City of Lone Tree Planning Commission Agenda
Tuesday, July 12, 2016

Meeting Location: City Council Meeting Room, Lone Tree Civic Center, 8527 Lone Tree Parkway

Meeting Procedure: The Lone Tree Planning Commission and staff will meet in a public Study Session at 5:30 p.m. in the lower level of the Civic Center. The Regular Meeting will be convened at 6:30 p.m. in the City Council meeting room. Contact Jennifer Drybread, jennifer.drybread@cityoflonetree.com if special arrangements are needed to attend (at least 24 hours in advance). Comments from the public are welcome during the Public Comment portion of the meeting (brief comments on items not appearing on the regular meeting agenda). Those persons requesting to comment on an agenda item will be called upon by the Chair. If you have any questions please contact Jennifer Drybread, Senior Planner, at jennifer.drybread@cityoflonetree.com, or 303-708-1818.

5:30 p.m. Study Session Agenda

1. Administrative Matters

6:30 p.m. Regular Meeting Agenda

1. Opening of Meeting / Roll Call
2. Conflict of Interest Inquiry
3. Public Comment (For Items NOT appearing on the agenda)
4. Minutes of the June 14, 2016 Planning Commission meeting
5. Park Meadows Filing 1, 3rd Amendment (The Yard). Site Improvement Plan for a 7 building, mixed use (restaurant/retail) center on 14.12 acres, Project SP16-22
6. Adjournment

MINUTES OF THE
Lone Tree Planning Commission Meeting
June 14, 2016

Lone Tree Civic Center

1. Attendance

In attendance were:

- Dave Kirchner, Chair
- Andrew Dodgen, Vice Chair
- Rhonda Carlson, Planning Commissioner
- Daryl Heskin, Planning Commissioner
- Richard Rodriguez, Planning Commissioner
- Kevin Spencer, Planning Commissioner
- Herb Steele, Planning Commissioner

In attendance from staff were:

- Kelly First, Community Development Director
- Jennifer Drybread, Senior Planner
- Hans Friedel, Planner III

2. Opening of Meeting / Roll Call

Chair Kirchner called the meeting to order at 6:20 p.m.

3. Conflict of Interest Inquiry

There were none.

4. Public Comment (For Items NOT appearing on the agenda)

There was no public comment for items not on the agenda.

5. Minutes of the May 24, 2016 Planning Commission meeting

Commissioner Spencer moved to approve the minutes, Commissioner Steele, seconded, and the minutes were approved – with Commissioner Dodgen abstaining due to his absence at that meeting.

6. Amendments to Planning Commission Bylaws and Planning Commission Guidelines and Procedures, Appendix B, Project RG16-41

Ms. Drybread presented an overview of the proposed changes to the Planning Commission Bylaws.

Commissioner Dodgen sought clarification on the change from a two-thirds majority to a simple majority. Ms. Drybread responded that this was due to there being seven members, and therefore it is impossible to achieve that mathematically.

Commissioner Rodriguez sought consistency on the conflict of interest section.

Commissioner Steele suggested changing “person” to “Commissioner” in the conflict of interest section.

Commissioner Rodriguez noted that under the order of business section, that often times Commissioners speak directly to people in the gallery, as opposed to asking them to come up to the podium first and identify themselves. Ms. Drybread explained that it is good practice to have people come to the podium.

Commissioner Rodriguez inquired about B6, E, where it states that if there are significant concerns about a consent agenda item, what would constitute “significant concerns.” Commissioner Dodgen and Chair Kirchner pointed out that the Planning Commission does not have a consent agenda, so it was recommended to strike the section.

Chair Kirchner asked that a definition be included for “interested party.” Commissioner Rodriguez suggested a sufficiently vague definition so as not to too narrowly preclude people. He suggested “any person or entity that has a personal, financial, or official stake in an application” as a definition.

Commissioner Dodgen stated that there should be consistency with whether “Member(s)” is capitalized throughout – it does not need to be preceded with “Planning Commission.”

Commissioner Steele mentioned that straw polls do not appear in the Appendix B under order of business, and are not included under authorized procedures. He suggested that this should be added as it was helpful in a previous meeting to clarify member’s standing on various issues. Ms. First stated that there is nothing precluding this from happening – it may be covered under discussion. Commissioner Rodriguez recommended adding that the Commission may discuss matters prior to making a formal motion.

Commissioner Steele also recommended giving the applicant the opportunity to clarify specific points after deliberation and before a motion. Chair Kirchner stated that there was nothing precluding it. Commissioner Steele suggested adding that the Chair may ask the applicant additional questions. Chair Kirchner stated that after the public meeting is closed, they can still ask the applicant questions. Commissioner Rodriguez stated that if final comments are allowed from the applicant, someone in the audience may feel aggrieved, and therefore the public should have another chance to speak. Commissioner Spencer recommended keeping the language that allows the Chair to ask the applicant and staff to present final comments before a motion is made, but not making that mandatory.

Commissioner Steele moved to approve the Planning Commission bylaws as amended. Commissioner Spencer seconded, and the motion passed unanimously.

7. **Guest speaker series – Commissioner Daryl Heskin presents and leads a discussion about building materials.**

   Ms. First gave opening remarks appreciating Commissioner Heskin for being willing to educate the Commissioner and Staff on building materials in his professional capacity as an architect.

   Commissioner Heskin's presentation is attached.

8. **Adjournment**

   There being no further business, Chair Kirchner asked for a motion to adjourn. Commissioner Dodgen made the motion to adjourn and Commissioner Steele seconded. The motion was approved unanimously. The meeting was adjourned at 8:00 P.M.

   These minutes have been reviewed and confirmed by

   _____ (name), on _____(date)

CITY OF LONE TREE
STAFF REPORT

TO: **City of Lone Tree Planning Commission**

FROM: **Kelly First, Community Development Director**
Jennifer Drybread, Senior Planner

DATE: **July 5, 2016**

FOR: **July 12, 2016 Planning Commission Meeting**

SUBJECT: **Park Meadows, Filing 1, 3rd Amendment**
The Yard at Lone Tree, Project SP16-22

Owner:	Representative:
Furniture Row Colo, LLC	Alberta Development Partners
Greg Ruegsegger	Bryan McFarland
	Greenwood Village, CO 80111

Planning Commission Meeting Date:	**July 12, 2016**
City Council Meeting Date:	**August 2, 2016**

A. REQUEST

Approval of a Site Improvement Plan (SIP) to construct seven, one and two-story buildings on 14.12 acres. Three additional buildings are shown as "pad sites" on the site plan, and will be subject to approval at a later date through an SIP amendment.

There are several variances associated with this request: two variances from the City's setback requirements, one variance from the City's minimum parking standards, and a potential variance to the process for review of future pad sites H, I and J.

B. STAFF FINDINGS AND RECOMMENDATION

Staff finds that the application is in conformance with the City's Comprehensive Plan and SIP requirements of the Lone Tree Zoning Code. The application is not

currently in conformance with the City's Subdivision Code with regard to a small Tract currently owned by Furniture Row located adjacent to the development that has no access. However, the applicant is currently working with the landowner and staff is recommending condition #2 to address this issue. Staff supports the variances associated with the project, as explained further in this report.

Staff recommends the Planning Commission recommend approval of the SIP, including the four variances to the City Council, with the following conditions:

1. Prior to the City Council meeting, the Park Meadows Drive access shall be shown on the SIP in a location that is supported by the Public Works Department.
2. Prior to final approval of the SIP, Tract 1-B (the landlocked tract currently owned by Furniture Row that currently has no physical or legal access, shall be addressed such that it does not remain a landlocked parcel.
3. The applicant's request to provide for an alternative review and approval process for pads H, I, and J, is contingent upon the applicant submiting design standards for City Council review and approval. The design standards should, at minimum, establish a palette of approved materials, colors, and architectural guidelines. They should also encourage orientation of outdoor seating towards the open space and address design standards for such outdoor patios. Should the design standards be approved by the City Council, future review and approval of pads H, I, and J would be subject to review and approval by the Planning Commission only.
4. The SIP is subject to final approval by the City Public Works Department.

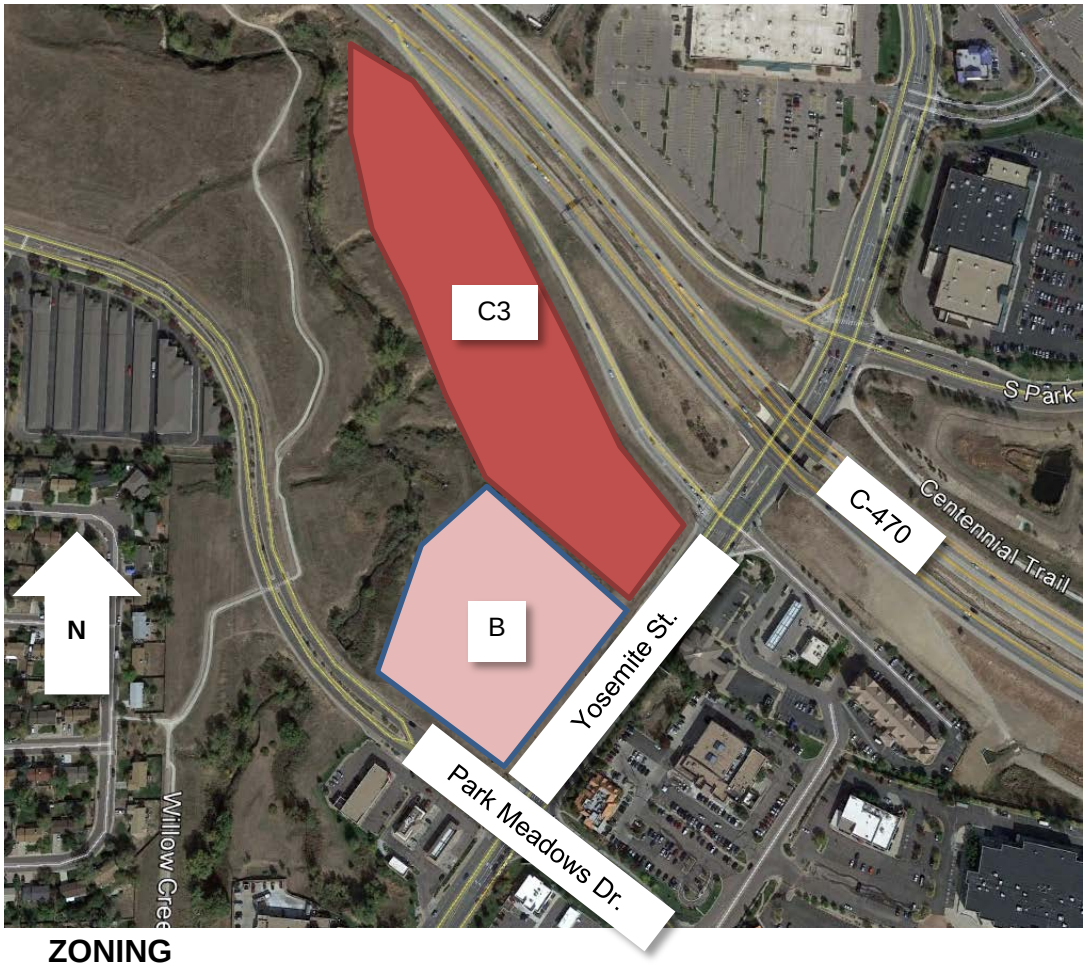
C. LOCATION

The property is located at the northwest corner of Yosemite Street and Park Meadows Drive, and is adjacent to City owned open space (Willow Creek).

Surrounding land uses are as follows:

North: Land owned by Douglas County that will be deeded to the Colorado Department of Transportation for C-470 off-ramp expansion
South: Park Meadows Drive and Willow Creek open space/drainage, commercial, and mini warehouse uses
East: Yosemite Street and restaurant and commercial uses
West: Undeveloped land

Vicinity Map



D. ZONING

The property is zoned Business (B) and Commercial 3 (C3) as shown in the Vicinity Map. Retail is an allowed use in both districts. Although restaurants are not explicitely listed as a permitted use in the C3 District, the Zoning Code states that the Director can determine other permitted uses if the are similar to those listed. Restaurants are a similar use to those listed and exitsing elsewhere in the C3 Districts and a determination has therefore been made that restaurants are a principal use here.

The applicant is requesting four variances - two from the required setbacks, one parking variance, and a potential variance to the process for City review of pads H, I, and J:

1. The B zone district has a 40-foot setback from Yosemite Street, while the C3 zone district has only a 30-foot setback. Building C straddles these two zone districts. The applicant is requesting a 10-foot setback variance for that portion of Building C in the 40-foot setback that is located only 30-feet from the property line. An 8-foot sidewalk and an 8-foot tree lawn along Yosemite Street has been added at staff's request, resulting in adequate buffering

between the building and the street. For this reason, staff supports this variance request.

2. The C-3 zoning requires a 10-foot landscaped side or rear-yard setback from the property line for parking lot on the property's northeast border. The applicant proposes 4-5 foot setbacks in some cases. Staff supports this variance, as this property abuts land owned by Douglas County that will be deeded to the Colorado Department of Transportation for off-ramp expansion. Moreover, the property in the setback will be landscaped, and the lesser setback will provide no adverse impacts on users of C-470 or The Yard patrons.

3. The Zoning Code requires 797 parking spaces, with the shared parking calculations factored in, and the applicant is proposing 745 spaces, resulting in a 52-space parking variance. This variance results in a 7% reduction in the required parking. The applicant retained the services of Fehr and Peers to evaluate their parking demand, and they conclude that their peak-hour parking needs will only require 723 spaces (see attached study). Staff supports this parking variance, as the Zoning Code shared parking formula does not take into account a commercial center that has various types of restaurant uses, e.g., breakfast and lunch-only restaurants, combined with primarily dinner-only restaurants. Their study creates a more fine tuned analysis, based on projected use. Additionally, in the event of a parking shortfall, there would be no impacts on adjoining properties or streets; patrons would simply go elsewhere.

4. The applicant is requesting that the future SIP amendment(s) for pads H, I, and J, if consistent with the form and materials of the proposed buildings, be heard by as an Administrative Amendment to the SIP (staff review only), or by the Planning Commission only. A similar process (Planning Commission review only) is used in Lincoln Commons in RidgeGate, where pad sites are consistent with City-approved design standards (i.e. the sub-area plan). Staff would support review and approval of the three pads by the Planning Commission, provided the applicant submits design standards for the pad sites for City Council review and approval. The design standards should, at minimum, establish a palette of approved materials, colors, and architectural guidelines. They should also encourage orientation of outdoor seating towards the open space and address design standards for such outdoor patios.

E. SITE CHARACTERISTICS

The property gently slopes down from north to south towards the Willow Creek drainage. It has been graded for development and reseeded with grass.

F. SERVICE PROVIDERS

Service	Provider
Water	Southgate Water District
Sanitation	Southgate Sanitation District
Police	Lone Tree Police
Fire	South Metro Fire Rescue Authority
Parks	South Suburban Parks and Recreation District

G. DESCRIPTION

Access

Yosemite Street
The Yosemite Street access is proposed as a right-in/right-out access. In order to minimize conflicts in this high-traffic area, the applicant and the City propose a “pork chop” median to be installed on Yosemite Street to reduce the likelihood of patrons making left-hand turns onto Yosemite Street from this access point. Additionally, the property will be signed at this exit stating that left-hand turns onto Yosemite Street or Park Meadows Drive from this access are prohibited (patrons will be directed to the Park Meadows Drive access instead).

Park Meadows Drive
There has been much discussion regarding the access point proposed by the applicant on Park Meadows Drive. The Public Works Department is awaiting additional information from the applicant at the time of this report in order to finalize their recommendation on this access. This issue will be addressed prior to City Council consideration.

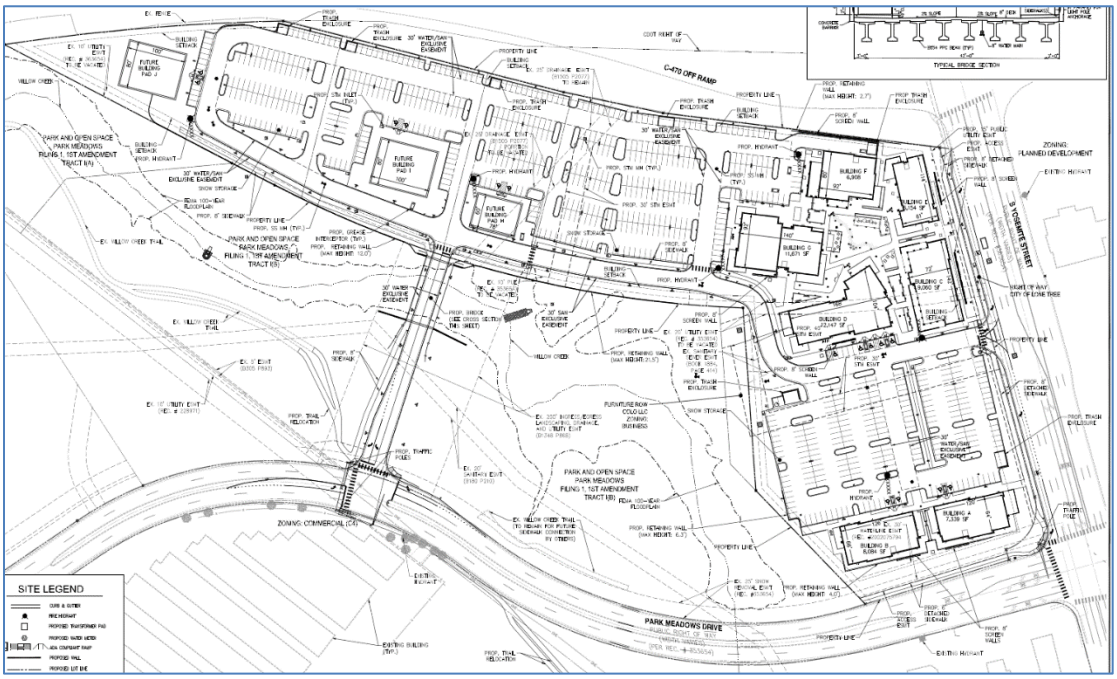
Pedestrian and bike access
The applicant has agreed to construct an 8-foot detached sidewalk along Yosemite Street, and a 6-foot detached sidewalk along Park Meadows Drive along their property line, separated in both cases from the street with an 8-foot tree lawn. Access will also be extended to the site via the Willow Creek Trail where it crosses the entry drive along Park Meadows Drive. While it is uncertain at this point where the vehicular access will be located along Park Meadows Drive, it is agreed that the trail will cross on the west side of a signalized intersection. Providing a signalized crossing for trail users for safety purposes has been a goal of the City with this application.

Traffic Study

The Traffic Study prepared by Felsburg, Holt & Ullevig for the applicant (attached), forecasts that at 2040, The Yard will contribute 5%-6% of the PM

Peak hour traffic (estimated generating 7,000 external trips daily – 560 trips during the AM/PM peak hours). The study states that the Yosemite Street/Park Meadows Drive intersection will continue to provide the biggest challenge in terms of traffic flow in this area. They state that this intersection currently has an E level of service during the AM and F level of service during the PM, and they estimate that there will be a long range condition of a D level of service for the AM peak hours and F level of service for the PM peak hours (a D level of service is the minimum objective for highway and intersections during AM and PM peak hours). The study recommends that the full movement access onto Park Meadows Drive should be three lanes wide including one inbound lane and two outbound lanes. One “meaningful” enhancement called for in the study that the City is already making to this intersection is to add a right turn dedicated lane from Yosemite Street onto Park Meadows Drive.

Site Plan



The main feature of the development is the central courtyard, surrounded by five restaurant/retail buildings, upon which many outdoor patios (ground floor and rooftop) and other amenities (benches, hammocks, Airstream ice cream truck, fire pits) are located. Patrons in this central courtyard will be generally buffered by buildings to the adjacent streets, C-470, and parking fields. Two linear retail/restaurant pads (Building A and B) are located to the south along Park Meadows Drive, and link to the courtyard with a central walkway through the parking field. Three additional, future restaurant pads (Buildings H, I, and J) are located to the west along the Willow Creek open space. These buildings will be considered by the City as amendments to the Site Improvement Plan (see variance request #4 on page 4 of this report). Staff has discussed with the

applicant that these future restaurant buildings should take advantage of their site, by orienting their outdoor spaces to natural areas (in this case the Willow Creek open space), as recommended in the City's Design Guidelines.

The project depicts an approximately 0.26 acre strip of land generally located west of Building D, which is currently owned by Furniture Row. The property was not planned to be acquired by the applicant, Alberta Development, nor used by them for their project. The City's Subdivision Code, however, does not allow landlocked properties to be created, and Public Works staff is recommending that either the parcel be acquired by Alberta Development and incorporated into the project, or be deeded to the City as part of the Willow Creek open space. Staff is recommending this issue be resolved as a condition of final approval. The applicant is working with Furniture Row to address this issue, and believes such can be done in the recommended time frame.

Building Design

The building architecture is contemporary in design. It incorporates the extensive use of reclaimed barn wood, Concrete Masonry Units (CMU), metal panels, precast stone, masonry veneer, and Exterior Insulation and Finishing System (EIFS). The masonry veneer and the majority of the CMU are grey in color. The photos of barn wood that the applicant provided after about 1-2 years in the environment, appear to mostly turn grey in color. With the exception of three of the metal panels (light green, blue, and brown) and some of the paint colors, the colors in the project tend largely to hues of grey. These grey colors would distinguish this center from the more typical beige colors found throughout Lone Tree. The color scheme will be offset to some extent with brightly colored awnings, umbrellas, and some of the patio furniture, and staff has encouraged these colorful accents throughout.

The glass, metal panels, cast stone, and CMU are all considered predominant materials by the City's Design Guidelines. The Design Guidelines state that wood siding should be composite or finished/treated wood that conveys high quality and longevity. The applicant's response to this guideline is that:

> The proposed reclaimed barn wood does convey high quality and longevity as it has been taken from barns where it has been exposed to the elements for hundreds of years. The product supplier simply fumigates and kiln dries the wood, but no other processes are done to give it its finish. The current finish of the wood is from years and years of weathering and is unlikely to change in 2 or more years. Reclaimed barn wood has been used on many exterior applications throughout the Denver areas. Included with this submittal are several pictures of projects that have used reclaimed barn wood. These pictures have been taken 1-2 years after construction.

Staff has included photos of examples of reclaimed barn wood provided by the applicant as an attachment to this report. It should be noted that the Design Guidelines support the use of recycled or reclaimed materials.

Landscaping and Irrigation
Landscaping and irrigation are consistent with the City's Zoning Code requirements. All plants selected require low or moderate water use, with the exception of the sod. The water intensive sod (Texas Thermal Blue Hybrid) will be used in the main yard area, and will have intensive public use. Such high-water sods are allowed in high-traffic areas per the Lone Tree Zoning Code. A tall fescue, a moderate-water sod will be used elsewhere, and the particular hybrid they have selected will use no more than 1-inch of water per week, consistent with the City's requirements. Evergreen trees and shrubs and ornamental grasses will be used throughout for year round color and interest.

Drip irrigation will be used extensively throughout, with overhead spray generally limited to the central yard area, and along the central drive and the major streets. Overlot seeded areas generally require temporary irrigation, however these are limited here to future pad sites, and for that reason, Staff is not recommending temporary irrigation be extended to these sites.

Retaining Wall
The applicant proposes a 21.5-foot tall retaining wall adjoining Willow Creek. While the Design Guidelines support terracing retaining walls and incorporating landscaping between the terraces to minimize the visual impacts of tall walls, in this case the wall is adjacent to the Willow Creek open space owned by the City of Lone Tree, where the presence of a floodplain and vegetation would likely be impacted by tiered walls at this location. The applicant has provided a cut sheet of the proposed wall (included as an attachment to this report), that is earth-toned in color, consistent with the Design Guidelines.

Snow Storage
Snow storage is proposed in the parking lots, at staff's recommendation. While staff does not generally support snow storage in parking lots unless there is an excess of parking per the City's Zoning code, in this case the property is not only deemed by their parking study to have excess parking, it is also the case that they plan to have extensive outdoor dining, which will likely not be used in the winter time, when snow storage is necessary. Additionally, staff has found that locating snow storage in landscaped areas that includes shrubs, trees, and perennials tend to crush these plant materials, and is therefore not a desirable location for that purpose.

Lighting
Lighting is consistent with the Zoning and Design Guidelines. A hierarchy of project lighting is provided, ranging from lighting of parking lots, pedestrian paths, landscaped areas and exterior building lighting. All lighting, with the exception of

decorative lighting, is downcast and shielded to reduce light pollution. LED lighting is used in many cases, and will help to minimize energy consumption.

Signage
The signs on the buildings are for illustrative purposes only. Sign permits will need to be secured separately through the Building Division. Any variances to the Sign Code will need to be part of a Master Sign Plan, approved by the Planning Commission.

Fencing
Fencing along Park Meadows Drive and Yosemite Street is proposed to be a combination of composite (Trex) materials and metal panels, and is consistent with the City's Design Guidelines.

Trash Enclosures
The location and design of the trash enclosures meet the requirements of the City Zoning Code and Design Guidelines.

H. REFERRALS

Referral comments are attached. The applicant's response to referral comments are also included as an attachment. The major outstanding issue is the location of the access along Park Meadows Drive. This will be addressed prior to consideration by the City Council.

I. Attachments

Development Application
Letter of Authorization
Narrative/Statement of Design Intent
The Yard Circulation Diagram
Traffic Study
Parking Study
Referral Comments
Applicant's referral responses
Retaining wall cut sheet
Reclaimed barn wood photographs
SIP and colored elevations

Renderings (to be provided prior to the Planning Commission meeting)

END

Development Application

Planning Division
9220 Kimmer Drive, Lone Tree, Colorado 80124
303.708.1818 | www.cityoflonetree.com

CITY OF LONE TREE

Project Description	THE YARD AT LONE TREE

Instructions	For Office Use Only
✓ All applications must be typed or legibly printed ✓ All applicable sections must be completed ✓ All required attachments must be included ✓ This application does not cover Engineering, Building, and/or Public Works submittal requirements and fees	Project Name The Yard Job # SP16-22 Date 3/31/16 Planning Fee $3,200 Check # 24911

Application Type		Location
☐ Preliminary Plan	☐ Rezoning	Address
☐ Final Plat	☒ Site Improvement Plan (SIP)	Approximate Location PARK MEADOWS DRIVE & NW CORNER S. YOSEMITE STREET
☐ Re-Plat	☐ SIP Amendment	
☐ Lot Line Adj.	☐ Other	State Parcel ID TRACT E-2231-032-03-008 TRACT BA-2231-033-01-004 Acreage 14.12

Zoning	Legal Description
Current Zoning or PD Name C3/B1	Subdivision Name PARK MEADOWS
Proposed Zoning if Rezoning N/A	Filing # 1 Block # N/A Lot # TRACT E & BA

Utility Providers		
Fire District SOUTH METRO	Water SOUTHGATE	Electricity XCEL ENERGY
Metro District PARK MEADOWS	Sewer SOUTHGATE	Gas XCEL ENERGY

Property Owner of Record	Applicant if Different than Owner
Owner Name FURNITURE ROW COLO, LLC	Name BRYAN MCFARLAND
Company FURNITURE ROW COLO, LLC	Company ALBERTA DEVELOPMENT PARTNERS
Address NEC PARK MEADOWS DR & YOSEMITE ST, DENVER, CO 80216	Address 5750 DTC PARKWAY, SUITE ~~[illegible]~~ 210 GREENWOOD VILLAGE, CO 80111
Phone	Phone 303.771.4004
Email greg.ruegsegger@furnituresrow.com	Email
Owner Signature Date	Applicant Signature Date

Letter of Authorization

Regarding Development Applications for Land Use Entitlements

City of Lone Tree
9220 Kimmer Drive #100
Lone Tree, CO 80124

RE: Property Address: N/A

Assessor's Parcel Number (SPN): 2231-032-03-008 AND 2231-033-01-004

To Whom It May Concern:

I/We, the owner(s) of the above described real property, authorize Bryan McFarland of Alberta Development Partners, LLC to act as an agent on my/our behalf for the purpose of creating, filing and/or managing an application for Site Improvement Plan (type of development or permit application).

The undersigned hereby certifies to being the fee owner(s) or legally authorized representative of the fee owner(s) of the real property described above.

Furniture Row COLO, LLC
(Print Name of Owner)

V.P.
(Signature of Owner or Authorized Representative)

State of Colorado
County of Adams

The foregoing instrument was acknowledged before me this 30th day of March, 2016 by Gregory A. Ruegsegger.

Janine M. Wood
(Notary's official signature)

09/17/2017
(Commission expiration date)

NOTARY SEAL

JANINE M. WOOD
Notary Public
State of Colorado

Site Improvement Plan Project Narrative & Statement of Design Intent Template

Planning Division
9220 Kimmer Drive, Lone Tree, Colorado 80124
303.708.1818 | www.cityoflonetree.com

Project Name THE YARD AT LONE TREE **Project #** ADP000002.01

Project Location NW CORNER OF PARK MEADOWS DRIVE & S. YOSEMITE STREET **Date** 07/01/16

Project Narrative

ARTICLE XXVII - Site Improvement Plan (SIP) Project Narrative. The SIP process is intended to provide for development that enhances the quality of life in the City by promoting high-quality design and a strong economy, and by fostering a sustainable and healthy community. The SIP process is required to ensure the development will be in conformance with the Comprehensive Plan, the Design Guidelines, applicable chapters of this Code and applicable Planned Developments and Sub-Area Plans.

Using this form or a separate page(s), the applicant shall provide a written narrative describing their project. Use the following outline (Sec. 16-27-60) as a guide when formulating your narrative – please disregard sections that do not apply to your project:

1. General information.

a. Provide the subdivision name, filing number, planning area number when located in a Planned Development, lot and block number or street address and section, township and range if not in a subdivision, and name of project.
Project Name: The Yard at Lone Tree
A Resubdivision of Park Meadows Filing One, First Amendment Tract BA and Tract E, Section 3, Township 6 South, Range 67 West of the Sixth P.M, City of Lone Tree, County of Douglas, State of Colorado.

b. Indicate zoning of the site and the zoning and current uses of adjacent land.
Site Zoning: B & C3
Adjacent Zoning: Southeast – Planned Development (PD)
South –Open Space, Business
North – Commercial (C2)

2. **Development impacts. Describe overall impacts of the proposed development on adjacent lands and methods for mitigating those impacts.**

   The Yard is intended as a commercial development which includes restaurant and retail users situated around a common outdoor space (i.e. The Yard) and central gathering space. The project also includes adjacent pad development opportunities for future users. The development site also comes with a few challenges:

   With the overall site configuration focusing on a grouping of buildings parking has been compartmentalized into larger areas around the perimeter of the project. However, the extensive and well-composed landscape design will help to screen both the views of the parking area from the adjacent open space areas as well as from C-470.

   A simple low impact approach has been taken to all of the parking lot lighting to minimize the visual impact of the parking area areas while still providing adequate lighting for safety and security.

   With the overall adjacency to the open space and trail system the project has also provided connectivity and s softened edge to mitigate the impact on the adjacent open space area from a view standpoint, while still providing for pedestrians/cyclist to access and circulate freely.

3. **Compliance with Intent and Approval Standards. Describe how the development complies with the Intent (Section 16-27-10) and Approval Standards (Subsection 16-27-90(a)) of this Article.**

   Section 16-27-10: SIP Process provides for development that enhances quality of life in the City by promoting high-quality design, strong economy, and by fostering a sustainable and healthy community. SIP process ensures conformance with the Comprehensive Plan, Design Guidelines, and Municipal Code and applicable Planned Developments and Sub-Area Plans.

   Section 16-27-90(a): Approval standards. SIPs must be in conformance with the Comprehensive Plan, the Design Guidelines, applicable chapters of this Code and applicable Planned Developments and Sub-Area Plans, as well as all applicable roadway, grading, drainage and erosion control standards.

4. **Development phasing. Describe the proposed development schedule and phases of development for all proposed construction.**

   This project is anticipated to be a single phase development. All of the overall site improvements will be constructed as single phase. The buildings (A,B,C,D,E,F and G) will be constructed sequentially in some manner to be defined at a later date. Building H, I and J are anticipated to be developed concurrently by their individual users.

5. **Other project data.**

   a. Total number of employees on maximum shift when known (for parking purposes).
      We have accounted for 122 employees on maximum shift for this project. Please see parking table on the Cover Sheet for parking requirements.

b. Square footage of building.
Building A – 7,372
Building B – 8,084
Building C – 9,060
Building D – 12,147
Building E – 6,147
Building F – 6,908
Building G- 11,654

c. Lot area.
Gross Site Area - 614,892 SF, 14.2 Acres

d. Anticipated opening date.

November 2017

6. Sustainability. Highlight ways in which the project furthers the City's environmental goals regarding sustainability. This may include a general description of the project location relative to other uses, public transit and trails; ease of travel to key destinations on foot or bicycle; water conservation and water quality measures; site layout; green building practices; or operational aspects of the use such as waste reduction, recycling or commuter trip reduction programs.

The Yard will be implementing the following practices regarding sustainability:

- Passive and Active outdoor open space
- Natural daylight and Ventilation of Building and Occupied Spaces
- Natural Ventilation of Building and Occupied Spaces
- Solar shading elements over outdoor spaces, and window openings to minimize solar heat gain.
- Varied surface treatments to minimize heat island effect.
- Shaded parking areas to minimize heat island effect.
- Low water consumption trees and plants
- Energy efficient LED lighting.
- Renewable Building Materials
- Underground detention and Water Quality
- Low absorption/reflective roof materials

7. Variances if applicable. For those SIPs for which a variance from the standards in this Chapter, the Design Guidelines or Sub-Area Plans is requested, the narrative shall also explain the need for the variance. (Public notice may be required, see Section 16-26-60).

Variance #1 -The current B zone district requires 40' Setback verses Zone C3 which only requires a 30'. This creates a step in the setback line right at the access point into the project from Yosemite. Building C footprint straddles both zone districts and falls inside the B 40' Setback requirement. In addition the request to add a detached sidewalk and tree lawn to Yosemite creates additional setback issues that this proposed development cannot accommodate. We are proposing to add the detached walk and tree lawn but will require a 10' variance from the existing setback requirement along Yosemite.

Variance #2 - Due to the small dimensions and irregular shape of this lot, the parking lot layout lies within the 10' set back required by C3 along the Northeast property line and we are requesting a slight reduction in that setback to provide a more cohesive successful parking layout and configuration.

Variance # 3 - We are requesting a variance to the City's parking requirements per The Yard - Shared Parking Analysis attached, dated June 16, 2016.

Variance #4 – We are requesting that the SIPs for the future buildings on Pad Sites H, I, and J, if consistent in form and materials to the buildings located elsewhere in The Yard, be considered either as an Administrative Amendment to the SIP, or for review by Planning Commission only.

Statement of Design Intent

Please describe how the project meets the intent of the City of Lone Tree Design Guidelines, including the city's Core Design Principles (p. 11). If the project is located within a Planned Development that is governed by additional design standards or guidelines, please address how the project satisfies the intent of those standards and guidelines as well.

Please use the outline below as a guide in formulating your response. You may also use this opportunity describe particular strengths, unique features, sustainable practices, or innovations that distinguish the design of the project, as well as any particular opportunities or challenges that should be considered. This Statement of Design Intent is intended to encourage thoughtful consideration of design guidelines and to give project reviewers and decision makers a more thorough understanding of the project.

1. Overall Design Concept. Briefly describe the use and overall concept for the project as a whole.

   The Yard is intended as a commercial development which includes restaurant and retail users situated around a common outdoor space (i.e. The Yard) and central gathering space. The project also includes adjacent pad development opportunities for future users on the remaining parcels. The project takes into account the overall site from a holistic standpoint allowing for flexibility while maintaining the overall design theme and desired experiences throughout each portion of the project. The overall theme of the project is intended to create a unique experience and a eclectic grouping of multiple types of users. The project design is contextual to the region while providing a site specific solution that takes full advantage of all of the site conditions.

   The project addresses the multiple frontages of the project in a variety of ways taking advantage of not only the solar exposure throughout the day, but of the views into and out of the project. The design provides a unique solution to a difficult corner and adjacency to a major highway by providing and protecting the outdoor experiences that are being contemplated. The project takes advantage of incorporating indoor /outdoor experiences and focus on blurring the lines between those spaces with the use of outdoor patios, operable window walls and rooftop patio spaces. There will be a variety of comfortable programmatic spaces while still providing opportunities for passive use of the open space and gathering areas.

2. Context and Site. Describe how the project relates functionally and visually to the context of the surrounding area. Consider issues of form and character, the natural environment, vehicular and pedestrian access and circulation, etc.

   The overall project addresses the City of Lone Tree's Design Guidelines in the following manner:

Context and Local Character: The architecture of The Yard is contextual in nature, using natural materials that indigenous to the areas. The palette of materials is simple and elegant while still providing a unique architectural expression for the end users. The overall project is appropriate in scale and is compatible with the surrounding area.
Economic Vitality: This project address economics in a significant way bringing millions of new tax dollars to the city, while providing a high quality development that the City of Lone Tree will enjoy for decades to come.
Human Scale: The Yard sole focus is the experiences of people and the projects design and integration of architecture, outdoor spaces, connectivity and experiences is common throughout the entirety of the project.
Design Excellence: This project provides extremely high quality design solutions to every aspect of it, which will ultimately set a new standard within the City for these types of developments.
Safety and Security: The project will be accessible, well connected and well lit promoting comfortable and safe access for everyone.
Sustainaibiliy: As referenced above this project implements a host of sustainable practices throughout its entirety.
Sense of Place: The Yard wil become one of the most desired retail/restaurant destinations with in the City of Lone Tree, with its diversity in users and the overall design and theming of the project this place will create experiences that will bring customers back time and time again, creating memories and moments in time that are irreplaceable which will create the "Sense of Place".

3. Public Realm. Describe how the project contributes to an inviting, safe and functional public realm. Consider public spaces, street/sidewalk – level experience, lighting, landscaping, and signage.

   As stated earlier, this project is centered around the Public Realm, every design decision from site configuration to the building design; landscape architecture to amenity finish packages have been focused on positively influencing the public realm.

4. Architectural Design. Describe how the architectural design contributes to the unique qualities of the area and how design concepts result in a unified, functional and high-quality design. Consider building form and composition, façade composition and articulation, and materials, colors, and lighting.

   As stated earlier, this project has been designed to create unique experiences and focuses those experiences on the outdoor spaces and people places. The architecture works in composition with that design focus by providing buildings that are designed to complement and enhance the overall aesthetic while still providing each of their users to have and individual identity. The materials are natural, warm and inviting, the forms of the building are simple and modern, the scale of the buildings are appropriate to the adjoining spaces and the adjacent building.

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Business: Furniture Row Colo, LLC

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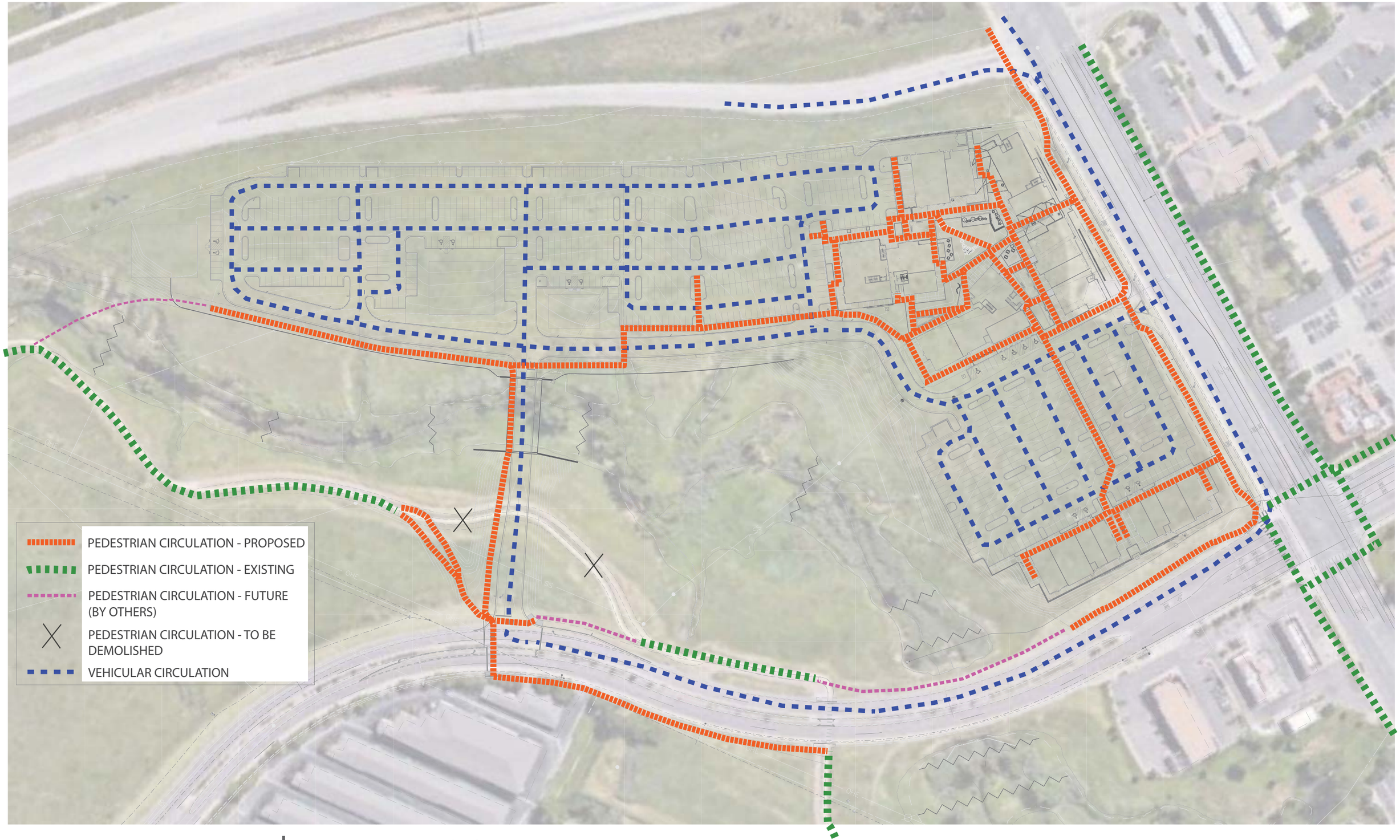
Denver, CO 80216

Phone:

Email: greg.ruegsegger@furniturerow.com



Galloway
Planning. Architecture. Engineering.

THE YARD

Alberta Development Partners

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CIRCULATION DIAGRAM

0' 60' 120' 300'
SCALE : 1" = 60'-0"

N

06.17.2016

"THE YARD" AT LONE TREE

TRAFFIC IMPACT ANALYSIS
SECOND EDITION

Prepared for:

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FHU Reference No. 15-221-01
June 2016

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I. INTRODUCTION

"The Yard" is a proposed commercial development to be located within the City of Lone Tree. The proposed site is located near C-470 and Yosemite Street. **Figure 1** illustrates the location of the site and the adjacent primary roadway network.

The current site plan concept for "The Yard" development is depicted on **Figure 2**. Current planning efforts have identified a mix of commercial land uses located east of the drainage. Access to the commercial parcel would be via a right-in/right-out access along South Yosemite Street and a full movement access on Park Meadows Drive (west of the drainage).

The purpose of this current report is to provide an evaluation of the potential traffic impacts specific to the current development program of "The Yard" and to identify any roadway or traffic control improvements required as a result. The analyses consider two future scenarios:

- Short Range Future. This scenario examines the traffic impacts on completion of the project in the near-term future (year 2017).

- Long Range Future. This scenario examines the traffic impacts within the context of a year 2040 horizon.

Figure 1
Vicinity Map

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The Yard 15-221 6/15/16

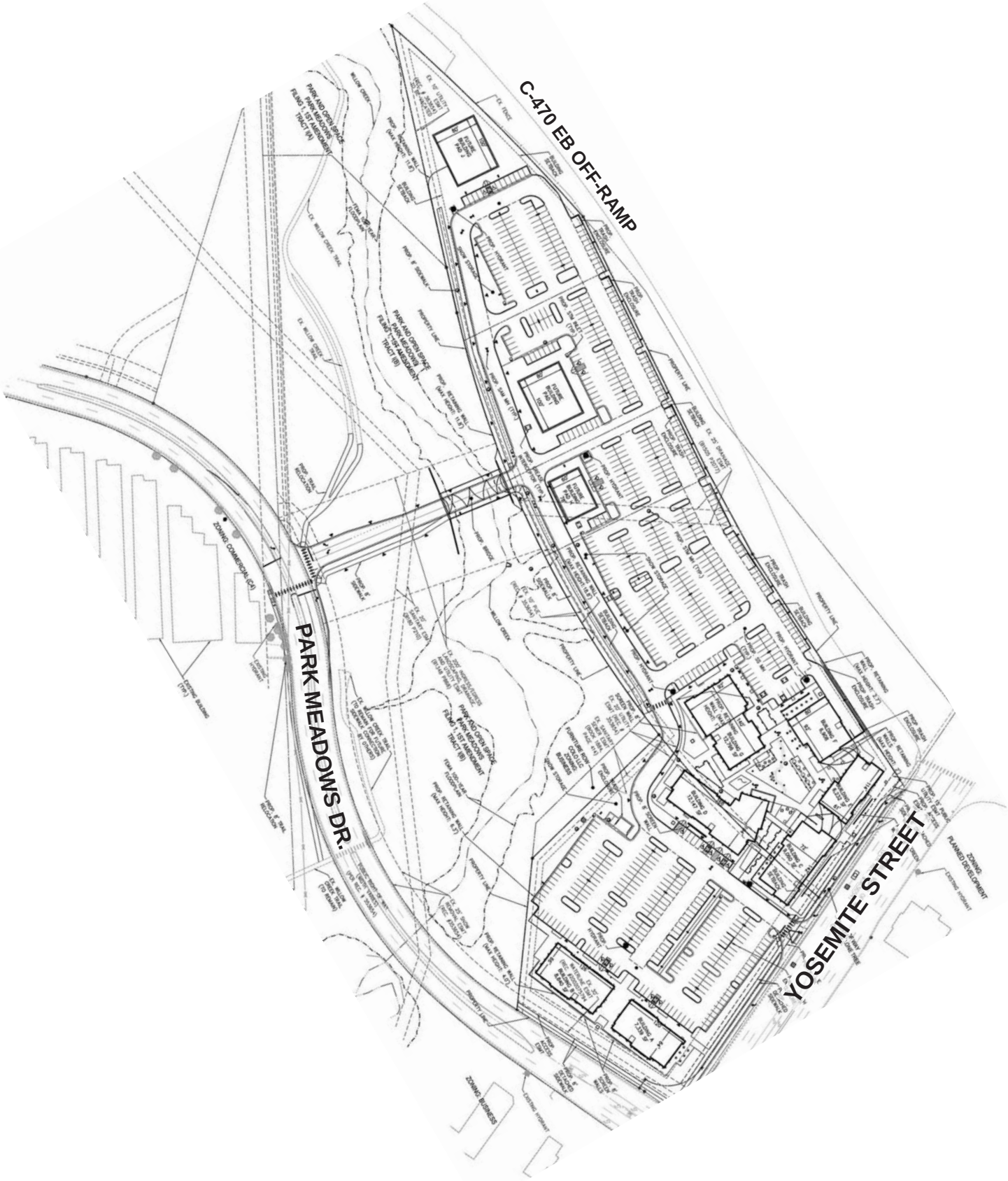


Figure 2
Site Plan

II. EXISTING CONDITIONS

A. Land Use

"The Yard" site is currently vacant land. Park Meadows Mall is located to the northeast, on the north side of C-470. The Entertainment District at Lone Tree is located east of the site, on the other side of Yosemite Street and includes a variety of commercial land uses. Immediately south of the site are various residential uses in Acres Green. Also to the south and west of the site, along Park Meadows Drive, are various other commercial uses as well as a church. Vacant land exists west of the drainage way which is zoned to allow an assortment of uses.

B. Roadway System

C-470 forms the northern boundary of the site. In the vicinity of the site, C-470 interchanges with Yosemite Street (providing movements to/from the west only). The posted speed limit is 65 miles per hour (MPH). The ramp intersections at Yosemite Street are currently signalized. Yosemite Street forms the eastern site boundary and this north-south arterial roadway consists of a basic four-lane divided cross section with a posted speed limit of 35 MPH.

Park Meadows Drive, a four-lane major collector (posted 35 MPH), forms the southern border and intersects Yosemite Street on the southeast corner of the site. The intersection of Yosemite Street and Park Meadows Drive is currently signalized.

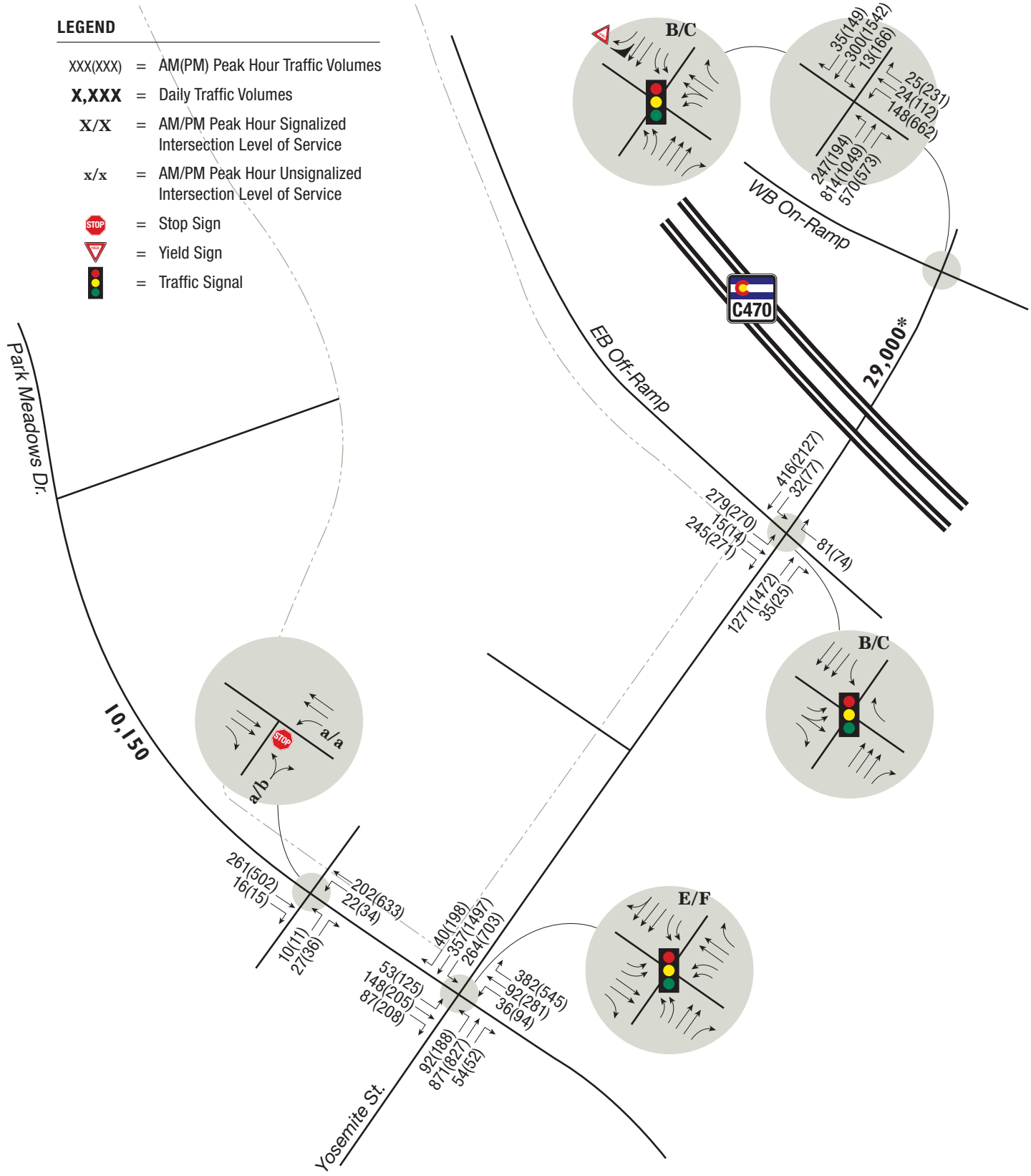
C. Traffic Volumes and Operations

AM and PM peak hour turning movement counts were collected at the intersections of Yosemite Street and the C-470 EB ramps, Yosemite Street and Park Meadows Drive, and the access intersection on Park Meadows Drive (just west of Yosemite Street providing access to the Conoco Gas Station and Tires Plus) on June 23, 2015. A 24-hour automated roadway count was also conducted along Park Meadows Drive (just east of the drainage way) adjacent to the site. Supplemental count data was collected in a separate effort at the Yosemite/C-470 WB ramps intersection on June 7, 2016. Count data sheets are included in **Appendix A**.

Figure 3 illustrates the existing traffic volumes within the study area. It can be seen that Yosemite Street serves approximately 29,000 VPD within the study area and Park Meadows Drive currently serves approximately 10,150 vehicles per day (VPD).

Traffic operations within the study area were evaluated according to techniques documented in the *Highway Capacity Manual* (Transportation Research Board, 2010) using the existing traffic volumes, intersection geometry, and traffic control. Level of Service (LOS) is a qualitative measure of traffic operational conditions based on roadway capacity and vehicle delay. LOS is described by a letter designation ranging from A to F, with LOS A representing almost free-flow travel, while LOS F represents congested conditions. For signalized intersections, LOS is reported as an average for the entire intersection. For stop-sign controlled intersections, LOS is calculated for each movement that must yield the right-of-way. According the Douglas County Guidelines for Traffic Studies (which has been adopted by Lone Tree), LOS D shall be the minimum objective for highway and intersection traffic operations during the AM and PM peak hours.

The existing traffic control, intersection geometry, and results of the LOS analysis are included on **Figure 3** (analysis worksheets incorporating existing timing plans are included in **Appendix B**). The intersections at the C-470 EB Ramps and WB Ramps with Yosemite Street currently operate at LOS B and C during the AM and PM peak hours, but the signalized intersection at Yosemite Street and Park Meadows Drive currently operates at LOS E and F during the AM and PM peak hours. This is a heavily traveled intersection, and one of the culprit movements that contribute to its poor LOS is the southbound left-turn movement which flows at 700 vehicles per hour during the PM peak hour. The movements at the unsignalized access intersection on Park Meadows Drive currently operates at LOS B or better during the AM and PM peak hours.



NOTE: Data collected in 2015/2016
***Source - DRCOG**

Figure 3
Existing Conditions

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III. FUTURE CONDITIONS

A. Site Trip Generation

As previously discussed, the proposed development "The Yard" would consist of a mix of restaurant and retail uses. Estimates of land use quantities were provided by the developer.

The number of vehicle trips generated by the proposed development was estimated based on the data and procedures documented in *Trip Generation, Institute of Transportation Engineers,* Ninth Edition, 2012. The trip rates contained in the manual are developed primarily through field observations of similar land uses throughout the nation. The trip generation for "The Yard" development is based on the average rates, per the Douglas County guidelines.

Trip generation rates for the specific land uses planned to be developed on the site are documented in *Trip Generation Manual, 9th Edition* (2012), by the Institute of Transportation Engineers (ITE). Trip generation rates and equations corresponding to the following ITE Land Use Codes (LUC) were used to calculate the trip generation estimates for the site:

- LUC 820 – Shopping Center
- LUC 932 – High-Turnover (Sit-Down) Restaurant

Table 1 shows the trip generation rates used for each of the planning areas and **Table 2** shows the trip generation estimates used for each of the planning areas within "The Yard."

Table 1. Trip Generation Rates – "The Yard"

Land Use	ITE Code	Quantity	Trip Generation Rates						
			Daily Trips	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Shopping Center	820	34,700 SF	42.7	0.60	0.36	0.96	1.78	1.93	3.71
High-Turnover (Sit-Down) Restaurant	932	49,800	127.0	5.93	4.86	10.79	5.91	3.94	9.84

Table 2. Trip Generation Estimates – "The Yard"

Land Use	ITE Code	Quantity	Daily Trips	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Shopping Center	820	34,700 SF	1480	20	12	32	61	67	128
High-Turnover (Sit-Down) Restaurant	932	49,800	6325	295	242	537	294	196	490
Subtotals			**7805**	**315**	**254**	**569**	**355**	**263**	**618**
Less Internal Trips(1)			-780	-4	-2	-6	-30	-26	-56
Net Totals			**7025**	**311**	**252**	**563**	**325**	**237**	**562**

(1) Assume 10% of trips remain internal to the site, applied to the non-peak direction.

It can be seen that "The Yard" would have the potential to generate approximately 7,000 external vehicle trips on a daily basis. About 560 of these trips would occur during the AM peak hour, and again during the PM peak hour. Of note, some of the proposed land uses would have the potential to attract trips from traffic passing by the site on the adjacent roadways. To be conservative, however, potential pass-by reductions have been omitted from this analysis. Internal trip reductions to account for interaction between the restaurant and retail uses were estimated using ITE internal trip making procedures; internal trips were capped at 10 percent per Douglas County standards.

B. Trip Distribution and Traffic Assignment

The site trip generation estimates were distributed to the adjacent roadways based on existing and projected future travel patterns. **Figure 4** illustrates the estimated distribution percentages for both Short Range and Long Range Future scenarios (which were also vetted with Lone Tree staff). As shown, most site trips (85 percent) will be oriented to/from Yosemite Street, some of which will be to/from the north, some to/from the south, and some simply crossing Yosemite Street.

The resultant site generated traffic assignment is illustrated on **Figure 5**. As shown, "The Yard" is projected to contribute between 2,300 and 2,900 VPD onto Yosemite Street adjacent to the site. Just west of Yosemite Street, "The Yard" would add approximately 4,200 VPD onto Park Meadows Drive.

Figure 4. Trip Distribution

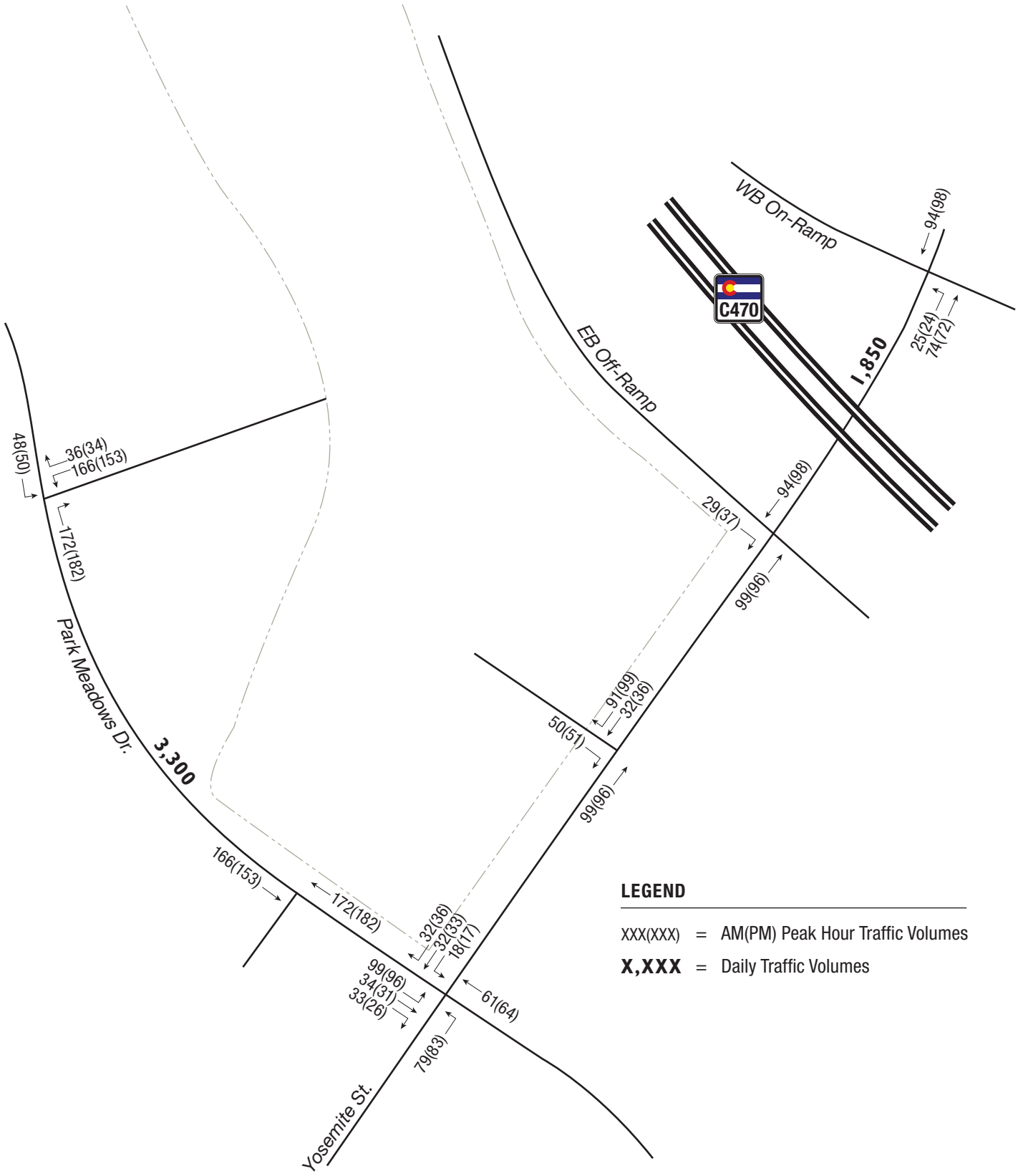

Figure 5
Site Generated Traffic Assignment

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The Yard 15-221 6/15/16

C. Background Traffic

Background traffic is the component of roadway volumes which will utilize the adjacent roadway system regardless of site development. Projections contained in the Denver Regional Council of Governments (DRCOG) 2040 traffic model indicate that traffic volumes in the area are projected to grow at a rate of approximately 1 percent per year. These rates were applied to the existing volumes to obtain year 2017 background traffic volumes for the Short Range Future scenario, as shown on **Figure 6**. The traffic numbers are only slightly greater than existing counts (two years of growth).

Intersection capacity analyses were conducted using the Short Range Future background peak hour volumes, as summarized on **Figure 6** (analysis worksheets are included in **Appendix C**). The C-470 ramp terminal intersections are projected to operate at LOS C or better for both peak hours. The Yosemite Street/Park Meadows Drive intersection is projected to operate at LOS D during the AM peak hour and LOS E during the PM peak hour. The City has indicated that a dedicated northbound right-turn lane is being constructed late summer/early fall of 2016. One possible improvement that would allow a LOS D to be achieved during the PM peak hour (short range) includes modifying the proposed dedicated right lane to a through-right lane, thereby providing three though lanes; a northbound "receiving" lane already exists north of Park Meadows Drive.

The Long Range Future (year 2040) background traffic volumes, shown on **Figure 7**, are also based on the annual growth trends extracted from the DRCOG model. In addition, trips associated with possible future development allowed along the west side of the drainage (north side of Park Meadows Drive) were estimated (based on a mix of non-residential uses) and incorporated into the *background* traffic above and beyond the one percent annual growth.

The intersection capacity analyses for the Long Range Future background peak hour volumes, are summarized on **Figure 7** (analysis worksheets are included in **Appendix D**). The C-470 ramp terminal intersections are projected to continue to operate at LOS C or better for both peak hours. The Yosemite Street/Park Meadows Drive intersection is projected to operate at LOS D during the AM peak hour and LOS F during the PM peak hour. With the addition of the third northbound through-right lane, as previously described, the PM peak hour would remain at LOS F (just not as severe).

As shown on **Figure 7**, approximately 36,500 VPD in background traffic would travel Yosemite Street under the C-470 bridge, and approximately 16,000 VPD would travel Park Meadows Drive adjacent to the site.

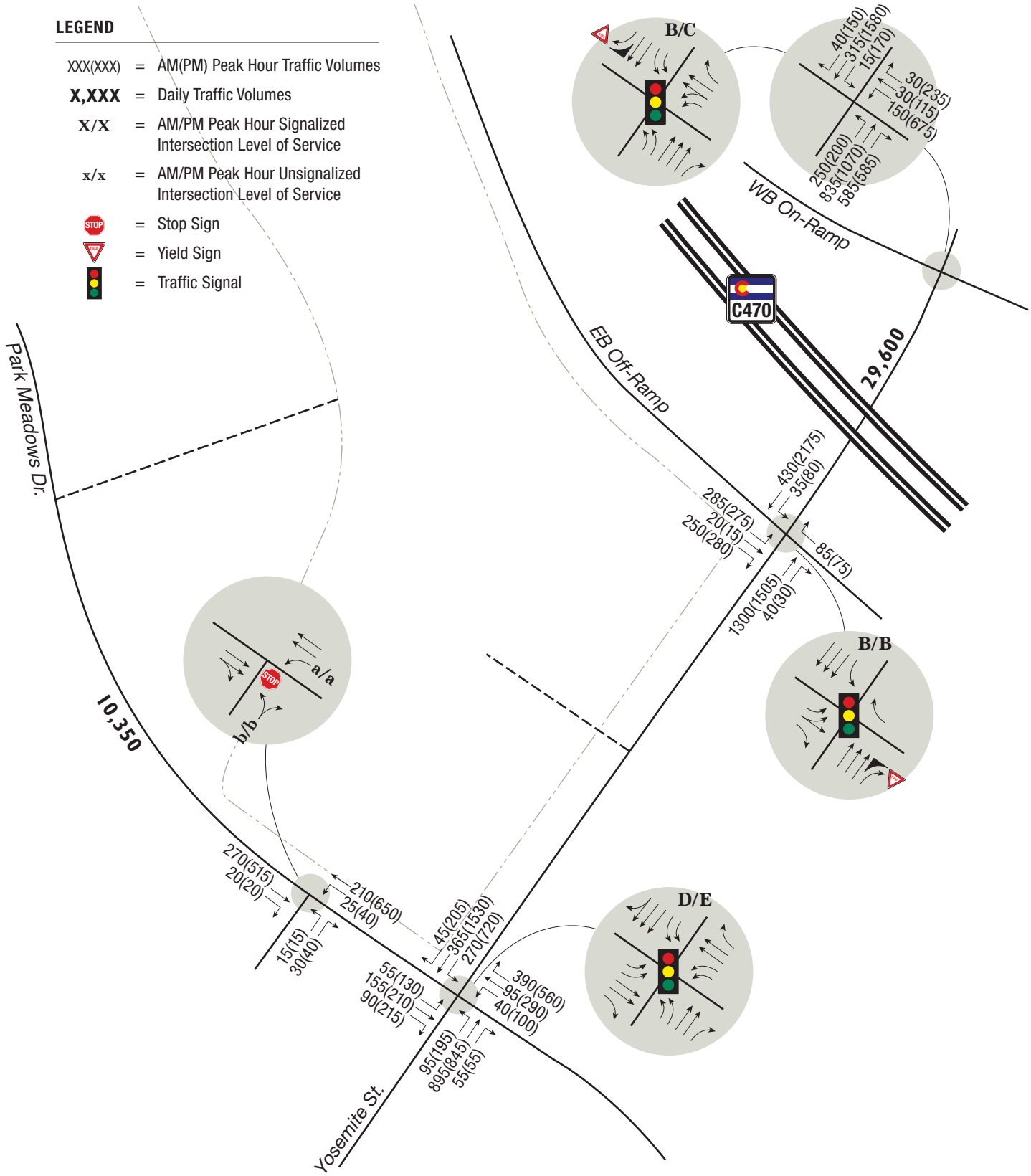

Figure 6

Short Range Future Background Traffic Conditions

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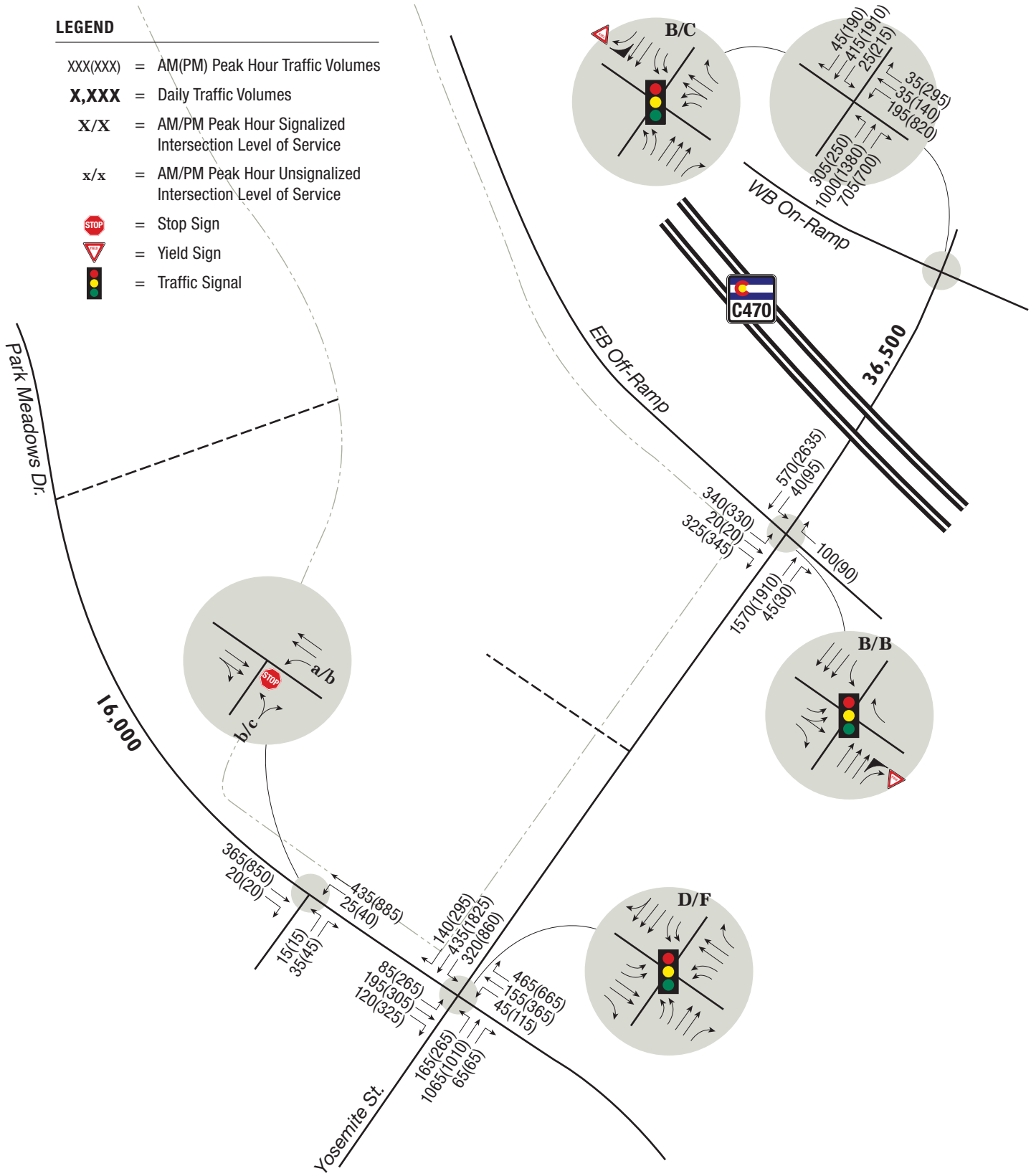

Figure 7

Long Range Future Background Traffic Conditions

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The Yard 15-221 6/15/16

D. Total Traffic Conditions

Short Range Future

The site generated traffic volumes (**Figure 5**) were added to the corresponding background volumes (**Figure 6**) to produce the Short Range Future total traffic volumes shown on **Figure 8**. As indicated, total daily traffic along Yosemite Street under C-470, of which "The Yard" would make-up 6 percent, would increase to approximately 31,500 VPD. A total of 13,650 VPD will travel Park Meadows Drive (west of the drainage) in which "The Yard" traffic would make up approximately 25 percent.

The Short Range Future total peak hour volumes were used as the basis for intersection capacity analyses, the results of which are also summarized on **Figure 8** (analysis worksheets are included in **Appendix E**).

The C-470 ramp terminal intersections are projected to continue to operate at LOS C or better during both peak hours. The site access onto Park Meadows Drive is projected to operate at LOS B or better during the AM and PM peak hours.

By the year 2017, the Yosemite Street/Park Meadows Drive intersection will continue to be the greatest challenge in the area with respect to operations. The short range total traffic projections indicate a LOS E overall at this intersection during the PM peak hour (signal timing adjustments allowed for an improved LOS over existing conditions). As previously discussed, intersection capacity analysis indicates that the 2017 background traffic would operate at the same LOS (for both AM and PM peak hours). A significant reason for the poor LOS pertains to heavy southbound left-turn movements which will be nearly 740 vehicles per hour in 2017; "The Yard" will not add much traffic to that specific movement. In total, trips associated with "The Yard" development would make up approximately 7 percent of the total traffic entering the intersection during the PM peak hour.

The intersection is nearly maxed-out with respect to lane geometry in that each approach includes double left turn lanes already. Similar to the background traffic conditions, PM peak hour would remain at LOS F with the addition of the third northbound through lane, but with reductions to overall intersection delay.

Other improvements that should be specifically implemented due to "The Yard" development plan include:

- A deceleration lane along Yosemite Street to serve the site's right-in/right-out access. To avoid a weave section with the C-470 off-ramp intersection, the deceleration lane should begin beyond the ramp intersection.

- The full movement access onto Park Meadows Drive should be three lanes wide including one inbound lane and two out bound lanes. An inbound left-turn lane will need to be cut out of the raised median along Park Meadows Drive to serve this full-movement access.

- Signalization of the Park Meadows Drive access intersection upon buildout of "The Yard". The peak hour traffic projections suggest that signalization is a possibility by 2017. Signalization could be completed prior to complete buildout of "The Yard", but it may be best to ensure that warrants are satisfied prior to full activation of the signal.

- The right-out movement from the site onto Yosemite should include a pork chop island and signage prohibiting left turns onto Park Meadows Drive. This will prevent (for those who follow the signage) rapid lane changes from taking place along southbound Yosemite Street. The combination of the pork chop island and the City's plans to construct a raised median on Yosemite effectively prevent northbound Yosemite traffic from attempting a left-turn into "The Yard".

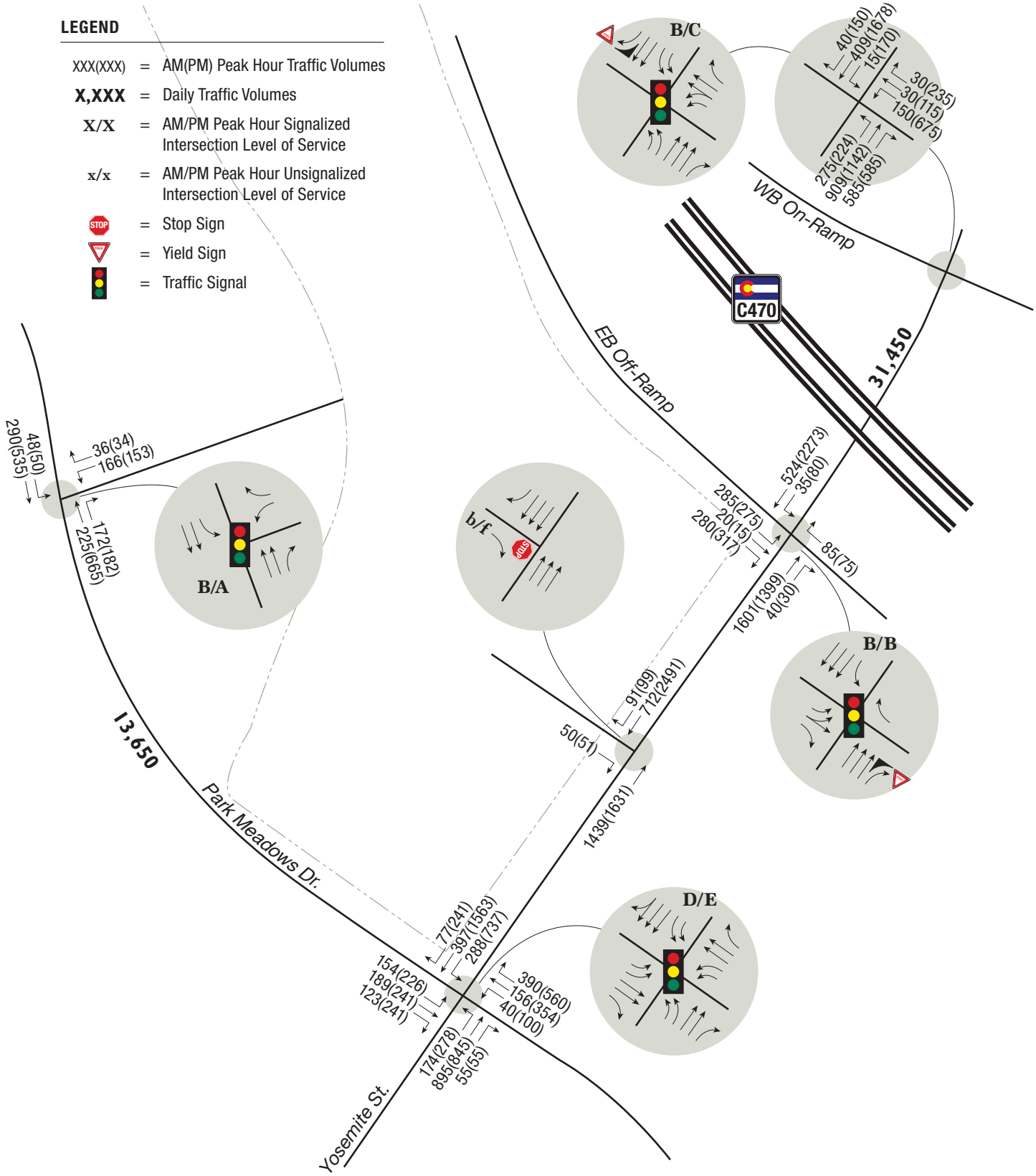

Figure 8

Short Range Future Total Traffic Conditions

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The Yard 15-221 6/15/16

Long Range Future

The site generated traffic volumes (**Figure 5**) were added to the Long Range Future background traffic volumes (**Figure 7**) to produce the year 2040 total traffic volumes shown on **Figure 9**. As indicated, total daily traffic along Yosemite Street under C-470 of which "The Yard" would make-up 5 percent, would increase to approximately 38,400 VPD. A total of 19,500 VPD will travel Park Meadows Drive in which "The Yard" traffic would make up 17 percent.

The C-470 ramp terminal intersections are projected to continue to operate at LOS C or better during both peak hours. The site access onto Park Meadows Drive is projected to operate at LOS B during the AM and PM peak hours.

Intersection capacity analyses were conducted using the Long Range Future total peak hour volumes, as summarized on **Figure 9** (analysis worksheets are included in **Appendix F**). As with the short range analysis, the Yosemite Street/Park Meadows Drive intersection would continue to be the most challenging with respect to operations. Given year 2040 traffic conditions, this intersection is projected to operate at a LOS D during the AM peak hour and LOS F during the PM peak hour. The addition of the third northbound through lane, as previously described, would improve the total traffic to a LOS D, but the PM peak hour would remain at LOS F (just not as severe). By 2040, PM peak hour trips generated by "The Yard" would make up 5 to 6 percent of the total PM peak hour traffic passing through this intersection.

The improvements listed as part of the short range analysis are applicable to the long range analysis. By 2040, the third northbound lane along Yosemite Street will be a more critical need, and the need for signalization for the access intersection onto Park Meadows Drive would be greater as well. This should be reassessed in the future when the property west of the drainage develops.

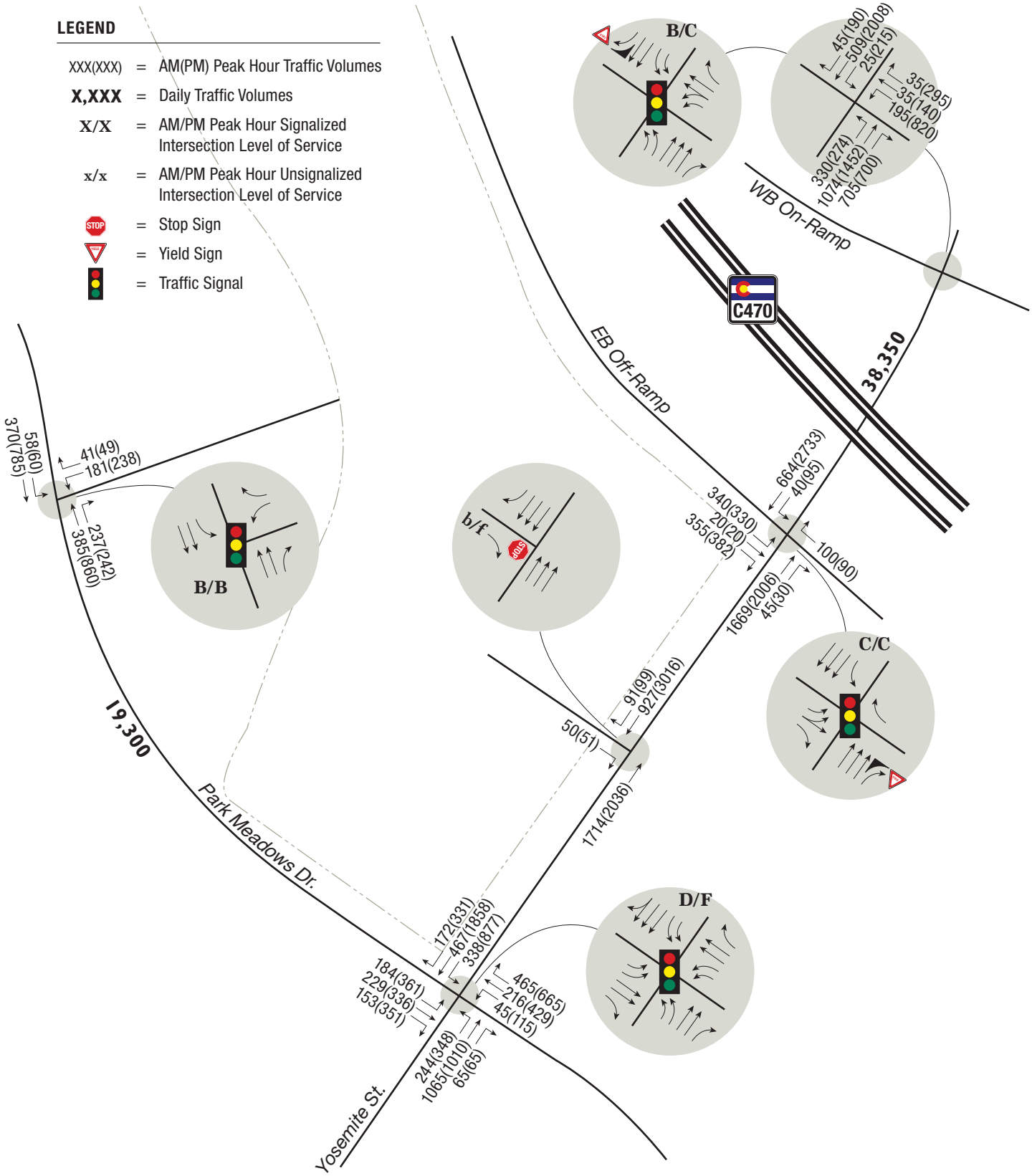


Figure 9

Long Range Future Total Traffic Conditions

FELSBURG HOLT & ULLEVIG

The Yard 15-221 6/15/16

IV. SUMMARY AND RECOMMENDATIONS

"The Yard" is a proposed restaurant/retail development to be located along the south side of C-470 just west of Yosemite Street. The proposed land uses at "The Yard" would have the potential to generate approximately 7,000 external vehicle trips on a daily basis. About 560 of these trips would occur in the AM peak hour and again during the PM peak hour.

The Yosemite Street/Park Meadows Drive intersection is, and will continue to be, the greatest challenge in the area with respect to operations. A significant reason for the poor LOS pertains to heavy southbound left-turn movement which could reach 875 vehicles per hour by 2040; "The Yard" will not add much traffic to that specific movement. In total, trips associated with "The Yard" development would make up approximately 5 to 6 percent of the total traffic entering the intersection during the PM peak hour in 2040.

This critical intersection is nearly "maxed-out" with respect to lane geometry, but one meaningful improvement includes widening the northbound approach by one lane (widening to occur along the east side of Yosemite Street) thereby providing three though lanes; a northbound "receiving" lane already exists north of Park Meadows Drive to accommodate this improvement. A review of available mapping suggests that <u>some</u> right-of-way may be available to accommodate this widening, but additional land may be needed. With respect to the applicant, this would be an offsite improvement, possibly requiring property beyond the applicant's control; the City may be in the best position to obtain the necessary property to implement this improvement. This should be pursued whether "The Yard" develops or not.

Other improvements that should be specifically implemented to accommodate "The Yard" development plan include:

- A deceleration lane along Yosemite Street to serve the site's right-in/right-out access. To avoid a weave section with the C-470 off-ramp intersection, the deceleration lane should begin just beyond the ramp intersection.

- The full movement access onto Park Meadows Drive should be three lanes wide including one inbound lane and two outbound lanes. An inbound left-turn lane will need to be cut out of the raised median along Park Meadows Drive to serve this full-movement access, and a short right turn deceleration lane should also be planned.

- Signalization of the Park Meadows Drive access intersection upon buildout of "The Yard." The peak hour traffic projections suggest that signalization is a possibility by 2017 and highly likely by 2040. This should be reassessed as part of the development planning process for the land west of the drainage. Signalization could be completed prior to complete buildout of "The Yard", but it may be best to ensure that warrants are satisfied prior to fully activating signalization.

- The right-out movement from the site onto Yosemite should be include a pork chop island and signage prohibiting drivers from turning left onto Park Meadows Drive. This will prevent (for those who follow the signage) rapid lane changes from taking place along southbound Yosemite Street. The City's plans to construct a raised median on Yosemite effectively prevent northbound Yosemite traffic from attempting a left-turn into "The Yard".

APPENDIX A TRAFFIC COUNTS

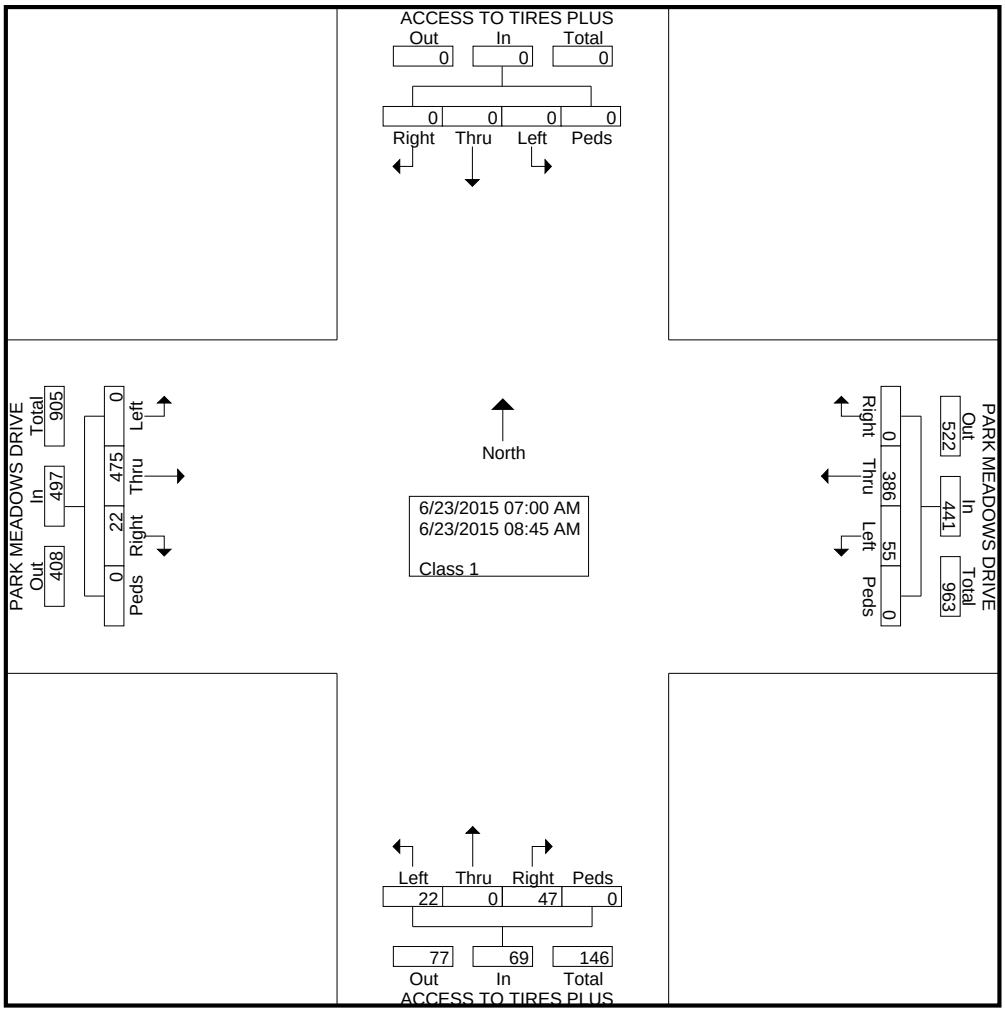
All Traffic Data

9660 W. 44th Ave
Wheatridge, CO, 80033
303-216-2439
www.alltrafficdata.net

File Name : #1 ACCESS&PARKMEADOWSAM
Site Code : 1
Start Date : 6/23/2015
Page No : 1

Groups Printed- Class 1

	ACCESS TO TIRES PLUS Southbound				PARK MEADOWS DRIVE Westbound				ACCESS TO TIRES PLUS Northbound				PARK MEADOWS DRIVE Eastbound				
Start Time	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Int. Total**
07:00 AM	0	0	0	0	0	36	8	0	4	0	6	0	2	37	0	0	93
07:15 AM	0	0	0	0	0	43	4	0	5	0	2	0	3	63	0	0	120
07:30 AM	0	0	0	0	0	40	16	0	6	0	1	0	1	56	0	0	120
07:45 AM	0	0	0	0	0	58	7	0	10	0	2	0	4	70	0	0	151
Total	0	0	0	0	0	177	35	0	25	0	11	0	10	226	0	0	484
08:00 AM	0	0	0	0	0	42	6	0	10	0	1	0	4	79	0	0	142
08:15 AM	0	0	0	0	0	52	3	0	2	0	3	0	3	55	0	0	118
08:30 AM	0	0	0	0	0	50	6	0	5	0	4	0	5	57	0	0	127
08:45 AM	0	0	0	0	0	65	5	0	5	0	3	0	0	58	0	0	136
Total	0	0	0	0	0	209	20	0	22	0	11	0	12	249	0	0	523
Grand Total	0	0	0	0	0	386	55	0	47	0	22	0	22	475	0	0	1007
Apprch %	0	0	0	0	0	87.5	12.5	0	68.1	0	31.9	0	4.4	95.6	0	0	
Total %	0	0	0	0	0	38.3	5.5	0	4.7	0	2.2	0	2.2	47.2	0	0	

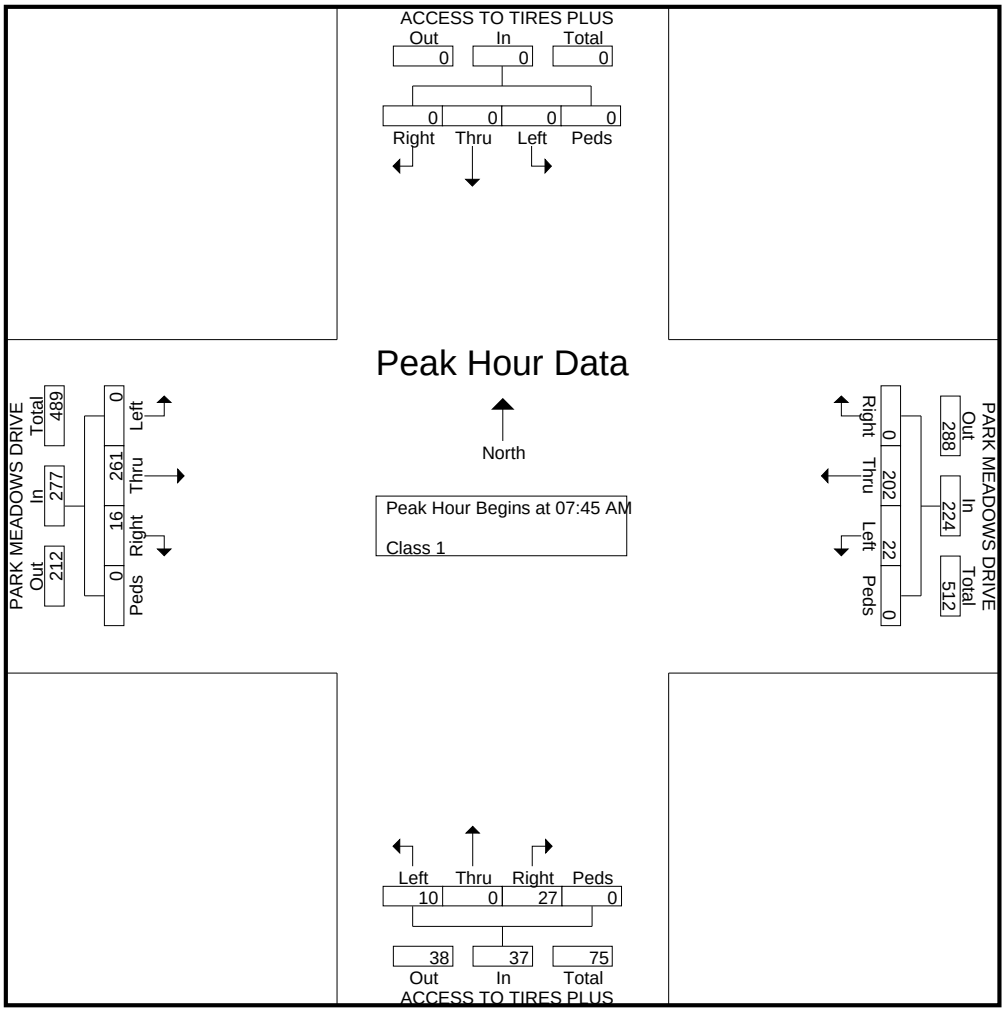


All Traffic Data

9660 W. 44th Ave
Wheatridge, CO, 80033
303-216-2439
www.alltrafficdata.net

File Name : #1 ACCESS&PARKMEADOWSAM
Site Code : 1
Start Date : 6/23/2015
Page No : 2

	ACCESS TO TIRES PLUS Southbound					PARK MEADOWS DRIVE Westbound					ACCESS TO TIRES PLUS Northbound					PARK MEADOWS DRIVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	0	0	0	**58**	**7**	0	**65**	**10**	0	2	0	**12**	4	70	0	0	74	**151**
08:00 AM	0	0	0	0	0	0	42	6	0	48	10	0	1	0	11	4	**79**	0	0	**83**	142
08:15 AM	0	0	0	0	0	0	52	3	0	55	2	0	3	0	5	3	55	0	0	58	118
08:30 AM	0	0	0	0	0	0	50	6	0	56	5	0	**4**	0	9	**5**	57	0	0	62	127
Total Volume	0	0	0	0	0	0	202	22	0	224	27	0	10	0	37	16	261	0	0	277	538
% App. Total	0	0	0	0		0	90.2	9.8	0		73	0	27	0		5.8	94.2	0	0		
PHF	.000	.000	.000	.000	.000	.000	.871	.786	.000	.862	.675	.000	.625	.000	.771	.800	.826	.000	.000	.834	.891



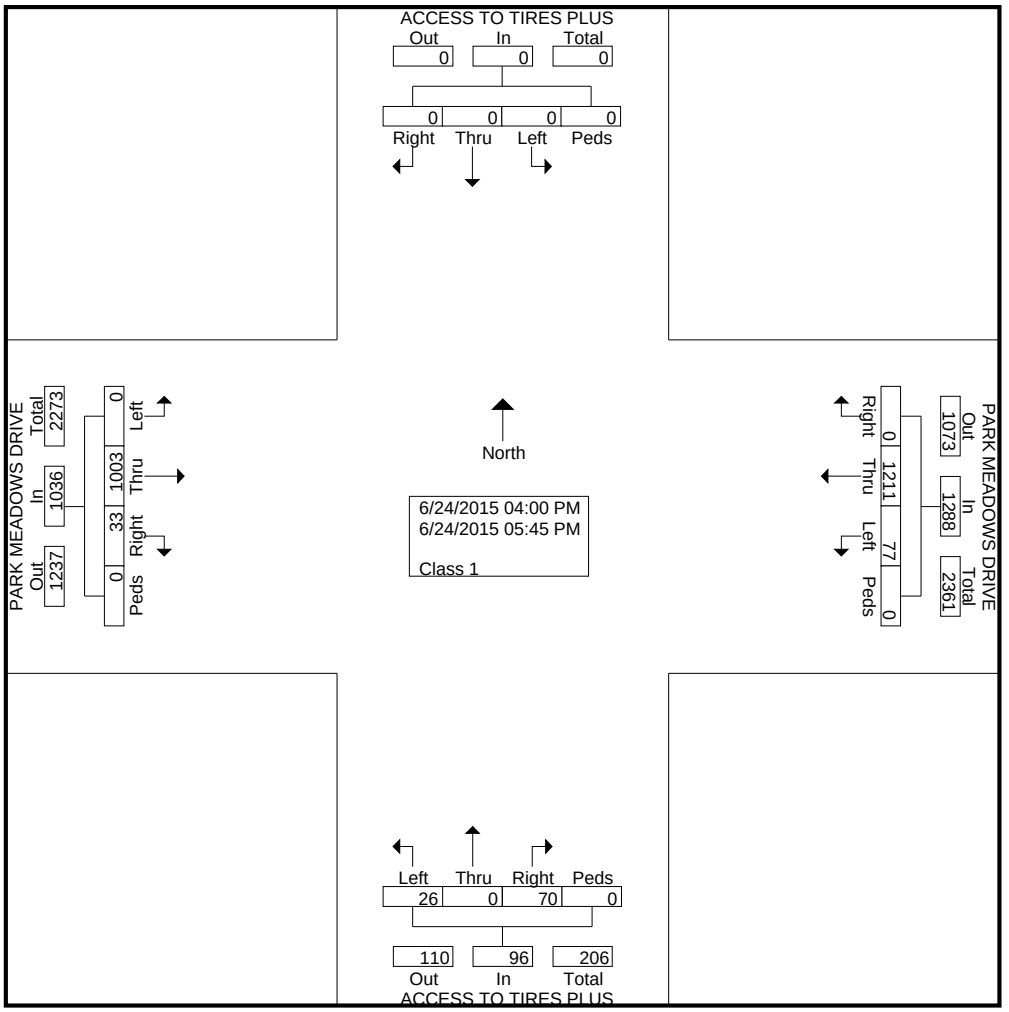
All Traffic Data

9660 W. 44th Ave
Wheatridge, CO, 80033
303-216-2439
www.alltrafficdata.net

File Name : #1 ACCESS&PARKMEADOWSPM
Site Code : 1
Start Date : 6/24/2015
Page No : 1

Groups Printed- Class 1

	ACCESS TO TIRES PLUS Southbound				PARK MEADOWS DRIVE Westbound				ACCESS TO TIRES PLUS Northbound				PARK MEADOWS DRIVE Eastbound				
Start Time	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Int. Total**
04:00 PM	0	0	0	0	0	158	12	0	7	0	3	0	4	132	0	0	316
04:15 PM	0	0	0	0	0	150	8	0	6	0	6	0	5	117	0	0	292
04:30 PM	0	0	0	0	0	143	16	0	10	0	3	0	0	140	0	0	312
04:45 PM	0	0	0	0	0	130	8	0	11	0	1	0	4	115	0	0	269
Total	0	0	0	0	0	581	44	0	34	0	13	0	13	504	0	0	1189
05:00 PM	0	0	0	0	0	161	10	0	11	0	4	0	2	127	0	0	315
05:15 PM	0	0	0	0	0	188	5	0	2	0	2	0	3	121	0	0	321
05:30 PM	0	0	0	0	0	154	11	0	12	0	4	0	6	139	0	0	326
05:45 PM	0	0	0	0	0	127	7	0	11	0	3	0	9	112	0	0	269
Total	0	0	0	0	0	630	33	0	36	0	13	0	20	499	0	0	1231
Grand Total	0	0	0	0	0	1211	77	0	70	0	26	0	33	1003	0	0	2420
Apprch %	0	0	0	0	0	94	6	0	72.9	0	27.1	0	3.2	96.8	0	0	
Total %	0	0	0	0	0	50	3.2	0	2.9	0	1.1	0	1.4	41.4	0	0	

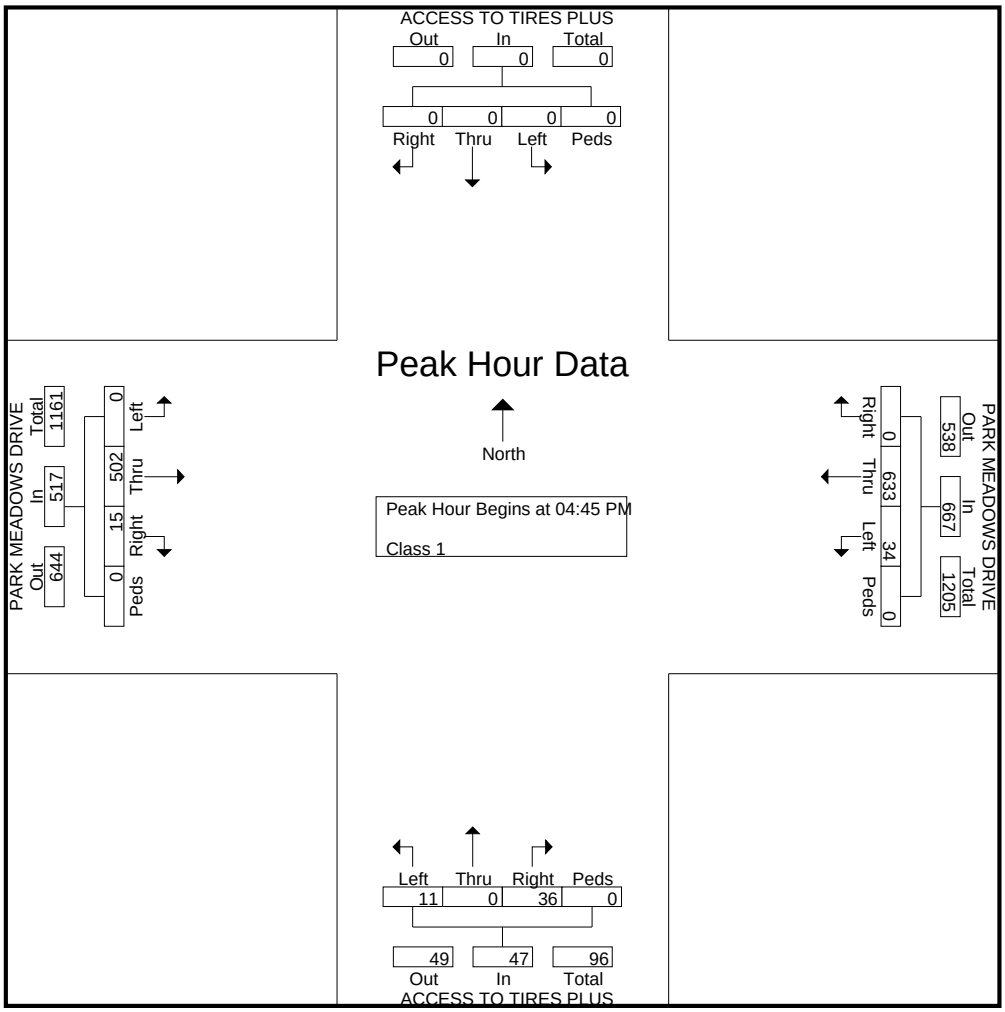


All Traffic Data

9660 W. 44th Ave
Wheatridge, CO, 80033
303-216-2439
www.alltrafficdata.net

File Name : #1 ACCESS&PARKMEADOWSPM
Site Code : 1
Start Date : 6/24/2015
Page No : 2

	ACCESS TO TIRES PLUS Southbound					PARK MEADOWS DRIVE Westbound					ACCESS TO TIRES PLUS Northbound					PARK MEADOWS DRIVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	0	0	0	0	0	130	8	0	138	11	0	1	0	12	4	115	0	0	119	269
05:00 PM	0	0	0	0	0	0	161	10	0	171	11	0	**4**	0	15	2	127	0	0	129	315
05:15 PM	0	0	0	0	0	0	**188**	5	0	**193**	2	0	2	0	4	3	121	0	0	124	321
05:30 PM	0	0	0	0	0	0	154	**11**	0	165	**12**	0	4	0	**16**	**6**	**139**	0	0	**145**	**326**
Total Volume	0	0	0	0	0	0	633	34	0	667	36	0	11	0	47	15	502	0	0	517	1231
% App. Total	0	0	0	0		0	94.9	5.1	0		76.6	0	23.4	0		2.9	97.1	0	0		
PHF	.000	.000	.000	.000	.000	.000	.842	.773	.000	.864	.750	.000	.688	.000	.734	.625	.903	.000	.000	.891	.944



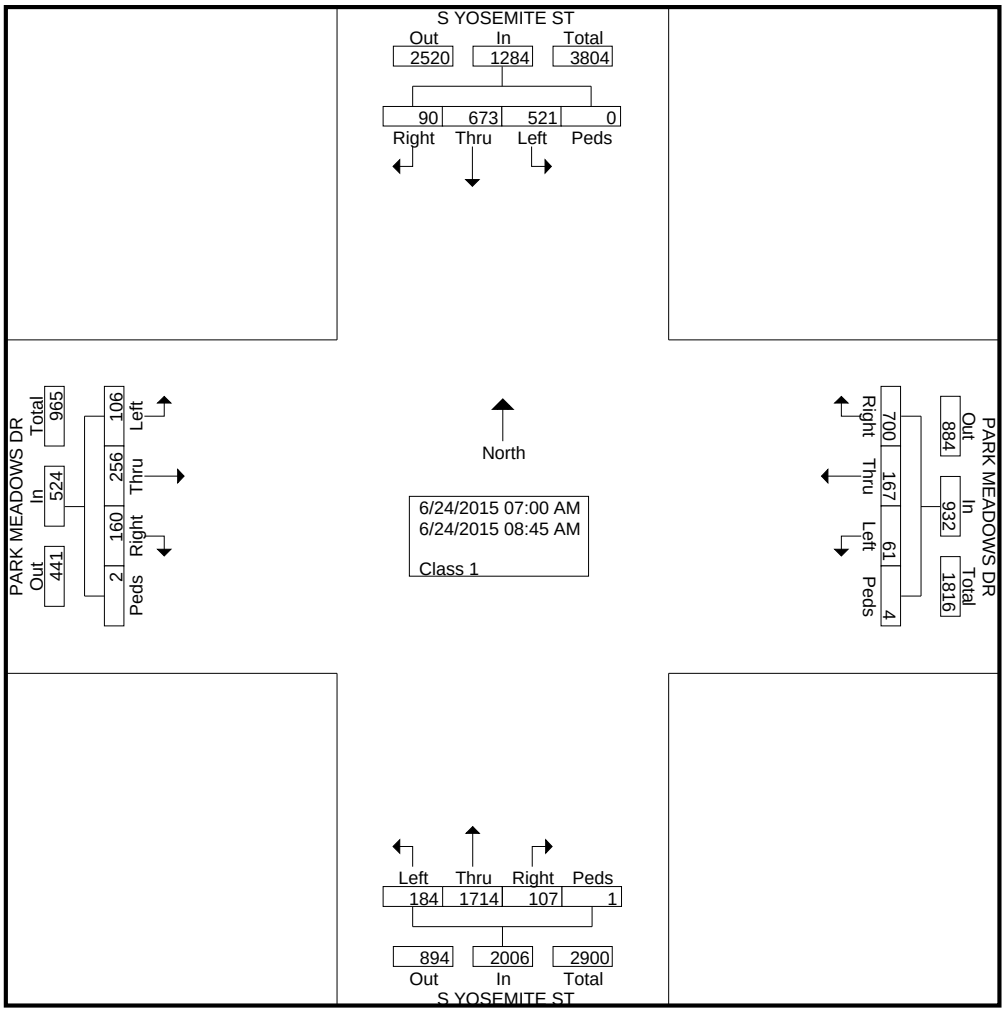
All Traffic Data

9660 W. 44th Ave
Wheatridge, CO, 80033
303-216-2439
www.alltrafficdata.net

File Name : #2 YOSEMITE&PARKMEADOWSAM
Site Code : 2
Start Date : 6/24/2015
Page No : 1

Groups Printed- Class 1

	S YOSEMITE ST Southbound				PARK MEADOWS DR Westbound				S YOSEMITE ST Northbound				PARK MEADOWS DR Eastbound				
Start Time	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Int. Total**
07:00 AM	12	76	56	0	60	15	4	0	7	185	17	0	18	18	5	0	473
07:15 AM	6	65	58	0	84	15	8	3	15	188	26	0	20	33	15	0	536
07:30 AM	16	72	73	0	92	23	7	0	8	244	17	0	16	34	12	0	614
07:45 AM	9	81	70	0	135	28	9	0	16	250	28	0	22	40	18	0	706
Total	43	294	257	0	371	81	28	3	46	867	88	0	76	125	50	0	2329
08:00 AM	13	88	44	0	59	15	13	0	15	220	20	0	22	48	19	0	576
08:15 AM	9	87	73	0	73	23	7	0	13	205	23	1	21	26	10	0	571
08:30 AM	9	101	77	0	115	26	7	0	10	196	21	0	22	34	6	2	626
08:45 AM	16	103	70	0	82	22	6	1	23	226	32	0	19	23	21	0	644
Total	47	379	264	0	329	86	33	1	61	847	96	1	84	131	56	2	2417
Grand Total	90	673	521	0	700	167	61	4	107	1714	184	1	160	256	106	2	4746
Apprch %	7	52.4	40.6	0	75.1	17.9	6.5	0.4	5.3	85.4	9.2	0	30.5	48.9	20.2	0.4	
Total %	1.9	14.2	11	0	14.7	3.5	1.3	0.1	2.3	36.1	3.9	0	3.4	5.4	2.2	0	

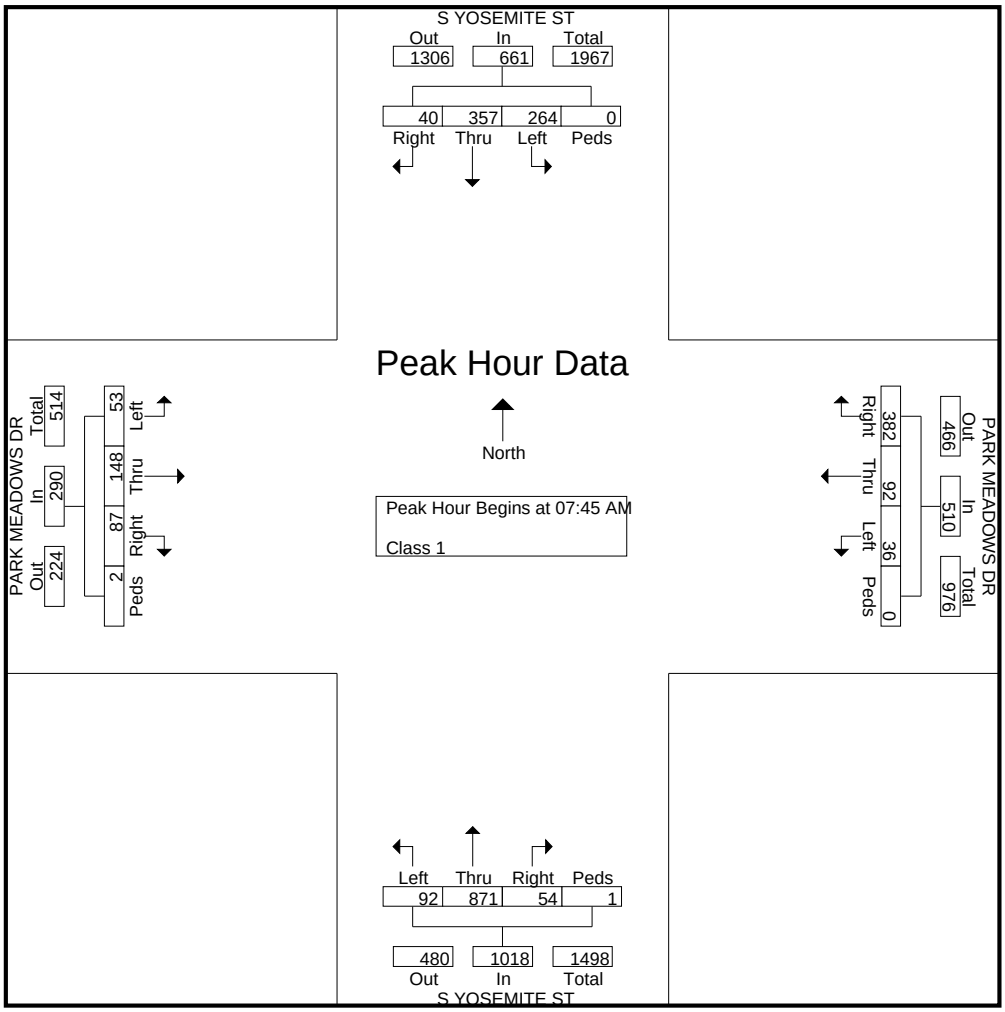


All Traffic Data

9660 W. 44th Ave
Wheatridge, CO, 80033
303-216-2439
www.alltrafficdata.net

File Name : #2 YOSEMITE&PARKMEADOWSAM
Site Code : 2
Start Date : 6/24/2015
Page No : 2

	S YOSEMITE ST Southbound					PARK MEADOWS DR Westbound					S YOSEMITE ST Northbound					PARK MEADOWS DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	9	81	70	0	160	**135**	**28**	9	0	**172**	**16**	**250**	**28**	0	**294**	**22**	40	18	0	80	**706**
08:00 AM	**13**	88	44	0	145	59	15	**13**	0	87	15	220	20	0	255	22	**48**	**19**	0	**89**	576
08:15 AM	9	87	73	0	169	73	23	7	0	103	13	205	23	**1**	242	21	26	10	0	57	571
08:30 AM	9	**101**	**77**	0	**187**	115	26	7	0	148	10	196	21	0	227	22	34	6	**2**	64	626
Total Volume	40	357	264	0	661	382	92	36	0	510	54	871	92	1	1018	87	148	53	2	290	2479
% App. Total	6.1	54	39.9	0		74.9	18	7.1	0		5.3	85.6	9	0.1		30	51	18.3	0.7		
PHF	.769	.884	.857	.000	.884	.707	.821	.692	.000	.741	.844	.871	.821	.250	.866	.989	.771	.697	.250	.815	.878



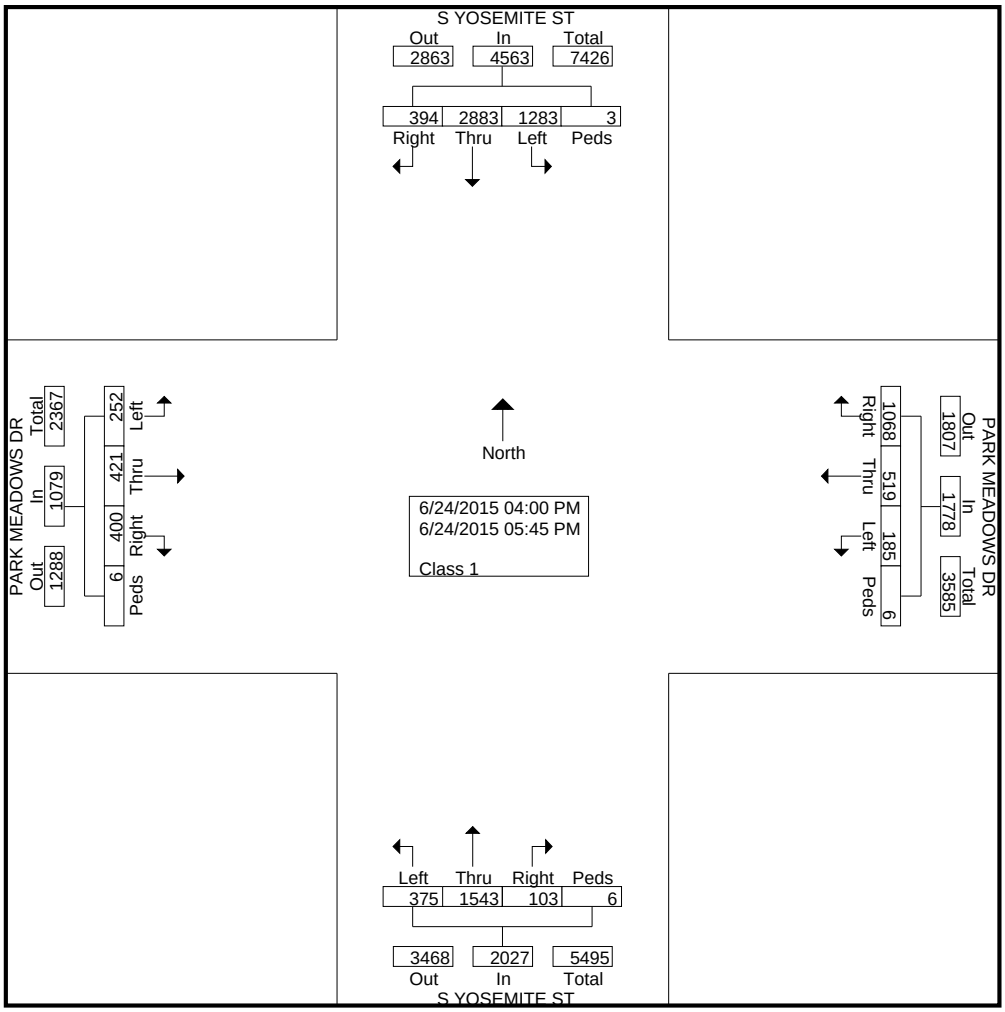
All Traffic Data

9660 W. 44th Ave
Wheatridge, CO, 80033
303-216-2439
www.alltrafficdata.net

File Name : #2 YOSEMITE&PARKMEADOWSPM
Site Code : 2
Start Date : 6/24/2015
Page No : 1

Groups Printed- Class 1

	S YOSEMITE ST Southbound				PARK MEADOWS DR Westbound				S YOSEMITE ST Northbound				PARK MEADOWS DR Eastbound				
Start Time	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Int. Total**
04:00 PM	48	311	121	0	143	67	23	3	11	189	55	2	47	57	35	0	1112
04:15 PM	48	343	127	0	131	59	21	0	11	161	51	1	45	53	25	3	1079
04:30 PM	47	352	128	0	132	65	21	0	16	175	47	1	58	57	35	0	1134
04:45 PM	45	427	148	1	140	55	26	0	14	188	38	0	52	48	26	2	1210
Total	188	1433	524	1	546	246	91	3	52	713	191	4	202	215	121	5	4535
05:00 PM	43	318	173	0	143	81	21	1	9	225	47	0	47	45	46	0	1199
05:15 PM	62	405	193	0	148	79	29	1	14	214	52	0	47	51	25	1	1321
05:30 PM	48	333	189	1	114	66	18	0	15	200	51	1	62	61	28	0	1187
05:45 PM	53	394	204	1	117	47	26	1	13	191	34	1	42	49	32	0	1205
Total	206	1450	759	2	522	273	94	3	51	830	184	2	198	206	131	1	4912
Grand Total	394	2883	1283	3	1068	519	185	6	103	1543	375	6	400	421	252	6	9447
Apprch %	8.6	63.2	28.1	0.1	60.1	29.2	10.4	0.3	5.1	76.1	18.5	0.3	37.1	39	23.4	0.6	
Total %	4.2	30.5	13.6	0	11.3	5.5	2	0.1	1.1	16.3	4	0.1	4.2	4.5	2.7	0.1	

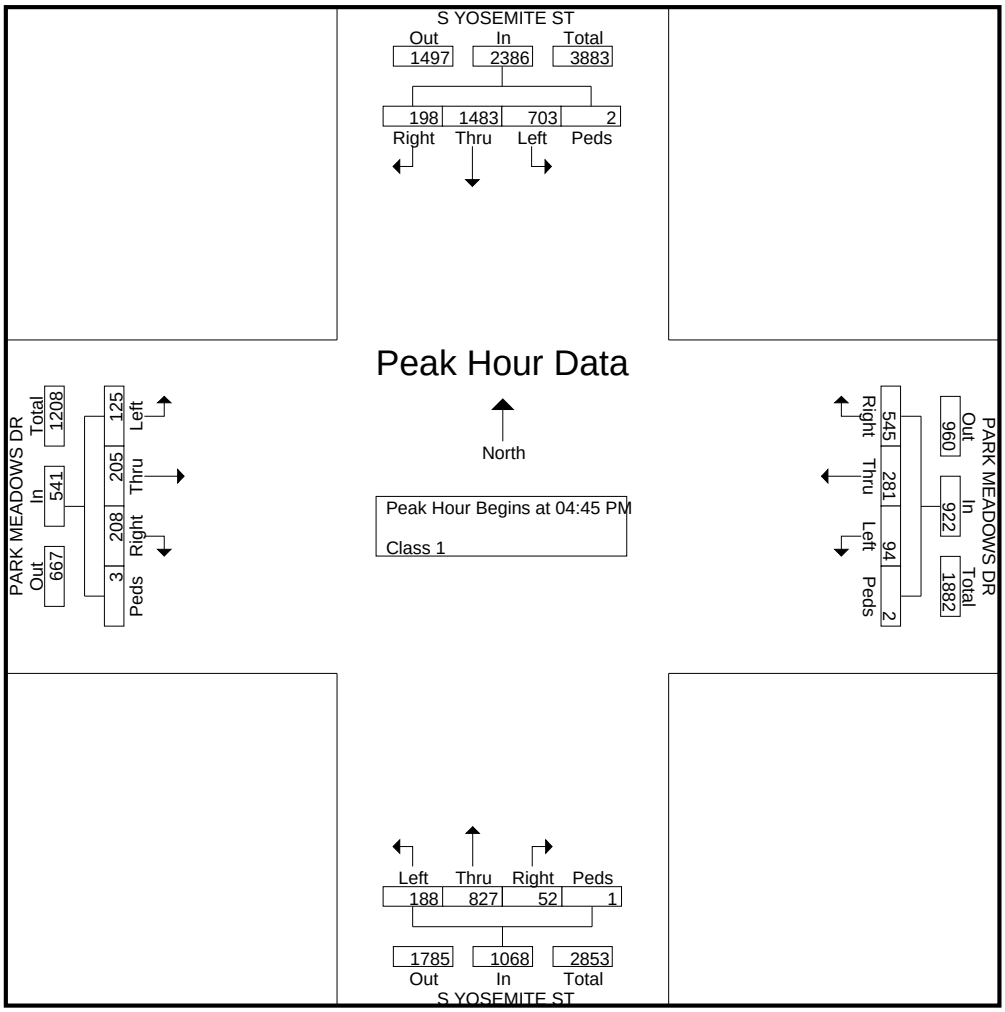


All Traffic Data

9660 W. 44th Ave
Wheatridge, CO, 80033
303-216-2439
www.alltrafficdata.net

File Name : #2 YOSEMITE&PARKMEADOWSPM
Site Code : 2
Start Date : 6/24/2015
Page No : 2

	S YOSEMITE ST Southbound					PARK MEADOWS DR Westbound					S YOSEMITE ST Northbound					PARK MEADOWS DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	45	**427**	148	**1**	621	140	55	26	0	221	14	188	38	0	240	52	48	26	**2**	128	1210
05:00 PM	43	318	173	0	534	143	**81**	21	**1**	246	9	**225**	47	0	**281**	47	45	**46**	0	138	1199
05:15 PM	**62**	405	**193**	0	**660**	**148**	79	**29**	1	**257**	14	214	**52**	0	280	47	51	25	1	124	**1321**
05:30 PM	48	333	189	1	571	114	66	18	0	198	**15**	200	51	**1**	267	**62**	**61**	28	0	**151**	1187
Total Volume	198	1483	703	2	2386	545	281	94	2	922	52	827	188	1	1068	208	205	125	3	541	4917
% App. Total	8.3	62.2	29.5	0.1		59.1	30.5	10.2	0.2		4.9	77.4	17.6	0.1		38.4	37.9	23.1	0.6		
PHF	.798	.868	.911	.500	.904	.921	.867	.810	.500	.897	.867	.919	.904	.250	.950	.839	.840	.679	.375	.896	.931



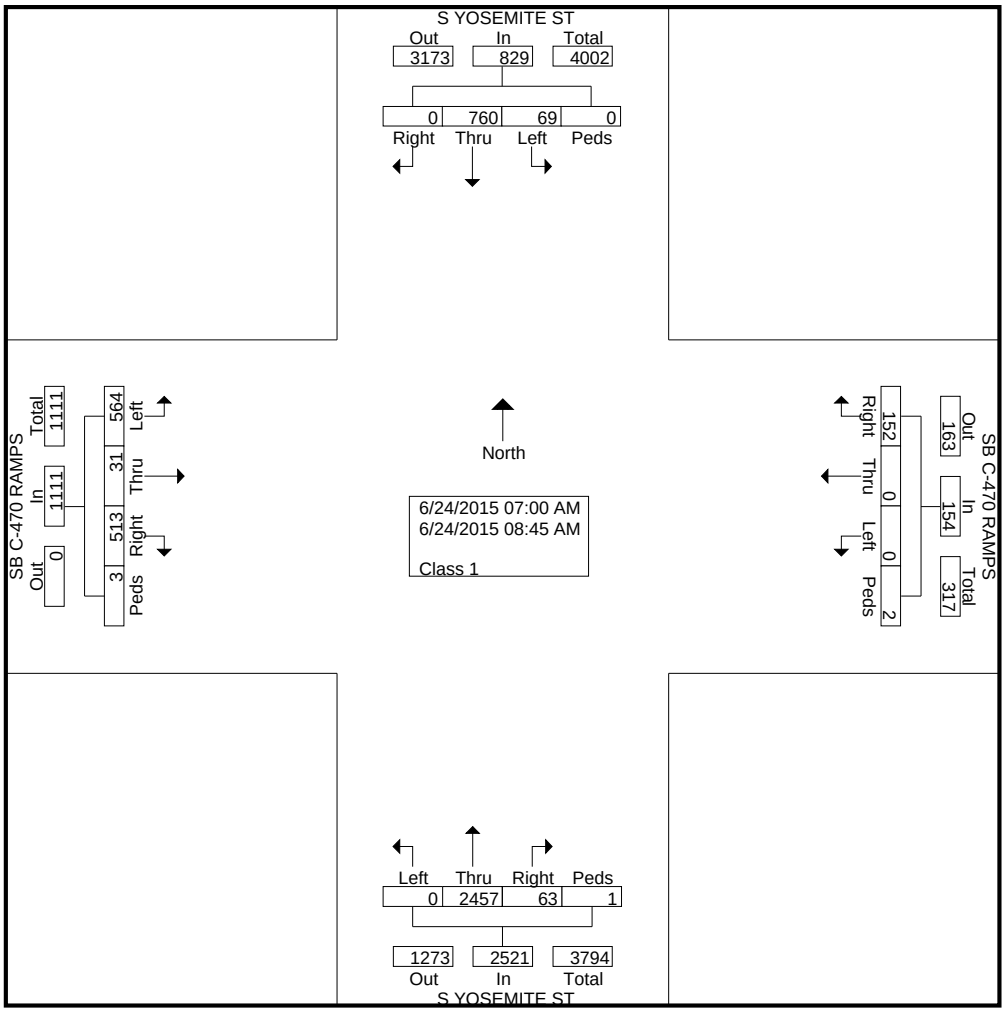
All Traffic Data

9660 W. 44th Ave
Wheatridge, CO, 80033
303-216-2439
www.alltrafficdata.net

File Name : #3 YOSEMITE&SB470RAMPSAM
Site Code : 3
Start Date : 6/24/2015
Page No : 1

Groups Printed- Class 1

	S YOSEMITE ST Southbound				SB C-470 RAMPS Westbound				S YOSEMITE ST Northbound				SB C-470 RAMPS Eastbound				
Start Time	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Int. Total**
07:00 AM	0	81	10	0	15	0	0	0	5	245	0	0	65	5	57	0	483
07:15 AM	0	85	13	0	23	0	0	2	12	275	0	0	51	5	58	0	524
07:30 AM	0	88	7	0	34	0	0	0	9	339	0	0	61	8	77	0	623
07:45 AM	0	101	9	0	15	0	0	0	5	398	0	0	66	3	61	1	659
Total	0	355	39	0	87	0	0	2	31	1257	0	0	243	21	253	1	2289
08:00 AM	0	94	5	0	14	0	0	0	12	286	0	1	56	1	65	1	535
08:15 AM	0	103	11	0	18	0	0	0	9	279	0	0	62	3	76	0	561
08:30 AM	0	102	4	0	23	0	0	0	9	308	0	0	76	1	77	1	601
08:45 AM	0	106	10	0	10	0	0	0	2	327	0	0	76	5	93	0	629
Total	0	405	30	0	65	0	0	0	32	1200	0	1	270	10	311	2	2326
Grand Total	0	760	69	0	152	0	0	2	63	2457	0	1	513	31	564	3	4615
Apprch %	0	91.7	8.3	0	98.7	0	0	1.3	2.5	97.5	0	0	46.2	2.8	50.8	0.3	
Total %	0	16.5	1.5	0	3.3	0	0	0	1.4	53.2	0	0	11.1	0.7	12.2	0.1	

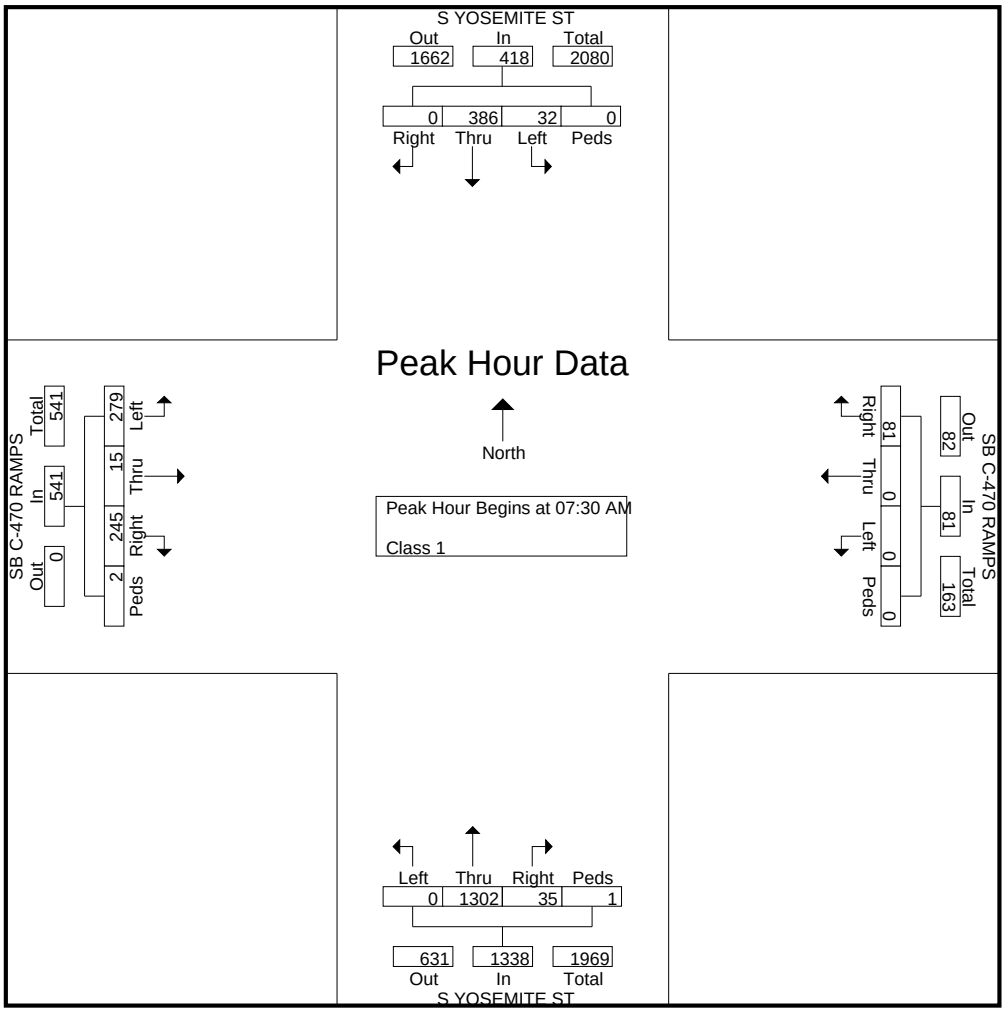


All Traffic Data

9660 W. 44th Ave
Wheatridge, CO, 80033
303-216-2439
www.alltrafficdata.net

File Name : #3 YOSEMITE&SB470RAMPSAM
Site Code : 3
Start Date : 6/24/2015
Page No : 2

	S YOSEMITE ST Southbound					SB C-470 RAMPS Westbound					S YOSEMITE ST Northbound					SB C-470 RAMPS Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	88	7	0	95	**34**	0	0	0	**34**	9	339	0	0	348	61	**8**	**77**	0	**146**	623
07:45 AM	0	101	9	0	110	15	0	0	0	15	5	**398**	0	0	**403**	**66**	3	61	**1**	131	**659**
08:00 AM	0	94	5	0	99	14	0	0	0	14	**12**	286	0	**1**	299	56	1	65	1	123	535
08:15 AM	0	**103**	**11**	0	**114**	18	0	0	0	18	9	279	0	0	288	62	3	76	0	141	561
Total Volume	0	386	32	0	418	81	0	0	0	81	35	1302	0	1	1338	245	15	279	2	541	2378
% App. Total	0	92.3	7.7	0		100	0	0	0		2.6	97.3	0	0.1		45.3	2.8	51.6	0.4		
PHF	.000	.937	.727	.000	.917	.596	.000	.000	.000	.596	.729	.818	.000	.250	.830	.928	.469	.906	.500	.926	.902



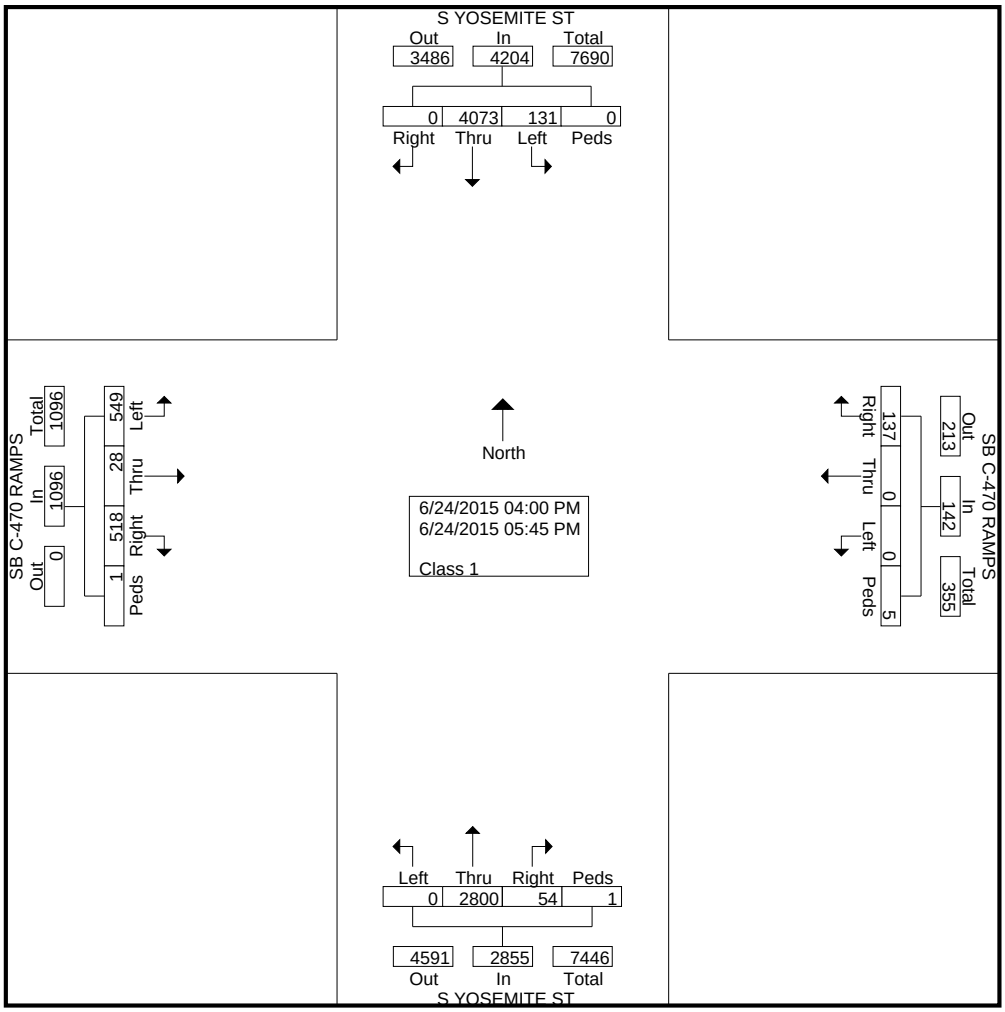
All Traffic Data

9660 W. 44th Ave
Wheatridge, CO, 80033
303-216-2439
www.alltrafficdata.net

File Name : #3 YOSEMITE&SB470RAMPSPM
Site Code : 3
Start Date : 6/24/2015
Page No : 1

Groups Printed- Class 1

	S YOSEMITE ST Southbound				SB C-470 RAMPS Westbound				S YOSEMITE ST Northbound				SB C-470 RAMPS Eastbound				
Start Time	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Right**	**Thru**	**Left**	**Peds**	**Int. Total**
04:00 PM	0	421	10	0	14	0	0	0	4	366	0	0	54	2	67	0	938
04:15 PM	0	477	17	0	10	0	0	0	6	309	0	0	65	4	75	0	963
04:30 PM	0	504	15	0	17	0	0	2	7	366	0	0	68	5	61	0	1045
04:45 PM	0	521	15	0	13	0	0	1	6	383	0	0	70	1	75	1	1086
Total	0	1923	57	0	54	0	0	3	23	1424	0	0	257	12	278	1	4032
05:00 PM	0	516	23	0	21	0	0	2	6	388	0	1	59	5	61	0	1082
05:15 PM	0	546	19	0	23	0	0	0	7	336	0	0	67	3	60	0	1061
05:30 PM	0	544	20	0	17	0	0	0	6	335	0	0	75	5	74	0	1076
05:45 PM	0	544	12	0	22	0	0	0	12	317	0	0	60	3	76	0	1046
Total	0	2150	74	0	83	0	0	2	31	1376	0	1	261	16	271	0	4265
Grand Total	0	4073	131	0	137	0	0	5	54	2800	0	1	518	28	549	1	8297
Apprch %	0	96.9	3.1	0	96.5	0	0	3.5	1.9	98.1	0	0	47.3	2.6	50.1	0.1	
Total %	0	49.1	1.6	0	1.7	0	0	0.1	0.7	33.7	0	0	6.2	0.3	6.6	0	

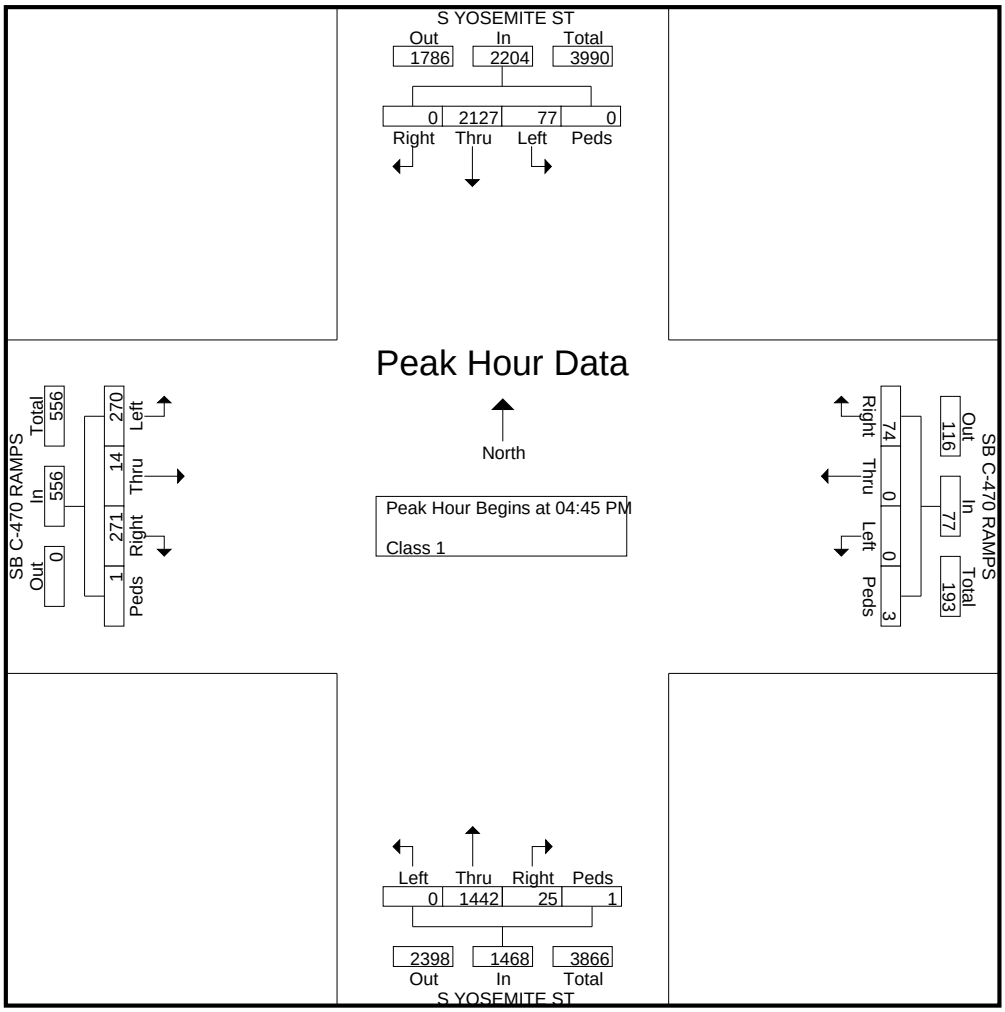


All Traffic Data

9660 W. 44th Ave
Wheatridge, CO, 80033
303-216-2439
www.alltrafficdata.net

File Name : #3 YOSEMITE&SB470RAMPSPM
Site Code : 3
Start Date : 6/24/2015
Page No : 2

	S YOSEMITE ST Southbound					SB C-470 RAMPS Westbound					S YOSEMITE ST Northbound					SB C-470 RAMPS Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	521	15	0	536	13	0	0	1	14	6	383	0	0	389	70	1	**75**	**1**	147	**1086**
05:00 PM	0	516	**23**	0	539	21	0	0	**2**	**23**	6	**388**	0	**1**	**395**	59	**5**	61	0	125	1082
05:15 PM	0	**546**	19	0	**565**	**23**	0	0	0	23	**7**	336	0	0	343	67	3	60	0	130	1061
05:30 PM	0	544	20	0	564	17	0	0	0	17	6	335	0	0	341	**75**	5	74	0	**154**	1076
Total Volume	0	2127	77	0	2204	74	0	0	3	77	25	1442	0	1	1468	271	14	270	1	556	4305
% App. Total	0	96.5	3.5	0		96.1	0	0	3.9		1.7	98.2	0	0.1		48.7	2.5	48.6	0.2		
PHF	.000	.974	.837	.000	.975	.804	.000	.000	.375	.837	.893	.929	.000	.250	.929	.903	.700	.900	.250	.903	.991



All Traffic Data Services, Inc
9660 W 44th Ave
Wheat Ridge,CO 80033
www.alltrafficdata.net

Site Code: 4
Station ID: 4
PARK MEADOWS DRIVE E/O DRAINAGE WAY
PARK MEADOWS DRIVE E/O DRAINAGE WAY

Start Time	24-Jun-15 Wed	EB	WB							Total
12:00 AM		16	16							32
01:00		6	5							11
02:00		3	3							6
03:00		2	3							5
04:00		10	7							17
05:00		25	14							39
06:00		93	80							173
07:00		255	194							449
08:00		248	217							465
09:00		297	208							505
10:00		332	272							604
11:00		**383**	**344**							**727**
12:00 PM		430	375							805
01:00		410	380							790
02:00		377	331							708
03:00		384	429							813
04:00		454	**656**							**1110**
05:00		**494**	608							1102
06:00		410	330							740
07:00		248	176							424
08:00		182	135							317
09:00		83	81							164
10:00		46	49							95
11:00		20	27							47
Total		5208	4940							10148
Percent		51.3%	48.7%							
AM Peak	-	11:00	11:00	-	-	-	-	-	-	11:00
Vol.	-	383	344	-	-	-	-	-	-	727
PM Peak	-	17:00	16:00	-	-	-	-	-	-	16:00
Vol.	-	494	656	-	-	-	-	-	-	1110
Total		5208	4940							10148
Percent		51.3%	48.7%							

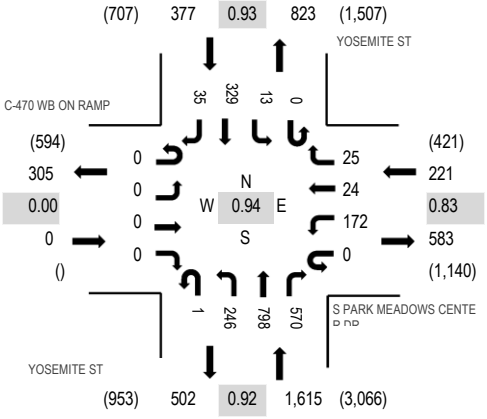
ADT	ADT 10,219	AADT 10,219

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

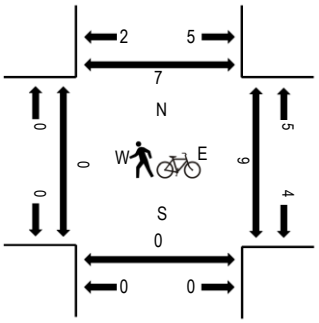
Location: 1 YOSEMITE ST & S PARK MEADOWS CENTER DR AM
Date and Start Time: Tuesday, June 7, 2016
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

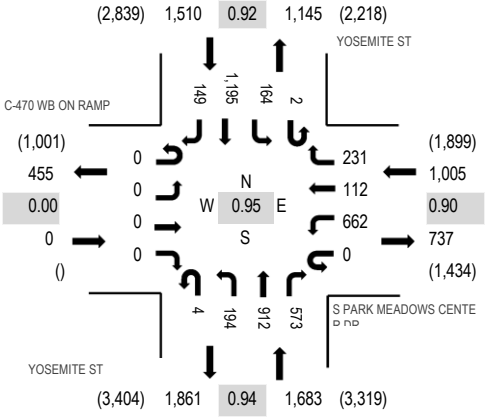
Interval Start Time	C-470 WB ON RAMP Eastbound				S PARK MEADOWS CENTER DR Westbound				YOSEMITE ST Northbound				YOSEMITE ST Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	0	0	0	32	2	4	0	49	132	135	0	2	56	12	424	2,062	1	0	0	0
7:15 AM	0	0	0	0	0	55	0	4	0	55	174	128	0	1	60	3	480	2,153	1	0	0	0
7:30 AM	0	0	0	0	0	34	1	5	0	76	219	146	0	3	79	6	569	2,213	0	1	0	0
7:45 AM	0	0	0	0	0	58	6	7	0	51	218	146	0	2	90	11	589	2,210	0	1	0	0
8:00 AM	0	0	0	0	0	38	5	7	0	61	170	138	0	1	85	10	515	2,132	0	0	0	0
8:15 AM	0	0	0	0	0	42	12	6	1	58	191	140	0	7	75	8	540		0	0	0	0
8:30 AM	0	0	0	0	0	45	4	6	1	68	184	162	0	4	83	9	566		0	0	0	0
8:45 AM	0	0	0	0	0	35	6	7	0	70	173	120	0	5	84	11	511		0	0	0	0
Count Total	0	0	0	0	0	339	36	46	2	488	1,461	1,115	0	25	612	70	4,194		2	2	0	0
Peak Hour	0	0	0	0	0	172	24	25	1	246	798	570	0	13	329	35	2,213		0	2	0	0

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

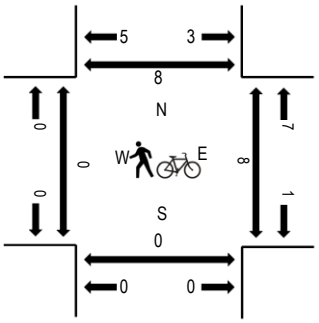
Location: 1 YOSEMITE ST & S PARK MEADOWS CENTER DR PM
Date and Start Time: Tuesday, June 7, 2016
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	C-470 WB ON RAMP Eastbound				S PARK MEADOWS CENTER DR Westbound				YOSEMITE ST Northbound				YOSEMITE ST Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	0	0	0	104	51	46	0	66	198	143	0	40	225	67	940	3,941	0	0	0	0
4:15 PM	0	0	0	0	0	149	39	47	0	59	195	143	0	35	230	49	946	4,106	0	1	0	0
4:30 PM	0	0	0	0	0	132	33	45	0	64	262	141	0	31	275	50	1,033	4,197	0	0	0	0
4:45 PM	0	0	0	0	0	140	46	50	0	62	212	153	1	47	268	43	1,022	4,198	0	0	0	0
5:00 PM	0	0	0	0	0	165	36	64	1	51	249	156	0	39	300	44	1,105	4,116	0	0	0	0
5:15 PM	0	0	0	0	0	163	12	48	2	48	216	139	0	47	327	35	1,037		0	0	0	0
5:30 PM	0	0	0	0	0	194	18	69	1	33	235	125	1	31	300	27	1,034		0	0	0	0
5:45 PM	0	0	0	0	0	169	12	67	0	30	212	123	1	41	259	26	940		0	0	0	0
Count Total	0	0	0	0	0	1,216	247	436	4	413	1,779	1,123	3	311	2,184	341	8,057		0	1	0	0
Peak Hour	0	0	0	0	0	662	112	231	4	194	912	573	2	164	1,195	149	4,198		0	0	0	0

APPENDIX B EXISTING CONDITIONS LOS WORKSHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	279	15	245	0	0	81	0	1271	35	32	416	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	0	1863	1900	0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	314	0	266	0	0	88	0	1382	38	35	452	0
Adj No. of Lanes	2	0	1	0	1	0	0	3	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	0	2	2	2	2	0
Cap, veh/h	795	0	475	0	0	475	0	2936	81	259	3221	0
Arrive On Green	0.30	0.00	0.30	0.00	0.00	0.30	0.00	0.58	0.58	0.01	0.21	0.00
Sat Flow, veh/h	2607	0	1583	0	0	1583	0	5256	140	1774	5253	0
Grp Volume(v), veh/h	314	0	266	0	0	88	0	921	499	35	452	0
Grp Sat Flow(s),veh/h/ln	1304	0	1583	0	0	1583	0	1695	1838	1774	1695	0
Q Serve(g_s), s	12.2	0.0	17.0	0.0	0.0	4.9	0.0	18.9	18.9	0.9	8.7	0.0
Cycle Q Clear(g_c), s	17.1	0.0	17.0	0.0	0.0	4.9	0.0	18.9	18.9	0.9	8.7	0.0
Prop In Lane	1.00		1.00	0.00		1.00	0.00		0.08	1.00		0.00
Lane Grp Cap(c), veh/h	795	0	475	0	0	475	0	1956	1061	259	3221	0
V/C Ratio(X)	0.40	0.00	0.56	0.00	0.00	0.19	0.00	0.47	0.47	0.14	0.14	0.00
Avail Cap(c_a), veh/h	795	0	475	0	0	475	0	1956	1061	380	3221	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.78	0.78	0.99	0.99	0.00
Uniform Delay (d), s/veh	37.5	0.0	35.3	0.0	0.0	31.1	0.0	14.7	14.7	11.2	20.8	0.0
Incr Delay (d2), s/veh	1.5	0.0	4.7	0.0	0.0	0.9	0.0	0.6	1.2	0.2	0.1	0.0
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(95%),veh/ln	8.1	0.0	12.7	0.0	0.0	4.1	0.0	13.3	14.5	0.8	7.4	0.0
LnGrp Delay(d),s/veh	38.9	0.0	40.0	0.0	0.0	32.0	0.0	15.4	15.9	11.4	20.9	0.0
LnGrp LOS	D		D			C		B	B	B	C	
Approach Vol, veh/h		580			88			1420			487	
Approach Delay, s/veh		39.5			32.0			15.6			20.2	
Approach LOS		D			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	6.8	73.2		40.0		80.0		40.0
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	11.0	61.0		36.0		76.0		36.0
Max Q Clear Time (g_c+I1), s	2.9	20.9		19.1		10.7		6.9
Green Ext Time (p_c), s	0.0	18.5		2.6		21.7		2.8

Intersection Summary	
HCM 2010 Ctrl Delay	22.4
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	53	148	87	36	92	382	92	871	54	264	357	40
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	58	161	95	39	100	415	100	947	59	287	388	43
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	99	545	244	115	560	251	156	1948	121	357	2953	322
Arrive On Green	0.03	0.15	0.15	0.03	0.16	0.16	0.05	0.58	0.58	0.10	0.63	0.63
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	3384	211	3442	4656	507
Grp Volume(v), veh/h	58	161	95	39	100	415	100	495	511	287	281	150
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1826	1721	1695	1773
Q Serve(g_s), s	2.0	4.8	6.5	1.3	2.9	19.0	3.4	19.8	19.8	9.8	4.0	4.1
Cycle Q Clear(g_c), s	2.0	4.8	6.5	1.3	2.9	19.0	3.4	19.8	19.8	9.8	4.0	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		0.29
Lane Grp Cap(c), veh/h	99	545	244	115	560	251	156	1019	1051	357	2150	1125
V/C Ratio(X)	0.58	0.30	0.39	0.34	0.18	1.66	0.64	0.49	0.49	0.80	0.13	0.13
Avail Cap(c_a), veh/h	315	560	251	315	560	251	516	1019	1051	602	2150	1125
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	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98
Uniform Delay (d), s/veh	57.6	45.0	45.7	56.7	43.7	50.5	56.3	15.0	15.0	52.6	8.8	8.8
Incr Delay (d2), s/veh	5.3	0.3	1.0	1.7	0.2	312.1	4.4	1.7	1.6	4.2	0.1	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(95%),veh/ln	1.8	4.3	5.2	1.2	2.6	54.0	3.1	15.3	15.7	8.5	3.4	3.7
LnGrp Delay(d),s/veh	62.9	45.3	46.7	58.4	43.9	362.6	60.7	16.7	16.6	56.8	8.9	9.0
LnGrp LOS	E	D	D	E	D	F	E	B	B	E	A	A
Approach Vol, veh/h		314			554			1106			718	
Approach Delay, s/veh		49.0			283.6			20.6			28.0	
Approach LOS		D			F			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.4	73.1	8.0	22.5	9.4	80.1	7.5	23.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	21.0	53.0	11.0	19.0	18.0	56.0	11.0	19.0
Max Q Clear Time (g_c+I1), s	11.8	21.8	3.3	8.5	5.4	6.1	4.0	21.0
Green Ext Time (p_c), s	0.7	11.2	0.0	2.7	0.2	12.6	0.1	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	80.0
HCM 2010 LOS	F

Intersection	
Int Delay, s/veh	1

Movement	SET	SER	NWL	NWT	NEL	NER
Vol, veh/h	261	16	22	202	10	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	284	17	24	220	11	29

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	301	0	450	151
Stage 1	-	-	-	-	292	-
Stage 2	-	-	-	-	158	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1257	-	538	868
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	854	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1257	-	528	868
Mov Cap-2 Maneuver	-	-	-	-	594	-
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	838	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.8	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	772	1257	-	-	-
HCM Lane V/C Ratio	0.052	0.019	-	-	-
HCM Control Delay (s)	9.9	7.9	-	-	-
HCM Lane LOS	A	A	-	-	-
HCM 95th %tile Q(veh)	0.2	0.1	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	148	24	25	247	814	570	13	300	35
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h				161	26	27	268	885	620	14	326	0
Adj No. of Lanes				2	1	1	2	3	1	2	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				238	125	106	340	4172	1299	43	3733	1162
Arrive On Green				0.07	0.07	0.07	0.10	0.82	0.82	0.01	0.73	0.00
Sat Flow, veh/h				3548	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h				161	26	27	268	885	620	14	326	0
Grp Sat Flow(s),veh/h/ln				1774	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s				5.3	1.6	1.9	9.1	4.5	13.9	0.5	2.2	0.0
Cycle Q Clear(g_c), s				5.3	1.6	1.9	9.1	4.5	13.9	0.5	2.2	0.0
Prop In Lane				1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h				238	125	106	340	4172	1299	43	3733	1162
V/C Ratio(X)				0.68	0.21	0.25	0.79	0.21	0.48	0.33	0.09	0.00
Avail Cap(c_a), veh/h				946	497	422	660	4172	1299	315	3733	1162
HCM Platoon Ratio				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	0.87	0.87	0.87	1.00	1.00	0.00
Uniform Delay (d), s/veh				54.7	53.0	53.1	52.9	2.3	3.2	58.8	4.5	0.0
Incr Delay (d2), s/veh				3.3	0.8	1.2	3.6	0.1	1.1	4.4	0.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				4.9	1.5	1.6	7.8	3.8	10.1	0.5	1.9	0.0
LnGrp Delay(d),s/veh				58.0	53.8	54.4	56.5	2.4	4.3	63.1	4.6	0.0
LnGrp LOS				E	D	D	E	A	A	E	A	
Approach Vol, veh/h					214			1773			340	
Approach Delay, s/veh					57.0			11.3			7.0	
Approach LOS					E			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2			5	6		8
Phs Duration (G+Y+Rc), s	5.5	102.4			15.8	92.1		12.1
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s	11.0	65.0			23.0	53.0		32.0
Max Q Clear Time (g_c+I1), s	2.5	15.9			11.1	4.2		7.3
Green Ext Time (p_c), s	0.0	16.6			0.7	16.6		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	14.8
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	270	14	271	0	0	74	0	1472	25	77	2127	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	0	1863	1900	0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	304	0	295	0	0	0	0	1600	27	84	2312	0
Adj No. of Lanes	2	0	1	0	1	0	0	3	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	0	2	2	2	2	0
Cap, veh/h	1451	0	594	0	699	0	0	2512	42	205	2839	0
Arrive On Green	0.38	0.00	0.38	0.00	0.00	0.00	0.00	0.49	0.49	0.04	0.56	0.00
Sat Flow, veh/h	3548	0	1583	0	1863	0	0	5318	87	1774	5253	0
Grp Volume(v), veh/h	304	0	295	0	0	0	0	1053	574	84	2312	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583	0	1863	0	0	1695	1847	1774	1695	0
Q Serve(g_s), s	7.0	0.0	17.2	0.0	0.0	0.0	0.0	27.7	27.7	2.7	44.2	0.0
Cycle Q Clear(g_c), s	7.0	0.0	17.2	0.0	0.0	0.0	0.0	27.7	27.7	2.7	44.2	0.0
Prop In Lane	1.00		1.00	0.00		0.00	0.00		0.05	1.00		0.00
Lane Grp Cap(c), veh/h	1451	0	594	0	699	0	0	1653	901	205	2839	0
V/C Ratio(X)	0.21	0.00	0.50	0.00	0.00	0.00	0.00	0.64	0.64	0.41	0.81	0.00
Avail Cap(c_a), veh/h	1451	0	594	0	699	0	0	1653	901	257	2839	0
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	0.00	0.00	0.00	0.00	0.50	0.50	0.69	0.69	0.00
Uniform Delay (d), s/veh	25.6	0.0	28.8	0.0	0.0	0.0	0.0	22.9	22.9	18.3	21.5	0.0
Incr Delay (d2), s/veh	0.3	0.0	3.0	0.0	0.0	0.0	0.0	0.9	1.7	0.9	1.9	0.0
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(95%),veh/ln	6.3	0.0	12.6	0.0	0.0	0.0	0.0	17.3	18.9	2.5	27.3	0.0
LnGrp Delay(d),s/veh	26.0	0.0	31.8	0.0	0.0	0.0	0.0	23.8	24.6	19.2	23.3	0.0
LnGrp LOS	C		C					C	C	B	C	
Approach Vol, veh/h		599			0			1627			2396	
Approach Delay, s/veh		28.8			0.0			24.1			23.2	
Approach LOS		C						C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	8.5	62.5		49.0		71.0		49.0
Change Period (Y+Rc), s	4.0	4.0		4.0		4.0		4.0
Max Green Setting (Gmax), s	8.0	55.0		45.0		67.0		45.0
Max Q Clear Time (g_c+I1), s	4.7	29.7		19.2		46.2		0.0
Green Ext Time (p_c), s	0.0	24.3		2.1		20.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	24.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	125	205	208	94	281	545	188	827	52	703	1497	198
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	136	223	226	102	305	592	204	899	57	764	1627	215
Adj No. of Lanes	2	2	1	2	2	1	2	2	0	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	197	624	279	163	590	264	267	1364	86	824	2570	339
Arrive On Green	0.06	0.18	0.18	0.05	0.17	0.17	0.08	0.40	0.40	0.24	0.57	0.57
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	3380	214	3442	4548	599
Grp Volume(v), veh/h	136	223	226	102	305	592	204	471	485	764	1212	630
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1825	1721	1695	1757
Q Serve(g_s), s	4.7	6.6	16.5	3.5	9.4	20.0	7.0	25.9	25.9	26.0	29.0	29.2
Cycle Q Clear(g_c), s	4.7	6.6	16.5	3.5	9.4	20.0	7.0	25.9	25.9	26.0	29.0	29.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.12	1.00		0.34
Lane Grp Cap(c), veh/h	197	624	279	163	590	264	267	714	736	824	1916	993
V/C Ratio(X)	0.69	0.36	0.81	0.62	0.52	2.24	0.76	0.66	0.66	0.93	0.63	0.63
Avail Cap(c_a), veh/h	516	624	279	516	590	264	459	714	736	860	1916	993
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	1.00	1.00	1.00	1.00	1.00	0.54	0.54	0.54
Uniform Delay (d), s/veh	55.5	43.4	47.5	56.1	45.6	50.0	54.3	29.1	29.1	44.6	17.7	17.7
Incr Delay (d2), s/veh	4.3	0.3	16.1	3.9	0.8	571.6	4.5	4.7	4.6	9.6	0.9	1.7
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(95%),veh/ln	4.2	5.9	13.2	3.1	8.2	91.1	6.3	19.7	20.2	17.9	18.1	19.1
LnGrp Delay(d),s/veh	59.8	43.8	63.6	60.0	46.4	621.6	58.8	33.8	33.7	54.2	18.5	19.4
LnGrp LOS	E	D	E	E	D	F	E	C	C	D	B	B
Approach Vol, veh/h		585			999			1160			2606	
Approach Delay, s/veh		55.2			388.6			38.2			29.2	
Approach LOS		E			F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	32.7	52.4	9.7	25.2	13.3	71.8	10.9	24.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	36.0	18.0	20.0	16.0	50.0	18.0	20.0
Max Q Clear Time (g_c+I1), s	28.0	27.9	5.5	18.5	9.0	31.2	6.7	22.0
Green Ext Time (p_c), s	0.7	7.4	0.2	1.0	0.4	16.1	0.3	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	101.1
HCM 2010 LOS	F

Intersection	
Int Delay, s/veh	0.7

Movement	SET	SER	NWL	NWT	NEL	NER
Vol, veh/h	502	15	34	633	11	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	546	16	37	688	12	39

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	562	0	972	281
Stage 1	-	-	-	-	554	-
Stage 2	-	-	-	-	418	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1005	-	250	716
Stage 1	-	-	-	-	539	-
Stage 2	-	-	-	-	632	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1005	-	241	716
Mov Cap-2 Maneuver	-	-	-	-	370	-
Stage 1	-	-	-	-	539	-
Stage 2	-	-	-	-	609	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.4	11.7
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	587	1005	-	-	-
HCM Lane V/C Ratio	0.087	0.037	-	-	-
HCM Control Delay (s)	11.7	8.7	-	-	-
HCM Lane LOS	B	A	-	-	-
HCM 95th %tile Q(veh)	0.3	0.1	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	662	112	231	194	1049	573	166	1542	149
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h				720	122	251	211	1140	623	180	1676	0
Adj No. of Lanes				2	1	1	2	3	1	2	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				862	453	385	281	2978	927	246	2925	911
Arrive On Green				0.24	0.24	0.24	0.08	0.59	0.59	0.07	0.58	0.00
Sat Flow, veh/h				3548	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h				720	122	251	211	1140	623	180	1676	0
Grp Sat Flow(s),veh/h/ln				1774	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s				23.1	6.4	17.1	7.2	14.4	32.3	6.1	25.1	0.0
Cycle Q Clear(g_c), s				23.1	6.4	17.1	7.2	14.4	32.3	6.1	25.1	0.0
Prop In Lane				1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h				862	453	385	281	2978	927	246	2925	911
V/C Ratio(X)				0.84	0.27	0.65	0.75	0.38	0.67	0.73	0.57	0.00
Avail Cap(c_a), veh/h				1183	621	528	746	2978	927	602	2925	911
HCM Platoon Ratio				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	0.73	0.73	0.73	1.00	1.00	0.00
Uniform Delay (d), s/veh				43.1	36.8	40.9	53.9	13.3	17.0	54.6	16.1	0.0
Incr Delay (d2), s/veh				3.9	0.3	1.9	2.9	0.3	2.8	4.2	0.8	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				17.4	6.0	12.2	6.2	10.3	20.1	5.5	17.5	0.0
LnGrp Delay(d),s/veh				47.0	37.1	42.7	56.8	13.6	19.8	58.8	17.0	0.0
LnGrp LOS				D	D	D	E	B	B	E	B	
Approach Vol, veh/h					1093			1974			1856	
Approach Delay, s/veh					44.9			20.2			21.0	
Approach LOS					D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2			5	6		8
Phs Duration (G+Y+Rc), s	12.6	74.3			13.8	73.0		33.2
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s	21.0	47.0			26.0	42.0		40.0
Max Q Clear Time (g_c+I1), s	8.1	34.3			9.2	27.1		25.1
Green Ext Time (p_c), s	0.4	12.0			0.6	14.0		4.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.0
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

APPENDIX C BACKGROUND TRAFFIC LOS WORKSHEETS – SHORT RANGE

HCM 2010 Signalized Intersection Summary
3: S Yosemite St & Access/C-470 EB Ramps

6/14/2016

Movement	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR	NEL	NER
Lane Configurations										
Volume (veh/h)	35	430	285	20	250	0	0	85	1300	40
Number	3	18	1	6	16	5	2	12	7	14
Initial Q (Qb), veh	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	0	1863	1900	1863	1900
Adj Flow Rate, veh/h	38	467	326	0	272	0	0	0	1453	0
Adj No. of Lanes	1	3	2	0	1	0	1	0	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	0	2	2	2	0
Cap, veh/h	640	0	2272	0	960	0	1130	0	1740	0
Arrive On Green	0.33	0.00	0.61	0.00	0.61	0.00	0.00	0.00	0.33	0.00
Sat Flow, veh/h	1774		3548	0	1583	0	1863	0	5322	
Grp Volume(v), veh/h	38		326	0	272	0	0	0	1453	
Grp Sat Flow(s),veh/h/ln	1774		1774	0	1583	0	1863	0	1774	
Q Serve(g_s), s	1.8		4.8	0.0	9.8	0.0	0.0	0.0	30.3	
Cycle Q Clear(g_c), s	1.8		4.8	0.0	9.8	0.0	0.0	0.0	30.3	
Prop In Lane	1.00		1.00		1.00	0.00		0.00	1.00	
Lane Grp Cap(c), veh/h	640		2272	0	960	0	1130	0	1740	
V/C Ratio(X)	0.06		0.14	0.00	0.28	0.00	0.00	0.00	0.84	
Avail Cap(c_a), veh/h	640		2272	0	960	0	1130	0	2661	
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.99		1.00	0.00	1.00	0.00	0.00	0.00	0.68	
Uniform Delay (d), s/veh	27.7		10.2	0.0	11.2	0.0	0.0	0.0	37.4	
Incr Delay (d2), s/veh	0.0		0.1	0.0	0.7	0.0	0.0	0.0	1.0	
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	1.6		4.2	0.0	7.9	0.0	0.0	0.0	20.2	
LnGrp Delay(d),s/veh	27.7		10.4	0.0	12.0	0.0	0.0	0.0	38.4	
LnGrp LOS	C		B		B				D	
Approach Vol, veh/h	38			598			0		1453	
Approach Delay, s/veh	27.7			11.1			0.0		38.4	
Approach LOS	C			B					D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3			6	7	
Phs Duration (G+Y+Rc), s		76.8	43.2			76.8	43.2	
Change Period (Y+Rc), s		4.0	4.0			4.0	4.0	
Max Green Setting (Gmax), s		40.0	8.0			40.0	60.0	
Max Q Clear Time (g_c+I1), s		0.0	3.8			11.8	32.3	
Green Ext Time (p_c), s		0.0	0.0			2.1	6.9	

Intersection Summary	
HCM 2010 Ctrl Delay	30.4
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	55	155	90	40	95	390	95	895	55	270	365	45
Number	1	6	16	5	2	12	7	4	14	3	8	18
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	60	168	98	43	103	424	103	973	60	293	397	49
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	190	1198	536	115	1121	501	155	1327	594	413	2069	251
Arrive On Green	0.06	0.34	0.34	0.03	0.32	0.32	0.04	0.38	0.38	0.12	0.45	0.45
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	3539	1583	3442	4598	557
Grp Volume(v), veh/h	60	168	98	43	103	424	103	973	60	293	291	155
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1583	1721	1695	1764
Q Serve(g_s), s	2.0	4.0	5.2	1.5	2.5	30.0	3.5	28.4	2.5	9.8	6.2	6.4
Cycle Q Clear(g_c), s	2.0	4.0	5.2	1.5	2.5	30.0	3.5	28.4	2.5	9.8	6.2	6.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	190	1198	536	115	1121	501	155	1327	594	413	1526	794
V/C Ratio(X)	0.32	0.14	0.18	0.37	0.09	0.85	0.67	0.73	0.10	0.71	0.19	0.20
Avail Cap(c_a), veh/h	190	1198	536	459	1121	501	201	1327	594	459	1526	794
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	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	54.5	27.6	28.0	56.8	28.9	38.3	56.4	32.3	17.2	50.8	19.9	19.9
Incr Delay (d2), s/veh	0.9	0.2	0.8	2.0	0.2	16.0	5.3	3.6	0.3	4.3	0.3	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(95%),veh/ln	1.8	3.6	4.3	1.3	2.2	21.7	3.2	20.8	2.1	8.5	5.3	5.8
LnGrp Delay(d),s/veh	55.5	27.8	28.7	58.8	29.0	54.3	61.7	35.9	17.5	55.1	20.1	20.4
LnGrp LOS	E	C	C	E	C	D	E	D	B	E	C	C
Approach Vol, veh/h		326			570			1136			739	
Approach Delay, s/veh		33.2			50.0			37.3			34.1	
Approach LOS		C			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.6	42.0	18.4	49.0	8.0	44.6	9.4	58.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	38.0	16.0	45.0	16.0	27.0	7.0	54.0
Max Q Clear Time (g_c+I1), s	4.0	32.0	11.8	30.4	3.5	7.2	5.5	8.4
Green Ext Time (p_c), s	0.0	1.2	1.5	6.0	0.1	1.4	0.0	4.2

Intersection Summary	
HCM 2010 Ctrl Delay	38.6
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	1.1

Movement	SET	SER	NWL	NWT	NEL	NER
Vol, veh/h	270	20	25	210	15	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	293	22	27	228	16	33

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	315	0	472	158
Stage 1	-	-	-	-	304	-
Stage 2	-	-	-	-	168	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1242	-	521	859
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	844	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1242	-	510	859
Mov Cap-2 Maneuver	-	-	-	-	581	-
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	826	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.8	10.2
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	741	1242	-	-	-
HCM Lane V/C Ratio	0.066	0.022	-	-	-
HCM Control Delay (s)	10.2	8	-	-	-
HCM Lane LOS	B	A	-	-	-
HCM 95th %tile Q(veh)	0.2	0.1	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	150	30	30	250	835	585	15	315	40
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h				163	33	33	272	908	636	16	342	0
Adj No. of Lanes				2	1	1	2	3	1	2	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				238	125	106	343	4165	1297	47	3728	1161
Arrive On Green				0.07	0.07	0.07	0.10	0.82	0.82	0.01	0.73	0.00
Sat Flow, veh/h				3548	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h				163	33	33	272	908	636	16	342	0
Grp Sat Flow(s),veh/h/ln				1774	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s				5.4	2.0	2.4	9.3	4.7	14.6	0.6	2.3	0.0
Cycle Q Clear(g_c), s				5.4	2.0	2.4	9.3	4.7	14.6	0.6	2.3	0.0
Prop In Lane				1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h				238	125	106	343	4165	1297	47	3728	1161
V/C Ratio(X)				0.68	0.26	0.31	0.79	0.22	0.49	0.34	0.09	0.00
Avail Cap(c_a), veh/h				650	342	290	631	4165	1297	172	3728	1161
HCM Platoon Ratio				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	0.61	0.61	0.61	1.00	1.00	0.00
Uniform Delay (d), s/veh				54.7	53.1	53.3	52.8	2.4	3.3	58.6	4.6	0.0
Incr Delay (d2), s/veh				3.4	1.1	1.6	2.6	0.1	0.8	4.1	0.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				5.0	2.0	2.0	7.3	4.0	9.7	0.5	2.0	0.0
LnGrp Delay(d),s/veh				58.2	54.3	55.0	55.4	2.5	4.1	62.7	4.6	0.0
LnGrp LOS				E	D	D	E	A	A	E	A	
Approach Vol, veh/h					229			1816			358	
Approach Delay, s/veh					57.1			11.0			7.2	
Approach LOS					E			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2			5	6		8
Phs Duration (G+Y+Rc), s	5.7	102.3			16.0	92.0		12.1
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s	6.0	80.0			22.0	64.0		22.0
Max Q Clear Time (g_c+I1), s	2.6	16.6			11.3	4.3		7.4
Green Ext Time (p_c), s	0.0	18.5			0.7	18.3		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	14.8
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR	NEL	NER
Lane Configurations										
Volume (veh/h)	80	2175	275	15	280	0	0	75	1505	30
Number	1	16	7	4	14	3	8	18	5	12
Initial Q (Qb), veh	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	0	1863	1900	1863	1900
Adj Flow Rate, veh/h	87	2364	310	0	304	0	0	0	1667	0
Adj No. of Lanes	1	3	2	0	1	0	1	0	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	0	2	2	2	0
Cap, veh/h	1124	0	1184	0	475	0	559	0	3371	0
Arrive On Green	0.63	0.00	0.30	0.00	0.30	0.00	0.00	0.00	0.63	0.00
Sat Flow, veh/h	1774		3548	0	1583	0	1863	0	5322	
Grp Volume(v), veh/h	87		310	0	304	0	0	0	1667	
Grp Sat Flow(s),veh/h/ln	1774		1774	0	1583	0	1863	0	1774	
Q Serve(g_s), s	2.3		8.0	0.0	20.0	0.0	0.0	0.0	20.1	
Cycle Q Clear(g_c), s	2.3		8.0	0.0	20.0	0.0	0.0	0.0	20.1	
Prop In Lane	1.00		1.00		1.00	0.00		0.00	1.00	
Lane Grp Cap(c), veh/h	1124		1184	0	475	0	559	0	3371	
V/C Ratio(X)	0.08		0.26	0.00	0.64	0.00	0.00	0.00	0.49	
Avail Cap(c_a), veh/h	1124		1184	0	475	0	559	0	3371	
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.67		1.00	0.00	1.00	0.00	0.00	0.00	0.51	
Uniform Delay (d), s/veh	8.5		32.2	0.0	36.4	0.0	0.0	0.0	11.7	
Incr Delay (d2), s/veh	0.0		0.5	0.0	6.5	0.0	0.0	0.0	0.1	
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	2.0		7.2	0.0	14.6	0.0	0.0	0.0	13.4	
LnGrp Delay(d),s/veh	8.5		32.8	0.0	42.9	0.0	0.0	0.0	11.8	
LnGrp LOS	A		C		D				B	
Approach Vol, veh/h	87			614			0		1667	
Approach Delay, s/veh	8.5			37.8			0.0		11.8	
Approach LOS	A			D					B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1			4	5			8
Phs Duration (G+Y+Rc), s	80.0			40.0	80.0			40.0
Change Period (Y+Rc), s	4.0			4.0	4.0			4.0
Max Green Setting (Gmax), s	12.0			36.0	60.0			36.0
Max Q Clear Time (g_c+I1), s	4.3			22.0	22.1			0.0
Green Ext Time (p_c), s	0.1			1.9	9.0			0.0

Intersection Summary	
HCM 2010 Ctrl Delay	18.4
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	130	210	215	100	290	560	195	845	55	720	1530	205
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	141	228	234	109	315	609	212	918	60	783	1663	223
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	880	394	170	855	383	270	1142	511	846	2224	297
Arrive On Green	0.06	0.25	0.25	0.05	0.24	0.24	0.08	0.32	0.32	0.25	0.49	0.49
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	3539	1583	3442	4539	606
Grp Volume(v), veh/h	141	228	234	109	315	609	212	918	60	783	1240	646
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1583	1721	1695	1756
Q Serve(g_s), s	4.8	6.2	15.6	3.7	8.9	29.0	7.3	28.5	3.2	26.7	35.3	35.6
Cycle Q Clear(g_c), s	4.8	6.2	15.6	3.7	8.9	29.0	7.3	28.5	3.2	26.7	35.3	35.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	194	880	394	170	855	383	270	1142	511	846	1661	860
V/C Ratio(X)	0.73	0.26	0.59	0.64	0.37	1.59	0.78	0.80	0.12	0.93	0.75	0.75
Avail Cap(c_a), veh/h	201	880	394	459	855	383	344	1142	511	889	1661	860
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	1.00	1.00	1.00	1.00	1.00	0.13	0.13	0.13
Uniform Delay (d), s/veh	55.7	36.2	39.7	56.0	37.9	45.5	54.3	37.2	28.6	44.2	24.6	24.7
Incr Delay (d2), s/veh	11.9	0.2	2.4	4.0	0.3	278.3	8.8	6.0	0.5	2.5	0.4	0.8
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(95%),veh/ln	4.7	5.5	11.5	3.4	7.8	76.0	6.8	21.2	2.6	15.0	19.0	19.8
LnGrp Delay(d),s/veh	67.6	36.3	42.1	60.0	38.1	323.8	63.1	43.2	29.1	46.7	25.0	25.5
LnGrp LOS	E	D	D	E	D	F	E	D	C	D	C	C
Approach Vol, veh/h		603			1033			1190			2669	
Approach Delay, s/veh		45.9			208.9			46.0			31.5	
Approach LOS		D			F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	33.5	42.7	9.9	33.9	13.4	62.8	10.8	33.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	31.0	37.0	16.0	20.0	12.0	56.0	7.0	29.0
Max Q Clear Time (g_c+I1), s	29.7	30.5	5.7	17.6	9.3	37.6	6.8	31.0
Green Ext Time (p_c), s	0.8	6.1	0.2	1.5	0.2	16.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	69.6
HCM 2010 LOS	E

Intersection	
Int Delay, s/veh	0.8

Movement	SET	SER	NWL	NWT	NEL	NER
Vol, veh/h	515	20	40	650	15	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	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	560	22	43	707	16	43

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	582	0	1011	291
Stage 1	-	-	-	-	571	-
Stage 2	-	-	-	-	440	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	988	-	236	706
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	616	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	988	-	226	706
Mov Cap-2 Maneuver	-	-	-	-	357	-
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	589	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.5	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	557	988	-	-	-
HCM Lane V/C Ratio	0.107	0.044	-	-	-
HCM Control Delay (s)	12.2	8.8	-	-	-
HCM Lane LOS	B	A	-	-	-
HCM 95th %tile Q(veh)	0.4	0.1	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	675	115	235	200	1070	585	170	1580	150
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h				734	125	255	217	1163	636	185	1717	163
Adj No. of Lanes				2	1	1	2	3	1	2	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				879	462	392	277	2958	921	243	2908	905
Arrive On Green				0.25	0.25	0.25	0.08	0.58	0.58	0.07	0.57	0.57
Sat Flow, veh/h				3548	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h				734	125	255	217	1163	636	185	1717	163
Grp Sat Flow(s),veh/h/ln				1774	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s				23.5	6.5	17.3	7.4	14.9	33.7	6.3	26.2	5.9
Cycle Q Clear(g_c), s				23.5	6.5	17.3	7.4	14.9	33.7	6.3	26.2	5.9
Prop In Lane				1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h				879	462	392	277	2958	921	243	2908	905
V/C Ratio(X)				0.83	0.27	0.65	0.78	0.39	0.69	0.76	0.59	0.18
Avail Cap(c_a), veh/h				1212	636	541	373	2958	921	315	2908	905
HCM Platoon Ratio				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	0.74	0.74	0.74	1.00	1.00	1.00
Uniform Delay (d), s/veh				42.8	36.4	40.5	54.1	13.6	17.5	54.8	16.6	12.3
Incr Delay (d2), s/veh				3.8	0.3	1.8	5.7	0.3	3.2	7.8	0.9	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
%ile BackOfQ(95%),veh/ln				17.7	6.1	12.4	6.5	10.7	21.0	5.9	18.3	4.8
LnGrp Delay(d),s/veh				46.6	36.7	42.3	59.8	13.9	20.7	62.6	17.5	12.7
LnGrp LOS				D	D	D	E	B	C	E	B	B
Approach Vol, veh/h					1114			2016			2065	
Approach Delay, s/veh					44.5			21.0			21.2	
Approach LOS					D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2			5	6		8
Phs Duration (G+Y+Rc), s	12.5	73.8			13.7	72.6		33.7
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s	11.0	56.0			13.0	54.0		41.0
Max Q Clear Time (g_c+I1), s	8.3	35.7			9.4	28.2		25.5
Green Ext Time (p_c), s	0.1	19.0			0.2	23.7		4.2

Intersection Summary	
HCM 2010 Ctrl Delay	26.1
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

APPENDIX D BACKGROUND TRAFFIC LOS WORKSHEETS – LONG RANGE

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	340	20	325	0	0	100	0	1570	45	40	570	0
Number	1	6	16	5	2	12	7	4	14	3	8	18
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	0	1863	1900	0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	386	0	353	0	0	0	0	1707	49	43	620	0
Adj No. of Lanes	2	0	1	0	1	0	0	3	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	0	2	2	2	2	0
Cap, veh/h	1799	0	749	0	882	0	0	2039	59	159	2339	0
Arrive On Green	0.47	0.00	0.47	0.00	0.00	0.00	0.00	0.80	0.80	0.03	0.46	0.00
Sat Flow, veh/h	3548	0	1583	0	1863	0	0	5249	146	1774	5253	0
Grp Volume(v), veh/h	386	0	353	0	0	0	0	1139	617	43	620	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583	0	1863	0	0	1695	1837	1774	1695	0
Q Serve(g_s), s	7.7	0.0	18.1	0.0	0.0	0.0	0.0	24.2	24.3	1.7	9.0	0.0
Cycle Q Clear(g_c), s	7.7	0.0	18.1	0.0	0.0	0.0	0.0	24.2	24.3	1.7	9.0	0.0
Prop In Lane	1.00		1.00	0.00		0.00	0.00		0.08	1.00		0.00
Lane Grp Cap(c), veh/h	1799	0	749	0	882	0	0	1360	737	159	2339	0
V/C Ratio(X)	0.21	0.00	0.47	0.00	0.00	0.00	0.00	0.84	0.84	0.27	0.27	0.00
Avail Cap(c_a), veh/h	1799	0	749	0	882	0	0	1639	888	203	2882	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.49	0.49	0.98	0.98	0.00
Uniform Delay (d), s/veh	18.7	0.0	21.4	0.0	0.0	0.0	0.0	9.5	9.5	22.5	19.9	0.0
Incr Delay (d2), s/veh	0.3	0.0	2.1	0.0	0.0	0.0	0.0	1.7	3.1	0.9	0.1	0.0
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(95%),veh/ln	6.9	0.0	13.1	0.0	0.0	0.0	0.0	14.9	16.3	1.5	7.5	0.0
LnGrp Delay(d),s/veh	18.9	0.0	23.5	0.0	0.0	0.0	0.0	11.2	12.6	23.4	20.0	0.0
LnGrp LOS	B		C					B	B	C	B	
Approach Vol, veh/h		739			0			1756			663	
Approach Delay, s/veh		21.1			0.0			11.7			20.2	
Approach LOS		C						B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		60.8	7.0	52.2		60.8		59.2
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0		4.0
Max Green Setting (Gmax), s		44.0	6.0	58.0		44.0		68.0
Max Q Clear Time (g_c+I1), s		0.0	3.7	26.3		20.1		11.0
Green Ext Time (p_c), s		0.0	0.0	21.9		2.7		31.2

Intersection Summary	
HCM 2010 Ctrl Delay	15.7
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	85	195	120	45	155	465	165	1065	65	320	435	140
Number	1	6	16	5	2	12	7	4	14	3	8	18
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	92	212	130	49	168	505	179	1158	71	348	473	152
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	192	1171	524	115	1091	488	237	1357	607	410	1668	518
Arrive On Green	0.06	0.33	0.33	0.03	0.31	0.31	0.07	0.38	0.38	0.12	0.43	0.43
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	3539	1583	3442	3846	1196
Grp Volume(v), veh/h	92	212	130	49	168	505	179	1158	71	348	415	210
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1583	1721	1695	1652
Q Serve(g_s), s	3.1	5.1	7.2	1.7	4.1	37.0	6.1	36.0	2.9	11.9	9.5	9.9
Cycle Q Clear(g_c), s	3.1	5.1	7.2	1.7	4.1	37.0	6.1	36.0	2.9	11.9	9.5	9.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.72
Lane Grp Cap(c), veh/h	192	1171	524	115	1091	488	237	1357	607	410	1470	716
V/C Ratio(X)	0.48	0.18	0.25	0.43	0.15	1.03	0.76	0.85	0.12	0.85	0.28	0.29
Avail Cap(c_a), veh/h	192	1171	524	459	1091	488	315	1357	607	459	1470	716
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	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96
Uniform Delay (d), s/veh	54.9	28.6	29.3	56.9	30.1	41.5	54.9	33.9	16.8	51.8	21.9	22.0
Incr Delay (d2), s/veh	1.8	0.3	1.1	2.5	0.3	49.9	7.1	7.0	0.4	12.5	0.5	1.0
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(95%),veh/ln	2.8	4.6	6.0	1.5	3.7	41.2	5.7	26.0	2.4	10.4	8.0	8.2
LnGrp Delay(d),s/veh	56.8	28.9	30.4	59.4	30.4	91.4	62.0	40.9	17.2	64.3	22.4	23.0
LnGrp LOS	E	C	C	E	C	F	E	D	B	E	C	C
Approach Vol, veh/h		434			722			1408			973	
Approach Delay, s/veh		35.3			75.0			42.4			37.5	
Approach LOS		D			E			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.7	41.0	18.3	50.0	8.0	43.7	12.3	56.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	5.0	37.0	16.0	46.0	16.0	26.0	11.0	51.0
Max Q Clear Time (g_c+I1), s	5.1	39.0	13.9	38.0	3.7	9.2	8.1	11.9
Green Ext Time (p_c), s	0.0	0.0	0.4	4.8	0.1	1.8	0.1	6.0

Intersection Summary	
HCM 2010 Ctrl Delay	46.8
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	0.8

Movement	SET	SER	NWL	NWT	NEL	NER
Vol, veh/h	365	20	25	435	15	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	397	22	27	473	16	38

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	418	0	699	209
Stage 1	-	-	-	-	408	-
Stage 2	-	-	-	-	291	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1138	-	374	797
Stage 1	-	-	-	-	640	-
Stage 2	-	-	-	-	733	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1138	-	365	797
Mov Cap-2 Maneuver	-	-	-	-	474	-
Stage 1	-	-	-	-	640	-
Stage 2	-	-	-	-	716	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.4	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	662	1138	-	-	-
HCM Lane V/C Ratio	0.082	0.024	-	-	-
HCM Control Delay (s)	10.9	8.2	-	-	-
HCM Lane LOS	B	A	-	-	-
HCM 95th %tile Q(veh)	0.3	0.1	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	195	35	35	305	1000	705	25	415	45
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h				212	38	38	332	1087	766	27	451	0
Adj No. of Lanes				2	1	1	2	3	1	2	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				287	151	128	403	3996	1244	115	3571	1112
Arrive On Green				0.08	0.08	0.08	0.12	0.79	0.79	0.03	0.70	0.00
Sat Flow, veh/h				3548	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h				212	38	38	332	1087	766	27	451	0
Grp Sat Flow(s),veh/h/ln				1774	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s				7.0	2.3	2.7	11.3	7.0	24.1	0.9	3.5	0.0
Cycle Q Clear(g_c), s				7.0	2.3	2.7	11.3	7.0	24.1	0.9	3.5	0.0
Prop In Lane				1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h				287	151	128	403	3996	1244	115	3571	1112
V/C Ratio(X)				0.74	0.25	0.30	0.82	0.27	0.62	0.24	0.13	0.00
Avail Cap(c_a), veh/h				532	279	237	602	3996	1244	459	3571	1112
HCM Platoon Ratio				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	0.62	0.62	0.62	1.00	1.00	0.00
Uniform Delay (d), s/veh				53.9	51.7	51.9	51.8	3.5	5.3	56.5	5.8	0.0
Incr Delay (d2), s/veh				3.7	0.9	1.3	3.7	0.1	1.4	1.0	0.0	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				6.5	2.2	2.2	8.6	5.6	15.2	0.8	2.9	0.0
LnGrp Delay(d),s/veh				57.6	52.6	53.2	55.4	3.6	6.7	57.6	5.9	0.0
LnGrp LOS				E	D	D	E	A	A	E	A	
Approach Vol, veh/h					288			2185			478	
Approach Delay, s/veh					56.4			12.6			8.8	
Approach LOS					E			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2			5	6		8
Phs Duration (G+Y+Rc), s	8.0	98.3			18.0	88.3		13.7
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s	16.0	74.0			21.0	69.0		18.0
Max Q Clear Time (g_c+I1), s	2.9	26.1			13.3	5.5		9.0
Green Ext Time (p_c), s	0.0	23.9			0.7	26.8		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	16.2
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	330	20	345	0	0	90	0	1910	30	95	2635	0
Number	1	6	16	5	2	12	7	4	14	3	8	18
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	0	1863	1900	0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	375	0	375	0	0	0	0	2076	33	103	2864	0
Adj No. of Lanes	2	0	1	0	1	0	0	3	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	0	2	2	2	2	0
Cap, veh/h	1373	0	559	0	658	0	0	2602	41	232	2950	0
Arrive On Green	0.35	0.00	0.35	0.00	0.00	0.00	0.00	1.00	1.00	0.04	0.58	0.00
Sat Flow, veh/h	3548	0	1583	0	1863	0	0	5324	82	1774	5253	0
Grp Volume(v), veh/h	375	0	375	0	0	0	0	1364	745	103	2864	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583	0	1863	0	0	1695	1848	1774	1695	0
Q Serve(g_s), s	9.2	0.0	24.1	0.0	0.0	0.0	0.0	0.0	0.0	3.2	65.0	0.0
Cycle Q Clear(g_c), s	9.2	0.0	24.1	0.0	0.0	0.0	0.0	0.0	0.0	3.2	65.0	0.0
Prop In Lane	1.00		1.00	0.00		0.00	0.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h	1373	0	559	0	658	0	0	1710	932	232	2950	0
V/C Ratio(X)	0.27	0.00	0.67	0.00	0.00	0.00	0.00	0.80	0.80	0.44	0.97	0.00
Avail Cap(c_a), veh/h	1373	0	559	0	658	0	0	1710	932	246	2966	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.09	0.09	0.40	0.40	0.00
Uniform Delay (d), s/veh	28.1	0.0	32.9	0.0	0.0	0.0	0.0	0.0	0.0	12.2	24.2	0.0
Incr Delay (d2), s/veh	0.5	0.0	6.3	0.0	0.0	0.0	0.0	0.3	0.5	0.5	5.4	0.0
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(95%),veh/ln	8.1	0.0	17.1	0.0	0.0	0.0	0.0	0.1	0.2	2.9	37.5	0.0
LnGrp Delay(d),s/veh	28.6	0.0	39.2	0.0	0.0	0.0	0.0	0.3	0.5	12.7	29.6	0.0
LnGrp LOS	C		D					A	A	B	C	
Approach Vol, veh/h		750			0			2109			2967	
Approach Delay, s/veh		33.9			0.0			0.3			29.0	
Approach LOS		C						A			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3	4		6		8
Phs Duration (G+Y+Rc), s		46.4	9.1	64.5		46.4		73.6
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0		4.0
Max Green Setting (Gmax), s		42.0	6.0	60.0		42.0		70.0
Max Q Clear Time (g_c+I1), s		0.0	5.2	2.0		26.1		67.0
Green Ext Time (p_c), s		0.0	0.0	57.1		2.5		2.7

Intersection Summary	
HCM 2010 Ctrl Delay	19.3
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	265	305	325	115	365	665	265	1010	65	860	1825	295
Number	1	6	16	5	2	12	7	4	14	3	8	18
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	288	332	353	125	397	723	288	1098	71	935	1984	321
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	287	929	416	187	826	369	315	1032	462	889	2028	323
Arrive On Green	0.08	0.26	0.26	0.05	0.23	0.23	0.09	0.29	0.29	0.26	0.46	0.46
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	3539	1583	3442	4425	704
Grp Volume(v), veh/h	288	332	353	125	397	723	288	1098	71	935	1512	793
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1583	1721	1695	1739
Q Serve(g_s), s	10.0	9.2	25.4	4.3	11.6	28.0	10.0	35.0	3.3	31.0	52.3	54.5
Cycle Q Clear(g_c), s	10.0	9.2	25.4	4.3	11.6	28.0	10.0	35.0	3.3	31.0	52.3	54.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.40
Lane Grp Cap(c), veh/h	287	929	416	187	826	369	315	1032	462	889	1554	797
V/C Ratio(X)	1.00	0.36	0.85	0.67	0.48	1.96	0.91	1.06	0.15	1.05	0.97	1.00
Avail Cap(c_a), veh/h	287	929	416	459	826	369	315	1032	462	889	1554	797
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	1.00	1.00	1.00	1.00	1.00	0.25	0.25	0.25
Uniform Delay (d), s/veh	55.0	36.0	42.0	55.7	39.7	46.0	54.0	42.5	21.7	44.5	31.8	32.4
Incr Delay (d2), s/veh	54.2	1.1	19.1	4.1	2.0	440.4	29.5	46.6	0.7	31.1	6.8	15.0
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(95%),veh/ln	12.4	8.1	19.3	3.8	9.9	103.3	10.0	42.7	2.8	33.4	30.0	33.8
LnGrp Delay(d),s/veh	109.2	37.1	61.1	59.8	41.7	486.4	83.5	89.1	22.4	75.6	38.6	47.4
LnGrp LOS	F	D	E	E	D	F	F	F	C	F	D	D
Approach Vol, veh/h		973			1245			1457			3240	
Approach Delay, s/veh		67.1			301.8			84.7			51.4	
Approach LOS		E			F			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	32.0	35.0	39.0	10.5	35.5	15.0	59.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	28.0	31.0	35.0	16.0	22.0	11.0	55.0
Max Q Clear Time (g_c+I1), s	12.0	30.0	33.0	37.0	6.3	27.4	12.0	56.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	105.7
HCM 2010 LOS	F

Intersection	
Int Delay, s/veh	0.7

Movement	SET	SER	NWL	NWT	NEL	NER
Vol, veh/h	850	20	40	885	15	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	924	22	43	962	16	49

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	946	0	1503	473
Stage 1	-	-	-	-	935	-
Stage 2	-	-	-	-	568	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	721	-	112	538
Stage 1	-	-	-	-	342	-
Stage 2	-	-	-	-	530	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	721	-	105	538
Mov Cap-2 Maneuver	-	-	-	-	231	-
Stage 1	-	-	-	-	342	-
Stage 2	-	-	-	-	498	-

Approach	SE	NW	NE
HCM Control Delay, s	0	0.4	15.6
HCM LOS			C

Minor Lane/Major Mvmt	NELn1	NWL	NWT	SET	SER
Capacity (veh/h)	404	721	-	-	-
HCM Lane V/C Ratio	0.161	0.06	-	-	-
HCM Control Delay (s)	15.6	10.3	-	-	-
HCM Lane LOS	C	B	-	-	-
HCM 95th %tile Q(veh)	0.6	0.2	-	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	820	140	295	250	1380	700	215	1910	190
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h				891	152	321	272	1500	761	234	2076	207
Adj No. of Lanes				2	1	1	2	3	1	2	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				1032	542	460	327	2665	830	293	2615	814
Arrive On Green				0.29	0.29	0.29	0.09	0.52	0.52	0.09	0.51	0.51
Sat Flow, veh/h				3548	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h				891	152	321	272	1500	761	234	2076	207
Grp Sat Flow(s),veh/h/ln				1774	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s				28.5	7.6	21.6	9.3	23.9	52.9	8.0	40.2	8.8
Cycle Q Clear(g_c), s				28.5	7.6	21.6	9.3	23.9	52.9	8.0	40.2	8.8
Prop In Lane				1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h				1032	542	460	327	2665	830	293	2615	814
V/C Ratio(X)				0.86	0.28	0.70	0.83	0.56	0.92	0.80	0.79	0.25
Avail Cap(c_a), veh/h				1212	636	541	344	2665	830	373	2615	814
HCM Platoon Ratio				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	0.50	0.50	0.50	1.00	1.00	1.00
Uniform Delay (d), s/veh				40.3	32.9	37.8	53.4	19.3	26.2	53.9	23.9	16.3
Incr Delay (d2), s/veh				5.9	0.3	3.2	8.3	0.4	9.6	9.2	2.6	0.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				21.1	7.1	15.0	7.3	15.1	31.1	7.5	26.5	7.1
LnGrp Delay(d),s/veh				46.2	33.1	41.0	61.7	19.7	35.8	63.0	26.5	17.0
LnGrp LOS				D	C	D	E	B	D	E	C	B
Approach Vol, veh/h					1364			2533			2517	
Approach Delay, s/veh					43.5			29.0			29.1	
Approach LOS					D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2			5	6		8
Phs Duration (G+Y+Rc), s	14.2	66.9			15.4	65.7		38.9
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s	13.0	54.0			12.0	55.0		41.0
Max Q Clear Time (g_c+I1), s	10.0	54.9			11.3	42.2		30.5
Green Ext Time (p_c), s	0.2	0.0			0.1	12.6		4.4

Intersection Summary	
HCM 2010 Ctrl Delay	32.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

APPENDIX E TOTAL TRAFFIC LOS WORKSHEETS – SHORT RANGE

Movement	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR	NEL	NER
Lane Configurations										
Volume (veh/h)	35	524	285	20	280	0	0	85	1399	40
Number	3	18	1	6	16	5	2	12	7	14
Initial Q (Qb), veh	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	0	1863	1900	1863	1900
Adj Flow Rate, veh/h	38	570	326	0	304	0	0	92	1561	0
Adj No. of Lanes	1	3	2	0	1	0	1	0	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	0	2	2	2	0
Cap, veh/h	680	0	1570	0	924	0	0	924	1861	0
Arrive On Green	0.35	0.00	0.58	0.00	0.58	0.00	0.00	0.58	0.35	0.00
Sat Flow, veh/h	1774		2598	0	1583	0	0	1583	5322	
Grp Volume(v), veh/h	38		326	0	304	0	0	92	1561	
Grp Sat Flow(s),veh/h/ln	1774		1299	0	1583	0	0	1583	1774	
Q Serve(g_s), s	1.7		7.6	0.0	11.9	0.0	0.0	3.1	32.4	
Cycle Q Clear(g_c), s	1.7		10.7	0.0	11.9	0.0	0.0	3.1	32.4	
Prop In Lane	1.00		1.00		1.00	0.00		1.00	1.00	
Lane Grp Cap(c), veh/h	680		1570	0	924	0	0	924	1861	
V/C Ratio(X)	0.06		0.21	0.00	0.33	0.00	0.00	0.10	0.84	
Avail Cap(c_a), veh/h	680		1570	0	924	0	0	924	2705	
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.99		1.00	0.00	1.00	0.00	0.00	1.00	1.00	
Uniform Delay (d), s/veh	25.9		13.4	0.0	12.9	0.0	0.0	11.0	35.9	
Incr Delay (d2), s/veh	0.0		0.3	0.0	1.0	0.0	0.0	0.2	1.7	
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	1.5		5.0	0.0	9.2	0.0	0.0	2.5	22.8	
LnGrp Delay(d),s/veh	25.9		13.7	0.0	13.8	0.0	0.0	11.3	37.6	
LnGrp LOS	C		B		B			B	D	
Approach Vol, veh/h	38			630			92		1561	
Approach Delay, s/veh	25.9			13.8			11.3		37.6	
Approach LOS	C			B			B		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3			6	7	
Phs Duration (G+Y+Rc), s		74.0	46.0			74.0	46.0	
Change Period (Y+Rc), s		4.0	4.0			4.0	4.0	
Max Green Setting (Gmax), s		40.0	7.0			40.0	61.0	
Max Q Clear Time (g_c+I1), s		5.1	3.7			13.9	34.4	
Green Ext Time (p_c), s		3.1	0.0			3.1	7.6	

Intersection Summary	
HCM 2010 Ctrl Delay	29.9
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	154	189	123	40	156	390	174	895	55	288	397	77
Number	1	6	16	5	2	12	7	4	14	3	8	18
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	167	205	134	43	170	424	189	973	60	313	432	84
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	284	1325	593	115	1150	515	247	1239	554	375	1664	315
Arrive On Green	0.08	0.37	0.37	0.03	0.32	0.32	0.07	0.35	0.35	0.11	0.39	0.39
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	3539	1583	3442	4295	814
Grp Volume(v), veh/h	167	205	134	43	170	424	189	973	60	313	339	177
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1583	1721	1695	1719
Q Serve(g_s), s	5.6	4.6	6.9	1.5	4.1	29.6	6.5	29.6	2.6	10.7	8.2	8.5
Cycle Q Clear(g_c), s	5.6	4.6	6.9	1.5	4.1	29.6	6.5	29.6	2.6	10.7	8.2	8.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.47
Lane Grp Cap(c), veh/h	284	1325	593	115	1150	515	247	1239	554	375	1313	666
V/C Ratio(X)	0.59	0.15	0.23	0.37	0.15	0.82	0.77	0.79	0.11	0.83	0.26	0.27
Avail Cap(c_a), veh/h	284	1325	593	459	1150	515	315	1239	554	430	1313	666
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)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.1	24.9	25.7	56.8	28.7	37.3	54.7	35.0	18.9	52.4	25.0	25.1
Incr Delay (d2), s/veh	3.0	0.2	0.8	2.0	0.3	13.9	8.3	5.1	0.4	11.9	0.5	1.0
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(95%),veh/ln	5.0	4.1	5.7	1.3	3.7	21.3	6.0	21.8	2.1	9.6	7.0	7.5
LnGrp Delay(d),s/veh	56.1	25.2	26.5	58.8	29.0	51.3	63.0	40.0	19.3	64.3	25.5	26.1
LnGrp LOS	E	C	C	E	C	D	E	D	B	E	C	C
Approach Vol, veh/h		506			637			1222			829	
Approach Delay, s/veh		35.7			45.8			42.5			40.3	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	43.0	17.1	46.0	8.0	48.9	12.6	50.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	8.0	39.0	15.0	42.0	16.0	31.0	11.0	46.0
Max Q Clear Time (g_c+I1), s	7.6	31.6	12.7	31.6	3.5	8.9	8.5	10.5
Green Ext Time (p_c), s	0.0	1.7	0.4	4.9	0.1	2.2	0.1	4.8

Intersection Summary	
HCM 2010 Ctrl Delay	41.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	150	30	30	275	909	585	15	409	40
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h				163	33	33	299	988	636	16	445	43
Adj No. of Lanes				2	1	1	2	3	1	2	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				238	125	106	373	4165	1297	47	3684	1147
Arrive On Green				0.07	0.07	0.07	0.11	0.82	0.82	0.01	0.72	0.72
Sat Flow, veh/h				3548	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h				163	33	33	299	988	636	16	445	43
Grp Sat Flow(s),veh/h/ln				1774	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s				5.4	2.0	2.4	10.2	5.2	14.6	0.6	3.2	0.9
Cycle Q Clear(g_c), s				5.4	2.0	2.4	10.2	5.2	14.6	0.6	3.2	0.9
Prop In Lane				1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h				238	125	106	373	4165	1297	47	3684	1147
V/C Ratio(X)				0.68	0.26	0.31	0.80	0.24	0.49	0.34	0.12	0.04
Avail Cap(c_a), veh/h				650	342	290	688	4165	1297	172	3684	1147
HCM Platoon Ratio				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	0.60	0.60	0.60	1.00	1.00	1.00
Uniform Delay (d), s/veh				54.7	53.1	53.3	52.3	2.4	3.3	58.6	5.0	4.7
Incr Delay (d2), s/veh				3.4	1.1	1.6	2.5	0.1	0.8	4.1	0.1	0.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				5.0	2.0	2.0	7.8	4.3	9.7	0.5	2.7	0.7
LnGrp Delay(d),s/veh				58.2	54.3	55.0	54.7	2.5	4.1	62.7	5.1	4.7
LnGrp LOS				E	D	D	D	A	A	E	A	A
Approach Vol, veh/h					229			1923			504	
Approach Delay, s/veh					57.1			11.2			6.9	
Approach LOS					E			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2			5	6		8
Phs Duration (G+Y+Rc), s	5.7	102.3			17.0	90.9		12.1
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s	5.0	80.0			24.0	62.0		22.0
Max Q Clear Time (g_c+I1), s	2.6	16.6			12.2	5.2		7.4
Green Ext Time (p_c), s	0.0	22.6			0.8	21.9		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	14.3
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.3

Movement	SEL	SER	NEL	NET	SWT	SWR
Vol, veh/h	0	50	0	1439	712	91
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	-	-	-	100
Veh in Median Storage, #	1	-	-	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	54	0	1564	774	99

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1400	387	774	0	-	0
Stage 1	774	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Critical Hdwy	5.74	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	194	522	502	-	-	-
Stage 1	331	-	-	-	-	-
Stage 2	451	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	194	522	502	-	-	-
Mov Cap-2 Maneuver	259	-	-	-	-	-
Stage 1	331	-	-	-	-	-
Stage 2	451	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	12.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	502	-	522	-	-
HCM Lane V/C Ratio	-	-	0.104	-	-
HCM Control Delay (s)	0	-	12.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	166	36	225	172	48	290
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	180	39	245	187	52	315
Adj No. of Lanes	1	1	2	1	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	215	192	2874	1286	820	2874
Arrive On Green	0.12	0.12	0.81	0.81	0.81	0.81
Sat Flow, veh/h	1774	1583	3632	1583	952	3632
Grp Volume(v), veh/h	180	39	245	187	52	315
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1583	952	1770
Q Serve(g_s), s	11.9	2.7	1.7	3.0	1.4	2.2
Cycle Q Clear(g_c), s	11.9	2.7	1.7	3.0	3.1	2.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	215	192	2874	1286	820	2874
V/C Ratio(X)	0.84	0.20	0.09	0.15	0.06	0.11
Avail Cap(c_a), veh/h	813	726	2874	1286	820	2874
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.92	0.92	1.00	1.00
Uniform Delay (d), s/veh	51.6	47.5	2.3	2.4	2.6	2.3
Incr Delay (d2), s/veh	8.3	0.5	0.1	0.2	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.5	2.2	1.5	2.5	0.7	1.9
LnGrp Delay(d),s/veh	59.9	48.0	2.3	2.6	2.7	2.4
LnGrp LOS	E	D	A	A	A	A
Approach Vol, veh/h	219		432			367
Approach Delay, s/veh	57.7		2.5			2.5
Approach LOS	E		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		101.4				101.4		18.6
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		57.0				57.0		55.0
Max Q Clear Time (g_c+I1), s		5.0				5.1		13.9
Green Ext Time (p_c), s		5.2				5.2		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	14.3
HCM 2010 LOS	B

Movement	SBL	SBR	SEL	SET	SER	NWL	NWT	NWR	NEL	NER
Lane Configurations										
Volume (veh/h)	80	2273	275	15	317	0	0	75	1601	30
Number	3	18	1	6	16	5	2	12	7	14
Initial Q (Qb), veh	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	0	1863	1900	1863	1900
Adj Flow Rate, veh/h	87	2471	310	0	345	0	0	0	1771	0
Adj No. of Lanes	1	3	2	0	1	0	1	0	3	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	0	2	2	2	0
Cap, veh/h	755	0	2042	0	858	0	1009	0	2084	0
Arrive On Green	0.39	0.00	0.54	0.00	0.54	0.00	0.00	0.00	0.39	0.00
Sat Flow, veh/h	1774		3548	0	1583	0	1863	0	5322	
Grp Volume(v), veh/h	87		310	0	345	0	0	0	1771	
Grp Sat Flow(s),veh/h/ln	1774		1774	0	1583	0	1863	0	1774	
Q Serve(g_s), s	3.8		5.3	0.0	15.3	0.0	0.0	0.0	36.4	
Cycle Q Clear(g_c), s	3.8		5.3	0.0	15.3	0.0	0.0	0.0	36.4	
Prop In Lane	1.00		1.00		1.00	0.00		0.00	1.00	
Lane Grp Cap(c), veh/h	755		2042	0	858	0	1009	0	2084	
V/C Ratio(X)	0.12		0.15	0.00	0.40	0.00	0.00	0.00	0.85	
Avail Cap(c_a), veh/h	755		2042	0	858	0	1009	0	2705	
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	0.62		1.00	0.00	1.00	0.00	0.00	0.00	1.00	
Uniform Delay (d), s/veh	23.3		13.8	0.0	16.1	0.0	0.0	0.0	33.3	
Incr Delay (d2), s/veh	0.0		0.2	0.0	1.4	0.0	0.0	0.0	2.2	
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
%ile BackOfQ(95%),veh/ln	3.3		4.7	0.0	11.4	0.0	0.0	0.0	25.3	
LnGrp Delay(d),s/veh	23.3		14.0	0.0	17.5	0.0	0.0	0.0	35.4	
LnGrp LOS	C		B		B				D	
Approach Vol, veh/h	87			655			0		1771	
Approach Delay, s/veh	23.3			15.8			0.0		35.4	
Approach LOS	C			B					D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2	3			6	7	
Phs Duration (G+Y+Rc), s		69.0	51.0			69.0	51.0	
Change Period (Y+Rc), s		4.0	4.0			4.0	4.0	
Max Green Setting (Gmax), s		40.0	7.0			40.0	61.0	
Max Q Clear Time (g_c+I1), s		0.0	5.8			17.3	38.4	
Green Ext Time (p_c), s		0.0	0.0			2.3	8.6	

Intersection Summary	
HCM 2010 Ctrl Delay	29.9
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	226	241	241	100	354	560	278	845	55	737	1563	241
Number	1	6	16	5	2	12	7	4	14	3	8	18
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	246	262	262	109	385	609	302	918	60	801	1699	262
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	287	985	441	170	865	387	364	1003	449	880	1928	296
Arrive On Green	0.08	0.28	0.28	0.05	0.24	0.24	0.11	0.28	0.28	0.26	0.43	0.43
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	3539	1583	3442	4450	682
Grp Volume(v), veh/h	246	262	262	109	385	609	302	918	60	801	1292	669
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1583	1721	1695	1742
Q Serve(g_s), s	8.5	6.9	13.1	3.7	11.1	16.8	10.3	30.1	2.8	27.1	41.9	42.4
Cycle Q Clear(g_c), s	8.5	6.9	13.1	3.7	11.1	16.8	10.3	30.1	2.8	27.1	41.9	42.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	287	985	441	170	865	387	364	1003	449	880	1469	755
V/C Ratio(X)	0.86	0.27	0.59	0.64	0.45	1.57	0.83	0.92	0.13	0.91	0.88	0.89
Avail Cap(c_a), veh/h	287	985	441	459	865	387	373	1003	449	889	1469	755
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)	0.96	0.96	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.3	33.8	21.7	56.0	38.4	14.9	52.6	41.6	22.5	43.3	31.1	31.3
Incr Delay (d2), s/veh	21.2	0.6	5.6	4.0	1.7	270.6	14.3	14.2	0.6	13.2	7.8	14.5
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(95%),veh/ln	8.4	6.2	10.4	3.4	9.5	65.5	9.5	23.3	2.4	20.8	28.7	31.2
LnGrp Delay(d),s/veh	75.5	34.4	27.3	60.0	40.1	285.5	66.9	55.8	23.1	56.5	38.9	45.7
LnGrp LOS	E	C	C	E	D	F	E	E	C	E	D	D
Approach Vol, veh/h		770			1103			1280			2762	
Approach Delay, s/veh		45.1			177.6			56.9			45.7	
Approach LOS		D			F			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	33.3	34.7	38.0	9.9	37.4	16.7	56.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	10.0	29.0	31.0	34.0	16.0	23.0	13.0	52.0
Max Q Clear Time (g_c+I1), s	10.5	18.8	29.1	32.1	5.7	15.1	12.3	44.4
Green Ext Time (p_c), s	0.0	5.4	0.9	1.1	0.2	4.6	0.4	6.3

Intersection Summary	
HCM 2010 Ctrl Delay	72.6
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	675	115	235	224	1142	585	170	1678	150
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h				734	125	255	243	1241	636	185	1824	163
Adj No. of Lanes				2	1	1	2	3	1	2	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				877	460	391	304	2962	922	243	2872	894
Arrive On Green				0.25	0.25	0.25	0.09	0.58	0.58	0.07	0.56	0.56
Sat Flow, veh/h				3548	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h				734	125	255	243	1241	636	185	1824	163
Grp Sat Flow(s),veh/h/ln				1774	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s				23.6	6.5	17.3	8.3	16.2	33.6	6.3	29.2	6.0
Cycle Q Clear(g_c), s				23.6	6.5	17.3	8.3	16.2	33.6	6.3	29.2	6.0
Prop In Lane				1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h				877	460	391	304	2962	922	243	2872	894
V/C Ratio(X)				0.84	0.27	0.65	0.80	0.42	0.69	0.76	0.64	0.18
Avail Cap(c_a), veh/h				1183	621	528	402	2962	922	315	2872	894
HCM Platoon Ratio				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	0.69	0.69	0.69	1.00	1.00	1.00
Uniform Delay (d), s/veh				42.9	36.5	40.5	53.7	13.8	17.5	54.8	17.7	12.7
Incr Delay (d2), s/veh				4.1	0.3	1.8	5.9	0.3	2.9	7.8	1.1	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
%ile BackOfQ(95%),veh/ln				17.7	6.1	12.4	7.0	11.5	20.8	5.9	19.9	4.9
LnGrp Delay(d),s/veh				46.9	36.8	42.4	59.6	14.1	20.4	62.6	18.8	13.1
LnGrp LOS				D	D	D	E	B	C	E	B	B
Approach Vol, veh/h					1114			2120			2172	
Approach Delay, s/veh					44.8			21.2			22.1	
Approach LOS					D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2			5	6		8
Phs Duration (G+Y+Rc), s	12.5	73.9			14.6	71.8		33.6
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s	11.0	57.0			14.0	54.0		40.0
Max Q Clear Time (g_c+I1), s	8.3	35.6			10.3	31.2		25.6
Green Ext Time (p_c), s	0.1	20.2			0.3	21.5		4.1

Intersection Summary	
HCM 2010 Ctrl Delay	26.4
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.7

Movement	SEL	SER	NEL	NET	SWT	SWR
Vol, veh/h	0	51	0	1631	2491	99
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	-	-	-	100
Veh in Median Storage, #	1	-	-	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	55	0	1773	2708	108

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	3417	1354	2708	0	-	0
Stage 1	2708	-	-	-	-	-
Stage 2	709	-	-	-	-	-
Critical Hdwy	5.74	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	15	120	54	-	-	-
Stage 1	19	-	-	-	-	-
Stage 2	408	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	15	120	54	-	-	-
Mov Cap-2 Maneuver	17	-	-	-	-	-
Stage 1	19	-	-	-	-	-
Stage 2	408	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	58.5	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	54	-	120	-	-
HCM Lane V/C Ratio	-	-	0.462	-	-
HCM Control Delay (s)	0	-	58.5	-	-
HCM Lane LOS	A	-	F	-	-
HCM 95th %tile Q(veh)	0	-	2.1	-	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	153	34	665	182	50	535
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	166	37	723	198	54	582
Adj No. of Lanes	1	1	2	1	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	200	179	2903	1299	528	2903
Arrive On Green	0.11	0.11	0.82	0.82	0.82	0.82
Sat Flow, veh/h	1774	1583	3632	1583	604	3632
Grp Volume(v), veh/h	166	37	723	198	54	582
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1583	604	1770
Q Serve(g_s), s	11.0	2.5	5.5	3.1	2.7	4.2
Cycle Q Clear(g_c), s	11.0	2.5	5.5	3.1	8.2	4.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	200	179	2903	1299	528	2903
V/C Ratio(X)	0.83	0.21	0.25	0.15	0.10	0.20
Avail Cap(c_a), veh/h	606	541	2903	1299	528	2903
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.75	0.75	1.00	1.00
Uniform Delay (d), s/veh	52.1	48.3	2.4	2.2	3.4	2.3
Incr Delay (d2), s/veh	8.4	0.6	0.2	0.2	0.4	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.8	2.1	4.8	2.5	0.9	3.8
LnGrp Delay(d),s/veh	60.5	48.9	2.6	2.4	3.7	2.5
LnGrp LOS	E	D	A	A	A	A
Approach Vol, veh/h	203		921			636
Approach Delay, s/veh	58.4		2.5			2.6
Approach LOS	E		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		102.4				102.4		17.6
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		71.0				71.0		41.0
Max Q Clear Time (g_c+I1), s		7.5				10.2		13.0
Green Ext Time (p_c), s		15.3				15.2		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	9.0
HCM 2010 LOS	A

APPENDIX F TOTAL TRAFFIC LOS WORKSHEETS – LONG RANGE

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	340	20	355	0	0	100	0	1669	45	40	664	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	0	1863	1900	0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	386	0	386	0	0	0	0	1814	49	43	722	0
Adj No. of Lanes	2	0	1	0	1	0	0	3	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	0	2	2	2	2	0
Cap, veh/h	1214	0	488	0	574	0	0	2671	72	169	3009	0
Arrive On Green	0.31	0.00	0.31	0.00	0.00	0.00	0.00	0.52	0.52	0.03	0.79	0.00
Sat Flow, veh/h	3548	0	1583	0	1863	0	0	5259	137	1774	5253	0
Grp Volume(v), veh/h	386	0	386	0	0	0	0	1208	655	43	722	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583	0	1863	0	0	1695	1838	1774	1695	0
Q Serve(g_s), s	10.1	0.0	26.8	0.0	0.0	0.0	0.0	31.6	31.6	1.3	4.5	0.0
Cycle Q Clear(g_c), s	10.1	0.0	26.8	0.0	0.0	0.0	0.0	31.6	31.6	1.3	4.5	0.0
Prop In Lane	1.00		1.00	0.00		0.00	0.00		0.07	1.00		0.00
Lane Grp Cap(c), veh/h	1214	0	488	0	574	0	0	1779	965	169	3009	0
V/C Ratio(X)	0.32	0.00	0.79	0.00	0.00	0.00	0.00	0.68	0.68	0.25	0.24	0.00
Avail Cap(c_a), veh/h	1214	0	488	0	574	0	0	1779	965	213	3009	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.98	0.98	0.00
Uniform Delay (d), s/veh	32.2	0.0	38.0	0.0	0.0	0.0	0.0	21.1	21.1	17.1	5.7	0.0
Incr Delay (d2), s/veh	0.7	0.0	12.3	0.0	0.0	0.0	0.0	2.1	3.9	0.8	0.2	0.0
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(95%),veh/ln	8.8	0.0	19.4	0.0	0.0	0.0	0.0	21.7	23.8	1.2	3.8	0.0
LnGrp Delay(d),s/veh	32.9	0.0	50.3	0.0	0.0	0.0	0.0	23.2	24.9	17.9	5.9	0.0
LnGrp LOS	C		D					C	C	B	A	
Approach Vol, veh/h		772			0			1863			765	
Approach Delay, s/veh		41.6			0.0			23.8			6.6	
Approach LOS		D						C			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	8.0	69.0		43.0		77.0		43.0
Change Period (Y+Rc), s	5.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	60.0		37.0		71.0		37.0
Max Q Clear Time (g_c+I1), s	3.3	33.6		28.8		6.5		0.0
Green Ext Time (p_c), s	0.0	20.6		1.9		37.9		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	24.0
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	184	229	153	45	216	465	244	1065	65	338	467	172
Number	1	6	16	5	2	12	7	4	14	3	8	18
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	200	249	166	49	235	505	265	1158	71	367	508	187
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	288	767	343	489	973	435	400	1357	607	429	1449	517
Arrive On Green	0.08	0.22	0.22	0.14	0.28	0.28	0.12	0.38	0.38	0.12	0.39	0.39
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	3539	1583	3442	3701	1319
Grp Volume(v), veh/h	200	249	166	49	235	505	265	1158	71	367	464	231
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1583	1721	1695	1630
Q Serve(g_s), s	6.8	7.1	11.0	1.5	6.2	33.0	8.8	36.0	3.5	12.5	11.6	12.1
Cycle Q Clear(g_c), s	6.8	7.1	11.0	1.5	6.2	33.0	8.8	36.0	3.5	12.5	11.6	12.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.81
Lane Grp Cap(c), veh/h	288	767	343	489	973	435	400	1357	607	429	1328	638
V/C Ratio(X)	0.69	0.32	0.48	0.10	0.24	1.16	0.66	0.85	0.12	0.86	0.35	0.36
Avail Cap(c_a), veh/h	288	767	343	489	973	435	430	1357	607	459	1328	638
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)	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.5	39.6	41.1	44.8	33.8	43.5	50.8	33.9	23.9	51.5	25.7	25.9
Incr Delay (d2), s/veh	6.7	1.1	4.6	0.1	0.6	94.7	3.4	7.0	0.4	14.0	0.7	1.6
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(95%),veh/ln	6.3	6.5	8.9	1.3	5.6	46.5	7.8	26.0	2.9	11.1	9.4	9.6
LnGrp Delay(d),s/veh	60.2	40.7	45.7	44.9	34.4	138.2	54.2	40.9	24.3	65.5	26.5	27.5
LnGrp LOS	E	D	D	D	C	F	D	D	C	E	C	C
Approach Vol, veh/h		615			789			1494			1062	
Approach Delay, s/veh		48.4			101.5			42.5			40.2	
Approach LOS		D			F			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	37.0	19.0	50.0	21.0	30.0	18.0	51.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	9.0	33.0	16.0	46.0	16.0	26.0	15.0	47.0
Max Q Clear Time (g_c+I1), s	8.8	35.0	14.5	38.0	3.5	13.0	10.8	14.1
Green Ext Time (p_c), s	0.0	0.0	0.4	4.8	0.6	1.7	1.0	5.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.5
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	195	35	35	330	1074	705	25	509	45
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h				212	38	38	359	1167	766	27	553	49
Adj No. of Lanes				2	1	1	2	3	1	2	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				289	152	129	434	4062	1265	68	3521	1096
Arrive On Green				0.08	0.08	0.08	0.13	0.80	0.80	0.02	0.69	0.69
Sat Flow, veh/h				3548	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h				212	38	38	359	1167	766	27	553	49
Grp Sat Flow(s),veh/h/ln				1774	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s				7.0	2.3	2.7	12.2	7.2	22.6	0.9	4.5	1.2
Cycle Q Clear(g_c), s				7.0	2.3	2.7	12.2	7.2	22.6	0.9	4.5	1.2
Prop In Lane				1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h				289	152	129	434	4062	1265	68	3521	1096
V/C Ratio(X)				0.73	0.25	0.29	0.83	0.29	0.61	0.40	0.16	0.04
Avail Cap(c_a), veh/h				591	310	264	688	4062	1265	115	3521	1096
HCM Platoon Ratio				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	0.66	0.66	0.66	1.00	1.00	1.00
Uniform Delay (d), s/veh				53.8	51.7	51.9	51.2	3.2	4.7	58.1	6.4	5.9
Incr Delay (d2), s/veh				3.6	0.9	1.3	3.2	0.1	1.4	3.7	0.1	0.1
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				6.5	2.2	2.2	9.3	5.9	14.3	0.9	3.8	1.0
LnGrp Delay(d),s/veh				57.4	52.5	53.1	54.3	3.3	6.1	61.8	6.5	5.9
LnGrp LOS				E	D	D	D	A	A	E	A	A
Approach Vol, veh/h					288			2292			629	
Approach Delay, s/veh					56.2			12.2			8.8	
Approach LOS					E			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2			5	6		8
Phs Duration (G+Y+Rc), s	6.4	99.8			19.1	87.1		13.8
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s	4.0	84.0			24.0	64.0		20.0
Max Q Clear Time (g_c+I1), s	2.9	24.6			14.2	6.5		9.0
Green Ext Time (p_c), s	0.0	30.5			0.9	30.0		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	15.5
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	0.3

Movement	SEL	SER	NEL	NET	SWT	SWR
Vol, veh/h	0	50	0	1714	927	91
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	-	-	-	100
Veh in Median Storage, #	1	-	-	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	54	0	1863	1008	99

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1753	504	1008	0	-	0
Stage 1	1008	-	-	-	-	-
Stage 2	745	-	-	-	-	-
Critical Hdwy	5.74	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	127	439	388	-	-	-
Stage 1	239	-	-	-	-	-
Stage 2	391	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	127	439	388	-	-	-
Mov Cap-2 Maneuver	188	-	-	-	-	-
Stage 1	239	-	-	-	-	-
Stage 2	391	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	14.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	388	-	439	-	-
HCM Lane V/C Ratio	-	-	0.124	-	-
HCM Control Delay (s)	0	-	14.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	181	41	385	237	58	370
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	197	45	418	258	63	402
Adj No. of Lanes	1	1	2	1	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	233	208	2839	1270	649	2839
Arrive On Green	0.13	0.13	0.80	0.80	0.80	0.80
Sat Flow, veh/h	1774	1583	3632	1583	760	3632
Grp Volume(v), veh/h	197	45	418	258	63	402
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1583	760	1770
Q Serve(g_s), s	13.0	3.0	3.2	4.6	2.4	3.0
Cycle Q Clear(g_c), s	13.0	3.0	3.2	4.6	5.6	3.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	233	208	2839	1270	649	2839
V/C Ratio(X)	0.85	0.22	0.15	0.20	0.10	0.14
Avail Cap(c_a), veh/h	739	660	2839	1270	649	2839
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.89	0.89	1.00	1.00
Uniform Delay (d), s/veh	50.9	46.6	2.7	2.8	3.3	2.7
Incr Delay (d2), s/veh	8.2	0.5	0.1	0.3	0.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.3	2.5	2.8	3.8	1.0	2.7
LnGrp Delay(d),s/veh	59.2	47.1	2.8	3.1	3.6	2.8
LnGrp LOS	E	D	A	A	A	A
Approach Vol, veh/h	242		676			465
Approach Delay, s/veh	56.9		2.9			2.9
Approach LOS	E		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		100.3				100.3		19.7
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		62.0				62.0		50.0
Max Q Clear Time (g_c+I1), s		6.6				7.6		15.0
Green Ext Time (p_c), s		8.5				8.5		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	12.3
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	330	20	382	0	0	90	0	2006	30	95	2733	0
Number	7	4	14	3	8	18	5	2	12	1	6	16
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	0	1863	1900	0	1863	1900	1863	1863	0
Adj Flow Rate, veh/h	375	0	415	0	0	0	0	2180	33	103	2971	0
Adj No. of Lanes	2	0	1	0	1	0	0	3	0	1	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	0	2	2	0	2	2	2	2	0
Cap, veh/h	1184	0	475	0	559	0	0	2666	40	162	3051	0
Arrive On Green	0.30	0.00	0.30	0.00	0.00	0.00	0.00	0.52	0.52	0.06	0.80	0.00
Sat Flow, veh/h	3548	0	1583	0	1863	0	0	5329	78	1774	5253	0
Grp Volume(v), veh/h	375	0	415	0	0	0	0	1431	782	103	2971	0
Grp Sat Flow(s),veh/h/ln	1774	0	1583	0	1863	0	0	1695	1849	1774	1695	0
Q Serve(g_s), s	9.9	0.0	29.8	0.0	0.0	0.0	0.0	42.4	42.5	3.2	63.5	0.0
Cycle Q Clear(g_c), s	9.9	0.0	29.8	0.0	0.0	0.0	0.0	42.4	42.5	3.2	63.5	0.0
Prop In Lane	1.00		1.00	0.00		0.00	0.00		0.04	1.00		0.00
Lane Grp Cap(c), veh/h	1184	0	475	0	559	0	0	1751	955	162	3051	0
V/C Ratio(X)	0.32	0.00	0.87	0.00	0.00	0.00	0.00	0.82	0.82	0.63	0.97	0.00
Avail Cap(c_a), veh/h	1184	0	475	0	559	0	0	1751	955	177	3051	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.33	0.33	0.00
Uniform Delay (d), s/veh	32.9	0.0	39.8	0.0	0.0	0.0	0.0	24.3	24.3	25.5	11.3	0.0
Incr Delay (d2), s/veh	0.7	0.0	19.5	0.0	0.0	0.0	0.0	4.4	7.8	2.2	5.1	0.0
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(95%),veh/ln	8.6	0.0	22.1	0.0	0.0	0.0	0.0	28.2	31.5	3.2	35.2	0.0
LnGrp Delay(d),s/veh	33.6	0.0	59.4	0.0	0.0	0.0	0.0	28.6	32.1	27.7	16.3	0.0
LnGrp LOS	C		E					C	C	C	B	
Approach Vol, veh/h		790			0			2213			3074	
Approach Delay, s/veh		47.1			0.0			29.8			16.7	
Approach LOS		D						C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	10.0	68.0		42.0		78.0		42.0
Change Period (Y+Rc), s	5.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	6.0	61.0		36.0		72.0		36.0
Max Q Clear Time (g_c+I1), s	5.2	44.5		31.8		65.5		0.0
Green Ext Time (p_c), s	0.0	16.4		1.3		6.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.4
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	361	336	351	115	429	665	348	1010	65	877	1858	331
Number	1	6	16	5	2	12	7	4	14	3	8	18
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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	392	365	382	125	466	723	378	1098	71	953	2020	360
Adj No. of Lanes	2	2	1	2	2	1	2	2	1	2	3	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	373	678	303	459	767	343	373	1003	449	889	1889	329
Arrive On Green	0.11	0.19	0.19	0.13	0.22	0.22	0.11	0.28	0.28	0.26	0.43	0.43
Sat Flow, veh/h	3442	3539	1583	3442	3539	1583	3442	3539	1583	3442	4359	760
Grp Volume(v), veh/h	392	365	382	125	466	723	378	1098	71	953	1561	819
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1721	1770	1583	1721	1770	1583	1721	1695	1729
Q Serve(g_s), s	13.0	11.2	18.0	3.9	14.3	26.0	13.0	34.0	4.0	31.0	52.0	52.0
Cycle Q Clear(g_c), s	13.0	11.2	18.0	3.9	14.3	26.0	13.0	34.0	4.0	31.0	52.0	52.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	373	678	303	459	767	343	373	1003	449	889	1469	749
V/C Ratio(X)	1.05	0.54	1.26	0.27	0.61	2.11	1.01	1.09	0.16	1.07	1.06	1.09
Avail Cap(c_a), veh/h	373	678	303	459	767	343	373	1003	449	889	1469	749
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)	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.5	43.7	29.8	46.8	42.4	47.0	53.5	43.0	32.3	44.5	34.0	34.0
Incr Delay (d2), s/veh	58.5	2.8	138.5	0.3	3.6	508.2	50.1	58.0	0.8	51.4	42.0	61.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	16.5	9.5	35.1	3.4	11.8	107.6	15.8	44.4	3.3	37.9	59.1	67.6
LnGrp Delay(d),s/veh	112.0	46.5	168.2	47.1	46.0	555.2	103.7	101.0	33.0	95.9	76.0	95.4
LnGrp LOS	F	D	F	D	D	F	F	F	C	F	F	F
Approach Vol, veh/h		1139			1314			1547			3333	
Approach Delay, s/veh		109.9			326.3			98.5			86.5	
Approach LOS		F			F			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	30.0	35.0	38.0	20.0	27.0	17.0	56.0
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	13.0	26.0	31.0	34.0	16.0	23.0	13.0	52.0
Max Q Clear Time (g_c+I1), s	15.0	28.0	33.0	36.0	5.9	20.0	15.0	54.0
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	1.4	1.1	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	135.6
HCM 2010 LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	820	150	295	274	1452	700	215	2008	190
Number				3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh				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
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1863	1863	1863	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h				891	163	321	298	1578	761	234	2183	207
Adj No. of Lanes				2	1	1	2	3	1	2	3	1
Peak Hour Factor				0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %				2	2	2	2	2	2	2	2	2
Cap, veh/h				1020	536	455	353	2681	835	293	2593	807
Arrive On Green				0.29	0.29	0.29	0.10	0.53	0.53	0.09	0.51	0.51
Sat Flow, veh/h				3548	1863	1583	3442	5085	1583	3442	5085	1583
Grp Volume(v), veh/h				891	163	321	298	1578	761	234	2183	207
Grp Sat Flow(s),veh/h/ln				1774	1863	1583	1721	1695	1583	1721	1695	1583
Q Serve(g_s), s				28.7	8.2	21.7	10.2	25.5	52.5	8.0	44.2	8.8
Cycle Q Clear(g_c), s				28.7	8.2	21.7	10.2	25.5	52.5	8.0	44.2	8.8
Prop In Lane				1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h				1020	536	455	353	2681	835	293	2593	807
V/C Ratio(X)				0.87	0.30	0.71	0.84	0.59	0.91	0.80	0.84	0.26
Avail Cap(c_a), veh/h				1153	605	515	373	2681	835	373	2593	807
HCM Platoon Ratio				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	0.45	0.45	0.45	1.00	1.00	1.00
Uniform Delay (d), s/veh				40.7	33.4	38.2	52.9	19.4	25.8	53.9	25.2	16.6
Incr Delay (d2), s/veh				7.0	0.3	3.8	7.7	0.4	8.2	9.2	3.5	0.8
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				21.3	7.6	15.2	7.7	15.7	30.2	7.5	29.1	7.2
LnGrp Delay(d),s/veh				47.6	33.7	42.0	60.6	19.9	34.1	63.0	28.8	17.3
LnGrp LOS				D	C	D	E	B	C	E	C	B
Approach Vol, veh/h					1375			2637			2624	
Approach Delay, s/veh					44.7			28.6			30.9	
Approach LOS					D			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2			5	6		8
Phs Duration (G+Y+Rc), s	14.2	67.3			16.3	65.2		38.5
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0		4.0
Max Green Setting (Gmax), s	13.0	56.0			13.0	56.0		39.0
Max Q Clear Time (g_c+I1), s	10.0	54.5			12.2	46.2		30.7
Green Ext Time (p_c), s	0.2	1.5			0.1	9.7		3.8

Intersection Summary	
HCM 2010 Ctrl Delay	32.8
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	1.3

Movement	SEL	SER	NEL	NET	SWT	SWR
Vol, veh/h	0	51	0	2036	3016	99
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	-	-	-	100
Veh in Median Storage, #	1	-	-	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	55	0	2213	3278	108

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	4163	1639	3278	0	-	0
Stage 1	3278	-	-	-	-	-
Stage 2	885	-	-	-	-	-
Critical Hdwy	5.74	7.14	5.34	-	-	-
Critical Hdwy Stg 1	6.64	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.82	3.92	3.12	-	-	-
Pot Cap-1 Maneuver	6	76	27	-	-	-
Stage 1	8	-	-	-	-	-
Stage 2	329	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	6	76	27	-	-	-
Mov Cap-2 Maneuver	7	-	-	-	-	-
Stage 1	8	-	-	-	-	-
Stage 2	329	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	130.2	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NEL	NET	SELn1	SWT	SWR
Capacity (veh/h)	27	-	76	-	-
HCM Lane V/C Ratio	-	-	0.729	-	-
HCM Control Delay (s)	0	-	130.2	-	-
HCM Lane LOS	A	-	F	-	-
HCM 95th %tile Q(veh)	0	-	3.5	-	-

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	238	49	860	242	60	785
Number	3	18	2	12	1	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863
Adj Flow Rate, veh/h	259	53	935	263	65	853
Adj No. of Lanes	1	1	2	1	1	2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	296	264	2713	1214	378	2713
Arrive On Green	0.17	0.17	0.77	0.77	0.77	0.77
Sat Flow, veh/h	1774	1583	3632	1583	465	3632
Grp Volume(v), veh/h	259	53	935	263	65	853
Grp Sat Flow(s),veh/h/ln	1774	1583	1770	1583	465	1770
Q Serve(g_s), s	17.1	3.5	10.1	5.6	6.2	8.9
Cycle Q Clear(g_c), s	17.1	3.5	10.1	5.6	16.2	8.9
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	296	264	2713	1214	378	2713
V/C Ratio(X)	0.87	0.20	0.34	0.22	0.17	0.31
Avail Cap(c_a), veh/h	665	594	2713	1214	378	2713
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.51	0.51	1.00	1.00
Uniform Delay (d), s/veh	48.8	43.1	4.4	3.9	7.0	4.3
Incr Delay (d2), s/veh	8.0	0.4	0.2	0.2	1.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	13.9	2.8	7.5	4.3	1.6	7.8
LnGrp Delay(d),s/veh	56.8	43.5	4.6	4.1	8.0	4.6
LnGrp LOS	E	D	A	A	A	A
Approach Vol, veh/h	312		1198			918
Approach Delay, s/veh	54.5		4.5			4.9
Approach LOS	D		A			A

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2				6		8
Phs Duration (G+Y+Rc), s		96.0				96.0		24.0
Change Period (Y+Rc), s		4.0				4.0		4.0
Max Green Setting (Gmax), s		67.0				67.0		45.0
Max Q Clear Time (g_c+I1), s		12.1				18.2		19.1
Green Ext Time (p_c), s		25.5				24.2		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	11.1
HCM 2010 LOS	B

FEHR PEERS

MEMORANDUM

Date: July 6, 2016

To: Bryan McFarland, Principal, Alberta Development Partners

From: Ann Bowers, P.E., PTOE, Principal, Fehr & Peers
Allison Crump, AICP, Transportation Planner, Fehr & Peers

Subject: ***The Yard - Shared Parking Analysis***

DN16-0533

INTRODUCTION

This memo documents the shared parking analysis associated with the development of The Yard project site located in Lone Tree, Colorado on the northwest corner of Yosemite Street and Park Meadows Drive. The estimations presented in this memorandum are based upon the Urban Land Institute's (ULI) Shared Parking Model.

ASSUMPTIONS

As noted in **Appendix A**, the Gross Leasable Area (GLA) of retail uses on site will be 26,933 square feet (sf), the GLA of restaurants on site will be 51,530 sf, and the outdoor dining on site will be 14,695 sf. To determine a combined parking demand for the whole development, the following assumptions were made regarding ability to share spaces among multiple uses:

- Initial retail assumptions follow the City of Lone Tree's municipal code requirement of 1 space per 250 sf of floor area.
- Initial restaurant assumptions follow the City of Lone Tree's municipal code requirement of 1 space per 100 sf of internal floor area plus 1 space per employee on maximum shift.
- Initial outdoor dining assumptions follow the City of Lone Tree's municipal code requirement of .5 spaces per 100 sf of outside seating area.
- Minimal mode split is considered as the location is further than one mile from the nearest light rail station and further than one half mile from the nearest full service bus stop. That being said, a conservative mode split of 5% is considered to account for employees and patrons who would utilize alternative transportation.

PARKING DEMAND MODEL

A parking demand model was developed to build a comprehensive understanding of all proposed uses for the site. The shared parking analysis was conducted using methodology provided in the ULI Shared Parking Model[1]. The model was calibrated and adjusted to account for specific base parking rates, time-of-day occupancy factors, internal capture and transit model assumptions.

<u>Background on Urban Land Institute's Shared Parking</u>

The ULI sponsored a national study in 1984 that established a basic methodology for analyzing parking demand in mixed-use developments and developed averages for parking rates by land

[1] *Shared Parking, Second Edition, Urban Land Institute, Washington D.C., 2004.*

use. Fehr & Peers staff was involved in the 2004 update of this national study sponsored by ULI.

Shared parking is a concept in which land uses in close proximity share a "pool" of available parking spaces in order to reduce the overall supply needed for the development as a whole. Shared parking is practical in situations where variations exist in vehicles by hour, by day, or season at individual land uses and the relationships among the land uses result in visiting multiple land uses on the same auto trip.

In the shared parking methodology, the base parking rate and daily/hourly/seasonal patterns for each land use are established, and then the overall parking demand is calculated by taking into account the unique travel characteristics of the project being analyzed. In this analysis, certain adjustments were made to the base parking rate, time-of-day occupancy factor and two travel factors: transit/walk-in potential and internal capture of parking between/among the land uses. The calibrated model was then used to estimate peak parking demand for the peak month of the year.

PARKING ANALYSIS PARAMETERS

In order to evaluate the number of spaces needed under shared parking conditions, a number of characteristics regarding a particular development must be known. The most important of these characteristics are the mix of land uses within the project and the size of each individual land use. The other parking-related factors that must be estimated in order to determine peak parking demand by-hour are described below.

Parking Ratio

Parking ratios follow the City of Lone Tree's off-street parking requirements. **Table 1** provides a summary of base parking rates used in the parking demand model for each of the components.

TABLE 1: BASE PARKING RATES

Land Use[1]	Base Parking Rate
Restaurant	1 space per 100 sq. ft. of floor area plus 1 space per employee on maximum shift
Outdoor Dining	.5 spaces per 100 sq. ft of outside seating area
Retail or wholesale, convenience	1 space per 250 sq. ft. of floor area

1. Parking ratios are based upon City of Lone Tree's off-street parking requirements.

Mode Split/Walk-In

One factor that affects the overall parking demand at a particular development is the number of visitors and employees that arrive by automobile compared to visitors and employees that arrive by alternate modes of transportation. Due to the fact that the site is further than one mile from the nearest light rail station and further than one half mile from the nearest full service bus stop, mode split is considered to be minimal and vehicle trips are assumed to comprise the large majority of trips. That being said, a conservation mode split of 5% was considered to account for the following:

- The RTD bus route 402L, a limited route, has a stop within one half mile of the Project site, thus accounting for service workers utilizing the bus system.

- The “Lone Tree Link” shuttle operates along Park Meadows Drive with a stop adjacent to the Park Meadows Drive / Yosemite Street intersection, thus accounting for service workers or nearby business members utilizing the shuttle.
- The Willow Creek Trail is adjacent to the Project site, thus accounting for cyclists and pedestrians utilizing the multi-use path.

Time-of-Day Patterns

Time-of-day patterns indicate the number of vehicles associated with each land use on site at a certain hour. Time-of-day occupancy assumptions were adjusted for restaurants based upon the likelihood of a portion of the restaurants being open for breakfast and the majority of restaurants being open for lunch and dinner patrons. For other uses, ULI recommended time-of-day factors were used.

Captive Market

Per Shared Parking, 2nd Edition, “Captive Market” is a term used to describe people who are already present in the immediate vicinity and are likely patrons of a second use. Internal capture ratio is an estimate of the percentage of parkers at a land use in a mixed-use development who are already counted as being parked at another of the land uses, in other words – the ratio of simultaneous trips. It is important to note the difference between simultaneous and sequential trips for parking purposes.

A simultaneous trip would occur if an office employee eats at a fast food restaurant on-site during his or her lunch hour. In this case, office is considered the primary use because the employee is already using a parking space that is accounted for in the office parking ratio. Lunch at the restaurant is occurring simultaneous to his car being parked at work.

A sequential trip, on the other hand, is a chained-trip that results in a greater demand for parking than if the trip were for one purpose. An example of a sequential trip is a patron that dines at a restaurant on-site before viewing a movie. Although the patron only makes one trip to the site, the parking demand is sequential in that the vehicle is parked one hour for dinner and two hours for the movie.

Table 2 provides a summary of internal capture applied to secondary uses on the site. Secondary uses demonstrate the ratio of simultaneous trips.

TABLE 2: CAPTIVE MARKET

Land Use	User	Weekday		Weekend	
		Daytime	Evening	Daytime	Evening
Restaurant	Visitors	5%	5%	5%	5%
	Employees	0%	0%	0%	0%
Outdoor Dining	Visitors	5%	5%	5%	5%
	Employees	0%	0%	0%	0%
Retail or wholesale, convenience	Visitors	20%	35%	20%	35%
	Employees	0%	0%	0%	0%

Source: Fehr & Peers 2016

Based upon the allotted square footage of on-site retail, retail uses will undoubtedly capture a small percentage (20%) of restaurant patrons during the daytime on weekdays and weekends at a slightly higher percentage (35%) during the evening weekday and weekend hours. A conservative internal capture was used because the specific type of retail is not known. The above capture rates were estimated by considering the unique land use mix and review of various case studies involving similar mixed-use retail centers in the ULI Shared Parking report. Based on time-of-day patterns, the capture rate is expected to be higher during the evenings due to the large amount of proposed restaurant space. A conservative internal capture rate of 5% was used for restaurants uses as well as outdoor dining.

Seasonal Variations

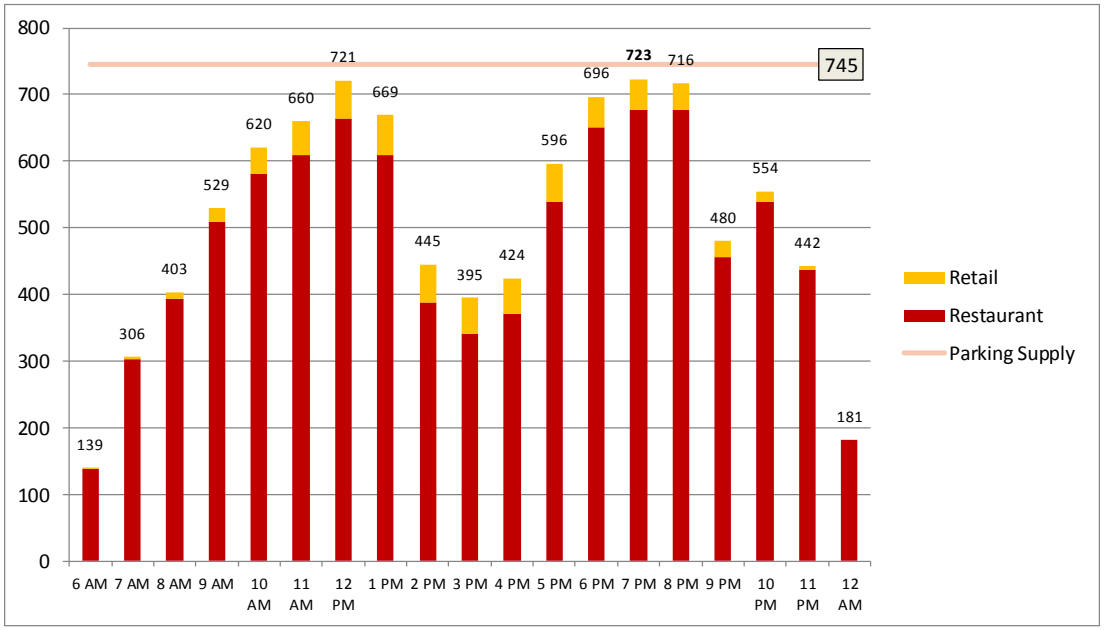
The parking demand model takes into consideration the variation in activity for each of the land uses from month-to-month. The mix of land uses in the development tends to level out parking demand over the course of the year. The retail land uses will experience higher demand between Christmas and New Year's Day whereas outdoor dining will experience higher demand in the summer months.

PARKING DEMAND PROJECTIONS

For this site, restaurant patrons are the primary driver of parking demand. As such, the parking demand peaks in the weekday evening hours. Between 696 and 723 trips would be produced by retail and restaurant patrons from 6:00 PM and 8:00 PM during the weekdays and between 661 and 708 trips would be produced by patrons from 6:00 PM and 8:00 PM during the weekend. The shared parking demand summary is located in **Appendix B**.

As **Figure 1** below illustrates, demand for retail and restaurant uses are complementary. Peak-hour parking demand is realized at 7:00 PM on a weekday at 723 spaces. With 745 proposed parking spaces, the site has more than adequate parking at all times of the day. This peak period would produce a 3.0 percent parking buffer.

FIGURE 1: WEEKDAY PARKING DEMAND



Source: Fehr & Peers 2016

SUMMARY OF PARKING FINDINGS

Key findings from the shared parking analysis include:

- Restaurant use will have the greatest parking demand for all hours of the day.
- The month of August sees the greatest parking demand due to the large amount of proposed outdoor dining space.
- The peak hour parking demand is realized at 7:00 PM on a weekday at 723 spaces. The second highest peak hour of demand is realized at 12:00 PM on a weekday at 721 spaces.
- The proposed number of spaces (745) will provide a 3.0 percent parking buffer during the peak hour of demand (723 spaces).
- No additional spaces beyond the proposed 745 are necessary, but the client should consider improved transit access to the site.

APPENDIX A: PARKING TABLE WITH BUILDING SQUARE FOOTAGES

THE YARD - PARKING COUNTS - Per City of Lone Tree Municipal Code

BUILDING SQUARE FOOTAGE				RETAIL			RESTAURANT							PARKING REQUIRED				PARKING PROVIDED	BICYCLE PARKING	
Building	Gross Building SQFT	Non Occupiable Space SQFT	Net Building SQFT	Average % of Retail SQFT		TOTAL RETAIL PARKING REQUIRED - 1 Per 250 Sqft	Average % of Restaurant SQFT		Restaurant Parking 1 Per 100 Sqft	Outdoor Dining SQFT	Outdoor Dining Parking .5 per 100 sqft	Employee Parking 1 per Employee Max Shift	TOTAL RESTAURANT PARKING REQUIRED	STANDARD SPACES REQUIRED	ACESSIBLE SPACES REQUIRED	TOTAL PARKING REQUIRED	MAX PARKING ALLOWED W/ 10% INCREASE	TOTAL PARKING PROVIDED	TOTAL BICYCLE PARKING REQUIRED	TOTAL BICYCLE PARKING PROVIDED
A	7,360	427	6,933	100%	6,933	28	0%	0	0	1,309	7	6	13	39	1	40	44	66	1	2
B	8,081	463	7,618	100%	7,618	30	0%	0	0	827	4	6	10	40	1	41	45	67	1	2
C	9,065	521	8,544	30%	2,563	10	70%	5,981	60	1,486	7	10	77	86	2	87	96	67	2	2
D	13,721	2,088	11,633	29%	3,385	14	71%	8,248	82	2,341	12	10	104	115	2	118	129	67	2	3
E	8,505	1,285	7,220	25%	1,805	7	75%	5,415	54	2,917	15	10	79	84	2	86	95	67	2	2
F	6,919	399	6,520	25%	1,630	7	75%	4,890	49	1,751	9	10	68	73	1	74	82	67	1	2
G	14,276	2,281	11,995	25%	2,999	12	75%	8,997	90	2,564	13	10	113	122	2	125	137	67	2	2
H	4,000	400	3,600	0%	0	0	100%	3,600	36	500	3	20	59	57	1	59	64	73	0	0
I	8,000	800	7,200	0%	0	0	100%	7,200	72	500	3	20	95	93	2	95	104	109	0	0
J	8,000	800	7,200	0%	0	0	100%	7,200	72	500	3	20	95	93	2	95	104	95	0	0
TOTALS	**87,927**	**9,464**	**78,463**	26,933		**108**	51,530		515	14,695	73	122	**711**	802	16	**819**	**900**	**745**	**11**	**15**

USE CLASSIFICATION	WEEKDAYS						WEEKENDS					
	1:00 a.m. - 7:00 am		7:00 a.m. - 6:00 p.m.		6:00 p.m. - 1:00 a.m.		1:00 a.m. - 7:00 am		7:00 a.m. - 6:00 p.m.		6:00 p.m. - 1:00 a.m.	
	% of Parking	Required Parking	% of Parking	Required Parking	% of Parking	Required Parking	% of Parking	Required Parking	% of Parking	Required Parking	% of Parking	Required Parking
Retail	0%	0	100%	108	80%	86	0%	0	100%	108	60%	65
Restaurant	20%	142	70%	498	100%	711	30%	213	75%	533	100%	711
TOTALS	**142**		**605**		**797**		**213**		**641**		**775**	

*Square footages listed above are estimates at this time and will be revised based on actual leasing at later date

APPENDIX B: SHARED PARKING ANALYSIS WORKSHEETS

Table
Project: **The Yard' shared parking analysis**
Description: **Lone Tree Rates**

7/5/2016

SHARED PARKING DEMAND SUMMARY

PEAK MONTH: AUGUST -- PEAK PERIOD: 7 PM, WEEKDAY

Projected Parking Supply:			Weekday					Weekend					Weekday			Weekend		
	Project Data				Non-					Non-			Peak Hr Adj	Peak Mo Adj	Estimated Parking	Peak Hr Adj	Peak Mo Adj	Estimated Parking
Land Use	**Quantity**	**Unit**	**Base Rate**	**Mode Adj**	**Captive Ratio**	**Project Rate**	**Unit**	**Base Rate**	**Mode Adj**	**Captive Ratio**	**Project Rate**	**Unit**	**7 PM**	**August**	**Demand**	**8 PM**	**August**	**Demand**
Retail	26,933	sf GLA	4.00	1.00	0.65	2.60	/ksf GLA	4.00	1.00	0.65	2.60	/ksf GLA	0.95	0.69	46	0.65	0.69	31
Employee			0.00	0.95	1.00	0.00	/ksf GLA	0.00	0.95	1.00	0.00	/ksf GLA	0.95	0.80	0	0.75	0.80	0
Restaurant	51,530	sf GLA	10.00	1.00	0.95	9.50	/ksf GLA	10.00	1.00	0.95	9.50	/ksf GLA	1.00	0.99	485	1.00	0.99	485
Employee			2.50	0.95	1.00	2.38	/ksf GLA	2.50	0.95	1.00	2.38	/ksf GLA	1.00	1.00	123	1.00	1.00	123
Outdoor Dining	14,695	sf GLA	5.00	1.00	0.95	4.75	/ksf GLA	5.00	1.00	0.95	4.75	/ksf GLA	1.00	1.00	69	1.00	1.00	69
Employee			0.00	0.95	1.00	0.00	/ksf GLA	0.00	0.95	1.00	0.00	/ksf GLA	1.00	1.00	0	1.00	1.00	0
													Customer		600	Customer		585
													Employee		123	Employee		123
													Reserved		0	Reserved		0
													Total		723	Total		708

ULI base data have been modified from default values.

Jennifer Drybread

From: SharonVanRamshorst <sharonvanram@comcast.net>
Sent: Thursday, June 02, 2016 8:46 AM
To: Jennifer Drybread
Subject: "The Yard"

Hello Jennifer - The Charter HOA reviewed the Referral Packet last night for The Yard. Although we had members missing those present did have some comments. Some were unanimous (which I will list first) and others were not.

1. The proposed cut on Yosemite - It was felt this was too close to the off ramp on C-470 and a right in/out would not work well at this location. People exiting at this location would be trying to cross all the way to the far left lane to make a left on Park Meadows Drive. We would prefer to see a right in only and should have it's own new right lane turn.

2. The variance request for a portion of the 10' setback along Yosemite we are opposed to. Projects located too close to a major street are unattractive and project a "closed-in feel" and are not something we'd like to see in Lone Tree along Yosemite.

3. It was also felt that the tree scape along Yosemite was rather sparse in some areas.

4. The entrance on Park Meadows Drive is on a curve. We suggest moving it east to align with the current trail location.

5. Cost of any trail realignment as well as signalization should be funded by the developer.

Other comments made concerned lighting and that care be taken that it not adversely affect adjacent neighborhoods. Flat roofs and screening of roof top structures. Found no specs for signage. Questioned the use of "pre-finished composite wood fencing" and whether or not this was quality material.

The design - color, windows, exterior - were not timeless and do not fit into Lone Tree. Two members objected to the design and two had no problem with it.

Thank you for making this available to us for our comments and thank you for providing the hard copy too.

Sharon Van Ramshorst, President
The Charter at Lone Tree

Jennifer Drybread

From: PCMS Corporate Office <corpoffice@pcms.net>
Sent: Thursday, June 02, 2016 12:00 PM
To: Jennifer Drybread
Subject: FW: Lone Tree eReferral (SB16-24) Is Ready For Review

Dear Ms. Drybread:

Please see comments below from the Terra Ridge at Lone Tree HOA Board of Directors regarding this referral.

Thanks!
Jessica Moser
PCMS

- Please widen the proposed sidewalk along Yosemite so that we may be able to get safer foot and bicycle access to the attractions near the mall.

From: Jennifer Drybread [mailto:Jennifer.Drybread@cityoflonetree.com]
Sent: Monday, May 16, 2016 3:19 PM
Subject: FW: Lone Tree eReferral (SB16-24) Is Ready For Review

Sorry, I did not include the Link. Please see below.

Jennifer Drybread
Senior Planner
City of Lone Tree
9220 Kimmer Drive, #100
Lone Tree, CO 80124
www.cityoflonetree.com
720-509-1273
jennifer.drybread@cityoflonetree.com

From: Jennifer Drybread
Sent: Monday, May 16, 2016 2:56 PM
Cc:
Subject: Lone Tree eReferral (SB16-24) Is Ready For Review

Greetings,
There is an eReferral for your review. Please click on the link below to review this referral.

Project Name:	Park Meadows Filing 1, 1st Amendment, a Replat of Tract BA and Tract E (The Yard)
Project File #:	SB16-24
Project Summary:	A replat of tracts into 4 lots on 14.12 acres. The proposal is located at the northwest corner of Yosemite Street and Park Meadows Drive.

CITY OF LONE TREE
Community Development Department

REFERRAL REQUEST

Today's date: May 9, 2016

Project Name and File Number: Park Meadows, Filing 1, Tract E & BA, Site Improvement Plan, Project SP16-22

Comments Due By: May 29, 2016
If you are unable to respond by the due date, please contact the project planner

Dear Referral Organization:
Information on the above referenced proposal in the City of Lone Tree is provided for your review and comment. Please submit your response no later than the due date to ensure adequate time to consider comments and enter them into the public record.

If you have difficulty viewing or understanding any of the information or have questions, please contact me at 303-708-1818. Printed materials and extra sets of materials are available upon request. Plans may also be viewed at the City offices from 8am-5pm.

X **We have no comments regarding this proposal**

____ **Please note the following concerns this organization has:**

_____

_____

_____

____ **See attached letter for comments regarding this proposal**

Organization Name: Ridge Gate West HOA

Your name: Linda Langewisch

Your signature: Linda Langewisch **Date:** 5/31/16

This project may be subject to public meetings. Please check the City's web site (www.cityoflonetree.com) for posted agendas or contact this office.
Thank you for your consideration.

Jennifer Drybread

Senior Planner

PLEASE RETURN THIS PAGE AND ANY COMMENTS TO:

City of Lone Tree Community Development Dept.
9220 Kimmer Drive Suite 100
Lone Tree, CO 80124
Ph: 303-708-1818
Fx: 303-225-4949
jennifer.drybread@cityoflonetree.com

South Suburban
PARKS AND RECREATION

Administrative Office
6631 S. University Blvd.
Centennial, CO 80121-2913

phone 303.798.5131
fax 303.798.3030
ssprd.org

Board of Directors
John K. Ostermiller, Chair
Scott A. LaBrash
Pamela M. Eller
Michael T. Anderson
James A. Taylor

Executive Director
Rob Hanna

May 27, 2016

Jennifer Drybread
City of Lone Tree
9220 Kimmer Dr. #100
Lone Tree, CO 80124

Re: Park Meadows, Filing 1, Tract E and B (The Yard) Site Improvement Plan Referral

Dear Ms. Drybread,

South Suburban Park and Recreation District reviewed the referral documents for the Park Meadows, Filing 1, Tract E and B (The Yard) Site Improvement Plan and have the following comments.

- The Willow Creek Trail crossing at Park Meadows Drive is proposed to be relocated approximatly 300 feet to the west of the current crossing at the intersection of the development's private drive. This intersection, while signalized, is located on a blind corner with limited visibility for trail users crossing from south to north. Relocate the signalized intersection approximately 200 feet to the east, or maintain the current trail crossing and add a HAWK signal.

- Should the signalized intersection be relocated, relocate the crosswalk on Park Meadows Drive to the west side of the intersection so trail users are not conflicting with left egress turns, and so trail users only need to cross one street.

- The south trail approach to the proposed crossing is shown as an attached sidewalk. Provide a detached trail, to the extent possible, located on the Douglas County and Lone Tree owned open space parcels.

- Relocate the sidewalk along the development's entry drive to the east side of the drive to provide better access for trail users.

- A future trail connection, by others, requiring a pedestrian bridge over Willow Creek is shown at the west corner of the proposed development (see Circulation Plan). This trail connection would be located primarily on public property, and directly benefit the developer. The developer should be responsible for the constrution and maintenance costs.

Thank you for the opportunity to comment on this referral.

Sincerely,

Brett Collins
Director of Planning and Development

Cc
Rob Hanna, Executive Director
Andy Jennings, Director of Parks

9222 Teddy Lane
Lone Tree, Colorado 80124

Ph: 303-662-8112
Fax: 303-792-9489
www.cityoflonetree.com

CITY OF LONE TREE

Department of Public Works

June 1, 2016

City of Lone Tree
Jennifer Drybread
9220 Kimmer, Suite 100
Lone Tree, CO 80124

Re: SP16-22 (The Yard)
Park Meadows, Fil. 1, Tract E & BA
Project No. 061-432

Dear Jennifer:

We have reviewed the SIP referral for the above referenced Project.

The SIP package submitted and reviewed consists of the following documents:

- Site Improvement Plan (55 sheets), dated 3/29/16, by Galloway.
- Grading, Erosion & Sedimentation Control Plans, (10 sheets) dated 3/29/16, by Bowman Consulting.
- Grading, Erosion & Sedimentation Control Report, dated 3/29/16, by Bowman Consulting.
- Phase II Drainage Report, dated March, 2016, by Bowman Consulting.
- Traffic Impact Analysis, dated March 2016, by Felsburg Holt & Ullevig.

Our comments are provided below:

GENERAL COMMENTS

1. The Public Works/Engineering Review fee for this Project, per the adopted standard review fee schedule (attached) is $9,920.00. The fee (check made out to "The City of Lone Tree") should be submitted to my attention at Public Works with, or prior to, resubmittal of the documents in response to the following comments. Review and comment on the SIP, GESC Plans, GESC Report, Phase II Drainage Report, Traffic Impact Analysis, and Traffic Signal Plans (for the proposed Park Meadows Drive entrance), as well as the future full Construction Plans and Phase III Drainage Report, are covered under this review fee. This fee covers the initial review, and one resubmittal review of the documents. Subsequent resubmittal reviews (if required) are charged at 50% of the standard review fee, per resubmittal, for the specific document(s).

2. A separate, but parallel Referral is pending for the Replat associated with this proposed development. That referral review, and the associated Public Works/Engineering review fee, will be addressed in those Referral comments.

3. A Site Improvement Plan Improvements Agreement (SIPIA) will be required for the proposed Project. The SIPIA (and associated Surety) will address any/all hardscape improvements within the ROW (or adjacent public access easement(s)) associated with this Project (including, but not limited to: street widening and improvements, curb & gutter, sidewalk, signalization, etc.)

4. A Grading, Erosion and Sedimentation Control (GESC) Permit will be required for this Project. The GESC Permit may not be obtained prior to final approvals of the GESC Plans / GESC Report and at least recommendation of SIP approval by the City Planning Commission. No site work may begin prior to issuance of the GESC Permit.

5. Since this site exceeds 1-Acre of disturbed area, a State Stormwater Construction Permit from the Colorado Department of Public Health and Environment (CDPHE) is required.

6. A 404 Permit from the Army Corps Engineers may be required for the bridge construction. An Army Corp of Engineers Jurisdictional Determination/Wetland Determination Confirmation should be obtained to determine if a 404 Permit is necessary.

7. Tract BA (the portion of this development at the corner of Yosemite and Park Meadows Drive) is subject to a Park Meadows Drive/Acres Green Drive Intersection Improvements Impact Fee of $24,699.13. This impact fee amount was assessed based on associated frontage on Park Meadows Drive. Assessment of the fee, by parcel, was deferred until development of the associated parcel. Accordingly, the Fee will be due for this parcel as part of this development approval process.

MAJOR CONSIDERATIONS

Orphan Tract 1-B Parcel

1. A 0.26 +/- acre strip of land (Part of Tract 1-B) owned by Furniture ROW is shown just to the east of the Tract BA portion of The Yard development. It is unclear to us why this small Tract of land was not incorporated into the proposed sale of Furniture ROW's Tract BA and Tract E to Alberta Development of for part of proposed "The Yard" development. The remaining Tract 1-B parcel has no access to public ROW, and is not a buildable piece of property in and of itself. The Lone Tree Subdivision Code requires that "legal and physical access shall be provided to all parcels by public right-of-way or recorded easement, acceptable to the City Engineer in compliance with the Roadway Design and Construction Standards." Sec.17-5-60 (10). Please revise the plan to either incorporate the property into The Yard development, or, alternatively, dedicate the land to the City to be incorporated into the adjacent Willow Creek open space.

Proposed Park Meadows Drive Entrance Intersection

2. The main entrance/exit for The Yard is proposed as a signalized full (3/4) movement intersection on Park Meadows Drive. Initial planning level recommendation from Public Works to the development team (7/31/15 Email & Attachment to FHU, who was doing traffic study for the development) was that "*the connection point to Park Meadows Drive be immediately east of the current trail crossing on PMD. To accommodate this option, the City could consider providing a public access easement / license agreement for the bridge & roadway access/through our property.*"

   As currently proposed on the SIP, this intersection is located approximately 500 feet west of the current Willow Creek Trail crossing of Park Meadows Drive. [The Willow Creek Trail is maintained by South Suburban Parks & Recreation Department (SSPR).] The currently shown location for the proposed bridge over Willow Creek is at one of the narrower crossings – e.g. shorter potential bridge span over the creek channel, and falls within an existing platted 200' access easement granted at the time of the original platting of this area. Initially, this intersection location seemed a logical option. However, based upon further review of the proposed location, both in the field and "on paper", we cannot support nor recommend approval of the intersection at this location, for the following reasons:

- City Public Works & Planning Staff, and South Suburban Parks & Recreation Staff conducted a site visit to review the proposed intersection location. From that visit, we observed that site lines did not allow for adequate visibility between oncoming eastbound traffic, the intersection and the proposed relocated Willow Creek Trail Crossing. Oncoming eastbound traffic would have inadequate stopping distance once they were able to see the proposed signalization and/or pedestrians/bicyclists crossing within the proposed crosswalk. Neither SSPR nor the City staff were comfortable with nor supportive of the current proposed intersection location. Initial thoughts (in the field) were that perhaps moving the connection point east approximately 200 feet +/- (just west of the existing drainage ditch) might provide a better location. (See attached Exhibit #1).

- Subsequent to the site visit, we evaluated the Site Stopping Distance requirements, based upon the City adopted Douglas County Roadway Design and Construction Standards (RDCS). Based on the 35 mph posted speed limit on this section of Park Meadows Drive, the RDCS specified required sight stopping distance is calculated at 473 feet. We applied this stopping distance from the point where the eastbound traffic could first see a signal head mounted on the signal pole at the north side of Park Meadows, and plotted the sight-lines on the attached Exhibit #1 for three locations.

  1) The "blue" line shows the stopping distance sight-line for the current applicant proposed intersection. This sight line "leaves" the street ROW, and would be blocked by landscaping, fence and a transformer, and therefore does not meet requirements.
  2) The "green" line shows the stopping distance sight-line for the initial "relocation" suggested during the field visit. This sight line also goes outside the street ROW, and also would be blocked by landscaping, fence and a transformer. It also would not meet requirements.
  3) The "red" line shows the first approximate location for the intersection that would meet stopping sight distance requirements for the signal pole located on the west side of the intersection.

Based upon the above stopping distance sight line analysis, Public Works/Engineering would be able to support a proposed intersection connection to Park Meadows at, or near, the existing Willow Creek Trail PMD Crossing, but not one further to the west. One approach to accomplish this could be to keep the bridge at the currently proposed location, add a box culvert over the existing drainage swale, and direct the access road to the new intersection location. (As shown in yellow on Exhibit #1). The new alignment would require centerline curve radii less than the adopted DC Road Design standards. However, in this specific instance, Public Works would support granting a variance due to the low speed and volume of this private access road. Also, to accommodate this alternate access road alignment, the City would need to grant a revised access easement across the City owned Willow Creek open space parcel. A second potential option might be something along the line of the red site entry concept shown on attached Exhibit #2.

3. The proposed Park Meadows Drive – site access intersection would be a full (3/4) movement T-intersection, with dedicated left turn and right turn egress lanes and one ingress lane. The intersection would need to be signalized, with associated signalized trail crossing at the west side of the intersection. A dedicated eastbound left turn lane on Park Meadows Drive (for entrance into the site) with associated modifications to the existing Park Meadows Drive median would be required. The development would be responsible for design and construction/installation of these improvements (under City review and approval).

Yosemite Right-In/Right-Out Access

4. An ingress/egress access to Yosemite Street is proposed. Given the nature and location, this connection is proposed as a Right-In / Right-Out ONLY connection, with a raised pork-chop island. Addition of a new (additional) lane is proposed for a deceleration/acceleration and turning lane for this RI/RO connection. Public Works generally concurs with this proposed connection concept, with the following comments:

   - A connection/access point in this general location to the property on the west side of Yosemite has long been envisioned, with an existing curb cut/access having been constructed prior to 1995 (prior to the City of Lone Tree formation).

   - Given the location and existing (anticipated) traffic at this location, the additional lane and the RI/RO only nature of the access are necessary. The pork chop island, along with City plans to construct a median in S. Yosemite in this area, will effectively control left turn access/egress at this connection point.

   - Installation of appropriate signage at the egress point will be required (as part of the final site Civil Construction Drawings) noting that Left Turns (eastbound) at Park Meadows Drive is not permitted from this right-out egress from The Yard.

Added Lane on Yosemite & Yosemite/Park Meadows Signalization

5. Construction of the proposed added (west side) lane and associated connection at Park Meadows Drive will result in the existing signal pole at the NW corner of Yosemite / PMD falling within the gutter line of the new lane connection as shown on the SIP. This arrangement would result in the Signal Pole needing to be relocated. Relocation of this pole may require re-wiring of the entire signal system for the full Yosemite / PMD intersection. The pole relocation and associated rewiring (if necessary) would be part of the development's responsibility.

6. An alternative design of the connection of the new Yosemite lane as a free (yield) right only to Park Meadows Drive (see attached Exhibit #3) would allow the existing signal pole to be retained in its current location, within an island. Public Works would be agreeable to this approach, which may be a better (more cost effective) option for the applicant.

7. There is existing fiber optic line near the back of the existing sidewalk along the west side of Yosemite, across this development's frontage. Construction of the new lane, and relocated sidewalk, may impact this line. Appropriate protection and/or relocation of this line may be necessary as part of the development's construction.

Overall Traffic Impact(s) of the Development

8. Felsburg, Holt and Ullevig (FHU) has prepared a Traffic Impact Analysis report for The Yard at Lone Tree. The report addresses the projected traffic generation by The Yard, the existing, and anticipated short range and long range traffic projections without The Yard (e.g. "Background" conditions) and the anticipated short and long range traffic projections with The Yard (e.g. "Total" conditions). (Note: Short Range is shortly after opening of The Yard. Long Range is projected to 2040 conditions). The TIA projects that The Yard would contribute approximately 5-6% of the traffic volume (short and long range) on Yosemite, between Park Meadows and C-470, and between 25% (short range) and 17% (long range) on Park Meadows Drive west of Yosemite.

The TIA provides the Level of Service (LOS) projections for the Park Meadows Drive / Yosemite intersection. Typical goal LOS for urban intersections is to maintain a LOS category of D or better, if practicable. The TIA indicates the existing (pre "Yard") LOS as E/F (morning peak hour/evening peak hour). With some proposed modifications (primarily signal timing adjustments and a new northbound right turn lane on Yosemite - actions currently under way by the City), the TIA projects the short term (post Yard opening) LOS at this intersection as D/E, and on the long term (2040) as LOS E/F. While the TIA "suggests" that the projected Short and Long Term LOS ratings likely would be similar without The Yard, the TIA unfortunately does not provide the comparable LOS analysis and summaries without The Yard for comparison to confirm this "suggestion". We recommend that comparison be documented in the TIA (along with other specific TIA comments included later in this letter).

Flood Plain Issues

9. Development of The Yard project, as proposed on the SIP, impacts the currently mapped Willow Creek regulatory flood plain. The northerly ends of three "fingers" (essentially large erosion rulleys) are impacted (see SIP). The north abutment/wing wall of the proposed bridge impacts one, while the proposed retaining wall for the site affects the other two. Also, if the alternative Park Meadows access connection, with the current proposed bridge location, is implemented, there may be an additional impact location at the road crossing of the southern ditch. As a result of these three (or 4) impact locations, under the National Flood Plain Insurance (NFIP) requirements the Development may be required to obtain a Conditional Letter Of Map Revision (CLOMR) (before construction) and subsequent Letter of Map Revision (LOMR) after the construction. The CLOMR / LOMR process would be required in order remove these impacted areas from the mapped regulatory flood plain limits. The necessity of pursing this CLOMR/LOMR process is being reviewed jointly with representatives of UDFCD (as the local NFIP review agency), the Colorado Water Conservation Bureau (as the State Flood Plain regulatory agency) and FEMA (Region 8). If ultimately required, an approvable CLOMR will be required before we can issue the associated City Flood Plain Development Permit to allow the construction impacts on the Flood Plain. (Construction on the site, outside of the flood plain – subject to normal City requirements - can be allowed without the Flood Plain Development Permit.)

10. As part of the initial CLOMR/LOMR background research, the applicant's team has reviewed potential wetlands/wildlife impacts of the proposed work in the Willow Creek channel area.
    a. With respect to possible impacts on Endangered Species, the U.S. Fish & Wildlife – Colorado Ecological Field Services Office (the "Service") has determined that "*There are no critical habitats in this location.*"
    b. With respect to Migratory Birds (e.g. Migratory Bird Treaty Act, and Bald & Golden Eagle Protection Act) the "Service" has determined "*There are no refuges in this location*".
    c. With respect to Wetlands in the National Wetlands Inventory (e.g. NWI regulatory wetlands), the U.S. Army Corp of Engineers (USACE) has indicated "*There are no* [regulatory] *wetlands in this location*".

11. Separate from the issue of the Flood Plain Development Permit, but related, the applicant may need to obtain an appropriate 404 Permit from the Army Corp of Engineers for the bridge construction and associated work within the Willow Creek channel.

Retaining / Screening Walls

12. A number of retaining walls and screening walls are indicated in the Site Plans. Screening walls, and retaining walls directly connected with the buildings, will be reviewed through the Building Department. All other retaining walls associated with the site grading work will be reviewed by Engineering. All walls in excess of 4-foot total height must be specifically designed and sealed by a Colorado Structural PE, with associated wall design documentation provided (to either the Building Department or Engineering, as applicable). Appropriate 3rd party inspection certifications may/will be required during construction.

C470 Widening & EB Yosemite off Ramp

13. The C470 Design-Build widening project will have some impacts in the immediate area, some of which may directly or indirectly impact the proposed YARD Project. Per CDOT comments received, the existing Douglas County parcel between the current off-ramp and The Yard parcel is being obtained by CDOT for realignment and widening (to two lanes, from the current one lane) of the off-ramp. The realignment, widening and associated grading may impact the corner of The Yard parcel near the proposed dumpster NE of Building Pad J (see Exhibit # 4, from CDOT). This may require some adjustments of the Site Plan/Parking Lot layout in that area.

Stormwater Detention

14. The Project is proposing to provide Full Spectrum Detention for the site in underground detention systems. The site is divided into two major stormwater basins, with one underground detention system for each basin. The underground systems will provide for excess urban runoff volume (EURV) and 100-yr detention. While we are in general agreement with the overall underground EURV-100 Yr detention concept, we do have serious reservations about the specifics of the underground detention systems proposed. According to the Phase II Drainage Report, the Development is proposing use of StormTech underground detention systems – which utilizes an open bottomed arch pipe system bedded on/in open graded rock. The surrounding rock contributes to the stormwater detention volume (e.g. the water accumulates in both the arched pipe open space and in the void space around the rock bedding - approx. 40% of the rock volume is void space). Thus, the water pools not only in the pipe but in the overall rock layer. Given the typical soils conditions in this area, with the tendency of expansive soils, we are very hesitant to concur with this approach. Barring a detailed geotechnical engineering study of the site (at least in the areas of the proposed detention facilities) that clearly documents the lack of expansive soils and the suitability of the site for this type of non-contained stormwater detention, we would not recommend approval of this type of detention. Rather, we recommend a fully enclosed/contained EURV – 100 yr. detention system design.

DOCUMENT SPECIFIC COMMENTS

The Major Considerations comments listed above may/will impact some Site Details shown within the submitted documents. Revisions to address those Major Considerations will be required, and generally are not listed/repeated in the following Document Specific Comments. Concurrently, some of the following comments may be negated or superseded by the changes necessary to address the Major Considerations.

Only those sheets within the documents for which we have specifically identified comments are listed below. Comments provided also may apply to other sheets/locations in the Project documents. The applicant's professional(s) should verify that the item(s) are addressed throughout the related Project documents consistently, as applicable.

Site Improvement Plan

Sheet 2 Overall Site Plan:

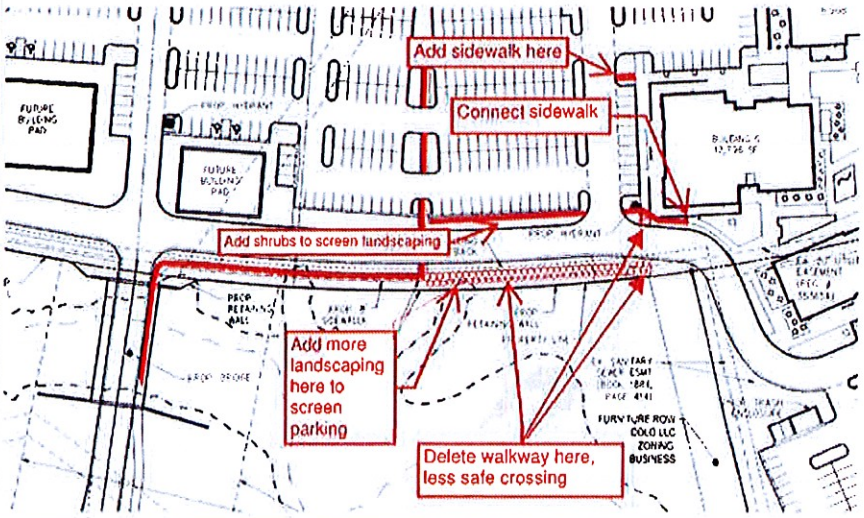
1. The relocated sidewalk along the Yosemite Street frontage is shown as 6-foot wide. This walk shall be 8-foot wide (minimum).

2. We do not review for ADA compliance. That said, we note that the ADA sidewalk ramps throughout the site do not include the typical City of Lone Tree ADA Truncated Domes*. The City standard truncated domes shall be used at all appropriate locations within the public ROW's. It is recommended to also incorporate these domes on site for general consistency.

   (Detectable warning inlaid pattern of truncated domes shall be Brick Red cast-in-place or cast-in-place-replaceable panels by ADA Solutions, Inc. (www.adatile.com, 800-372-0519), or approved equal.)

3. There is some concern about the location of the sidewalk crossing the main drive along the south side of the site right at the curve at the SW side of the main "Yard" complex. Planning and Engineering jointly are suggesting a possible relocation of the walk in this area to what we believe may be a better alignment (See excerpt below from an email from Planning staff).

"We are concerned with crossing the main drive aisle at a bad location, and the circuitous sidewalk connection by Building G. We recommend connecting the parking lot to a walkway to a 6-foot sidewalk on the north side of the drive aisle and crossing to the east at a safer location. We also recommend adding another short sidewalk segment northwest of Building G where shown."



Sheets 3 – 7 Site Plans

4. Sheet 4: There is an existing 25-foot drainage easement (indicated to be vacated) running E to W through the site and passing under proposed Building Pad H. Plans are to relocate the existing storm line from approximately midpoint of the site south, to the east of Building Pad H. A new 30' drainage easement is proposed for the existing/relocated portions of the storm line. While indicated on the SIP, the storm easement information is not explicitly clear. It may be appropriate to provide additional callouts and/or notes to clarify.

5. Sheet 5: The proposed relocation of the SSPR Trail connection shown on this sheet may be moot (see prior Major Considerations Comment on the Park Meadows Drive Entrance Intersection). However, it should be noted that the trail is a regional trail, and all portions should be 10-foot wide, rather than the 8 foot widths shown on the SIP.

6. Sheet 6: A 20-foot utility easement is shown south of Willow Creek on this sheet. On Sheet 5, this same easement is labeled as an Existing 20-foot Sanitary Easement (B180 P 210). The easement should be labeled consistently on Sheet 6 (as on Sheet 5).

7. Sheet 7: A Public Access Easement is indicated along the west side of the proposed widened Yosemite Street, to incorporate the relocated detached sidewalk across the site frontage. However, the sidewalk leaves the easement at the crossing of the right-in/right-out drive entrance. The easement should be adjusted at/near the drive to keep the sidewalk within the easement.

8. Sheet 7: There is a note callout regarding "Proposed Relocated Traffic Pole" at the NW corner of Yosemite Street and Park Meadows Drive. The layout of this general intersection area, and the pole relocation, may or may not occur (see prior Major Considerations Comment on the Added Lane on Yosemite and Yosemite/Park Meadows Signalization). Depending upon final determinations regarding this intersection and pole relocation, the SIP Sheet(s) will need to be appropriately updated.

Sheets 8 -12 Grading Plans

9. With exception of the specific comments listed below, the grading concepts shown appear generally acceptable. More detailed review during the Civil Construction Documents submittal may generate additional specific comments.

10. Sheet 8: There is uncertainty regarding proper drainage at the south end of the parking bay immediately east of Building Pad J. Additional spot elevations and/or revision of the grading in this area, or the addition of an inlet at the south end of this parking bay, may be required.

11. Sheet 9: The proposed re-alignment of the storm sewer running E-W through the site (e.g. CDOT drainage primarily) needs to be reviewed and discussed. If the proposed bridge over Willow Creek remains in the currently shown location, the City would prefer the storm line be aligned to run NW under the southern on-site drive, and then west to discharge at/through the northern bridge abutment/retaining wall (e.g. an armored discharge point) rather than into the bank of the channel. Additional channel stabilization may also be required in the general discharge area (possibly to include addition of a drop structure in the creek at this location to help stabilize the channel in the vicinity of the bridge). This will need to be reviewed and discussed further.

12. Sheets 9 & 12: The existing 66-inch storm sewer through the site from Yosemite to Willow Creek, and associated storm vault under proposed Building C, should be clearly labeled and noted for removal and relocation to the new proposed alignment.

13. Sheets 9, 11 & 12: The proposed drainage easement along the realigned storm sewer (see prior comment) is shown as 40-foot wide on Sheets 9 & 11, and as 30-foot wide on Sheet 12. Please explain. The easement should be consistent (e.g. 40-foot wide) throughout. Also, the easement is not shown extending beyond (northerly) the existing storm where the new line connects to the existing line (see Sheet 12). The easement should extend approximately 20-feet beyond the storm line.

14. Sheet 12: The proposed portion of the relocated storm sewer within Yosemite, including the proposed new junction box, needs to be reviewed. This portion of new storm should be moved as far west as possible (either under the proposed new lane, or even west of that lane under the proposed sidewalk) to minimize major construction and associated traffic impacts within the existing SB Yosemite drive lanes.

Sheets 13 -17 Utility Plans
No additional comments at this time.

Sheets 19 - 29 Landscape Plans:
We do not review and respond to Landscaping related issues, other than in a broad general sense or as pertains to potential conflict between the landscaping and other engineering related issues. In doing a very cursory scan of the sheets, we did, however, note the following items:

15. Sheet 20: Intersection with southern drive, west of Building Pad I – There may be a potential conflict with site lines at this intersection, depending upon the specific landscaping proposed. This should be evaluated, and the landscape plantings selected to avoid a visibility conflict.

16. Sheet 25: We noted a leader line/arrow not pointing to the Bench referenced by the callout (e.g. Bench just east of planting area east of Building G).

17. Sheet 26: We noted a miss-spelling on the stormwater inlet callout near the NE corner of Building E (e.g. "stromwater" rather than "stormwater").

Sheets 30 – 31 Site Amenities:
We do not review and respond to Site Amenities. Accordingly, we have no comments on these sheets.

Sheets 32 – 38 Conceptual Irrigation Plans:
We do not review and respond to Site Irrigation. Accordingly, we have no comments on these sheets.

Sheets 39 – 47 Photometric Plans:
We do not review and respond to Site Photometrics. Accordingly, we have no comments on these sheets, with exception of the following:

18. Sheet 39: The sheet title is missing in the Title Box.

Sheets 48 - 55 Architectural Elevations:
We do not review and respond to Architectural Elevations. Accordingly, we have no comments on these sheets.

Grading, Erosion and Sedimentation Control (GESC) Plans

19. The Project is located within The City of Lone Tree, not within unincorporated Douglas County. The City of Lone Tree GESC Plans, Standard Details and GESC Standard Check List requirements (as posted on the City Website) must be utilized and followed. The GESC Plans submittal should be updated accordingly.

20. Sheet 1 – Cover Sheet: The Index of Plans (e.g. Sheet Numbering) does not match the numbering on the sheets.

21. Sheet 02: There is an existing 10" sanitary sewer shown traversing the site east to west. WE anticipate there should be an existing easement for this sanitary line. That existing easement should be shown and labeled.

22. Sheets 02 - 07: The BMP legend (and graphic BMP representations) should be consistent with the City of Lone Tree Standard GESC Plans legend.

23. Sheet 03: The BMP's shown in the area of the proposed site access drive and Park Meadows Drive intersection will need to be appropriately modified based on the resolution of the intersection location.

24. Sheet 03: Some extension of the proposed silt fence is recommended up the slope at both sides just west of the proposed sediment basin, and at the north end at the limits of construction. Please add. (Also, adjustments and/or additions may be noted/required in the field during the site work.)

25. Sheets 04 – 07: The Key Map should be updated so that the indicated sheet area is not fully blocked out (e.g. the indicated area's transparency needs to be adjusted, similar to that on Sheets 02 & 03).

Grading, Erosion and Sedimentation Control (GESC) Report

26. As noted above, the City of Lone Tree GESC Standards (Check List, etc.) shall be followed.

27. Pg. 6 – Areas & Volumes: The report notes that there will be a net 16,623 CY of import required. The GESC Plans indicate there will be a net export of approximately 9,110 CY (e.g. Cut – fill/embankment). Please make sure the two documents are consistent.

28. Pg. 7 – The discussion regarding diversion ditches references the southeast border of the site. However, diversion ditches are shown on the plans along the southwest and west borders of the site.

29. Pg. 7 – Good Housekeeping Methods – Chemical Management: The last sentence references "No solid materials…". This should be revised to "No waste materials…" (e.g. no liquid or solid waste materials shall be allowed to discharge into Willow Creek or the on-site storm system).

30. Pg. 8 – 3rd bullet: "… include measured to prevent…" should be "… include measures to prevent…".

31. Pg. 8 – last bullet: "…on the site." should be "… on the site, except into identified and approved concrete washout areas."

32. Pg. 9 – Inspection and Maintenance – 1st line: It is "The City of Lone Tree", not "Town of Lone Tree".

33. Pg. 9 – Inspection and Maintenance: last line: Revise "… event of 0.5 inches or greater." to "event which generates, or has the potential to generate, stormwater runoff from the site."

34. Pg. 9 – Inspection and Maintenance – last paragraph, 3rd line: Revise "… within 7 days." to "… as soon as possible."

35. Cost Opinion Spreadsheet: Utilize the applicable City of Lone Tree GESC Opinion of Probable Cost Spreadsheet.

36. Checklist - Utilize the applicable City of Lone Tree GESC Checklist.

Phase II Drainage Report

37. Pg. 5, Sec. 2.2 – 3rd line, states that "All sub-basins will be directed to two underground detention facilities…". The prior sentence references 15 detained and 4 un-detained on-site basins, and 5 off site basins. Accordingly, please clarify which "All sub-basins…" actually go to the detention facilities. Also, clarify that the facilities are "full spectrum detention faculties".

38. Pg. 8 – Off-Site Basins. The off-site basins, as identified in the study, are indicated as being "open space" south of the existing C-470 EB Yosemite off-ramp. However, as part of the planned C-470 widening, with associated realignment of the EB Yosemite off-ramp, this current Douglas County owned "open space" parcel will become part of the C470 development, and no longer "open space". Ultimate design of the on-site hydrology/hydraulics needs to take into account the "developed" condition of these off-site basins.

39. Pg. 8, Sec. 3.2, 5th line: "A Drainage Analysis we …" should be "A drainage analysis was…".

40. Pg. 9, 1st line: "… pipe which currently run through…." should be "… pipe which currently runs through…".

41. Pg. 9, 1st paragraph: The discussion notes the 1995 FHU Interchange construction plans as the basis for determining the flows through the existing 48 storm sewer running E-W through the site, and therefore for sizing the re-routing of this pipe. However, as noted above, the current C470 Design-Build widening project may / is anticipated potentially to increase the flows to/in this line. Coordination with the CDOT Design/Build Team should occur – and the design of this relocated storm line may need to be adjusted.

42. Pg. 10, Sec. 4.2, 2nd paragraph: The discussion notes that emergency stormwater overflow paths will be incorporated into the development, to provide relief for storm runoff events greater than the design capacity (e.g. greater than a 100 yr. event) and/or in case of a system failure. We did not note where or how this (these) emergency overflows / flow paths were. Please clarify.

43. Pg. 12, Proposed Storage Facilities Table: We will need to review the proposed sizing in more detail. Our preliminary review suggested the proposed sizing is close, but possibly slightly (e.g. 2% +/-) smaller than may be required.

44. Pg. 13, Sec. 4.7, 1st line: The existing regulatory floodplain is mapped as Zone AE, not Zone A.

45. Pg. 13, Sec. 4.7, 4th line: There are no stormwater ponds proposed within the floodplain as part of this Project.

46. Pg. 13, Sec. 4.8: The required CDPHE permit is a State Stormwater Construction Permit from the Colorado Department of Public Health and Environment (CDPHE). Also, a 404 Permit from the Army Corps Engineers may be required. An Army Corp of Engineer Jurisdictional Determination/Wetland Determination Confirmation should be obtained to determine if a 404 Permit is necessary.

47. Pg. 14, 2nd & 3rd lines: The statement "… all offsite flow will bypass the proposed underground detention facilities…" does not appear to be consistent with prior discussion in this drainage report. Please review and correct as appropriate.

48. Pg. 14, Reference #1: Please provide a copy of the referenced firmette in the appropriate appendix.

49. A full Phase III Drainage report, complete with all on-site drainage design (curb inlet capacity, gutter capacity, storm system pipe sizing, etc.) documentation will need to be prepared and submitted as part of the Site Civil Design documentation.

Traffic Impact Analysis (TIA)

50. Figure 2 – Site Plan: It might be appropriate to show the Site Access/Park Meadows Drive intersection, and also the C-470 & EB Yosemite Off–Ramp.

51. Pg. 14, Short Range Future Condition, 3rd paragraph: The discussion projects a short range (2017 – shortly after opening of The Yard) traffic peak hour level of service (LOS) of E/F at the Yosemite / Park Meadows intersection (re: Figure 3). Figure 8, which includes the background traffic plus The Yard traffic, projects a LOS of D/E (with the evening Peak Hour level of service (LOS) rating of E). The FHU evaluation notes the "improvement from LOS E/F to LOS D/E by signal timing adjustments. The discussion also projects that even without The Yard, the projected Short Range Future LOS would likely still at an D/E rating. The discussion notes one additional possible improvement to help marginally improve the LOS might be incorporation of an additional northbound lane on Yosemite, between Maximus and Park Meadows. (FHU apparently was unaware that an added dedicated NB right-turn lane is being constructed late summer/early fall of 2016. Perhaps it would be appropriate to update the TIA to incorporate this new lane into the analysis.)

52. The discussion of what the Background Traffic LOS values might be, without The Yard, begs the question of why the short term and long term Background LOS values were not included (e.g. similar to Figure 8 and Figure 9) – to provide a better comparison of projected conditions both with and without The Yard's contribution. Such a comparison may help to clarify, or dispel, concerns about what degree of impact traffic from The Yard development might contribute to the immediate area.

53. CDOT has expressed concern over what impact The Yard traffic might have on backups for NB Yosemite to WB C470 traffic. CDOT has requested that the TIA analysis be expanded to model the intersection of Yosemite, WB C470/ S. Park Meadow Center Drive. We concur with CDOTs request/suggestion.

54. Pg. 16, 3rd bullet: The text under this bullet appears to have been prematurely truncated. Please provide the missing text.

55. Pg. 16, 4th bullet: The text references signalization of the new site access intersection off of Park Meadows Drive "upon buildout of The Yard". The signalization should be installed and operational before even partial opening of The Yard (e.g. before the intersection is opened for public use).

56. Pg. 16, 5th bullet: This bullet references potential for drivers exiting the site trying to merge over to turn left (EB) onto Park Meadows. We will require the combination of the RI/RO pork chop island plus signage prohibiting left turn (EB) at Park Meadows as part of The Yard's Civil Construction Plans to help with this issue. Additionally, a planned new raised median in Yosemite (across the frontage of The Yard RI/RO entry area) should effectively prevent NB Yosemite traffic from attempting a left turn into the Yard.

CONCLUSION

Public Works/Engineering has no objections in principal to the overall Project concept (e.g. The Yard multi restaurant/retail site). However, we have noted a number of comments, some significant (such as the location of the proposed site access intersection off of Park Meadows Drive) which we believe should be resolved satisfactorily before full SIP / development approvals. Once the Planning Commission/City Council are comfortable that the major items are satisfactorily resolved, Public Works/Engineering then would have no objection to recommendation of SIP approval contingent upon appropriate resolution of the issues noted in the above comments and final Engineering/Public Works approval of the various engineering documents/plans.

Please feel free to call me with any questions or comments at 303-662-8112.

Sincerely,

Gregory A. Weeks, PE, LEED ® AP
City Engineer

CITY OF LONE TREE

Public Works Department

Project #	061-432 (SP16-14 / SB16-15)
Project:	The Yard
Owner:	Alberta Development
	SIP, CD's, Signal Plans, Traffic Study

ENGINEERING REVIEW FEE SCHEDULE

DESCRIPTION	*ENGR FEE*	*QUANTITY*	*SUB-TOTAL*
ZONING APPLICATION	$6,500.00	<5 acres	
- includes required plans and reports	$9,900.00	≥ 5 ac. and < 25 ac.	
	$13,300.00	≥ 25 acres	
SKETCH PLAN	$2,500.00	<5 acres	
- includes required plans and reports	$5,000.00	≥ 5 ac. and <25 ac.	
	$7,500.00	≥ 25 acres	
PRELIMINARY PLAN	$2,500.00	<5 acres	
- includes required plans and reports	$5,000.00	≥ 5 ac. and <25 ac.	
	$7,500.00	≥ 25 acres	
FINAL PLAT	$5,000.00	<5 acres	
- includes required plans and reports	$5,800.00	≥ 5 ac. and <25 ac.	
	$7,500.00	≥ 25 acres	
MINOR DEVELOPMENT PLAT	$5,000.00	<5 acres	
- includes required plans and reports	$5,800.00	≥ 5 ac. and <25 ac.	
	$7,500.00	≥ 25 acres	
REPLAT (Administrative Lot Line Adjustment or Vacation) +	$500.00		
REPLAT (Non - Administrative Lot Line Adjustment or Vacation) +	$1,000.00		
CONDOMINIMUM MAP	$500 + $15/unit		$0.00
SITE IMPROVEMENT PLAN	$3,000.00	<5 acres	
(and Major Revisions to Site Improvement Plan)	$5,500.00	≥ 5 ac. and <25 ac.	**$5,500.00**
- includes required plans and reports	$9,500.00	≥ 25 acres	
SITE IMPROVEMENT PLAN ++ "Pad Site" (Part of a Larger Approved SIP)	$1,500.00		
SITE IMPROVEMENT PLAN - Minor Revision	$400.00		
SITE IMPROVEMENT PLAN - Minor Modification	$200.00		
USE BY SPECIAL REVIEW +++	$3,000.00	<5 acres	
- includes required plans and reports	$5,500.00	≥ 5 ac. and <25 ac.	
	$9,500.00	≥ 25 acres	
PD Amendment (Major)	$500.00		
SERVICE PLAN (Special District)	$640.00		
RIGHT-OF-WAY (R.O.W.) DEDICATION (Public)	$200.00		
R.O.W. VACATION	$2,400.00		
MINOR ADJUSTMENT TO EXISTING R.O.W.	$200.00		
DEDICATION OF DRAINAGE EASEMENT	$200.00		
VACATION of Access or Drainage Easements	$1,000.00		
VACATION of Other Easements (May be used for Access or Drainage Easements if part of a larger project)	$400.00		
SB 35 EXEMPTION	$1,200.00		
LOCATION & EXTENT	$1,000.00		
PLANNED DEVELOPMENT (Zoning) Administrative Amendment	$400.00		
CONSTRUCTION PLAN REVIEWS			
STREET / STORM PLANS	$1,600.00	<5 acres	
	$2,000.00	≥ 5 ac. and <25 ac.	**$2,000.00**
	$2,400.00	≥ 25 acres	
GRADING, EROSION & SEDIMENT CONTROL (GESC) PLANS (1)	$250 + $25(X)		$0.00
LOW IMPACT GESC PLANS	$250.00		
DISTRICT ROADWAY PLANS (2)	$700 + $60√Y		$0.00
DISTRICT STORM SEWER PLANS (2)	$700 + $75√Y		$0.00
REGIONAL DETENTION POND PLANS (1)	$500 + $40√X		$0.00
REGIONAL WATER QUALITY FACILITY PLANS	$400.00		

ENGINEERING REVIEW FEE SCHEDULE			
DESCRIPTION	***ENGR FEE***	***QUANTITY***	***SUB-TOTAL***
UTILITY PLANS Gas, Electric, Telephone, Cable TV (For submittals greater than 1000 LF)	$450.00		
TRAFFIC SIGNAL PLANS (Per Intersection)	$800.00		**$800.00**
SIGNAGE AND STRIPING PLANS (if not a part of an overall construction plan set)	$200 per sheet		$0.00
R.O.W. LANDSCAPE PLANS (2)	$350 + $60√Y		$0.00
OTHER REVIEW SERVICES			
PHASE I DRAINAGE REPORT	$336.00	<5 acres	
	$560.00	≥ 5 ac. and <25 ac.	
	$672.00	≥ 25 acres	
PHASE II or PHASE III DRAINAGE REPORT	$672.00	<5 acres	
	$1,120.00	≥ 5 ac. and <25 ac.	**$1,120.00**
	$1,344.00	≥ 25 acres	
DRAINAGE CONFORMANCE LETTER	$100.00		
FLOODPLAIN MODIFICATION STUDY - Minor	$800.00		
FLOODPLAIN MODIFICATION STUDY - Major	$1,600.00		
FLOODPLAIN DEVELOPMENT PERMIT	$100.00		
PAVEMENT DESIGN REPORT	$250.00		
ACCESS PERMIT	$75.00		
TRAFFIC IMPACT STUDY FOR:			
Rezoning, Sketch Plan or Preliminary Plan	$2,000.00		
Updated Report to Original for Sketch or Preliminary	$1,000.00		
Final Plat / Minor Development Plat	$500.00		
Site Improvement Plan	$500.00		**$500.00**
Use by Special Review	$1,500.00		
SIGNAL WARRANT STUDY (Per Intersection)	$200.00		
VARIANCE REQUEST	$200.00		
NOTICE OF CHANGE TO APPROVED PLAN - Minor Revision	$200.00		
NOTICE OF CHANGE TO APPROVED PLAN - Major Revision	$500.00		
ALTERNATE ROADWAY STANDARDS FOR PUBLIC ROADS	$2,500.00		
Revision to Alternative Roadway Standards (Public Roads)	$500.00		
ROADWAY STANDARDS FOR PRIVATE ROADS	$2,500.00		
Revision to Private Roadway Standards	$250.00		
LICENSE AGREEMENT	$250.00		
INTERGOVERNMENTAL AGREEMENT (Special District)	$1,000.00		
MODIFICATION to Standard Improvements Agreements	$500.00		
MINIMUM ENGINEERING REVIEW FEE	$300.00		
Other:			
		TOTAL	**$9,920.00**

Notes:

+ See Article VII, Section 17-7-30(b) for clarification / applicability.

++ A "Pad Site" is part of a larger approved Site Improvement Plan (SIP). The following items must exist (or be approved) to qualify as a "Pad Site": (1) Detention/water quality, access, parking (generally), grading (generally) and utilities all provided for through the larger SIP; (2) No revisions are required to the overall drainage patterns, detention, water quality, etc.; (3) The consulting engineer for the Project is required to submit a letter (minimum) certifying that the drainage and access for the "Pad Site" are in substantial compliance with the Larger SIP Drainage Report and Traffic Report (if applicable).

+++ The City of Lone Tree reserves the right tp send referrals to outside agencies from which expert technical assistance may be requested. Fees may be assessed by referral agencies for their outside review, and those fees shall be assesed to and paid by the applicant.

1. X denotes area in acres
2. Y denotes longitudinal distance in hundreds of feet

The fees listed above are for the initial submittal. All third resubmittals are charged 50% of the initial submittal fee. Resubmittals following a "conditional approval" require no fee.

DATE PAID: _____

☐ CASH ☐ CHECK # _____

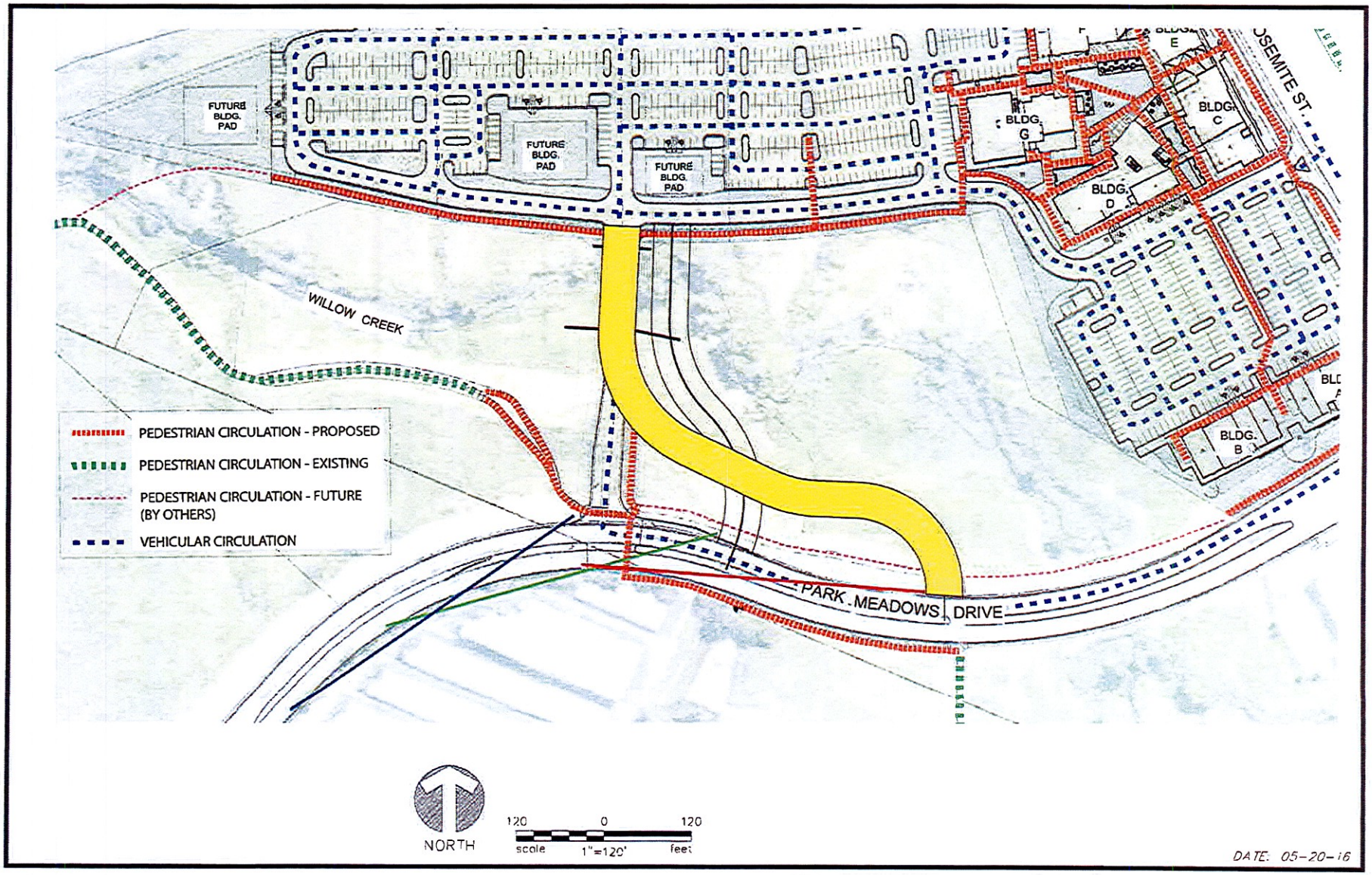


Exhibit # 1

SIP16-22 Comments - Public Works/Engineering 6/1/16

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

A RESUBDIVISION OF PARK MEADOWS FILING ONE, FIRST AMENDMENT TRACT BA AND TRACT E, SECTION 3, TOWNSHIP 6 SOUTH, RANGE 67 WEST OF THE SIXTH P.M., CITY OF LONE TREE, COUNTY OF DOUGLAS, STATE OF COLORADO

14.12 ACRES, SIP# SPXX-XXX

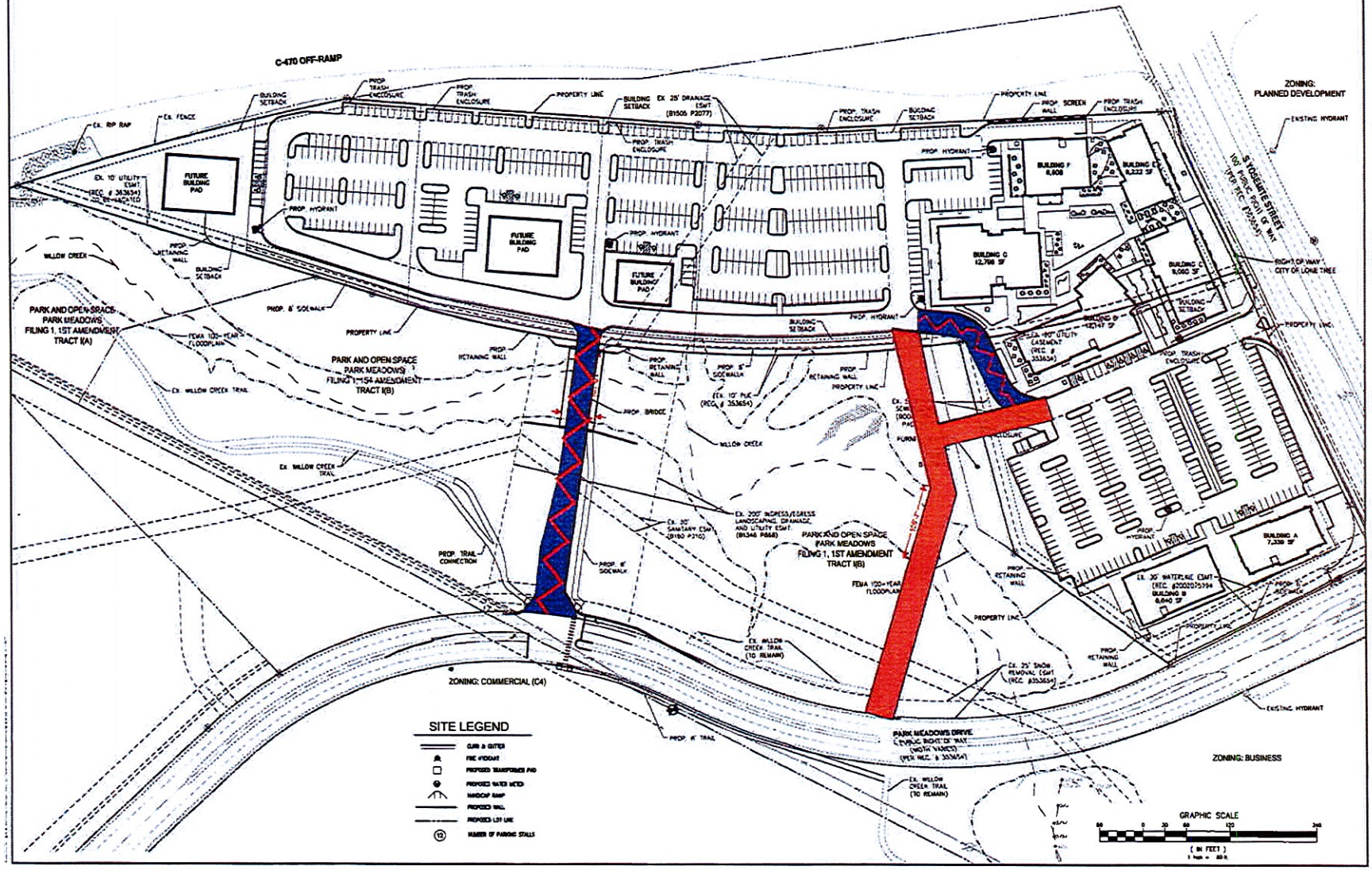


Exhibit # 2

SIP16-22 Comments - Public Works/Engineering 6/1/16

Galloway

ALBERTA DEVELOPMENT PARTNERS LLC

COPYRIGHT

THE YARD AT LONE TREE

LONE TREE, COLORADO

ALBERTA DEVELOPMENT PARTNERS

SHEET TITLE: OVERALL SITE PLAN

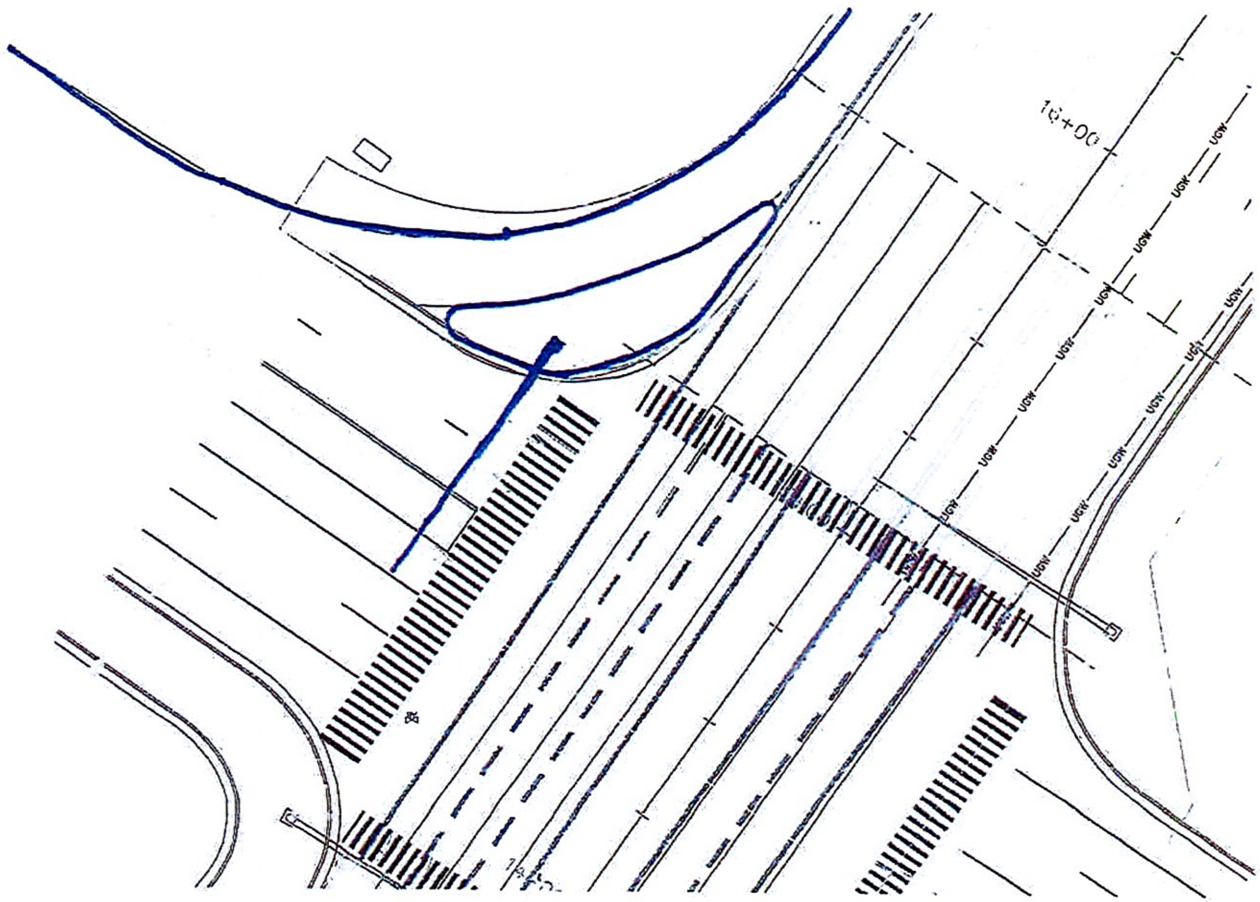


Exhibit # 3

SIP16-22 Comments - Public Works/Engineering 6/1/16

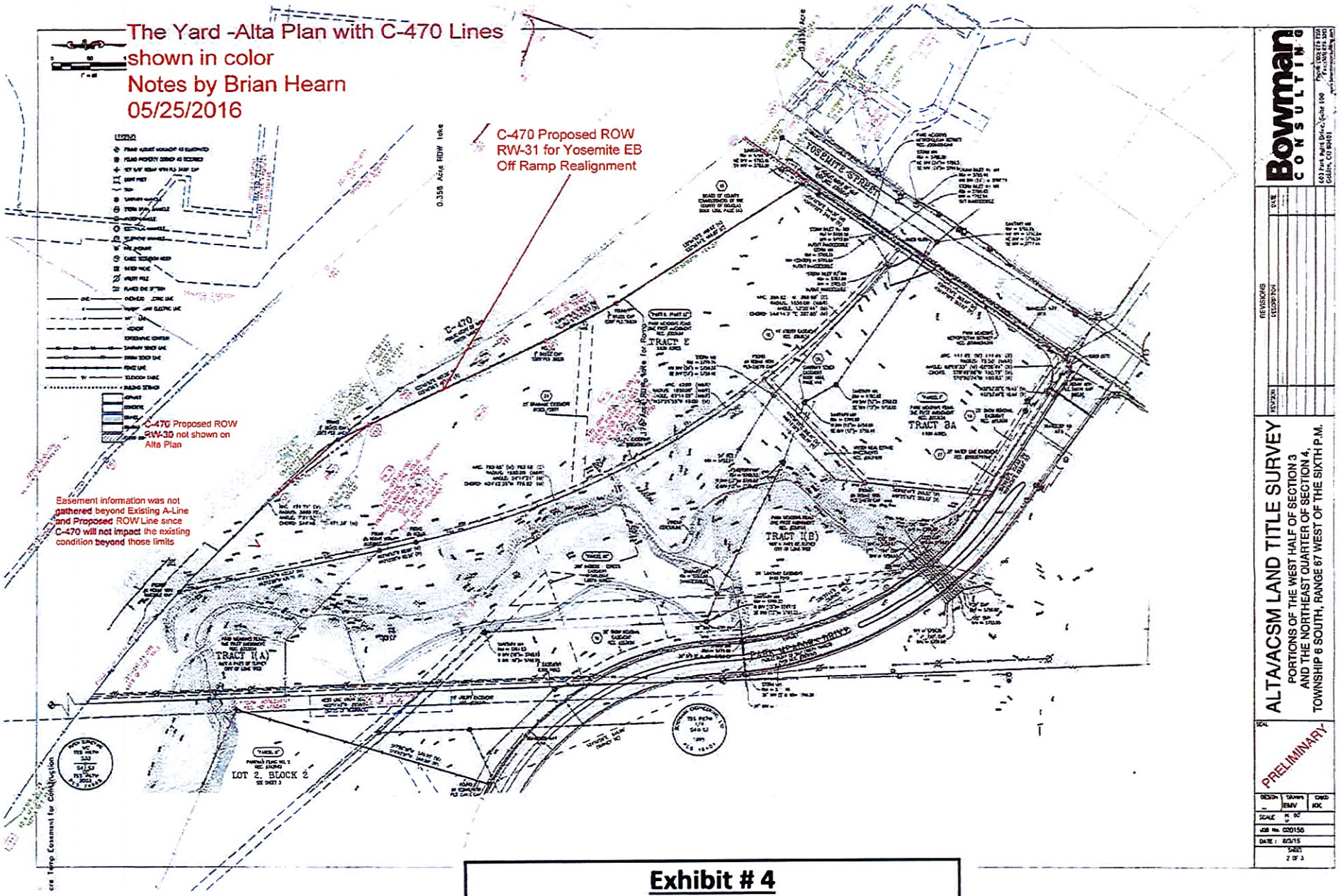


Exhibit # 4

SIP16-22 Comments - Public Works/Engineering 6/1/16

STATE OF COLORADO

Traffic & Safety
Region 1
2000 South Holly Street
Denver, Colorado 80222

COLORADO
Department of Transportation

Project Name:	**The Yard at Lone Tree**		
		Highway:	Mile Marker:
Print Date:	5/25/2016	C-470	25.5

Environmental Comments:

From a planning perspective, if there are no plans for future improvements I usually give the ok. If there are known projects I defer to the LA and engineers as they know the project needs in more detail. In this case I would touch base with the RE (Jerome Estes) and program engineer (Carrie DeJiacomo). Per Danny Herrman

Traffic Comments:

The Study omits site traffic that would be using the C470 WB on-ramp. This needs to be included in the study as this traffic may effect the intersection operation at the ramp. Also, The trip distribution percentage assigned to C470 appears to be too low (10%). 15%-20% seems more appropriate.

The Study needs to be re-submitted reflecting these changes.

PS 05-19-16

Permits Comments:

An A-line exist along the west side of Yosemite extending south to the north edge of the existing curb cut. Our investigation indicates this existing access/curb cut was established for the purpose of construction & maintaining the C-470 eastbound exit ramp, utility easements & improvements thereon. In essence, minimal access & traffic would be generated or required here if any. This existing access is substandard to the FHWA recommendation of a 550-ft minimum access spacing for interstate ramps for vehicular access. This access however, is not under a CDOT Permit. Should additional ROW be dedicated for the creation of an auxiliary lane, it is recommended that an A-line be re-established for the 550-ft distance.

The plans should clarify if the existing utility & storm easements as shown on the Alta Survey will remain. Please ensure access to these facilities is provided.

Conversion of the existing curb cut to a proposed new right-in/out access may exacerbate problems that exist with peak hour traffic. Vehicles will attempt to cross over 5 lanes of traffic in a shorten distance to make left and U-turns at the Park Meadows intersection. CDOT is concerned that vehicles could back-up and impede egress from the C-470 Ramp. We recommend consideration to: (a) eliminate right out egress movements onto Yosemite, and (b) establish a raised median in Yosemite to inhibit cheaters attempting to make left in/out movements into the access.

Signs oriented to C-470 need to be compliant with the State rules for Outdoor Advertising. Recommend consideration of the TOD-LOGOS program for qualified restaurants to be located in this development.

We anticipate that higher than normal bicycle and pedestrian traffic will be present due to the proximity of the Willow Creek & C-470 trails and attractions in the area. Noted that the existing attached sidewalk is proposed for removal & replacement with a narrower detached walk. We recommend that the City require this pathway along Yosemite to be wider of an 8 to 10-ft width to safely accommodate pedestrian and cyclist. Discourage any on-street bike lanes in this congested area. Should the City allow the Yosemite access to remain, we recommend at minimum, an overhead street light for illumination & safety.

RS 05-17-16

Any utility work within C-470 right of way will require individual permits. ROW needs to be verified with the C-470 design-build project.

CL 05-20-16

ROW

The property north of the Yard was acquired by Douglas County for the C-470 / Yosemite interchange project. It was needed for the EB C470 off ramp to Yosemite. It has an access control line along the southern boundary (northern boundary of the Yard) and then runs south along Yosemite to the existing curb cut. The existing curb cut was constructed within a permanent easement acquired by Douglas County for "construction and maintenance of an access road". No purpose for the access road was provided.

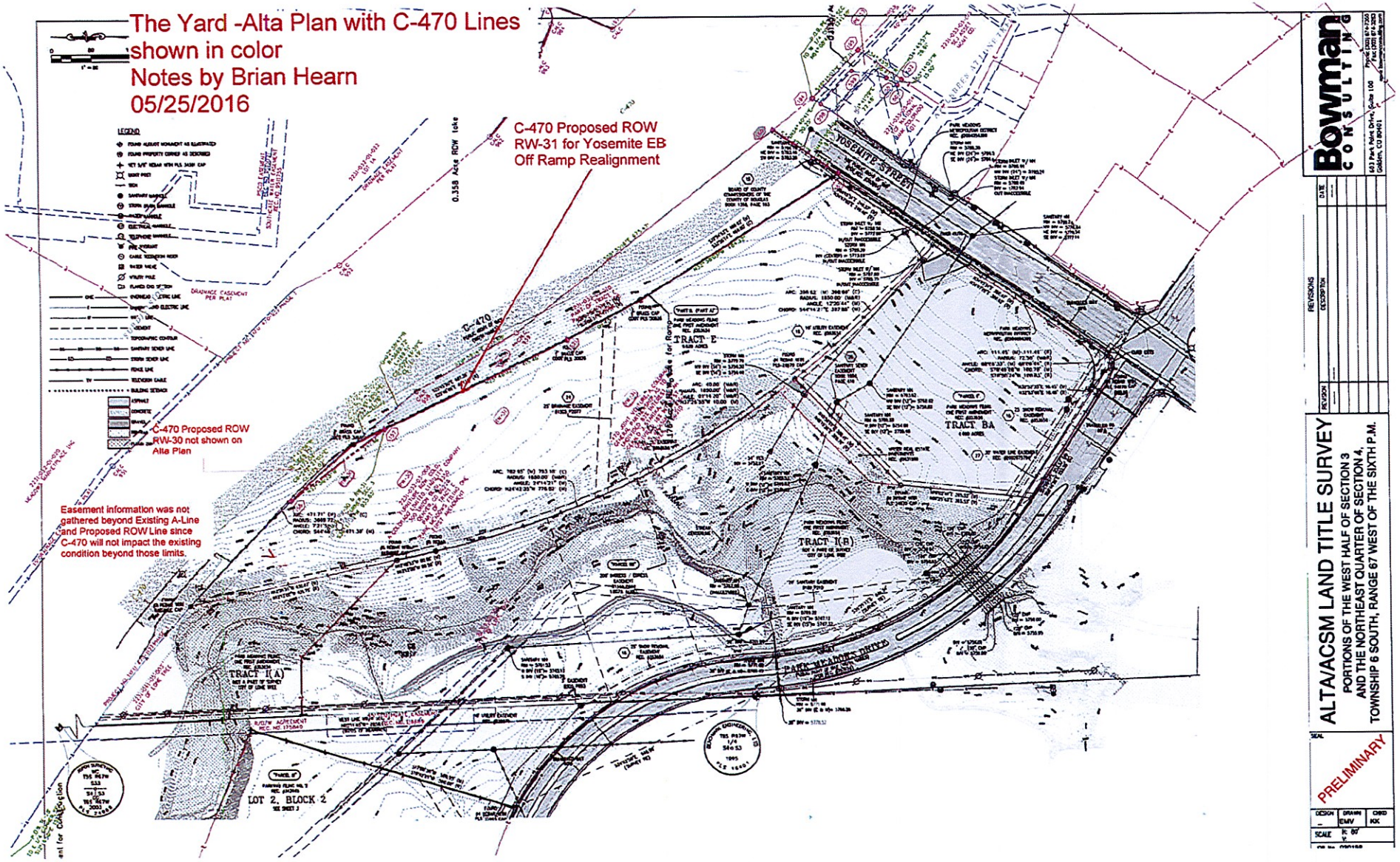
Irv Mallow, Region 1 Right of Way Pr operty Manager

RESIDENCY - C-470 DESIGN-BUILD LEAD ENGINEER

We have not identified the easements beyond our proposed ROW line since our project will not impact these easements. I've attached a pdf showing the C-470 ROW superimposed on the Yard-ALTA.pdf. The Yard plan is missing a piece of proposed ROW being purchased by CDOT as part of the C-470 Design Build Project. I can send along CAD files or our ROW Plan sheets for this area to ensure we are all using the same ROW lines.

The property north of The Yard that is owned by Douglas County is being deeded to CDOT for the realignment of the Yosemite EB Off Ramp and to keep the entire ramp within CDOT ROW. The Yosemite EB Off Ramp is being widening to a two lane exit, which will change the alignment and grading through the south side of the off ramp. The contractor for the C-470 construction still has the flexibility to adjust the Yosemite off ramp alignment and grading beyond what we saw in their Technical proposal, so that CDOT ROW parcel will not be available for (off-site) landscaping.

Brian Hearn, PE
Denver Transportation Operations Manager | Wilson & Company, Inc., Engineers & Architects


The Yard -Alta Plan with C-470 Lines shown in color
Notes by Brian Hearn
05/25/2016
C-470 Proposed ROW RW-31 for Yosemite EB Off Ramp Realignment
C-470 Proposed ROW RW-30 not shown on Alta Plan
Easement information was not gathered beyond Existing A-Line and Proposed ROW Line since C-470 will not impact the existing condition beyond those limits.
0.358 Acre ROW take
TRACT E
TRACT BA
TRACT I(B)
TRACT I(A)
LOT 2, BLOCK 2
PARK MEADOWS DRIVE
Bowman CONSULTING
ALTA/ACSM LAND TITLE SURVEY
PORTIONS OF THE WEST HALF OF SECTION 3 AND THE NORTHEAST QUARTER OF SECTION 4, TOWNSHIP 6 SOUTH, RANGE 67 WEST OF THE SIXTH P.M.
PRELIMINARY

Jennifer Drybread

From: Solomon - CDOT, Richard <richard.solomon@state.co.us>
Sent: Friday, May 27, 2016 10:00 AM
To: Jennifer Drybread
Cc: Jerome Estes - CDOT; Carrie DeJiacomo-Wiedner; Dole Grebenik; Scott Leiker - CDOT; Samer AlHaj
Subject: Additional referral remarks - CDOT
Attachments: Utility Comments 05-26-16.pdf; Drainage Comments 05-26-16.pdf

Jennifer:
I did receive two additional sets of remarks, from our Utility unit and from our C-470 project engineer with regards to storm drainage. Please see attached & add to previous remarks sent in.

We are aware that Lone Tree is a funding partner of the major regional C-470 managed lane project. Whereby it is a design-build project & process, specific (location-design) details may not be readily available as of today's status. It appears that all options are being protected within the ROW - footprint they are using.

Thank you ! .

Rick Solomon
Region One Permit Unit Supervisor

P 303.757.9356 | C 720 670-7068 | F 303.757.9886
2000 South Holly Street
Denver, CO 80222
richard.solomon@state.co.us

The Yard at Lone Tree– Utility Comments, Patricia McKinney-Clark, CDOT Region 1 Utility Engineer

After reviewing the Site Improvement Plans, on Sheet 1 of 55 there is an existing 10' utility easement, east of Willow Creek on the north end of the development, Rec #363654; in some areas on the plan sheet the easement has "to be vacated". The 20' utility easement under the same Rec # farther south, on the same sheet, doesn't seem to be affected. The 10' easement runs north to south through the development. It appears the 20' easement contains the 10' easement "to be vacated" as well as an additional 10'. On Sheet 7 of 55, near Yosemite St., the 20' utility easement, also Rec #363654, also has "to be vacated". Where does the vacation begin and end? How will the utilities being accommodated once the easement is vacated? Is the developer purchasing a replacement easement for those areas to be vacated?

The CDOT ROW is not shown on the plan sheet at the C-470 Off-Ramp. This should be shown and labeled.

For proposed fire hydrants, the developer is advised to provide a 10' X 10' minimum permanent easement for the operation of the hydrants. The municipal fire department must approve the proposed locations of all hydrants and requires the easement so nothing can be built around the hydrant.

Sheet 7 of 55, there is a proposed 40' Drainage Easement crossing an existing sanitary sewer easement. The Developer should note there are typically separation requirements (minimum clearance) between sanitary and storm pipes. Impacts to the sanitary lines should be avoided.

Xcel Energy should be contacted concerning the location and size of all transformers for power source needs for proposed lighting and possible other devices as needed. LED lights don't have as much pull as HPS but this should still be considered prior to final lighting quantities and locations. Because of the C-470 Express Lanes DB project in the area, location of transformers and other power source facilities could be relocated and ultimately affect The Yard.

The C-470 Express Lanes DB project is under design. The developer is encouraged to contact Wilson and Co. regarding design impacts to this area.

MEMO TO FILE

RE: "The Yard at Lone Tree" - Drainage Referral remarks

Date: May 25, 2016

From: Brian Hearn, PE Denver Transportation Operations Manager
Wilson & Company, Inc., Engineers & Architects | 303-501-1241 Direct

The drainage design we have developed for C-470 is at a preliminary level and the contractor will be required to finalize the drainage design and report. The preliminary design of the C-470 widening and realignment including the widening the of the Yosemite EB Off Ramp will have adjustments including small adjustments to the Offsite Basins O1-4 and Offsite Basin 5 will have increase flows due to pipe crossing from the Yosemite EB Off Ramp Gore into the existing ditch into O5 (100 Year Flow of 9.4 cfs, an increase of 2.4 cfs from the pre-project condition). This is subject to adjustment as the contractor finalized the design.

On pages 8 & 9 of the drainage report, Bowman Consulting reference a 1995 FHU C-470/Yosemite Interchange Plans used to determine the flows from the 48" pipe which runs under C-470 into the site. The RFP for the C-470 Design Build Project requires the contractor to analyze the existing storm sewer system so that the post-project design flows do not exceed the hydraulic capacity of the existing storm drain system. These are the flows coming from the ponds east of Yosemite. They will be allowed to increase the flows into this pipe as long as it does not exceed the existing hydraulic capacity. The contractor is required coordinate with Lone Tree on these ponds and to obtain Lone Tree's approval and Acceptance by CDOT.

Jennifer Drybread

From: Hearn, Brian S. <Brian.Hearn@Wilsonco.com>
Sent: Tuesday, July 05, 2016 10:50 AM
To: Solomon - CDOT, Richard; Jennifer Drybread
Cc: Corey Guerrero - CDOT; Jerome Estes - CDOT; Carrie DeJiacomo - CDOT; Kirk Allen
Subject: RE: The Yard Referral responses

Rick, I wanted to follow up with you on the ROW-30 issue. We met with Alberta last week about the small corner clip parcel (RW-30). They explained that it had a significant impact to their parking area. The 30% design by Wilson was acquiring RW-30 for the inclusion of ditch that was not yet shown on the grading plans, but this parcel is not required if we do not include a ditch. We were planning on Type 7 barrier along the outside edge of pavement along the south side of the EB Off Ramp, so the only water flowing offsite would be the side slope flows. The Alberta Drainage Report takes these flows from the slopes and accommodates them as part of their improvements, so we will not need to acquire the parcel as permanent ROW for this project. We will still want to proceed to get a temporary easement for constructability since our toes will be coming within a few feet of the ROW line.

Since Alberta's drainage report is taking the existing grading outside the existing edge of pavement, not acquiring this parcel will not be a significant impact to the C-470 Project. Feel free to give me a call at my cell phone if you would like to talk through this, 303-641-4477.

Brian Hearn, PE
Denver Transportation Operations Manager | Wilson & Company, Inc., Engineers & Architects | 303-641-4477 Cell

From: Solomon - CDOT, Richard [mailto:richard.solomon@state.co.us]
Sent: Wednesday, June 22, 2016 1:46 PM
To: Jennifer Drybread
Cc: Hearn, Brian S.; Corey Guerrero - CDOT; Jerome Estes - CDOT; Carrie DeJiacomo - CDOT; Kirk Allen
Subject: Re: The Yard Referral responses

Not cooperating to dedicate that narrow strip of ROW from the later phase of their project essentially elevates the issue into our C-470 project & schedule, for which I will need others to weigh in on.
Not clear what / how this suggestion might lead to.

Brian & Corey:

Please look at the attachment, pp 23-24
I can see where not obtaining ROW may save time, but on the other hand a temporary easement to construct such wall might take just as long.
and CDOT would probably need a permanent easement to maintain such wall via a permanent easement. (yet to see a wall design that is 100% maintenance-free)
I have also seen where a wall has altered the historic storm water sheet flows into a directional flow, another element to take into account among others, including installation of a guard rail, etc.-etc.

Jennifer:

Will there be more to review with their re-submission?
We saw the City's red-lines, but not a revised plan - of yet.

Eventually, we would appreciate a digital copy of the City approved TIA, SIP & Plat.

DOUGLAS COUNTY
COLORADO

Department of Public Works Engineering
Engineering Services

www.douglas.co.us

May 20, 2016

Jennifer Drybread
Lone Tree Community Development Department
9220 Kimmer Drive, #100
Lone Tree, CO 80124

Subject: Park Meadows, Filing 1, Tract E and B (The Yard at Lone Tree)
Site Improvement Plan (SP16-22)

Dear Jennifer,

Douglas County Engineering has reviewed the Site Improvement Plan for The Yard at Lone Tree and offers the following comments.

1. There are two drainage easements that run through this site which were originally dedicated to Douglas County. It appears that the developer intends on revising the storm sewer improvements located in the easements. Further legal work may be required, such as an assignment or quit claim from the County, in order to allow the easements to be either modified or vacated. Please contact us to set up a meeting with the appropriate legal folks from the County to address this issue.

2. The developer is proposing to relocate the existing 66" RCP storm sewer pipe, which is located in the 40' Drainage Easement. The relocation of the storm sewer pipe appears to be partially located in the south bound lanes of Yosemite Street. It may be better to relocate this pipe in a manner that would not necessitate the closing of lanes in Yosemite Street especially depending on the timing of construction as it relates to the construction timing of the C-470 toll lane project.

3. The construction plans for the C-470 toll lane project will require a small portion of additional ROW be secured from this property. Please see the attached exhibit which indicates where CDOT will need additional ROW. It would be desirable for this land owner to dedicate the ROW to CDOT or at a minimum the SIP design should modify the parking lot in this area so that it would not be impacted by CDOT's C-470 project.

If you have any questions please feel free to contact me.

Sincerely,

Janet Herman

Janet Herman, P.E.
Assistant Director of PW Engineering

Attachment: Exhibit

Colorado Department of Transportation
18500 East Colfax Avenue
Aurora, CO 80011
Phone: 303-365-7410 FAX: 303-365-7350
Region 1 KAW

Sheet Revisions

Date	Description	Initials

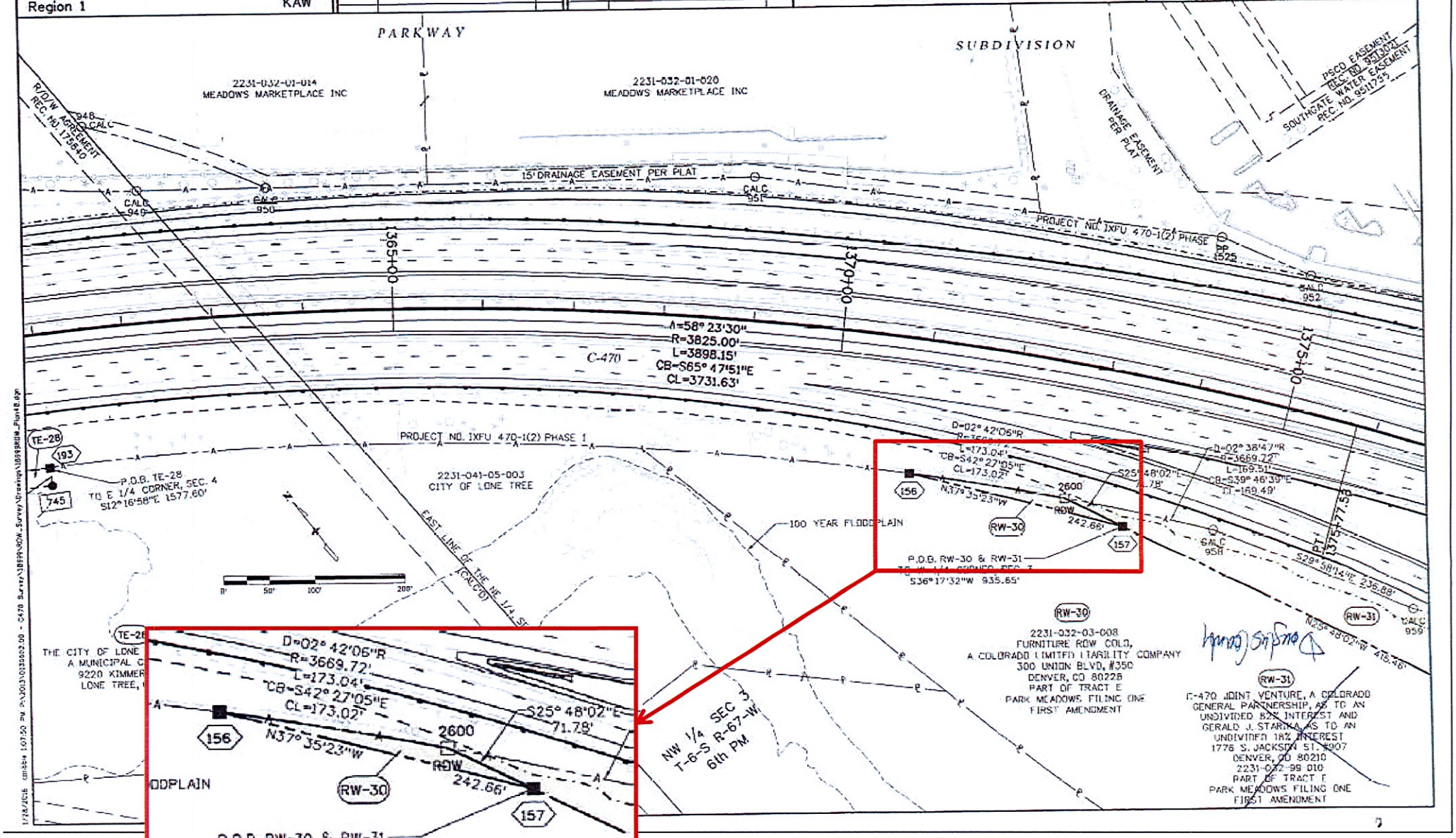
Sheet Revisions

Date	Description	Initials

Farnsworth GROUP
4755 FORGE ROAD, SUITE 150
COLORADO SPRINGS, COLORADO 80907
(719) 590-9194 / (719) 590-9111 Fax
www.f-w.com

Right of Way Plans
Plan Sheet
Project Number: C470L 124
Project Location: C-470 AT KIPLING TO I-25

Project Code	Last Mod. Date	Subset	Sheet No.
18999	01-18-2016	7.48 of 7.50	7.48



Additional ROW Need

Jennifer Drybread

From: Jeremy Hirsch <JHirsch@douglas.co.us>
Sent: Tuesday, May 24, 2016 5:36 PM
To: Jennifer Drybread
Subject: RE: Lone Tree eReferral (SP16-22) Is Ready For Review

Jennifer,

Our office has "no comments" regarding this proposal.

Thanks,
Jeremy

Jeremy Hirsch
GIS Specialist II | Douglas County Assessor
301 Wilcox Street | Castle Rock, CO 80104
303-660-7450 ext. 4228 | 303-479-9751 Fax

From: Marian Woodward
Sent: Monday, May 09, 2016 10:59 AM
To: Jeremy Hirsch; Brooke Decker
Subject: Fwd: Lone Tree eReferral (SP16-22) Is Ready For Review

Sent from my iPhone

Begin forwarded message:

From: Jennifer Drybread <Jennifer.Drybread@cityoflonetree.com>
Date: May 9, 2016 at 9:26:40 AM MDT
To: Undisclosed recipients:;
Subject: Lone Tree eReferral (SP16-22) Is Ready For Review

Greetings,

There is an eReferral for your review. Please click on the link below to review this referral.

http://cityoflonetree.hosted.civiclive.com/UserFiles/Servers/Server_745898/File/Government/Departments%20and%20Divisions/Planning/Referrals/Yard%20Referral%20Binder%20red.pdf

This is a large file, and may take some time to open.

Project Name:	Park Meadows, Filing 1, Tract E and B (The Yard)
Project File #:	SP16-22
Project Summary:	Site Improvement plan application for nearly 80,000 square feet of restaurant and retail use on 14.12 acres. The proposal is located at the northwest corner of Yosemite Street and Park Meadows Drive.

Project Name: Park Meadows, Filing 1, Tract E and B (The Yard)

Project Number: SP16-22
Date Received: 2016-05-09 00:00:00

Jurisdiction: City of Lone Tree
Due Date: 2016-05-29 00:00:00

Addressing Comments:
The proposed addresses for this project will be issued from Park Meadows Drive since this street contains the full movement access. The addresses must reflect the full movement access as required by E911 providers.

The proposed addresses are as follows:
A - 8875 Park Meadows Dr.
B - 8877 Park Meadows Dr.
C - 8867 Park Meadows Dr.
D - 8869 Park Meadows Dr.
E - 8865 Park Meadows Dr.
F - 8863 Park Meadows Dr.
G - 8861 Park Meadows Dr.
H - 8851 Park Meadows Dr.
I - 8849 Park Meadows Dr.
J - 8845 Park Meadows Dr.

These addresses are not to be used for any purpose other than for plan review with the building and fire departments until after this project is approved. These addresses are subject to change and Douglas County and the City of Lone Tree will not reimburse any funds spent using these proposed addresses should they require a change.

These proposed addresses have been forwarded to the city planner under separate cover.

Engineering Comments:
Please see letter dated May 20, 2016 for comments from Douglas County Engineering.

Planner Comments:
No Comments

Southgate
WATER & SANITATION DISTRICTS

May 25, 2016

Delivered via email: jennifer.drybread@cityoflonetree.com

Ms. Jennifer Drybread
Planning Division
City of Lone Tree
9220 Kimmer Drive, #100
Lone Tree, CO 80124

RE: Referral for Case No. SP16-22 The Yard
Park Meadows, Filing 1, Tract E & BA
SPNs: 2231-032-03-008 and 2231-033-01-004

Dear Ms. Drybread,

Thank you for providing Southgate Water & Sanitation Districts (Southgate) the opportunity to comment on the subject referral, which was received on May 9, 2016. The subject property is within the boundaries of Southgate and is serviceable through Southgate. Service connections to Southgate's water distribution and wastewater collection systems may be made only after proper application to Southgate and are subject to the following conditions. Southgate comments are as follows:

1. Proposed water and sewer infrastructure design was not reviewed with this submittal – water and sewer main extensions, fire hydrants, and water and sewer service plans, with applicable fees, must be submitted to Southgate directly for review and approval prior to construction. The design and construction of water and wastewater systems or facilities shall be in strict accordance with Southgate's Rules & Regulations and Design & Construction Standards/Specifications. Information on the review process and submittal requirements can be found on Southgate's website: www.southgatedistricts.org

2. Extensions to Southgate's systems, and any existing mains, are required to be located in a minimum of 30' public right-of-way (ROW) or easement without encumbrances and encroachments and minimum required clearances from other utilities, edges of ROW/easement, flow-lines, etc.

    a. Encroachments are not permitted. Encroachments include structures, buildings, fences, walls, retaining walls, parking, curb & gutter crossings, trees, woody plants, nursery stock, planters, islands, medians, posts, signs, etc.

b. All easements shall be drivable with Southgate equipment, including a combination jet/vacuum truck, without traversing encroachments, such as curb and gutter, walkways, landscaping, etc.

c. Unimproved easements shall be graded for driving purposes and may be landscaped with sod, bark or gravel. Trees, shrubs and woody plants are not permitted.

d. Improved easements shall be a paved (no pavers) roadway with a minimum paving width of 29' flow-line to flow-line or 26' flow-line to flow-line with an attached walk.

3. The cost of providing services to the property, including, and not limited to, System Connection Charges, system extension projects, potential system impact studies, potential system impact fees, and potential system improvements, will be borne by the property owner.

4. The legal ability to provide service continues to exist at the time of connection and has not been limited, restricted or suspended by the action of a governmental entity, agency or other regulatory body which would diminish Southgate's capability to provide such service.

5. Contact Southgate's Engineering Staff as soon as possible to discuss the project and establish project-specific requirements.

You may contact me at cbaca@southgatedistricts.org or (303) 713-7746 with questions.

Sincerely,

Christina Baca, PE
Engineering Manager
Southgate Water & Sanitation Districts

cc: David Irish, Southgate Water & Sanitation Districts;
File

CITY OF LONE TREE
Community Development Department

REFERRAL REQUEST

Today's date: May 9, 2016

Project Name and File Number: Park Meadows, Filing 1, Tract E & BA, Site Improvement Plan, Project SP16-22

Comments Due By: May 29, 2016
If you are unable to respond by the due date, please contact the project planner

Dear Referral Organization:
Information on the above referenced proposal in the City of Lone Tree is provided for your review and comment. Please submit your response no later than the due date to ensure adequate time to consider comments and enter them into the public record.

If you have difficulty viewing or understanding any of the information or have questions, please contact me at 303-708-1818. Printed materials and extra sets of materials are available upon request. Plans may also be viewed at the City offices from 8am-5pm.

____ **We have no comments regarding this proposal**

__X__ **Please note the following concerns this organization has: Site access Autoturn analysis (attached) and amending the SIP submittal. The SIP is approved as submitted.**

____ **See attached letter for comments regarding this proposal**

Organization Name: South Metro Fire Rescue

Your name: Jeff Sceili

Your signature: _____ **Date:** 5/19/16

This project may be subject to public meetings. Please check the City's web site (www.cityoflonetree.com) for posted agendas or contact this office.
Thank you for your consideration.

Jennifer Drybread

Senior Planner

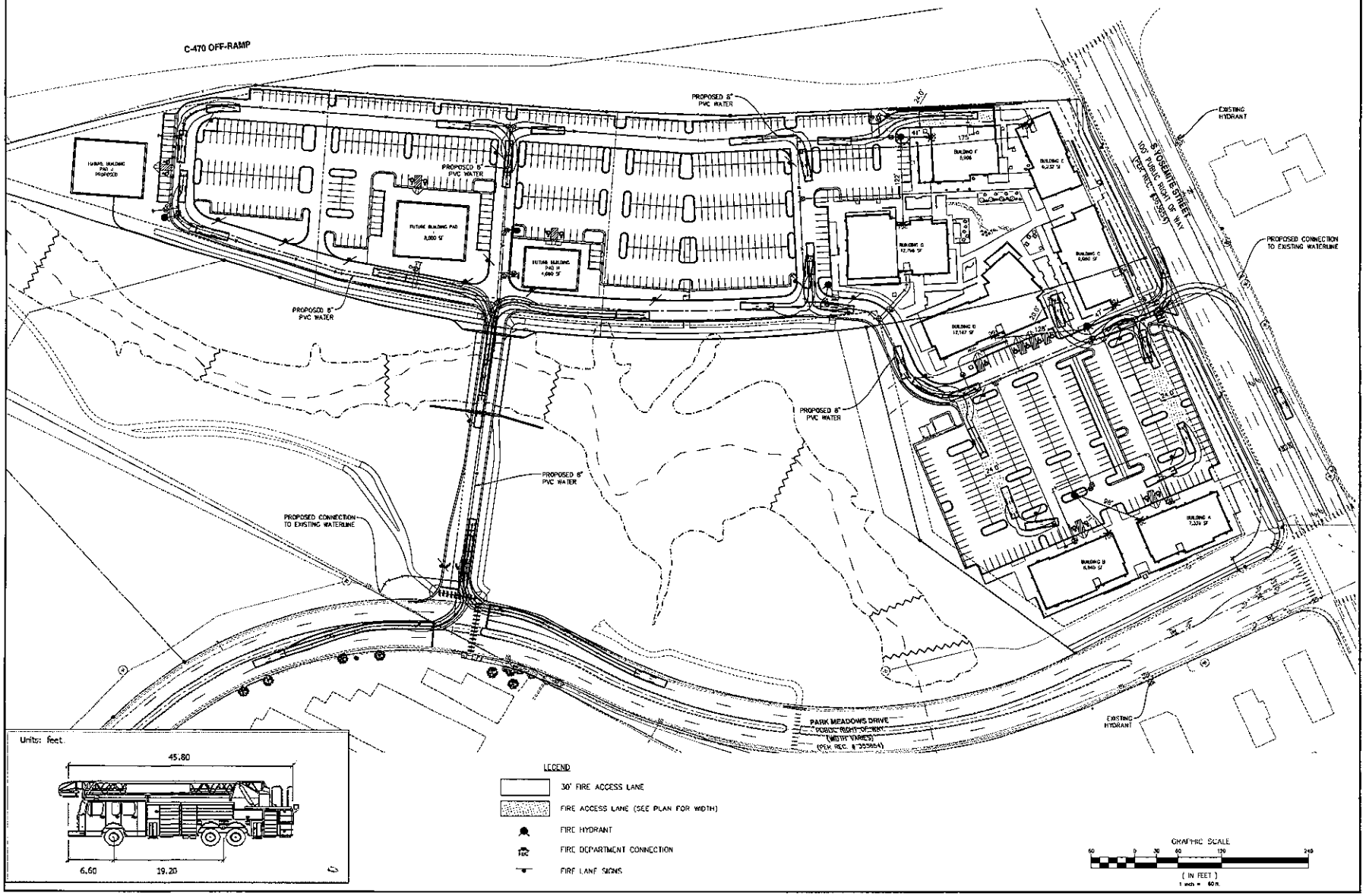
PLEASE RETURN THIS PAGE AND ANY COMMENTS TO:

City of Lone Tree Community Development Dept.
9220 Kimmer Drive Suite 100
Lone Tree, CO 80124
Ph: 303-708-1818
Fx: 303-225-4949
jennifer.drybread@cityoflonetree.com

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 1ST AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22



Galloway
Planning, Architecture, Engineering
6162 S. Willow Drive, Suite 320
Greenwood Village, CO 80111
303.770.8884 O
www.galloway-us.com

ALBERTA DEVELOPMENT PARTNERS, LLC

NOT FOR CONSTRUCTION

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THE YARD AT LONE TREE
LONE TREE, COLORADO
ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL

Project No.	AH16000701
Drawn By:	JAH
Checked By:	KJT
Date:	03.29.16

SHEET TITLE:
FIRE ACCESS & PROTECTION PLAN

Tri-County Health Department

June 2, 2016

Jennifer Drybread
City of Lone Tree
9220 Kimmer Drive Suite 100
Lone Tree, CO 80124

RE: The Yard at Lone Tree, SP16-22
TCHD Case # 3910

Dear Ms. Drybread:

Thank you for the opportunity to review and comment on the Site Improvement Plan for a development located on the northeast corner of Park Meadows Drive and Yosemite. Tri-County Health Department (TCHD) staff reviewed the application for compliance with applicable environmental and public health regulations and has the following comments.

Food Service Plan Review

The applicant indicates a few of the buildings will be occupied for restaurants. Plans for all new and remodeled retail food establishments must be reviewed by TCHD for compliance with Colorado Retail Food Establishment Rules and Regulations and approved by the Department before the start of construction. The applicant shall submit plans for the proposed food establishment to our Administration Office at 6162 S Willow Drive, Suite 100, Greenwood Village, along with the Plan Review Specification Packet found at http://www.tchd.org/DocumentCenter/View/2094. More information can be found at http://www.tchd.org/246/Restaurants-Grocery. We recommend a review of the plans by THCD be completed before the city issues a building permit for the construction. The applicant may call TCHD's Plan Review Hotline at our Administrative Office at (303) 846-6230, regarding requirements for and scheduling a plan review. Instructions for opening a retail food establishment can be found on line at TCHD's web site at http://www.tchd.org/DocumentCenter/View/315.

Community Design for Healthy Behaviors

Because chronic diseases related to physical inactivity and obesity now rank among the country's greatest public health risks, TCHD encourages community designs that make it easy for people to include regular physical activity, such as walking and bicycling, in their daily routines. Because research shows that the way we design our communities can encourage regular physical activity, Tri-County Health Department (TCHD) strongly supports community plans that incorporate pedestrian and bicycle amenities that support the use of a broader pedestrian and bicycle network.

TCHD commends the applicant for connecting the sidewalks on the proposed development with existing sidewalks on nearby streets as well as the existing trail to the south of the property.

Please feel free to contact me at 720-200-1580 or vrichard@tchd.org if you have any questions.

Sincerely,

Vanessa Richardson

Environmental Health Specialist II

CC: Sheila Lynch, Keith Homersham, TCHD

Xcel Energy℠
PUBLIC SERVICE COMPANY

Right of Way & Permits

1123 West 3rd Avenue
Denver, Colorado 80223
Telephone: **303.571.3306**
Facsimile: 303. 571.3524
donna.l.george@xcelenergy.com

May 27, 2016

City of Lone Tree Community Development Department
9220 Kimmer Drive, #100
Lone Tree, CO 80124

Attn: Jennifer Drybread

Re: Park Meadows Filing No. 1, Tract E and B (The Yard), Case # SP16-22

Public Service Company of Colorado's (PSCo) Right of Way & Permits Referral Desk has reviewed the site improvement plans for **Park Meadows Filing No. 1, Tract E and B (The Yard)**. Please be aware PSCo owns and operates existing electric distribution facilities within the subject property. The property owner/developer/contractor must continue working with the Designer assigned to the project for approval of design details. Additional easements will need to be acquired by separate document.

As a safety precaution, PSCo would like to remind the developer to call the **Utility Notification Center, at 1-800-922-1987** to have all utilities located prior to any construction.

Should you have any questions with this referral response, please contact me at 303-571-3306.

Donna George
Contract Right of Way Referral Processor
Public Service Company of Colorado

CITY OF LONE TREE
Community Development Department

REFERRAL REQUEST

Today's date: May 9, 2016

Project Name and File Number: Park Meadows, Filing 1, Tract E & BA, Site Improvement Plan, Project SP16-22

Comments Due By: May 29, 2016
If you are unable to respond by the due date, please contact the project planner

Dear Referral Organization:
Information on the above referenced proposal in the City of Lone Tree is provided for your review and comment. Please submit your response no later than the due date to ensure adequate time to consider comments and enter them into the public record.

If you have difficulty viewing or understanding any of the information or have questions, please contact me at 303-708-1818. Printed materials and extra sets of materials are available upon request. Plans may also be viewed at the City offices from 8am-5pm.

X **We have no comments regarding this proposal**

____ **Please note the following concerns this organization has:**

_____

_____

_____

____ **See attached letter for comments regarding this proposal**

Organization Name: Park Meadows Metropolitan District

Your name: Bob Blodgett

Your signature: BL Blodgett **Date:** 5-12-16

This project may be subject to public meetings. Please check the City's web site (www.cityoflonetree.com) for posted agendas or contact this office.
Thank you for your consideration.

Jennifer Drybread

Senior Planner

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CITY OF LONE TREE
Community Development Department

REFERRAL REQUEST

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If you have difficulty viewing or understanding any of the information or have questions, please contact me at 303-708-1818. Printed materials and extra sets of materials are available upon request. Plans may also be viewed at the City offices from 8am-5pm.

__X__ We have no comments regarding this proposal

____ Please note the following concerns this organization has:

_____

_____

_____

____ See attached letter for comments regarding this proposal

Organization Name: Lone Tree Police Dept.

Your name: David E. Brown

Your signature: David E. Brown **Date:** 05/09/16

This project may be subject to public meetings. Please check the City's web site (www.cityoflonetree.com) for posted agendas or contact this office.
Thank you for your consideration.

Jennifer Drybread

Senior Planner

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Galloway
Planning. Architecture. Engineering.

June 20, 2016

VIA HAND DELIVERY

City of Lone Tree
Planning Department – Jennifer Drybread
9220 Kimmer Drive
Suite 100
Lone Tree, CO 80124

RE:

Project Name: The Yard at Lone Tree - 3rd Submittal of the SIP

Dear Ms. Drybread and Planning Staff:

In response to the referral comments from The Yard at Lone Tree – Site Improvement Plan, that was submitted to the City of Lone Tree on 04-29-2016, the Applicant is delivering, concurrently with this Response Letter, revisions to the 2nd Submittal of the SIP. This 3rd Submittal incorporates or addresses each of the comments in the below summary.

Please note; we have consolidated all of the individual third party referral comments into a single document, absent a consolidated list from the City. This summary represents our best understanding of all planning and engineering issues that we were required to address. In addition due to the way comments were sent out in multiple forms, there is a significant amount of redundancy as many items are duplicated. To ensure we captured all of the comments each agency has been represented below.

The Applicant provides the following responses, in red, in connection with comments received on from the City in response to 2nd Submittal:

We are looking forward to working with the City on the SIP, and if you have any additional questions, please feel free to contact us directly.

Sincerely,
GALLOWAY & COMPANY, INC.

Kristoffer Kenton, AIA NCARB – Principal

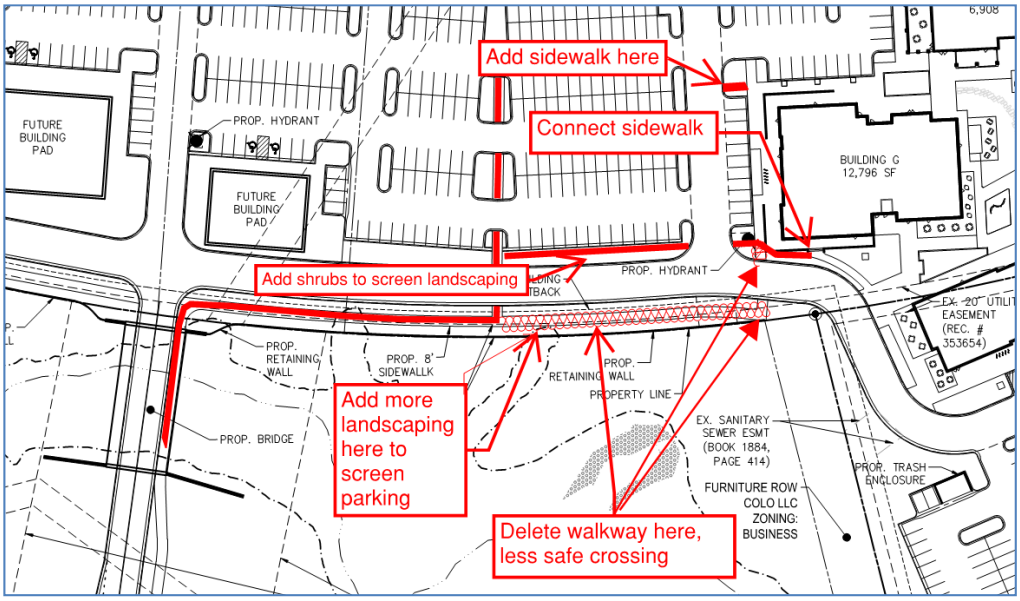
cc: Don Provost, Alberta Development Partners (via email)
Bryan McFarland, Alberta Development Partners (via email)
Jeb Bosart, Alberta Development Partners (via email)
Lincoln Thomas, Bowman Engineering (via email)

THE YARD AT LONE TREE – SIP RESPONSE NARRATIVE
6/17/2016

PLANNING DEPARTMENT COMMENTS

Site Plan

1. We remain concerned with the proposed pedestrian crossing of the main drive aisle at a location that is not ideal from a safety standpoint, even with Yield signs (near the curve in the driveway,). It is unlikely that a pedestrian would walk south in the parking lot on the central walkway, cross the main driveway to the south, then head east, only to cross that same driveway to the north to pick up the sidewalk connection by Building G. We continue to recommend connecting the parking walkway to a 5-foot sidewalk on the north side of the drive aisle and crossing to the east at a safer location by Building G. To respond to your concern regarding landscaping, you can add more landscaping where indicated on the plan to screen the parking. Moreover, we are not suggesting by this that we are directing people to the "middle of the parking field," but instead to the main Yard.



RESPONSE: The sidewalk has been updated to follow along the parking lot and the new crossing has been placed as shown by Building G.

2. Please label the *proposed* specific building and parking setbacks *in feet* as provided in the Zoning Code.
   RESPONSE: Building and parking setbacks are dimensioned on Sheets 3-6.

3. Please show the location of existing and planned electric and gas meters (we found your water meters and transformers). For electric, gas, and water meters visible from a public place, please note on the plan that meters and conduit will be painted to match the building color behind it.

RESPONSE: The gas and electric meter locations have been added to the elevations. Please see utility plans for water meter locations.

4. Please provide a graphic that shows how you derive 34.70% of the total B zone district as landscaped area. It seems very high compared to what is shown on the SIP.
   RESPONSE: Graphic has been provided showing 33.28% open space (revised slightly since last submittal)

5. Please provide a 5-foot sidewalk extending from Park Meadows Drive north between Buildings A and B, for more direct pedestrian circulation into the project.
   RESPONSE: The requested sidewalk connection cannot be achieved due to grade difference without a ramp with handrails. The ramp would be located within an existing water easement and not an allowable encroachment. Pedestrian connection from buildings A and B is provided on the east side to Yosemite Street.

6. Sheets 2, 7, and 23 show a trash enclosure within the parking field north of Building A, with parking inside. Please relocate this enclosure to the exterior and in a place that can be readily accessed by the trash hauler.
   RESPONSE: Moving the trash enclosure to the exterior row of parking will move it closer to Yosemite and increase its visibility from a high traffic street. Moving the trash enclosure to this exterior row of parking will not increase access to the enclosure by the trash hauler. Parking has been removed from inside the trash enclosure.

7. Sheet 25 shows light poles west of Building G near the middle of the sidewalk. Please relocate these to the side of the sidewalk.
   RESPONSE: This has been revised.

Signage

1. Please explain the nature of your Master Sign Plan, as it may impact whether the City needs to approve it at all. Specifically, if it is more restrictive or specific than the City's sign standards, it can simply be an internal private document. All signs submitted for permit with the City would need to include landlord/owner approval of the sign.
   RESPONSE: At this time, the Master Sign Plan is being developed to work within the framework of the City's signage design standards while also providing some additional flexibility to the project to enhance the project's overall uniqueness and design aesthetic.

   If, on the other hand, you envision the project will incorporate signs that do not comply with the City Code in some way, a master sign plan is the only way to address that (we do not entertain variances for individual signs). Master sign plans require approval by the City Planning Commission so it would be ideal to run that at the same time as the SIP.
   RESPONSE: It our intention that this will be submitted at a later date to be approved by Planning Commission and City Council in addition to the SIP.

Landscape Plan

1. To soften the hard edge of landscaping on the north side of your property through an undulating pattern of evergreen and deciduous trees and shrubs, we have contacted Fred Koch, with Douglas County Public Works, to see if there would be an opportunity for the County to allow you to do some off-site planting and irrigation. We will get back to you on this as soon as we have more information.
   RESPONSE: We have not received the information/direction as stated in the comment, therefore planting and irrigation has not been expanded onto Douglas Co. land at this time. It is our understanding that this land is to be conveyed to CDOT for exit ramps improvements, therefore this is not an option.

Irrigation Plan

1. Please revise the irrigation plan, pp. 33-38 to include (and label) the location and type of the weather-based smart controller(s).
   RESPONSE: Plans have been revised per the comment.

2. Please darken the "non-irrigated overlot seed" label in your legend and your pattern on the plan as it is hard to see, particularly if it is copied.
   RESPONSE: Plans have been revised per the comment.

Building Materials

1. The Design Guidelines state that "Wood siding or elements should be composite or finished/treated wood that conveys *high quality and longevity*." Please show photograph examples of where reclaimed barn wood has been used for commercial purposes and exposed to elements in this climate over a period of two or more years, if possible, as the Planning Commission and Council will want to understand how the barn wood will weather over time in terms of durability and coloration.
   RESPONSE: The proposed reclaimed barn wood does convey high quality and longevity as it has been taken from barns where it has been exposed to the elements for hundreds of years. The product supplier simply fumigates and kiln dries the wood, but no other processes are done to give it its finish. The current finish of the wood is from years and years of weathering and is unlikely to change in 2 or more years. Reclaimed barn wood has been used on many exterior applications throughout the Denver area. Included with this submittal are several pictures of projects that have used reclaimed barn wood. These pictures have been taken 1-2 years after construction.

2. Please provide color samples of the table umbrellas, along with specifications on patio tables and chairs, awnings, or other exterior furnishings you plan to use and show on the plan now if possible; otherwise, please be advised they will need to be approved separately as an Administrative Amendment to the SIP.
   RESPONSE: Table umbrellas, tables, chairs, and awnings will all be by tenant. Site furnishings in common areas (outside patio areas) are specified in the Site Amenities sheets 30-31.

3. Please provide a colored cut sheet that shows what retaining wall material you plan to use adjacent to Willow Creek.

RESPONSE: Please see cut sheet and image included with SIP submittal. We are using Pavestone Diamond Pro Stone Cut Block in color Colorado Blend.

Fencing

1. Sheet 55 – we recommend adding a cap along the top of the screen wall to unify and tie together these two very different construction materials (concrete and metal). Adding a cap is consistent with the City's Design Guidelines.
   RESPONSE: A cap on the Gabion structure would not be appropriate and does not fit into the overall aesthetic of the Gabion structure. A cap will be provided on the Prefinished Composite Wood Fencing. This detail will be refined during the Site Construction Document Phase.

Bridge

1. What does the bridge look like? Please provide a dimensioned cross-section of the bridge and access road design from east to west, and include elevations of the bridge design with materials and colors labeled.
   RESPONSE: Bridge section has been added to Sheet 2.

Project Narrative

1. Please change all references to "B1" zone district to "B" zone district.
   RESPONSE: This has been updated on the revised project narrative and Cover Sheet 1 of 56

Conceptual Site Plan

1. Please update and resubmit your colored Conceptual Site Plan.
   RESPONSE: Revised Conceptual Site Plan provided.

Circulation Plan

1. Based on the Circulation Diagram, it appears you are proposing new trail alignments on City and private property. We would like to set up a meeting with you and South Suburban Parks and Recreation to discuss when and how this might happen. We would like to hold this meeting early on in the referral period. Please respond.
   RESPONSE: Noted. This meeting occurred and those considerations have been incorporated into the revised SIP.

General Comments

1. Staff continues to support the design of the three western pad sites (H, I and J) in such a way to take advantage of the adjacent open space and create a sense of place. At minimum, this could be accomplished by orienting any outdoor dining towards the open space. It is our impression that you agree in principle to this concept but, understandably, are unable to make a commitment until a specific user is identified. In order to establish the intent and guide design of the future pads, we suggest a note be added to the SIP that any outdoor dining at the pad sites shall be located in such a way to engage view of the Willow Creek open space.
   RESPONSE: This will be a Tenant driven consideration and will need to be addressed at the time of those Pad's submittal to the City.

Additional Graphics needed prior to sending this to the Planning Commission:

1. As we have discussed, please provide updated color renderings when we get closer to the Planning Commission meeting, so we can include it in their packet.
   RESPONSE: Noted

Parking Study

We have had a chance to look at the parking study and have the following comments:

1. There is no regular local bus service to this area for employees or patrons (in your Assumptions on page 1), so a 5% mode split would not seem to make sense here
   RESPONSE: As stated in the Assumptions on page 1, the Project site is "further than one half mile from the nearest full service bus stop" however the following modes would attribute to non-vehicle trips and account for the 5% mode split.
   - *The RTD bus route 402L, a limited route, has a stop within one half mile of the Project site, thus accounting for service workers utilizing the bus system*
   - *The "Lone Tree Link" shuttle operates along Park Meadows Drive with a stop adjacent to the Park Meadows Drive / Yosemite Street intersection, thus accounting for service workers or nearby business members utilizing the shuttle*
   - *The Willow Creek Trail is adjacent to the Project site, thus accounting for cyclists and pedestrians utilizing the multi-use path*

2. Is one of the headings in Table 2 supposed to be for "Weekend"?
   RESPONSE: Yes, this has been updated.

3. There is still some confusion on our part as to how simultaneous and sequential trips are used in Table 2 – are these "secondary" trips "sequential"? If so, please include "sequential" in the table heading
   RESPONSE: No, "secondary" and "simultaneous" trips are used interchangeably. However, "sequential" is neither of those. "Sequential" trips are not part of the captive ratio – the paragraph exists for informational purposes to state the difference between "simultaneous" and "sequential".

4. The Planning Commission has asked for a comparative example of restaurant/retail center, perhaps at the Streets at Southglenn(?), where a similar parking ratio has proved successful. We recommend you include such historic or comparative data in your report.
   RESPONSE: Please refer to The Yard Shared Parking Analysis dated 6/16/16 for an overall analysis for the parking requirements for this project comparable to similar projects throughout development community.

PLANNING COMMISSION STUDY SESSION

Parking:

1. Concern regarding the 60-space parking shortfall, especially since it is hard to know the tenant mix (retail and residential) now or in the future. They would like to see a specific example where such a deviation from parking for a similar restaurant/retail center has been successful.
   RESPONSE: Please refer to The Yard Shared Parking Analysis dated 6/16/16 for an overall analysis for the parking requirements for this project comparable to similar projects throughout development community.

Architecture:

1. Concern regarding the use of recycled barnwood, and examples where such materials have been used on a building for 5-10 years in this climate/altitude, to see how it weathers over time. There was also a question about how they would repair the barnwood, if some boards needed to be replaced and how the newer looking wood would look next to the existing weathered wood (thought it may look like patchwork).
   RESPONSE: The proposed reclaimed barn wood does convey high quality and longevity as it has been taken from barns where it has been exposed to the elements for hundreds of years. The product supplier simply fumigates and kiln dries the wood, but no other processes are done to give it its finish. The current finish of the wood is from years and years of weathering and is unlikely to change in 2 or more years. Reclaimed barn wood has been used on many exterior applications throughout the Denver area. Included with this submittal are several pictures of projects that have used reclaimed barn wood. These pictures have been taken 1-2 years after construction.

2. Concern regarding the color scheme for the building materials (comments on that to follow).
   RESPONSE: Noted

3. Concern for use of EIFS, since there have been observations of its durability over time (birds pecking away at EIFS, vandalism, ice/snow damage).
   RESPONSE: The manufacturers specifications will be strictly enforced to ensure longevity of this material, and the sub-contractor/suppliers warranty will provide added protection

4. Would like to see a rendering from the C-470 off ramp to see what the roofs (HVAC) would look like at that perspective since this is a major gateway to the City (a Sketch Up model would be preferable to see the site from various perspectives).
   RESPONSE: Noted. Perspectives will be provided prior to Planning Commission meeting.

Traffic:

1. Concern about traffic congestion/conflict at what is now a very busy intersection at Park Meadows Drive and Yosemite (e.g., some traffic from C-470 might continue southward, while at the same time traffic entering onto Yosemite from The Yard might want to make a left turn at Park Meadows Drive, requiring them to cross many lanes of traffic).

RESPONSE: The Traffic Study recommends the installation of a pork chop island and signage indicating that left turns are prohibited at Park Meadows Drive at the RIRO access for The Yard on Yosemite.

CDOT

UTILITY COMMENTS

1. After reviewing the Site Improvement Plans, on Sheet 1 of 55 there is an existing 10' utility easement, east of Willow Creek on the north end of the development, Rec #363654; in some areas on the plan sheet the easement has "to be vacated". The 20' utility easement under the same Rec # farther south, on the same sheet, doesn't seem to be affected. The 10' easement runs north to south through the development. It appears the 20' easement contains the 10' easement "to be vacated" as well as an additional 10'. On Sheet 7 of 55, near Yosemite St., the 20' utility easement, also Rec #363654, also has "to be vacated". Where does the vacation begin and end? How will the utilities being accommodated once the easement is vacated? Is the developer purchasing a replacement easement for those areas to be vacated?
   RESPONSE: Design team will be coordinating the easement vacations with utility companies and City as part of the replat.

2. The CDOT ROW is not shown on the plan sheet at the C-470 Off-Ramp. This should be shown and labeled.
   RESPONSE: ROW has been labeled.

3. For proposed fire hydrants, the developer is advised to provide a 10' X 10' minimum permanent easement for the operation of the hydrants. The municipal fire department must approve the proposed locations of all hydrants and requires the easement so nothing can be built around the hydrant.
   RESPONSE: Design team will coordinate with utility provider on easements.

4. Sheet 7 of 55, there is a proposed 40' Drainage Easement crossing an existing sanitary sewer easement. The Developer should note there are typically separation requirements (minimum clearance) between sanitary and storm pipes. Impacts to the sanitary lines should be avoided.
   RESPONSE: Design team will coordinate with utility provider on utility crossings.

5. Xcel Energy should be contacted concerning the location and size of all transformers for power source needs for proposed lighting and possible other devices as needed. LED lights don't have as much pull as HPS but this should still be considered prior to final lighting quantities and locations. Because of the C- 470 Express Lanes DB project in the area, location of transformers and other power source facilities could be relocated and ultimately affect The Yard.
   RESPONSE: Design team has been in contact with Xcel regarding servicing this project.

6. The C-470 Express Lanes DB project is under design. The developer is encouraged to contact Wilson and Co. regarding design impacts to this area.
   RESPONSE: Wilson and Co. contact information needs to be provided.

DRAINAGE COMMENTS

1. The drainage design we have developed for C-470 is at a preliminary level and the contractor will be required to finalize the drainage design and report. The preliminary design of the C-470 widening and realignment including the widening the of the Yosemite EB Off Ramp will have adjustments including small adjustments to the Offsite Basins O1-4 and Offsite Basin 5 will have increase flows due to pipe crossing from the Yosemite EB Off Ramp Gore into the existing ditch into O5 (100 Year Flow of 9.4 cfs, an increase of 2.4 cfs from the pre-project condition). This is subject to adjustment as the contractor finalized the design.
   RESPONSE: Project can incorporate C-470 design when CDOT drainage design is finalized.

2. On pages 8 & 9 of the drainage report, Bowman Consulting reference a 1995 FHU C-470/Yosemite Interchange Plans used to determine the flows from the 48" pipe which runs under C-470 into the site. The RFP for the C-470 Design Build Project requires the contractor to analyze the existing storm sewer system so that the post-project design flows do not exceed the hydraulic capacity of the existing storm drain system. These are the flows coming from the ponds east of Yosemite. They will be allowed to increase the flows into this pipe as long as it does not exceed the existing hydraulic capacity. The contractor is required coordinate with Lone Tree on these ponds and to obtain Lone Tree's approval and Acceptance by CDOT.
   RESPONSE: Acknowledged.

DEPARTMENT OF PUBLIC WORKS COMMENTS

GENERAL COMMENTS

1. The Public Works/Engineering Review fee for this Project, per the adopted standard review fee schedule (attached) is $9,920.00. The fee (check made out to "The City of Lone Tree") should be submitted to my attention at Public Works with, or prior to, resubmittal of the documents in response to the following comments. Review and comment on the SIP, GESC Plans, GESC Report, Phase II Drainage Report, Traffic Impact Analysis, and Traffic Signal Plans (for the proposed Park Meadows Drive entrance), as well as the future full Construction Plans and Phase III Drainage Report, are covered under this review fee. This fee covers the initial review, and one resubmittal review of the documents. Subsequent resubmittal reviews (if required) are charged at 50% of the standard review fee, per resubmittal, for the specific document(s).
   RESPONSE: Acknowledged.

2. A separate, but parallel Referral is pending for the Replat associated with this proposed development. That referral review, and the associated Public Works/Engineering review fee, will be addressed in those Referral comments.
   RESPONSE: Acknowledged.

3. A Site Improvement Plan Improvements Agreement (SIPIA) will be required for the proposed Project. The SIPIA (and associated Surety) will address any/all hardscape improvements within the ROW (or adjacent public access easement(s)) associated with this Project (including, but not limited to: street widening and improvements, curb & gutter, sidewalk, signalization, etc.)
   RESPONSE: Acknowledged.

4. A Grading, Erosion and Sedimentation Control (GESC) Permit will be required for this Project. The GESC Permit may not be obtained prior to final approvals of the GESC Plans / GESC Report and at least recommendation of SIP approval by the City Planning Commission. No site work may begin prior to

issuance of the GESC Permit.
RESPONSE: Acknowledged.

5. Since this site exceeds 1-Acre of disturbed area, a State Stormwater Construction Permit from the Colorado Department of Public Health and Environment (CDPHE) is required.
RESPONSE: Acknowledged.

6. A 404 Permit from the Army Corps Engineers may be required for the bridge construction. An Army Corp of Engineers Jurisdictional Determination/Wetland Determination Confirmation should be obtained to determine if a 404 Permit is necessary.
RESPONSE: A jurisdictional determination request has been submitted.

7. Tract BA (the portion of this development at the corner of Yosemite and Park Meadows Drive) is subject to a Park Meadows Drive/Acres Green Drive Intersection Improvements Impact Fee of $24,699.13. This impact fee amount was assessed based on associated frontage on Park Meadows Drive. Assessment of the fee, by parcel, was deferred until development of the associated parcel. Accordingly, the Fee will be due for this parcel as part of this development approval process.
RESPONSE: Acknowledged.

MAJOR CONSIDERATIONS

Orphan Tract 1-B Parcel

1. A 0.26 +/- acre strip of land (Part of Tract 1-B) owned by Furniture ROW is shown just to the east of the Tract BA portion of The Yard development. It is unclear to us why this small Tract of land was not incorporated into the proposed sale of Furniture ROW's Tract BA and Tract E to Alberta Development of for part of proposed "The Yard" development. The remaining Tract 1-B parcel has no access to public ROW, and is not a buildable piece of property in and of itself. The Lone Tree Subdivision Code requires that "legal and physical access shall be provided to all parcels by public right-of-way or recorded easement, acceptable to the City Engineer in compliance with the Roadway Design and Construction Standards." Sec.17-5-60 (10). Please revise the plan to either incorporate the property into The Yard development, or, alternatively, dedicate the land to the City to be incorporated into the adjacent Willow Creek open space.
RESPONSE: Development team is analyzing the feasibility of acquiring parcel.

Proposed Park Meadows Drive Entrance Intersection

2. The main entrance/exit for The Yard is proposed as a signalized full (3/4) movement intersection on Park Meadows Drive. Initial planning level recommendation from Public Works to the development team (7/31/15 Email & Attachment to FHU, who was doing traffic study for the development) was that "*the connection point to Park Meadows Drive be immediately east of the current trail crossing on PMD. To accommodate this option, the City could consider providing a public access easement / license agreement for the bridge & roadway access/through our property*."

   As currently proposed on the SIP, this intersection is located approximately 500 feet west of the current Willow Creek Trail crossing of Park Meadows Drive. [The Willow Creek Trail is maintained by South Suburban Parks & Recreation Department (SSPR).] The currently shown location for the proposed bridge over Willow Creek is at one of the narrower crossings – e.g. shorter potential bridge span over the creek channel, and falls within an existing platted 200' access easement granted at the time of the original platting of this area. Initially, this intersection location seemed a logical option. However, based upon further review of the proposed location, both in the field and "on paper", we cannot support nor recommend approval of the intersection at this location, for the following reasons:

   - City Public Works & Planning Staff, and South Suburban Parks & Recreation Staff conducted a site visit

to review the proposed intersection location. From that visit, we observed that site lines did not allow for adequate visibility between oncoming eastbound traffic, the intersection and the proposed relocated Willow Creek Trail Crossing. Oncoming eastbound traffic would have inadequate stopping distance once they were able to see the proposed signalization and/or pedestrians/bicyclists crossing within the proposed crosswalk. Neither SSPR nor the City staff were comfortable with nor supportive of the current proposed intersection location. Initial thoughts (in the field) were that perhaps moving the connection point east approximately 200 feet +/- (just west of the existing drainage ditch) might provide a better location. (See attached Exhibit #1).

- Subsequent to the site visit, we evaluated the Site Stopping Distance requirements, based upon the City adopted Douglas County Roadway Design and Construction Standards (RDCS). Based on the 35 mph posted speed limit on this section of Park Meadows Drive, the RDCS specified required sight stopping distance is calculated at 473 feet. We applied this stopping distance from the point where the eastbound traffic could first see a signal head mounted on the signal pole at the north side of Park Meadows, and plotted the sight-lines on the attached Exhibit #1 for three locations.

  1) The "blue" line shows the stopping distance sight-line for the current applicant proposed intersection. This sight line "leaves" the street ROW, and would be blocked by landscaping, fence and a transformer, and therefore does not meet requirements.
  2) The "green" line shows the stopping distance sight-line for the initial "relocation" suggested during the field visit. This sight line also goes outside the street ROW, and also would be blocked by landscaping, fence and a transformer. It also would not meet requirements.
  3) The "red" line shows the first approximate location for the intersection that would meet stopping sight distance requirements for the signal pole located on the west side of the intersection.

Based upon the above stopping distance sight line analysis, Public Works/Engineering would be able to support a proposed intersection connection to Park Meadows at, or near, the existing Willow Creek Trail PMD Crossing, but not one further to the west. One approach to accomplish this could be to keep the bridge at the currently proposed location, add a box culvert over the existing drainage swale, and direct the access road to the new intersection location. (As shown in yellow on Exhibit #1). The new alignment would require centerline curve radii less than the adopted DC Road Design standards. However, in this specific instance, Public Works would support granting a variance due to the low speed and volume of this private access road. Also, to accommodate this alternate access road alignment, the City would need to grant a revised access easement across the City owned Willow Creek open space parcel. A second potential option might be something along the line of the red site entry concept shown on attached Exhibit #2.
RESPONSE: Please see the sight distance analysis and recommendations presented in the separate memo. (attached)

3. The proposed Park Meadows Drive – site access intersection would be a full (3/4) movement T-intersection, with dedicated left turn and right turn egress lanes and one ingress lane. The intersection would need to be signalized, with associated signalized trail crossing at the west side of the intersection. A dedicated eastbound left turn lane on Park Meadows Drive (for entrance into the site) with associated modifications to the existing Park Meadows Drive median would be required. The development would be responsible for design and construction/installation of these improvements (under City review and approval).
RESPONSE: Acknowledged.

Yosemite Right-In/Right-Out Access

4. An ingress/egress access to Yosemite Street is proposed. Given the nature and location, this connection is proposed as a Right-In / Right-Out ONLY connection, with a raised pork-chop island. Addition of a new (additional) lane is proposed for a deceleration/acceleration and turning lane for this RI/RO connection.

Public Works generally concurs with this proposed connection concept, with the following comments:

- A connection/access point in this general location to the property on the west side of Yosemite has long been envisioned, with an existing curb cut/access having been constructed prior to 1995 (prior to the City of Lone Tree formation).

- Given the location and existing (anticipated) traffic at this location, the additional lane and the RI/RO only nature of the access are necessary. The pork chop island, along with City plans to construct a median in S. Yosemite in this area, will effectively control left turn access/egress at this connection point.

- Installation of appropriate signage at the egress point will be required (as part of the final site Civil Construction Drawings) noting that Left Turns (eastbound) at Park Meadows Drive is not permitted from this right-out egress from The Yard.

RESPONSE: Acknowledged, appropriate signage at egress will be reflected on the civil construction plans. The traffic study has been updated to reflect these recommendations.

Added Lane on Yosemite & Yosemite/Park Meadows Signalization

5. Construction of the proposed added (west side) lane and associated connection at Park Meadows Drive will result in the existing signal pole at the NW corner of Yosemite / PMD falling within the gutter line of the new lane connection as shown on the SIP. This arrangement would result in the Signal Pole needing to be relocated. Relocation of this pole may require re-wiring of the entire signal system for the full Yosemite / PMD intersection. The pole relocation and associated rewiring (if necessary) would be part of the development's responsibility.
RESPONSE: Acknowledged.

6. An alternative design of the connection of the new Yosemite lane as a free (yield) right only to Park Meadows Drive (see attached Exhibit #3) would allow the existing signal pole to be retained in its current location, within an island. Public Works would be agreeable to this approach, which may be a better (more cost effective) option for the applicant.
RESPONSE: Based on feedback from general contractor, the cost of the alternative design would be greater than signal pole relocation currently reflected on the plans, project intends to move forward with signal pole relocation.

7. There is existing fiber optic line near the back of the existing sidewalk along the west side of Yosemite, across this development's frontage. Construction of the new lane, and relocated sidewalk, may impact this line. Appropriate protection and/or relocation of this line may be necessary as part of the development's construction.
RESPONSE: Contractor shall work with utility company to adequately relocate line either deeper or in the grass strip, if needed.

Overall Traffic Impact(s) of the Development

8. Felsburg, Holt and Ullevig (FHU) has prepared a Traffic Impact Analysis report for The Yard at Lone Tree. The report addresses the projected traffic generation by The Yard, the existing, and anticipated short range and long range traffic projections without The Yard (e.g. "Background" conditions) and the anticipated short and long range traffic projections with The Yard (e.g. "Total" conditions). (Note: Short Range is shortly after opening of The Yard. Long Range is projected to 2040 conditions). The TIA projects that The Yard would contribute approximately 5-6% of the traffic volume (short and long range) on Yosemite, between Park Meadows and C-470, and between 25% (short range) and 17% (long range) on Park Meadows Drive west of Yosemite.

The TIA provides the Level of Service (LOS) projections for the Park Meadows Drive / Yosemite intersection. Typical goal LOS for urban intersections is to maintain a LOS category of D or better, if practicable. The TIA indicates the existing (pre "Yard") LOS as E/F (morning peak hour/evening peak hour). With some proposed modifications (primarily signal timing adjustments and a new northbound right turn lane on Yosemite - actions currently under way by the City), the TIA projects the short term (post Yard opening) LOS at this intersection as D/E, and on the long term (2040) as LOS E/F. While the TIA "suggests" that the projected Short and Long Term LOS ratings likely would be similar without The Yard, the TIA unfortunately does not provide the comparable LOS analysis and summaries without The Yard for comparison to confirm this "suggestion". We recommend that comparison be documented in the TIA (along with other specific TIA comments included later in this letter).

RESPONSE: The traffic study has been updated to include LOS analysis for the forecasted background traffic volumes.

Flood Plain Issues

9. Development of The Yard project, as proposed on the SIP, impacts the currently mapped Willow Creek regulatory flood plain. The northerly ends of three "fingers" (essentially large erosion rulleys) are impacted (see SIP). The north abutment/wing wall of the proposed bridge impacts one, while the proposed retaining wall for the site affects the other two. Also, if the alternative Park Meadows access connection, with the current proposed bridge location, is implemented, there may be an additional impact location at the road crossing of the southern ditch. As a result of these three (or 4) impact locations, under the National Flood Plain Insurance (NFIP) requirements the Development may be required to obtain a Conditional Letter Of Map Revision (CLOMR) (before construction) and subsequent Letter of Map Revision (LOMR) after the construction. The CLOMR / LOMR process would be required in order remove these impacted areas from the mapped regulatory flood plain limits. The necessity of pursing this CLOMR/LOMR process is being reviewed jointly with representatives of UDFCD (as the local NFIP review agency), the Colorado Water Conservation Bureau (as the State Flood Plain regulatory agency) and FEMA (Region 8). If ultimately required, an approvable CLOMR will be required before we can issue the associated City Flood Plain Development Permit to allow the construction impacts on the Flood Plain. (Construction on the site, outside of the flood plain – subject to normal City requirements - can be allowed without the Flood Plain Development Permit.)

   RESPONSE: A CLOMR has been submitted.

10. As part of the initial CLOMR/LOMR background research, the applicant's team has reviewed potential wetlands/wildlife impacts of the proposed work in the Willow Creek channel area.
    a. With respect to possible impacts on Endangered Species, the U.S. Fish & Wildlife – Colorado Ecological Field Services Office (the "Service") has determined that "*There are no critical habitats in this location."*
    b. With respect to Migratory Birds (e.g. Migratory Bird Treaty Act, and Bald & Golden Eagle Protection Act) the "Service" has determined "*There are no refuges in this location".*
    c. With respect to Wetlands in the National Wetlands Inventory (e.g. NWI regulatory wetlands), the U.S. Army Corp of Engineers (USACE) has indicated "*There are no* [regulatory] *wetlands in this location".*

    RESPONSE: Acknowledged.

11. Separate from the issue of the Flood Plain Development Permit, but related, the applicant may need to obtain an appropriate 404 Permit from the Army Corp of Engineers for the bridge construction and associated work within the Willow Creek channel.

    RESPONSE: A jurisdictional determination request has been submitted.

Retaining / Screening Walls

12. A number of retaining walls and screening walls are indicated in the Site Plans. Screening walls, and retaining walls directly connected with the buildings, will be reviewed through the Building Department. All other retaining walls associated with the site grading work will be reviewed by Engineering. All walls in excess of 4-foot total height must be specifically designed and sealed by a Colorado Structural PE, with associated wall design documentation provided (to either the Building Department or Engineering, as applicable). Appropriate 3rd party inspection certifications may/will be required during construction.
RESPONSE: Acknowledged.

C470 Widening & EB Yosemite off Ramp

13. The C470 Design-Build widening project will have some impacts in the immediate area, some of which may directly or indirectly impact the proposed YARD Project. Per CDOT comments received, the existing Douglas County parcel between the current off-ramp and The Yard parcel is being obtained by CDOT for realignment and widening (to two lanes, from the current one lane) of the off-ramp. The realignment, widening and associated grading may impact the corner of The Yard parcel near the proposed dumpster NE of Building Pad J (see Exhibit # 4, from CDOT). This may require some adjustments of the Site Plan/Parking Lot layout in that area.
RESPONSE: Developer proposes that CDOT construct a retaining wall within their ROW to avoid the need to purchase the Yard parcel.

Stormwater Detention

14. The Project is proposing to provide Full Spectrum Detention for the site in underground detention systems. The site is divided into two major stormwater basins, with one underground detention system for each basin. The underground systems will provide for excess urban runoff volume (EURV) and 100-yr detention. While we are in general agreement with the overall underground EURV-100 Yr detention concept, we do have serious reservations about the specifics of the underground detention systems proposed. According to the Phase II Drainage Report, the Development is proposing use of StormTech underground detention systems – which utilizes an open bottomed arch pipe system bedded on/in open graded rock. The surrounding rock contributes to the stormwater detention volume (e.g. the water accumulates in both the arched pipe open space and in the void space around the rock bedding - approx. 40% of the rock volume is void space). Thus, the water pools not only in the pipe but in the overall rock layer. Given the typical soils conditions in this area, with the tendency of expansive soils, we are very hesitant to concur with this approach. Barring a detailed geotechnical engineering study of the site (at least in the areas of the proposed detention facilities) that clearly documents the lack of expansive soils and the suitability of the site for this type of non-contained stormwater detention, we would not recommend approval of this type of detention. Rather, we recommend a fully enclosed/contained EURV – 100 yr. detention system design.
RESPONSE: A fully enclosed system is now being proposed.

DOCUMENT SPECIFIC COMMENTS

The Major Considerations comments listed above may/will impact some Site Details shown within the submitted documents. Revisions to address those Major Considerations will be required, and generally are not listed/repeated in the following Document Specific Comments. Concurrently, some of the following comments may be negated or superseded by the changes necessary to address the Major Considerations.

Only those sheets within the documents for which we have specifically identified comments are listed below. Comments provided also may apply to other sheets/locations in the Project documents. The applicant's professional(s) should verify that the item(s) are addressed throughout the related Project documents consistently, as applicable.

Site Improvement Plan

Sheet 2 Overall Site Plan:

1. The relocated sidewalk along the Yosemite Street frontage is shown as 6-foot wide. This walk shall be 8-foot wide (minimum).
   RESPONSE: The sidewalk has been revised from 6-foot to 8-foot wide.

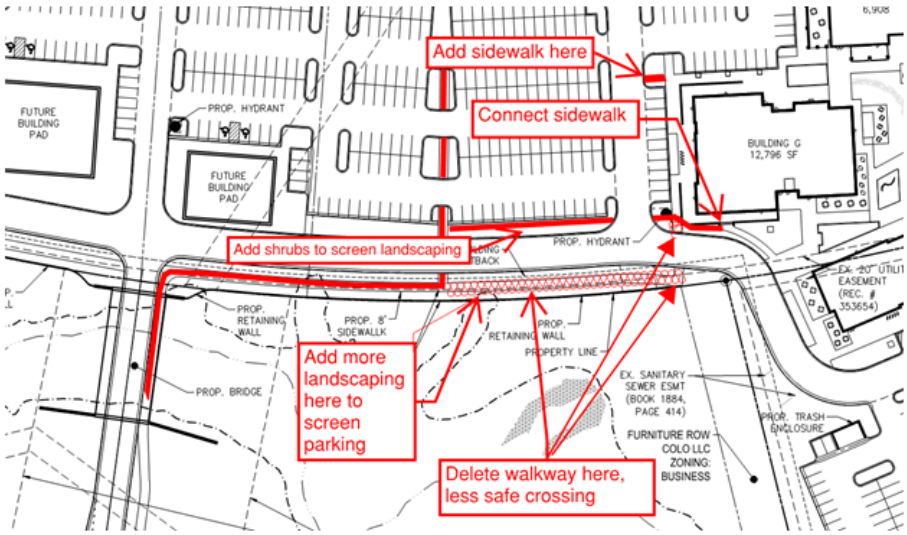
2. We do not review for ADA compliance. That said, we note that the ADA sidewalk ramps throughout the site do not include the typical City of Lone Tree ADA Truncated Domes*. The City standard truncated domes shall be used at all appropriate locations within the public ROW's. It is recommended to also incorporate these domes on site for general consistency.

   *(*Detectable warning inlaid pattern of truncated domes shall be Brick Red cast-in-place or cast-in-place-replaceable panels by ADA Solutions, Inc. (www.adatile.com, 800-372-0519), or approved equal.*)

   RESPONSE: Construction specifics for the site improvements will be reflected in the civil construction plans and will include truncated domes.

3. There is some concern about the location of the sidewalk crossing the main drive along the south side of the site right at the curve at the SW side of the main "Yard" complex. Planning and Engineering jointly are suggesting a possible relocation of the walk in this area to what we believe may be a better alignment (See excerpt below from an email from Planning staff).

"We are concerned with crossing the main drive aisle at a bad location, and the circuitous sidewalk connection by Building G. We recommend connecting the parking lot to a walkway to a 6-foot sidewalk on the north side of the drive aisle and crossing to the east at a safer location. We also recommend adding another short sidewalk segment northwest of Building G where shown."



RESPONSE: The crossing and sidewalk location has been updated.

Sheets 3 – 7 Site Plans

4. Sheet 4: There is an existing 25-foot drainage easement (indicated to be vacated) running E to W through the site and passing under proposed Building Pad H. Plans are to relocate the existing storm line from approximately midpoint of the site south, to the east of Building Pad H. A new 30' drainage easement is proposed for the existing/relocated portions of the storm line. While indicated on the SIP, the storm easement information is not explicitly clear. It may be appropriate to provide additional callouts and/or notes to clarify.

RESPONSE: Additional notes and callouts have been added to clarify new easement configuration.

5. Sheet 5: The proposed relocation of the SSPR Trail connection shown on this sheet may be moot (see prior Major Considerations Comment on the Park Meadows Drive Entrance Intersection). However, it should be noted that the trail is a regional trail, and all portions should be 10-foot wide, rather than the 8 foot widths shown on the SIP.
   RESPONSE: The relocated trail has been updated to be 10-foot wide along Park Meadows Drive.

6. Sheet 6: A 20-foot utility easement is shown south of Willow Creek on this sheet. On Sheet 5, this same easement is labeled as an Existing 20-foot Sanitary Easement (B180 P 210). The easement should be labeled consistently on Sheet 6 (as on Sheet 5).
   RESPONSE: This label has been updated to be consistent.

7. Sheet 7: A Public Access Easement is indicated along the west side of the proposed widened Yosemite Street, to incorporate the relocated detached sidewalk across the site frontage. However, the sidewalk leaves the easement at the crossing of the right-in/right-out drive entrance. The easement should be adjusted at/near the drive to keep the sidewalk within the easement.
   RESPONSE: The easement configuration has been updated.

8. Sheet 7: There is a note callout regarding "Proposed Relocated Traffic Pole" at the NW corner of Yosemite Street and Park Meadows Drive. The layout of this general intersection area, and the pole relocation, may or may not occur (see prior Major Considerations Comment on the Added Lane on Yosemite and Yosemite/Park Meadows Signalization). Depending upon final determinations regarding this intersection and pole relocation, the SIP Sheet(s) will need to be appropriately updated.
   RESPONSE: Based on feedback from general contractor, the cost of the alternative design would be greater than signal pole relocation currently reflected on the plans, project intends to move forward with signal pole relocation.

<u>Sheets 8 -12 Grading Plans</u>

9. With exception of the specific comments listed below, the grading concepts shown appear generally acceptable. More detailed review during the Civil Construction Documents submittal may generate additional specific comments.
   RESPONSE: Acknowledged.

10. Sheet 8: There is uncertainty regarding proper drainage at the south end of the parking bay immediately east of Building Pad J. Additional spot elevations and/or revision of the grading in this area, or the addition of an inlet at the south end of this parking bay, may be required.
    RESPONSE: Additional slopes and spot elevations have been added for clarity.

11. Sheet 9: The proposed re-alignment of the storm sewer running E-W through the site (e.g. CDOT drainage primarily) needs to be reviewed and discussed. If the proposed bridge over Willow Creek remains in the currently shown location, the City would prefer the storm line be aligned to run NW under the southern on-site drive, and then west to discharge at/through the northern bridge abutment/retaining wall (e.g. an armored discharge point) rather than into the bank of the channel. Additional channel stabilization may also be required in the general discharge area (possibly to include addition of a drop structure in the creek at this location to help stabilize the channel in the vicinity of the bridge). This will need to be reviewed and discussed further.

RESPONSE: The suggested alignment conflicts with the proposed water main and water easement and would result in significant more cost to project, we propose to keep the outfall location in its current location. Outfall protection/stabilization will be provided.

12. Sheets 9 & 12: The existing 66-inch storm sewer through the site from Yosemite to Willow Creek, and associated storm vault under proposed Building C, should be clearly labeled and noted for removal and relocation to the new proposed alignment.
RESPONSE: Labels have been added to clearly identify removal of the existing storm sewer.

13. Sheets 9, 11 & 12: The proposed drainage easement along the realigned storm sewer (see prior comment) is shown as 40-foot wide on Sheets 9 & 11, and as 30-foot wide on Sheet 12. Please explain. The easement should be consistent (e.g. 40-foot wide) throughout. Also, the easement is not shown extending beyond (northerly) the existing storm where the new line connects to the existing line (see Sheet 12). The easement should extend approximately 20-feet beyond the storm line.
RESPONSE: Project is proposing 30' easement within the parking lot area, and increasing the easement width to 40' where it is located within landscaped slope along Willow Creek due to the slope condition across the proposed easement.

14. Sheet 12: The proposed portion of the relocated storm sewer within Yosemite, including the proposed new junction box, needs to be reviewed. This portion of new storm should be moved as far west as possible (either under the proposed new lane, or even west of that lane under the proposed sidewalk) to minimize major construction and associated traffic impacts within the existing SB Yosemite drive lanes.
RESPONSE: Existing dry utilities prevent the new storm pipe from moving further to the west.

<u>Sheets 13 -17 Utility Plans</u>

No additional comments at this time.

<u>Sheets 19 - 29 Landscape Plans</u>:

We do not review and respond to Landscaping related issues, other than in a broad general sense or as pertains to potential conflict between the landscaping and other engineering related issues. In doing a very cursory scan of the sheets, we did, however, note the following items:

15. Sheet 20: Intersection with southern drive, west of Building Pad I – There may be a potential conflict with site lines at this intersection, depending upon the specific landscaping proposed. This should be evaluated, and the landscape plantings selected to avoid a visibility conflict.
RESPONSE: Trees have been moved/omitted in this area per the comment.

16. Sheet 25: We noted a leader line/arrow not pointing to the Bench referenced by the callout (e.g. Bench just east of planting area east of Building G).
RESPONSE: Plans revised per the comment.

17. Sheet 26: We noted a miss-spelling on the stormwater inlet callout near the NE corner of Building E (e.g. "stromwater" rather than "stormwater").
RESPONSE: Plans revised per the comment.

<u>Sheets 30 – 31 Site Amenities</u>:

We do not review and respond to Site Amenities. Accordingly, we have no comments on these sheets.

Sheets 32 – 38 Conceptual Irrigation Plans:
We do not review and respond to Site Irrigation. Accordingly, we have no comments on these sheets.

Sheets 39 – 47 Photometric Plans:
We do not review and respond to Site Photometrics. Accordingly, we have no comments on these sheets, with exception of the following:

18. Sheet 39: The sheet title is missing in the Title Box.
RESPONSE: This has been corrected on the updated drawing set.

Sheets 48 - 55 Architectural Elevations:
We do not review and respond to Architectural Elevations. Accordingly, we have no comments on these sheets.

Grading, Erosion and Sedimentation Control (GESC) Plans

19. The Project is located within The City of Lone Tree, not within unincorporated Douglas County. The City of Lone Tree GESC Plans, Standard Details and GESC Standard Check List requirements (as posted on the City Website) must be utilized and followed. The GESC Plans submittal should be updated accordingly.
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

20. Sheet 1 – Cover Sheet: The Index of Plans (e.g. Sheet Numbering) does not match the numbering on the sheets.
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

21. Sheet 02: There is an existing 10" sanitary sewer shown traversing the site east to west. WE anticipate there should be an existing easement for this sanitary line. That existing easement should be shown and labeled.
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

22. Sheets 02 - 07: The BMP legend (and graphic BMP representations) should be consistent with the City of Lone Tree Standard GESC Plans legend.
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

23. Sheet 03: The BMP's shown in the area of the proposed site access drive and Park Meadows Drive intersection will need to be appropriately modified based on the resolution of the intersection location.
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

24. Sheet 03: Some extension of the proposed silt fence is recommended up the slope at both sides just west of the proposed sediment basin, and at the north end at the limits of construction. Please add. (Also, adjustments and/or additions may be noted/required in the field during the site work.)
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

25. Sheets 04 – 07: The Key Map should be updated so that the indicated sheet area is not fully blocked out (e.g.

the indicated area's transparency needs to be adjusted, similar to that on Sheets 02 & 03).
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

Grading, Erosion and Sedimentation Control (GESC) Report

26. As noted above, the City of Lone Tree GESC Standards (Check List, etc.) shall be followed.
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

27. Pg. 6 – Areas & Volumes: The report notes that there will be a net 16,623 CY of import required. The GESC Plans indicate there will be a net export of approximately 9,110 CY (e.g. Cut – fill/embankment). Please make sure the two documents are consistent.
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

28. Pg. 7 – The discussion regarding diversion ditches references the southeast border of the site. However, diversion ditches are shown on the plans along the southwest and west borders of the site.
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

29. Pg. 7 – Good Housekeeping Methods – Chemical Management: The last sentence references "No solid materials…". This should be revised to "No waste materials…" (e.g. no liquid or solid waste materials shall be allowed to discharge into Willow Creek or the on-site storm system).
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

30. Pg. 8 – 3rd bullet: "… include measured to prevent…" should be "… include measures to prevent…".
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

31. Pg. 8 – last bullet: "…on the site." should be "… on the site, except into identified and approved concrete washout areas."
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

32. Pg. 9 – Inspection and Maintenance – 1st line: It is "The City of Lone Tree", not "Town of Lone Tree".
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

33. Pg. 9 – Inspection and Maintenance: last line: Revise "… event of 0.5 inches or greater." to "event which generates, or has the potential to generate, stormwater runoff from the site."
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

34. Pg. 9 – Inspection and Maintenance – last paragraph, 3rd line: Revise "… within 7 days." to "… as soon as possible."
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

35. Cost Opinion Spreadsheet: Utilize the applicable City of Lone Tree GESC Opinion of Probable Cost Spreadsheet.
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

36. Checklist - Utilize the applicable City of Lone Tree GESC Checklist.
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

<u>Phase II Drainage Report</u>

37. Pg. 5, Sec. 2.2 – 3rd line, states that "All sub-basins will be directed to two underground detention facilities…". The prior sentence references 15 detained and 4 un-detained on-site basins, and 5 off site basins. Accordingly, please clarify which "All sub-basins…" actually go to the detention facilities. Also, clarify that the facilities are "full spectrum detention faculties".
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

38. Pg. 8 – Off-Site Basins. The off-site basins, as identified in the study, are indicated as being "open space" south of the existing C-470 EB Yosemite off-ramp. However, as part of the planned C-470 widening, with associated realignment of the EB Yosemite off-ramp, this current Douglas County owned "open space" parcel will become part of the C470 development, and no longer "open space". Ultimate design of the on-site hydrology/hydraulics needs to take into account the "developed" condition of these off-site basins.
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

39. Pg. 8, Sec. 3.2, 5th line: "A Drainage Analysis we …" should be "A drainage analysis was…".
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

40. Pg. 9, 1st line: "… pipe which currently run through…." should be "… pipe which currently runs through…".
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

41. Pg. 9, 1st paragraph: The discussion notes the 1995 FHU Interchange construction plans as the basis for determining the flows through the existing 48 storm sewer running E-W through the site, and therefore for sizing the re-routing of this pipe. However, as noted above, the current C470 Design-Build widening project may / is anticipated potentially to increase the flows to/in this line. Coordination with the CDOT Design/Build Team should occur – and the design of this relocated storm line may need to be adjusted.
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

42. Pg. 10, Sec. 4.2, 2nd paragraph: The discussion notes that emergency stormwater overflow paths will be incorporated into the development, to provide relief for storm runoff events greater than the design capacity (e.g. greater than a 100 yr. event) and/or in case of a system failure. We did not note where or how this (these) emergency overflows / flow paths were. Please clarify.
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

43. Pg. 12, Proposed Storage Facilities Table: We will need to review the proposed sizing in more detail. Our preliminary review suggested the proposed sizing is close, but possibly slightly (e.g. 2% +/-) smaller than may be required.
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

44. Pg. 13, Sec. 4.7, 1st line: The existing regulatory floodplain is mapped as Zone AE, not Zone A.
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

45. Pg. 13, Sec. 4.7, 4th line: There are no stormwater ponds proposed within the floodplain as part of this Project.
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

46. Pg. 13, Sec. 4.8: The required CDPHE permit is a State Stormwater Construction Permit from the Colorado Department of Public Health and Environment (CDPHE). Also, a 404 Permit from the Army Corps Engineers may be required. An Army Corp of Engineer Jurisdictional Determination/Wetland Determination Confirmation should be obtained to determine if a 404 Permit is necessary.
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

47. Pg. 14, 2nd & 3rd lines: The statement "… all offsite flow will bypass the proposed underground detention facilities…" does not appear to be consistent with prior discussion in this drainage report. Please review and correct as appropriate.
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

48. Pg. 14, Reference #1: Please provide a copy of the referenced firmette in the appropriate appendix.
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

49. A full Phase III Drainage report, complete with all on-site drainage design (curb inlet capacity, gutter capacity, storm system pipe sizing, etc.) documentation will need to be prepared and submitted as part of the Site Civil Design documentation.
RESPONSE: This comment will be responded to with the resubmission of the GESC and Drainage Report in association with the submittal of the Civil Site CDs.

<u>Traffic Impact Analysis (TIA)</u>

50. Figure 2 – Site Plan: It might be appropriate to show the Site Access/Park Meadows Drive intersection, and also the C-470 & EB Yosemite Off –Ramp.
RESPONSE: The traffic study has been updated to include a more comprehensive site plan.

51. Pg. 14, Short Range Future Condition, 3rd paragraph: The discussion projects a short range (2017 – shortly after opening of The Yard) traffic peak hour level of service (LOS) of E/F at the Yosemite / Park Meadows intersection (re: Figure 3). Figure 8, which includes the background traffic plus The Yard traffic, projects a LOS of D/E (with the evening Peak Hour level of service (LOS) rating of E). The FHU evaluation notes the "improvement from LOS E/F to LOS D/E by signal timing adjustments. The discussion also projects that even without The Yard, the projected Short Range Future LOS would likely still at an D/E rating. The

discussion notes one additional possible improvement to help marginally improve the LOS might be incorporation of an additional northbound lane on Yosemite, between Maximus and Park Meadows. (FHU apparently was unaware that an added dedicated NB right-turn lane is being constructed late summer/early fall of 2016. Perhaps it would be appropriate to update the TIA to incorporate this new lane into the analysis.)
RESPONSE: The traffic study has been updated to include a more comprehensive site plan.

52. The discussion of what the Background Traffic LOS values might be, without The Yard, begs the question of why the short term and long term Background LOS values were not included (e.g. similar to Figure 8 and Figure 9) – to provide a better comparison of projected conditions both with and without The Yard's contribution. Such a comparison may help to clarify, or dispel, concerns about what degree of impact traffic from The Yard development might contribute to the immediate area.
RESPONSE: The traffic study has been updated to include LOS analysis for the forecasted background traffic volumes.

53. CDOT has expressed concern over what impact The Yard traffic might have on backups for NB Yosemite to WB C470 traffic. CDOT has requested that the TIA analysis be expanded to model the intersection of Yosemite, WB C470/ S. Park Meadow Center Drive. We concur with CDOTs request/suggestion.
RESPONSE: The traffic study has been updated to include the intersection of Yosemite and WB C-470/Park Meadows Center Drive.

54. Pg. 16, 3rd bullet: The text under this bullet appears to have been prematurely truncated. Please provide the missing text.
RESPONSE: This text was accidentally included and has been removed.

55. Pg. 16, 4th bullet: The text references signalization of the new site access intersection off of Park Meadows Drive "upon buildout of The Yard". The signalization should be installed and operational before even partial opening of The Yard (e.g. before the intersection is opened for public use).
Pg. 16, 5th bullet: This bullet references potential for drivers exiting the site trying to merge over to turn left (EB) onto Park Meadows. We will require the combination of the RI/RO pork chop island plus signage prohibiting left turn (EB) at Park Meadows as part of The Yard's Civil Construction Plans to help with this issue. Additionally, a planned new raised median in Yosemite (across the frontage of The Yard RI/RO entry area) should effectively prevent NB Yosemite traffic from attempting a left turn into the Yard.
RESPONSE: The traffic study has been modified to include (1) the possibility of signalization prior to buildout, (2) recommendations for the installation of a pork chop island and signage indicating that left turns are prohibited at Park Meadows Drive at the RIRO access for The Yard on Yosemite, and (3) the plans for construction of the raised median on Yosemite.

<u>SOUTH METRO FIRE RESCUE COMMENTS</u>
No Comments

DEPARTMENT OF TRANSPORTATION COMMENTS

Environmental Comments:

From a planning perspective, if there are no plans for future improvements I usually give the ok. If there are known projects I defer to the LA and engineers as they know the project needs in more detail. In this case I would touch base with the RE (Jerome Estes) and program engineer (Carrie DeJiacomo). Per Danny Herrman

RESPONSE: Acknowledge

Traffic Comments:

The Study omits site traffic that would be using the C470 WB on-ramp. This needs to be included in the study as this traffic may effect the intersection operation at the ramp. Also, The trip distribution percentage assigned to C470 appears to be too low {10%). 15%-20% seems more appropriate.
The Study needs to be re-submitted reflecting these changes.
PS 05-19-16

RESPONSE: The traffic study has been updated to include analysis of the intersection of Yosemite and WB C-470/Park Meadows Center Drive. FHU has conducted a sensitivity analysis for increasing the distribution percentage of traffic assigned to C-470. Increasing the distribution to/from C-470 to 20 percent did not change the overall recommendations. The overall analysis shown in the traffic study retains the original trip distribution percentages.

Permits Comments:

An A-line exist along the west side of Yosemite extending south to the north edge of the existing curb cut. Our investigation indicates this existing access/curb cut was established for the purpose of construction & maintaining the C-470 eastbound exit ramp, utility easements & improvements thereon. In essence, minimal access & traffic would be generated or required here if any. This existing access is substandard to the FHWA recommendation of a 550-ft minimum access spacing for interstate ramps for vehicular access. This access however, is not under a COOT Permit. Should additional ROW be dedicated for the creation of an auxiliary lane, it is recommended that an A-line be re-established for the 550-ft distance.

RESPONSE: Per comments from Public Works, the City is agreeable to the proposed Yosemite access location, this access is beyond the existing A-line.

The plans should clarify if the existing utility & storm easements as shown on the Alta Survey will remain. Please ensure access to these facilities is provided.

RESPONSE: Labels have been added to clarify.

Conversion of the existing curb cut to a proposed new right-in/out access may exacerbate problems that exist with peak hour traffic. Vehicles will attempt to cross over 5 lanes of traffic in a shorten distance to make left and U-turns at the Park Meadows intersection. COOT is concerned that vehicles could back-up and impede egress from the C-470 Ramp. We recommend consideration to: (a) eliminate right out egress movements onto Yosemite, and (b) establish a raised median in Yosemite to inhibit cheaters attempting to make left in/out movements into the access.

RESPONSE: Per comments from Public Works, the City is agreeable to the proposed Yosemite access location and City has plans to construct raised median in Yosemite. The traffic study retains the proposed RIRO access and includes discussion of the City's plans to construct a raised median on Yosemite.

Signs oriented to C-470 need to be compliant with the State rules for Outdoor Advertising. Recommend consideration of the TOD-LOGOS program for qualified restaurants to be located in this development.

RESPONSE: Noted

We anticipate that higher than normal bicycle and pedestrian traffic will be present due to the proximity of the Willow Creek & C-470 trails and attractions in the area. Noted that the existing attached sidewalk is proposed for removal & replacement with a narrower detached walk. We recommend that the City require this pathway along Yosemite to be wide'r of an 8 to 10-ft width to safely accommodate pedestrian and cyclist. Discourage any on-street bike lanes in this congested area. Should the City allow the Yosemite access to remain, we recommend at minimum, an overhead street light for illumination & safety.
RESPONSE: 8' sidewalks have been proposed along Yosemite.

Any utility work within C-470 right of way will require individual permits. ROW needs to be verified with the C-470 design-build project.
RESPONSE: Acknowledged, no utility work is currently proposed within CDOT right of way.

ROW
The property north of the Yard was acquired by Douglas County for the C-470 / Yosemite interchange project. It was needed for the EB C470 off ramp to Yosemite. It has an access control line along the southern boundary (northern boundary of the Yard) and then runs south along Yosemite to the existing curb cut. The existing curb cut was constructed within a permanent easement acquired by Douglas County for "construction and maintenance of an access road". No purpose for the access road was provided.
Irv Mallow, Region 1 Right of Way Property Manager
RESPONSE: Acknowledged.

RESIDENCY - C-470 DESIGN-BUILD LEAD ENGINEER
We have not identified the easements beyond our proposed ROW line since our project will not impact these easements. I've attached a pdf showing the C-470 ROW superimposed on the Yard-ALTA.pdf. The Yard plan is missing a piece of proposed ROW being purchased by COOT as part of the C-470 Design Build Project. I can send along CAD files or our ROW Plan sheets for this area to ensure we are all using the same ROW lines.
RESPONSE: Developer proposes that CDOT construct a retaining wall within their ROW to avoid the need to purchase the Yard parcel.

The property north of The Yard that is owned by Douglas County is being deeded to CDOT for the realignment of the Yosemite EB Off Ramp and to keep the entire ramp within CDOT ROW. The Yosemite EB Off Ramp is being widening to a two lane exit, which will change the alignment and grading through the south side of the off ramp. The contractor for the C-470 construction still has the flexibility to adjust the Yosemite off ramp alignment and grading beyond what we saw in their Technical proposal, so that CDOT ROW parcel will not be available for (off-site) landscaping.
RESPONSE: Acknowledged.

PARK MEADOWS METROPOLITAN DISTRICT COMMENTS
No Comments

DOUGLAS COUNTY DEPARTMENT OF COMMUNITY DEVELOPMENT COMMENTS

Project Name: Park Meadows, Filing 1, Tract E and B (The Yard)
Project Number: SP16-22
Jurisdiction: City of Lone Tree

Addressing Comments:
The proposed addresses for this project will be issued from Park Meadows Drive since this street contains the full movement access. The addresses must reflect the full movement access as required by E911 providers.
The proposed addresses are as follows:

A - 8875 Park Meadows Dr.
B - 8877 Park Meadows Dr.
C - 8867 Park Meadows Dr.
D - 8869 Park Meadows Dr.
E - 8865 Park Meadows Dr.
F - 8863 Park Meadows Dr.
G - 8861 Park Meadows Dr.
H - 8851 Park Meadows Dr.
I - 8849 Park Meadows Dr.
J - 8845 Park Meadows Dr.

These addresses are not to be used for any purpose other than for plan review with the building and fire departments until after this project is approved. These addresses are subject to change and Douglas County and the City of Lone Tree will not reimburse any funds spent using these proposed addresses should they require a change.
These proposed addresses have been forwarded to the city planner under separate cover.
RESPONSE: Acknowledged.

Engineering Comments:
Please see letter dated May 20, 2016 for comments from Douglas County Engineering.
RESPONSE: See response comments to Engineering comments below.

Planner Comments:
No Comments

Project Name: Park Meadows Filing 1, 1st Amdt, A Replat of Tract BA and Tract E
Project Number: SB16-24
Jurisdiction: City of Lone Tree

Addressing Comments:
Filing 1, 1st Amendment already exists so this replat must take the next available amendment number which appears to be 3rd Amendment.
RESPONSE: Replat amendment number has been revised.

The proposed addresses have previously been furnished to the City of Lone Tree based on the site plan referral. The site plan's approval is contingent upon the recordation of this replat.
RESPONSE: Acknowledged.

Engineering Comments:
Please see DC Engineering's comments dated 5-20-2016.
RESPONSE: See response comments to Engineering comments below.

Planner Comments:
No Comments

DOUGLAS COUNTY DEPARTMENT OF PUBLIC WORKS ENGINEERING COMMENTS

1. There are two drainage easements that run through this site which were originally dedicated to Douglas County. It appears that the developer intends on revising the storm sewer improvements located in the easements. Further legal work may be required, such as an assignment or quit claim from the County, in order to allow the easements to be either modified or vacated. Please contact us to set up a meeting with the appropriate legal folks from the County to address this issue.
   RESPONSE: Coordination meeting will be set up after SIP resubmittal.

2. The developer is proposing to relocate the existing 66" RCP storm sewer pipe, which is located in the 40' Drainage Easement. The relocation of the storm sewer pipe appears to be partially located in the south bound lanes of Yosemite Street. It may be better to relocate this pipe in a manner that would not necessitate the closing of lanes in Yosemite Street especially depending on the timing of construction as it relates to the construction timing of the C-470 toll lane project.
   RESPONSE: Existing dry utilities prevent the new storm pipe from moving further to the west.

3. The construction plans for the C-470 toll lane project will require a small portion of additional ROW be secured from this property. Please see the attached exhibit which indicates where CDOT will need additional ROW. It would be desirable for this land owner to dedicate the ROW to CDOT or at a minimum the SIP design should modify the parking lot in this area so that it would not be impacted by CDOT's C-470 project.
   RESPONSE: Developer proposes that CDOT construct a retaining wall within their ROW to avoid the need to purchase the Yard parcel.

SOUTHGATE WATER & SANITATION DISTRICTS COMMENTS

Project Name: Park Meadows, Filing 1, Tract E and B (The Yard)
Project Number: SP16-22
Jurisdiction: City of Lone Tree

1. Proposed water and sewer infrastructure design was not reviewed with this submittal - water and sewer main extensions, fire hydrants, and water and sewer service plans, with applicable fees, must be submitted to Southgate directly for review and approval prior to construction. The design and construction of water and wastewater systems or facilities shall be in strict accordance with Southgate's Rules & Regulations and Design & Construction Standards/Specifications. Information on the review process and submittal requirements can be found on South gate's website: www.southgatedistricts.org
   RESPONSE: These plans were submitted on June 10, 2016.

2. Extensions to Southgate's systems, and any existing mains, are required to be located in a minimum of 30' public right-of-way (ROW) or easement without encumbrances and encroachments and minimum required clearances from other utilities, edges of ROW/easement, flow-lines, etc.
   a. Encroachments are not permitted. Encroachments include structures, buildings, fences, walls, retaining walls, parking, curb & gutter crossings, trees, woody plants, nursery stock, planters, islands, medians, posts, signs, etc.
   b. All easements shall be drivable with Southgate equipment, including a combination jet/vacuum truck, without traversing encroachments, such as curb and gutter, walkways, landscaping, etc.
   c. Unimproved easements shall be graded for driving purposes and may be landscaped with sod, bark or gravel. Trees, shrubs and woody plants are not permitted.
   d. Improved easements shall be a paved (no pavers) roadway with a minimum paving width of 29' flow-line to flow-line or 26' flow-line to flow-line with an attached walk.

   RESPONSE: Acknowledged.

3. The cost of providing services to the property, including, and not limited to, System Connection Charges, system extension projects, potential system impact studies, potential system impact fees, and potential system improvements, will be borne by the property owner.
   RESPONSE: Acknowledged.

4. The legal ability to provide service continues to exist at the time of connection and has not been limited, restricted or suspended by the action of a governmental entity, agency or other regulatory body which would diminish Southgate's capability to provide such service.
   RESPONSE: Acknowledged.

5. Contact Southgate's Engineering Staff as soon as possible to discuss the project and establish project-specific requirements.
   RESPONSE: On-going communication, plans were submitted June 10th.

Project Name: Park Meadows, Filing 1, Tract E and B (The Yard)
Project Number: SP16-22
Jurisdiction: City of Lone Tree

1. Easements for water and sewer will be min. 30' & dedicated to Southgate by Southgate's Standard Easement Agreement.
   RESPONSE: Acknowledged.

PLANNING COMMISSION COMMENTS

Parking:
Concern regarding the 60-space parking shortfall, especially since it is hard to know the tenant mix (retail and restaurant) now or in the future. They would like to see a specific example where such a deviation from parking for a similar restaurant/retail center has been successful.

RESPONSE: Please refer to the The Yard Shared Parking Analysis dated 6/16/16 for an overall analysis for the parking requirements for this project comparable to similar projects throughout development community.

Architecture:
Concern regarding the use of recycled barnwood, and examples where such materials have been used on a building for 5-10 years in this climate/altitude, to see how it weathers over time. There was also a question about how they would repair the barnwood, if some boards needed to be replaced and how the newer looking wood would look next to the existing weathered wood (thought it may look like patchwork). Concern regarding the color scheme for the building materials (comments on that to follow).

RESPONSE: The proposed reclaimed barn wood does convey high quality and longevity as it has been taken from barns where it has been exposed to the elements for hundreds of years. The product supplier simply fumigates and kiln dries the wood, but no other processes are done to give it its finish. The current finish of the wood is from years and years of weathering and is unlikely to change in 2 or more years. Reclaimed barn wood has been used on many exterior applications throughout the Denver area. Included with this submittal are several pictures of projects that have used reclaimed barn wood. These pictures have been taken 1-2 years after construction.

Concern for use of EIFS, since there have been observations of its durability over time (birds pecking away at EIFS, vandalism, ice/snow damage). Would like to see a rendering from the C-470 off ramp to see what the roofs (HVAC) would look like at that perspective since this is a major gateway to the City (a Sketch Up model would be preferable to see the site from various perspectives).

RESPONSE: The manufacturers specifications will be strictly enforced to ensure longevity of this material, and the sub-contractor/suppliers warranty will provide added protection

Traffic:
Concern about traffic congestion/conflict at what is now a very busy intersection at Park Meadows Drive and Yosemite (e.g., some traffic from C-470 might continue southward, while at the same time traffic entering onto Yosemite from The Yard might want to make a left turn at Park Meadows Drive, requiring them to cross many lanes of traffic).

RESPONSE: The Traffic Study recommends the installation of a pork chop island and signage indicating that left turns are prohibited at Park Meadows Drive at the RIRO access for The Yard on Yosemite.

One additional request was for more review time to consider this large project. The referral period for this project has been extended from May 29th to May 31st due to the weekend and holiday. We will continue to pass along to you substantive referrals as we receive them.

RESPONSE: Acknowledged

Please respond to the following comment received later from one of our Planning Commission members, Daryl Heskin, who is an architect:

"Would the applicant please provide an alternative to the materials currently selected since:

1) The EFIS does not meet the criteria for using “quality , durable materials” per page 41 of the Lone tree Design Guidelines, paragraph 7.

RESPONSE: The manufacturers specifications will be strictly enforced to ensure longevity of this material, and the sub-contractor/suppliers warranty will provide added protection

2) Predominant materials include Cementitious Stucco but not EFIS.

RESPONSE: We have not suggested that we are using EIFS is a predominate material. EIFS is used in limited areas and generally in low visible areas throughout the project.

3) “wood siding or wood elements (should be composite or finished treated wood that conveys high quality and longevity)” per page 74 of the Lone Tree Guidelines Secondary Materials. Neither barn wood nor EFIS meet those standards. This project is on one or the Principle Gateways to Lone Tree and particular attention should be paid to the quality of the development, design and materials at this site. The current materials will not stand the “test of time” per our Core Design Principles: “Design Excellence” - Support excellence in architectural design and quality of construction to convey a sense of timelessness and durability. I would categorize the current design as “trendy” rather that timeless.”

RESPONSE: The proposed reclaimed barn wood does convey high quality and longevity as it has been taken from barns where it has been exposed to the elements for hundreds of years. The product supplier simply fumigates and kiln dries the wood, but no other processes are done to give it its finish. The current finish of the wood is from years and years of weathering and is unlikely to change in 2 or more years. Reclaimed barn wood has been used on many exterior applications throughout the Denver area. Included with this submittal are several pictures of projects that have used reclaimed barn wood. These pictures have been taken 1-2 years after construction.

HOA COMMENTS

1. The proposed cut on Yosemite - It was felt this was too close to the off ramp on C-470 and a right in/out would not work well at this location. People exiting at this location would be trying to cross all the way to the far left lane to make a left on Park Meadows Drive. We would prefer to see a right in only and should have it's own new right lane turn.
RESPONSE: Lone Tree Public Works is agreeable to the access location as proposed. The Traffic Study recommends the installation of a pork chop island and signage indicating that left turns are prohibited at Park Meadows Drive at the RIRO access for The Yard on Yosemite.

2. The variance request for a portion of the 10' setback along Yosemite we are opposed to. Projects located too close to a major street are unattractive and project a "closed-in feel" and are not something we'd like to see in Lone Tree along Yosemite.
RESPONSE: Acknowledged.

3. It was also felt that the tree scape along Yosemite was rather sparse in some areas.
RESPONSE: Due to underground utilities tree placement along Yosemite is limited.

4. The entrance on Park Meadows Drive is on a curve. We suggest moving it east to align with the current trail location.
RESPONSE: Per our Traffic Study this is an acceptable location. Please refer to the Study.

5. Cost of any trail realignment as well as signalization should be funded by the developer. Other comments made concerned lighting and that care be taken that it not adversely affect adjacent neighborhoods. Flat roofs and screening of roof top structures. Found no specs for signage. Questioned the use of "pre-finished composite wood fencing" and whether or not this was quality material. The design - color, windows, exterior – were not timeless and do not fit into Lone Tree. Two members objected to the design and two had no problem with it.
RESPONSE: N/A

HOA BOARD OF DIRECTORS COMMENTS
Please widen the proposed sidewalk along Yosemite so that we may be able to get safer foot and bicycle access to the attractions near the mall.
RESPONSE: The sidewalk has been widened to 8' wide.

SOUTH SUBURBAN PARK AND RECREATION DISTRICT COMMENTS

The Willow Creek Trail crossing at Park Meadows Drive is proposed to be relocated approximately 300 feet to the west of the current crossing at the intersection of the development's private drive. This intersection, while signalized, is located on a blind corner with limited visibility for trail users crossing from south to north. Relocate the signalized intersection approximately 200 feet to the east, or maintain the current trail crossing and add a HAWK signal.
RESPONSE: Please refer to the revised SIP for the proposed design solution.

Should the signalized intersection be relocated, relocate the crosswalk on Park Meadows Drive to the west side of the intersection so trail users are not conflicting with left egress turns, and so trail users only need to cross one street.
RESPONSE: The sidewalk has been relocated to the west.

The south trail approach to the proposed crossing is shown as an attached sidewalk. Provide a detached trail, to the extent possible, located on the Douglas County and Lone Tree owned open space parcels. Relocate the sidewalk along the development's entry drive to the east side of the drive to provide better access for trail users.
RESPONSE: The south trail has been made detached to the extent possible.

A future trail connection, by others, requiring a pedestrian bridge over Willow Creek is shown at the west corner of the proposed development (see Circulation Plan). This trail connection would be located primarily on public property, and directly benefit the developer. The developer should be responsible for the construction and maintenance costs.
RESPONSE: Per discussions with City staff, the future trail connection would not be responsibility of developer.

TRI-COUNTY HEALTH DEPARTMENT COMMENTS

Food Service Plan Review

The applicant indicates a few of the buildings will be occupied for restaurants. Plans for all new and remodeled retail food establishments must be reviewed by TCHD for compliance with Colorado Retail Food Establishment Rules and Regulations and approved by the Department before the start of construction. The applicant shall submit plans for the proposed food establishment to our Administration Office at 6162 S Willow Drive, Suite 100, Greenwood Village, along with the Plan Review Specification Packet found at http://www.tchd.org/DocumentCenter/View/2094. More information can be found at http://www.tchd.org/246/Restaurants-Grocery. We recommend a review of the plans by THCD be completed before the city issues a building permit for the construction. The applicant may call TCHD's Plan Review Hotline at our Administrative Office at (303) 846-6230, regarding requirements for and scheduling a plan review. Instructions for opening a retail food establishment can be found on line at TCHD's web site at http://www.tchd.org/DocumentCenter/View/315.

RESPONSE: Acknowledged

Community Design for Healthy Behaviors

Because chronic diseases related to physical inactivity and obesity now rank among the country's greatest public health risks, TCHD encourages community designs that make it easy for people to include regular physical activity, such as walking and bicycling, in their daily routines. Because research shows that the way we design our communities can encourage regular physical activity, Tri-County Health Department (TCHD) strongly supports community plans that incorporate pedestrian and bicycle amenities that support the use of a broader pedestrian and bicycle network.

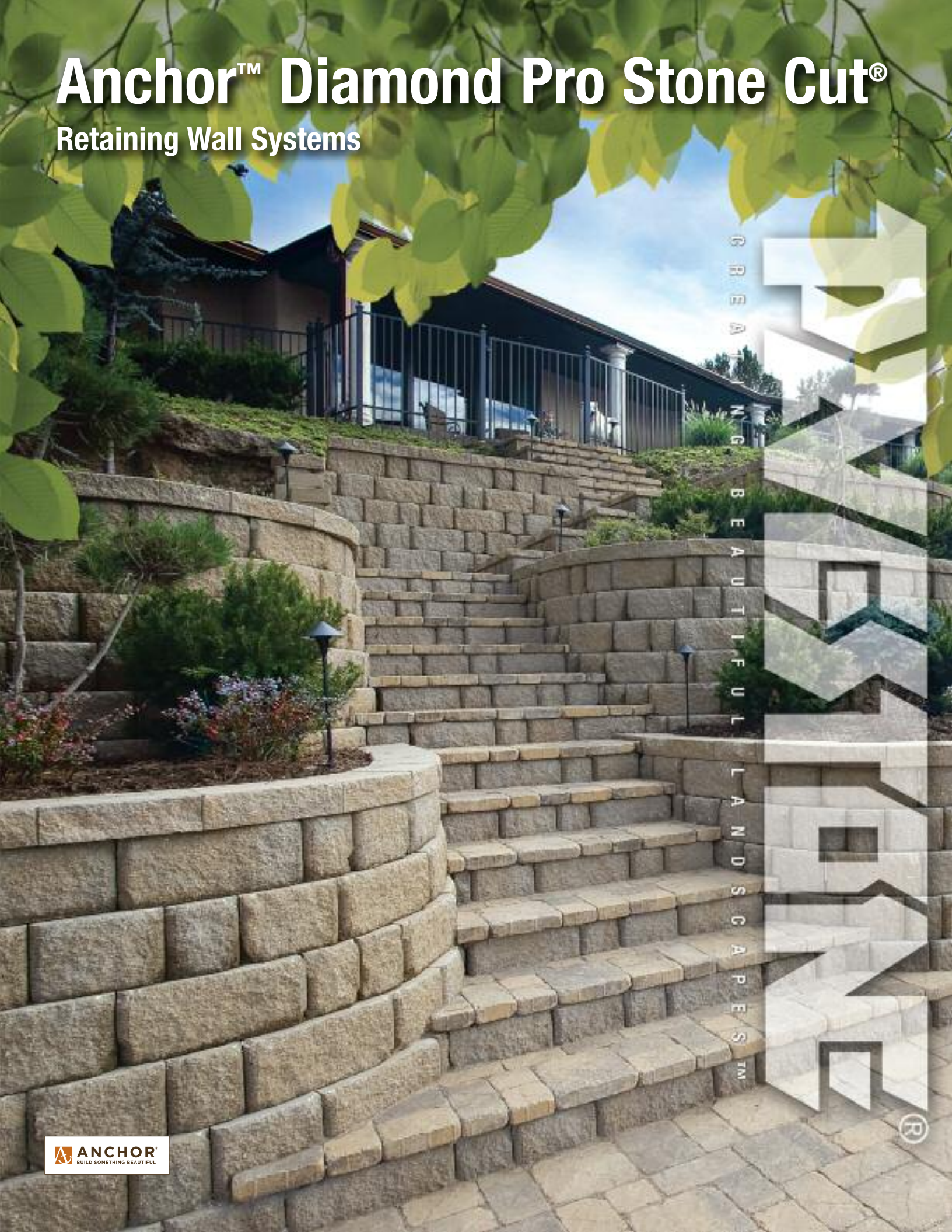
RESPONSE: Acknowledged

TCHD commends the applicant for connecting the sidewalks on the proposed development with existing sidewalks on nearby streets as well as the existing trail to the south of the property.

RESPONSE: Acknowledged

Anchor™ Diamond Pro Stone Cut®

Retaining Wall Systems



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The Anchor™ Diamond Pro Stone Cut® Series has brought the latest look and appeal in architectural design with its addition of the two smaller modular components. The new three piece system separates itself by creating alternating scale and dimensions. The product's patented splitting technique results in more natural appearance in the edge profiles. This softer edge creates more amenity in the facing of the wall. While the system still meets the rigorous demands for both engineering and structural components, its multiple shape patterning creates new and innovative applications for site work design.

COMPOSITION AND MANUFACTURE

Anchor™ Diamond Pro Stone Cut® Series is made from a "no slump" concrete mix. Made under extreme pressure and high frequency vibrations, Diamond Pro Stone Cut® Series has a compressive strength greater than 3500 psi and a water absorption maximum of 7% and will meet or exceed ASTM 1372.

INSTALLATION FOR REINFORCED WALLS

1. Layout

Stake out the wall's placement according to lines and grades on approved plans. Excavate for the leveling pad to the lines and grades shown. Excavate soil to a dimension behind the wall for placement of grid and reinforced soils. The trench for the leveling pad should be a minimum (6) inches in front and back of the placed wall stone.

2. Leveling Pad

The leveling pad consists of a crushed aggregate compactible base material. The pad must extend a minimum six (6) inches in front and behind the first course of stone, and be a minimum six (6) inches in depth. Compact the aggregate in maximum eight (8) inches lifts and check top elevation for level.

3. Base Course

Place a string line along the back of the stone to align the wall units. Begin laying stone at the lowest elevation of the wall. Place wall stones flat on the leveling pad with facings aligned according to plans. If necessary, remove rear lip of the stone so that it will lie flat on the leveling pad. Place the stones side-by-side, flush against each other, and in full contact with the leveling pad. Level the stone front-to-back and side-to-side. Check the stones for proper horizontal alignment.

4. Wall Construction

Clean any debris off the top of the stones. Place the second course of stones on the base course maintainingrunning bond pattern (do not align vertical joints). Push or pull each stone forward as far as possible to ensure stone-to-stone engagement and the correct setback. Fill all voids between and within concrete wall stones with drainage aggregate. Backfill with drainage aggregate directly behind the stone. Fill behind the aggregate with soil meeting design parameters. Place and compact the backfill material before the next course is laid. Hand-operated equipment should be used within four (4) feet of the wall. Avoid driving heavy equipment within the same area.

5. Drainage

Fill in the area behind the stones with drainage aggregate to a minimum horizontal dimension of 12 inches. Place a perforated drain pipe at the base of the drainage aggregate and above the wall's front finished grade at the toe. Daylight or direct the drain to an area lower than the lowest drain elevation in the wall. Additional drainage design may be required.

6. Compaction

Place the backfill soil behind the drainage aggregate and compact. The backfill within four (4) feet of the wall is to only be compacted with a hand-operated compactor. Aggregate is to be level with or slightly below the top of each course. Repeat at the front of the wall. Add soil and compact backfill soil as necessary. Testing for proper compaction may be required.

7. Geo-Grid Reinforcement Placement

Check approved wall construction plan for grid placement. Determine which courses will have reinforcement grid placed into the backfill. Measure and cut the reinforcement grid to the design length in the plans. The reinforcement grid has a design strength direction to be laid perpendicular to the wall. Place the front edge of the material on the designated top course a maximum of one and half (1 1/2) inches from the face of the stone. Apply the next course of stones to secure it in place. At the back of the wall, pull the reinforcement taut. Add drainage aggregate behind the stones, then add the backfill soil and compact. Testing for proper density and compaction may be necessary to meet project requirements. A minimum of six (6) inches of backfill over the grid is required prior to operating most vehicles on top of the reinforcement.

8. Finish Grade and Surface Drainage

Protect your wall from water damage and erosion with a finished grade to provide positive drainage away from the wall at the top and bottom of the wall structure. To minimize infiltration of water into the top of the backfill area of the wall, place a minimum six (6) inches of soil with low permeability (clayor similar materials).

Complete installation & specification details are available by contacting your Pavestone Sales Representative.

Note: Colors are shown as accurately as possible in brochures & samples, but due to the nature of the product, regional color differences and variables in print reproduction, colors may not match exactly.

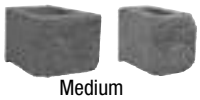
APPLICATIONS

Terraced Gardens • Landscape Retaining Walls • Geosynthetic Reinforced Walls • Erosion Control

PRODUCT INFORMATION

Anchor Diamond Pro Stone Cut® Series
Small & Medium Bundled Together

Nominal Dimensions	SM	7" L x 12" W x 8" H
	M	11" L x 12" W x 8" H
Wt./Stone	SM 34 lbs.	M 45 lbs.
Stones/Pallet	SM 16	M 32
Approx. Wt./Pallet	1991 lbs.	
Face ft./Pallet	26	
Batter	7°	
Product Number	833	



Small

Medium

Anchor Diamond Pro Stone Cut® Series

Nominal Dimensions	LG	18" L x 12" W x 8" H
Wt./Stone	86 lbs.	
Stones/Pallet	36	
Approx. Wt./Pallet	3,096 lbs.	
Face Ft./Pallet	36	
Batter	7°	
Product Number	818	

Large

Anchor Diamond Pro Stone Cut® Series 3-PC Combo

Small, Medium & Large Bundled Together

Nominal Dimensions	SM	7" L x 12" W x 8" H	
	M	11" L x 12" W x 8" H	
	LG	18" L x 12" W x 8" H	
Wt./Stone	SM 34 lbs.	M 45 lbs.	LG 86 lbs.
Stones/Pallet	SM 16	M 16	LG 16
Approx. Wt./Pallet	2,608 lbs.		
Face ft./Pallet	32		
Batter	7°		
Product Number	835		

3-Pc Combo

Pavestone Cap for Anchor Diamond Pro®

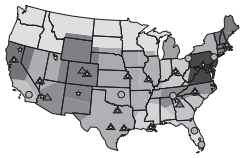
18" L x 13 1/2" W x 4" H

Wt./Stone	79 lbs.
Stones/Pallet	48
Approx. Wt./Pallet	3,792 lbs.
Linear ft./Pallet	63
Product Number	831

Anchor Diamond Pro® Cap

17" L x 10 1/2" W x 4" H

Wt./Stone	45 lbs.
Stones/Pallet	63
Approx.Wt./Pallet	2,835 lbs.
Linear Ft./Pallet	89
Product Number	830



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- Charlotte, NC: (704) 588-4747
- Cincinnati, OH: (513) 474-3783
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- Dallas/Ft. Worth, TX: (817) 481-5802
- Denver, CO: (303) 287-3700
- Hagerstown, MD (240) 420-3780
- Houston, TX: (281) 391-7283
- Kansas City, MO: (816) 524-9900
- Las Vegas, NV: (702) 221-2700
- New Orleans, LA: (985) 882-9111
- Phoenix, AZ: (602) 257-4588
- St. Louis/ Cape Girardeau,MO: (573) 332-8312
- Sacramento/ Winters, CA: (530) 795-4400

PLEASE CHECK WITH A PAVESTONE REPRESENTATIVE FOR AVAILABILITY.

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PLANET Professional Landcare Network

World Wide UNILOCK Pavers

ICPI Charter Member

ANCHOR BUILD SOMETHING BEAUTIFUL

SKU# CDC 157v4 1/12

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22

APPROVAL CERTIFICATE:

THIS SIP HAS BEEN REVIEWED AND FOUND TO BE COMPLETE AND IN ACCORD WITH CITY REGULATIONS, AS APPROVED BY THE CITY ON _____.

BY: _____

NAME: _____
TITLE: COMMUNITY DEVELOPEMENT DIRECTOR

DATE: _____

BY: _____

NAME: _____
TITLE: CITY ENGINEER

DATE: _____

BY: _____

NAME: _____
TITLE: MAYOR

DATE: _____

THE OWNER(S) OF THE LANDS DESCRIBED HEREIN, HEREBY AGREE(S) (1) TO DEVELOP AND MAINTAIN THE PROPERTY DESCRIBED HEREON IN ACCORDNACE WITH THIS APPROVED SITE IMPROVMENT PLAN AND IN COMPLIANCE WITH CHAPTER 16 OF THE LONE TREE MUNICIPAL CODE AND THAT (2) THE HEIRS, SUCCESSORS AND ASSIGNS OF THE OWNER(S) SHALL ALSO BE BOUND. THE SIGNATURES OF THE OWNER(S)'(S) REPRESENTATIVE(S) BELOW INDICATE THAT ANY REQUIRED AUTHORIZATIONS TO ENTER THIS AGREEMENT, INCLUDING ANY CORPORATE AUTHORIZATIONS, HAVE BEEN OBTAINED.

_____
(NAME OF OWNER)

_____
(SIGNATURE OF OWNER)

_____
(PRINTED NAME AND TITLE)

STATE OF : _____)
) SS.
COUNTY OF _____)

SUBSCRIBED AND SWORN TO BEFORE ME THIS _____ DAY OF _____, 20_____.
BY _____

WITNESS MY HAND AND OFFICIAL SEAL.

MY COMMISSION EXPIRES: _____

_____
(NOTARY PUBLIC)

APPROVAL BY THE CITY OF LONE TREE DOES NOT SIGNIFY THAT THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA) HAVE BEEN SATISFIED. THE APPLICANT IS RESPONSIBLE TO ENSURE THAT ADA REQUIREMENTS HAVE BEEN MET.

STANDARD CONDITIONS OF APPROVAL
(PER CITY OF LONE TREE MUNICIPAL CODE SECTION 16-27-70(B)(1):

THE PROPERTY HEREIN IS SUBJECT TO ALL APPLICABLE REQUIREMENTS OF THE LONE TREE ZONING CODE, INCLUDING BUT NOT LIMITED TO MAINTENANCE, LIGHTING, PARKING, SIGNAGE, AND OUTDOOR STORAGE, EXCEPT AS MAY OTHERWISE BE ADDRESSED IN AN APPROVED DEVELOPMENT PLAN OR SUB-AREA PLAN.

CONSULTANT FIRMS:

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ALBERTA DEVELOPMENT PARTNERS, LLC
5750 DTC PARKWAY, SUITE 210
GREENWOOD VILLAGE, CO 80111
TEL: (303) 771-4004
ATTN: BRYAN C McFARLAND

PLANNING/ENGINEERING CONSULTANT
BOWMAN CONSULTING
603 PARK POINT DR., SUITE 100
GOLDEN, CO 80401
TEL: (303) 674-7355
FAX: (303) 674-3263
ATTN: LINCOLN THOMAS, PE
lthomas@bowmanconsulting.com

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UTILITY CONTACTS:

ELECTRICAL/GAS
XCEL ENERGY
5460 W. 60TH AVENUE
ARVADA, CO 80003
TEL: (800) 628-2121

WATER AND SANITARY SEWER
SOUTHGATE WATER & SANITATION DISTRICT
3722 EAST ORCHARD ROAD
CENTENNIAL, COLORADO 80121
TEL: (303) 713-7746
CONTACT: CHRISTINA BACA

STORM SEWER
CITY OF LONE TREE
PUBLIC WORKS DEPARTMENT
9222 TEDDY LANE
LONE TREE, COLORADO 80124
TEL: (303) 662-8112
CONTACT: GREG WEEKS

FIRE DEPARTMENT
SOUTH METRO FIRE & RESCUE
9195 E. MINERAL AVE,
CENTENNIAL, COLORADO 80112
TEL: (720) 989-2000

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VICINITY MAP
SCALE: 1" = 2000'

OVERALL SITE DATA	SQUARE FOOTAGE	% OF GROSS
BUILDING FOOTPRINT (7 BUILDINGS)	61,372 SQFT	9.98%
PARKING/ROADS (INCLUDED PLANTED INTERIOR ISLANDS)	333,000 SQFT	54.16%
LANDSCAPE AREA (EXCLUDING PLANTED INTERIOR PARKING ISLANDS, INCLUDING LANDSCAPED AREA, TRAILS, AND WALKS)	162,940 SQFT	26.50%
SEEDED AREAS (FUTURE BUILDING H, I, AND J)	54,935 SQFT	8.93%
GROSS SITE AREA	614,892 SQFT	99.57%
B ZONE AREA	195,574 SQFT	31.81%
C3 ZONE AREA	419,318 SQFT	68.19%

SITE SETBACKS	
B ZONE	
MINOR ARTERIAL STREET	40'
OPEN SPACE, NON TRAIL	20'
ADJACENT COMMERICIAL ZONE	0'
C3 ZONE	
YOSEMITE STREET	30'
SIDE OR REAR LOT LINE	10'
PRIVATE DRIVE	20'
OPEN SPACE	30'
PARKING	10'

LANDSCAPE AREA PERCENTAGE OF ZONE	B ZONE	C3 ZONE	TOTAL
LANDSCAPE AREA (EXCLUDING PLANTED INTERIOR PARKING ISLANDS, INCLUDING LANDSCAPED AREA, TRAILS, AND WALKS)	65,090 SQFT	97,850 SQFT	162,940 SQFT
TOTAL ZONE AREA	195,574 SQFT	419,318 SQFT	614,892 SQFT
PERCENTAGE OF ZONE	33.28%	23.34%	26.50%

BUILDING SIZE	
MAXIMUM BUILDING HEIGHT	36'-8"
MAX FLOOR AREA PROVIDED PER BUILDING	16,043
GROSS BUILDING AREA (7 BUIDINGS)	71,750 SQFT

PARKING REQUIRED FOR PROJECT IS BASED ON THE ASSOCIATED PARKING STUDY, THE YARD SHARED PARKING ANALYSIS, DATED JUNE 16, 2016.

ALL PROPERTIES HEREIN WILL IMPLEMENT A SHARED PARKING AND CROSS ACCESS AGREEMENT.

Galloway
Planning. Architecture. Engineering.
6162 S. Willow Drive, Suite 320
Greenwood Village, CO 80111
303.770.8884 O
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THE YARD AT LONE TREE
LONE TREE, COLORADO
ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL
	06.17.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

Project No:	ADP000002.01
Drawn By:	DES
Checked By:	KK
Date:	03.29.16

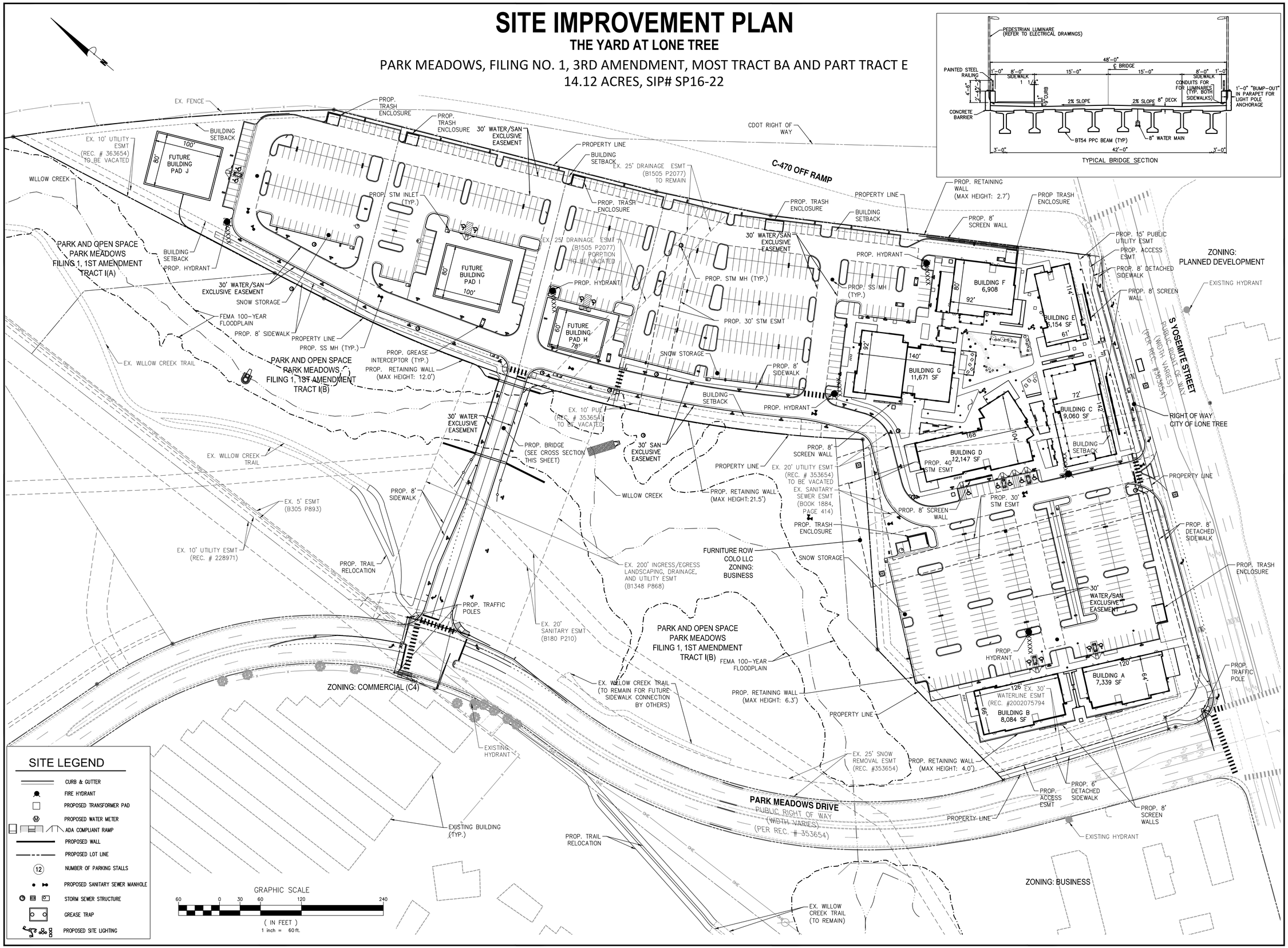
SHEET TITLE:
COVER SHEET

7/1/2016 11:42:54 AM

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22



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LONE TREE, COLORADO
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	04.29.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

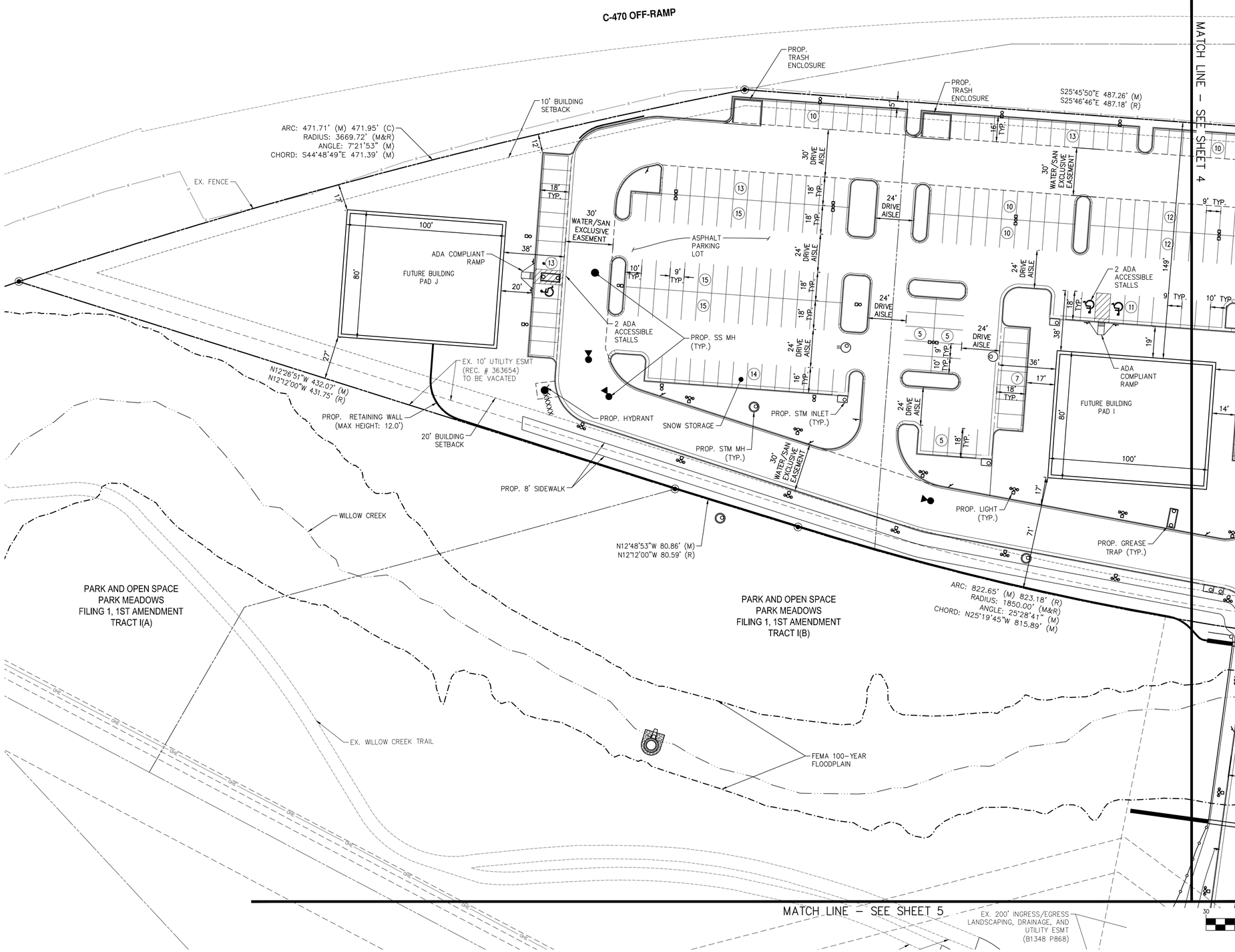
Project No:	ADP000002.01
Drawn By:	JAH
Checked By:	LJT
Date:	03.29.16

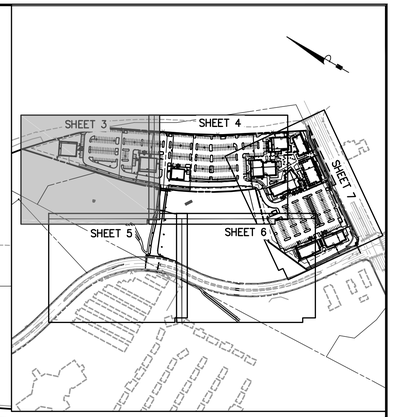
SHEET TITLE:
OVERALL SITE PLAN

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22





KEY MAP
SCALE: 1" = 400'

SITE LEGEND

- CURB & GUTTER
- FIRE HYDRANT
- PROPOSED TRANSFORMER PAD
- PROPOSED WATER METER
- ADA COMPLIANT RAMP
- PROPOSED WALL
- PROPOSED LOT LINE
- NUMBER OF PARKING STALLS
- PROPOSED SANITARY SEWER MANHOLE
- STORM SEWER STRUCTURE
- GREASE TRAP
- PROPOSED SITE LIGHTING

NOTES:

1. REFER TO SHEETS 13 TO 17 FOR UTILITY SERVICE INFORMATION.
2. REFER TO PHOTOMETRIC PLAN FOR ADDITIONAL FIXTURE LOCATIONS.
3. REFER TO LANDSCAPE PLAN FOR SITE FURNITURE AND PATIO DETAILS.
4. ALL PARKING STALLS ADJACENT TO LANDSCAPE ISLANDS ARE 10' WIDE

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THE YARD AT LONE TREE
LONE TREE, COLORADO
ALBERTA DEVELOPMENT PARTNERS

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	04.29.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

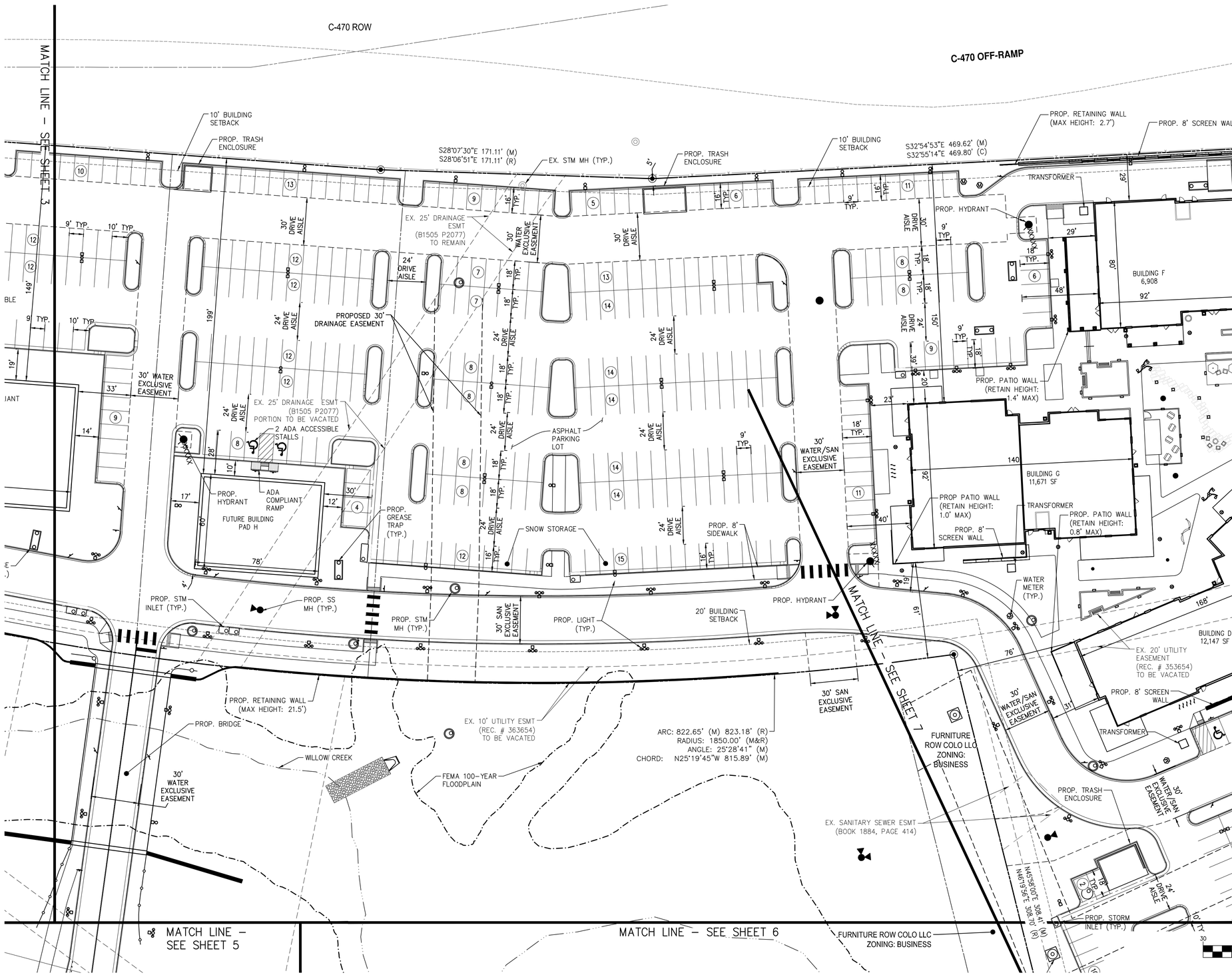
Project No:	ADP000002.01
Drawn By:	JAH
Checked By:	LJT
Date:	03.29.16

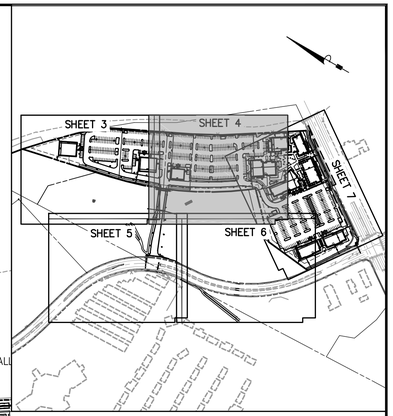
SHEET TITLE:
SITE PLAN -
SHEET 1 OF 5

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22





KEY MAP
SCALE: 1" = 400'

SITE LEGEND

- CURB & GUTTER
- FIRE HYDRANT
- PROPOSED TRANSFORMER PAD
- PROPOSED WATER METER
- ADA COMPLIANT RAMP
- PROPOSED WALL
- PROPOSED LOT LINE
- NUMBER OF PARKING STALLS
- PROPOSED SANITARY SEWER MANHOLE
- STORM SEWER STRUCTURE
- GREASE TRAP
- PROPOSED SITE LIGHTING

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LONE TREE, COLORADO
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	07.01.16	SIP RESUBMITTAL

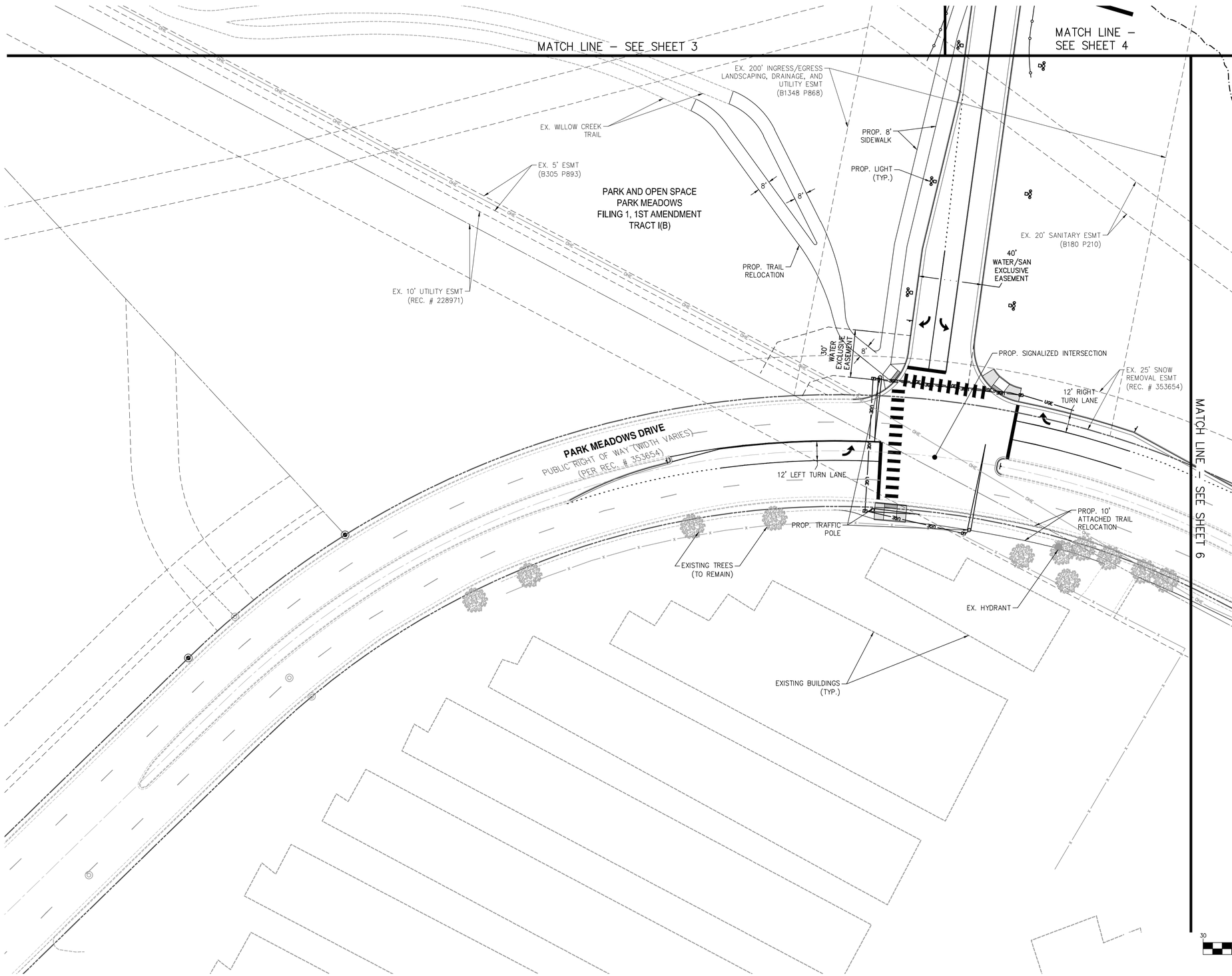
Project No:	ADP000002.01
Drawn By:	JAH
Checked By:	LJT
Date:	03.29.16

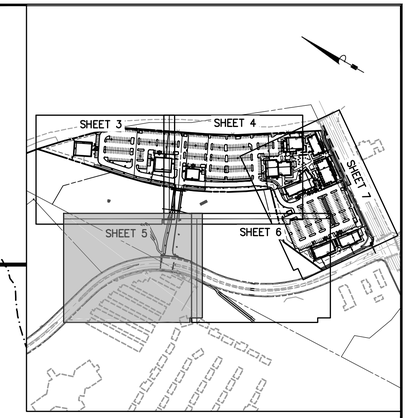
SHEET TITLE:
SITE PLAN - SHEET 2 OF 5

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22





KEY MAP
SCALE: 1" = 400'

SITE LEGEND

- CURB & GUTTER
- FIRE HYDRANT
- PROPOSED TRANSFORMER PAD
- PROPOSED WATER METER
- ADA COMPLIANT RAMP
- PROPOSED WALL
- PROPOSED LOT LINE
- NUMBER OF PARKING STALLS
- PROPOSED SANITARY SEWER MANHOLE
- STORM SEWER STRUCTURE
- GREASE TRAP
- PROPOSED SITE LIGHTING

NOTES:

1. REFER TO SHEETS 13 TO 17 FOR UTILITY SERVICE INFORMATION.
2. REFER TO PHOTOMETRIC PLAN FOR ADDITIONAL FIXTURE LOCATIONS.
3. REFER TO LANDSCAPE PLAN FOR SITE FURNITURE AND PATIO DETAILS.
4. ALL PARKING STALLS ADJACENT TO LANDSCAPE ISLANDS ARE 10' WIDE

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

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THE YARD AT LONE TREE
LONE TREE, COLORADO
ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

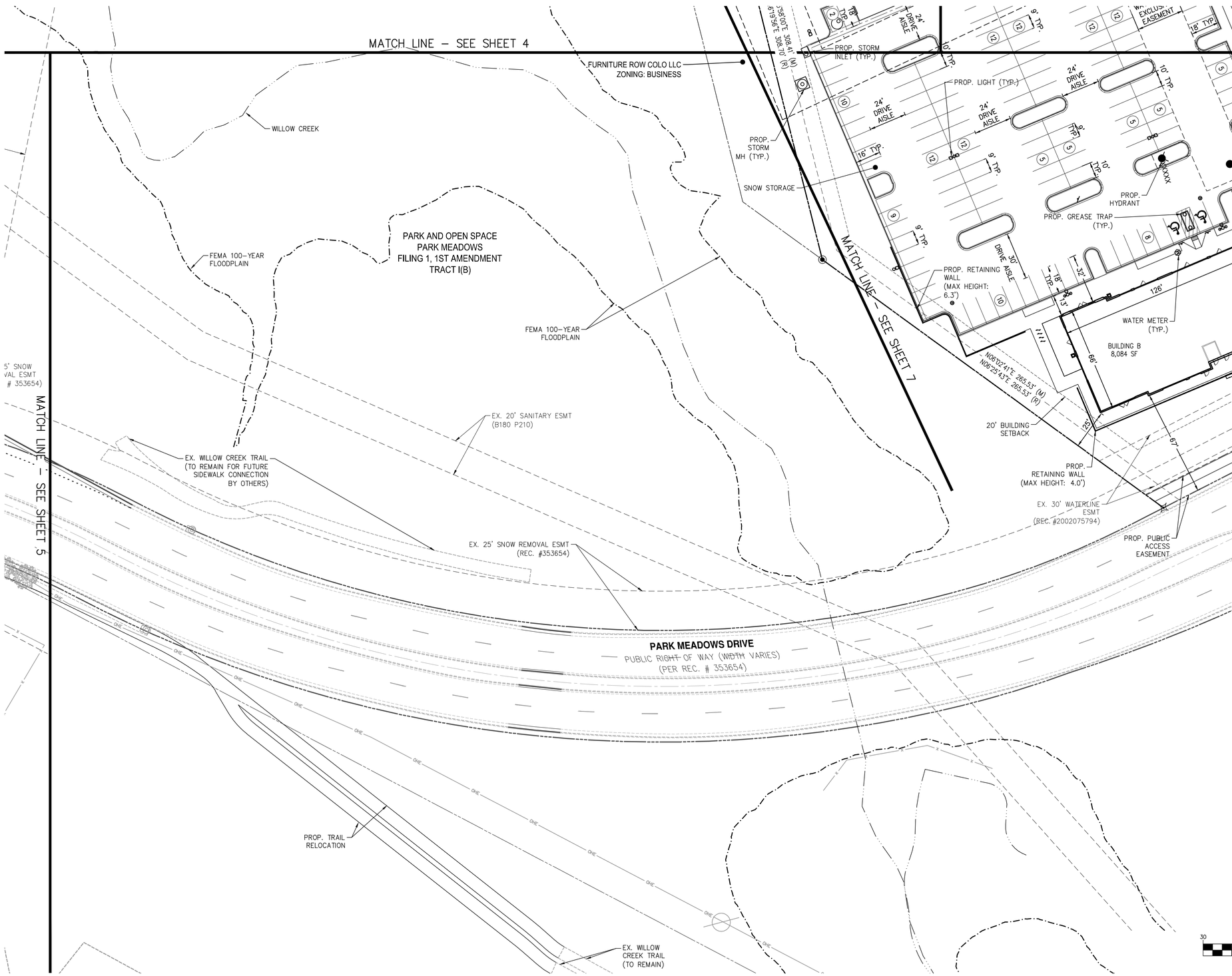
Project No:	ADP000002.01
Drawn By:	JAH
Checked By:	LJT
Date:	03.29.16

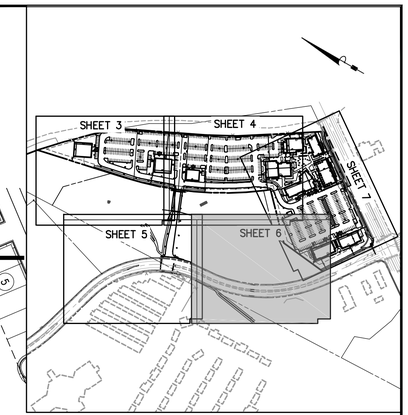
SHEET TITLE:
SITE PLAN -
SHEET 3 OF 5

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22





KEY MAP
SCALE: 1" = 400'

SITE LEGEND

- CURB & GUTTER
- FIRE HYDRANT
- PROPOSED TRANSFORMER PAD
- PROPOSED WATER METER
- ADA COMPLIANT RAMP
- PROPOSED WALL
- PROPOSED LOT LINE
- NUMBER OF PARKING STALLS
- PROPOSED SANITARY SEWER MANHOLE
- STORM SEWER STRUCTURE
- GREASE TRAP
- PROPOSED SITE LIGHTING

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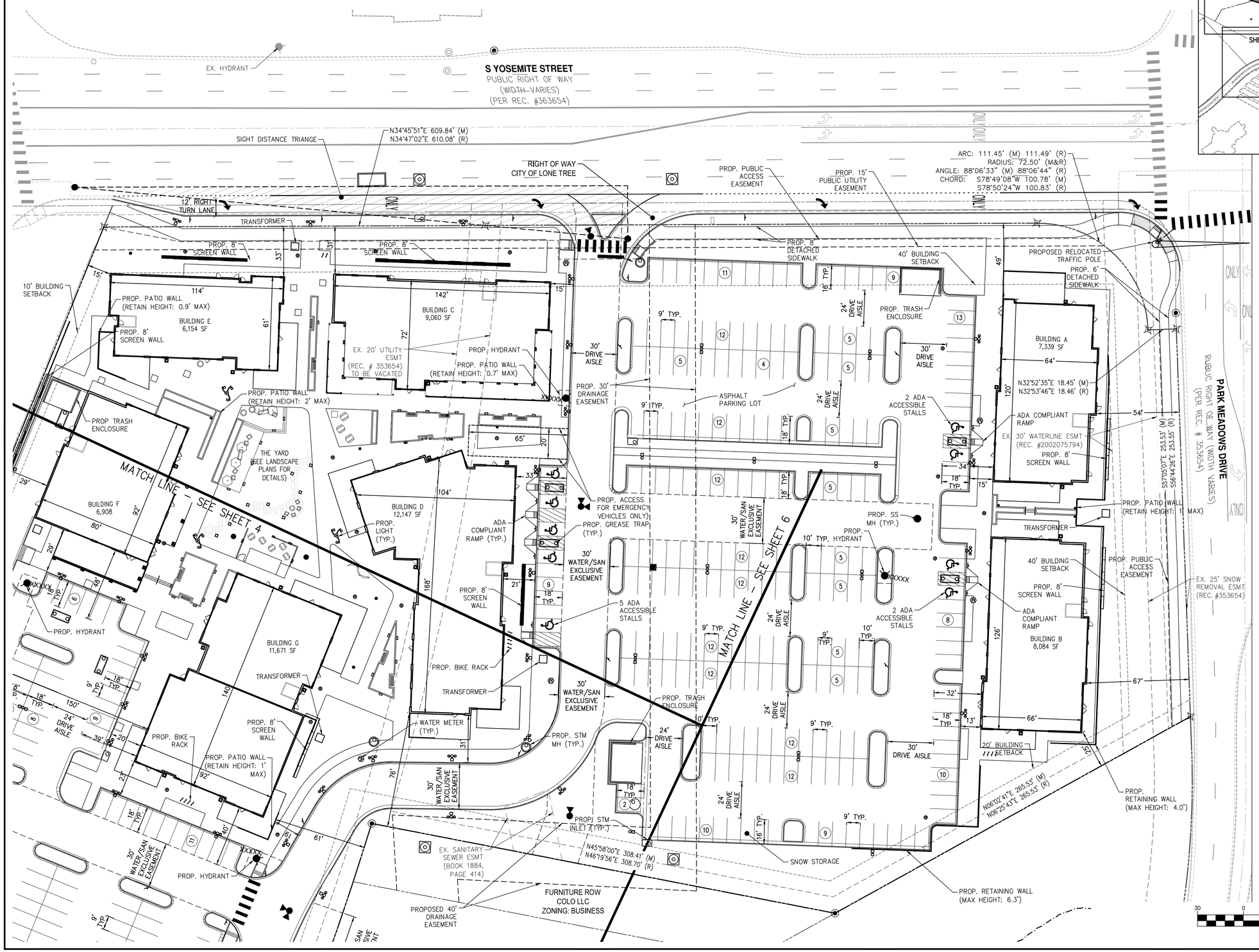
Project No:	ADP000002.01
Drawn By:	JAH
Checked By:	LJT
Date:	03.29.16

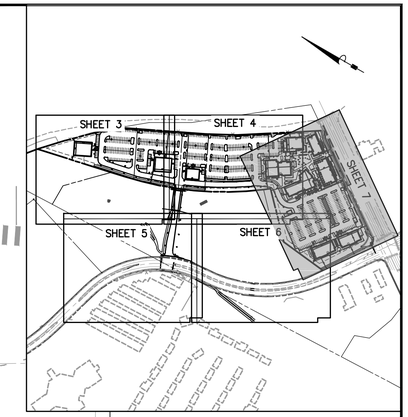
SHEET TITLE:
SITE PLAN -
SHEET 4 OF 5

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22





KEY MAP
SCALE: 1" = 400'

SITE LEGEND

- CURB & GUTTER
- FIRE HYDRANT
- PROPOSED TRANSFORMER PAD
- PROPOSED WATER METER
- ADA COMPLIANT RAMP
- PROPOSED WALL
- PROPOSED LOT LINE
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GRAPHIC SCALE
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(IN FEET)
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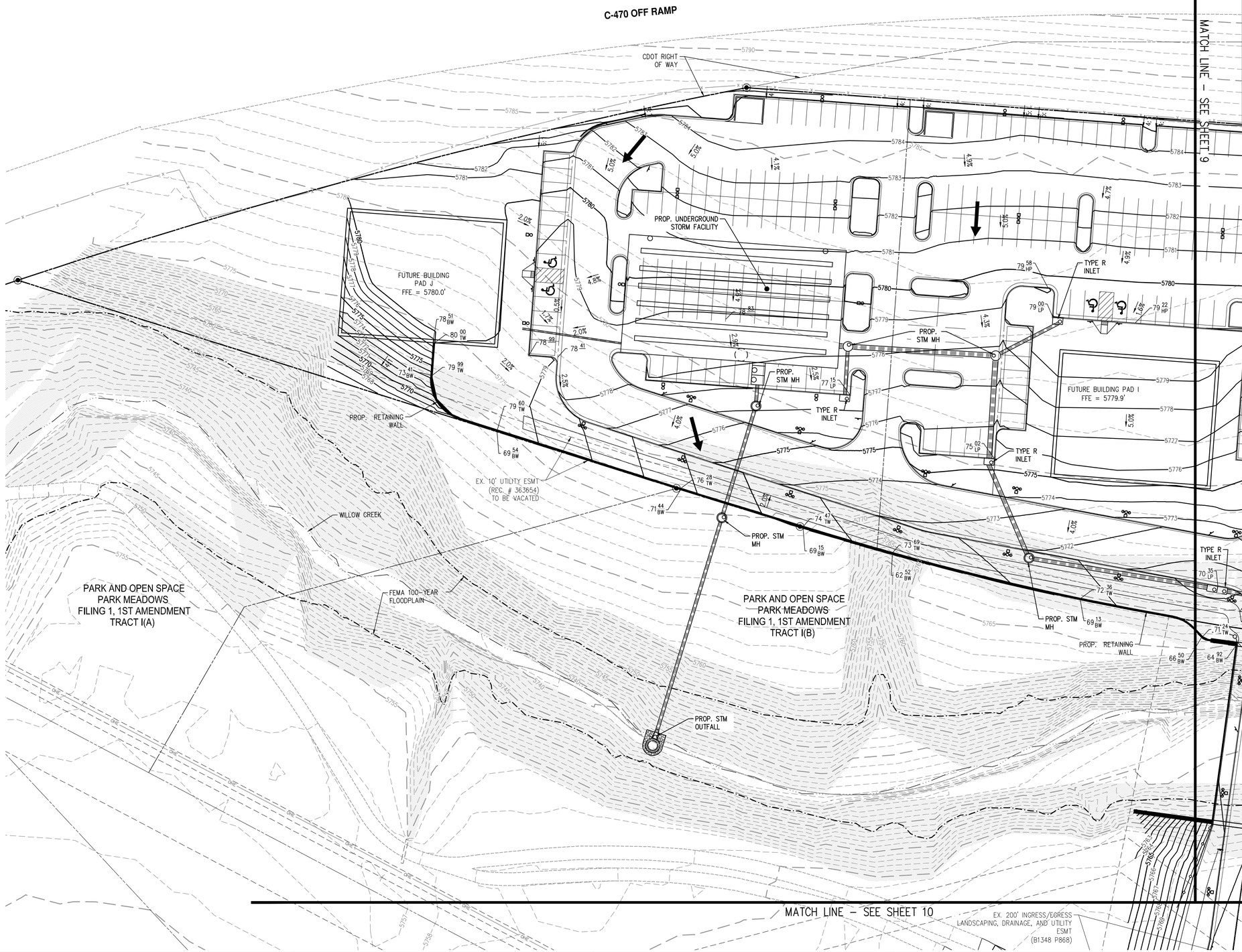
Project No:	ADP000002.01
Drawn By:	JAH
Checked By:	LJT
Date:	03.29.16

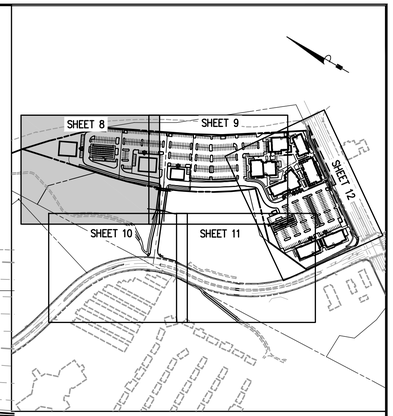
SHEET TITLE:
SITE PLAN -
SHEET 5 OF 5

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22





KEY MAP
SCALE: 1" = 400'

GRADING LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- SPOT ELEVATION
- PROPOSED SLOPE
- EXISTING SLOPES > 20%
- CURB & GUTTER
- STORM DRAIN PIPE W/ MANHOLE
- STORM SEWER STRUCTURE
- HANDICAP RAMP
- RETAINING WALL
- FLOW DIRECTION ARROW

GRAPHIC SCALE
(IN FEET)
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Drawn By:	JAH
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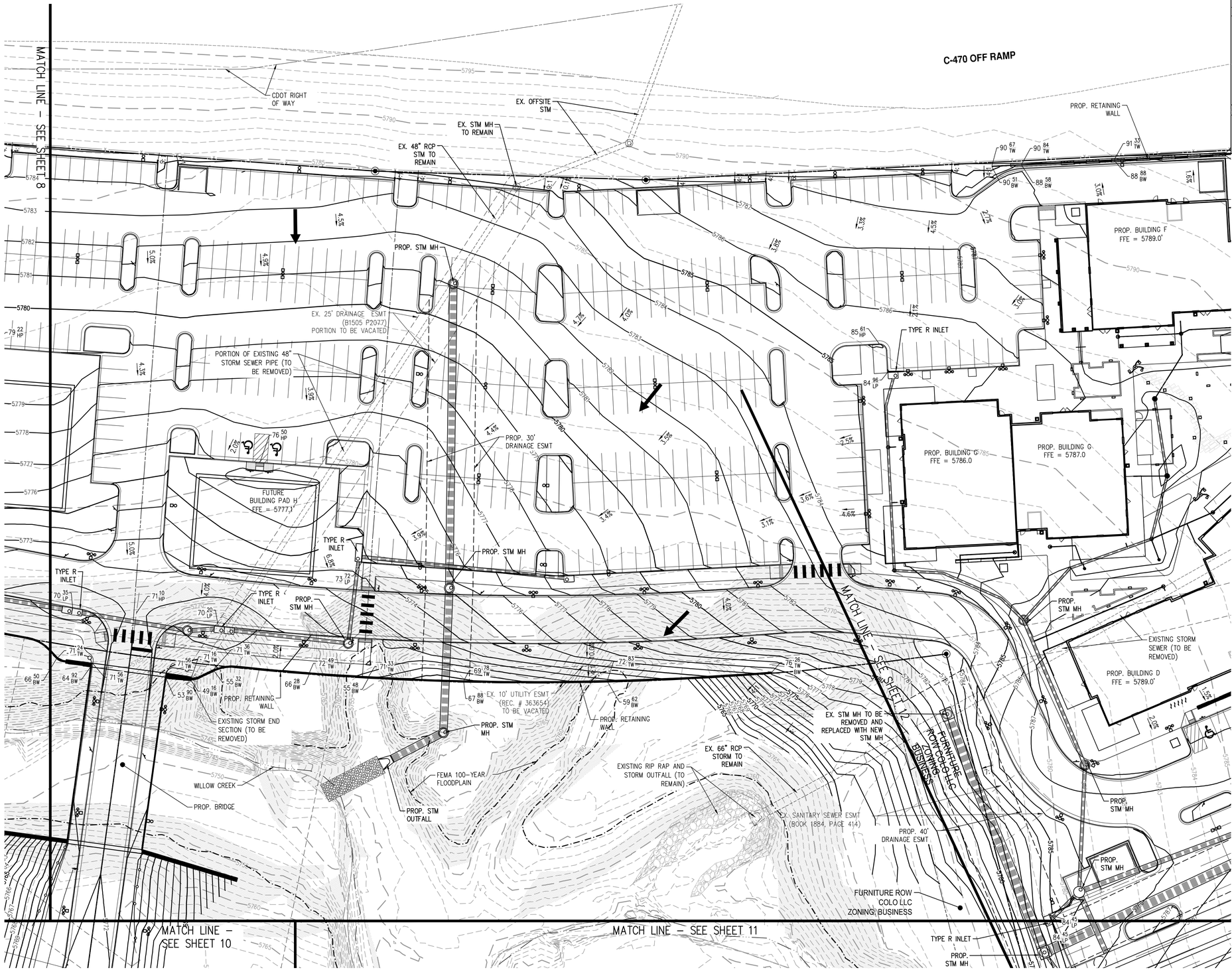
Date:	03.29.16

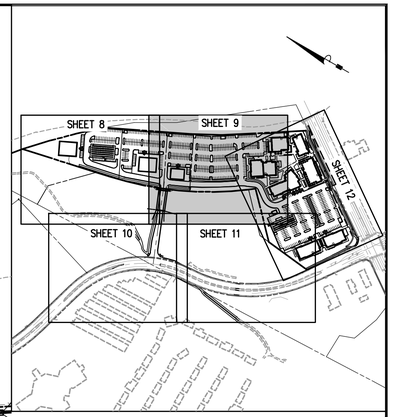
SHEET TITLE:
GRADING PLAN -
SHEET 1 OF 5

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22





KEY MAP
SCALE: 1" = 400'

GRADING LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- SPOT ELEVATION
- PROPOSED SLOPE
- EXISTING SLOPES > 20%
- CURB & GUTTER
- STORM DRAIN PIPE W/ MANHOLE
- STORM SEWER STRUCTURE
- HANDICAP RAMP
- RETAINING WALL
- FLOW DIRECTION ARROW

GRAPHIC SCALE
30 0 15 30 60 120
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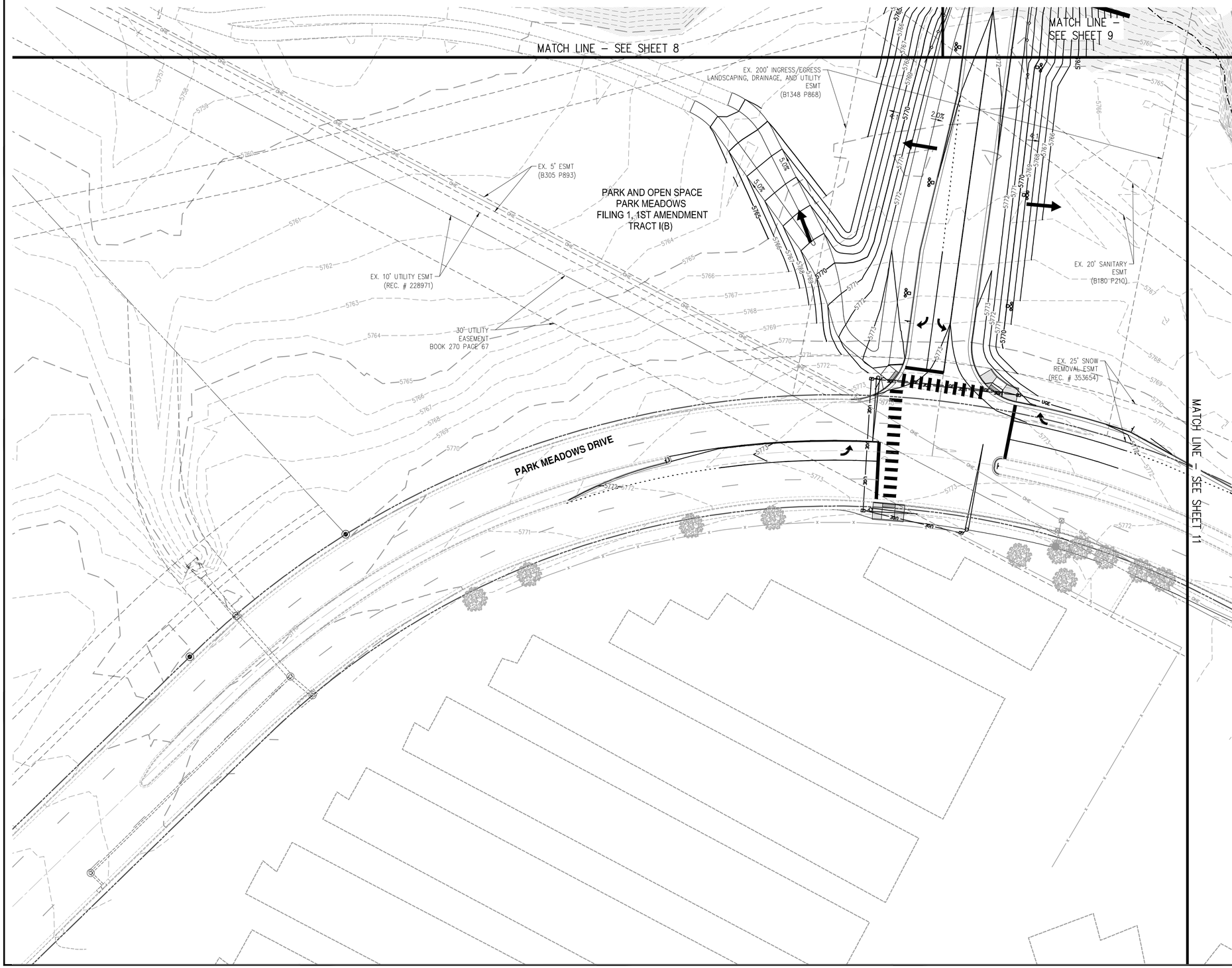
Project No:	ADP000002.01
Drawn By:	JAH
Checked By:	LJT
Date:	03.29.16

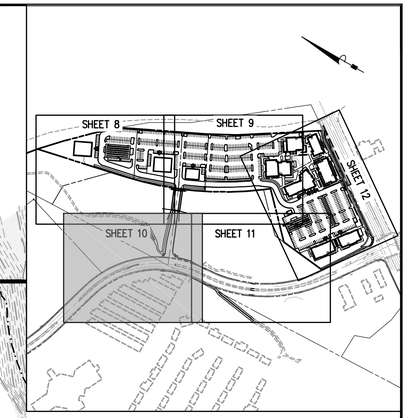
SHEET TITLE:
GRADING PLAN - SHEET 2 OF 5

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22





KEY MAP
SCALE: 1" = 400'

GRADING LEGEND

- 6070 — EXISTING CONTOUR
- 6070 — PROPOSED CONTOUR
- XX XX/TW — SPOT ELEVATION
- 4.0% — PROPOSED SLOPE
- EXISTING SLOPES > 20%
- CURB & GUTTER
- STORM DRAIN PIPE W/ MANHOLE
- STORM SEWER STRUCTURE
- HANDICAP RAMP
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- FLOW DIRECTION ARROW

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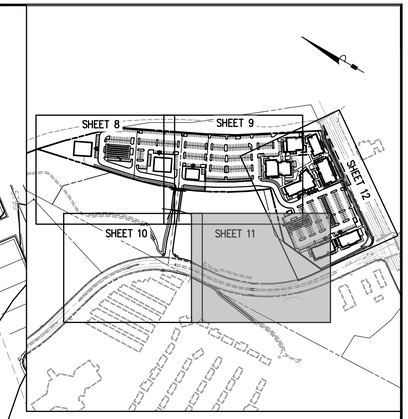
Date:	03.29.16

SHEET TITLE:
GRADING PLAN -
SHEET 3 OF 5

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22



KEY MAP
SCALE: 1" = 400'

GRADING LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- SPOT ELEVATION
- PROPOSED SLOPE
- EXISTING SLOPES > 20%
- CURB & GUTTER
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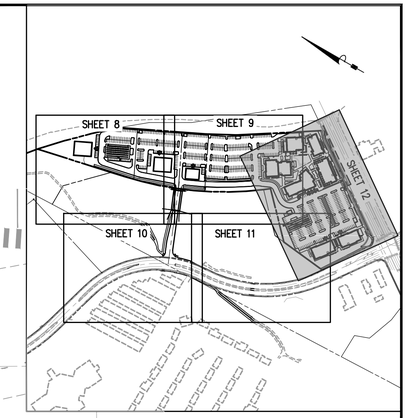
SHEET TITLE:
GRADING PLAN -
SHEET 4 OF 5

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22



KEY MAP
SCALE: 1" = 400'

GRADING LEGEND

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- PROPOSED CONTOUR
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SHEET TITLE:
GRADING PLAN - SHEET 5 OF 5

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
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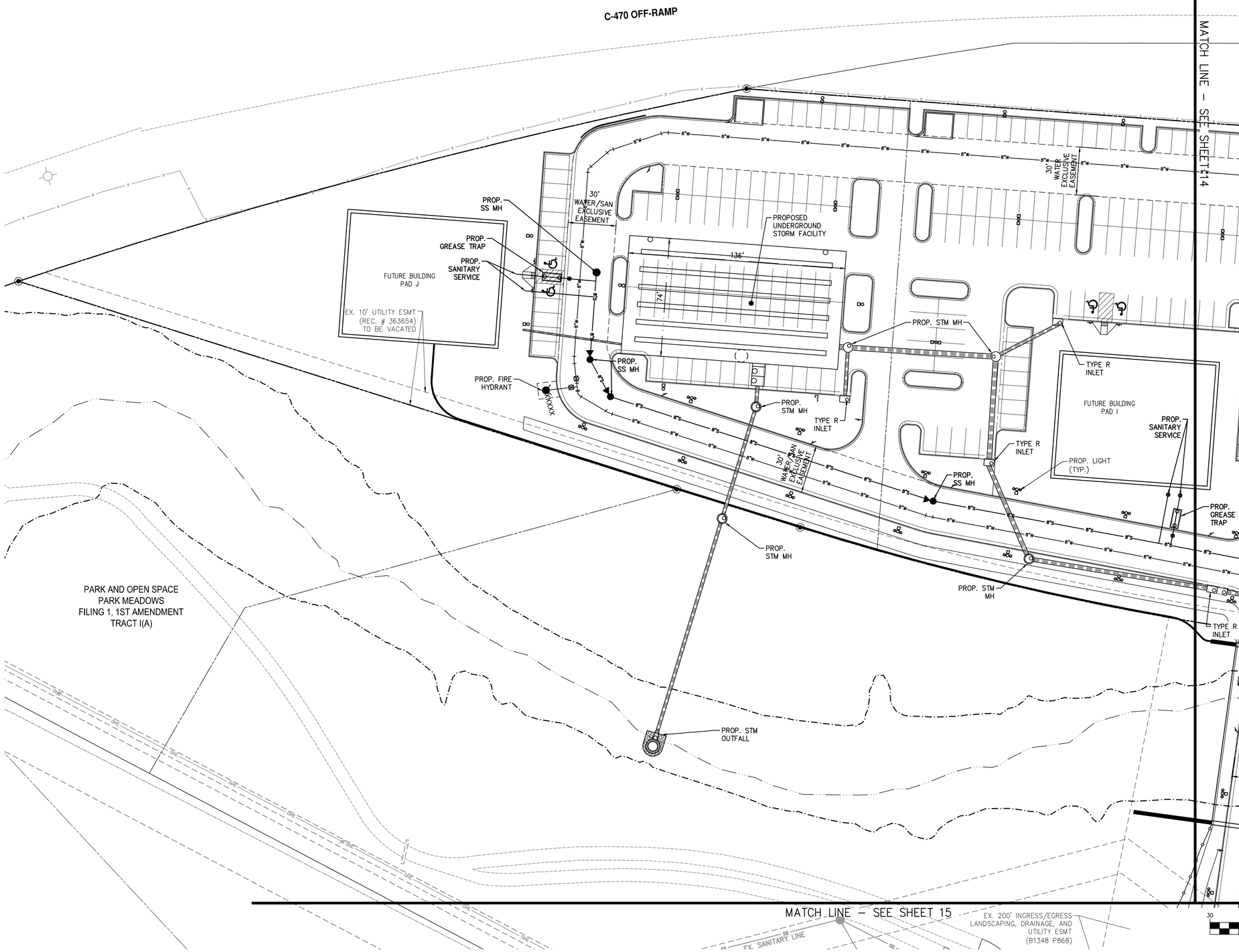

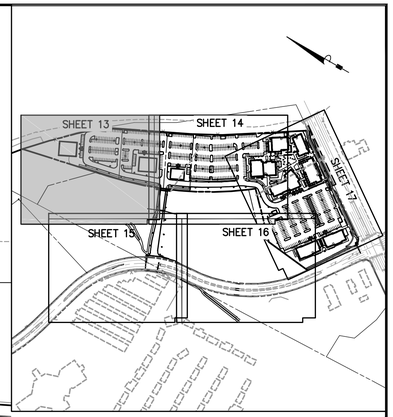

KEY MAP
SCALE: 1" = 400'

UTILITY LEGEND

- CURB & GUTTER
- FIRE HYDRANT ASSEMBLY
- 8"W — 8" WATER LINE
- 10"S — SANITARY SEWER
- EXISTING SANITARY SEWER MANHOLE
- PROPOSED SANITARY SEWER MANHOLE
- STORM DRAIN PIPE W/ MANHOLE
- STORM SEWER STRUCTURE
- ADA COMPLIANT RAMP
- PROPOSED WALL
- PROPOSED LOT LINE
- PROPOSED WATER METER
- PROPOSED SANITARY/STORM CLEAN OUT
- PROPOSED GATE VALVE & BOX
- GREASE TRAP
- PROPOSED TRANSFORMER PAD
- FDC — FIRE DEPARTMENT CONNECTION
- PROPOSED SITE LIGHTING

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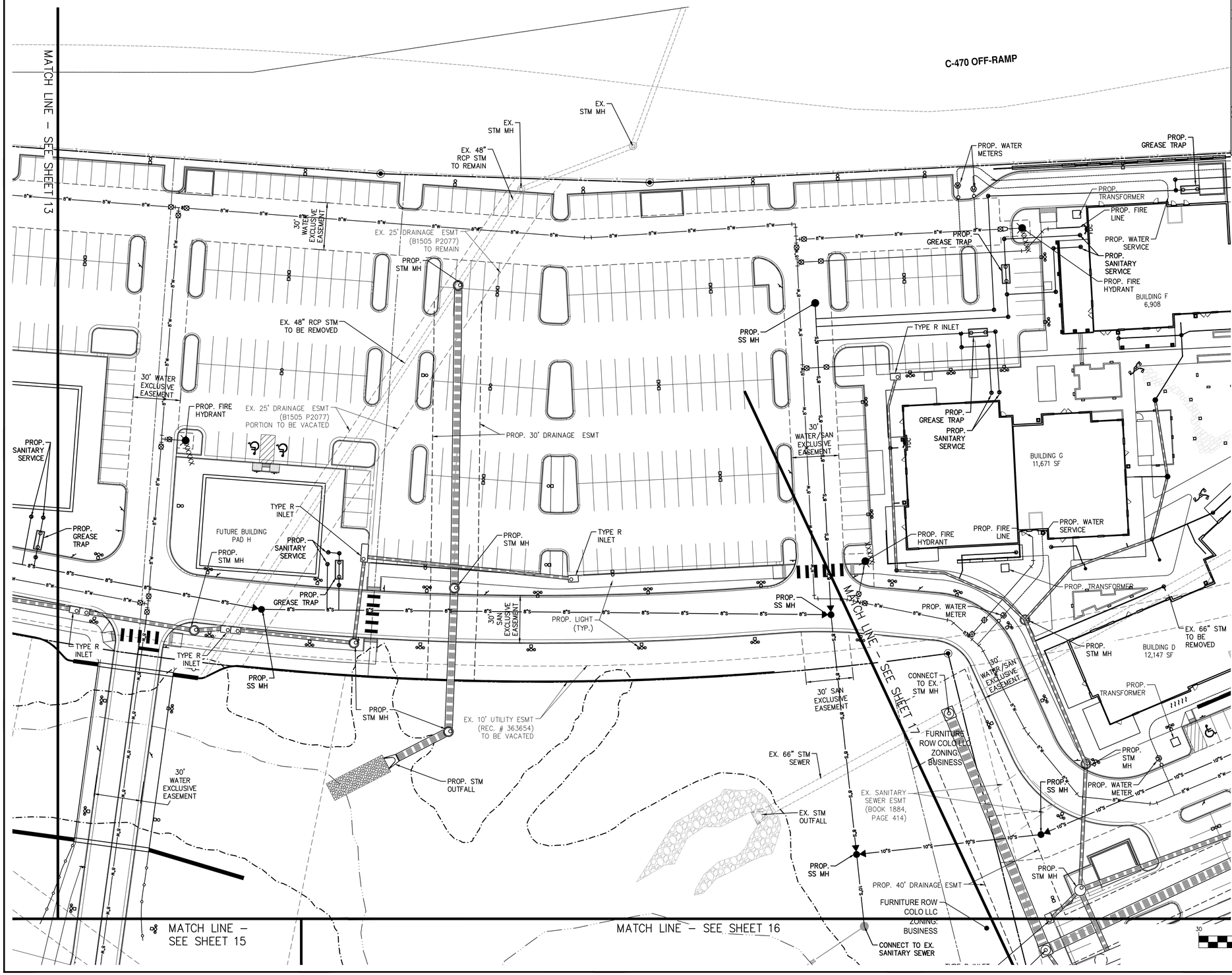
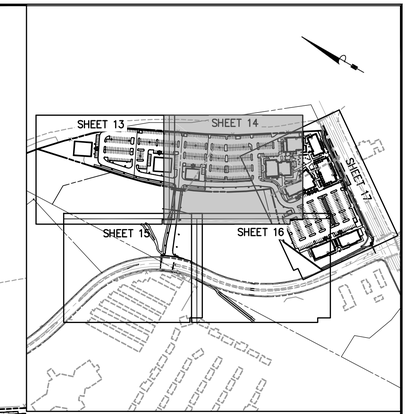
SHEET TITLE:
UTILITY PLAN - SHEET 1 OF 5

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22





KEY MAP
SCALE: 1" = 400'

UTILITY LEGEND

- CURB & GUTTER
- FIRE HYDRANT ASSEMBLY
- 8"W — 8" WATER LINE
- 10"S — SANITARY SEWER
- EXISTING SANITARY SEWER MANHOLE
- PROPOSED SANITARY SEWER MANHOLE
- STORM DRAIN PIPE W/ MANHOLE
- STORM SEWER STRUCTURE
- ADA COMPLIANT RAMP
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ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

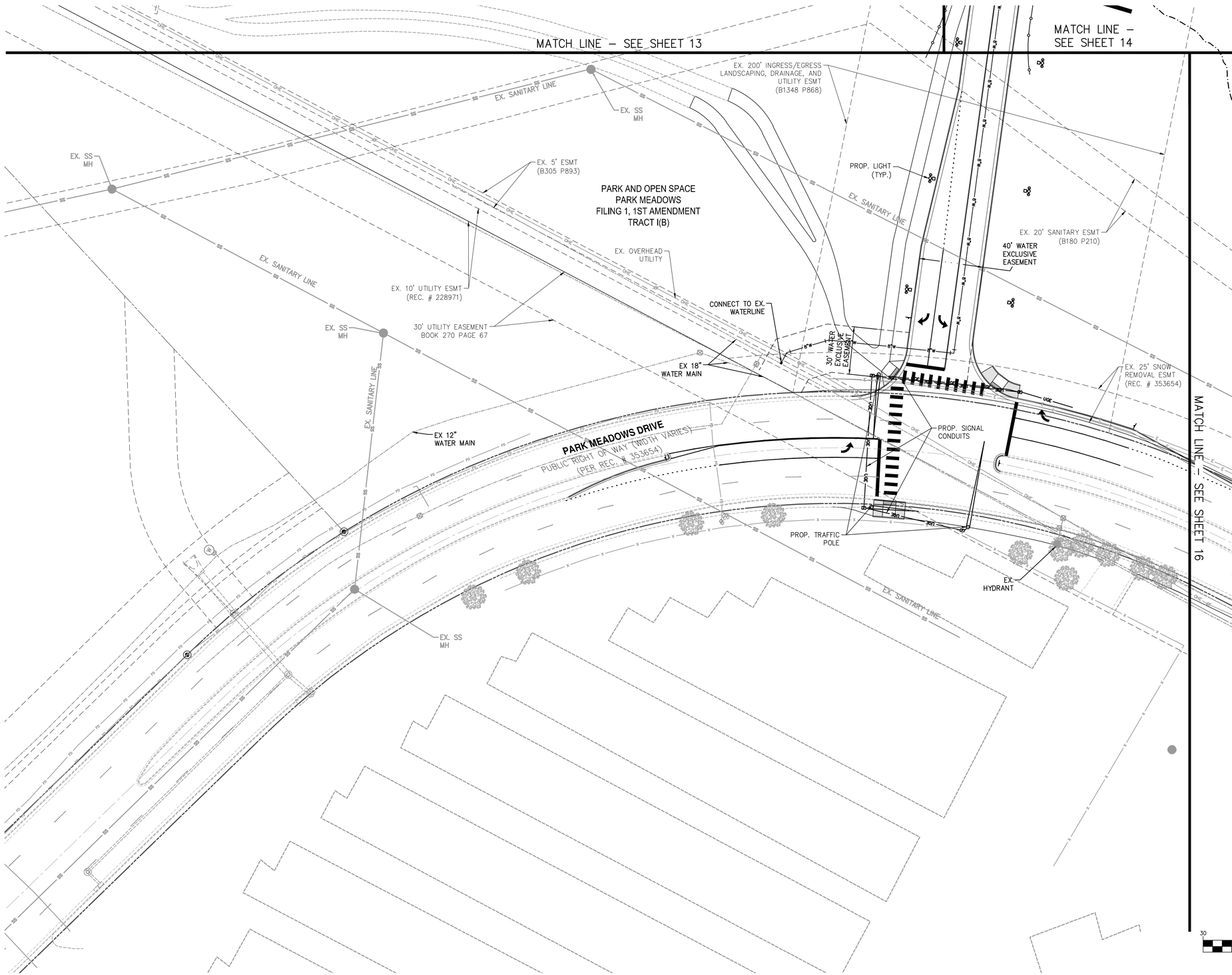
Project No:	ADP000002.01
Drawn By:	JAH
Checked By:	LJT
Date:	03.29.16

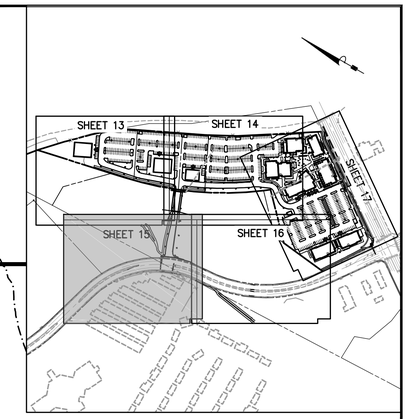
SHEET TITLE:
UTILITY PLAN - SHEET 2 OF 5

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22





KEY MAP
SCALE: 1" = 400'

UTILITY LEGEND

- CURB & GUTTER
- FIRE HYDRANT ASSEMBLY
- 8"W — 8" WATER LINE
- 10"S — SANITARY SEWER
- EXISTING SANITARY SEWER MANHOLE
- PROPOSED SANITARY SEWER MANHOLE
- STORM DRAIN PIPE W/ MANHOLE
- STORM SEWER STRUCTURE
- ADA COMPLIANT RAMP
- PROPOSED WALL
- PROPOSED LOT LINE
- PROPOSED WATER METER
- PROPOSED SANITARY/STORM CLEAN OUT
- PROPOSED GATE VALVE & BOX
- GREASE TRAP
- PROPOSED TRANSFORMER PAD
- FDC — FIRE DEPARTMENT CONNECTION
- PROPOSED SITE LIGHTING

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

Galloway
Planning. Architecture. Engineering.
6162 S. Willow Drive, Suite 320
Greenwood Village, CO 80111
303.770.8884 O
www.gallowayUS.com

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THE YARD AT LONE TREE
LONE TREE, COLORADO
ALBERTA DEVELOPMENT PARTNERS

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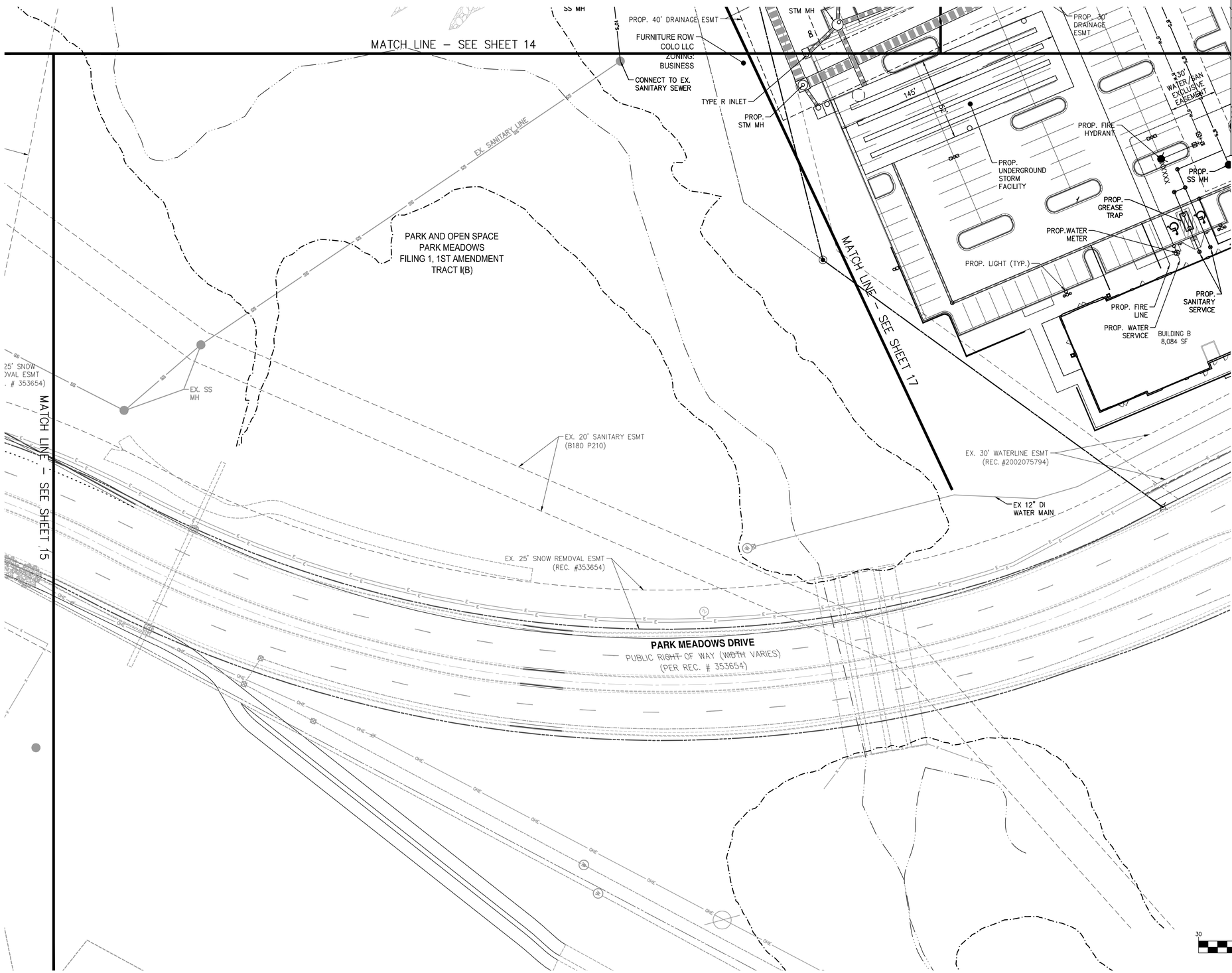
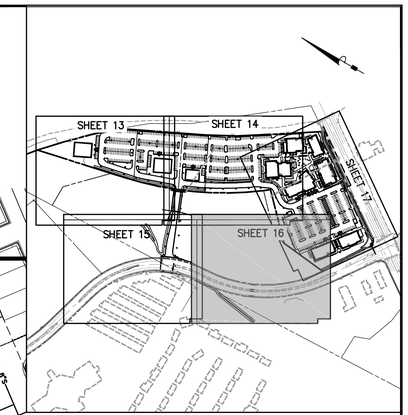
SHEET TITLE:
UTILITY PLAN -
SHEET 3 OF 5

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22





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SHEET TITLE:
UTILITY PLAN -
SHEET 4 OF 5

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

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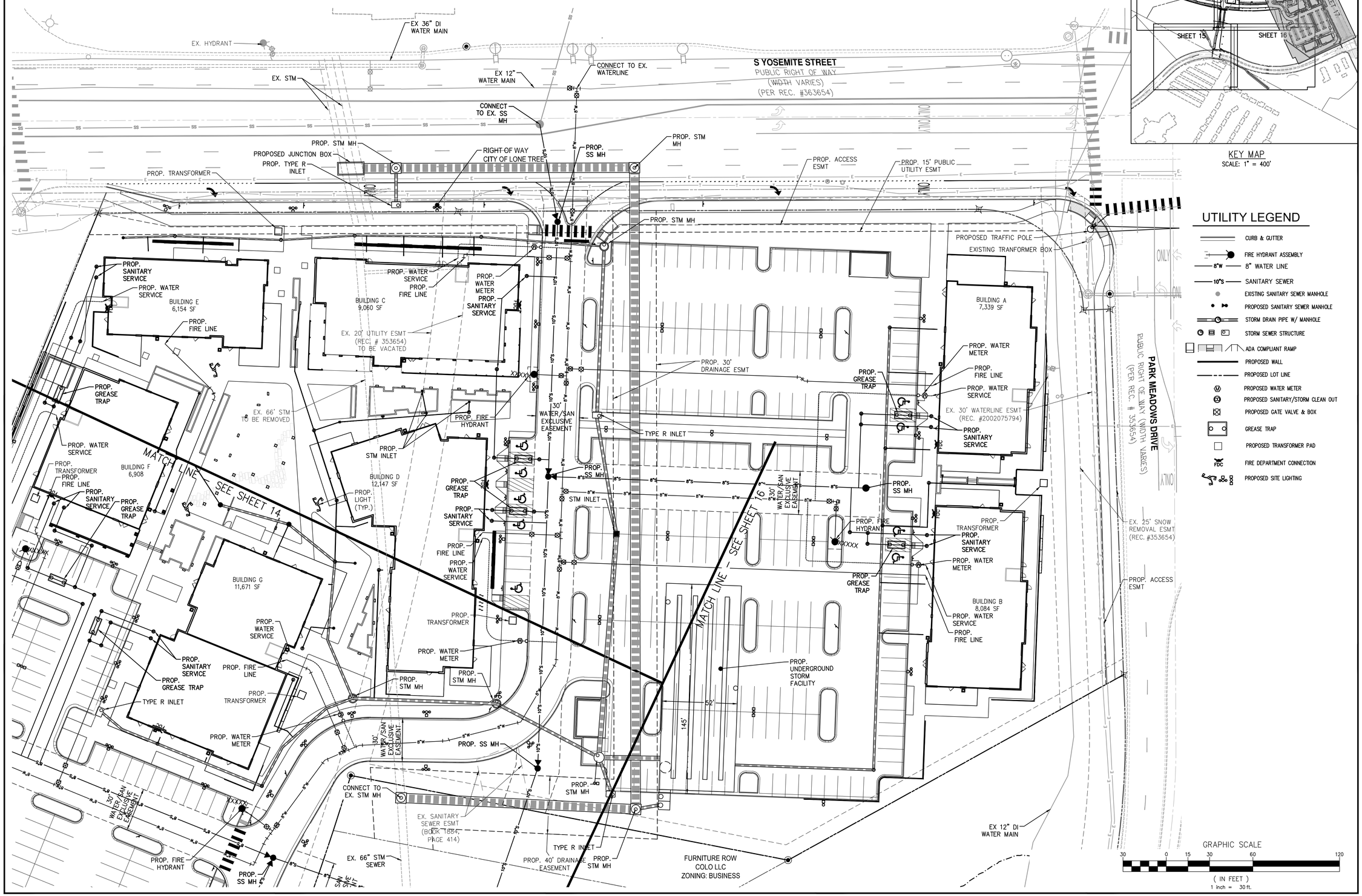

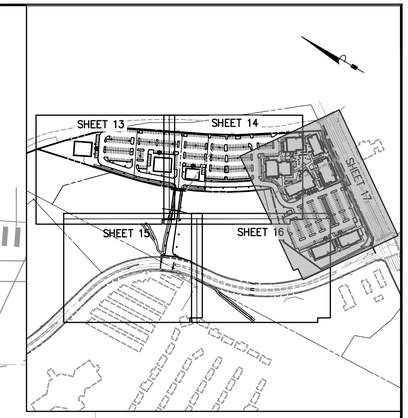

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UTILITY PLAN - SHEET 5 OF 5

SITE IMPROVEMENT PLAN
THE YARD AT LONE TREE
PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E

14.12 ACRES, SIP# SP16-22

PLANTING NOTES

GENERAL

1. ALL WORK SHALL CONFORM TO ALL APPLICABLE STATE AND LOCAL CODES, STANDARDS, AND SPECIFICATIONS.
2. LANDSCAPE DESIGN IS DIAGRAMMATIC IN NATURE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN TAKEOFFS AND QUANTITY CALCULATIONS. IN THE EVENT OF A DISCREPANCY BETWEEN THE PLAN AND THE LANDSCAPE LEGEND, THE PLANT QUANTITY AS SHOWN ON THE PLAN SHALL TAKE PRECEDENCE AND NOTIFY THE LANDSCAPE ARCHITECT OF THESE DISCREPANCIES. MINOR ADJUSTMENTS TO THE LANDSCAPE MATERIAL AND LOCATIONS MAY BE PROPOSED FOR CITY CONSIDERATION AT THE CONSTRUCTION DOCUMENT STAGE TO RESPOND TO MARKET AND FIELD CONDITIONS. HOWEVER, THERE SHALL BE NO REDUCTION IN THE NUMBER AND SIZE OF MATERIALS.
3. CONTRACTOR SHALL MAKE HIMSELF AWARE OF THE LOCATIONS OF EXISTING AND PROPOSED UTILITIES, AND SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE UTILITIES AND/OR ANY INJURY TO ANY PERSON. THIS DRAWING IS PART OF A COMPLETE SET OF CONTRACT DOCUMENTS. UNDER NO CIRCUMSTANCES SHOULD THIS PLAN BE USED FOR CONSTRUCTION PURPOSES WITHOUT EXAMINING ACTUAL LOCATIONS OF UTILITIES ON SITE AND REVIEW ALL RELATED PLANS AND DOCUMENTS.
4. ALL UTILITY EASEMENTS SHALL REMAIN UNOBSTRUCTED AND FULLY ACCESSIBLE ALONG THEIR ENTIRE LENGTH FOR MAINTENANCE EQUIPMENT.
5. THE CONTRACTOR SHALL TAKE EXTREME CARE NOT TO DAMAGE ANY EXISTING PLANTS INDICATED AS "TO REMAIN". ANY SUCH PLANTS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED WITH THE SAME SPECIES, SIZE, AND QUANTITY AT THE CONTRACTOR'S OWN EXPENSE, AND AS ACCEPTABLE TO THE OWNER. REFER TO THE TREE PROTECTION NOTES ON THE PLANS (AS APPLICABLE).
6. LANDSCAPE CONTRACTOR SHALL EXAMINE THE SITE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED AND NOTIFY THE GENERAL CONTRACTOR IN WRITING OF UNSATISFACTORY CONDITIONS. IF SITE CONDITIONS OR PLANT AVAILABILITY REQUIRE CHANGES TO THE PLAN, THEN AN APPROVAL WILL BE OBTAINED FROM THE CITY. DO NOT PROCEED UNTIL CONDITIONS HAVE BEEN CORRECTED.
7. ALL CONSTRUCTION DEBRIS AND MATERIAL SHALL BE REMOVED AND CLEANED OUT PRIOR TO INSTALLATION OF TOPSOIL, TREES, SHRUBS, AND TURF.
8. FOR ALL INFORMATION ON SURFACE MATERIAL OF WALKS, DRIVES, AND PARKING LOTS, SEE THE SITE PLAN. SEE PHOTOMETRIC PLAN FOR FREE STANDING LIGHTING INFORMATION.
9. THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT ONE WEEK PRIOR TO BEGINNING CONSTRUCTION.
10. WINTER WATERING SHALL BE AT THE EXPENSE OF THE CONTRACTOR UNTIL SUCH TIME AS FINAL ACCEPTANCE IS RECEIVED.
11. ALL LANDSCAPE CONSTRUCTION PRACTICES, WORKMANSHIP, AND ETHICS SHALL, BE IN ACCORDANCE WITH INDUSTRY STANDARDS SET FORTH IN THE CONTRACTORS HANDBOOK PUBLISHED BY THE COLORADO LANDSCAPE CONTRACTORS ASSOCIATION.
12. LANDSCAPE AND IRRIGATION WORK SHALL BE COMPLETED PRIOR TO THE ISSUANCE OF THE FINAL CERTIFICATE OF OCCUPANCY.

FINISH GRADING AND SOIL PREPARATION

13. CONTRACTOR SHALL CONSTRUCT AND MAINTAIN FINISH GRADES AS RECOMMENDED BY THE GEOTECHNICAL REPORT. ALL LANDSCAPE AREAS SHALL HAVE POSITIVE DRAINAGE AWAY FROM STRUCTURES AT THE MINIMUM SLOPE SPECIFIED IN THE REPORT, AND AREAS OF POTENTIAL PONDING SHALL BE REGRADED TO BLEND IN WITH THE SURROUNDING GRADES AND ELIMINATE PONDING POTENTIAL. SHOULD ANY CONFLICTS AND/OR DISCREPANCIES ARISE BETWEEN THE GEOTECHNICAL REPORT, THE GRADING PLANS, THESE NOTES, AND ACTUAL CONDITIONS, THE CONTRACTOR SHALL IMMEDIATELY BRING SUCH ITEMS TO THE ATTENTION OF THE LANDSCAPE ARCHITECT AND OWNER.
14. AFTER FINISH GRADES HAVE BEEN ESTABLISHED, IT IS RECOMMENDED THAT THE CONTRACTOR SHALL HAVE SOIL SAMPLES TESTED BY AN ESTABLISHED SOIL TESTING LABORATORY FOR THE FOLLOWING: GENERAL SOIL FERTILITY, PH, ORGANIC MATTER CONTENT, SALT (CEC), LIME, SODIUM ADSORPTION RATIO (SAR) AND BORON CONTENT. EACH SAMPLE SUBMITTED SHALL CONTAIN NO LESS THAN ONE QUART OF SOIL. CONTRACTOR SHALL ALSO SUBMIT THE PROJECT'S PLANT LIST TO THE LABORATORY ALONG WITH THE SOIL SAMPLES. THE SOIL REPORT PRODUCED BY THE LABORATORY SHALL CONTAIN RECOMMENDATIONS FOR THE FOLLOWING (AS APPROPRIATE): GENERAL SOIL PREPARATION AND BACKFILL MIXES, PRE-PLANT FERTILIZER APPLICATIONS, AND ANY OTHER SOIL RELATED ISSUES. THE REPORT SHALL ALSO PROVIDE A FERTILIZER PROGRAM FOR THE ESTABLISHMENT PERIOD AND FOR LONG-TERM MAINTENANCE.
15. THE CONTRACTOR SHALL RECOMMEND INSTALLATION OF SOIL AMENDMENTS AND FERTILIZERS PER THE SOILS REPORT FOR THE THE OWNER/OWNER'S REPRESENTATIVE CONSIDERATION.
16. AT A MINIMUM, ALL TOPSOIL SHALL BE AMENDED WITH NITROGEN STABILIZED ORGANIC AMENDMENT COMPOST AT A RATE OF 5.0 CUBIC YARDS AND AMMONIUM PHOSPHATE 16-20-0 AT A RATE OF 15 POUNDS PER THOUSAND SQUARE FEET OF LANDSCAPE AREA. COMPOST SHALL BE MECHANICALLY INTEGRATED INTO THE TOP 6" OF SOIL BY MEANS OF ROTOTILLING AFTER CROSS-RIPPING. GROUND COVER & PERENNIAL BED AREAS SHALL BE AMENDED AT A RATE OF 8 CUBIC FEET PER THOUSAND SQUARE FEET OF NITROGEN STABILIZED ORGANIC AMENDMENT AND 10 LBS. OF 12-12-12 FERTILIZER PER CU. YD., ROTOTILLED TO A DEPTH OF 8". NO MANURE OR ANIMAL-BASED PRODUCTS SHALL BE USED FOR ORGANIC AMENDMENTS.

PLANTING

17. ALL DECIDUOUS TREES SHALL HAVE FULL, WELL-SHAPED HEADS/ALL EVERGREENS SHALL BE UNSHEARED AND FULL TO THE GROUND; UNLESS OTHERWISE SPECIFIED. TREES WITH CENTRAL LEADERS WILL NOT BE ACCEPTED IF LEADER IS DAMAGED OR REMOVED. PRUNE ALL DAMAGED TWIGS AFTER PLANTING.
18. ALL PLANTS WITHIN A SPECIES SHALL HAVE SIMILAR SIZE, AND SHALL BE OF A FORM TYPICAL FOR THE SPECIES. ANY PLANT DEEMED UNACCEPTABLE BY THE LANDSCAPE ARCHITECT SHALL BE IMMEDIATELY REMOVED FROM THE SITE AND SHALL BE REPLACED WITH AN ACCEPTABLE PLANT OF LIKE TYPE AND SIZE AT THE CONTRACTOR'S OWN EXPENSE. ANY PLANTS APPEARING TO BE UNHEALTHY, EVEN IF DETERMINED TO STILL BE ALIVE, SHALL NOT BE ACCEPTED. THE LANDSCAPE ARCHITECT SHALL BE THE SOLE JUDGE AS TO THE ACCEPTABILITY OF PLANT MATERIAL.
19. ALL TREES SHALL BE GUYED AND WOOD STAKED AS PER DETAILS. NO 'T-STAKES' SHALL BE USED FOR TREES.
20. ALL PLANT MATERIALS SHALL BE TRUE TO TYPE, SIZE, SPECIES, QUALITY, AND FREE OF INJURY, BROKEN ROOT BALLS, PESTS, AND DISEASES, AS WELL AS CONFORM TO THE MINIMUM REQUIREMENTS DESCRIBED IN THE "AMERICAN STANDARD FOR NURSERY STOCK". FOLLOW GREENCO TREE PLANTING RECOMMENDATIONS FOR MINIMUM QUALITY REQUIREMENTS FOR TREES.
21. ALL TREE AND SHRUB BED LOCATIONS ARE TO BE STAKED OUT ON SITE FOR APPROVAL BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
22. ALL TREES PLANTED ADJACENT TO PUBLIC AND/OR PEDESTRIAN WALKWAYS SHALL BE PRUNED CLEAR OF ALL BRANCHES BETWEEN GROUND AND A HEIGHT OF EIGHT (8) FEET FOR THAT PORTION OF THE PLAN LOCATED OVER THE SIDEWALK AND/OR ROAD.
23. ALL PLANT MATERIAL SHALL NOT BE PLANTED PRIOR TO INSTALLATION OF TOPSOIL.
24. ALL PLANT BEDS SHALL BE CONTAINED WITH STEEL EDGER. STEEL EDGER IS NOT REQUIRED ALONG CURBS, WALKS OR BUILDING FOUNDATIONS. ALL EDGING SHALL OVERLAP AT JOINTS A MINIMUM OF 6-INCHES, AND SHALL BE FASTENED WITH A MINIMUM OF 4 PINS PER EACH 10 FOOT SECTION. THE TOP OF ALL EDGING MATERIAL SHALL BE A ROLLED TOP AND 1/2 INCH ABOVE THE FINISHED GRADE OF ADJACENT LAWN OR MULCH AREAS. COLOR: GREEN.
25. THE DEVELOPER, HIS SUCCESSOR, OR ASSIGNEE SHALL BE RESPONSIBLE FOR ESTABLISHING AND CONTINUING A REGULAR PROGRAM OF MAINTENANCE FOR ALL LANDSCAPED AREAS. SEE LANDSCAPE GUARANTEE AND MAINTENANCE NOTE.
26. A 3-FOOT CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF ALL FIRE HYDRANTS.
27. LANDSCAPE CONTRACTOR TO SUBMIT SAMPLES OF MISCELLANEOUS LANDSCAPING MATERIALS TO THE LANDSCAPE ARCHITECTS AND OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO INSTALLATION, IE.; MULCH, EDGER, LANDSCAPE FABRIC, ETC.

MULCHING

28. AFTER ALL PLANTING IS COMPLETE, THE CONTRACTOR SHALL INSTALL A MINIMUM 4" THICK LAYER OF MULCH AS SPECIFIED IN THE PLANTING LEGEND. INSTALL A 4" THICK RING OF DOUBLE SHREDDED CEDAR BARK MULCH AROUND ALL PLANT MATERIAL IN ROCK MULCH BEDS WHERE LANDSCAPING IS SHOWN ON THE PLANS. WOOD MULCH RING SIZE SHALL BE 1.5X THE CONTAINER SIZE OF THE SHRUBS, PERENNIALS, AND ORNAMENTAL GRASSES. TREE RING SIZE SHALL BE GREEN INDUSTRIES OF COLORADO INDUSTRY STANDARD WIDTH.
29. ALL MULCH SHALL BE HARVESTED IN A SUSTAINABLE MANNER FROM A LOCAL SOURCE.
30. INSTALL DEWITT PRO-5 WEED BARRIER FABRIC UNDER ALL ROCK MULCH SHRUB BEDS SPECIFIED ON THE PLANS ONLY. NO LANDSCAPE FABRIC SHALL BE USED IN WOOD MULCH AREAS. NO PLASTIC WEED BARRIERS SHALL BE SPECIFIED.
31. ABSOLUTELY NO EXPOSED GROUND SHALL BE LEFT SHOWING ANYWHERE ON THE PROJECT AFTER MULCH HAS BEEN INSTALLED.
32. ALL PLANTING AREAS WITH LESS THAN A 4:1 GRADIENT SHALL RECEIVE A LAYER OF MULCH, TYPE AND DEPTH PER PLANS. SUBMIT 1 CUBIC FOOT SAMPLE OF MULCH (ONE SAMPLE PER TYPE) TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION. THE MULCH SHALL BE SPREAD EVENLY THROUGHOUT ALL PLANTING AREAS EXCEPT SLOPES 4:1 OR STEEPER, OR AS OTHERWISE DENOTED ON THE PLAN. ABSOLUTELY NO EXPOSED GROUND SHALL REMAIN IN AREAS TO RECEIVE MULCH AFTER MULCH HAS BEEN INSTALLED.
33. ALL PLANTING AREAS ON SLOPES OVER 4:1 SHALL RECEIVE COCONUT FIBER EROSION CONTROL NETTING FROM ROLLS. NETTING SHALL BE #CT-125, AS MANUFACTURED BY NORTH AMERICAN GREEN (OR EQUAL). INSTALL AND STAKE PER MANUFACTURER'S SPECIFICATIONS. SEE ALSO THE CIVIL ENGINEER'S EROSION CONTROL PLAN.

LANDSCAPE GUARANTEE AND MAINTENANCE

1. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL TREES, SHRUBS, PERENNIALS, SOD, SEEDED AREAS, AND IRRIGATION SYSTEMS FOR A PERIOD OF ONE YEAR FROM THE DATE OF THE OWNER'S ACCEPTANCE. THE CONTRACTOR SHALL REPLACE, AT HIS OWN EXPENSE, ANY PLANTS WHICH DIE IN THAT TIME, OR REPAIR ANY PORTIONS OF THE IRRIGATION SYSTEM WHICH OPERATE IMPROPERLY.
2. THE LANDSCAPE CONTRACTOR SHALL MAINTAIN THE LANDSCAPE IN A NEAT, CLEAN, AND HEALTHY CONDITION FOR A PERIOD OF 90 DAYS. THIS SHALL INCLUDE PROPER PRUNING, MOWING AND AERATION OF LAWNS, WEEDING, REPLACEMENT OF MULCH, REMOVAL OF LITTER, AND THE APPROPRIATE WATERING OF ALL PLANTINGS. IRRIGATION SHALL BE MAINTAINED IN PROPER WORKING ORDER, WITH SCHEDULING ADJUSTMENTS BY SEASON AND TO MAXIMIZE WATER CONSERVATION. IF SITE OPENS DURING WINTER, TO AVOID FREEZE DAMAGE ON PLANTINGS, THE 90 DAYS SHOULD BEGIN AFTER ACCEPTANCE OF THE WORK.
3. DURING THE LANDSCAPE MAINTENANCE PERIOD, THE LANDSCAPE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM STRUCTURES IN ALL LANDSCAPE AREAS AT THE MINIMUM SLOPE SPECIFIED IN THE GEOTECHNICAL REPORT. LANDSCAPE AREAS WHICH SETTLE AND CREATE THE POTENTIAL FOR PONDING SHALL BE REPAIRED TO ELIMINATE PONDING POTENTIAL AND BLEND IN WITH THE SURROUNDING GRADES. SHOULD ANY CONFLICTS AND/OR DISCREPANCIES ARISE BETWEEN THE GEOTECHNICAL REPORT, THE GRADING PLANS, THESE NOTES, AND ACTUAL CONDITIONS, THE CONTRACTOR SHALL IMMEDIATELY BRING SUCH ITEMS TO THE ATTENTION OF THE LANDSCAPE ARCHITECT AND OWNER.

IRRIGATION CONCEPT

1. AN AUTOMATIC IRRIGATION SYSTEM SHALL BE INSTALLED AND OPERATIONAL BY THE TIME OF FINAL INSPECTION. THE ENTIRE IRRIGATION SYSTEM SHALL BE INSTALLED BY A QUALIFIED IRRIGATION CONTRACTOR.
2. THE IRRIGATION SYSTEM SHALL TAP OFF BUILDING'S POTABLE WATER SERVICE AFTER THE WATER METER, BEFORE BUILDING'S DOUBLE CHECK VALVE.
3. THE IRRIGATION SYSTEM WILL OPERATE ON POTABLE WATER, AND THE SYSTEM WILL HAVE APPROPRIATE BACKFLOW PREVENTION DEVICES INSTALLED TO PREVENT CONTAMINATION OF THE POTABLE SOURCE.
4. ALL NON-TURF/SEED PLANTED AREAS WILL BE DRIP IRRIGATED. TURF SOD/SEED SHALL RECEIVE POP-UP SPRAY IRRIGATION FOR HEAD TO HEAD COVERAGE.
5. ALL PLANTS SHARING SIMILAR HYDROZONE CHARACTERISTICS SHALL BE PLACED ON A VALVE DEDICATED TO PROVIDE THE NECESSARY WATER REQUIREMENTS SPECIFIC TO THAT HYDROZONE.
6. THE IRRIGATION SYSTEM SHALL BE DESIGNED AND INSTALLED, TO THE MAXIMUM EXTENT POSSIBLE, TO CONSERVE WATER BY USING THE FOLLOWING DEVICES AND SYSTEMS: MATCHED PRECIPITATION RATE TECHNOLOGY ON ROTOR AND SPRAY HEADS (WHEREVER POSSIBLE), RAIN SENSORS, AND SMART MULTI-PROGRAM COMPUTERIZED IRRIGATION CONTROLLERS FEATURING SENSORY INPUT CAPABILITIES.

SEED NOTES:

1) SEED MIXES ARE AVAILABLE AS FOLLOWS:
50%-"FOOTHILLS GRASS MIX", 50%-"XERISCAPE WILDFLOWER MIX"
WESTERN NATIVE SEED COMPANY
P.O. BOX 188
COALDALE, CO 81222
(719) 942-3935

"FOOTHILLS WET MEADOW MIX"
WESTERN NATIVE SEED COMPANY
P.O. BOX 188
COALDALE, CO 81222
(719) 942-3935

2) ALL SEED APPLICATIONS SHALL BE DRILL SEEDED, WITH HYDROSLURRY APPLIED OVER THE SEED BED AFTER SEEDING. THE SLURRY MIX SHALL CONTAIN THE FOLLOWING:

	LBS./1,000 SF
WOOD FIBER MULCH	46
15-15-15 ORGANIC FERTILIZER	9
ORGANIC BINDER	4

SEED ESTABLISHMENT:

1. THE LANDSCAPE CONTRACTOR SHALL SEED ALL NATIVE SEED AREAS AS SOON AS POSSIBLE AFTER COMPLETION OF GRADING OPERATIONS. SOIL PREPARATION MEASURES IN AREAS TO BE SEEDED SHALL BE COMPLETED PRIOR TO SEEDING.
2. FOR PROPER ESTABLISHMENT, SEED SHALL BE INSTALLED WHEN AT LEAST THREE MONTHS REMAIN IN THE GROWING SEASON. IF LESS THAN THREE MONTHS REMAIN IN THE GROWING SEASON AT THE TIME OF SEEDING, THE LANDSCAPE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE LANDSCAPE ARCHITECT AND OWNER. THE IRRIGATION SYSTEM FOR SEEDED AREAS SHALL BE FULLY OPERATIONAL AT THE TIME OF SEEDING.
3. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ADDITIONAL CORRECTIVE MEASURES, AT HIS OWN COST, TO SATISFY ESTABLISHMENT REQUIREMENTS AND ENSURE TIMELY CLOSEOUT. THESE MEASURES MAY INCLUDE, AT THE OWNER'S OPTION, RESEEDING OF SPARSELY GERMINATED AREAS AND/OR INSTALLATION OF SOD IN ALL SEEDED AREAS.

FOOTHILLS MEADOW MIX:

'FOOTHILLS WET MEADOW MIX'

SEEDING RATE: 4-8 OZ/1000 SQ.FT.

%	SCIENTIFIC NAME	COMMON NAME
15	SCIRPUS MARITIMUS	ALKALI BULRUSH
15	ELYMUS CANADENSIS	CANADA WILDRYE
15	PANICUM VIRGATUM	SWITCHGRASS
12	SORGHASTRUM NUTANS	INDIAN GRASS
7	SPARTINA PECTINATA	PRAIRIE CORDGRASS
6	CAREX NEBRASCENCIS	NEBRASKA SEDGE
6	SCIRPUS ACUTUS	HARD STEM BULRUSH
6	SCIRPUS VALIDUS	SOFT STEM BULRUSH
6	SCIRPUS AMERICANUS	OLNEY'S THREESQUARE BULRUSH
4	JUNCUS BALTICUS	BALTIC RUSH
4	CAREX MICROPTERA	POPCORN SEDGE
2	CAREX LANUGINOSA	WOOLY SEDGE
2	ELEOCHARIS PALUSTRIS	SPIKERUSH

XERISCAPE WILDFLOWER MIX:

'FOOTHILLS WET MEADOW MIX'

SEEDING RATE: 4-8 OZ/1000 SQ.FT.

%	SCIENTIFIC NAME	COMMON NAME
12	DALEA PURPUREA	PURPLE PRAIRIE CLOVER
12	LINUM LEWISII	MAPLE GROVE BLUE FLAX
12	PENSTEMON STRICTUS	ROCKY MOUNTAIN PENSTEMON
12	PENSTEMON ANGUSTIFOLIUS	PAGODA PENSTEMON
12	SPHAERALCEA GROSSULARIEAFOLIA	GOOSEBERRY LEAF GLOBEMALLOW
10	RATIBIDA COLUMNIFERA	PRAIRIE CONEFLOWER
10	RATIBIDA COLUMNIFERA PULCHRA	MEXICAN HAT
6	CLEOME SERRULATA	ROCKY MOUNTAIN BEEPLANT
4	CLEOME LUTEA	GOLDEN BEEPLANT
3	DALEA CANDIDA	WHITE PRAIRIE CLOVER
2	STANLEYA PINNATA	PRINCE'S PLUME

TREE PROTECTION NOTES:

1. USE LONE TREE, CO TREE PROTECTION NOTE (IF AVAILABLE). TREE PROTECTION NOTES BELOW SHALL BE USED FOR FURTHER INTEGRATION.
2. "PROTECTED ZONE" FOR EXISTING TREES: BEFORE BEGINNING ANY DEMOTION OR CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL INSTALL TEMPORARY FENCING AROUND ALL EXISTING TREES WITHIN THE CONSTRUCTION ZONE THAT ARE TO BE SAVED. THE FENCE SHALL BE INSTALLED NO CLOSER TO THE TREE THAN THE EDGE OF THE TREE'S PROTECTED ZONE, GENERALLY DEFINED AS THE AREA BEGINNING FIVE FEET OUTSIDE OF THE TREE'S DRIPLINE AND EXTENDING TOWARDS THE TREE (OR AS FAR AWAY FROM THE TRUNK AS PRACTICABLE). THE FENCING SHALL BE OF A MATERIAL AND HEIGHT ACCEPTABLE TO THE LANDSCAPE ARCHITECT. ALL CONTRACTORS AND THEIR CREWS SHALL NOT BE ALLOWED INSIDE THIS "PROTECTED ZONE" NOR SHALL THEY BE ALLOWED TO STORE OR DUMP FOREIGN MATERIALS WITHIN THIS AREA. NO WORK OF ANY KIND, INCLUDING TRENCHING, SHALL BE ALLOWED WITHIN THE PROTECTED ZONE EXCEPT AS DESCRIBED BELOW. THE FENCING SHALL REMAIN AROUND EACH TREE TO BE SAVED UNTIL THE COMPLETION OF CONSTRUCTION OPERATIONS.
3. TEMPORARY MULCH: TO ALLEVIATE SOIL COMPACTION IN ANTICIPATED AREAS OF HIGH CONSTRUCTION TRAFFIC, AND ONLY WHERE FENCING CANNOT BE SET FIVE FEET OUTSIDE OF THE DRIPLINE, THE CONTRACTOR SHALL INSTALL A LAYER OF MULCH, 9"-12" THICK, OVER ALL EXPOSED EARTH FROM THE TREE TRUNK TO 5' OUTSIDE OF THE DRIPLINE. THIS LAYER SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. WHEN PLANTING OPERATIONS ARE COMPLETED, THE MULCH SHALL BE REDISTRIBUTED THROUGHOUT ALL PLANTING AREAS IN A 3" THICK "PERMANENT" MULCH LAYER.
4. NECESSARY WORK: WHEN IT BECOMES NECESSARY TO ENTER THE "PROTECTED ZONE", SUCH AS FOR FINE GRADING, IRRIGATION INSTALLATION, AND PLANTING OPERATIONS, THE CONTRACTOR SHALL STRICTLY ADHERE TO THE FOLLOWING RULES:
   A. EVERY EFFORT SHALL BE MADE TO PRESERVE THE EXISTING GRADE AROUND PROTECTED TREES IN AS WIDE AN AREA AS POSSIBLE.
   B. TRENCHING WITHIN THE PROTECTED ZONE OF EXISTING TREES SHALL BE PERFORMED BY HAND, AND WITH EXTREME CARE NOT TO SEVER ROOTS 1-1/2" IN DIAMETER AND LARGER. WHERE ROOTS 1-1/2" IN DIAMETER AND LARGER ARE ENCOUNTERED, THE CONTRACTOR SHALL TUNNEL UNDER SAID ROOTS. EXPOSED ROOTS THAT HAVE BEEN TUNNELED UNDER SHALL BE WRAPPED IN WET BURLAP AND KEPT MOIST WHILE THE TRENCH IS OPEN.
   C. WHERE ROOTS 1-1/2" IN DIAMETER OR LARGER MUST BE CUT DUE TO EXTENSIVE GRADE CHANGES, THOSE ROOTS MUST BE EXPOSED BY HAND DIGGING AND CUT CLEANLY. RAGGED CUTS GENERALLY DO NOT HEAL PROPERLY, AND MAY LEAVE THE TREE OPEN TO PESTS AND PATHOGENS.
   D. WHERE TRENCHING NEAR TREES HAS ALREADY OCCURRED FROM PREVIOUS CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL MAKE EVERY EFFORT TO CONFINE HIS TRENCHING OPERATIONS TO THE PREVIOUSLY-CREATED TRENCHES, WHILE ADHERING TO THE CONDITIONS SET FORTH IN 3B.
4. POTENTIAL CONFLICTS: THE CONTRACTOR SHALL NOTIFY THE OWNER AND ARBORIST SHOULD ANY POTENTIAL CONFLICTS ARISE BETWEEN THESE SPECIFICATIONS AND/OR LARGE ROOTS ENCOUNTERED IN THE FIELD, AND CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL NOT TAKE ANY ACTION IN SUCH CONFLICTS WITHOUT THE ARBORIST'S WRITTEN APPROVAL. THE ARBORIST SHALL HAVE FINAL AUTHORITY OVER ALL METHODS NECESSARY TO HELP ENSURE THE PROTECTION AND SURVIVAL OF EXISTING TREES.
5. PRUNING: PRUNE ONLY THE TREES THAT ARE INDICATED ON THE PLANS AS REQUIRING PRUNING. PRUNE TREES ACCORDING TO INTERNATIONAL SOCIETY OF ARBORICULTURE / ANSI A300 STANDARDS:
   A. REMOVE ALL DEAD WOOD.
   B. PRUNE LIVE WOOD FOR HEALTH OR STRUCTURAL REASONS ONLY, INCLUDING THE NEED TO ELIMINATE DISEASED OR DAMAGED GROWTH, ELIMINATE STRUCTURALLY UNSOUND GROWTH, REDUCE THE POTENTIAL FOR WIND TOPPLING OR WIND DAMAGE, OR TO MAINTAIN GROWTH WITHIN LIMITED SPACE. DO NOT REMOVE MORE THAN 25% OF ANY TREE'S LIVE FOLIAGE IN ANY ONE GROWING SEASON. PRUNE ONLY TO INTERNATIONAL SOCIETY OF ARBORICULTURE/ANSI A300 STANDARDS, AND ONLY UNDER THE DIRECT SUPERVISION OF A CERTIFIED ARBORIST.
   C. FINAL CUTS SHALL BE MADE JUST OUTSIDE THE SHOULDER RING AREA. EXTREMELY FLUSHED CUTS WHICH PRODUCE LARGE WOUNDS SHALL NOT BE MADE.
   D. ALL TRIMMING CUTS SHALL BE PERFORMED IN SUCH A MANNER AS TO PROMOTE THE NATURAL GROWTH AND SHAPE OF EACH TREE SPECIES.
   E. IMPROPER PRUNING METHODS INCLUDING, BUT NOT LIMITED TO, "TOPPING", "TIPPING", "HEADING BACK", "DEHORNING", AND "LIONTAILING" WILL NOT BE ALLOWED. THE CONTRACTOR SHALL PAY FOR ALL WORK NECESSARY TO CORRECT SUCH PRUNING WHEN PERFORMED BY HIS CREWS OR SUBCONTRACTORS.
   F. SHOULD THE CONTRACTOR REQUIRE MORE INFORMATION, THE CONTRACTOR SHALL CONTACT THE ISA AT (217) 355-9411 FOR A COPY OF THE ANSI A300 PRUNING STANDARDS. CONTRACTOR SHALL ADHERE TO THE METHODS AND PRACTICES SET FORTH IN THIS DOCUMENT.
6. LANDSCAPE AND IRRIGATION (NATIVE TREES ONLY): ANY FUTURE LANDSCAPE AND IRRIGATION SHOULD ADHERE TO THE FOLLOWING GUIDELINES:
   A. NO IRRIGATION OR PLANTING SHOULD OCCUR CLOSER THAN 8'-10' FROM THE TRUNK.
   B. WHERE IRRIGATION DOES OCCUR WITHIN THE PROTECTED ZONE, DRIP IRRIGATION SHOULD BE USED WHEREVER POSSIBLE. ADDITIONALLY, ONLY PLANTS WITH LOW WATER NEEDS SHOULD BE PLANTED WITHIN THE PROTECTED ZONE, SPACED FAR APART WHERE CLOSE TO THE TREE. PLANTS MAY BE SPACED CLOSER TOGETHER NEAR THE EDGE OF THE PROTECTED ZONE.

PLANTING LEGEND

SYMBOL	QUANTITY	LEGEND ABBREV.	BOTANIC NAME	COMMON NAME	PLANTING SIZE	MATURE SIZE (HXW)	WATER USE (VL, L, M, H)
OVERSTORY DECIDUOUS TREES							
	37	ACGL	ACER GLABRUM	ROCKY MOUNTAIN MAPLE	2.0" CAL. B&B	30'X20'	LOW/MOD
	25	ACTA	ACER TATARICUM 'HOT WINGS'	HOT WINGS TATARIAN MAPLE	2.0" CAL. B&B	20'X30'	LOW
	6	AEHI	AESCULUS HIPPOCASTANUM	COMMON HORSECHESTNUT	2.0" CAL. B&B	50'X40'	MODERATE
	14	CASP	CATALPA SPECIOSA	CATALPA	2.0" CAL. B&B	40'X25'	MODERATE
	60	GLTR	GLEDITSIA TRIACANTHOS INERMIS 'SHADEMASTER'	SHADEMASTER HONEYLOCUST	2.0" CAL. B&B	40'X35'	LOW
	43	GYDI	GYMNOCLADUS DIOICUS	KENTUCKY COFFEE TREE	2.0" CAL. B&B	60'X40'	LOW
ORNAMENTAL DECIDUOUS TREES							
	23	AMCA	AMELANCHIER CANADENSIS	SHADBLOW SERVICEBERRY	2" CAL. MULTI STEM B&B	25'X20'	LOW
	3	CECA	CERCIS CANADENSIS	EASTERN REDBUD	2" CAL. MULTI STEM B&B	20'X25'	MODERATE
	3	COMA	CORNUS MAS	CORNELIAN CHERRY	2" CAL. MULTI STEM B&B	15'X15'	MODERATE
	20	PTTR	PTELEA TRIFOLIATA	WATER ASH / HOPTREE	2" CAL. MULTI STEM B&B	15'X15'	LOW
EVERGREEN TREES							
	21	PIGL	PICEA GLAUCA 'DENSATA'	BLACK HILLS SPRUCE	6' HT B&B	20'X15'	MODERATE
	7	PIPU	PICEA PUNGENS 'BAKERI'	BAKERI BLUE SPRUCE	6' HT B&B	30'X18'	MODERATE
	11	PIED	PINUS EDULIS	PINYON PINE	6' HT B&B	30'X30'	LOW
	3	PIFL	PINUS FLEXILIS PARVIFLORA	LACEBARK PINE	6' HT B&B	30'X35'	LOW
DECIDUOUS SHRUBS							
	48	AMNA	AMORPHA NANA	DWARF LEADPLANT	5 GALLON 12-18"	2'X2'	LOW
	124	ARAR	ARONIA ARBUTIFOLIA BRILLIANTISSIMA	RED CHOKEBERRY	5 GALLON 18-24"	8'X4'	MODERATE
	247	COSE	CORNUS SERICEA BAILEYI	RED TWIG DOGWOOD	5 GALLON 18-24"	8'X8'	MODERATE
	18	FAPA	FALLUGIA PARADOXA	APACHE PLUME	5 GALLON 18-24"	5'X5'	LOW
	51	FOAR	FORSYTHIA 'ARNOLD DWARF'	ARNOLD DWARF FORSYTHIA	5 GALLON 18-24"	3'X6'	MODERATE
	266	PEAT	PEROVSKIA ATRIPLICIFOLIA	RUSSIAN SAGE	5 GALLON 18-24"	4'X4'	LOW
	197	RHAR	RHUS AROMATICA 'GRO LOW'	GRO LOW SUMAC	5 GALLON 12-18"	2'X8'	LOW
	18	RHTY	RHUS TYPHINA 'BAILTIGER'	TIGER EYES SUMAC	5 GALLON 18-24"	6'X6'	LOW

SEE SHEET 29 FOR PLANTING DETAILS

SYMBOL	QUANTITY	LEGEND ABBREV.	BOTANIC NAME	COMMON NAME	PLANTING SIZE	MATURE SIZE (HXW)	WATER USE (VL, L, M, H)
EVERGREEN SHRUBS							
	126	ARPA	ARCTOSTAPHYLOS COLORADENSIS 'PANCHITO'	PANCHITO MANZANITA	5 GALLON 12-18"	2'X4'	LOW
	108	CYPU	CYTISUS PURGANS 'SPANISH GOLD'	SPANISH GOLD BROOM	5 GALLON 18-24"	4'X6'	LOW
	82	MAAQ	MAHONIA AQUIFOLIUM	OREGON GRAPE HOLLY	5 GALLON 18-24"	5'X5'	MODERATE
	28	PIMU	PINUS MUGO 'BIG TUNA'	BIG TUNA MUGO PINE	5 GALLON 18-24"	6'X5'	LOW
	110	PIMS	PINUS MUGO 'SLOWMOUND'	SLOWMOUND MUGO PINE	5 GALLON 18-24"	3'X3'	LOW
	19	PISY	PINUS SYLVESTRIS 'HILLSIDE CREEPER'	HILLSIDE CREEPER PINE	5 GALLON 12-18"	2'X6'	MODERATE
ORNAMENTAL GRASSES							
	913	BOGR	BOUTELOUA GRACILIS 'BLONDE AMBITION'	BLONDE AMBITION GRAMA GRASS	1 GALLON	2.5'X2'	LOW
	249	CAAC	CALAMAGROSTIS ACUTIFLORA 'KARL FOERSTER'	FEATHER REED GRASS	1 GALLON	4'X2'	LOW
	319	PAVI	PANICUM VIRGATUM 'SHENANDOAH'	SWITCH GRASS	1 GALLON	4'X30"	MODERATE
	190	SCSC	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	1 GALLON	3'X2'	LOW
PERENNIALS							
	6471 SF	PER1	ACHILLEA 'PAPRIKA'	PAPRIKA YARROW	1 GALLON	2'X2'	LOW
			BAPTISIA AUSTRALIS	FALSE INDIGO	1 GALLON	4'X4'	LOW
			LIATRIS SPICATA	GAYFEATHER / BLAZING STAR	1 GALLON	4'X1.5'	MODERATE
	840 SF	PER2	ECHINACEA PURPUREA	PURPLE CONEFLOWER	1 GALLON	5'X2'	LOW
			ERYNGIUM YUCCIFOLIUM	RATTLESNAKE MASTER	1 GALLON	5'X3'	LOW
			RATIBIDA PINNATA	GREY-HEADED CONEFLOWER	1 GALLON	5'X2'	MODERATE
	196	AUSA	AURINIA SAXATILIS	BASKET OF GOLD	1 GALLON	1'X1.5'	LOW
	30	ASNO	ASTER NOVAE-ANGLIAE	NEW ENGLAND ASTER	1 GALLON	6'X3'	MODERATE
	68	SEAU	SEDUM 'AUTUMN JOY'	AUTUMN JOY STONECROP	1 GALLON	2'X2'	LOW
	68	SESP	SEMPERVIVUM SPP.	HENS & CHICKS	1 GALLON	6"X18"	LOW
MISCELLANEOUS							
	5,075 SF	---	TURF SOD - THE YARD	THERMAL BLUE TEXAS HYBRID/RTF 90:10 BLEND	SOD	---	HIGH/MOD [WATER USE < 1.5"/WEEK]
	36,015 SF	---	TURF SOD	RTF (RHIZOMATOUS TALL FESCUE)	SOD	---	MODERATE
	77,526 SF	---	MULCH - USE IN ALL PLANTING AREAS	MOUNTAIN HIGH TREE, LAWN & LANDSCAPE CO. DARK BROWN SUPREME ORGANIC MULCH	MULCH	---	---
	55,762 SF	---	NON-IRRIGATED OVERLOT DRYLAND SEED MIX	GRASS SEED	SEED	---	LOW
	15,213 SF	---	IRRIGATED GRASS / WILDFLOWER SEED	NATIVE SEED, SEE NOTES THIS SHEET	SEED	---	LOW
	1,120 LF	---	STEEL EDGING				

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THE YARD AT LONE TREE

LONE TREE, COLORADO

ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL
	06.17.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

Project No:	ADP000002.01
Drawn By:	SRA
Checked By:	KL
Date:	03/29/16

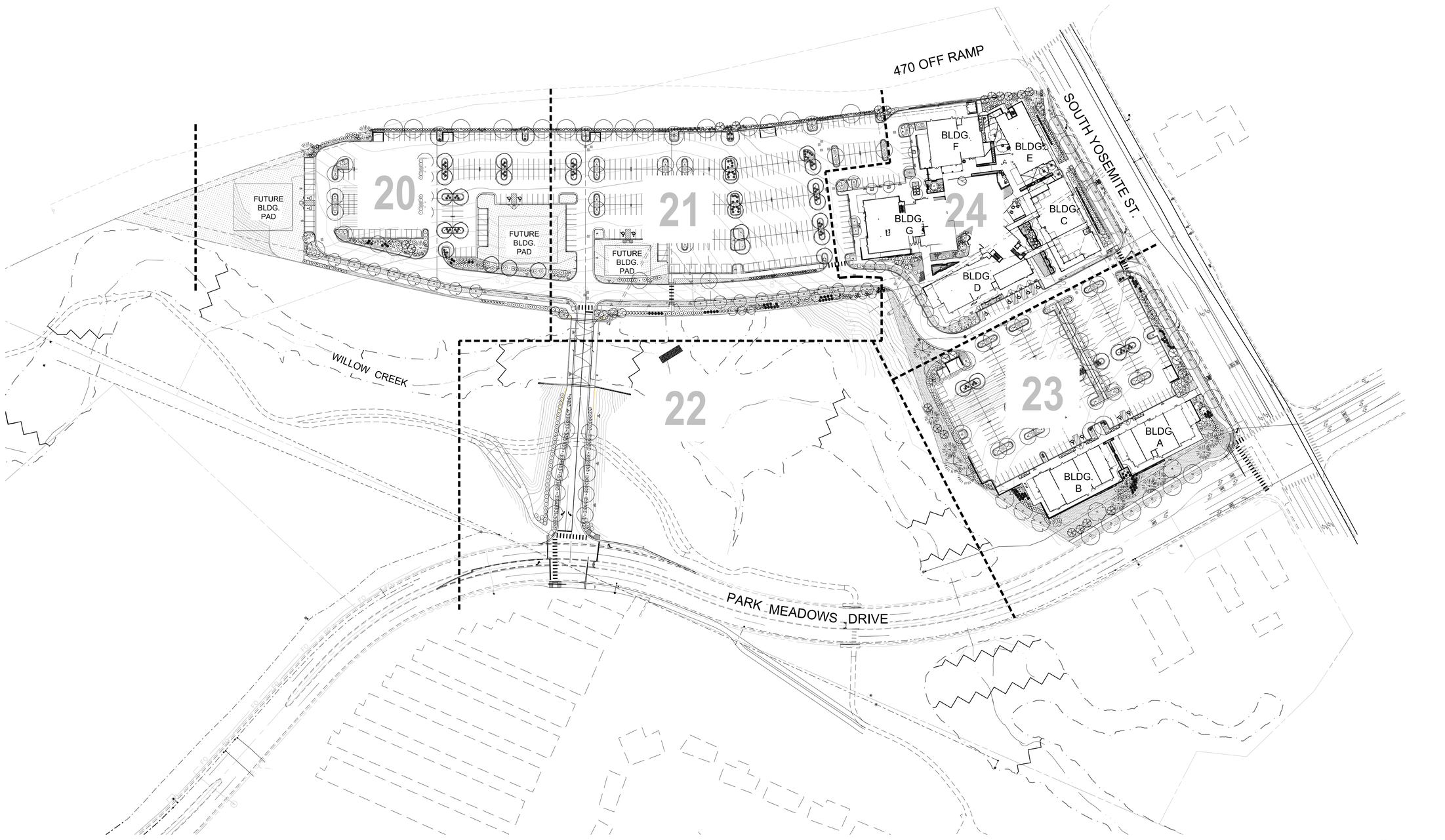
SHEET TITLE:
LANDSCAPE NOTES

3/2/2016 11:51:18 AM

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22



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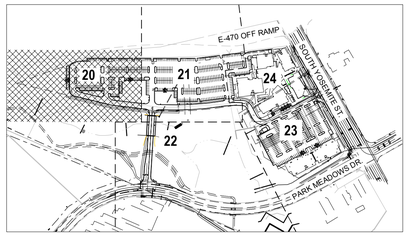

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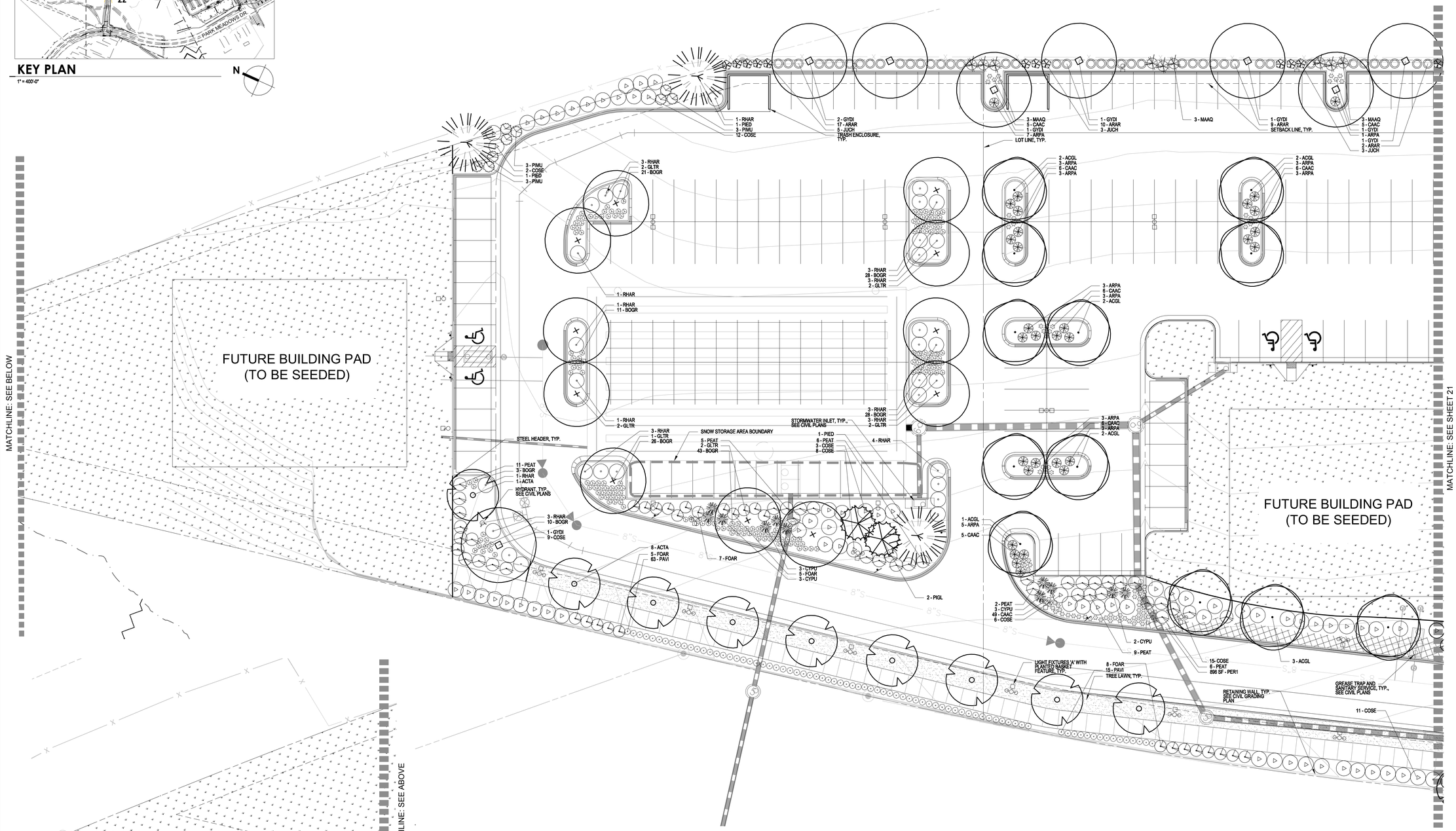

NOTE: SEE SHEET 18 FOR PLANT LEGEND AND NOTES

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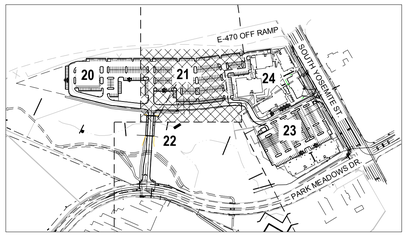

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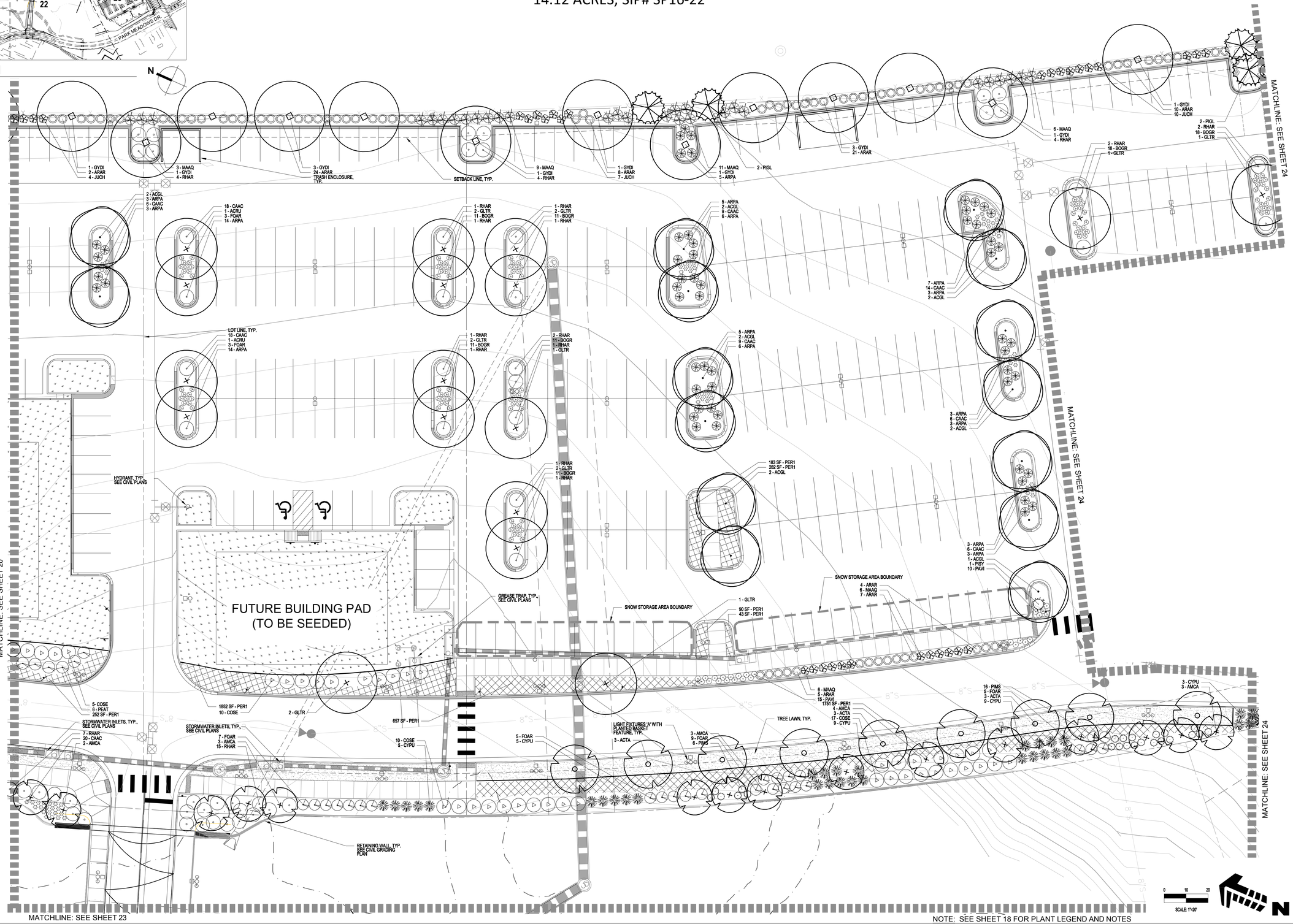

MATCHLINE: SEE SHEET 23

NOTE: SEE SHEET 18 FOR PLANT LEGEND AND NOTES

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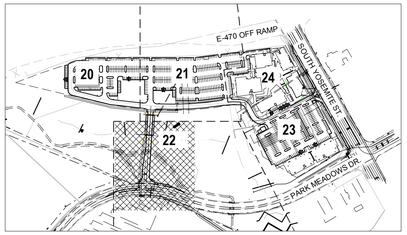

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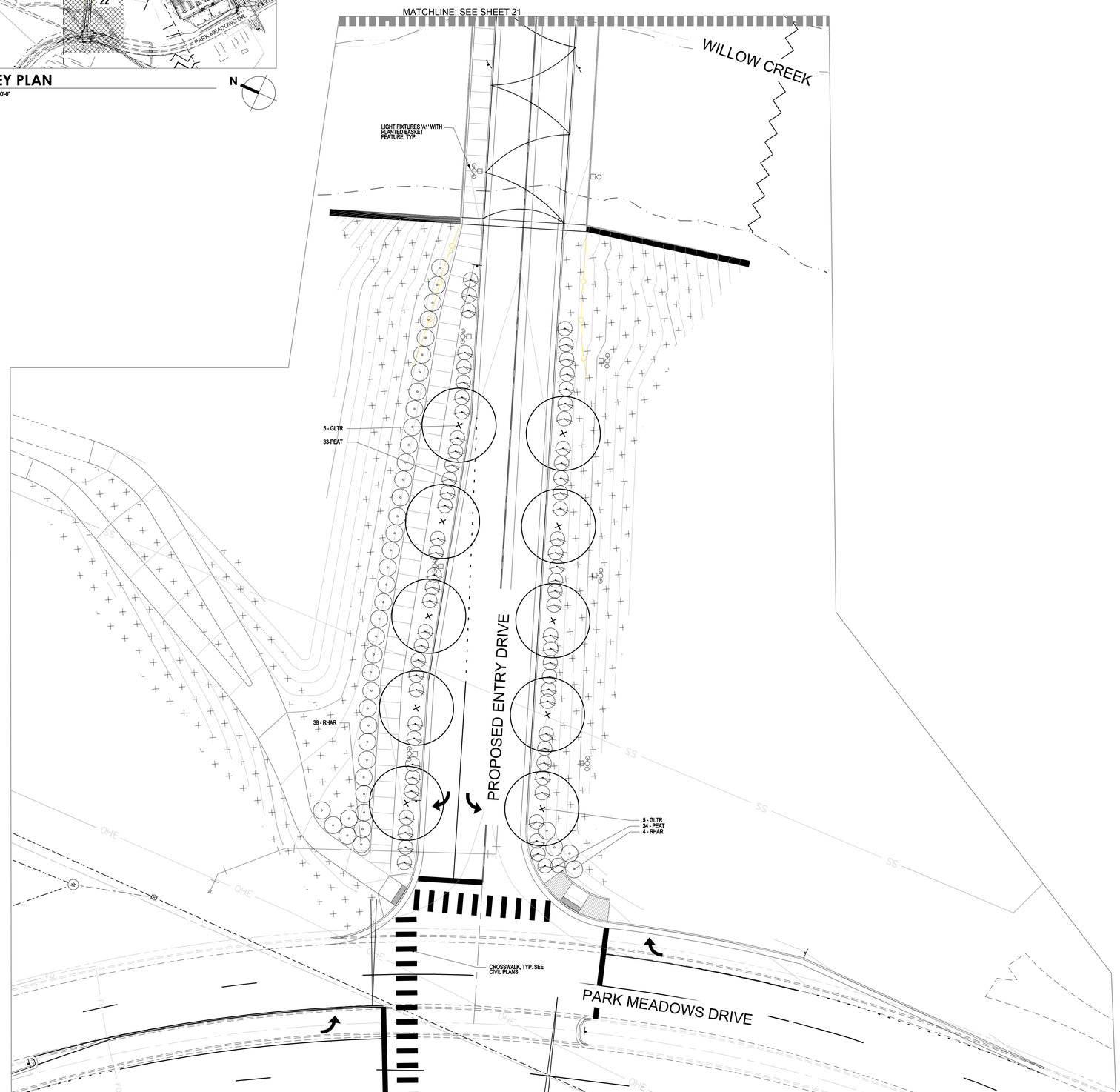

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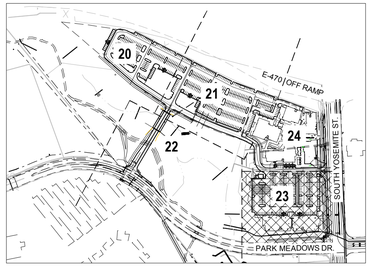

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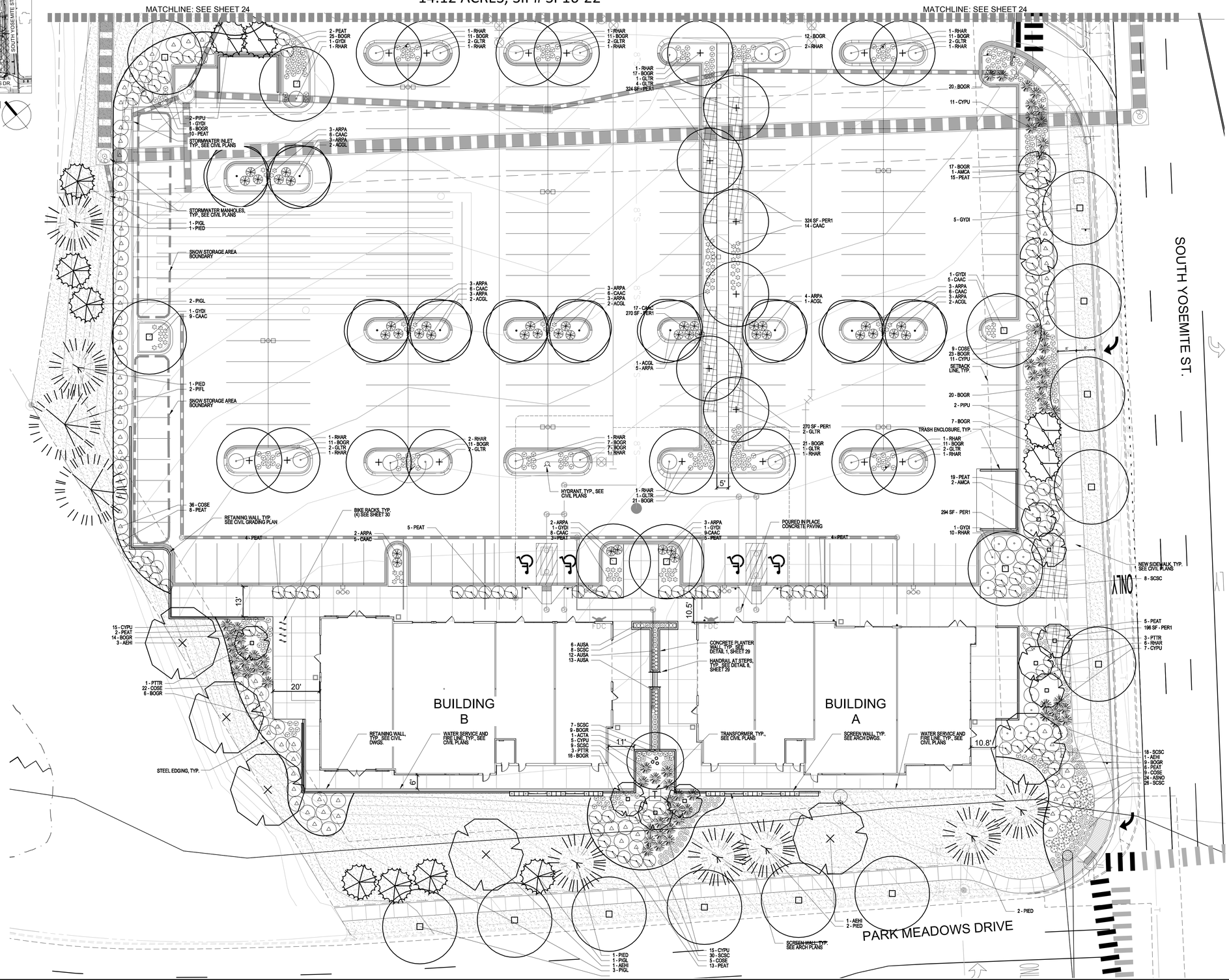

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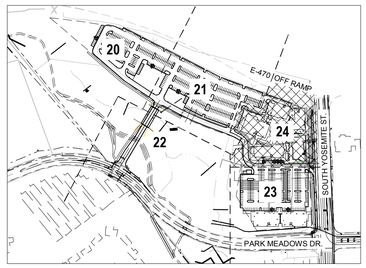
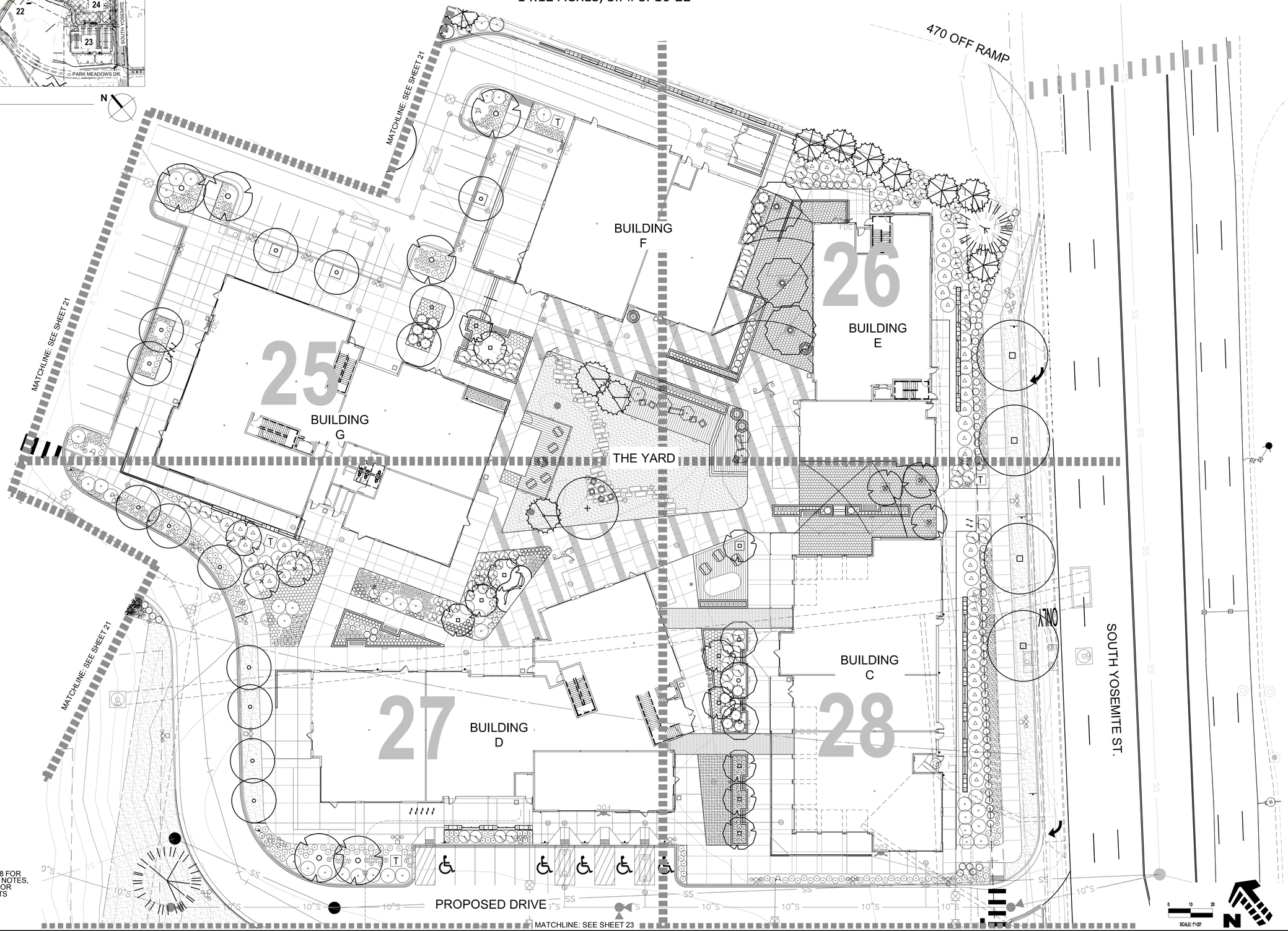


KEY PLAN

1" = 400'-0"



NOTE: SEE SHEET 18 FOR PLANT LEGEND AND NOTES, AND SHEETS 25-28 FOR PLAN ENLARGEMENTS

3/2/2016 11:51:18 AM

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THE YARD AT LONE TREE

LONE TREE, COLORADO

ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL
	06.17.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

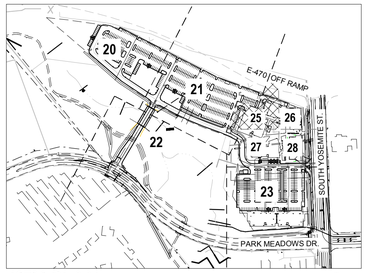
Project No:	ADP000002.01
Drawn By:	SRA
Checked By:	KL
Date:	03/29/16

SHEET TITLE:
LANDSCAPE PLAN

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22

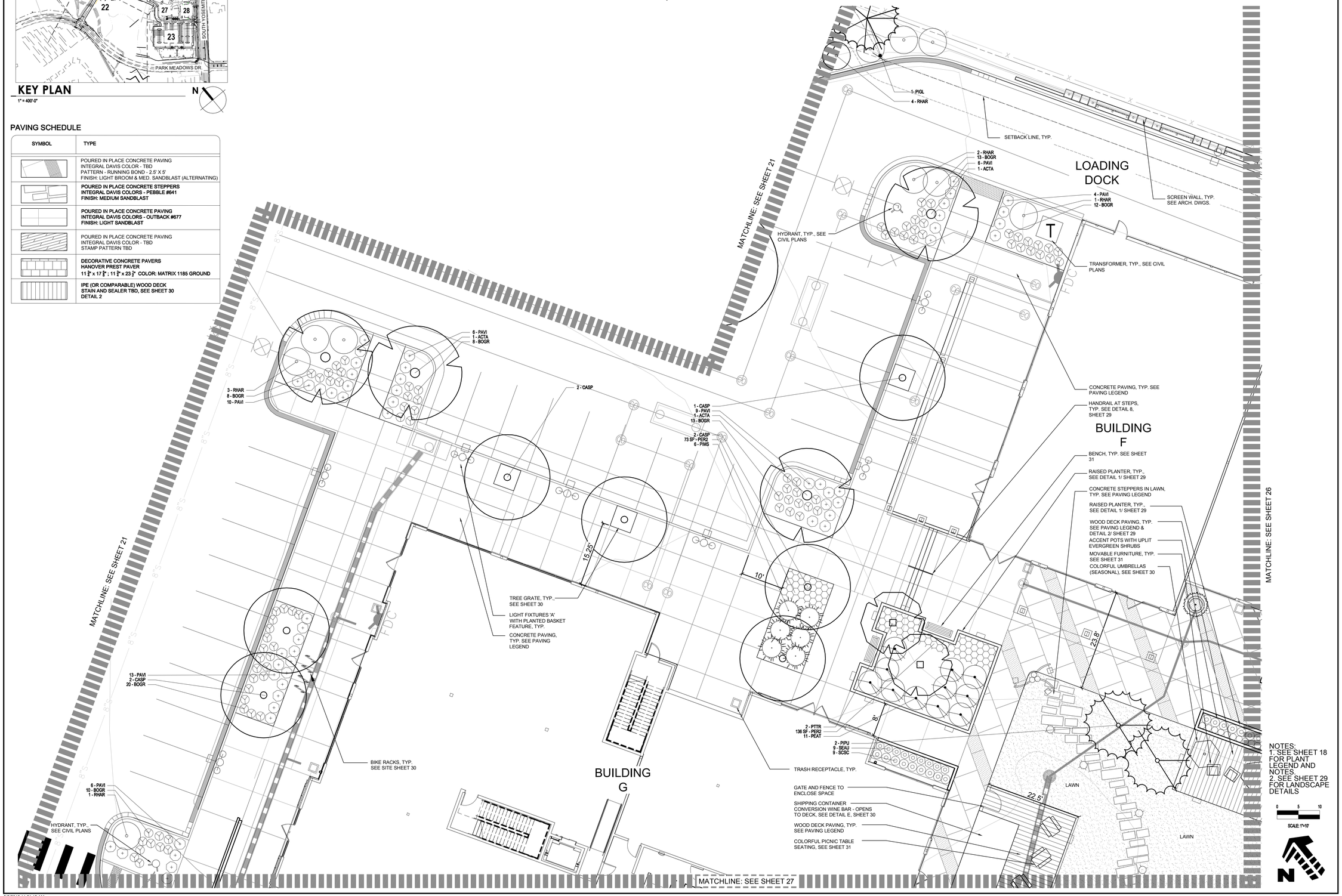


KEY PLAN
1" = 400'-0"

N

PAVING SCHEDULE

SYMBOL	TYPE
	POURED IN PLACE CONCRETE PAVING INTEGRAL DAVIS COLOR - TBD PATTERN - RUNNING BOND - 2.5' X 5' FINISH: LIGHT BROOM & MED. SANDBLAST (ALTERNATING)
	POURED IN PLACE CONCRETE STEPPERS INTEGRAL DAVIS COLORS - PEBBLE #641 FINISH: MEDIUM SANDBLAST
	POURED IN PLACE CONCRETE PAVING INTEGRAL DAVIS COLORS - OUTBACK #677 FINISH: LIGHT SANDBLAST
	POURED IN PLACE CONCRETE PAVING INTEGRAL DAVIS COLOR - TBD STAMP PATTERN TBD
	DECORATIVE CONCRETE PAVERS HANOVER PREST PAVER 11 3/8" x 17 7/8" ; 11 3/8" x 23 5/8" COLOR: MATRIX 1185 GROUND
	IPE (OR COMPARABLE) WOOD DECK STAIN AND SEALER TBD, SEE SHEET 30 DETAIL 2



NOTES:
1. SEE SHEET 18 FOR PLANT LEGEND AND NOTES.
2. SEE SHEET 29 FOR LANDSCAPE DETAILS

0 5 10
SCALE: 1"=10'

N

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THE YARD AT LONE TREE
LONE TREE, COLORADO
ALBERTA DEVELOPMENT PARTNERS

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Project No:	ADP000002.01
Drawn By:	SRA
Checked By:	KL
Date:	03/29/16

SHEET TITLE:
LANDSCAPE PLAN ENLARGEMENT

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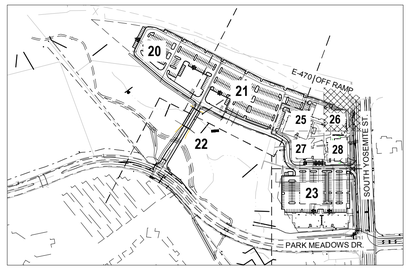
SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22



KEY PLAN
1" = 400'-0"

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PAVING SCHEDULE

SYMBOL	TYPE
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	POURED IN PLACE CONCRETE PAVING INTEGRAL DAVIS COLOR - TBD STAMP PATTERN TBD
	DECORATIVE CONCRETE PAVERS HANOVER PREST PAVER 11 3/8" x 17 3/8" , 11 3/8" x 23 3/8" COLOR: MATRIX 1185 GROUND
	IPE (OR COMPARABLE) WOOD DECK STAIN AND SEALER TBD, SEE SHEET 30 DETAIL 2

470 OFF RAMP

LOADING DOCK

SCREEN WALL, SEE ARCH. DWGS, TYP.

CONCRETE PAVING, TYP. SEE PAVING LEGEND

FESTOON LIGHTS, TYP.

BUILDING F

RAISED PLANTER, TYP., SEE DETAIL 1/ SHEET 29

16 - AUSA
10- SCSC
8 - PIMU
27 - AUSA

29 - AUSA
20 - SCSC

MATCHLINE: SEE SHEET 25

6'

11.1'

4 - PIGL
7 - PIMS
8 - COSE
3 - PEAT
3 - GEOA

FDC

5 - PISY
11 - BOGR
4 - PEAT

PAVER GRATE, TYP. SEE DETAIL 6, SHEET 29

TRASH RECEPTACLE, TYP.

BUILDING E

DECORATIVE CONCRETE PAVERS, TYP. SEE PAVING LEGEND

ACCENT POTS WITH UPLIT EVERGREEN SHRUBS

WOOD DECK PAVING, TYP. SEE PAVING LEGEND AND DETAIL 2, SHEET 29

ACCENT POTS WITH UPLIT EVERGREEN SHRUBS

COLORFUL UMBRELLAS (SEASONAL), SEE SHEET 30

MOVABLE FURNITURE, TYP. SEE SHEET 31

DECORATIVE CONCRETE PAVING, TYP. SEE PAVING LEGEND

LAWN

11.1'

2 - PIGL
11 - RHTY

STORMWATER INLET, TYP., SEE CIVIL PLANS

1 - PIED
1- PIGL
11 - PIMS
7 - RHTY
8 - COSE
3 - PEAT

SETBACK LINE, TYP.

SCREEN WALL, SEE ARCH. DWGS, TYP.

10'

CONCRETE PAVING, TYP. SEE PAVING LEGEND

6'

20 - PIMS
9 - COSE
25 - BOGR
2 - GYDI

8'

8'

LIGHT FIXTURES 'A' WITH PLANTED BASKET FEATURE, TYP.

SOUTH YOSEMITE ST.

MATCHLINE: SEE SHEET 28

NOTE:
1. SEE SHEET 18 FOR PLANT LEGEND AND NOTES.
2. SEE SHEET 29 FOR LANDSCAPE DETAILS.

0 5 10
SCALE: 1"=10'

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LANDSCAPE PLAN
ENLARGEMENT

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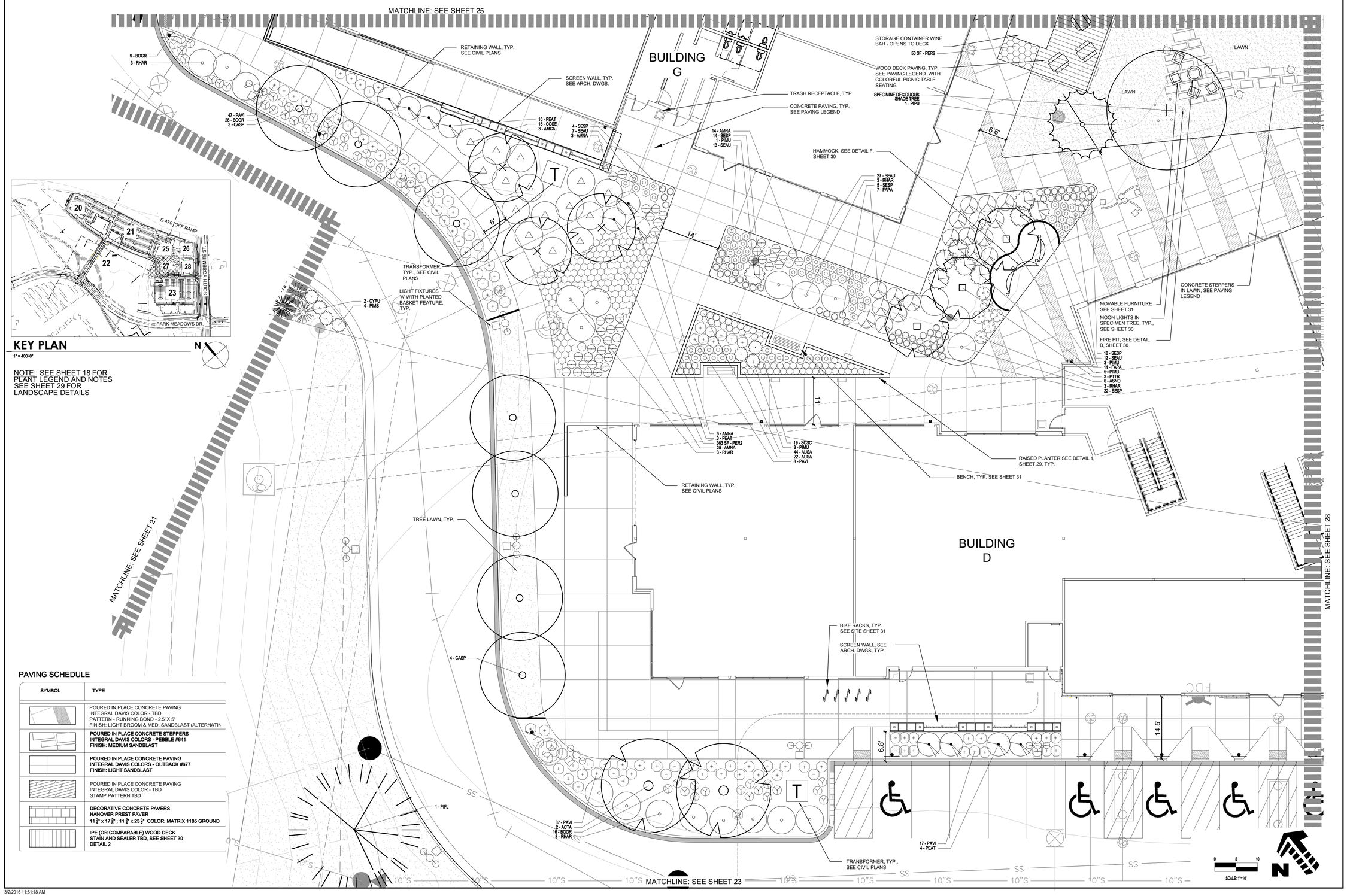
SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22



NOTE: SEE SHEET 18 FOR PLANT LEGEND AND NOTES
SEE SHEET 29 FOR LANDSCAPE DETAILS

PAVING SCHEDULE

SYMBOL	TYPE
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	POURED IN PLACE CONCRETE STEPPERS **INTEGRAL DAVIS COLORS - PEBBLE #641** **FINISH: MEDIUM SANDBLAST**
	POURED IN PLACE CONCRETE PAVING **INTEGRAL DAVIS COLORS - OUTBACK #677** **FINISH: LIGHT SANDBLAST**
	POURED IN PLACE CONCRETE PAVING INTEGRAL DAVIS COLOR - TBD STAMP PATTERN TBD
	DECORATIVE CONCRETE PAVERS **HANOVER PREST PAVER** **11 $\frac{3}{8}$" x 17 $\frac{7}{8}$" ; 11 $\frac{3}{8}$" x 23 $\frac{5}{8}$" COLOR: MATRIX 1185 GROUND**
	IPE (OR COMPARABLE) WOOD DECK **STAIN AND SEALER TBD, SEE SHEET 30** **DETAIL 2**

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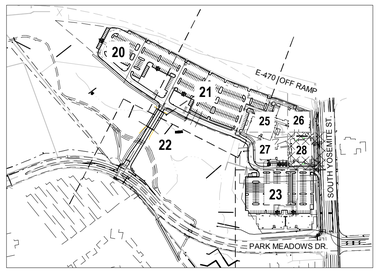
14.12 ACRES, SIP# SP16-22



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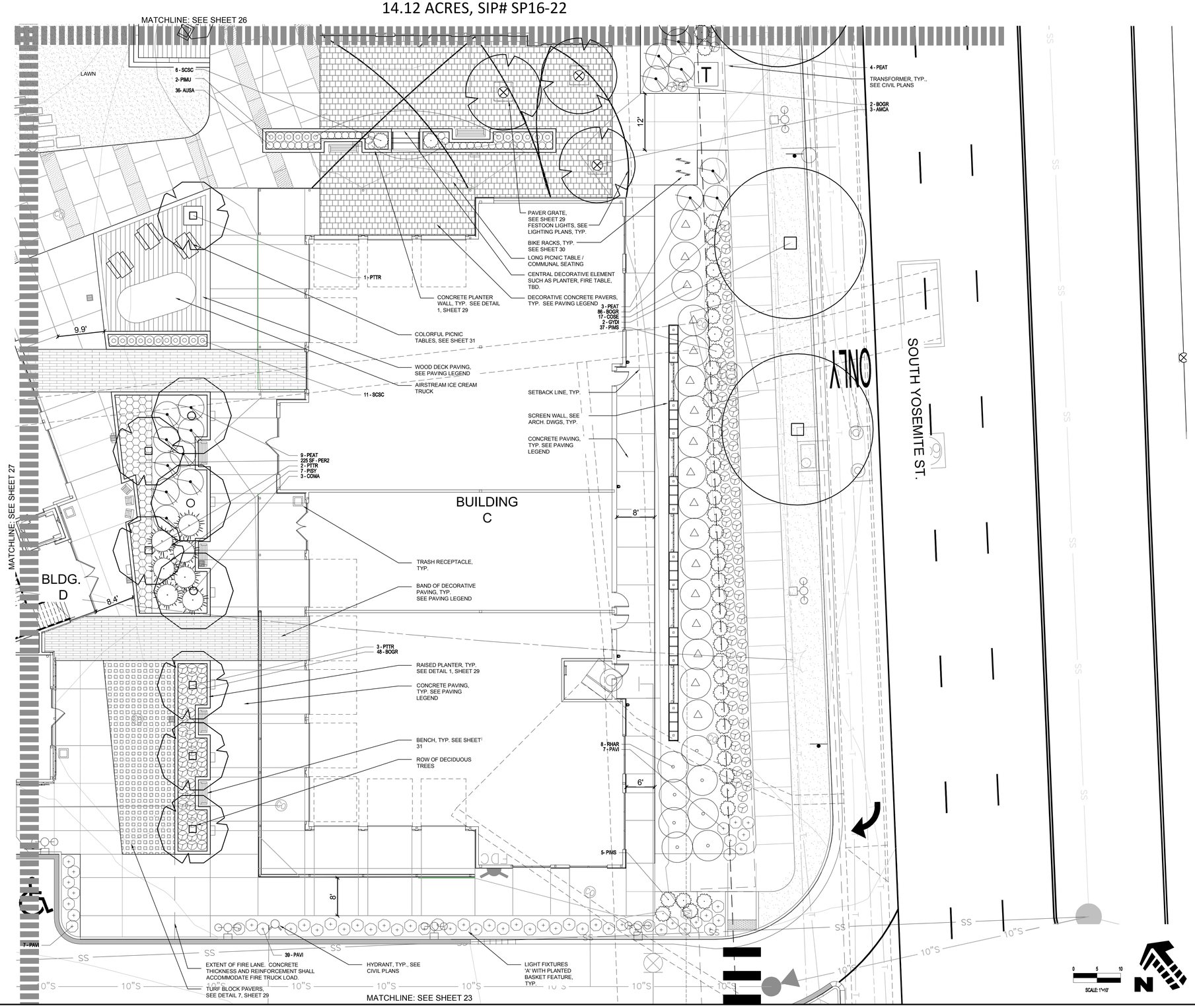
NOTE: SEE SHEET 18 FOR PLANT LEGEND AND NOTES, AND SHEETS 29-31 FOR DETAILS AND SITE FURNISHINGS



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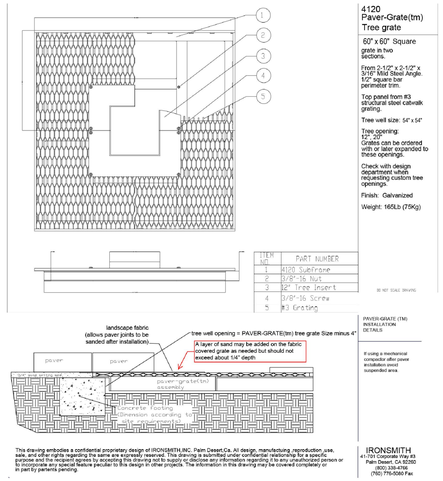
SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22



6 PAVER GRATE
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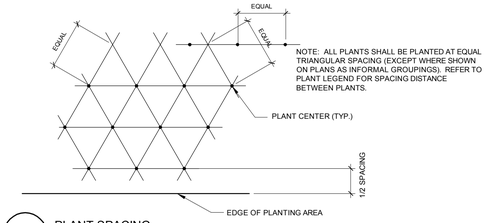
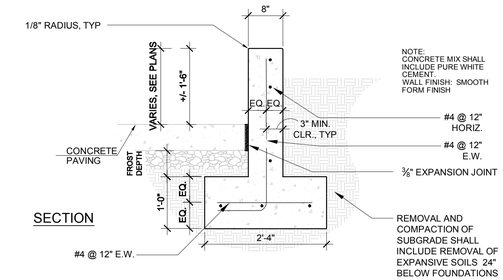
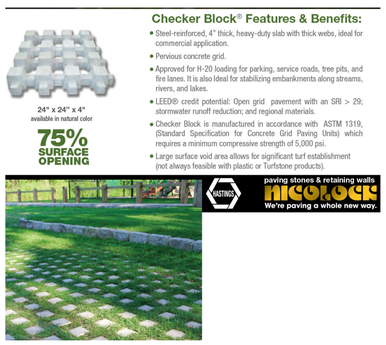


4 PLANT SPACING
SCALE: NOT TO SCALE



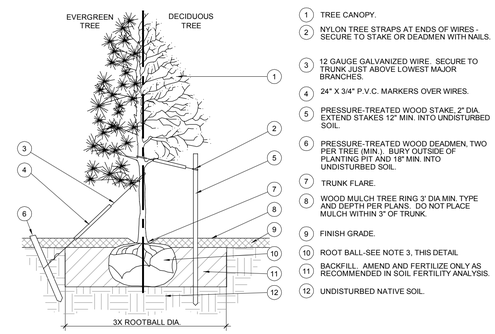
1 CONCRETE PLANTER WALL
SCALE: NOT TO SCALE



Checker Block® Features & Benefits:

- Steel-reinforced, 4" thick, heavy-duty slab with thick webs, ideal for commercial application.
- Pervious concrete grid.
- Approved for H-20 loading for parking, service roads, tree pits, and fire lanes. It is also Ideal for stabilizing embankments along streams, rivers, and lakes.
- LEED® credit potential: Open grid pavement with an SRI > 29; stormwater runoff reduction; and regional materials.
- Checker Block is manufactured in accordance with ASTM 1319, (Standard Specification for Concrete Grid Paving Units) which requires a minimum compressive strength of 5,000 psi.
- Large surface void area allows for significant turf establishment (not always feasible with plastic or Turfstone products).

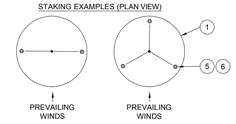
7 CHECKER BLOCK PAVER
SCALE: NOT TO SCALE



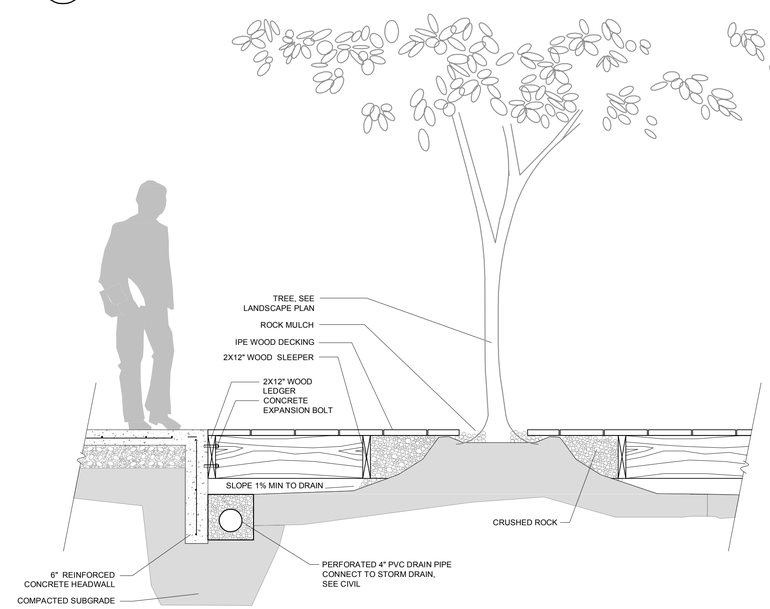
1. TREE CANOPY.
2. NYLON TREE STRAPS AT ENDS OF WIRES - SECURE TO STAKE OR DEADMEN WITH NAILS.
3. 12 GAUGE GALVANIZED WIRE. SECURE TO TRUNK JUST ABOVE LOWEST MAJOR BRANCHES.
4. 24" X 3/4" P.V.C. MARKERS OVER WIRES.
5. PRESSURE-TREATED WOOD STAKE, 2" DIA. EXTEND STAKES 12" MIN. INTO UNDISTURBED SOIL.
6. PRESSURE-TREATED WOOD DEADMEN, TWO PER TREE (MIN.). BURY OUTSIDE OF PLANTING PIT AND 18" MIN. INTO UNDISTURBED SOIL.
7. TRUNK FLARE.
8. WOOD MULCH TREE RING 3' DIA MIN. TYPE AND DEPTH PER PLANS. DO NOT PLACE MULCH WITHIN 3" OF TRUNK.
9. FINISH GRADE.
10. ROOT BALL-SEE NOTE 3, THIS DETAIL
11. BACKFILL. AMEND AND FERTILIZE ONLY AS RECOMMENDED IN SOIL FERTILITY ANALYSIS.
12. UNDISTURBED NATIVE SOIL.

NOTES:
1. SCARIFY SIDES OF PLANTING PIT PRIOR TO SETTING TREE.
2. REMOVE EXCESS SOIL APPLIED ON TOP OF THE ROOTBALL THAT COVERS THE ROOT FLARE. THE PLANTING HOLE DEPTH SHALL BE SUCH THAT THE ROOTBALL RESTS ON UNDISTURBED SOIL, AND THE ROOT FLARE IS 3"-5" ABOVE FINISH GRADE.
3. CUT OFF BOTTOM 1/3 OF WIRE BASKET BEFORE PLACING TREE IN HOLE, CUT OFF AND REMOVE REMAINDER OF BASKET AFTER TREE IS SET IN HOLE. REMOVE ALL NYLON TIES, TWINE, ROPE, AND OTHER PACKING MATERIAL. REMOVE ALL BURLAP FROM AROUND ROOTBALL.
4. TREE WRAP IS NOT TO BE USED ON ANY NEW PLANTINGS, EXCEPT IN LATE FALL PLANTING SITUATIONS, AND ONLY THEN AFTER CONSULTATION WITH THE LANDSCAPE ARCHITECT. WHEN WRAPPING TREE, WRAP FROM TRUNK FLARE TO LOWEST MAJOR BRANCH.
5. REMOVE ALL NURSERY STAKES AFTER PLANTING.
6. FOR TREES OVER 3" CALIPER, USE THREE STAKES OR DEADMEN (AS APPROPRIATE), SPACED EVENLY AROUND TREE.

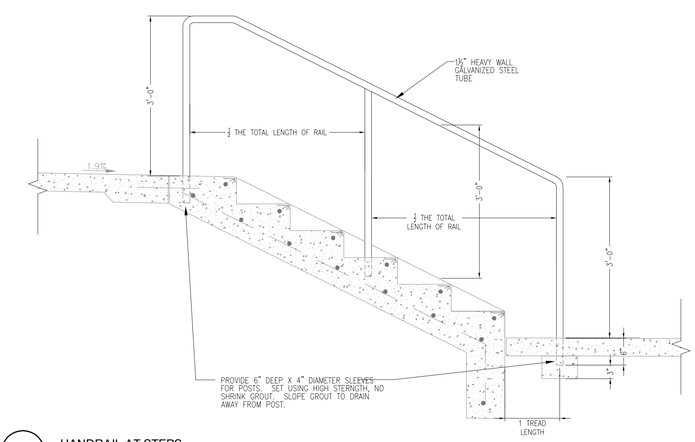
STAKING EXAMPLES (PLAN VIEW)



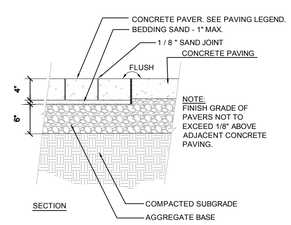
5 TREE PLANTING DETAIL
SCALE: NOT TO SCALE



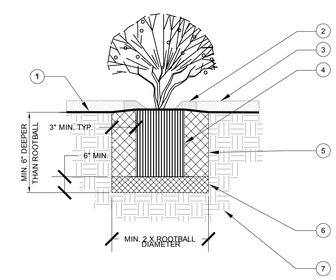
2 WOOD DECK AT CONCRETE PAVING
SCALE: NOT TO SCALE



8 HANDRAIL AT STEPS
SCALE: NOT TO SCALE



6 CONCRETE PAVERS
SCALE: NOT TO SCALE



1. DOUBLE SHREDDED CEDAR BARK MULCH, 4" DEEP. INSTALLED TO 1.5X THE CONTAINER WIDTH OF ALL SHRUBS.
2. FINISH GRADE IN PLANTING AREA.
3. MULCH, SPECIFIED IN PLANTING LEGEND.
4. PLANT ROOT BALL. SET TOP ROOTBALL 2" ABOVE ADJECENT GRADE. IN BERMED AREAS SET ROOTBALL 2" ABOVE LOWER ADJECENT GRADE. INSTALL WATER RING (2 - 3" HT.)
5. BACKFILL MIX (PER PLANTING SPECIFICATIONS). AMEND AND FERTILIZE ONLY AS RECOMMENDED IN SOIL FERTILITY ANALYSIS. JET BACKFILL WITH WATER TO ELIMINATE VOIDS.
6. COMPACTED BACKFILL MIX (75%).
7. UNDISTURBED NATIVE SOIL.

3 SHRUB AND PERENNIAL DETAIL
SCALE: NOT TO SCALE

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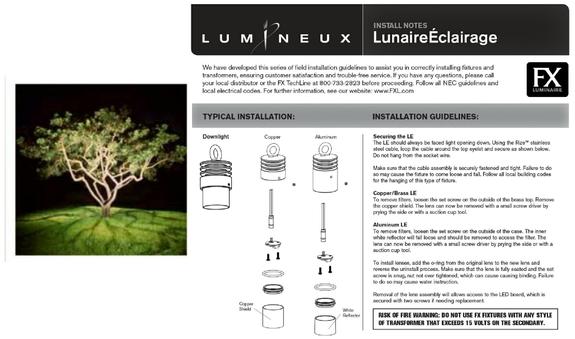
PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22


LUMINEUX
INSTALL NOTES
LunaireÉclairage

We have developed this series of field installation guidelines to assist you in correctly installing fixtures and transformers, ensuring customer satisfaction and trouble-free service. If you have any questions, please call your local distributor or the FX TechLine at 800-733-2823 before proceeding. Follow all NEC guidelines and local electrical codes. For further information, see our website: www.FXL.com

TYPICAL INSTALLATION:
Downlight
Copper
Aluminum
Copper Shield
White Reflector

INSTALLATION GUIDELINES:

Securing the LE
The LE should always be faced light opening down. Using the Rize™ stainless steel cable, loop the cable around the top eyelet and secure as shown below. Do not hang from the socket wire.

Make sure that the cable assembly is securely fastened and tight. Failure to do so may cause the fixture to come loose and fall. Follow all local building codes for the hanging of this type of fixture.

Copper/Brass LE
To remove filters, loosen the set screw on the outside of the brass top. Remove the copper shield. The lens can now be removed with a small screw driver by prying the side or with a suction cup tool.

Aluminum LE
To remove filters, loosen the set screw on the outside of the case. The inner white reflector will fall loose and should be removed to access the filter. The lens can now be removed with a small screw driver by prying the side or with a suction cup tool.

To install lenses, add the o-ring from the original lens to the new lens and reverse the uninstall process. Make sure that the lens is fully seated and the set screw is snug, but not over tightened, which can cause causing binding. Failure to do so may cause water instruction.

Removal of the lens assembly will allows access to the LED board, which is secured with two screws if needing replacement.

RISK OF FIRE WARNING: DO NOT USE FX FIXTURES WITH ANY STYLE OF TRANSFORMER THAT EXCEEDS 15 VOLTS ON THE SECONDARY.

FX LUMINAIRE
COMMERCIAL MOON LIGHTS
- MATERIAL: BRASS
- FINISH: COPPER
- COLOR: BLACK
- LOCATION: SPECIMEN TREES (2)
-WWW.FXL.COM

G MOON LIGHTS AT SPECIMEN TREES
NOT TO SCALE

INTERNATIONAL ART PROPERTIES
MIRAGE
- MATERIAL: FIBERGLASS & METAL
- SIZE: 18X12X36
- COLOR: STAINLESS STEEL
- LOCATION:SEE PLANS
-WWW.IAPSF.COM

D TRASH RECEPTACLE
NOT TO SCALE

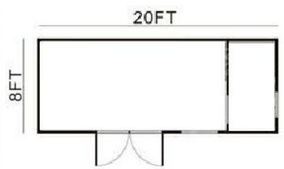
LANDSCAPE FORMS
LOOP SERIES
- MATERIAL: ALUMINUM
- SIZE 31"H x 36" L (2 BIKE CAPACITY)
- COLOR: STORMCLOUD, POWDERCOAT
- LOCATION:SEE PLANS
-WWW.LANDSCAPEFORMS.COM

A BIKE RACK
NOT TO SCALE

CRATE & BARREL
TIDORE PLANTERS
- MATERIAL: PLASTIC
- SIZE: VARIES
- COLOR: DARK WOODGRAIN
- LOCATION:TBD
-WWW.CRATEANDBARREL.COM

QUICKCRETE
CASCADE PLANTER SERIES
- MATERIAL: CONCRETE
- SIZE: 48" TOP O.D. QR-CE4842P
- COLOR: MEYER YELLOW
- LOCATION: SEE PLANS
-WWW.QUICKCRETE.COM

H PLANTER POTS-ROUND & SQUARE
NOT TO SCALE



BOXMAN STUDIOS
CUSTOM DESIGNED CONTAINER CONVERSION FOR USE AS WINE BAR
- MATERIAL: STEEL, PAINT, TBD
- SIZE: 8' x 20'
- LOCATION: SEE PLANS
- ASSOCIATED KITCHEN SERVICES TO BE PROVIDED BY ADJACENT RESTAURANT TENANT
- WWW.BOXMANSTUDIOS.COM

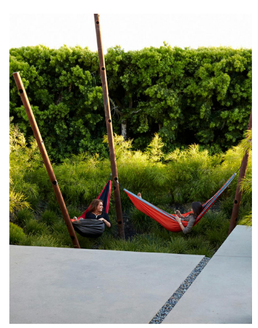
E SHIPPING CONTAINER CONVERSION - WINE BAR
NOT TO SCALE

DOT & BO
HAND ROLLED STEEL FIRE PIT
- MATERIAL: STEEL, FIRE-GLASS
- SIZE: 34X17
- COLOR: MARASCHINO
- LOCATION: SEE PLANS
- WWW.DOTANDBO.COM

B FIRE PIT
NOT TO SCALE

LANDSCAPE FORMS
TUUCI OCEAN MASTER CLASSIC HEXAGON PARASOL
- MATERIAL: SUNBRELLA FABRIC, ANODIZED ALUMINUM
- SIZE: 10'
- COLOR: NATURAL #6004 (SHOWN)
- LOCATION: SEE PLANS
-WWW.LANDSCAPEFORMS.COM

I UMBRELLA
NOT TO SCALE



DOT & BO
KEY WEST HANGING CHAIR
- MATERIAL: COLOR FAST YARN
- SIZE: 84X48
- COLOR: SEDONA (SHOWN RIGHT)
- LOCATION: SEE PLANS
-WWW.LANDSCAPEFORMS.COM

F HAMMOCK
NOT TO SCALE

EJ
SUNRAY
- MATERIAL: CAST IRON, STEEL FRAME
- SIZE: 60" SQ., OPTIONS FOR REMOVABLE CENTER RINGS
- COLOR: N/A
- LOCATION: SEE PLANS
-WWW.TREEGRATE.COM

C TREE GRATE
NOT TO SCALE

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THE YARD AT LONE TREE
LONE TREE, COLORADO
ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL
	06.17.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

Project No:	ADP000002.01
Drawn By:	SRA
Checked By:	KL
Date:	03/29/16

SHEET TITLE:
SITE AMENITIES

3/2/2016 11:51:18 AM

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22

LUMENS LIGHT & LIVING
JANE SECTIONAL
- MATERIAL: SUNBRELLA OUTDOOR FABRIC UPHOLSTERY, FLAT SYNTHETIC ALL-WEATER WICKER, STAINLESS STEEL
- SIZE: VARIES
- COLOR: MACAW
- LOCATION: SEE PLANS
-LUMENS.COM

G SECTIONAL
NOT TO SCALE

LUMENS LIGHT & LIVING
NO. 9 SOFA
- MATERIAL: RECYCLED HDPE
- SIZE: 44WX28.25HX29.25D
- COLOR: LEAF GREEN
- LOCATION: SEE PLANS
-LUMENS.COM

D BENCH
NOT TO SCALE

LOWES
PICNINC TABLE
- MATERIAL: SOUTHERN YELLOW PINE
- SIZE: 72IN
- COLOR: TO BE PAINTED BY CONTRACTOR, COLOR - SHERMAN-WILLIAMS SW 6950 (CALYPSO)
- LOCATION: SEE PLANS
-LOWES.COM

A PICNIC TABLE
NOT TO SCALE

GREAT DEAL FURNITURE
LISBON OUTDOOR WOOD CHAISE LOUNGE
- MATERIAL: WOOD
- SIZE: 70X20X26
- COLOR: NEUTRAL WOOD
- LOCATION: SEE PLANS
-GREATDEALFURNITURE.COM

H WOOD CHAISE LOUNGE
NOT TO SCALE

HOUZZ
REPAST
- MATERIAL: POWDER COATED CARBON STEEL, DOMESTIC HARDWOOD
- SIZE: 60WX22DX33H
- COLOR: ORANGE & WOOD
- LOCATION: SEE PLANS
-HOUZZ.COM

E BENCH
NOT TO SCALE

RAPSON
HIGHBACK ROCKER
- MATERIAL: RECYCLED PLASTIC
- SIZE: NA
- COLOR: RED
- LOCATION: SEE PLANS
-RAPSON-INC.COM

B ROCKER
NOT TO SCALE

LUMENS LIGHT & LIVING
KUBBIA MODERNA LED CUBE
- MATERIAL: POLYETHYLENE
- SIZE: 17X17X17
- COLOR: WHITE
- LOCATION: SEE PLANS
-LUMENS.COM

I SIDE TABLE
NOT TO SCALE

GREAT DEAL FURNITURE
CASTRO BISTRO SET
- MATERIAL: POWDER COATED CAST IRON
- SIZE: TABLE-24WX29H, CHAIRS-20WX29H
- COLOR: OFF-WHITE
- LOCATION: SEE PLANS
-GREATDEALFURNITURE.COM

F BISTRO SET
NOT TO SCALE

OVERSTOCK
SAFAVIEH SHENANDOAH CHAIR & OTTOMAN
- MATERIAL: WICKER
- SIZE: 30HX18WX32D
- COLOR: BLUE
- LOCATION: SEE PLANS
-OVERSTOCK.COM

C WICKER CHAIR & OTTOMAN
NOT TO SCALE

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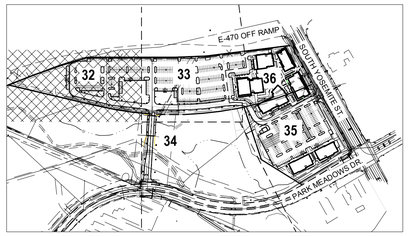

KEY PLAN
1" = 400'-0"

N

MATCHLINE: SEE BELOW

FUTURE BUILDING PAD
(TO BE SEEDED)

MATCHLINE: SEE SHEET 33

FUTURE BUILDING PAD
(TO BE SEEDED)

CONCEPTUAL IRRIGATION
DESIGN ONLY.
NOT FOR CONSTRUCTION

MATCHLINE: SEE ABOVE

CONCEPTUAL IRRIGATION LEGEND

- OVERHEAD SPRAY IRRIGATION
- DRIP IRRIGATION
- NON-IRRIGATED OVERLOT SEED
- IRRIGATED GRASS / WILDFLOWER SEED

0 10 20
SCALE: 1"=20'

N

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LONE TREE, COLORADO

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SITE IMPROVEMENT PLAN

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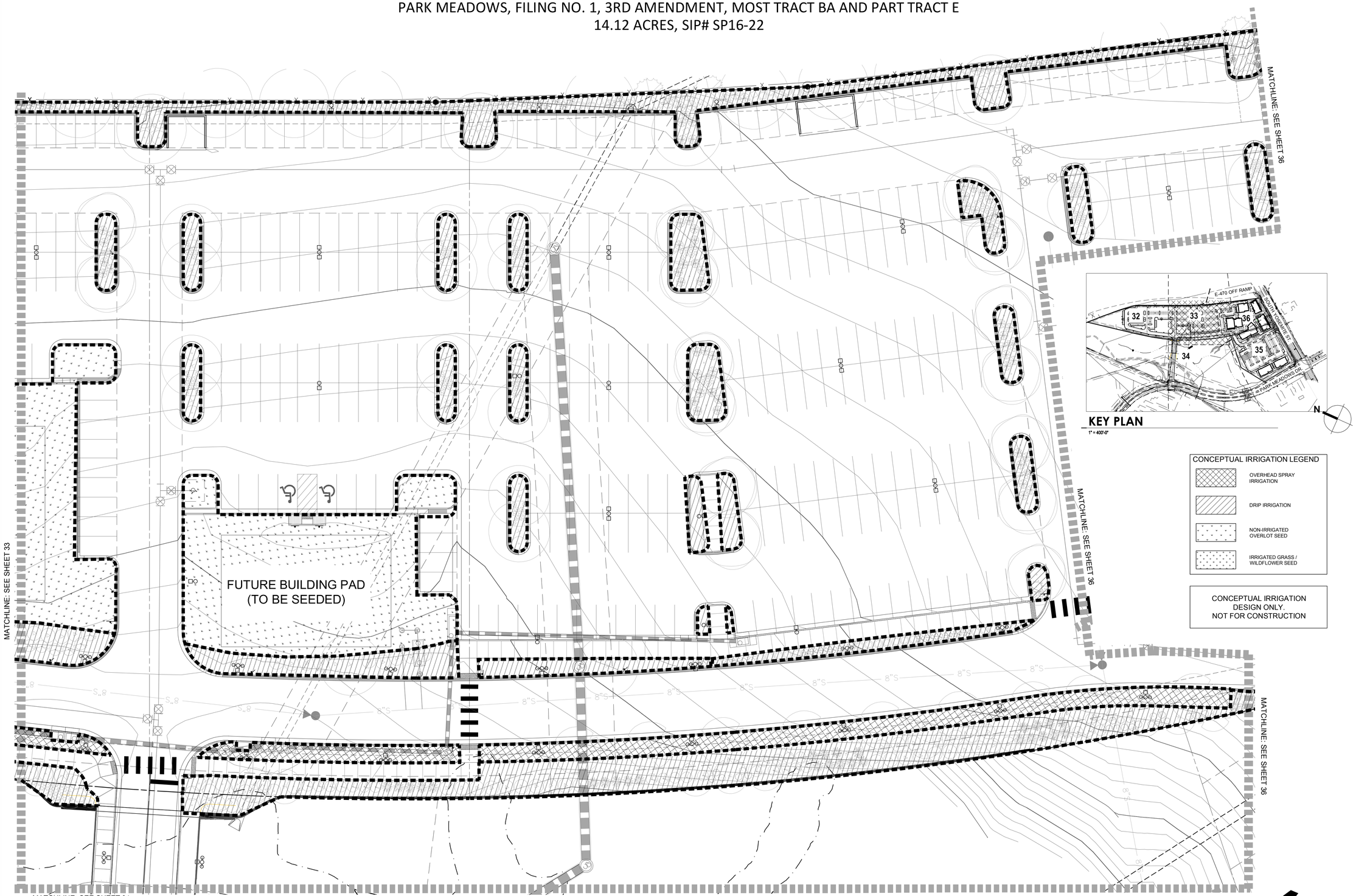

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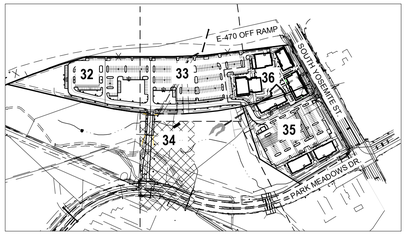


KEY PLAN

1" = 400'-0"

N

GENERAL IRRIGATION NOTES

1. IRRIGATION DESIGN IS NOT AN EXACT SCIENCE. IT IS BASED ON THEORIES, ASSUMPTIONS, AND/OR INFORMATION PROVIDED BY CIVIL MODELS/UTILITIES/MUNICIPAL ENTITIES AND THUS, IS DIAGRAMMATIC IN NATURE. ALL PIPING, VALVES, AND OTHER EQUIPMENT SHOWN WITHIN PAVED AREAS OR OUT OF PROPERTY BOUNDARIES ARE FOR GRAPHIC CLARIFICATION ONLY, AND SHALL BE INSTALLED IN PLANTING AREAS WITHIN THE PROPERTY LINES OR LIMITS INDICATED ON PLAN. THE IRRIGATION CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL ABOVE-GRADE IRRIGATION EQUIPMENT WITH THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO INSTALLATION, OR IRRIGATION CONTRACTOR MAY BE REQUIRED TO MOVE SUCH ITEMS AT HIS OWN COST.
2. REFER TO SPECIFICATIONS (AS APPROPRIATE) FOR SUBMITTALS, INSPECTIONS AND OTHER APPLICABLE INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A COPY OF THE PROJECT SPECIFICATIONS PRIOR TO BIDDING. THE PROJECT SPECIFICATIONS ARE A PART OF THESE PLANS AND SHALL BE CONSULTED BY THE IRRIGATION CONTRACTOR. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING WORK AS SPECIFIED IN THE PROJECT SPECIFICATIONS AND ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A COPY OF THE PROJECT SPECIFICATIONS PRIOR TO BIDDING.
3. THE IRRIGATION CONTRACTOR SHALL MEET WITH THE OWNER'S REPRESENTATIVE PRIOR TO COMMENCEMENT OF WORK, AND SHALL OBTAIN ALL ENGINEERING, LANDSCAPE, AND OTHER APPLICABLE PLANS & DOCUMENTS. CONTRACTOR SHALL THOROUGHLY REVIEW PLANS & REPORT ANY CONFLICTS OR DISCREPANCIES TO OWNER'S REPRESENTATIVE IMMEDIATELY.
4. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, EQUIPMENT QUANTITIES, AND UTILITY LOCATIONS PRIOR TO BEGINNING WORK. DO NOT INSTALL THE IRRIGATION SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT OBSTRUCTIONS, GRADE DIFFERENCES, OR DIFFERENCES IN THE AREA DIMENSIONS EXIST THAT MIGHT NOT HAVE EXISTED AT THE TIME OF THE IRRIGATION DESIGN PREPARATION. SUCH OBSTRUCTIONS OR DIFFERENCES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE AND LANDSCAPE ARCHITECT. IN THE EVENT THIS NOTIFICATION IS NOT GIVEN, THE IRRIGATION CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY TO BRING THE SYSTEM TO A PROPER WORKING CONDITION, AND TO THE OWNER'S SATISFACTION.
5. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO FAMILIARIZE HIMSELF WITH ALL GRADE DIFFERENCES, LOCATIONS OF WALLS, RETAINING WALLS, ETC. THE IRRIGATION CONTRACTOR SHALL COORDINATE HIS WORK WITH THE GENERAL CONTRACTOR AND OTHER SUBCONTRACTORS FOR THE LOCATION AND INSTALLATION OF PIPE SLEEVES THROUGH WALL, UNDER ROADWAY PAVING, ETC.
6. THE CONTRACTOR SHALL MAKE NO SUBSTITUTIONS, DELETIONS, OR ADDITIONS TO THIS PLAN WITHOUT APPROVAL OF THE LANDSCAPE ARCHITECT.
7. SEE CIVIL ENGINEER'S DRAWINGS FOR IRRIGATION POINT OF CONNECTION (TAP) AND DOMESTIC WATER SUPPLY.
8. ALL CONSTRUCTION SHALL CONFORM TO CITY, COUNTY, STATE, AND FEDERAL REQUIREMENTS. IT SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO ENSURE THAT ALL IRRIGATION EQUIPMENT MEETS GOVERNMENT REGULATIONS. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS OR APPROVALS
9. THE IRRIGATION SYSTEM DESIGN IS BASED ON THE MINIMUM OPERATING PRESSURE AND THE MAXIMUM FLOW DEMAND SHOWN ON THE POINT OF CONNECTION NOTE TAG(S) ON THE DRAWINGS. THE IRRIGATION CONTRACTOR SHALL FIELD VERIFY THE STATIC & OPERATING WATER PRESSURE PRIOR TO CONSTRUCTION, AND SHALL REPORT ANY DIFFERENCES BETWEEN THE WATER PRESSURE INDICATED ON THE DRAWINGS AND THE ACTUAL PRESSURE READING AT THE IRRIGATION POINT OF CONNECTION TO THE OWNER'S AUTHORIZED REPRESENTATIVE AND LANDSCAPE ARCHITECT. IN THE EVENT PRESSURE DIFFERENCES ARE NOT REPORTED OR PRESSURES HAVE GREATLY CHANGED PRIOR TO THE START OF THE IRRIGATION SYSTEM CONSTRUCTION, THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR RECOMMENDING A SOLUTION AND PROVIDING AN ADD ALTERNATE BID FOR IRRIGATION COSTS.
10. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT IF AVAILABLE WATER PRESSURE EXCEEDS 5 PSI HIGHER OR LOWER THAN AVAILABLE WATER PRESSURE.
11. NO MORE THAN 90% OF AVAILABLE MINIMUM STATIC WATER PRESSURE WAS USED IN PREPARATION OF THESE PLANS, FURTHERMORE, THE MAXIMUM FLOW THROUGH THE METER SHOULD NOT EXCEED 75% OF THE MAXIMUM SAFE FLOW.
12. SUPPLY LINE AND METER TO BE PROVIDED BY GENERAL CONTRACTOR. BACKFLOW PREVENTER TO BE PROVIDED BY IRRIGATION CONTRACTOR. IRRIGATION CONTRACTOR'S POINT OF CONNECTION TO BEGIN AFTER THE IRRIGATION WATER METER.
13. INSTALL ALL MATERIALS AND EQUIPMENT AS SHOWN ON THE PLANS AND DETAILS. NO SUBSTITUTIONS OF EQUIPMENT WILL BE ACCEPTABLE WITHOUT PRIOR WRITTEN APPROVAL BY THE LANDSCAPE ARCHITECT OR THE OWNERS REPRESENTATIVE. THE IRRIGATION CONTRACTOR MAY BE REQUIRED TO REMOVE AND REPLACE ALL UNAPPROVED SUBSTITUTED EQUIPMENT AT HIS OWN COST IF SO DIRECTED BY THE OWNER.
14. WHEN INSTALLING IRRIGATION PIPE AND EQUIPMENT NEXT TO HARDSCAPE (SUCH AS WALLS, CURBS, OR WALKS), PLACE PIPE AS CLOSE AS POSSIBLE TO HARDSCAPE TO AVOID CONFLICTS WITH PLANTING. REFER TO MAINLINE TRENCHING DETAILS FOR ADDITIONAL INFORMATION.
15. THE IRRIGATION CONTRACTOR SHALL COORDINATE 120 V.A.C. ELECTRICAL POWER TO CONTROLLERS AND DEDICATE ONE (1) 20-AMP BREAKER FOR EACH CONTROLLER. IT SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO MAKE THE FINAL HOOK-UP FROM THE ELECTRICAL SOURCE TO THE CONTROLLER UNIT ONLY.
16. THE RAIN SENSOR SHALL BE LOCATED NEAR THE IRRIGATION CONTROLLER, AND SHALL BE MOUNTED AS SHOWN ON THE DETAIL AND/OR LEGEND. LOCATE SENSOR AWAY FROM TALL TREES, SHRUBS, AND OTHER POTENTIAL OBSTRUCTIONS.
17. ALL VALVE CONTROL WIRE SHALL BE MAXI CABLE FOR 2-WIRE PATH, DIRECT BURIAL. NO SPLICES SHALL BE ALLOWED EXCEPT AT VALVES, BRANCH LOOPS AND CONTROLLER. WHERE SPLICES MAY BE NECESSARY DUE TO EXCESSIVELY LONG WIRE RUNS, THE CONTRACTOR SHALL MAKE ALL SPLICES IN 6" ROUND VALVE BOXES WITH 3M DBR/Y-6 SPLICE KITS. THE CONTRACTOR SHALL LABEL ALL WIRES WITH WATERPROOF TAGS AND MARKERS AT ALL SPLICES AND VALVE MANIFOLDS, AND SHALL LEAVE A 24" COIL OF EXCESS WIRE AT EACH CONNECTION.
18. CONTRACTOR SHALL PROVIDE COMMON WIRE PER SPECIFICATIONS, DIRECT BURIAL, TO ALL REMOTE CONTROL VALVES.
19. CONNECT ALL DIRECT BURIAL WIRES TO VALVES USING 3M'S "DBY-DIRECT BURIAL SPLICE KIT" (UNLESS OTHERWISE SPECIFIED).
20. PROVIDE ADDITIONAL IRRIGATION CONTROL WIRES TO THE AMOUNT OF OPEN ZONES ON THE CONTROLLER ALONG EACH BRANCH OF MAINLINE FOR FUTURE EXPANSION. STUB ADDITIONAL CONTROL WIRES INTO BACK OF IRRIGATION CONTROLLERS.
21. THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ALL CONTROL WIRE SLEEVES AND PIPE SLEEVES UNDER PAVED AREAS PRIOR TO PAVING. ELECTRICAL WIRES FOR IRRIGATION VALVES AND IRRIGATION LINES ARE TO BE PLACED IN SEPARATE SLEEVES. ALL SLEEVING SHALL BE PVC SCHEDULE 40 PIPE. SLEEVES FOR MAINLINE AND LATERAL LINES SHALL BE A MINIMUM TWICE THE DIAMETER OF THE ENCLOSED PIPE; SLEEVES FOR CONTROL WIRES SHALL BE AS PER THE SLEEVING / WIRING NOTE AND THE WIRING SLEEVE LEGEND ITEM AS SHOWN ON THESE DRAWINGS.
22. TRENCH BACKFILL MATERIAL SHALL BE FREE OF ROCKS, GLASS, AND OTHER EXTRANEOUS MATERIALS LARGER THAN 1" IN DIAMETER. BACKFILL SHALL BE COMPACTED TO 90% MAXIMUM DRY DENSITY.
23. WHERE VALVES ARE LOCATED IN CLOSE PROXIMITY TO EACH OTHER, CLUSTER VALVES INTO MANIFOLDS. INSTALL NO MORE THAN ONE VALVE PER VALVE BOX.
24. MANUAL DRAIN VALVE, FOR FREEZE PROTECTION, ARE TO BE LOCATED AT ALL LOW POINTS OF IRRIGATION LATERAL LINES. WHERE THE LOW POINT IS AT THE END OF THE LINE, LOCATE DRAIN VALVE A MINIMUM OF 12" DOWNSTREAM FROM THE LAST SPRINKLER HEAD. SEE DETAIL FOR VALVE ORIENTATION.
25. USE TEFLON TAPE ON ALL PVC MALE PIPE THREADS ON ALL SWING JOINT AND VALVE ASSEMBLIES.
26. ALL IRRIGATION HEADS, INCLUDING FIXED-SPRAY AND DRIP DEVICES, SHALL BE SET PERPENDICULAR TO THE FINISH GRADE OF THE AREA TO BE IRRIGATED.
27. ALL PRESSURIZED MAINLINES, VALVES, AND ROTOR AND SPRAY HEADS SHALL BE INSTALLED A MINIMUM OF 5' AWAY FROM ANY BUILDING FOUNDATION. IF THIS EQUIPMENT IS SHOWN WITHIN THE 5' OFFSET ON THESE PLANS, IT IS FOR THE PURPOSE OF GRAPHIC CLARITY ONLY.
28. EXCEPT WHERE SPECIFICALLY NOTED OTHERWISE, IT IS THE INTENT OF THE IRRIGATION DESIGN TO INDICATE ALL SPRAY HEADS AS "POP-UPS". IN THE EVENT THAT POP-UP HEADS HAVE NOT BEEN SPECIFIED IN TURF AREAS, IT SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO BRING THIS TO THE ATTENTION OF THE LANDSCAPE ARCHITECT PRIOR TO BIDDING AND CONSTRUCTION.
29. ALL SPRAY AND ROTOR HEAD LOCATIONS SHALL BE STAKED, FLAGGED AND/OR OTHERWISE CLEARLY MARKED ON THE GROUND PRIOR TO INSTALLATION. SPRINKLER HEAD STAKING SHALL BE INSPECTED AND APPROVED BY THE OWNER'S REPRESENTATIVE OR THE LANDSCAPE ARCHITECT BEFORE INSTALLATION. STAKED LOCATIONS SHALL BE SPACED TO PROVIDE HEAD-TO-HEAD COVERAGE.
30. FLUSH AND ADJUST ALL SPRINKLER HEADS FOR OPTIMUM PERFORMANCE AND TO PREVENT OVERSPRAY ONTO WALKS, ROADWAYS, AND/OR BUILDINGS AS MUCH AS POSSIBLE. THIS SHALL INCLUDE SELECTING THE BEST NOZZLE ARC AND RADIUS TO FIT THE EXISTING SITE CONDITIONS.
31. ALL POP-UP TYPE SPRINKLER HEADS INSTALLED IN TURF AREAS SHALL BE INSTALLED SO THE TOP OF THE SPRINKLER HEAD IS FLUSH WITH THE ADJACENT SIDEWALK, OR PAVING. ALL POP-UP HEADS AWAY FROM HARDSCAPE EDGES IN TURF SHALL BE 1" ABOVE THE FINISH GRADE TO PREVENT CONTACT WITH MOWERS.
32. EXISTING TREES TO REMAIN ARE TO BE PROTECTED FROM DAMAGE. DO NOT TRENCH OR EXCAVATE WITHIN THE CRITICAL ROOT ZONE OF ANY TREE.
33. ALL PLANT MATERIAL IN TREE HOLDING AREAS SHALL BE MANUALLY WATERED/IRRIGATED TO KEEP MOIST UNTIL PLANTED.
34. UPON COMPLETION OF INSTALLATION OF IRRIGATION SYSTEM, IRRIGATION CONTRACTOR SHALL PROVIDE THE FOLLOWING:
    - A. ACCURATE AND COMPLETE "AS BUILT" PLANS OF IRRIGATION SYSTEM INCLUDING 8-1/2" X 11" ZONE MAP TO BE PLACED INSIDE EACH CONTROLLER BOX.
    - B. LOG ON ALL WATER WINDOWS, RUN SCHEDULE TIMES, AND OTHER CHANGES AND/OR MODIFICATIONS TO THE IRRIGATION SYSTEM SINCE INSTALLATION.
    - C. ONE HOUR OF TRAINING TO OWNER ON IRRIGATION SYSTEM AND CONTROLLER OPERATION.
    - D. THREE OF EACH TYPE OF HEAD AND EMITTER INSTALLED.
    - E. ONE OF EACH TYPE OF VALVE INSTALLED.
    - F. REVIEW WINTERIZATION PROCEDURES FOR IRRIGATION SYSTEM WITH OWNERS REPRESENTATIVE.
35. PRIOR TO ACCEPTANCE OF IRRIGATION SYSTEM AT THE END OF THE MAINTENANCE PERIOD, THE IRRIGATION CONTRACTOR SHALL PROVIDE THE FOLLOWING:
    - A. CURRENT SCHEDULE RUN TIME AND WATER WINDOW LOG, ALONG WITH NOTING ANY OTHER PERTINENT INFORMATION.
36. UNLESS OTHERWISE SPECIFIED, THE IRRIGATION CONTRACTOR SHALL REPAIR OR REPLACE ANYTHING DAMAGED BY HIS WORK AT NO ADDITIONAL COST TO THE OWNER.
37. CONTRACTOR SHALL INSTALL MAINLINES ±12" FROM PAVEMENT EDGE IN PLANTING AREAS. ALL PIPING, VALVES, AND OTHER EQUIPMENT SHOWN WITHIN PAVED AREAS OR OUT OF PROPERTY BOUNDARIES ARE FOR DESIGN CLARIFICATION ONLY, AND SHALL BE INSTALLED IN PLANTING AREAS WITHIN THE PROPERTY LINES OR LIMITS AS INDICATED ON THESE PLANS.
38. IN THE EVENT OF A DISCREPANCY BETWEEN THE PLAN AND SPECIFICATIONS, THE PLAN SHALL TAKE PRECEDENCE.
39. THE IRRIGATION SYSTEM SHALL BE INSTALLED BY A QUALIFIED IRRIGATION CONTRACTOR.

CONCEPTUAL IRRIGATION DESIGN ONLY. NOT FOR CONSTRUCTION

CONCEPTUAL IRRIGATION LEGEND

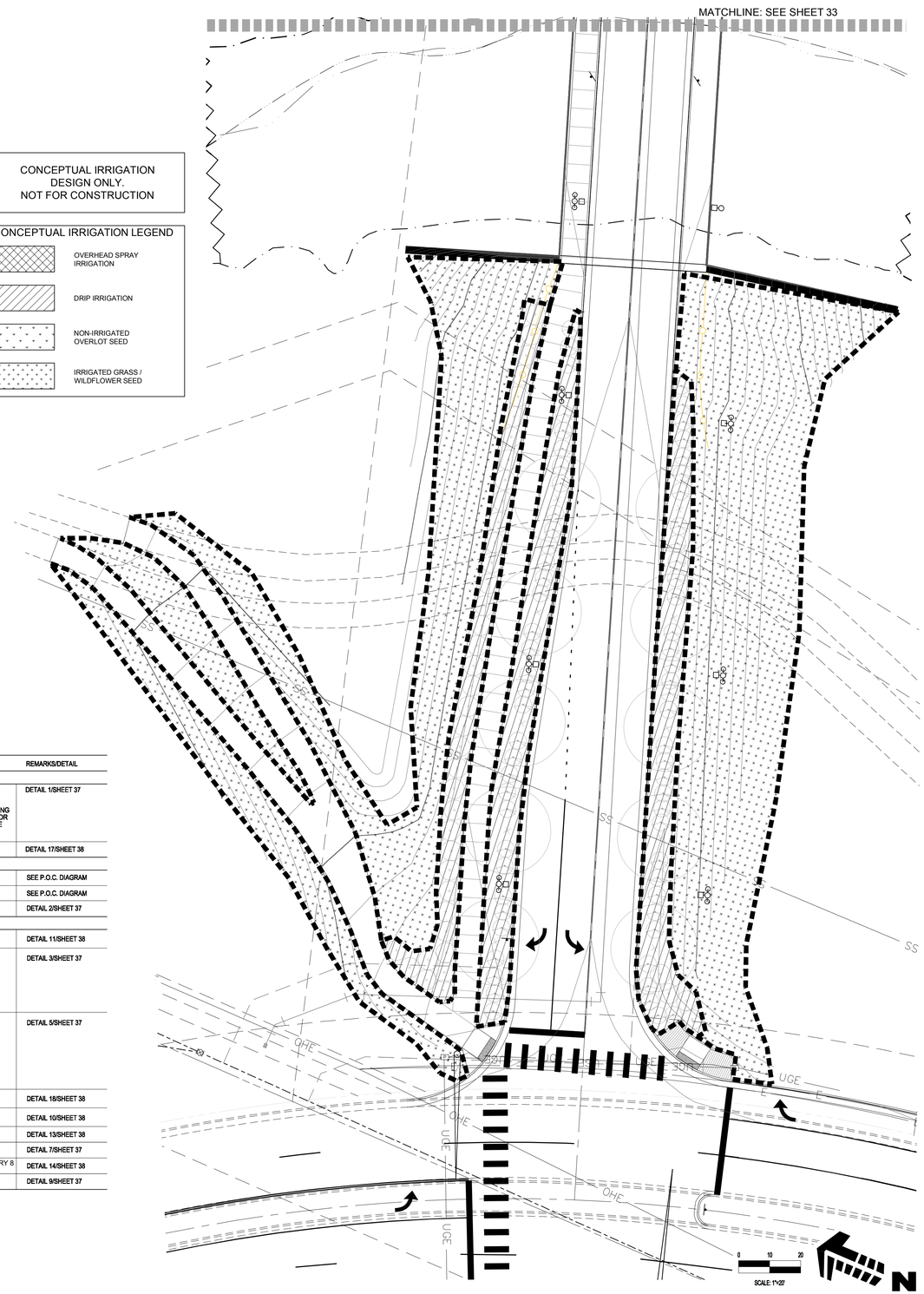
- OVERHEAD SPRAY IRRIGATION
- DRIP IRRIGATION
- NON-IRRIGATED OVERLOT SEED
- IRRIGATED GRASS / WILDFLOWER SEED

IRRIGATION LEGEND

SYMBOL	MANUF.	MODEL NO.	DESCRIPTION	REMARKS/DETAIL
CONTROLLERS AND SENSORS				
A	RAINBIRD	ESP-LXD XX STATION W/ PBC-LXD	IRRIGATION DECODER CONTROLLER TO BE A XX STATION RAINBIRD ESP-LXD DECODER SERIES HYBRID SOLID STATE TYPE, WITHIN STAINLESS STEEL METAL VANDAL RESISTANT LOCKABLE PEDESTAL CABINET (LXMMPED). IRRIGATION CONTROLLER TO BE LOCATED ON PLANS OR AS DIRECTED BY OWNER OR OWNERS REPRESENTATIVE. CONTROLLER SHALL INCLUDE PROGRAMMING BACKUP CARTRIDGE (PBCLXD), AN ET MANAGER CARTRIDGE, AND DEDICATED EXTRA STATIONS FOR A MASTER VALVE AND FLOW SENSING. CONTRACTOR CONTACT RAINBIRD AREA REPRESENTATIVE PRIOR TO INSTALLING IRRIGATION SYSTEM.	DETAIL 1/SHEET 37
R	RAINBIRD	WR2 - RFC	WIRELESS RAIN/FREEZE SENSOR	DETAIL 17/SHEET 38
POINT OF CONNECTION				
	PER WEST GATE WATER & SANITARY SPECIFICATIONS		2.0" POINT OF CONNECTION, SEE ARCHITECTURAL AND CIVIL PLANS FOR TAP LOCATION.	SEE P.O.C. DIAGRAM
M	PER WEST GATE WATER & SANITARY SPECIFICATIONS		2.0" IRRIGATION METER, SEE ARCHITECTURAL AND CIVIL PLANS FOR METER LOCATION.	SEE P.O.C. DIAGRAM
	FEBCO	MODEL 825YA	2.0" BACKFLOW PREVENTER-MOUNT IN GUARDSHACK MODEL #GS-1 W/ FROST GUARD BAG MODEL #FG-1 FOR WINTERIZATION, SEE POINT OF CONNECTION SCHEMATIC DIAGRAMS	DETAIL 2/SHEET 37
VALVES				
MV	RAINBIRD	200-EFB-CP	2.0" MASTER VALVE (24 VAC), ELECTRIC GLOBE VALVE W/ FD-101-TURF DECODER	DETAIL 11/SHEET 38
	RAINBIRD	100/150/200-PEB (OPTIONAL-PRS-D WHEN REQUIRED)	REMOTE CONTROL VALVE (24 VAC), SIZE PER PLAN. USE THE DECODER BELOW FOR MULTIPLE VALVE SCHEDULING: -FD-101-TURF: ONE ADDRESS - CONTROLLING ONE VALVE -FD-102-TURF: ONE ADDRESS - CONTROLLING TWO VALVES SIMULTANEOUSLY -FD-202-TURF: TWO ADDRESSES - EACH CONTROLLING TWO VALVES SIMULTANEOUSLY -FD-401-TURF: FOUR ADDRESSES - EACH CONTROLLING ONE VALVE -FD-601-TURF: SIX ADDRESSES - EACH CONTROLLING ONE VALVE	DETAIL 3/SHEET 37
	RAINBIRD	XCZ-075-PRF (0.2-3 GPM) XCZ-100-PRF (3-15 GPM) XCZ-100-PRB-COM (15-20 GPM) XCZ-150-PRB-COM (20-40 GPM)	DRIP CONTROL ZONE KITS (24 VAC-60Hz) W/ FILTRATION AND 30PSI IN-LINE PRESSURE REGULATOR. USE THE DECODER BELOW FOR MULTIPLE VALVE SCHEDULING: -FD-101-TURF: ONE ADDRESS - CONTROLLING ONE VALVE -FD-102-TURF: ONE ADDRESS - CONTROLLING TWO VALVES SIMULTANEOUSLY -FD-202-TURF: TWO ADDRESSES - EACH CONTROLLING TWO VALVES SIMULTANEOUSLY -FD-401-TURF: FOUR ADDRESSES - EACH CONTROLLING ONE VALVE -FD-601-TURF: SIX ADDRESSES - EACH CONTROLLING ONE VALVE	DETAIL 5/SHEET 37
FS	RAINBIRD	FS200B	2.0" FLOW SENSOR W/ FD-101-TURF DECODER, INSTALL PER MANUFACTURE RECOMMENDATIONS	DETAIL 18/SHEET 38
QC	RAINBIRD	33DRC	3/4" BRASS QUICK COUPLER VALVE, TWO PIECE BODY WITH LOCK	DETAIL 10/SHEET 38
	CITY APPROVED	CITY APPROVED	2.0" GATE VALVE, SEE POINT OF CONNECTION SCHEMATIC DIAGRAMS	DETAIL 13/SHEET 38
	ANY APPROVED	ANY APPROVED	BALL VALVE - SIZE PER MAINLINE SIZE	DETAIL 7/SHEET 37
LSP	RAINBIRD	LSP-1 TURF	LINE SURGE PROTECTION, SOLO INSTALLATION, INSTALL PER PLAN, EVERY 500', OR EVERY 8 DECODERS, WHICHEVER IS SMALLER	DETAIL 14/SHEET 38
SB	CARSON	910-12B	2-WIRE SPLICE BOX AT BRANCHES	DETAIL 9/SHEET 37

SLEEVING / WIRING NOTES

-USE ONLY MAXI CABLE FOR 2-WIRE PATH APPLICATIONS PER MANUFACTURE'S RECOMMENDATIONS. USE ONLY 3M DBR/Y-6 SPLICE KITS FOR ALL ELECTRICAL WIRING CONNECTIONS TO THE 2-WIRE PATH. IMPROPER WIRING CAN CAUSE SERIOUS DAMAGE TO YOUR CONTROLLER OR IRRIGATION SYSTEM.
-IN ADDITION TO PROVIDING SLEEVES FOR ALL PIPING UNDER ROADWAYS AND WALKWAYS, PROVIDE AND INSTALL SCH. 40 PVC SLEEVES FOR ALL WIRES OCCURRING UNDER ALL ROADWAYS AND WALKWAYS. SLEEVES FOR CONTROLLER WIRES SHALL BE 2" DIA. AND CONTAIN NO MORE THAN 25 WIRES.



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THE YARD AT LONE TREE

LONE TREE, COLORADO

ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL
	06.17.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

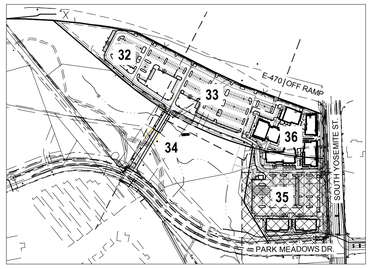
Project No:	ADP000002.01
Drawn By:	SRA
Checked By:	KL
Date:	03/29/16

CONCEPTUAL IRRIGATION PLAN

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22



KEY PLAN

1" = 400'-0"

N

CONCEPTUAL IRRIGATION LEGEND

- OVERHEAD SPRAY IRRIGATION
- DRIP IRRIGATION
- NON-IRRIGATED OVERLOT SEED
- IRRIGATED GRASS / WILDFLOWER SEED

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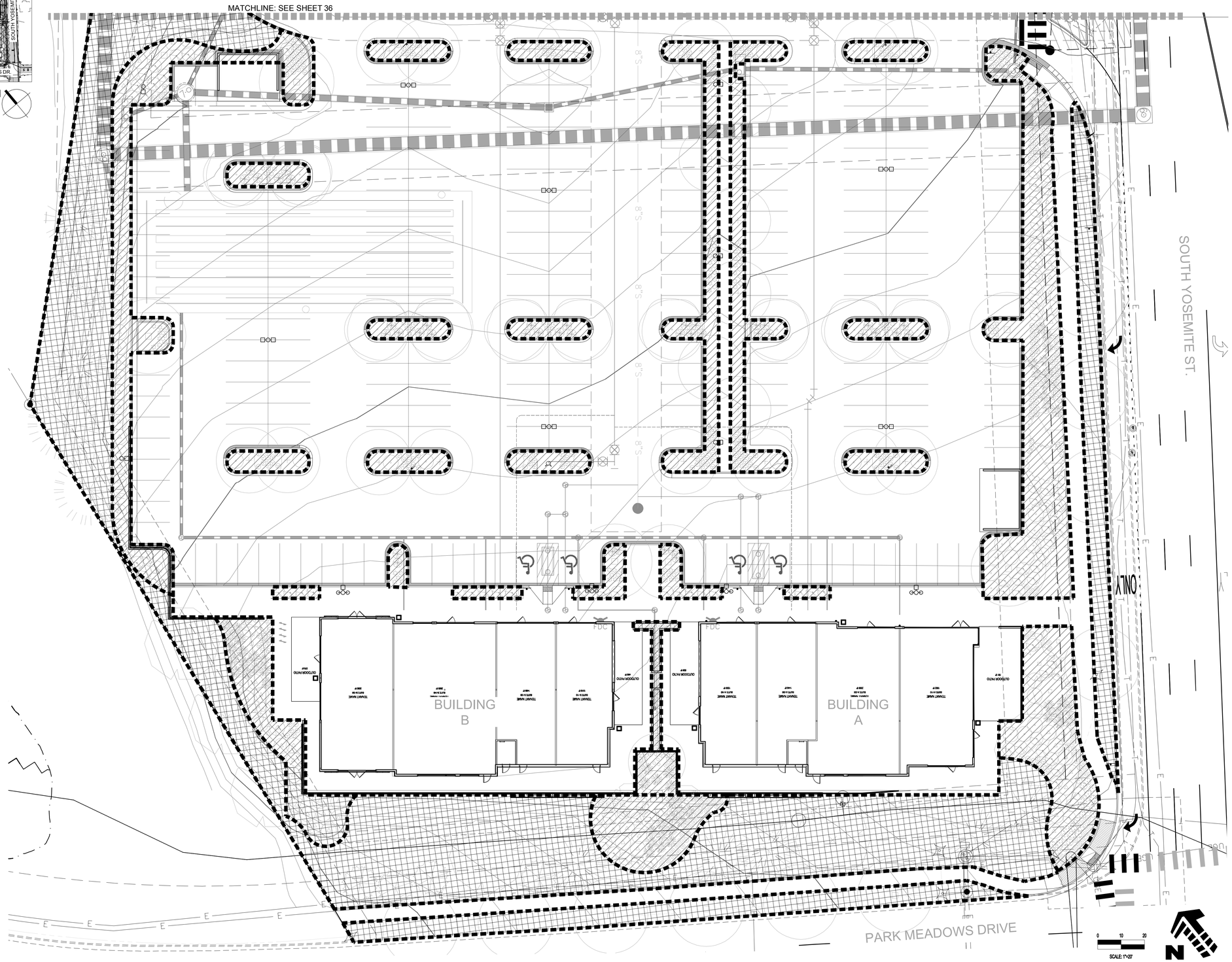

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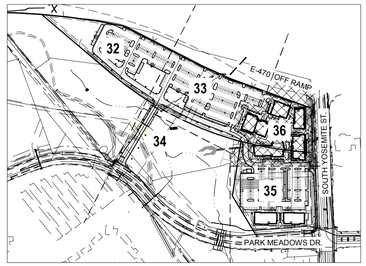


KEY PLAN

1" = 400'-0"

CONTROLLER NOTE

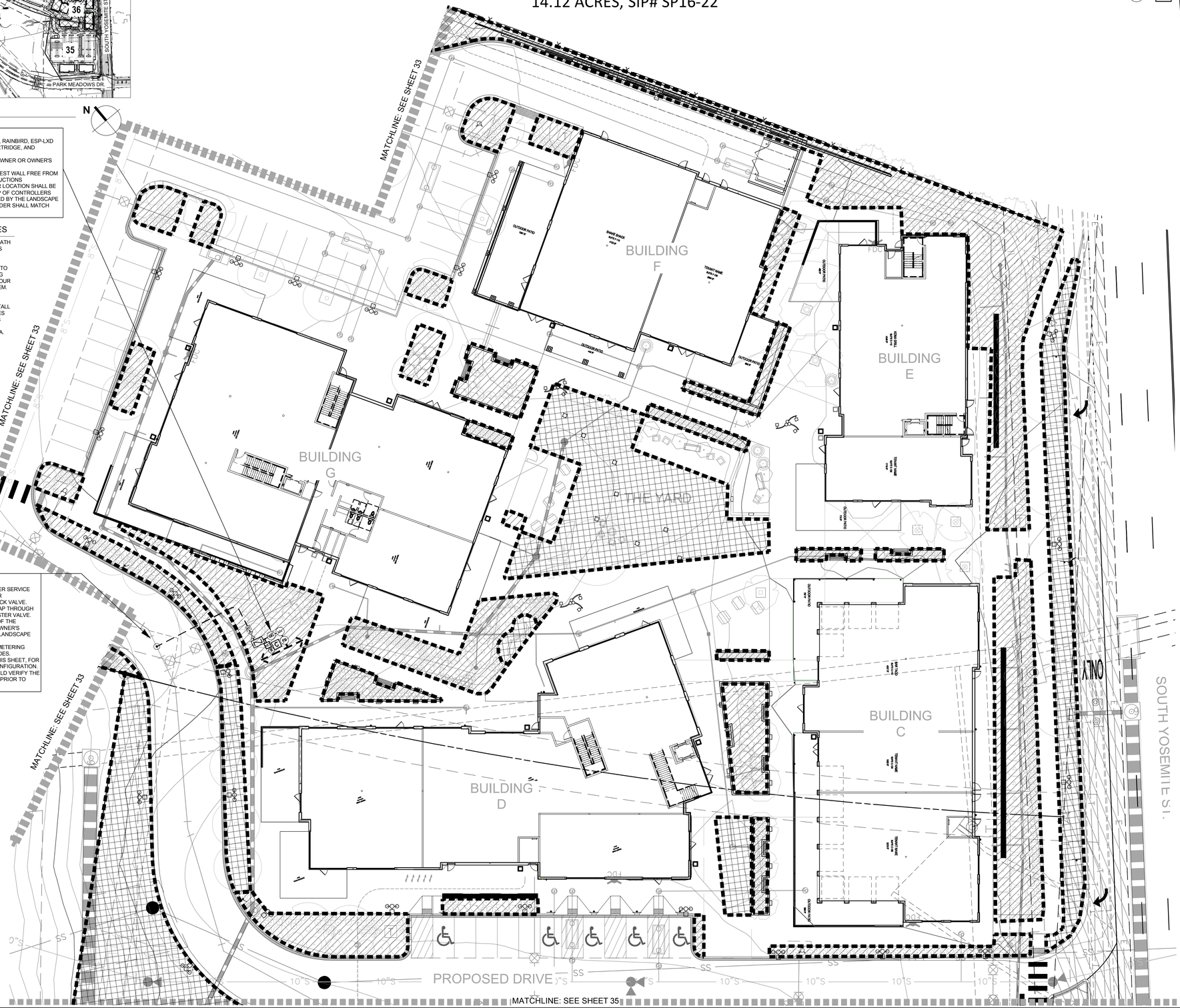
- CONTROLLER TO BE A TWO-WIRE, RAINBIRD, ESP-LXD WITH PBC-LXD, ET MANAGER CARTRIDGE, AND RAIN/FREEZE/FLOW SENSING.
  VERIFY LOCATION IN FIELD WITH OWNER OR OWNER'S REPRESENTATIVE
- PLACE RAIN SENSOR ATOP NEAREST WALL FREE FROM OVERHANGS AND OTHER OBSTRUCTIONS
- 120 VAC POWER TO CONTROLLER LOCATION SHALL BE PROVIDED BY OTHERS. HOOK-UP OF CONTROLLERS TO 120 VAC SHALL BE PERFORMED BY THE LANDSCAPE CONTRACTOR. STATION RUN ORDER SHALL MATCH PLANS.

SLEEVING / WIRING NOTES

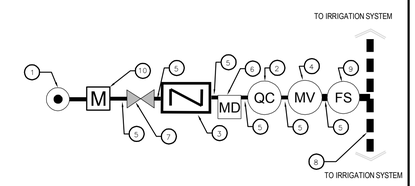
-USE ONLY MAXI CABLE FOR 2-WIRE PATH APPLICATIONS PER MANUFACTURES RECOMMENDATIONS. USE ONLY 3M DBR/Y-6 SPLICE KITS FOR ALL ELECTRICAL WIRING CONNECTIONS TO THE 2-WIRE PATH. IMPROPER WIRING CAN CAUSE SERIOUS DAMAGE TO YOUR CONTROLLER OR IRRIGATION SYSTEM.
-IN ADDITION TO PROVIDING SLEEVES FOR ALL PIPING UNDER ROADWAYS AND WALKWAYS, PROVIDE AND INSTALL SCH. 40 PVC SLEEVES FOR ALL WIRES OCCURRING UNDER ALL ROADWAYS AND WALKWAYS. SLEEVES FOR CONTROLLER WIRES SHALL BE 2" DIA. AND CONTAIN NO MORE THAN 25 WIRES.

POINT OF CONNECTION

- USE 2" TAP AND POTABLE MAINLINE WATER SERVICE FOR THE IRRIGATION SYSTEM. TAP AFTER METER/BEFORE BUILDING'S DOUBLE CHECK VALVE.
- 2" TYPE K COPPER SERVICE FROM THE TAP THROUGH THE IRRIGATION BACKFLOW, TO THE MASTER VALVE.
- CONTRACTOR SHALL VERIFY LOCATION OF THE EQUIPMENT, IN FIELD WITH OWNER OR OWNER'S AUTHORIZED REPRESENTATIVE AND/OR LANDSCAPE ARCHITECT.
- CONFIRM BACKFLOW PROTECTION AND METERING REQUIREMENTS WITH LOCAL / STATE CODES.
- SEE POINT OF CONNECTION DIAGRAM, THIS SHEET, FOR THE IRRIGATION SYSTEM EQUIPMENT CONFIGURATION.
- THE IRRIGATION CONTRACTOR SHALL FIELD VERIFY THE STATIC & OPERATING WATER PRESSURE PRIOR TO CONSTRUCTION.



POINT OF CONNECTION SCHEMATIC DIAGRAM



1. 2" TAP INTO IRRIGATION WATER MAINLINE
2. QUICK COUPLER/FOR BLOW OUT
3. 2" BACKFLOW DEVICE
4. 2" MASTER VALVE
5. 2" TYPE K COPPER WATER PIPE
6. MANUAL DRAIN VALVE
7. 2" GATE VALVE
8. CLASS 200 PLASTIC PIPE
9. FLOW SENSOR
10. DOMESTIC WATER METER, SEE CIVIL

WINTERIZATION PROCEDURES:
TURN OFF SYSTEM @ GATE VALVE BEFORE WATER METER. OPEN ONE CONTROL VALVE TO RELIEVE PRESSURE SLOWLY OPEN BLOW OUT VALVE. REPEAT PROCEDURE FOR ALL BLOW OUT VALVES ALONG IRRIGATION MAINLINE.

CONCEPTUAL IRRIGATION LEGEND

- OVERHEAD SPRAY IRRIGATION
- DRIP IRRIGATION
- NON-IRRIGATED OVERLOT SEED
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IRRIGATION DISCLAIMER

1. IRRIGATION DESIGN IS NOT AN EXACT SCIENCE. IT IS BASED ON THEORIES, ASSUMPTIONS, AND/OR INFORMATION PROVIDED BY CIVIL MODELS/UTILITIES/MUNICIPALITIES ENTITIES AND THUS DIAGRAMMATIC IN NATURE.
2. CONTRACTOR SHALL INSTALL MAINLINES ±12" FROM PAVEMENT EDGE IN PLANTING AREAS. ALL PIPING, VALVES, AND OTHER EQUIPMENT SHOWN WITHIN PAVED AREAS OR OUT OF PROPERTY BOUNDARIES ARE FOR DESIGN CLARIFICATION ONLY, AND SHALL BE INSTALLED IN PLANTING AREAS WITHIN THE PROPERTY LINES OR LIMITS AS INDICATED ON THESE PLANS.
3. THE IRRIGATION CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL ABOVE-GRADE AND VISIBLE IRRIGATION EQUIPMENT (CONTROLLERS, BACKFLOW PREVENTERS, METER PITS, ETC.) WITH THE OWNER'S AUTHORIZED REPRESENTATIVE AND / OR LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. THE INSTALLATION OF THESE ITEMS SHALL BE INTEGRATED WITHIN DESIGNATED LANDSCAPE AREAS. FAILURE TO LOCATE THIS EQUIPMENT IN AN APPROVED LOCATION MAY RESULT IN THE IRRIGATION CONTRACTOR BEING REQUIRED TO MOVE SUCH ITEMS AT HIS OWN COST.
4. THE IRRIGATION SYSTEM DESIGN IS BASED ON THE MINIMUM OPERATING PRESSURE AND THE MAXIMUM FLOW DEMAND SHOWN ON THE DRAWINGS. THE IRRIGATION CONTRACTOR SHALL FIELD VERIFY THE STATIC & OPERATING WATER PRESSURE PRIOR TO CONSTRUCTION OF ANY COMPONENT OF THE IRRIGATION SYSTEM. AFTER FIELD VERIFICATION, THE IRRIGATION CONTRACTOR SHALL NOTIFY THE OWNER, OWNER'S REPRESENTATIVE, LANDSCAPE ARCHITECT, & IRRIGATION DESIGNER OF THE PRESSURE READING FOR THE TAP.
5. ALL PRESSURIZED MAINLINES, VALVES, DRIP, AND ROTOR AND SPRAY HEADS SHALL BE INSTALLED A MINIMUM OF 3' AWAY FROM ANY BUILDING FOUNDATION. IF THIS EQUIPMENT IS SHOWN WITHIN THE 3' OFFSET ON THESE PLANS, IT IS FOR THE PURPOSE OF GRAPHIC CLARITY ONLY.

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0 10 20
SCALE: 1"=20'

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THE YARD AT LONE TREE
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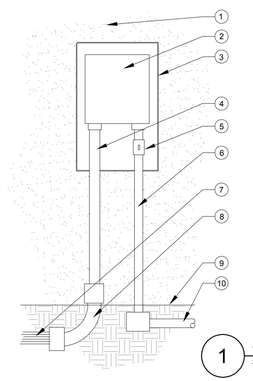
CONCEPTUAL IRRIGATION PLAN

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22

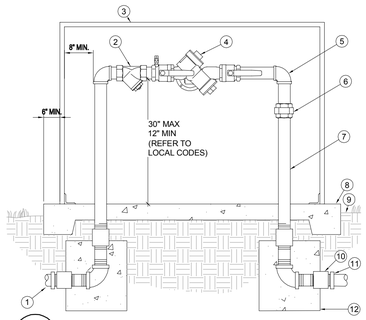


NOTE: CONTRACTOR SHALL PROVIDE AND INSTALL AN EIGHT FOOT LONG COPPER GROUNDING ROD INTO THE GROUND FOR CONTROLLER. PROVIDE PROPER INSTALLATION FOR CONTROLLER PER MANUFACTURER RECOMMENDATIONS.

NOTE: VERIFY FINAL LOCATION WITH OWNER PRIOR TO INSTALLATION

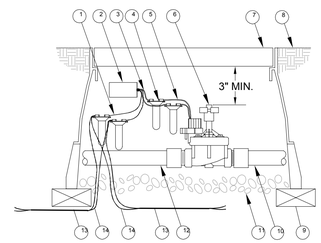
1. INTERIOR/EXTERIOR WALL
2. CONTROLLER PER LEGEND
3. LOCKING VANDAL-RESISTANT ENCLOSURE. ATTACH TO WALL PER MANUFACTURER'S SPECIFICATIONS.
4. PVC CONDUIT FOR CONTROL WIRES
5. POWER SWITCH
6. 120 VOLT POWER WIRES IN CONDUIT. INSTALL PER ALL APPLICABLE CODES.
7. CONTROL WIRES
8. INSTALL PVC SWEEP 1'-6" BELOW FINISH GRADE. WIRES SHALL SHARE MAINLINE TRENCHING WHEREVER POSSIBLE.
9. FINISH GRADE
10. ELECTRICAL SOURCE PER ALL APPLICABLE ELECTRICAL CODES

1 CONTROLLER
SCALE: NTS



1. TO POINT OF CONNECTION- ADAPT AS NECESSARY ALL WORK SHALL CONFORM TO ALL APPLICABLE CODES
2. BRASS WYE STRAINER W/60 MESH SCREEN
3. ENCLOSURE PER IRRIGATI0N LEGEND
4. BACKFLOW PREVENTER UNIT
5. BRASS 90 DEGREE ELLS (TYP.)
6. BRASS UNION (TYPICAL)
7. BRASS NIPPLES (TYPICAL)
8. 4" CONCRETE PAD - SLOPE TO DRAIN AWAY FROM BACKFLOW PREVENTER
9. FINISH GRADE 2" BELOW PAD
10. BRASS COUPLING
11. PIPE ADAPTER AND MAINLINE PIPE
12. 12"X12"X12" THRUST BLOCKS

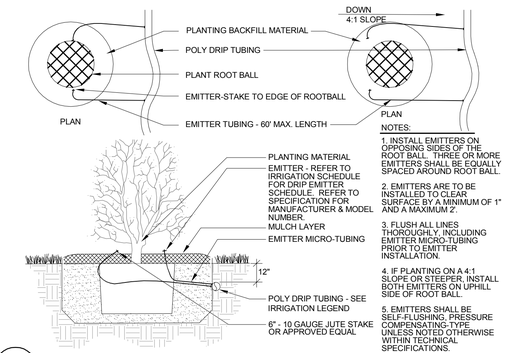
2 BACKFLOW PREVENTER, REDUCED PRESSURE
SCALE: NTS



1. BLUE WIRE FROM FIELD DECODER (1 OF 2)
2. FIELD DECODER: RAIN BIRD FD-101TURF M13011 DECODER OR FD-102TURF M13004 DECODER
3. WHITE WIRE FROM FIELD DECODER (1 OF 2)
4. DB SERIES WIRE CONNECTOR: RAIN BIRD DBTWC25 (1 OF 4)
5. SOLENOID WIRE (1 OF 2)
6. RAIN BIRD REMOTE CONTROL VALVE
7. 12-INCH VALVE BOX WITH COVER: RAIN BIRD VB-STD
8. FINISH GRADE OR TOP OF MULCH
9. BRICK (1 OF 4)
10. PVC MAINLINE PIPE
11. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
12. PVC LATERAL PIPE
13. TWO-WIRE CABLE TO NEXT DEVICE (FIELD DECODER, SENSOR DECODER, LINE SURGE PROTECTOR OR ESP-LXD CONTROLLER)
14. COMMUNICATION WIRE TO NEXT DEVICE (FIELD DECODER, SENSOR DECODER, LINE SURGE PROTECTOR OR ESP-LXD CONTROLLER)

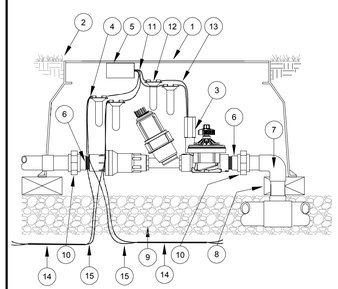
NOTES:
1. MAXIMUM LENGTH OF SECONDARY WIRE PATH (14 AWG) FROM FIELD DECODER TO SOLENOID IS 450 FEET.
2. PLACE 3 FEET OF EXTRA WIRE IN EVERY VALVE BOX FOR EASIER SERVICING.

3 REMOTE CONTROL VALVE
SCALE: NTS



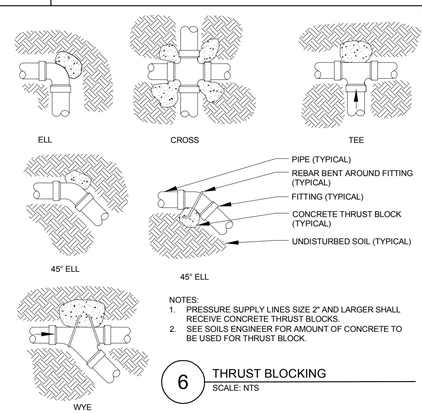
NOTES:
1. INSTALL EMITTERS ON OPPOSING SIDES OF THE ROOT BALL. THREE OR MORE EMITTERS SHALL BE EQUALLY SPACED AROUND ROOT BALL.
2. EMITTERS ARE TO BE INSTALLED TO CLEAR SURFACE BY A MINIMUM OF 1" AND A MAXIMUM 2'.
3. FLUSH ALL LINES THOROUGHLY, INCLUDING EMITTER MICRO-TUBING PRIOR TO EMITTER INSTALLATION.
4. IF PLANTING ON A 4:1 SLOPE OR STEEPER, INSTALL BOTH EMITTERS ON UPHILL SIDE OF ROOT BALL.
5. EMITTERS SHALL BE SELF-FLUSHING, PRESSURE COMPENSATING-TYPE UNLESS NOTED OTHERWISE WITHIN TECHNICAL SPECIFICATIONS.

4 DRIP EMITTERS LAYOUT
SCALE: NOT TO SCALE



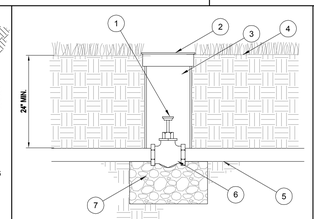
1. JUMBO VALVE BOX EQUIPMENT TYPE BRAND ONTO BOX LID
2. FINISH GRADE
3. DRIP ZONE KIT MODEL ICZ WITH FILTER (TIP 45 DEGREES)
4. BLUE WIRE FROM FIELD DECODER (1 OF 2)
5. FIELD DECODER: RAIN BIRD FD-101TURF M13011 DECODER OR FD-102TURF M13004 DECODER
6. SCH 80 T.O.E. NIPPLE
7. MAIN LINE PIPE & FITTINGS
8. BRICK SUPPORTS (4)
9. 3/4" MINUS WASHED GRAVEL
10. PVC SLIP UNIONS
11. WHITE WIRE FROM FIELD DECODER (1 OF 2)
12. DB SERIES WIRE CONNECTOR: RAIN BIRD DBTWC25 (1 OF 4)
13. SOLENOID WIRE (1 OF 2)
14. TWO-WIRE CABLE TO NEXT DEVICE (FIELD DECODER, SENSOR DECODER, LINE SURGE PROTECTOR OR ESP-LXD CONTROLLER)
15. COMMUNICATION WIRE TO NEXT DEVICE (FIELD DECODER, SENSOR DECODER, LINE SURGE PROTECTOR OR ESP-LXD CONTROLLER)

5 REMOTE CONTROL DRIP VALVE
SCALE: NTS



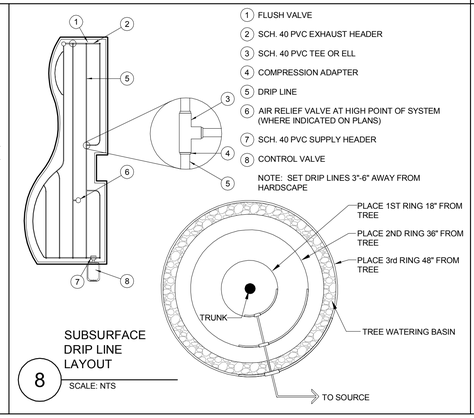
NOTES:
1. PRESSURE SUPPLY LINES SIZE 2" AND LARGER SHALL RECEIVE CONCRETE THRUST BLOCKS.
2. SEE SOILS ENGINEER FOR AMOUNT OF CONCRETE TO BE USED FOR THRUST BLOCK.

6 THRUST BLOCKING
SCALE: NTS



1. KEY HEAD PER HEAD
2. 9" ROUND VALVE BOX-EQUIPMENT TYPE BRAND ONTO BOX LID
3. 4" PVC SLEEVE
4. FINISH GRADE AT 1" BELOW TOP OF BOX IN TURF AREAS; 2" BELOW TOP OF BOX IN SHRUB/GROUNDCOVER AREAS
5. IRRIGATION MAINLINE
6. MANUAL GATE VALVE (SIZED PER MAINLINE)
7. 1' DIA. x 12-INCH MINIMUM DEPTH OF 3/4-INCH CRUSHED ROCK

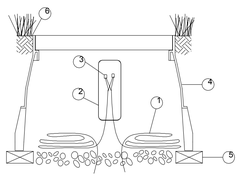
7 GATE VALVE
SCALE: NTS



1. FLUSH VALVE
2. SCH. 40 PVC EXHAUST HEADER
3. SCH. 40 PVC TEE OR ELL
4. COMPRESSION ADAPTER
5. DRIP LINE
6. AIR RELIEF VALVE AT HIGH POINT OF SYSTEM (WHERE INDICATED ON PLANS)
7. SCH. 40 PVC SUPPLY HEADER
8. CONTROL VALVE

NOTE: SET DRIP LINES 3"-6" AWAY FROM HARDSCAPE

8 SUBSURFACE DRIP LINE LAYOUT
SCALE: NTS



1. PE-CABLE (36-INCH LOOP)
2. PREFORMED SUPER SERVISEAL WATERPROOF WIRE SPLICE KIT
3. 3M UAL CONNECTIORS (SPLICE ALL WIRE PAIRS)
4. SPLICE BOX WITH COVER
5. BRICK (1 OF 2)
6. FINISH GRADE

9 2-WIRE PATH SPLICE BOX
SCALE: NOT TO SCALE

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THE YARD AT LONE TREE
LONE TREE, COLORADO
ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL
	06.17.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

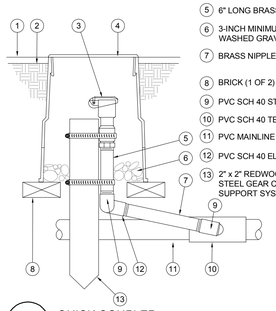
Project No:	ADP000002.01
Drawn By:	SRA
Checked By:	KL
Date:	03/29/16

CONCEPTUAL IRRIGATION DETAILS

SITE IMPROVEMENT PLAN

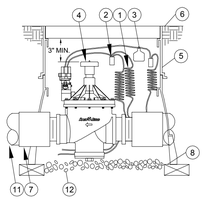
THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22



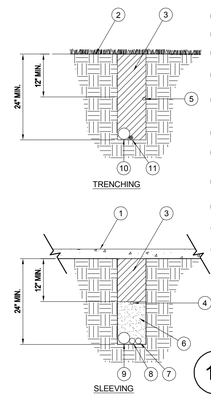
1. TOP OF MULCH
2. FINISHED GRADE-1" BELOW TOP OF BOX IN TURF AREAS, 2" IN SHRUB AREAS
3. QUICK-COUPLING VALVE
4. 10" ROUND PLASTIC VALVE BOX BY CARSON (OR EQUAL) EQUIPMENT TYPE BRAND ONTO BOX LID
5. 6" LONG BRASS NIPPLE
6. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
7. BRASS NIPPLE (LENGTH AS REQUIRED)
8. BRICK (1 OF 2)
9. PVC SCH 40 STREET ELL
10. PVC SCH 40 TEE OR ELL
11. PVC MAINLINE PIPE
12. PVC SCH 40 ELL
13. 2" x 2" REDWOOD STAKE WITH STAINLESS STEEL GEAR CLAMPS OR EQUIVALENT SUPPORT SYSTEM

10 QUICK COUPLER
SCALE: NTS



1. 2-WIRE RAINBIRD TYPICAL INSTALLATION
2. WATERPROOF CONNECTION: RAIN BIRD SPLICE-1 (1 OF 2)
3. ID TAG: RAIN BIRD VID SERIES
4. REMOTE CONTROL VALVE: RAIN BIRD EFB-CP WITH BSP THREADS
5. VALVE BOX WITH COVER-EQUIP TYPE BRAND ONTO BOX LID: RAIN BIRD VB-STD WITH 6-INCH EXTENSION
6. FINISH GRADE/TOP OF MULCH
7. PVC REDUCING MALE ADAPTER
8. BRICK (1 OF 4)
9. MAINLINE PIPE
10. DUCTILE IRON SERVICE TEE
11. PVC LATERAL PIPE
12. 3.0-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL

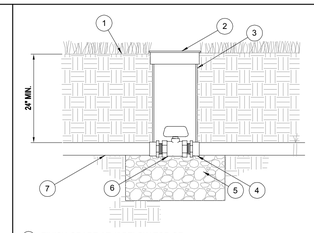
11 MASTER VALVE
SCALE: NOT TO SCALE



1. PAVEMENT SURFACE
2. FINISH GRADE
3. TRENCH BACKFILL
4. LOCATOR WIRE W/BURIED CAUTION TAPE
5. PVC IRRIGATION LATERAL - BURIED MIN. 12" BELOW GRADE
6. SAND BACKFILL
7. PVC LATERAL SLEEVE SEE PLANS FOR SIZE
8. 2" MIN. PVC WIRE SLEEVE FOR CONTROL WIRES
9. PVC MAINLINE SLEEVE SEE PLANS FOR SIZE
10. PVC IRRIGATION MAINLINE
11. CONTROL WIRES - TAPE TO MAINLINE AT 10' INTERVALS

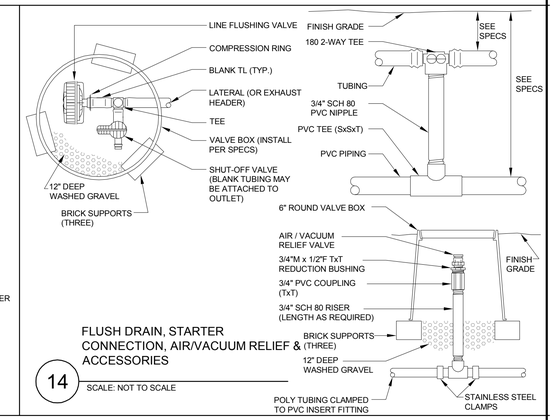
NOTE:
EXTEND SLEEVES INTO LANDSCAPE AREAS 12" BEYOND EDGE OF HARDSCAPE

12 PIPE AND SLEEVE INSTALLATION
SCALE: NTS

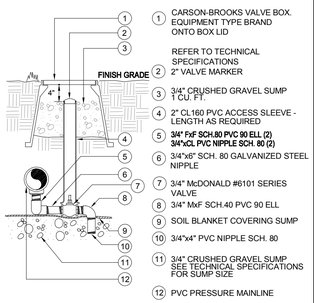


1. FINISH GRADE AT 1" BELOW TOP OF BOX IN TURF AREAS: 2" BELOW TOP OF BOX IN SHRUB/GROUNDCOVER AREAS
2. 9" ROUND VALVE BOX WITH LOCKABLE LID-EQUIPMENT TYPE BRAND ONTO BOX LID
3. EXTENSION SECTION AS NECESSARY TO MEET GRADE
4. PVC MALE ADAPTER
5. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
6. PLASTIC BALL VALVE (SIZED PER MAINLINE)
7. IRRIGATION MAINLINE

13 PLASTIC BALL VALVE
SCALE: NTS

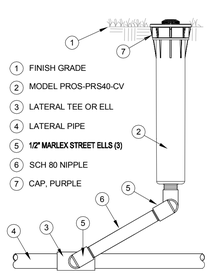


14 FLUSH DRAIN, STARTER CONNECTION, AIR/VACUUM RELIEF & ACCESSORIES
SCALE: NOT TO SCALE



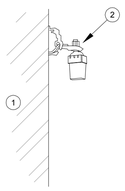
1. CARSON-BROOKS VALVE BOX. EQUIPMENT TYPE BRAND ONTO BOX LID
2. REFER TO TECHNICAL SPECIFICATIONS 2" VALVE MARKER
3. 3/4" CRUSHED GRAVEL SUMP 1 CU. FT.
4. 2" CL160 PVC ACCESS SLEEVE - LENGTH AS REQUIRED
5. 3/4" FxF SCH.80 PVC 90 ELL (2) 3/4"xCL PVC NIPPLE SCH. 80 (2)
6. 3/4"x6" SCH. 80 GALVANIZED STEEL NIPPLE
7. 3/4" McDONALD #6101 SERIES VALVE
8. 3/4" MxF SCH.40 PVC 90 ELL
9. SOIL BLANKET COVERING SUMP
10. 3/4"x4" PVC NIPPLE SCH. 80
11. 3/4" CRUSHED GRAVEL SUMP SEE TECHNICAL SPECIFICATIONS FOR SUMP SIZE
12. PVC PRESSURE MAINLINE

15 MANUAL DRAIN VALVE
SCALE: NTS



1. FINISH GRADE
2. MODEL PROS-PRS40-CV
3. LATERAL TEE OR ELL
4. LATERAL PIPE
5. 1/2" MARLEX STREET ELLS (3)
6. SCH 80 NIPPLE
7. CAP, PURPLE

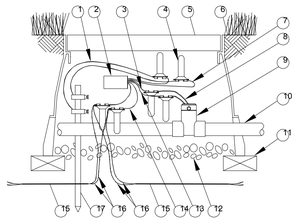
16 MP ROTATOR SPRINKLER
SCALE: NTS



NOTE:
MOUNT ON ANY SURFACE WHERE IT WILL BE EXPOSED TO UNOBSTRUCTED RAINFALL, BUT NOT IN PATH OF SPRINKLER SPRAY.

1. EXTERIOR WALL OR POLL (SEE NOTE)
2. RAIN SENSOR

17 RAIN SENSOR
SCALE: NTS



NOTES:
1. MAXIMUM LENGTH OF SECONDARY WIRE PATH (14 AWG) FROM DECODER TO RELAY IS 450 FEET.
2. PLACE 3-FEET OF EXTRA WIRE IN VALVE BOX FOR EASY SERVICING.
3. IN A SITE CONTROL DECODER SYSTEM A PULSE TRANSMITTER (PT322) SHOULD BE INSTALLED BETWEEN THE SENSOR DECODER AND THE FLOW SENSOR. THIS IS NOT NEEDED IN AN ESP-LXD CONTROLLER SYSTEM.
4. GROUNDING SHOULD BE TO 10 OHMS OR LESS.

1. GREEN/YELLOW WIRE FROM SD-210TURF TO GROUNDING ROD BRASS CLAMP (1 OF 2)
2. SENSOR DECODER: RAIN BIRD SD-210TURF M13009 SENSOR DECODER
3. RED WIRE FROM SD-210TURF TO FLOW SENSOR
4. DB SERIES WIRE CONNECTOR: RAIN BIRD DBTWC25 (1 OF 6)
5. 12-INCH VALVE BOX WITH COVER: RAIN BIRD VB-STD
6. FINISH GRADE OR TOP OF MULCH
7. GROUND WIRE FROM SD-210TURF TO DB SERIES WIRE CONNECTOR (1 OF 2)
8. FLOW SENSOR WIRE (1 OF 2)
9. FLOW SENSOR
10. PVC MAINLINE PIPE
11. BRICK (1 OF 4)
12. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
13. BLACK WIRE FROM SD-210TURF TO FLOW SENSOR
14. BLUE WIRE FROM SD-210TURF (1 OF 2)
15. TWO-WIRE CABLE TO NEXT DEVICE (FIELD DECODER, SENSOR DECODER, LINE SURGE PROTECTOR OR ESP-LXD CONTROLLER)
16. COMMUNICATION WIRE TO NEXT DEVICE (FIELD DECODER, SENSOR DECODER, LINE SURGE PROTECTOR, OR ESP-LXD CONTROLLER)
17. GROUNDING ROD

18 SURGE PROTECTION, SENSOR DECODER AND FLOW SENSOR
SCALE: NOT TO SCALE

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Drawn By:	SRA
Checked By:	KL
Date:	03/29/16

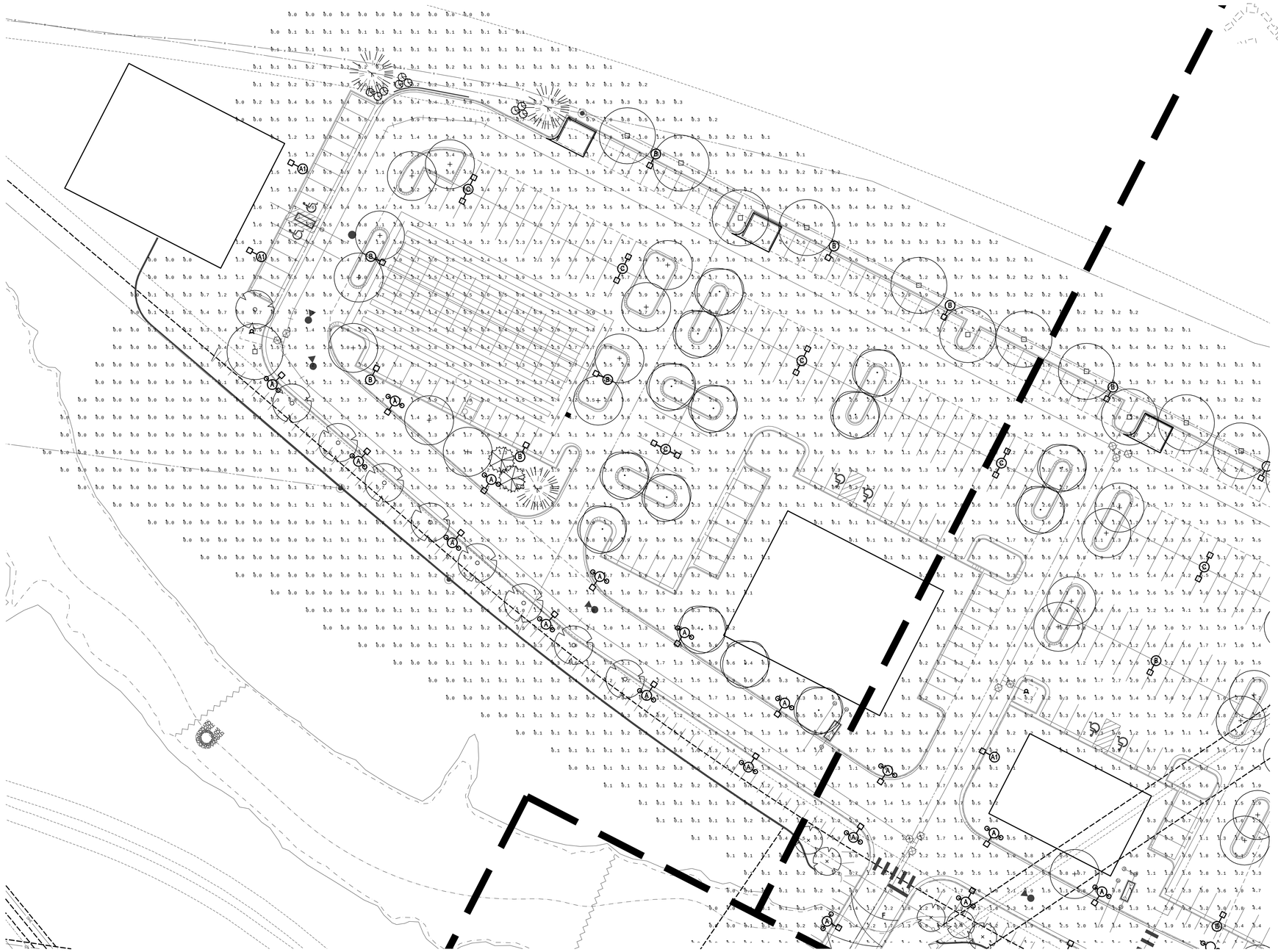
CONCEPTUAL IRRIGATION DETAILS

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E

14.12 ACRES, SIP# SP16-22



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SCALE: 1"=30

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Drawn By:	JDM
Checked By:	DNJ
Date:	03.29.16

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PHOTOMETRIC PLAN

SITE IMPROVEMENT PLAN

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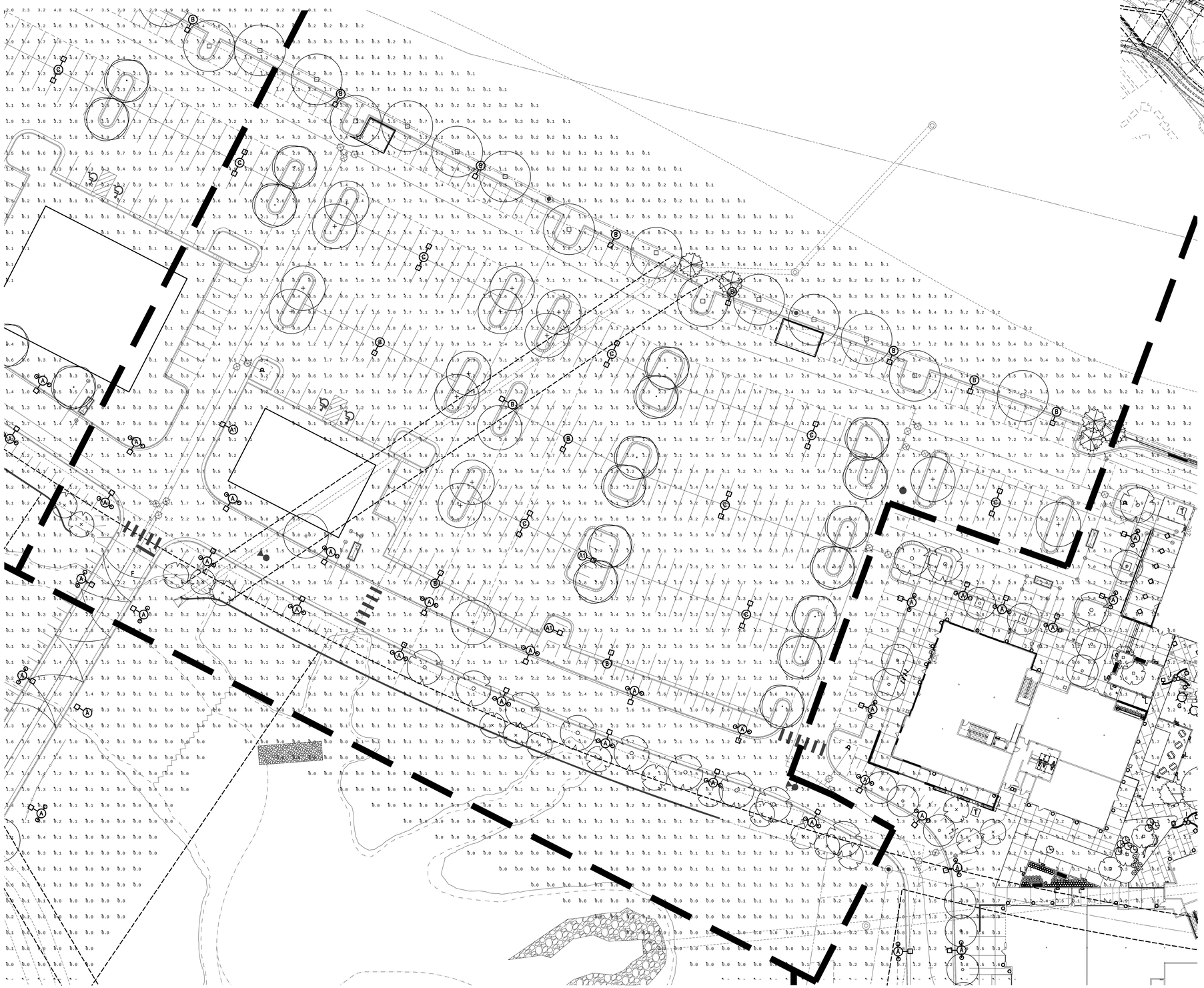

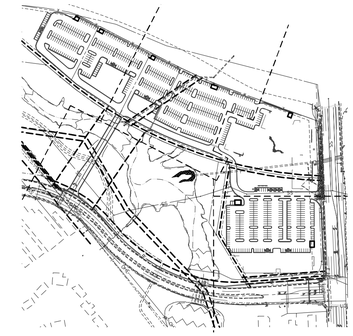

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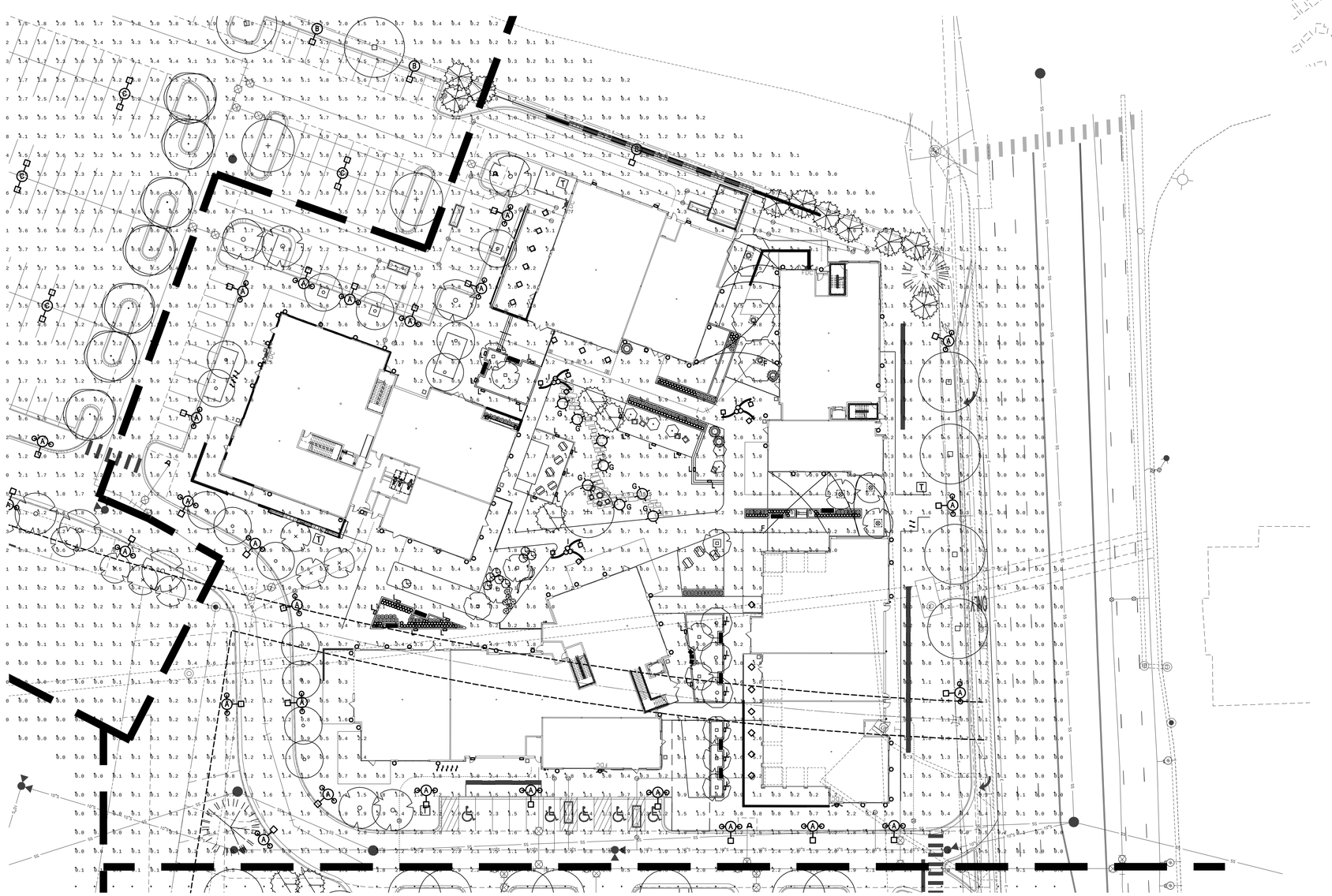

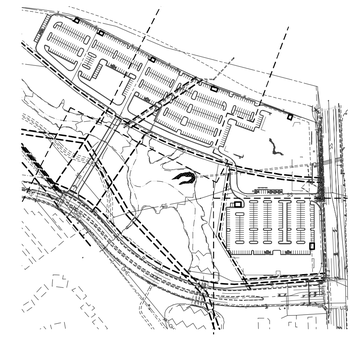

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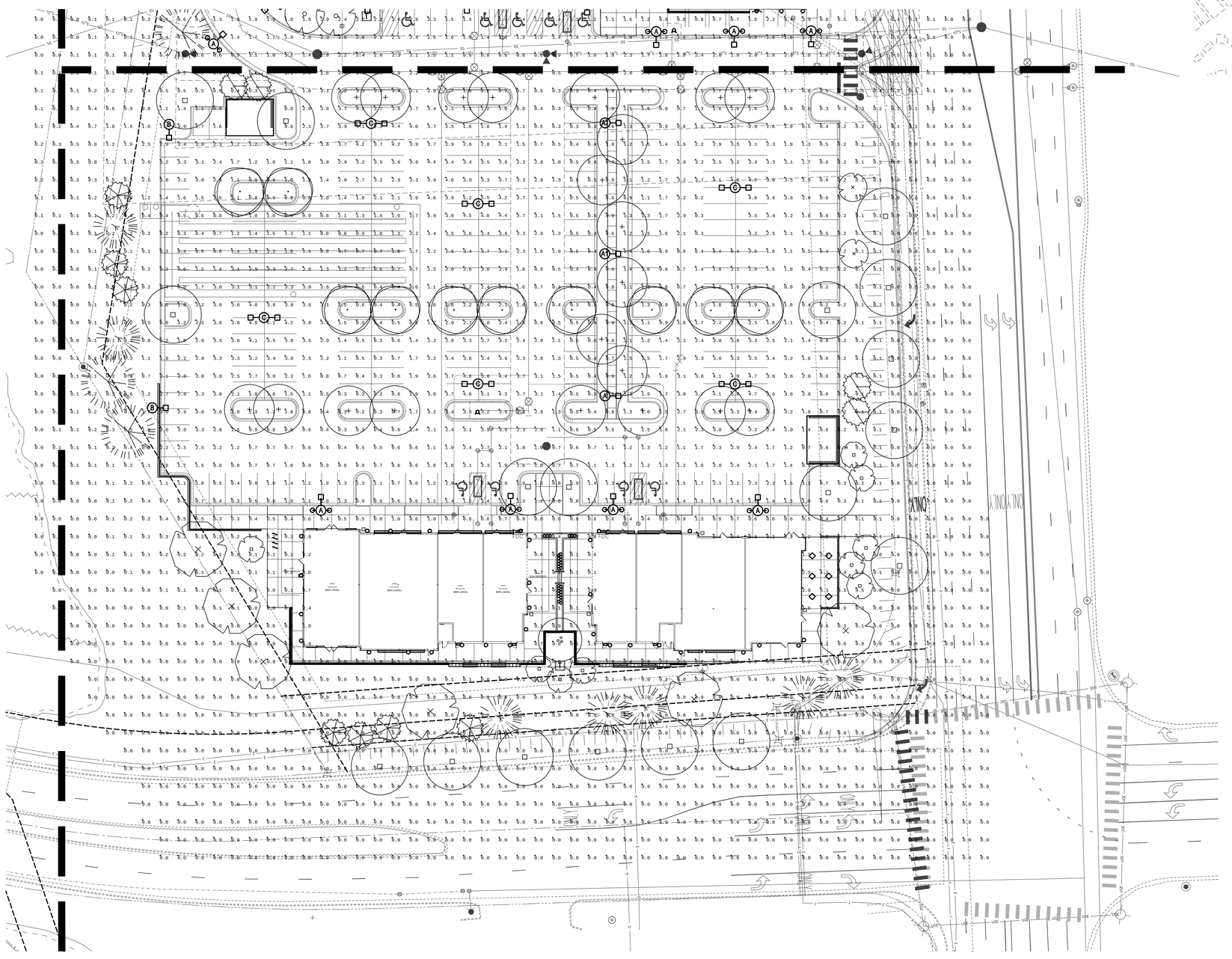

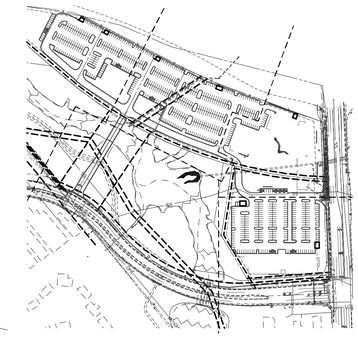

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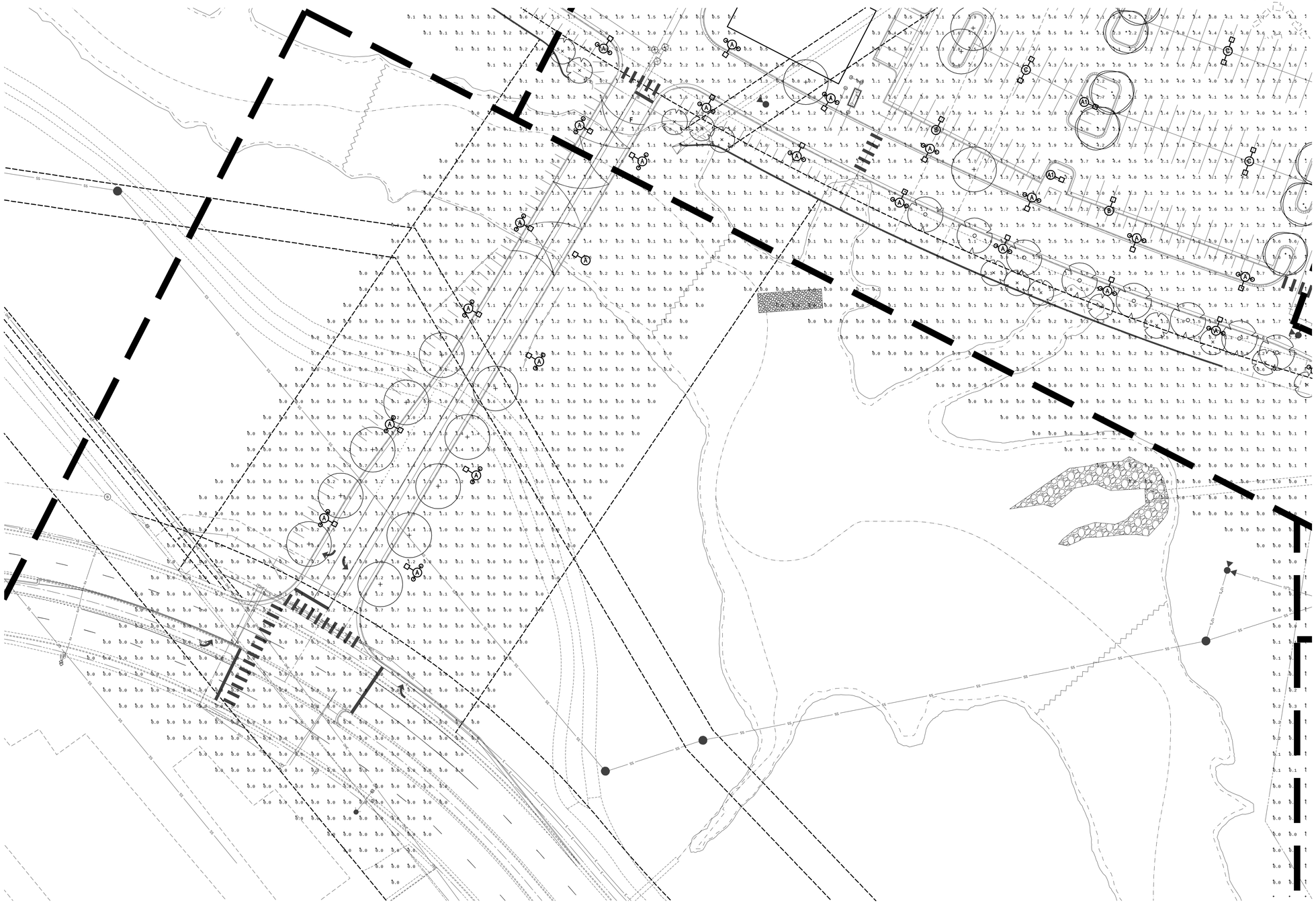

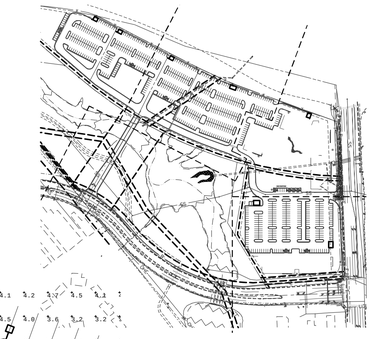

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14.12 ACRES, SIP# SP16-22

SITE LIGHTING SCHEDULE

MARK	MANUFACTURER	CATALOG NO.	BEAM DISTRIB.	LAMP DATA	VOLTS	FIXTURE QUAN. PER POLE	FIXTURE AND POLE FINISH	POLE HT. (FT.)	POLE TYPE	DESCRIPTION	REMARKS
A	KIM	SAR3-P-35-40L-3K-277	TYPE III	LED PROVIDED W/ FIXTURE	120/277	1	LIGHT GREY	15'-0"	SSS	PEDESTRIAN LUMINAIRE	1
A1	KIM	SAR3-P-35-40L-3K-277	TYPE III	LED PROVIDED W/ FIXTURE	120/277	1	LIGHT GREY	15'-0"	SSS	PEDESTRIAN LUMINAIRE	
B	BEACON	VPS-60NB-136-4K-T3-UNV-BBT	TYPE III	LED PROVIDED W/ FIXTURE	120/277	1	BASIC BLACK TEXTURED	22'-0"	SSS	AREA/PARKING LUMINAIRE	
C	BEACON	VPS-60NB-136-4K-T3-UNV-BBT	TYPE III	LED PROVIDED W/ FIXTURE	120/277	2	BASIC BLACK TEXTURED	22'-0"	SSS	AREA/PARKING LUMINAIRE	
D	VISA	OW230-L30-NRW-MED-*COLOR*-JBC	MED (DOWN)/ NRW (UP)	LED PROVIDED W/ FIXTURE	120/277	1	TBD	8'-0"	N/A	WALL	
E	MODERN FORMS	PD-W1915-AL	N/A	LED PROVIDED W/ FIXTURE	120/277	1	BRUSHED ALUMINUM	VARIES	N/A	PENDANT SINGLE BULB	
F	TIVOLI LIGHTING	LSL-B-18-S-35-C-12-PSU	N/A	LED PROVIDED W/ FIXTURE	120/277	SEE PLANS	TBD	VARIES	N/A	FESTOON LIGHTS	
G	STRUCTURA, INC	MAC-II-42-L30-S0-xx-xx-277-STD	N/A	LED PROVIDED W/ FIXTURE	120/277	1	WOOD	42"	N/A	BOLLARD	
H	LSI	XPWS3-FT-LED-28-350-NW-UE-BRZ	TYPE IV	LED PROVIDED W/ FIXTURE	120/277	1	BRONZE	8'-0"	N/A	WALL EGRESS LUMINAIRE	
I	KIM	SAR3-P-35-40L-3K-277	TYPE III	LED PROVIDED W/ FIXTURE	120/276	VARIES	LIGHT GREY	VARIES	REDD	DECORATIVE REED LUMINAIRE	
L	DELTA LIGHT	LOGIC W L 304 32 01 83	N/A	LED PROVIDED W/ FIXTURE	120/277						

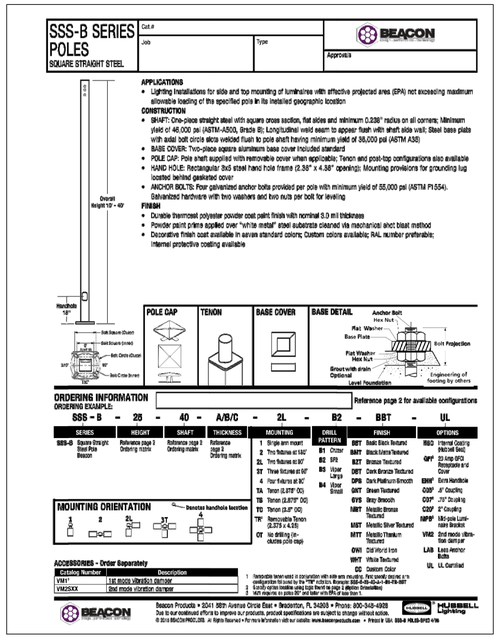
GENERAL NOTES:

a. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS FOR LUMINAIRES, LAMPS, AND BALLASTS.

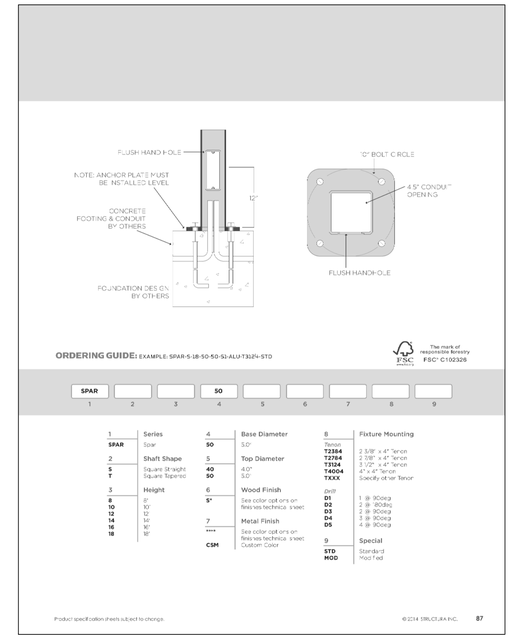
b. CONTRACTOR TO VERIFY LIGHT FIXTURE CATALOG NUMBER AND INSTALLATION REQUIREMENTS PRIOR TO ORDERING.

c. POLE TYPE DESCRIPTION (ABC): A - SHAPE, R-ROUND, S-SQUARE; B - PROFILE, S-STRAIGHT, T-TAPERED; C - MATERIAL, A-ALUMINUM, S-STEEL

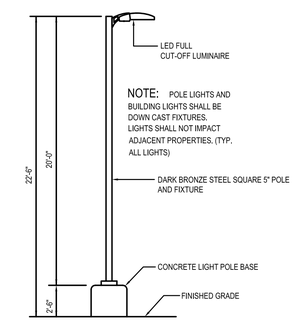
REMARKS:



MANUFACTURER SPECIFICATION SHEET
FOR POLE FIXTURES TYPE 'B AND C'

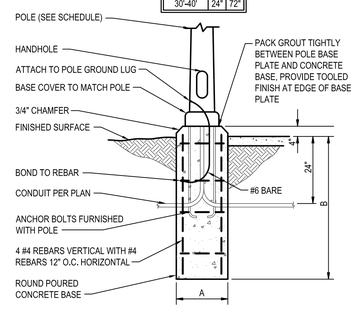


MANUFACTURER SPECIFICATION SHEET
FOR POLE FIXTURE TYPE 'A'



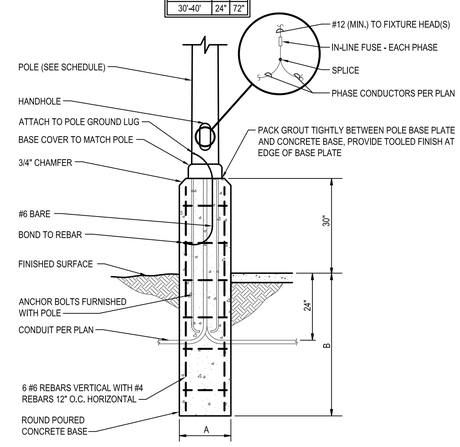
3 AREA LIGHT DETAIL
SCALE: NOT TO SCALE

DIMENSIONS		
POLE HT.	A	B
8'-15'	16"	48"
16'-29'	20"	60"
30'-40'	24"	72"

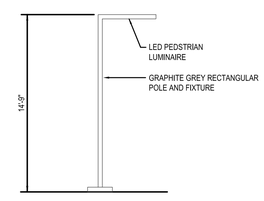


1 POLE BASE GRADE LEVEL
SCALE: NOT TO SCALE

DIMENSIONS		
POLE HT.	A	B
8'-15'	16"	48"
16'-29'	20"	60"
30'-40'	24"	72"



2 POLE BASE ABOVE GRADE
SCALE: NOT TO SCALE



4 PEDESTRIAN LIGHT DETAIL
SCALE: NOT TO SCALE

Galloway
Planning. Architecture. Engineering.
6162 S. Willow Drive, Suite 320
Greenwood Village, CO 80111
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THE YARD AT LONE TREE
LONE TREE, COLORADO
ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL
	06.17.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

Project No:	ADP000002.01
Drawn By:	JDM
Checked By:	DNJ
Date:	03.29.16

SHEET TITLE:
PHOTOMETRIC DETAILS

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22

KIM LIGHTING

SAR
The Archetype® Small PicoPrism™ LED
8/10/15 • kl_sarpled_spec.pdf

Type:
Job:
Catalog number:

Mfg. / Fixture / Electrical Module / Finish / Options (See pages 3-4) / Optional Vertical Slipfitter Mount (See page 4) — See page 2

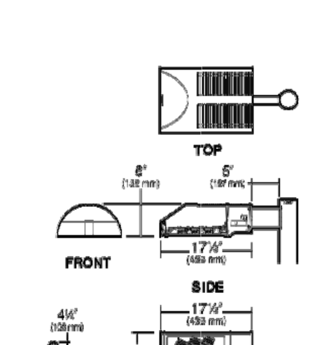
Select pole from Kim Arms and Poles Selection Guide. If pole is provided by others indicate O.D. for arm fitting.

Approvals:

Date:
Page: 1 of 6

Specifications

SAR LED
40 Light Emitting Diodes
46 total System Watts for 350mA
93 total System Watts for 700mA
Maximum Weight is 30 lbs.



IP66 constructed sealed PicoPrism™ optical modules do not require a glass lens and offer improved optical performance. Contact factory if glass lens is required.

Housing: One-piece die-cast, low copper (<0.6% Cu) aluminum alloy with integral cooling ribs over the optical chamber and electrical compartment. Solid barrier wall separates optical and electrical compartments. Double-thick wall with gussets on the support-arm mounting end. Housing forms a half cylinder with 35° front face plane providing a recess to allow a flush single-latch detail. All hardware is stainless steel or electro-zinc plated steel.

Frame: One-piece die-cast, low copper (<0.6% Cu) aluminum alloy lens frame with 1" minimum depth around the gasket flange. Integral hinges with stainless steel pins provide no-tool mounting and removal from housing. Single die-cast aluminum cam-latch provides positive locking by a one-piece extruded and vulcanized silicone gasket.

Electronic Module: All electrical components are UL and CSA recognized, mounted on a single plate and factory prewired with quick-disconnect plugs. Module includes a driver, thermal control device and surge protector. Electrical module attaches to housing with no-tool hinges and latches, accessible by opening the frame only. Driver is rated for -40°F starting.

Optical Module: Precision, IP66 replaceable PicoPrism™ modules are positioned to achieve directional control toward desired task. The entire light engine fastens to the housing as a one-piece module.

Dimming: Driver has a 0-10V dimming interface with a dimming range of 10-100%. Approved dimmers include Lutron Diva AVTV, Lutron Nova NFTV and NTFTV. Note: Not compatible with current sourcing dimmers.

Support Arm: One-piece extruded aluminum with internal bolt guides and fully radiussed top and bottom. Luminaire-to-pole attachment is by internal draw bolts, and includes a pole reinforcing plate with wire strain relief. Arm is circular cut for specified round pole.

Finish: Each luminaire receives a fade and abrasion resistant, electrostatically applied, thermally cured, triglycidal isocyanurate (TGIC) polyester powdercoat finish. Standard colors include (BL) Black, (DB) Dark Bronze, (WH) White, (PS) Platinum Silver, (SG) Stealth Gray, (LG) Light Gray, and (CC) Custom Color (Include RAL#).

Listed to: UL 1598 Standard for Luminaires - UL 8750 Standard for Safety for Light Emitting Diode (LED) Equipment for use in Lighting Products and CSA C22.2#250.0 Luminaires. RoHS compliant. Meets Buy American provisions within ARRA.

Warranty: Kim Lighting warrants The Archetype LED products ("Product(s)") sold by Kim Lighting to be free from defects in material and workmanship for (i) a period of five (5) years for metal parts, (ii) a period of ten (10) years for exterior housing paint finish(s), (iii) a period of six (6) years for LED Light Engines (PicoPrisms™ and, (iv) a period of five (5) years for LED power components (LED Driver, LifeShield® device), from the date of sale of such goods to the buyer as specified in Kim Lighting shipment documents for each product. Occupancy sensors, Surge Protector, dimmers and relay wiring components are covered by the manufacturer's warranty.

CAUTION: Fixtures must be grounded in accordance with national, state and/or local electrical codes. Failure to do so may result in serious personal injury.

HUBBELL US Patent Number D674,985 S.

KIM LIGHTING RESERVES THE RIGHT TO CHANGE SPECIFICATIONS WITHOUT NOTICE.

KIM LIGHTING

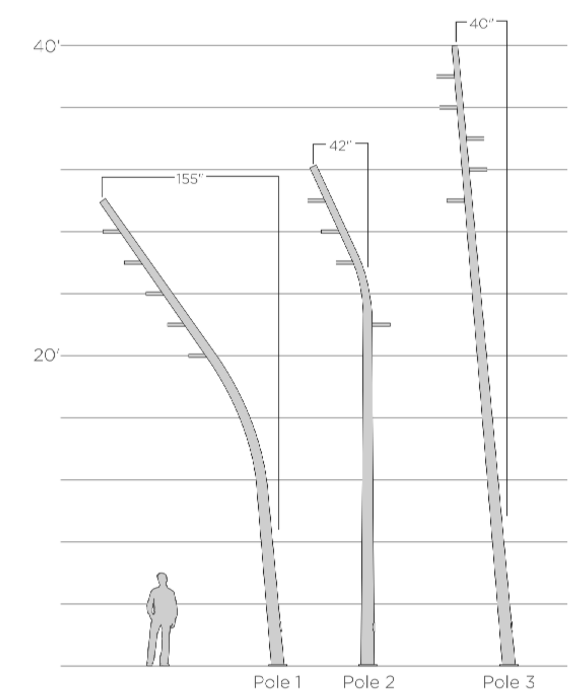
SAR
The Archetype® Small PicoPrism™ LED
8/10/15 • kl_sarpled_spec.pdf

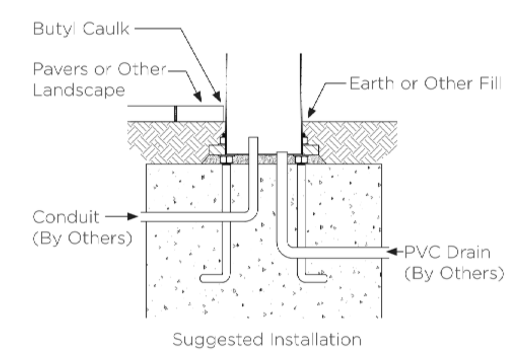
Type:
Job:
Page: 2 of 6

Standard Features

Mounting 3SY configuration is available for round poles only.	Plan View: EPA: 0.7, 1.4, 1.2, 1.9, 1.9, 2.5; Cat. No.: ☐ 1SA ☐ 2SB ☐ 2SL ☐ 3ST ☐ 3SY ☐ 4SC ☐ 1W (Wall Mount)
Fixture Cat. No. designates fixture and optic	SAR _ x _ P _ xx — **Housing Size:** SAR; **Distribution:** ☐ 1 = Type I ☐ 2 = Type II ☐ 3 = Type III ☐ 4 = Type IV ☐ 5 = Type V ☐ L = Type L Left ☐ R = Type R Right; **Optic:** P = PicoPrism™; **Current:** 35 = 350 mA, 70 = 700 mA. Light Distribution: Type I, Type II, Type III, Type IV Forward Throw, Type V Square, Type R Right, Type L Left
Electrical Module	Cat. Nos. for Electrical Modules available: 40L _ xK _ xxx — **Source:** 40L = 40 LED's; **Color Temperature:** ☐ 2K = 580nm - Amber ☐ 3K = 3000K ☐ 4K = 4200K ☐ 5K = 5100K; **Voltage:** ☐ 120 = 120V¹ ☐ 208 = 208V¹ ☐ 240 = 240V¹ ☐ 277 = 277V¹ ☐ 347 = 347V ☐ 480 = 480V. ¹120V through 277V is a variable driver.
Finish TGIC powdercoat	Color: Black, Dark Bronze, Light Gray, Stealth Gray, Platinum Silver, White, Custom Color² — Cat. No.: ☐ BL ☐ DB ☐ LG ☐ SG ☐ PS ☐ WH ☐ CC. ²Custom colors subject to additional charges, minimum quantities and extended lead times. Consult representative. Custom color description: ____

MANUFACTURER SPECIFICATION SHEET FOR PED/DECORATIVE FIXTURES "A" & "I"





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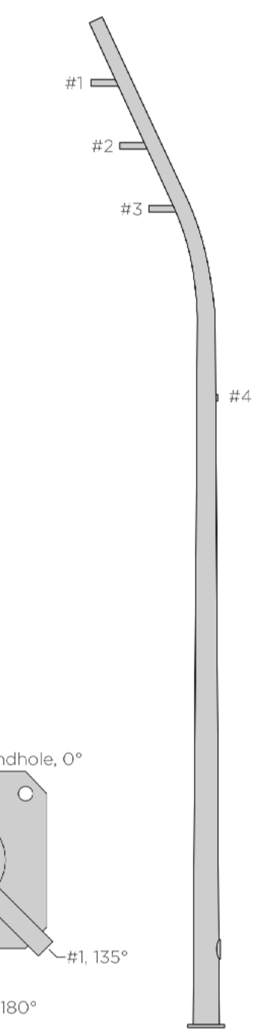
HOW TO ORDER

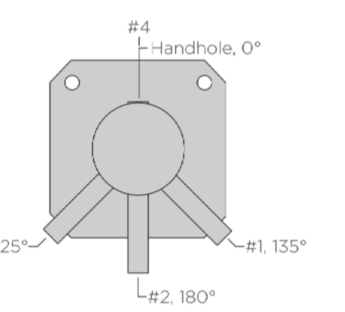
HOW TO ORDER:

Follow these steps below to order. Number designations match those found in the Ordering Guide.

1. Specify the product series.
2. Specify pole number.
3. Choose a powdercoat paint finish or weathered steel for pole finish. Custom colors are available. Indicate RAL color with the order or provide a paint chip for color match.
4. Specify number of fixture to mount to the pole.
5. Indicate "MOD" if the order requires any special mounting, electrical requirements, dimensions, custom finishes or other deviations from the product specification.
6. Use the table to indicate fixture height, angle, and mounting. Angles available in 45° increments clockwise from the handhole at 0°.



Catalg Number			
REED-2-ALU-4-STD			
Fixture	Height	Angle	Mounting
#1	30'	135°	Tenon
#2	28'	180°	Tenon
#3	26'	225°	Tenon
#4	20'	0°	Threaded Insert
#5			
#6			



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MANUFACTURER SPECIFICATION SHEET FOR DECORATIVE POLE "REED"

VIPER S SERIES
SMALL VIPER LUMINAIRE

Cat.# | Job | Type | BEACON | Approvals

SPECIFICATIONS

Intended Use:
The Beacon Viper luminaire is available in two sizes with a wide choice of different LED Wattage configurations and optical distributions designed to replace HID lighting up to 1000W MH or HPS. 5 different mounting options allow for application in a wide variety of new and existing installations. Luminaires are suitable for wet locations.

Construction:
- One piece optical cartridge system consisting of an LED engine, LED lamps, optics, gasket and stainless steel bezel.
- Cartridge is held together with internal brass standoffs soldered to the board so that it can be field replaced as a one piece optical system.
- Two-piece silicone and micro-cellular polyurethane foam gasket ensures a weather-proof seal around each individual LED.

LED/Optics:
- LED driver accepts 100V through 277V, 50 Hz to 60 Hz (UNV), or a driver that accepts 347V or 480V input.
- Power factor is .92 at full load.
- All electrical components are rated at 50,000 hours at full load and 25°C ambient conditions per MIL-217F Notice 2.
- Dimming drivers are standard with connections for external dimming equipment available upon request.
- Component-to-component wiring within the luminaire may carry no more than 80% of rated load and is listed by UL for use at 600VAC at 50°C or higher.
- Plug disconnects are listed by UL for use at 600 VAC, 13A or higher. 13A rating applies to primary (AC) side only.

Electrical:
- Fixture electrical compartment shall contain all LED driver components and shall be provided with a push-button terminal block for AC power connections.
- Optional 7-pin ANSI C136.41-2013 twist-lock photo control receptacle available. Compatible with ANSI C136.41 external wireless control devices.
- Surge protection - 20KA; Shuts off at end of life.

Controls/Options:
- Available with an optional passive infrared (PIR) motion sensor capable of detecting motion 360° around the luminaire. When no motion is detected for the specified time, the Motion Response system reduces the Wattage to factory preset level, reducing the light level accordingly. When motion is detected by the PIR sensor, the luminaire returns to full Wattage and full light output. Please contact Beacon Products if project requirements vary from standard configuration.
- Available with Energeni for optional set dimming, timed dimming with simple delay, or timed dimming based on hours of operation or time of night (see www.beaconproducts.com/products/energeni).

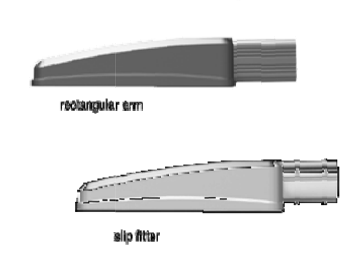
Installation:
- Mounting options for horizontal arm, vertical tenon or traditional arm mounting available. Mounting hardware included.
- Product is suitable for applications requiring 3G testing prescribed by ANSI C136.31

Finish:
- Beacote V polyester powder-coat electro-statically applied and thermocured.
- Beacote V finish consists of a five stage pretreatment regimen with a polymer primer sealer and top coated with a thermoset super TGIC polyester powder coat finish.
- The finish meets the AAMA 605.2 performance specification which includes passing a 3000 hour salt spray test for corrosion resistance and resists cracking or loss of adhesion per ASTM D522 and resists surface impacts of up to 160 inch-pounds.

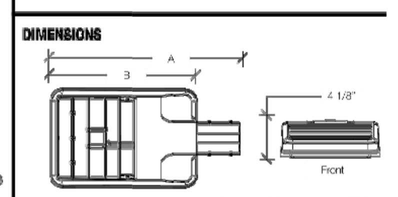
Listings:
The luminaire shall be NRTL certified to UL 1598 and 8750 standards for use in wet locations.

Warranty:
Five year limited warranty (for more information visit: http://www.hubbelllighting.com/resources/warranty).

PRODUCT IMAGE(S)

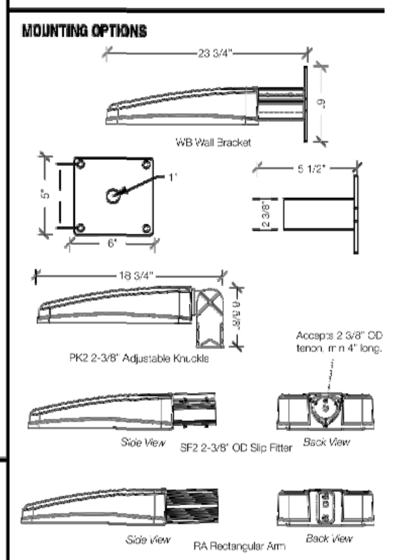


DIMENSIONS



A	B	C	Weight:	EPA
22.75" (578 mm)	16.75" (425 mm)	4.13" (105 mm)	15.0 lbs (6.8 kg)	.87 ft²

MOUNTING OPTIONS



CERTIFICATIONS/LISTINGS

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ORDERING INFORMATION ORDERING EXAMPLE: VPS/30NB-90/5K/T5R/UNV/PCR-TL/SF2/GENIXX/BLC/RA/BBT

SERIES: VPS viper-small

ENGINE-WATTS: 22NB-50 50W, LED array; 22NB-70 70W, LED array; 30NB-70 70W, LED array; 30NB-90 90W, LED array; 48NB-110 110W, LED array; 60NB-136 136W, LED array

LED COLOR: 3K 3000K; 4K 4000K; 5K 5000K

OPTICS⁶: T1 type I; T2 type II; T3 type III; T4 type IV; T5R type V, rectangular; T5QM type V, square medium; T5W type V, round wide; FR front row auto optic

VOLTAGE: UNV 120-277V; 347V 347V; 480V 480V

ELECTRICAL OPTIONS: PCR-TL photocell, twist lock; PCR-SC photocell, shorting cap; 2PF¹² dual power feed

SENSOR OPTIONS: MDD¹ motion dimming detector; TCM²³ totus control module, 1-net wireless control

CONTROL OPTIONS: GENI-XX³⁴ energeni

HOUSE SIDE SHIELD OPTIONS: HSS-90 house side shield 90°; HSS-180 house side shield 180°; BLC⁴ backlight control

MOUNTING OPTIONS: RA rectangular arm; SF2 2 3/8" OD slip-fitter; PK2 2 3/8" adjustable knuckle; WB wall bracket; RPA round pole adapter

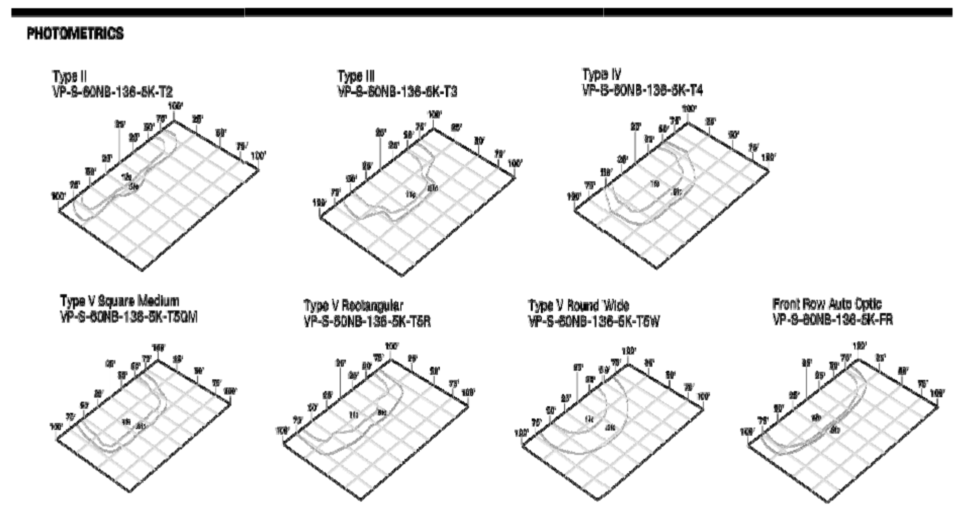
FINISH: BBT basic black textured; BMT black matte textured; WHT white textured; MBT metallic bronze textured; BZT bronze textured; DBT dark bronze textured; GYS gray smooth; DPS dark platinum smooth; GNT green textured; MST metallic silver textured; MTT metallic titanium textured; OWI old world iron; RAL ____

MDD ORDERING INFORMATION: When ordering a fixture with the motion detection option (MDD), please specify the appropriate information. These settings are specified in the ordering as shown in the example below.
VPS / 30NB-90 / 5K / T5R / UNV / MDD - 1 to 30 min. - 33% or 50% - ?? / MT
High to Dim Delay — Low Level — Mounting Height (ft.)

¹ not available with 60NB-136
² not available @ 347V or 480V input
³ Not available with other control or sensor options.
⁴ T4 optic only
⁵ When ordering Energeni, specify the routine setting code (example GENI-24). See Energeni brochure and instructions for setting table and options. Not available with sensor options.
⁶ To rotate optics Left or right 90 degrees, specify L or R after the optical distribution example T4L.

DesignLights Consortium qualified. Consult DLC website for more details: http://www.designlights.org/QPL

PHOTOMETRICS



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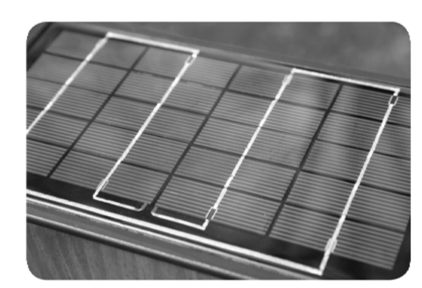
MANUFACTURER SPECIFICATION SHEET AREA/SITE FIXTURES "B" & "C"

Mac Sol Solar Powered LED Bollard

FIXTURE TYPE: ____
PROJECT NAME: ____



Glulam solid wood bollard with solar powered LED light source.

FEATURES:
- Low installed cost, no trenching, cabling or wiring
- No electric bills, no lamp replacement
- Provides a visibly green statement with no ongoing carbon emissions
- Certified by Forest Stewardship Council (FSC)
- Automatically manages performance based on environmental conditions

SPECIFICATIONS:

HOUSING: Solid wood bollard is assembled through glulam construction and precision machined using CNC technology. Adhesive complies with ASTM D-2559 glulam construction specifications for extreme exposed weather conditions and is waterproof and rated for wet or dry use exposure.

Glulam wood is fastened to a concrete anchor bolt base with concealed hardware accessible from top access plate. Anchor bolt kit includes (4) hot dip galvanized anchor bolts and fasteners and a ridged concrete pour template.

SOLAR MODULE: Panel integrated into the top cap encapsulated in a high impact, UV resistant, polycarbonate. Battery is rated to -4°F winter rating.

OPTICAL SYSTEM: Three high-output LEDs with a combined lumen output of 130 lumens in 3000K or 4300K with a 50,000 hour L70 life.

FINISHES AND MATERIALS: Woods are finished with a low VOC waterborne matte exterior finish containing UV and mildew inhibitors. All aluminum parts are polyester powder coat painted.

HARDWARE: Fasteners are stainless steel. Anchor bolt kits are hot dip galvanized.

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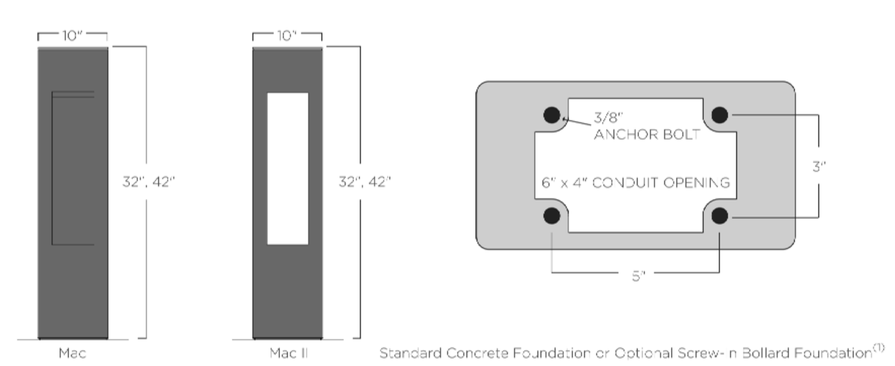

Powered By: FIRSTLIGHT TECHNOLOGIES

2013 IES PROGRESS Report SELECTION

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ORDERING GUIDE: EXAMPLE: M II SOL-42-L43S-S1-BLKTX-00-SCW

1	2	3	4	BLKTX 5	6	7

1 **Series**: M SOL Solar Mac; M II SOL Solar Mac II
2 **Overall Height**: 32 — 32"; 42 — 42"
3 **Color Temperature**: L30S 3000K LED; L43S 4300K LED
4 **Wood Finish**: S* See color options on finishes technical sheet
5 **Metal Finish**: BLKTX Black Texture
6 **Lighting Profile**: 00 Dusk 'til Dawn; 01 Dark ~6 hours then off; 02 Dark ~6 hours then 30%; 03 Dark ~5 hours, off, Dawn ~1 hour; 04 Dark ~5 hours, 30%, Dawn ~1 hour (DEFAULT)
7 **Special**: STD Standard; MOD Modified

1. Spec sheet for Screw-in Bollard Foundation is available in the Accessories section.

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MANUFACTURER SPECIFICATION SHEET BOLLARD FIXTURE "G"

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THE YARD AT LONE TREE
LONE TREE, COLORADO
ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL
	06.17.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

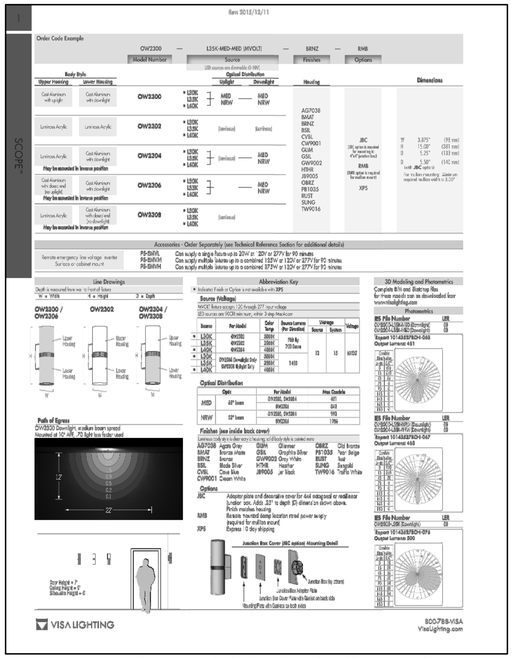
Project No:	ADP000002.01
Drawn By:	JDM
Checked By:	DNJ
Date:	03.29.16

SHEET TITLE:
PHOTOMETRIC DETAILS (SITE/DECORATIVE)

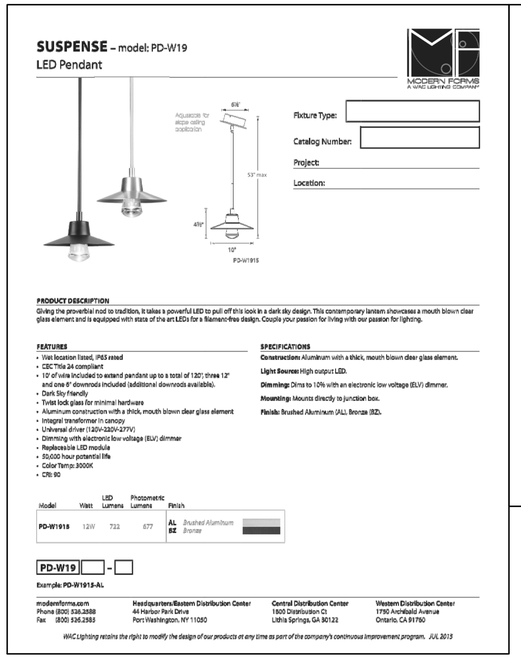
SITE IMPROVEMENT PLAN

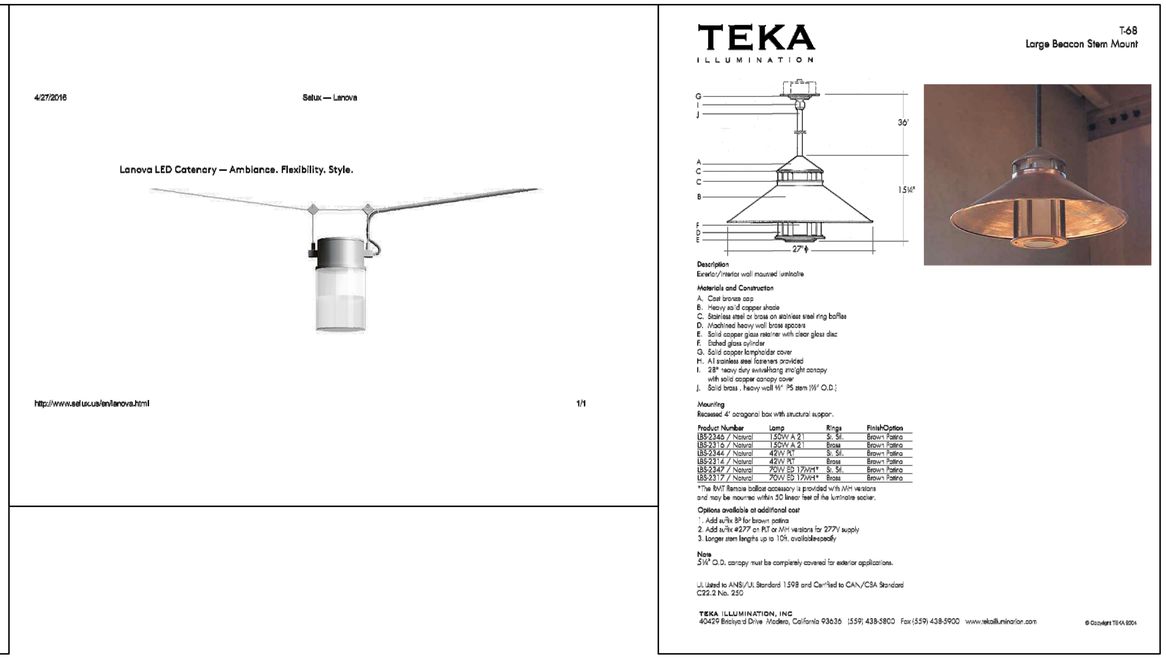
THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22



MANUFACTURER SPECIFICATION SHEET FOR BUILDING FIXTURE "D"





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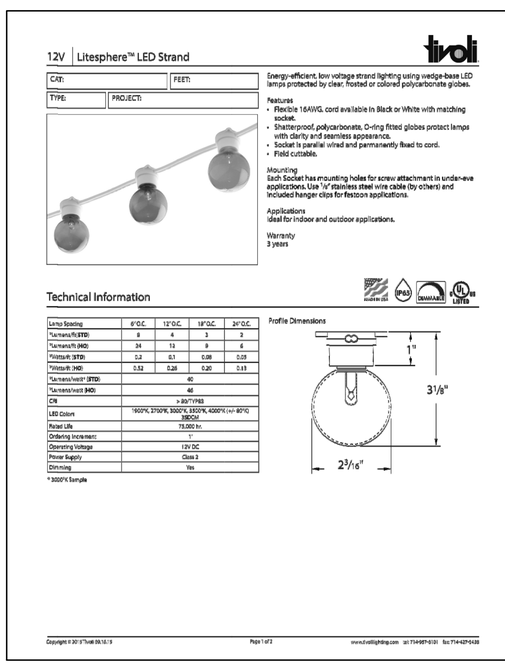
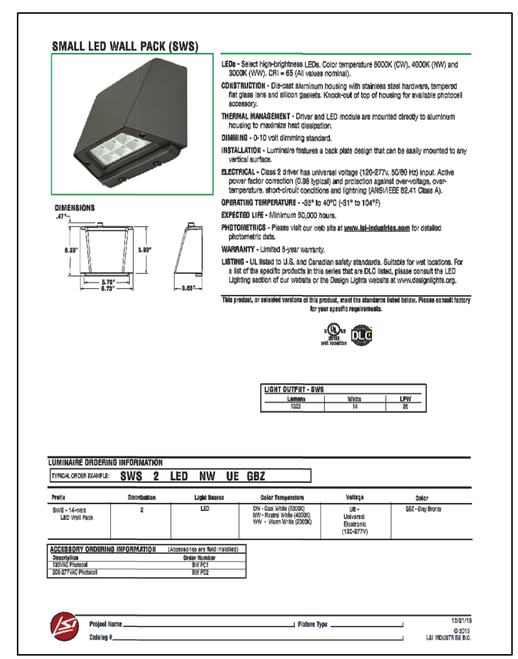


MANUFACTURER SPECIFICATION SHEET FOR FESTOON FIXTURE "F"



MANUFACTURER SPECIFICATION SHEET FOR EGRESS FIXTURE "H"

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THE YARD AT LONE TREE
LONE TREE, COLORADO
ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
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Project No:	ADP000002.01
Drawn By:	JDM
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Date:	03.29.16

SHEET TITLE:
PHOTOMETRIC DETAILS (BUILDING)

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22

CIRCLE – model: WS-W606
LED Interior & Exterior Sconce

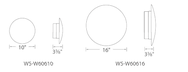
MODERN FORMS
A WAC LIGHTING COMPANY

Fixture Type:

Catalog Number:

Project:

Location:



PRODUCT DESCRIPTION

An eternal shape, this simple floating metal shield mystically glows indirectly illuminating the surface behind. Exceptionally versatile as an interior or exterior wall or ceiling mount, use just one or many.

FEATURES

- Rated to be mounted on walls and ceilings
- ADA compliant, low profile design
- ETL & cETL wet location listed, IP65 rated
- CEC Title 24 Compliant
- Aluminum construction with mouth blown etched opal glass
- Full range dimming when used with compatible dimmers
- No transformer or driver required
- 277V option available (special order)
- 80,000 hour rated life
- Color Temp: 3000K
- CRI: 90

SPECIFICATIONS

Construction: Aluminum construction with mouth blown etched opal glass.

Light Source: High output LED.

Finish: Brushed Aluminum (AL), Bronze (BZ).

Standards: ETL & cETL wet location listed. IP65 rated. ADA compliant. CEC Title 24.

ORDER NUMBER

Model	Width	Wattage	Voltage	LED Lumens	Delivered Lumens	Finish
WS-W60610	10"	9W	120V	800	240	**BZ** - *Bronze*
WS-W60616	16"	20W		1890	280	**AL** - *Brushed Aluminum*

Example: **WS-W60610-BZ**
For 277V special order, add an "F" before the finish: **WS-W60610F-BZ**

modernforms.com
Phone (800) 526.2588
Fax (800) 526.2585

Headquarters/Eastern Distribution Center
44 Harbor Park Drive
Port Washington, NY 11050

Central Distribution Center
1600 Distribution Ct
Lithia Springs, GA 30122

Western Distribution Center
1750 Archibald Avenue
Ontario, CA 91760

WAC Lighting retains the right to modify the design of our products at any time as part of the company's continuous improvement program.

MANUFACTURER SPECIFICATION SHEET FOR
BUILDING FIXTURE "J"

Specification Sheet

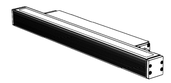
lumenfacade™
HORIZONTAL
WHITE & STATIC COLORS

Client _____ **Project name** _____

Order# _____ **Type** _____ **Qty** _____

FEATURES AND BENEFITS

Physical :
- Low copper content extruded aluminum housing
- Available in 1', 2', 3' or 4' sections
- Electro-statically applied polyester powder coat finish
- Machined aluminum end caps and silicone gaskets
- Stainless steel hardware
- Clear tempered glass
- Asymmetric wallwash, 10° x 10°, 10° x 60°, 30° x 60° or 60° x 60° optics
- Right or left feeding side options available
- IP66
- IK07 rated (asymmetric wallwash lens is IK06 rated)
- Corrosion-resistant coating for hostile environments**
- Meets 3G ANSI C136.31 Vibration standard for bridge applications



IK07*

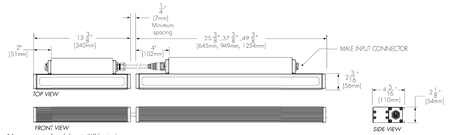
lumen talk | EcoSystem Enabled

Performance :
- CRI values: 85+ (2700K), 80+ (3000K), 78+ (4000K)
- Lumen maintenance 120,000 hrs [L70 @ 25°C]
- Lumen measurements comply with IM - 79 - 08 standard
- Resolution per foot or per fixture (configured with Lumentⓡ V3 software & RDM)
- Operating temperatures: -25° C to 50° C [-13F to 122F]

4ft HO 4000K	Delivered Output [lm]	Intensity [peak cd]
10°x10°		
10°x60°	3,692	19,654
30°x60°*	3,584	4,750
60°x60°*	3,676	3,137
WW	3,592	5,159

Estimated. Consult Lumenpulse website for the latest .ies files.

Electrical :
- Line voltage luminaire for 100 to 277V
- Power and data in 1 cable (#16-5)
- Up to 88 feet with a single120V power feed, HO version
- 5W/ft version meets ASHRAE standards for linear lighting on building facades
- 8.5W/ft Regular Output version
- 15.25/ft High Output version
- Dimming options: 0-10 volt, DMX/RDM enabled, DALI, Lumentalk or Lutron® EcoSystem® enabled



*Asymmetric wallwash lens is IK06 rated.
** Use only when exposed to salt spray and harsh chemicals. This option is not required for normal outdoor exposure!

1/11 | 01/SE/2015 | N.Kassabian - Rev.24

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Montreal (Quebec) Canada
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www.lumenpulse.com

5-year limited warranty.
Consult www.lumenpulse.com for our complete Standard Terms and Conditions of Sales.

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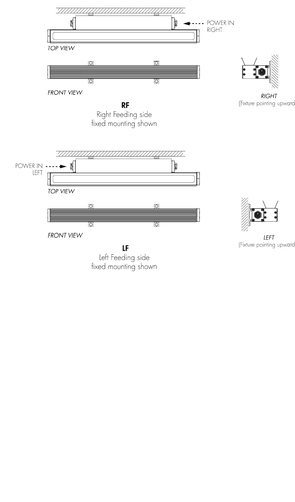
Lumenpulse reserves the right to make changes to this product at any time without prior notice and such modification shall be effective immediately.

Specification Sheet

lumenfacade™
HORIZONTAL
WHITE & STATIC COLORS

FEEDING SIDE



*Fixture's feeding side is based on uplight installations. Feeding sides are reversed when fixture is used in a downlight application.

3/11 | 01/SE/2015 | N.Kassabian - Rev.24

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Specification Sheet

lumenfacade™
HORIZONTAL
WHITE & STATIC COLORS

HOW TO ORDER

LOGH	Select:	Select:	Select:	Select:	Select:	Select:	Select:	Select:	Select:	Select:
	1	2	3	4	5	6	7	8	9	10

1 Housing:
LOGH ASHRAE - Lumenfacade™ Horizontal, 5W/ft
ASHRAE compliant
LOGH RO - Lumenfacade™ Horizontal Regular Output, 8.5W/ft
LOGH HO - Lumenfacade™ Horizontal High Output, 15.25W/ft

2 Voltage:
100 - 100 volts
120 - 120 volts
208 - 208 volts
220 - 220 volts
240 - 240 volts
277 - 277 volts

3 Length:
12 - 13 3/8 inches (340mm) (2 kg/4.5 lbs)
24 - 25 3/8 inches (645mm) (3.17 kg/7 lbs)
36 - 37 3/8 inches (949mm) (4.75 kg/10.5 lbs)
48 - 49 3/8 inches (1254mm) (6.35 kg/14 lbs)

4 Colors and Color Temperatures:
27K - 2700K
30K - 3000K
35K - 3500K
40K - 4000K
RD - Red
GR - Green
BL - Blue

5 Optics:
WW - Asymmetric Wallwash optic*
10x10 - 10° x 10°**
10x60 - 10° x 60°
30x60 - 30° x 60°
60x60 - 60° x 60°
* Available September 2015.
** For best results use with HO Fixtures at a 6-inch (15cm) setback from surface. Contact factory for application support.

6 Feeding Side:
Please specify one of the following:
(Right Feeding side is standard unless otherwise specified.)
LF - Left Feeding side
RF - Right Feeding side

7 Mounting Option:
UMP - Fixed Mounting
UMAS - Universal Adjustable Mounting
(Suitable to use when **3GV** option is specified)
WAMH6 - Adjustable Extended Arm Mounting 6" Horizontal version
WAMH12 - Adjustable Extended Arm Mounting 12" Horizontal version
WAMH18 - Adjustable Extended Arm Mounting 18" Horizontal version

8 Finish:
SI - Silver SandText
BK - Black SandText
WH - White
CC - Custom (please specify RAL color)

9 Control:
NO - No dimming
LT - Lumentalk Dimming[1]
DIM - 0-10V Dimming option[2]
DMX/RDM - DMX/RDM enabled[3]
DALI - DALI Dimming option[4]
ES - Lutron® EcoSystem® Enabled Dimming[5]

10 Option:
ETE - End - to - end configuration, no jumper cable needed
CRC - Corrosion-resistant coating for hostile environments
3GV - 3G ANSI C136.31 Vibration Rating
N.B. Available with UMAS mounting option only.

Notes:
* Available for 2' RO, 3' and 4' lengths only. 1% minimum dimming value.
* 10% minimum dimming value.
* 1% minimum dimming value. Fixtures come pre-addressed by fixture (3 DMX channels per fixture).
* 1% minimum dimming value.
* Available for 2' RO, 3' and 4' lengths only. One EcoSystem® address per fixture length. 1% minimum dimming value.

11/11 | 01/SE/2015 | N.Kassabian - Rev.24

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MANUFACTURER SPECIFICATION SHEET FOR BUILDING WALLWASH "K"

DELTALIGHT

USA / deltalight.us / +1(954) 677 9800
Canada / deltalight.ca / +1(905) 813 6130

Date
Name
Client
Project Name
Quote#
Type/Quantity

Specification Sheet

LOGIC W L
6 304 32 01 83

Weblink

AVAILABLE AS FROM 04/2016 (CONTACT US FOR MORE DETAILS)

Cutout shape/size:	BOX mm
Recessed depth (mm):	4" 5/16 - 5" 5/16 mm
Available colors:	ALU GREY (6 304 32 01 83 A) WHITE (6 304 32 01 83 W) DARK GREY (6 304 32 01 83 N)

INCL. GLASS SBL
INCL. LED CLUSTER 9,5W / CRI>80 / 3000K / 1270lm
INCL. LED POWER SUPPLY 350mA-DC
INCL. 1 x PG11

LED Technics:	Light source: 1270 lm // 9 W // 134 lm/W Luminaire: 116 lm // 11 W // 11 lm/W

120V / 60Hz

Class 2	N.a.
Ada	N.a.
Weight:	2.2 LBS
Protection level:	IP65 - suitable for wet locations
Minimum distance:	n.a.

Requirements STANDARD:
CONCRETE BOX 191
CONCRETE PACK LOGIC W L

For detailed installation instructions, please consult the manual: 6_304_32_01_83_HAND2.pdf

MANUFACTURER SPECIFICATION SHEET FOR
RECESSED EGRESS "L"

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THE YARD AT LONE TREE
LONE TREE, COLORADO
ALBERTA DEVELOPMENT PARTNERS

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	04.29.16	SIP RESUBMITTAL
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Project No:	ADP000002.01
Drawn By:	JDM
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Date:	03.29.16

SHEET TITLE:
PHOTOMETRIC DETAILS
(BUILDING)

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22

PREDOMINANT MATERIALS: 67%

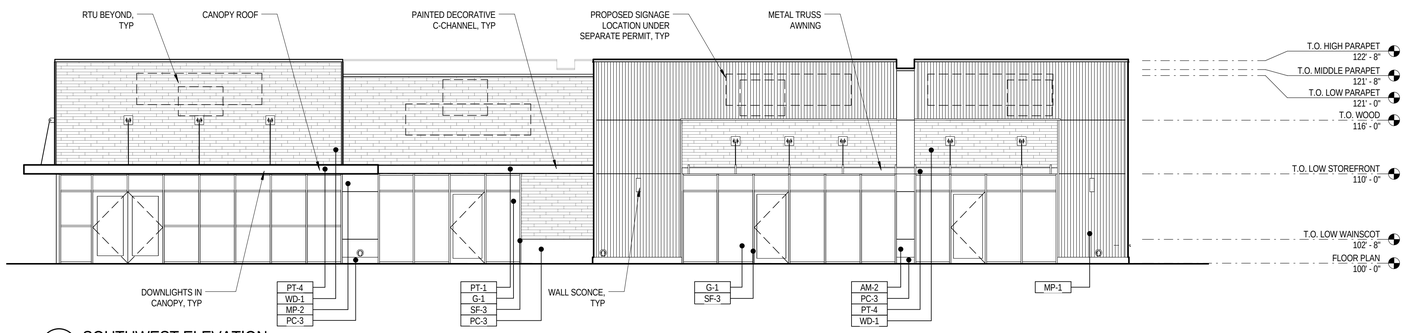
ARCHITECTURAL METAL PANELS: 2,133 SF
STUCCO: 985 SF
CAST STONE, ARCHITECTURAL CONCRETE BLOCK & PRE-CAST CONRETE: 570 SF
GLASS: 2,078 SF

SECONDARY MATERIALS: 33%

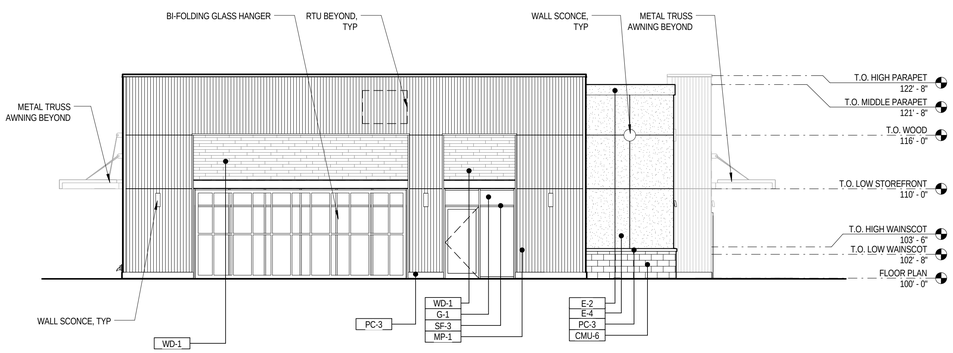
METAL ACCENTS: 495 SF
WOOD SIDING: 2,345 SF

MATERIAL LEGEND

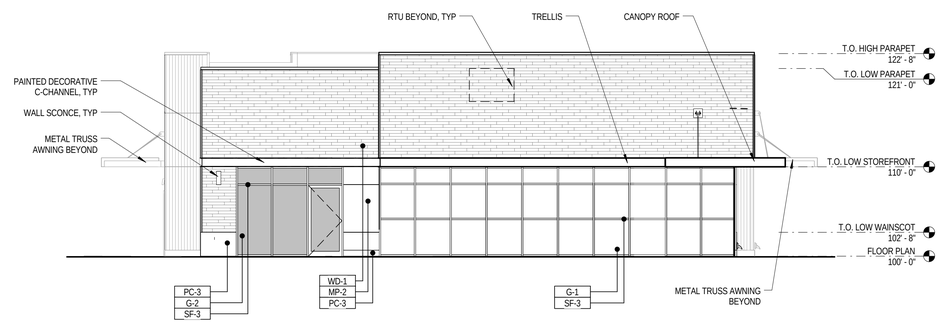
LABEL	MATERIAL	COLOR
AM-1	ARCHITECTURAL METAL PANEL	WESTERN STATES METAL PANEL -SPECKLED RUST
AM-2	ARCHITECTURAL METAL PANEL	WESTERN STATES METAL PANEL - WEATHERED RUSTIC
AW-1	FABRIC AWNING	RED
CIP-1	CAST IN PLACE BOARD FORM WALL	GRAY
BF-1	CRAFTED MASONRY VENEER	CREATIVE MINES CRAFT BOARD FORM - MONSOON
CMU-1	GROUND FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
CMU-2	SPLIT FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
CMU-3	GROUND FACE CONCRETE MASONRY UNIT	BASALITE 900R
CMU-4	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 900R
CMU-5	GROUND FACE CONCRETE MASONRY UNIT	BASALITE 807R
CMU-6	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 807R
CMU-7	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 701R
E-1	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #104 DOVER SKY
E-2	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #105 SUEDE
E-3	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #110 VAN DYKE
E-4	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #614 SMOKE SIGNAL
E-5	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #615A TATTLE TALE
G-1	1" LOW-E GLASS	VIRACON - VE1-2M - LOW-E GLASS
G-2	1" SPANDREL GLASS	VIRACON - V908 - GRAY
MP-1	ARCHITECTURAL METAL PANEL	BERRIDGE ZINC-COTE
MP-2	ARCHITECTURAL METAL PANEL	BERRIDGE PRE-WEATHERED GALVALUME
MP-3	ARCHITECTURAL METAL PANEL	BERRIDGE PATINA GREEN
MP-4	ARCHITECTURAL METAL PANEL	BERRIDGE AWARD BLUE
MP-5	ARCHITECTURAL METAL PANEL	BERRIDGE MATTE BLACK
PC-1	PRECAST STONE	PACIFIC CAST STONE T-01
PC-2	PRECAST STONE	PACIFIC CAST STONE T-9915
PC-3	PRECAST STONE	PACIFIC CAST STONE T-9817
PC-4	PRECAST STONE	PACIFIC CAST STONE T-9702R
PT-1	PAINT	BENJAMIN MOORE AC-25 HARBOR GRAY
PT-2	PAINT	BENJAMIN MOORE AC-26 OZARK SHADOWS
PT-3	PAINT	BENJAMIN MOORE AC-34 CAPE HATTERAS SAND
PT-4	PAINT	BENJAMIN MOORE AC-35 VALLEY FORGE TAN
PT-5	PAINT	BENJAMIN MOORE 2121-10 GRAY
PT-6	PAINT	BENJAMIN MOORE 2121-20 STEEL WOOL
PT-7	PAINT	BENJAMIN MOORE 2121-30 PEWTER
SF-1	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - CLEAR NO. 14 & 17
SF-2	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - DARK BRONZE NO. 40
SF-3	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - BLACK NO. 29
WD-1	BARNWOOD SIDING	RECLAIMED DESIGNWORKS - NATURAL
WD-2	STAINED TIMBER	NATURAL
WD-3	PREFINISHED COMPOSITE WOOD FENCING	NATURAL



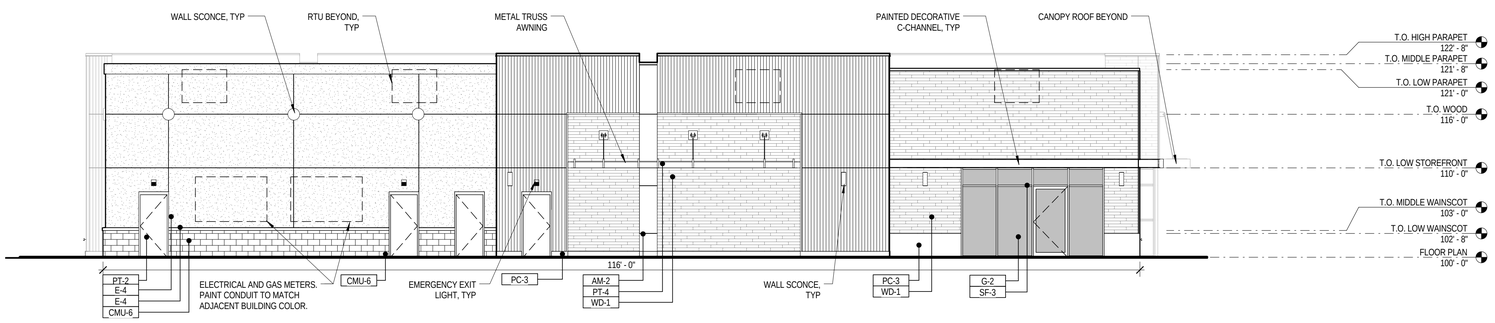
1 SOUTHWEST ELEVATION
SCALE: 1/8" = 1'-0"



2 SOUTHEAST ELEVATION
SCALE: 1/8" = 1'-0"



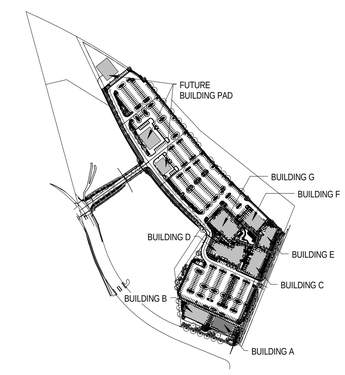
3 NORTHWEST ELEVATION
SCALE: 1/8" = 1'-0"



4 NORTHEAST ELEVATION
SCALE: 1/8" = 1'-0"

FIXTURE TYPES:

	FIXTURE D	REFERENCE PHOTOMETRICS SHEETS FOR FIXTURE INFORMATION
	FIXTURE J	
	FIXTURE H	
	FIXTURE E	



5 KEY PLAN
SCALE: 1" = 400'-0"

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LONE TREE, COLORADO

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Project No:	ADP000002.01
Drawn By:	KAB
Checked By:	KK
Date:	03.29.16

SHEET TITLE:
ARCHITECTURAL ELEVATIONS - BUILDING A

6/30/2016 4:02:10 PM

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22

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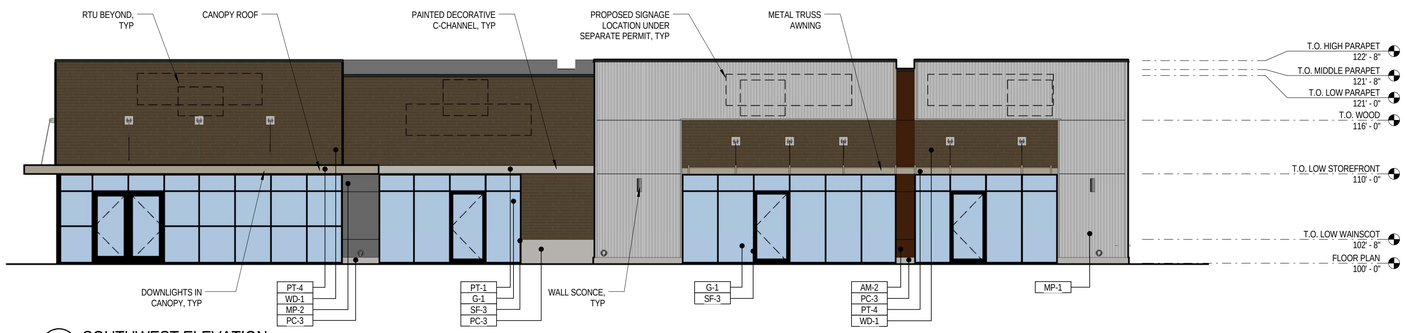
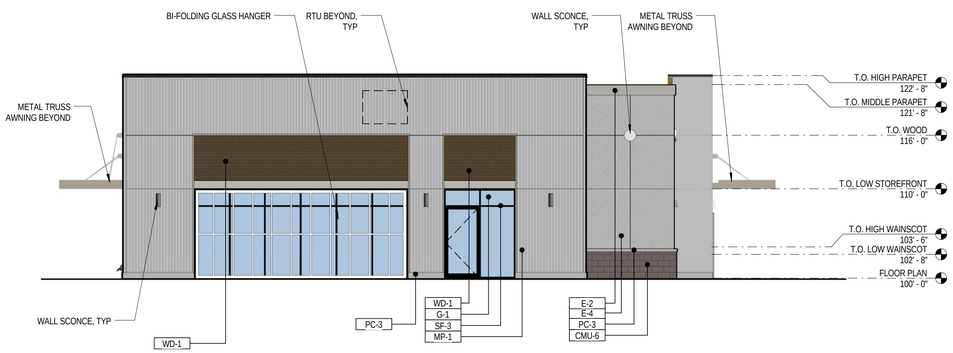
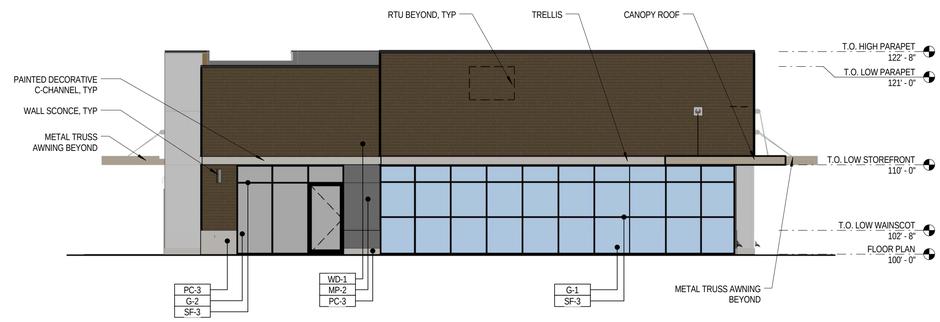
CMU-1	GROUND FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
CMU-2	SPLIT FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
CMU-3	GROUND FACE CONCRETE MASONRY UNIT	BASALITE 900R
CMU-4	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 900R
CMU-5	GROUND FACE CONCRETE MASONRY UNIT	BASALITE 807R
CMU-6	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 807R
CMU-7	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 701R
E-1	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #104 DOVER SKY
E-2	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #105 SUEDE
E-3	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #110 VAN DYKE
E-4	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #614 SMOKE SIGNAL
E-5	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #615A TATTLE TALE
G-1	1" LOW-E GLASS	VIRACON - VE1-2M - LOW-E GLASS
G-2	1" SPANDREL GLASS	VIRACON - V908 - GRAY
MP-1	ARCHITECTURAL METAL PANEL	BERRIDGE ZINC-COTE
MP-2	ARCHITECTURAL METAL PANEL	BERRIDGE PRE-WEATHERED GALVALUME
MP-3	ARCHITECTURAL METAL PANEL	BERRIDGE PATINA GREEN
MP-4	ARCHITECTURAL METAL PANEL	BERRIDGE AWARD BLUE
MP-5	ARCHITECTURAL METAL PANEL	BERRIDGE MATTE BLACK
PC-1	PRECAST STONE	PACIFIC CAST STONE T-01
PC-2	PRECAST STONE	PACIFIC CAST STONE T-9915
PC-3	PRECAST STONE	PACIFIC CAST STONE T-9817
PC-4	PRECAST STONE	PACIFIC CAST STONE T-9702R
PT-1	PAINT	BENJAMIN MOORE AC-25 HARBOR GRAY
PT-2	PAINT	BENJAMIN MOORE AC-26 OZARK SHADOWS
PT-3	PAINT	BENJAMIN MOORE AC-34 CAPE HATTERAS SAND
PT-4	PAINT	BENJAMIN MOORE AC-35 VALLEY FORGE TAN
PT-5	PAINT	BENJAMIN MOORE 2121-10 GRAY
PT-6	PAINT	BENJAMIN MOORE 2121-20 STEEL WOOL
PT-7	PAINT	BENJAMIN MOORE 2121-30 PEWTER
SF-1	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - CLEAR NO. 14 & 17
SF-2	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - DARK BRONZE NO. 40
SF-3	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - BLACK NO. 29
WD-1	BARNWOOD SIDING	RECLAIMED DESIGNWORKS - NATURAL
WD-2	STAINED TIMBER	NATURAL
WD-3	PREFINISHED COMPOSITE WOOD FENCING	NATURAL



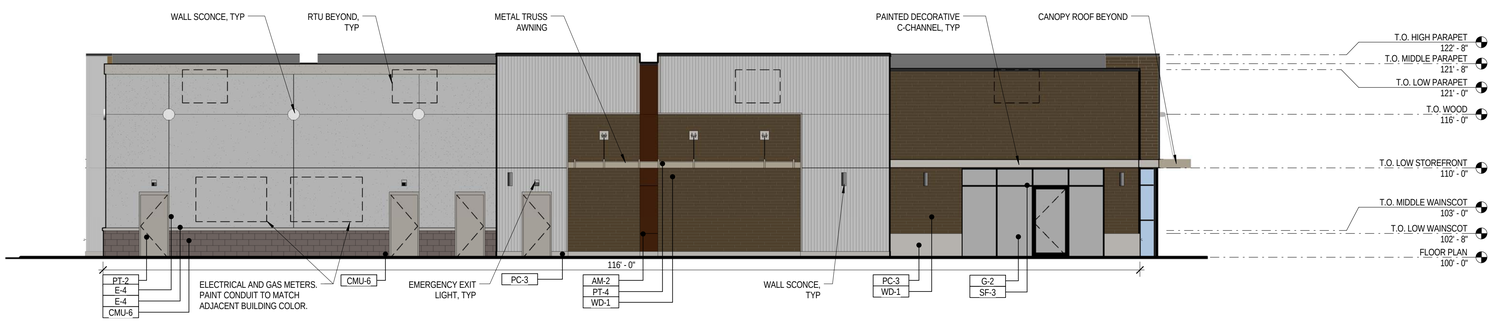
1 SOUTHWEST ELEVATION
SCALE: 1/8" = 1'-0"



2 SOUTHEAST ELEVATION
SCALE: 1/8" = 1'-0"



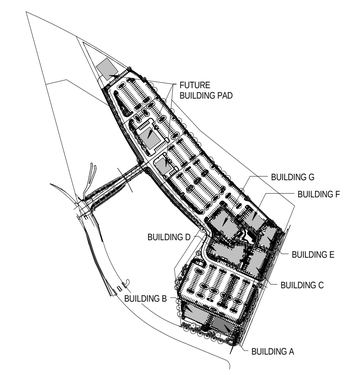
3 NORTHWEST ELEVATION
SCALE: 1/8" = 1'-0"



4 NORTHEAST ELEVATION
SCALE: 1/8" = 1'-0"

FIXTURE TYPES:

	FIXTURE D	REFERENCE PHOTOMETRICS SHEETS FOR FIXTURE INFORMATION
	FIXTURE J	
	FIXTURE H	
	FIXTURE E	



5 KEY PLAN
SCALE: 1" = 400'-0"

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THE YARD AT LONE TREE

LONE TREE, COLORADO

ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL
	06.17.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

Project No:	ADP000002.01
Drawn By:	KAB
Checked By:	KK
Date:	03.29.16

SHEET TITLE:
ARCHITECTURAL ELEVATIONS - BUILDING A

6/30/2016 4:01:10 PM

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22

PREDOMINANT MATERIALS: 67%

ARCHITECTURAL METAL PANELS: 2,332 SF
STUCCO: 1,167 SF
CAST STONE, ARCHITECTURAL CONCRETE BLOCK & PRE-CAST CONRETE: 450 SF
GLASS: 2,040 SF

SECONDARY MATERIALS: 33%

METAL ACCENTS: 759 SF
WOOD SIDING: 2,129 SF

MATERIAL LEGEND		
LABEL	MATERIAL	COLOR
AM-1	ARCHITECTURAL METAL PANEL	WESTERN STATES METAL PANEL -SPECKLED RUST
AM-2	ARCHITECTURAL METAL PANEL	WESTERN STATES METAL PANEL - WEATHERED RUSTIC
AW-1	FABRIC AWNING	RED
CIP-1	CAST IN PLACE BOARD FORM WALL	GRAY
BF-1	CRAFTED MASONRY VENEER	CREATIVE MINES CRAFT BOARD FORM - MONSOON
CMU-1	GROUND FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
CMU-2	SPLIT FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
CMU-3	GROUND FACE CONCRETE MASONRY UNIT	BASALITE 900R
CMU-4	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 900R
CMU-5	GROUND FACE CONCRETE MASONRY UNIT	BASALITE 807R
CMU-6	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 807R
CMU-7	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 701R
E-1	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #104 DOVER SKY
E-2	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #105 SUEDE
E-3	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #110 VAN DYKE
E-4	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #614 SMOKE SIGNAL
E-5	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #615A TATTLE TALE
G-1	1" LOW-E GLASS	VIRACON - VE1-2M - LOW-E GLASS
G-2	1" SPANDREL GLASS	VIRACON - V908 - GRAY
MP-1	ARCHITECTURAL METAL PANEL	BERRIDGE ZINC-COTE
MP-2	ARCHITECTURAL METAL PANEL	BERRIDGE PRE-WEATHERED GALVALUME
MP-3	ARCHITECTURAL METAL PANEL	BERRIDGE PATINA GREEN
MP-4	ARCHITECTURAL METAL PANEL	BERRIDGE AWARD BLUE
MP-5	ARCHITECTURAL METAL PANEL	BERRIDGE MATTE BLACK
PC-1	PRECAST STONE	PACIFIC CAST STONE T-01
PC-2	PRECAST STONE	PACIFIC CAST STONE T-9915
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PT-1	PAINT	BENJAMIN MOORE AC-25 HARBOR GRAY
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PT-3	PAINT	BENJAMIN MOORE AC-34 CAPE HATTERAS SAND
PT-4	PAINT	BENJAMIN MOORE AC-35 VALLEY FORGE TAN
PT-5	PAINT	BENJAMIN MOORE 2121-10 GRAY
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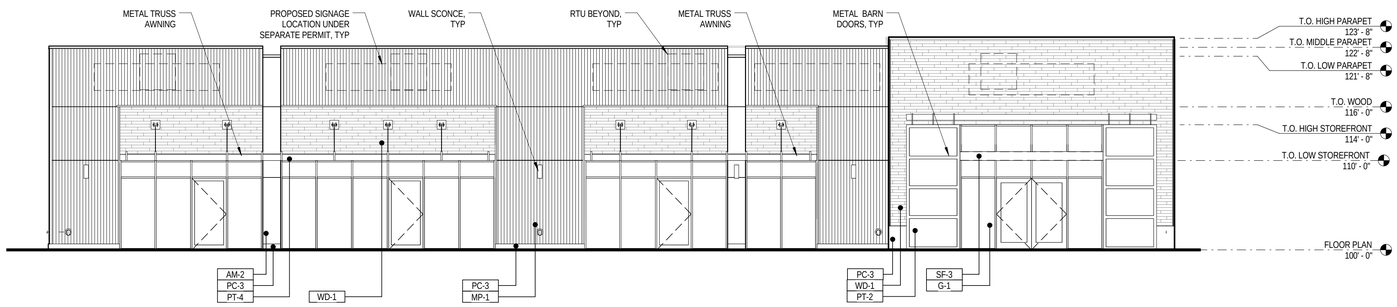
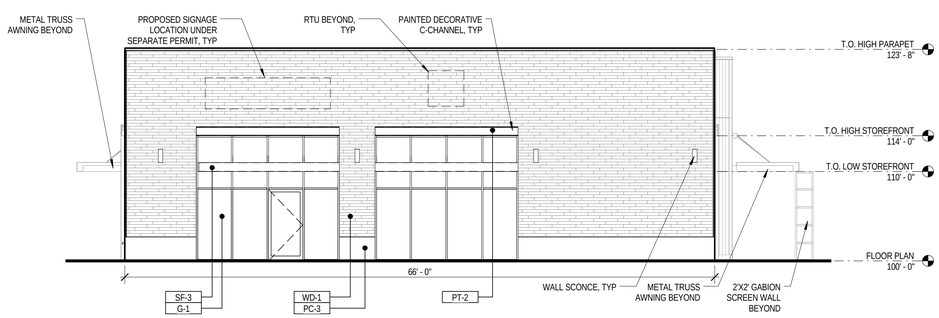
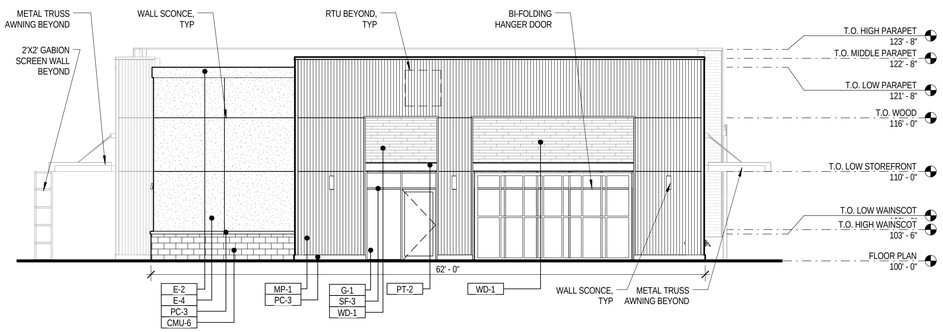
PT-7	PAINT	BENJAMIN MOORE 2121-30 PEWTER
SF-1	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - CLEAR NO. 14 & 17
SF-2	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - DARK BRONZE NO. 40
SF-3	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - BLACK NO. 29
WD-1	BARNWOOD SIDING	RECLAIMED DESIGNWORKS - NATURAL
WD-2	STAINED TIMBER	NATURAL
WD-3	PREFINISHED COMPOSITE WOOD FENCING	NATURAL



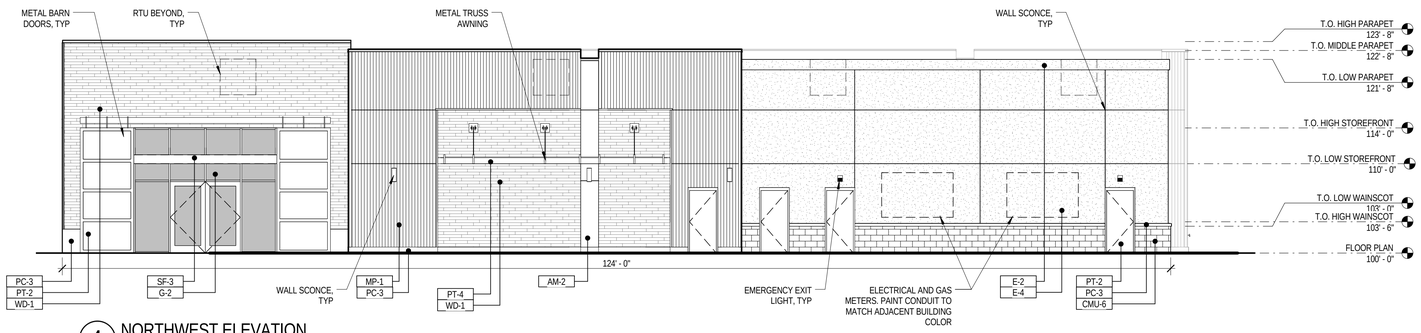
1 SOUTHEAST ELEVATION
SCALE: 1/8" = 1'-0"



2 SOUTHWEST ELEVATION
SCALE: 1/8" = 1'-0"



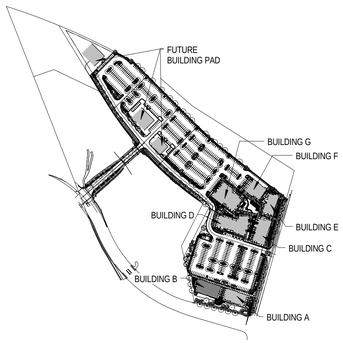
3 NORTHEAST ELEVATION
SCALE: 1/8" = 1'-0"



4 NORTHWEST ELEVATION
SCALE: 1/8" = 1'-0"

FIXTURE TYPES:

	FIXTURE D	REFERENCE PHOTOMETRICS SHEETS FOR FIXTURE INFORMATION
	FIXTURE J	
	FIXTURE H	



5 SIP - KEY PLAN
SCALE: 1" = 400'-0"

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THE YARD AT LONE TREE

LONE TREE, COLORADO

ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL
	06.17.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

Project No:	ADP000002.01
Drawn By:	KAB
Checked By:	KK
Date:	03.29.16

SHEET TITLE:
ARCHITECTURAL ELEVATIONS - BUILDING B

6/30/2016 4:10:42 PM

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22

PREDOMINANT MATERIALS: 67%

ARCHITECTURAL METAL PANELS: 2,332 SF
STUCCO: 1,167 SF
CAST STONE, ARCHITECTURAL CONCRETE BLOCK & PRE-CAST CONRETE: 450 SF
GLASS: 2,040 SF

SECONDARY MATERIALS: 33%

METAL ACCENTS: 759 SF
WOOD SIDING: 2,129 SF

MATERIAL LEGEND		
LABEL	MATERIAL	COLOR
AM-1	ARCHITECTURAL METAL PANEL	WESTERN STATES METAL PANEL -SPECKLED RUST
AM-2	ARCHITECTURAL METAL PANEL	WESTERN STATES METAL PANEL - WEATHERED RUSTIC
AW-1	FABRIC AWNING	RED
CIP-1	CAST IN PLACE BOARD FORM WALL	GRAY
BF-1	CRAFTED MASONRY VENEER	CREATIVE MINES CRAFT BOARD FORM - MONSOON
CMU-1	GROUND FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
CMU-2	SPLIT FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
CMU-3	GROUND FACE CONCRETE MASONRY UNIT	BASALITE 900R
CMU-4	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 900R
CMU-5	GROUND FACE CONCRETE MASONRY UNIT	BASALITE 807R
CMU-6	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 807R
CMU-7	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 701R
E-1	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #104 DOVER SKY
E-2	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #105 SUEDE
E-3	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #110 VAN DYKE
E-4	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #614 SMOKE SIGNAL
E-5	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #615A TATTLE TALE
G-1	1" LOW-E GLASS	VIRACON - VE1-2M - LOW-E GLASS
G-2	1" SPANDREL GLASS	VIRACON - V908 - GRAY
MP-1	ARCHITECTURAL METAL PANEL	BERRIDGE ZINC-COTE
MP-2	ARCHITECTURAL METAL PANEL	BERRIDGE PRE-WEATHERED GALVALUME
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PT-1	PAINT	BENJAMIN MOORE AC-25 HARBOR GRAY
PT-2	PAINT	BENJAMIN MOORE AC-26 OZARK SHADOWS
PT-3	PAINT	BENJAMIN MOORE AC-34 CAPE HATTERAS SAND
PT-4	PAINT	BENJAMIN MOORE AC-35 VALLEY FORGE TAN
PT-5	PAINT	BENJAMIN MOORE 2121-10 GRAY
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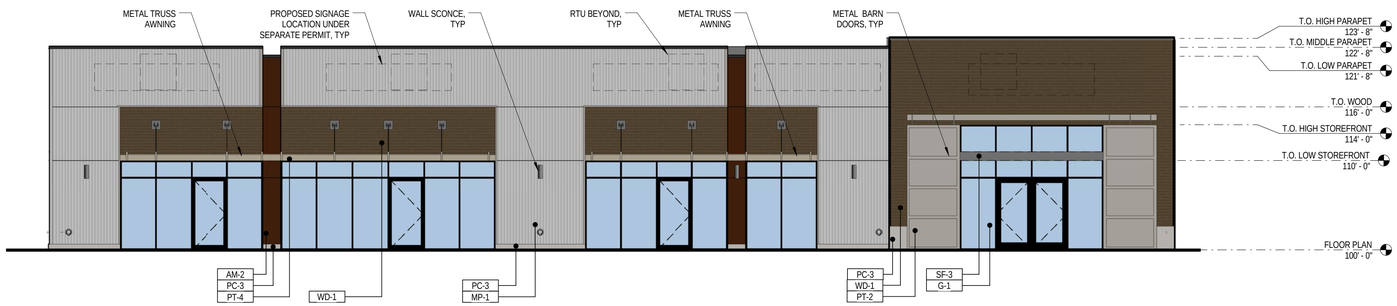
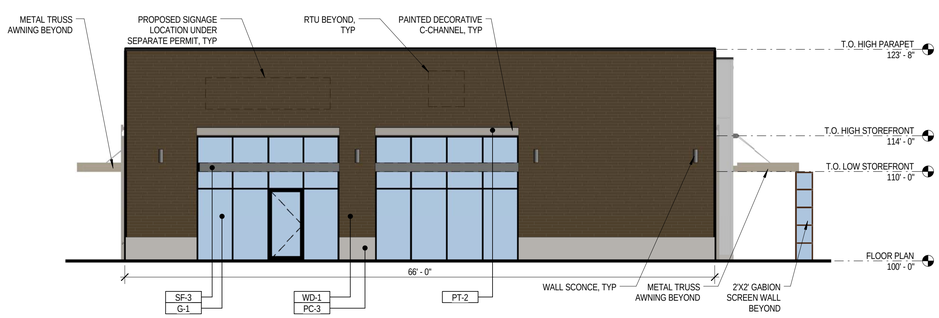
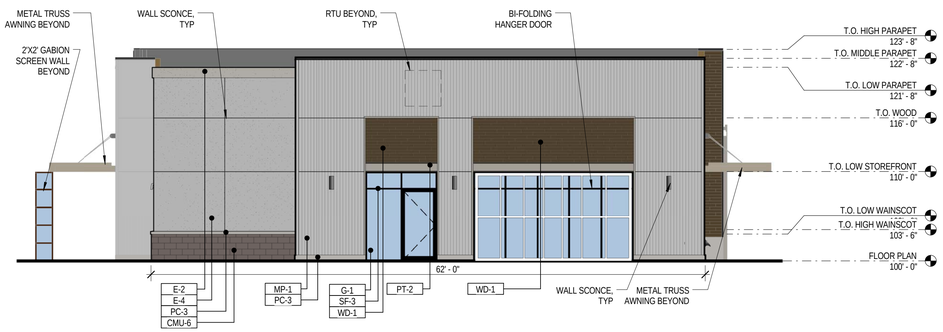
PT-7	PAINT	BENJAMIN MOORE 2121-30 PEWTER
SF-1	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - CLEAR NO. 14 & 17
SF-2	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - DARK BRONZE NO. 40
SF-3	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - BLACK NO. 29
WD-1	BARNWOOD SIDING	RECLAIMED DESIGNWORKS - NATURAL
WD-2	STAINED TIMBER	NATURAL
WD-3	PREFINISHED COMPOSITE WOOD FENCING	NATURAL



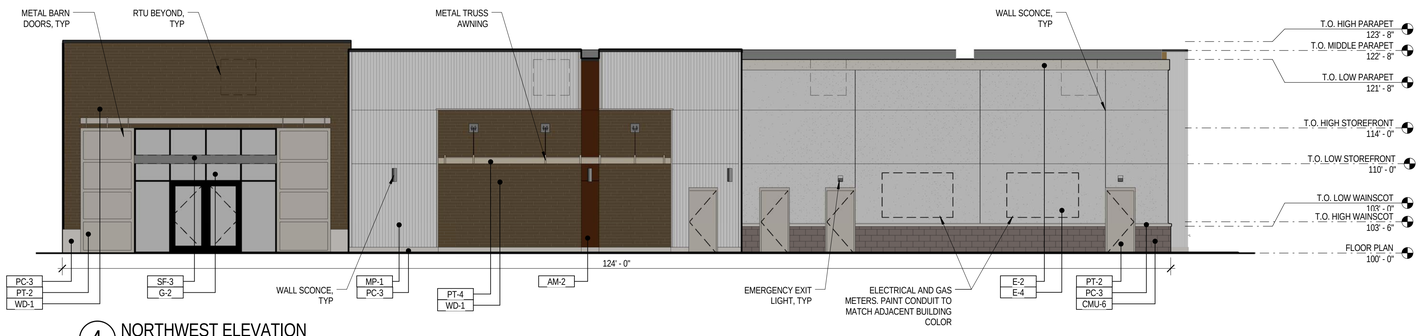
1 SOUTHEAST ELEVATION
SCALE: 1/8" = 1'-0"



2 SOUTHWEST ELEVATION
SCALE: 1/8" = 1'-0"



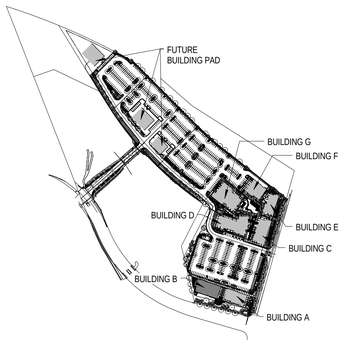
3 NORTHEAST ELEVATION
SCALE: 1/8" = 1'-0"



4 NORTHWEST ELEVATION
SCALE: 1/8" = 1'-0"

FIXTURE TYPES:

	FIXTURE D	REFERENCE PHOTOMETRICS SHEETS FOR FIXTURE INFORMATION
	FIXTURE J	
	FIXTURE H	



5 SIP - KEY PLAN
SCALE: 1" = 400'-0"

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THE YARD AT LONE TREE

LONE TREE, COLORADO

ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL
	06.17.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

Project No:	ADP000002.01
Drawn By:	KAB
Checked By:	KK
Date:	03.29.16

SHEET TITLE:
ARCHITECTURAL ELEVATIONS - BUILDING B

6/30/2016 4:08:11 PM

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22

PREDOMINANT MATERIALS: 69%

ARCHITECTURAL METAL PANELS: 923 SF
STUCCO: 1,287 SF
CAST STONE, ARCHITECTURAL CONCRETE BLOCK: 679 SF
GLASS: 2,268 SF
MANUFACTURED STONE: 2,498 SF

SECONDARY MATERIALS: 31%

METAL ACCENTS: 873 SF
WOOD SIDING: 1,827 SF
FIBER CEMENT BOARD: 515 SF

MATERIAL LEGEND		
LABEL	MATERIAL	COLOR
AM-1	ARCHITECTURAL METAL PANEL	WESTERN STATES METAL PANEL -SPECKLED RUST
AM-2	ARCHITECTURAL METAL PANEL	WESTERN STATES METAL PANEL - WEATHERED RUSTIC
AW-1	FABRIC AWNING	RED
CIP-1	CAST IN PLACE BOARD FORM WALL	GRAY
BF-1	CRAFTED MASONRY VENEER	CREATIVE MINES CRAFT BOARD FORM - MONSOON
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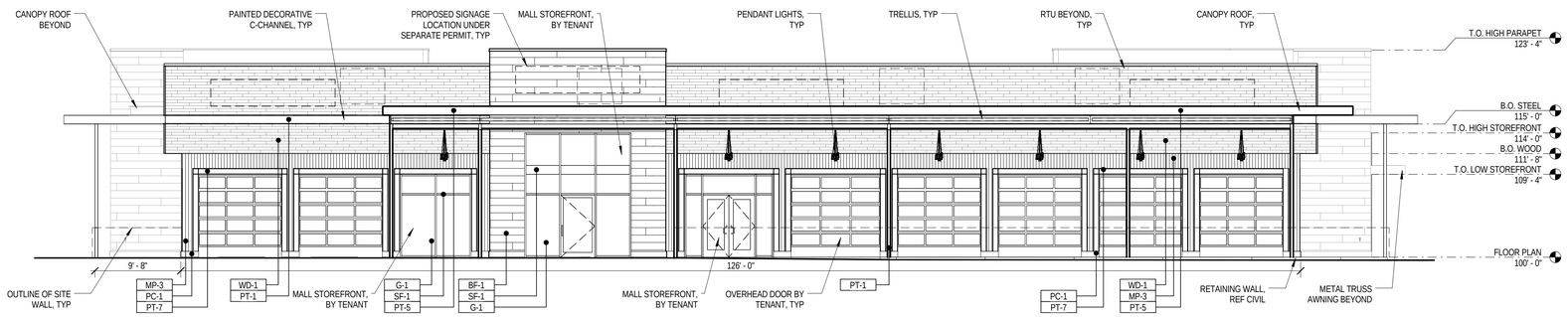
WD-1	BARNWOOD SIDING	RECLAIMED DESIGNWORKS - NATURAL
WD-2	STAINED TIMBER	NATURAL
WD-3	PREFINISHED COMPOSITE WOOD FENCING	NATURAL

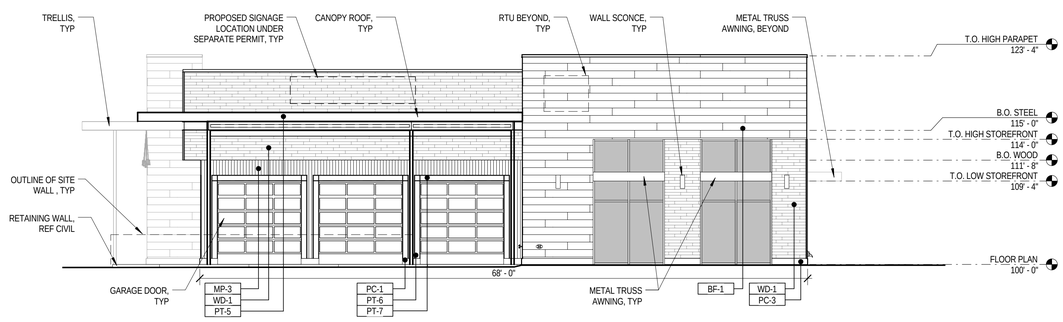


1 NORTHWEST ELEVATION
SCALE: 1/8" = 1'-0"

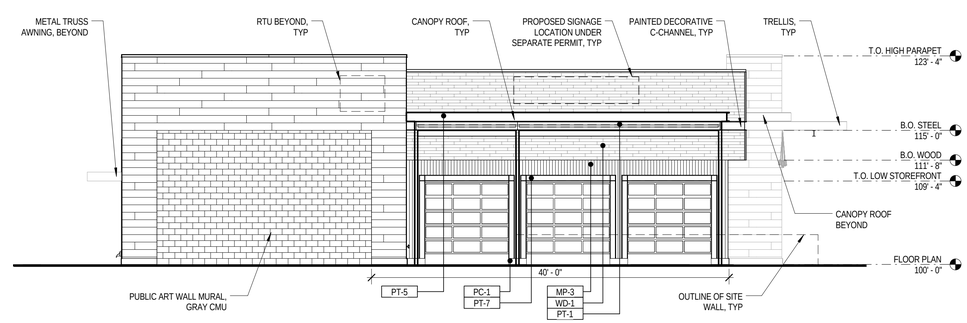
FIXTURE TYPES:

FIXTURE D
FIXTURE J
FIXTURE H
FIXTURE E

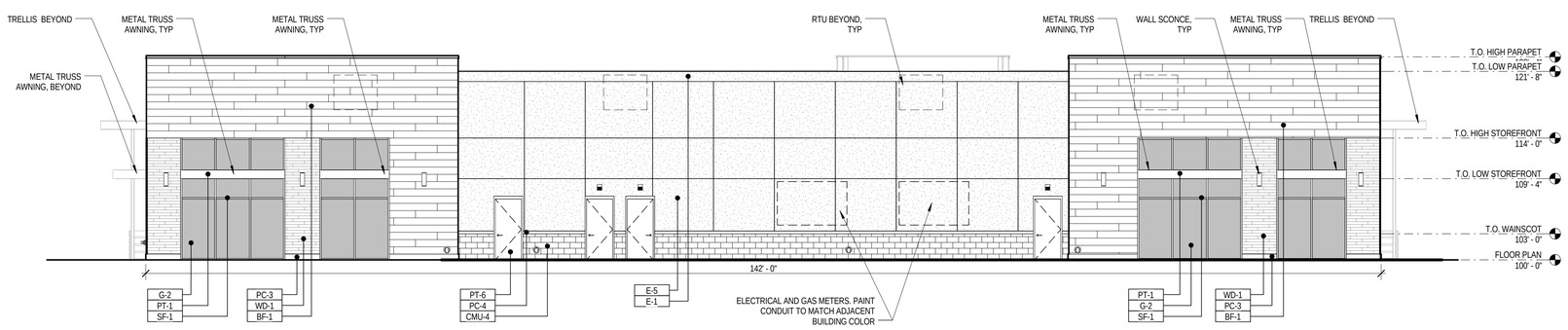
REFERENCE PHOTOMETRICS SHEETS FOR FIXTURE INFORMATION



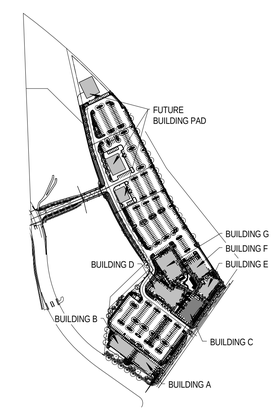
2 SOUTHWEST ELEVATION
SCALE: 1/8" = 1'-0"



3 NORTHEAST ELEVATION
SCALE: 1/8" = 1'-0"



4 SOUTHEAST ELEVATION
SCALE: 1/8" = 1'-0"



5 SIP - KEY PLAN
SCALE: 1" = 400'-0"

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THE YARD AT LONE TREE

LONE TREE, COLORADO

ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL
	06.17.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

Project No:	ADP000002.01
Drawn By:	KAB
Checked By:	KK
Date:	03.29.16

SHEET TITLE:
ARCHITECTURAL ELEVATIONS - BUILDING C

6/30/2016 4:17:05 PM

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22

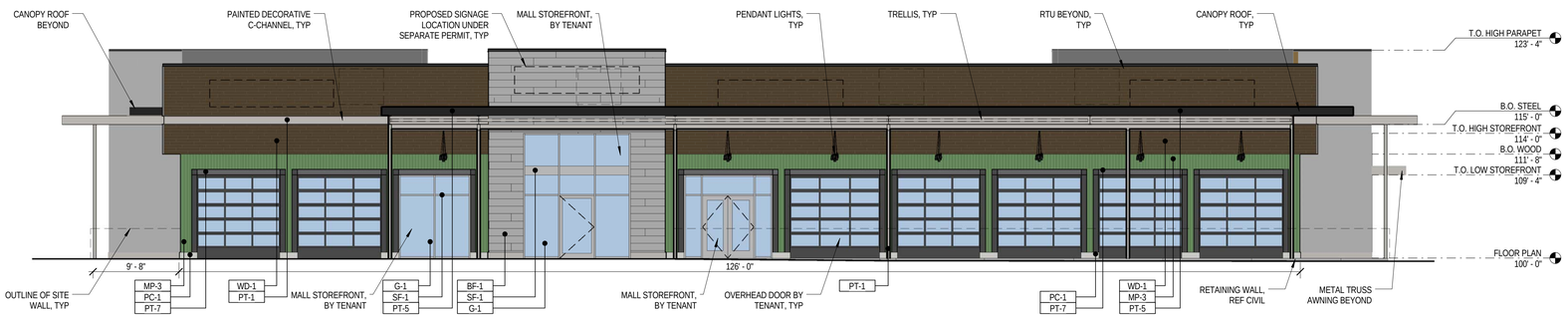
PREDOMINANT MATERIALS: 69%

ARCHITECTURAL METAL PANELS: 923 SF
STUCCO: 1,287 SF
CAST STONE, ARCHITECTURAL CONCRETE BLOCK: 679 SF
GLASS: 2,268 SF
MANUFACTURED STONE: 2,498 SF

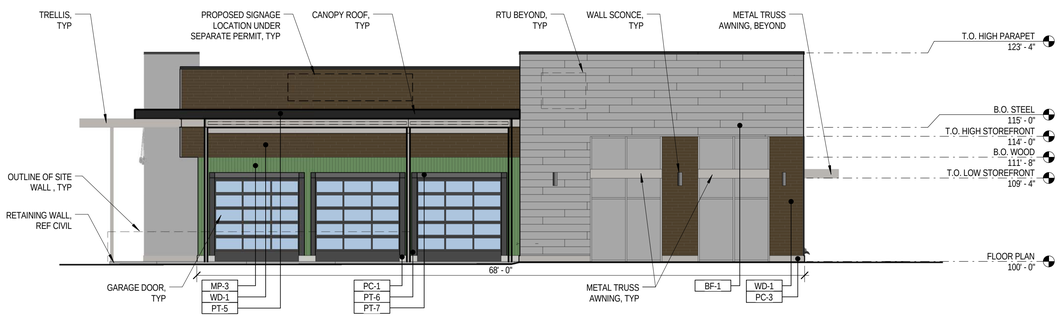
SECONDARY MATERIALS: 31%

METAL ACCENTS: 873 SF
WOOD SIDING: 1,827 SF
FIBER CEMENT BOARD: 515 SF

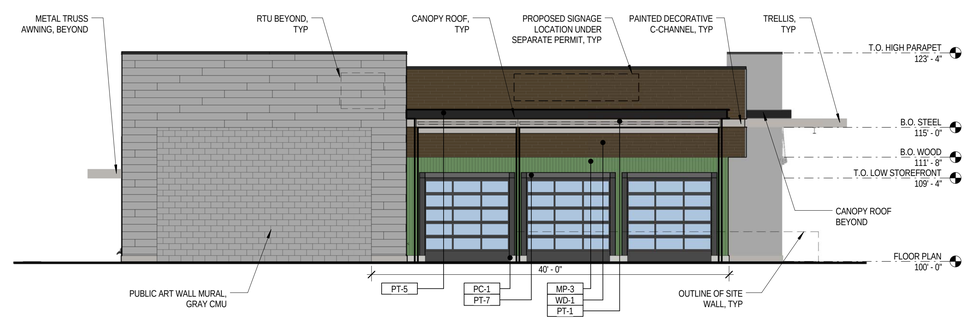
MATERIAL LEGEND		
LABEL	MATERIAL	COLOR
AM-1	ARCHITECTURAL METAL PANEL	WESTERN STATES METAL PANEL -SPECKLED RUST
AM-2	ARCHITECTURAL METAL PANEL	WESTERN STATES METAL PANEL - WEATHERED RUSTIC
AW-1	FABRIC AWNING	RED
CIP-1	CAST IN PLACE BOARD FORM WALL	GRAY
BF-1	CRAFTED MASONRY VENEER	CREATIVE MINES CRAFT BOARD FORM - MONSOON
CMU-1	GROUND FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
CMU-2	SPLIT FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
CMU-3	GROUND FACE CONCRETE MASONRY UNIT	BASALITE 900R
CMU-4	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 900R
CMU-5	GROUND FACE CONCRETE MASONRY UNIT	BASALITE 807R
CMU-6	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 807R
CMU-7	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 701R
E-1	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #104 DOVER SKY
E-2	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #105 SUEDE
E-3	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #110 VAN DYKE
E-4	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #614 SMOKE SIGNAL
E-5	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #615A TATTLE TALE
G-1	1" LOW-E GLASS	VIRACON - VE1-2M - LOW-E GLASS
G-2	1" SPANDREL GLASS	VIRACON - V908 - GRAY
MP-1	ARCHITECTURAL METAL PANEL	BERRIDGE ZINC-COTE
MP-2	ARCHITECTURAL METAL PANEL	BERRIDGE PRE-WEATHERED GALVALUME
MP-3	ARCHITECTURAL METAL PANEL	BERRIDGE PATINA GREEN
MP-4	ARCHITECTURAL METAL PANEL	BERRIDGE AWARD BLUE
MP-5	ARCHITECTURAL METAL PANEL	BERRIDGE MATTE BLACK
PC-1	PRECAST STONE	PACIFIC CAST STONE T-01
PC-2	PRECAST STONE	PACIFIC CAST STONE T-9915
PC-3	PRECAST STONE	PACIFIC CAST STONE T-9817
PC-4	PRECAST STONE	PACIFIC CAST STONE T-9702R
PT-1	PAINT	BENJAMIN MOORE AC-25 HARBOR GRAY
PT-2	PAINT	BENJAMIN MOORE AC-26 OZARK SHADOWS
PT-3	PAINT	BENJAMIN MOORE AC-34 CAPE HATTERAS SAND
PT-4	PAINT	BENJAMIN MOORE AC-35 VALLEY FORGE TAN
PT-5	PAINT	BENJAMIN MOORE 2121-10 GRAY
PT-6	PAINT	BENJAMIN MOORE 2121-20 STEEL WOOL
PT-7	PAINT	BENJAMIN MOORE 2121-30 PEWTER
SF-1	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - CLEAR NO. 14 & 17
SF-2	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - DARK BRONZE NO. 40
SF-3	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - BLACK NO. 29
WD-1	BARNWOOD SIDING	RECLAIMED DESIGNWORKS - NATURAL
WD-2	STAINED TIMBER	NATURAL
WD-3	PREFINISHED COMPOSITE WOOD FENCING	NATURAL



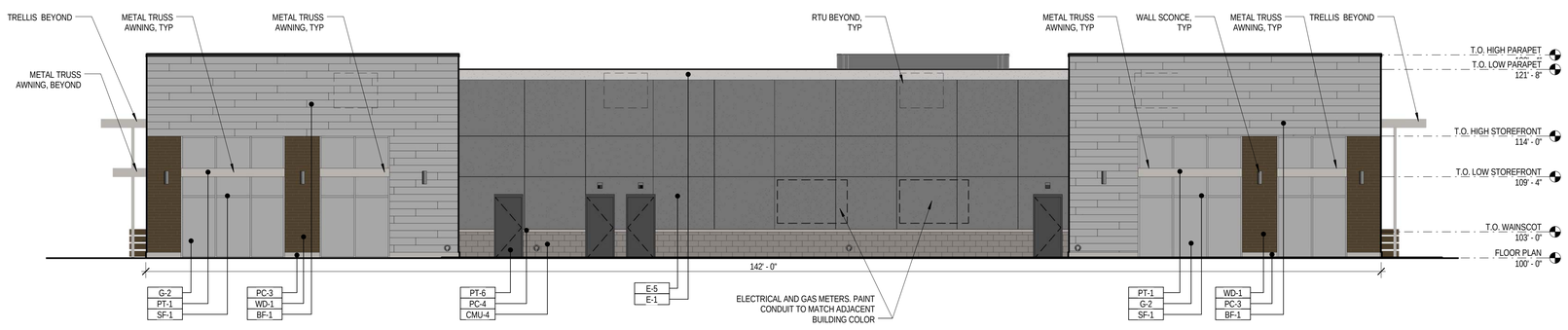
1 NORTHWEST ELEVATION
SCALE: 1/8" = 1'-0"



2 SOUTHWEST ELEVATION
SCALE: 1/8" = 1'-0"



3 NORTHEAST ELEVATION
SCALE: 1/8" = 1'-0"

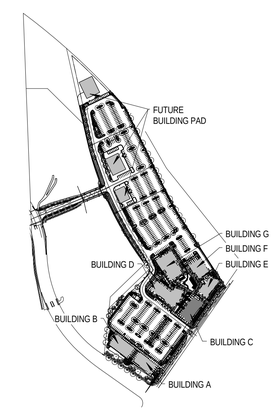


4 SOUTHEAST ELEVATION
SCALE: 1/8" = 1'-0"

FIXTURE TYPES:

FIXTURE D
FIXTURE J
FIXTURE H
FIXTURE E

REFERENCE PHOTOMETRICS SHEETS FOR FIXTURE INFORMATION



5 SIP - KEY PLAN
SCALE: 1" = 400'-0"

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THE YARD AT LONE TREE

LONE TREE, COLORADO

ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL
	06.17.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

Project No:	ADP000002.01
Drawn By:	KAB
Checked By:	KK
Date:	03.29.16

SHEET TITLE:
ARCHITECTURAL ELEVATIONS - BUILDING C

6/30/2016 4:14:48 PM

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22

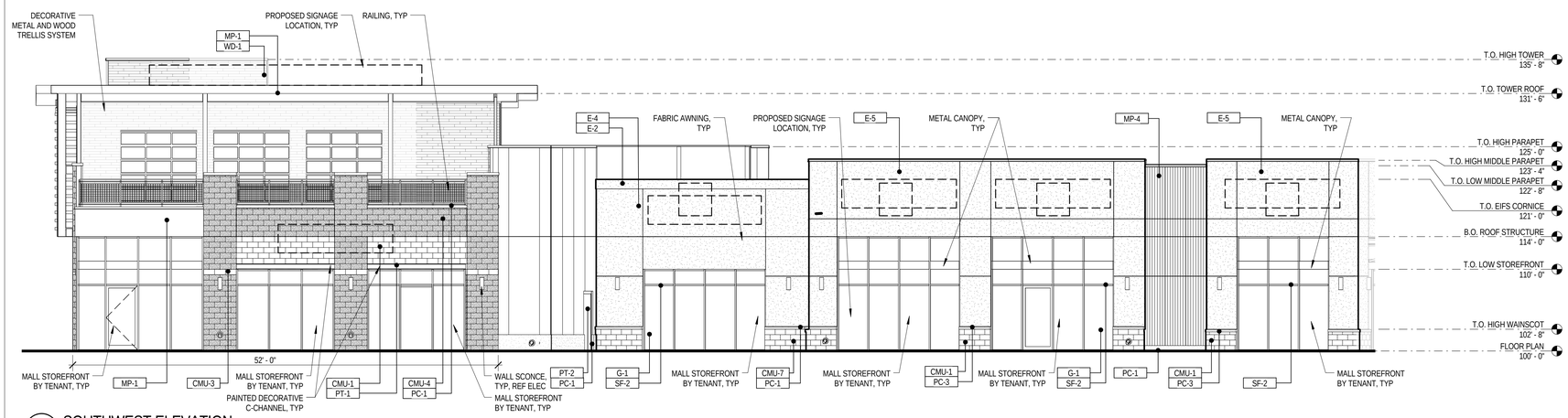
PREDOMINANT MATERIALS: 86%

ARCHITECTURAL METAL PANELS: 3,717 SF
STUCCO: 2,646 SF
CAST STONE, ARCHITECTURAL CONCRETE BLOCK: 2,088 SF
GLASS: 4,686 SF

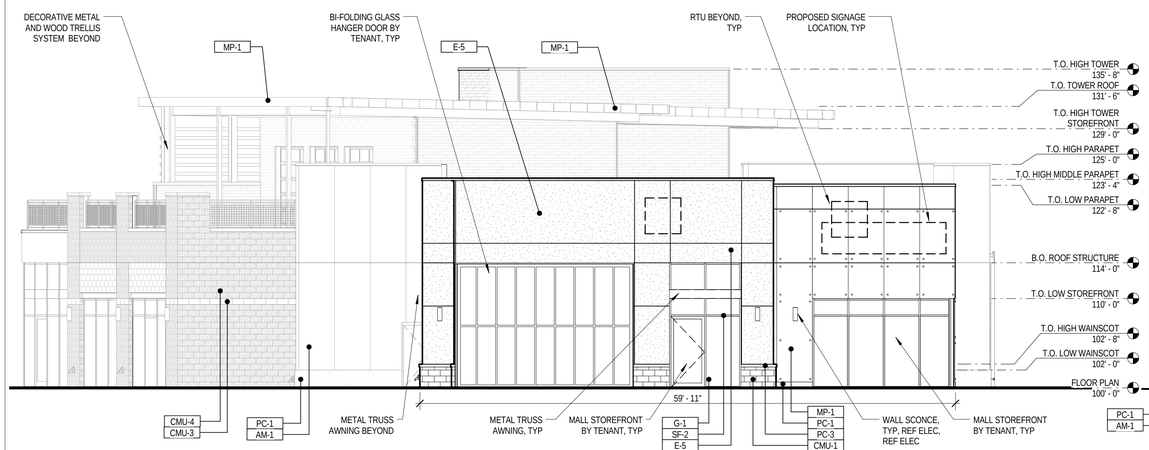
SECONDARY MATERIALS: 14%

METAL ACCENTS: 4747 SF
WOOD SIDING: 1,446 SF

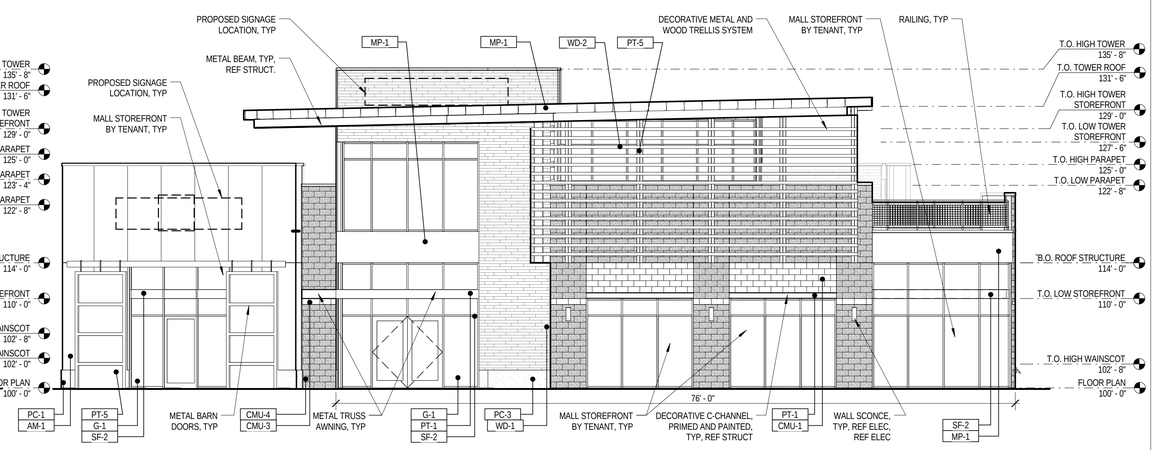
MATERIAL LEGEND		
LABEL	MATERIAL	COLOR
AM-1	ARCHITECTURAL METAL PANEL	WESTERN STATES METAL PANEL -SPECKLED RUST
AM-2	ARCHITECTURAL METAL PANEL	WESTERN STATES METAL PANEL - WEATHERED RUSTIC
AW-1	FABRIC AWNING	RED
CIP-1	CAST IN PLACE BOARD FORM WALL	GRAY
BF-1	CRAFTED MASONRY VENEER	CREATIVE MINES CRAFT BOARD FORM - MONSOON
CMU-1	GROUND FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
CMU-2	SPLIT FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
CMU-3	GROUND FACE CONCRETE MASONRY UNIT	BASALITE 900R
CMU-4	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 900R
CMU-5	GROUND FACE CONCRETE MASONRY UNIT	BASALITE 807R
CMU-6	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 807R
CMU-7	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 701R
E-1	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #104 DOVER SKY
E-2	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #105 SUEDE
E-3	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #110 VAN DYKE
E-4	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #614 SMOKE SIGNAL
E-5	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #615A TATTLE TALE
G-1	1" LOW-E GLASS	VIRACON - VE1-2M - LOW-E GLASS
G-2	1" SPANDREL GLASS	VIRACON - V908 - GRAY
MP-1	ARCHITECTURAL METAL PANEL	BERRIDGE ZINC-COTE
MP-2	ARCHITECTURAL METAL PANEL	BERRIDGE PRE-WEATHERED GALVALUME
MP-3	ARCHITECTURAL METAL PANEL	BERRIDGE PATINA GREEN
MP-4	ARCHITECTURAL METAL PANEL	BERRIDGE AWARD BLUE
MP-5	ARCHITECTURAL METAL PANEL	BERRIDGE MATTE BLACK
PC-1	PRECAST STONE	PACIFIC CAST STONE T-01
PC-2	PRECAST STONE	PACIFIC CAST STONE T-9915
PC-3	PRECAST STONE	PACIFIC CAST STONE T-9817
PC-4	PRECAST STONE	PACIFIC CAST STONE T-9702R
PT-1	PAINT	BENJAMIN MOORE AC-25 HARBOR GRAY
PT-2	PAINT	BENJAMIN MOORE AC-26 OZARK SHADOWS
PT-3	PAINT	BENJAMIN MOORE AC-34 CAPE HATTERAS SAND
PT-4	PAINT	BENJAMIN MOORE AC-35 VALLEY FORGE TAN
PT-5	PAINT	BENJAMIN MOORE 2121-10 GRAY
PT-6	PAINT	BENJAMIN MOORE 2121-20 STEEL WOOL
PT-7	PAINT	BENJAMIN MOORE 2121-30 PEWTER
SF-1	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - CLEAR NO. 14 & 17
SF-2	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - DARK BRONZE NO. 40
SF-3	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - BLACK NO. 29
WD-1	BARNWOOD SIDING	RECLAIMED DESIGNWORKS - NATURAL
WD-2	STAINED TIMBER	NATURAL
WD-3	PREFINISHED COMPOSITE WOOD FENCING	NATURAL



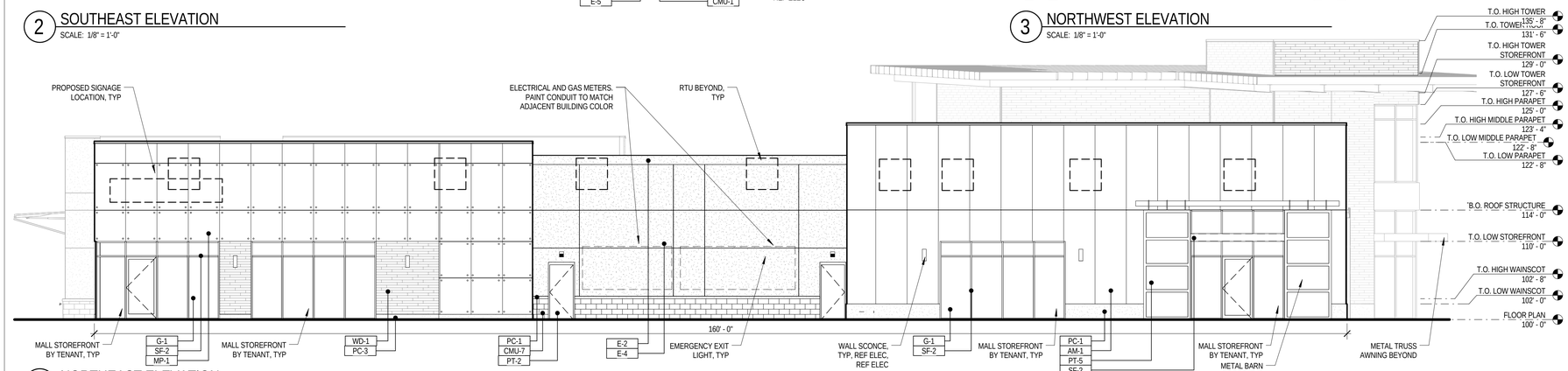
1 SOUTHWEST ELEVATION
SCALE: 1/8" = 1'-0"



2 SOUTHEAST ELEVATION
SCALE: 1/8" = 1'-0"



3 NORTHWEST ELEVATION
SCALE: 1/8" = 1'-0"



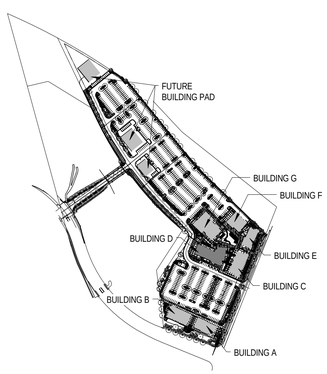
4 NORTHEAST ELEVATION
SCALE: 1/8" = 1'-0"

FIXTURE TYPES:

FIXTURE D

FIXTURE H

REFERENCE PHOTOMETRIC'S SHEETS FOR FIXTURE INFORMATION



5 KEY PLAN
SCALE: 1" = 400'-0"

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THE YARD AT LONE TREE

LONE TREE, COLORADO

ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL
	06.17.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

Project No:	ADP000002.01
Drawn By:	KAB
Checked By:	KK
Date:	03.29.16

SHEET TITLE:
ARCHITECTURAL ELEVATIONS - BUILDING D

6/30/2016 3:34:43 PM

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22

PREDOMINANT MATERIALS: 86%

ARCHITECTURAL METAL PANELS: 3,717 SF
STUCCO: 2,646 SF
CAST STONE, ARCHITECTURAL CONCRETE BLOCK: 2,088 SF
GLASS: 4,686 SF

SECONDARY MATERIALS: 14%

METAL ACCENTS: 4747 SF
WOOD SIDING: 1,446 SF

MATERIAL LEGEND

LABEL	MATERIAL	COLOR
AM-1	ARCHITECTURAL METAL PANEL	WESTERN STATES METAL PANEL -SPECKLED RUST
AM-2	ARCHITECTURAL METAL PANEL	WESTERN STATES METAL PANEL - WEATHERED RUSTIC
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CIP-1	CAST IN PLACE BOARD FORM WALL	GRAY
BF-1	CRAFTED MASONRY VENEER	CREATIVE MINES CRAFT BOARD FORM - MONSOON
CMU-1	GROUND FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
CMU-2	SPLIT FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
CMU-3	GROUND FACE CONCRETE MASONRY UNIT	BASALITE 900R
CMU-4	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 900R
CMU-5	GROUND FACE CONCRETE MASONRY UNIT	BASALITE 807R
CMU-6	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 807R
CMU-7	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 701R
E-1	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #104 DOVER SKY
E-2	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #105 SUEDE
E-3	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #110 VAN DYKE
E-4	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #614 SMOKE SIGNAL
E-5	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #615A TATTLE TALE
G-1	1" LOW-E GLASS	VIRACON - VE1-2M - LOW-E GLASS
G-2	1" SPANDREL GLASS	VIRACON - V908 - GRAY
MP-1	ARCHITECTURAL METAL PANEL	BERRIDGE ZINC-COTE
MP-2	ARCHITECTURAL METAL PANEL	BERRIDGE PRE-WEATHERED GALVALUME
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PT-1	PAINT	BENJAMIN MOORE AC-25 HARBOR GRAY
PT-2	PAINT	BENJAMIN MOORE AC-26 OZARK SHADOWS
PT-3	PAINT	BENJAMIN MOORE AC-34 CAPE HATTERAS SAND
PT-4	PAINT	BENJAMIN MOORE AC-35 VALLEY FORGE TAN
PT-5	PAINT	BENJAMIN MOORE 2121-10 GRAY
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SF-1	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - CLEAR NO. 14 & 17
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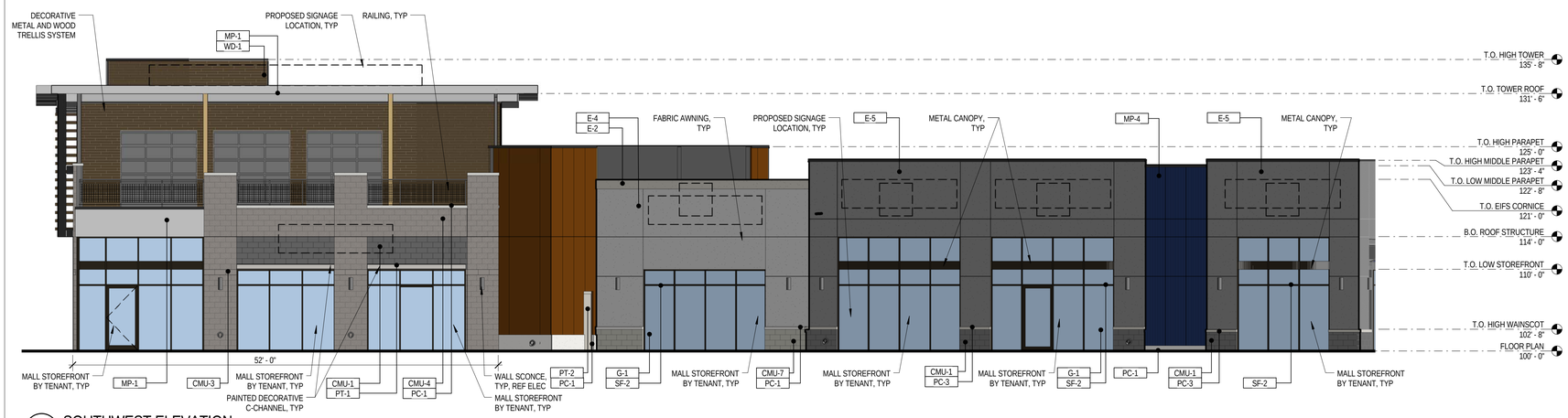
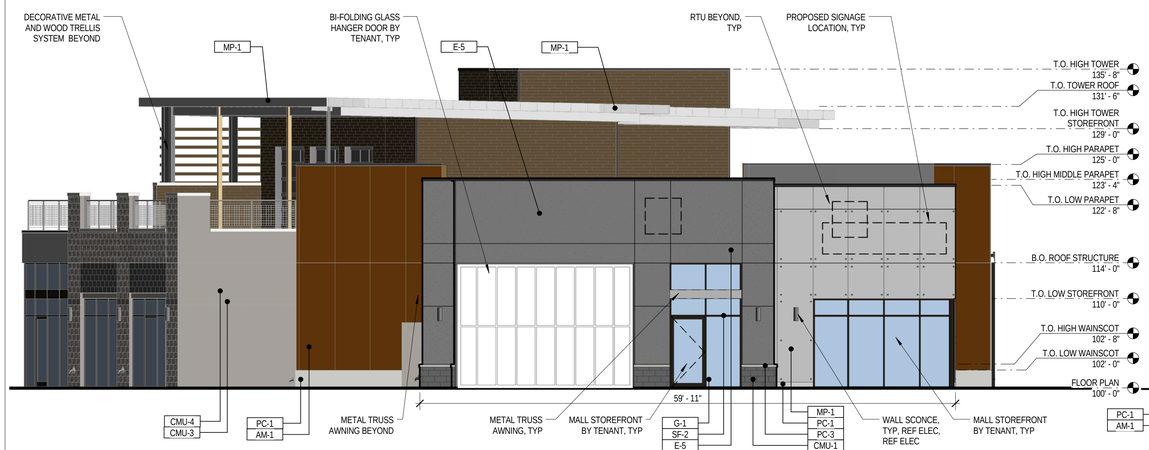
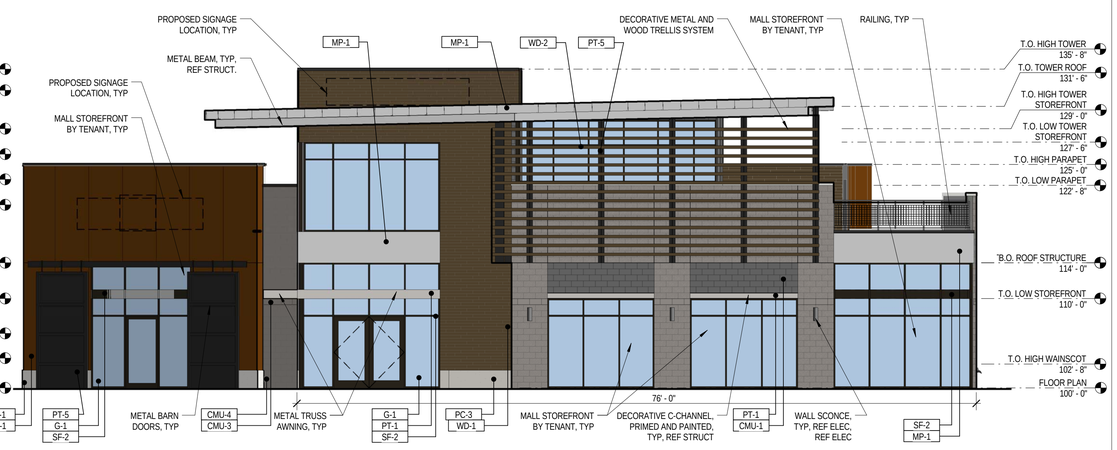
SF-3	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - BLACK NO. 29
WD-1	BARNWOOD SIDING	RECLAIMED DESIGNWORKS - NATURAL
WD-2	STAINED TIMBER	NATURAL
WD-3	PREFINISHED COMPOSITE WOOD FENCING	NATURAL



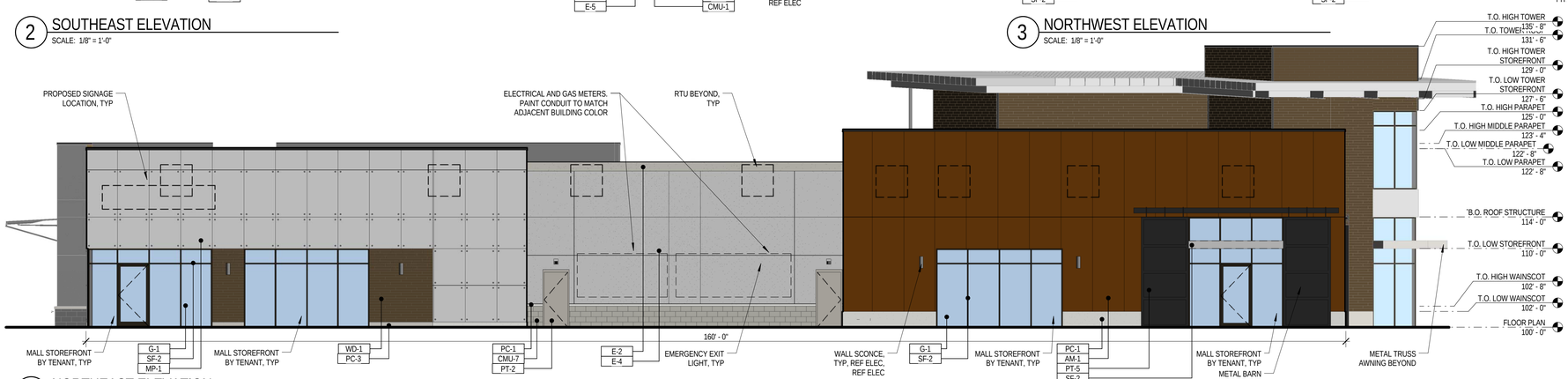
1 SOUTHWEST ELEVATION
SCALE: 1/8" = 1'-0"



2 SOUTHEAST ELEVATION
SCALE: 1/8" = 1'-0"



3 NORTHWEST ELEVATION
SCALE: 1/8" = 1'-0"



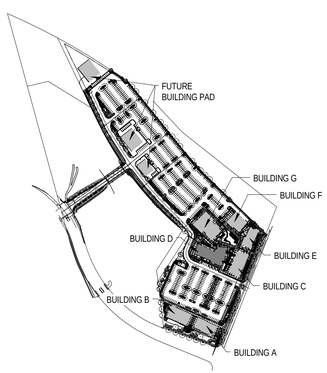
4 NORTHEAST ELEVATION
SCALE: 1/8" = 1'-0"

FIXTURE TYPES:

FIXTURE D

FIXTURE H

REFERENCE PHOTOMETRICS SHEETS FOR FIXTURE INFORMATION



5 KEY PLAN
SCALE: 1" = 400'-0"

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THE YARD AT LONE TREE

LONE TREE, COLORADO

ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL
	06.17.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

Project No:	ADP000002.01
Drawn By:	KAB
Checked By:	KK
Date:	03.29.16

SHEET TITLE:
ARCHITECTURAL ELEVATIONS - BUILDING D

6/30/2016 3:31:19 PM

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22

PREDOMINANT MATERIALS: 89%

ARCHITECTURAL METAL PANELS: 5,005SF
STUCCO: 112 SF
CAST STONE, ARCHITECTURAL CONCRETE BLOCK: 433 SF
GLASS: 2,581 SF
MANUFACTURED STONE: 1,731 SF

SECONDARY MATERIALS: 11%

METAL ACCENTS: 635 SF
WOOD SIDING: 538 SF

MATERIAL LEGEND

LABEL	MATERIAL	COLOR
AM-1	ARCHITECTURAL METAL PANEL	WESTERN STATES METAL PANEL -SPECKLED RUST
AM-2	ARCHITECTURAL METAL PANEL	WESTERN STATES METAL PANEL - WEATHERED RUSTIC
AW-1	FABRIC AWNING	RED
CIP-1	CAST IN PLACE BOARD FORM WALL	GRAY
BF-1	CRAFTED MASONRY VENEER	CREATIVE MINES CRAFT BOARD FORM - MONSOON
CMU-1	GROUND FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
CMU-2	SPLIT FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
CMU-3	GROUND FACE CONCRETE MASONRY UNIT	BASALITE 900R
CMU-4	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 900R
CMU-5	GROUND FACE CONCRETE MASONRY UNIT	BASALITE 807R
CMU-6	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 807R
CMU-7	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 701R
E-1	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #104 DOVER SKY
E-2	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #105 SUEDE
E-3	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #110 VAN DYKE
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E-5	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #615A TATTLE TALE
G-1	1" LOW-E GLASS	VIRACON - VE1-2M - LOW-E GLASS
G-2	1" SPANDREL GLASS	VIRACON - V908 - GRAY
MP-1	ARCHITECTURAL METAL PANEL	BERRIDGE ZINC-COTE
MP-2	ARCHITECTURAL METAL PANEL	BERRIDGE PRE-WEATHERED GALVALUME
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MP-4	ARCHITECTURAL METAL PANEL	BERRIDGE AWARD BLUE
MP-5	ARCHITECTURAL METAL PANEL	BERRIDGE MATTE BLACK
PC-1	PRECAST STONE	PACIFIC CAST STONE T-01
PC-2	PRECAST STONE	PACIFIC CAST STONE T-9915
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PT-1	PAINT	BENJAMIN MOORE AC-25 HARBOR GRAY
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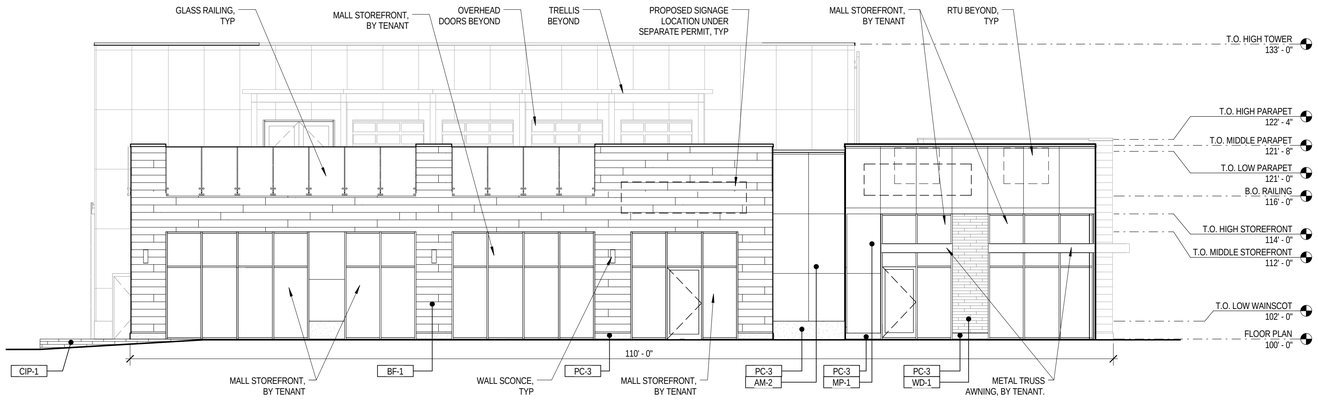
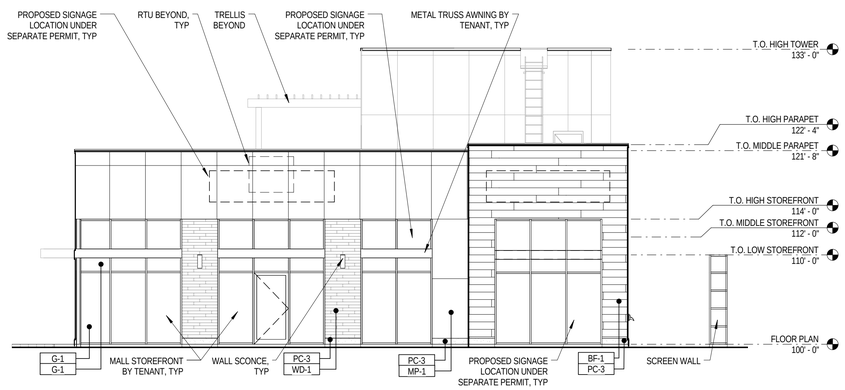
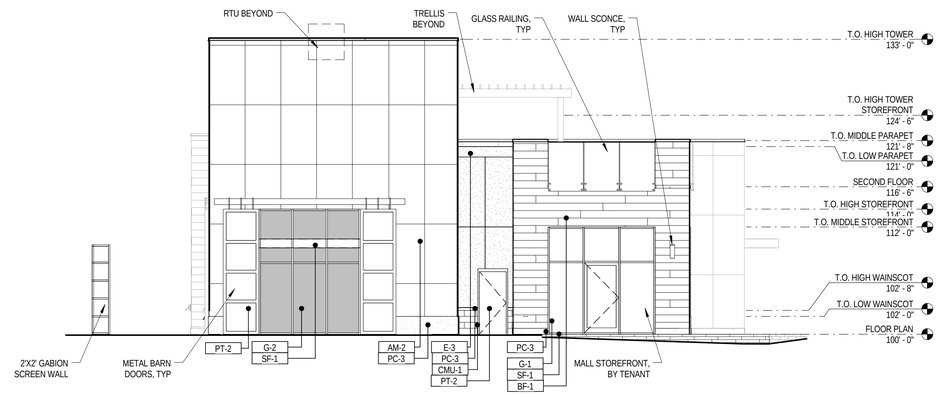
WD-1	BARNWOOD SIDING	RECLAIMED DESIGNWORKS - NATURAL
WD-2	STAINED TIMBER	NATURAL
WD-3	PREFINISHED COMPOSITE WOOD FENCING	NATURAL



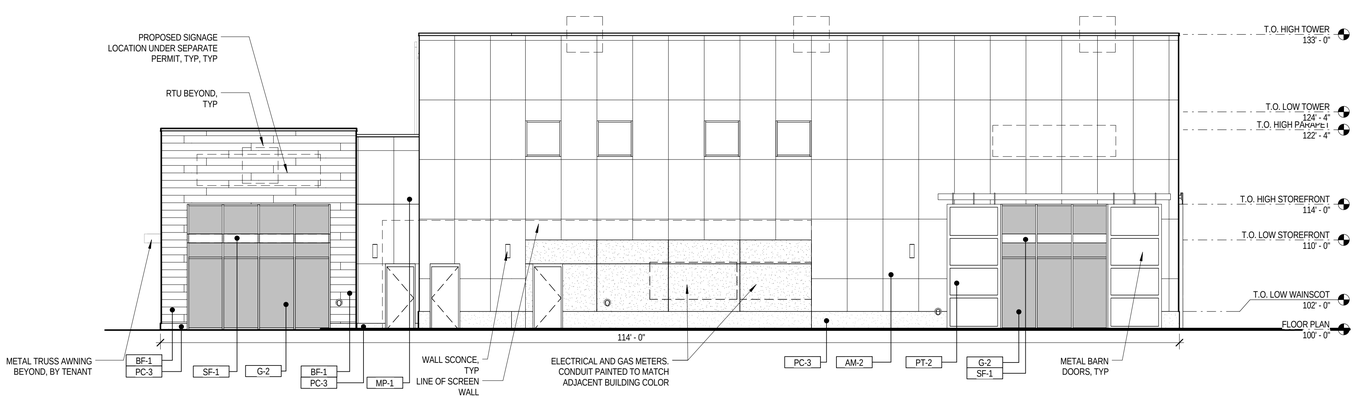
1 NORTHWEST ELEVATION
SCALE: 1/8" = 1'-0"



2 SOUTHWEST ELEVATION
SCALE: 1/8" = 1'-0"



3 NORTHEAST ELEVATION
SCALE: 1/8" = 1'-0"



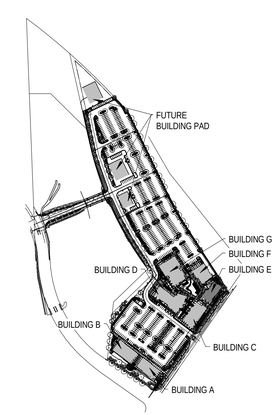
4 SOUTHEAST ELEVATION
SCALE: 1/8" = 1'-0"

FIXTURE TYPES:

FIXTURE D

FIXTURE H

REFERENCE PHOTOMETRICS SHEETS FOR FIXTURE INFORMATION



5 KEY PLAN
SCALE: 1" = 400'-0"

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Project No:	ADP000002.01
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Checked By:	KK
Date:	03.29.16

SHEET TITLE:
ARCHITECTURAL ELEVATIONS - BUILDING E

6/30/2016 3:45:45 PM

SITE IMPROVEMENT PLAN

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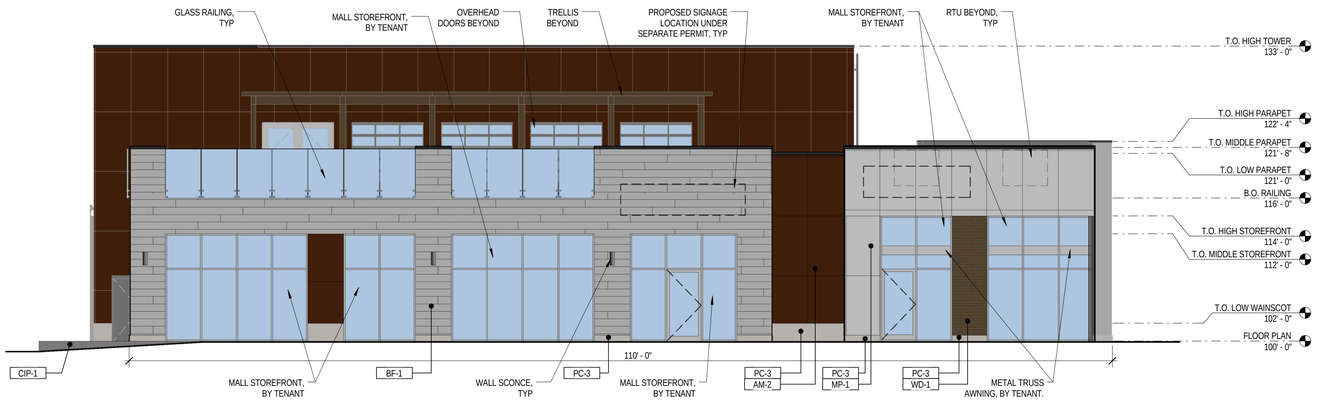
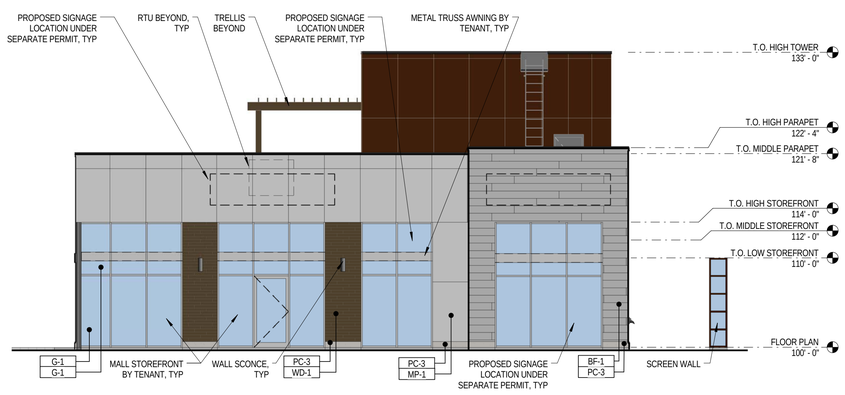


1 NORTHWEST ELEVATION
SCALE: 1/8" = 1'-0"



2 SOUTHWEST ELEVATION
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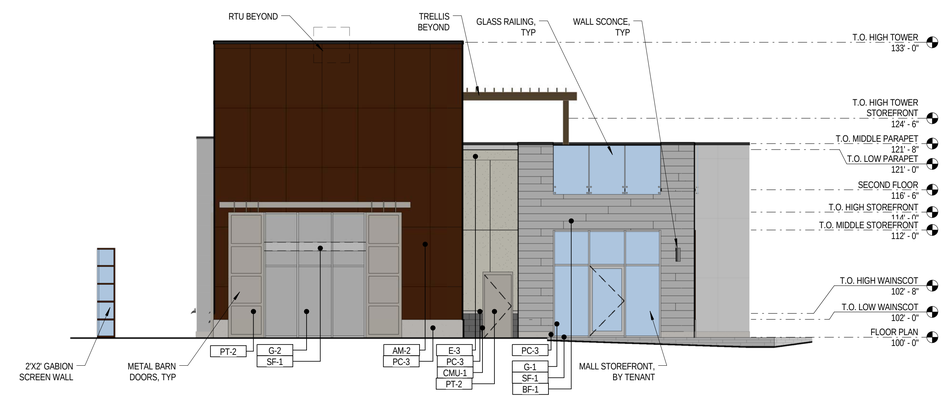

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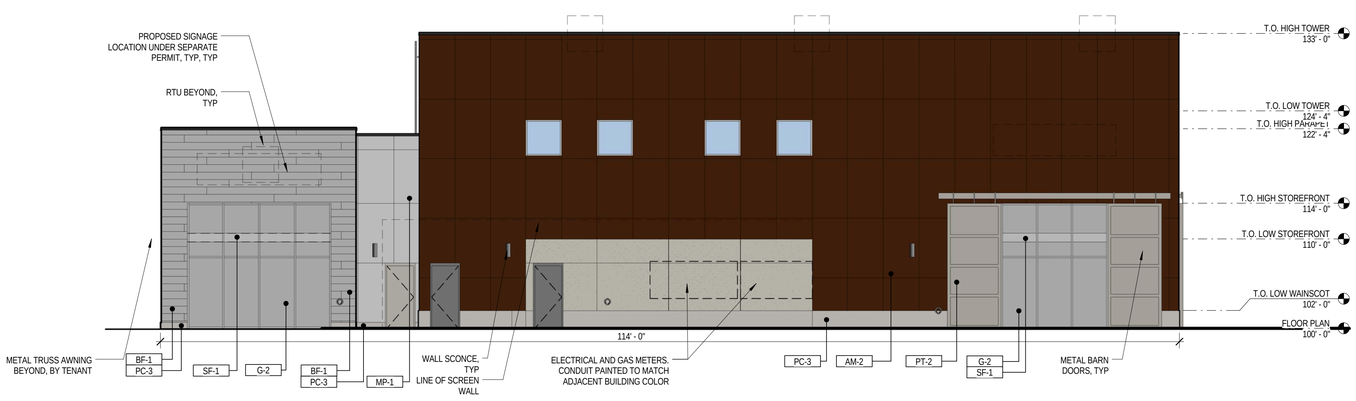

4 SOUTHEAST ELEVATION
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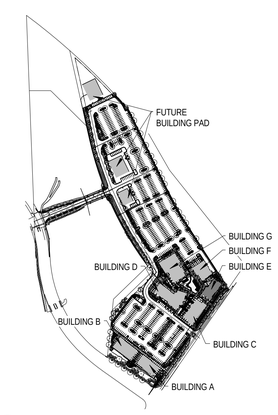
FIXTURE TYPES:

FIXTURE D

FIXTURE H

REFERENCE PHOTOMETRICS SHEETS FOR FIXTURE INFORMATION



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SCALE: 1" = 400'-0"

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Project No:	ADP000002.01
Drawn By:	KAB
Checked By:	KK
Date:	03.29.16

SHEET TITLE:
ARCHITECTURAL ELEVATIONS - BUILDING E

6/30/2016 3:44:14 PM

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

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PREDOMINANT MATERIALS: 74%

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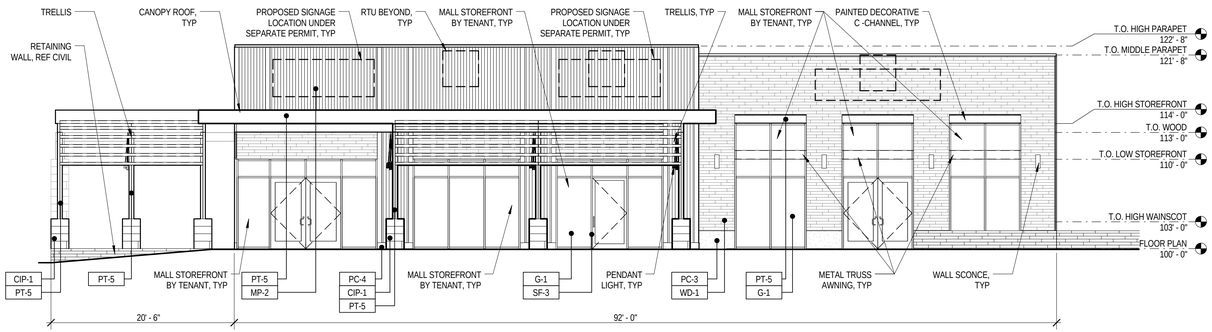

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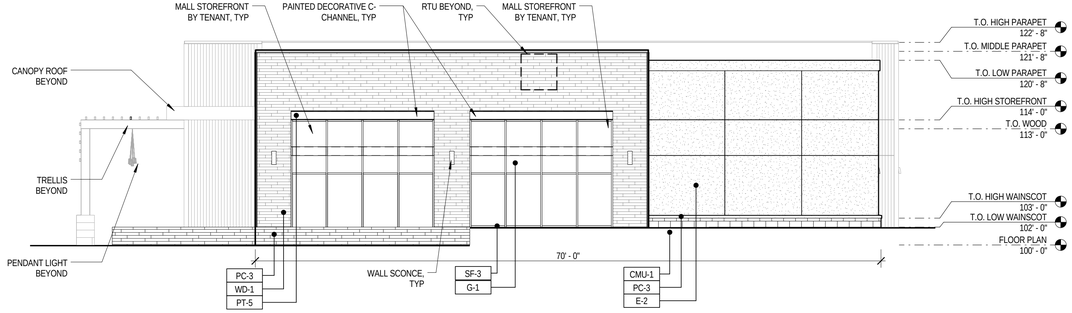
SCALE: 1/8" = 1'-0"



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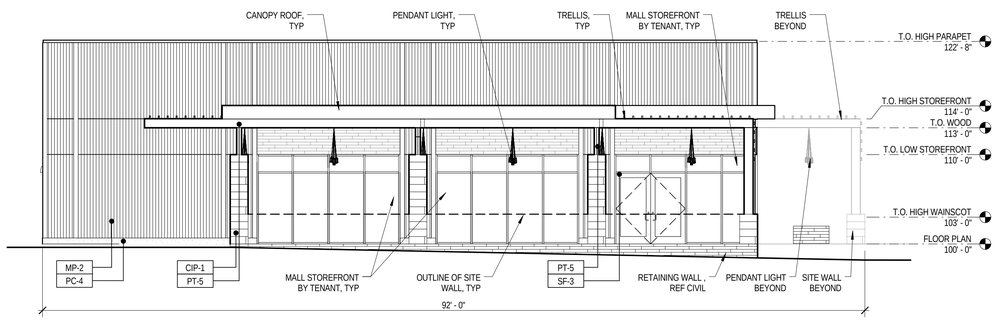

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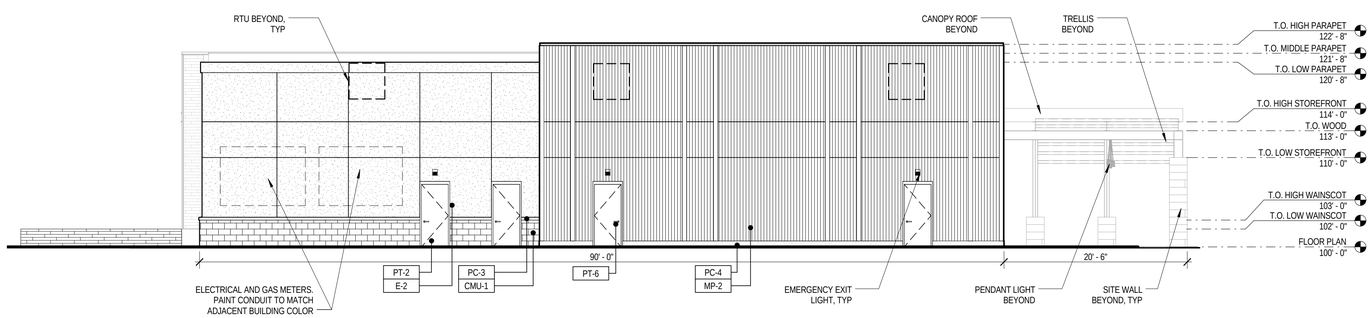

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FIXTURE TYPES:

FIXTURE D
FIXTURE H
FIXTURE E

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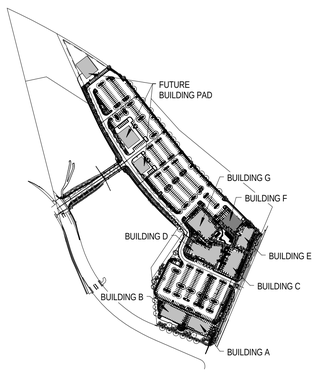

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SHEET TITLE:
ARCHITECTURAL ELEVATIONS - BUILDING F

6/30/2016 3:49:49 PM

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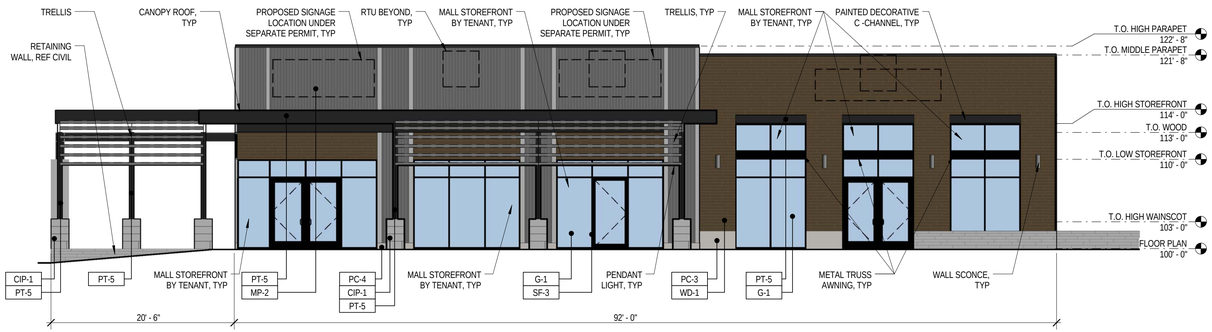
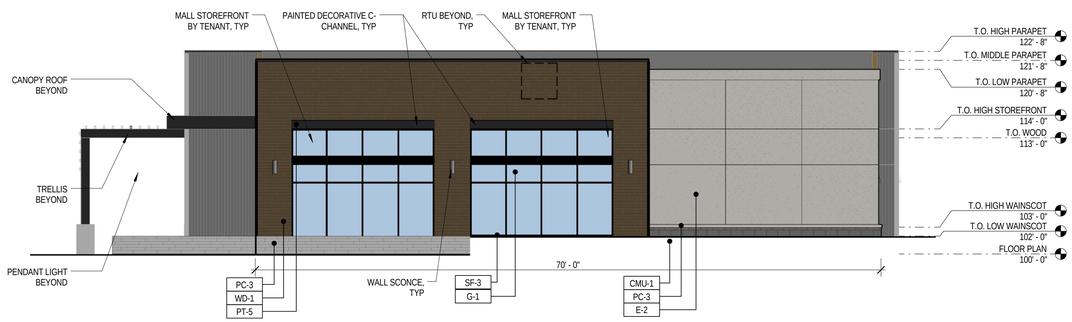
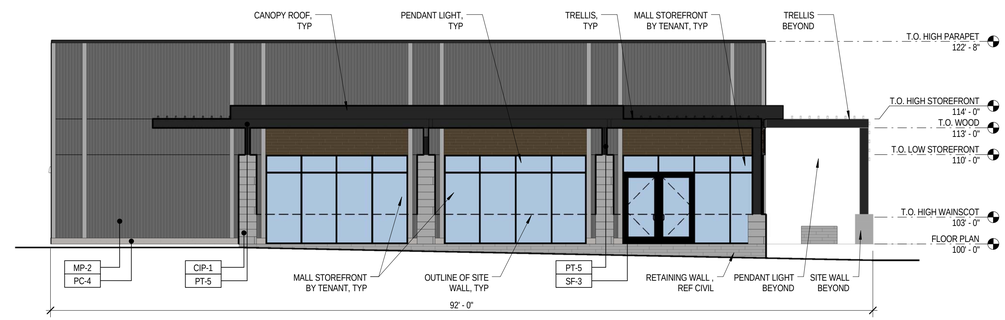
G-2	1" SPANDREL GLASS	VIRACON - V908 - GRAY
MP-1	ARCHITECTURAL METAL PANEL	BERRIDGE ZINC-COTE
MP-2	ARCHITECTURAL METAL PANEL	BERRIDGE PRE-WEATHERED GALVALUME
MP-3	ARCHITECTURAL METAL PANEL	BERRIDGE PATINA GREEN
MP-4	ARCHITECTURAL METAL PANEL	BERRIDGE AWARD BLUE
MP-5	ARCHITECTURAL METAL PANEL	BERRIDGE MATTE BLACK
PC-1	PRECAST STONE	PACIFIC CAST STONE T-01
PC-2	PRECAST STONE	PACIFIC CAST STONE T-9915
PC-3	PRECAST STONE	PACIFIC CAST STONE T-9817
PC-4	PRECAST STONE	PACIFIC CAST STONE T-9702R
PT-1	PAINT	BENJAMIN MOORE AC-25 HARBOR GRAY
PT-2	PAINT	BENJAMIN MOORE AC-26 OZARK SHADOWS
PT-3	PAINT	BENJAMIN MOORE AC-34 CAPE HATTERAS SAND
PT-4	PAINT	BENJAMIN MOORE AC-35 VALLEY FORGE TAN
PT-5	PAINT	BENJAMIN MOORE 2121-10 GRAY
PT-6	PAINT	BENJAMIN MOORE 2121-20 STEEL WOOL
PT-7	PAINT	BENJAMIN MOORE 2121-30 PEWTER
SF-1	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - CLEAR NO. 14 & 17
SF-2	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - DARK BRONZE NO. 40
SF-3	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - BLACK NO. 29
WD-1	BARNWOOD SIDING	RECLAIMED DESIGNWORKS - NATURAL
WD-2	STAINED TIMBER	NATURAL
WD-3	PREFINISHED COMPOSITE WOOD FENCING	NATURAL



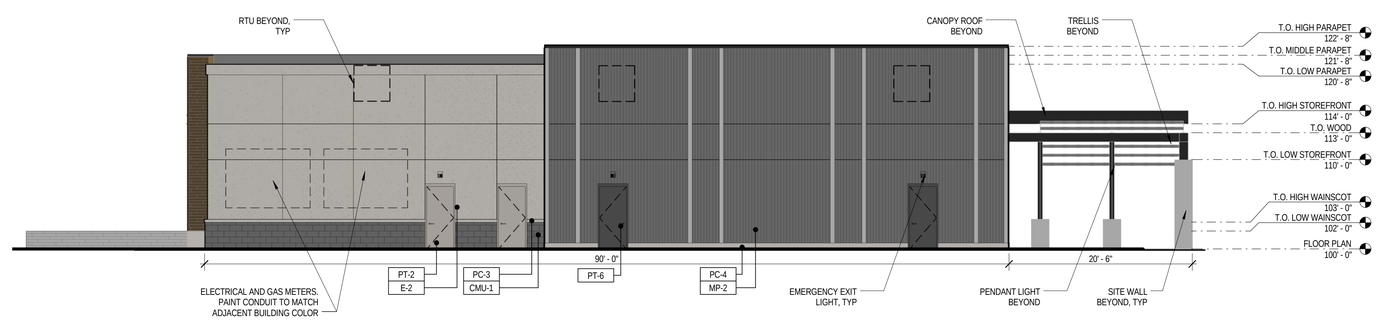
1 SOUTHWEST ELEVATION
SCALE: 1/8" = 1'-0"



2 SOUTHEAST ELEVATION
SCALE: 1/8" = 1'-0"



3 NORTHWEST ELEVATION
SCALE: 1/8" = 1'-0"



4 NORTHEAST ELEVATION
SCALE: 1/8" = 1'-0"

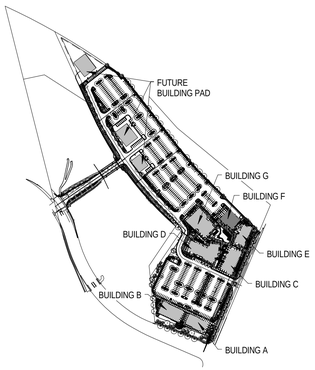
FIXTURE TYPES:

FIXTURE D

FIXTURE H

FIXTURE E

REFERENCE PHOTOMETRICS SHEETS FOR FIXTURE INFORMATION



5 KEY PLAN
SCALE: 1" = 400'-0"

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THE YARD AT LONE TREE

LONE TREE, COLORADO

ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL
	06.17.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

Project No:	ADP000002.01
Drawn By:	KAB
Checked By:	KK
Date:	03.29.16

SHEET TITLE:
ARCHITECTURAL ELEVATIONS - BUILDING F

6/30/2016 3:52:23 PM

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22

PREDOMINANT MATERIALS: 81%

ARCHITECTURAL METAL PANELS: 3,347 SF
STUCCO: 750 SF
CAST STONE, ARCHITECTURAL CONCRETE BLOCK & PRE-CAST CONCRETE: 348 SF
GLASS: 4,575 SF
MANUFACTURED STONE: 2,970 SF

SECONDARY MATERIALS: 19%

METAL ACCENTS: 635 SF
WOOD SIDING: 2,108 SF

MATERIAL LEGEND		
LABEL	MATERIAL	COLOR
AM-1	ARCHITECTURAL METAL PANEL	WESTERN STATES METAL PANEL -SPECKLED RUST
AM-2	ARCHITECTURAL METAL PANEL	WESTERN STATES METAL PANEL - WEATHERED RUSTIC
AW-1	FABRIC AWNING	RED
CIP-1	CAST IN PLACE BOARD FORM WALL	GRAY
BF-1	CRAFTED MASONRY VENEER	CREATIVE MINES CRAFT BOARD FORM - MONSOON
CMU-1	GROUND FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
CMU-2	SPLIT FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
CMU-3	GROUND FACE CONCRETE MASONRY UNIT	BASALITE 900R
CMU-4	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 900R
CMU-5	GROUND FACE CONCRETE MASONRY UNIT	BASALITE 807R
CMU-6	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 807R
CMU-7	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 701R
E-1	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #104 DOVER SKY
E-2	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #105 SUEDE
E-3	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #110 VAN DYKE
E-4	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #614 SMOKE SIGNAL
E-5	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #615A TATTLE TALE
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PT-4	PAINT	BENJAMIN MOORE AC-35 VALLEY FORGE TAN
PT-5	PAINT	BENJAMIN MOORE 2121-10 GRAY
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PT-7	PAINT	BENJAMIN MOORE 2121-30 PEWTER
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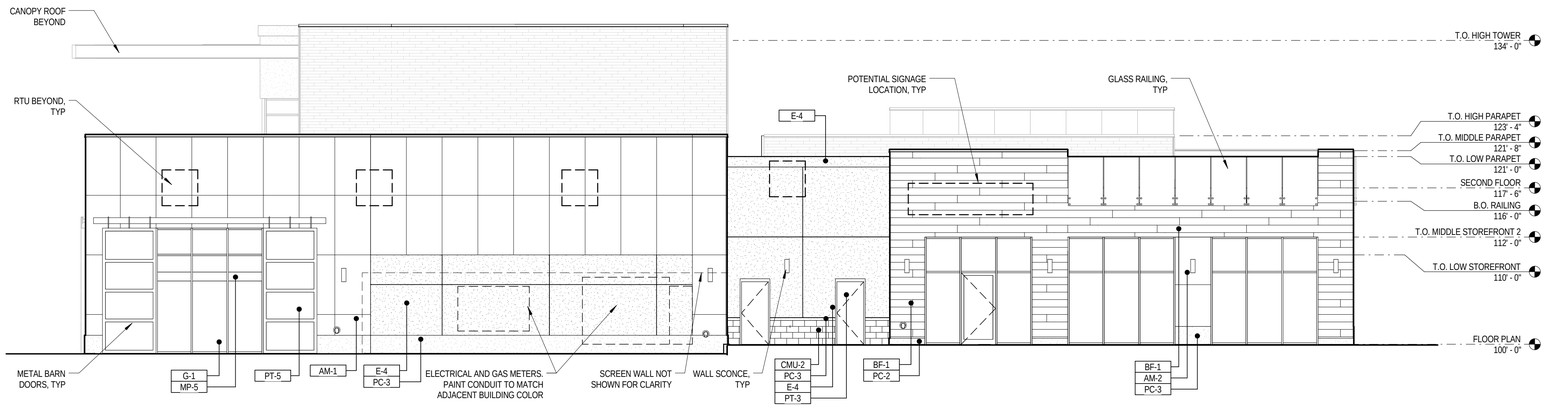
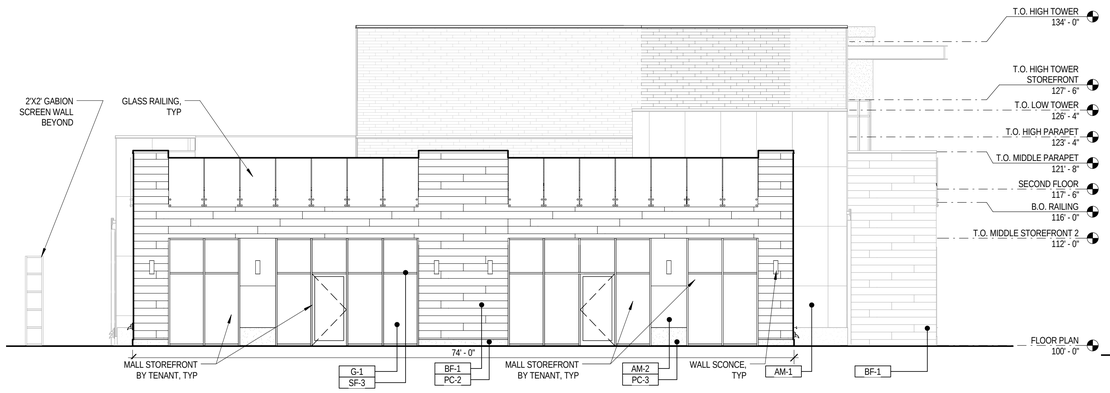
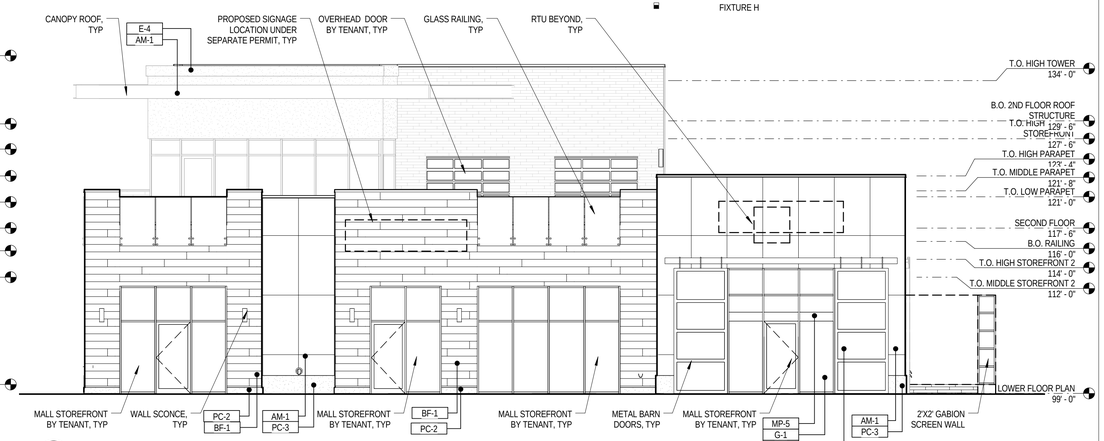
WD-1	BARNWOOD SIDING	RECLAIMED DESIGNWORKS - NATURAL
WD-2	STAINED TIMBER	NATURAL
WD-3	PREFINISHED COMPOSITE WOOD FENCING	NATURAL



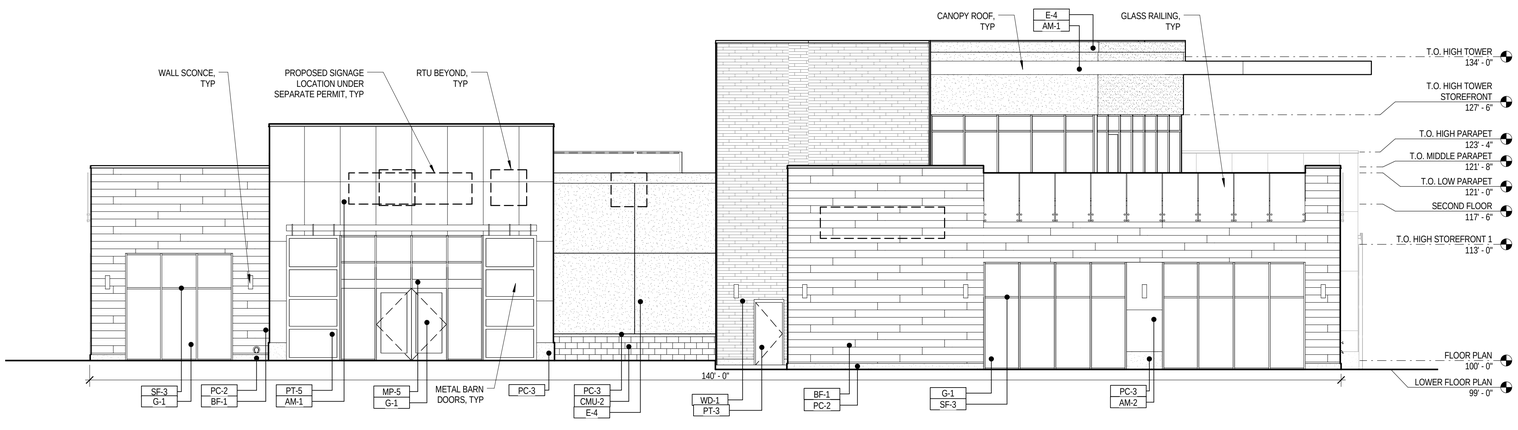
1 NORTHEAST ELEVATION
SCALE: 1/8" = 1'-0"



2 NORTHWEST ELEVATION
SCALE: 1/8" = 1'-0"



3 SOUTHEAST ELEVATION
SCALE: 1/8" = 1'-0"



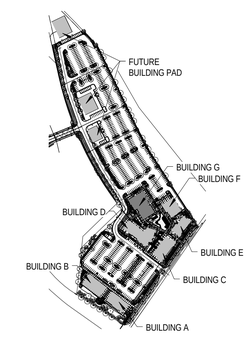
4 SOUTHWEST ELEVATION
SCALE: 1/8" = 1'-0"

FIXTURE TYPES:

FIXTURE D

FIXTURE H

REFERENCE PHOTOMETRICS SHEETS FOR FIXTURE INFORMATION



5 KEY PLAN
SCALE: 1" = 400'-0"

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THE YARD AT LONE TREE

LONE TREE, COLORADO

ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL
	06.17.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

Project No:	ADP000002.01
Drawn By:	KAB
Checked By:	KK
Date:	03.29.16

SHEET TITLE:
ARCHITECTURAL ELEVATIONS - BUILDING G

6/30/2016 3:58:24 PM

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22

PREDOMINANT MATERIALS: 81%

ARCHITECTURAL METAL PANELS: 3,347 SF
STUCCO: 750 SF
CAST STONE, ARCHITECTURAL CONCRETE BLOCK & PRE-CAST CONCRETE: 348 SF
GLASS: 4,575 SF
MANUFACTURED STONE: 2,970 SF

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CMU-1	GROUND FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
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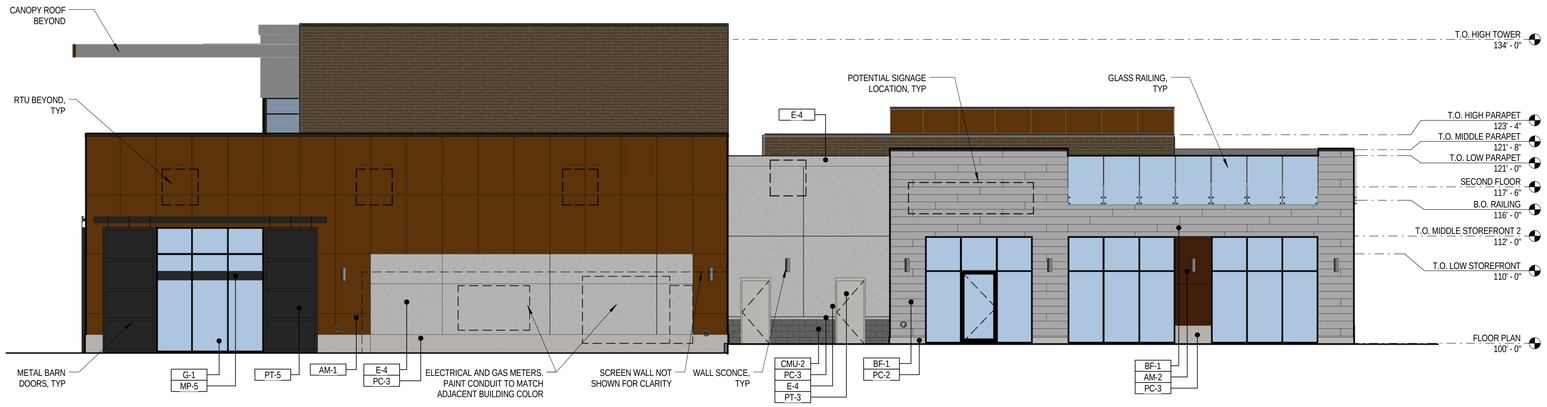
WD-2	STAINED TIMBER	NATURAL
WD-3	PREFINISHED COMPOSITE WOOD FENCING	NATURAL



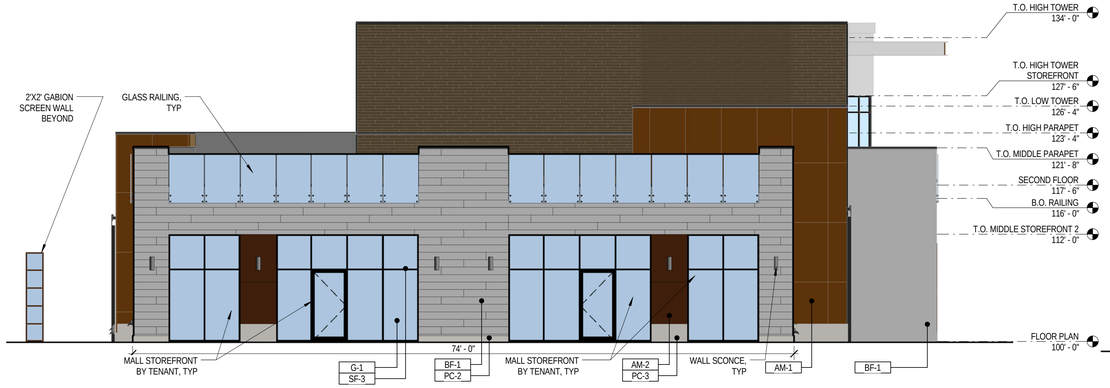
1 NORTHEAST ELEVATION
SCALE: 1/8" = 1'-0"

FIXTURE TYPES:

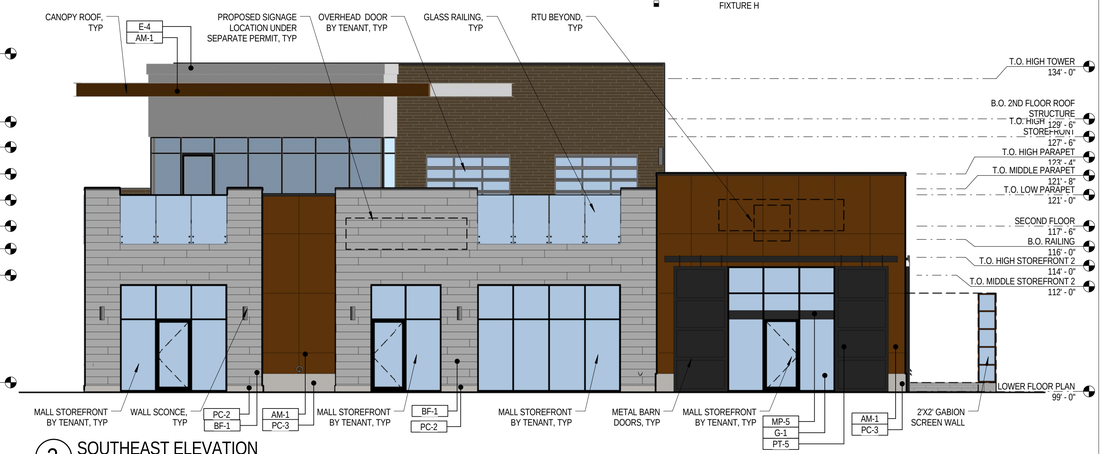
FIXTURE D

FIXTURE H

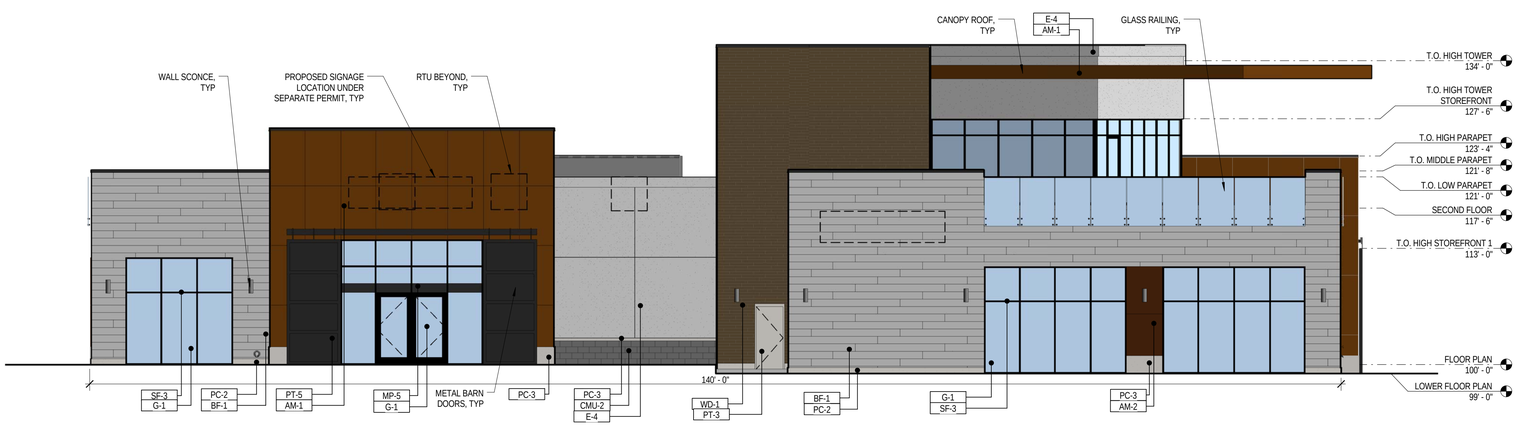
REFERENCE PHOTOMETRICS SHEETS FOR FIXTURE INFORMATION



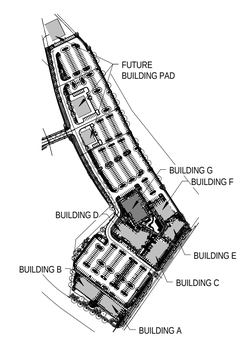
2 NORTHWEST ELEVATION
SCALE: 1/8" = 1'-0"



3 SOUTHEAST ELEVATION
SCALE: 1/8" = 1'-0"



4 SOUTHWEST ELEVATION
SCALE: 1/8" = 1'-0"



5 KEY PLAN
SCALE: 1" = 400'-0"

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THE YARD AT LONE TREE

LONE TREE, COLORADO

ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
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	07.01.16	SIP RESUBMITTAL

Project No:	ADP000002.01
Drawn By:	KAB
Checked By:	KK
Date:	03.29.16

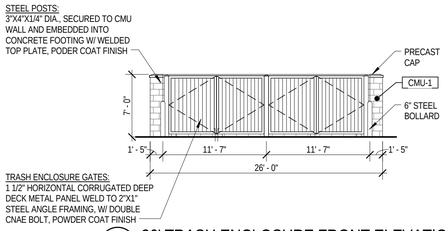
SHEET TITLE:
ARCHITECTURAL ELEVATIONS - BUILDING G

6/30/2016 3:57:30 PM

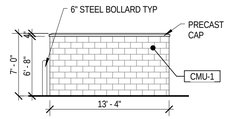
SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

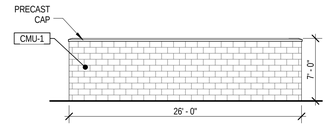
PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22



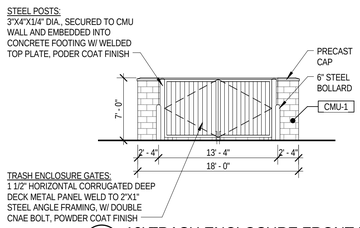
10 26' TRASH ENCLOSURE FRONT ELEVATION
SCALE: 1/8" = 1'-0"



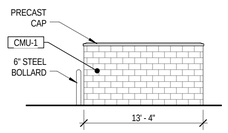
11 26' TRASH ENCLOSURE SIDE ELEVATION
SCALE: 1/8" = 1'-0"



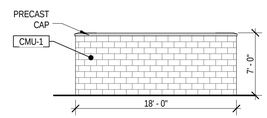
12 26' TRASH ENCLOSURE REAR ELEVATION
SCALE: 1/8" = 1'-0"



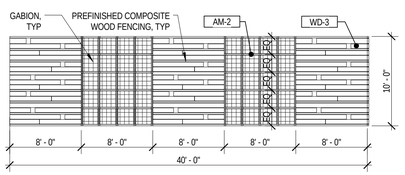
7 18' TRASH ENCLOSURE FRONT ELEVATION
SCALE: 1/8" = 1'-0"



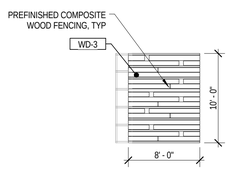
8 18' TRASH ENCLOSURE SIDE ELEVATION
SCALE: 1/8" = 1'-0"



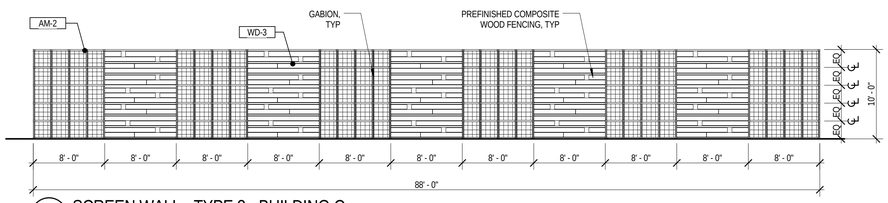
9 18' TRASH ENCLOSURE REAR ELEVATION
SCALE: 1/8" = 1'-0"



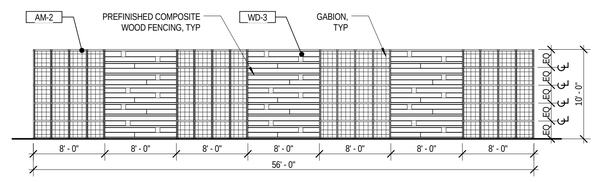
5 SCREEN WALL FRONT ELEVATION - TYPE 5 - BUILDING G
SCALE: 1/8" = 1'-0"



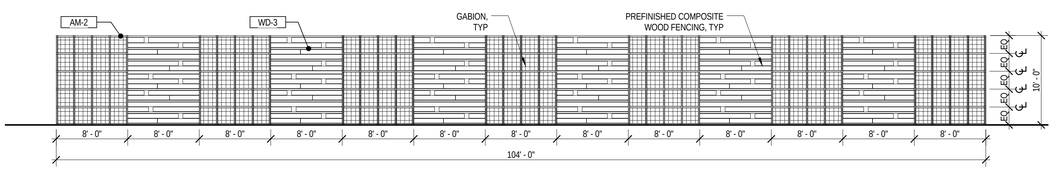
6 SCREEN WALL SIDE ELEVATION - TYPE 5 - BUILDING G
SCALE: 1/8" = 1'-0"



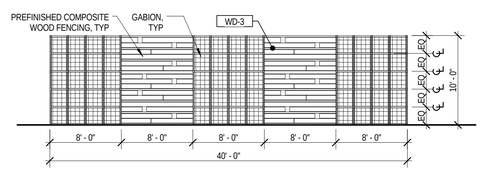
3 SCREEN WALL - TYPE 3 - BUILDING C
SCALE: 1/8" = 1'-0"



4 SCREEN WALL TYPE 4 - BUILDING E
SCALE: 1/8" = 1'-0"



1 SCREEN WALL - TYPE 1 - BUILDING F
SCALE: 1/8" = 1'-0"



2 SCREEN WALL - TYPE 2 - BUILDINGS A, B, D
SCALE: 1/8" = 1'-0"

MATERIAL LEGEND

LABEL	MATERIAL	COLOR
AM-1	ARCHITECTURAL METAL PANEL	WESTERN STATES METAL PANEL -SPECKLED RUST
AM-2	ARCHITECTURAL METAL PANEL	WESTERN STATES METAL PANEL - WEATHERED RUSTIC
AW-1	FABRIC AWNING	RED
CIP-1	CAST IN PLACE BOARD FORM WALL	GRAY
BF-1	CRAFTED MASONRY VENEER	CREATIVE MINES CRAFT BOARD FORM - MONSOON
CMU-1	GROUND FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
CMU-2	SPLIT FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
CMU-3	GROUND FACE CONCRETE MASONRY UNIT	BASALITE 900R
CMU-4	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 900R
CMU-5	GROUND FACE CONCRETE MASONRY UNIT	BASALITE 807R
CMU-6	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 807R
CMU-7	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 701R
E-1	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #104 DOVER SKY
E-2	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #105 SUEDE
E-3	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #110 VAN DYKE
E-4	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #614 SMOKE SIGNAL
E-5	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #615A TATTLE TALE
G-1	1" LOW-E GLASS	VIRACON - VE1-2M - LOW-E GLASS
G-2	1" SPANDREL GLASS	VIRACON - V908 - GRAY
MP-1	ARCHITECTURAL METAL PANEL	BERRIDGE ZINC-COTE
MP-2	ARCHITECTURAL METAL PANEL	BERRIDGE PRE-WEATHERED GALVALUME
MP-3	ARCHITECTURAL METAL PANEL	BERRIDGE PATINA GREEN
MP-4	ARCHITECTURAL METAL PANEL	BERRIDGE AWARD BLUE
MP-5	ARCHITECTURAL METAL PANEL	BERRIDGE MATTE BLACK
PC-1	PRECAST STONE	PACIFIC CAST STONE T-01
PC-2	PRECAST STONE	PACIFIC CAST STONE T-9915
PC-3	PRECAST STONE	PACIFIC CAST STONE T-9817
PC-4	PRECAST STONE	PACIFIC CAST STONE T-9702R
PT-1	PAINT	BENJAMIN MOORE AC-25 HARBOR GRAY
PT-2	PAINT	BENJAMIN MOORE AC-26 OZARK SHADOWS
PT-3	PAINT	BENJAMIN MOORE AC-34 CAPE HATTERAS SAND
PT-4	PAINT	BENJAMIN MOORE AC-35 VALLEY FORGE TAN
PT-5	PAINT	BENJAMIN MOORE 2121-10 GRAY
PT-6	PAINT	BENJAMIN MOORE 2121-20 STEEL WOOL
PT-7	PAINT	BENJAMIN MOORE 2121-30 PEWTER
SF-1	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - CLEAR NO. 14 & 17
SF-2	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - DARK BRONZE NO. 40
SF-3	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - BLACK NO. 29
WD-1	BARNWOOD SIDING	RECLAIMED DESIGNWORKS - NATURAL
WD-2	STAINED TIMBER	NATURAL
WD-3	PREFINISHED COMPOSITE WOOD FENCING	NATURAL

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THE YARD AT LONE TREE

LONE TREE, COLORADO

ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL
	06.17.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

Project No:	ADP000002.01
Drawn By:	DES
Checked By:	KK
Date:	03.29.16

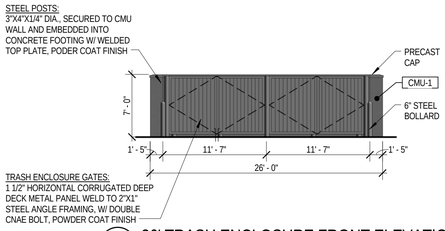
SHEET TITLE:
ARCHITECTURAL SITE AMENITIES

6/30/2016 4:05:33 PM

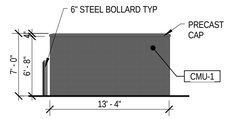
SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

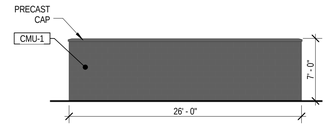
PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22



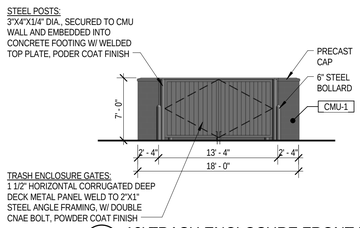
10 26' TRASH ENCLOSURE FRONT ELEVATION
SCALE: 1/8" = 1'-0"



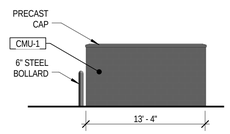
11 26' TRASH ENCLOSURE SIDE ELEVATION
SCALE: 1/8" = 1'-0"



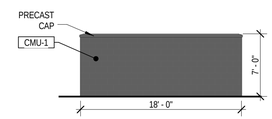
12 26' TRASH ENCLOSURE REAR ELEVATION
SCALE: 1/8" = 1'-0"



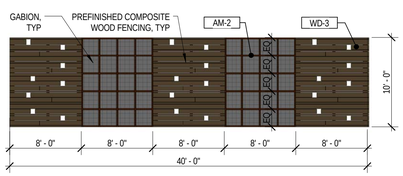
7 18' TRASH ENCLOSURE FRONT ELEVATION
SCALE: 1/8" = 1'-0"



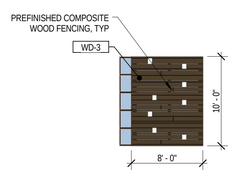
8 18' TRASH ENCLOSURE SIDE ELEVATION
SCALE: 1/8" = 1'-0"



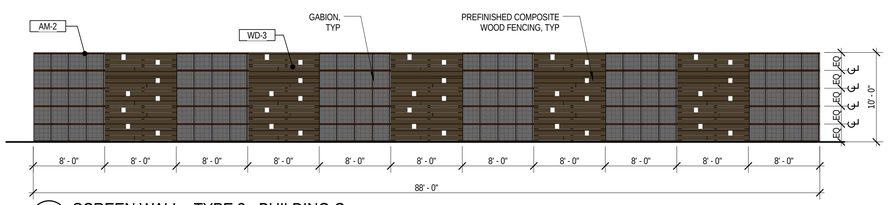
9 18' TRASH ENCLOSURE REAR ELEVATION
SCALE: 1/8" = 1'-0"



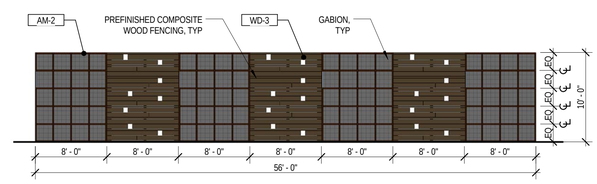
5 SCREEN WALL FRONT ELEVATION - TYPE 5 - BUILDING G
SCALE: 1/8" = 1'-0"



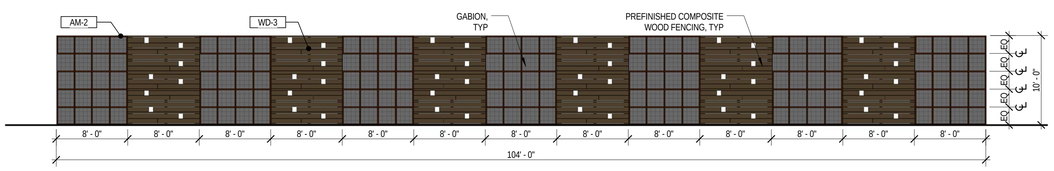
6 SCREEN WALL SIDE ELEVATION - TYPE 5 - BUILDING G
SCALE: 1/8" = 1'-0"



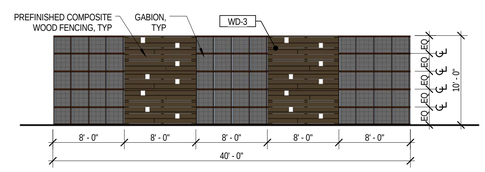
3 SCREEN WALL - TYPE 3 - BUILDING C
SCALE: 1/8" = 1'-0"



4 SCREEN WALL TYPE 4 - BUILDING E
SCALE: 1/8" = 1'-0"



1 SCREEN WALL - TYPE 1 - BUILDING F
SCALE: 1/8" = 1'-0"



2 SCREEN WALL - TYPE 2 - BUILDINGS A, B, D
SCALE: 1/8" = 1'-0"

MATERIAL LEGEND

LABEL	MATERIAL	COLOR
AM-1	ARCHITECTURAL METAL PANEL	WESTERN STATES METAL PANEL -SPECKLED RUST
AM-2	ARCHITECTURAL METAL PANEL	WESTERN STATES METAL PANEL - WEATHERED RUSTIC
AW-1	FABRIC AWNING	RED
CIP-1	CAST IN PLACE BOARD FORM WALL	GRAY
BF-1	CRAFTED MASONRY VENEER	CREATIVE MINES CRAFT BOARD FORM - MONSOON
CMU-1	GROUND FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
CMU-2	SPLIT FACE CONCRETE MASONRY UNIT	BEST BLOCK #838
CMU-3	GROUND FACE CONCRETE MASONRY UNIT	BASALITE 900R
CMU-4	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 900R
CMU-5	GROUND FACE CONCRETE MASONRY UNIT	BASALITE 807R
CMU-6	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 807R
CMU-7	SPLIT FACE CONCRETE MASONRY UNIT	BASALITE 701R
E-1	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #104 DOVER SKY
E-2	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #105 SUEDE
E-3	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #110 VAN DYKE
E-4	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #614 SMOKE SIGNAL
E-5	EXTERIOR INSULATING FINISH SYSTEM	DRYVIT #615A TATTLE TALE
G-1	1" LOW-E GLASS	VIRACON - VE1-2M - LOW-E GLASS
G-2	1" SPANDREL GLASS	VIRACON - V908 - GRAY
MP-1	ARCHITECTURAL METAL PANEL	BERRIDGE ZINC-COTE
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PC-3	PRECAST STONE	PACIFIC CAST STONE T-9817
PC-4	PRECAST STONE	PACIFIC CAST STONE T-9702R
PT-1	PAINT	BENJAMIN MOORE AC-25 HARBOR GRAY
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PT-3	PAINT	BENJAMIN MOORE AC-34 CAPE HATTERAS SAND
PT-4	PAINT	BENJAMIN MOORE AC-35 VALLEY FORGE TAN
PT-5	PAINT	BENJAMIN MOORE 2121-10 GRAY
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SF-2	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - DARK BRONZE NO. 40
SF-3	STOREFRONT	KAWNEER PERMANODIC ANODIZED FINISHES - BLACK NO. 29
WD-1	BARNWOOD SIDING	RECLAIMED DESIGNWORKS - NATURAL
WD-2	STAINED TIMBER	NATURAL
WD-3	PREFINISHED COMPOSITE WOOD FENCING	NATURAL

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THE YARD AT LONE TREE

LONE TREE, COLORADO

ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL
	06.17.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

Project No:	ADP000002.01
Drawn By:	DES
Checked By:	KK
Date:	03.29.16

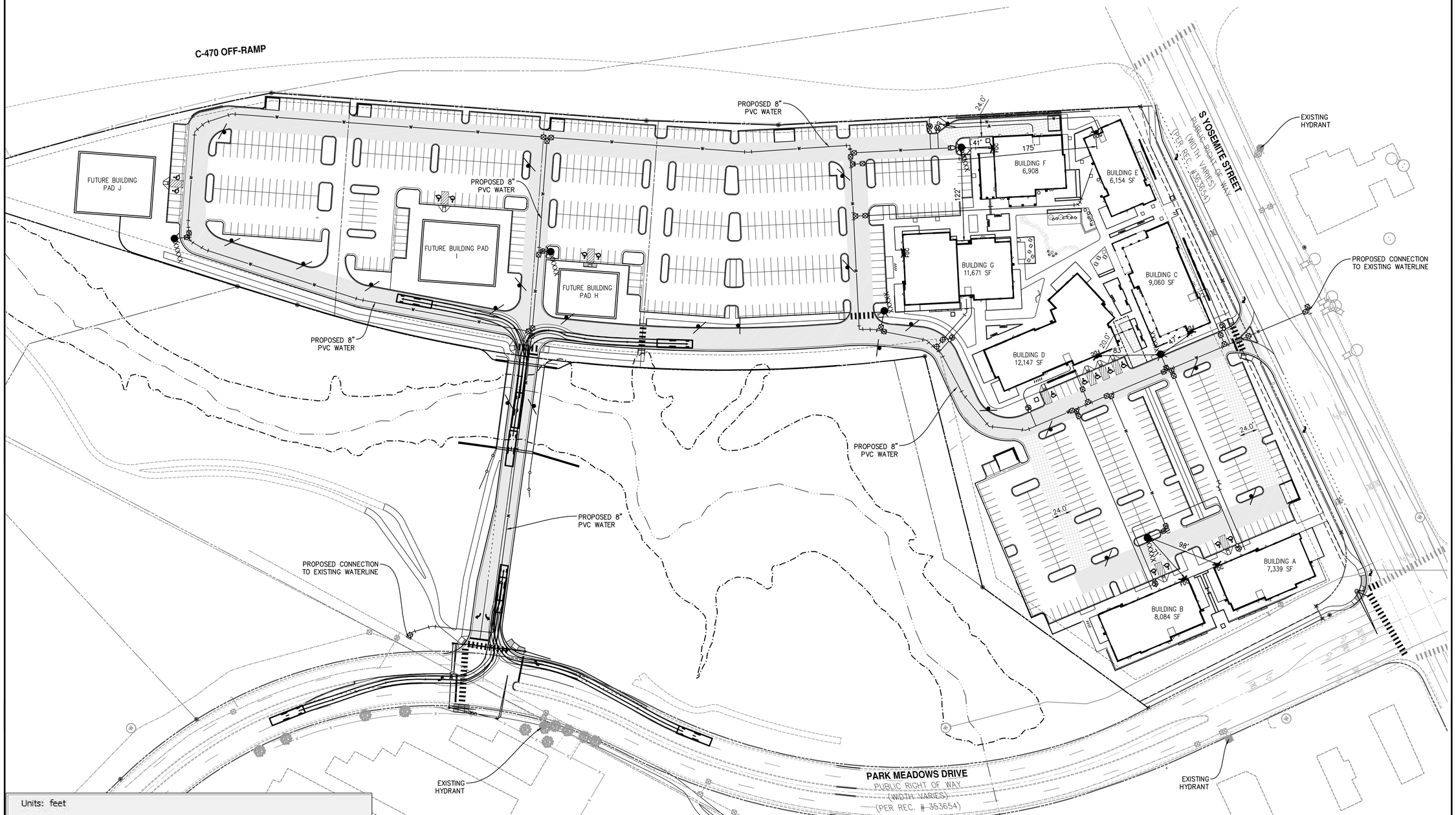
SHEET TITLE:
ARCHITECTURAL SITE AMENITIES

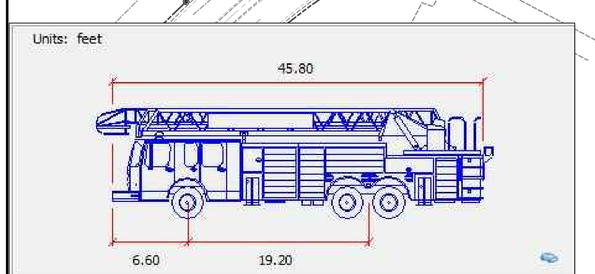
6/30/2016 4:03:58 PM

SITE IMPROVEMENT PLAN

THE YARD AT LONE TREE

PARK MEADOWS, FILING NO. 1, 3RD AMENDMENT, MOST TRACT BA AND PART TRACT E
14.12 ACRES, SIP# SP16-22





LEGEND

- 30' FIRE ACCESS LANE
- FIRE ACCESS LANE (SEE PLAN FOR WIDTH)
- FIRE HYDRANT
- FDC FIRE DEPARTMENT CONNECTION
- FIRE LANE SIGNS

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

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THE YARD AT LONE TREE
LONE TREE, COLORADO
ALBERTA DEVELOPMENT PARTNERS

#	Date	Issue/Description
	03.29.16	SIP SUBMITTAL
	04.29.16	SIP RESUBMITTAL
	07.01.16	SIP RESUBMITTAL

Project No:	ADP000002.01
Drawn By:	JAH
Checked By:	LJT
Date:	03.29.16

SHEET TITLE:
FIRE ACCESS & PROTECTION PLAN