

# Development Review Staff Report

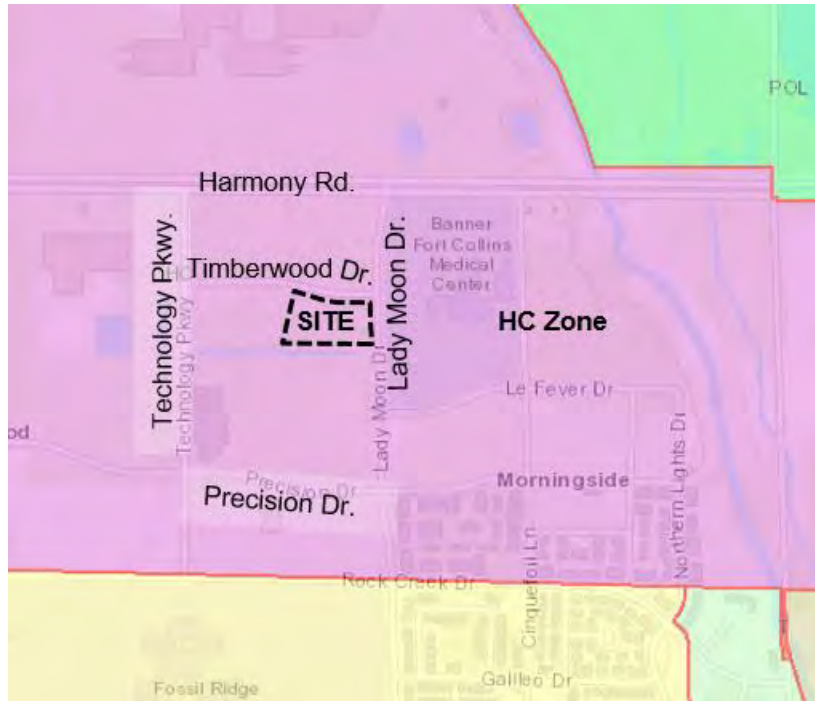
Administrative Hearing March 15, 2021

## Harmony Technology Park Medical Office Buildings, PDP #200021

### Summary of Request

This is a proposed Project Development Plan, PDP #200021, for two medical office buildings within the Harmony Technology Park.

### Zoning Map



### Next Steps

If approved, the applicant will be eligible to submit a Final Development Plan to finalize engineering and other details and record all plan documents; the applicant could then apply for construction and building permits.

### Site Location

Southwest corner of Timberwood and Lady Moon Drives.

### Zoning

Harmony Corridor (HC)

### Property Owner

Harmony Technology Park, LLC  
2723 South State Street Suite 250  
Ann Arbor, Michigan 48104

### Applicant/Representative

Jason Messaros  
1603 Oakridge Dr. Suite 100  
Fort Collins, Colorado 80525

### Staff

Clark Mapes, City Planner

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### Staff Recommendation

Staff recommends that the Hearing Officer approve the PDP.

## 1. Project Introduction

### A. PROJECT DESCRIPTION

- This proposal would replat an existing parcel and enable development of two new buildings. Building A is proposed to contain 33,830 square feet in two stories, and Building B is proposed to contain 50,577 square feet in three stories.
- The plan is intended to be developed in two phases.
- The plan includes associated parking, walkways, landscaping, and all other associated site improvements.

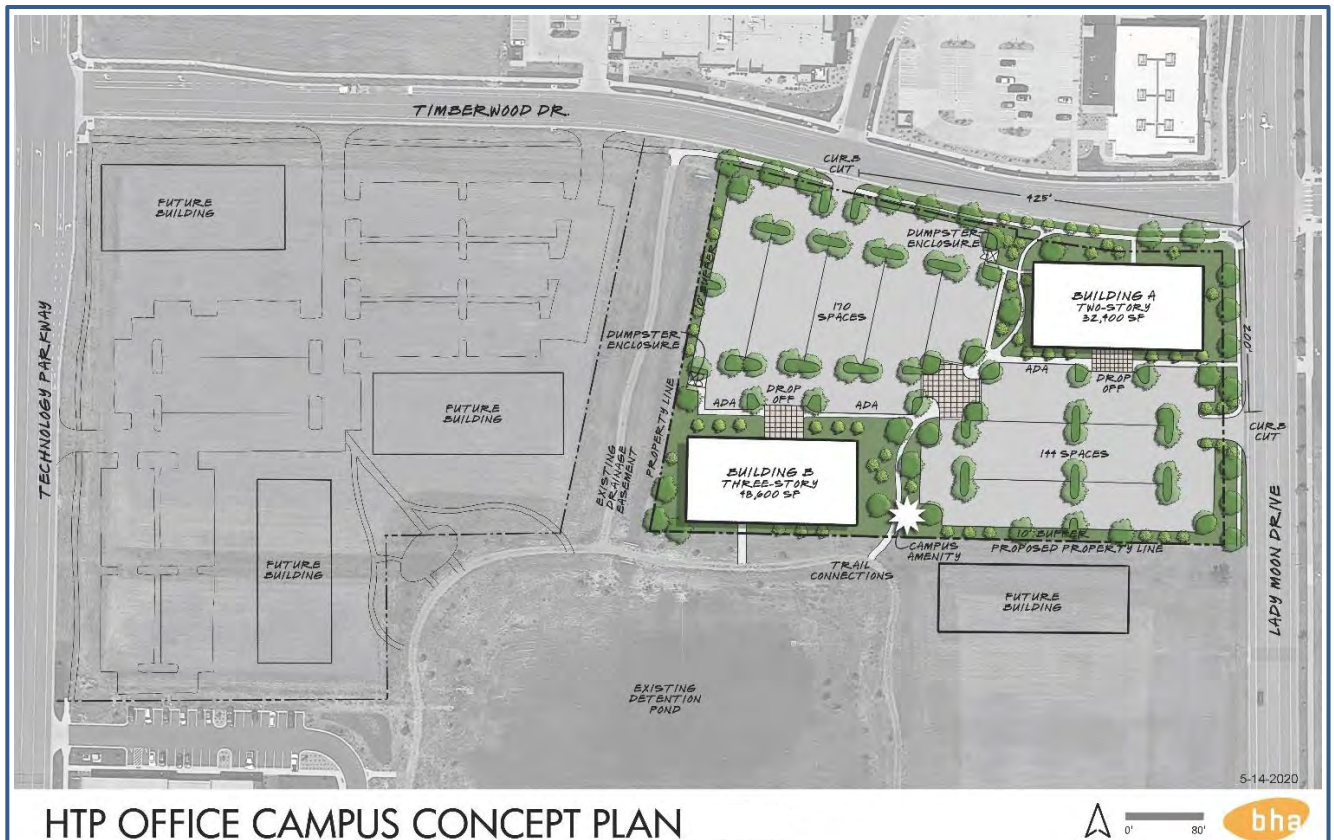


**HARMONY TECH PARK**  
 MEDICAL OFFICE BUILDINGS



- Building A is placed at the street corner (Timberwood and Lady Moon Drives) with no intervening vehicle use area. Building B is placed along the south edge of the site abutting a large detention pond open space, with its parking lot placed between the building and Timberwood Drive. Because this project is proposed to be part of an office campus, it is eligible for the “campus exception” to general citywide standards in the HC zone district that require buildings to be placed along streets. Instead, the buildings are proposed to be placed along a pedestrian spine bisecting the site and connecting to an adjacent trail system around a detention pond open space on the south. A conceptual illustration of the office campus is shown below.





- Access is provided on Timberwood Drive to the North and Lady Moon Drive on the East.
- 4.6 acre site.
- The plan is subject to a Type 1, Administrative Hearing review.

## B. DEVELOPMENT STATUS/BACKGROUND

### 1. Annexation and Planning

The site is part of the Harmony Technology Park Overall Development Plan (ODP). Street and utility infrastructure is already in place, constructed by a master developer (MAVDevelopment). Harmony Technology Park is a long-term 274-acre ODP for a mix of uses consistent with the *Harmony Corridor Plan*.

The *Harmony Corridor Plan*, adopted in 1991, designated most of the Harmony Corridor for precisely the type of land use and development represented by Harmony Technology Park and this proposed plan.

The *Harmony Corridor Plan* was prompted by the opportunity for large tracts of serviced land to accommodate this kind of large non-retail employment and institutional use, along with the opportunity to shape the community image and design of Harmony Road as an attractive landscaped entryway corridor into the city.

The plan has been updated several times over the years, but none of the updates have involved any change to the fundamental vision for office, light industrial, and institutional uses in planned office/business parks as primary uses.

The property was annexed in 1994 as part of the Harmony Farm Annexation.

The Harmony Technology Park ODP was approved in 1997. Subsequent amendments have led to the current Seventh Amendment.

## 2. Surrounding Zoning and Land Use

	North	South	East	West
<b>Zoning</b>	Harmony Corridor (HC)	Harmony Corridor (HC)	Harmony Corridor (HC)	Harmony Corridor (HC)
<b>Land Use</b>	Business hotel and preschool—'secondary uses' under HC zoning	Large office and light industrial uses, vacant tracts, large stormwater detention area with trails as a shared campus space	Large hospital/medical	Vacant tract planned for additional buildings in a campus arrangement that includes the subject property

## C. OVERVIEW OF MAIN CONSIDERATIONS

The plan review process has been straightforward. Site design, architecture and engineering have been consistent with all applicable development standards from the first concept review through the review process. Plan iterations in the process have involved only minor adjustments to the plans and technical clarifications involving utilities.

As mentioned previously, the site has public infrastructure in place that is intended for the proposed type of development. Architecture is consistent with the quality envisioned for the Harmony Corridor generally and the Harmony Technology Park specifically. A complete landscape plan is designed in conjunction with the building, parking, and walkways.

## 2. Land Use Code Article 2

### A. PROJECT DEVELOPMENT PLAN PROCEDURAL OVERVIEW

#### 1. Preliminary Design Review – PDR200007

A Preliminary Design Review meeting was held on June 7, 2020 to discuss the initial concept.

#### 2. First Submittal – PDP200021

The application was submitted on December 11, 2020.

#### 3. Neighborhood Meeting

No neighborhood meeting was required or held.

#### 4. Notice (Posted, Written and Published)

Posted Notice: September 25, 2020, Sign #574.

Written Hearing Notice: February 25, 2021, 17 addresses mailed.


Published Hearing Notice: Scheduled for Sunday, February 28, 2021.



### 3. Land Use Code Article 3

#### A. DIVISION 3.2 - SITE PLANNING AND DESIGN STANDARDS

Applicable Code Standard	Summary of Code Requirement and Analysis	Staff Findings
<b>3.2.1 – Landscaping and Tree Protection</b>	<p>The standards of this Section require a fully developed landscape plan that addresses relationships of landscaping to the building, the circulation system, outdoor spaces, surrounding streets and the neighborhood or district setting, in a manner appropriate to the context. Standards emphasize ‘full tree stocking’ around buildings, in and around vehicle use areas, as street trees along the street.</p> <p>The plan provides:</p> <ul style="list-style-type: none"> <li>Full tree stocking.</li> <li>Complete parking lot landscaping including interior and perimeter landscaping.</li> <li>Turfgrass lawn and shrub bed areas where appropriate.</li> <li>Native grass seeding of the south and west edges of the site, consistent with abutting landscape areas including a large detention pond and a large drainage swale.</li> <li>Wetland transition seeding in a small stormwater detention pond at the southwest periphery of the site.</li> <li>There are no existing trees on the site.</li> </ul>	Complies
<b>3.2.2 – Access, Circulation and Parking</b>	<p>This Section requires that development projects accommodate the movement of vehicles, bicycles, pedestrians safely and conveniently.</p> <ul style="list-style-type: none"> <li>The plan provides convenient, well-defined vehicle access to and through the parking lots from the two abutting streets. Parking is divided into two blocks related to the two buildings, with a junction connecting the two blocks.</li> <li>The two buildings are oriented to a central walkway spine that provides connections between the two buildings, to the streets, and to the trail in the open space area to the south.</li> <li>The walkway spine crosses the junction between the two parking lots. The junction is framed by landscape islands and includes enhanced paving to emphasize it as a pedestrian space and a special crossing that warrants attention by vehicle drivers. The image below from the proposed plan shows the junction of the two parking lots and the walkway spine (center of image—hatching indicates pedestrian paving).</li> </ul>	Complies


											
<p><b>3.2.2(C)(4) – Bicycle Parking Space Requirements</b></p>	<p>This standard requires a minimum number of bicycle parking spaces with 20% of the spaces covered.</p> <ul style="list-style-type: none"> <li>The plan provides the parking as follows:</li> </ul> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Standard Min. Required: 1/4,000 sq. ft.</th> <th style="width: 33%;">Min. Covered 20%</th> <th style="width: 33%;">Provided</th> </tr> </thead> <tbody> <tr> <td><i>Bldg. A: 11</i></td> <td>2</td> <td>16 w/ 8 covered</td> </tr> <tr> <td><i>Bldg. B: 13</i></td> <td>3</td> <td>14 w/ 8 covered</td> </tr> </tbody> </table>	Standard Min. Required: 1/4,000 sq. ft.	Min. Covered 20%	Provided	<i>Bldg. A: 11</i>	2	16 w/ 8 covered	<i>Bldg. B: 13</i>	3	14 w/ 8 covered	<p>Complies</p>
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<i>Bldg. B: 13</i>	3	14 w/ 8 covered									
<p><b>3.2.2(K)(2) – Vehicle Parking Space Requirements</b></p>	<p>This standard requires a minimum and maximum number of parking spaces per 1,000 square feet of floor area for medical office use.</p> <ul style="list-style-type: none"> <li>The plan provides the parking as follows:</li> </ul> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Standard Min. 2/1,000 sq. ft.</th> <th style="width: 33%;">Standard Max. 4.5/1000 sq. ft</th> <th style="width: 33%;">Provided</th> </tr> </thead> <tbody> <tr> <td><i>Bldg. A: 68</i></td> <td>217</td> <td>130</td> </tr> <tr> <td><i>Bldg. B: 98</i></td> <td>153</td> <td>123</td> </tr> </tbody> </table> <p>Each building requires at least 5 ADA-accessible spaces.</p> <ul style="list-style-type: none"> <li>Building A provides 13. Building B provides 14.</li> </ul>	Standard Min. 2/1,000 sq. ft.	Standard Max. 4.5/1000 sq. ft	Provided	<i>Bldg. A: 68</i>	217	130	<i>Bldg. B: 98</i>	153	123	<p>Complies</p>
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<i>Bldg. A: 68</i>	217	130									
<i>Bldg. B: 98</i>	153	123									
<p><b>3.2.4 – Site Lighting</b></p>	<p>This Section requires that lighting meet the functional and security needs of the project in a way that does not adversely affect adjacent properties.</p> <ul style="list-style-type: none"> <li>The plans include a complete lighting plan that complies with all requirements for fixtures to be fully shielded, down-directional, color temperature 3,000 Kelvin or less fixtures. A photometric plan</li> </ul>	<p>Complies</p>									

	demonstrates lighting levels within required limits, and shows the selection of fixtures for lighting the parking lot, walkways, and exterior of the building.	
<b>Section 3.2.5 – Trash and Recycling Enclosures</b>	<p>This Section requires trash and recycling enclosures in convenient locations, with walk-in access without having to open the main service gate. Additionally, standards require 50/50 distribution of recycling and trash, a concrete pad, and enclosures to be constructed of durable, high quality material that complements the material and architecture of the residential building that it is required for.</p> <p>The plan provides trash and recycling space conveniently located for each building.</p>	Complies

## B. DIVISION 3.4 – NATURAL RESOURCES STANDARDS

No habitats or natural features exist on the site.

## C. DIVISION 3.5 - BUILDING STANDARDS

Applicable Code Standard	Summary of Code Requirement and Analysis	Staff Findings
<b>3.5.1 Building and Project Compatibility</b>	<p>This Section requires compatibility with the context of the surrounding area in terms of physical and operational characteristics. Main topics are building scale, architectural materials and design, and screening of service functions.</p> <ul style="list-style-type: none"> <li>The architecture of the two buildings incorporates design forms and aesthetics compatible with the vision for the Harmony Corridor, and with existing buildings that have been built in the Harmony Technology Park. The proposed buildings are similar in scale, quality of materials, and visual interest to other buildings in the area.</li> </ul> <p>Below is one of the illustrations of Building A.</p> 	Complies



**3.5.3(D) and (E) Character and Image of Commercial Buildings**

Standards in this Section require buildings to be placed in direct relation to street sidewalks, and require architectural interest with site-specific design of materials, elements, features, color range and activity areas tailored specifically to the site and its context. Variation in massing is required to avoid a single, large dominant building mass. Standards address wall articulation, façade character, and clearly defined entrances.

- Building A is placed in relation to the street as required under this standard. Building B is placed according to a standard in the Harmony Corridor zone district, subsection 4.26.E.3(b), which allows exceptions to the street orientation standard if the development provides a "campus or park-like development block". Staff finds that this exception applies.
- The architecture is characterized by a set of features that exemplify the purpose of the standards. The building facades are modulated with brick masonry elements that anchor the central portion of each façade, while also providing human scale with brick detailing, brick color/texture change at the punched window openings, and a step down of lower brick wainscot at the corners of the building. Entrances are highlighted by taller vertical features using portland cement stucco and architectural fiber cement panels.

These features are contrasted by a background of prefinished metal panels, which lend a lightening effect to reduce the overall scale and bulk of the buildings, but still provide texture.

The upper level windows are treated as ribbon windows, to differentiate and lighten the top level as compared to the lower levels.

Below is one of the illustrations of Building B.



Complies

## D. DIVISION 3.6 - TRANSPORTATION AND CIRCULATION

This Division is intended to ensure that the transportation system is in conformance with adopted transportation plans and policies established by the City.


Applicable Code Standard	Summary of Code Requirement and Analysis	Staff Findings
<b>3.6.2 – Streets, Streetscapes, Alleys and Easements</b>	<p>This section requires development to include streets and easements as needed to support the development.</p> <ul style="list-style-type: none"> <li>Streets are existing, and the plan provides all necessary easements for utilities, public access, emergency access and drainage.</li> </ul>	Complies
<b>3.6.4 – Transportation Level of Service Requirements</b>	<p>This Section requires that the transportation needs of proposed development will be safely accommodated by the existing transportation system, or that appropriate mitigation of impacts will be provided by the development in order to meet adopted Level of Service (LOS) standards.</p> <p>To evaluate the transportation needs and impacts of the development, this Section requires a Transportation Impact Study (TIS). The TIS is attached.</p> <ul style="list-style-type: none"> <li>It assessed the impacts of the development on the short range (2025) and long range (2040) street system in the vicinity. As a result of this analysis, the study concluded that the development as proposed is feasible from a traffic engineering standpoint, and that acceptable level of service is achieved for pedestrian, bicycle, and transit modes based upon the measures in the City’s multi-modal level of service guidelines. The conclusions are stated on numbered pages 30-31 of the 131-page report.</li> <li>The TIS was received, reviewed and accepted by Traffic and Engineering staff.</li> <li>One notable improvement in the plan is that it not only includes standard sidewalks along its Timberwood and Lady Moon Drive street frontages, but the developer has also agreed to extend a sidewalk southward along Lady Moon to connect a gap between this site and existing sidewalk roughly 700 hundred feet to the south.</li> </ul>	Complies
<b>3.6.6 – Emergency Access</b>	<p>This Section requires adequate access for emergency vehicles and persons rendering fire protection and emergency services.</p> <ul style="list-style-type: none"> <li>The plan provides an emergency access drive throughout the development.</li> </ul>	Complies

**4. Land Use Code Article 4**

**A. DIVISION 4.26 – HARMONY CORRIDOR DISTRICT (HC)**

Applicable Code Standard	Summary of Code Requirement and Analysis	Staff Findings
<b>4.26(A-D) – Purpose, Uses, and Land Use Standards</b>	<p>The Harmony Corridor District is intended to implement the design concepts and land use vision of the Harmony Corridor Plan - that of creating an attractive and complete mixed-use area with a major employment base.</p> <ul style="list-style-type: none"> <li>• The proposed office use is permitted as a 'Primary Use' as described in the Harmony Corridor Plan, which designates much of the corridor for light industrial, office, and institutional type land uses in planned office (or business) park settings. The plan's listing of primary uses specifically includes hospitals, clinics, nursing and personal care facilities. The plan language is translated into the Permitted Uses list in the HC zone district.</li> <li>• The maximum height for nonresidential buildings in the HC zone is 6 stories. The proposed buildings are two and three stories in height, which complies with this standard.</li> </ul>	Complies
<b>4.26(E) – Development Standards</b>	<p>This Section refers to the Harmony Corridor Design Standards and Guidelines document, which is under separate cover from the Land Use Code and is incorporated into the code by reference.</p> <p>That document was one the first such documents adopted by the City containing development standards, in 1991, with an update in 1995. Topics addressed include pedestrian amenities, lighting, screening and buffering of parking lots and service functions such as trash collection, and basic architectural quality.</p> <p>All of the pertinent topics that are relevant to this PDP have been further developed and incorporated into Land Use Code standards in the 30 years since 1991, so that the pioneering Harmony Corridor Standards that are relevant, are effectively superseded. In other words, development that complies with the Land Use Code meets or exceeds the Harmony Corridor Standards as well. (There is one exception for which the Design Standards and Guidelines document remains the controlling reference, and that is the the streetscape along Harmony Road itself, which is not involved in this plan.0</p>	Complies



Applicable Code Standard	Summary of Code Requirement and Analysis	Staff Findings
<p><b>4.26(E) – Land Use Standards</b></p>	<p>A standard in this Section requires that, in the case of multiple parcel ownership, to the extent reasonably feasible, an applicant shall enter into cooperative agreements with adjacent property owners to create a comprehensive development plan that establishes an integrated pattern of streets, outdoor spaces, building styles and land uses.</p> <ul style="list-style-type: none"> <li>In this case, the Harmony Technology Park establishes a coordinated plan that is consistent with this standard. In addition, the site is being subdivided from a larger parcel planned as an evolving, coordinated office campus as shown in the concept plan below.</li> </ul>  <p>The concept plan shows a campus layout with several buildings: 'BUILDING A' (70,000 SF), 'BUILDING B' (THREE-STORY, 78,000 SF), and several 'FUTURE BUILDING' footprints. It includes streets like 'TIMBERWOOD DR.', 'LADY WALK DRIVE', and 'TECHNOLOGY PARKWAY'. Features include 'DUMPSTER ENCLOSURE', 'NO SPACES', 'TRAIL CONNECTIONS', and 'CAMPUS ORIGIN'. A scale bar and 'bha' logo are present at the bottom right of the plan.</p> <p><b>HTP OFFICE CAMPUS CONCEPT PLAN - PDR</b></p> <p>Another standard allows for a 'Campus Exception' to building placement standards in the Building Standards Section of the code, as follows:</p> <p>"An exception shall be permitted to the requirements contained in Section 3.5.3(B) if the development provides a 'campus or park-like development block,' meaning development with a unifying, formative internal framework of pedestrian-oriented, nonvehicular outdoor spaces and walkways that function as an alternative to street sidewalks by organizing and connecting buildings. The internal campus pedestrian circulation system shall be designed to provide direct connections to common origins and destinations (such as street sidewalks, transit stops, restaurants, child care facilities and convenience shopping centers)."</p> <ul style="list-style-type: none"> <li>As explained previously in discussion of Section 3.5.3 above, the plan reflects this standard.</li> </ul>	<p>Complies</p>

## 5. Findings of Fact/Conclusion

In evaluating the request for the Harmony Technology Park Medical Office Buildings, #PDP200021, staff makes the following findings of fact and conclusions:

1. The Project Development Plan complies with the applicable procedural and administrative requirements of Article 2 of the Land Use Code.
2. The Project Development Plan complies with pertinent standards in Article 3 – General Development Standards.
3. The Project Development Plan complies with pertinent standards in Article 4, Division 4.26 -- Harmony Corridor Zone District.

## 6. Recommendation

Staff recommends that the Hearing Officer approve the Harmony Technology Park Medical Office Buildings, PDP #200021, based on the Findings of Fact and supporting explanations found in the staff report.

## 7. Attachments

1. Applicants Narrative
2. Site and Landscape Plans
3. Architectural Elevations
4. Lighting Plan
5. Utility Plans
6. Plat
7. Transportation Impact Study
8. Staff Presentation

## Project Information and Design Narrative

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### 4750 Technology Parkway Offices – Harmony Technology Park

December 2, 2020

The proposed project includes two office/medical office buildings on a 4.59-acre parcel in Harmony Technology Park. This project is intended to be part of an office campus with the proposed buildings oriented along a pedestrian spine bisecting the site and connecting to the adjacent trail system. Building A meets the build to standard with frontage on both Timberwood and Lady Moon Drives. Building B will front on the regional detention pond and pedestrian spine as allowed with the “campus exception”.

#### Architecture

The architectural design of these two medical office buildings incorporates design forms and aesthetics for both the existing Brinkman office building to the southeast and the Banner Medical Center directly to the east, and the Rodelle Vanilla and 5042 Flex office buildings to the south and southwest.

The facades of both of these buildings feature a planar, horizontal brick masonry element that is used to anchor the central portions of the building, while also providing human scale with brick detailing, brick color/texture change at the punched window openings, as well as a step down of lower brick wainscot at the corners of the building. These design choices have all been made to simplify the building design gesture while also providing overall scale, placement, detail and design of these materials.

The planar brick elements are contrasted by the upper level treatment which include the use of prefinished metal panels that are intended to appear lighter to reduce the overall scale and bulk of the buildings, but still create a subtle texture that add richness to the overall composition. The upper level windows are also treated as ribbon windows, as opposed to the punch windows at the lower level, which further enhance this lighter feeling to the top portion of the buildings.

The facades include a primary entry on the longer, parking lot faced elevation that has been placed off-center based on the interior layout, but provides an overall balance to the underlying planar brick massing. The side elevations also include welcoming secondary entry elements that are well integrated into the site for tenant access. All of the entry elements include a 1-story covered canopy to further emphasize their locations, while providing protection from the elements and a human scale to tenants and users approaching the building. The entry elements have also been designed to accent and contrast the largely horizontal overall building massing with more delicate vertical orientated design elements.

#### **(i) Statement of appropriate City Plan Principals and Policies**

The proposed project is consistent with the City’s Comprehensive Plan as per the following

- 4750 Technology Parkway Offices is being developed as part of the Harmony Technology Park ODP. The project will comply with the city code and the requirements set forth in the ODP. The land use is a primary use in the Harmony



Corridor zone district. Bicycle and pedestrian access as well as connectivity to the rest of the Harmony Technology Park sites will be important in the design.

## **(ii) Open Space, Buffering, Landscaping, Circulation, Transition Areas, Wetlands and Natural Areas**

### Open Space:

- As part of a larger business park, open spaces are designed not based only on single sites but through the development as a whole. The site includes a substantial landscaped area along the pedestrian spine which is augmented with pedestrian features including tables and patio areas.

### Buffering:

- Buffering is indicated to screen parking and service areas from adjacent properties. These properties are also anticipated to develop as similar uses as indicated in the ODP.

### Landscaping:

- Appropriate landscaping will be installed at the building entrances, adjacent to parking areas and at building perimeters.

### Circulation:

- The site will be primarily accessed from Lady Moon Drive and Timberwood Drive. The north and east access points serve the divided parking area. Accessible parking spaces are shown distributed between primary building access points. Pedestrian access is provided from parking areas to building entrances, and directly to the adjacent Lady Moon Drive and Timberwood Drive sidewalks in multiple locations as well as connectivity to the larger pedestrian trails as provided in the ODP.

### Wetlands and Natural Areas:

- There are no wetlands or natural areas on the site.

## **(iii) Proposed ownership and maintenance of public and private open space areas.**

- MAV Development Company will be responsible for maintenance of the site. A master association for the entire Harmony Technology Park campus will maintain public and shared open space areas and the stormwater detention areas.

## **(iv) Estimate of Number of Employees for Commercial and Industrial Uses**

- Building A: Office 29,332 / 150 gross = ±197 Occupants
- Building B: Office 43,952 / 150 gross = ±295 Occupants

## **(v) Description of rationale behind assumptions and choices made by the applicant**

- This project will comply with applicable city standards.

## **(vi) Variances**

- There are no variances being requested at this time.

## **(vii) How Conflicts Between Land Uses are Being Avoided**

- There are no wetlands or natural areas on the site. The intended use is consistent with the ODP and adjacent uses.

**(viii) Neighborhood meeting**

- With the proposed land use and building size, the project is subject to Administrative Review so no neighborhood meeting is required.

**(ix) Project name and previous project names.**

- 4750 Technology Parkway Offices

## Campus Exception

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### 4750 Technology Parkway Offices - Harmony Technology Park

December 2, 2020

#### **Project Overview**

The proposed project includes two office/medical office buildings on a 4.59-acre parcel in Harmony Technology Park. This project is intended to be part of an office campus with the proposed buildings oriented along a pedestrian spine bisecting the site and connecting to the adjacent trail system. Building A meets the build to standard with frontage on both Timberwood and Lady Moon Drives. Building B will front on the regional detention pond and pedestrian spine as allowed with the "campus exception".

The unique limitation of the site with respect to adjacent driveway connections and intersection separation requirements result in a site plan that lends itself well to a campus layout consisting of two buildings with this project and subsequent adjacent projects. As a result, we would like to offer the following information specific to our request for approval:

**4.26.E.3(b) Campus Exception.** *An exception shall be permitted to subsection (a) above, and to the requirements contained in Section 3.5.3(B) if the development provides a "campus or park-like development block," meaning development with a unifying, formative internal framework of pedestrian-oriented, nonvehicular outdoor spaces and walkways that function as an alternative to street sidewalks by organizing and connecting buildings. The internal campus pedestrian circulation system shall be designed to provide direct connections to common origins and destinations (such as street sidewalks, transit stops, restaurants, child care facilities and convenience shopping centers).*

This project consists of a composition of buildings that provides a campus/park-like development block with a strong pedestrian spine flanked with open space providing direct connections between building entries, major pedestrian intersections, and the trail system as prescribed by the ODP.

## LEGAL DESCRIPTION

A PORTION OF LOT 2, HARMONY TECHNOLOGY PARK SECOND PHASE BEING SITUATED IN THE NORTHWEST CORNER OF SECTION 4, TOWNSHIP 6 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, CITY OF FORT COLLINS, COUNTY OF LAMAR, STATE OF COLORADO.

## OWNERSHIP CERTIFICATION

KNOW ALL MEN BY THESE PRESENTS THAT

Harmony Technology Park, LLC, a Colorado Limited Liability Company and/or assigns being all the lawful recorded owners of the property shown on the development plan, except any existing public streets, roads, or highways, do hereby certify that I/we accept the conditions and restrictions set forth on said plan and in the conditions of approval by the City of Fort Collins, dated \_\_\_\_\_, and that I/we consent to the recitation of any information pertaining thereto.

Owner: Harmony Technology Park, LLC, a Colorado Limited Liability Company  
By: HAN/Development Company

Is: Manager

Date: \_\_\_\_\_

STATE OF COLORADO )

COUNTY OF LAMAR ) ss.

The foregoing instrument was acknowledged before me this \_\_\_\_\_ day of \_\_\_\_\_ by \_\_\_\_\_

WITNESS my hand and official seal.

My commission expires: \_\_\_\_\_ Notary Public

## DIRECTOR OF PLANNING

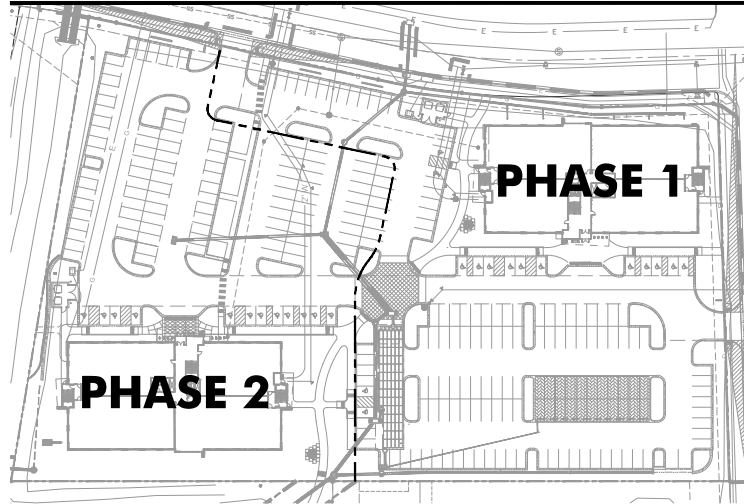
APPROVED BY THE DIRECTOR OF PLANNING OF THE CITY OF FORT COLLINS, COLORADO ON THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, A.D. 20\_\_\_\_.

DIRECTOR OF PLANNING

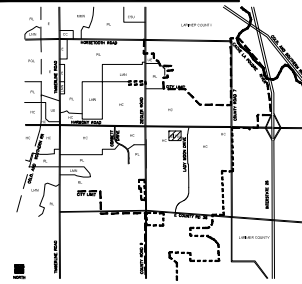
## SITE PLAN NOTES

- Refer to final utility plans for exact locations and construction information for storm drainage structures, utility mains and services, proposed topography, street improvements.
- Refer to the subdivision plot and utility plans for exact locations, areas and dimensions of all easements, lots, tracks, streets, walks and other survey information.
- The project shall be constructed in accordance with the final amendments to the plans must be reviewed and approved by the city prior to the implementation of any changes to the plans.
- All rooftop and ground mounted mechanical equipment must be screened from view from adjacent property and public streets, in cases where building parapets do not accomplish sufficient screening, free-standing screens with matching the predominant color of the building shall be constructed; other minor equipment such as condenser, meters and plumbing vents shall be screened or painted to match surrounding building surfaces.
- All construction with this development plan must be completed in one phase unless a phasing plan is shown with these plans. All exterior lighting provided shall comply with the following requirements in section 3.2.4 of the land use code and shall use a concealed, fully shielded light source with sharp cut-off capability so as to minimize up-light, spill light, glare and unnecessary diffusion. signage and addressing are not permitted with this planning document and must be approved by separate city permit prior to construction, signs must comply with city sign code unless a specific variance is granted by the city.
- Fire hydrants must meet or exceedoudre fire authority standards, all buildings must provide an approved fire extinguishing system.
- All bike racks provided must be permanently anchored.
- All sidewalks and ramps must conform to city standards, accessible ramps must be provided at all street and drive intersections and at all designated accessible parking spaces; accessible parking spaces must slope no more than 1:48 in any direction, all accessible routes must slope no more than 1:20 in direction of travel and with no more than 1:48 cross slope.
- Common open space areas and landscaping within right of way, street medians, and traffic circles adjacent to common open space areas are required to be maintained by the property owner of the common area. The property owner is responsible for snow removal on all adjacent street sidewalks and sidewalks in common open space areas.
- Design and installation of all parway/tree lawn and median areas in the right-of-way shall be in accordance with city standards, unless otherwise agreed to by the city with the final plans, all ongoing maintenance of such areas is the responsibility of the owner/developer.
- Private conditions, covenants, and restrictions (cc&Rs), or any other private restrictive covenant imposed on landowners within the development, may not be created or enforced having the effect of prohibiting or limiting the installation of resource landscaping, solar/photovoltaic collection (if mounted flush upon any established roof line), solar lines (if located in back yards), solar-controlled compost bins, or which have the effect of requiring that a portion of any individual lot be planted in tree grass.
- Any damaged curb, gutter and sidewalk existing prior to construction, as well as streets, sidewalks, curbs and gutters, destroyed, damaged or removed due to construction of this project, shall be replaced or restored to city of fort collins standards at the developer's expense prior to the acceptance of completed improvements and/or prior to the issuance of the first certificate of occupancy.
- Fire lane marking: a fire lane marking plan must be reviewed and approved by the fire official prior to the issuance of any certificate of occupancy, where required by the fire code official, approved signs or other approved notices that include the words no parking fire lanes shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof; the means by which fire lanes are designated shall be maintained in a clean and legible condition at all times and be replaced or repainted when necessary to provide adequate visibility.
- Plaque identification: an addressing plan is required to be reviewed and approved by the city and plaque fire authority prior to the issuance of any certificate of occupancy, unless the private drive is named, monument signage may be required to allow wayfinding; all buildings shall have address numbers, building numbers or approved building identification placed in a position that is plainly legible, visible from the street or road fronting the property, and posted with a minimum of six inch numbers on a contrasting background, where access is by means of a private road and the building cannot be viewed from the public way, a monument, pole or other sign or means shall be used to identify the structure.

## PHASING PLAN



## VICINITY MAP



## LAND USE DATA

- EXISTING ZONING
- PROPOSED LAND USE
- MAX. BUILDING HEIGHT PERMITTED
- MAX. BUILDING HEIGHT PROPOSED
- GROSS SITE AREA
- ESTIMATED FLOOR AREA
- FLOOR AREA RATIO
- PUBLIC ROW
- NET SITE AREA
- CONSTRUCTION TYPE
- BUILDING OCCUPANCY

HIC-HARMONY CORRIDOR  
OFFICE / MEDICAL OFFICE  
6 STORES  
BUILDING A: 2 STORES  
BUILDING B: 3 STORES  
200,074 S.F. (4.59 ACRES)  
BUILDING A: 33,830 CSF  
BUILDING B: 50,577 CSF  
42 FAR  
0.5 F.F.  
200,074 S.F. (4.59 ACRES)  
TYPE III W/TYPE 13 SPRINKLER SYSTEM  
BUILDING A: TYPE M: 197  
BUILDING B: TYPE M: 295

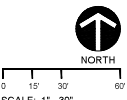
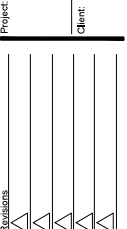
SITE COVERAGE	AREA	PERCENT
BUILDING COVERAGE	34,008 S.F.	1.7%
DEFS AND PARKING	102,011 S.F.	5.0%
OPEN SPACE	59,005 S.F.	3.0%
PRIVATE ROW	0 S.F.	0%
TOTAL	200,024 S.F.	100%

BUILDING USES (INTERIOR DIMENSIONS)	AREA
OFFICE / MEDICAL OFFICE	84,407 S.F.

BUILDING A (33,830 s.f.)	REQUIRED (MIN. / MAX.)		PROVIDED
	REGULAR PARKING	ACCESSIBLE PARKING	
	(2/1000 S.F.) = 66 MIN. (4.5/1000 S.F.) = 153 MAX.	123	123
	3/7.6	12	12
TOTAL			135 (138/1000 S.F.)

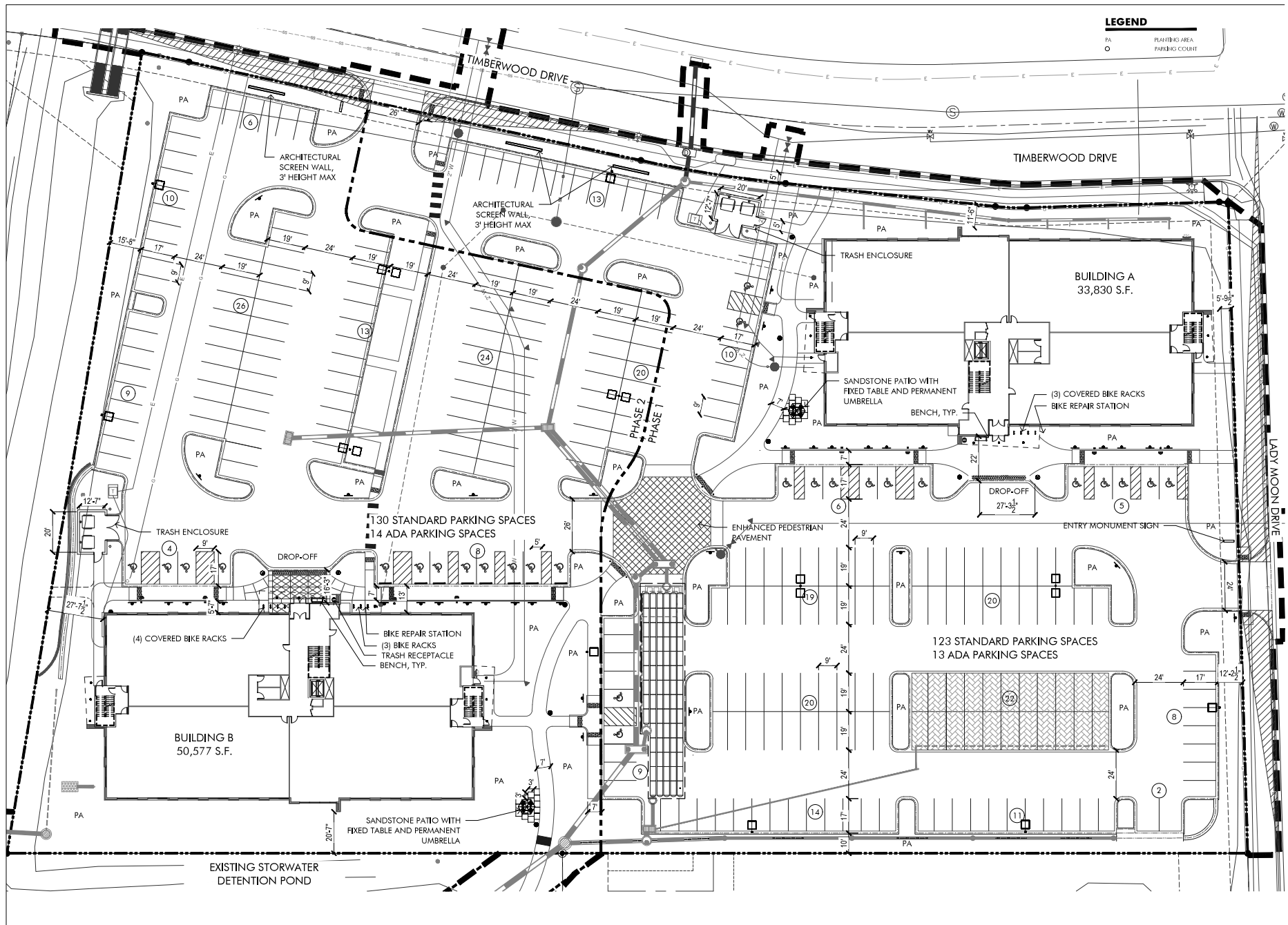
BUILDING B (50,577 s.f.)	REQUIRED (MIN. / MAX.)		PROVIDED
	REGULAR PARKING	ACCESSIBLE PARKING	
	(2/1000 S.F.) = 98 MIN. (4.5/1000 S.F.) = 219 MAX.	130	130
	4/7.7	14	14
TOTAL			144 (130 (2.6/1000 S.F.)

BUILDING C (50,577 s.f.)	REQUIRED (MIN. / MAX.)		PROVIDED
	REGULAR PARKING	ACCESSIBLE PARKING	
	(2/1000 S.F.) = 98 MIN. (4.5/1000 S.F.) = 219 MAX.	130	130
	4/7.7	14	14
TOTAL			144 (130 (2.6/1000 S.F.)



Designed by: APJM  
Drawn by: APJM  
Checked by: JM  
Drawing Name:  
COVER SHEET

Project Number: 2020  
Sheet Date: 10/28/2020  
Sheet Number:



**LEGEND**

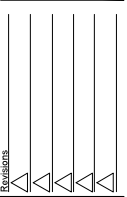
- PA PLANTING AREA
- O PARKING COURT

**bha**  
 1603 Oakridge Drive Fort  
 Collins, CO 80525  
 (970) 223-7577  
 www.bhadesign.com

Landscape Architecture  
 Urban Design  
 Planning

Project: 4750 TECHNOLOGY PARKWAY  
 PDP

Client: MAVD  
 2723 SOUTH STATE ST., STE. 250  
 ANN ARBOR MI, 48104



**NORTH**

0 15' 30' 60'

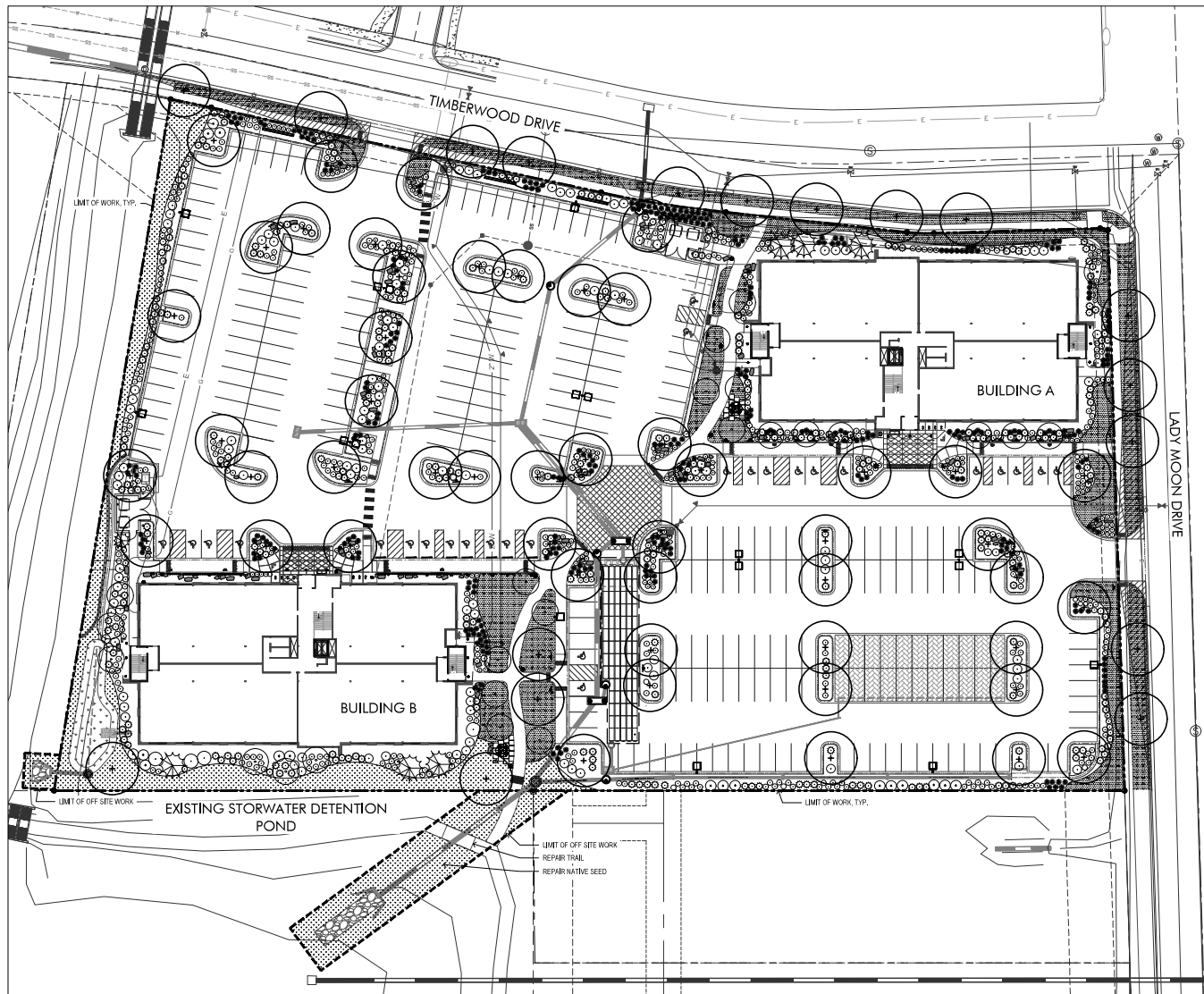
SCALE: 1" = 30'

Designed by: AP/JM  
 Drawn by: AP/JM  
 Checked by: JM

Drawing Name:  
**SITE PLAN**

Project Number: 2020  
 Sheet Date: 10/28/2020  
 Sheet Number:





**GENERAL LANDSCAPE NOTES**

- Plant quality: all plant material shall be grade or no. 1 grade - free of any defects, of minimal height, height, leaf density and spread appropriate to the species as defined by the American Association of Nurserymen (AAN) standards. All trees shall be balled and burlapped or equivalent.
- Irrigation: all landscape areas within the site including turf, shrub beds and tree areas shall be irrigated with an automatic irrigation system. The irrigation plan must be reviewed and approved by the city of Fort Collins water utilities department prior to the issuance of a building permit. All turf areas shall be irrigated with an automatic pop-up irrigation system. All shrub beds and trees, including in native seed areas, shall be irrigated with an automatic drip (trickle) irrigation system, or with an acceptable alternative approved by the city with the irrigation plans. The irrigation system shall be adjusted to meet the water requirements of the individual plant material. Irrigation systems to be turned over to the city parks department for maintenance must be approved by the parks manager and meet parks irrigation standards. Design review shall occur during utilities department irrigation review prior to the issuance of a building permit and construction observation and inspection by parks shall be incorporated into the construction process.
- Topsoil: to the maximum extent feasible, topsoil that is removed during construction activity shall be conserved for later use on areas requiring revegetation and landscaping.
- Soil amendments: soil amendments shall be provided and documented in accordance with city code section 12-132. The soil in all landscape areas, including pathways and medians, shall be thoroughly loosened to a depth of not less than eight (8) inches and soil amendment shall be thoroughly incorporated into the soil of all landscape areas to a depth of at least six (6) inches by tilling, discing or other suitable method, at a rate of at least three (3) cubic yards of soil amendment per one thousand (1,000) square feet of landscape area, prior to the issuance of any certificate of occupancy, or written certification must be submitted to the city that all planted areas, or areas to be planted, have been thoroughly loosened and the soil amended, consistent with the requirements set forth in section 12-132.
- Installation and guarantee: all landscaping shall be installed according to sound horticultural practices in a manner designed to encourage quick establishment and healthy growth. All landscaping for each phase must be either installed or the installation must be secured with an irrevocable letter of credit, performance bond, or escrow account for 125% of the value of the materials and labor prior to issuance of a certificate of occupancy for any building in each phase.
- Maintenance: trees and vegetation, irrigation systems, fences, walls and other landscape elements with these final plans shall be considered as elements of the project in the same manner as parking, building materials and other site details. The applicant, landscaper or successor in interest shall be jointly and severally responsible for the regular maintenance of all landscaping elements in good condition. All landscaping shall be maintained free from diseases, pests, weeds and litter, and all landscape structures such as fences and walls shall be repaired and replaced periodically to maintain a structurally sound condition.
- Replacement: any landscape element that dies, or is otherwise removed, shall be promptly replaced in accordance with the requirements of these plans.
- The following separations shall be provided between trees/shrubs and utilities:  
 40 feet between canopy trees and street lights  
 15 feet between ornamental trees and streetlights  
 10 feet between trees and public water, sanitary and storm sewer main lines  
 6 feet between trees and public water, sanitary and storm sewer service lines  
 4 feet between shrubs and public water and sanitary and storm sewer lines  
 4 feet between trees and gas lines
- All street trees shall be placed a minimum eight (8) feet away from the edges of driveways and alleys per [§ 3.2.1](d)(2)(a).
- Placement of all landscaping shall be in accordance with the sight distance criteria as specified by the city of Fort Collins, no structures or landscape elements greater than 2'4" shall be allowed within the sight distance triangle or corners with the exception of deciduous trees provided that the lowest branch is at least 6' from grade. Any fences within the sight distance triangle or easement must be not more than 42" in height and of an open design.
- The final landscape plan shall be coordinated with all other final plan elements so that the proposed grading, storm drainage, and other development improvements do not conflict with nor preclude installation and maintenance of landscape elements on the plan.
- Minor changes in species and plant locations may be made during construction - as required by site conditions or plant availability. Overall quantity, quality, and design concept must be consistent with the approved plans. In the event of conflict with the quantities included in the plant list, species and quantities illustrated shall be provided. All changes of plant species and location must have written approval by the city prior to installation.
- All planting beds shall be mulched to a minimum depth of three inches.

**STREET TREE NOTES**

- A permit must be obtained from the city forester before any trees or shrubs are noted on this plan are planted, pruned or removed in the public right-of-way. This includes zones between the sidewalk and curb, medians and other city property. This permit shall approve the location and species to be planted. Failure to obtain this permit is a violation of the city of Fort Collins code subject to citation (section 27-21) and may also result in replacing or relocating trees and a hold on certificate of occupancy.
- Contact the city forester to inspect all street tree plantings at the completion of each phase of the development. All must be installed as shown on the landscape plan. Approval of street tree planting is required before final approval of each phase.
- Street Landscaping, including street trees, shall be selected in accordance with all city codes and policies. All tree pruning and removal work shall be performed by a city of Fort Collins licensed arborist when required by code. Street trees shall be supplied and planted by the developer using a qualified landscape contractor.
- The developer shall replace dead or dying street trees after planting and final maintenance inspection and acceptance by the city of Fort Collins forestry division. All street trees in the project must be established, with an approved species and of acceptable condition prior to acceptance.
- Subject to approval by the city forester - street tree locations may be adjusted to accommodate driveway locations, utility separations between trees, street signs and streetlights, street trees to be contained in the middle of the lot to the extent feasible. Quantities shown on plan must be installed unless a reduction is approved by the city to meet separation standards.

A PERMIT MUST BE OBTAINED FROM THE CITY FORESTER BEFORE ANY TREES OR SHRUBS AS NOTED ON THIS PLAN ARE PLANTED, PRUNED OR REMOVED IN THE PUBLIC RIGHT-OF-WAY. THIS INCLUDES ZONES BETWEEN THE SIDEWALK AND CURB, MEDIANS AND OTHER CITY PROPERTY. THIS PERMIT SHALL APPROVE THE LOCATION AND SPECIES TO BE PLANTED. FAILURE TO OBTAIN THIS PERMIT IS A VIOLATION OF THE CITY OF FORT COLLINS CODE SUBJECT TO CITATION (SECTION 27-21) AND MAY ALSO RESULT IN REPLACING OR RELOCATING TREES AND A HOLD ON CERTIFICATE OF OCCUPANCY.

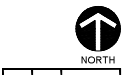
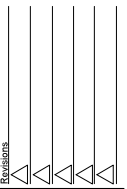


1603 Oakridge Drive Fort Collins, CO 80525 (970) 223-7577 www.bhadesign.com

Landscape Architecture Urban Design Planning

Project: 4750 TECHNOLOGY PARKWAY PDP

Client: MAVD 2723 SOUTH STATE ST., STE. 250 ANN ARBOR MI, 48104



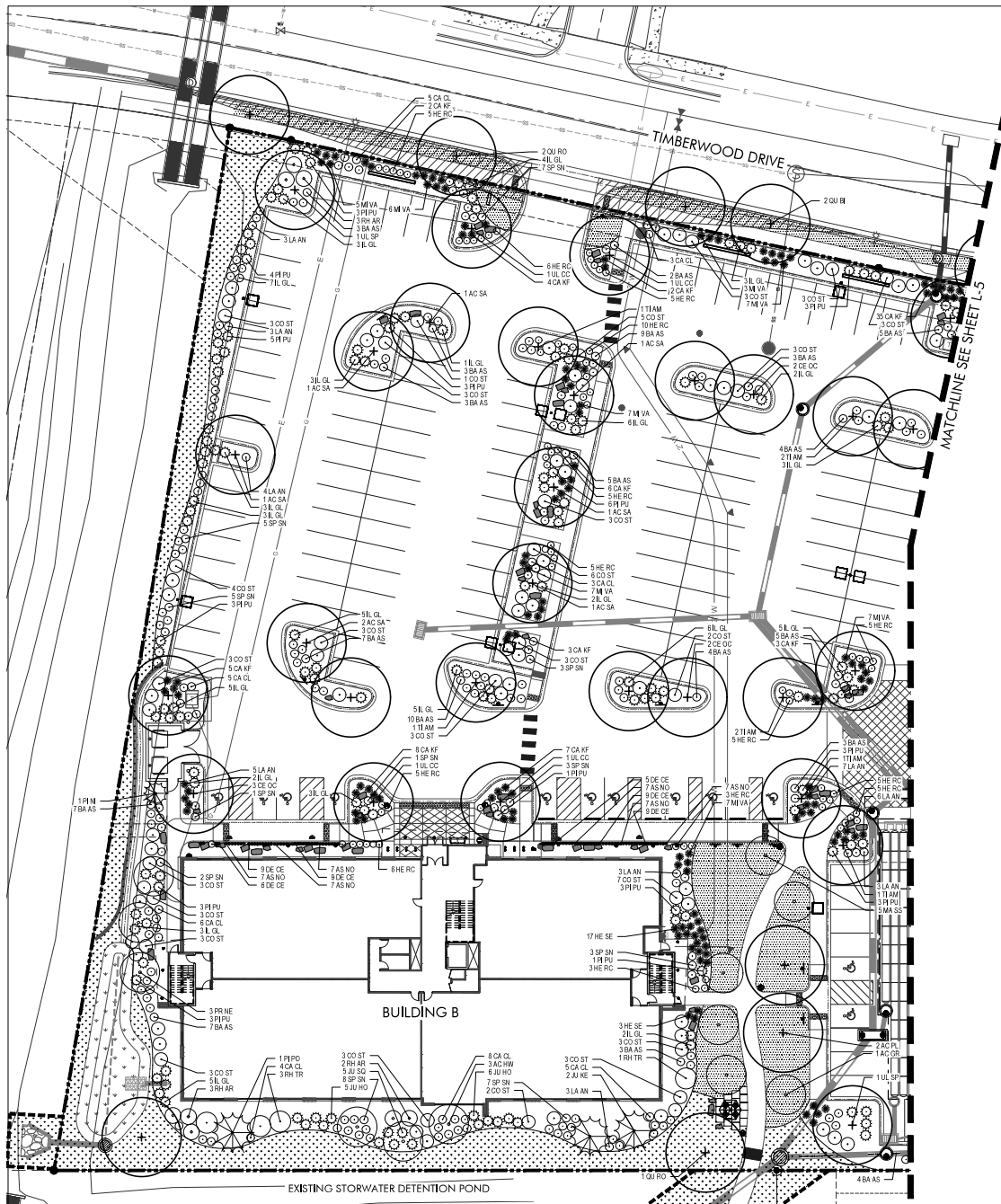
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Designed by: APJM  
 Drawn by: APJM  
 Checked by: JM

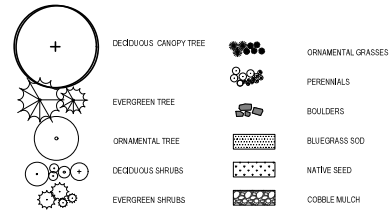
Drawing Name: OVERALL LANDSCAPE PLAN

Project Number: 2020  
 Sheet Date: 11/29/2020  
 Sheet Number:





**LEGEND**



SYM/CL	BOTANICAL NAME	COMMON NAME	SIZE	MOD	QTY	PERCENTAGE
<b>DECIDUOUS TREES</b>						
AC SA	Acer saccharum 'Green Mountain'	Green Mountain Maple	2" Cal.	BB	12	13.64%
CE OC	Celtis occidentalis	Western Hackberry	2" Cal.	BB	13	14.77%
QU BI	Quercus buckleyi	Texas Red Oak	2" Cal.	BB	7	7.96%
UL CC	Ulmus glaberrima 'Choice City'	Choice City Elm	2" Cal.	BB	7	7.96%
TI AM	Tilia americana	American Linden	2" Cal.	BB	13	14.79%
QU RO	Quercus robur 'Cranechmidt'	Crimson Spire Oak	2" Cal.	BB	6	6.60%
Total:						60
<b>EVERGREEN TREES</b>						
JU JA	Juniperus scopulorum 'Woodward'	Woodward Juniper	6" H	BB	3	3.41%
PI PO	Pinus pungens 'Baby Blue Eyes'	Baby Blue Eyes Spruce	6" H	BB	3	3.41%
PI NI	Pinus nigra	Austrian Pine	6" H	BB	1	1.08%
Total:						7
<b>ORNAMENTAL TREES</b>						
AC HW	Acer heterophyllum 'Hot Wings'	Hot Wings Maple	1.6" Cal.	BB	9	9.90%
AC GR	Acer grandidentatum	Double Maple	1.5" Cal.	BB	3	3.41%
MA SS	Malus x Spring Snow	Spring Snow Crabapple	1.5" Cal.	BB	11	12.50%
Total:						21
<b>ALL TREES</b>						<b>88</b>
<b>PERCENTAGE</b>						<b>100%</b>
<b>DECIDUOUS SHRUBS</b>						
CO ST	Cornus stolonifera 'Baker'	Baker Redwing Dogwood	5 Gal.	Cont.	111	
SP SN	Spirea japonica 'Snowmound'	Snowmound Spirea	5 Gal.	Cont.	89	
PI AK	Pinus aristata 'Stow Leaf'	Great Leaf Spruce	5 Gal.	Cont.	16	
SA AS	Saxifraga australis	Fine Leaf Sedum	5 Gal.	Cont.	147	
CA CL	Caragana x clandestina 'Blue Mist'	Blue Mist Indigo	5 Gal.	Cont.	85	
RH TR	Rhus trilobata 'Adam Amber'	Creeeping Three Leaf Sumac	5 Gal.	Cont.	4	
Total:						451
<b>EVERGREEN SHRUBS</b>						
JU JO	Juniperus squamata	Blue River Juniper	5 Gal.	Cont.	35	
JU HO	Juniperus horizontalis	Creeeping Juniper	5 Gal.	Cont.	11	
PI PU	Pinus pungens	Great Spruce	5 Gal.	Cont.	63	
IL GL	Ilex glabra	Compact Holly	5 Gal.	Cont.	165	
Total:						274
<b>ORNAMENTAL GRASSES</b>						
CA SF	Calamagrostis acutiflora 'Karl Foerster'	Faithful Reed Grass	1 Gal.	Cont.	134	
DE CE	Deschampsia cespitosa 'Northern Light'	Northern Light Tallgrass	4 Gal.	Cont.	47	
HE SE	Holcus lanatus 'Campanula'	Blue-Awne Grass	1 Gal.	Cont.	20	
MVA	Miscanthus sinensis 'Variegatus'	Variegated Maiden Grass	1 Gal.	Cont.	114	
Total:						315
<b>PERENNIALS</b>						
HE RC	Hemerocallis 'Rockwell City'	Orange Daylily	1 Gal.	Cont.	169	
LA AN	Lavandula angustifolia 'Hidcote'	Dark Blue Lavender	1 Gal.	Cont.	78	
AS NO	Adonis vernalis 'Purple Dome'	Purple Dome Adonis	3 Gal.	Cont.	42	
Total:						289

**SEED AND SOD MIXES**

**SOD MIX** Sod shall be a Texas Bluegrass Blend

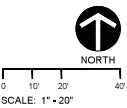
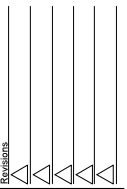
**NATIVE SEED MIX** Seed shall be a mixture that matches the following: Bluegrass Application rate = 12 pounds per acre, 30% pure live seed; Buffalo Grass, Application rate = 15 pounds per acre, 45% pure live seed; Blue Grama, Application rate = 14 pounds per acre, 30% pure live seed; Overall recommended seed application rate shall be 40 pounds per acre.

**SEED MIX B - WETLAND TRANSITION SEED**

Botanical Name	Common Name	% of Mix
Andropogon gerardii	Big Bluestem	10%
Calamagrostis longifolia	Prairie Sandreed (plains, sandy areas)	20%
Distichlis spicata	Inland saltgrass	15%
Panicum virgatum	Switchgrass	10%
Poa polystris	Marsh bluegrass (plains-montane, wet)	20%
Sorghastrum nutans	Yellow Indiangrass	10%
Spartina pectinata	Prairie Cordgrass	15%
		100%

(-70 seeds/eq ft and/or 11.4 lbs/PLS/acre)

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Designed by: APJM  
Drawn by: APJM  
Checked by: JM

Drawing Name: LANDSCAPE PLAN

Project Number: 2020  
Sheet Number: 11/29/2020

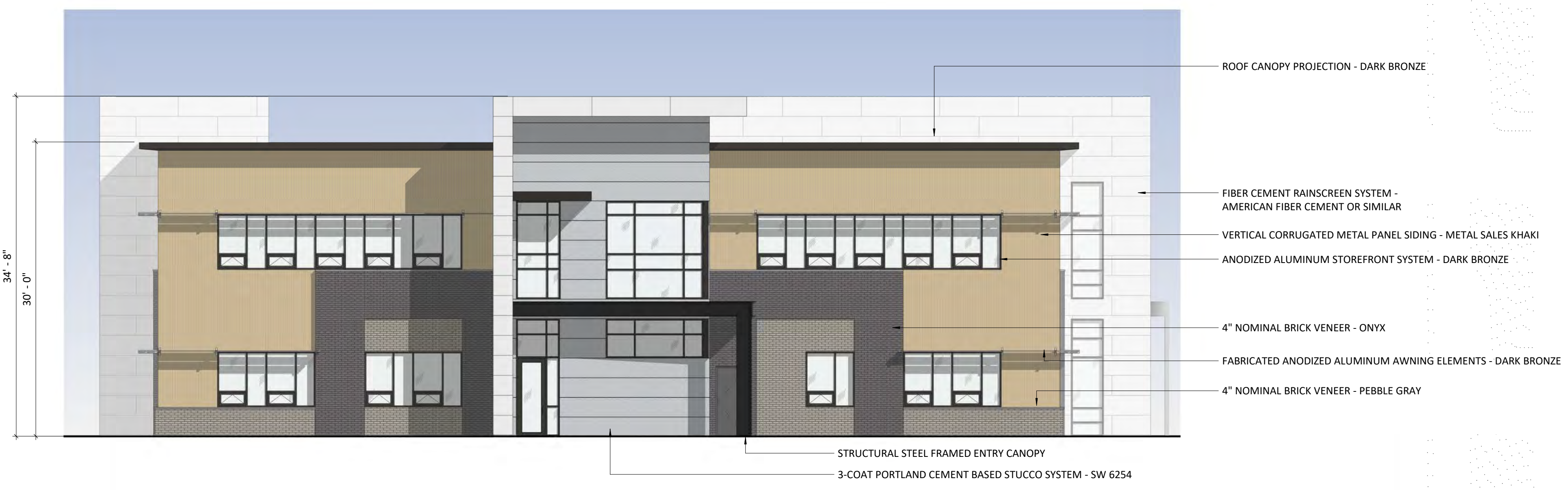




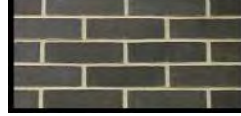

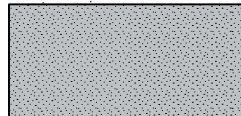
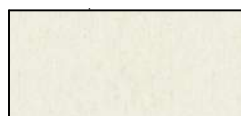
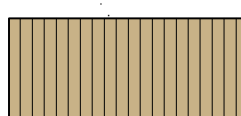




1 PRELIMINARY SOUTH ELEVATION  
A4.1 SCALE: 1/8" = 1'-0"

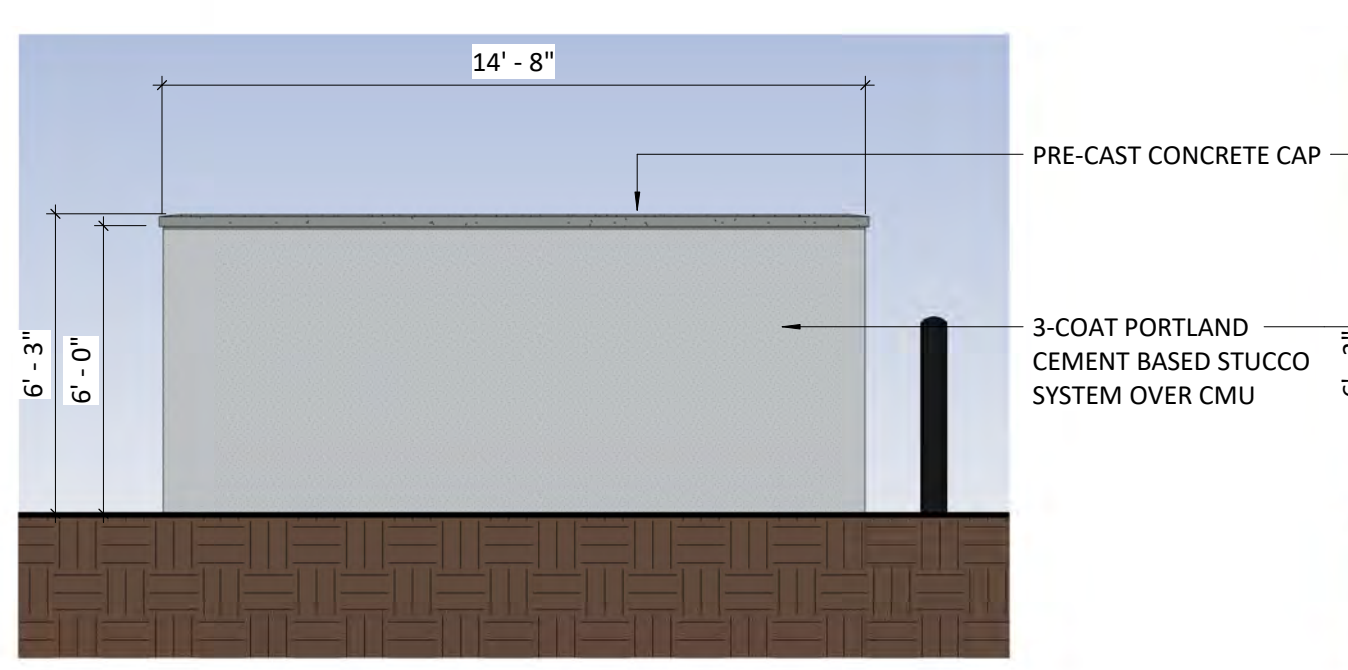


**MATERIAL LEGEND**

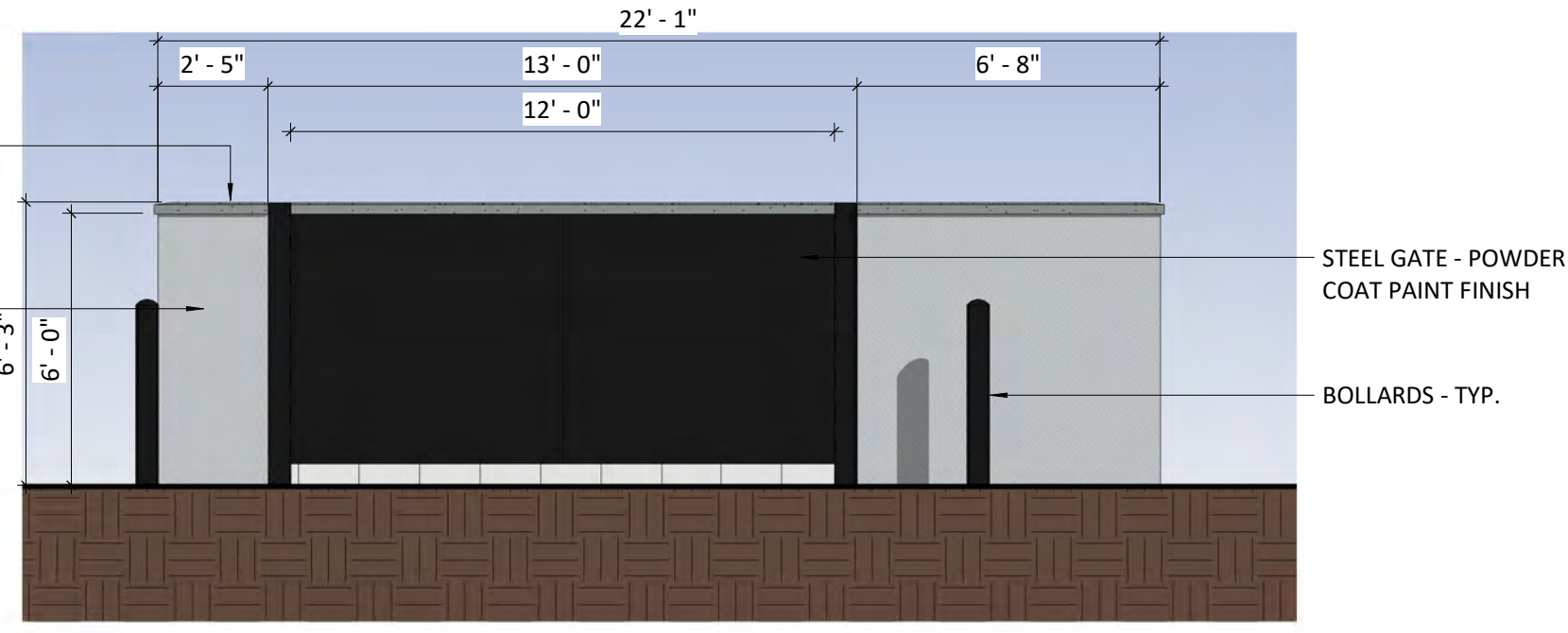
-  SUMMIT BRICK - ONYX (OR SIMILAR)
-  SUMMIT BRICK - PEBBLE GRAY (OR SIMILAR)
-  3-COAT PORTLAND CEMENT BASED STUCCO SYSTEM - SW 6254
-  AMERICAN FIBER CEMENT RAINSCREEN SYSTEM - PEARL
-  VERTICAL CORRUGATED METAL PANEL SIDING - METAL SALES KHAKI

**NOTE:**  
ALL EXPOSED ELECTRICAL AND MECHANICAL EQUIPMENT TO BE SCREENED OR PAINTED TO MATCH THE BUILDING PER LOCAL REQUIREMENTS

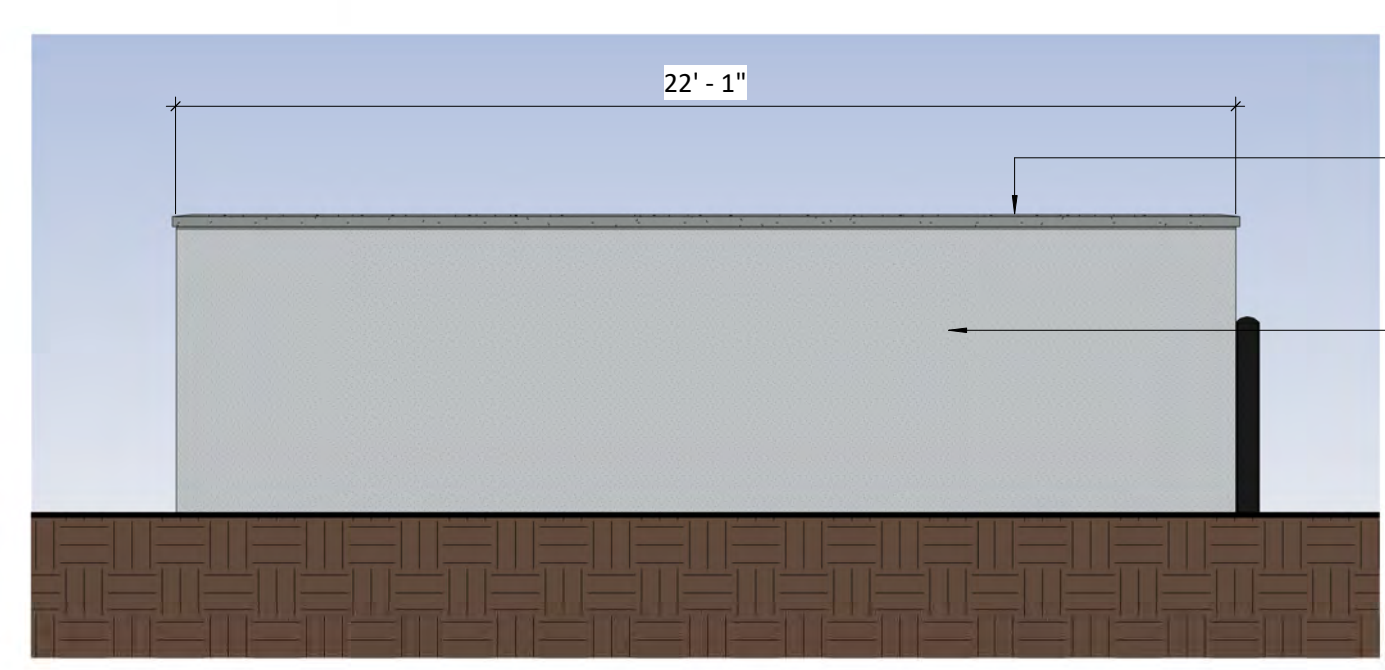
2 PRELIMINARY WEST ELEVATION  
A4.1 SCALE: 1/8" = 1'-0"



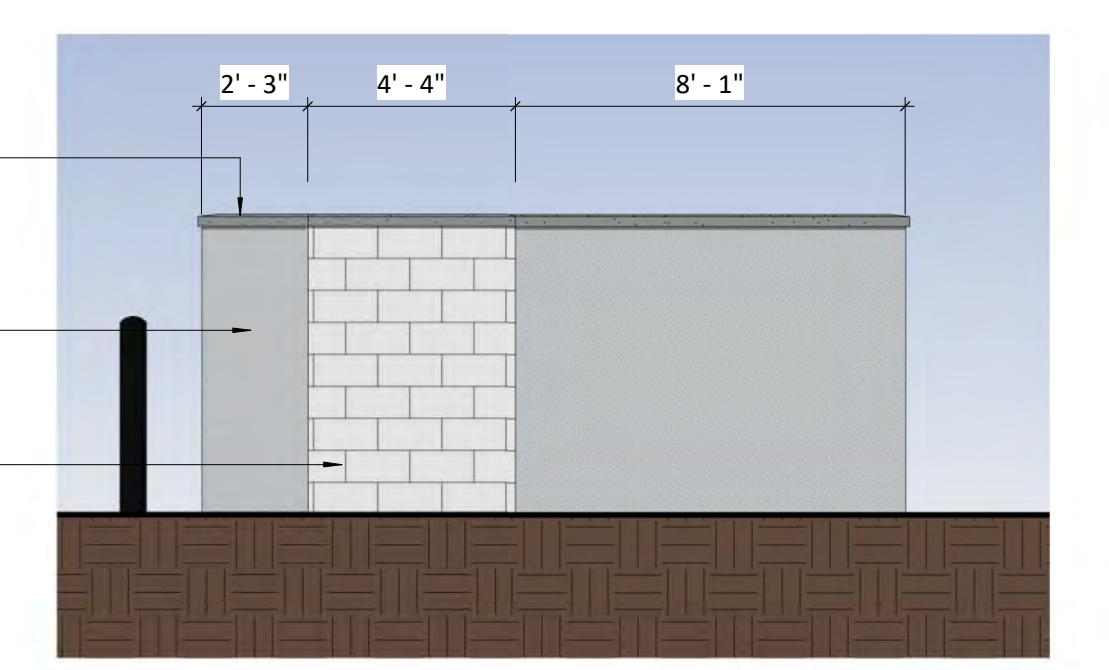
3 TRASH ENCLOSURE - SIDE ELEVATION 1  
A4.1 SCALE: 1/4" = 1'-0"



4 TRASH ENCLOSURE - FRONT ELEVATION  
A4.1 SCALE: 1/4" = 1'-0"



5 TRASH ENCLOSURE - BACK ELEVATION  
A4.1 SCALE: 1/4" = 1'-0"



6 TRASH ENCLOSURE - SIDE ELEVATION 2  
A4.1 SCALE: 1/4" = 1'-0"

Project: 4750 TECHNOLOGY PARKWAY  
PDP

Client: MAVD  
2723 SOUTH STATE ST., STE. 250  
ANN ARBOR MI, 48104

Revisions




SCALE: SEE DRAWINGS

Designed by: \_\_\_\_\_ Designer  
Drawn by: \_\_\_\_\_ IDS  
Checked by: \_\_\_\_\_ Checker

Drawing Name:  
BUILDING A -  
PRELIMINARY  
ELEVATIONS

Project Number: PDR200011  
Sheet Date: 11/17/2020  
Sheet Number: A4.1





- ROOF CANOPY PROJECTION - DARK BRONZE
- FIBER CEMENT RAINSCREEN SYSTEM - AMERICAN FIBER CEMENT OR SIMILAR
- VERTICAL CORRUGATED METAL PANEL SIDING - METAL SALES KHAKI
- ANODIZED ALUMINUM STOREFRONT SYSTEM - DARK BRONZE
- 4" NOMINAL BRICK VENEER - ONYX
- FABRICATED ANODIZED ALUMINUM AWNING ELEMENTS - DARK BRONZE
- 4" NOMINAL BRICK VENEER - PEBBLE GRAY

3-COAT PORTLAND CEMENT BASED STUCCO SYSTEM - SW 6254

**PRELIMINARY NORTH ELEVATION**

2  
A4.2 SCALE: 1/8" = 1'-0"





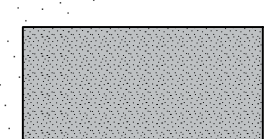

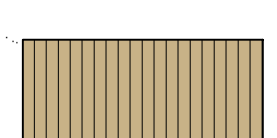
- ROOF CANOPY PROJECTION - DARK BRONZE
- FIBER CEMENT RAINSCREEN SYSTEM - AMERICAN FIBER CEMENT OR SIMILAR
- VERTICAL CORRUGATED METAL PANEL SIDING - METAL SALES KHAKI
- ANODIZED ALUMINUM STOREFRONT SYSTEM - DARK BRONZE
- 4" NOMINAL BRICK VENEER - ONYX
- FABRICATED ANODIZED ALUMINUM AWNING ELEMENTS - DARK BRONZE
- 4" NOMINAL BRICK VENEER - PEBBLE GRAY

3-COAT PORTLAND CEMENT BASED STUCCO SYSTEM - SW 6254  
STRUCTURAL STEEL FRAMED ENTRY CANOPY

**PRELIMINARY EAST ELEVATION**

1  
A4.2 SCALE: 1/8" = 1'-0"

**MATERIAL LEGEND**

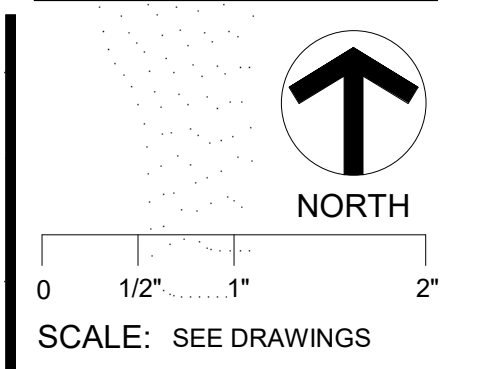
-  SUMMIT BRICK - ONYX (OR SIMILAR)
-  SUMMIT BRICK - PEBBLE GRAY (OR SIMILAR)
-  3-COAT PORTLAND CEMENT BASED STUCCO SYSTEM - SW 6254
-  AMERICAN FIBER CEMENT RAINSCREEN SYSTEM - PEARL
-  VERTICAL CORRUGATED METAL PANEL SIDING - METAL SALES KHAKI

**NOTE:**  
ALL EXPOSED ELECTRICAL AND MECHANICAL EQUIPMENT TO BE SCREENED OR PAINTED TO MATCH THE BUILDING PER LOCAL REQUIREMENTS

Project: 4750 TECHNOLOGY PARKWAY  
PDP

Client: MAVD  
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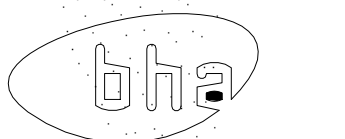



Designed by: \_\_\_\_\_ Designer  
 Drawn by: \_\_\_\_\_ Author  
 Checked by: \_\_\_\_\_ Checker

Drawing Name:  
**BUILDING A -  
 PRELIMINARY  
 ELEVATIONS**

Project Number: PDR200011  
 Sheet Date: 11/17/2020  
 Sheet Number: **A4.2**





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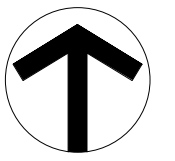


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PDP

Client: MAVD  
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ANN ARBOR MI, 48104

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NORTH

0 1/2" 1" 2"  
SCALE: SEE DRAWINGS

Designed by: \_\_\_\_\_ Designer  
Drawn by: \_\_\_\_\_ IDS  
Checked by: \_\_\_\_\_ Checker

Drawing Name:  
CONCEPTUAL  
BUILDING  
PERSPECTIVE VIEWS

Project Number: PDR200011  
Sheet Date: 11/17/2020  
Sheet Number: \_\_\_\_\_

A4.3



**VIEW FROM SOUTHWEST**

2  
A4.3  
SCALE:



**VIEW FROM SOUTHEAST**

3  
A4.3  
SCALE:



**VIEW FROM SOUTH**

1  
A4.3  
SCALE:





2  
 A4.4 SCALE: **VIEW FROM NORTHEAST**



3  
 A4.4 SCALE: **VIEW FROM NORTHWEST**

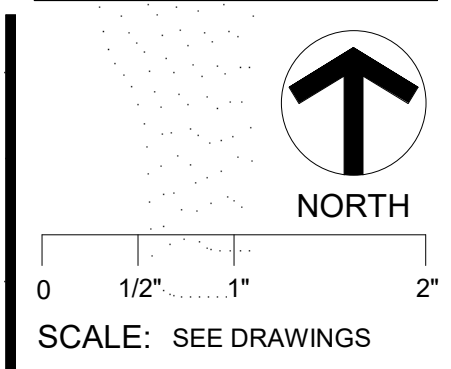


1  
 A4.4 SCALE: **VIEW FROM NORTH**

Project: **4750 TECHNOLOGY PARKWAY**  
 PDP

Client: **MAVD**  
 2723 SOUTH STATE ST., STE. 250  
 ANN ARBOR MI, 48104

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Designed by: \_\_\_\_\_ Designer  
 Drawn by: \_\_\_\_\_ Author  
 Checked by: \_\_\_\_\_ Checker

Drawing Name:  
**CONCEPTUAL  
 BUILDING  
 PERSPECTIVE VIEWS**

Project Number: PDR200011  
 Sheet Date: 11/17/2020  
 Sheet Number: **A4.4**





**PRELIMINARY NORTH ELEVATION**



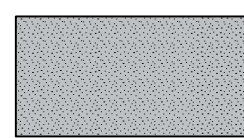

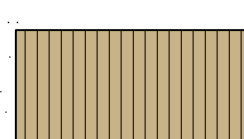
1  
A4.1 SCALE: 1/8" = 1'-0"



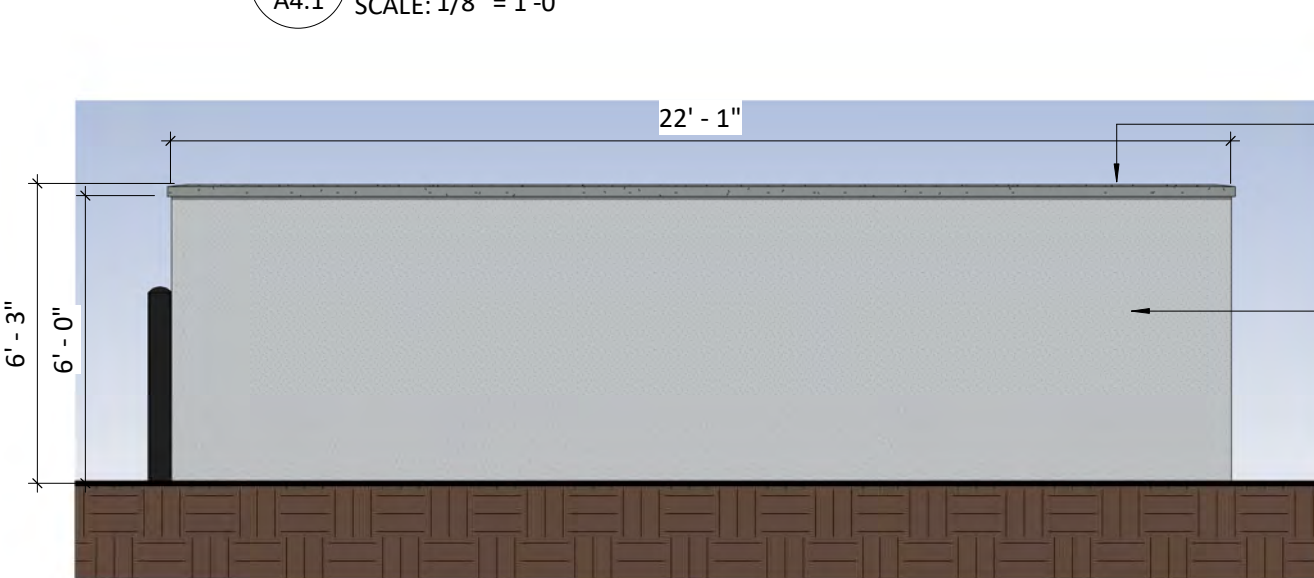
**PRELIMINARY EAST ELEVATION**

2  
A4.1 SCALE: 1/8" = 1'-0"

**MATERIAL LEGEND**

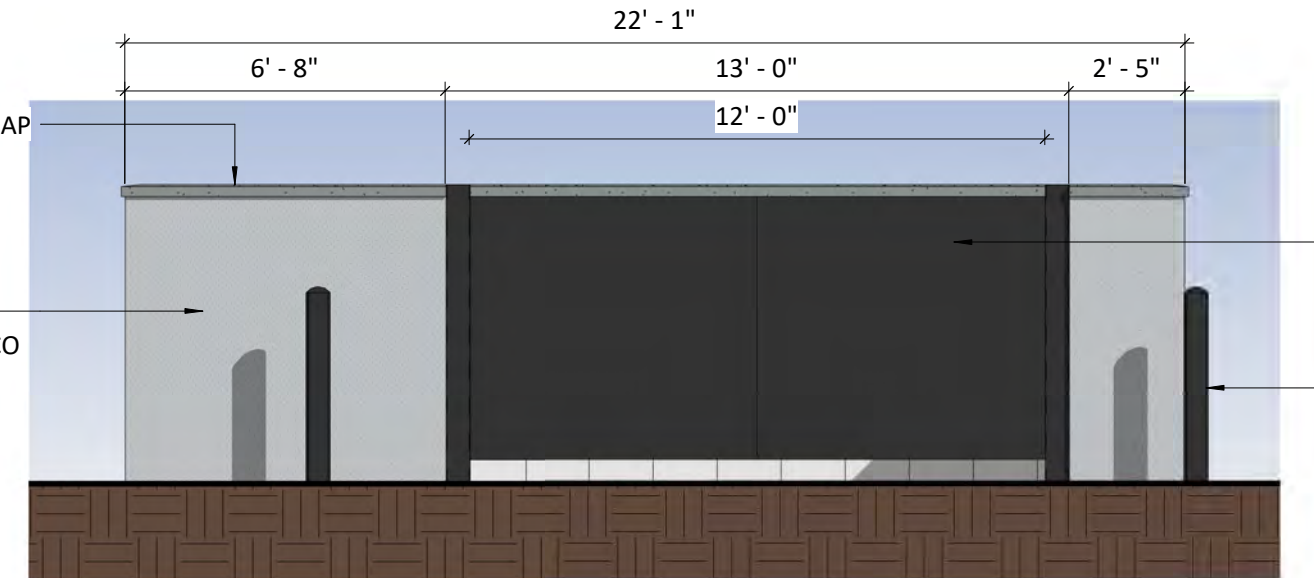
-  SUMMIT BRICK - ONYX (OR SIMILAR)
-  SUMMIT BRICK - PEBBLE GRAY (OR SIMILAR)
-  3-COAT PORTLAND CEMENT BASED STUCCO SYSTEM - SW 6254
-  AMERICAN FIBER CEMENT RAINSCREEN SYSTEM - PEARL
-  VERTICAL CORRUGATED METAL PANEL SIDING - METAL SALES KHAKI

**NOTE:**  
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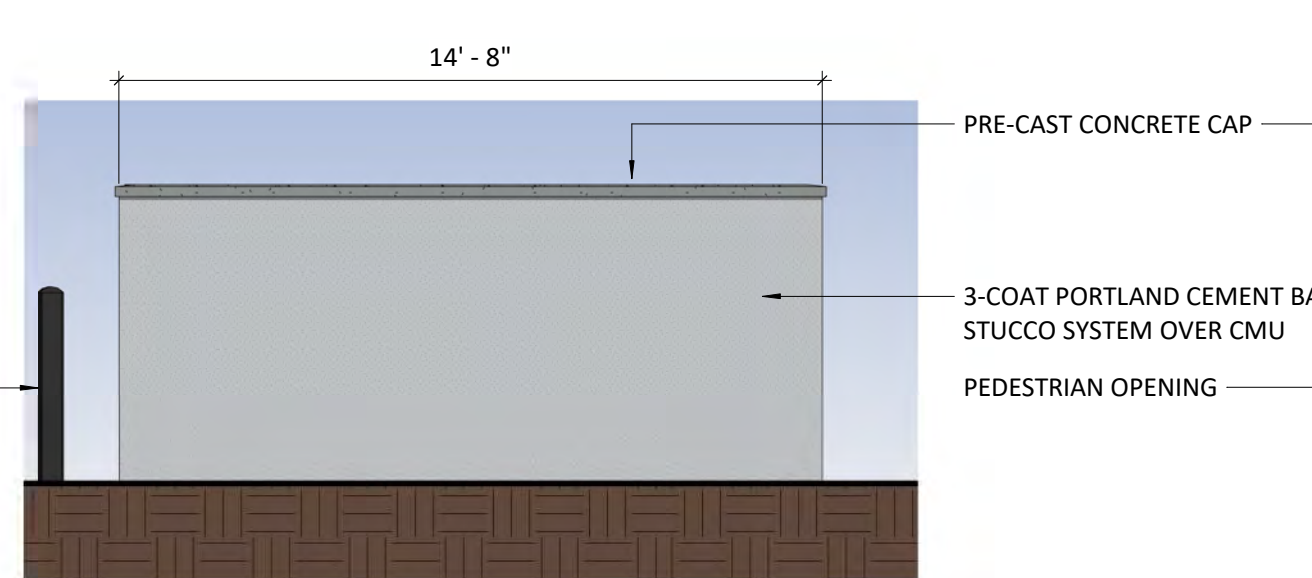
**TRASH ENCLOSURE - BACK ELEVATION**

3  
A4.1 SCALE: 1/4" = 1'-0"



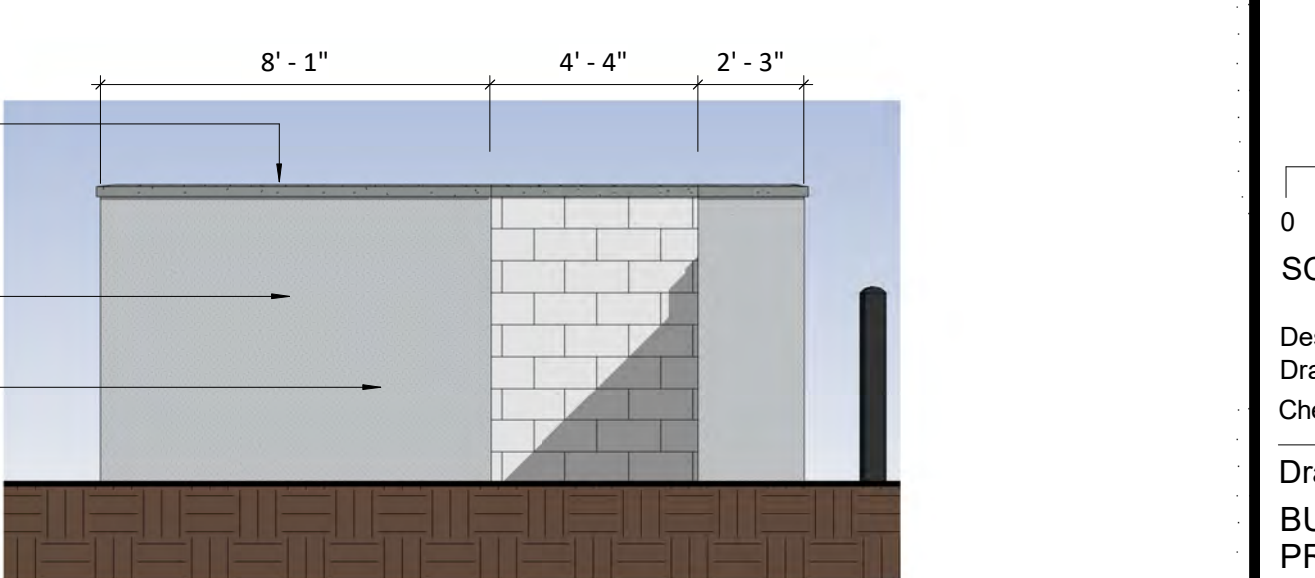
**TRASH ENCLOSURE - FRONT ELEVATION**

4  
A4.1 SCALE: 1/4" = 1'-0"



**TRASH ENCLOSURE - SIDE ELEVATION 1**

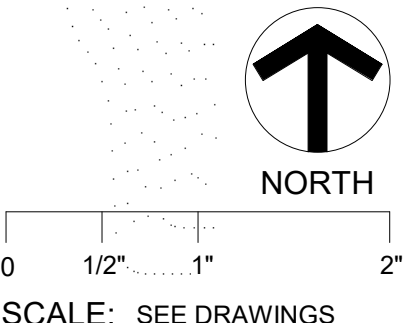
5  
A4.1 SCALE: 1/4" = 1'-0"



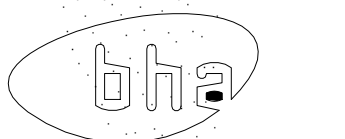
**TRASH ENCLOSURE - SIDE ELEVATION 2**

6  
A4.1 SCALE: 1/4" = 1'-0"

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Project: 4750 TECHNOLOGY PARKWAY  
PDP

Client: MAVD  
2723 SOUTH STATE ST., STE. 250  
ANN ARBOR MI, 48104

Revisions



SCALE: SEE DRAWINGS

Designed by: \_\_\_\_\_ Designer  
Drawn by: \_\_\_\_\_ Author  
Checked by: \_\_\_\_\_ Checker

Drawing Name:  
BUILDING B -  
PRELIMINARY  
ELEVATIONS

Project Number: PDR200011  
Sheet Date: 11/17/2020  
Sheet Number: \_\_\_\_\_

A4.2



ROOF CANOPY PROJECTION - DARK BRONZE

VERTICAL CORRUGATED METAL PANEL SIDING - METAL SALES KHAKI

FIBER CEMENT RAINSCREEN SYSTEM - AMERICAN FIBER CEMENT OR SIMILAR

ANODIZED ALUMINUM STOREFRONT SYSTEM - DARK BRONZE

4" NOMINAL BRICK VENEER - ONYX

FABRICATED ANODIZED ALUMINUM AWNING ELEMENTS - DARK BRONZE

4" NOMINAL BRICK VENEER - PEBBLE GRAY

3-COAT PORTLAND CEMENT BASED STUCCO SYSTEM - SW 6254

**PRELIMINARY SOUTH ELEVATION**

2  
A4.2 SCALE: 1/8" = 1'-0"



ROOF CANOPY PROJECTION - DARK BRONZE

VERTICAL CORRUGATED METAL PANEL SIDING - METAL SALES KHAKI

FIBER CEMENT RAINSCREEN SYSTEM - AMERICAN FIBER CEMENT OR SIMILAR

ANODIZED ALUMINUM STOREFRONT SYSTEM - DARK BRONZE

4" NOMINAL BRICK VENEER - ONYX

FABRICATED ANODIZED ALUMINUM AWNING ELEMENTS - DARK BRONZE

4" NOMINAL BRICK VENEER - PEBBLE GRAY

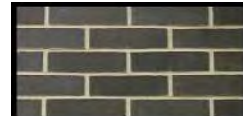

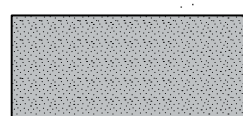

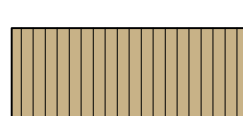
3-COAT PORTLAND CEMENT BASED STUCCO SYSTEM - SW 6254

STRUCTURAL STEEL FRAMED ENTRY CANOPY

**PRELIMINARY WEST ELEVATION**

1  
A4.2 SCALE: 1/8" = 1'-0"

**MATERIAL LEGEND**

-  SUMMIT BRICK - ONYX (OR SIMILAR)
-  SUMMIT BRICK - PEBBLE GRAY (OR SIMILAR)
-  3-COAT PORTLAND CEMENT BASED STUCCO SYSTEM - SW 6254
-  AMERICAN FIBER CEMENT RAINSCREEN SYSTEM - PEARL
-  VERTICAL CORRUGATED METAL PANEL SIDING - METAL SALES KHAKI

**NOTE:**  
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**VIEW FROM NORTHEAST**  
 2  
 A4.3 SCALE:

**VIEW FROM NORTHWEST**  
 3  
 A4.3 SCALE:



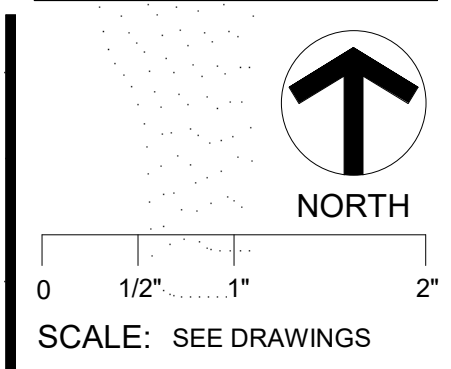
**VIEW FROM NORTH**  
 1  
 A4.3 SCALE:

Project: 4750 TECHNOLOGY PARKWAY  
 PDP

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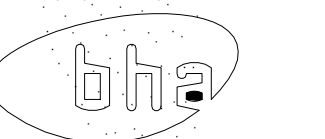
Revisions

NO.	DATE	DESCRIPTION



Designed by: \_\_\_\_\_ Designer  
 Drawn by: IDS Checker  
 Checked by: \_\_\_\_\_  
 Drawing Name: CONCEPTUAL BUILDING PERSPECTIVE VIEWS  
 Project Number: PDR200011  
 Sheet Date: 11/17/2020  
 Sheet Number: A4.3





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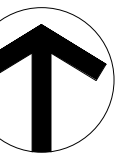
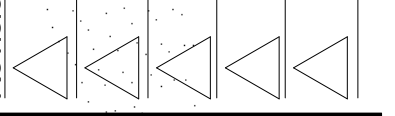


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Revisions



NORTH

0 1/2" 1" 2"  
SCALE: SEE DRAWINGS

Designed by: \_\_\_\_\_ Designer  
Drawn by: \_\_\_\_\_ Author  
Checked by: \_\_\_\_\_ Checker

Drawing Name:  
CONCEPTUAL  
BUILDING  
PERSPECTIVE VIEWS

Project Number: PDR200011  
Sheet Date: 11/17/2020  
Sheet Number: \_\_\_\_\_

A4.4



VIEW FROM SOUTHEAST

2  
A4.4 SCALE:



VIEW FROM SOUTHWEST

3  
A4.4 SCALE:



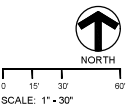
VIEW FROM SOUTH

1  
A4.4 SCALE:



Project: 4750 TECHNOLOGY PARKWAY  
 PDP

Client: MAVD  
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 ANN ARBOR MI, 48104

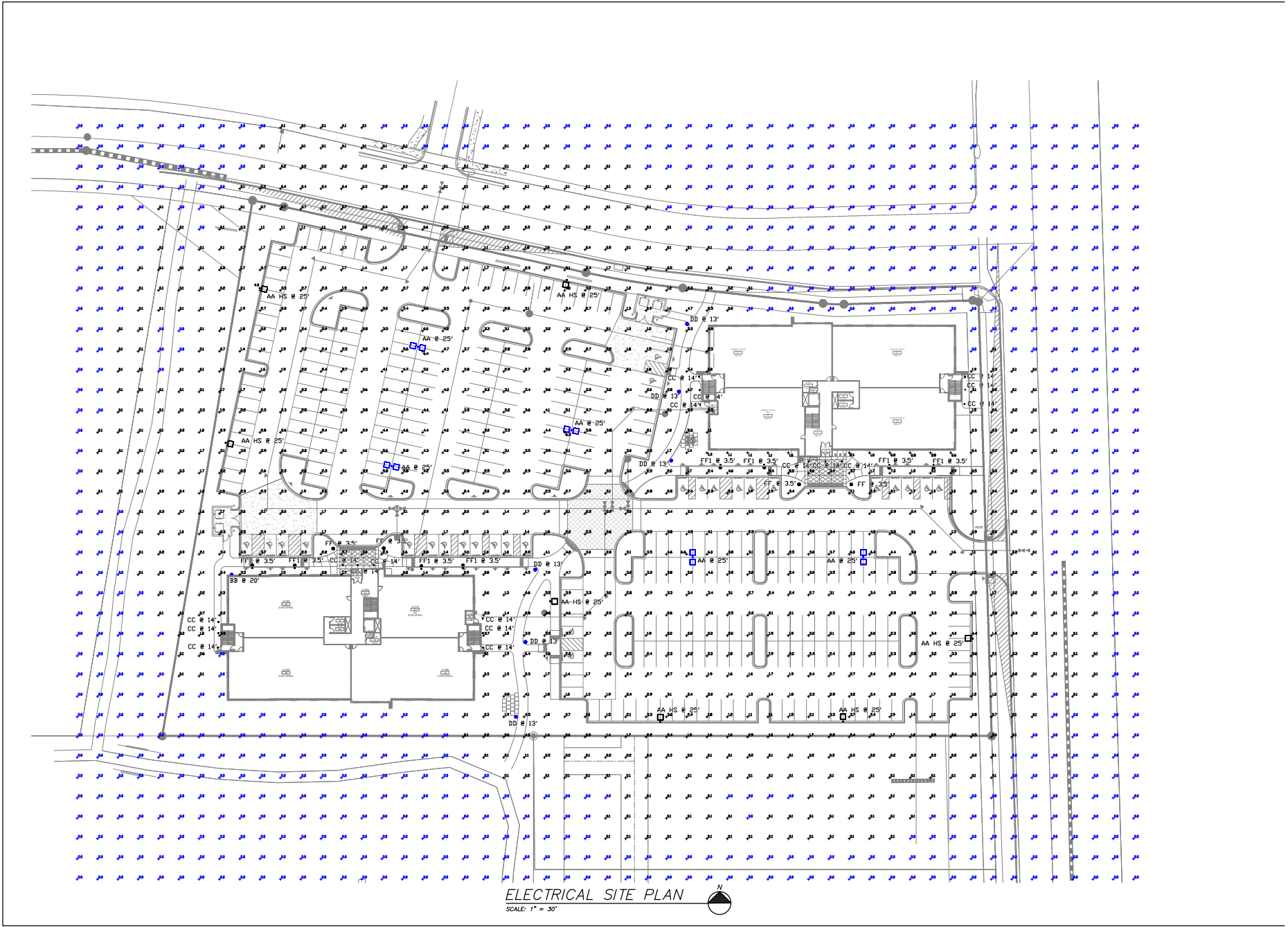


Designed by: RJB  
 Drawn by: SJM  
 Checked by: CP

Drawing Name:  
 PHOTOMETRIC  
 PLAN

Project Number: APS\_627.20  
 Sheet Date: 01/21/2021  
 Sheet Number:

PM.1



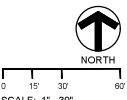
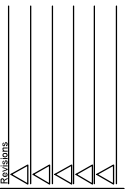
Symbol	Label	Image	QTY	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens per Lamp	Lumen Multiple	LLF	Wattage	Efficiency	Distribution	Polar Plot	Notes
AA	AA		5	Lithonia Lighting	DSX1 LED P9 30K T5W MVOLT	DSX1 LED P9 30K T5W MVOLT	LED	1	DSX1_LED_P9_30K_T5W_MVOLT_LT.jes	26405	1	1	482	100%	TYPE VS, BUG RATING B5-U0-G4		
BB	BB		1	Lithonia Lighting	DSXW2 LED 30C 1000 30K TFTM MVOLT	DSXW2 LED WITH 3 LIGHT ENGINES, 30 LEDS, 1000mA DRIVER, 3000K LED, TYPE FORWARD THROW MEDIUM OPTIC	LED	1	DSXW2_LED_30C_1000_30K_TFTM_MVOLT.jes	10355	1	1	109	100%	TYPE IV, SHORT, BUG RATING B2-U0-G2		
CC	CC		18	Lithonia Lighting	WFL6 LED 30K40K50K MVOLT 90CRI 3000K	6" LED Water Selectable White MVOLT 30K40K50K_3000K	LED	1	WFL6_LED_30K40K50K_MVOLT_90CRI_3000K.jes	1112	1	1	13.83	100%	DRECT, SC=0=1,23, SC=90=1,24		
DD	DD		6	Lithonia Lighting	MRP LED 42C 530 30K SFC MVOLT	MRP POST TOP LIGHT 42 LEDS 530 mA DRIVE CURRENT 30K COLOR TEMP TYPE 2 DISTRIBUTION	LED	1	MRP_LED_42C_530_30K_SFC.jes	5456	1	1	75	100%	TYPE III, SHORT, BUG RATING B1-U0-G1		
FF1	FF1		8	Lithonia Lighting	DSXB LED 12C 350 30K ASY	D-SERIES GOLLARD WITH 12 3000K LEDS OPERATED AT 350mA AND ASYMMETRIC DISTRIBUTION	LED	1	DSXB_LED_12C_350_30K_ASY.jes	1194	1	1	16	100%	TYPE IV, SHORT, BUG RATING B1-U0-G1		
FF	FF		4	Lithonia Lighting	DSXB LED 16C 350 30K SYM	D-SERIES GOLLARD WITH 16 3000K LEDS OPERATED AT 350mA AND SYMMETRIC DISTRIBUTION	LED	1	DSXB_LED_16C_350_30K_SYM.jes	1558	1	1	20	100%	TYPE VS, BUG RATING B1-U0-G0		
AA HS	AA HS		7	Lithonia Lighting	DSX1 LED P9 30K T5W MVOLT HS	DSX1 LED P9 30K T5W MVOLT with house side shield	LED	1	DSX1_LED_P9_30K_T5W_MVOLT_HS.jes	17449	1	1	241	100%	TYPE III, SHORT, BUG RATING B3-U0-G3		

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #3	+	1.0 fc	7.1 fc	0.0 fc	N/A	N/A

Luminaire Locations										
No.	Label	Location					Aim			
		X	Y	Z	MH	Orientation	Tilt	X	Y	Z
17	AA	20184.60	10747.94	25.00	25.00	281.46	0.00			
19	AA	20051.82	10721.42	25.00	25.00	282.49	0.00			
20	AA	20400.21	10654.15	25.00	25.00	0.00	0.00			
21	AA	20071.12	10809.48	25.00	25.00	282.49	0.00			
22	AA	20274.23	10654.01	25.00	25.00	0.00	0.00			
9	AA HS	19954.45	10852.81	25.00	25.00	101.99	0.00	19956.16	10852.45	0.00
10	AA HS	19929.39	10736.54	25.00	25.00	101.41	0.00	19931.10	10736.16	0.00
11	AA HS	20250.79	10523.45	25.00	25.00	0.39	0.00	20250.30	10524.20	0.00
12	AA HS	20385.23	10532.89	25.00	25.00	0.00	0.00	20385.23	10534.44	0.00
13	AA HS	20481.00	10593.99	25.00	25.00	270.00	0.00	20479.25	10593.99	0.00
14	AA HS	20168.79	10621.46	25.00	25.00	89.87	0.00	20170.54	10621.46	0.00
15	AA HS	20181.20	10858.78	25.00	25.00	191.97	0.00	20180.84	10857.07	0.00
1	BB	19933.76	10641.10	20.00	20.00	0.00	0.00	19933.76	10641.10	0.00
1	CC	20026.76	10648.29	14.00	14.00	359.20	0.00	20026.76	10648.29	0.00
2	CC	20015.78	10645.29	14.00	14.00	0.00	0.00	20015.78	10648.29	0.00
3	CC	20038.79	10649.24	14.00	14.00	0.19	0.00	20038.79	10648.24	0.00
4	CC	20119.23	10598.04	14.00	14.00	358.21	0.00	20119.23	10598.04	0.00
5	CC	20119.16	10606.71	14.00	14.00	271.91	0.00	20119.16	10608.71	0.00
6	CC	20119.50	10687.26	14.00	14.00	0.00	0.00	20119.50	10687.28	0.00
7	CC	19923.54	10687.34	14.00	14.00	0.00	0.00	19923.54	10687.34	0.00
8	CC	19923.82	10698.04	14.00	14.00	1.52	0.00	19923.82	10698.04	0.00
9	CC	19924.04	10696.26	14.00	14.00	63.23	0.00	19924.04	10696.26	0.00
10	CC	20283.02	10787.37	14.00	14.00	178.49	0.00	20283.02	10787.37	0.00
11	CC	20283.56	10766.85	14.00	14.00	358.25	0.00	20283.56	10766.85	0.00
12	CC	20283.23	10777.58	14.00	14.00	87.21	0.00	20283.23	10777.58	0.00
13	CC	20479.27	10787.19	14.00	14.00	92.36	0.00	20479.27	10787.19	0.00
14	CC	20478.96	10787.16	14.00	14.00	0.72	0.00	20478.96	10787.16	0.00
15	CC	20479.49	10777.71	14.00	14.00	242.88	0.00	20479.49	10777.71	0.00
16	CC	20376.18	10724.79	14.00	14.00	86.46	0.00	20376.18	10724.79	0.00
17	CC	20398.25	10724.89	14.00	14.00	270.00	0.00	20398.25	10724.89	0.00
18	CC	20381.89	10724.74	14.00	14.00	0.00	0.00	20381.89	10724.74	0.00
1	DD	20270.12	10926.34	13.00	13.00	59.06	0.00	20270.12	10926.34	0.00
2	DD	20264.04	10778.41	13.00	13.00	99.55	0.00	20264.04	10778.41	0.00
3	DD	20258.31	10725.45	13.00	13.00	90.02	0.00	20258.31	10725.45	0.00
4	DD	20157.95	10644.87	13.00	13.00	135.62	0.00	20157.96	10644.87	0.00
5	DD	20150.67	10691.38	13.00	13.00	136.86	0.00	20150.67	10691.38	0.00
6	DD	20143.79	10596.14	13.00	13.00	90.00	0.00	20143.79	10596.14	0.00
1	FF	20395.31	10707.74	3.50	3.50	0.00	0.00	20395.31	10707.74	0.00
2	FF	20356.75	10707.82	3.50	3.50	0.00	0.00	20356.75	10707.82	0.00
3	FF	20008.73	10960.43	3.50	3.50	0.00	0.00	20008.73	10960.43	0.00
4	FF	20048.09	10960.62	3.50	3.50	0.00	0.00	20048.09	10960.62	0.00
6	FF1	20073.79	10645.40	3.50	3.50	1.35	0.00	20073.81	10646.40	0.00
7	FF1	20104.60	10646.05	3.50	3.50	359.36	0.00	20104.59	10647.05	0.00
8	FF1	19948.94	10645.99	3.50	3.50	1.35	0.00	19948.96	10646.99	0.00
9	FF1	19993.41	10646.00	3.50	3.50	359.36	0.00	19993.40	10647.00	0.00
12	FF1	20423.36	10722.08	3.50	3.50	181.74	0.00	20423.35	10721.08	0.00
13	FF1	20458.02	10722.16	3.50	3.50	179.74	0.00	20458.02	10721.16	0.00
14	FF1	20298.68	10722.31	3.50	3.50	181.74	0.00	20298.65	10721.31	0.00
15	FF1	20331.13	10722.37	3.50	3.50	179.74	0.00	20331.13	10721.37	0.00

Project: 4750 TECHNOLOGY PARKWAY  
PDP

Client: MAVD  
2723 SOUTH STATE ST., STE. 250  
ANN ARBOR MI, 48104




Designed by: RJB  
Drawn by: SJM  
Checked by: CP

Drawing Name:  
PHOTOMETRIC SCHEDULES

Project Number: APS\_627.20  
Sheet Date: 01/21/2021  
Sheet Number:

PM.2

### D-Series Size 1 LED Area Luminaire



**Specifications**

- Beam: 12.4°
- Length: 12"
- Width: 12"
- Height (H): 7.05"
- Height (H): 8.10"
- Weight: 2.75 lbs

**Introduction**

The modern styling of the D-Series is striking yet minimalist, making a bold, progressive statement in your space. The D-Series offers the benefits of the latest LED technology with a high efficiency, high efficacy long life luminaire.

The superior electronic performance means it also has excellent uniformity, greater glare control and lower power density. It is ideal for existing or to 700Mhz radio in sensitive locations lighting applications with typical usage savings of 60% and expected service life of over 50,000 hours.

**Example:** DS1 LED P7 40W 17M MVOLT S/N TAIR2 PRHND DBX0

**Ordering Information**


Code	Beam	Length	Width	Height (H)	Weight	Part Number	Part Name
DS1	12.4°	12"	12"	7.05"	2.75 lbs	DS1	LED P7 40W 17M MVOLT S/N TAIR2 PRHND DBX0

**Notes:**

- 1. See ordering use for details.
- 2. An AC-Certified luminaire requires the order of one RCMF (not per luminaire). Sold Separately. Add to Item Link in DTL.

FIXT. TYPES AA, AA.HS

### D-Series Size 2 LED Wall Luminaire



**Specifications**

- Beam: 12.4°
- Length: 12"
- Width: 12"
- Height (H): 7.05"
- Height (H): 8.10"
- Weight: 2.75 lbs

**Introduction**

The D-Series Size 2 LED Wall Luminaire is designed and tested for professional installation. It is a high efficiency, high efficacy long life luminaire.

The superior electronic performance means it also has excellent uniformity, greater glare control and lower power density. It is ideal for existing or to 700Mhz radio in sensitive locations lighting applications with typical usage savings of 60% and expected service life of over 50,000 hours.

**Example:** DS2W LED 80C 70W 40K 3M MVOLT DBX0X

**Ordering Information**

Code	Beam	Length	Width	Height (H)	Weight	Part Number	Part Name
DS2W	12.4°	12"	12"	7.05"	2.75 lbs	DS2W	LED 80C 70W 40K 3M MVOLT DBX0X

**Notes:**

- 1. See ordering use for details.
- 2. An AC-Certified luminaire requires the order of one RCMF (not per luminaire). Sold Separately. Add to Item Link in DTL.

FIXT. TYPES BB

### LITHONIA LIGHTING W5 LED Recessed Downlight

**6" LED SWITCHABLE WHITE COLOR TEMPERATURE**

**Introduction**

The W5 LED Recessed Downlight is a stylish, energy-saving, single-bulb solution designed to perform in every installation—with zero voltage. An optical cup forward, the full cut-off luminaire will meet the most stringent or lighting codes. The D-Series LED Recessed Downlight rugged construction, built-in high quality lighting LEDs will provide years of maintenance-free service.

**Example:** DSX1 LED 8C 70W 40K 3M MVOLT DBX0X

**Ordering Information**


Code	Beam	Length	Width	Height (H)	Weight	Part Number	Part Name
DSX1	12.4°	12"	12"	7.05"	2.75 lbs	DSX1	LED 8C 70W 40K 3M MVOLT DBX0X

**Notes:**

- 1. See ordering use for details.
- 2. An AC-Certified luminaire requires the order of one RCMF (not per luminaire). Sold Separately. Add to Item Link in DTL.

FIXT. TYPES CC

### MRP LED Area Luminaire



**Specifications**

- Beam: 12.4°
- Length: 12"
- Width: 12"
- Height (H): 7.05"
- Height (H): 8.10"
- Weight: 2.75 lbs

**Introduction**

The MRP LED Area Luminaire is designed and tested for professional installation. It is a high efficiency, high efficacy long life luminaire.

The superior electronic performance means it also has excellent uniformity, greater glare control and lower power density. It is ideal for existing or to 700Mhz radio in sensitive locations lighting applications with typical usage savings of 60% and expected service life of over 50,000 hours.

**Example:** MRP LED 42C 70W 40K 5M MVOLT DBX0X

**Ordering Information**


Code	Beam	Length	Width	Height (H)	Weight	Part Number	Part Name
MRP	12.4°	12"	12"	7.05"	2.75 lbs	MRP	LED 42C 70W 40K 5M MVOLT DBX0X

**Notes:**

- 1. See ordering use for details.
- 2. An AC-Certified luminaire requires the order of one RCMF (not per luminaire). Sold Separately. Add to Item Link in DTL.

FIXT. TYPES DD

### D-Series LED Eclairé



**Specifications**

- Beam: 12.4°
- Length: 12"
- Width: 12"
- Height (H): 7.05"
- Height (H): 8.10"
- Weight: 2.75 lbs

**Introduction**

The D-Series LED Eclairé is a stylish, energy-saving, single-bulb solution designed to perform in every installation—with zero voltage. An optical cup forward, the full cut-off luminaire will meet the most stringent or lighting codes. The D-Series LED Eclairé rugged construction, built-in high quality lighting LEDs will provide years of maintenance-free service.

**Example:** DSX1 LED 8C 70W 40K 3M MVOLT DBX0X

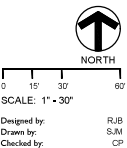
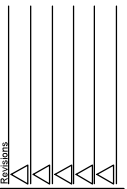
**Ordering Information**

Code	Beam	Length	Width	Height (H)	Weight	Part Number	Part Name
DSX1	12.4°	12"	12"	7.05"	2.75 lbs	DSX1	LED 8C 70W 40K 3M MVOLT DBX0X

**Notes:**

- 1. See ordering use for details.
- 2. An AC-Certified luminaire requires the order of one RCMF (not per luminaire). Sold Separately. Add to Item Link in DTL.

FIXT. TYPES FF, FF1



Designed by: RJB  
Drawn by: SJM  
Checked by: CP

Drawing Name: PHOTOMETRIC SCHEDULES

Project Number: APS\_627.20  
Sheet Date: 01/21/2021  
Sheet Number: PM.3





GENERAL NOTES:

- 1. All materials, workmanship, and construction of public improvements shall meet or exceed the standards and specifications set forth in the Larimer County Urban Area Street Standards and applicable state and federal regulations. Where there is a conflict between these plans and the specifications, or any applicable standards, the most restrictive standard shall apply. All work shall be inspected and approved by the Local Entity.

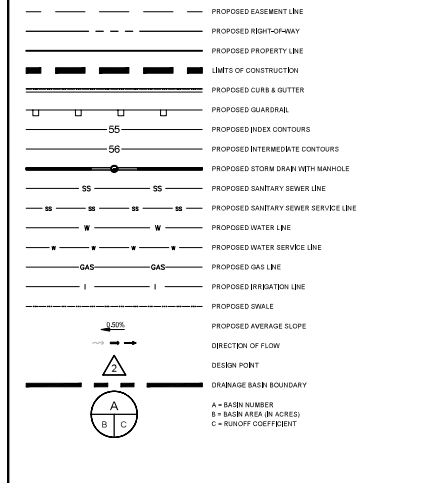
GENERAL NOTES (CONTINUED)

- 41. All retaining is based on the condition of roadway unless otherwise noted.
42. Damaged curb, gutter and sidewalk existing prior to construction, as well as existing fences, trees, streets, sidewalks, curbs and paths, landscaping, structures, and improvements destroyed, damaged or removed due to construction of the project, shall be replaced or restored to the extent of the Developer's expense, unless otherwise indicated on these plans, prior to the acceptance of completed improvements and/or prior to the issuance of the first Certificate of Occupancy.
43. When an existing asphalt street must be cut, the street must be restored to a condition equal to or better than its original condition. The existing street condition shall be documented by the Local Entity Construction Inspector before any cuts are made. Paving shall be done in accordance with the Local Entity Street Repair Standards. The finished joint shall be in an existing surface. All large patches shall be paved with an asphalt in-place machine. In streets where more than one cut is made, an overlap of the entire street width, including the shoulder area, may be required. The determination of need for a complete overlay shall be made by the Local Entity Engineer and/or the Local Entity Inspector at the time the cuts are made.

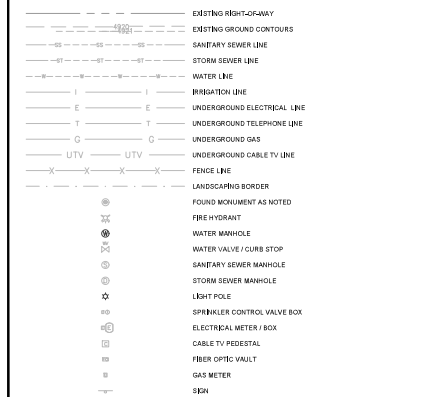
LEGEND OF ABBREVIATIONS:

Table with 2 columns: Abbreviation and Description. Includes items like BOW (Back of Walk), BWC (Back of Wheel Curve), BVC (Begin Vertical Curve), etc.

LEGEND OF PROPOSED SYMBOLS:



LEGEND OF EXISTING SYMBOLS:



- 1. A street construction is subject to the General Notes on the cover sheet of these plans as well as the Street Improvements Notes listed herein.
2. A paving and/or design area not permitted by a Colorado Building Permit must be submitted to the Local Entity Engineer for approval prior to any street construction activity. All depth asphalt designs are set and stamped at a depth greater than 8 inches of asphalt. The job mix shall be submitted for approval prior to placement of any asphalt.
3. Where proposed paving involves existing asphalt, the existing asphalt shall be saw cut, a minimum distance of 12 inches from the existing edge, to create a clean construction joint. The asphalt shall be removed to a distance where a clean construction joint can be made. Mixed cuts shall not be allowed unless approved by the Local Entity Engineer.
4. Street subgrades shall be finished to the top 12 inches and recompacted prior to base installation. No base material shall be laid until the subgrade has been inspected and approved by the Local Entity Engineer.

- 1. A street construction is subject to the General Notes on the cover sheet of these plans as well as the Street Improvements Notes listed herein.
2. A paving and/or design area not permitted by a Colorado Building Permit must be submitted to the Local Entity Engineer for approval prior to any street construction activity. All depth asphalt designs are set and stamped at a depth greater than 8 inches of asphalt. The job mix shall be submitted for approval prior to placement of any asphalt.
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4. Street subgrades shall be finished to the top 12 inches and recompacted prior to base installation. No base material shall be laid until the subgrade has been inspected and approved by the Local Entity Engineer.

- 1. The Local Entity shall not be responsible for obtaining all necessary permits for any applicable agencies prior to commencement of construction. The Developer shall notify the Local Entity Engineer of all permits required.
2. The Developer shall be responsible for obtaining all necessary permits for any applicable agencies prior to commencement of construction. The Developer shall notify the Local Entity Engineer of all permits required.
3. The Developer shall be responsible for obtaining all necessary permits for any applicable agencies prior to commencement of construction. The Developer shall notify the Local Entity Engineer of all permits required.

Traffic Spacing and Permanent Marking Construction Notes

- 1. All spacing and marking is subject to the General Notes on the cover sheet of these plans, as well as the Traffic Spacing and Marking Construction Notes listed herein.
2. All symbols, including arrows, CHLYS, crosswalks, stop bars, etc., shall be performed therapeutically.
3. All signage shall be per Local Entity Standards and these plans or as otherwise specified in MUTCD.
4. Allow lines for concrete pavement shall receive coat of latex paint with glass beads.
5. Allow lines for asphalt pavement shall be epoxy paint.

Storm Drainage Notes

- 1. The City of Fort Collins shall not be responsible for the maintenance of storm drainage facilities located on private property. Maintenance of onsite drainage facilities shall be the responsibility of the property owner.
2. All recommendations of the Final Drainage and Erosion Control Report for Harmony Technology Park Medical Office Building, by Arsen Engineering, dated November 16, 2020, shall be followed and implemented.
3. Prior to final inspection and acceptance by the City of Fort Collins, certification of the drainage facilities, by a registered engineer, must be submitted to and approved by the Stormwater Utility Department. Certification shall be submitted to the Stormwater Utility Department at least two weeks prior to the release of a certificate of occupancy for single family units. For commercial properties, certification shall be submitted to the Stormwater Utility Department at least two weeks prior to the release of any building permits in excess of those allowed prior to certification per the Development Agreement.

Sanitary Sewer Notes

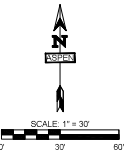
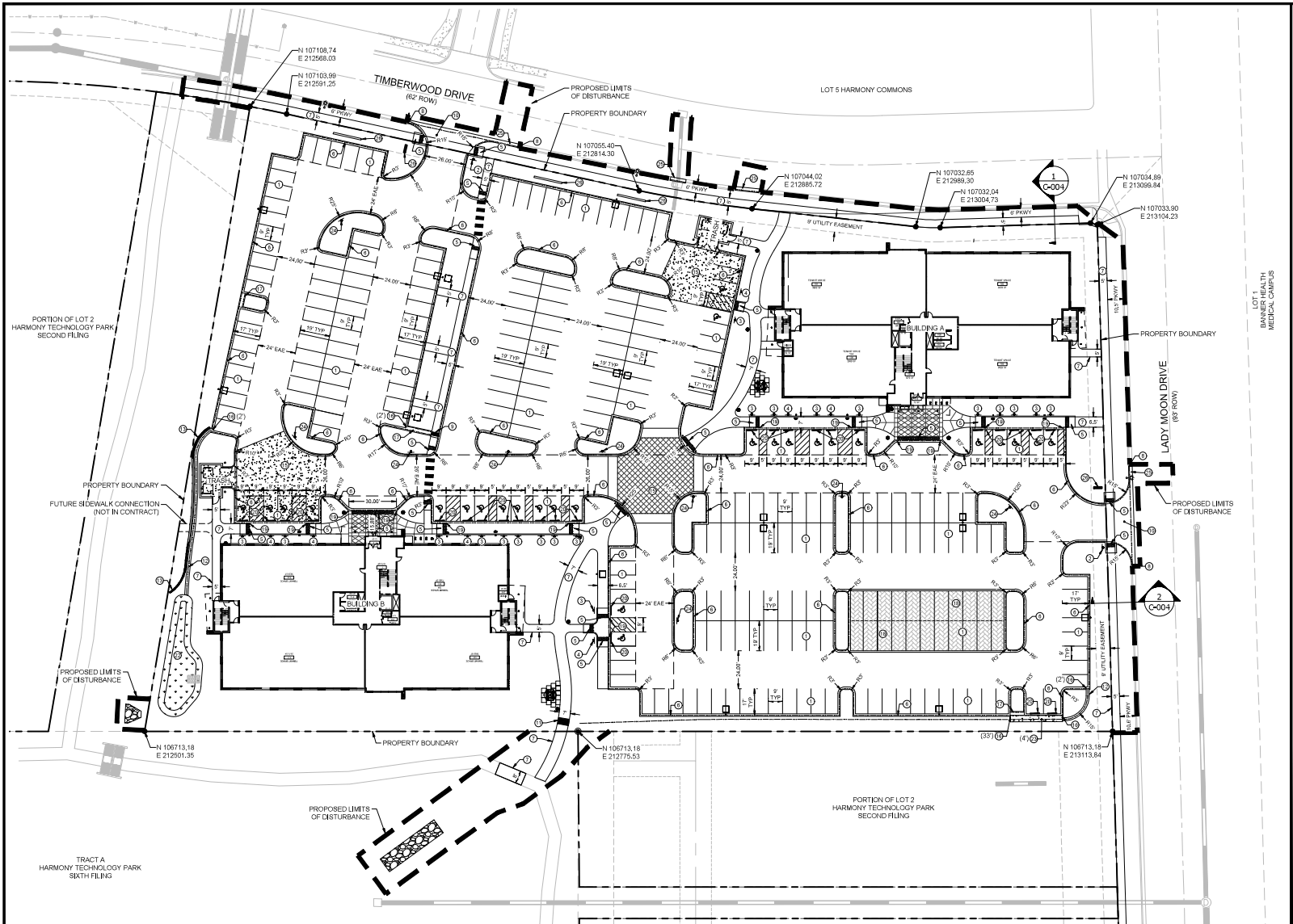
- 1. All sanitary sewer construction shall be performed according to the Fort Collins-Loveland Water District and the South Fort Collins Sanitation District Standards and Specifications.
2. Construction of sewer facilities requires a pre-con meeting with District Operations staff prior to construction.
3. Contractor shall notify District Inspectors prior to starting work.
4. Contractor shall contact the Sanitation District for sewer inspection 48 hours prior to connecting to existing sewer mains.
5. All District valves shall only be operated by district operators staff.

Colorado 811 logo and text: CALL UTILITY NOTIFICATION CENTER OF COLORADO 1-800-922-1987

City of Fort Collins, Colorado UTILITY PLAN APPROVAL. Includes fields for APPROVED, CHECKED BY, and DATE for various utility departments like Water & Wastewater, Stormwater, Parks & Recreation, etc.

Vertical sidebar containing project location (HARMONY TECHNOLOGY PARK MEDICAL OFFICE BUILDING), project location (FORT COLLINS, COLORADO), project location (GENERAL NOTES & MASTER LEGEND), project location (SHEET NO. C-002), and project location (DATE: 1/27/21).





**NOTES**

- ALL DIMENSIONS ARE TO FLOWLINE, UNLESS NOTED OR SHOWN OTHERWISE.
- SEE SHEET C-002 FOR MASTER LEGEND, ABBREVIATIONS & GENERAL CONSTRUCTION NOTES.
- PAINTED 4" STRIPES SHALL BE EPOXY PAINT.
- STRIPING DIMENSIONS SHOWN ARE FROM CENTER OF STRIPE, UNLESS OTHERWISE NOTED.
- REFER TO TRAFFIC SIGNING AND PAVEMENT MARKING CONSTRUCTION NOTES ON SHEET C-003 FOR SIGNAGE & STRIPING CONSTRUCTION. INSTALL HANDICAP STALL STRIPING AND SYMBOLS IN ACCORDANCE WITH ADA.
- PLEASE REFER TO THE GEOTECHNICAL REPORT, BY EARTH ENGINEERING CONSULTANTS, LLC, FOR EXCAVATION, GRAZING, AND PAVING RECOMMENDATIONS AND REQUIREMENTS FOR THE PROJECT SITE.
- SITE/PAVEMENT GRADING FOR CONCRETE AREAS, PANS, AND CHASSES SHALL UTILIZE 0.5% MINIMUM.
- EXISTING UTILITIES AND TREES NOT SHOWN FOR CLARITY. SEE DEMOLITION PLAN AND LANDSCAPE PLANS FOR EXISTING TREES TO REMAIN OR BE REMOVED.
- THE PROPERTY BOUNDARY SERVES AS THE "LIMITS OF DEVELOPMENT" AS SHOWN EXCEPT FOR TIE-IN TO THE OFF-SITE SIDEWALK AND STORM DRAIN IMPROVEMENTS TO THE WEST AND SOUTH OF THE PROPERTY.
- EAE = EMERGENCY ACCESS EASEMENT. PLEASE REFER TO THE PLAN FOR EMERGENCY ACCESS AND ALL OTHER EASEMENTS.
- PROPOSED POROUS PAVERS ARE TO BE CONSTRUCTED AT THE END OF THE CONSTRUCTION SEQUENCE, AND PROTECTED FOR THE DURATION OF CONSTRUCTION.

**KEY NOTE LEGEND**

- ① 4" SOLID WHITE LINE
- ② INSTALL STOP SIGN (R1-1)
- ③ INSTALL HANDICAP ACCESSIBLE PARKING SPACE SIGN (R7-8)
- ④ INSTALL HANDICAP VAN ACCESSIBLE PARKING SPACE SIGN (R7-8)
- ⑤ INSTALL HANDICAP RAMP W/ TRUNCATED DOMES
- ⑥ PROPOSED 1.5" WIDE VERTICAL CURB AND GUTTER
- ⑦ PROPOSED CONCRETE SIDEWALK (WIDTH AS NOTED ON PLAN)
- ⑧ MATCH PROPOSED VERTICAL CURB & GUTTER TO EXISTING
- ⑨ PROPOSED 2" SIDEWALK CHASE W/ METAL SIDEWALK CULVERT
- ⑩ PROPOSED DRIVE APRON PAVED IN CONCRETE TO THE RIGHT-OF-WAY
- ⑪ PROPOSED 4" SIDEWALK CHASE W/ METAL SIDEWALK CULVERT
- ⑫ PROPOSED 2" WIDE CONCRETE TRICKLE PAN
- ⑬ PROPOSED MSE RETAINING WALL
- ⑭ PROPOSED ASPHALT PAVEMENT
- ⑮ PROPOSED CONCRETE PAVEMENT
- ⑯ PROPOSED CURB CUT (WIDTH NOTED ON PLAN)
- ⑰ PROPOSED 2" WIDE CURB CHASE
- ⑱ PROPOSED POROUS PAVERS (SEE NOTE 11)
- ⑲ PROPOSED ZERO HEIGHT CURB AND GUTTER
- ⑳ PROPOSED WHEEL STOP
- ㉑ PROPOSED HANDICAP ACCESSIBLE PARKING SPACE W/ THERMOPLASTIC STENCIL (SEE PARKING TYPICAL DETAIL)
- ㉒ PROPOSED LID BASH
- ㉓ PROPOSED CONCRETE APRON (WIDTH NOTED ON PLAN)
- ㉔ INSTALL NO PARKING FIRE LANE SIGN (R8-31)
- ㉕ PROPOSED 2.5" WIDE VERTICAL CURB AND GUTTER
- ㉖ PROPOSED FEATURE WALL / MONUMENT SIGN (SEE SITE PLAN)



REV.	DESCRIPTION OF REVISION	DATE	REVISION BY	APPROVED BY

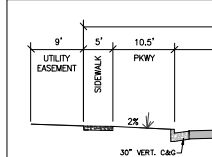
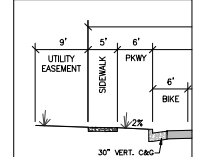
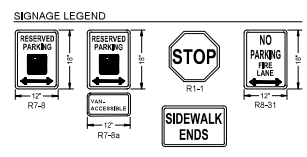
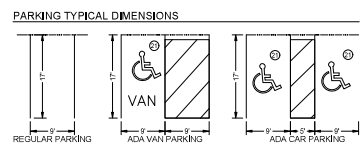
CHECKED BY: JRC  
DESIGNED BY: AGW  
DRAWN BY: AGW

**HARMONY TECHNOLOGY PARK  
MEDICAL OFFICE BUILDING**  
FORT COLLINS, COLORADO

PROJECT LOCATION: PROJECT LOCATION:

DESIGNING:

**HORIZONTAL CONTROL, SIGNAGE & STRIPING PLAN**



City of Fort Collins, Colorado  
**UTILITY PLAN APPROVAL**

APPROVED: _____	City Engineer	_____	Date
CHECKED BY: _____	Water & Wastewater Utility	_____	Date
CHECKED BY: _____	Stormwater Utility	_____	Date
CHECKED BY: _____	Parks & Recreation	_____	Date
CHECKED BY: _____	Traffic Engineer	_____	Date
CHECKED BY: _____	Environmental Planner	_____	Date

THESE PLANS HAVE BEEN REVIEWED BY THE LOCAL ENTITY FOR CONCEPT ONLY. THE REVIEW DOES NOT IMPLY RESPONSIBILITY BY THE REVIEWING DEPARTMENT, THE LOCAL ENTITY ENGINEER, OR THE LOCAL ENTITY FOR ACCURACY AND CORRECTNESS OF THE CALCULATIONS. FURTHERMORE, THE REVIEW DOES NOT IMPLY THAT QUANTITIES OF ITEMS ON THE PLANS ARE THE FINAL QUANTITIES REQUIRED. THE REVIEW SHALL NOT BE CONSTRUED IN ANY REASON AS ACCEPTANCE OF FINANCIAL RESPONSIBILITY BY THE LOCAL ENTITY FOR ADDITIONAL QUANTITIES OF ITEMS SHOWN THAT MAY BE REQUIRED DURING THE CONSTRUCTION PHASE.

PROJECT NO: 1009005  
DATE: 1/27/21  
SHEET NO: C-004  
4 OF 14

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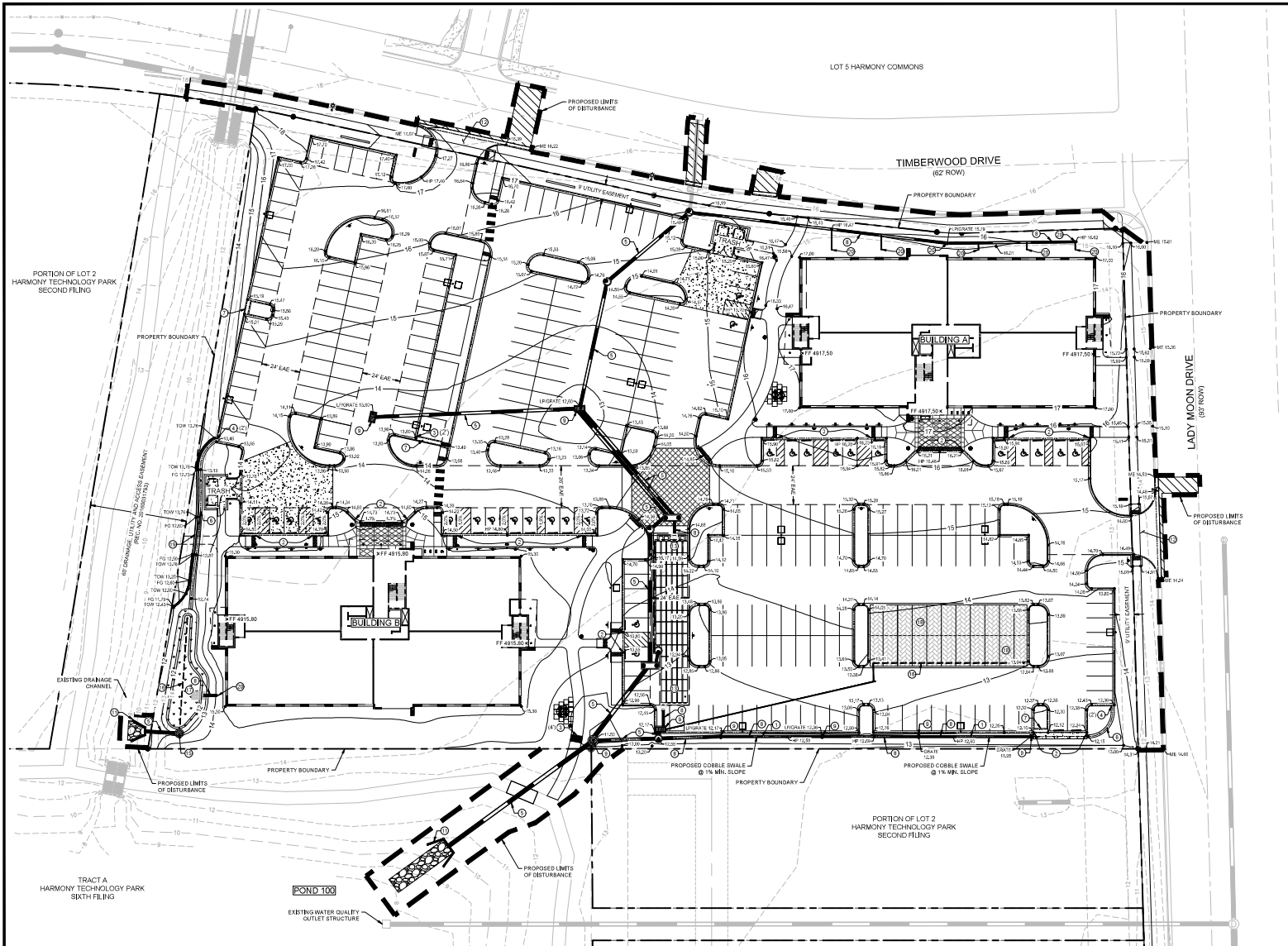












- NOTES**
- PROPOSED ELEVATIONS SHOWN ARE RELATIVE TO A DATUM OF 4500 FEET AND ARE BASED ON AN EXISTING NAVD83 BENCHMARK. PLEASE SEE SHEET C-002 FOR PROJECT BENCHMARK INFORMATION.
  - SEE SHEET C-002 FOR GENERAL CONSTRUCTION NOTES AND MASTER LEGEND.
  - ALL INTERIOR CURB AND GUTTER SHALL BE 1.5" w/ 1" PAN, UNLESS NOTED OTHERWISE.
  - PLEASE REFER TO THE GEOTECHNICAL REPORT FOR EXCAVATION, GRADING AND PAVING RECOMMENDATIONS AND REQUIREMENTS FOR THE PROJECT SITE.
  - PROPOSED OUTFALL CURB AND GUTTER SHALL BE PROVIDED FOR INTERIOR PORTIONS OF THE SITE, AS HATCHED AND SHOWN ON THIS PLAN.
  - REFER TO THE ARCHITECTURAL DRAWINGS FOR FINISH FLOOR INFORMATION.
  - REFER TO THE LANDSCAPE PLANS FOR HARDSCAPE DETAILS, PLANTING PLANS AND EXISTING TREES TO BE PROTECTED IN PLACE.
  - SITE GRADING AND GREEN AREAS WILL UTILIZE 2% CROSS-SLOPE MINIMUM UNLESS SHOWN OTHERWISE.
  - FLOWLINES OF CURB AND GUTTER AND CONCRETE PARACHASES WILL UTILIZE 0.5% MINIMUM ON INTERIOR OF SITE. SLOPES IN STREETS WILL VARY AS REQUIRED TO MATCH EXISTING CONDITIONS.
  - ALL PRIVATE SIDEWALKS WILL BE 4" THICK 4000 PSI CONCRETE. ALL PUBLIC SIDEWALKS WILL BE 6" THICK 4000 PSI CONCRETE.
  - THE FINISH FLOOR ELEVATION SHOWN EXCEEDS THE MINIMUM ELEVATION REQUIRED FOR PROTECTION FROM THE 100-YR STORM.
  - ALL CURB CUTS SHALL HAVE 1" TRANSITION TAPERS FROM 6" HIGH CURB TO 0" HIGH CURB ON EACH SIDE OF THE CURB CUT, EXCEPT WHERE CONNECTING TO A SIDEWALK CHASE.
  - REFER TO THE LANDSCAPE PLANS BY BHA FOR LOCATIONS OF IRRIGATION VALVE BOXES AND PLANTS.
  - CONTRACTOR SHALL VERIFY ALL EXISTING GRADES PRIOR TO CONSTRUCTION. IF EXISTING GRADES VARY FROM THOSE SHOWN, CONTRACTOR SHALL COORDINATE WITH ENGINEER PRIOR TO CONSTRUCTION.
  - RAILINGS SHALL BE INSTALLED ON MSE WALLS GREATER THAN 30" IN HEIGHT.
  - PIPE SIZING IS PRELIMINARY, AND WILL BE DETERMINED DURING FINAL DESIGN.
  - THE PROPERTY BOUNDARY SERVES AS THE LIMITS OF DEVELOPMENT AS SHOWN, EXCEPT FOR THE TIE-IN TO OFF-SITE SIDEWALKS AND STORM DRAIN IMPROVEMENTS TO THE WEST AND SOUTH OF THE BOUNDARY.

- KEY NOTE LEGEND**
- ① PROPOSED DRAINAGE SWALE
  - ② PROPOSED ZERO HEIGHT CURB
  - ③ PROPOSED SIDEWALK CULVERT W/ METAL CULVERT (WIDTH AS NOTED ON PLAN)
  - ④ PROPOSED CURB CUT (WIDTH AS NOTED ON PLAN)
  - ⑤ PROPOSED STORM SEWER (SEE SHEET 9)
  - ⑥ PROPOSED 2" WIDE CONCRETE TRICKLE PAN
  - ⑦ PROPOSED 2" WIDE CONCRETE CHASE
  - ⑧ PROPOSED HDPE STORM DRAIN
  - ⑨ PROPOSED STORM INLET
  - ⑩ PROPOSED OUTFALL CURB & GUTTER
  - ⑪ PROPOSED CONCRETE HEADWALL (SEE C-007 HEADWALL FOR PIPES DETAIL M-601-10)
  - ⑫ PROPOSED DRIVEWAY PAVED IN CONCRETE TO ROW
  - ⑬ PROPOSED UNDERGROUND STORMTECH LID
  - ⑭ PROPOSED GRADE BREAK LINE
  - ⑮ PROPOSED LID OVERFLOW INLET
  - ⑯ PROPOSED LID UNDERDRAIN
  - ⑰ PROPOSED LID BASIN
  - ⑱ PROPOSED POROUS PAVERS
  - ⑲ PROPOSED RETAINING WALL
  - ⑳ PROPOSED STORM CLEANOUT



REV. #	DESCRIPTION OF REVISION	DATE	DESIGNED BY	CHECKED BY	APPROVED BY
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CHECKED BY: JRC  
 DESIGNED BY: AGW  
 DRAWN BY: DJW

**HARMONY TECHNOLOGY PARK  
 MEDICAL OFFICE BUILDING  
 FORT COLLINS, COLORADO  
 GRADING PLAN**

City of Fort Collins, Colorado  
 UTILITY PLAN APPROVAL

APPROVED:	City Engineer	Date
CHECKED BY:	Water & Wastewater Utility	Date
CHECKED BY:	Stormwater Utility	Date
CHECKED BY:	Parks & Recreation	Date
CHECKED BY:	Traffic Engineer	Date
CHECKED BY:	Environmental Planner	Date

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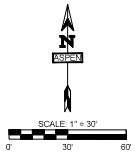
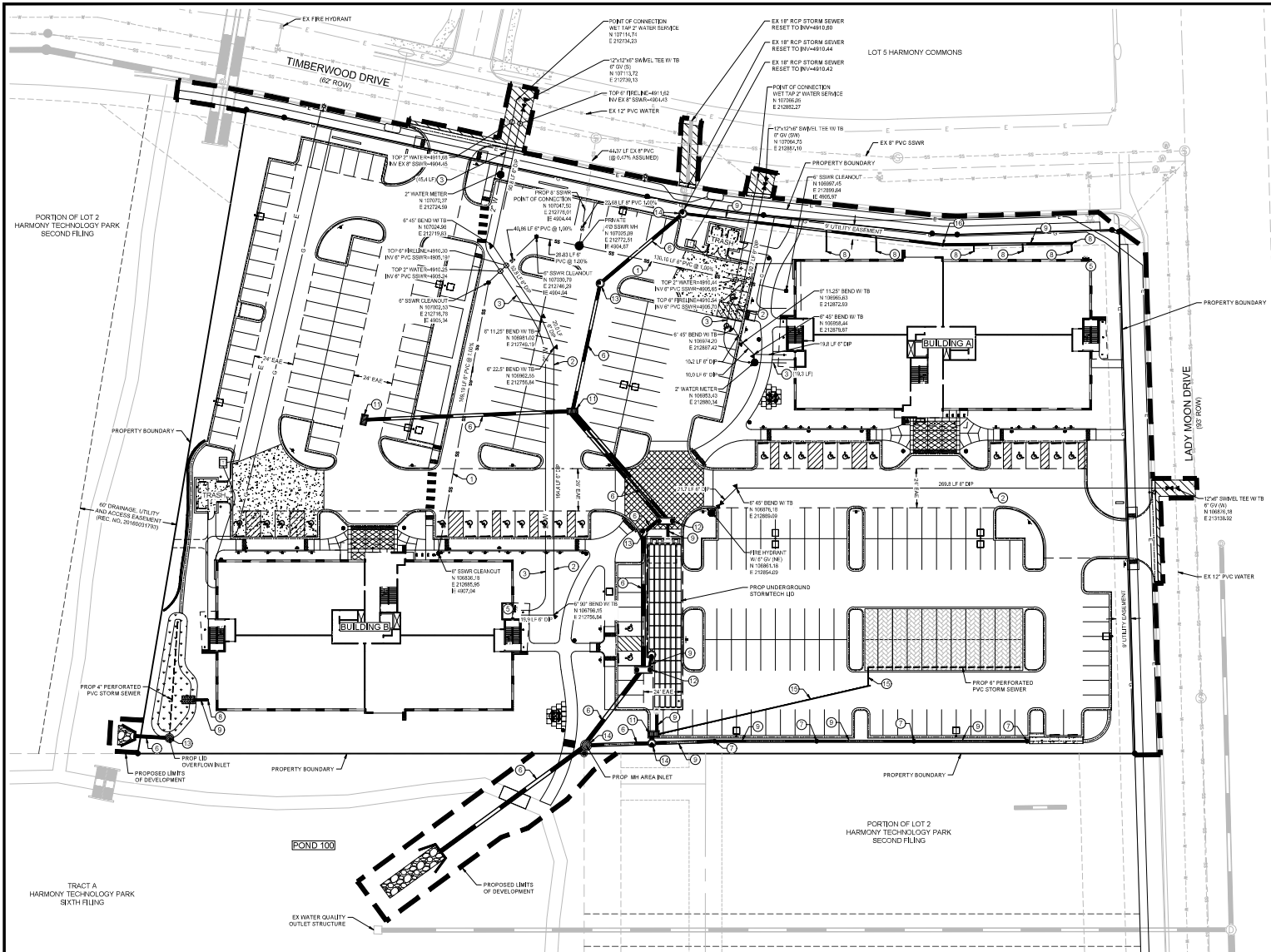


CALL UTILITY NOTIFICATION CENTER OF COLORADO  
 1-800-922-1987  
 CALL 2 BUSINESS DAYS IN ADVANCE BEFORE THE GRADE OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.



PROJECT NO: 1009005  
 DATE: 1/27/21  
 SHEET NO: C-008  
 8 OF 14

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- LEGEND**
- - - - - EXISTING TELEPHONE LINE
  - - - - - EXISTING WATER LINE
  - - - - - EXISTING SANITARY SEWER LINE
  - - - - - EXISTING STORM SEWER LINE
  - - - - - EXISTING IRRIGATION LINE
  - - - - - EXISTING BURIED ELECTRIC LINE
  - - - - - EXISTING FIBER OPTIC LINE
  - PROPOSED TRANSFORMER LOCATION
  - - - - - PROPOSED ELECTRIC LINE
  - - - - - PROPOSED GAS LINE
  - - - - - PROPOSED LIMITS OF DISTURBANCE

- KEY NOTE LEGEND**
- ① PROPOSED 6" PVC SANITARY SEWER SERVICE (8" LUB TO 5' OUTSIDE OF BUILDING - SEE MEP PLANS)
  - ② PROPOSED 6" DIP FIRE SERVICE LINE
  - ③ PROPOSED 2" WATER SERVICE LINE
  - ④ PROPOSED 6" PVC WATER LINE
  - ⑤ PROPOSED FIRE DEPARTMENT CONNECTION
  - ⑥ PROPOSED RCP STORM DRAIN
  - ⑦ PROPOSED NYLOPLAST DRAIN BASIN W/ STANDARD H-20 GRATE
  - ⑧ PROPOSED ROOF DRAIN PIPE W/ CLEANOUT
  - ⑨ PROPOSED 12" HDPE STORM DRAIN
  - ⑩ PROPOSED CDOOT TYPE C INLET
  - ⑪ PROPOSED CDOOT TYPE D INLET
  - ⑫ PROPOSED STORM JUNCTION BOX
  - ⑬ PROPOSED 4" IA STORM MANHOLE
  - ⑭ PROPOSED 6" IA STORM MANHOLE
  - ⑮ PROPOSED 6" PVC PIPE STORM DRAIN
  - ⑯ PROPOSED 18" ADS DRAIN BASIN

CALL UTILITY NOTIFICATION  
CENTER OF COLORADO  
**1-800-922-1987**  
CALL 48 HOURS IN ADVANCE  
BEFORE YOU DIG, GRADE, OR EXCAVATE  
FOR THE HARMONY OFFICE BUILDING  
UNDERGROUND  
UTILITY LOCATIONS.



City of Fort Collins, Colorado  
UTILITY PLAN APPROVAL

APPROVED:	<i>City Engineer</i>	Date
CHECKED BY:	Water & Wastewater Utility	Date
CHECKED BY:	Stormwater Utility	Date
CHECKED BY:	Parks & Recreation	Date
CHECKED BY:	Traffic Engineer	Date
CHECKED BY:	Environmental Planner	Date

THESE PLANS HAVE BEEN REVIEWED BY THE LOCAL ENTITY FOR CONCEPT ONLY. THE REVIEW DOES NOT IMPLY RESPONSIBILITY BY THE REVIEWING DEPARTMENT, THE LOCAL ENTITY ENGINEER, OR THE LOCAL ENTITY FOR ACCURACY AND CORRECTNESS OF THE CALCULATIONS. FURTHERMORE, THE REVIEW SHALL NOT BE CONSTRUED IN ANY REASON AS ACCEPTANCE OF FINANCIAL RESPONSIBILITY BY THE LOCAL ENTITY FOR ADDITIONAL QUANTITIES OF ITEMS SHOWN THAT MAY BE REQUIRED DURING THE CONSTRUCTION PHASE.



REV.	DESCRIPTION OF REVISION	DATE	REVISION BY	APPROVED BY

CHECKED BY: JRC  
DESIGNED BY: AGW  
DRAWN BY: DJW

# HARMONY TECHNOLOGY PARK MEDICAL OFFICE BUILDING FORT COLLINS, COLORADO

UTILITY PLAN

PROJECT LOCATION: DRAWING



PROJECT NO: 100905  
DATE: 1/27/21  
SHEET NO: C-009  
9 OF 14

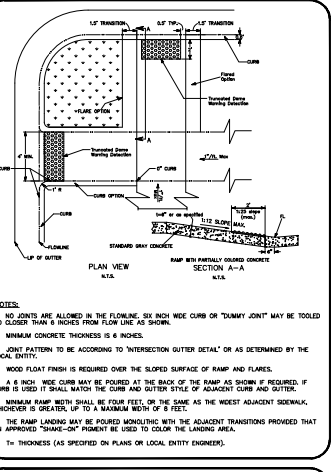
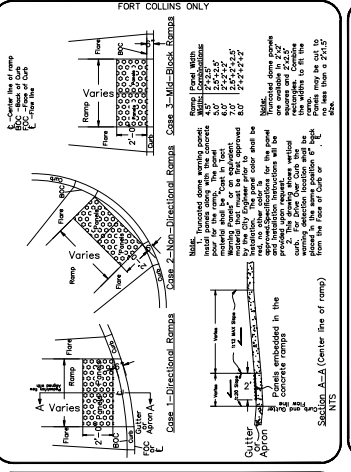
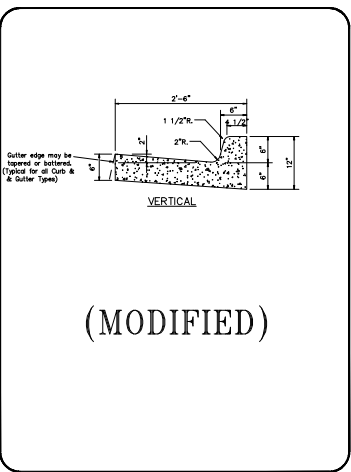
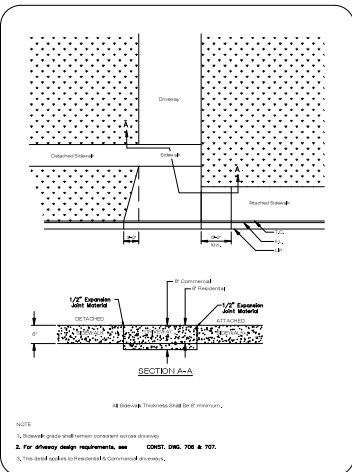
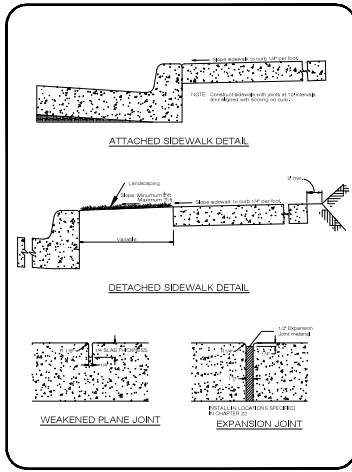
**NOTES:**

- 10' SEPARATION SHALL BE PROVIDED BETWEEN WATER, SEWER, AND STORM SEWER LINES.
- ALL STORM SEWER PIPE SHALL BE CLASS III RCP WITH WATER TIGHT JOINTS, UNLESS NOTED OTHERWISE.
- ALL SANITARY SEWER SERVICES SHALL BE SDR 35 PVC.
- ALL SANITARY SEWER CLEAN-OUTS SHALL BE TRAFFIC RATED.
- A 2" WATER SERVICE AND METER FIT ARE ASSUMED FOR THE PROPOSED BUILDINGS, WHICH MAY SERVE SEPARATE TENANTS. THEREFORE, THE DEVELOPER MAY CHOOSE TO SUB-METER BEHIND THE MASTER METER, OR MAY INSTALL A SECOND SERVICE AND METER FIT. THIS WILL BE DETERMINED PRIOR TO CONSTRUCTION.
- ALL WATERLINES SHALL HAVE A MINIMUM OF 4 1/2" OF COVER AND A MAXIMUM OF 5 1/2" OF COVER.
- A KNOX BOX WILL BE REQUIRED TO BE MOUNTED ON THE FRONT OF THE MAIN BUILDING EQUIPPED WITH A FIRE SPRINKLER SYSTEM OR FIRE ALARM SYSTEM PER POUDRE FIRE AUTHORITY. CONTRACTOR TO COORDINATE LOCATION OF KNOX BOX WITH POUDRE FIRE AUTHORITY.
- A KNOX BOX WILL BE REQUIRED TO BE MOUNTED ON THE FRONT OF THE BUILDINGS EQUIPPED WITH A FIRE SPRINKLER SYSTEM AND/OR FIRE ALARM SYSTEM PER POUDRE FIRE AUTHORITY. CONTRACTOR SHALL COORDINATE THE LOCATION OF THE KNOX BOX WITH POUDRE FIRE AUTHORITY. EACH BUILDING WILL ALSO HAVE AND FDC AND SHALL BE MOUNTED PER PFA REQUIREMENTS.
- A 2" WATER SERVICE LINE, AND A 6" FIRE LINE SHALL SERVICE EACH BUILDING, AND BOTH LINES SHALL BE EXTENDED TO 5' OUTSIDE OF THE BUILDING, AS SHOWN. SEE MEP PLANS AND ARCHITECTURAL PLANS FOR SIZE AND LOCATION OF INTERNAL WATER SERVICES, POINT OF CONNECTION, AND UPLIFT LOCATIONS IN WATER RISER ROOMS. FINAL SERVICE SIZES WILL BE VERIFIED IN FINAL DESIGN.
- STORM SEWER PIPE AND INLET SIZING IS TO BE DETERMINED WITH FINAL DESIGN.
- GAS SERVICE, ELECTRIC SERVICE AND THEIR ASSOCIATED METERING LOCATIONS ARE TO BE DETERMINED WITH FINAL DESIGN.
- THE PROPERTY BOUNDARY SERVES AS THE LIMITS OF DEVELOPMENT AS SHOWN, EXCEPT FOR THE TIE-IN TO OFF-SITE SIDEWALKS AND STORM DRAIN IMPROVEMENTS TO THE WEST AND SOUTH OF THE BOUNDARY.

A:\Projects\100-000-000-000\DWG\100-000-000-000.dwg, 1/27/2021 11:46:17 AM, ASPEN ENGINEERING







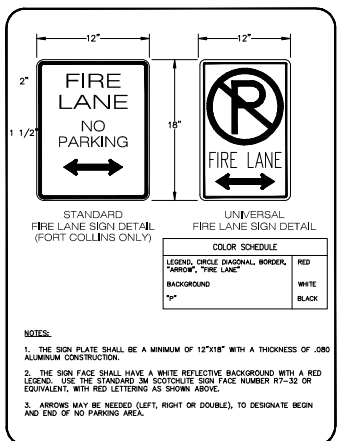
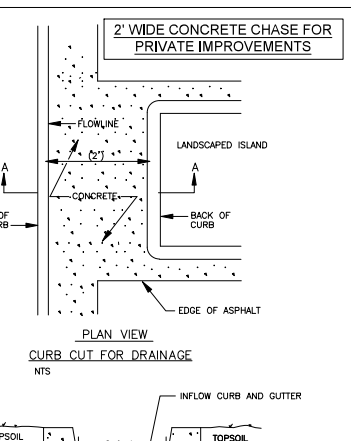
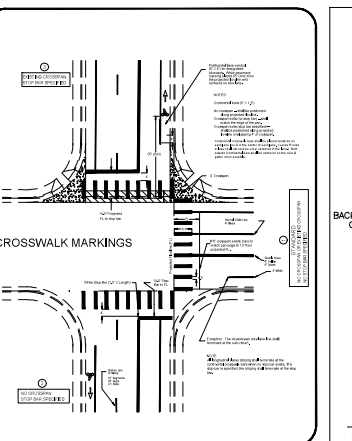
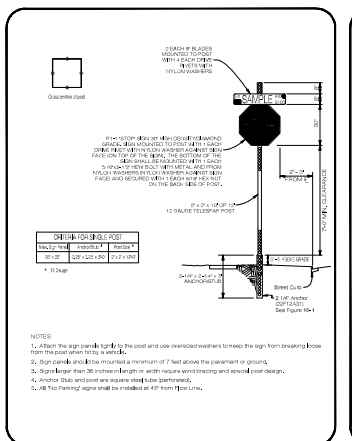
LARIMER COUNTY URBAN AREA STREET STANDARDS	CONSTRUCTION DRAWINGS	REVISION NO. 2	DRAWING DATE: 04/01/07	1602
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LARIMER COUNTY URBAN AREA STREET STANDARDS	CONSTRUCTION DRAWINGS	REVISION NO. 1	DRAWING DATE: 04/01/07	1601
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LARIMER COUNTY URBAN AREA STREET STANDARDS	CONSTRUCTION DRAWINGS	REVISION NO. 1	DRAWING DATE: 03/01/02	701
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LARIMER COUNTY URBAN AREA STREET STANDARDS	CONSTRUCTION DRAWINGS	REVISION NO. 1	DRAWING DATE: 04/01/07	1607
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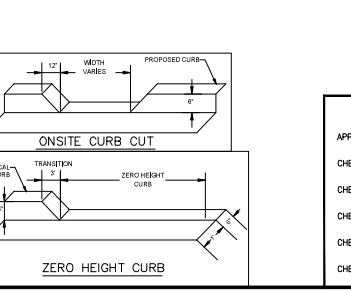
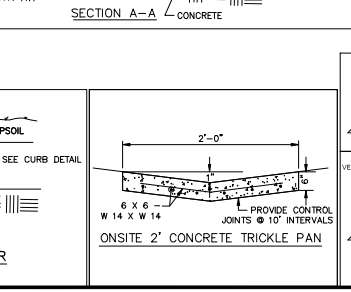
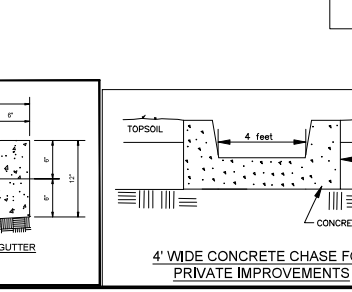
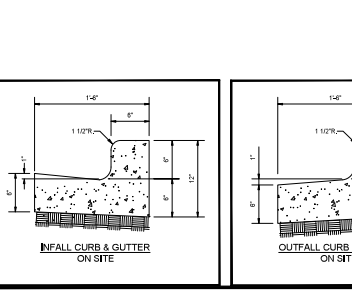
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LARIMER COUNTY URBAN AREA STREET STANDARDS	CONSTRUCTION DRAWINGS	REVISION NO. 1	DRAWING DATE: 04/01/07	1401
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LARIMER COUNTY URBAN AREA STREET STANDARDS	CONSTRUCTION DRAWINGS	REVISION NO. 1	DRAWING DATE: 03/01/02	1403
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LARIMER COUNTY URBAN AREA STREET STANDARDS	CONSTRUCTION DRAWINGS	REVISION NO. 2	DRAWING DATE: 04/01/07	1418
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City of Fort Collins, Colorado UTILITY PLAN APPROVAL	
APPROVED: _____	City Engineer Date _____
CHECKED BY: _____	Water & Wastewater Utility Date _____
CHECKED BY: _____	Stormwater Utility Date _____
CHECKED BY: _____	Parks & Recreation Date _____
CHECKED BY: _____	Traffic Engineer Date _____
CHECKED BY: _____	Environmental Planner Date _____

PROJECT LOCATION: HARMONY TECHNOLOGY PARK MEDICAL OFFICE BUILDING FORT COLLINS, COLORADO

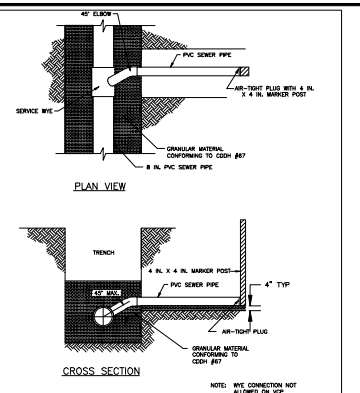
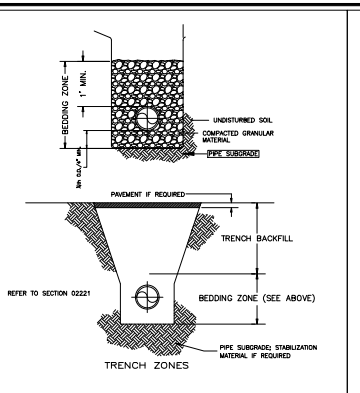
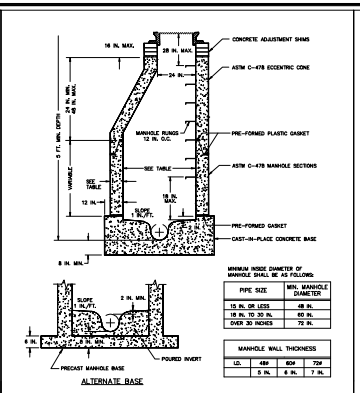
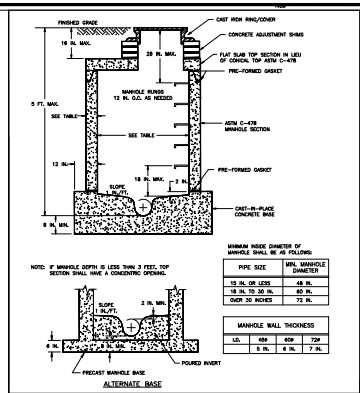
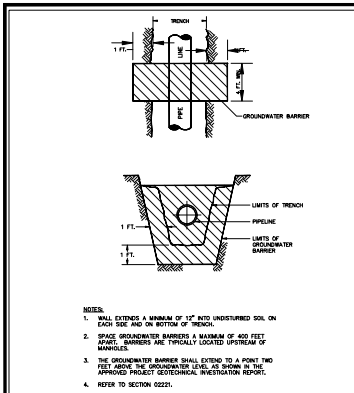
DRAWING: SITE & STREET DETAILS

PROVIDED BY: ASPEN ENGINEERING

PROJECT NO: 1009005 DATE: 1/27/21

SHEET NO: C-011

11 OF 14



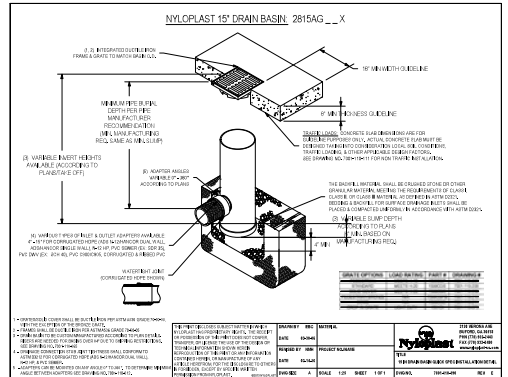
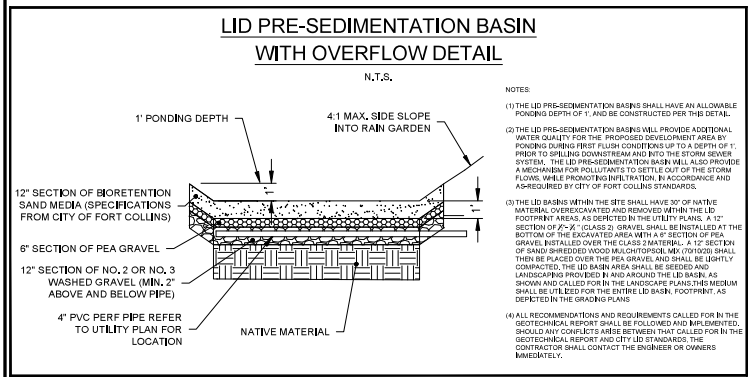
SOUTH FORT COLLINS SANITATION DISTRICT  
OFFICE (970) 228-3104 FAX (970) 228-0196  
APPROVED: DATE: 12-10-2010 SCALE: NTS

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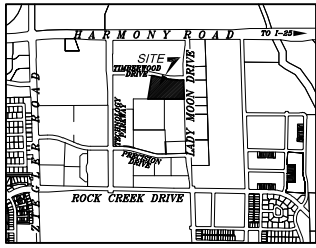






# HARMONY TECHNOLOGY PARK MEDICAL OFFICE BUILDING

A PORTION OF LOT 2, HARMONY TECHNOLOGY PARK SECOND FILING  
BEING SITUATED IN THE NORTHWEST ONE-QUARTER OF SECTION 4,  
TOWNSHIP 6 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN,  
CITY OF FORT COLLINS, COUNTY OF LARIMER, STATE OF COLORADO.



**OWNER**  
HARMONY TECHNOLOGY PARK, LLC  
1603 OAKRIDGE DRIVE, SUITE 250  
ANN ARBOR, MI 48104

**PLANNER**  
BLS DESIGN INCORPORATED  
1603 OAKRIDGE DRIVE, SUITE 100  
FORT COLLINS, CO 80525

**ENGINEER**  
ASPEN ENGINEERING  
19 OLD TOWN SQUARE, SUITE 238  
FORT COLLINS, CO 80524

**SURVEYOR**  
EDMONDS LAND SURVEYING, INC.  
PO BOX 641  
KERSEY, CO 80644

**DIRECTOR OF COMMUNITY DEVELOPMENT AND NEIGHBORHOOD SERVICES:**  
By the Director of Planning of the City of Fort Collins, Colorado  
this \_\_\_\_\_ day of \_\_\_\_\_, A.D., \_\_\_\_\_.

Director of Community Development and Neighborhood Services

**APPROVED AS TO FORM CITY ENGINEER:**  
By the City Engineer of the City of Fort Collins, Colorado  
this \_\_\_\_\_ day of \_\_\_\_\_, A.D., \_\_\_\_\_.

City Engineer

### NOTICE OF OTHER DOCUMENTS:

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

### ATTORNEY'S CERTIFICATION:

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

ATTEST:

ADDRESS:

REGISTRATION NO.:

### SURVEYOR'S STATEMENT:

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

\_\_\_\_\_  
PROFESSIONAL

Robert M. Edmonds  
Colorado Registered Professional Land Surveyor #37968

### SURVEYOR'S NOTES

- 1.) BASIS OF BEARINGS: BEARINGS FOR THIS SURVEY ARE BASED ON THE SOUTH LINE OF THE NORTHWEST ONE-QUARTER OF SECTION 4, TEN, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN, AS SHOWN AND DESCRIBED HEREON. SAID LINE BEARS S88°47'30"E TO REFERENCE RECORDED PLAT OF HARMONY TECHNOLOGY PARK THIRD FILING.
- 2.) FIDELITY NATIONAL TITLE COMPANY'S FILE NO. 597-10478209-383-KA DATED MAY 17, 2024 WAS ENTIRELY RELIED UPON FOR EASEMENTS, RIGHTS-OF-WAY AND ENCUMBRANCES OF RECORD AFFECTING THIS PROPERTY. THIS SURVEY DOES NOT CONSTITUTE A SEARCH BY EDMONDS LAND SURVEYING, INC. TO DETERMINE OWNERSHIP OR EASEMENTS, RIGHTS-OF-WAY OR ENCUMBRANCES OF RECORD.
- 3.) NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF CERTIFICATION OF THIS RECORD.
- 4.) THE LINEAL UNIT OF MEASUREMENT FOR THE SURVEY OF THIS PROPERTY IS U.S. SURVEY FEET.
- 5.) ALL EXISTING EASEMENTS DEDICATED BY THE PLAT OF HARMONY TECHNOLOGY PARK SECOND FILING THAT ARE WITHIN THE BOUNDARY OF THIS PLAT, ARE HEREBY VACATED BY THIS PLAT.

### NOTICE

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

### MAINTENANCE GUARANTEE:

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

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

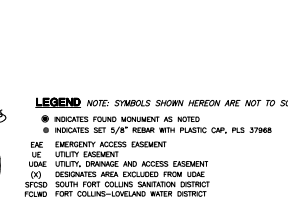
### REPAIR GUARANTEE:

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

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

### ZONING INFORMATION

The Subject Property, along with adjacent properties, is in the "HARMONY CORRIDOR DISTRICT" per the City of Fort Collins Online Zoning Map.



LEGEND NOTE: SYMBOLS SHOWN HEREIN ARE NOT TO SCALE

- INDICATES FOUND MONUMENT AS NOTED
- INDICATES SET 5/8" REBAR WITH PLASTIC CAP, PLUS 37968

EM EMERGENCY ACCESS EASEMENT  
UE UTILITY EASEMENT  
UMD UTILITY, DRAINAGE AND ACCESS EASEMENT  
(O) DESIGNATES AREA EXCLUDED FROM USE  
SFCSD SOUTH FORT COLLINS SANITATION DISTRICT  
PCLWD FORT COLLINS-LOVELAND WATER DISTRICT

NOTE:  
THERE SHALL BE NO PRIVATE CONDITIONS, COVENANTS OR RESTRICTIONS THAT PROMOT OR LIMIT THE INSTALLATION OF RESOURCE CONSERVING EQUIPMENT OR LANDSCAPING THAT ARE ALLOWED BY SECTIONS 12-120 - 12-122 OF THE CITY CODE.

### STATEMENT OF OWNERSHIP AND SUBDIVISION:

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

A tract of land located in the Northwest One-quarter of Section 4, Township 6 North, Range 68 West of the Sixth Principal Meridian, City of Fort Collins, County of Larimer, State of Colorado, being more particularly described as follows:

Being a portion of Lot 2, Harmony Technology Park Second Filing described as follows: Commencing at the Center One-Quarter corner of said Section 4, thence N32°52'44"W 1827.26 feet to the Northwest corner of Tract A, Harmony Technology Park Sixth Filing; Thence N0°00'00"E 255.92 feet along the North line of said Tract A, to the POINT OF BEGINNING; Thence N89°00'00"E 612.48 feet continuing along said North line and extension thereof to the West Right-of-way line of Lady Moon Drive; Thence N01°43'01"W 320.87 feet along said West line to the South Right-of-way line of Timberland Drive; Thence along the said South Right-of-way the following Seven (7) courses: 1) 4.56 feet along the arc of a non-tangent curve concave to the South, said curve having a radius of 9.00 feet; 2) 285°37'30" and Chord which bears N7°14'18"W 4.50 feet; 3) 15.46 feet along the arc of a curve concave to the North, said curve having a radius of 311.00 feet, a delta angle of 07°58'46" and a Chord which bears N87°43'38"W 15.45 feet; 4) N83°41'15"W 104.20 feet; 5) 72.36 feet along the arc of a curve concave to the North, said curve having a radius of 641.00 feet, a delta angle of 07°02'01" and a Chord which bears N89°56'42"W 72.33 feet; 6) N77°42'39"W 228.28 feet, and 7) 23.70 feet along the arc of a curve concave to the South, said curve having a radius of 919.00 feet, a delta angle of 01°28'39" and a Chord which bears N78°26'58"W 23.70 feet to the Eastern line of said Drainage, Utility and Access Easement at Reception No. 20160031792; Thence S02°47'07"W 4011.4 feet along said Easterly line to the POINT OF BEGINNING.

(which above described tract contains 4.59 acres, more or less) for themselves and their successors in interest (collectively, "Owner") have caused the above described land to be surveyed and subdivided into lots, tracts and streets as shown on this Plat to be known as HARMONY TECHNOLOGY PARK MEDICAL OFFICE BUILDING, (the "Development"), subject to all easements and rights-of-way now of record or existing or indicated on this Plat. The rights and obligations of this Plat shall run with the land.

### CERTIFICATE OF DEDICATION:

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

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

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

WITNESS OUR HANDS AND SEALS THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, A.D., 20\_\_\_\_

Owner: HARMONY TECHNOLOGY PARK, LLC, a Colorado Limited Liability Company

BY: \_\_\_\_\_  
AS MANAGER

STATE OF \_\_\_\_\_ )  
COUNTY OF \_\_\_\_\_ ) S.S.

THE FOREGOING DEDICATION WAS ACKNOWLEDGED BEFORE ME THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, A.D., 20\_\_\_\_ BY \_\_\_\_\_ AS MANAGER OF HARMONY TECHNOLOGY PARK, LLC, A COLORADO LIMITED LIABILITY COMPANY.

MY COMMISSION EXPIRES \_\_\_\_\_

NOTARY PUBLIC

ADDRESS \_\_\_\_\_

AS LIENHOLDER: \_\_\_\_\_

BY: \_\_\_\_\_

STATE OF \_\_\_\_\_ )  
COUNTY OF \_\_\_\_\_ ) S.S.

THE FOREGOING DEDICATION WAS ACKNOWLEDGED BEFORE ME THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, A.D., 20\_\_\_\_ BY \_\_\_\_\_

MY COMMISSION EXPIRES \_\_\_\_\_

NOTARY PUBLIC

ADDRESS \_\_\_\_\_

DATE: NOVEMBER 12, 2020  
SCALE: 1"=50'  
DWG: RME  
PLAT: 20160031792

CLIENT:  
ASPEN ENGINEERING  
MVD/development

EDMONDS LAND SURVEYING, INC.  
PO BOX 641  
KERSEY, CO 80644  
PHONE (970) 686-6970

EXHIBITS  
22/27

HARMONY TECHNOLOGY PARK MEDICAL OFFICE BUILDING  
EDMONDS LAND SURVEYING, INC.  
BEING SITUATED IN THE NORTHWEST ONE-QUARTER OF SECTION 4,  
TOWNSHIP 6 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN,  
CITY OF FORT COLLINS, COUNTY OF LARIMER, STATE OF COLORADO.

PROJECT NO.:  
20-0446

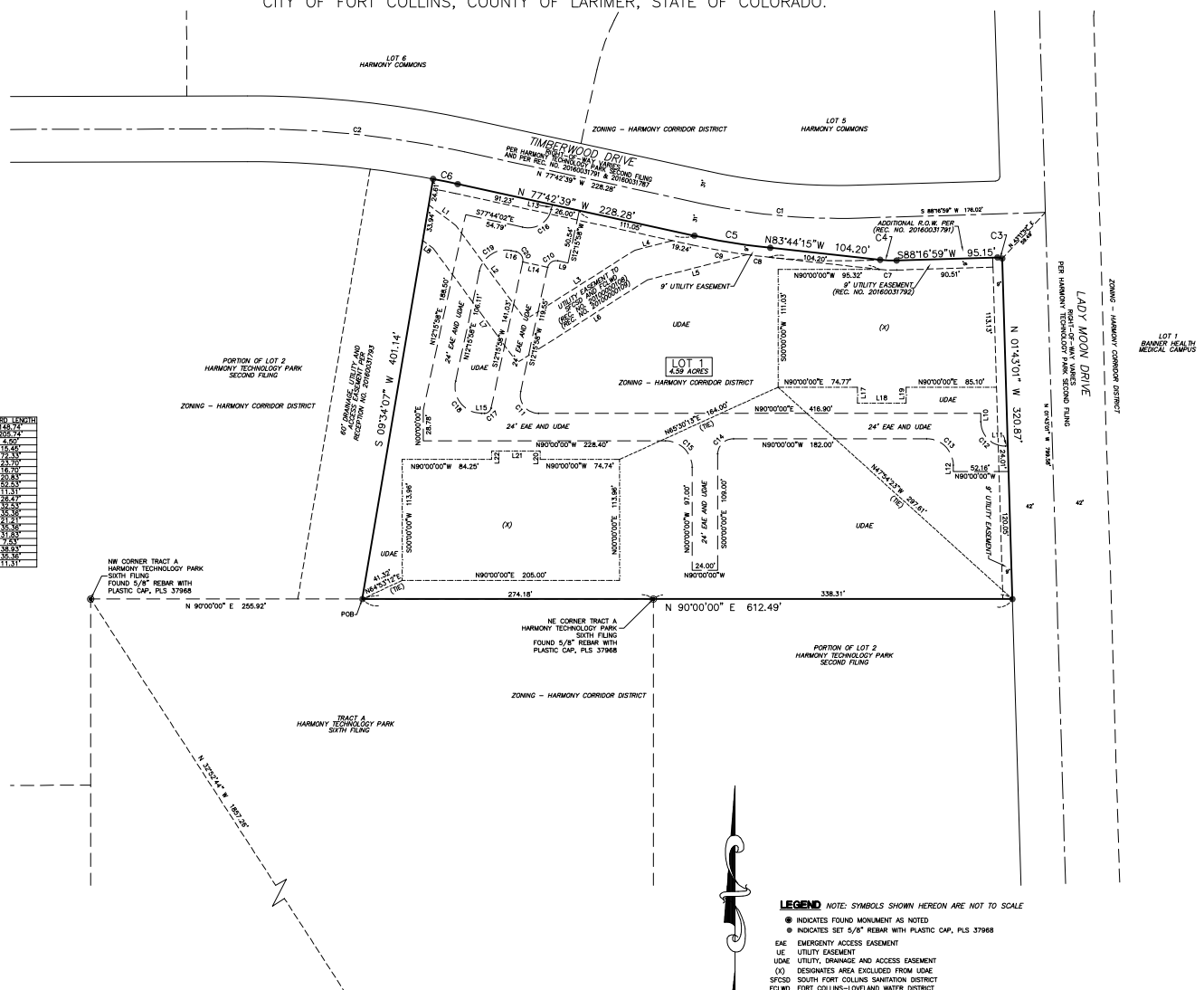
1  
SHEET 1 OF 2

# HARMONY TECHNOLOGY PARK MEDICAL OFFICE BUILDING

A PORTION OF LOT 2, HARMONY TECHNOLOGY PARK SECOND FILING  
BEING SITUATED IN THE NORTHWEST ONE-QUARTER OF SECTION 4,  
TOWNSHIP 6 NORTH, RANGE 68 WEST OF THE SIXTH PRINCIPAL MERIDIAN,  
CITY OF FORT COLLINS, COUNTY OF LARIMER, STATE OF COLORADO.

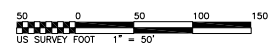
LINE	BEGINN	END	LENGTH
L1	527.9320	37.31	565.2420
L2	527.9320	129.27	176.3380
L3	527.9320	86.85	141.1820
L4	527.9320	97.02	141.1820
L5	527.9320	129.27	176.3380
L6	527.9320	151.81	201.8820
L7	527.9320	174.35	227.4260
L8	527.9320	196.89	252.9700
L9	527.9320	219.43	278.5140
L10	527.9320	241.97	304.0580
L11	527.9320	264.51	329.6020
L12	527.9320	287.05	355.1460
L13	527.9320	309.59	380.6900
L14	527.9320	332.13	406.2340
L15	527.9320	354.67	431.7780
L16	527.9320	377.21	457.3220
L17	527.9320	399.75	482.8660
L18	527.9320	422.29	508.4100
L19	527.9320	444.83	533.9540
L20	527.9320	467.37	559.4980
L21	527.9320	489.91	585.0420
L22	527.9320	512.45	610.5860
L23	527.9320	534.99	636.1300
L24	527.9320	557.53	661.6740
L25	527.9320	580.07	687.2180
L26	527.9320	602.61	712.7620
L27	527.9320	625.15	738.3060
L28	527.9320	647.69	763.8500
L29	527.9320	670.23	789.3940
L30	527.9320	692.77	814.9380
L31	527.9320	715.31	840.4820
L32	527.9320	737.85	866.0260
L33	527.9320	760.39	891.5700
L34	527.9320	782.93	917.1140
L35	527.9320	805.47	942.6580
L36	527.9320	828.01	968.2020
L37	527.9320	850.55	993.7460
L38	527.9320	873.09	1019.2900
L39	527.9320	895.63	1044.8340
L40	527.9320	918.17	1070.3780
L41	527.9320	940.71	1095.9220
L42	527.9320	963.25	1121.4660
L43	527.9320	985.79	1147.0100
L44	527.9320	1008.33	1172.5540
L45	527.9320	1030.87	1198.0980
L46	527.9320	1053.41	1223.6420
L47	527.9320	1075.95	1249.1860
L48	527.9320	1098.49	1274.7300
L49	527.9320	1121.03	1300.2740
L50	527.9320	1143.57	1325.8180
L51	527.9320	1166.11	1351.3620
L52	527.9320	1188.65	1376.9060
L53	527.9320	1211.19	1402.4500
L54	527.9320	1233.73	1427.9940
L55	527.9320	1256.27	1453.5380
L56	527.9320	1278.81	1479.0820
L57	527.9320	1301.35	1504.6260
L58	527.9320	1323.89	1530.1700
L59	527.9320	1346.43	1555.7140
L60	527.9320	1368.97	1581.2580
L61	527.9320	1391.51	1606.8020
L62	527.9320	1414.05	1632.3460
L63	527.9320	1436.59	1657.8900
L64	527.9320	1459.13	1683.4340
L65	527.9320	1481.67	1708.9780
L66	527.9320	1504.21	1734.5220
L67	527.9320	1526.75	1760.0660
L68	527.9320	1549.29	1785.6100
L69	527.9320	1571.83	1811.1540
L70	527.9320	1594.37	1836.6980
L71	527.9320	1616.91	1862.2420
L72	527.9320	1639.45	1887.7860
L73	527.9320	1661.99	1913.3300
L74	527.9320	1684.53	1938.8740
L75	527.9320	1707.07	1964.4180
L76	527.9320	1729.61	1989.9620
L77	527.9320	1752.15	2015.5060
L78	527.9320	1774.69	2041.0500
L79	527.9320	1797.23	2066.5940
L80	527.9320	1819.77	2092.1380
L81	527.9320	1842.31	2117.6820
L82	527.9320	1864.85	2143.2260
L83	527.9320	1887.39	2168.7700
L84	527.9320	1909.93	2194.3140
L85	527.9320	1932.47	2219.8580
L86	527.9320	1955.01	2245.4020
L87	527.9320	1977.55	2270.9460
L88	527.9320	2000.09	2296.4900
L89	527.9320	2022.63	2322.0340
L90	527.9320	2045.17	2347.5780
L91	527.9320	2067.71	2373.1220
L92	527.9320	2090.25	2398.6660
L93	527.9320	2112.79	2424.2100
L94	527.9320	2135.33	2449.7540
L95	527.9320	2157.87	2475.2980
L96	527.9320	2180.41	2500.8420
L97	527.9320	2202.95	2526.3860
L98	527.9320	2225.49	2551.9300
L99	527.9320	2248.03	2577.4740
L100	527.9320	2270.57	2603.0180

CURVE	RADIUS	ARC LENGTH	CHORD	CHORD BEARING	CHORD LENGTH
C1	810.00	149.11	170.94	N82°52'45"W	185.74
C2	850.00	226.15	272.89	N81°55'38"W	295.74
C3	9.00	4.50	8.97	N77°14'15"W	4.50
C4	111.00	15.48	7.98	N87°43'38"W	15.48
C5	643.00	22.86	6.28	N89°28'58"W	22.86
C6	918.00	23.70	7.28	N72°28'58"W	23.70
C7	130.00	16.31	7.58	N87°43'38"W	16.31
C8	650.00	20.83	7.50	N87°43'38"W	20.83
C9	850.00	16.31	4.71	N89°01'38"W	16.31
C10	8.00	12.57	8.00	N87°01'38"W	11.31
C11	17.00	35.13	16.62	N87°01'38"W	35.13
C12	23.00	35.13	16.62	N87°01'38"W	35.13
C13	15.00	35.13	16.62	N87°01'38"W	35.13
C14	15.00	35.13	16.62	N87°01'38"W	35.13
C15	15.00	35.13	16.62	N87°01'38"W	35.13
C16	15.00	35.13	16.62	N87°01'38"W	35.13
C17	15.00	35.13	16.62	N87°01'38"W	35.13
C18	15.00	35.13	16.62	N87°01'38"W	35.13
C19	15.00	35.13	16.62	N87°01'38"W	35.13
C20	8.00	12.57	8.00	N87°01'38"W	11.31



**LEGEND NOTE:** SYMBOLS SHOWN HEREON ARE NOT TO SCALE

- INDICATES FOUND MONUMENT AS NOTED
- ⊙ INDICATES SET 5/8" REBAR WITH PLASTIC CAP, PLS 37968
- EAE EMERGENCY ACCESS EASEMENT
- UE UTILITY EASEMENT
- UDAE UTILITY, DRAINAGE AND ACCESS EASEMENT
- (X) DESIGNATES AREA EXCLUDED FROM UDAE
- SPOSD SOUTH FORT COLLINS SANITATION DISTRICT
- FLWD FORT COLLINS-LOVELAND WATER DISTRICT



WEST 1/4 CORNER  
SEC. 4, T6N, R68W  
FOUND 3/4" ALUMINUM CAP  
MONUMENT, PLS 22098 IN  
MONUMENT BOX.

SOUTH LINE NW 1/4 SECTION 4  
S88°47'35"E 265.417'  
(BASIS OF BEARINGS)

CENTER 1/4 CORNER  
SEC. 4, T6N, R68W  
FOUND 2 1/2" ALUMINUM CAP  
MONUMENT, PLS 33163 IN  
MONUMENT BOX.

PRELIMINARY

ROBERT M. EDMONDS, PLS 37968  
SHEET 2 OF 2

DATE: NOVEMBER 12, 2020  
SCALE: 1"=50' BK: ---  
DWG: RME CHK: RME  
PLAT: 06068004-722

CLIENT:  
ASPEY ENGINEERING  
MWD/development

EDMONDS LAND SURVEYING, INC.  
PO BOX 641  
KERSEY, CO 80644  
PHONE (970) 686-6970

PROJECT NO.:  
20-0446

SHEET 2 OF 2



HTP MEDICAL OFFICES  
TRANSPORTATION IMPACT STUDY

FORT COLLINS, COLORADO

NOVEMBER 2020

Prepared for:

MAVD  
2723 South State Street, Suite 250  
Ann Arbor, MI 48104

Prepared by:

DELICH ASSOCIATES  
2272 Glen Haven Drive  
Loveland, CO 80538  
Phone: 970-669-2061  
FAX: 970-669-5034



Project #2072

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## APPENDICES

- A. Base Assumptions Packet
- B. Recent Peak Hour Traffic
- C. Current Peak Hour Operation/Level of Service Descriptions/Fort Collins LOS Standards
- D. Short Range (2025) Background Peak Hour Operation
- E. Long Range (2040) Background Peak Hour Operation
- F. Short Range (2025) Total Peak Hour Operation
- G. Long Range (2040) total Peak Hour Operation
- H. Pedestrian/Bicycle Level of Service

## I. INTRODUCTION

This transportation impact study (TIS) addresses the capacity, geometric, and control requirements at and near the proposed Harmony Tech Park (HTP) Medical Offices. The HTP Medical Offices site is located in the southwest quadrant of the Harmony/Lady Moon intersection in Fort Collins, Colorado.

During the course of the analysis, numerous contacts were made with the project developer (MAVD), the project engineer (Aspen Engineering), and the Fort Collins Traffic Engineering staff. This study generally conforms to the format set forth in the Fort Collins transportation impact study guidelines contained in the “Larimer County Urban Area Street Standards” (LCUASS). Appendix A contains the Transportation Impact Study Base Assumptions form and related attachments for the HTP Medical Offices. The study involved the following steps:

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

## II. EXISTING CONDITIONS

The location of the HTP Medical Offices site is shown in Figure 1. It is important that a thorough understanding of the existing conditions be presented.

### Land Use

Land uses in the area are primarily commercial and residential. Land adjacent to the site is flat (<2% grade) from a traffic operations perspective. The center of Fort Collins is to the northwest of the site.

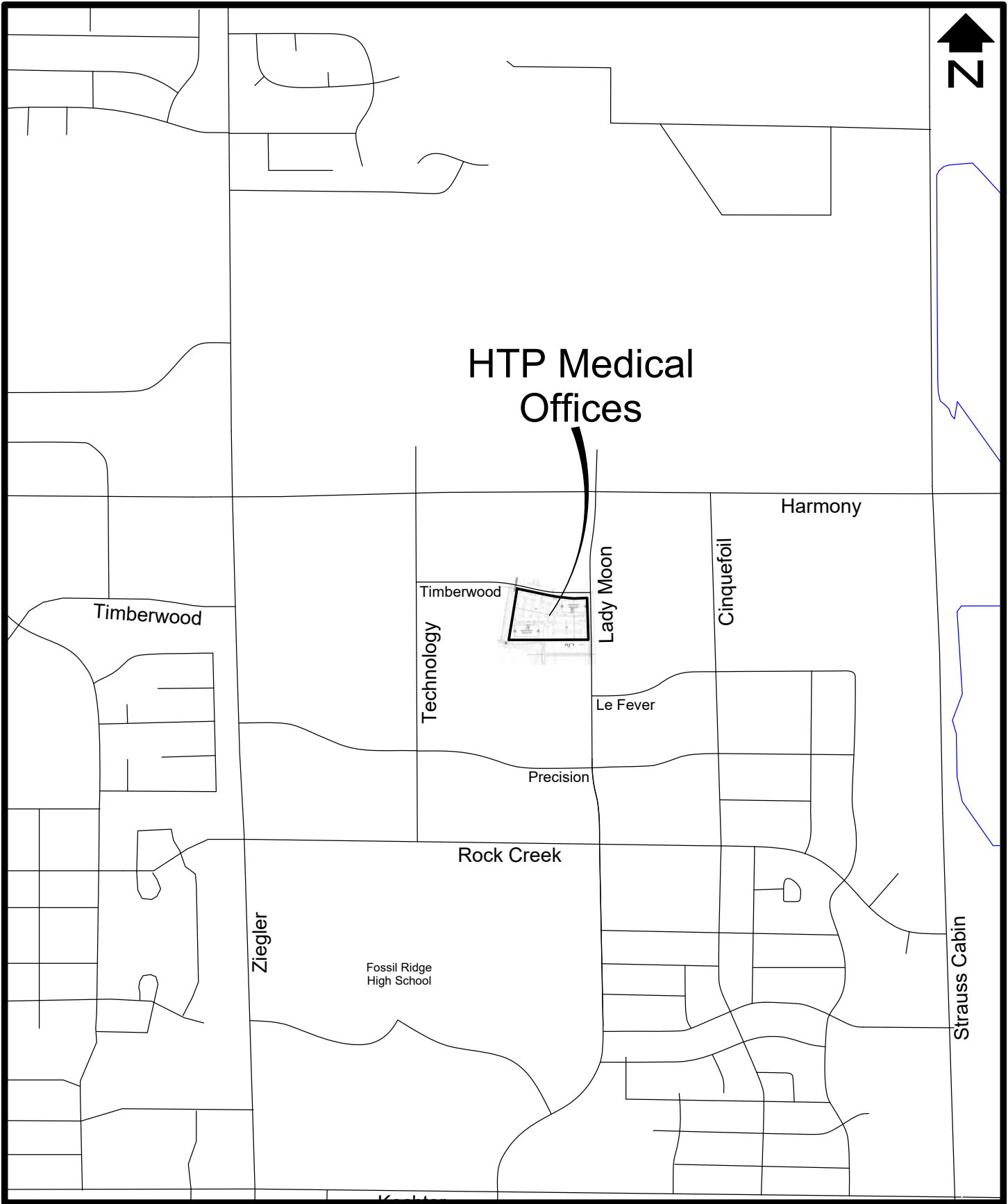
### Roads

The primary streets near the HTP Medical Offices site are Harmony Road, Lady Moon Drive, Technology Parkway, and Timberwood Drive. The existing geometry at the Harmony/Technology-HP West, Harmony/Lady Moon-HP East, Lady Moon/Timberwood-Banner Access, and Timberwood/Retail Access intersections is shown in Figure 2.

Harmony Road is to the north of the HTP Medical Offices site. Harmony Road is an east-west street designated as a six-lane arterial street on the Fort Collins Master Street Plan. Currently, Harmony Road has a six-lane cross section, with auxiliary lanes at intersections. At the Harmony/Technology-HP West intersection, Harmony Road has eastbound and westbound left-turn lanes, three through lanes in each direction, and an eastbound right-turn lane. The Harmony/Technology-HP West intersection has stop sign control on Technology Parkway and HP West. This intersection is a  $\frac{3}{4}$  movement intersection allowing right-in/right-out/left-in turning movements. At the Harmony/Lady Moon intersection, Harmony Road has eastbound and westbound left-turn lanes, three through lanes in each direction, and eastbound and westbound right-turn lanes. The Harmony/Lady Moon intersection has signal control. The existing speed limit in this area is 55 mph.

Lady Moon Drive is to the east of (adjacent to) the HTP Medical Offices site. On the Fort Collins Master Street Plan, it is a north-south street designated as a collector street south of Harmony Road. South of Harmony Road, Lady Moon Drive has a two-lane cross section with center lane and bicycle lanes. At the Harmony/Lady Moon intersection, Lady Moon Drive has northbound and southbound left-turn lanes, one through lane in each direction, and a northbound right-turn lane. At the Lady Moon/Timberwood-Banner Access intersection, Lady Moon Drive has a northbound two-way continuous left-turn lane, a southbound left-turn lane, one through lane in each direction, and a southbound right-turn lane. The Lady Moon/Timberwood-Banner Access intersection has stop sign control on Timberwood Drive and the Banner Access. The existing speed limit in this area is 30 mph.

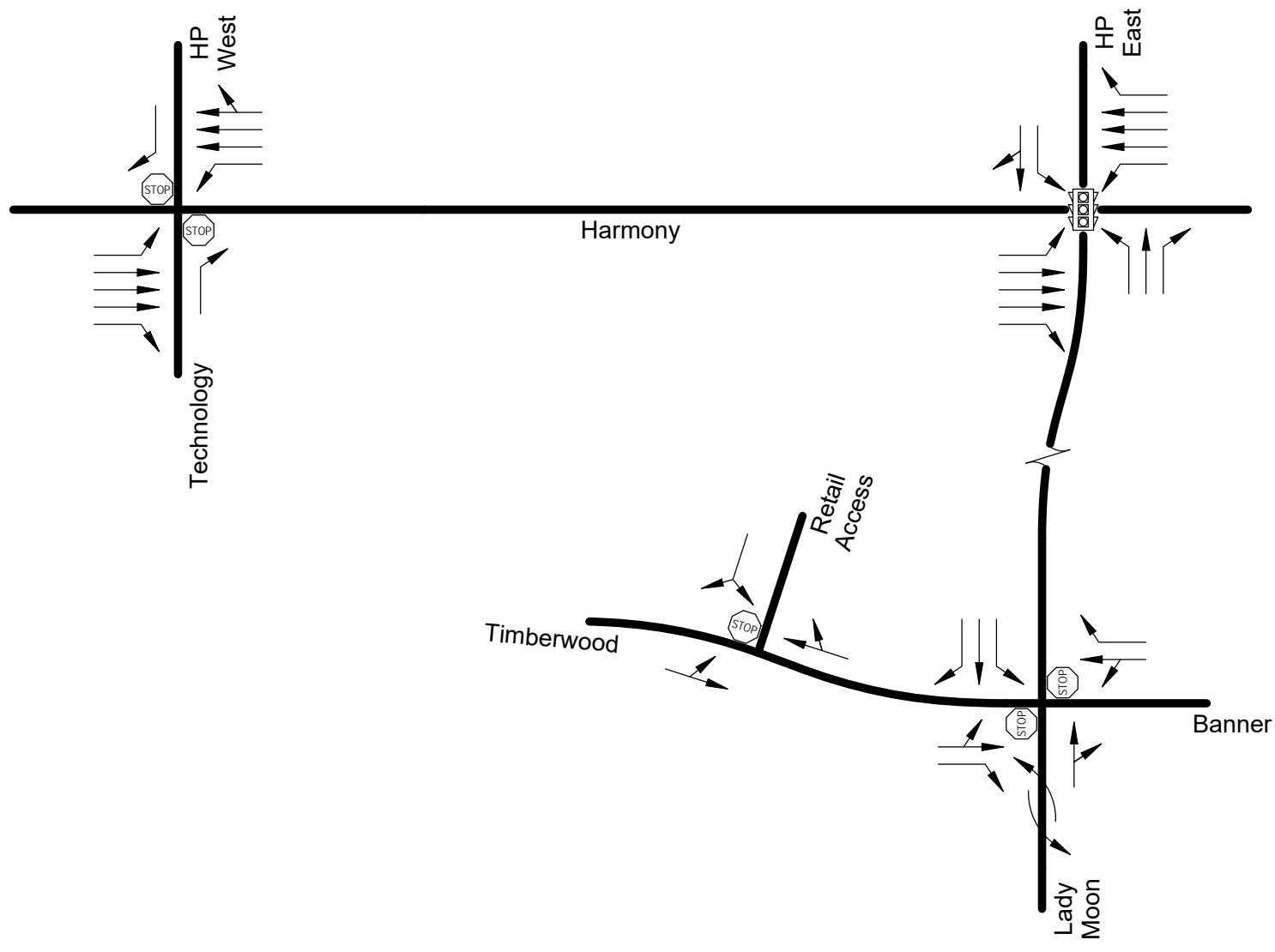




SCALE: 1"=1000'

**SITE LOCATION**

**Figure 1**



← - Denotes Lane  
↩ - Two-way Continuous Left-turn Lane

# EXISTING INTERSECTION GEOMETRY

Figure 2

Technology Parkway is to the west of the HTP Medical Offices site. Technology Parkway is a north-south street designated as a collector street on the Fort Collins Master Street Plan. Currently, Technology Parkway has a two-lane cross section with center lane south of Harmony Road. At the Harmony/Technology-HP West intersection, Technology Parkway has a northbound right-turn lane. The existing speed limit in this area is 25 mph.

Timberwood Drive is to the north of (adjacent to) the HTP Medical Offices site. Kechter Road is an east-west street designated as a local street on the Fort Collins Master Street Plan. Currently, Timberwood Drive has a two-lane cross section with no center lane. At the Lady Moon/Timberwood-Banner Access intersection, Timberwood Drive-Banner Access has combined eastbound and westbound left-turn/through lanes and eastbound and westbound right-turn lanes. The existing speed limit in this area is 25 mph.

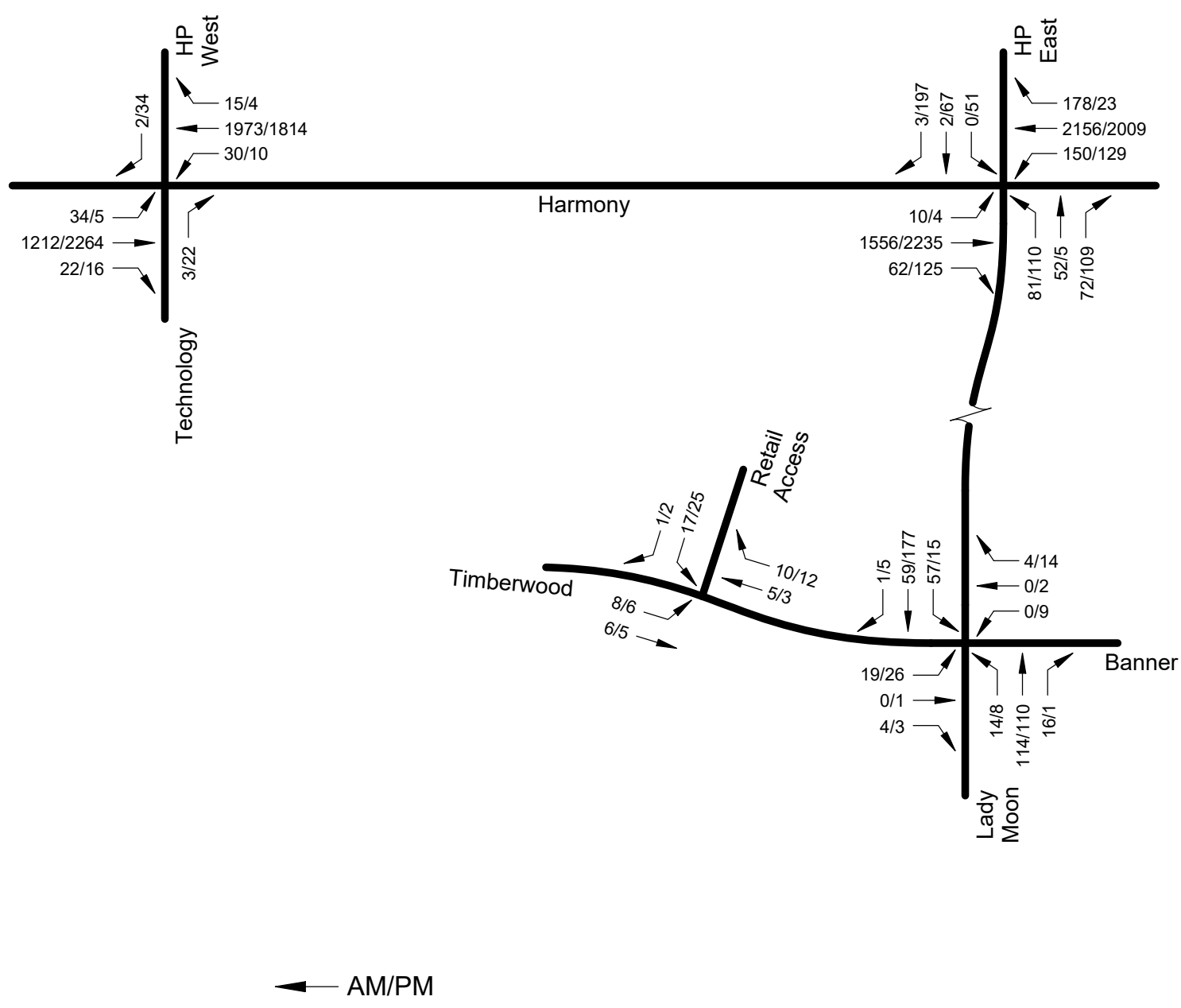
### Existing Traffic

Figure 3 shows recent morning and afternoon peak hour traffic counts at the Harmony/Technology-HP West, Harmony/Lady Moon-HP East, Lady Moon/Timberwood-Banner Access, and Timberwood/Retail Access intersections. Recent morning and afternoon count data at the Harmony/Technology-HP West, Lady Moon/Timberwood-Banner Access, and Timberwood/Retail Access intersections was obtained in October 2020. The counts at the Harmony/Lady Moon-HP East intersection were obtained by the City of Fort Collins in November 2017. Raw count data is provided in Appendix B. Since the counts were performed during different years and considering the current COVID 19 pandemic, the volumes between the key intersections were adjusted and are shown in Figure 4. Based upon historic (2016) and recent (2020) traffic counts at the Harmony/Technology-HP West intersection, it was concluded that the COVID 19 pandemic had a significant impact.

### Existing Operation

Using the volumes shown in Figure 4, the Harmony/Technology-HP West, Harmony/Lady Moon-HP East, Lady Moon/Timberwood-Banner Access, and Timberwood/Retail Access intersections were evaluated and the morning and afternoon peak hour operation and calculated delay for levels of service E & F are displayed in Table 1. Calculation forms are provided in Appendix C. The intersections were evaluated using techniques provided in the 2016 Highway Capacity Manual (2016HCM). A description of level of service for signalized and unsignalized intersections from the 2016 Highway Capacity Manual is provided in Appendix C. Table 4-3 showing the Fort Collins Motor Vehicle LOS Standards (Intersections) is also provided in Appendix C. Acceptable operation at signalized intersections during the peak hours is defined as level of service D or better for the overall intersection, and level of service E or better for any leg or movement. The level of service threshold for arterial/arterial and arterial/

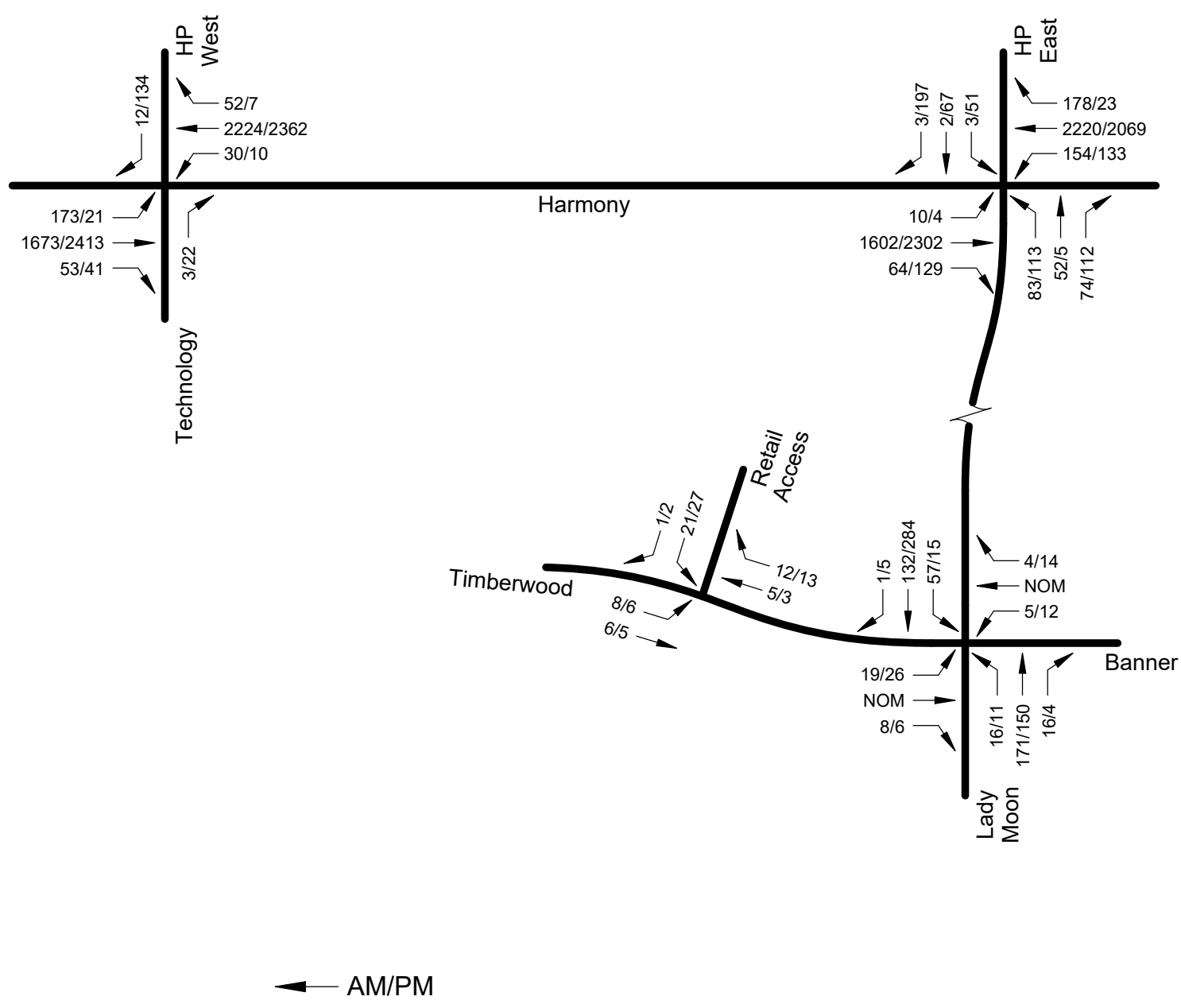




# RECENT PEAK HOUR TRAFFIC

# Figure 3





# ADJUSTED RECENT PEAK HOUR TRAFFIC

Figure 4

**TABLE 1  
Current Peak Hour Operation**

Intersection	Movement	Level of Service (delay)	
		AM	PM
Harmony/Technology-HP West (RT-in/RT-out/LT-in)	NB RT	C	E (40.6 secs)
	SB RT	D	F (185.1 secs)
	EB LT	F (871.6 secs)	F (96.2 secs)
	WB LT	E (37.2 secs)	F (86.1 secs)
	OVERALL	E (36.1 secs)	A
Harmony/Lady Moon (signal) (existing signal timing)	EB LT	E (57.9 secs)	E (62.1 secs)
	EB T	B	C
	EB RT	A	A
	EB APPROACH	B	C
	WB LT	D	F (117.4 secs)
	WB T	A	B
	WB RT	A	A
	WB APPROACH	B	B
	NB LT	D	D
	NB T	D	D
	NB RT	D	D
	NB APPROACH	D	D
	SB LT	D	D
	SB T/RT	D	F (86.7 secs)
	SB APPROACH	D	E (76.8 secs)
OVERALL	B	C	
Harmony/Lady Moon (signal) (adjusted signal timing)	EB LT	N/A	E (62.1 secs)
	EB T		C
	EB RT		A
	EB APPROACH		C
	WB LT		E (75.5 secs)
	WB T		B
	WB RT		A
	WB APPROACH		B
	NB LT		D
	NB T		D
	NB RT		D
	NB APPROACH		D
	SB LT		D
	SB T/RT		E (74.4 secs)
	SB APPROACH		E (67.1 secs)
OVERALL	C		

Continued on next page



Continued from previous page

<b>TABLE 1</b>			
<b>Current Peak Hour Operation</b>			
<b>Intersection</b>	<b>Movement</b>	<b>Level of Service (delay)</b>	
		<b>AM</b>	<b>PM</b>
Lady Moon/Timberwood- Banner Access (stop sign)	EB LT/T	B	B
	EB RT	A	A
	EB APPROACH	B	B
	WB LT/T	B	B
	WB RT	A	A
	WB APPROACH	B	B
	NB LT	A	A
	SB LT	A	A
	OVERALL	A	A
Timberwood/Retail Access (stop sign)	SB LT/RT	A	A
	EB LT/T	A	A
	OVERALL	A	A

collector or local stop sign controlled intersections is level of service F or better for any approach leg. The afternoon signal timing at the Harmony/Lady Moon intersection was adjusted giving more green time to the westbound left turns and more green time to the southbound leg. With the adjusted timing, the key intersections meet the Fort Collins operational criteria during the peak hours. At the Harmony/Technology-HP West intersection during the morning peak hour, the SYNCHRO software limits the capacity of the eastbound left turns to 71 vehicles. Since the recent traffic uses volumes from older counts, it is not known whether there is an operational issue for these eastbound left turns. This over capacity of the eastbound left turns has skewed the results of the overall operation of this intersection.

### Pedestrian Facilities

There are sidewalks along both sides of Harmony Road, Lady Moon Drive, Technology Parkway, and the north side of Timberwood Drive.

### Bicycle Facilities

Bicycle lanes exist on both sides of Harmony Road, Lady Moon Drive, Technology Parkway, and Timberwood Drive.

### Transit Facilities

Currently, Transfort Route 16 operates along Harmony Road. There are no other Transfort facilities in this area of Fort Collins.



### III. PROPOSED DEVELOPMENT

Figure 5 shows the site plan of the HTP Medical Offices site. The HTP Medical Offices will consist of a total of 81,000 square feet in two buildings. The western building will be approximately 48,600 square feet and the eastern building will be approximately 32,400 square feet. There will be one full-movement access to/from Lady Moon Drive and one full-movement access to/from Timberwood Drive with the construction of the HTP Medical Offices. The access on Timberline Drive will line up with the existing Retail Access. The short range analysis (Year 2025) includes development of the HTP Medical Offices and an appropriate increase in background traffic, due to normal growth, and other approved developments in the area. The long range future is considered to be the year 2040.

#### Trip Generation

Trip generation is important in considering the impact of a development such as this upon the existing and proposed street system. A compilation of trip generation information contained in Trip Generation, 10<sup>th</sup> Edition, ITE was used to estimate trips that would be generated by the proposed/expected use at this site. Table 2 shows the weekday daily, morning, and afternoon peak hour trip generation for the HTP Medical Offices. With development of the HTP Medical Offices, the site will generate approximately 3,024 weekday vehicle trip ends, 185 morning peak hour vehicle trip ends, and 273 afternoon peak hour vehicle trip ends.

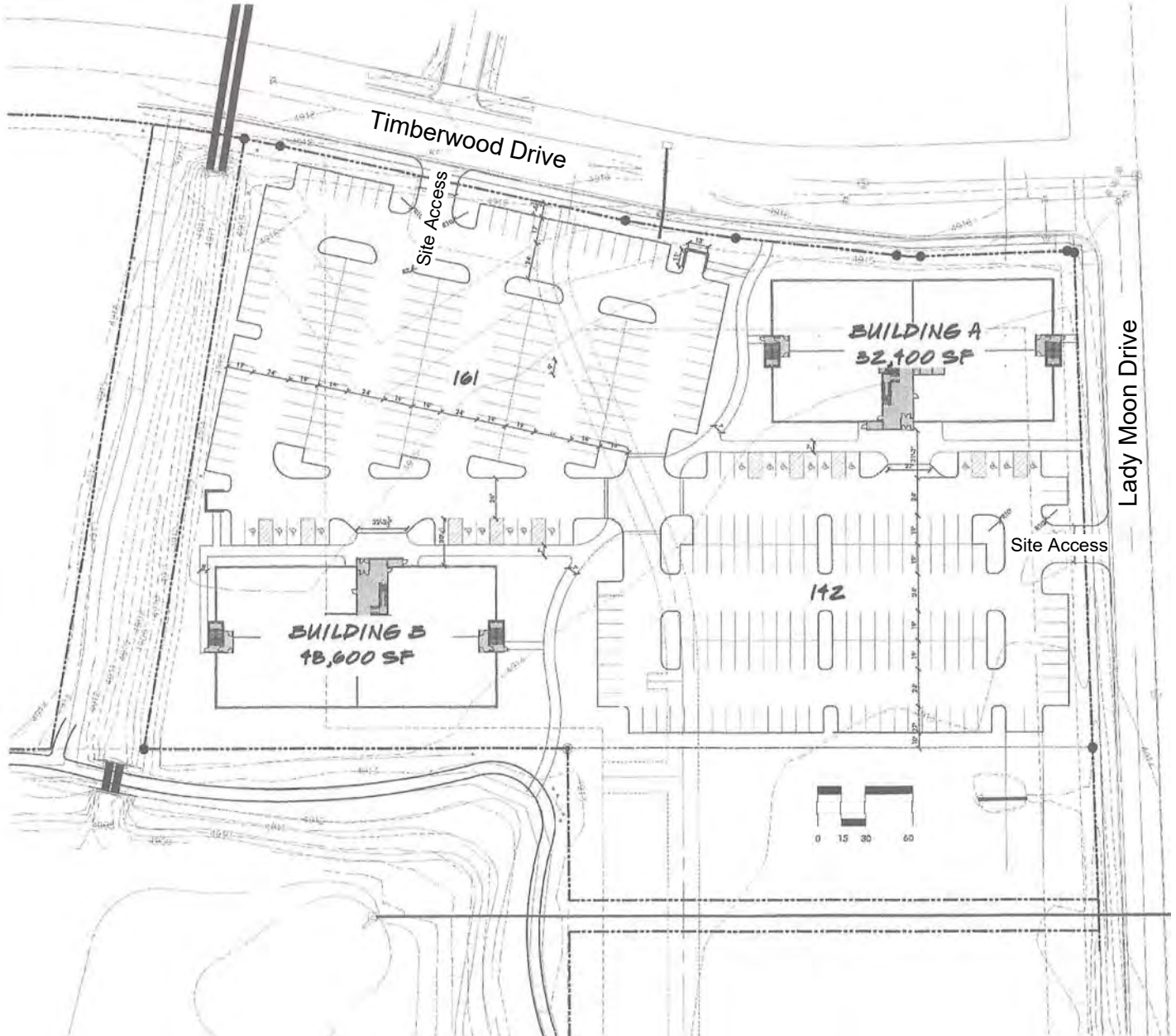
Code	Use	Size	AWDTE		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	In	Rate	Out	Rate	In	Rate	Out
720	Medical Office	81.0 KSF	EQ	3024	EQ	144	EQ	41	EQ	76	EQ	197

#### Trip Distribution

Directional distribution of the generated trips was determined for the HTP Medical Offices site. Figure 6 shows the vehicle trip distribution used for the HTP Medical Offices site. The trip distribution was discussed and agreed to in the scoping exercise.



SCALE: 1"=100'

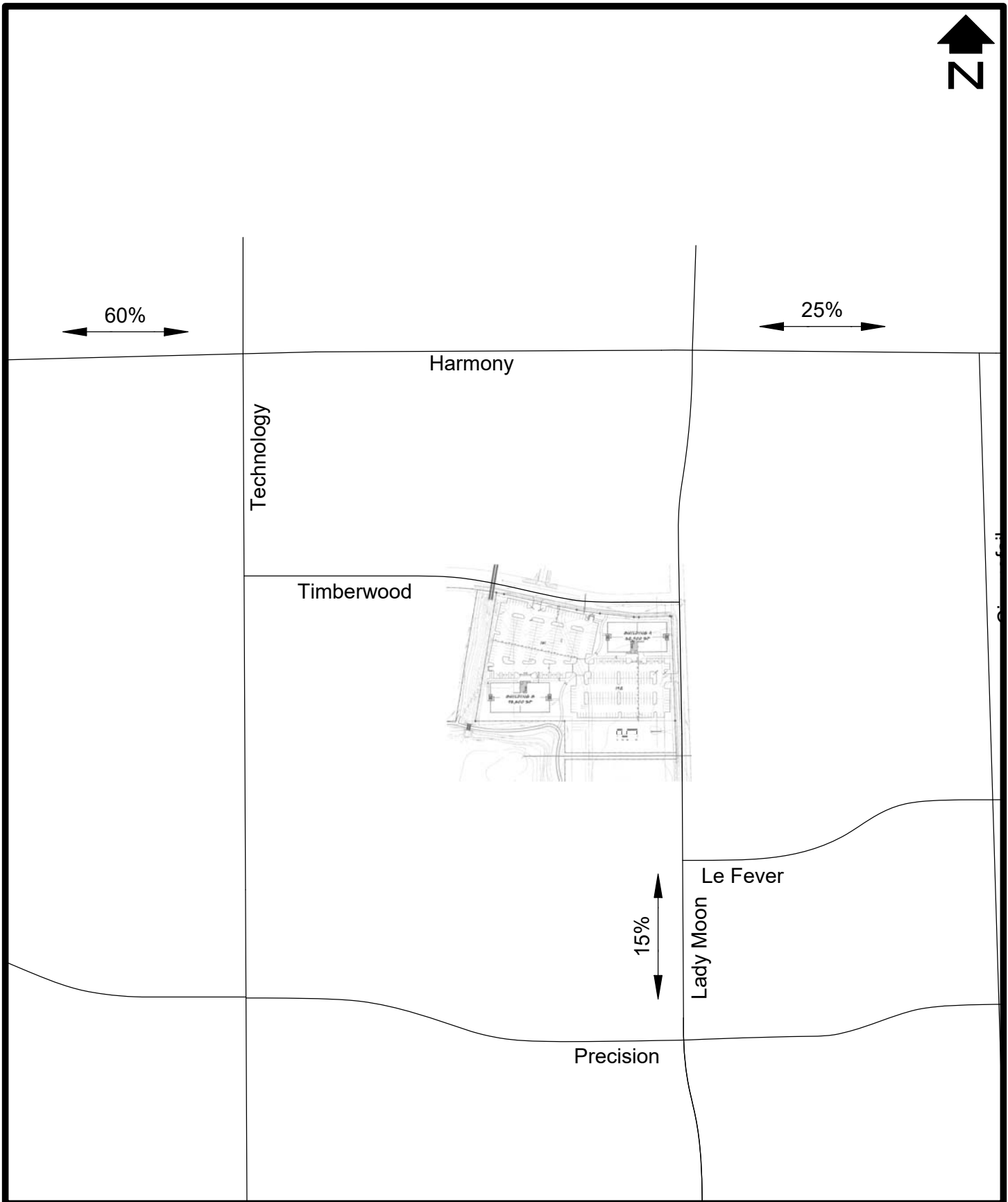


# SITE PLAN

Figure 5







SCALE: 1"=400'

# TRIP DISTRIBUTION

Figure 6

## Background Traffic Projections

Figure 7 shows the short range (2025) background morning and afternoon peak hour vehicle traffic projections at the Harmony/Technology-HP West, Harmony/Lady Moon-HP East, Lady Moon/Timberwood-Banner Access, and Timberwood/Retail Access intersections. Short range (2025) background traffic forecasts were developed by factoring the existing traffic on Harmony Road by one percent per year and factoring existing traffic on all other streets by two percent per year. In addition to this, the site traffic from the remaining vacant space in the retail parcel to the north was added to the short range (2025) background projections. The long range (2040) future forecasts included full built out of the HTP area. Figure 8 shows the long range (2040) background peak hour traffic at the key intersections.

## Trip Assignment/Total Traffic

Trip assignment is how the generated and distributed trips are expected to be loaded on the street system. The assigned trips are the resultant of the trip distribution process. Using the trip distribution shown in Figure 6, Figure 9 shows the assignment of the site generated peak hour traffic. The site generated vehicle traffic was combined with the background traffic to determine the total forecasted vehicle traffic at the key intersections. Figures 10 and 11 show the short range (2025) and long range (2040) total peak hour traffic at the key intersections, respectively.

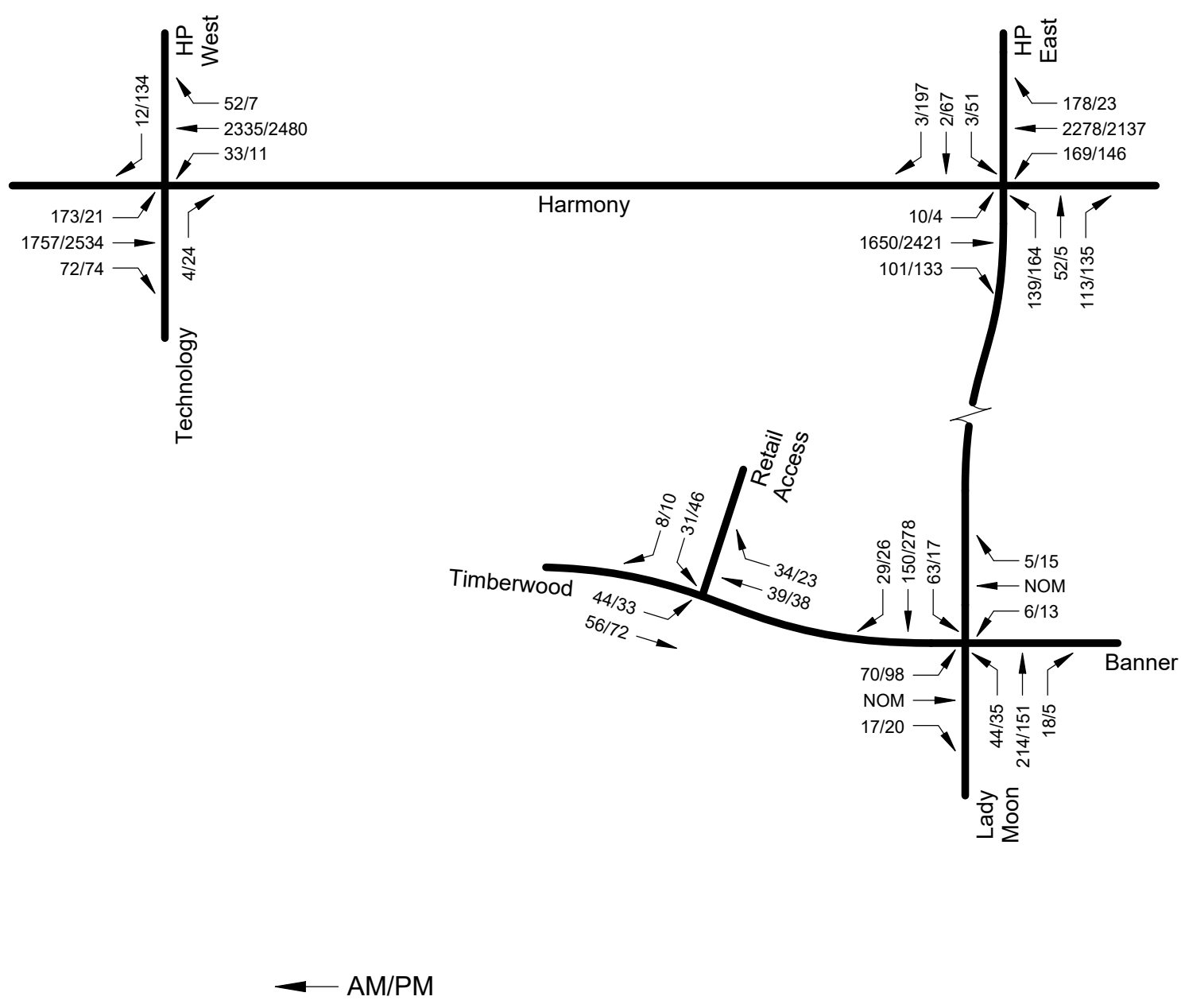
## Signal Warrants

As a matter of policy, traffic signals are not installed at any location unless warrants are met according to the Manual on Uniform Traffic Control Devices. The Harmony/Lady Moon intersection is currently signalized. For the roads in the vicinity of the HTP Medical Offices Development, four hour and/or eight hour signal warrants are applicable. These warrants require much data and are applied when the traffic is actually on the area road system. It is acknowledged that peak hour signal warrants should not be applied, but since the peak hour forecasts are readily available in a traffic impact study, it is reasonable to use them to estimate whether other signal warrants may be met. If peak hour signal warrants will not be met at a given intersection, it is reasonable to conclude that it is not likely that other signal warrants would be met. If peak hour signal warrants are met, it merely indicates that further evaluation should occur in the future as the development occurs. However, a judgment can be made that some intersections will likely meet other signal warrants. Since the Harmony/Technology intersection is analyzed as a  $\frac{3}{4}$  movement intersection, it does not meet the criteria for signalization. The other stop sign controlled do not meet the signal criteria of the City of Fort Collins.

## Geometry

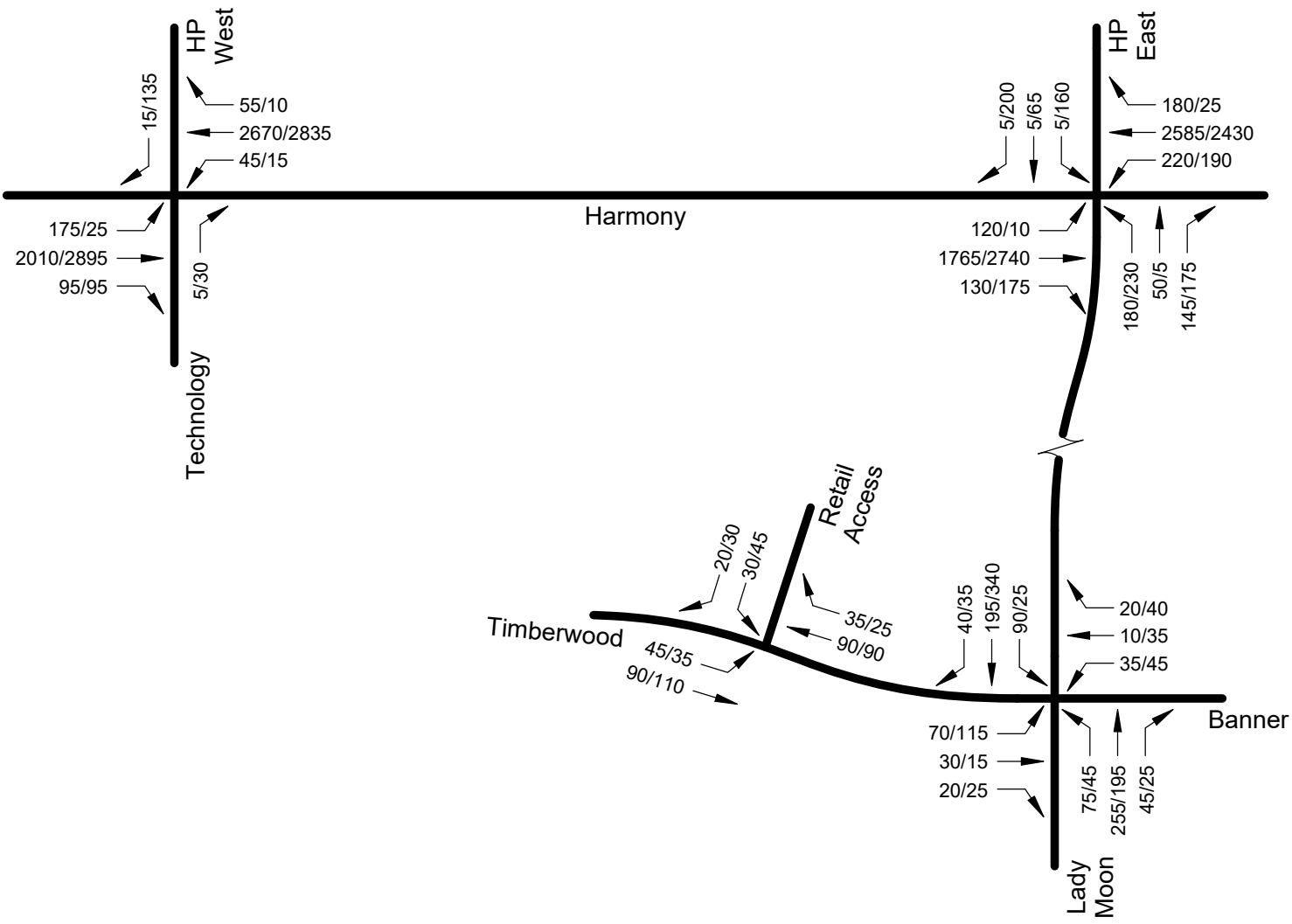
The following geometric evaluations utilize the short range (2025) total peak hour traffic forecasts (Figure 10) and the long range (2040) total peak hour traffic forecasts (Figure 11).





# SHORT RANGE (2025) BACKGROUND PEAK HOUR TRAFFIC

Figure 7

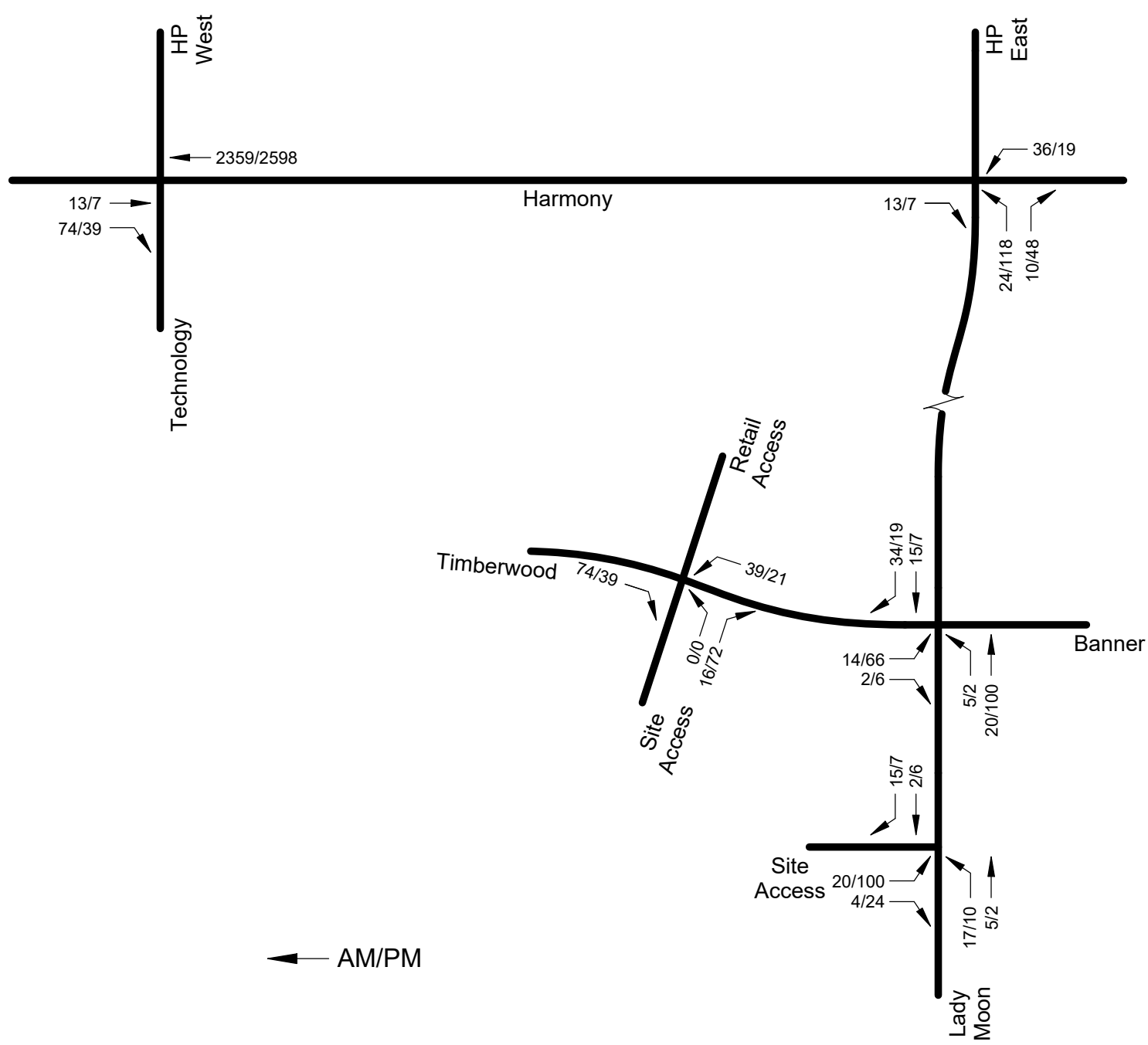


← AM/PM  
Rounded to Nearest  
5 Vehicles

# LONG RANGE (2040) BACKGROUND PEAK HOUR TRAFFIC

Figure 8

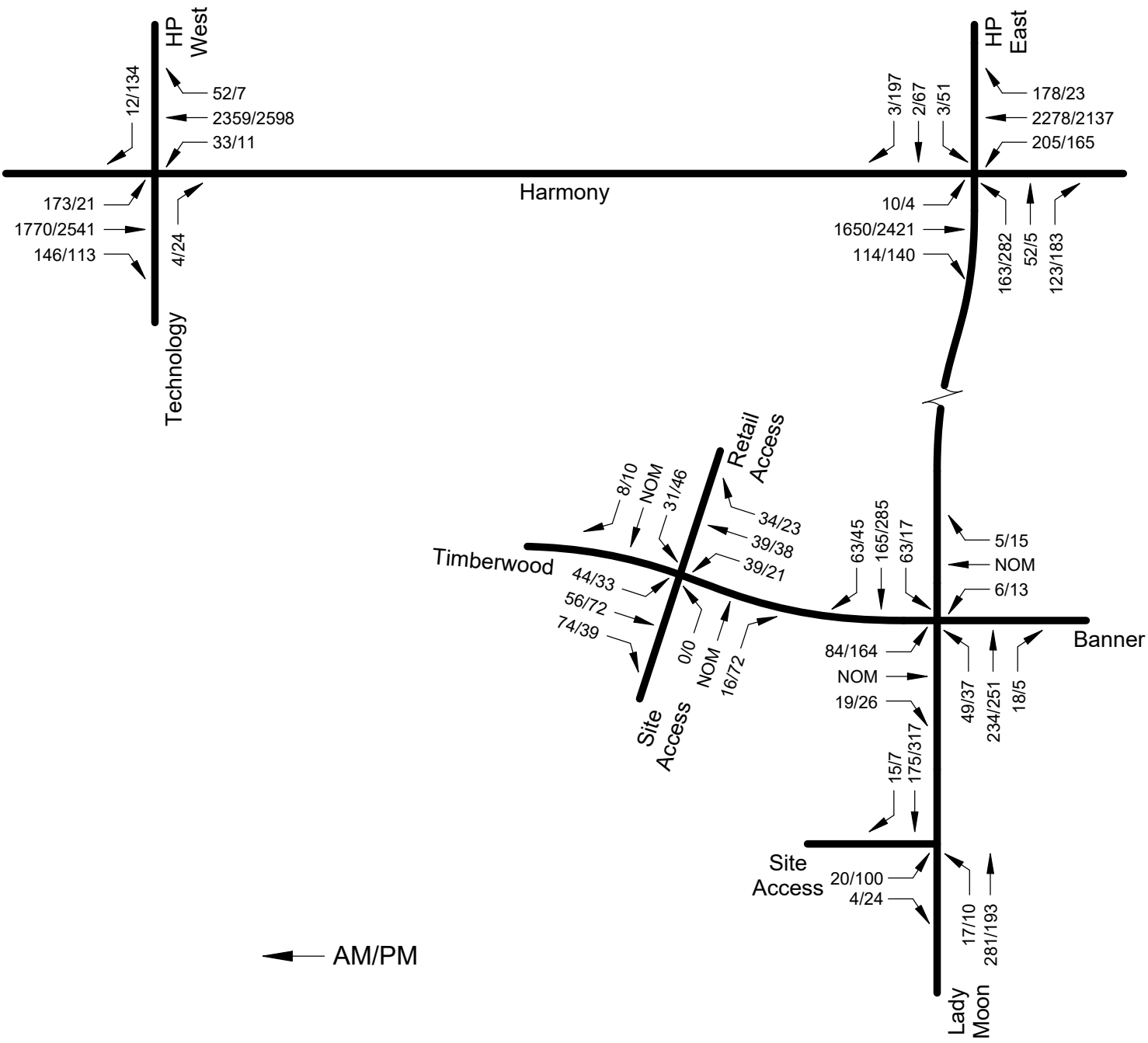




← AM/PM

# SITE GENERATED PEAK HOUR TRAFFIC

Figure 9

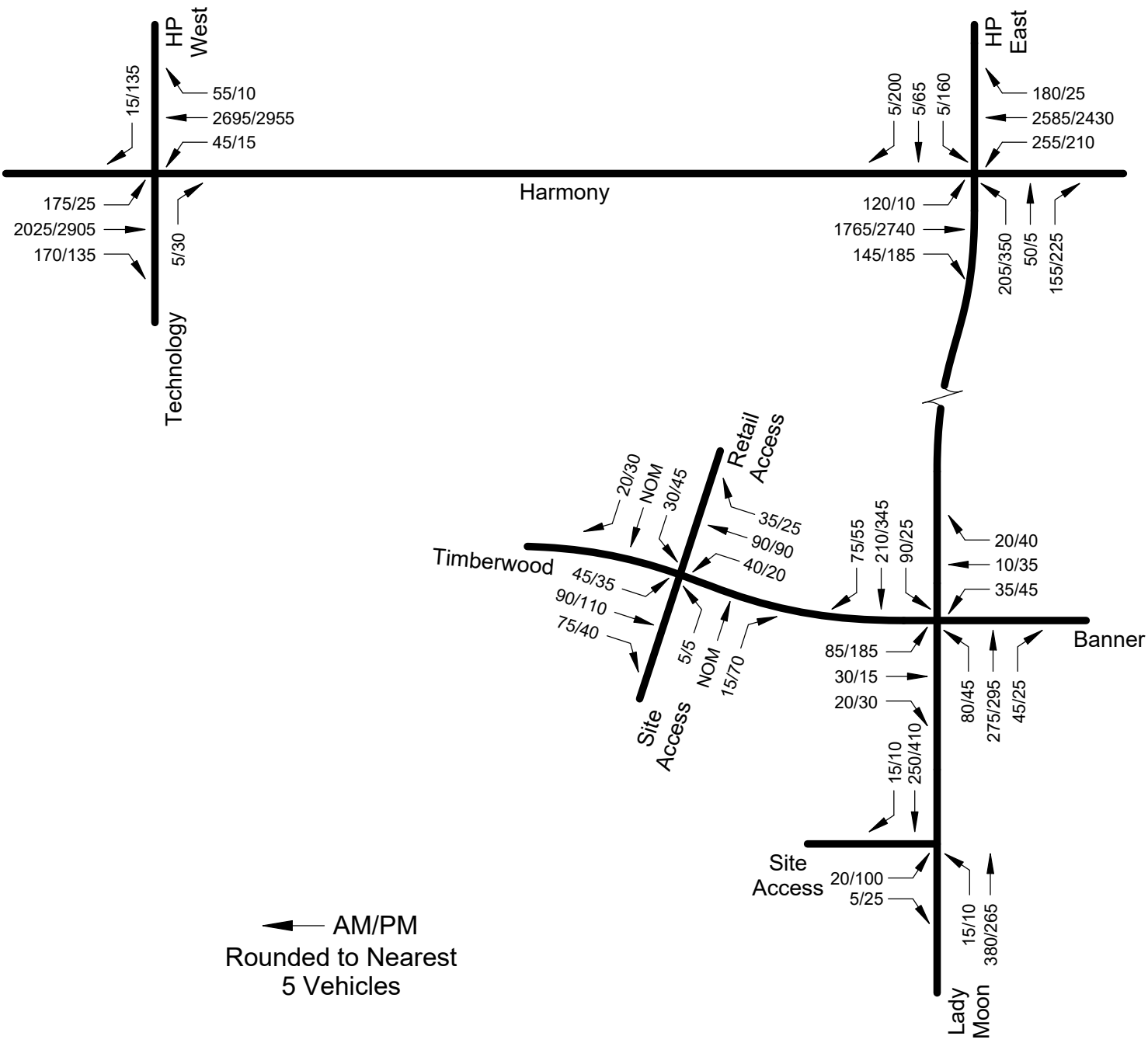


# SHORT RANGE (2025) TOTAL PEAK HOUR TRAFFIC

Figure 10







← AM/PM  
Rounded to Nearest  
5 Vehicles

# LONG RANGE (2040) TOTAL PEAK HOUR TRAFFIC

Figure 11

The short range (2025) geometry is shown in Figure 12. Geometry at the Harmony/Technology and Lady Moon/Timberwood-Banner Access intersections can remain as it exists today. The Timberwood/Retail-Site Access intersection does not require any auxiliary lanes. At the Harmony/Lady Moon intersection, the operations analyses show that northbound dual left-turn lanes will likely be required in the short range (2025) future. This is especially true since it is desired that the Harmony/Technology intersection remain as a stop sign controlled intersection. Dual northbound left-turn lanes can be accomplished by combining the through lane with the right-turn lane.

The long range (2040) geometry is shown in Figure 13. Much of the verbiage related to the short range (2025) geometry is applicable in the long range (2040) future. At the Harmony/Lady Moon intersection, there may be the need for dual westbound left-turn lanes from an operational perspective. Implementation of the dual left-turn lanes would require widening Lady Moon Drive to have two receiving lanes.

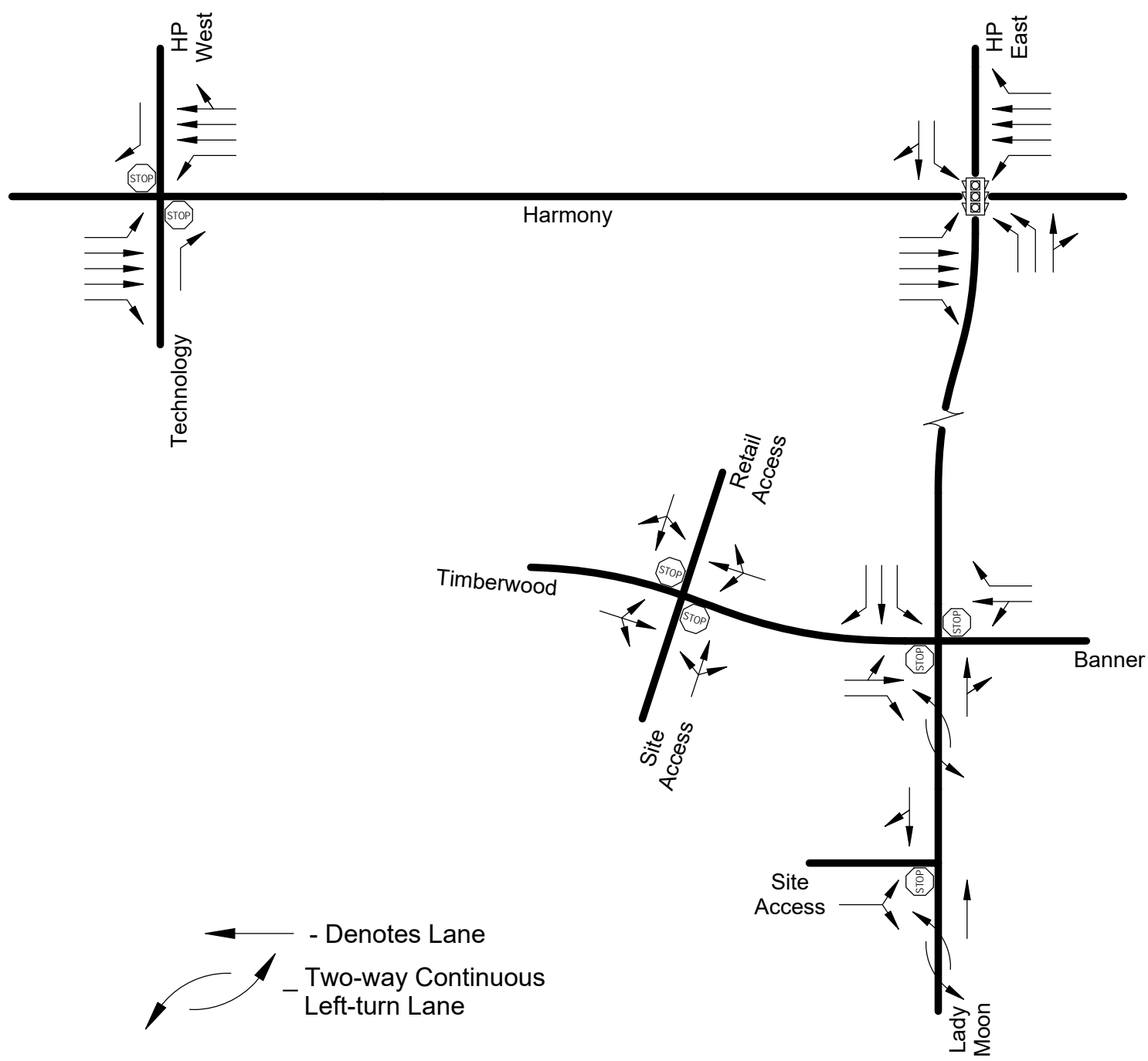
## Operation Analysis

Operation analyses were performed at the Harmony/Technology-HP West, Harmony/Lady Moon-HP East, Lady Moon/Timberwood-Banner Access, and Timberwood/Retail-Site Access intersections. The operation analyses were conducted for the short range analysis, reflecting a year 2025 condition, and for the long range analysis, reflecting a year 2040 condition. Under the short range (2025) and long range (2040) conditions, the calculated delay for each movement and leg is provided when the level of service falls in the LOS E or LOS F categories. The long range (2040) analyses are provided for informational and planning purposes.

Using the short range (2025) background morning and afternoon peak hour traffic volumes, the Harmony/Technology-HP West, Harmony/Lady Moon-HP East, Lady Moon/Timberwood-Banner Access, and Timberwood/Retail Access intersections operate as indicated in Table 3. Calculation forms for these analyses are provided in Appendix D. As with the existing traffic analysis, the afternoon signal timing at the Harmony/Lady Moon intersection was adjusted giving more green time to the westbound left turns and more green time to the southbound leg. With the adjusted timing, the key intersections meet the Fort Collins operational criteria during the peak hours. At the Harmony/Technology-HP West intersection during the morning peak hour, the SYNCHRO software limits the capacity of the eastbound left turns to 68 vehicles. It is not known whether there will actually be an operational issue for these eastbound left turns. This over capacity of the eastbound left turns has skewed the results of the overall operation of this intersection.

Using the long range (2040) background morning and afternoon peak hour traffic volumes, the key intersections operate as indicated in Table 4. Calculation forms for these analyses are provided in Appendix E. Under the long range (2040) background traffic condition, the Harmony/Lady Moon intersection was analyzed with signal control and minimal geometric improvements in order to meet the Fort Collins operational criteria.





# SHORT RANGE (2025) GEOMETRY

Figure 12







**TABLE 3**  
**Short Range (2025) Background Peak Hour Operation**

Intersection	Movement	Level of Service (delay)	
		AM	PM
Harmony/Technology-HP West (RT-in/RT-out/LT-in)	NB RT	C	E (41.3 secs)
	SB RT	D	F (176.4 secs)
	EB LT	F (889.8 secs)	F (96.5 secs)
	WB LT	E (40.3 secs)	F (93.0 secs)
	OVERALL	E (35.1 secs)	A
Harmony/Lady Moon (signal)	EB LT	E (57.9 secs)	E (62.1 secs)
	EB T	B	D
	EB RT	A	A
	EB APPROACH	B	D
	WB LT	D	E (75.0 secs)
	WB T	A	B
	WB RT	A	A
	WB APPROACH	B	B
	NB LT	D	E (71.6 secs)
	NB T	D	D
	NB RT	D	D
	NB APPROACH	D	E (70.6 secs)
	SB LT	D	D
	SB T/RT	D	E (74.4 secs)
	SB APPROACH	D	E (67.1 secs)
OVERALL	B	C	
Lady Moon/Timberwood-Banner Access (stop sign)	EB LT/T	C	C
	EB RT	A	B
	EB APPROACH	C	C
	WB LT/T	C	B
	WB RT	A	A
	WB APPROACH	B	B
	NB LT	A	A
	SB LT	A	A
	OVERALL	A	A
Timberwood/Retail Access (stop sign)	SB LT/RT	B	B
	EB LT/T	A	A
	OVERALL	A	A

**TABLE 4**  
**Long Range (2040) Background Peak Hour Operation**

Intersection	Movement	Level of Service (delay)	
		AM	PM
Harmony/Technology-HP West (RT-in/RT-out/LT-in)	NB RT	C	F (56.9 secs)
	SB RT	E (41.8 secs)	F (279.6 secs)
	EB LT	F (1362.3 secs)	F (172.5 secs)
	WB LT	E (63.6 secs)	F (165.0 secs)
	OVERALL	E (47.7 secs)	A
Harmony/Lady Moon (signal)	EB LT	E (71.3 secs)	E (63.8 secs)
	EB T	C	D
	EB RT	A	A
	EB APPROACH	C	D
	WB LT	D	E (79.7 secs)
	WB T	B	B
	WB RT	A	A
	WB APPROACH	B	C
	NB LT	E (56.2 secs)	E (60.6 secs)
	NB T/RT	D	D
	NB APPROACH	E (55.3 secs)	E (58.7 secs)
	SB LT	E (62.8 secs)	E (69.1 secs)
	SB T/RT	E (55.8 secs)	E (77.1 secs)
	SB APPROACH	E (59.0 secs)	E (73.3 secs)
OVERALL	C	C	
Lady Moon/Timberwood-Banner Access (stop sign)	EB LT/T	D	D
	EB RT	A	B
	EB APPROACH	D	D
	WB LT/T	D	C
	WB RT	B	A
	WB APPROACH	C	C
	NB LT	A	A
	SB LT	A	A
OVERALL	A	A	
Timberwood/Retail Access (stop sign)	SB LT/RT	B	B
	EB LT/T	A	A
	OVERALL	A	A



Using the traffic volumes shown in Figure 10, the Harmony/Technology-HP West, Harmony/Lady Moon-HP East, Lady Moon/Timberwood-Banner Access, Timberwood/Retail-Site Access, and Lady Moon/Site Access intersections operate in the short range (2025) total condition as indicated in Table 5. Calculation forms for these analyses are provided in Appendix F. The Lady Moon/Timberwood-Banner Access, Timberwood/Retail-Site Access, and Lady Moon/Site Access intersections will meet the Fort Collins operational criteria during the peak hours. At the Harmony/Lady Moon-HP East intersection, the intersection does not meet the Fort Collins operational criteria with a single northbound left-turn lane during the afternoon peak hour. Therefore, this intersection was analyzed with dual northbound left-turn lanes. The operation is shown in Table 5. Keeping all v/c ratios less than 1.0 will cause the southbound through/right-turn movement to operate at level of service F. However, by allowing the eastbound through movement to run a v/c ratio slightly greater than 1.0, all movements meet the Fort Collins operational criteria with regard to delay. At the Harmony/Technology-HP West intersection during the morning peak hour, the SYNCHRO software limits the capacity of the eastbound left turns to 66 vehicles. It is not known whether there will actually be an operational issue for these eastbound left turns. This over capacity of the eastbound left turns has skewed the results of the overall operation of this intersection.

Using the traffic volumes shown in Figure 11, the key intersections operate in the long range (2040) total condition as indicated in Table 6. Calculation forms for these analyses are provided in Appendix G. The Harmony/Lady Moon intersection was analyzed with both dual northbound left-turn lanes and dual westbound left-turn lanes for operational purposes. Implementation of the dual westbound left-turn lanes would require widening Lady Moon Drive to have two receiving lanes. This intersection should be monitored with regard to operation and the need for additional auxiliary lanes.

## Pedestrian Level of Service

Appendix H shows a map of the area that is within 1320 feet of the HTP Medical Offices site. The HTP Medical Offices site is located within an area termed as “other,” which sets the level of service threshold at LOS C for all measured factors. There are four destination areas within 1320 feet of the proposed HTP Medical Offices: 1) the retail/commercial area to the north, 2) the Banner medical facility east of the site, 3) the residential area to the southeast, and 4) the industrial uses to the south. Sidewalks exist along both sides of Harmony Road, Lady Moon Drive, Technology Parkway, and the north side of Timberwood Drive. It is expected that the HTP Medical Offices will construct sidewalks along its frontage of Timberwood Drive, as well as within the development itself.

- **Directness** – The distance ratio to all pedestrian destinations is less than 1.2 (LOS A).
- **Continuity** – The continuity to all pedestrian destinations will be acceptable at LOS B, since there is existing sidewalks adjacent to all the destination areas.
- **Street Crossings** – The street crossings to all pedestrian destinations will be acceptable at LOS B, since the widest street crossing is Lady Moon Drive.

**TABLE 5**  
**Short Range (2025) Total Peak Hour Operation**

Intersection	Movement	Level of Service (delay)	
		AM	PM
Harmony/Technology-HP West (RT-in/RT-out/LT-in)	NB RT	C	E (41.7 secs)
	SB RT	D	F (219.3 secs)
	EB LT	F (929.1 secs)	F (118.0 secs)
	WB LT	E (45.4 secs)	F (99.9 secs)
	OVERALL	E (35.7 secs)	A
Harmony/Lady Moon (signal) (single NB LT lane)	EB LT	E (57.9 secs)	E (62.1 secs)
	EB T	B	D
	EB RT	A	A
	EB APPROACH	B	D
	WB LT	E (55.9 secs)	F (149.1 secs)
	WB T	A	B
	WB RT	A	A
	WB APPROACH	B	C
	NB LT	D	F (140.0 secs)
	NB T	D	D
	NB RT	D	D
	NB APPROACH	D	F (132.1 secs)
	SB LT	D	D
	SB T/RT	D	E (74.4 secs)
	SB APPROACH	D	E (67.1 secs)
OVERALL	B	D	
Harmony/Lady Moon (signal) (dual NB LT lanes)	EB LT	E (57.9 secs)	E (67.5 secs)
	EB T	B	D
	EB RT	A	A
	EB APPROACH	B	D
	WB LT	E (57.5 secs)	E (77.6 secs)
	WB T	A	B
	WB RT	A	A
	WB APPROACH	B	C
	NB LT	D	E (76.7 secs)
	NB T/RT	D	D
	NB APPROACH	D	E (73.5 secs)
	SB LT	D	D
	SB T/RT	D	F (86.8 secs)
	SB APPROACH	D	E (77.7 secs)
	OVERALL	B	D

Continued on next page



Continued from previous page

<b>TABLE 5</b>			
<b>Short Range (2025) Total Peak Hour Operation</b>			
<b>Intersection</b>	<b>Movement</b>	<b>Level of Service (delay)</b>	
		<b>AM</b>	<b>PM</b>
Harmony/Lady Moon (signal) (dual NB LT lanes & allowing the EB through with v/c ratio > 1.0)	EB LT	N/A	E (67.5 secs)
	EB T		D
	EB RT		A
	EB APPROACH		D
	WB LT		E (73.7 secs)
	WB T		B
	WB RT		A
	WB APPROACH		C
	NB LT		E (76.7 secs)
	NB T/RT		D
	NB APPROACH		E (73.3 secs)
	SB LT		D
	SB T/RT		E (78.9 secs)
	SB APPROACH		E (71.6 secs)
OVERALL	D		
Lady Moon/Timberwood- Banner Access (stop sign)	EB LT/T	C	D
	EB RT	A	B
	EB APPROACH	C	D
	WB LT/T	C	C
	WB RT	A	A
	WB APPROACH	B	B
	NB LT	A	A
	SB LT	A	A
	OVERALL	A	A
Timberwood/Retail Access (stop sign)	NB LT/T/RT	A	A
	SB LT/T/RT	B	B
	EB LT/T/RT	A	A
	WB LT/T/RT	A	A
	OVERALL	A	A
Lady Moon/Site Access (stop sign)	EB LT/RT	B	B
	NB LT	A	A
	OVERALL	A	A

**TABLE 6**  
**Long Range (2040) Total Peak Hour Operation**

Intersection	Movement	Level of Service (delay)	
		AM	PM
Harmony/Technology-HP West (RT-in/RT-out/LT-in)	NB RT	C	F (57.6 secs)
	SB RT	E (42.6 secs)	F (345.7 secs)
	EB LT	F (1399.3 secs)	F (219.7 secs)
	WB LT	F (75.4 secs)	F (186.6 secs)
	OVERALL	E (48.0 secs)	A
Harmony/Lady Moon (signal)	EB LT	E (71.3 secs)	E (69.3 secs)
	EB T	C	D
	EB RT	A	A
	EB APPROACH	C	D
	WB LT	D	E (75.4 secs)
	WB T	B	B
	WB RT	A	A
	WB APPROACH	B	C
	NB LT	E (55.8 secs)	E (78.7 secs)
	NB T/RT	D	F (156.3 secs)
	NB APPROACH	D	F (110.3 secs)
	SB LT	E (62.8 secs)	F (101.9 secs)
	SB T/RT	E (55.8 secs)	F (284.7 secs)
	SB APPROACH	E (59.0 secs)	F (215.9 secs)
	OVERALL	C	D
Lady Moon/Timberwood-Banner Access (stop sign)	EB LT/T	E (44.7 secs)	F (107.5 secs)
	EB RT	A	B
	EB APPROACH	E (39.5 secs)	F (94.9 secs)
	WB LT/T	D	D
	WB RT	B	B
	WB APPROACH	C	C
	NB LT	A	A
	SB LT	A	A
	OVERALL	A	C
Timberwood/Retail Access (stop sign)	NB LT/T/RT	A	A
	SB LT/T/RT	B	B
	EB LT/T/RT	A	A
	WB LT/T/RT	A	A
	OVERALL	A	A
Lady Moon/Site Access (stop sign)	EB LT/RT	B	C
	NB LT	A	A
	OVERALL	A	A



- **Visual Interest and Amenity** – The visual interest and amenity to all pedestrian destinations is acceptable at LOS B, since most of the sidewalks have some landscaped parkways.
- **Security** – The security to all pedestrian destinations is acceptable at LOS B, since the sidewalks are adjacent to residential and commercial land uses.

#### Bicycle Level of Service

Based upon Fort Collins bicycle LOS criteria, there is one destination area within 1320 feet of the HTP Medical Offices: 1) the commercial area north of the site. The bicycle level of service is acceptable. The bicycle LOS Worksheet is provided in Appendix H. Bicycle lanes exist on both sides of Harmony Road, Lady Moon Drive, Technology Parkway, and Timberwood Drive.

#### Transit Level of Service

Currently, Transfort Route 16 operates along Harmony Road. There are no other Transfort facilities in this area of Fort Collins.

#### IV. CONCLUSIONS/RECOMMENDATIONS

This study assessed the impacts of the HTP Medical Offices development on the short range (2025) and long range (2040) street system in the vicinity of the proposed development. As a result of this analysis, the following is concluded:

- The development of the HTP Medical Offices site is feasible from a traffic engineering standpoint. In the short range (2025) future, with development of the HTP Medical Offices, the site will generate approximately 3,024 weekday vehicle trip ends, 185 morning peak hour vehicle trip ends, and 273 afternoon peak hour vehicle trip ends.
- Currently, the key intersections meet the Fort Collins operational criteria during the peak hours. The afternoon signal timing at the Harmony/Lady Moon intersection was adjusted giving more green time to the westbound left turns and more green time to the southbound leg. At the Harmony/Technology-HP West intersection during the morning peak hour, the SYNCHRO software limits the capacity of the eastbound left turns to 71 vehicles. Since the recent traffic uses volumes from older counts, it is not known whether there is an operational issue for these eastbound left turns. This over capacity of the eastbound left turns has skewed the results of the overall operation of this intersection.
- Since the Harmony/Technology intersection is analyzed as a  $\frac{3}{4}$  movement intersection, it does not meet the criteria for signalization. The other stop sign controlled do not meet the signal criteria of the City of Fort Collins.
- The short range (2025) and long range (2040) geometry is shown in Figures 12 and 13, respectively. At the Harmony/Lady Moon intersection, the operations analyses show that northbound dual left-turn lanes will likely be required in the short range (2025) future. This is especially true since it is desired that the Harmony/ Technology intersection is desired to remain as a stop sign controlled intersection.
- In the short range (2025) future, given development of the HTP Medical Offices and an increase in background traffic, the Lady Moon/Timberwood-Banner Access, Timberwood/Retail-Site Access, and Lady Moon/Site Access intersections will meet the Fort Collins operational criteria during the peak hours. At the Harmony/Lady Moon-HP East intersection, the intersection does not meet the Fort Collins operational criteria with a single northbound left-turn lane during the afternoon peak hour. Therefore, this intersection was analyzed with dual northbound left-turn lanes. At the Harmony/Technology-HP West intersection during the morning peak hour, the SYNCHRO software limits the capacity of the eastbound left turns to 66 vehicles. It is not known whether there will actually be an operational issue for these eastbound left turns. This over capacity of the eastbound left turns has skewed the results of the overall operation of this intersection.



- The Harmony/Lady Moon intersection was analyzed with both dual northbound left-turn lanes and dual westbound left-turn lanes for operational purposes. Implementation of the dual westbound left-turn lanes would require widening Lady Moon Drive to have two receiving lanes. This intersection should be monitored with regard to operation and the need for additional auxiliary lanes.
- Acceptable level of service is achieved for pedestrian, bicycle, and transit modes based upon the measures in the multi-modal transportation guidelines.

# APPENDIX A

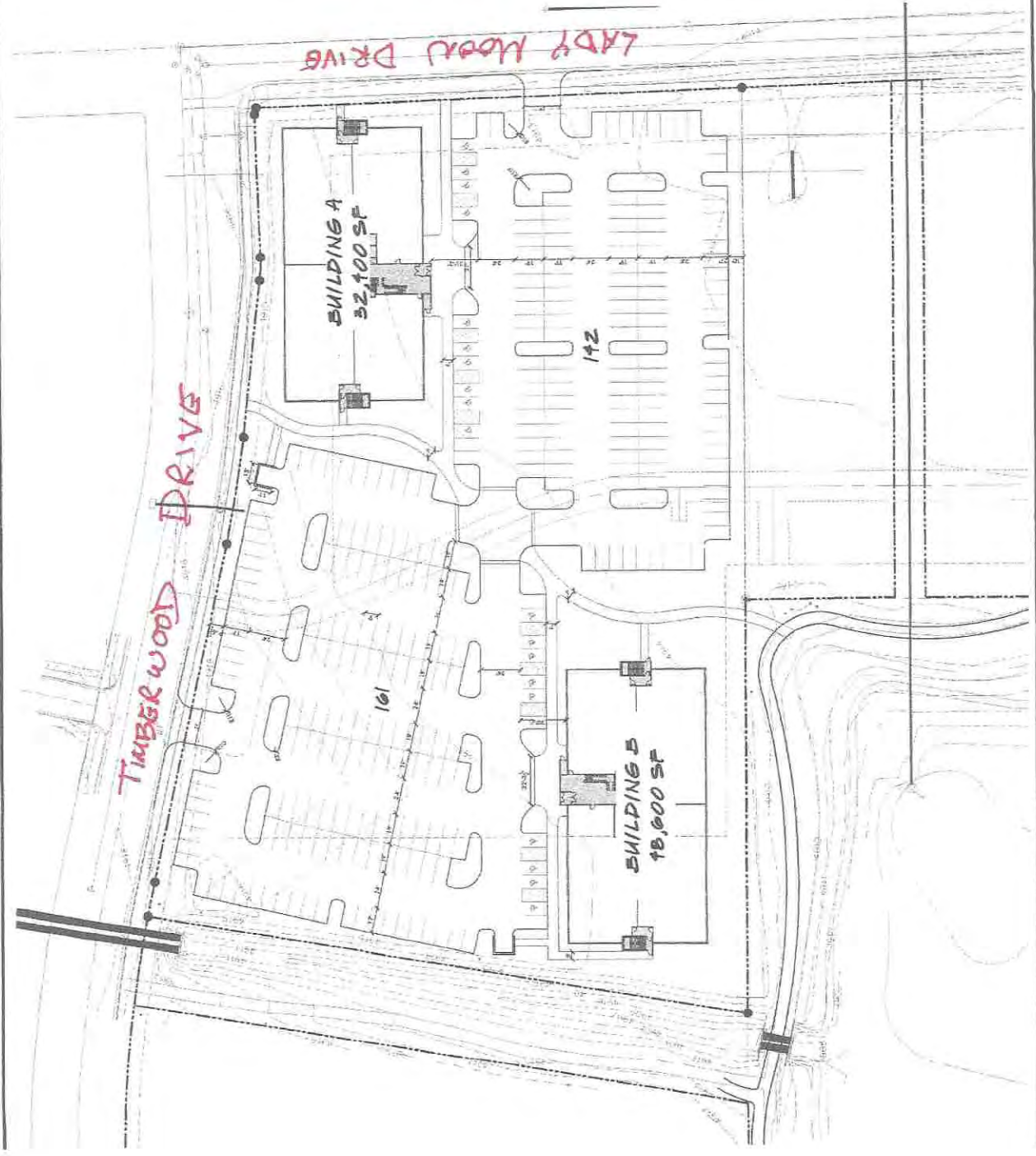


**Attachment A  
Transportation Impact Study  
Base Assumptions**

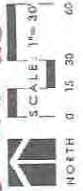
<b>Project Information</b>		
Project Name <u>HARMONY TECH PARK - MEDICAL OFFICE BUILDINGS</u>		
Project Location <u>SW QUADRANT OF LADY MOON/TIMBERWOOD</u>		
<b>TIS Assumptions</b>		
Type of Study	Full: <u>YES</u>	Intermediate: <u>NO</u>
Study Area Boundaries	North: <u>HARMONY ROAD</u>	South: <u>SITE ACCESS</u>
	East: <u>LADY MOON</u>	West: <u>SITE ACCESS</u>
Study Years	Short Range: <u>2025</u>	Long Range: <u>2040</u>
Future Traffic Growth Rate	<u>1% / YEAR ON HARMONY ; 2% / YEAR ON OTHERS</u>	
Study Intersections	1. All access drives (2)	5.
	2. <u>TIMBERWOOD/LADY MOON</u>	6.
	3. <u>HARMONY/LADY MOON</u>	7.
	4.	8.
Time Period for Study	<u>AM: 7:00-9:00 PM: 4:00-6:00</u>	Sat Noon: <u>NO</u>
Trip Generation Rates	<u>PER T.G. 10<sup>th</sup> (ATTACHED)</u>	
Trip Adjustment Factors	Passby: <u>N/A</u>	Captive Market: <u>N/A</u>
Overall Trip Distribution	<u>SEE ATTACHED SKETCH</u> <small>See changes</small>	
Mode Split Assumptions	<u>N/A</u>	
Committed Roadway Improvements	<u>NOT AWARE OF ANY - CITY PROVIDE</u> <small>None</small>	
Other Traffic Studies	<u>PRECISION TECH } BY DA</u> <u>5041 TECH PKWY } BY DA</u> <u>OTHERS - CITY PROVIDE</u>	
Areas Requiring Special Study	<small>We would like this study to include pedestrian connectivity along Lady Moon even though the entire parcel is not being developed. We need to consider the sidewalk gap that is being left, and should this be built now.</small>	

Date: OCTOBER 9, 2020  
 Traffic Engineer: DELICH ASSOCIATES  
 Local Entity Engineer: Steven Gilchrist 10/13/20

2072 BAF



MEDICAL OFFICE  
BUILDINGS



NORTH 0 15 30 60

# SITE PLAN

FORT COLLINS, COLORADO

WWW.SCHWAB-BLICKL.COM CONTACT: (970) 229-7377

SHEET 1 OF 1

# TRIP GENERATION (T.G., 10<sup>th</sup> ED)

BLDG A - 32.4 KSF } 81.0 KSF  
BLDG B - 48.6 KSF }

MEDICAL OFFICE (CODE 720)

DAILY  $T = 38.42x - 87.62 = 3024$  TE  
 $R^2 = 0.95$

AM  $L_{in}T = 0.89L_{in}X + 1.31 = 185$  TE IN (78%)  
 $R^2 = 0.80$  OUT (22%)

PM  $T = 3.39x + 2.02 = 273$  TE IN (28%)  
 $R^2 = 0.73$  OUT (72%)



# Harmony Tech Park

## Legend

60%

25%

15%

SITE

TRIP DISTRIBUTION



# APPENDIX B

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

## TABULAR SUMMARY OF VEHICLE COUNTS

Date: 10/13/2020

Observer: Vickie

Day: Tuesday

Jurisdiction: Fort Collins

**Intersection: Harmony/Technology-HP West**

R = right turn  
 S = straight  
 L = left turn

Time Begins	Northbound: Technology				Southbound: HP West				Total north/south	Eastbound: Harmony				Westbound: Harmony				Total east/west	Total All
	L	S	R	Total	L	S	R	Total		L	S	R	Total	L	S	R	Total		
7:30			0	0			0	0	0	6	349	2	357	8	522	3	533	890	890
7:45			2	2			1	1	3	11	290	6	307	6	572	9	587	894	897
8:00			0	0			0	0	0	6	268	8	282	8	440	1	449	731	731
8:15			1	1			1	1	2	11	305	6	322	8	439	2	449	771	773

7:30-8:30	0	0	3	3	0	0	2	2	5	34	1212	22	1268	30	1973	15	2018	3286	3291
PHF	n/a	n/a	0.38	0.38	n/a	n/a	0.5	0.5		0.77	0.87	0.69	0.89	0.94	0.86	0.42	0.86		0.92

4:30			5	5			9	9	14	1	560	3	564	0	494	0	494	1058	1072
4:45			4	4			5	5	9	2	525	8	535	2	436	0	438	973	982
5:00			7	7			13	13	20	2	627	4	633	3	494	1	498	1131	1151
5:15			6	6			7	7	13	0	552	1	553	5	390	3	398	951	964

4:30-5:30	0	0	22	22	0	0	34	34	56	5	2264	16	2285	10	1814	4	1828	4113	4169
PHF	n/a	n/a	0.79	0.79	n/a	n/a	0.65	0.65		0.63	0.9	0.5	0.9	0.5	0.92	0.33	0.92		0.91



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

## TABULAR SUMMARY OF VEHICLE COUNTS

Date: 11/28/2017

Observer: City of Fort Collins

Day: Tuesday

Jurisdiction: Fort Collins

**Intersection: Harmony/Lady Moon-HP East**

R = right turn  
 S = straight  
 L = left turn

Time Begins	Northbound: Lady Moon				Southbound: HP East				Total north/south	Eastbound: Harmony				Westbound: Harmony				Total east/west	Total All
	L	S	R	Total	L	S	R	Total		L	S	R	Total	L	S	R	Total		
7:30	17	10	18	45	2	0	0	2	47	2	458	18	478	41	553	36	630	1108	1155
7:45	20	11	24	55	1	0	0	1	56	2	411	14	427	36	553	65	654	1081	1137
8:00	23	18	19	60	0	0	0	0	60	2	347	14	363	32	518	40	590	953	1013
8:15	21	13	11	45	0	2	0	2	47	4	340	16	360	39	532	37	608	968	1015

7:30-8:30	81	52	72	205	3	2	0	5	210	10	1556	62	1628	148	2156	178	2482	4110	4320
PHF	0.88	0.72	0.75	0.85	0.38	0.25	n/a	0.63		0.63	0.85	0.86	0.85	0.9	0.97	0.68	0.95		0.94

4:30	30	2	34	66	55	22	20	97	163	0	520	24	544	36	477	4	517	1061	1224
4:45	23	2	14	39	52	12	4	68	107	1	565	35	601	30	531	9	570	1171	1278
5:00	29	0	38	67	54	16	13	83	150	1	561	31	593	32	427	4	463	1056	1206
5:15	28	1	23	52	36	17	14	67	119	2	589	34	625	31	574	6	611	1236	1355

4:30-5:30	110	5	109	224	197	67	51	315	539	4	2235	124	2363	129	2009	23	2161	4524	5063
PHF	0.92	0.63	0.72	0.84	0.9	0.76	0.64	0.81		0.5	0.95	0.89	0.95	0.9	0.88	0.64	0.88		0.93

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

## TABULAR SUMMARY OF VEHICLE COUNTS

Date: 10/14/2020

Observer: Vickie

Day: Wednesday

Jurisdiction: Fort Collins

**Intersection: Lady Moon/Timberwood-Banner Access**

R = right turn  
 S = straight  
 L = left turn

Time Begins	Northbound: Lady Moon				Southbound: Lady Moon				Total north/south	Eastbound: Timberwood				Westbound: Banner Access				Total east/west	Total All
	L	S	R	Total	L	S	R	Total		L	S	R	Total	L	S	R	Total		
7:30	3	30	3	36	18	8	0	26	62	8	0	0	8	0	0	1	1	9	71
7:45	5	23	5	33	14	12	0	26	59	6	0	1	7	0	0	1	1	8	67
8:00	4	34	3	41	16	23	0	39	80	1	0	2	3	0	0	1	1	4	84
8:15	2	27	5	34	9	16	1	26	60	4	0	1	5	0	0	1	1	6	66

7:30-8:30	14	114	16	144	57	59	1	117	261	19	0	4	23	0	0	4	4	27	288
PHF	0.7	0.84	0.8	0.88	0.79	0.64	0.25	0.75		0.59	n/a	0.5	0.72	n/a	n/a	1	1		0.86

4:30	3	19	0	22	5	38	2	45	67	8	1	0	9	2	0	4	6	15	82
4:45	3	27	1	31	4	41	2	47	78	7	0	1	8	2	1	2	5	13	91
5:00	0	36	0	36	2	42	1	45	81	5	0	0	5	3	1	8	12	17	98
5:15	2	28	0	30	4	56	0	60	90	6	0	2	8	2	0	0	2	10	100

4:30-5:30	8	110	1	119	15	177	5	197	316	26	1	3	30	9	2	14	25	55	371
PHF	0.67	0.76	0.25	0.83	0.75	0.79	0.63	0.82		0.81	0.25	0.38	0.83	0.75	0.5	0.44	0.52		0.93

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

## TABULAR SUMMARY OF VEHICLE COUNTS

Date: 10/14/2020

Observer: Vickie

Day: Wednesday

Jurisdiction: Fort Collins

**Intersection: Timberwood/Retail Access**

R = right turn  
 S = straight  
 L = left turn

Time Begins	Northbound:				Southbound: Retail Access				Total north/south	Eastbound: Timberwood				Westbound: Timberwood				Total east/west	Total All
	L	S	R	Total	L	S	R	Total		L	S	R	Total	L	S	R	Total		
7:30				0	7		0	7	7	3	1		4		1	2	3	7	14
7:45				0	5		0	5	5	2	2		4		2	3	5	9	14
8:00				0	1		1	2	2	1	2		3		2	2	4	7	9
8:15				0	4		0	4	4	2	1		3		0	3	3	6	10

7:30-8:30	0	0	0	0	17	0	1	18	18	8	6	0	14	0	5	10	15	29	47
PHF	n/a	n/a	n/a	n/a	0.61	n/a	0.25	0.64		0.67	0.75	n/a	0.88	n/a	0.63	0.83	0.75		0.84

4:30				0	8		0	8	8	2	1		3		2	3	5	8	16
4:45				0	8		0	8	8	1	0		1		1	5	6	7	15
5:00				0	2		2	4	4	3	3		6		0	2	2	8	12
5:15				0	7		0	7	7	0	1		1		0	2	2	3	10

4:30-5:30	0	0	0	0	25	0	2	27	27	6	5	0	11	0	3	12	15	26	53
PHF	n/a	n/a	n/a	n/a	0.78	n/a	0.25	0.84		0.5	0.42	n/a	0.46	n/a	0.38	0.6	0.63		0.83



# APPENDIX C

HCM 6th TWSC  
8: Technology Parkway/HP West & Harmony

Recent AM

Intersection

Int Delay, s/veh	36.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘ ↑↑↑	↘ ↑↑↑	↘	↘ ↑↑↑	↘ ↑↑↑				↘			↘
Traffic Vol, veh/h	173	1673	53	30	2224	52	0	0	3	0	0	12
Future Vol, veh/h	173	1673	53	30	2224	52	0	0	3	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	350	430	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	188	1818	58	33	2417	57	0	0	3	0	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2474	0	0	1876	0	0	-	-	909	-	-	1237
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	~ 71	-	-	144	-	-	0	0	238	0	0	144
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 71	-	-	144	-	-	-	-	238	-	-	144
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	79.4			0.5			20.3			32.5		
HCM LOS							C			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	238	~ 71	-	-	144	-	-	144
HCM Lane V/C Ratio	0.014	2.648	-	-	0.226	-	-	0.091
HCM Control Delay (s)	20.3	871.6	-	-	37.2	-	-	32.5
HCM Lane LOS	C	F	-	-	E	-	-	D
HCM 95th %tile Q(veh)	0	18.5	-	-	0.8	-	-	0.3

Notes

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

HCM 6th TWSC  
8: Technology Parkway/HP West & Harmony

Recent PM

Intersection

Int Delay, s/veh	5.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑↑				↗			↗
Traffic Vol, veh/h	21	2413	41	10	2362	7	0	0	22	0	0	134
Future Vol, veh/h	21	2413	41	10	2362	7	0	0	22	0	0	134
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	350	430	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	2652	45	11	2596	8	0	0	24	0	0	147

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2604	0	0	2697	0	0	-	-	1326	-	-	1302
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	61	-	-	55	-	-	0	0	125	0	0	~ 130
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	61	-	-	55	-	-	-	-	125	-	-	~ 130
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0.4			40.6			185.1		
HCM LOS							E			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	125	61	-	-	55	-	-	130
HCM Lane V/C Ratio	0.193	0.378	-	-	0.2	-	-	1.133
HCM Control Delay (s)	40.6	96.2	-	-	86.1	-	-	185.1
HCM Lane LOS	E	F	-	-	F	-	-	F
HCM 95th %tile Q(veh)	0.7	1.4	-	-	0.7	-	-	8.6

Notes

























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



# HCM 6th Signalized Intersection Summary

## 1: Lady Moon & Harmony









Recent AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1602	64	154	2220	178	83	52	74	3	2	3
Future Volume (veh/h)	10	1602	64	154	2220	178	83	52	74	3	2	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1945	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	1704	18	164	2362	151	88	55	1	3	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	36	2808	872	293	3664	1138	241	180	152	141	47	24
Arrive On Green	0.02	0.55	0.55	0.16	0.72	0.72	0.07	0.10	0.10	0.01	0.04	0.03
Sat Flow, veh/h	1853	5106	1585	1781	5106	1585	1781	1870	1585	1781	1176	588
Grp Volume(v), veh/h	11	1704	18	164	2362	151	88	55	1	3	0	3
Grp Sat Flow(s),veh/h/ln	1853	1702	1585	1781	1702	1585	1781	1870	1585	1781	0	1764
Q Serve(g_s), s	0.6	24.8	0.4	9.3	26.7	3.3	5.0	3.0	0.1	0.2	0.0	0.2
Cycle Q Clear(g_c), s	0.6	24.8	0.4	9.3	26.7	3.3	5.0	3.0	0.1	0.2	0.0	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	36	2808	872	293	3664	1138	241	180	152	141	0	71
V/C Ratio(X)	0.30	0.61	0.02	0.56	0.64	0.13	0.36	0.31	0.01	0.02	0.00	0.04
Avail Cap(c_a), veh/h	253	2808	872	293	3664	1138	249	180	152	249	0	160
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	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.2	16.7	6.5	42.3	8.2	4.8	44.2	46.3	45.0	49.5	0.0	50.9
Incr Delay (d2), s/veh	4.7	1.0	0.0	2.4	0.4	0.1	0.9	1.0	0.0	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	8.5	0.2	4.1	6.9	0.8	2.3	1.5	0.0	0.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.9	17.7	6.6	44.7	8.6	4.9	45.1	47.3	45.0	49.5	0.0	51.2
LnGrp LOS	E	B	A	D	A	A	D	D	D	D	A	D
Approach Vol, veh/h		1733			2677			144				6
Approach Delay, s/veh		17.8			10.6			45.9				50.4
Approach LOS		B			B			D				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.5	9.4	24.1	66.0	4.4	15.6	5.1	84.9				
Change Period (Y+Rc), s	4.0	6.0	7.0	6.5	4.0	6.0	4.0	7.0				
Max Green Setting (Gmax), s	7.0	9.0	11.0	59.5	7.0	9.0	14.0	59.0				
Max Q Clear Time (g_c+I1), s	7.0	2.2	11.3	26.8	2.2	5.0	2.6	28.7				
Green Ext Time (p_c), s	0.0	0.0	0.0	8.8	0.0	0.0	0.0	15.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			14.5									
HCM 6th LOS			B									

# Timing Report, Sorted By Phase

## 1: Lady Moon & Harmony

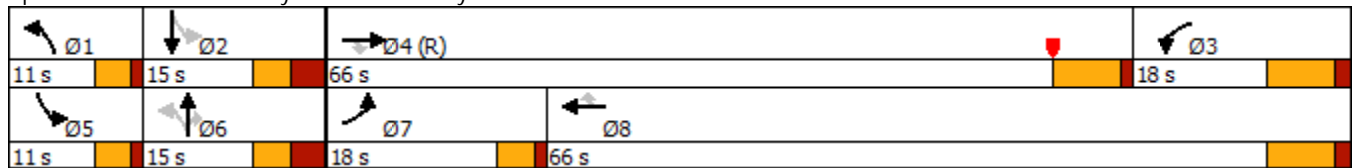
Recent AM

								
Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBTL	WBL	EBT	SBL	NBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize								
Recall Mode	None	None	None	C-Max	None	None	None	None
Maximum Split (s)	11	15	18	66	11	15	18	66
Maximum Split (%)	10.0%	13.6%	16.4%	60.0%	10.0%	13.6%	16.4%	60.0%
Minimum Split (s)	11	15	11	25.5	11	15	11	28
Yellow Time (s)	3	3	5.5	5.5	3	3	3	5.5
All-Red Time (s)	1	3	1.5	1	1	3	1	1.5
Minimum Initial (s)	4	4	4	15	4	4	4	15
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)				7				7
Flash Dont Walk (s)				12				12
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	66.5	77.5	48.5	92.5	66.5	77.5	92.5	0.5
End Time (s)	77.5	92.5	66.5	48.5	77.5	92.5	0.5	66.5
Yield/Force Off (s)	73.5	86.5	59.5	42	73.5	86.5	106.5	59.5
Yield/Force Off 170(s)	73.5	86.5	59.5	30	73.5	86.5	106.5	47.5
Local Start Time (s)	24.5	35.5	6.5	50.5	24.5	35.5	50.5	68.5
Local Yield (s)	31.5	44.5	17.5	0	31.5	44.5	64.5	17.5
Local Yield 170(s)	31.5	44.5	17.5	98	31.5	44.5	64.5	5.5

### Intersection Summary

Cycle Length 110  
 Control Type Actuated-Coordinated  
 Natural Cycle 80  
 Offset: 42 (38%), Referenced to phase 4:EBT, Start of Yellow












### Splits and Phases: 1: Lady Moon & Harmony



## Queues

Recent AM

## 1: Lady Moon &amp; Harmony

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	11	1704	68	164	2362	189	88	55	79	3	5
v/c Ratio	0.09	0.51	0.07	0.85	0.57	0.14	0.46	0.35	0.26	0.02	0.04
Control Delay	49.5	11.5	0.1	84.0	7.0	1.3	51.1	53.5	2.1	40.7	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	11.5	0.1	84.0	7.0	1.3	51.1	53.5	2.1	40.7	36.4
Queue Length 50th (ft)	7	209	0	116	164	0	59	37	0	2	1
Queue Length 95th (ft)	26	331	0	#236	483	27	98	78	0	10	13
Internal Link Dist (ft)		1193			358			651			468
Turn Bay Length (ft)	445		500	375		525	190		290	125	
Base Capacity (vph)	249	3353	1022	193	4111	1316	193	174	314	169	156
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.51	0.07	0.85	0.57	0.14	0.46	0.32	0.25	0.02	0.03

## Intersection Summary

























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



# HCM 6th Signalized Intersection Summary









Recent PM

## 1: Lady Moon & Harmony

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	2302	129	133	2069	23	113	5	112	51	67	197
Future Volume (veh/h)	4	2302	129	133	2069	23	113	5	112	51	67	197
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1945	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	4	2475	62	143	2225	1	122	5	1	55	72	116
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	23	2872	892	148	3340	1037	197	275	233	316	81	130
Arrive On Green	0.01	0.56	0.56	0.08	0.65	0.65	0.07	0.15	0.15	0.04	0.13	0.12
Sat Flow, veh/h	1853	5106	1585	1781	5106	1585	1781	1870	1585	1781	645	1039
Grp Volume(v), veh/h	4	2475	62	143	2225	1	122	5	1	55	0	188
Grp Sat Flow(s),veh/h/ln	1853	1702	1585	1781	1702	1585	1781	1870	1585	1781	0	1683
Q Serve(g_s), s	0.3	49.4	1.5	9.6	32.0	0.0	7.0	0.3	0.1	3.2	0.0	13.2
Cycle Q Clear(g_c), s	0.3	49.4	1.5	9.6	32.0	0.0	7.0	0.3	0.1	3.2	0.0	13.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.62
Lane Grp Cap(c), veh/h	23	2872	892	148	3340	1037	197	275	233	316	0	210
V/C Ratio(X)	0.17	0.86	0.07	0.96	0.67	0.00	0.62	0.02	0.00	0.17	0.00	0.89
Avail Cap(c_a), veh/h	201	2872	892	148	3340	1037	197	275	233	429	0	210
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	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.6	22.3	5.8	54.8	12.7	7.2	41.7	43.8	43.7	42.7	0.0	52.0
Incr Delay (d2), s/veh	3.5	3.7	0.2	62.6	0.5	0.0	5.9	0.0	0.0	0.3	0.0	34.7
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(50%),veh/ln	0.1	17.9	0.7	6.7	10.0	0.0	3.4	0.1	0.0	1.4	0.0	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.1	26.0	6.0	117.4	13.2	7.2	47.6	43.8	43.7	42.9	0.0	86.7
LnGrp LOS	E	C	A	F	B	A	D	D	D	D	A	F
Approach Vol, veh/h		2541			2369			128				243
Approach Delay, s/veh		25.5			19.5			47.4				76.8
Approach LOS		C			B			D				E
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	20.0	16.0	73.0	8.4	22.6	4.5	84.5				
Change Period (Y+Rc), s	4.0	6.0	7.0	6.5	4.0	6.0	4.0	7.0				
Max Green Setting (Gmax), s	7.0	14.0	9.0	66.5	12.0	9.0	12.0	66.0				
Max Q Clear Time (g_c+I1), s	9.0	15.2	11.6	51.4	5.2	2.3	2.3	34.0				
Green Ext Time (p_c), s	0.0	0.0	0.0	10.3	0.0	0.0	0.0	13.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			25.7									
HCM 6th LOS			C									

Timing Report, Sorted By Phase  
1: Lady Moon & Harmony

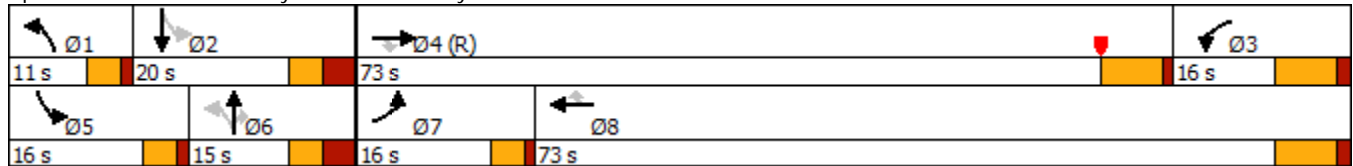
Recent PM

								
Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBTL	WBL	EBT	SBL	NBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize								
Recall Mode	None	None	None	C-Max	None	None	None	None
Maximum Split (s)	11	20	16	73	16	15	16	73
Maximum Split (%)	9.2%	16.7%	13.3%	60.8%	13.3%	12.5%	13.3%	60.8%
Minimum Split (s)	11	15	11	25.5	11	15	11	28
Yellow Time (s)	3	3	5.5	5.5	3	3	3	5.5
All-Red Time (s)	1	3	1.5	1	1	3	1	1.5
Minimum Initial (s)	4	4	4	15	4	4	4	15
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)				7				7
Flash Dont Walk (s)				12				12
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	17.5	28.5	1.5	48.5	17.5	33.5	48.5	64.5
End Time (s)	28.5	48.5	17.5	1.5	33.5	48.5	64.5	17.5
Yield/Force Off (s)	24.5	42.5	10.5	115	29.5	42.5	60.5	10.5
Yield/Force Off 170(s)	24.5	42.5	10.5	103	29.5	42.5	60.5	118.5
Local Start Time (s)	22.5	33.5	6.5	53.5	22.5	38.5	53.5	69.5
Local Yield (s)	29.5	47.5	15.5	0	34.5	47.5	65.5	15.5
Local Yield 170(s)	29.5	47.5	15.5	108	34.5	47.5	65.5	3.5

Intersection Summary

Cycle Length 120  
 Control Type Actuated-Coordinated  
 Natural Cycle 90  
 Offset: 115 (96%), Referenced to phase 4:EBT, Start of Yellow












Splits and Phases: 1: Lady Moon & Harmony



## Queues

Recent PM

## 1: Lady Moon &amp; Harmony

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	4	2475	139	143	2225	25	122	5	120	55	284
v/c Ratio	0.04	0.87	0.15	0.97	0.65	0.02	0.67	0.02	0.31	0.17	0.96
Control Delay	54.0	26.6	1.5	122.6	13.0	0.0	58.5	49.6	2.1	38.0	77.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.0	26.6	1.5	122.6	13.0	0.0	58.5	49.6	2.1	38.0	77.8
Queue Length 50th (ft)	3	570	0	112	312	0	78	4	0	34	147
Queue Length 95th (ft)	15	644	19	#245	475	0	#145	17	0	70	#323
Internal Link Dist (ft)		1193			358			651			468
Turn Bay Length (ft)	445		500	375		525	190		290	125	
Base Capacity (vph)	198	2860	903	147	3427	1111	181	240	382	364	295
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.87	0.15	0.97	0.65	0.02	0.67	0.02	0.31	0.15	0.96

## Intersection Summary

























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



# HCM 6th Signalized Intersection Summary

## 1: Lady Moon & Harmony

Recent PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	2302	129	133	2069	23	113	5	112	51	67	197
Future Volume (veh/h)	4	2302	129	133	2069	23	113	5	112	51	67	197
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1945	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	4	2475	58	143	2225	1	122	5	1	55	72	116
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	23	2745	852	178	3298	1024	208	290	246	328	86	138
Arrive On Green	0.01	0.54	0.54	0.10	0.65	0.65	0.07	0.16	0.16	0.04	0.13	0.13
Sat Flow, veh/h	1853	5106	1585	1781	5106	1585	1781	1870	1585	1781	645	1039
Grp Volume(v), veh/h	4	2475	58	143	2225	1	122	5	1	55	0	188
Grp Sat Flow(s),veh/h/ln	1853	1702	1585	1781	1702	1585	1781	1870	1585	1781	0	1683
Q Serve(g_s), s	0.3	52.2	1.5	9.4	32.8	0.0	6.9	0.3	0.1	3.1	0.0	13.1
Cycle Q Clear(g_c), s	0.3	52.2	1.5	9.4	32.8	0.0	6.9	0.3	0.1	3.1	0.0	13.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.62
Lane Grp Cap(c), veh/h	23	2745	852	178	3298	1024	208	290	246	328	0	224
V/C Ratio(X)	0.17	0.90	0.07	0.80	0.67	0.00	0.59	0.02	0.00	0.17	0.00	0.84
Avail Cap(c_a), veh/h	170	2745	852	178	3298	1024	208	290	246	456	0	224
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	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.6	24.9	6.8	52.8	13.3	7.5	40.8	42.9	42.8	41.8	0.0	51.0
Incr Delay (d2), s/veh	3.5	5.4	0.2	22.6	0.6	0.0	4.3	0.0	0.0	0.2	0.0	23.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	19.6	0.7	5.2	10.4	0.0	3.3	0.1	0.0	1.4	0.0	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.1	30.3	6.9	75.5	13.9	7.5	45.1	43.0	42.8	42.1	0.0	74.4
LnGrp LOS	E	C	A	E	B	A	D	D	D	D	A	E
Approach Vol, veh/h		2537			2369			128			243	
Approach Delay, s/veh		29.8			17.6			45.0			67.1	
Approach LOS		C			B			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	21.0	18.0	70.0	8.4	23.6	4.5	83.5				
Change Period (Y+Rc), s	4.0	6.0	7.0	6.5	4.0	6.0	4.0	7.0				
Max Green Setting (Gmax), s	7.0	15.0	11.0	63.5	13.0	9.0	10.0	67.0				
Max Q Clear Time (g_c+I1), s	8.9	15.1	11.4	54.2	5.1	2.3	2.3	34.8				
Green Ext Time (p_c), s	0.0	0.0	0.0	7.1	0.1	0.0	0.0	13.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			26.4									
HCM 6th LOS			C									

# Timing Report, Sorted By Phase

## 1: Lady Moon & Harmony

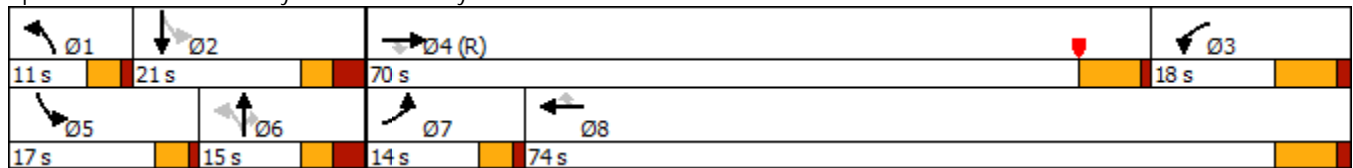
Recent PM

Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBTL	WBL	EBT	SBL	NBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize								
Recall Mode	None	None	None	C-Max	None	None	None	None
Maximum Split (s)	11	21	18	70	17	15	14	74
Maximum Split (%)	9.2%	17.5%	15.0%	58.3%	14.2%	12.5%	11.7%	61.7%
Minimum Split (s)	11	15	11	25.5	11	15	11	28
Yellow Time (s)	3	3	5.5	5.5	3	3	3	5.5
All-Red Time (s)	1	3	1.5	1	1	3	1	1.5
Minimum Initial (s)	4	4	4	15	4	4	4	15
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)				7				7
Flash Dont Walk (s)				12				12
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	19.5	30.5	1.5	51.5	19.5	36.5	51.5	65.5
End Time (s)	30.5	51.5	19.5	1.5	36.5	51.5	65.5	19.5
Yield/Force Off (s)	26.5	45.5	12.5	115	32.5	45.5	61.5	12.5
Yield/Force Off 170(s)	26.5	45.5	12.5	103	32.5	45.5	61.5	0.5
Local Start Time (s)	24.5	35.5	6.5	56.5	24.5	41.5	56.5	70.5
Local Yield (s)	31.5	50.5	17.5	0	37.5	50.5	66.5	17.5
Local Yield 170(s)	31.5	50.5	17.5	108	37.5	50.5	66.5	5.5

### Intersection Summary

Cycle Length 120  
 Control Type Actuated-Coordinated  
 Natural Cycle 90  
 Offset: 115 (96%), Referenced to phase 4:EBT, Start of Yellow












### Splits and Phases: 1: Lady Moon & Harmony



## Queues

Recent PM

## 1: Lady Moon &amp; Harmony

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	4	2475	139	143	2225	25	122	5	120	55	284
v/c Ratio	0.04	0.90	0.16	0.82	0.66	0.02	0.67	0.02	0.31	0.16	0.93
Control Delay	54.0	30.7	1.7	86.1	13.6	0.0	57.3	48.6	2.0	37.1	69.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.0	30.7	1.7	86.1	13.6	0.0	57.3	48.6	2.0	37.1	69.9
Queue Length 50th (ft)	3	607	0	110	322	0	77	4	0	34	145
Queue Length 95th (ft)	15	687	20	#222	487	0	#143	17	0	69	#312
Internal Link Dist (ft)		1193			358			651			468
Turn Bay Length (ft)	445		500	375		525	190		290	125	
Base Capacity (vph)	167	2742	872	177	3389	1100	182	254	393	379	308
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.90	0.16	0.81	0.66	0.02	0.67	0.02	0.31	0.15	0.92

## Intersection Summary

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



HCM 6th TWSC  
 3: Lady Moon & Timberwood Drive/Banner Access

Recent AM

Intersection

Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔		↔	↔	↔
Traffic Vol, veh/h	19	0	8	5	0	4	16	171	16	57	132	1
Future Vol, veh/h	19	0	8	5	0	4	16	171	16	57	132	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	80	-	-	80	250	-	-	80	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	0	9	6	0	5	19	199	19	66	153	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	534	541	153	537	533	209	154	0	0	218	0	0
Stage 1	285	285	-	247	247	-	-	-	-	-	-	-
Stage 2	249	256	-	290	286	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	457	448	893	455	453	831	1426	-	-	1352	-	-
Stage 1	722	676	-	757	702	-	-	-	-	-	-	-
Stage 2	755	696	-	718	675	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	433	421	893	429	425	831	1426	-	-	1352	-	-
Mov Cap-2 Maneuver	433	421	-	429	425	-	-	-	-	-	-	-
Stage 1	713	643	-	747	693	-	-	-	-	-	-	-
Stage 2	741	687	-	676	642	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.4		11.7		0.6		2.3	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1426	-	-	433	893	429	831	1352	-	-
HCM Lane V/C Ratio	0.013	-	-	0.051	0.01	0.014	0.006	0.049	-	-
HCM Control Delay (s)	7.6	-	-	13.8	9.1	13.5	9.4	7.8	-	-
HCM Lane LOS	A	-	-	B	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	0	0.2	-	-

HCM 6th TWSC  
 3: Lady Moon & Timberwood Drive/Banner Access

Recent PM

Intersection

Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔		↔	↔	↔
Traffic Vol, veh/h	26	1	6	12	1	14	11	150	4	15	284	5
Future Vol, veh/h	26	1	6	12	1	14	11	150	4	15	284	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	80	-	-	80	250	-	-	80	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	1	6	13	1	15	12	161	4	16	305	5

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	532	526	305	530	529	163	310	0	0	165	0	0
Stage 1	337	337	-	187	187	-	-	-	-	-	-	-
Stage 2	195	189	-	343	342	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	458	457	735	460	455	882	1250	-	-	1413	-	-
Stage 1	677	641	-	815	745	-	-	-	-	-	-	-
Stage 2	807	744	-	672	638	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	442	447	735	448	445	882	1250	-	-	1413	-	-
Mov Cap-2 Maneuver	442	447	-	448	445	-	-	-	-	-	-	-
Stage 1	670	634	-	807	738	-	-	-	-	-	-	-
Stage 2	784	737	-	657	631	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	13		11.2		0.5			0.4		
HCM LOS	B		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1250	-	-	442	735	448	882	1413	-	-
HCM Lane V/C Ratio	0.009	-	-	0.066	0.009	0.031	0.017	0.011	-	-
HCM Control Delay (s)	7.9	-	-	13.7	9.9	13.3	9.2	7.6	-	-
HCM Lane LOS	A	-	-	B	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0.1	0.1	0	-	-

HCM 6th TWSC  
4: Timberwood Drive & Retail Access

Recent AM

Intersection

Int Delay, s/veh 4.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
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Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	8	6	5	12	21	1
Future Vol, veh/h	8	6	5	12	21	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	7	6	14	25	1

Major/Minor	Major1	Major2	Minor2
-------------	--------	--------	--------

Conflicting Flow All	20	0	0	38	13
Stage 1	-	-	-	13	-
Stage 2	-	-	-	25	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1596	-	-	974	1067
Stage 1	-	-	-	1010	-
Stage 2	-	-	-	998	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1596	-	-	968	1067
Mov Cap-2 Maneuver	-	-	-	968	-
Stage 1	-	-	-	1004	-
Stage 2	-	-	-	998	-

Approach	EB	WB	SB
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HCM Control Delay, s	4.2	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
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Capacity (veh/h)	1596	-	-	-	972
HCM Lane V/C Ratio	0.006	-	-	-	0.027
HCM Control Delay (s)	7.3	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1



HCM 6th TWSC  
4: Timberwood Drive & Retail Access

Recent PM

Intersection

Int Delay, s/veh 5.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		4	1		4	
Traffic Vol, veh/h	6	5	3	13	27	2
Future Vol, veh/h	6	5	3	13	27	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	6	4	15	32	2

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	19	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1597	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1597	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	4	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1597	-	-	-	984
HCM Lane V/C Ratio	0.004	-	-	-	0.035
HCM Control Delay (s)	7.3	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

## UNSIGNALIZED INTERSECTIONS

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

## SIGNALIZED INTERSECTIONS

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

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

	Overall	Any Approach Leg	Any Movement
Signalized	D <sup>1</sup>	E	E <sup>2</sup>
Unsignalized Arterial/Arterial Collector/Collector	E <sup>3</sup>	F <sup>4</sup>	
Unsignalized Arterial/Collector Arterial/Local Collector/Local Local/Local	D <sup>3</sup>	F <sup>4</sup>	
Roundabout	E <sup>3,5</sup>	E <sup>5,4</sup>	E <sup>5</sup>
<sup>1</sup> In mixed use district including downtown as defined by structure plan, overall LOS E is acceptable <sup>2</sup> Applicable with at least 5% of total entering volume <sup>3</sup> Use weighed average to identify overall delay <sup>4</sup> Mitigation may be required <sup>5</sup> Apply unsignalized delay value thresholds to determine LOS			



# APPENDIX D

HCM 6th TWSC  
 8: Technology Parkway/HP West & Harmony

Short Bkgrd AM

Intersection

Int Delay, s/veh	35.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘ ↑↑↑	↘ ↑↑↑	↘	↘ ↑↑↑	↘ ↑↑↑				↘			↘
Traffic Vol, veh/h	173	1757	72	33	2335	52	0	0	4	0	0	12
Future Vol, veh/h	173	1757	72	33	2335	52	0	0	4	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	350	430	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	182	1849	76	35	2458	55	0	0	4	0	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2513	0	0	1925	0	0	-	-	925	-	-	1257
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	~ 68	-	-	136	-	-	0	0	233	0	0	139
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 68	-	-	136	-	-	-	-	233	-	-	139
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	76.9			0.5			20.7			33.5		
HCM LOS							C			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	233	~ 68	-	-	136	-	-	139
HCM Lane V/C Ratio	0.018	2.678	-	-	0.255	-	-	0.091
HCM Control Delay (s)	20.7	889.8	-	-	40.3	-	-	33.5
HCM Lane LOS	C	F	-	-	E	-	-	D
HCM 95th %tile Q(veh)	0.1	18	-	-	1	-	-	0.3

Notes

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

HCM 6th TWSC  
 8: Technology Parkway/HP West & Harmony

Short Bkgrd PM

Intersection

Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑↑	↗	↘	↑↑↑				↗			↗
Traffic Vol, veh/h	21	2534	74	11	2480	7	0	0	24	0	0	134
Future Vol, veh/h	21	2534	74	11	2480	7	0	0	24	0	0	134
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	350	430	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	2667	78	12	2611	7	0	0	25	0	0	141

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2618	0	0	2745	0	0	-	-	1334	-	-	1309
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	60	-	-	52	-	-	0	0	124	0	0	~ 128
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	60	-	-	52	-	-	-	-	124	-	-	~ 128
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.4	41.3	176.4
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	124	60	-	-	52	-	-	128
HCM Lane V/C Ratio	0.204	0.368	-	-	0.223	-	-	1.102
HCM Control Delay (s)	41.3	96.5	-	-	93	-	-	176.4
HCM Lane LOS	E	F	-	-	F	-	-	F
HCM 95th %tile Q(veh)	0.7	1.4	-	-	0.7	-	-	8.1

























Notes

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











HCM 6th Signalized Intersection Summary  
 1: Lady Moon & Harmony

Short Bkgrd AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1650	101	169	2278	178	139	52	113	3	2	3
Future Volume (veh/h)	10	1650	101	169	2278	178	139	52	113	3	2	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1945	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	1755	54	180	2423	144	148	55	1	3	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	36	2808	872	285	3642	1131	249	188	159	141	47	24
Arrive On Green	0.02	0.55	0.55	0.16	0.71	0.71	0.07	0.10	0.10	0.01	0.04	0.03
Sat Flow, veh/h	1853	5106	1585	1781	5106	1585	1781	1870	1585	1781	1176	588
Grp Volume(v), veh/h	11	1755	54	180	2423	144	148	55	1	3	0	3
Grp Sat Flow(s),veh/h/ln	1853	1702	1585	1781	1702	1585	1781	1870	1585	1781	0	1764
Q Serve(g_s), s	0.6	25.9	1.3	10.4	28.5	3.2	8.0	3.0	0.1	0.2	0.0	0.2
Cycle Q Clear(g_c), s	0.6	25.9	1.3	10.4	28.5	3.2	8.0	3.0	0.1	0.2	0.0	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	36	2808	872	285	3642	1131	249	188	159	141	0	71
V/C Ratio(X)	0.30	0.62	0.06	0.63	0.67	0.13	0.59	0.29	0.01	0.02	0.00	0.04
Avail Cap(c_a), veh/h	253	2808	872	285	3642	1131	249	188	159	249	0	160
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	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.2	17.0	6.7	43.2	8.6	5.0	45.5	45.9	44.5	49.5	0.0	50.9
Incr Delay (d2), s/veh	4.7	1.1	0.1	4.5	0.5	0.1	3.8	0.9	0.0	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	8.9	0.6	4.7	7.5	0.8	4.1	1.5	0.0	0.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.9	18.0	6.8	47.6	9.1	5.0	49.3	46.7	44.6	49.5	0.0	51.2
LnGrp LOS	E	B	A	D	A	A	D	D	D	D	A	D
Approach Vol, veh/h		1820			2747			204				6
Approach Delay, s/veh		17.9			11.4			48.5				50.4
Approach LOS		B			B			D				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	9.4	23.6	66.0	4.4	16.0	5.1	84.5				
Change Period (Y+Rc), s	4.0	6.0	7.0	6.5	4.0	6.0	4.0	7.0				
Max Green Setting (Gmax), s	7.0	9.0	11.0	59.5	7.0	9.0	14.0	59.0				
Max Q Clear Time (g_c+I1), s	10.0	2.2	12.4	27.9	2.2	5.0	2.6	30.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	9.3	0.0	0.0	0.0	15.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			15.5									
HCM 6th LOS			B									

Timing Report, Sorted By Phase  
1: Lady Moon & Harmony

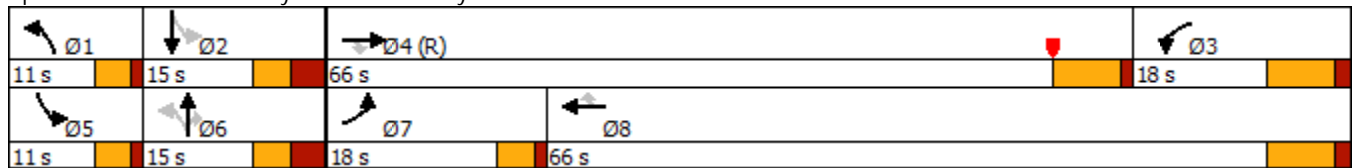
Short Bkgrd AM

								
Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBTL	WBL	EBT	SBL	NBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize								
Recall Mode	None	None	None	C-Max	None	None	None	None
Maximum Split (s)	11	15	18	66	11	15	18	66
Maximum Split (%)	10.0%	13.6%	16.4%	60.0%	10.0%	13.6%	16.4%	60.0%
Minimum Split (s)	11	15	11	25.5	11	15	11	28
Yellow Time (s)	3	3	5.5	5.5	3	3	3	5.5
All-Red Time (s)	1	3	1.5	1	1	3	1	1.5
Minimum Initial (s)	4	4	4	15	4	4	4	15
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)				7				7
Flash Dont Walk (s)				12				12
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	66.5	77.5	48.5	92.5	66.5	77.5	92.5	0.5
End Time (s)	77.5	92.5	66.5	48.5	77.5	92.5	0.5	66.5
Yield/Force Off (s)	73.5	86.5	59.5	42	73.5	86.5	106.5	59.5
Yield/Force Off 170(s)	73.5	86.5	59.5	30	73.5	86.5	106.5	47.5
Local Start Time (s)	24.5	35.5	6.5	50.5	24.5	35.5	50.5	68.5
Local Yield (s)	31.5	44.5	17.5	0	31.5	44.5	64.5	17.5
Local Yield 170(s)	31.5	44.5	17.5	98	31.5	44.5	64.5	5.5

Intersection Summary












Cycle Length 110  
 Control Type Actuated-Coordinated  
 Natural Cycle 80  
 Offset: 42 (38%), Referenced to phase 4:EBT, Start of Yellow

Splits and Phases: 1: Lady Moon & Harmony



Queues  
1: Lady Moon & Harmony

Short Bkgrd AM

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	11	1755	107	180	2423	189	148	55	120	3	5
v/c Ratio	0.09	0.54	0.11	0.93	0.61	0.15	0.76	0.35	0.40	0.02	0.04
Control Delay	49.5	12.4	1.2	98.9	7.7	1.3	70.0	53.5	5.2	40.7	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	12.4	1.2	98.9	7.7	1.3	70.0	53.5	5.2	40.7	36.4
Queue Length 50th (ft)	7	219	0	128	172	0	104	37	0	2	1
Queue Length 95th (ft)	26	345	14	#263	506	27	153	78	12	10	13
Internal Link Dist (ft)		1193			358			651			468
Turn Bay Length (ft)	445		500	375		525	190		290	125	
Base Capacity (vph)	249	3246	994	193	3949	1271	194	174	314	169	156
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.54	0.11	0.93	0.61	0.15	0.76	0.32	0.38	0.02	0.03




























Intersection Summary

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











HCM 6th Signalized Intersection Summary  
1: Lady Moon & Harmony

Short Bkgrd PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  							
Traffic Volume (veh/h)	4	2421	133	146	2137	23	164	5	135	51	67	197
Future Volume (veh/h)	4	2421	133	146	2137	23	164	5	135	51	67	197
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1945	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	4	2603	60	157	2298	1	176	5	1	55	72	116
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	23	2702	839	193	3298	1024	208	290	246	328	86	138
Arrive On Green	0.01	0.53	0.53	0.11	0.65	0.65	0.07	0.16	0.16	0.04	0.13	0.13
Sat Flow, veh/h	1853	5106	1585	1781	5106	1585	1781	1870	1585	1781	645	1039
Grp Volume(v), veh/h	4	2603	60	157	2298	1	176	5	1	55	0	188
Grp Sat Flow(s),veh/h/ln	1853	1702	1585	1781	1702	1585	1781	1870	1585	1781	0	1683
Q Serve(g_s), s	0.3	58.8	1.6	10.3	34.8	0.0	8.0	0.3	0.1	3.1	0.0	13.1
Cycle Q Clear(g_c), s	0.3	58.8	1.6	10.3	34.8	0.0	8.0	0.3	0.1	3.1	0.0	13.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.62
Lane Grp Cap(c), veh/h	23	2702	839	193	3298	1024	208	290	246	328	0	224
V/C Ratio(X)	0.17	0.96	0.07	0.81	0.70	0.00	0.85	0.02	0.00	0.17	0.00	0.84
Avail Cap(c_a), veh/h	170	2702	839	193	3298	1024	208	290	246	456	0	224
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	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.6	27.1	7.2	52.3	13.7	7.5	45.2	42.9	42.8	41.8	0.0	51.0
Incr Delay (d2), s/veh	3.5	10.6	0.2	22.7	0.7	0.0	26.4	0.0	0.0	0.2	0.0	23.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	23.3	0.8	5.6	11.1	0.0	3.0	0.1	0.0	1.4	0.0	7.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.1	37.8	7.3	75.0	14.3	7.5	71.6	43.0	42.8	42.1	0.0	74.4
LnGrp LOS	E	D	A	E	B	A	E	D	D	D	A	E
Approach Vol, veh/h		2667			2456			182			243	
Approach Delay, s/veh		37.1			18.2			70.6			67.1	
Approach LOS		D			B			E			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	21.0	19.0	69.0	8.4	23.6	4.5	83.5				
Change Period (Y+Rc), s	4.0	6.0	7.0	6.5	4.0	6.0	4.0	7.0				
Max Green Setting (Gmax), s	7.0	15.0	12.0	62.5	13.0	9.0	10.0	67.0				
Max Q Clear Time (g_c+I1), s	10.0	15.1	12.3	60.8	5.1	2.3	2.3	36.8				
Green Ext Time (p_c), s	0.0	0.0	0.0	1.6	0.1	0.0	0.0	13.8				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			31.2									
HCM 6th LOS			C									

Timing Report, Sorted By Phase  
1: Lady Moon & Harmony

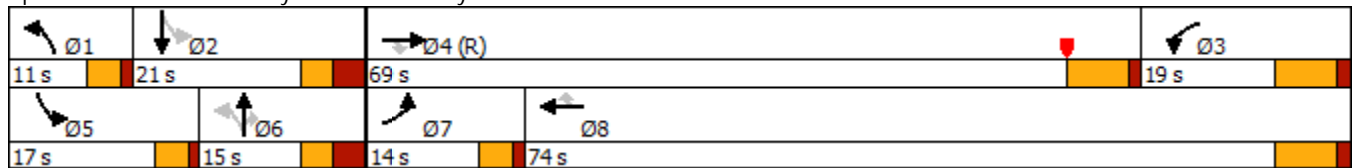
Short Bkgrd PM

								
Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBTL	WBL	EBT	SBL	NBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize								
Recall Mode	None	None	None	C-Max	None	None	None	None
Maximum Split (s)	11	21	19	69	17	15	14	74
Maximum Split (%)	9.2%	17.5%	15.8%	57.5%	14.2%	12.5%	11.7%	61.7%
Minimum Split (s)	11	15	11	25.5	11	15	11	28
Yellow Time (s)	3	3	5.5	5.5	3	3	3	5.5
All-Red Time (s)	1	3	1.5	1	1	3	1	1.5
Minimum Initial (s)	4	4	4	15	4	4	4	15
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)				7				7
Flash Dont Walk (s)				12				12
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	20.5	31.5	1.5	52.5	20.5	37.5	52.5	66.5
End Time (s)	31.5	52.5	20.5	1.5	37.5	52.5	66.5	20.5
Yield/Force Off (s)	27.5	46.5	13.5	115	33.5	46.5	62.5	13.5
Yield/Force Off 170(s)	27.5	46.5	13.5	103	33.5	46.5	62.5	1.5
Local Start Time (s)	25.5	36.5	6.5	57.5	25.5	42.5	57.5	71.5
Local Yield (s)	32.5	51.5	18.5	0	38.5	51.5	67.5	18.5
Local Yield 170(s)	32.5	51.5	18.5	108	38.5	51.5	67.5	6.5

Intersection Summary












Cycle Length 120  
 Control Type Actuated-Coordinated  
 Natural Cycle 90  
 Offset: 115 (96%), Referenced to phase 4:EBT, Start of Yellow

Splits and Phases: 1: Lady Moon & Harmony



Queues  
1: Lady Moon & Harmony

Short Bkgrd PM

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	4	2603	143	157	2298	25	176	5	145	55	284
v/c Ratio	0.04	0.96	0.17	0.83	0.68	0.02	0.96	0.02	0.37	0.16	0.93
Control Delay	54.0	38.2	1.9	85.8	14.0	0.0	100.4	48.6	4.4	37.1	69.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.0	38.2	1.9	85.8	14.0	0.0	100.4	48.6	4.4	37.1	69.9
Queue Length 50th (ft)	3	684	0	121	341	0	115	4	0	34	145
Queue Length 95th (ft)	15	#833	23	#237	516	0	#248	17	17	69	#312
Internal Link Dist (ft)		1193			358			651			468
Turn Bay Length (ft)	445		500	375		525	190		290	125	
Base Capacity (vph)	167	2699	861	191	3388	1099	183	255	393	379	308
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.02	0.96	0.17	0.82	0.68	0.02	0.96	0.02	0.37	0.15	0.92

Intersection Summary

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



HCM 6th TWSC  
 3: Lady Moon & Timberwood Drive/Banner Access

Short Bkgrd AM

Intersection

Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗	↖	↗		↖	↗	↖
Traffic Vol, veh/h	70	0	17	6	0	5	44	214	18	63	150	29
Future Vol, veh/h	70	0	17	6	0	5	44	214	18	63	150	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	80	-	-	80	250	-	-	80	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	81	0	20	7	0	6	51	249	21	73	174	34

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	685	692	174	709	716	260	208	0	0	270	0	0
Stage 1	320	320	-	362	362	-	-	-	-	-	-	-
Stage 2	365	372	-	347	354	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	362	367	869	349	356	779	1363	-	-	1293	-	-
Stage 1	692	652	-	657	625	-	-	-	-	-	-	-
Stage 2	654	619	-	669	630	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	334	334	869	317	324	779	1363	-	-	1293	-	-
Mov Cap-2 Maneuver	334	334	-	317	324	-	-	-	-	-	-	-
Stage 1	666	615	-	633	602	-	-	-	-	-	-	-
Stage 2	625	596	-	617	595	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.2	13.5	1.2	2.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1363	-	-	334	869	317	779	1293	-	-
HCM Lane V/C Ratio	0.038	-	-	0.244	0.023	0.022	0.007	0.057	-	-
HCM Control Delay (s)	7.7	-	-	19.2	9.2	16.6	9.7	8	-	-
HCM Lane LOS	A	-	-	C	A	C	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.9	0.1	0.1	0	0.2	-	-

HCM 6th TWSC  
 3: Lady Moon & Timberwood Drive/Banner Access

Short Bkgrd PM

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔		↔	↔	↔
Traffic Vol, veh/h	98	1	20	13	1	15	35	151	5	17	278	26
Future Vol, veh/h	98	1	20	13	1	15	35	151	5	17	278	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	80	-	-	80	250	-	-	80	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	105	1	22	14	1	16	38	162	5	18	299	28

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	584	578	299	602	604	165	327	0	0	167	0	0
Stage 1	335	335	-	241	241	-	-	-	-	-	-	-
Stage 2	249	243	-	361	363	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	423	427	741	412	412	879	1233	-	-	1411	-	-
Stage 1	679	643	-	762	706	-	-	-	-	-	-	-
Stage 2	755	705	-	657	625	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	401	408	741	386	394	879	1233	-	-	1411	-	-
Mov Cap-2 Maneuver	401	408	-	386	394	-	-	-	-	-	-	-
Stage 1	658	635	-	738	684	-	-	-	-	-	-	-
Stage 2	717	683	-	629	617	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16	11.9	1.5	0.4
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1233	-	-	401	741	387	879	1411	-	-
HCM Lane V/C Ratio	0.031	-	-	0.265	0.029	0.039	0.018	0.013	-	-
HCM Control Delay (s)	8	-	-	17.2	10	14.7	9.2	7.6	-	-
HCM Lane LOS	A	-	-	C	B	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.1	0.1	0.1	0.1	0	-	-

HCM 6th TWSC  
4: Timberwood Drive & Retail Access

Short Bkgrd AM

Intersection

Int Delay, s/veh 3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	44	56	39	34	31	8
Future Vol, veh/h	44	56	39	34	31	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	66	46	40	36	9

Major/Minor	Major1	Major2	Minor2
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Conflicting Flow All	86	0	0	236	66
Stage 1	-	-	-	66	-
Stage 2	-	-	-	170	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1510	-	-	752	998
Stage 1	-	-	-	957	-
Stage 2	-	-	-	860	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1510	-	-	725	998
Mov Cap-2 Maneuver	-	-	-	725	-
Stage 1	-	-	-	923	-
Stage 2	-	-	-	860	-

Approach	EB	WB	SB
----------	----	----	----

HCM Control Delay, s	3.3	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
-----------------------	-----	-----	-----	-----	-------

Capacity (veh/h)	1510	-	-	-	768
HCM Lane V/C Ratio	0.034	-	-	-	0.06
HCM Control Delay (s)	7.5	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2



HCM 6th TWSC  
4: Timberwood Drive & Retail Access

Short Bkgrd PM

Intersection

Int Delay, s/veh 3.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	33	72	38	23	46	10
Future Vol, veh/h	33	72	38	23	46	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	85	45	27	54	12

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	72	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1528	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1528	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1528	-	-	-	781
HCM Lane V/C Ratio	0.025	-	-	-	0.084
HCM Control Delay (s)	7.4	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

# APPENDIX E

HCM 6th TWSC  
 3: Technology/HP West & Harmony

Long Bkgrd AM

Intersection

Int Delay, s/veh	47.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘ ↑↑↑	↘ ↑↑↑	↘	↘ ↑↑↑	↘ ↑↑↑				↘			↘
Traffic Vol, veh/h	175	2010	95	45	2670	55	0	0	5	0	0	15
Future Vol, veh/h	175	2010	95	45	2670	55	0	0	5	0	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	250	250	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	179	2051	97	46	2724	56	0	0	5	0	0	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2780	0	0	2148	0	0	-	-	1026	-	-	1390
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	~ 49	-	-	105	-	-	0	0	199	0	0	113
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 49	-	-	105	-	-	-	-	199	-	-	113
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	104.6			1			23.6			41.8		
HCM LOS							C			E		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	199	~ 49	-	-	105	-	-	113
HCM Lane V/C Ratio	0.026	3.644	-	-	0.437	-	-	0.135
HCM Control Delay (s)	23.6	1362.3	-	-	63.6	-	-	41.8
HCM Lane LOS	C	F	-	-	F	-	-	E
HCM 95th %tile Q(veh)	0.1	19.6	-	-	1.9	-	-	0.5

Notes

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



HCM 6th TWSC  
3: Technology/HP West & Harmony

Long Bkgrd PM

Intersection

Int Delay, s/veh	7.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘ ↑↑↑	↘ ↑↑↑	↘	↘ ↑↑↑	↘ ↑↑↑				↘			↘
Traffic Vol, veh/h	25	2895	95	15	2835	10	0	0	30	0	0	135
Future Vol, veh/h	25	2895	95	15	2835	10	0	0	30	0	0	135
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	250	250	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	2954	97	15	2893	10	0	0	31	0	0	138

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2903	0	0	3051	0	0	-	-	1477	-	-	1452
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	43	-	-	36	-	-	0	0	99	0	0	~ 103
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	43	-	-	36	-	-	-	-	99	-	-	~ 103
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.4			0.9			56.9			279.6		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	99	43	-	-	36	-	-	103
HCM Lane V/C Ratio	0.309	0.593	-	-	0.425	-	-	1.337
HCM Control Delay (s)	56.9	172.5	-	-	165	-	-	279.6
HCM Lane LOS	F	F	-	-	F	-	-	F
HCM 95th %tile Q(veh)	1.2	2.2	-	-	1.4	-	-	9.7

Notes

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









HCM 6th Signalized Intersection Summary  
 174: Lady Moon/HP East & Harmony

Long Bkgrd AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	1765	130	220	2585	180	180	50	145	5	5	5
Future Volume (veh/h)	120	1765	130	220	2585	180	180	50	145	5	5	5
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		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	122	1801	78	224	2638	113	184	51	57	5	5	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	161	2659	825	673	3299	1023	279	87	98	24	77	63
Arrive On Green	0.09	0.52	0.52	0.19	0.65	0.65	0.08	0.11	0.11	0.01	0.04	0.04
Sat Flow, veh/h	1781	5106	1584	3456	5106	1584	3456	807	901	1781	1870	1532
Grp Volume(v), veh/h	122	1801	78	224	2638	113	184	0	108	5	5	1
Grp Sat Flow(s),veh/h/ln	1781	1702	1584	1728	1702	1584	1728	0	1708	1781	1870	1532
Q Serve(g_s), s	8.0	31.3	2.4	6.7	45.4	3.3	6.2	0.0	7.2	0.3	0.3	0.1
Cycle Q Clear(g_c), s	8.0	31.3	2.4	6.7	45.4	3.3	6.2	0.0	7.2	0.3	0.3	0.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.53	1.00		1.00
Lane Grp Cap(c), veh/h	161	2659	825	673	3299	1023	279	0	185	24	77	63
V/C Ratio(X)	0.76	0.68	0.09	0.33	0.80	0.11	0.66	0.00	0.58	0.21	0.07	0.02
Avail Cap(c_a), veh/h	163	2659	825	673	3299	1023	634	0	256	223	171	140
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	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.3	21.3	9.0	41.6	15.6	8.1	53.5	0.0	50.9	58.6	55.3	25.8
Incr Delay (d2), s/veh	18.1	1.4	0.2	0.3	1.5	0.0	2.6	0.0	2.9	4.2	0.4	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	11.4	1.0	2.8	14.6	1.0	2.8	0.0	3.3	0.2	0.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.3	22.7	9.3	41.9	17.0	8.1	56.2	0.0	53.8	62.8	55.7	25.9
LnGrp LOS	E	C	A	D	B	A	E	A	D	E	E	C
Approach Vol, veh/h		2001			2975			292				11
Approach Delay, s/veh		25.1			18.6			55.3				56.2
Approach LOS		C			B			E				E
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.7	9.9	29.4	68.0	4.6	18.0	13.9	83.5				
Change Period (Y+Rc), s	4.0	6.0	7.0	6.5	4.0	6.0	4.0	7.0				
Max Green Setting (Gmax), s	21.0	10.0	4.0	61.5	14.0	17.0	10.0	58.0				
Max Q Clear Time (g_c+I1), s	8.2	2.3	8.7	33.3	2.3	9.2	10.0	47.4				
Green Ext Time (p_c), s	0.5	0.0	0.0	9.5	0.0	0.2	0.0	8.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			23.2									
HCM 6th LOS			C									

Timing Report, Sorted By Phase  
 174: Lady Moon/HP East & Harmony

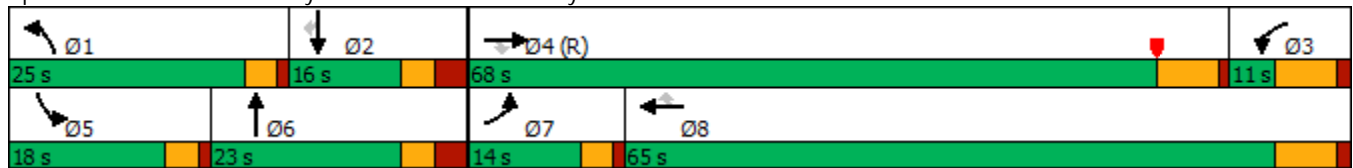
Long Bkgrd AM

								
Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBT	WBL	EBT	SBL	NBT	EBL	WBT
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize								
Recall Mode	None	None	None	C-Max	None	None	None	None
Maximum Split (s)	25	16	11	68	18	23	14	65
Maximum Split (%)	20.8%	13.3%	9.2%	56.7%	15.0%	19.2%	11.7%	54.2%
Minimum Split (s)	11	15	11	25.5	11	15	11	28
Yellow Time (s)	3	3	5.5	5.5	3	3	3	5.5
All-Red Time (s)	1	3	1.5	1	1	3	1	1.5
Minimum Initial (s)	4	4	4	15	4	4	4	15
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)				7				7
Flash Dont Walk (s)				12				10
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	12.5	37.5	1.5	53.5	12.5	30.5	53.5	67.5
End Time (s)	37.5	53.5	12.5	1.5	30.5	53.5	67.5	12.5
Yield/Force Off (s)	33.5	47.5	5.5	115	26.5	47.5	63.5	5.5
Yield/Force Off 170(s)	33.5	47.5	5.5	103	26.5	47.5	63.5	115.5
Local Start Time (s)	17.5	42.5	6.5	58.5	17.5	35.5	58.5	72.5
Local Yield (s)	38.5	52.5	10.5	0	31.5	52.5	68.5	10.5
Local Yield 170(s)	38.5	52.5	10.5	108	31.5	52.5	68.5	0.5

Intersection Summary

Cycle Length 120  
 Control Type Actuated-Coordinated  
 Natural Cycle 90  
 Offset: 115 (96%), Referenced to phase 4:EBT, Start of Yellow

Splits and Phases: 174: Lady Moon/HP East & Harmony
















Queues

Long Bkgrd AM

174: Lady Moon/HP East & Harmony

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	122	1801	133	224	2638	184	184	199	5	5	5
v/c Ratio	0.59	0.53	0.12	1.57	0.84	0.18	0.48	0.66	0.05	0.04	0.02
Control Delay	61.7	11.9	1.2	323.2	23.5	2.6	53.7	33.7	54.2	51.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.7	11.9	1.2	323.2	23.5	2.6	53.7	33.7	54.2	51.2	0.2
Queue Length 50th (ft)	90	207	0	~126	516	0	68	72	4	4	0
Queue Length 95th (ft)	155	387	17	#208	#909	37	105	144	17	16	0
Internal Link Dist (ft)		1233			4691			644		316	
Turn Bay Length (ft)	445			335		483	100		50		
Base Capacity (vph)	211	3429	1096	143	3150	1027	629	357	221	176	332
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.53	0.12	1.57	0.84	0.18	0.29	0.56	0.02	0.03	0.02

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary  
 174: Lady Moon/HP East & Harmony

Long Bkgrd PM









Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	2740	175	190	2430	25	230	5	175	160	65	200
Future Volume (veh/h)	10	2740	175	190	2430	25	230	5	175	160	65	200
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	10	2796	179	194	2480	26	235	5	179	163	66	204
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	32	2745	851	202	3058	948	330	6	206	193	274	228
Arrive On Green	0.02	0.54	0.54	0.06	0.60	0.60	0.10	0.13	0.13	0.11	0.15	0.15
Sat Flow, veh/h	1781	5106	1584	3456	5106	1584	3456	43	1548	1781	1870	1556
Grp Volume(v), veh/h	10	2796	179	194	2480	26	235	0	184	163	66	204
Grp Sat Flow(s),veh/h/ln	1781	1702	1584	1728	1702	1584	1728	0	1592	1781	1870	1556
Q Serve(g_s), s	0.7	64.5	4.1	6.7	45.5	0.8	7.9	0.0	13.6	10.8	3.7	12.4
Cycle Q Clear(g_c), s	0.7	64.5	4.1	6.7	45.5	0.8	7.9	0.0	13.6	10.8	3.7	12.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.97	1.00		1.00
Lane Grp Cap(c), veh/h	32	2745	851	202	3058	948	330	0	212	193	274	228
V/C Ratio(X)	0.32	1.02	0.21	0.96	0.81	0.03	0.71	0.00	0.87	0.84	0.24	0.90
Avail Cap(c_a), veh/h	163	2745	851	202	3058	948	547	0	212	193	274	228
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	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.2	27.8	4.8	56.4	18.8	9.8	52.7	0.0	51.0	52.5	45.3	32.6
Incr Delay (d2), s/veh	5.6	22.1	0.6	52.4	1.7	0.0	2.9	0.0	29.4	27.5	0.5	33.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	28.1	2.3	4.3	15.6	0.3	3.6	0.0	7.2	6.3	1.8	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.8	49.8	5.4	108.8	20.5	9.8	55.5	0.0	80.3	80.0	45.8	66.0
LnGrp LOS	E	F	A	F	C	A	E	A	F	F	D	E
Approach Vol, veh/h		2985			2700			419				433
Approach Delay, s/veh		47.2			26.8			66.4				68.2
Approach LOS		D			C			E				E
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.5	22.5	13.0	70.0	16.0	21.0	5.1	77.9				
Change Period (Y+Rc), s	4.0	6.0	7.0	6.5	4.0	6.0	4.0	7.0				
Max Green Setting (Gmax), s	18.0	9.0	6.0	63.5	12.0	15.0	10.0	62.0				
Max Q Clear Time (g_c+I1), s	9.9	14.4	8.7	66.5	12.8	15.6	2.7	47.5				
Green Ext Time (p_c), s	0.5	0.0	0.0	0.0	0.0	0.0	0.0	10.0				

Intersection Summary

HCM 6th Ctrl Delay	41.4
HCM 6th LOS	D

Timing Report, Sorted By Phase  
 174: Lady Moon/HP East & Harmony

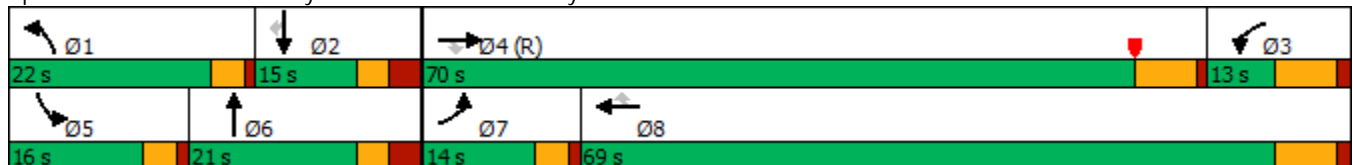
Long Bkgrd PM

								
Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBT	WBL	EBT	SBL	NBT	EBL	WBT
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize								
Recall Mode	None	None	None	C-Max	None	None	None	None
Maximum Split (s)	22	15	13	70	16	21	14	69
Maximum Split (%)	18.3%	12.5%	10.8%	58.3%	13.3%	17.5%	11.7%	57.5%
Minimum Split (s)	11	15	11	25.5	11	15	11	28
Yellow Time (s)	3	3	5.5	5.5	3	3	3	5.5
All-Red Time (s)	1	3	1.5	1	1	3	1	1.5
Minimum Initial (s)	4	4	4	15	4	4	4	15
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)				7				7
Flash Dont Walk (s)				12				10
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	14.5	36.5	1.5	51.5	14.5	30.5	51.5	65.5
End Time (s)	36.5	51.5	14.5	1.5	30.5	51.5	65.5	14.5
Yield/Force Off (s)	32.5	45.5	7.5	115	26.5	45.5	61.5	7.5
Yield/Force Off 170(s)	32.5	45.5	7.5	103	26.5	45.5	61.5	117.5
Local Start Time (s)	19.5	41.5	6.5	56.5	19.5	35.5	56.5	70.5
Local Yield (s)	37.5	50.5	12.5	0	31.5	50.5	66.5	12.5
Local Yield 170(s)	37.5	50.5	12.5	108	31.5	50.5	66.5	2.5

Intersection Summary

Cycle Length 120  
 Control Type Actuated-Coordinated  
 Natural Cycle 100  
 Offset: 115 (96%), Referenced to phase 4:EBT, Start of Yellow












Splits and Phases: 174: Lady Moon/HP East & Harmony



## Queues

Long Bkgrd PM

## 174: Lady Moon/HP East &amp; Harmony

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	10	2796	179	194	2480	26	235	184	163	66	204
v/c Ratio	0.09	0.96	0.19	0.97	0.74	0.02	0.57	0.72	0.85	0.41	0.63
Control Delay	54.7	35.4	3.1	112.9	17.0	0.0	54.9	38.0	89.0	59.4	16.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.7	35.4	3.1	112.9	17.0	0.0	54.9	38.0	89.0	59.4	16.3
Queue Length 50th (ft)	8	727	5	78	412	0	89	56	126	49	0
Queue Length 95th (ft)	25	#931	39	#155	676	0	127	132	#248	96	74
Internal Link Dist (ft)		1233			4691			644		316	
Turn Bay Length (ft)	445			335		483	100		50		
Base Capacity (vph)	162	2904	954	200	3335	1060	543	305	191	168	326
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.96	0.19	0.97	0.74	0.02	0.43	0.60	0.85	0.39	0.63

## Intersection Summary

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



HCM 6th TWSC  
 14: Lady Moon & Timberwood/Banner

Long Bkgrd AM

Intersection

Int Delay, s/veh	7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗	↖	↗		↖	↗	
Traffic Vol, veh/h	70	30	20	35	10	20	75	255	45	90	195	40
Future Vol, veh/h	70	30	20	35	10	20	75	255	45	90	195	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	80	-	-	80	250	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	74	32	21	37	11	21	79	268	47	95	205	42

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	882	889	226	893	887	292	247	0	0	315	0	0
Stage 1	416	416	-	450	450	-	-	-	-	-	-	-
Stage 2	466	473	-	443	437	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	267	282	813	262	283	747	1319	-	-	1245	-	-
Stage 1	614	592	-	589	572	-	-	-	-	-	-	-
Stage 2	577	558	-	594	579	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	226	245	813	207	246	747	1319	-	-	1245	-	-
Mov Cap-2 Maneuver	226	245	-	207	246	-	-	-	-	-	-	-
Stage 1	577	547	-	554	538	-	-	-	-	-	-	-
Stage 2	517	525	-	504	535	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	29.1		21.4		1.6			2.3		
HCM LOS	D		C							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1319	-	-	231	813	215	747	1245	-	-
HCM Lane V/C Ratio	0.06	-	-	0.456	0.026	0.22	0.028	0.076	-	-
HCM Control Delay (s)	7.9	-	-	33	9.5	26.4	10	8.1	-	-
HCM Lane LOS	A	-	-	D	A	D	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	2.2	0.1	0.8	0.1	0.2	-	-

HCM 6th TWSC  
 14: Lady Moon & Timberwood/Banner

Long Bkgrd PM

Intersection												
Int Delay, s/veh	7.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔		↔	↔	
Traffic Vol, veh/h	115	15	25	45	35	40	45	195	25	25	340	35
Future Vol, veh/h	115	15	25	45	35	40	45	195	25	25	340	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	80	-	-	80	250	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	121	16	26	47	37	42	47	205	26	26	358	37

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	781	754	377	762	759	218	395	0	0	231	0	0
Stage 1	429	429	-	312	312	-	-	-	-	-	-	-
Stage 2	352	325	-	450	447	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3,518	4,018	3,318	3,518	4,018	3,318	2,218	-	-	2,218	-	-
Pot Cap-1 Maneuver	312	338	670	322	336	822	1164	-	-	1337	-	-
Stage 1	604	584	-	699	658	-	-	-	-	-	-	-
Stage 2	665	649	-	589	573	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	258	318	670	284	317	822	1164	-	-	1337	-	-
Mov Cap-2 Maneuver	258	318	-	284	317	-	-	-	-	-	-	-
Stage 1	580	573	-	671	632	-	-	-	-	-	-	-
Stage 2	570	623	-	540	562	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	28.9		17.7		1.4			0.5		
HCM LOS	D		C							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1164	-	-	264	670	298	822	1337	-	-
HCM Lane V/C Ratio	0.041	-	-	0.518	0.039	0.283	0.051	0.02	-	-
HCM Control Delay (s)	8.2	-	-	32.4	10.6	21.8	9.6	7.7	-	-
HCM Lane LOS	A	-	-	D	B	C	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	2.8	0.1	1.1	0.2	0.1	-	-

HCM 6th TWSC  
 11: Timberwood & Retail Access

Long Bkgrd AM

Intersection

Int Delay, s/veh 2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	45	90	90	35	30	20
Future Vol, veh/h	45	90	90	35	30	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	47	95	95	37	32	21

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	132	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1453	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1453	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1453	-	-	-	754
HCM Lane V/C Ratio	0.033	-	-	-	0.07
HCM Control Delay (s)	7.6	0	-	-	10.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

HCM 6th TWSC  
 11: Timberwood & Retail Access

Long Bkgrd PM

Intersection

Int Delay, s/veh	3.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	35	110	90	25	45	30
Future Vol, veh/h	35	110	90	25	45	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	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	37	116	95	26	47	32

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	121	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	1467	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1467	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1467	-	-	-	762
HCM Lane V/C Ratio	0.025	-	-	-	0.104
HCM Control Delay (s)	7.5	0	-	-	10.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3



# APPENDIX F

HCM 6th TWSC  
 8: Technology Parkway/HP West & Harmony

Short Total AM

Intersection

Int Delay, s/veh	35.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘ ↑↑↑	↘ ↑↑↑	↘	↘ ↑↑↑	↘ ↑↑↑				↘			↘
Traffic Vol, veh/h	173	1770	146	33	2359	52	0	0	4	0	0	12
Future Vol, veh/h	173	1770	146	33	2359	52	0	0	4	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	350	430	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	182	1863	154	35	2483	55	0	0	4	0	0	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2538	0	0	2017	0	0	-	-	932	-	-	1269
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	~ 66	-	-	123	-	-	0	0	230	0	0	137
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 66	-	-	123	-	-	-	-	230	-	-	137
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	76.9			0.6			20.9			33.9		
HCM LOS							C			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	230	~ 66	-	-	123	-	-	137
HCM Lane V/C Ratio	0.018	2.759	-	-	0.282	-	-	0.092
HCM Control Delay (s)	20.9	929.1	-	-	45.4	-	-	33.9
HCM Lane LOS	C	F	-	-	E	-	-	D
HCM 95th %tile Q(veh)	0.1	18.3	-	-	1.1	-	-	0.3

Notes

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

HCM 6th TWSC  
8: Technology Parkway/HP West & Harmony

Short Total PM

Intersection

Int Delay, s/veh	6.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘ ↑↑↑	↘ ↑↑↑	↘	↘ ↑↑↑	↘ ↑↑↑				↘			↘
Traffic Vol, veh/h	21	2541	113	11	2598	7	0	0	24	0	0	134
Future Vol, veh/h	21	2541	113	11	2598	7	0	0	24	0	0	134
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	350	430	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	2675	119	12	2735	7	0	0	25	0	0	141

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2742	0	0	2794	0	0	-	-	1338	-	-	1371
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	52	-	-	49	-	-	0	0	123	0	0	~ 117
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	52	-	-	49	-	-	-	-	123	-	-	~ 117
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.9			0.4			41.7			219.3		
HCM LOS							E			F		

























Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	123	52	-	-	49	-	-	117
HCM Lane V/C Ratio	0.205	0.425	-	-	0.236	-	-	1.206
HCM Control Delay (s)	41.7	118	-	-	99.9	-	-	219.3
HCM Lane LOS	E	F	-	-	F	-	-	F
HCM 95th %tile Q(veh)	0.7	1.6	-	-	0.8	-	-	8.9

Notes

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

HCM 6th Signalized Intersection Summary  
1: Lady Moon & Harmony









Short Total AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1650	114	205	2278	178	163	52	123	3	2	3
Future Volume (veh/h)	10	1650	114	205	2278	178	163	52	123	3	2	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1945	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	1737	67	216	2398	144	172	55	1	3	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	36	2808	872	285	3642	1131	249	188	159	141	47	24
Arrive On Green	0.02	0.55	0.55	0.16	0.71	0.71	0.07	0.10	0.10	0.01	0.04	0.03
Sat Flow, veh/h	1853	5106	1585	1781	5106	1585	1781	1870	1585	1781	1176	588
Grp Volume(v), veh/h	11	1737	67	216	2398	144	172	55	1	3	0	3
Grp Sat Flow(s),veh/h/ln	1853	1702	1585	1781	1702	1585	1781	1870	1585	1781	0	1764
Q Serve(g_s), s	0.6	25.5	1.7	12.8	27.9	3.2	8.0	3.0	0.1	0.2	0.0	0.2
Cycle Q Clear(g_c), s	0.6	25.5	1.7	12.8	27.9	3.2	8.0	3.0	0.1	0.2	0.0	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.33
Lane Grp Cap(c), veh/h	36	2808	872	285	3642	1131	249	188	159	141	0	71
V/C Ratio(X)	0.30	0.62	0.08	0.76	0.66	0.13	0.69	0.29	0.01	0.02	0.00	0.04
Avail Cap(c_a), veh/h	253	2808	872	285	3642	1131	249	188	159	249	0	160
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	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.2	16.9	6.7	44.2	8.5	5.0	46.5	45.9	44.5	49.5	0.0	50.9
Incr Delay (d2), s/veh	4.7	1.0	0.2	11.1	0.4	0.1	7.8	0.9	0.0	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	8.8	0.7	6.2	7.3	0.8	5.2	1.5	0.0	0.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.9	17.9	6.9	55.3	9.0	5.0	54.4	46.7	44.6	49.5	0.0	51.2
LnGrp LOS	E	B	A	E	A	A	D	D	D	D	A	D
Approach Vol, veh/h		1815			2758			228				6
Approach Delay, s/veh		17.7			12.4			52.5				50.4
Approach LOS		B			B			D				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	9.4	23.6	66.0	4.4	16.0	5.1	84.5				
Change Period (Y+Rc), s	4.0	6.0	7.0	6.5	4.0	6.0	4.0	7.0				
Max Green Setting (Gmax), s	7.0	9.0	11.0	59.5	7.0	9.0	14.0	59.0				
Max Q Clear Time (g_c+I1), s	10.0	2.2	14.8	27.5	2.2	5.0	2.6	29.9				
Green Ext Time (p_c), s	0.0	0.0	0.0	9.3	0.0	0.0	0.0	15.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			16.4									
HCM 6th LOS			B									



Timing Report, Sorted By Phase  
1: Lady Moon & Harmony

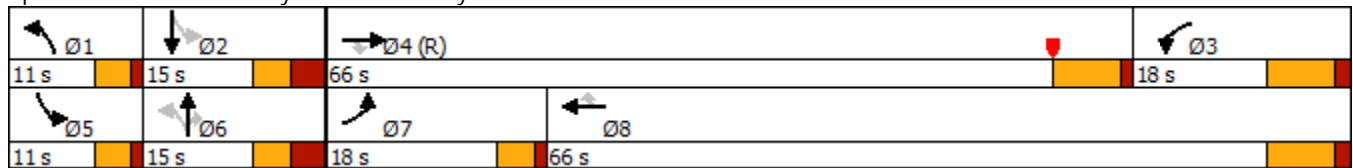
Short Total AM

								
Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBTL	WBL	EBT	SBL	NBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize								
Recall Mode	None	None	None	C-Max	None	None	None	None
Maximum Split (s)	11	15	18	66	11	15	18	66
Maximum Split (%)	10.0%	13.6%	16.4%	60.0%	10.0%	13.6%	16.4%	60.0%
Minimum Split (s)	11	15	11	25.5	11	15	11	28
Yellow Time (s)	3	3	5.5	5.5	3	3	3	5.5
All-Red Time (s)	1	3	1.5	1	1	3	1	1.5
Minimum Initial (s)	4	4	4	15	4	4	4	15
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)				7				7
Flash Dont Walk (s)				12				12
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	66.5	77.5	48.5	92.5	66.5	77.5	92.5	0.5
End Time (s)	77.5	92.5	66.5	48.5	77.5	92.5	0.5	66.5
Yield/Force Off (s)	73.5	86.5	59.5	42	73.5	86.5	106.5	59.5
Yield/Force Off 170(s)	73.5	86.5	59.5	30	73.5	86.5	106.5	47.5
Local Start Time (s)	24.5	35.5	6.5	50.5	24.5	35.5	50.5	68.5
Local Yield (s)	31.5	44.5	17.5	0	31.5	44.5	64.5	17.5
Local Yield 170(s)	31.5	44.5	17.5	98	31.5	44.5	64.5	5.5

Intersection Summary

Cycle Length 110  
 Control Type Actuated-Coordinated  
 Natural Cycle 80  
 Offset: 42 (38%), Referenced to phase 4:EBT, Start of Yellow












Splits and Phases: 1: Lady Moon & Harmony



## Queues

Short Total AM

## 1: Lady Moon &amp; Harmony

























											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	11	1737	120	216	2398	187	172	55	129	3	5
v/c Ratio	0.09	0.54	0.12	1.12	0.61	0.15	0.89	0.35	0.43	0.02	0.04
Control Delay	49.5	12.3	1.6	145.9	7.6	1.3	87.1	53.5	6.5	40.7	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	12.3	1.6	145.9	7.6	1.3	87.1	53.5	6.5	40.7	36.4
Queue Length 50th (ft)	7	215	0	~176	168	0	122	37	0	2	1
Queue Length 95th (ft)	26	340	20	#328	497	27	176	78	19	10	13
Internal Link Dist (ft)		1193			358			651			468
Turn Bay Length (ft)	445		500	375		525	190		290	125	
Base Capacity (vph)	249	3246	994	193	3949	1271	194	174	314	169	156
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.54	0.12	1.12	0.61	0.15	0.89	0.32	0.41	0.02	0.03

## Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.









HCM 6th Signalized Intersection Summary  
1: Lady Moon & Harmony

Short Total PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	2421	140	165	2137	23	282	5	183	51	67	197
Future Volume (veh/h)	4	2421	140	165	2137	23	282	5	183	51	67	197
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1945	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	4	2548	69	174	2249	1	297	5	25	54	71	114
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	23	2532	786	193	3128	971	273	354	300	311	81	130
Arrive On Green	0.01	0.50	0.50	0.11	0.61	0.61	0.11	0.19	0.19	0.04	0.13	0.12
Sat Flow, veh/h	1853	5106	1585	1781	5106	1585	1781	1870	1585	1781	646	1037
Grp Volume(v), veh/h	4	2548	69	174	2249	1	297	5	25	54	0	185
Grp Sat Flow(s),veh/h/ln	1853	1702	1585	1781	1702	1585	1781	1870	1585	1781	0	1684
Q Serve(g_s), s	0.3	59.5	2.0	11.6	36.6	0.0	13.0	0.3	1.6	3.1	0.0	13.0
Cycle Q Clear(g_c), s	0.3	59.5	2.0	11.6	36.6	0.0	13.0	0.3	1.6	3.1	0.0	13.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.62
Lane Grp Cap(c), veh/h	23	2532	786	193	3128	971	273	354	300	311	0	210
V/C Ratio(X)	0.17	1.01	0.09	0.90	0.72	0.00	1.09	0.01	0.08	0.17	0.00	0.88
Avail Cap(c_a), veh/h	139	2532	786	193	3128	971	273	354	300	425	0	210
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	1.00	0.00	1.00
Uniform Delay (d), s/veh	58.6	30.2	8.7	52.9	16.1	9.0	43.3	39.6	40.1	42.7	0.0	51.9
Incr Delay (d2), s/veh	3.5	19.4	0.2	38.6	0.8	0.0	79.6	0.0	0.1	0.3	0.0	31.8
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(50%),veh/ln	0.1	26.0	1.0	7.0	12.2	0.0	8.0	0.1	0.6	1.4	0.0	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.1	49.7	8.9	91.5	16.9	9.0	122.9	39.6	40.2	43.0	0.0	83.7
LnGrp LOS	E	F	A	F	B	A	F	D	D	D	A	F
Approach Vol, veh/h		2621			2424			327				239
Approach Delay, s/veh		48.6			22.3			115.3				74.5
Approach LOS		D			C			F				E
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	20.0	19.0	65.0	8.3	27.7	4.5	79.5				
Change Period (Y+Rc), s	4.0	6.0	7.0	6.5	4.0	6.0	4.0	7.0				
Max Green Setting (Gmax), s	12.0	14.0	12.0	58.5	12.0	14.0	8.0	65.0				
Max Q Clear Time (g_c+I1), s	15.0	15.0	13.6	61.5	5.1	3.6	2.3	38.6				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			42.2									
HCM 6th LOS			D									

Timing Report, Sorted By Phase  
1: Lady Moon & Harmony

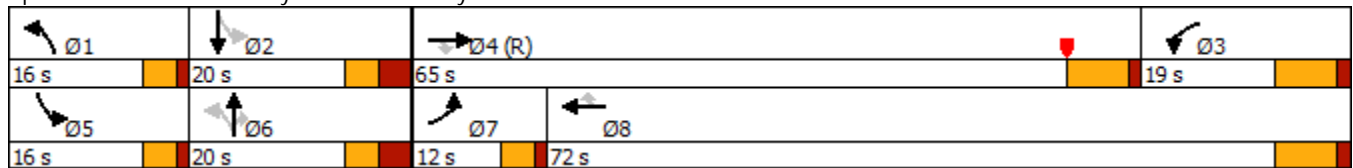
Short Total PM

								
Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBTL	WBL	EBT	SBL	NBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize								
Recall Mode	None	None	None	C-Max	None	None	None	None
Maximum Split (s)	16	20	19	65	16	20	12	72
Maximum Split (%)	13.3%	16.7%	15.8%	54.2%	13.3%	16.7%	10.0%	60.0%
Minimum Split (s)	11	15	11	25.5	11	15	11	28
Yellow Time (s)	3	3	5.5	5.5	3	3	3	5.5
All-Red Time (s)	1	3	1.5	1	1	3	1	1.5
Minimum Initial (s)	4	4	4	15	4	4	4	15
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)				7				7
Flash Dont Walk (s)				12				12
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	20.5	36.5	1.5	56.5	20.5	36.5	56.5	68.5
End Time (s)	36.5	56.5	20.5	1.5	36.5	56.5	68.5	20.5
Yield/Force Off (s)	32.5	50.5	13.5	115	32.5	50.5	64.5	13.5
Yield/Force Off 170(s)	32.5	50.5	13.5	103	32.5	50.5	64.5	1.5
Local Start Time (s)	25.5	41.5	6.5	61.5	25.5	41.5	61.5	73.5
Local Yield (s)	37.5	55.5	18.5	0	37.5	55.5	69.5	18.5
Local Yield 170(s)	37.5	55.5	18.5	108	37.5	55.5	69.5	6.5

Intersection Summary

Cycle Length 120  
 Control Type Actuated-Coordinated  
 Natural Cycle 110  
 Offset: 115 (96%), Referenced to phase 4:EBT, Start of Yellow

Splits and Phases: 1: Lady Moon & Harmony
















## Queues

Short Total PM

## 1: Lady Moon &amp; Harmony

											
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	4	2548	147	174	2249	24	297	5	193	54	278
v/c Ratio	0.04	1.01	0.18	0.91	0.70	0.02	1.16	0.02	0.45	0.16	0.95
Control Delay	54.0	51.0	3.1	98.7	16.6	0.0	143.1	44.8	10.1	34.2	74.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.0	51.0	3.1	98.7	16.6	0.0	143.1	44.8	10.1	34.2	74.0
Queue Length 50th (ft)	3	~724	0	135	369	0	~216	3	0	31	142
Queue Length 95th (ft)	15	#851	33	#271	542	0	#408	16	67	65	#313
Internal Link Dist (ft)		1193			358			651			468
Turn Bay Length (ft)	445		500	375		525	190		290	125	
Base Capacity (vph)	137	2521	806	191	3215	1037	256	320	432	390	294
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	1.01	0.18	0.91	0.70	0.02	1.16	0.02	0.45	0.14	0.95

## Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary  
 1: Lady Moon & Harmony









Short Total AM  
 NB Dual LT Lanes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	1650	114	205	2278	178	163	52	123	3	2	3
Future Volume (veh/h)	10	1650	114	205	2278	178	163	52	123	3	2	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1945	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	11	1737	63	216	2398	138	172	55	50	3	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	36	2808	872	278	3623	1125	497	94	86	144	52	26
Arrive On Green	0.02	0.55	0.55	0.16	0.71	0.71	0.07	0.10	0.10	0.01	0.04	0.04
Sat Flow, veh/h	1853	5106	1585	1781	5106	1585	3456	902	820	1781	1176	588
Grp Volume(v), veh/h	11	1737	63	216	2398	138	172	0	105	3	0	3
Grp Sat Flow(s),veh/h/ln	1853	1702	1585	1781	1702	1585	1728	0	1723	1781	0	1764
Q Serve(g_s), s	0.6	25.5	1.6	12.8	28.3	3.0	5.0	0.0	6.4	0.2	0.0	0.2
Cycle Q Clear(g_c), s	0.6	25.5	1.6	12.8	28.3	3.0	5.0	0.0	6.4	0.2	0.0	0.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.48	1.00		0.33
Lane Grp Cap(c), veh/h	36	2808	872	278	3623	1125	497	0	180	144	0	78
V/C Ratio(X)	0.30	0.62	0.07	0.78	0.66	0.12	0.35	0.00	0.58	0.02	0.00	0.04
Avail Cap(c_a), veh/h	253	2808	872	278	3623	1125	499	0	180	252	0	160
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.2	16.9	6.7	44.6	8.8	5.1	43.4	0.0	47.0	49.0	0.0	50.5
Incr Delay (d2), s/veh	4.7	1.0	0.2	12.9	0.5	0.0	0.4	0.0	4.8	0.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	8.8	0.7	6.4	7.5	0.7	2.2	0.0	3.0	0.1	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.9	17.9	6.9	57.5	9.2	5.1	43.8	0.0	51.8	49.1	0.0	50.7
LnGrp LOS	E	B	A	E	A	A	D	A	D	D	A	D
Approach Vol, veh/h		1811			2752			277				6
Approach Delay, s/veh		17.8			12.8			46.8				49.9
Approach LOS		B			B			D				D
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.0	9.9	23.2	66.0	4.4	16.5	5.1	84.0				
Change Period (Y+Rc), s	4.0	6.0	7.0	6.5	4.0	6.0	4.0	7.0				
Max Green Setting (Gmax), s	7.0	9.0	11.0	59.5	7.0	9.0	14.0	59.0				
Max Q Clear Time (g_c+I1), s	7.0	2.2	14.8	27.5	2.2	8.4	2.6	30.3				
Green Ext Time (p_c), s	0.0	0.0	0.0	9.3	0.0	0.0	0.0	15.2				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			16.6									
HCM 6th LOS			B									

# Timing Report, Sorted By Phase

## 1: Lady Moon & Harmony

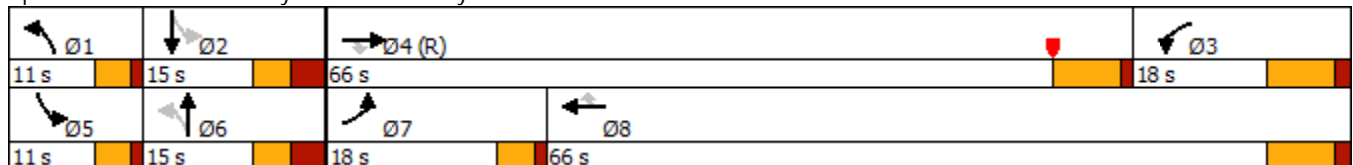
Short Total AM  
NB Dual LT Lanes

								
Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBTL	WBL	EBT	SBL	NBTL	EBL	WBT
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize								
Recall Mode	None	None	None	C-Max	None	None	None	None
Maximum Split (s)	11	15	18	66	11	15	18	66
Maximum Split (%)	10.0%	13.6%	16.4%	60.0%	10.0%	13.6%	16.4%	60.0%
Minimum Split (s)	11	15	11	25.5	11	15	11	28
Yellow Time (s)	3	3	5.5	5.5	3	3	3	5.5
All-Red Time (s)	1	3	1.5	1	1	3	1	1.5
Minimum Initial (s)	4	4	4	15	4	4	4	15
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)				7				7
Flash Dont Walk (s)				12				12
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	66.5	77.5	48.5	92.5	66.5	77.5	92.5	0.5
End Time (s)	77.5	92.5	66.5	48.5	77.5	92.5	0.5	66.5
Yield/Force Off (s)	73.5	86.5	59.5	42	73.5	86.5	106.5	59.5
Yield/Force Off 170(s)	73.5	86.5	59.5	30	73.5	86.5	106.5	47.5
Local Start Time (s)	24.5	35.5	6.5	50.5	24.5	35.5	50.5	68.5
Local Yield (s)	31.5	44.5	17.5	0	31.5	44.5	64.5	17.5
Local Yield 170(s)	31.5	44.5	17.5	98	31.5	44.5	64.5	5.5

### Intersection Summary











Cycle Length 110  
 Control Type Actuated-Coordinated  
 Natural Cycle 80  
 Offset: 42 (38%), Referenced to phase 4:EBT, Start of Yellow

### Splits and Phases: 1: Lady Moon & Harmony



Queues  
1: Lady Moon & Harmony

Short Total AM  
NB Dual LT Lanes

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	11	1737	120	216	2398	187	172	184	3	5
v/c Ratio	0.09	0.56	0.13	1.12	0.63	0.15	0.36	0.70	0.02	0.04
Control Delay	49.5	14.2	1.7	145.9	9.0	1.4	42.9	40.6	40.7	36.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	14.2	1.7	145.9	9.0	1.4	42.9	40.6	40.7	36.4
Queue Length 50th (ft)	7	247	0	~176	224	0	56	66	2	1
Queue Length 95th (ft)	26	340	20	#328	497	27	83	#182	10	13
Internal Link Dist (ft)		1193			358			651		468
Turn Bay Length (ft)	445		500	375		525	190		125	
Base Capacity (vph)	249	3103	956	193	3806	1231	474	267	169	156
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.56	0.13	1.12	0.63	0.15	0.36	0.69	0.02	0.03

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.






























# HCM 6th Signalized Intersection Summary

## 1: Lady Moon & Harmony









Short Total PM

NB Dual LT Lanes & 130 second cycle

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  		 					
Traffic Volume (veh/h)	4	2421	140	165	2137	23	282	5	183	51	67	197
Future Volume (veh/h)	4	2421	140	165	2137	23	282	5	183	51	67	197
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1945	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	4	2548	69	174	2249	1	297	5	27	54	71	122
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	22	2553	793	212	3200	993	346	48	257	312	81	139
Arrive On Green	0.01	0.50	0.50	0.12	0.63	0.63	0.10	0.19	0.19	0.04	0.13	0.12
Sat Flow, veh/h	1853	5106	1585	1781	5106	1585	3456	254	1370	1781	618	1062
Grp Volume(v), veh/h	4	2548	69	174	2249	1	297	0	32	54	0	193
Grp Sat Flow(s),veh/h/ln	1853	1702	1585	1781	1702	1585	1728	0	1624	1781	0	1679
Q Serve(g_s), s	0.3	64.7	2.2	12.4	38.2	0.0	11.0	0.0	2.1	3.4	0.0	14.7
Cycle Q Clear(g_c), s	0.3	64.7	2.2	12.4	38.2	0.0	11.0	0.0	2.1	3.4	0.0	14.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.84	1.00		0.63
Lane Grp Cap(c), veh/h	22	2553	793	212	3200	993	346	0	305	312	0	220
V/C Ratio(X)	0.18	1.00	0.09	0.82	0.70	0.00	0.86	0.00	0.11	0.17	0.00	0.88
Avail Cap(c_a), veh/h	114	2553	793	212	3200	993	346	0	305	359	0	220
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	63.6	32.4	9.6	55.9	16.2	9.1	57.6	0.0	43.8	45.7	0.0	55.8
Incr Delay (d2), s/veh	3.9	17.4	0.2	21.7	0.7	0.0	19.1	0.0	0.1	0.3	0.0	30.8
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(50%),veh/ln	0.2	27.9	1.0	6.6	12.9	0.0	5.8	0.0	0.9	1.5	0.0	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.5	49.8	9.8	77.6	16.9	9.1	76.7	0.0	43.9	46.0	0.0	86.6
LnGrp LOS	E	D	A	E	B	A	E	A	D	D	A	F
Approach Vol, veh/h		2621			2424			329				247
Approach Delay, s/veh		48.8			21.3			73.5				77.7
Approach LOS		D			C			E				E
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	22.0	21.5	70.5	8.6	29.4	4.5	87.5				
Change Period (Y+Rc), s	4.0	6.0	7.0	6.5	4.0	6.0	4.0	7.0				
Max Green Setting (Gmax), s	12.0	16.0	14.5	64.0	8.0	20.0	7.0	74.0				
Max Q Clear Time (g_c+I1), s	13.0	16.7	14.4	66.7	5.4	4.1	2.3	40.2				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.9				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			39.6									
HCM 6th LOS			D									

Timing Report, Sorted By Phase  
1: Lady Moon & Harmony

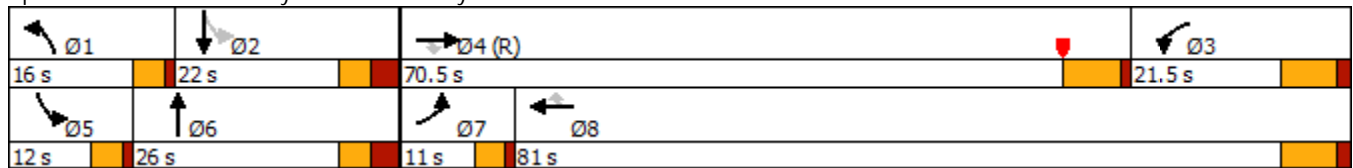
Short Total PM  
NB Dual LT Lanes & 130 second cycle

								
Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBTL	WBL	EBT	SBL	NBT	EBL	WBT
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize								
Recall Mode	None	None	None	C-Max	None	None	None	None
Maximum Split (s)	16	22	21.5	70.5	12	26	11	81
Maximum Split (%)	12.3%	16.9%	16.5%	54.2%	9.2%	20.0%	8.5%	62.3%
Minimum Split (s)	11	15	11	25.5	11	15	11	28
Yellow Time (s)	3	3	5.5	5.5	3	3	3	5.5
All-Red Time (s)	1	3	1.5	1	1	3	1	1.5
Minimum Initial (s)	4	4	4	15	4	4	4	15
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)				7				7
Flash Dont Walk (s)				12				12
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	28	44	6.5	66	28	40	66	77
End Time (s)	44	66	28	6.5	40	66	77	28
Yield/Force Off (s)	40	60	21	0	36	60	73	21
Yield/Force Off 170(s)	40	60	21	118	36	60	73	9
Local Start Time (s)	28	44	6.5	66	28	40	66	77
Local Yield (s)	40	60	21	0	36	60	73	21
Local Yield 170(s)	40	60	21	118	36	60	73	9

Intersection Summary

Cycle Length 130  
Control Type Actuated-Coordinated  
Natural Cycle 90  
Offset: 0 (0%), Referenced to phase 4:EBT, Start of Yellow

Splits and Phases: 1: Lady Moon & Harmony













Queues

1: Lady Moon & Harmony

Short Total PM

NB Dual LT Lanes & 130 second cycle

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	4	2548	147	174	2249	24	297	198	54	278
v/c Ratio	0.04	1.00	0.18	0.84	0.69	0.02	0.85	0.44	0.20	0.94
Control Delay	59.0	50.1	3.2	88.8	16.6	0.0	79.8	10.5	38.2	76.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.0	50.1	3.2	88.8	16.6	0.0	79.8	10.5	38.2	76.1
Queue Length 50th (ft)	3	~770	0	145	389	0	129	4	34	161
Queue Length 95th (ft)	16	#908	35	#269	559	0	#207	73	70	#334
Internal Link Dist (ft)		1193			358			651		468
Turn Bay Length (ft)	445		500	375		525	190		125	
Base Capacity (vph)	112	2550	814	211	3275	1052	349	447	272	297
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	1.00	0.18	0.82	0.69	0.02	0.85	0.44	0.20	0.94

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

# HCM 6th Signalized Intersection Summary

Short Total PM

## 1: Lady Moon & Harmony

NB Dual LT Lanes, 130 second cycle & EB v/c ratio > 1.0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	2421	140	165	2137	23	282	5	183	51	67	197
Future Volume (veh/h)	4	2421	140	165	2137	23	282	5	183	51	67	197
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1945	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	4	2548	69	174	2249	1	297	5	29	54	71	121
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	22	2514	780	218	3178	986	346	46	266	318	84	143
Arrive On Green	0.01	0.49	0.49	0.12	0.62	0.62	0.10	0.19	0.19	0.04	0.14	0.13
Sat Flow, veh/h	1853	5106	1585	1781	5106	1585	3456	238	1383	1781	621	1059
Grp Volume(v), veh/h	4	2548	69	174	2249	1	297	0	34	54	0	192
Grp Sat Flow(s),veh/h/ln	1853	1702	1585	1781	1702	1585	1728	0	1621	1781	0	1680
Q Serve(g_s), s	0.3	64.0	2.3	12.3	38.6	0.0	11.0	0.0	2.2	3.3	0.0	14.5
Cycle Q Clear(g_c), s	0.3	64.0	2.3	12.3	38.6	0.0	11.0	0.0	2.2	3.3	0.0	14.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.85	1.00		0.63
Lane Grp Cap(c), veh/h	22	2514	780	218	3178	986	346	0	311	318	0	227
V/C Ratio(X)	0.18	1.01	0.09	0.80	0.71	0.00	0.86	0.00	0.11	0.17	0.00	0.85
Avail Cap(c_a), veh/h	114	2514	780	218	3178	986	346	0	311	364	0	233
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	63.6	33.0	10.0	55.4	16.6	9.3	57.6	0.0	43.3	45.3	0.0	55.2
Incr Delay (d2), s/veh	3.9	21.4	0.2	18.3	0.7	0.0	19.1	0.0	0.2	0.3	0.0	23.7
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(50%),veh/ln	0.2	28.6	1.1	6.4	13.1	0.0	5.8	0.0	0.9	1.5	0.0	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.5	54.4	10.2	73.7	17.3	9.3	76.7	0.0	43.5	45.5	0.0	78.9
LnGrp LOS	E	F	B	E	B	A	E	A	D	D	A	E
Approach Vol, veh/h		2621			2424			331				246
Approach Delay, s/veh		53.3			21.4			73.3				71.6
Approach LOS		D			C			E				E
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.0	22.6	21.9	69.5	8.6	30.0	4.5	86.9				
Change Period (Y+Rc), s	4.0	6.0	7.0	6.5	4.0	6.0	4.0	7.0				
Max Green Setting (Gmax), s	12.0	17.0	14.5	63.0	8.0	21.0	7.0	73.0				
Max Q Clear Time (g_c+I1), s	13.0	16.5	14.3	66.0	5.3	4.2	2.3	40.6				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.1	0.0	13.7				

### Intersection Summary









HCM 6th Ctrl Delay	41.5
HCM 6th LOS	D



Timing Report, Sorted By Phase  
1: Lady Moon & Harmony

Short Total PM

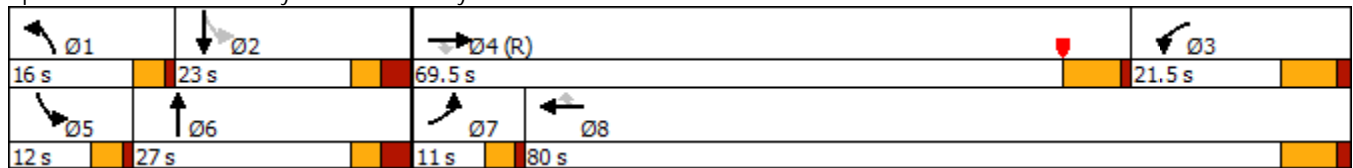
NB Dual LT Lanes, 130 second cycle & EB v/c ratio > 1.0

								
Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBTL	WBL	EBT	SBL	NBT	EBL	WBT
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize								
Recall Mode	None	None	None	C-Max	None	None	None	None
Maximum Split (s)	16	23	21.5	69.5	12	27	11	80
Maximum Split (%)	12.3%	17.7%	16.5%	53.5%	9.2%	20.8%	8.5%	61.5%
Minimum Split (s)	11	15	11	25.5	11	15	11	28
Yellow Time (s)	3	3	5.5	5.5	3	3	3	5.5
All-Red Time (s)	1	3	1.5	1	1	3	1	1.5
Minimum Initial (s)	4	4	4	15	4	4	4	15
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)				7				7
Flash Dont Walk (s)				12				12
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	28	44	6.5	67	28	40	67	78
End Time (s)	44	67	28	6.5	40	67	78	28
Yield/Force Off (s)	40	61	21	0	36	61	74	21
Yield/Force Off 170(s)	40	61	21	118	36	61	74	9
Local Start Time (s)	28	44	6.5	67	28	40	67	78
Local Yield (s)	40	61	21	0	36	61	74	21
Local Yield 170(s)	40	61	21	118	36	61	74	9

Intersection Summary

Cycle Length 130  
 Control Type Actuated-Coordinated  
 Natural Cycle 90  
 Offset: 0 (0%), Referenced to phase 4:EBT, Start of Yellow

Splits and Phases: 1: Lady Moon & Harmony













Queues

Short Total PM

1: Lady Moon & Harmony

NB Dual LT Lanes, 130 second cycle & EB v/c ratio > 1.0

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	4	2548	147	174	2249	24	297	198	54	278
v/c Ratio	0.04	1.01	0.18	0.84	0.69	0.02	0.85	0.44	0.20	0.92
Control Delay	59.0	52.1	3.2	88.8	17.1	0.0	79.8	10.2	37.4	71.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.0	52.1	3.2	88.8	17.1	0.0	79.8	10.2	37.4	71.4
Queue Length 50th (ft)	3	-831	0	145	400	0	129	4	34	158
Queue Length 95th (ft)	16	#920	35	#269	571	0	#207	72	69	#323
Internal Link Dist (ft)		1193			358			651		468
Turn Bay Length (ft)	445		500	375		525	190		125	
Base Capacity (vph)	112	2532	810	211	3257	1046	349	452	277	310
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	1.01	0.18	0.82	0.69	0.02	0.85	0.44	0.19	0.90

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

HCM 6th TWSC  
 3: Lady Moon & Timberwood Drive/Banner Access

Short Total AM

Intersection

Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔		↔	↔	↔
Traffic Vol, veh/h	84	0	19	6	0	5	49	234	18	63	165	63
Future Vol, veh/h	84	0	19	6	0	5	49	234	18	63	165	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	80	-	-	80	250	-	-	80	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	98	0	22	7	0	6	57	272	21	73	192	73

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	738	745	192	783	808	283	265	0	0	293	0	0
Stage 1	338	338	-	397	397	-	-	-	-	-	-	-
Stage 2	400	407	-	386	411	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3,518	4,018	3,318	3,518	4,018	3,318	2,218	-	-	2,218	-	-
Pot Cap-1 Maneuver	334	342	850	311	315	756	1299	-	-	1269	-	-
Stage 1	676	641	-	629	603	-	-	-	-	-	-	-
Stage 2	626	597	-	637	595	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	306	308	850	280	284	756	1299	-	-	1269	-	-
Mov Cap-2 Maneuver	306	308	-	280	284	-	-	-	-	-	-	-
Stage 1	646	604	-	601	576	-	-	-	-	-	-	-
Stage 2	594	571	-	585	560	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	19.8		14.4		1.3		1.7	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1299	-	-	306	850	280	756	1269	-	-
HCM Lane V/C Ratio	0.044	-	-	0.319	0.026	0.025	0.008	0.058	-	-
HCM Control Delay (s)	7.9	-	-	22.2	9.3	18.2	9.8	8	-	-
HCM Lane LOS	A	-	-	C	A	C	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.3	0.1	0.1	0	0.2	-	-

HCM 6th TWSC  
 3: Lady Moon & Timberwood Drive/Banner Access

Short Total PM

Intersection												
Int Delay, s/veh	6.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗	↖	↗		↖	↗	↖
Traffic Vol, veh/h	164	1	26	13	1	15	37	251	5	17	285	45
Future Vol, veh/h	164	1	26	13	1	15	37	251	5	17	285	45
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	80	-	-	80	250	-	-	80	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	176	1	28	14	1	16	40	270	5	18	306	48

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	703	697	306	734	743	273	354	0	0	275	0	0
Stage 1	342	342	-	353	353	-	-	-	-	-	-	-
Stage 2	361	355	-	381	390	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	352	365	734	336	343	766	1205	-	-	1288	-	-
Stage 1	673	638	-	664	631	-	-	-	-	-	-	-
Stage 2	657	630	-	641	608	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	332	348	734	311	327	766	1205	-	-	1288	-	-
Mov Cap-2 Maneuver	332	348	-	311	327	-	-	-	-	-	-	-
Stage 1	651	629	-	642	610	-	-	-	-	-	-	-
Stage 2	621	609	-	607	599	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	25.2		13.3		1			0.4		
HCM LOS	D		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1205	-	-	332	734	312	766	1288	-	-
HCM Lane V/C Ratio	0.033	-	-	0.534	0.038	0.048	0.021	0.014	-	-
HCM Control Delay (s)	8.1	-	-	27.6	10.1	17.1	9.8	7.8	-	-
HCM Lane LOS	A	-	-	D	B	C	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	3	0.1	0.2	0.1	0	-	-



HCM 6th TWSC  
 4: Site Access/Retail Access & Timberwood Drive

Short Total AM

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	44	56	74	39	39	34	0	0	16	31	0	8
Future Vol, veh/h	44	56	74	39	39	34	0	0	16	31	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	52	66	87	46	46	40	0	0	19	36	0	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	86	0	0	153	0	0	377	392	110	381	415	66
Stage 1	-	-	-	-	-	-	214	214	-	158	158	-
Stage 2	-	-	-	-	-	-	163	178	-	223	257	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1510	-	-	1428	-	-	580	544	943	577	528	998
Stage 1	-	-	-	-	-	-	788	725	-	844	767	-
Stage 2	-	-	-	-	-	-	839	752	-	780	695	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1510	-	-	1428	-	-	543	505	943	535	491	998
Mov Cap-2 Maneuver	-	-	-	-	-	-	543	505	-	535	491	-
Stage 1	-	-	-	-	-	-	758	697	-	812	741	-
Stage 2	-	-	-	-	-	-	803	726	-	735	669	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.9			2.6			8.9			11.6		
HCM LOS							A			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	943	1510	-	-	1428	-	-	591
HCM Lane V/C Ratio	0.02	0.034	-	-	0.032	-	-	0.078
HCM Control Delay (s)	8.9	7.5	0	-	7.6	0	-	11.6
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-	-	0.3

HCM 6th TWSC  
 4: Site Access/Retail Access & Timberwood Drive

Short Total PM

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	33	72	39	21	38	23	0	0	72	46	0	10
Future Vol, veh/h	33	72	39	21	38	23	0	0	72	46	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	39	85	46	25	45	27	0	0	85	54	0	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	72	0	0	131	0	0	301	308	108	338	318	59
Stage 1	-	-	-	-	-	-	186	186	-	109	109	-
Stage 2	-	-	-	-	-	-	115	122	-	229	209	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1528	-	-	1454	-	-	651	606	946	616	598	1007
Stage 1	-	-	-	-	-	-	816	746	-	896	805	-
Stage 2	-	-	-	-	-	-	890	795	-	774	729	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1528	-	-	1454	-	-	621	579	946	541	571	1007
Mov Cap-2 Maneuver	-	-	-	-	-	-	621	579	-	541	571	-
Stage 1	-	-	-	-	-	-	793	725	-	871	791	-
Stage 2	-	-	-	-	-	-	864	781	-	685	709	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.7			1.9			9.2			11.9		
HCM LOS							A			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	946	1528	-	-	1454	-	-	590
HCM Lane V/C Ratio	0.09	0.025	-	-	0.017	-	-	0.112
HCM Control Delay (s)	9.2	7.4	0	-	7.5	0	-	11.9
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0.1	-	-	0.4

HCM 6th TWSC  
 12: Lady Moon & Site Access

Short Total AM

Intersection

Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	TT		T	T	T	
Traffic Vol, veh/h	20	4	17	281	175	15
Future Vol, veh/h	20	4	17	281	175	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	5	20	331	206	18

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	586	215	224	0	0
Stage 1	215	-	-	-	-
Stage 2	371	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	473	825	1345	-	-
Stage 1	821	-	-	-	-
Stage 2	698	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	466	825	1345	-	-
Mov Cap-2 Maneuver	466	-	-	-	-
Stage 1	809	-	-	-	-
Stage 2	698	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.6	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1345	-	502	-	-
HCM Lane V/C Ratio	0.015	-	0.056	-	-
HCM Control Delay (s)	7.7	-	12.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

HCM 6th TWSC  
 12: Lady Moon & Site Access

Short Total PM

Intersection

Int Delay, s/veh	2.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	100	24	10	193	317	7
Future Vol, veh/h	100	24	10	193	317	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	108	26	11	208	341	8

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	575	345	349	0	0
Stage 1	345	-	-	-	-
Stage 2	230	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	480	698	1210	-	-
Stage 1	717	-	-	-	-
Stage 2	808	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	476	698	1210	-	-
Mov Cap-2 Maneuver	476	-	-	-	-
Stage 1	711	-	-	-	-
Stage 2	808	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.6	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1210	-	507	-	-
HCM Lane V/C Ratio	0.009	-	0.263	-	-
HCM Control Delay (s)	8	-	14.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	1	-	-



# APPENDIX G

HCM 6th TWSC  
3: Technology/HP West & Harmony

Long Total AM

Intersection

Int Delay, s/veh	48											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘ ↑↑↑	↘ ↑↑↑	↘	↘ ↑↑↑	↘ ↑↑↑				↘			↘
Traffic Vol, veh/h	175	2025	170	45	2695	55	0	0	5	0	0	15
Future Vol, veh/h	175	2025	170	45	2695	55	0	0	5	0	0	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	250	250	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	179	2066	173	46	2750	56	0	0	5	0	0	15

Major/Minor	Major1		Major2		Minor1		Minor2	
Conflicting Flow All	2806	0	0	2239	0	0	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	5.34	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	-	3.92
Pot Cap-1 Maneuver	~ 48	-	-	94	-	-	0	0
Stage 1	-	-	-	-	-	-	0	0
Stage 2	-	-	-	-	-	-	0	0
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	~ 48	-	-	94	-	-	-	197
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	103.3	1.2	23.8	42.6
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	197	~ 48	-	-	94	-	-	111
HCM Lane V/C Ratio	0.026	3.72	-	-	0.488	-	-	0.138
HCM Control Delay (s)	23.8	1399.3	-	-	75.4	-	-	42.6
HCM Lane LOS	C	F	-	-	F	-	-	E
HCM 95th %tile Q(veh)	0.1	19.7	-	-	2.1	-	-	0.5

Notes

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

HCM 6th TWSC  
 3: Technology/HP West & Harmony

Long Total PM

Intersection

Int Delay, s/veh	9.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘ ↑↑↑	↘ ↑↑↑	↘ ↑	↘ ↑↑↑	↘ ↑↑↑				↘ ↑			↘ ↑
Traffic Vol, veh/h	25	2905	135	15	2955	10	0	0	30	0	0	135
Future Vol, veh/h	25	2905	135	15	2955	10	0	0	30	0	0	135
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	250	250	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	2964	138	15	3015	10	0	0	31	0	0	138

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	3025	0	0	3102	0	0	-	-	1482	-	-	1513
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	37	-	-	33	-	-	0	0	98	0	0	~ 93
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	37	-	-	33	-	-	-	-	98	-	-	~ 93
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.8			0.9			57.6			\$ 345.7		
HCM LOS							F			F		

























Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	98	37	-	-	33	-	-	93
HCM Lane V/C Ratio	0.312	0.689	-	-	0.464	-	-	1.481
HCM Control Delay (s)	57.6	219.7	-	-	186.6	-	-	\$ 345.7
HCM Lane LOS	F	F	-	-	F	-	-	F
HCM 95th %tile Q(veh)	1.2	2.5	-	-	1.5	-	-	10.5

Notes

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

HCM 6th Signalized Intersection Summary  
 174: Lady Moon/HP East & Harmony









Long Total AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	1765	145	255	2585	180	205	50	155	5	5	5
Future Volume (veh/h)	120	1765	145	255	2585	180	205	50	155	5	5	5
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		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	122	1801	95	260	2638	115	209	51	60	5	5	1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	161	2659	825	647	3259	1011	306	91	107	24	62	12
Arrive On Green	0.09	0.52	0.52	0.19	0.64	0.64	0.09	0.12	0.12	0.01	0.04	0.04
Sat Flow, veh/h	1781	5106	1584	3456	5106	1584	3456	783	921	1781	1503	301
Grp Volume(v), veh/h	122	1801	95	260	2638	115	209	0	111	5	0	6
Grp Sat Flow(s),veh/h/ln	1781	1702	1584	1728	1702	1584	1728	0	1705	1781	0	1804
Q Serve(g_s), s	8.0	31.3	2.9	7.9	46.4	3.4	7.0	0.0	7.4	0.3	0.0	0.4
Cycle Q Clear(g_c), s	8.0	31.3	2.9	7.9	46.4	3.4	7.0	0.0	7.4	0.3	0.0	0.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.54	1.00		0.17
Lane Grp Cap(c), veh/h	161	2659	825	647	3259	1011	306	0	198	24	0	74
V/C Ratio(X)	0.76	0.68	0.12	0.40	0.81	0.11	0.68	0.00	0.56	0.21	0.00	0.08
Avail Cap(c_a), veh/h	163	2659	825	647	3259	1011	634	0	256	223	0	165
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.3	21.3	9.1	42.9	16.2	8.5	53.1	0.0	50.1	58.6	0.0	55.4
Incr Delay (d2), s/veh	18.1	1.4	0.3	0.4	1.6	0.0	2.7	0.0	2.5	4.2	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	11.4	1.3	3.3	15.2	1.0	3.2	0.0	3.3	0.2	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.3	22.7	9.4	43.3	17.9	8.5	55.8	0.0	52.6	62.8	0.0	55.8
LnGrp LOS	E	C	A	D	B	A	E	A	D	E	A	E
Approach Vol, veh/h		2018			3013			320				11
Approach Delay, s/veh		25.0			19.7			54.7				59.0
Approach LOS		C			B			D				E
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.6	9.9	28.5	68.0	4.6	18.9	13.9	82.6				
Change Period (Y+Rc), s	4.0	6.0	7.0	6.5	4.0	6.0	4.0	7.0				
Max Green Setting (Gmax), s	21.0	10.0	4.0	61.5	14.0	17.0	10.0	58.0				
Max Q Clear Time (g_c+I1), s	9.0	2.4	9.9	33.3	2.3	9.4	10.0	48.4				
Green Ext Time (p_c), s	0.6	0.0	0.0	9.6	0.0	0.2	0.0	7.7				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			23.9									
HCM 6th LOS			C									



Timing Report, Sorted By Phase  
 174: Lady Moon/HP East & Harmony

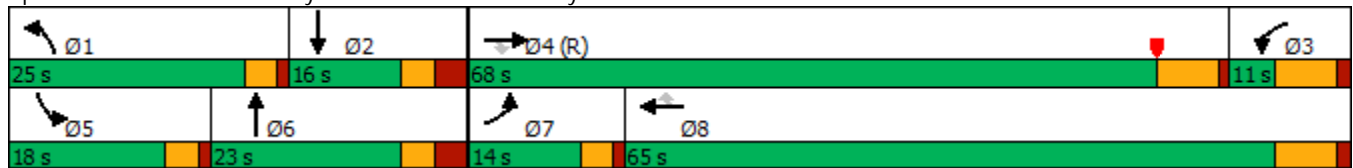
Long Total AM

								
Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBT	WBL	EBT	SBL	NBT	EBL	WBT
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize								
Recall Mode	None	None	None	C-Max	None	None	None	None
Maximum Split (s)	25	16	11	68	18	23	14	65
Maximum Split (%)	20.8%	13.3%	9.2%	56.7%	15.0%	19.2%	11.7%	54.2%
Minimum Split (s)	11	15	11	25.5	11	15	11	28
Yellow Time (s)	3	3	5.5	5.5	3	3	3	5.5
All-Red Time (s)	1	3	1.5	1	1	3	1	1.5
Minimum Initial (s)	4	4	4	15	4	4	4	15
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)				7				7
Flash Dont Walk (s)				12				10
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	12.5	37.5	1.5	53.5	12.5	30.5	53.5	67.5
End Time (s)	37.5	53.5	12.5	1.5	30.5	53.5	67.5	12.5
Yield/Force Off (s)	33.5	47.5	5.5	115	26.5	47.5	63.5	5.5
Yield/Force Off 170(s)	33.5	47.5	5.5	103	26.5	47.5	63.5	115.5
Local Start Time (s)	17.5	42.5	6.5	58.5	17.5	35.5	58.5	72.5
Local Yield (s)	38.5	52.5	10.5	0	31.5	52.5	68.5	10.5
Local Yield 170(s)	38.5	52.5	10.5	108	31.5	52.5	68.5	0.5

Intersection Summary

Cycle Length 120  
 Control Type Actuated-Coordinated  
 Natural Cycle 90  
 Offset: 115 (96%), Referenced to phase 4:EBT, Start of Yellow











Splits and Phases: 174: Lady Moon/HP East & Harmony



## Queues

Long Total AM

## 174: Lady Moon/HP East &amp; Harmony























										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	122	1801	148	260	2638	184	209	209	5	10
v/c Ratio	0.59	0.52	0.13	1.82	0.83	0.18	0.48	0.71	0.05	0.09
Control Delay	62.2	11.2	1.6	426.5	22.0	2.5	52.2	36.8	54.2	39.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.2	11.2	1.6	426.5	22.0	2.5	52.2	36.8	54.2	39.1
Queue Length 50th (ft)	90	210	0	~156	520	0	77	74	4	4
Queue Length 95th (ft)	156	391	24	#243	#909	37	115	149	17	21
Internal Link Dist (ft)		1233			4691			644		316
Turn Bay Length (ft)	445			335		483	100		50	
Base Capacity (vph)	209	3472	1108	143	3196	1040	629	350	221	164
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.52	0.13	1.82	0.83	0.18	0.33	0.60	0.02	0.06

## Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.









HCM 6th Signalized Intersection Summary  
 174: Lady Moon/HP East & Harmony

Long Total PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	2740	185	210	2430	25	350	5	225	160	65	200
Future Volume (veh/h)	10	2740	185	210	2430	25	350	5	225	160	65	200
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		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	10	2796	189	214	2480	26	357	5	230	163	66	204
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	30	2769	859	266	3173	984	399	4	204	178	46	141
Arrive On Green	0.02	0.54	0.54	0.08	0.62	0.62	0.12	0.13	0.13	0.10	0.12	0.12
Sat Flow, veh/h	1781	5106	1584	3456	5106	1584	3456	34	1556	1781	396	1225
Grp Volume(v), veh/h	10	2796	189	214	2480	26	357	0	235	163	0	270
Grp Sat Flow(s),veh/h/ln	1781	1702	1584	1728	1702	1584	1728	0	1590	1781	0	1621
Q Serve(g_s), s	0.7	70.5	4.9	7.9	46.5	0.8	13.2	0.0	17.0	11.8	0.0	15.0
Cycle Q Clear(g_c), s	0.7	70.5	4.9	7.9	46.5	0.8	13.2	0.0	17.0	11.8	0.0	15.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.98	1.00		0.76
Lane Grp Cap(c), veh/h	30	2769	859	266	3173	984	399	0	208	178	0	187
V/C Ratio(X)	0.33	1.01	0.22	0.81	0.78	0.03	0.90	0.00	1.13	0.92	0.00	1.44
Avail Cap(c_a), veh/h	110	2769	859	266	3173	984	399	0	208	178	0	187
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	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	63.2	29.8	5.7	59.0	18.1	9.5	56.7	0.0	56.5	58.0	0.0	57.5
Incr Delay (d2), s/veh	6.2	19.5	0.6	16.4	1.3	0.0	22.0	0.0	101.8	43.9	0.0	227.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	30.2	2.7	3.9	15.9	0.3	7.0	0.0	12.7	7.5	0.0	18.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.3	49.3	6.3	75.4	19.4	9.5	78.7	0.0	158.3	101.9	0.0	284.7
LnGrp LOS	E	F	A	E	B	A	E	A	F	F	A	F
Approach Vol, veh/h		2995			2720			592			433	
Approach Delay, s/veh		46.6			23.7			110.3			215.9	
Approach LOS		D			C			F			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.0	20.0	16.0	76.0	16.0	22.0	5.2	86.8				
Change Period (Y+Rc), s	4.0	6.0	7.0	6.5	4.0	6.0	4.0	7.0				
Max Green Setting (Gmax), s	14.0	14.0	9.0	69.5	12.0	16.0	7.0	74.0				
Max Q Clear Time (g_c+I1), s	15.2	17.0	9.9	72.5	13.8	19.0	2.7	48.5				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			53.8									
HCM 6th LOS			D									

Timing Report, Sorted By Phase  
 174: Lady Moon/HP East & Harmony

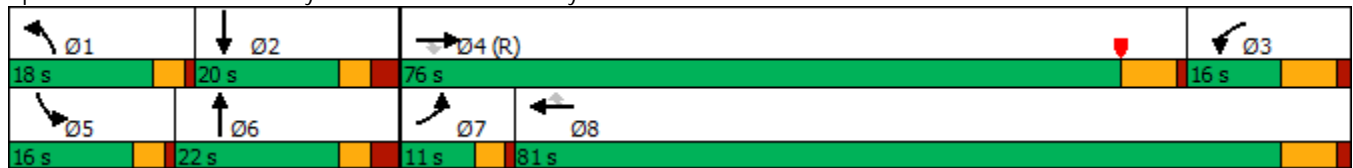
Long Total PM

								
Phase Number	1	2	3	4	5	6	7	8
Movement	NBL	SBT	WBL	EBT	SBL	NBT	EBL	WBT
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lead	Lag
Lead-Lag Optimize								
Recall Mode	None	None	None	C-Max	None	None	None	None
Maximum Split (s)	18	20	16	76	16	22	11	81
Maximum Split (%)	13.8%	15.4%	12.3%	58.5%	12.3%	16.9%	8.5%	62.3%
Minimum Split (s)	11	15	11	25.5	11	15	11	28
Yellow Time (s)	3	3	5.5	5.5	3	3	3	5.5
All-Red Time (s)	1	3	1.5	1	1	3	1	1.5
Minimum Initial (s)	4	4	4	15	4	4	4	15
Vehicle Extension (s)	3	3	3	3	3	3	3	3
Minimum Gap (s)	3	3	3	3	3	3	3	3
Time Before Reduce (s)	0	0	0	0	0	0	0	0
Time To Reduce (s)	0	0	0	0	0	0	0	0
Walk Time (s)				7				7
Flash Dont Walk (s)				12				10
Dual Entry	No	Yes	No	Yes	No	Yes	No	Yes
Inhibit Max	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Start Time (s)	22.5	40.5	6.5	60.5	22.5	38.5	60.5	71.5
End Time (s)	40.5	60.5	22.5	6.5	38.5	60.5	71.5	22.5
Yield/Force Off (s)	36.5	54.5	15.5	0	34.5	54.5	67.5	15.5
Yield/Force Off 170(s)	36.5	54.5	15.5	118	34.5	54.5	67.5	5.5
Local Start Time (s)	22.5	40.5	6.5	60.5	22.5	38.5	60.5	71.5
Local Yield (s)	36.5	54.5	15.5	0	34.5	54.5	67.5	15.5
Local Yield 170(s)	36.5	54.5	15.5	118	34.5	54.5	67.5	5.5

Intersection Summary

Cycle Length 130  
 Control Type Actuated-Coordinated  
 Natural Cycle 110  
 Offset: 0 (0%), Referenced to phase 4:EBT, Start of Yellow

Splits and Phases: 174: Lady Moon/HP East & Harmony















Queues

Long Total PM

174: Lady Moon/HP East & Harmony

										
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	10	2796	189	214	2480	26	357	235	163	270
v/c Ratio	0.10	1.01	0.21	0.81	0.76	0.03	0.90	0.73	0.92	1.00
Control Delay	60.3	50.5	6.1	82.2	18.6	0.0	83.0	37.5	107.5	92.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.3	50.5	6.1	82.2	18.6	0.0	83.0	37.5	107.5	92.3
Queue Length 50th (ft)	8	-872	26	93	467	0	155	83	138	156
Queue Length 95th (ft)	27	#994	64	#157	673	0	#244	#194	#278	#342
Internal Link Dist (ft)		1233			4691			644		316
Turn Bay Length (ft)	445			335		483	100		50	
Base Capacity (vph)	108	2757	894	264	3277	1028	396	322	177	270
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	1.01	0.21	0.81	0.76	0.03	0.90	0.73	0.92	1.00

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

HCM 6th TWSC  
 14: Lady Moon & Timberwood/Banner

Long Total AM

Intersection												
Int Delay, s/veh	8.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔		↔	↔	
Traffic Vol, veh/h	85	30	20	35	10	20	80	275	45	90	210	75
Future Vol, veh/h	85	30	20	35	10	20	80	275	45	90	210	75
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	80	-	-	80	250	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	89	32	21	37	11	21	84	289	47	95	221	79

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	948	955	261	958	971	313	300	0	0	336	0	0
Stage 1	451	451	-	481	481	-	-	-	-	-	-	-
Stage 2	497	504	-	477	490	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	241	258	778	237	253	727	1261	-	-	1223	-	-
Stage 1	588	571	-	566	554	-	-	-	-	-	-	-
Stage 2	555	541	-	569	549	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	201	222	778	184	218	727	1261	-	-	1223	-	-
Mov Cap-2 Maneuver	201	222	-	184	218	-	-	-	-	-	-	-
Stage 1	549	526	-	528	517	-	-	-	-	-	-	-
Stage 2	493	505	-	480	506	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	39.5		23.9		1.6			2		
HCM LOS	E		C							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1261	-	-	206	778	191	727	1223	-	-
HCM Lane V/C Ratio	0.067	-	-	0.588	0.027	0.248	0.029	0.077	-	-
HCM Control Delay (s)	8.1	-	-	44.7	9.8	30	10.1	8.2	-	-
HCM Lane LOS	A	-	-	E	A	D	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	3.3	0.1	0.9	0.1	0.3	-	-

HCM 6th TWSC  
 14: Lady Moon & Timberwood/Banner

Long Total PM

Intersection

Int Delay, s/veh	21.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗	↖	↗		↖	↗	
Traffic Vol, veh/h	185	15	30	45	35	40	45	295	25	25	345	55
Future Vol, veh/h	185	15	30	45	35	40	45	295	25	25	345	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	80	-	-	80	250	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	195	16	32	47	37	42	47	311	26	26	363	58

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	902	875	392	886	891	324	421	0	0	337	0	0
Stage 1	444	444	-	418	418	-	-	-	-	-	-	-
Stage 2	458	431	-	468	473	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	259	288	657	265	282	717	1138	-	-	1222	-	-
Stage 1	593	575	-	612	591	-	-	-	-	-	-	-
Stage 2	583	583	-	575	558	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	208	270	657	230	265	717	1138	-	-	1222	-	-
Mov Cap-2 Maneuver	208	270	-	230	265	-	-	-	-	-	-	-
Stage 1	569	563	-	587	567	-	-	-	-	-	-	-
Stage 2	492	559	-	521	546	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	94.9		21.6			1			0.5		
HCM LOS	F		C								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1138	-	-	212	657	244	717	1222	-	-
HCM Lane V/C Ratio	0.042	-	-	0.993	0.048	0.345	0.059	0.022	-	-
HCM Control Delay (s)	8.3	-	-	107.5	10.8	27.3	10.3	8	-	-
HCM Lane LOS	A	-	-	F	B	D	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	8.8	0.2	1.5	0.2	0.1	-	-

HCM 6th TWSC  
 11: Site Access /Retail Access & Timberwood

Long Total AM

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	45	90	75	40	90	35	5	0	15	30	0	20
Future Vol, veh/h	45	90	75	40	90	35	5	0	15	30	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	47	95	79	42	95	37	5	0	16	32	0	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	132	0	0	174	0	0	437	445	135	435	466	114
Stage 1	-	-	-	-	-	-	229	229	-	198	198	-
Stage 2	-	-	-	-	-	-	208	216	-	237	268	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1453	-	-	1403	-	-	530	508	914	531	494	939
Stage 1	-	-	-	-	-	-	774	715	-	804	737	-
Stage 2	-	-	-	-	-	-	794	724	-	766	687	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1453	-	-	1403	-	-	492	474	914	495	461	939
Mov Cap-2 Maneuver	-	-	-	-	-	-	492	474	-	495	461	-
Stage 1	-	-	-	-	-	-	746	689	-	775	713	-
Stage 2	-	-	-	-	-	-	751	701	-	726	662	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.6			1.9			9.9			11.5		
HCM LOS							A			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	753	1453	-	-	1403	-	-	610
HCM Lane V/C Ratio	0.028	0.033	-	-	0.03	-	-	0.086
HCM Control Delay (s)	9.9	7.6	0	-	7.6	0	-	11.5
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-	-	0.3



HCM 6th TWSC  
 11: Site Access /Retail Access & Timberwood

Long Total PM

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	35	110	40	20	90	25	5	0	70	45	0	30
Future Vol, veh/h	35	110	40	20	90	25	5	0	70	45	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	116	42	21	95	26	5	0	74	47	0	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	121	0	0	158	0	0	377	374	137	398	382	108
Stage 1	-	-	-	-	-	-	211	211	-	150	150	-
Stage 2	-	-	-	-	-	-	166	163	-	248	232	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1467	-	-	1422	-	-	580	557	911	562	551	946
Stage 1	-	-	-	-	-	-	791	728	-	853	773	-
Stage 2	-	-	-	-	-	-	836	763	-	756	713	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1467	-	-	1422	-	-	542	532	911	500	527	946
Mov Cap-2 Maneuver	-	-	-	-	-	-	542	532	-	500	527	-
Stage 1	-	-	-	-	-	-	769	708	-	829	761	-
Stage 2	-	-	-	-	-	-	795	751	-	675	693	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.4			1.1			9.5			11.7		
HCM LOS							A			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	871	1467	-	-	1422	-	-	616
HCM Lane V/C Ratio	0.091	0.025	-	-	0.015	-	-	0.128
HCM Control Delay (s)	9.5	7.5	0	-	7.6	0	-	11.7
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.4

HCM 6th TWSC  
 1: Lady Moon & Site Access

Long Total AM

Intersection

Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	5	15	380	250	15
Future Vol, veh/h	20	5	15	380	250	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	21	5	16	400	263	16

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	703	271	279	0	-	0
Stage 1	271	-	-	-	-	-
Stage 2	432	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	404	768	1284	-	-	-
Stage 1	775	-	-	-	-	-
Stage 2	655	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	399	768	1284	-	-	-
Mov Cap-2 Maneuver	399	-	-	-	-	-
Stage 1	766	-	-	-	-	-
Stage 2	655	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.7	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1284	-	441	-	-
HCM Lane V/C Ratio	0.012	-	0.06	-	-
HCM Control Delay (s)	7.8	-	13.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

HCM 6th TWSC  
 1: Lady Moon & Site Access

Long Total PM

Intersection

Int Delay, s/veh	2.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	100	25	10	265	410	10
Future Vol, veh/h	100	25	10	265	410	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	105	26	11	279	432	11

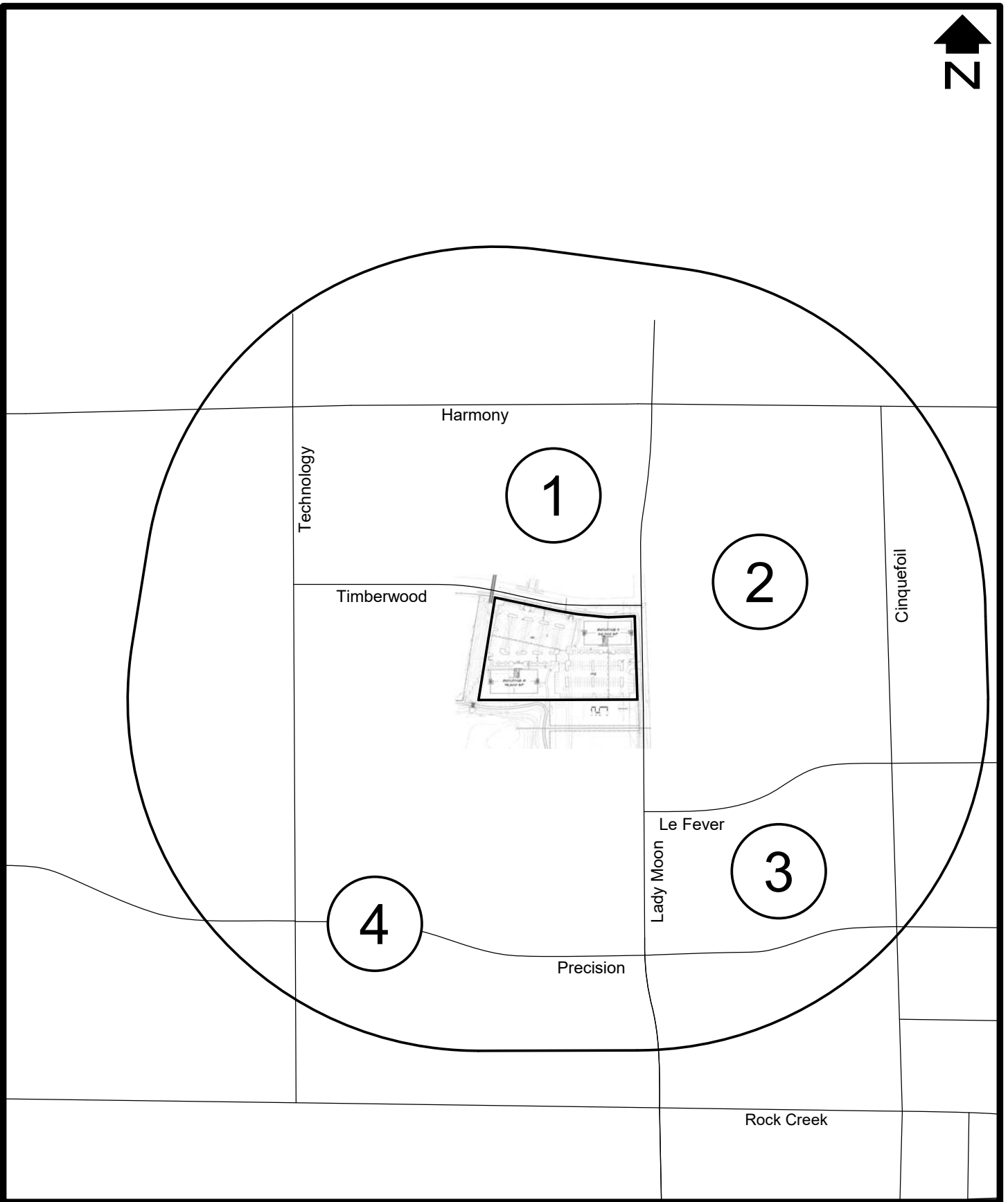
Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	739	438	443	0	0
Stage 1	438	-	-	-	-
Stage 2	301	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	385	619	1117	-	-
Stage 1	651	-	-	-	-
Stage 2	751	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	381	619	1117	-	-
Mov Cap-2 Maneuver	381	-	-	-	-
Stage 1	644	-	-	-	-
Stage 2	751	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.7	0.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1117	-	413	-	-
HCM Lane V/C Ratio	0.009	-	0.319	-	-
HCM Control Delay (s)	8.3	-	17.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	1.4	-	-

# APPENDIX H





SCALE: 1"=500'

## PEDESTRIAN INFLUENCE AREA

### Pedestrian LOS Worksheet

Project Location Classification: Other

	Description of Applicable Destination Area Within 1320'	Destination Area Classification		Level of Service (minimum based on project location classification)				
				Directness	Continuity	Street Crossings	Visual Interest & Amenities	Security
1	Retail area to the north	Commercial	Minimum	C	C	C	C	C
			Actual	A	D	B	C	C
			Proposed	A	A	B	C	B
2	Banner Medical Campus	Commercial/ Institutional	Minimum	C	C	C	C	C
			Actual	A	D	B	C	B
			Proposed	A	A	B	B	B
3	Residential area to the southeast	Industrial	Minimum	C	C	C	C	C
			Actual	A	D	C	C	C
			Proposed	A	B	C	B	C
4	Industrial uses to the south	Industrial	Minimum	C	C	C	C	C
			Actual	A	D	B	C	C
			Proposed	A	B	B	C	C
5			Minimum					
			Actual					
			Proposed					
6			Minimum					
			Actual					
			Proposed					
7			Minimum					
			Actual					
			Proposed					
8			Minimum					
			Actual					
			Proposed					
9			Minimum					
			Actual					
			Proposed					
10			Minimum					
			Actual					
			Proposed					

## Bicycle LOS Worksheet

		Level of Service – Connectivity			
		Minimum	Actual	Proposed	
	Base Connectivity:	C	B	B	
Specific connections to priority sites:					
	Description of Applicable Destination Area Within 1320'	Destination Area Classification			
1	Retail area north of the site	Commercial	C	A	A
2					
3					
4					
5					
6					
7					
8					