BANNER HEALTH CENTER *plus*

Development Review Board Narrative

March 8, 2024

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TABLE OF CONTENTS

Development Team 2

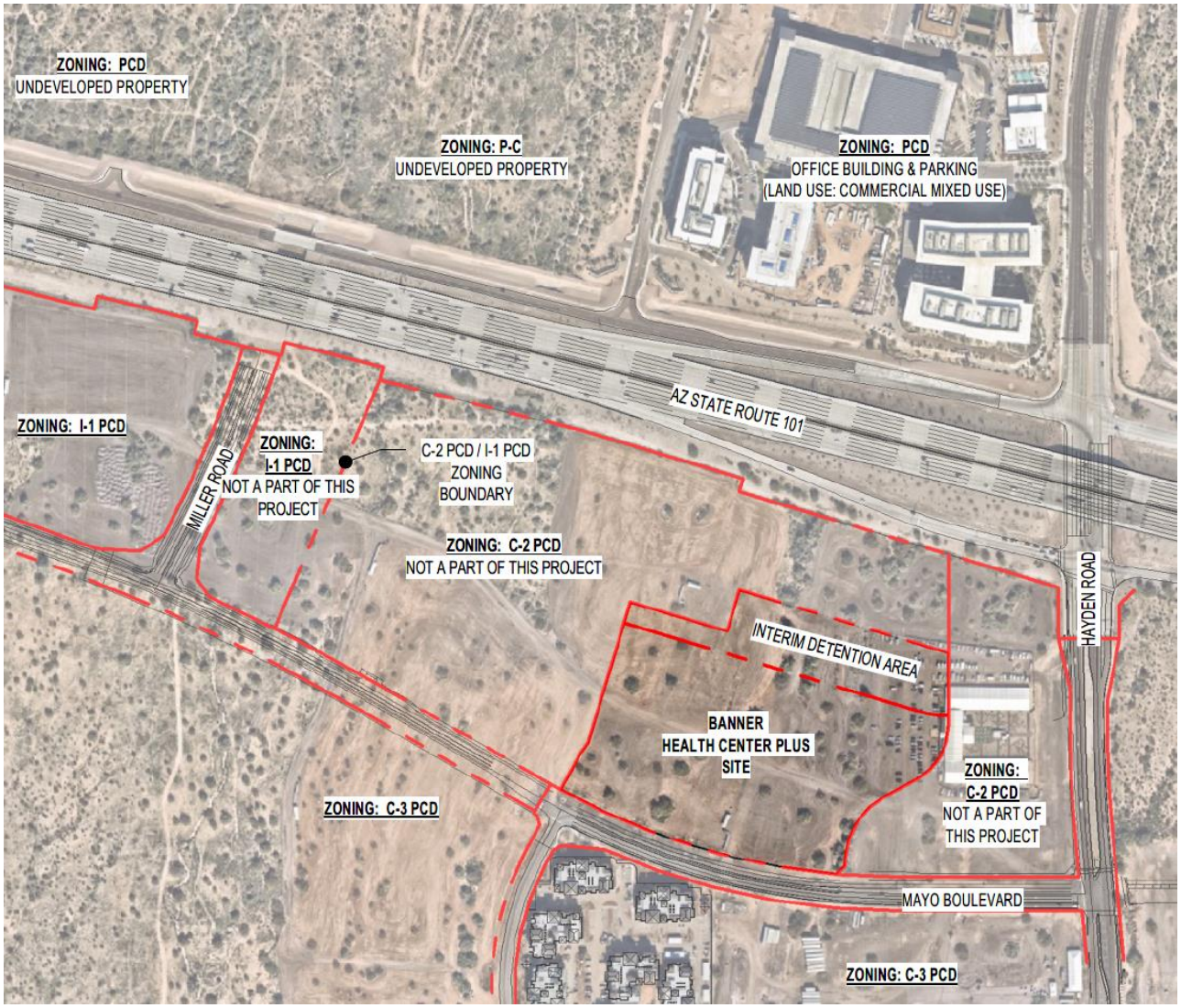
1. Project Overview 4
2. Site 6
3. Banner Health Center *Plus* 7
4. Civil 14
5. Architecture & Design 16
6. International Green Construction Code (IgCC) 23
7. Development Review Board Criteria 25
8. Design Guidelines 29

1. PROJECT OVERVIEW

Banner Health ("Banner" or "Applicant") is submitting this Development Review Board Application ("Application") to facilitate development of a new Banner Health Center *Plus* ("Health Center *Plus*" or "Project"), an outpatient medical office and services facility, to be developed on the approximate 14.8 acres generally located 700-feet west of the northwest corner of Hayden Road & Mayo Boulevard ("Site"). The Site is comprised of a portion of Maricopa County Assessor Parcel Number 215-07-209H ("Property"). See Context Aerial Map. The remaining approximate 33 acres of Maricopa County Assessor Parcel Number 215-07-209H are not included in this Application. The Site is zoned Planning Community District—Central Business District (P-C C-2) by Ordinance No. 4594 (19-ZN-2022#11). The Site is located within Planning Unit IV of the Crossroads East Planned Community District (PCD). The proposed uses are allowed by right pursuant to the existing and approved zoning. No changes to the approved zoning or development standards are requested with this application. The 119,500 gross square-foot Banner Health Center *Plus* will be a state-of-the-art outpatient medical office and services facility will help continue to develop Banner's care network in Scottsdale adding exciting specialties such as a Banner MD Anderson oncology program, ambulatory surgery, outpatient imaging, primary and specialty care, and related uses. The Banner Health Center *Plus* will serve as a new community healthcare resource for the benefit of the existing and growing population of North Scottsdale and greater North Phoenix.

The Health Center *Plus* facility will include an array of healthcare services, including a comprehensive MD Anderson Cancer suite that incorporates Radiation Oncology, Linear Accelerators, Infusion Center, Oncology Imaging, and Compounding Pharmacy, as well as Banner University Medical Group clinic space, a Banner Health Urgent Care, Retail Imaging Center, Banner Family Pharmacy, and an Ambulatory Surgery Center. The Project complies with the City's adopted Green Building Program that mandates adherence to the International Green Construction Code. Design features included as part of the Project include EV-ready charging infrastructure, renewable energy solutions, and water use reduction strategies.

2. SITE



The Site is generally located west of Hayden Road between State Route 101 to the north and Mayo Boulevard to the south. The Site is currently vacant, undeveloped desert land, and is immediately bounded to the east by property owned by Hayden Loop 101 Investors LLC and zoned P-C C-2 in 19-ZN-2022#11; to the north west by the remainder of APN - 209H, which is also vacant, undeveloped land zoned P-C C-2, with a small portion near the Miller Road alignment zoned P-C I-1; and to the south by San Artes luxury apartment home community.

Notable uses in the surrounding area include the Nationwide/ Cavasson campus to the north across State Route 101, the planned ASM campus and the under construction Optima McDowell Mountain condominiums to the west, and the Fairmont Scottsdale Princess and the TPC Stadium golf course to the southwest.

3. BANNER HEALTH CENTER *plus*

OVERALL SITE ORGANIZATION

The Health Center *Plus* facility is planned on the approximate 14.8 acres generally located 700-feet west of the northwest corner of Hayden Road & Mayo Boulevard. The Site Plan is generally organized along an east—west axis. The Project includes a 3-story, 119,500 gross square-foot medical office building, including a 1-story urgent care. The building is generally positioned in the middle of the Site, with associated site improvements, such as landscaping, open space and trail network, hardscape, and parking surrounding it.

Primary access to the Health Care *Plus* facility is planned along Hayden Road and at the intersection of 78th Street & Mayo Boulevard, with secondary access planned at the approximate midpoint between Hayden Road and 78th Street. Parking fields are distributed around the perimeter of the building, with patient parking and the main building entry oriented to the north. The urgent care entry is also located on the north side of the building; however, has a separate entrance from the main building. Staff parking is distributed around the perimeter, including a parking canopy with solar panels. Hardscape pathways are planned to provide connectivity and safe access to the facility's various entries/exits for staff, patients, and visitors.

PROGRAMMING & PLANNING

The Health Center *Plus* facility will provide comprehensive outpatient services as well as Outpatient Oncology services provided in conjunction with M.D. Anderson. M.D. Anderson services will include Radiation Oncology, Linear Accelerators, Infusing Center, Oncology, Imaging, and Compounding Pharmacy. Additionally, the facility will include clinic space for the Banner University Medical Group, Banner Health Urgent Care, Retail Imaging Center, Banner Family Pharmacy, and an Ambulatory Surgery Center. It is anticipated that the Banner University Medical Group clinics will occupy the entire 2nd floor, and are planned to include cardiac outpatient services, as well as other specialty services.

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HIGH PERFORMANCE DESIGN & FUNCTIONALITY

The Health Center *Plus* facility is designed using site-adapted Banner Health template designs, which have been developed to maximize functional and operational efficiencies and provide state-of-the-art treatment spaces focused on exceptional patient care.

Synonymous with the MD Anderson Cancer Center brand, the building will also include a structural "Lantern Element" on the building exterior that serves as a beacon of hope for patients, families, and caregivers. Soothing color palettes, bespoke landscape design, natural trails, and accessible parking will make the facility a new healthcare landmark for the City of Scottsdale.

Design decisions were carefully evaluated by the integrated project delivery team comprised of Banner Health Design & Construction, Banner Health System clinical experts, SmithGroup, NexCore, Okland Construction Company, and construction sub-trades. The Banner Health Center *Plus* facility seeks to combine the best practices of Banner and NexCore's network of medical office buildings and implement new innovations in healthcare design.

The Project seeks to develop design and engineering strategies that promote health, healing, & wellness, while conserving water and energy, and respecting the natural ecosystem of the Site.

PARKING

Parking complies with City's requirement of 4 parking spaces per 1000 square-feet of building area, plus additional parking as determined based on Banner's extensive experience. Based on the various planned medical office uses, Banner is providing 4.43 parking spaces per 1,000 square-feet of building area, resulting in a total of 529 parking spaces, with the requisite number of ADA parking spaces clustered near the building's main entry.

LANDSCAPING

The general site design focuses on exterior landscape improvements along the perimeter roadways and points of entry. The character of the design includes a natural desert palette with species and forms that are native to the general Sonoran region. Visual and physical wayfinding cues guide patients and visitors to parking areas that connect to pedestrian walks linking to building entries. Areas of respite with shade and seating are located throughout the Project and adjacent to building entries, serving as gathering spaces for visitors and staff at different scales with flexible programming opportunities. A small staff patio and garden planting area will be placed on the east side of the building to provide maximum shade for daytime use and views to the mountains. Landscape micro-basins and bio-swales contribute aesthetic and ecological benefits while also retaining water and conveying it to larger detention/retention areas. The planting along the Mayo Boulevard trail corridor and internal walking paths will be Sonoran native planting focused on providing ample pedestrian shade while promoting wildlife, such as local pollinators like butterflies and hummingbirds.

LANDSCAPE SPECIES PALETTE

Landscape planting design will consist primarily of trees, shrubs, cacti, accents, and ground cover plants. Mature native trees and cacti will be salvaged and relocated on site as part of the new landscape planting design to the greatest extent possible. Plant materials will be strategically selected based on characteristics of low water-use and low maintenance requirements. Stone top-dress and plant species selection will enhance and celebrate the native, desert character of the area to create a cohesive visual experience across the Site that blends into the contextual environment. Plant selections at building entries, staff/visitor amenity spaces, and pedestrian linkages will include a mixture of scale, form, texture, and color to celebrate the dynamic forms of the Sonoran Desert and provide seasonal interest.

Select high visibility areas are planned to receive increased masses and specimen materials. Plant densities will be highest within impact areas to encourage recognition of arrival points. Similar densities will occur along pedestrian walks and common areas for aesthetics and staff and visitor comfort. Tree and plant size and quantities will adhere to City requirements throughout Project.

IRRIGATION

All landscape planting areas will be fed by a new automatic, underground irrigation system. This water-wise irrigation system will include a rain sensor so that in case of a rain event the irrigation system will shut off, allowing for the most efficiency and water conservation. The new system will be set up so all current and future irrigation areas tie back to one central controller unit. Plants of similar species and water demands will be valved separately to minimize water-use and prevent over-watering. Best stormwater management practices will seek to use drainage design to direct rain water to landscape plantings prior to reaching the storm sewer to reduce irrigation demand.

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HARDSCAPE & SITE FURNISHINGS

Premium paving materials will be used at the visitor entry plaza and vehicular entries to the parking lot to further layer and define site wayfinding and reinforce the architectural design language of the Project. The perimeter wellness trail will be constructed with stabilized decomposed granite to blend in with the adjacent desert ground plane, reduce the use of concrete, and increase the porosity of the Site. The overall site paving material palette will balance aesthetics with durability, maintenance, and ease of construction.

LOADING & MECHANICAL

The service-related elements are planned along the south side of the building. A loading area has been provided with enough width to accommodate loading and for future mobile MRI capabilities. Additional services along the south side include access to the recycle and trash compactors, as well as dedicated parking for Ambulatory Surgery patient discharge. To the east of the refuse area, the main mechanical and electrical equipment yard is provided, fully screened. MEP yards have been provided in two areas on the site. On the western portion of the south elevation, one additional ground mounted mechanical unit is provided, and is fully screened.

REFUSE

The Project, which includes calculated capacity for a total of 180,000 GSF, will provide a 6 cubic yard trash compactor and a 6 cubic yard recycle compactor. The calculations are provided below for conformance with the IgCC recycling requirements and Scottsdale Design Standards & Policies Manual (DSPM):

Total Capacity Gross Square Feet (Commercial/Non-Residential): **180,000 GSF**
Total Refuse Containers: (180,000/30,000) x 2 = 12 containers distributed as **6 trash and 6 recycling**.
6 containers x 4 cubic yards = 24 cubic yards of waste & 24 cubic yards of recycling.
Waste Compaction ratio: 24 cubic yards / 4 (ratio below) = **6 cubic yards trash compactor**
Recycle Compaction ratio: 24 cubic yards / 4 (ratio below) = **6 cubic yards recycle compactor**

4. CIVIL

GRADING & DRAINGE

The Grading & Drainage design approach will meet the City and Maricopa County Flood Control District requirements. The design will include storm drains and/or swales to collect and convey both off-site and on-site flows to surface detention basins. These flows will be discharged by means of storm drain bleed-off. All building finish floors are required to be set a minimum of 3' above the highest adjacent grade or above the 500-year storm event to meet City and Federal floodplain requirements. A 500-year floodplain analysis was conducted with assumptions for the grading to the west with results showing that the 500-year water surface elevation does not govern the finish floor elevation. The finished floor will be set at least 3' above highest adjacent grade.

The offsite flows that impact the Site from the northeast will be collected and conveyed as part of the parcels to the east, which wil be designed and developed by others. These improvements will be in place prior to construction of the Health Center *Plus* facility. There will be a junction structure required at the end of the collection to connect the east storm drain to the existing culverts in Mayo Boulevard.

WATER

There is an existing City 16" Ductile Iron Pipe (DIP) water main under Hayden Road and another 16" DIP Pipe that runs east-west under Mayo Boulevard. An on-site loop will provide fire protection to the building and hydrants, while domestic service will be taken from the main in Mayo Boulevard. There is a 12-inch public water line planned in the north drive while the fire loop through the Site is planned to be private. Fire hydrants will be spaced throughout the Site and along Mayo Boulevard to meet City Fire Code.

SEWER

Site sewer will discharge to a planned City of Scottsdale sewer main running east-west in Mayo Boulevard that is being designed and constructed by others. A sewer stub will be provided to the north end of the Site to minimize disruptions during any future expansions. Sewer mains will be sized to convey flows for the Project and possible future development to the north. Manholes will be provided as required to meet City of Scottsdale requirements.

ACCESS & TRAFFIC

Mayo Boulevard is planned to be extended to the west and widened along the north half-street. Two right turn lanes and two driveways are proposed along Mayo Boulevard to allow access to the Site. Both driveways are anticipated to be full access driveways. The east full access driveway will be a shared driveway between the Health Center *Plus* and future development to the immediate east. Additionally, in partnership with the property owner to the east, a private access drive connection to the Site from Hayden Road is being constructed that will allow access from southbound Hayden Road. These connections will allow for a looped circulation system for the Site. On-site private access drives to the north and the west of the Banner Health Center *Plus* will be designed and developed as part of this Project, while the access drive to the east will be designed and developed by others.

OFF-SITE IMPROVEMENTS

The adjacent landowner to the east, Hayden Loop 101 Investors LLC, is responsible for all required Master Plans, pursuant to the requirements of the Crossroads East PCD, and will take the lead on design and construction of off-site improvements, including right of way dedication and easements for Hayden Road and Mayo Boulevard, construction of required off-site roadway improvements for Hayden Road and Mayo Boulevard, and off-site water and sewer infrastructure, as well as the internal shared access drive along the eastern portion of the Site and the internal drive that connects to and from Hayden Road. All required off-site improvements will be completed alongside design and construction of the Banner Health Center *Plus* facility.

5. ARCHITECTURE & DESIGN

ARCHITECURAL DESIGN & CONCEPT DRIVERS

The Banner Health Center *Plus* is designed with unmatched quality, which mirrors the quality of care and commitment to the community that Banner provides in all of their facilities. The building is designed using the foundation of the new Banner Health Center *Plus* model.

This Project has been designed to be rooted in its Southwestern context and use quality materials and massing strategies that are sensitive to the local surroundings in terms of scale and context adjacent to the Loop 101 freeway corridor. The Project builds off the design themes that were established with the Banner Health Center *Plus* at New River Trails (located at 75th Avenue and the Loop 101 Freeway), and Banner's system-wide legacy of high quality architecture at its many medical center, outpatient and cancer center projects, and specifically the campuses of Banner Ironwood, Banner Ocotillo, and Banner Gateway. The architecture and building massing are integrated with Site and building programming strategies aimed to provide relief stress for patients, enhance wayfinding for staff and visitors, communicate a premium care delivery environment, and integrate seamlessly into the natural desert environment.

HEALTH CENTER PLUS BRAND PRECEDENT

BANNER HEALTH CENTER PLUS - NEW RIVER TRAIL

BANNER HEALTH CENTER PLUS - NEW RIVER TRAIL

BANNER UNIVERSITY TUCSON - NORTH

MD ANDERSON BRAND PRECEDENT

BANNER MD ANDERSON - GATEWAY CAMPUS

BANNER MD ANDERSON - PHOENIX CAMPUS

North Elevation—Health Care Plus Entry

This Project will be one of Banner's most significant investments into the Scottsdale healthcare marketplace. To maximize the investment potential, the facility's design plays an important role in communicating the mission of delivering a high quality of care to this community. A focus on health and wellness will elevate the experience of those visiting the facility. To emphasize placemaking and connectivity with the community, the natural desert site will be celebrated as well as the direct views to the McDowell preserve to the North and East of the site.

Design perspectives are included below and as part of the included exhibits along with building elevations that visually represent the approach to design and the adherence to the City's design guidelines. Specific language for each design guideline is included below.

North Elevation—Health Care Plus Entry

South Elevation (looking from walking trail)

South Elevation

North Elevation (looking from respite trail)

West Elevation (looking from respite trail)

East Elevation

North Elevation—Urgent Care Entry

North Elevation—Urgent Care Entry

BUILDING MATERIALS

The blend of quality building materials, which include masonry block, metals, and synthetic finishes, combined with the composition of windows and shading elements, provide for proper and appropriate massing and scale, creating a comfortable environment on-site, as well as along the surrounding streetscapes.

The color palette is comprised of a range of natural earth tones, with the intent of staying away from large amounts of warm or dark colors. Light sand and tan colors are complimented by the cooler glass and small areas of metal panels. This approach gives the building a lighter feel, relying on the rich texture of the various materials to promote a sense of elegance and quality commensurate with the consistent visual identity of Banner's facilities. To celebrate the natural environment, synthetic cor-ten metal panels will be used with the cool synthetic zinc metal panels.

Masonry is concentrated at the main entry points of the building (freeway exposure) and the south elevation along Mayo Boulevard. The masonry consists of four different colors and multiple masonry textures that are inter-woven in a pattern reminiscent of the natural Arizona landscape. This signature pattern also is used in site walls and to screen the building support areas on the south elevation. The placement of the masonry serves two primary functions—communicate design excellence which is representative of the care received and to be a focal element that stands out from the rest of the building perimeter to call one's attention to a specific element.

Curtainwall and storefront high-performance glazing will be maximized in areas of highest public impact to connect users to the natural context on-site, as well as long range to the views outward from the Site. Glazing in staff circulation and break areas will also be maximized to allow for proper respite, collaboration, and recharge spaces.

Synthetic stucco (EIFS) of a similar color complement broken up by horizontal and vertical score lines is a predominant material on the east and west sides of the building. Punched window openings, areas of metal panel, canopies and other subtle accents provide a rich composition intended to create visual interest and avoid creating monolithic elevations.

Metal panel accents are used throughout the exterior of the building to provide a visual break from the predominant masonry or stucco exterior materials. These panels are used in a way that breaks the building's cornice line with the intent of reducing the building scale and mass.

LANTERN DESIGN

The signature focal element of the Banner Health Center *Plus* is the architectural 'lantern' element, similar to the 'Lantern of Hope' installed at the Banner MD Anderson Cancer Center at the Gateway campus in Gilbert, Arizona. The intention of the lantern element is to continue the legacy of design of similar Banner MD Anderson projects, but more importantly, recreate a similar effect of exposure from the adjacent freeway and a radiating message of hope for the users, patients and visitors to the building.

The design for the lantern utilizes clear glazed curtainwall, to maximize transparency of the element, and then a laser cut pattern of a palo verde tree canopy into an aluminum plate system held off the curtainwall by outriggers to create the layered effect. During evening hours, the lantern is illuminated to recognize the different colors associated with various cancer awareness platforms. It is proposed that the design utilizes interior lighting to create the nighttime lighting effect, with recessed lighting coves at the slab edges to minimize horizontal dark bands of the lighting affect around the perimeter.

6. INTERNATIONAL GREEN CONSTRUCTION CODE (IgCC)

HEAT ISLAND MITIGATION

A minimum of 50 percent of site hardscape has been provided with a combination of the following options (a) shading by trees and (b) SRI compliant hardscape material. Full compliance with this requirement is detailed on exhibits LP100.1-LP100.3, which illustrate shade provided from the trees on-site at 10 AM, 12 PM, and 3 PM at the summer solstice per City requirements. The mean shade provided from those times, plus the SRI compliant hardscape are detailed as part of the submittal.

ELECTRIC VEHICLE CHARGING INFRASTRUCTURE

Based on the size of this Health Center *Plus* facility, 19 chargers are planned to be 'ready' and the infrastructure for an additional 28 total to be provided on-site (4% and 10% of the required parking).

ENERGY COMPLIANCE PATH (PRESCRIPTIVE)

This facility is designed to be compliant with the 2021 International Energy Code and 2021 International Green Building Code as required by the City. Based on the glazing being less than 40% of the perimeter, the design will be confirmed and documented utilizing the DOE COMCheck compliance forms.

ON-SITE RENEWABLE ENERGY SYSTEM

In accordance with IgCC amended Sections 701.3, this Project is to provide not less than 3% of the annual estimated energy use for the building mechanical, service water heating, and lighting.

The annual estimated energy use for the building mechanical, service water heating, and lighting is estimated at 18.2 kWh/sf-yr or 2,115,768 kWh/yr for this 119,500 SF building. Energy use intensity has been estimated based on the Department of Energy/Pacific Northwest National Laboratory prototype building energy models for an Outpatient Healthcare Facility built to IECC 2021 in Climate Zone 2B.

3% of 2,115,768 kWh/yr is approximately 64,000 kWh/yr. A 45 kWdc solar array, is estimated to produce enough power to meet the 3% of annual building mechanical, service water heating and lighting energy use requirement. A 45 kWdc solar array is estimated to produce 70,000 kWh/yr in Scottsdale at a 0° tilt and 78,000 kWh/yr with the City's Solar Submittal Guidelines recommended tilt of 18.5° based on PVWatts analysis.

This PV solar system will be provided on a parking canopy in the parking field west of the facility. The canopy section has also been provided with the site detail exhibits.

REFUSE AND RECYCLING COLLECTION

Refuse and Recycling enclosures are provided and designed for in accordance with DSPM Section 2-1.309. Two (6) Cubic Yard vertical trash compactor will be provided for both recycling and refuse, one for each refuse line. Location and validating calculations have been provided on the Refuse exhibit.

7. DEVELOPMENT REVIEW BOARD CRITERIA

Section 1.904 of the City's Zoning Ordinance sets forth the criteria guiding the Development Review Board when considering applications for development:

1. *The Board shall examine the design and theme of the application for consistency with the design and character components of the applicable guidelines, development standards, Design Standards and Policies Manual, master plans, character plan and General Plan.*

Response: The Banner Health Center *Plus* facility has been designed with a consistent theme, which conforms to the applicable design guidelines—Sensitive Design Program, Greater Phoenix Metro Green Infrastructure Handbook, MAG Supplements, Office Design Guidelines, Lighting Design Guidelines, and the Shading Design Guidelines, development standards, Design Standards & Policies Manual, master plans, Greater Airpark Area Plan, and General Plan (see below).

2. *The architectural character, landscaping and site design of the proposed development shall:*

   a. *Promote a desirable relationship of structures to one another, to open spaces and topography, both on the site and in the surrounding neighborhood;*

Response: The Project recognizes that the building should be scaled to its context. The Site Plan and design of the building integrate into the existing context of the area, through breaking-up the volume of the overall building, proportions, and height into smaller sub-volumes and by creating the appearance of grouping of smaller structures through the use of textures, materials, details, colors, and other architectural elements. Building materials were selectively chosen to include the use of quality masonry block, metals, and synthetic finishes, combined with the composition of windows and shading elements, which collectively provide for proper and appropriate massing and scale, creating a comfortable environment on-site, as well as along the surrounding streetscapes.

The Health Center *Plus* facility has been designed with a cohesive network of pedestrian and vehicular access points that provide appropriate public linkages and safe service access at the rear of the facility. The natural topography of the site slopes down from north to south and the buildings, pathways and open space relate appropriately to the sloping site. The structures will relate to the adjacent neighboring properties as well as the freeway for seamless contextual integration.

b. Avoid excessive variety and monotonous repetition;

Response: The Health Center *Plus* facility will have a unifying aesthetic as developed by the Banner Health Design Standards, which was appropriately conceived as a response to southwestern regional landscape and climatic features. The design will promote a cohesive massing strategy with textured/layered elevations and appropriate focus on elements to assist in intuitive wayfinding on-site.

The building has been scaled to its context and complies with all applicable development standards. The building elevations define a rhythm and pattern of windows, materials, colors, and architectural features that are similar in proportion, which also establish a human scale at the streetscape and building entries. In addition, the external design of the building expresses the position of each floor through materials, articulation of structural elements, and expression lines to avoid the appearance of large panelized facades or extensive featureless surfaces.

c. Recognize the unique climatic and other environmental factors of this region to respond to the Sonoran Desert environment, as specified in the Sensitive Design Principles;

Response: The architecture of the desert southwest has traditionally responded to its surroundings to provide a green response in the design process. The Health Center *Plus* facility includes flat roofs that minimize the surface area exposed to the sun with internal building and roof deck insulation protecting the most vulnerable portion of the building. The facility's walls are predominately light in color to reflect the sun and provide adequate thickness to insulate the structure. Landscaping set against the building helps to soften the most extreme summer heat conditions. Overhangs at entries and recessed windows shade the required opening from direct sunlight, while providing an abundance of natural interior light. The Project includes use of trees in the landscaping, along with low water use, but green, vegetation below them to cool the building surroundings and exterior walls.

The Health Center *Plus* facility has been designed to respond to green initiatives, including site design elements of open space, storm water design, heat island effects, and water efficiencies. The building has been designed to optimize energy performance and use or reuse of recycled materials with control systems for lighting, thermal comfort, and ventilation.

The City's Sensitive Design Principles & Guidelines emphasize the unique character of the architecture. The planned structure, along with landscaping, streetscape, and elements of human scale are appropriate and relate to the context of the surrounding area. The Banner brand standards are rooted in the Sonoran Desert environment, and adherence to the Sensitive Design Principles are detailed in this Narrative and accompanying plan sheets.

d. Conform to the recommendations and guidelines in the Environmentally Sensitive Lands (ESL) Ordinance, in the ESL Overlay District; and

Response: The proposed facility is not located in the ESL Overlay District.

e. Incorporate unique or characteristic architectural features, including building height, size, shape, color, texture, setback or architectural details, in the Historic Property Overlay District.

Response: The proposed facility is not located in the Historic Property Overlay District.

3. Ingress, egress, internal traffic circulation, off-street parking facilities, loading and service areas and pedestrian ways shall be so designed as to promote safety and convenience.

Response: Mayo Boulevard is planned to be extended to the west and widened to the north, along with construction of two right turn lanes and two driveways providing access to the Site. Both driveways are anticipated to be full access driveways. The east full access driveway will be a shared driveway between the Health Center *Plus* and the future development to the immediate east. Additionally, the adjacent property owner is constructing a connection to and from the Site from Hayden Road that will allow access from southbound Hayden Road. These connections will allow for a looped circulation for the Site. On-site private access drives to the north and the west of the Site will be designed and developed as part of the Project, while the private access drive to the east will be designed and developed by the adjacent property owner as noted. Both Mayo Boulevard and Hayden Road will be improved with sidewalk and landscaping to ensure pedestrian safety and comfort.

The Site Plan has been designed to provide ease of access with clear and open view corridors and direct vehicular routes, in an effort to be efficient and convenient for patients, visitors, and staff. The Site Plan recognizes that a motorist becomes a pedestrian the moment the car is parked and exits the vehicle. As such, vehicular service traffic is separated from the patient and visitor circulation points and through direct routes. Additionally, the parking areas are clearly organized with separated and safe pedestrian routes through the parking lots to the main entries. See Pedestrian Circulation Plan and Vehicular Circulation Plan.

4. *If provided, mechanical equipment, appurtenances and utilities, and their associated screening shall be integral to the building design.*

Response: All rooftop mechanical equipment and appurtenances & utilities are screened and setback from the face of the building, as well as consistent with the building's material palette. The Health Center *Plus* facility has an on-grade mechanical and electrical yard plant that is designed as an integral part of the building and includes full-height screen walls to screen on-grade mechanical and electrical equipment.

5. *Within the Downtown Area, building and site design shall:*

   a. *Demonstrate conformance with the Downtown Plan Urban Design & Architectural Guidelines;*
   b. *Incorporate urban and architectural design that address human scale and incorporate pedestrian-oriented environment at the street level;*
   c. *Reflect contemporary and historic interpretations of Sonoran Desert architectural traditions, by subdividing the overall massing into smaller elements, expressing small scale details, and recessing fenestrations;*
   d. *Reflect the design features and materials of the urban neighborhoods in which the development is located; and*
   e. *Incorporate enhanced design and aesthetics of building mass, height, materials, and intensity with transitions between adjacent/abutting Type 1 and Type 2 Areas, and adjacent/abutting Type 2 Areas and existing development outside the Downtown Area.*

Response: The proposed facility is not located within the Downtown Area.

6. *The location of artwork provided in accordance with the Cultural Improvement Program or Public Art Program shall address the following criteria:*

   a. *Accessibility to the public;*
   b. *Location near pedestrian circulation routes consistent with existing or future development or natural features;*
   c. *Location near the primary pedestrian or vehicular entrance of a development;*
   d. *Location in conformance with the Design Standards and Policies Manual for locations affecting existing utilities, public utility easements, and vehicular sight distance requirements; and*
   e. *Location in conformance to standards for public safety.*

Response: The proposed facility is not subject to the CIP or PAP criteria.

8. DESIGN GUIDELINES

AIRPARK ENVIRONMENTAL PLANNING

GOAL EP 1—*Reduce energy consumption through environmentally sensitive land use practices and design policies.*

- *Policy EP1.1—Promote green building alternatives that support sustainable, energy-efficient development.*
- *Policy EP1.3—Promote landscape design and irrigation methods that contribute to water and energy conservation.*
- *Policy EP1.4—Promote solar and alternative energy development standards in building and site design.*
- *Policy EP 1.7—Encourage design concepts that maximize building efficiency such as building orientation, air circulation, and shading.*

Response: The Health Center *Plus* facility will meet the City's adopted International Green Construction Code (IgCC), which mandates sustainable design enhancements, such as energy efficiency systems design, EV-ready charging stations, PV solar parking canopies, and heat island mitigation strategies. Low water native plant species have been selected for a natural desert landscape palette, as well as a significant number of native species will be salvaged from the Site pre-construction. The facility is strategically orientated to maximize views for the main public spines to the surrounding Sonoran Desert views, as well as to optimize energy efficiency with its east-west axis orientation. Natural shading is provided throughout the Project to support the use of the respite trail network and sidewalks.

GOAL EP 2—*Promote the Greater Airpark as a laboratory for methods of energy efficiency and sustainable design.*

- *Policy EP2.2—Support the attraction and development of green and other energy-efficient technologies to the greater airpark.*

Response: Medical office and services are a positive contributor to science and research development and its proximity will support forward thinking partnerships in and around the Greater Airpark area.

GOAL EP 3—*Reduce the Urban Heat Island effect in the Greater Airpark*

- *Policy EP3.2—Increase the use of effective natural and man-made shading for parking lots, streets, and pedestrian areas.*

- *Policy EP3.3—Incorporate opportunities for "cool" technologies that will help reduce the heat island effects, such as alternative pavement material, high solar reflectance building surface treatments, passive cooling elements, open spaces, and "green" roofs.*

- *Policy EP3.4—Increase tree planting as a ground-level ozone reduction measure.*

Response: Parking fields have been purposely designed to run along the east—west axis, with ample shading being provided on collector paths from the southern exposure. The roofing will feature a high solar reflectance, and the Project maximizes the amount of open space to support wellness and use of the pedestrian pathways. Tree sizes and quantities will adhere to City requirements and will be further supplemented by landscape salvage efforts for mature species integration into the Project. The densities of vegetation are planned to increase next to areas of heavy pedestrian use and major building elements.

GOAL EP 4—*Foster a sustainable balance between environmental stewardship and the development and redevelopment of the Greater Airpark*

- *Policy EP4.2—Encourage all developments to respect and respond to the Sonoran Desert climate.*

- *Policy EP4.8—Building design should respect and enhance the Sonoran Desert context of the Greater Airpark using building orientation, landscape buffers, color, textures, materials, and lighting.*

Response: The Health Center *Plus* facility is oriented to respect the Sonoran climate and pedestrian pathways are planned to have natural shading to provide for comfort.

Banner Health design standards were developed to be rooted in the themes of the Sonoran Desert context. The material configuration and types mimic natural landforms and textures, and to promote visual connectivity to the desert surroundings. Landscape design supports pedestrian movement and is aligned with the natural water flows through the Site.

GOAL EP 5—*Improve water conservation efforts and encourage the reuse of graywater*

- *Policy EP5.1—Review future development impacts on water use, and encourage development design that fosters water conservation*

- *Policy EP5.3—Promote rainwater harvesting techniques in site planning, landscape design, and landscape improvements for all development types.*

- *Policy EP5.4—Encourage landscape improvements that limit the amount of turf area and make optimal use of indigenous and adapted desert plants.*

- *Policy EP5.5—Use the City's Water Campus as an environmental education center to foster public awareness of water use and waste water reclamation.*

Response: Water is critical component to the promotion of patient wellness within the healthcare facilities. Banner is committed to solutions that reduce water use without compromising patient care, including use of targeted areas through landscape design and low water use plant species. Open space and pedestrian pathways are planned to either have natural bioswales to promote water movement or depressions to increase water infiltration. Basins are designed to be integrated into the natural landscape design character and treat the first flush of any on-site collection. The Project includes no expansive turf areas are—the landscape palette will consist of indigenous and adapted desert plant species.

GOAL EP 6—*Effectively manage and protect local and regional stormwater drainage ways.*

- *Policy EP6.1—Establish flood control design criteria that recognize, considers, and respects: sensitive aesthetic treatment; multiple uses that harmonize the character; and impact on wildlife habitats.*

- *Policy EP6.2—Continue to monitor stormwater runoff to identify and reduce stormwater pollution.*

- *Policy EP6.5—Integrate alternative stormwater detention practices, such as rainwater harvesting and water infiltration methods.*

Response: The detention basins have been designed to convey a natural aesthetic and like the existing washes will promote natural habitat and native plant population. Amenities, such as the respite walking trail and other passive areas, are planned to be integrated around the water conveyance systems.

Treatment is being provided to the stormwater before it leaves the Site for enhanced water quality. Additionally, a stormwater pollution prevention plan (SWPP) will be developed to protect stormwater from pollutants prior to, during, and post construction. The first flush will be retained on-site, which is anticipated to contain the most sediment and oils, reducing the stormwater pollution through the Site.

In areas of open space, the Project includes shallow areas and depressions to promote good infiltration, thus create bioswales along public pathways to promote wildlife habitat and natural landscape zones.

SCOTTSDALE SENSITIVE DESIGN PROGRAM

1. *The design character of any area should be enhanced and strengthened by new development.*

Response: The design of the Health Center *Plus* is consistent with the surrounding development along the Loop 101 Freeway corridor, and will add value through the use placement in proximity to other uses. The natural desert context will be supported and celebrated through the landscape design and open space planning.

2. *Development, through appropriate siting and orientation of buildings, should recognize and preserve established major vistas, as well as protect natural features.*

Response: The building is orientated to maximize views for patient, visitor, and staff areas to the surrounding unmatched Sonoran Desert context, as well as to optimize energy efficiency with its east-west orientation. Natural shading is provided throughout the Site to support the use of the pedestrian network of trails and sidewalk.

3. *Development should be sensitive to existing topography and landscaping.*

Response: All building finish floors will be set a minimum of 3' above the highest adjacent grade or above the 500-year storm event to meet City and Federal floodplain requirements. A 500-year floodplain analysis was conducted with assumptions for the grading to the west and results showed that the 500-year water surface elevation does not govern the finish floor elevation. The finished floor will be set at least 3' above highest adjacent grade. The site design will allow for the pedestrian network of trails to engage the natural topography. A natural desert palette will be developed for the landscaping and will be aided by an appropriate salvage of existing species on site.

4. *Development should protect the character of the Sonoran Desert by preserving and restoring natural habitats and ecological processes.*

Response: The open space network seeks to restore and redevelop the natural desert conditions on the Site. Historic water conveyance through the site is maintained through the site planning with the existing topography and infrastructure enhancements. Micro-basins and bioswales will be paired with walking trails and pedestrian network of paths to allow for connectivity with the natural systems.

5. *The design of the public realm, including streetscapes, parks, plazas and civic amenities, is an opportunity to provide identity to the community and to convey its design expectations.*

Response: This Project seeks to promote a healing environment through its programmatic mission, as well as with its site design and building architecture. Community pathways are preserved and connections are enhanced with this development.

6. *Developments should integrate alternative modes of transportation, including bicycles and bus access, within the pedestrian network that encourage social contact and interaction within the community.*

Response: EV-ready charging stations are planned, and bicycle parking is provided at both staff and visitor entry points. There are no bus network connections currently in this area of Scottsdale.

7. *Development should show consideration for the pedestrian by providing landscaping and shading elements as well as inviting access connections to adjacent developments.*

Response: The majority of the pedestrian routes to the building's entrances are purposely planned along the east-west orientation to allow for concentrated shaded routes from the southern exposure. A multi-use walking trail is provided along Mayo Boulevard to allow for site users and the general public to connect with the natural desert context and the views outward from the site.

8. *Buildings should be designed with a logical hierarchy of masses.*

Response: The design of the Health Center *Plus* facility uses both material designation and height to mark the entry to the facility. In a healing environment, providing intuitive wayfinding is critical and the Banner design standards promote this hierarchy.

9. *The design of the built environment should respond to the desert environment*

Response: The massing of the Health Center *Plus* is aligned with the proper solar orientation as well as with respect to naturally ventilating winds through the Site with the planned open spaces adjacent to the structures. Generous landscape setbacks are provided along the rights-of-way that greatly exceeds the required minimum to better integrate this structure its neighboring context. Views to the surround desert context are also promoted from this Site with the placement of the structure.

10. *Developments should strive to incorporate sustainable and healthy building practices and products.*

Response: Banner is committed to energy efficient strategies and the use of healthy building practices. The Health Center *Plus* facility will meet the City's adopted International Green Construction Code (IgCC), which mandates many sustainable design enhancements to the Site, inclusive of energy efficiency systems design, EV-ready charging stations, PV parking canopies, and heat island mitigation strategies. It also includes the use of healthy building practices and products.

11. *Landscape design should respond to the desert environment by utilizing a variety of mature landscape materials indigenous to the arid region.*

Response: The landscape palette builds off the salvaged inventory of indigenous landscape materials on-site and create a new experience that will celebrate the existing desert context.

12. *Site design should incorporate techniques for efficient water use by providing desert adapted landscaping and preserving native plants.*

Response: The landscape palette will build on the salvaged inventory of indigenous landscape materials on the site and create a new experience that will celebrate the existing desert context, while be considerate for efficient water use.

13. *The extent and quality of lighting should be integrally designed as part of the built environment.*

Response: Exterior lighting will promote safe access to/from the facility and support wayfinding on-site.

14. *Signage should consider the distinctive qualities and character of the surrounding context in terms of size, color, location and illumination.*

Response: The Banner sign program will use materials from the building composition which are rooted in themes from the Sonoran Desert. The placement, size, and illumination support appropriate, timely and safe wayfinding practices on-site for both vehicles and pedestrian access.

DESIGN STANDARDS AND POLICIES MANUAL

All design and construction of the Project will conform with the City's Design Standards & Policies Manual.

GREATER PHOENIX METRO GREEN INFRASTRUCTURE HANDBOOK

The purpose of this Greater Phoenix Metro Green Infrastructure Handbook ("Handbook") is to provide members of the design, planning, and development communities with guidance and specific techniques for low impact development (LID). The Handbook is intended to address non-point source pollutant load reductions, conformance with first-flush requirements, and stormwater peak flow and volume reductions for water quality and flood hazard mitigation. Equally important in the Sonoran Desert is the opportunity to ameliorate water supply/demand concerns by increasing rainfall infiltration, recharging groundwater, and harvesting stormwater to offset potable water used for outdoor purposes.

This project will implement LID best practices according to the Handbook. The first flush rainfall is the design storm used in the handbook since 82% of the storms record the first flush.

- Curb Openings: Parking lot and other site runoff will be routed through curb openings leading to vegetated landscape areas where possible, to promote infiltration and absorption.

- Concentrated flow inlets and rip rap spillway-on-site runoff will be conveyed to concentrated flow inlets and rip rap spillways to trap sediment.

- Bioswales: The vegetated or rock bioswales can provide additional removal of total suspended solids (TSS) as they drop out while slowly flowing through the swale in the smaller storms also reducing erosion.

- Stormwater First Flush Basins: The stormwater basins will detain at a minimum the first flush volume equivalent to the first 0.5" of rainfall, which is approximately the average annual runoff volume.

- Stormwater Pre versus Post Basins-sized to ensure post design flows off the site do not exceed pre-development flows (which often times exceeds the first flush) will detain water and allow for even more infiltration into the ground before slowly leaving the site.

- Water Quality Units: The first flush volume will be routed through hydrodynamic separator storm water quality units, which will further reduce the total suspended solids (TSS) and will then slowly be released downstream.

- Overflow structures will be designed to take the larger storms greater than the first flush downstream to other drainage facilities (sediment basins, culverts, storm drains).

- Landscape: The above LID practices will be combined with LID landscape.

MAG SUPPLEMENTS

All civil construction for this project will be designed in conformance with the latest edition of the Maricopa Association of Governments (MAG) standard specifications and details, with City of Scottsdale amendments.

OFFICE DESIGN GUIDELINES

The Health Center *Plus* facility is designed with unmatched quality, which mirrors the quality of care and commitment to the community that Banner provides in all of its facilities. It will be designed using the foundation of the new Banner Health Center *Plus* model, as established at the Banner Health Center *Plus* at New River Trail campus in Glendale (located at 75th Avenue and the Loop 101 Freeway). However, the Scottsdale Banner Health Center *Plus* design has been enhanced to further respond to its significant relationship with its McDowell Mountains and Sonoran Desert context. The Banner design standards are rooted in its Southwestern context and drive unique project specific solutions that accentuate appropriate local connections and responses to climatic influences. The Project will feature a unique architectural element, a 'lantern of hope' at the building entry which serves as a beacon of health and hope outwards to the community and enriches the visitor and patient experience within the building with its key programmatic placement off the offset core and lobbies.

The orientation of the Site and building are driven by its physical and environmental context. The freeway orients the Site in the east-west direction, promoting maximum site visibility to ease anxiety for the healthcare users and optimize mechanical systems with fenestration strategies. New pedestrian linkages are strengthened along Mayo Boulevard, which lead to the various building entries.

The Site design looks to maximize its open space connections to its local context by providing various paths to and from the building entries to external path networks and to the future adjacent retail parcels to the east of the Site. Adjacent to the main entry will be a reflective garden space with a meandering path that engages the senses with local flora and fauna and gives users the proper space to decompress and connect with nature during their healthcare journey.

This Project will be one of Banner's most significant investments into the Scottsdale and the North Phoenix/Scottsdale healthcare marketplace. The facility's design plays an important role in communicating the mission of delivering a high-quality of care to the community. A focus on health and wellness will elevate the experience of those visiting and be treated by Banner. To emphasize placemaking and connectivity with the community, the natural desert site will be celebrated as well as the direct views to the McDowell preserve to the north and east of the Site.

LIGHTING DESIGN GUIDELINES

1. *The city places a high value on lighting design and technologies that are energy efficient and sensitive to the surrounding context.*

    - Exterior lighting sources are energy efficient LED.
    - Exterior lighting is automatically controlled via a highly programmable, digital, astronomical timer.
    - Color temperature and light trespass have been analyzed and selected/designed accordingly.

2. *Lighting should provide a sense of personal safety in active areas of the site; allow for an even distribution of illumination in commonly used vehicular and pedestrian areas; and highlight architectural features of significance and meaning during nighttime hours.*

    - Exterior lighting has been designed with a focus on user safety, circulation, wayfinding, and architectural aesthetic.

3. *High-pressure-sodium (HPS) is the preferred light source for most large-scale projects. The preferred light source for smaller scale applications include linear fluorescent (RE170 series, triple-tube 4 pin), compact fluorescent, induction and LED lamps.*

    - All light sources are 3000k LED.

4. *Incandescent and halogen sources are discouraged in all but the most unique applications.*

    - All light sources are 3000k LED.

5. *The design of the lighting systems should anticipate lighting levels that will vary depending on building use, hours of operation, occupancy, and seasonal changes, and operate for only the minimum required hours.*

    - Exterior lighting is automatically controlled via a highly programmable, digital, astronomical timer.

6. *Recommended light level guidelines and uniformity ratios established in the Illuminating Engineering Society of North America (IESNA) Lighting Requirements should be used, along with predominant lighting characteristics of the surrounding area when determining appropriate lighting design solutions.*

    - Exterior lighting design is based on IESNA and City standards and requirements.

7. *Light glare or excess brightness should be minimized. Light trespass should be controlled by shielding or aiming fixtures away from adjacent uses.*

    - Light fixture distribution and placement have been carefully considered to mitigate light trespass, excess brightness and glare.

8. *Architectural and landscape lighting should only be used to highlight special features and to embellish the lighting levels of ground level pedestrian areas.*

    - Architectural and landscape lighting is specified to highlight key site design aspects in areas of high visibility and/or circulation.

9. *Limited low voltage lighting of landscape features and plant material area acceptable when associated with pedestrian spaces and site entrance.*

    - Landscape lighting is specified to highlight key site design aspects in areas of high visibility and/or circulation.

SHADING DESIGN GUIDELINES

The City's shading concepts are in response to the warm, dry climate of the Sonoran Desert that can have intense sun light exposure. The goals are to reduce energy consumption and to achieve indoor and outdoor spaces that are comfortable. The concepts embodied by the Shading Design Guidelines include a three tier approach to shading and climate appropriateness, heat avoidance through shading, passive cooling, and mechanical equipment.

- *Heat Avoidance Through Shading*

    - *'Hard' exterior Shading devices (horizontal overhangs, vertical fins, eggcrate (grids and screens), variations of these (clerestory windows, movable devices, louvers, etc.).*

Response: There are multiple approaches to properly protecting the fenestration of the Health Center *Plus* facility. The primary layer of protection is the glazing spec, with high-performance low-e clear glazing selected to promote transparency while minimizing the heat load on the glass. Further, at primary Project entries, deep canopies are provided to protect the glazing and allow for a covered entry into the facility. The building is oriented along the freeway elevation which is generally in the east-west direction. Accordingly, the majority of public areas and the maximized glazing is provided on the north façade.

    - *'Soft' shading through plants (trees, vines on trellis, etc.)*

Response: Vegetation is clustered in areas directly adjacent to the building's entries and building fenestration to allow for maximize shading and visual connection to nature for building occupants. Mature salvaged species will be placed near building entries to allow for maximum immediate shading and scale impact. Pedestrian routes to the main entry will also be properly shaded with tree canopies.

- *Passive Cooling*

    - *Shaded outdoor spaces, breezeways, cooling towers*

Response: Major building access from the parking lots are oriented in the east-west axis to allow for ample shading from the southern exposure. Additionally open space is planned to take advantage of the prevailing winds from the southwest to provide passive cooling for outdoor use and gathering.

- *Orientation of windows – minimize on south and west facades, angle so as to not have direct sunlight, double walls and/or roofs, etc.*

Response: As a primary approach to energy use and shading, the building is properly orientated along the east-west axis, which helps to maximize view opportunities to the north to the McDowell Mountains and Sonoran Desert, as well as control impacts to glazing on the other facades.

- *Minimal heat gain through treated glazing*

Response: The baseline for shading approach to Banner's glazed openings is high performance glass that exceeds the City's requirements for thermal performance.

- *Mechanical Equipment*

  - *Ground (not roof) mounted, pre-cooling systems, over-night cold storage, etc.*

Response: The Project utilizes ground and roof mounted mechanical equipment to effectively and efficiently deliver the right amount of systems to the building based on equipment loads and operations.

  - *'Smart' systems tuned to use, time of day, orientation of spaces, etc.*

Response: Banner intends on utilizing *Skyspark Controls* front end controls system that continues to monitor the mechanical system daily to ensure it is operating effectively and efficiently. All fans and pumps have variable frequency drives to control the speed of the motors to accurately track the load required as it changes throughout the day, thus creating energy efficiencies.

OVERALL SITE PLAN
SCALE: 1" = 60'-0"

NORTH

0 60' 120' 180'
GRAPHIC SCALE: 1" = 60' - 0"

GRAPHIC LEGEND

- EV CAPABLE PARKING SPACE (10% OF REQUIRED PARKING)
- EV READY CHARGING PARKING SPACE (4% OF REQUIRED PARKING)
- ADA PARKING SPACE (4% OF REQUIRED PARKING)
- CONCRETE / HARDSCAPE MATERIAL

SITE DATA

PROPERTY DESCRIPTION:

NW CORNER OF HAYDEN ROAD AND MAYO BOULEVARD
SCOTTSDALE, AZ 85255
LOCATED IN SEC 36, 4N, 4E, MARICOPA COUNTY, ARIZONA

EXISTING ZONING DESIGNATION: C2-PCD
EXISTING USE: VACANT

SITE SIZE - GROSS / NET:

512,218 DEVELOPED SQ. FT. NET

PROPOSED SCREENING:

SITE WALLS, BERMS, PLANTS/TREES

PROPOSED USES:

MEDICAL OFFICE BUILDING / AMBULATORY SURGERY CENTER / CANCER CENTER

OPEN SPACE: *CROSS ROADS EAST DEV. STANDARDS SECTION 5.1404*

REQUIRED: 76,833 SQ.FT. (15% OF NET SITE AREA MAX)
PROVIDED: 185,946 SQ. FT.
(SEE SHEET ENT_A1.3.1 FOR BREAKDOWN)

FLOOR AREA RATIO (FAR): *SECTION 6.804.D*

MAXIMUM: 0.80
PROVIDED: 0.23

FAR = TOTAL USABLE BUILDING AREA / NET SITE (DEVELOPED)
119,500 SQ. FT. / 512,218 SQ. FT. = 0.23

BANNER HEALTH CENTER PLUS - GROSS:

LEVEL 1: 47,612 SQ. FT.
LEVEL 2: 39,630 SQ. FT.
LEVEL 3: 32,258 SQ. FT.
TOTAL: 119,500 SQ.FT.

MAX BUILDING HEIGHT: 42'-0" *CROSS ROADS EAST DEV. STANDARDS SECTION 5.1404*

PARKING DATA

OVERALL *TABLE 9.103.A*

	REQUIRED	PROVIDED
BANNER HEALTH PLUS (119,500 S.F. @1 PER 250 S.F.)	478	529
TOTAL	**478**	**529**

BREAKDOWN OF OVERALL

	REQUIRED	PROVIDED
ACCESSIBLE (4% OF REQ'D PARKING) *SECTION 9.105.B.4*	19	19 18 (UNCOVERED) 1 (COVERED)
STANDARD (SOLAR COVERED)	26	27
STANDARD (UNCOVERED)	-	502
EV STATIONS (READY)* *IGCC 501.3.7.3*	19	20
EV STATIONS (CAPABLE)* *IGCC 501.3.7.3*	48	48
BICYCLE (1 PER 10 REQ'D PARKING SPACES) OR (100 MAX.) *SECTION 9.103.C*	12**	12

*NOTE: AS REQUIRED BY THE 2021 SCOTTSDALE IGCC, 4% OF THE REQUIRED PARKING READY, AND 10% OF THE REQUIRED PARKING CAPABLE.
**TOTAL CAMPUS WILL ULTIMATELY PROVIDE 100 BICYCLE PARKING SPACES, THIS IS THE PROPORTIONATE VALUE FOR THIS PORTION OF THE SITE

SHEET KEYNOTES

A101	CONCRETE SIDEWALK, 6'-0" U.N.O.
A108	CMU SITE WALL
A114	DECOMPOSED GRANITE 'DG' WALKING PATH
A118	DETENTION BASIN
A122	CONCRETE APPROACH PAD
A123	STAFF PATIO / RESPITE
A129	PV SOLAR PARKING CANOPY
A133	SEATING NODE

Banner Health Center Plus

SCOTTSDALE CAMPUS

NW Corner of Hayden Rd. and Mayo Blvd.
Scottsdale, Arizona 85255

NexCore GROUP
1550 Market Street
Suite 200
Denver, CO 80202

SMITHGROUP
455 NORTH THIRD STREET
SUITE 250
PHOENIX, AZ 85004
602.265.2200
smithgroup.com

ISSUED FOR	REV	DATE
DEVELOPMENT REVIEW BOARD		07MAR24

SEALS AND SIGNATURES

NOT FOR CONSTRUCTION

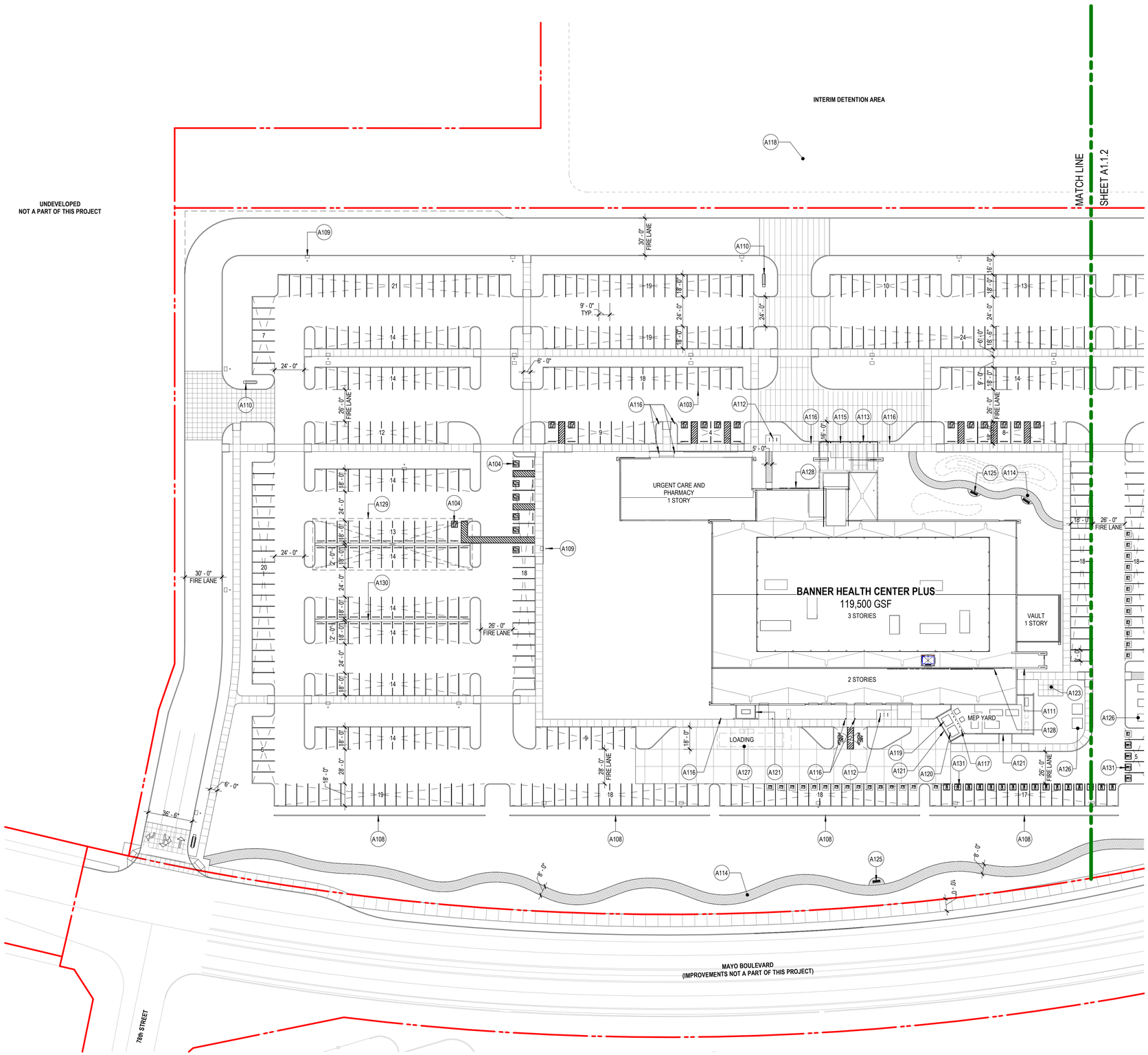
SHEET TITLE

ARCHITECTURAL SITE PLAN

PROJECT NUMBER 14303.000

SHEET NUMBER **DRB_A1.1.0**

Author
Plot Date: 3/8/2024 9:05:41 AM



ENLARGED SITE PLAN - AREA A

SCALE: 1" = 40'-0"

NORTH

0 40' 80' 120'

GRAPHIC SCALE: 1" = 40' - 0"

SITE DATA

PROPERTY DESCRIPTION:

NW CORNER OF HAYDEN ROAD AND MAYO BOULEVARD
SCOTTSDALE, AZ 85255
LOCATED IN SEC 36, 4N, 4E, MARICOPA COUNTY, ARIZONA

EXISTING ZONING DESIGNATION: C2-PCD
EXISTING USE: VACANT

SITE SIZE - GROSS / NET:

512,218 DEVELOPED SQ. FT. NET

PROPOSED SCREENING:

SITE WALLS, BERMS, PLANTS/TREES

PROPOSED USES:

MEDICAL OFFICE BUILDING / AMBULATORY SURGERY CENTER / CANCER CENTER

OPEN SPACE: *CROSS ROADS EAST DEV. STANDARDS SECTION 5.1404*

REQUIRED: 76,833 SQ.FT. (15% OF NET SITE AREA MAX)
PROVIDED: 185,946 SQ. FT.
(SEE SHEET ENT_A1.3.1 FOR BREAKDOWN)

FLOOR AREA RATIO (FAR): *SECTION 6.804.D*

MAXIMUM: 0.80
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FAR = TOTAL USABLE BUILDING AREA / NET SITE (DEVELOPED)
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TOTAL: 119,500 SQ.FT.

MAX BUILDING HEIGHT: 42'-0" *CROSS ROADS EAST DEV. STANDARDS SECTION 5.1404*

PARKING DATA

OVERALL *TABLE 9.103.A*

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BREAKDOWN OF OVERALL

	REQUIRED	PROVIDED
ACCESSIBLE (4% OF REQ'D PARKING)	19	19 *SECTION 9.105.B.4* 18 (UNCOVERED) 1 (COVERED)
STANDARD (SOLAR COVERED)	26	27
STANDARD (UNCOVERED)	-	502
EV STATIONS (READY)*	19	20 *IGCC 501.3.7.3*
EV STATIONS (CAPABLE)*	48	48 *IGCC 501.3.7.3*
BICYCLE (1 PER 10 REQ'D PARKING SPACES) OR (100 MAX.)	12**	12 *SECTION 9.103.C*

*NOTE: AS REQUIRED BY THE 2021 SCOTTSDALE IGCC, 4% OF THE REQUIRED PARKING READY, AND 10% OF THE REQUIRED PARKING CAPABLE.
**TOTAL CAMPUS WILL ULTIMATELY PROVIDE 100 BICYCLE PARKING SPACES, THIS IS THE PROPORTIONATE VALUE FOR THIS PORTION OF THE SITE

SHEET KEYNOTES

A103 PARKING STALL: 9'-0" X 18'-0", TYP.
A104 ADA PARKING STALL: 11'-0" X 18'-0" WITH 5'-0" ACCESS AISLE, TYP.
A108 CMU SITE WALL
A109 POLE MOUNTED LIGHT FIXTURE, TYP.
A110 MONUMENT AND DIRECTIONAL SITE SIGNAGE
A111 BUILDING ENTRY / EXIT
A112 BICYCLE PARKING
A113 BUILDING CANOPY / OVERHANG ABOVE
A114 DECOMPOSED GRANITE 'DG' WALKING PATH
A115 DECORATIVE SECURITY BOLLARD
A116 DECORATIVE ILLUMINATED SECURITY BOLLARD
A117 SAFETY BOLLARD
A118 DETENTION BASIN
A119 6 CUBIC YARD TRASH COMPACTOR
A120 6 CUBIC YARD RECYCLE COMPACTOR
A121 MANUAL GATE
A123 STAFF PATIO / RESPITE
A125 SITE FURNISHINGS
A126 APS ELECTRICAL GEAR
A127 FUTURE MOBILE IMAGING LOCATION
A128 BUILDING MOUNTED SIGNAGE LOCATION
A129 PV SOLAR PARKING CANOPY
A130 FUTURE PARKING CANOPY LOCATION
A131 EV CHARGING PARKING STALL - READY, TYP.

Banner Health Center Plus

SCOTTSDALE CAMPUS

NW Corner of Hayden Rd. and Mayo Blvd.
Scottsdale, Arizona 85255

NexCore GROUP
1550 Market Street
Suite 200
Denver, CO 80202

SMITHGROUP

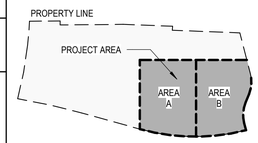
455 NORTH THIRD STREET
SUITE 250
PHOENIX, AZ 85004
602.265.2200
smithgroup.com

ISSUED FOR	REV	DATE
DEVELOPMENT REVIEW BOARD		*07MAR24*

SEALS AND SIGNATURES

NOT FOR CONSTRUCTION

ENLARGEMENT KEYPLAN



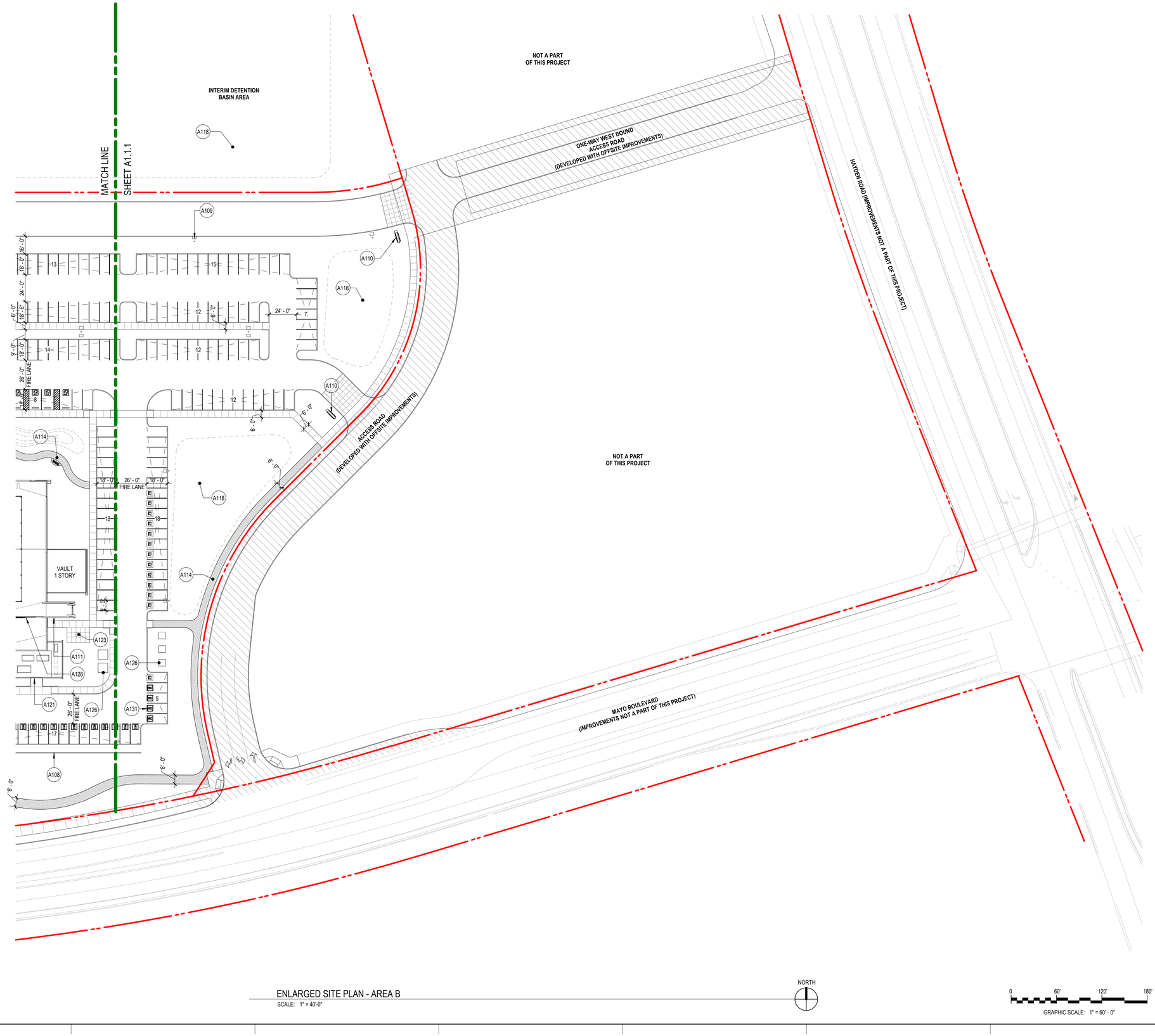
SHEET TITLE

ENLARGED SITE PLAN - AREA A

14303.000
PROJECT NUMBER

DRB_A1.1.1
SHEET NUMBER

Plot Date: 3/8/2024 9:05:43 AM Author



ENLARGED SITE PLAN - AREA B

SCALE: 1" = 40'-0"

NORTH

0 60' 120' 180'

GRAPHIC SCALE: 1" = 60' - 0"

SITE DATA

PROPERTY DESCRIPTION:

NW CORNER OF HAYDEN ROAD AND MAYO BOULEVARD
SCOTTSDALE, AZ 85255
LOCATED IN SEC 36, 4N, 4E, MARICOPA COUNTY, ARIZONA

EXISTING ZONING DESIGNATION: C2-PCD
EXISTING USE: VACANT

SITE SIZE - GROSS / NET:

512,218 DEVELOPED SQ. FT. NET

PROPOSED SCREENING:

SITE WALLS, BERMS, PLANTS/TREES

PROPOSED USES:

MEDICAL OFFICE BUILDING / AMBULATORY SURGERY CENTER / CANCER CENTER

OPEN SPACE: *CROSS ROADS EAST DEV. STANDARDS SECTION 5.1404*

REQUIRED: 76,833 SQ.FT. (15% OF NET SITE AREA MAX)
PROVIDED: 185,946 SQ. FT.
(SEE SHEET ENT_A1.3.1 FOR BREAKDOWN)

FLOOR AREA RATIO (FAR): *SECTION 6.804.D*

MAXIMUM: 0.80
PROVIDED: 0.23

FAR = TOTAL USABLE BUILDING AREA / NET SITE (DEVELOPED)
119,500 SQ. FT. / 512,218 SQ. FT. = 0.23

BANNER HEALTH CENTER PLUS - GROSS:

LEVEL 1: 47,612 SQ. FT.
LEVEL 2: 39,630 SQ. FT.
LEVEL 3: 32,258 SQ.FT.
TOTAL: 119,500 SQ.FT.

MAX BUILDING HEIGHT: 42'-0" *CROSS ROADS EAST DEV. STANDARDS SECTION 5.1404*

PARKING DATA

OVERALL *TABLE 9.103.A*

	REQUIRED	PROVIDED
BANNER HEALTH PLUS (119,500 S.F. @1 PER 250 S.F.)	478	529
TOTAL	**478**	**529**

BREAKDOWN OF OVERALL

	REQUIRED	PROVIDED
ACCESSIBLE (4% OF REQ'D PARKING)	19	19 *SECTION 9.105.B.4* 18 (UNCOVERED) 1 (COVERED)
STANDARD (SOLAR COVERED)	26	27
STANDARD (UNCOVERED)	-	502
EV STATIONS (READY)*	19	20 *IGCC 501.3.7.3*
EV STATIONS (CAPABLE)*	48	48 *IGCC 501.3.7.3*
BICYCLE (1 PER 10 REQ'D PARKING SPACES) OR (100 MAX.)	12**	12 *SECTION 9.103.C*

*NOTE: AS REQUIRED BY THE 2021 SCOTTSDALE IGCC, 4% OF THE REQUIRED PARKING READY, AND 10% OF THE REQUIRED PARKING CAPABLE
**TOTAL CAMPUS WILL ULTIMATELY PROVIDE 100 BICYCLE PARKING SPACES, THIS IS THE PROPORTIONATE VALUE FOR THIS PORTION OF THE SITE

SHEET KEYNOTES

A108	CMU SITE WALL
A109	POLE MOUNTED LIGHT FIXTURE, TYP.
A110	MONUMENT AND DIRECTIONAL SITE SIGNAGE
A111	BUILDING ENTRY / EXIT
A114	DECOMPOSED GRANITE 'DG' WALKING PATH
A118	DETENTION BASIN
A121	MANUAL GATE
A123	STAFF PATIO / RESPITE
A126	APS ELECTRICAL GEAR
A128	BUILDING MOUNTED SIGNAGE LOCATION
A131	EV CHARGING PARKING STALL - READY, TYP.

Banner Health Center Plus

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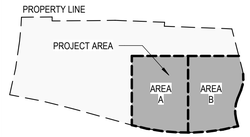
602.265.2200
smithgroup.com

ISSUED FOR	REV	DATE
DEVELOPMENT REVIEW BOARD		07MAR24

SEALS AND SIGNATURES

NOT FOR CONSTRUCTION

ENLARGEMENT KEYPLAN



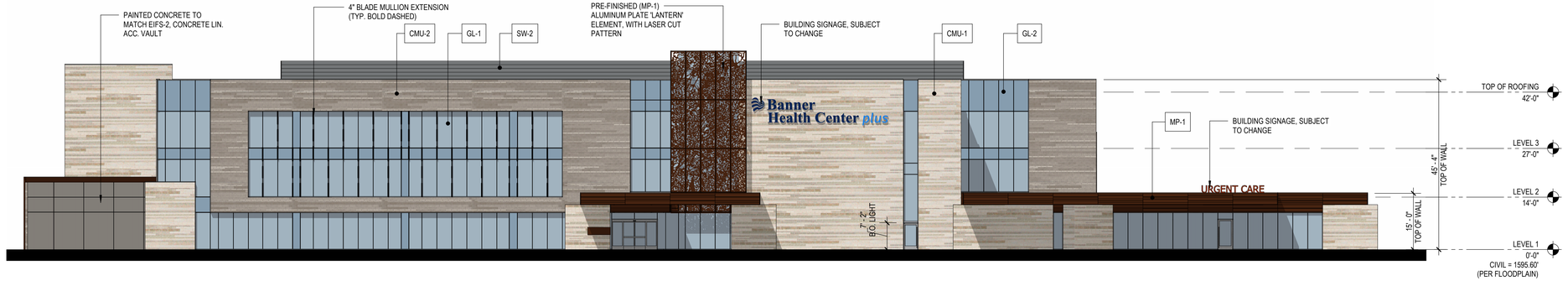
SHEET TITLE

ENLARGED SITE PLAN - AREA B

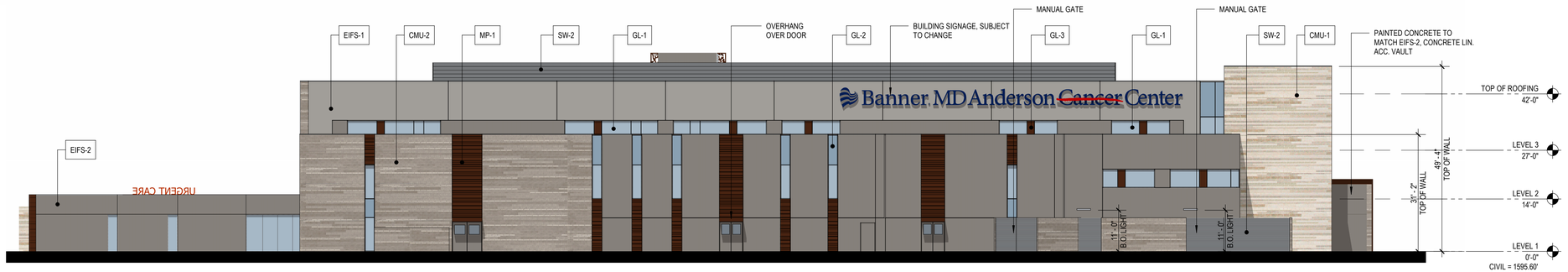
14303.000
PROJECT NUMBER

DRB_A1.1.2
SHEET NUMBER

Plot Date: 3/8/2024 9:05:45 AM Author

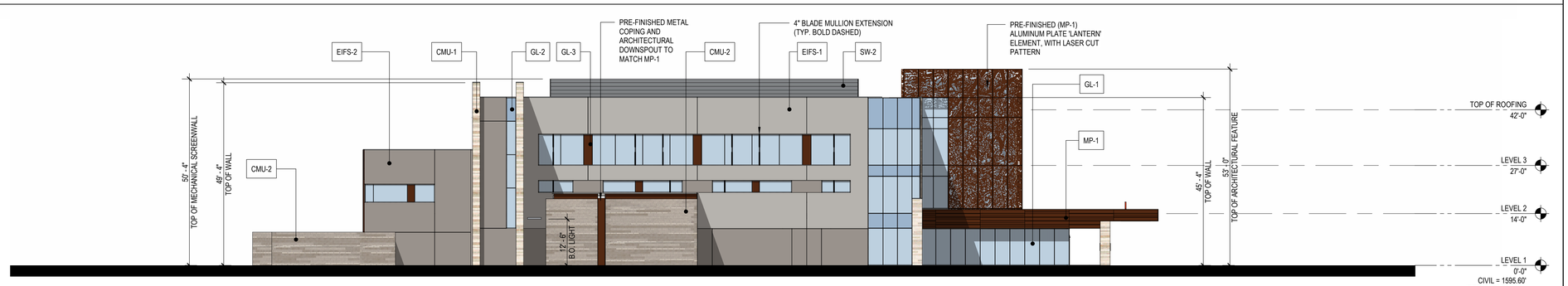


37 NORTH ELEVATION
SCALE: 1/16" = 1'-0"



39 SOUTH ELEVATION
SCALE: 1/16" = 1'-0"

41 WEST ELEVATION
SCALE: 1/16" = 1'-0"



42 EAST ELEVATION
SCALE: 1/16" = 1'-0"

GRAPHIC LEGEND

NOTE: HATCH PATTERNS IN THIS LEGEND ARE USED TO GRAPHICALLY SHOW THE DIFFERENCE OF MATERIAL, AND ARE NOT TO BE USED FOR SCALING, DIMENSIONING, OR PATTERN LAYOUT.

A. HM DOORS AND FRAMES ARE PAINTED TO MATCH ADJACENT FIELD MATERIAL

B. CURTAIN WALLS, STOREFRONTS, AND WINDOWS FRAMES TO BE CLEAR ANODIZED

C. ROOF MOUNTED EQUIPMENT SCREENED TO TOP OF EQUIPMENT AND GROUND MOUNTED EQUIPMENT SCREENED TO TOP OF EQUIPMENT + 1'-0" PER CITY ORDINANCE.

CONCRETE MASONRY UNIT (CMU)
CUSTOM MASONRY PATTERN "BANNER BLOCK"

CMU-1
PATTERN A. INCLUDES THE FOLLOWING:
-MESA STONE, MALIBU SAND
-TREND STONE, MALIBU SAND
-MESA STONE, MISSION WHITE
-TREND STONE, MISSION WHITE
-MESA STONE, PEARL WHITE
-TREND STONE, PEARL WHITE
-TREND STONE, WALNUT CREEK

CMU-2
PATTERN B. INCLUDES THE FOLLOWING:
-MESA STONE, MALIBU SAND
-MESA STONE, WALNUT CREEK
-TREND STONE, WALNUT CREEK

EXTERIOR INSULATION FINISH SYSTEM (EIFS)
BARRIER NON DRAINABLE SYSTEM, FINE FINISH U.N.O.

EIFS-1 (DEFS-1 AS OCCURS)
FIELD COLOR
ICI OLD MONTEREY HEX #98938A

EIFS-2 (DEFS-2 AS OCCURS)
BASE COLOR AND ACCENT
ICI OLD MONTEREY 25% DARKER HEX #7B766D

EXTERIOR PAINT (EPT)
HIGH PERFORMANCE PAINT

EPT-1
MATCH MP-1
PANTONE 175C

EPT-2
PANTONE 444C

SCREEN WALL (SW)
PAINTED HORZ. 3" STANDARD PROFILE B - DECK

SW-2
PAINT WITH EPT-2

GLAZING TYPES (GL)
BASIS OF DESIGN: VIRACON

GL-1
HIGH PERFORMANCE VISION UNIT
1" VNE35-53 INSULATING HS/HS
1/4" - PURE MID IRON HS
VNE-53 #2
1/2" - SPACER - BLACK - ARGON
1/4" - PURE MID IRON HS

GL-2
HIGH PERFORMANCE SPANDREL UNIT
1" VNE35-53 INSULATING HS/HS SPANDREL
1/4" - PURE MID IRON HS
VNE-53 #2
1/2" - SPACER - BLACK - ARGON
1/4" - PURE MID IRON HS
V957 SUBDUED GRAY VIRASPAN #4

GL-3
INSULATED GLAZING INSERT PANEL WITH FINISHED SHEETS OF ALUMINUM ON EACH FACE
MATCH MP-1

METAL COPING (MC)
PREFINISHED

MC-1
MATCH MP-1
USE AT MP-1 LOCATIONS

MC-2
MATCH EPT-2
USE AT CMU-1, EIFS-1, AND EIFS-2 LOCATIONS

METAL PANEL (MP)
PRE-FINISHED, CONCEALED FASTENERS

MP-1
TEXTURED CORTEN
SW 4392/8934M
BASIS OF DESIGN: KOVACH K-WALL
12" FLUSH PROFILE, 1" & 6" REVEALS, HORIZONTAL. U.N.O.

K-WALL PANEL TYPE 'A'
12" PANEL W/ 1" REVEAL

K-WALL PANEL TYPE 'B'
12" PANEL W/ 6" REVEAL ON BOTTOM

K-WALL PANEL TYPE 'C'
12" PANEL W/ 6" REVEAL ON TOP

-PROVIDE 1 1/2" SQUARE PROFILE CORNER TRIM AT ALL EXTERIOR CORNERS

-PROVIDE VERTICAL FLASHING AT INTERMEDIATE PANEL TO PANEL JOINTS

Banner Health Center Plus
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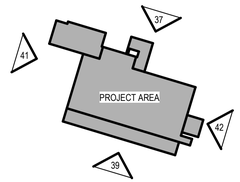
ISSUED FOR	REV	DATE
DEVELOPMENT REVIEW BOARD		07MAR24

SEALS AND SIGNATURES

NOT FOR CONSTRUCTION

KEYPLAN



SHEET TITLE

EXTERIOR BUILDING ELEVATIONS

PROJECT NUMBER 14303.000

SHEET NUMBER DRB_A4.1.0

Author

Plot Date: 3/5/2024 4:16:44 PM

1 AERIAL VIEW FROM NORTHWEST
SCALE: NOT TO SCALE

2 AERIAL ENTRY VIEW FROM NORTHEAST
SCALE: NOT TO SCALE

3 MAIN ENTRY_NORTHEAST PERSPECTIVE
SCALE: NOT TO SCALE

4 MAIN ENTRY_NORTHWEST PERSPECTIVE
SCALE: NOT TO SCALE

5 MAIN ENTRY_PERSPECTIVE FROM THE EAST
SCALE: NOT TO SCALE

6 RESPITE PATH_PERSPECTIVE FROM THE EAST
SCALE: NOT TO SCALE

GRAPHIC LEGEND

NOTE: HATCH PATTERNS IN THIS LEGEND ARE USED TO GRAPHICALLY SHOW THE DIFFERENCE OF MATERIAL, AND ARE NOT TO BE USED FOR SCALING, DIMENSIONING, OR PATTERN LAYOUT.

A. HM DOORS AND FRAMES ARE PAINTED TO MATCH ADJACENT FIELD MATERIAL

B. CURTAIN WALLS, STOREFRONTS, AND WINDOWS FRAMES TO BE CLEAR ANODIZED

C. ROOF MOUNTED EQUIPMENT SCREENED TO TOP OF EQUIPMENT AND GROUND MOUNTED EQUIPMENT SCREENED TO TOP OF EQUIPMENT + 1'-0" PER CITY ORDINANCE.

CONCRETE MASONRY UNIT (CMU)
CUSTOM MASONRY PATTERN "BANNER BLOCK"

CMU-1
PATTERN A. INCLUDES THE FOLLOWING:
-MESA STONE, MALIBU SAND
-TREND STONE, MALIBU SAND
-MESA STONE, MISSION WHITE
-TREND STONE, MISSION WHITE
-MESA STONE, PEARL WHITE
-TREND STONE, PEARL WHITE
-TREND STONE, WALNUT CREEK

CMU-2
PATTERN B. INCLUDES THE FOLLOWING:
-MESA STONE, MALIBU SAND
-MESA STONE, WALNUT CREEK
-TREND STONE, WALNUT CREEK

EXTERIOR INSULATION FINISH SYSTEM (EIFS)
BARRIER NON DRAINABLE SYSTEM, FINE FINISH U.N.O.

EIFS-1 (DEFS-1 AS OCCURS)
FIELD COLOR
ICI OLD MONTEREY HEX #98938A

EIFS-2 (DEFS-2 AS OCCURS)
BASE COLOR AND ACCENT
ICI OLD MONTEREY 25% DARKER HEX #7B766D

EXTERIOR PAINT (EPT)
HIGH PERFORMANCE PAINT

EPT-1
MATCH MP-1
PANTONE 175C

EPT-2
PANTONE 444C

SCREEN WALL (SW)
PAINTED HORZ. 3" STANDARD PROFILE B - DECK

SW-2
PAINT WITH EPT-2

GLAZING TYPES (GL)
BASIS OF DESIGN: VIRACON

GL-1
HIGH PERFORMANCE VISION UNIT
1" VNE35-53 INSULATING HS/HS
1/4" - PURE MID IRON HS
VNE-53 #2
1/2" - SPACER - BLACK - ARGON
1/4" - PURE MID IRON HS

GL-2
HIGH PERFORMANCE SPANDREL UNIT
1" VNE35-53 INSULATING HS/HS SPANDREL
1/4" - PURE MID IRON HS
VNE-53 #2
1/2" - SPACER - BLACK - ARGON
1/4" - PURE MID IRON HS
V957 SUBDUED GRAY VIRASPAN #4

GL-3
INSULATED GLAZING INSERT PANEL WITH FINISHED SHEETS OF ALUMINUM ON EACH FACE
MATCH MP-1

METAL COPING (MC)
PREFINISHED

MC-1
MATCH MP-1
USE AT MP-1 LOCATIONS

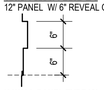
MC-2
MATCH EPT-2
USE AT CMU-1, EIFS-1, AND EIFS-2 LOCATIONS

METAL PANEL (MP)
PRE-FINISHED, CONCEALED FASTENERS

MP-1
TEXTURED CORTEN
SW 4392/8934M
BASIS OF DESIGN: KOVACH K-WALL
12" FLUSH PROFILE, 1" & 6" REVEALS, HORIZONTAL. U.N.O.

K-WALL PANEL TYPE 'A'
12" PANEL W/ 1" REVEAL

K-WALL PANEL TYPE 'B'
12" PANEL W/ 6" REVEAL ON BOTTOM



K-WALL PANEL TYPE 'C'
12" PANEL W/ 6" REVEAL ON TOP

-PROVIDE 1 1/2" SQUARE PROFILE CORNER TRIM AT ALL EXTERIOR CORNERS

-PROVIDE VERTICAL FLASHING AT INTERMEDIATE PANEL TO PANEL JOINTS.

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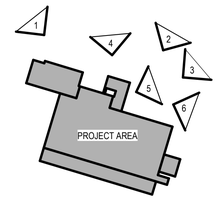
DEVELOPMENT REVIEW BOARD		07MAR24

SEALS AND SIGNATURES

NOT FOR CONSTRUCTION

KEYPLAN



SHEET TITLE

EXTERIOR PERSPECTIVE VIEWS

PROJECT NUMBER 14303.000

SHEET NUMBER DRB_A4.1.1

Plot Date: 3/5/2024 4:16:45 PM Author

1 PERSPECTIVE VIEW FROM THE SOUTHEAST (MAYO BOULEVARD)
SCALE: NOT TO SCALE

2 AERIAL VIEW FROM THE SOUTHEAST (MAYO BOULEVARD)
SCALE: NOT TO SCALE

3 STAFF PATIO_PERSPECTIVE FROM THE SOUTHEAST
SCALE: NOT TO SCALE

4 AERIAL VIEW FROM THE SOUTHWEST (MAYO BOULEVARD)
SCALE: NOT TO SCALE

5 SOUTH ELEVATION_PERSPECTIVE FROM WALKING TRAIL (MAYO BOULEVARD)
SCALE: NOT TO SCALE

6 SIOUTH ELEVATION PERSPECTIVE
SCALE: NOT TO SCALE

GRAPHIC LEGEND

NOTE: HATCH PATTERNS IN THIS LEGEND ARE USED TO GRAPHICALLY SHOW THE DIFFERENCE OF MATERIAL, AND ARE NOT TO BE USED FOR SCALING, DIMENSIONING, OR PATTERN LAYOUT.

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CONCRETE MASONRY UNIT (CMU)
CUSTOM MASONRY PATTERN "BANNER BLOCK"

CMU-1
PATTERN A. INCLUDES THE FOLLOWING:
-MESA STONE, MALIBU SAND
-TREND STONE, MALIBU SAND
-MESA STONE, MISSION WHITE
-TREND STONE, MISSION WHITE
-MESA STONE, PEARL WHITE
-TREND STONE, PEARL WHITE
-TREND STONE, WALNUT CREEK

CMU-2
PATTERN B. INCLUDES THE FOLLOWING:
-MESA STONE, MALIBU SAND
-MESA STONE, WALNUT CREEK
-TREND STONE, WALNUT CREEK

EXTERIOR INSULATION FINISH SYSTEM (EIFS)
BARRIER NON DRAINABLE SYSTEM, FINE FINISH U.N.O.

EIFS-1 (DEFS-1 AS OCCURS)
FIELD COLOR
ICI OLD MONTEREY HEX #98938A

EIFS-2 (DEFS-2 AS OCCURS)
BASE COLOR AND ACCENT
ICI OLD MONTEREY 25% DARKER HEX #7B766D

EXTERIOR PAINT (EPT)
HIGH PERFORMANCE PAINT

EPT-1
MATCH MP-1
PANTONE 175C

EPT-2
PANTONE 444C

SCREEN WALL (SW)
PAINTED HORZ. 3" STANDARD PROFILE B - DECK

SW-2
PAINT WITH EPT-2

GLAZING TYPES (GL)
BASIS OF DESIGN: VIRACON

GL-1
HIGH PERFORMANCE VISION UNIT
1" VNE35-53 INSULATING HS/HS
1/4" - PURE MID IRON HS
VNE-53 #2
1/2" - SPACER - BLACK - ARGON
1/4" - PURE MID IRON HS

GL-2
HIGH PERFORMANCE SPANDREL UNIT
1" VNE35-53 INSULATING HS/HS SPANDREL
1/4" - PURE MID IRON HS
VNE-53 #2
1/2" - SPACER - BLACK - ARGON
1/4" - PURE MID IRON HS
V557 SUBDUED GRAY VIRASPAN #4

GL-3
INSULATED GLAZING INSERT PANEL WITH FINISHED SHEETS OF ALUMINUM ON EACH FACE
MATCH MP-1

METAL COPING (MC)
PREFINISHED

MC-1
MATCH MP-1
USE AT MP-1 LOCATIONS

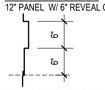
MC-2
MATCH EPT-2
USE AT CMU-1, EIFS-1, AND EIFS-2 LOCATIONS

METAL PANEL (MP)
PRE-FINISHED, CONCEALED FASTENERS

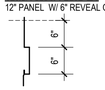
MP-1
TEXTURED CORTEN
SW 439Z8934M
BASIS OF DESIGN: KOVACH K-WALL
12" FLUSH PROFILE, 1" & 6" REVEALS, HORIZONTAL. U.N.O.

K-WALL PANEL TYPE 'A'
12" PANEL W/ 1" REVEAL

K-WALL PANEL TYPE 'B'
12" PANEL W/ 6" REVEAL ON BOTTOM



K-WALL PANEL TYPE 'C'
12" PANEL W/ 6" REVEAL ON TOP



-PROVIDE 1 1/2" SQUARE PROFILE CORNER TRIM AT ALL EXTERIOR CORNERS

-PROVIDE VERTICAL FLASHING AT INTERMEDIATE PANEL TO PANEL JOINTS

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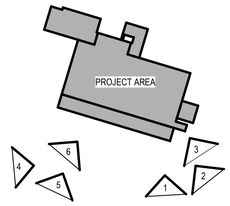
NOT FOR CONSTRUCTION

KEYPLAN



SHEET TITLE

EXTERIOR PERSPECTIVE VIEWS

PROJECT NUMBER 14303.000

SHEET NUMBER **DRB_A4.1.2**

Plot Date: 3/5/2024 4:16:46 PM Author

1 URGENT CARE ENTRY_PERSPECTIVE FROM NORTH
SCALE: NOT TO SCALE

2 URGENT CARE ENTRY_PERSPECTIVE FROM NORTHEAST
SCALE: NOT TO SCALE

3 URGENT CARE ENTRY_PERSPECTIVE FROM NORTHWEST
SCALE: NOT TO SCALE

4 MAIN ENTRY PERSPECTIVE_INTERIOR ILLUMINATED 'LANTERN' AT EVENING HOURS
SCALE: NOT TO SCALE

5 RESPITE PATH_PERSPECTIVE FROM NORTHWEST
SCALE: NOT TO SCALE

6 MAIN ENTRY_PERSPECTIVE FROM UNDER CANOPY AT VESTIBULE
SCALE: NOT TO SCALE

GRAPHIC LEGEND

NOTE: HATCH PATTERNS IN THIS LEGEND ARE USED TO GRAPHICALLY SHOW THE DIFFERENCE OF MATERIAL, AND ARE NOT TO BE USED FOR SCALING, DIMENSIONING, OR PATTERN LAYOUT.

A. HM DOORS AND FRAMES ARE PAINTED TO MATCH ADJACENT FIELD MATERIAL
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CONCRETE MASONRY UNIT (CMU)
CUSTOM MASONRY PATTERN "BANNER BLOCK"

CMU-1
PATTERN A. INCLUDES THE FOLLOWING:
-MESA STONE, MALIBU SAND
-TREND STONE, MALIBU SAND
-MESA STONE, MISSION WHITE
-TREND STONE, MISSION WHITE
-MESA STONE, PEARL WHITE
-TREND STONE, PEARL WHITE
-TREND STONE, WALNUT CREEK

CMU-2
PATTERN B. INCLUDES THE FOLLOWING:
-MESA STONE, MALIBU SAND
-MESA STONE, WALNUT CREEK
-TREND STONE, WALNUT CREEK

EXTERIOR INSULATION FINISH SYSTEM (EIFS)
BARRIER NON DRAINABLE SYSTEM, FINE FINISH U.N.O.

EIFS-1 (DEFS-1 AS OCCURS)
FIELD COLOR
ICI OLD MONTEREY HEX #98938A

EIFS-2 (DEFS-2 AS OCCURS)
BASE COLOR AND ACCENT
ICI OLD MONTEREY 25% DARKER HEX #7B766D

EXTERIOR PAINT (EPT)
HIGH PERFORMANCE PAINT

EPT-1
MATCH MP-1
PANTONE 175C

EPT-2
PANTONE 444C

SCREEN WALL (SW)
PAINTED HORZ. 3" STANDARD PROFILE B - DECK

SW-2
PAINT WITH EPT-2

GLAZING TYPES (GL)
BASIS OF DESIGN: VIRACON

GL-1
HIGH PERFORMANCE VISION UNIT
1" VNE35-53 INSULATING HS/HS
1/4" - PURE MID IRON HS
VNE-53 #2
1/2" - SPACER - BLACK - ARGON
1/4" - PURE MID IRON HS

GL-2
HIGH PERFORMANCE SPANDREL UNIT
1" VNE35-53 INSULATING HS/HS SPANDREL
1/4" - PURE MID IRON HS
VNE-53 #2
1/2" - SPACER - BLACK - ARGON
1/4" - PURE MID IRON HS
V957 SUBDUED GRAY VIRASPAN #4

GL-3
INSULATED GLAZING INSERT PANEL WITH FINISHED SHEETS OF ALUMINUM ON EACH FACE
MATCH MP-1

METAL COPING (MC)
PREFINISHED

MC-1
MATCH MP-1
USE AT MP-1 LOCATIONS

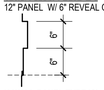
MC-2
MATCH EPT-2
USE AT CMU-1, EIFS-1, AND EIFS-2 LOCATIONS

METAL PANEL (MP)
PRE-FINISHED, CONCEALED FASTENERS

MP-1
TEXTURED CORTEN
SW 4392/8934M
BASIS OF DESIGN: KOVACH K-WALL
12" FLUSH PROFILE, 1" & 6" REVEALS, HORIZONTAL. U.N.O.

K-WALL PANEL TYPE 'A'
12" PANEL W/ 1" REVEAL

K-WALL PANEL TYPE 'B'
12" PANEL W/ 6" REVEAL ON BOTTOM



K-WALL PANEL TYPE 'C'
12" PANEL W/ 6" REVEAL ON TOP

-PROVIDE 1 1/2" SQUARE PROFILE CORNER TRIM AT ALL EXTERIOR CORNERS

-PROVIDE VERTICAL FLASHING AT INTERMEDIATE PANEL TO PANEL JOINTS.

Banner Health Center Plus

SCOTTSDALE CAMPUS

NW Corner of Hayden Rd. and Mayo Blvd.
Scottsdale, Arizona 85255

NexCore GROUP
1550 Market Street
Suite 200
Denver, CO 80202

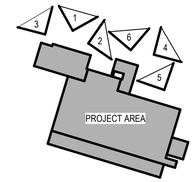
SMITHGROUP
455 NORTH THIRD STREET
SUITE 250
PHOENIX, AZ 85004
602.265.2200
smithgroup.com

ISSUED FOR	REV	DATE
DEVELOPMENT REVIEW BOARD		07MAR24

SEALS AND SIGNATURES

NOT FOR CONSTRUCTION

KEYPLAN



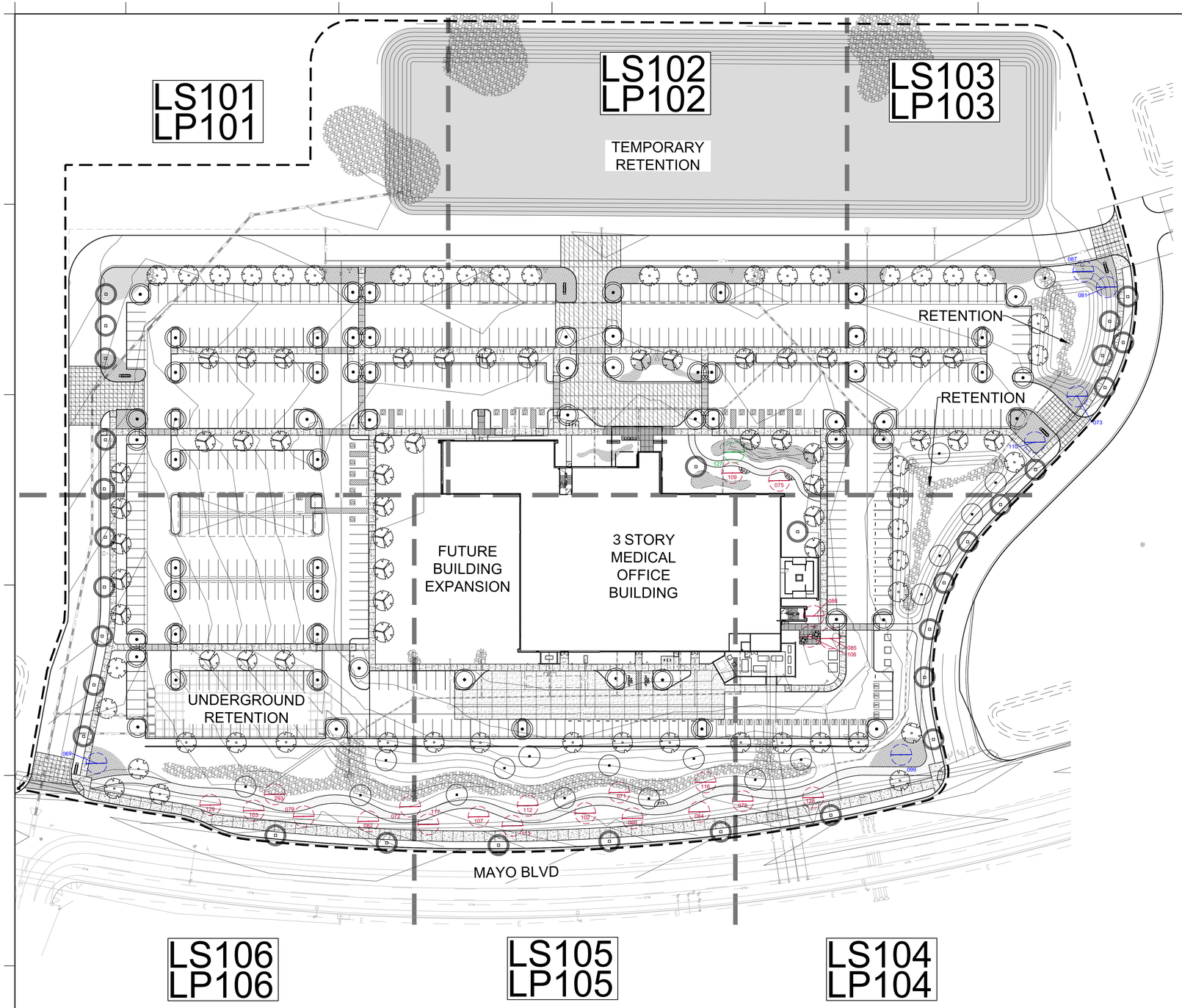
SHEET TITLE

EXTERIOR PERSPECTIVE VIEWS

PROJECT NUMBER 14303.000

SHEET NUMBER **DRB_A4.1.3**

Plot Date: 3/5/2024 4:16:47 PM Author



PLANT LEGEND

SYMBOL	BOTANICAL / COMMON NAME	SIZE	MATURE	INSTALL	QTY	REMARKS
TREES						
	PARKINSONIA FLORIDA BLUE PALO VERDE	36" BOX	30'X30'	10'X8'	48	MULTI
	PARKINSONIA X 'AZT' AZT THORNLESS PALO VERDE	36" BOX	30'X30'	10'X7'	43	MULTI
	PROSOPIS VELUTINA VELVET MESQUITE	36" BOX	30'X30'	10'X8'	9	MULTI
	PROSOPIS X COOPERI COOPERI MESQUITE	36" BOX	25'X25'	10' X 8'	30	MULTI
	QUERCUS VIRGINIANA SOUTHERN LIVE OAK	36" BOX	40'X40'	12'X7'	62	HIGH BREAK

SALVAGE PLANT LEGEND

SYM.	BOTANICAL NAME (COMMON NAME)	QTY.
	TREES	
	PARKINSONIA FLORIDA BLUE PALO VERDE	6
	PROSOPIS VELUTINA MESQUITE	22
	OLNEYA TESOTA IRONWOOD	1

SALVAGE PLANT LEGEND

TAG NO.	BOTANICAL NAME	COMMON NAME	CAL. SIZE
69	PARKINSONIA FLORIDA	BLUE PALO VERDE	16
71	PROSOPIS VELUTINA	MESQUITE	7
72	PROSOPIS VELUTINA	MESQUITE	6
73	PARKINSONIA FLORIDA	BLUE PALO VERDE	6
75	PROSOPIS VELUTINA	MESQUITE	18
78	PROSOPIS VELUTINA	MESQUITE	16
79	PROSOPIS VELUTINA	MESQUITE	18
81	PARKINSONIA FLORIDA	BLUE PALO VERDE	12
82	PROSOPIS VELUTINA	MESQUITE	15
84	PROSOPIS VELUTINA	MESQUITE	10
85	PROSOPIS VELUTINA	MESQUITE	20
86	PROSOPIS VELUTINA	MESQUITE	22
87	PARKINSONIA FLORIDA	BLUE PALO VERDE	8
88	PROSOPIS VELUTINA	MESQUITE	14
99	PARKINSONIA FLORIDA	BLUE PALO VERDE	14
102	PROSOPIS VELUTINA	MESQUITE	10
103	PROSOPIS VELUTINA	MESQUITE	8
106	PROSOPIS VELUTINA	MESQUITE	24
107	PROSOPIS VELUTINA	MESQUITE	16
109	PROSOPIS VELUTINA	MESQUITE	16
110	PARKINSONIA FLORIDA	BLUE PALO VERDE	20
112	PROSOPIS VELUTINA	MESQUITE	14
113	PROSOPIS VELUTINA	MESQUITE	8
116	PROSOPIS VELUTINA	MESQUITE	9
117	PROSOPIS VELUTINA	MESQUITE	12
127	OLNEYA TESOTA	IRONWOOD	24
128	PROSOPIS VELUTINA	MESQUITE	18
129	PROSOPIS VELUTINA	MESQUITE	14
293	PROSOPIS VELUTINA	MESQUITE	6

TOPDRESS/DUST CONTROL LEGEND

	DECOMPOSED GRANITE, 2" MIN. DEPTH. SIZE: **3/4" SCREENED** COLOR: **MAHOGANY** **ALL PLANTING AREAS U.O.N.**	+/-147,000 SF
	STONE COBBLE, 3" MIN. DEPTH. SIZE: **SIZE PER CIVIL DRAWINGS** COLOR: **MAHOGANY**	+/-34,000 SF
	STONE COBBLE, 3" MIN. DEPTH. SIZE: **1"-3"** COLOR: **SHASTA BROWN**	+/-15,000 SF
	STABILIZED DECOMPOSED GRANITE, 3" MIN. DEPTH. SIZE: **1/4" MINUS** COLOR: **SHASTA BROWN**	+/-10,000 SF
	NATIVE RESTORATIVE SEED MIX BY HYDROSEED	+/-113,000 SF

A +/-(2) SURFACE SELECT GRANITE BOULDERS - 1 TON - 3'X 5'X 3'

B +/-(4) SURFACE SELECT GRANITE BOULDERS - 3/4 TON - 3'X 3'X 3'

C +/-(11) SURFACE SELECT GRANITE BOULDERS - 3/4 TON - 2'X 2'X 2'

NOTE: ALL BOULDERS TO BE MAHOGANY COLOR

811 Know what's below. Call before you dig.

CALL PRIVATE UTILITY LOCATOR TO LOCATE PRIVATE UTILITIES

NORTH

SCALE: 1"=50' (50 / 100)

Plot Date:

Banner Health Center Plus

SCOTTSDALE CAMPUS

NW Corner of Hayden Rd. and Mayo Blvd.
Scottsdale, Arizona 85255

NexCore GROUP
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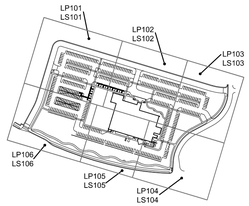
ISSUED FOR	REV	DATE
DEVELOPMENT REVIEW BOARD		07MAR24

SEALS AND SIGNATURES

NOT FOR CONSTRUCTION

KEY PLAN



SHEET TITLE

OVERALL TREE PLAN

14303.000
PROJECT NUMBER

DRB_LP100
SHEET NUMBER

PLANT LEGEND

SYMBOL	BOTANICAL / COMMON NAME	SIZE	MATURE	INSTALL	QTY	REMARKS
TREES						
	PARKINSONIA FLORIDA BLUE PALO VERDE	36" BOX	30`X30`	10`X8`	48	MULTI
	PARKINSONIA X 'AZT' AZT THORNLESS PALO VERDE	36" BOX	30`X30`	10`X7`	43	MULTI
	PROSOPIS VELUTINA VELVET MESQUITE	36" BOX	30`X30`	10`X8`	9	MULTI
	PROSOPIS X COOPERI COOPERI MESQUITE	36" BOX	25`X25`	10` X 8`	30	MULTI
	QUERCUS VIRGINIANA SOUTHERN LIVE OAK	36" BOX	40`X40`	12`X7`	62	HIGH BREAK

SALVAGE PLANT LEGEND

SYM.	BOTANICAL NAME (COMMON NAME)	QTY.
	TREES	
	PARKINSONIA FLORIDA BLUE PALO VERDE	6
	PROSOPIS VELUTINA MESQUITE	22
	OLNEYA TESOTA IRONWOOD	1

TREE SHADE STUDY | 10:00 AM

REQUIREMENTS

PER CITY OF SCOTTSDALE 2021 INTERNATIONAL GREEN CONSTRUCTION CODE (IGCC) BUILDING PLAN REVIEW CHECKLIST – COMMERCIAL BUILDING PROJECTS SECTION 501.3.5.1 SITE HARDSCAPE, AT LEAST 50% OF THE SITE HARDSCAPE OF NEW COMMERCIAL BUILDING PROJECTS SHALL COMPLY WITH:

TREES AND VEGETATION PLANTED TO PROVIDE FULL SHADE NO LATER THAN TEN YEARS AFTER PROJECT COMPLETION. THE EFFECTIVE SHADE COVERAGE ON THE HARDSCAPE SHALL BE THE ARITHMETIC MEAN OF THE SHADE COVERAGE CALCULATED AT 10 A.M., NOON, AND 3 P.M. ON THE SUMMER SOLSTICE (JUNE 21ST).

HARDSCAPE AREAS

ASPHALT (NON SRI COMPLIANT)	+/-201,970 SF
CONCRETE (SRI COMPLIANT)	+/-75,860 SF
STABILIZED DECOMPOSED GRANITE (SRI COMPLIANT)	+/-10,000 SF
TOTAL SITE HARDSCAPE	**+/-287,830 SF**
TOTAL SRI COMPLIANT HARDSCAPE	**+/-85,860 SF**
TOTAL HEAT ISLAND MITIGATION REQUIRED 50%(0.50) x +/-287,830 SF	**+/-143,915 SF**

LANDSCAPE AREAS / SHADE CALCULATIONS

TREE SHADE LANDSCAPE COVERAGE	
TREE SHADE HARDSCAPE COVERAGE	+/-66,924 SF
TOTAL SITE SHADE COVERAGE	**+/-66,924 SF**

MEAN SHADE PROVIDED

SHADE PROVIDED AT 10:00AM	+/-66,924 SF
SHADE PROVIDED AT 12:00PM	+/-46,417 SF
SHADE PROVIDED AT 3:00PM	+/-68,022 SF
MEAN SHADE PROVIDED	**+/-60,455 SF**
SRI COMPLIANT HARDSCAPE	**+/-85,860 SF**
TOTAL HEAT ISLAND COVERAGE	**+/-146,315 SF**
TOTAL HEAT ISLAND MITIGATION PROVIDED IN EXCESS OF REQUIREMENT (INCLUDES SHADE AND HARDSCAPE COMPLIANT MATERIALS)	**+/-2,400 SF**

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CALL PRIVATE UTILITY LOCATOR TO LOCATE PRIVATE UTILITIES

NORTH

SCALE: X X 1:XX

Plot Date:

Banner Health
Center Plus

SCOTTSDALE CAMPUS

NW Corner of Hayden Rd. and Mayo Blvd.
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ISSUED FOR	REV	DATE
DEVELOPMENT REVIEW BOARD		07MAR24

SEALS AND SIGNATURES

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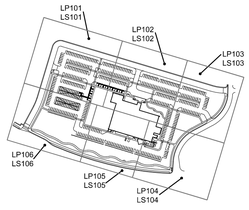
KEY PLAN



SHEET TITLE

TREE SHADE STUDY
10:00 AM

PROJECT NUMBER 14303.000

DRB_LP100.1

SHEET NUMBER

PLANT LEGEND

SYMBOL	BOTANICAL / COMMON NAME	SIZE	MATURE	INSTALL	QTY	REMARKS
TREES						
	PARKINSONIA FLORIDA BLUE PALO VERDE	36" BOX	30'X30'	10'X8'	48	MULTI
	PARKINSONIA X 'AZT' AZT THORNLESS PALO VERDE	36" BOX	30'X30'	10'X7'	43	MULTI
	PROSOPIS VELUTINA VELVET MESQUITE	36" BOX	30'X30'	10'X8'	9	MULTI
	PROSOPIS X COOPERI COOPERI MESQUITE	36" BOX	25'X25'	10' X 8'	30	MULTI
	QUERCUS VIRGINIANA SOUTHERN LIVE OAK	36" BOX	40'X40'	12'X7'	62	HIGH BREAK

SALVAGE PLANT LEGEND

SYM.	BOTANICAL NAME (COMMON NAME)	QTY.
	TREES	
	PARKINSONIA FLORIDA BLUE PALO VERDE	6
	PROSOPIS VELUTINA MESQUITE	22
	OLNEYA TESOTA IRONWOOD	1

TREE SHADE STUDY | 12:00 PM

REQUIREMENTS

PER CITY OF SCOTTSDALE 2021 INTERNATIONAL GREEN CONSTRUCTION CODE (IGCC) BUILDING PLAN REVIEW CHECKLIST – COMMERCIAL BUILDING PROJECTS SECTION 501.3.5.1 SITE HARDSCAPE, AT LEAST 50% OF THE SITE HARDSCAPE OF NEW COMMERCIAL BUILDING PROJECTS SHALL COMPLY WITH:

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HARDSCAPE AREAS

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TOTAL SRI COMPLIANT HARDSCAPE	**+/-85,860 SF**
TOTAL HEAT ISLAND MITIGATION REQUIRED 50%(0.50) x +/-287,830 SF	**+/-143,915 SF**

LANDSCAPE AREAS / SHADE CALCULATIONS

TREE SHADE LANDSCAPE COVERAGE	
TREE SHADE HARDSCAPE COVERAGE	+/-46,417 SF
TOTAL SITE SHADE COVERAGE	**+/-46,417 SF**

MEAN SHADE PROVIDED

SHADE PROVIDED AT 10:00AM	+/-66,924 SF
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SRI COMPLIANT HARDSCAPE	**+/-85,860 SF**
TOTAL HEAT ISLAND COVERAGE	**+/-146,315 SF**
TOTAL HEAT ISLAND MITIGATION PROVIDED IN EXCESS OF REQUIREMENT (INCLUDES SHADE AND HARDSCAPE COMPLIANT MATERIALS)	**+/-2,400 SF**

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NORTH

SCALE: X X 1:XX

Plot Date:

Banner Health Center Plus

SCOTTSDALE CAMPUS

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smithgroup.com

ISSUED FOR	REV	DATE
DEVELOPMENT REVIEW BOARD		07MAR24

SEALS AND SIGNATURES

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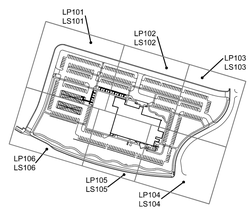
KEY PLAN



SHEET TITLE

TREE SHADE STUDY
12:00 PM

14303.000
PROJECT NUMBER

DRB_LP100.2
SHEET NUMBER

PLANT LEGEND

SYMBOL	BOTANICAL / COMMON NAME	SIZE	MATURE	INSTALL	QTY	REMARKS
TREES						
	PARKINSONIA FLORIDA BLUE PALO VERDE	36" BOX	30'X30'	10'X8'	48	MULTI
	PARKINSONIA X 'AZT' AZT THORNLESS PALO VERDE	36" BOX	30'X30'	10'X7'	43	MULTI
	PROSOPIS VELUTINA VELVET MESQUITE	36" BOX	30'X30'	10'X8'	9	MULTI
	PROSOPIS X COOPERI COOPERI MESQUITE	36" BOX	25'X25'	10' X 8'	30	MULTI
	QUERCUS VIRGINIANA SOUTHERN LIVE OAK	36" BOX	40'X40'	12'X7'	62	HIGH BREAK

SALVAGE PLANT LEGEND

SYM.	BOTANICAL NAME (COMMON NAME)	QTY.
	TREES	
	PARKINSONIA FLORIDA BLUE PALO VERDE	6
	PROSOPIS VELUTINA MESQUITE	22
	OLNEYA TESOTA IRONWOOD	1

TREE SHADE STUDY | 3:00 PM

REQUIREMENTS

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CONCRETE (SRI COMPLIANT)	+/-75,860 SF
STABILIZED DECOMPOSED GRANITE (SRI COMPLIANT)	+/-10,000 SF
TOTAL SITE HARDSCAPE	**+/-287,830 SF**
TOTAL SRI COMPLIANT HARDSCAPE	**+/-85,860 SF**
TOTAL HEAT ISLAND MITIGATION REQUIRED 50%(0.50) x +/-287,830 SF	**+/-143,915 SF**

LANDSCAPE AREAS / SHADE CALCULATIONS

TREE SHADE LANDSCAPE COVERAGE	
TREE SHADE HARDSCAPE COVERAGE	+/-68,022 SF
TOTAL SITE SHADE COVERAGE	**+/-68,022 SF**

MEAN SHADE PROVIDED

SHADE PROVIDED AT 10:00AM	+/-66,924 SF
SHADE PROVIDED AT 12:00PM	+/-46,417 SF
SHADE PROVIDED AT 3:00PM	+/-68,022 SF
MEAN SHADE PROVIDED	**+/-60,455 SF**
SRI COMPLIANT HARDSCAPE	**+/-85,860 SF**
TOTAL HEAT ISLAND COVERAGE	**+/-146,315 SF**
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ISSUED FOR	REV	DATE
DEVELOPMENT REVIEW BOARD		07MAR24

SEALS AND SIGNATURES

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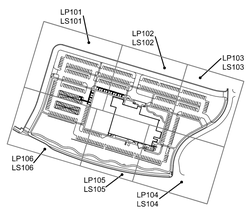
KEY PLAN



SHEET TITLE

TREE SHADE STUDY
3:00 PM

PROJECT NUMBER 14303.000

SHEET NUMBER **DRB_LP100.3**

PLANT LEGEND

SYMBOL	BOTANICAL / COMMON NAME	SIZE	MATURE	INSTALL	QTY	REMARKS
TREES						
	PARKINSONIA FLORIDA BLUE PALO VERDE	36" BOX	30'X30'	10'X8'	48	MULTI
	PARKINSONIA X 'AZT' AZT THORNLESS PALO VERDE	36" BOX	30'X30'	10'X7'	43	MULTI
	PROSOPIS VELUTINA VELVET MESQUITE	36" BOX	30'X30'	10'X8'	9	MULTI
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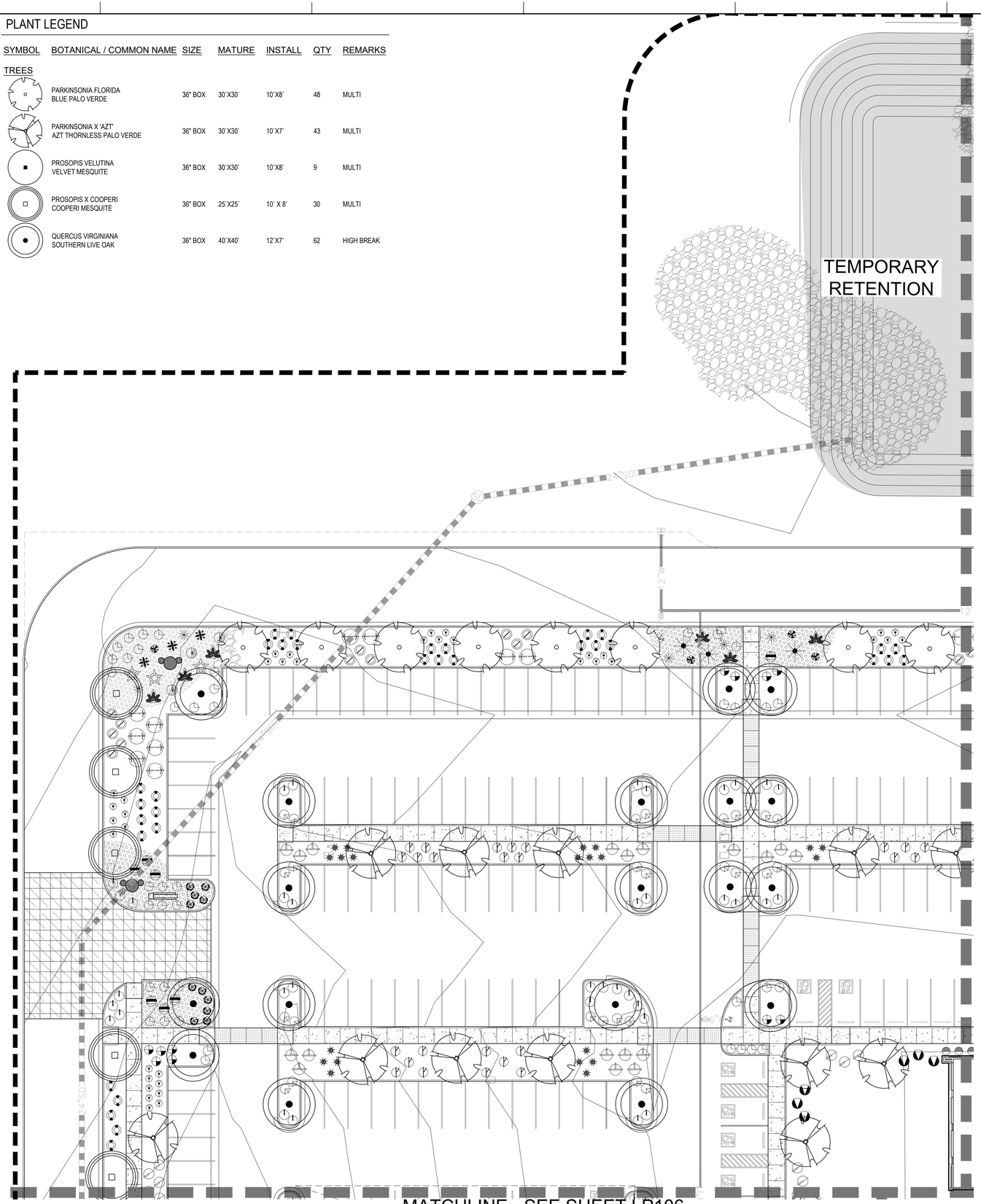

TOPDRESS/DUST CONTROL LEGEND

	DECOMPOSED GRANITE, 2" MIN. DEPTH. SIZE: **3/4" SCREENED** COLOR: **MAHOGANY** **ALL PLANTING AREAS U.O.N.**	+/-147,000 SF
	STONE COBBLE, 3" MIN. DEPTH. SIZE: **SIZE PER CIVIL DRAWINGS** COLOR: **MAHOGANY**	+/-34,000 SF
	STONE COBBLE, 3" MIN. DEPTH. SIZE: **1"-3"** COLOR: **SHASTA BROWN**	+/-15,000 SF
	STABILIZED DECOMPOSED GRANITE, 3" MIN. DEPTH. SIZE: **1/4" MINUS** COLOR: **SHASTA BROWN**	+/-10,000 SF
	NATIVE RESTORATIVE SEED MIX BY HYDROSEED	+/-113,000 SF
A B C	+/-(2) SURFACE SELECT GRANITE BOULDERS - 1 TON - 3'X 5'X 3' +/-(4) SURFACE SELECT GRANITE BOULDERS - 3/4 TON - 3'X 3'X 3' +/-(11) SURFACE SELECT GRANITE BOULDERS - 3/4 TON - 2'X 2'X 2' NOTE: ALL BOULDERS TO BE MAHOGANY COLOR	

SALVAGE PLANT LEGEND

SYM.	BOTANICAL NAME (COMMON NAME)	QTY.
	TREES	
	PARKINSONIA FLORIDA BLUE PALO VERDE	6
	PROSOPIS VELUTINA MESQUITE	22
	OLNEYA TESOTA IRONWOOD	1

PLANT LEGEND

SYMBOL	BOTANICAL / COMMON NAME	SIZE	MATURE	QTY
SHRUBS				
	ANISACANTHUS QUADRIFIDUS WRIGHTII WRIGHT'S DESERT HONEYSUCKLE	#5	5'X5'	58
	CAESALPINEA MEXICANA MEXICAN BIRD OF PARADISE	#5	10'X8'	49
	CALLIANDRA CALIFORNICA RED BAJA FAIRY DUSTER	#5	5'X5'	98
	CORDIA BOISSIERI TEXAS OLIVE	#15	10'X10'	15
	ENCELIA FARINOSA BRITTLEBUSH	#5	3'X4'	29
	EREMOPHILA MACULATA 'VALENTINE' VALENTINE SPOTTED EMU BUSH	#5	5'X5'	85
	JUSTICIA CALIFORNICA CHUPAROSA	#5	5'X5'	78
	JUSTICIA SPICIGERA MEXICAN HONEYSUCKLE	#5	3'X3'	50
	LARREA TRIDENTATA CREOSOTE BUSH	#5	6"X6'	48
	LEUCOPHYLLUM CANDIDUM 'THUNDER CLOUD' THUNDER CLOUD TEXAS SAGE	#5	4'X4'	101
	LEUCOPHYLLUM LAEVIGATUM CHIHUAHUAN SAGE	#5	4'X5'	120
	RUSSELIA EQUISETIFORMIS FIRECRACKER PLANT	#5	4'X5'	24
	SIMMONDSIA CHINENSIS JOJOBA	#5	6"X6'	32
	SIMMONDSIA CHINENSIS 'VISTA' JOJOBA	#5	4'X4'	68
	TECOMA STANS 'GOLD STAR' GOLD STAR YELLOW BELLS	#5	6"X6'	29
ACCENTS				
	AGAVE COLORATA MESCAL CENIZA	#5	4'X4'	28
	AGAVE DESMETIANA SMOOTH AGAVE	#5	3'X3'	62
	AGAVE OVATIFOLIA 'FROSTY BLUE' FROSTY BLUE WHALE'S TONGUE AGAVE	#5	4'X5'	12
	AGAVE VICTORIAE-REGINAE QUEEN VICTORIA AGAVE	#5	2'X2'	9
	AGAVE WEBERI WEBER AGAVE	#5	6'X6'	18
	AGAVE X 'BLUE GLOW' BLUE GLOW AGAVE	#5	2'X3'	14
	ALOE BARBADENSIS BARBADOS ALOE	#5	4'X4'	56
	ALOE STRIATA CORAL ALOE	#5	3'X3'	51
	ALOE X 'BLUE ELF' BLUE ELF ALOE	#5	2'X2'	31
	DASYLIRION TEXANUM TEXAS SOTOL	#5	4'X5'	36
	DASYLIRION WHEELERI GREY DESERT SPOON	#5	5'X5'	46
	EUPHORBIA ANTISYPHILITICA CANDELILLA EUPHORBIA	#5	2'X3'	37
	EUPHORBIA TIRUCALLI FIRE STICKS	#5	5'X5'	3
	FOUQUIERIA SPLENDENS OCOTILLO	10' HT. 15 CANE	12'X10'	10
	HESPERALOE FUNIFERA GIANT HESPERALOE	#5	5'X5'	12
	HESPERALOE PARVIFLORA RED YUCCA	#5	3'X5'	78
	MUHLENBERGIA CAPILLARIS `LENCA` REGAL MIST® PINK MUHLY GRASS	#5	3'X3'	181
	NOLINA MICROCARPA BEARGRASS	#5	3'X4'	66
	YUCCA RIGIDA MEXICAN BLUE YUCCA	#5	12'X6'	29
	YUCCA THOMPSONIANA THOMPSON'S YUCCA	#5	6"X6'	8
CACTI				
	CARNEGIEA GIGANTEA SAGUARO	6" HT.	20'X10'	13
	LOPHOCEREUS SCHOTTII MONSTROSUS TOTEM POLE CACTUS	#15	12'X10'	11
	OPUNTIA ENGELMANNII ENGELMANN'S PRICKLY PEAR	#15	6'X15'	2
	OPUNTIA MICRODASYS BUNNY EARS PRICKLY PEAR	#5	4'X6'	12
	OPUNTIA SANTA-RITA 'TUBAC' SANTA RITA PRICKLY PEAR	#15	8'X10'	15
	OPUNTIA X 'KELLY'S CHOICE' KELLY'S CHOICE OPUNTIA	#15	5'X5'	37
	STENOCEREUS THURBERI ORGANPIPE CACTUS	#15	15'X12'	2
GROUNDCOVERS				
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	EREMOPHILA GLABRA 'MINGENEW GOLD' OUTBACK SUNRISE EMU BUSH	#5	2'X10'	24
	LANTANA MONTEVIDENSIS PURPLE TRAILING LANTANA	#5	2'X4'	200
	LANTANA X 'NEW GOLD' NEW GOLD LANTANA	#5	2'X4'	175
PERENNIALS				
	PENSTEMON SPP. PENSTEMON MIX 50% PENSTEMON EATONII 50% PENSTEMON PARRYI	#5	2'X2'	36

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Scottsdale, Arizona 85255

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DEVELOPMENT REVIEW BOARD		*07MAR24*

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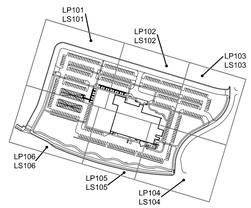
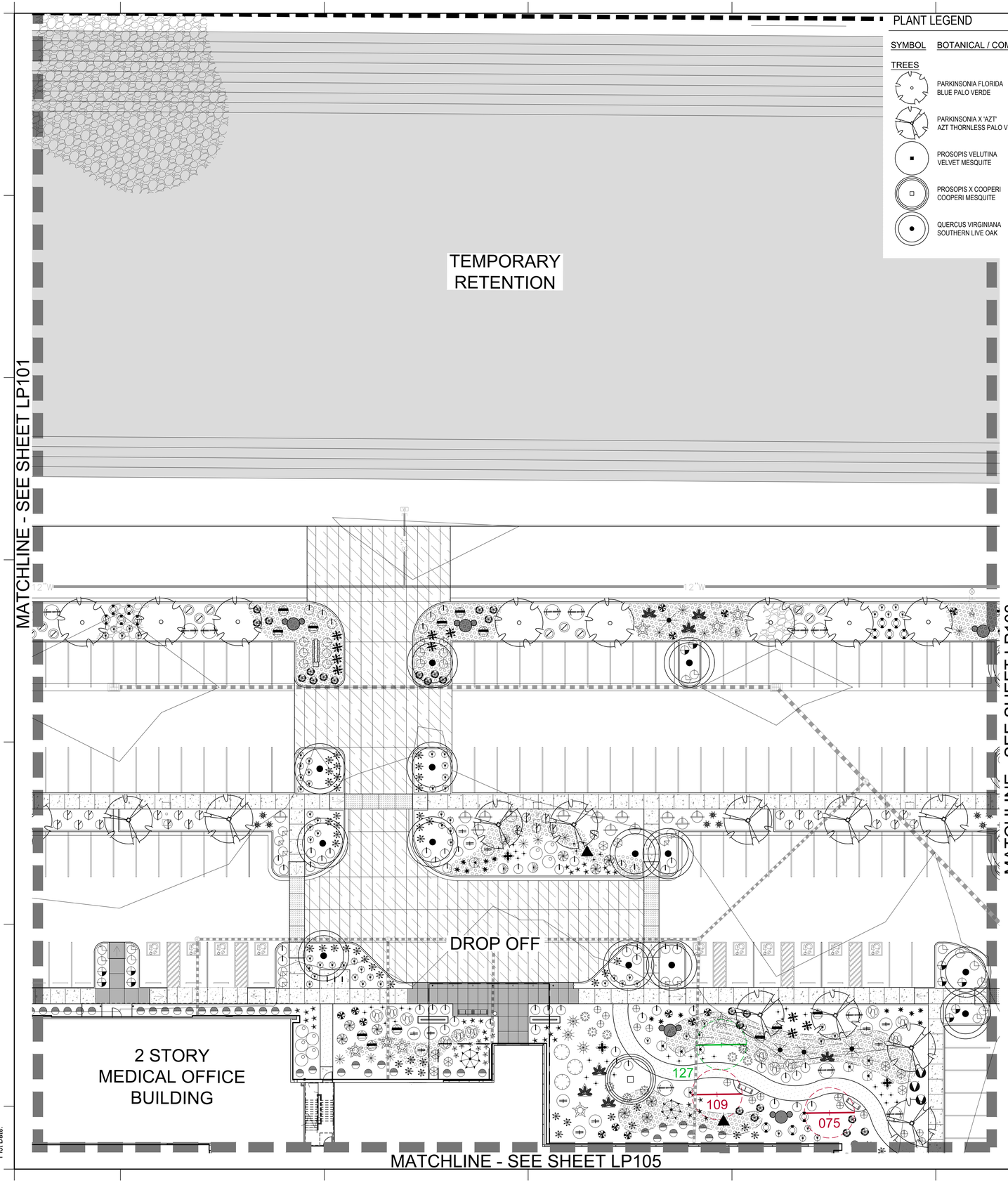


SHEET TITLE

PLANTING PLAN

14303.000
PROJECT NUMBER

DRB_LP101
SHEET NUMBER



PLANT LEGEND

SYMBOL	BOTANICAL / COMMON NAME	SIZE	MATURE	INSTALL	QTY	REMARKS
TREES						
	PARKINSONIA FLORIDA BLUE PALO VERDE	36" BOX	30'X30'	10'X8'	48	MULTI
	PARKINSONIA X 'AZT' AZT THORNLESS PALO VERDE	36" BOX	30'X30'	10'X7'	43	MULTI
	PROSOPIS VELUTINA VELVET MESQUITE	36" BOX	30'X30'	10'X8'	9	MULTI
	PROSOPIS X COOPERI COOPERI MESQUITE	36" BOX	25'X25'	10' X 8'	30	MULTI
	QUERCUS VIRGINIANA SOUTHERN LIVE OAK	36" BOX	40'X40'	12'X7'	62	HIGH BREAK

TOPDRESS/DUST CONTROL LEGEND

	DECOMPOSED GRANITE, 2" MIN. DEPTH. SIZE: **3/4" SCREENED** COLOR: **MAHOGANY** **ALL PLANTING AREAS U.O.N.**	+/-147,000 SF
	STONE COBBLE, 3" MIN. DEPTH. SIZE: **SIZE PER CIVIL DRAWINGS** COLOR: **MAHOGANY**	+/-34,000 SF
	STONE COBBLE, 3" MIN. DEPTH. SIZE: **1"-3"** COLOR: **SHASTA BROWN**	+/-15,000 SF
	STABILIZED DECOMPOSED GRANITE, 3" MIN. DEPTH. SIZE: **1/4" MINUS** COLOR: **SHASTA BROWN**	+/-10,000 SF
	NATIVE RESTORATIVE SEED MIX BY HYDROSEED	+/-113,000 SF
A B C	+/-(2) SURFACE SELECT GRANITE BOULDERS - 1 TON - 3'X 5'X 3' +/-(4) SURFACE SELECT GRANITE BOULDERS - 3/4 TON - 3'X 3'X 3' +/-(11) SURFACE SELECT GRANITE BOULDERS - 3/4 TON - 2'X 2'X 2' NOTE: ALL BOULDERS TO BE MAHOGANY COLOR	

SALVAGE PLANT LEGEND

SYM.	BOTANICAL NAME (COMMON NAME)	QTY.
	TREES	
	PARKINSONIA FLORIDA BLUE PALO VERDE	6
	PROSOPIS VELUTINA MESQUITE	22
	OLNEYA TESOTA IRONWOOD	1

PLANT LEGEND

SYMBOL	BOTANICAL / COMMON NAME	SIZE	MATURE	QTY
SHRUBS				
	ANISACANTHUS QUADRIFIDUS WRIGHTII WRIGHT'S DESERT HONEYSUCKLE	#5	5'X5'	58
	CAESALPINEA MEXICANA MEXICAN BIRD OF PARADISE	#5	10'X8'	49
	CALLIANDRA CALIFORNICA RED BAJA FAIRY DUSTER	#5	5'X5'	98
	CORDIA BOISSIERI TEXAS OLIVE	#15	10'X10'	15
	ENCELIA FARINOSA BRITTLEBUSH	#5	3'X4'	29
	EREMOPHILA MACULATA 'VALENTINE' VALENTINE SPOTTED EMU BUSH	#5	5'X5'	85
	JUSTICIA CALIFORNICA CHUPAROSA	#5	5'X5'	78
	JUSTICIA SPICIGERA MEXICAN HONEYSUCKLE	#5	3'X3'	50
	LARREA TRIDENTATA CREOSOTE BUSH	#5	6"X6'	48
	LEUCOPHYLLUM CANDIDUM 'THUNDER CLOUD' THUNDER CLOUD TEXAS SAGE	#5	4'X4'	101
	LEUCOPHYLLUM LAEVIGATUM CHIHUAHUAN SAGE	#5	4'X5'	120
	RUSSELIA EQUISETIFORMIS FIRECRACKER PLANT	#5	4'X5'	24
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	TECOMA STANS 'GOLD STAR' GOLD STAR YELLOW BELLS	#5	6"X6'	29
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	AGAVE OVATIFOLIA 'FROSTY BLUE' FROSTY BLUE WHALE'S TONGUE AGAVE	#5	4'X5'	12
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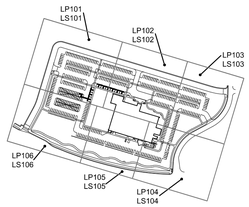

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PLANTING PLAN

14303.000
PROJECT NUMBER

DRB_LP102
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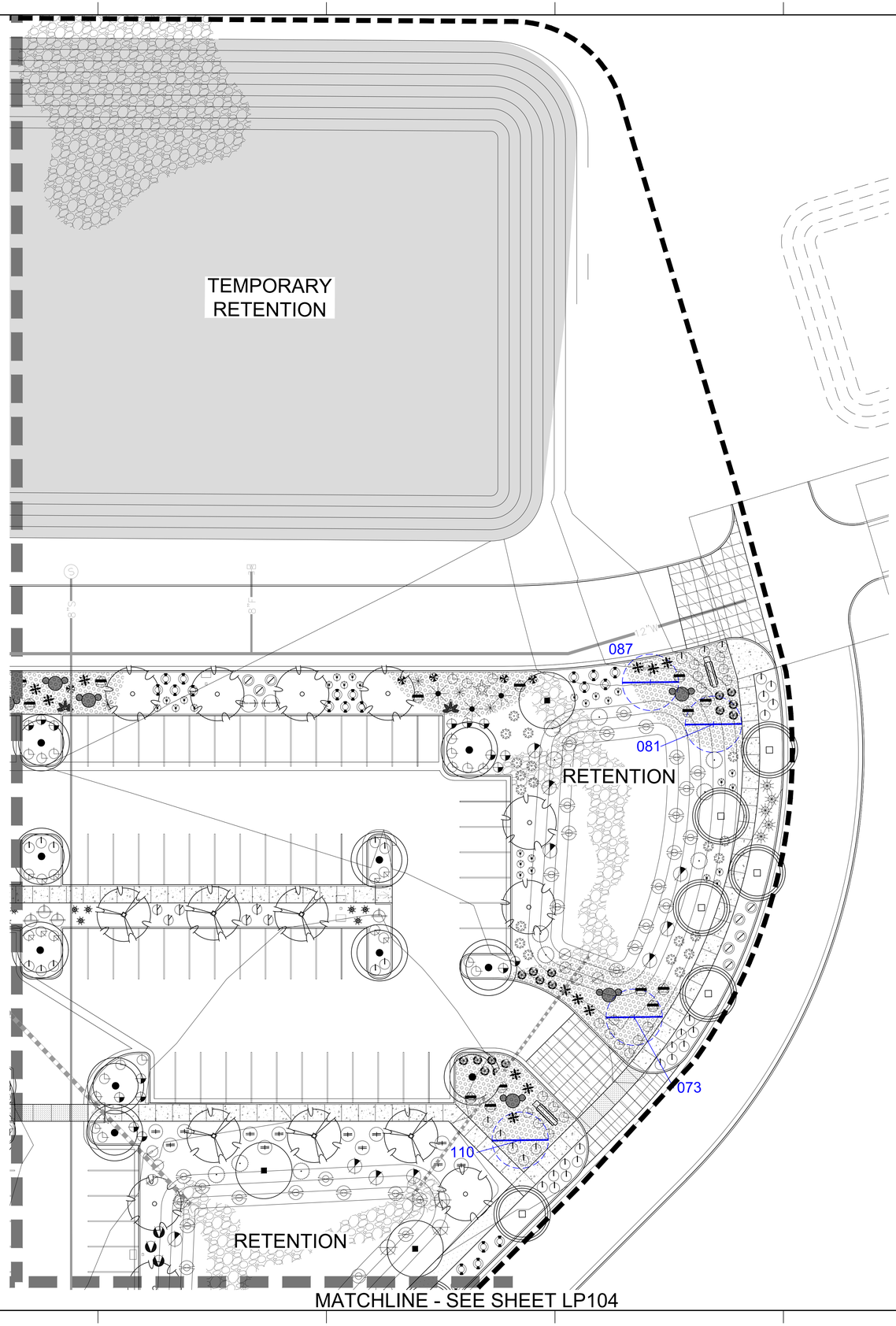

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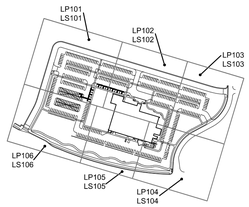

SHEET TITLE

PLANTING PLAN

14303.000
PROJECT NUMBER

DRB_LP103
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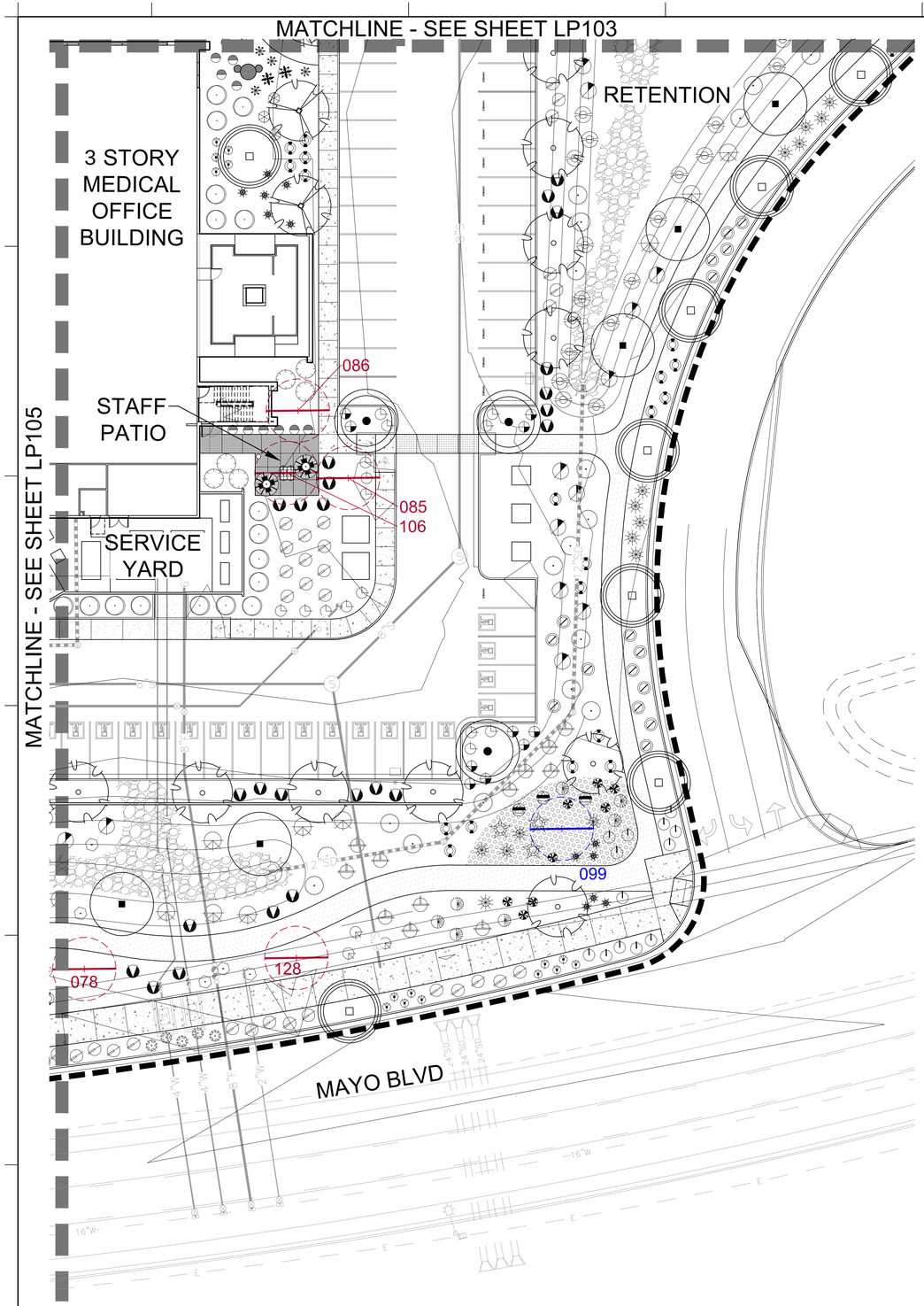

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	DASYLIRION TEXANUM TEXAS SOTOL	#5	4'X5'	36
	DASYLIRION WHEELERI GREY DESERT SPOON	#5	5'X5'	46
	EUPHORBIA ANTISYPHILITICA CANDELILLA EUPHORBIA	#5	2'X3'	37
	EUPHORBIA TIRUCALLI FIRE STICKS	#5	5'X5'	3
	FOUQUIERIA SPLENDENS OCOTILLO	10' HT. 15 CANE	12'X10'	10
	HESPERALOE FUNIFERA GIANT HESPERALOE	#5	5'X5'	12
	HESPERALOE PARVIFLORA RED YUCCA	#5	3'X5'	78
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	YUCCA RIGIDA MEXICAN BLUE YUCCA	#5	12'X6'	29
	YUCCA THOMPSONIANA THOMPSON'S YUCCA	#5	6"X6'	8
CACTI				
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	LOPHOCEREUS SCHOTTII MONSTROSUS TOTEM POLE CACTUS	#15	12'X10'	11
	OPUNTIA ENGELMANNII ENGELMANN`S PRICKLY PEAR	#15	6'X15'	2
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	OPUNTIA SANTA-RITA 'TUBAC' SANTA RITA PRICKLY PEAR	#15	8'X10'	15
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	LANTANA MONTEVIDENSIS PURPLE TRAILING LANTANA	#5	2'X4'	200
	LANTANA X 'NEW GOLD' NEW GOLD LANTANA	#5	2'X4'	175
PERENNIALS				
	PENSTEMON SPP. PENSTEMON MIX 50% PENSTEMON EATONII 50% PENSTEMON PARRYI	#5	2'X2'	36

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Plot Date:

Banner Health Center Plus

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Scottsdale, Arizona 85255

NexCore GROUP
1550 Market Street
Suite 200
Denver, CO 80202

SMITHGROUP

455 NORTH THIRD STREET
SUITE 250
PHOENIX, AZ 85004
602.265.2200
smithgroup.com

ISSUED FOR	REV	DATE
DEVELOPMENT REVIEW BOARD		07MAR24

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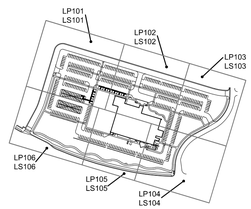
KEY PLAN

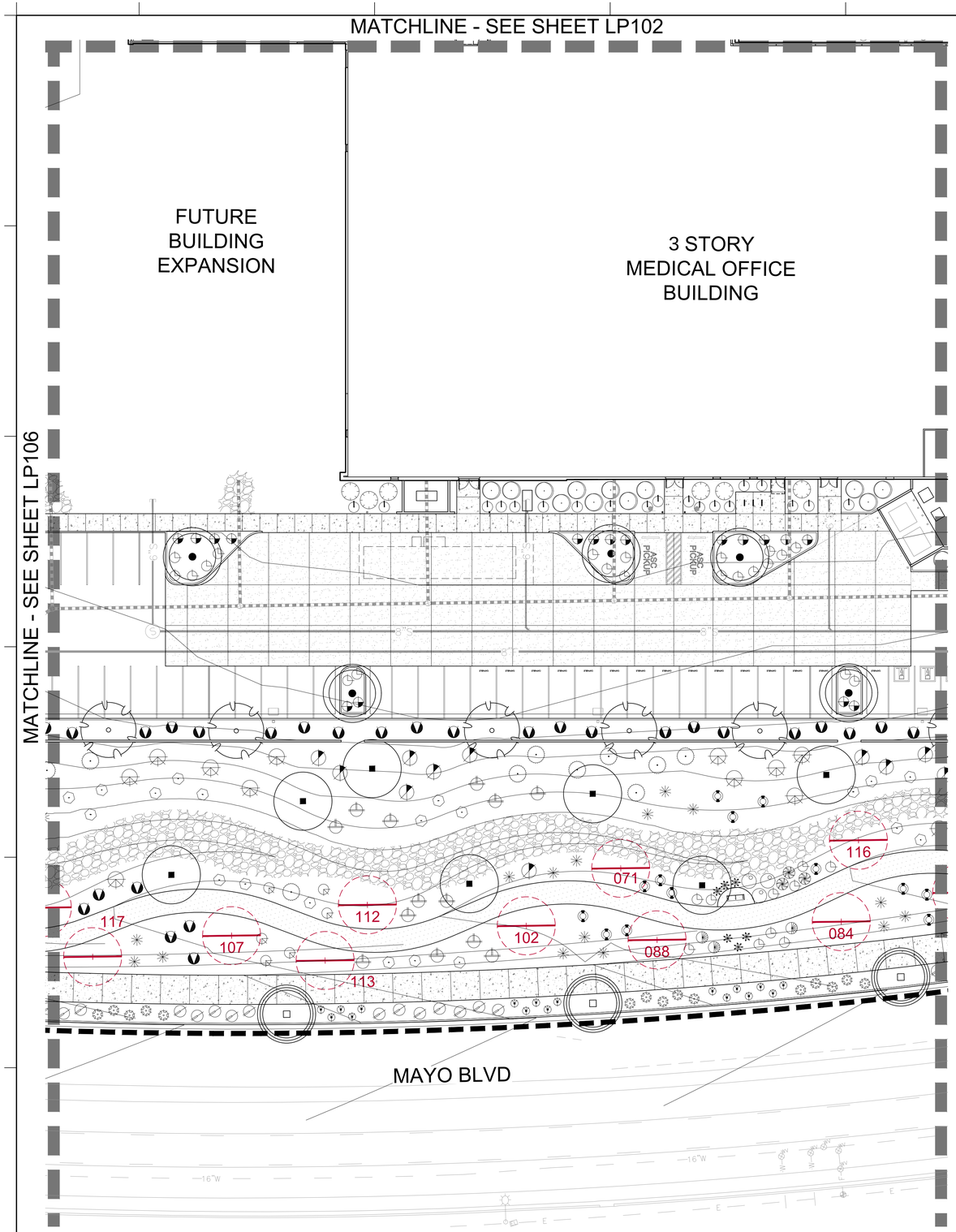


SHEET TITLE

PLANTING PLAN

14303.000
PROJECT NUMBER

DRB_LP104
SHEET NUMBER



PLANT LEGEND

SYMBOL	BOTANICAL / COMMON NAME	SIZE	MATURE	INSTALL	QTY	REMARKS
TREES						
	PARKINSONIA FLORIDA BLUE PALO VERDE	36" BOX	30`X30`	10`X8`	48	MULTI
	PARKINSONIA X 'AZT' AZT THORNLESS PALO VERDE	36" BOX	30`X30`	10`X7`	43	MULTI
	PROSOPIS VELUTINA VELVET MESQUITE	36" BOX	30`X30`	10`X8`	9	MULTI
	PROSOPIS X COOPERI COOPERI MESQUITE	36" BOX	25`X25`	10` X 8`	30	MULTI
	QUERCUS VIRGINIANA SOUTHERN LIVE OAK	36" BOX	40`X40`	12`X7`	62	HIGH BREAK

TOPDRESS/DUST CONTROL LEGEND

	DECOMPOSED GRANITE, 2" MIN. DEPTH. SIZE: **3/4" SCREENED** COLOR: **MAHOGANY** **ALL PLANTING AREAS U.O.N.**	+/-147,000 SF
	STONE COBBLE, 3" MIN. DEPTH. SIZE: **SIZE PER CIVIL DRAWINGS** COLOR: **MAHOGANY**	+/-34,000 SF
	STONE COBBLE, 3" MIN. DEPTH. SIZE: **1"-3"** COLOR: **SHASTA BROWN**	+/-15,000 SF
	STABILIZED DECOMPOSED GRANITE, 3" MIN. DEPTH. SIZE: **1/4" MINUS** COLOR: **SHASTA BROWN**	+/-10,000 SF
	NATIVE RESTORATIVE SEED MIX BY HYDROSEED	+/-113,000 SF
A	+/-(2) SURFACE SELECT GRANITE BOULDERS - 1 TON - 3'X 5'X 3'	
B	+/-(4) SURFACE SELECT GRANITE BOULDERS - 3/4 TON - 3'X 3'X 3'	
C	+/-(11) SURFACE SELECT GRANITE BOULDERS - 3/4 TON - 2'X 2'X 2'	
	NOTE: ALL BOULDERS TO BE MAHOGANY COLOR	

SALVAGE PLANT LEGEND

SYM.	BOTANICAL NAME (COMMON NAME)	QTY.
	TREES	
	PARKINSONIA FLORIDA BLUE PALO VERDE	6
	PROSOPIS VELUTINA MESQUITE	22
	OLNEYA TESOTA IRONWOOD	1

PLANT LEGEND

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SHRUBS				
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	ENCELIA FARINOSA BRITTLEBUSH	#5	3`X4`	29
	EREMOPHILA MACULATA 'VALENTINE' VALENTINE SPOTTED EMU BUSH	#5	5`X5`	85
	JUSTICIA CALIFORNICA CHUPAROSA	#5	5`X5`	78
	JUSTICIA SPICIGERA MEXICAN HONEYSUCKLE	#5	3`X3`	50
	LARREA TRIDENTATA CREOSOTE BUSH	#5	6"X6`	48
	LEUCOPHYLLUM CANDIDUM 'THUNDER CLOUD' THUNDER CLOUD TEXAS SAGE	#5	4`X4`	101
	LEUCOPHYLLUM LAEVIGATUM CHIHUAHUAN SAGE	#5	4`X5`	120
	RUSSELIA EQUISETIFORMIS FIRECRACKER PLANT	#5	4`X5`	24
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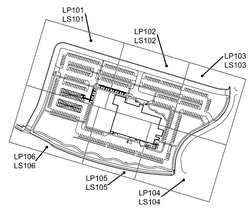

SHEET TITLE

PLANTING PLAN

14303.000
PROJECT NUMBER

DRB_LP105

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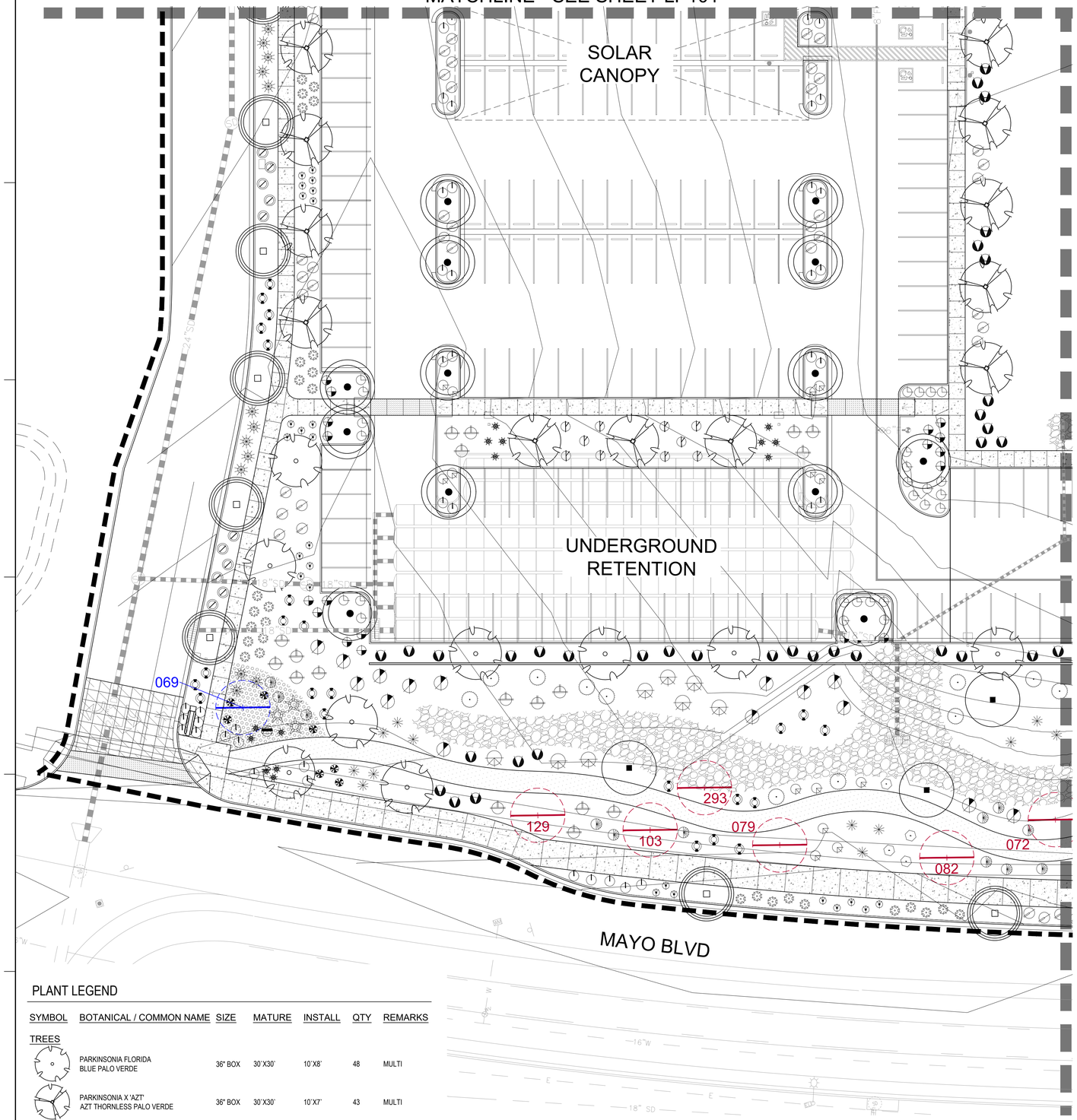

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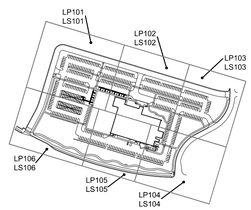


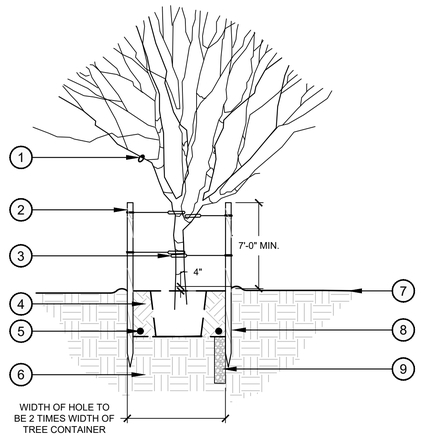
SHEET TITLE

PLANTING PLAN

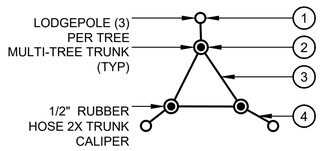
PROJECT NUMBER 14303.000

DRB_LP106

SHEET NUMBER



1. ALL TREE IDENTIFICATION, TRADEMARK, AND SALVAGE TAGS TO REMAIN ON TREE
2. 3" MIN. DIAMETER X 10'-0" LODGEWOOD POLES, FREE OF KNOTS AND CRACKS - DRIVEN OUTSIDE ROOTBALL INTO SUBGRADE (18" MIN.) PRIOR TO BACKFILLING AS NECESSARY FOR FIRM SUPPORT - NOT REQUIRED FOR SALVAGE TREES
3. HOSE ENCASED WIRE OF PLIABLE ZINC-COATED IRON OF #10 GAUGE; PROVIDE MINIMUM OF TWO PER TREE; HOSE COVERING: TWO-PLY REINFORCED, RUBBER GARDEN HOSE MINIMUM OF ½" DIAMETER; HIGHEST TIE TO BE ABOVE LOWEST SCAFFOLDING BRANCH, PROVIDE SECOND TIE MID-WAY TO THE GROUND
4. BACKFILL W/ SPECIFIED SOIL MIX PER SPECIFICATIONS, WATER AND TAMP TO REMOVE AIR POCKETS - FOR SALVAGE MATERIAL, NATIVE SOILS TO BE USED AS BACKFILL, SOIL AMENDMENTS TO BE DETERMINED BY SALVAGE CONTRACTOR AT TIME OF INSTALLATION
5. PLANT TABS PER SPECIFICATIONS
6. UNDISTURBED SUBGRADE
7. FINISH GRADE
8. SCARIFY SIDES OF PLANTING HOLE TO PREVENT GLAZING
9. WATER TEST TREE HOLES - IF WATER DOES NOT DRAIN WITHIN 24 HOUR PERIOD PROVIDE 8" WIDE X 5' DEEP AUGER DUG WELL W/ 1-2" DIAMETER CRUSHED ROCK FOR DRAINAGE WHEN IN HARDPAN CONDITIONS

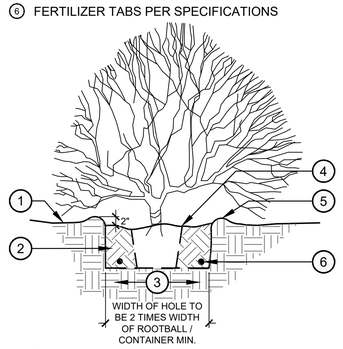


MULTI-TRUNK STAKING PROCEDURE

1. INSTALL LODGEPOLES
2. ATTACH RUBBER HOSES TO ALL TRUNKS
3. SECURE INTERIOR 10 GA. WIRE TO RUBBER HOSES
4. SECURE 10 GA. WIRE FROM RUBBER HOSES TO LODGEPOLES

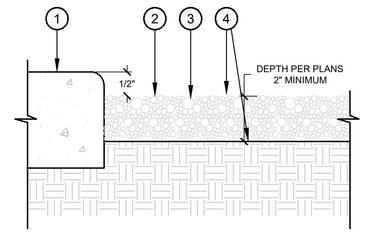
NOTES:
- ROOT BALL TO BE AT FINISH GRADE
- TOP OF WELL TO BE 2" HIGH
- PAINT CUTS OVER 1" DIA.
- POSITION STAKES TO AVOID RUBBING ROOT BALL, BRANCHES, AND PIERCING PER SPECIFICATIONS

1 TREE PLANTING AND STAKING
SCALE: NTS — LD-TREE



1. FINISH GRADE
2. BACKFILL W/ SPECIFIED SOIL MIX PER SPECIFICATIONS - WATER AND TAMP TO REMOVE AIR POCKETS
3. UNDISTURBED SUBGRADE
4. TOP OF ROOT BALL TO BE AT FINISH GRADE
5. TOP OF WELL 2" HIGH
6. FERTILIZER TABS PER SPECIFICATIONS

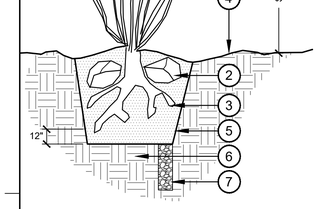
2 SHRUB PLANTING
SCALE: NTS — LD-SHRUB



1. ADJACENT HARDSCAPE AS OCCURS
2. DECOMPOSED GRANITE IN ALL PLANTING AREAS UNLESS OTHERWISE NOTED
3. FINISH GRADE
4. PRE- EMERGENT - PER SPECIFICATIONS

NOTES:
- SIZE AND COLOR OF DECOMPOSED GRANITE NOTED ON PLANT LEGEND
- PRE-EMERGENT SHALL BE APPLIED TO FINISH GRADE BEFORE INSTALLATION OF DECOMPOSED GRANITE AND TO MULCH AFTER INSTALLATION, EXCEPT FOR DRY SCATTER SEED APPLICATIONS - SEE PLANS FOR SPECIFIC AREAS

3 DECOMPOSED GRANITE
SCALE: NTS — LD-DG



1. AVERAGE OF 75% OF CANES SHOULD BE TALLER THAN SPECIFIED HEIGHT ON LEGEND
2. USE 6" TO 8" Ø ROCKS TO ANCHOR ROOTS BELOW GRADE. STAKE OCOTILLOS ONLY AS DIRECTED BY LANDSCAPE ARCHITECT
3. ROOTS TO HAVE A MIN. LENGTH OF 12" OR PLANT WILL BE REJECTED
4. FINISH GRADE
5. SCARIFY SIDES OF PLANTING HOLE TO PREVENT GLAZING
6. UNDISTURBED SUBGRADE
7. 8" X 5' DEEP AUGER DUG WELL W/ 1-2" DIAMETER CRUSHED ROCK FOR DRAINAGE WHEN IN HARDPAN CONDITIONS

NOTES
1. ROOT PRUNE ALL SHREDDED OR DAMAGED ROOTS. ROOTS SHOULD HAVE A MINIMUM LENGTH OF 12".

2. AT JOB SITE, DUST ENTIRE ROOT STRUCTURE W/ WETTABLE DUSTING SULPHUR.

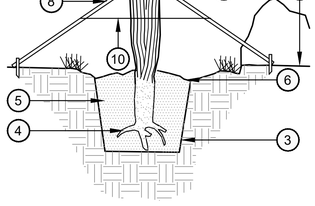
3. PLANTING MIX SHALL BE 1/3 NITROGEN STABLIZED MULCH & 2/3 SPEC SOIL BY VOLUME.

4. PLANTING DEPTH TO MATCH DEPTH AT WHICH PLANT WAS GROWN PRIOR TO HARVEST.

5. APPLY "SUPERTHRIVE", "B-1" OR OTHER APPROVED HORMONE FOR 2 WATERINGS COMMENCING IMMEDIATELY AFTER INSTALLATION.

6. SPRAY / MIST ALL CANES WEEKLY DURING SUMMER ESTABLISHMENT PERIODS; MONTHLY DURING WINTER.

4 BARE ROOT OCOTILLO PLANTING
SCALE: NTS — LD-OCOTILLO



1. REFER TO PLANT LEGEND FOR HEIGHT/NUMBER OF ARMS.
2. MAINTAIN ORIGINAL SOLAR ORIENTATION PRIOR TO TRANSPLANT.
3. PLANTING HOLE WIDTH SHALL BE 3 TIMES THE DIAMETER OF ROOTS AND NO DEEPER THAN THE EXTENSION OF THE ROOTS.
4. ROOT PRUNE ALL SHREDDED OR DAMAGED ROOTS AND DUST ENTIRE ROOT STRUCTURE WITH WETTABLE SULPHUR (1.5 MIN.) AND STREPTO-MIACIN SPRAY AT PLANTING SITE. ROOTBALL MIN. SIZE SHALL BE 24" WITH A MIN. ROOT LENGTH OF 6" ON ALL SIDES.
5. USE GOLF SAND OR 1/4" MINUS DECOMPOSED GRANITE TO BACKFILL PLANTING HOLE. BACKFILL 1/2 OF PIT, THEN COMPACT-BACKFILL REMAINDER.
6. (6) - 1 GALLON EMITTERS IN 'HULA HOOP' DISTRIBUTION, RUN ONCE A MONTH 24 TO 48 HOURS FOR ONE YEAR.
7. FINISH GRADE OF LANDSCAPE.
8. (3) 2" X 6" BRACES, SPACED EQUALLY AND NAILED TO WOODEN STAKES IN THE GROUND. BRACES TO REMAIN IN PLACE FOR ONE YEAR MINIMUM.
9. 4" X 8" - DENSE FOAM AND CARPET PADDED, 8' ABOVE NATURAL GRADE AND NAILED TO BRACE.
10. STEEL BAND FASTENED WITH 2 LARGE STAPLES PER BRACE.

NOTE:

SAGUAROS SHALL BE "A" QUALITY WITH NO TREE RUBS, ROTTING, DISCOLORATION, GIRDLING, OR DAMAGE. COORDINATE REVIEWS AND APPROVAL BY LANDSCAPE ARCHITECT.

5 SAGUARO PLANTING DETAIL
SCALE: NTS — LD-SAGUARO

1. SCREENED GRANITE COBBLE
2. FINISH GRADE
3. PRE-EMERGENT PER SPECIFICATIONS

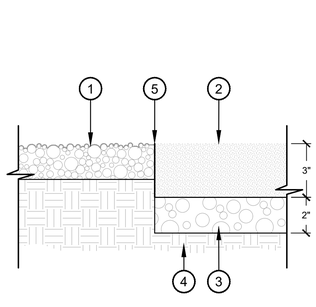
NOTES:
SIZE AND COLOR OF GRANITE COBBLE NOTED ON PLANT LEGEND

PRE-EMERGENT SHALL BE APPLIED TO FINISH GRADE BEFORE INSTALLATION OF GRANITE COBBLE

COMPACT GRADE ADJACENT TO EDGING TO AVOID SETTLING

REFER TO CIVIL DRAWINGS FOR RUBBLE DEPTH AT INLET, AND FINISH GRADE

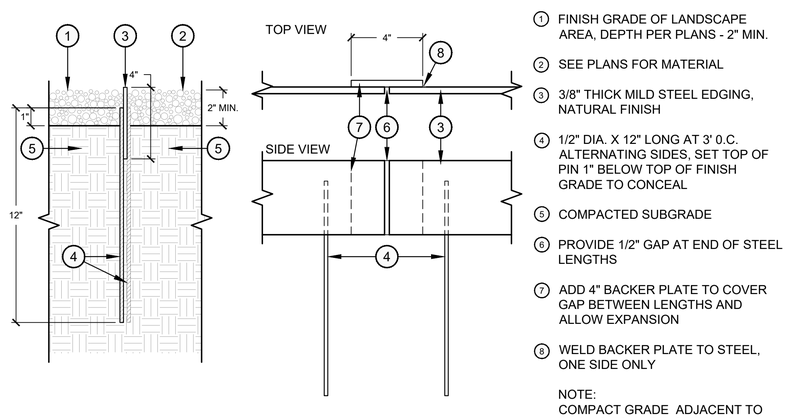
6 GRANITE COBBLE
SCALE: NTS — LD-COBBLE



1. LANDSCAPE PLANTING AREA - REFER TO PLANS FOR DEPTH OF TOPDRESS MATERIAL
2. 1/4" MINUS STABILIZED DECOMPOSED GRANITE PATH, SEE PLANT LEGEND FOR GRANITE COLOR - REFER TO SPECIFICATIONS
3. AGGREGATE BASE COURSE
4. COMPACTED SUBGRADE
5. STEEL HEADER ON BOTH SIDES OF PATHWAY - SEE DETAIL 8 / THIS SHEET

NOTE: PROVIDE MOCK-UP FOR REVIEW AND APPROVAL BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. MOCK-UP TO BE 5'-0" WIDE, 10'-0" LONG, AND FULL-DEPTH AND TO INCLUDE STEEL HEADER.

7 STABILIZED DECOMPOSED GRANITE
SCALE: 3"=1'-0" — HD-STABDG



1. FINISH GRADE OF LANDSCAPE AREA, DEPTH PER PLANS - 2" MIN.
2. SEE PLANS FOR MATERIAL
3. 3/8" THICK MILD STEEL EDGING, NATURAL FINISH
4. 1/2" DIA. X 12" LONG AT 3' 0.C. ALTERNATING SIDES, SET TOP OF PIN 1" BELOW TOP OF FINISH GRADE TO CONCEAL
5. COMPACTED SUBGRADE
6. PROVIDE 1/2" GAP AT END OF STEEL LENGTHS
7. ADD 4" BACKER PLATE TO COVER GAP BETWEEN LENGTHS AND ALLOW EXPANSION
8. WELD BACKER PLATE TO STEEL, ONE SIDE ONLY

NOTE:
COMPACT GRADE ADJACENT TO EDGING TO AVOID SETTLING

8 STEEL HEADER
SCALE: 3"=1'-0" — HD-HEADER-STEEL

Plot Date:

Banner Health
Center Plus

SCOTTSDALE CAMPUS

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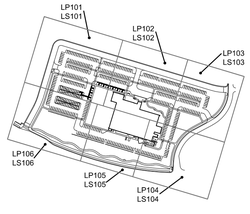
KEY PLAN

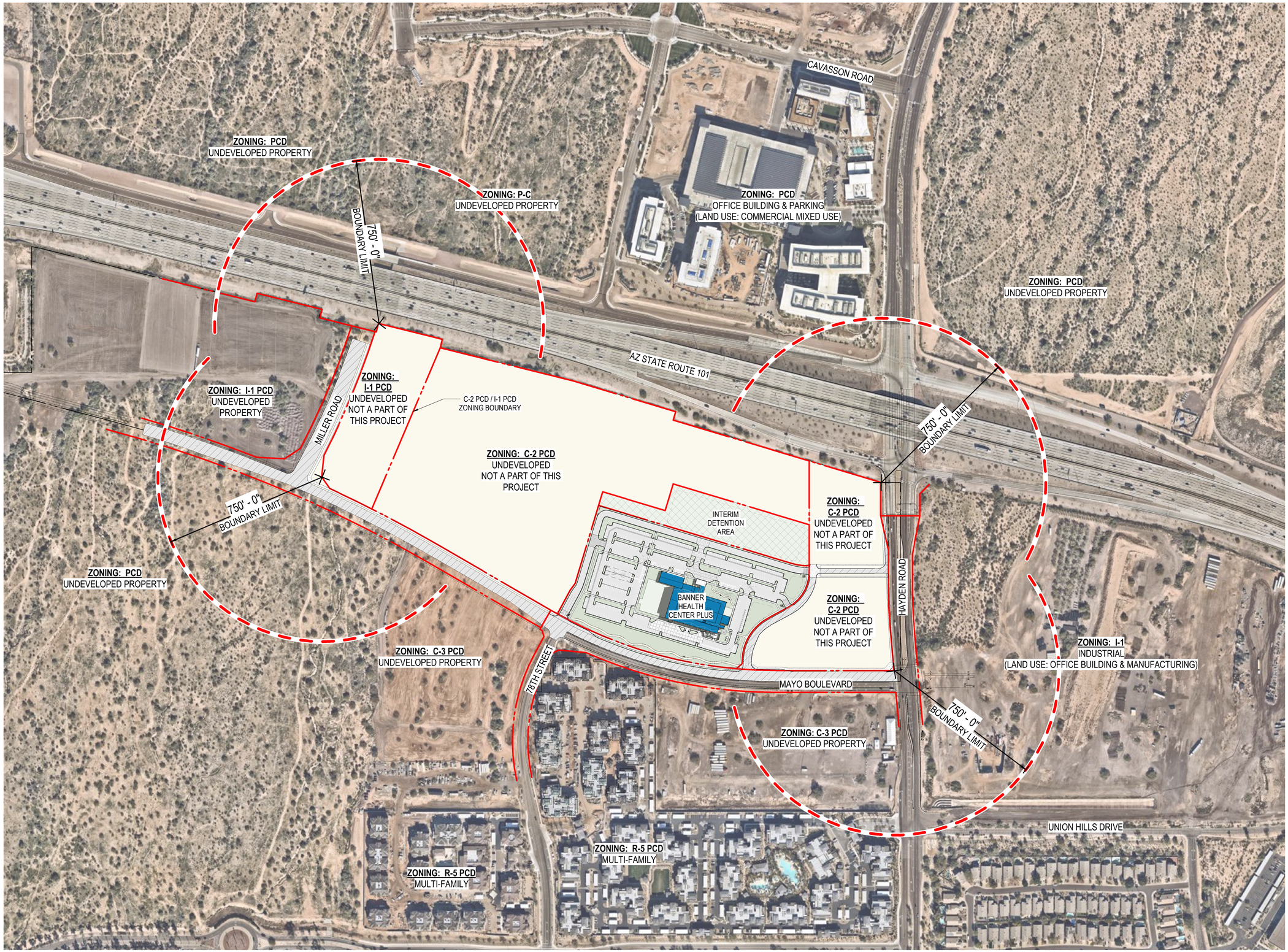


SHEET TITLE

PLANTING DETAILS

14303.000
PROJECT NUMBER

DRB_LP500
SHEET NUMBER



CONTEXT AERIAL SITE PLAN_DRB
SCALE: 1" = 200'-0"

NORTH

0 200' 400' 600'
GRAPHIC SCALE: 1" = 200' - 0"

Plot Date: 3/5/2024 4:14:55 PM Author

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CONTEXT AERIAL SITE PLAN

PROJECT NUMBER 14303.000

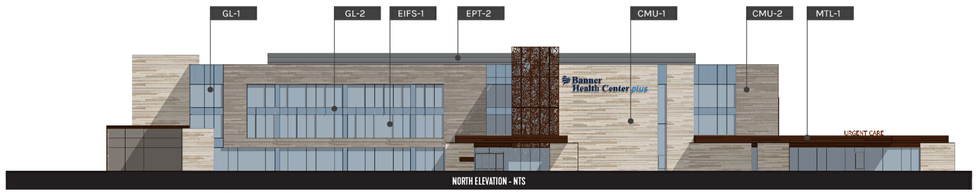
SHEET NUMBER **DRB_A1.0.0**

EIFS - 1
ICI OLD MONTEREY HEX #98938A
FIELD COLOR

EIFS - 2
OLD MONTEREY 50% DARKER HEX #7B766D
BASE COLOR + ACCENT

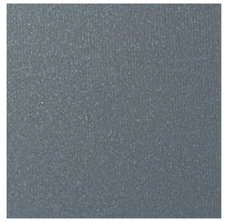
MTL - 1 (GL-3 @ GLAZING INSERT)
439Z8934M (COLOR: TEXTURED CORTEN)
METAL WALL PANEL

ALUMINUM FRAMING (GLAZING) + ACCESSORIES
CLEAR ANNODIZED



NORTH ELEVATION - NTS

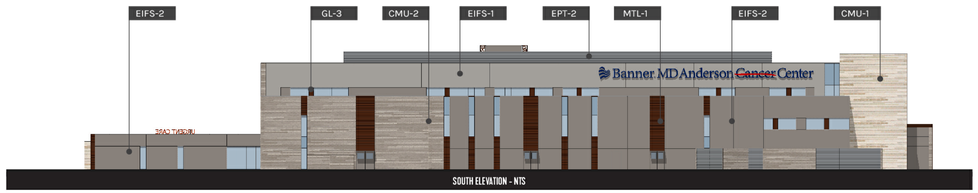
Banner Health NexCore GROUP BANNER HEALTH CENTER PLUS SMITHGROUP



MTL - 2
SW 4392Z1148M WEATHERED ZINC
ENTRY CANOPY FASCIA

EPT - 1
HIGH PERFORMANCE PAINT MATCH TO MTL-1
PANTONE 175C

EPT - 2
HIGH PERFORMANCE PAINT MATCH TO MTL-2
PANTONE 444C
METAL SCREENWALL + EXPOSED STEEL



SOUTH ELEVATION - NTS

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CMU - 1
CUSTOM MASONRY PATTERN "BANNER BLOCK"
PATTERN A

MESA STONE
MALIBU SAND
PATTERN A + B

TREND STONE
MALIBU SAND
PATTERN A

MESA STONE
MISSION WHITE
PATTERN A

TREND STONE
MISSION WHITE
PATTERN A

CMU - 2
CUSTOM MASONRY PATTERN "BANNER BLOCK"
PATTERN B

MESA STONE
PEARL WHITE
PATTERN A

TREND STONE
PEARL WHITE
PATTERN A

MESA STONE
WALNUT CREEK
PATTERN B

TREND STONE
WALNUT CREEK
PATTERN A + B

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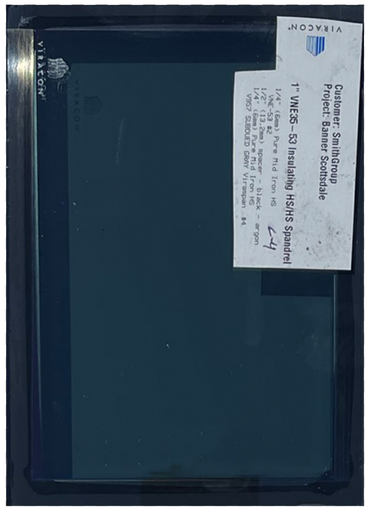
GL - 1
HIGH PERFORMANCE VISION UNIT
VIRACON VNE 35-53



GL - 2
HIGH PERFORMANCE SPANDREL UNIT
VIRACON VNE 35-53

PERFORMANCE DATA

GL - 1
VISION GLAZING
VIRACON VNE 35-53*

VL Transmittance:	49%
VL Reflectance:	19%
Solar Heat Gain Coefficient:	0.23
Shading Coefficient:	.26
Winter U-Factor:	0.29
Summer U-Factor:	0.25

GL - 2
SPANDREL GLAZING**
VIRACON VNE 35-53*

VL Transmittance:	–
VL Reflectance:	–
Solar Heat Gain Coefficient:	–
Shading Coefficient:	–
Winter U-Factor:	0.29
Summer U-Factor:	0.25

*Low-E Coating Sputtered on second surface
**Viracon "Subdued Gray" #V957 on surface 4.

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Author

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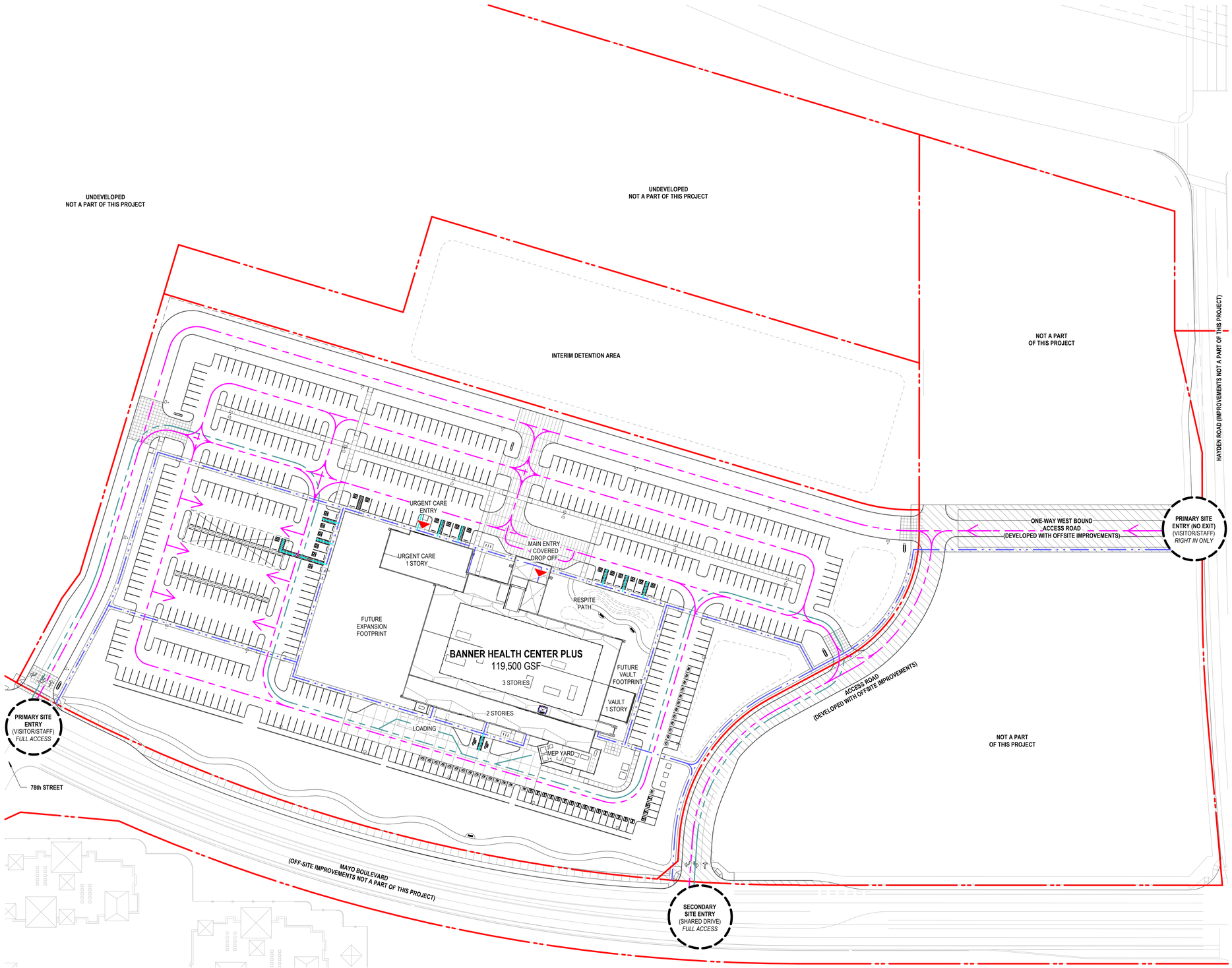

PEDESTRIAN AND VEHICULAR CIRCULATION PLAN
SCALE: 1" = 60'-0"

NORTH

0 60' 120' 180'
GRAPHIC SCALE: 1" = 60' - 0"

GRAPHIC LEGEND

- PROPERTY BOUNDARY
- PEDESTRIAN CIRCULATION
- SERVICE VEHICLE CIRCULATION
- EMPLOYEE/VISITOR VEHICLE CIRCULATION
- ACCESSIBLE CIRCULATION
- ACCESS ROAD BY OTHERS - NOT A PART OF THIS SUBMISSION

Banner Health Center Plus

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DEVELOPMENT REVIEW BOARD		*07MAR24*

SEALS AND SIGNATURES

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SHEET TITLE

PEDESTRIAN AND VEHICULAR CIRCULATION PLAN

PROJECT NUMBER 14303.000

DRB_A1.5.1

SHEET NUMBER

Author

Plot Date: 3/8/2024 9:08:11 AM

BANNER HEALTH CENTER PLUS SCOTTSDALE

Traffic Impact and Mitigation Analysis

Prepared For: Banner Health

Seth Chalmers, PE

Project No.: 1121151

April 12, 2024

DIBBLE

Table of Contents

I. EXECUTIVE SUMMARY AND INTRODUCTION 1
A. Purpose of Report 1
B. Executive Summary 1
II. PROPOSED DEVELOPMENT 3
A. Off-Site Development 3
B. Description of on-site Development 3
III. AREA CONDITIONS 6
A. Study Area 6
B. Study Area Land Use 7
C. Site Accessibility 7
IV. PROJECTED TRAFFIC 9
A. Site Traffic 9
B. Background Traffic 11
C. Total Traffic 13
V. TRAFFIC ANALYSIS 15
A. Site Access 15
B. Turn Lane Warrants 15
C. Capacity and Level of Service 18
D. Traffic Signals 21
E. Site Circulation and Parking 21
VI. IMPROVEMENT ANALYSIS 21
A. Queueing Analysis 21
VII. FINDINGS 23
A. Site Accessibility 23
B. Traffic Impacts 23
C. Need for Improvements 23
D. Compliance with Applicable City Codes 23
VIII. RECOMMENDATIONS 23
A. Roadway Improvements 23

List of Figures

Figure 1 – Vicinity Map 4
Figure 2 – Overall Site Access 5
Figure 3 – MOB+ Site Plan 6
Figure 4 – Trip Distribution 10
Figure 5 – Trip Assignment 11
Figure 6 – Opening Day Background Traffic (2026) 12
Figure 7 – Future Background Traffic w/Axon (2040) 12
Figure 8 – Future Background Traffic w/o Axon (2040) 13
Figure 9 – Opening Day Total Traffic (2026) 13
Figure 10 – Future Total Traffic (2040) 14
Figure 11 – Future Total Traffic w/o Axon (2040) 14
Figure 12 – Site Access 15

List of Tables

Table 1 –Signal Warrant Results 2

Table 2 –Trip Generation 9
Table 3 –Right Turn Lane Warrants 16
Table 4 –Left Turn Lane Warrants 17
Table 5 – Traffic Operations Issues & Considerations 18
Table 6 –Opening Day Background (2040) LOS 19
Table 7 –Opening Day (2026) Total Traffic LOS 19
Table 8 – Future (2040) Total Traffic LOS 20
Table 9 – Future (2040) Total Traffic w/o Axon LOS 20
Table 10 –Signal Warrant Results 21
Table 11 –Right Turn Lane Queues 22
Table 12 –Left Turn Lane Queues 22

Appendices

Appendix A Scottsdale Roadway Functional Classification Map A-1
Appendix B Site Plan B-1
Appendix C Synchro Reports C-1
Appendix D Background Traffic Exhibit D-1
Appendix E Kimley Horn TIMA Report E-1
Appendix F Signal Warrant Analysis F-1

I. EXECUTIVE SUMMARY AND INTRODUCTION

A. Purpose of Report

The purpose of this Traffic Impact and Mitigation Analysis ("Report") is to evaluate the traffic impacts of a proposed joint Banner Health and NexCore Medical Office Building, Banner Health Center Plus ("MOB+") proposed on approximately 14.8 acres located just west of the northwest corner of Mayo Boulevard and Hayden Road (the "MOB+ Site"). The MOB+ Site constitutes a portion of a larger scale development planned for approximately 73.2 acres located at the northwest corner of Mayo Boulevard & Hayden Road in Scottsdale, Arizona ("Overall Site"). The MOB+ is designated as a critical care facility and is allowed by right within the existing Crossroads East C-2 PAD zoning. The opening year was assumed to be 2026 for the purposes of this Report. The City of Scottsdale has requested a Category II Traffic Impact and Mitigation Analysis for the MOB+ development to determine the offsite infrastructure needs for the MOB+ Site and to determine if and when traffic signals will be warranted for the MOB+ Site and during the development of the larger medical campus planned but not yet approved for the Overall Site. A Traffic Impact & Mitigation Analysis for the Overall Site was prepared by Kimley Horn & Associates and accepted by the City on June 14, 2023, and is included in **Appendix E** of this Report ("Kimley-Horn TIMA"). In the Kimley-Horn study, approximately 48 acres of the Overall Site were assumed to be developed for medical uses. The 14.2 acre MOB+ facility is a portion of the larger planned medical uses. Although this Report focuses on the MOB+, the future plans for the Overall Site are accounted for in the background traffic for a future horizon year (2040). This was done to evaluate the full buildout offsite transportation infrastructure needs, which will allow the improvements to efficiently be built with the construction of Mayo Boulevard and Miller Road along the frontage of the Overall Site.

B. Executive Summary

Site Location and Study Area

The MOB+ Site is located within the City of Scottsdale, west of Hayden Road between Loop 101 and Mayo Boulevard. This Report includes the analysis of the following intersections:

- Mayo Boulevard & 78th Street
- Hayden Road & Mayo Boulevard
- Mayo Boulevard & Miller Road
- Five access points to the medical campus

Development Description

The proposed 119,500 SF MOB+ will be developed in one phase. There is potential for a larger medical campus in the future as a part of development planned for the Overall Site. The planning level numbers from the Kimley Horn TIMA were used for the Overall Site and included as a part of the background traffic for the purposes of this Report.

Principal Findings

At full buildout of the MOB+, it is anticipated that multiple off-site improvements will be completed by the master developer of the Overall Site, including installing a traffic signal at Mayo Boulevard & Hayden Road, and at Mayo Boulevard & Miller Road. The signal at Mayo Boulevard & Hayden Road may not be installed prior to the completion of the MOB+ or, potentially, the remainder of the Overall Site. The peak hour (warrant 3) signal warrant was therefore analyzed for two scenarios.

- Scenario 1: Full buildout of the MOB+ only by 2026
- Scenario 2: Full buildout of the Overall Site by 2040 **without** the Axon development (as discussed further below)

The results of the signal warrant analysis are summarized in **Table 1**.

Table 1 –Signal Warrant Results

Intersection	Scenario	
	MOB+ Only 2026	NWC Development 2040 w/o Axon
Mayo Blvd & Miller Rd	No	Yes (Both Peaks)
Mayo Blvd & 78th St	No	Yes (Both Peaks)
Mayo Blvd & Hayden Road	Yes (PM Peak)	Yes (Both Peaks)

Development of the MOB+ Site is not anticipated to create excessive delays at the surrounding intersections. With the current site plan and recommended site access, the adjacent intersections and site driveways are anticipated to operate acceptably for the opening day of the MOB+ as well as the full buildout of the Overall Site with full access provided at driveways B, C and D as well as 78th Street and Mayo.

Recommendations

Based on the analysis in this Report, there are several recommendations for the site driveways and adjacent intersections by opening day of the MOB+ that also take into consideration the additional future development surrounding the site. The recommendations are in alignment with the approved Kimley Horn TIMA.

Overall, it is recommended to provide a right turn lane for driveways B, C, D, E, and at 78th Street into the Overall Site. Additional recommendations for specific driveways and adjacent intersections are as follows:

Hayden Road & Driveway E
With a dedicated southbound right turn lane at Hayden Road & Driveway E, the queue length is not anticipated to extend beyond the boundary of the right turn lane. Therefore, the queue is not anticipated to have a negative impact on the operation of the Loop 101 and Hayden Road interchange.

Mayo Boulevard & 78th Street
A signal is not warranted from both a vehicle capacity and delay perspective for opening day of the MOB+. A signal is warranted in the future as the Overall Site is developed. It is recommended to install signal pull boxes on all four corners of Mayo Boulevard and 78th Street as well as signal conduit connections between the pull boxes for a future traffic signal for opening day of the MOB+. With the construction of the MOB+, the intersection operates at an acceptable level of service with two-way stop control and Mayo Boulevard traffic free flowing.

Mayo Boulevard & Hayden Road
Provide a southbound right turn lane at the intersection, which is already planned. Additionally, if the Axon development does not occur and the traffic signal is not installed prior to the completion of the MOB+, a signal will be warranted at the intersection by opening day of the MOB+.

Mayo Boulevard & Miller Road
A signal is not warranted at this intersection from both a vehicle capacity and delay perspective for opening day of the MOB+. A signal will be warranted in the future scenarios with the further development of the Overall Site. With the construction of the MOB+, the intersection operates at an acceptable level of service with two-way stop control and Mayo Boulevard traffic free flowing. It is recommended to install signal pull

boxes on all four corners of Mayo Boulevard and Miller Road as well as signal conduit connections between the pull boxes for a future traffic signal for opening day of the MOB+.

Recommended turn lane storage lengths for all new intersections and turn lanes are given in **Table 11** – **Table 12**.

II. PROPOSED DEVELOPMENT

A. Off-Site Development

In addition to the development planned for the Overall Site, there are several other off-site developments planned in the area. The Kimley Horn TIMA for the Overall Site includes planning level traffic assumptions for the Overall Site that included a planned medical campus as well as other proposed land uses such as office, retail and hotels. The Kimley Horn TIMA can be found in **Appendix E**. The Kimley-Horn TIMA also incorporates additional planned developments within the area such as Cavasson, HonorHealth Medical Campus, Axon Campus and Optima McDowell Mountain Village into the background traffic. The independent traffic studies for each of those developments was used to generate the background traffic numbers. Those same assumptions were utilized in this Report. At the time of this Report, it is unknown if or when the Axon development will be constructed. A traffic signal at Mayo Boulevard and Hayden Road was planned as a part of the Axon development. If the Axon development is delayed or is no longer built on the east side of the intersection of Mayo Boulevard and Hayden Road, the traffic signal will still be needed for the MOB+, the Overall Site and other developments in the area. This Report therefore, evaluates the need for a traffic signal at this intersection with the completion of the MOB+. Kimley Horn also provided Dibble with their total 2040 traffic numbers for the surrounding intersections that excluded the Banner Health traffic. The traffic numbers also included all the previously mentioned proposed developments in the area. These traffic numbers can be found in **Appendix D**.

B. Description of on-site Development

Land Use and Intensity

This MOB+ Site is planned to be developed with a medical office building comprised of 119,500 SF of building space. For the purposes of this Report, a future (not currently planned) 48,700 SF expansion of the MOB+ was assumed for a total of 168,200 SF on the MOB+ Site.

Location

The proposed MOB+ development is located within the City of Scottsdale, west of Hayden Road between Loop 101 and Mayo Boulevard. This location is shown in **Figure 1**.

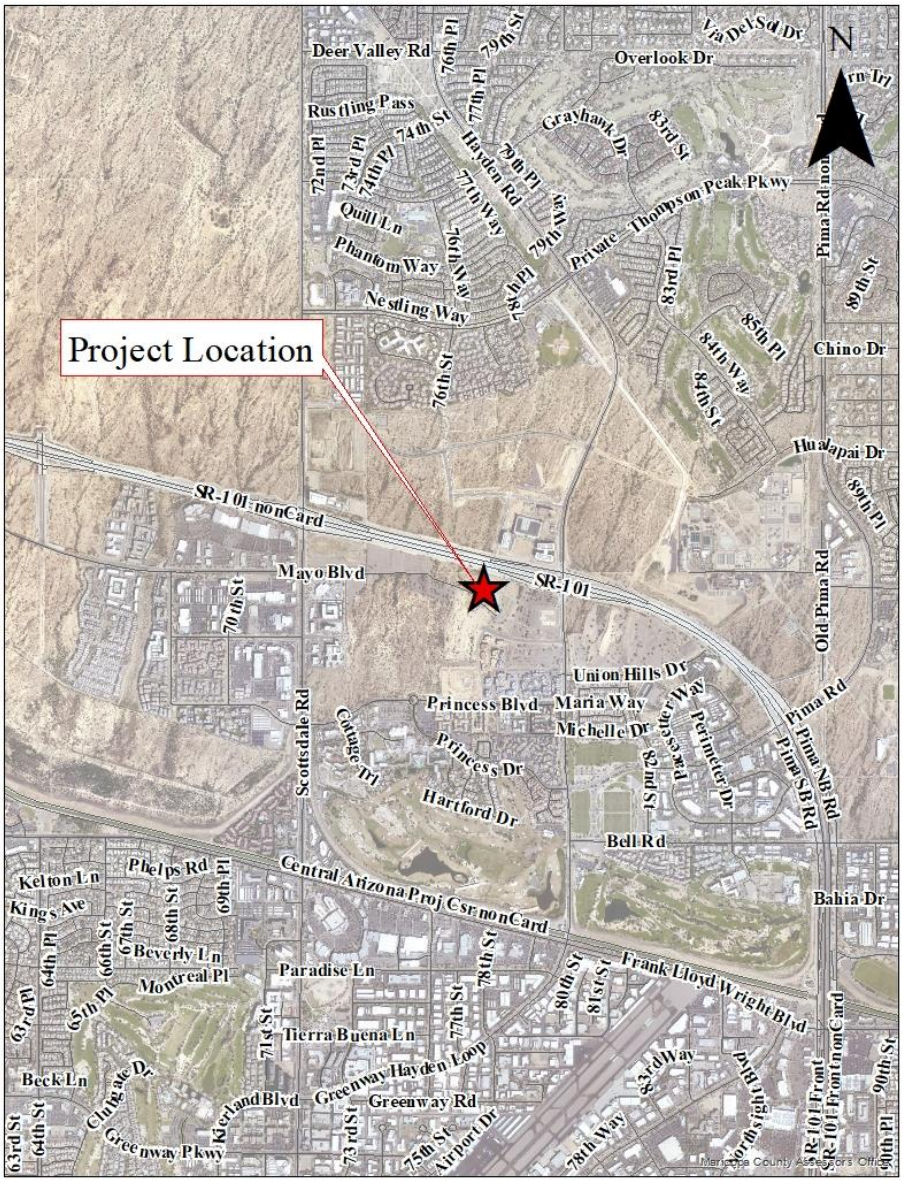


Figure 1 – Vicinity Map

Site Plan

The Overall Site is planned to have seven driveways to access the Overall Site. One driveway is planned to provide full access on Miller Road (Driveway A). Four access points are initially modeled to provide full access on Mayo Boulevard (Driveways B-D and 78th Street). The sixth proposed access point (Driveway E) is on Hayden Road to provide more direct access from the freeway. Driveway E will be a right-in only access point due to the proximity to the Loop 101 ramps as well as the Mayo Boulevard and Hayden Road intersection to prevent unsafe weaving traffic exiting the site. The proposed driveways are shown in **Figure 2** followed by the current site plan in **Figure 3**.

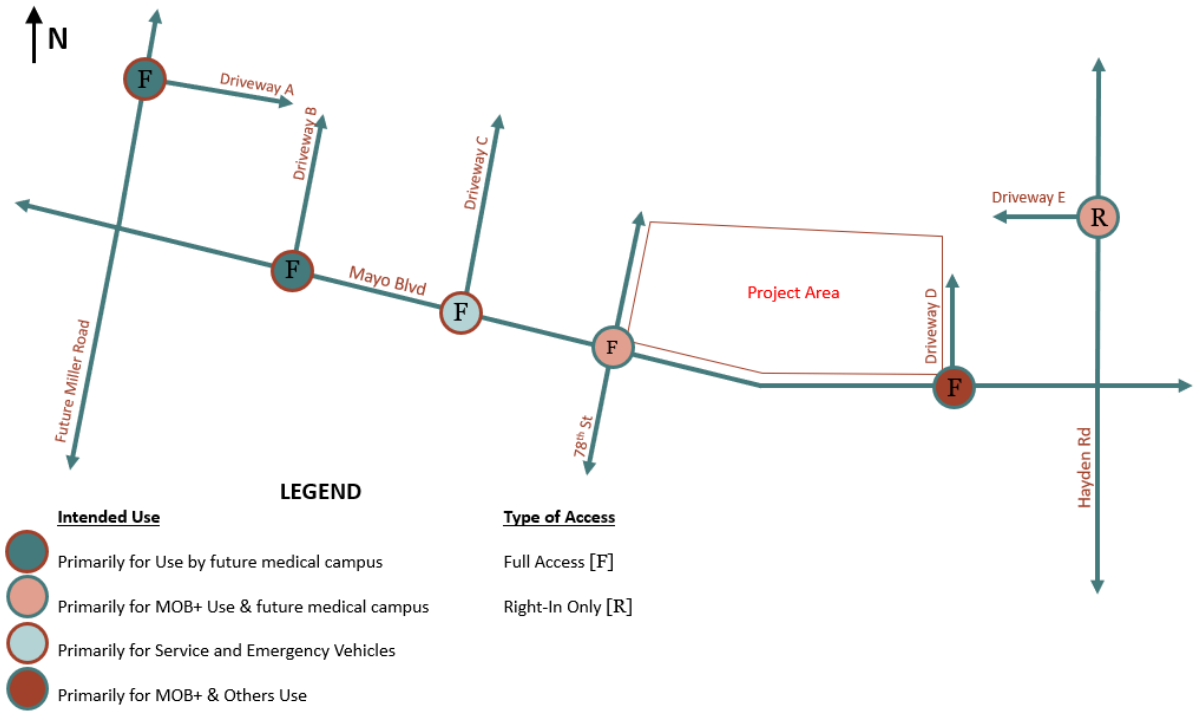


Figure 2 – Overall Site Access

Figure 3 – MOB+ Site Plan

Phasing and Timing

The MOB+ will be developed in one phase. The remainder of the medical campus development on the Overall Site will be developed at a later date. Conservative planning level numbers from the Kimley Horn TIMA are used for the future medical campus development and included as a part of the background traffic for the purposes of this Report.

III. AREA CONDITIONS

A. Study Area

Area of Influence

The MOB+ Site is located within the City of Scottsdale, west of Hayden Road between Loop 101 and Mayo Boulevard. This MOB+ Site and the larger medical campus planned for a portion of the Overall Site are anticipated to serve the surrounding population. There are several smaller clinics as well as other hospitals within a 5-mile radius of this site. This was considered for the trip distribution for the MOB+ Site as well as the medical services provided at other locations.

Area of Significant Traffic Impact

The area with the most traffic impact due to the addition of the MOB+ and the larger medical campus planned for a portion of the Overall Site will occur along Loop 101, Hayden Road, Scottsdale Road, and Mayo Boulevard roadways. These are the major travel routes that vehicles will likely take to reach and leave the site.

This study focuses on the capacity analysis for the Overall Site driveways and the following surrounding intersections:

- Mayo Boulevard & 78th Street
- Hayden Road & Mayo Boulevard
- Mayo Boulevard & Miller Road
- Five additional access points to the Overall Site

B. Study Area Land Use

Existing Land Uses and Zoning

The MOB+ Site is currently zoned as Planned Community District-Central Business District (P-C C-2).

Anticipated Future Development

As previously mentioned, the Kimley Horn TIMA included development plans for a larger medical campus on the Overall Site. The planned developments analyzed in Kimley Horn TIMA include retail, senior living, office, hotel, and restaurant land uses. The trips generated by these developments in the Kimley Horn TIMA were used in this Report as background traffic. Surrounding offsite developments include the Axon development and the Optima McDowell Mountain development. The background traffic provided from the Kimley Horn TIMA can be found in **Appendix D**. It should be noted that the Axon development may be delayed or it may not be built. At the request of the City,his Report therefore reflects scenarios that include this development and as exclude this development.

C. Site Accessibility

Existing Roadway System

Roadway Segments

Hayden Road is currently a divided, four-lane, north-south minor arterial roadway. There are two northbound and two southbound lanes with a 40-mph posted speed limit in each direction and a raised median down the middle. There is curb and gutter on both sides of the road. There is a sidewalk with large gaps and a bike lane on the west side of the road with little sidewalk and no bike lane on the east side of the road. The east side of the road has a 5-foot-wide shoulder that tapers out as it nears the intersection with Loop 101.

Miller Road is not currently built but is anticipated to be a major collector. The future Miller Road alignment is expected to connect as the north leg of the Princess Boulevard & Princess Drive intersection then extend north under Loop 101 providing a grade separation. Miller Road is anticipated to be constructed as a 4-lane roadway with a two-way left-turn lane down the middle and a bike lane in each direction. It is assumed Miller Road will have a posted speed limit of 40 mph.

78th Street is currently a 2-lane divided road with a two-way left-turn lane down the middle classified by the City of Scottsdale as a minor collector. The road is built between Princess Boulevard and Mayo Boulevard. There is curb, gutter, and sidewalk on both sides of the road. There is also a bike lane and a posted speed limit of 30 mph in each direction.

Mayo Boulevard is currently a 2-lane divided road with a two-way left-turn lane down the middle classified by the City of Scottsdale as a major collector. The road is built between Hayden Road & 78th Street. There is currently curb and gutter on the south side of the road and bike lanes on both sides of the road. This road is expected to be extended to the west to connect with the Mayo Boulevard & Scottsdale Road intersection. There is a posted speed limit of 30 mph east of Scottsdale Road.

Intersections

Mayo Boulevard & 78th Street is currently a 2-way free-flowing intersection. This results in a curved roadway with a name transition between the two directions. This intersection is anticipated to be built out with the west leg being an extension of Mayo Boulevard and the south leg being stop-controlled.

Hayden Road & Mayo Boulevard is a 3-leg stop-controlled intersection with the west leg being stop controlled and the north and south legs being free-flow. There is one dedicated left turn lane (300' storage length) and one dedicated right turn lane (170' storage length) on the eastbound approach. There is one dedicated left turn lane (150' storage length) and two through lanes on the northbound approach. There are two through lanes on the southbound approach with a dedicated right turn lane (185' storage length).

Future Roadway System

There are a few improvements already planned for this area. It is anticipated that a third southbound through lane will extend south of the Loop 101 to the Mayo Boulevard intersection where the third through lane is anticipated to transition to a right-turn only lane. Mayo Boulevard is anticipated to be constructed with two travel lanes, a bike lane in each direction and a center two-way left turn lane between 73rd Place and Hayden Road. Miller Road is anticipated to be constructed with two travel lanes and a bike lane in each direction with a two-way left-turn lane.

There are also multiple proposed developments planned in the surrounding area that are anticipated to make improvements to the surrounding roadway network. The anticipated developments and the associated improvements with each one are listed below.

General Recommendations made in the Kimley Horn TIMA: The northbound approach at Hayden Road & Mayo Boulevard is to be remarked to provide dual northbound left lanes when this intersection becomes signalized. At Miller Road & Mayo Boulevard, the eastbound approach is to have dual left turn lanes with 400 feet of storage. The Miller Road & Mayo Boulevard intersection is recommended to have dedicated right and turn lanes with 250 feet for all approaches.

Axon Development: At Hayden Road & Mayo Boulevard, there should be a third northbound through lane that is expected to continue north to the Loop 101 WB Ramp & Scottsdale Road intersection. There should also be dual westbound right turn lanes at this intersection. Additionally, this development is anticipated to construct Mayo Boulevard east of Hayden Road with two travel lanes in each direction. It is also anticipated this development will construct a traffic signal at Mayo Boulevard and Hayden Road. If this development is delayed or it is not constructed, the traffic signal will still likely be warranted due to the other developments planned in the area.

Optima McDowell Mountain: A dedicated westbound right turn lane is anticipated to be built at Scottsdale Road & Mayo Boulevard. A third westbound lane along Mayo Boulevard is anticipated to be built along Optima McDowell Mountain's frontage. This will become a dedicated westbound right turn lane at Scottsdale Road & Mayo Boulevard.

It is assumed these roadway improvements are constructed and open for public use by 2040 since the City of Scottsdale Transportation Master Plan, 2016 mentions a few of these improvements are anticipated to be completed by 2030. This includes widening Hayden to a six-lane road in this area and constructing Mayo

Boulevard as a four-lane road in this area. For the purposes of this Report, the driveways are assumed to have a speed limit of 25 mph with two-lane roads at the driveway entrances.

Traffic Volumes and Conditions

The anticipated 2040 traffic volumes for this area were obtained and adjusted by Kimley Horn from the 2035 MAG model as described in the Kimley Horn TIMA (see **Appendix E**). These volumes were combined with the trips generated by the surrounding developments and were provided to Dibble. The combined volumes are used as the background traffic in this Report.

Transit Service

There are existing bus services along Mayo Boulevard to the west of this site, along Scottsdale Road, and along Bell Road south of this site. The closest bus stop is located at Scottsdale Road & Mayo Boulevard about 2/3 of a mile away from this site. There are no plans at this time to extend the bus route along Mayo Boulevard according to the City of Scottsdale Transportation Master Plan, 2008.

IV. PROJECTED TRAFFIC

A. Site Traffic

Trip Generation

The trip generation for this project was calculated using the ITE Trip Generation Manual, 11th edition. These values are for the typical peak hour times of the adjacent street (between 7:00 and 9:00 for the morning peak hour and between 4:00 and 6:00 for the afternoon peak hour). The medical-dental office building land use code was used for the trip generation calculations since it seems to best align with the proposed development. This corresponds with land use 720.

The trips generated by the MOB+ development is shown in **Table 2**. The total trips generated are slightly less than the trips generated in the Kimley Horn TIMA. Kimley Horn used planning level numbers prior to having a developed site plan for the development to calculate the trip generation numbers.

Table 2 –Trip Generation

General Suburban - Fitted Curve												
LUC	Description	Units	Quant	Weekday			AM Peak			PM Peak		
				Total	Ingress	Egress	Total	Ingress	Egress	Total	Ingress	Egress
720	Medical-Dental Office Building	1000 Sq. Ft. GFA	168.2	5858	2929	2929	456	369	87	506	126	380

Trip Distribution

The trip distribution was assessed based on the surrounding population within a 5-10 mile radius. It is assumed that most people will attempt to exit the same way they had entered with minor changes due to limited access driveways. When reviewing the surrounding street network, the main freeway used to access the study area is the Loop 101 with the closest exit ramps located both east and west of the site at Hayden Road and Scottsdale Road. The main arterials and collectors are Scottsdale Road, Hayden Road, and Mayo Boulevard. To access the site, the traffic will either enter from Miller Road, Mayo Boulevard, or Hayden Road. The trip distribution is summarized in **Figure 4**.

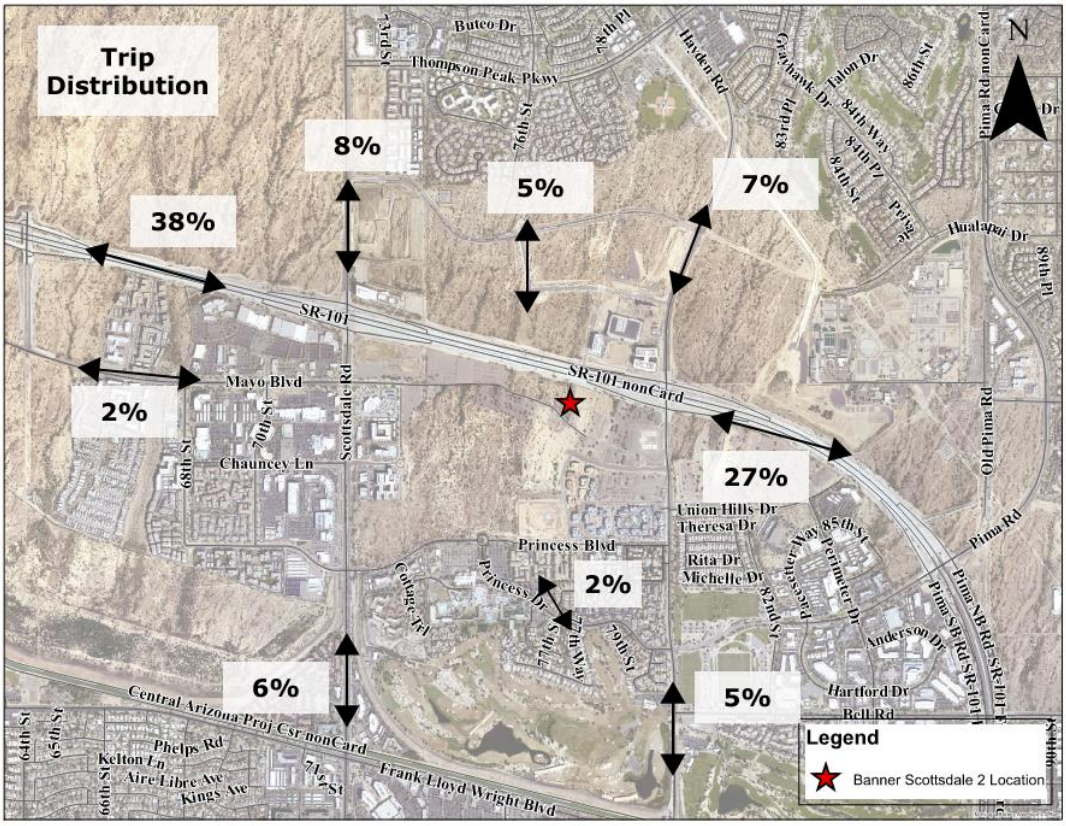


Figure 4 – Trip Distribution

Modal Split

Most traffic will likely travel to and from the site via passenger car since the surrounding area does not have heavy residential areas. If a bus route is added or extended to provide a stop near the hospital, some trips may arrive via public transportation. It is assumed in this report that all trips will be made via passenger vehicle in order to analyze the worst-case scenario.

Trip Assignment

The trip assignment is shown in **Figure 5**. The MOB+ trips will likely primarily use the 78th Street & Mayo Boulevard entrance as well as Driveway D to access the site due to the proximity of the building and it's parking lot to the two access points. It is also likely that some vehicles will use Driveway E to access the site to the MOB+ parking lot.

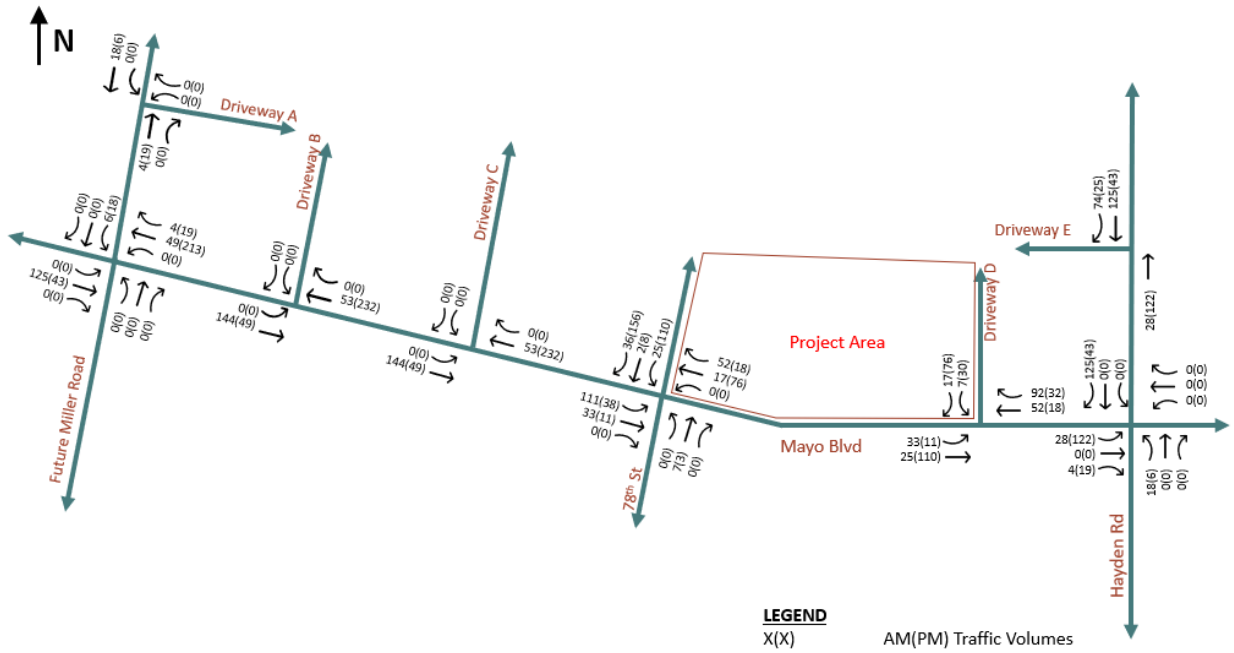


Figure 5 – Trip Assignment

B. Background Traffic

Method of Projections

There are two horizon years projected for the purposes of this Report. The first is the anticipated opening year of 2026 for the MOB+. The traffic studies for the surrounding developments from the Kimley Horn TIMA indicate that the surrounding developments are anticipated to be completed after the 2026 opening year. To account for other potential growth in the area, a 0.5% growth rate was applied to the 2022 collected counts for 4 years to determine the background traffic for 2026.

The second horizon year is for 2040 with the full build out of the Overall Site. The anticipated 2040 traffic volumes for this area were obtained and adjusted by Kimley Horn from the 2035 MAG model as described in Kimley Horn TIMA. These volumes were combined with the trips generated by the surrounding developments. These combined volumes are used as the background traffic in this Report. Note that the trips generated by the parcels to the east of this site along Hayden Road were assigned to use two of the driveways studied in this Report as well as a driveway not studied in this Report.

Estimated Volumes

Figure 6, **Figure 7** and **Figure 8** show the calculated background traffic volumes used for the anticipated Opening Day and for the Future (2040) analysis with and without the Axon development. This is when all four phases of the Overall Site are anticipated to be completed.

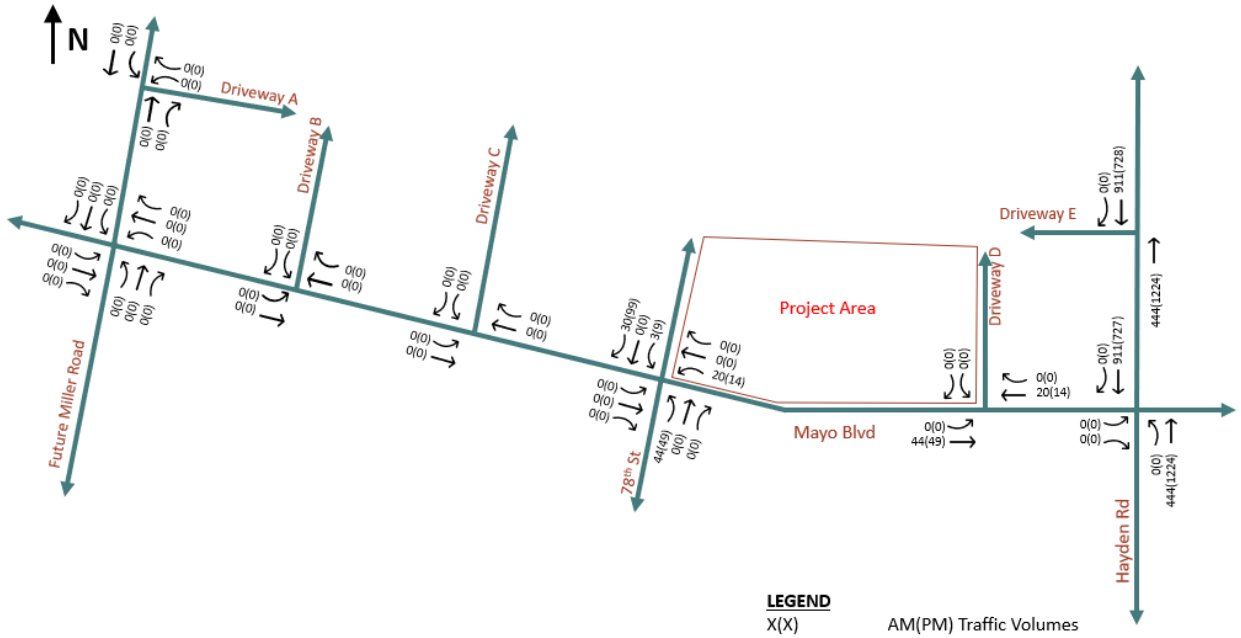


Figure 6 – Opening Day Background Traffic (2026)

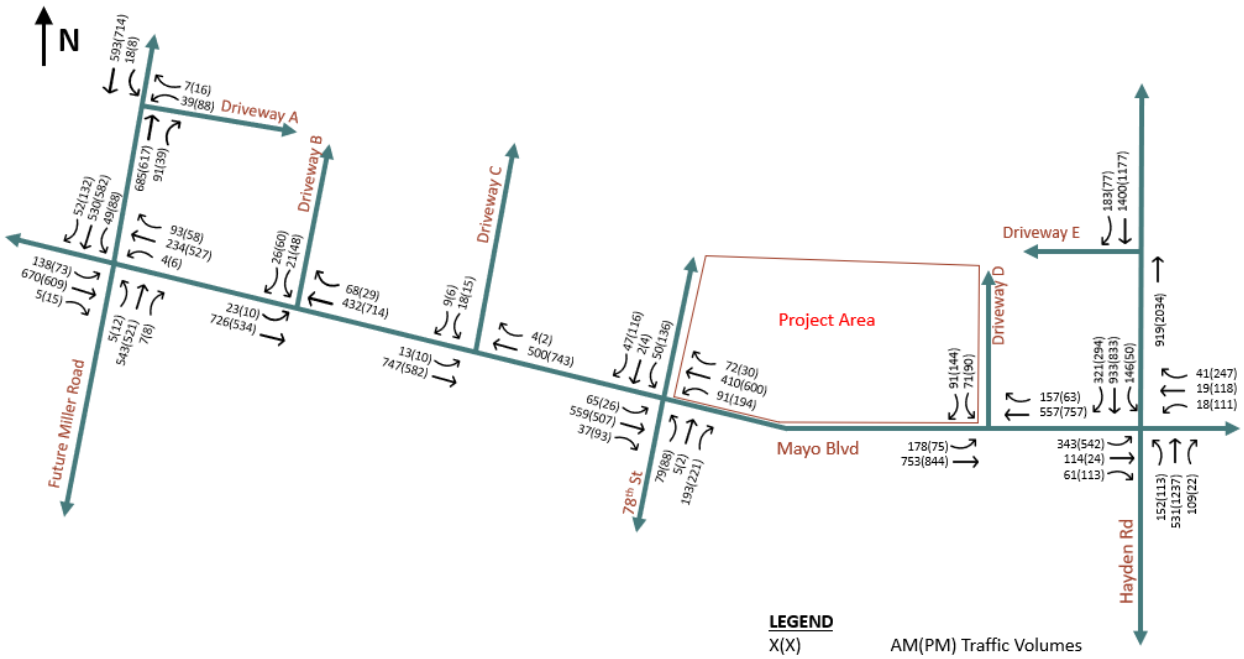


Figure 7 – Future Background Traffic w/Axon (2040)

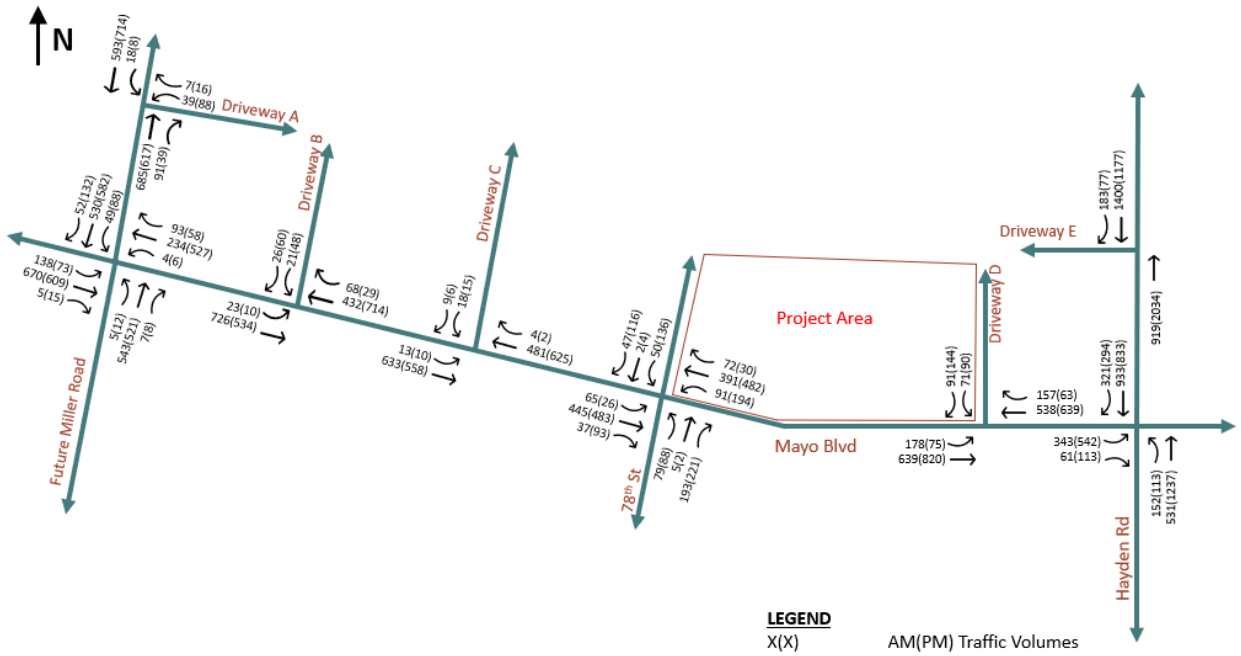


Figure 8 – Future Background Traffic w/o Axon (2040)

C. Total Traffic

The background traffic and anticipated site traffic were combined to calculate the total anticipated traffic for both horizon years. **Figure 9** and **Figure 10** show the anticipated total traffic for the two horizon years.

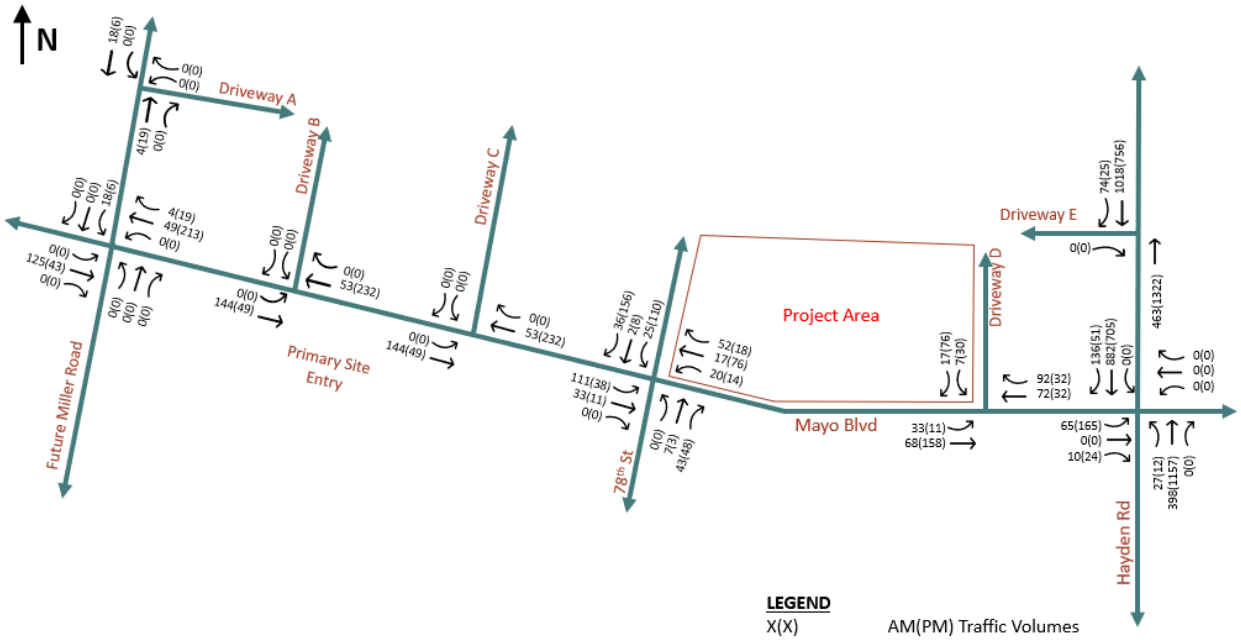


Figure 9 – Opening Day Total Traffic (2026)

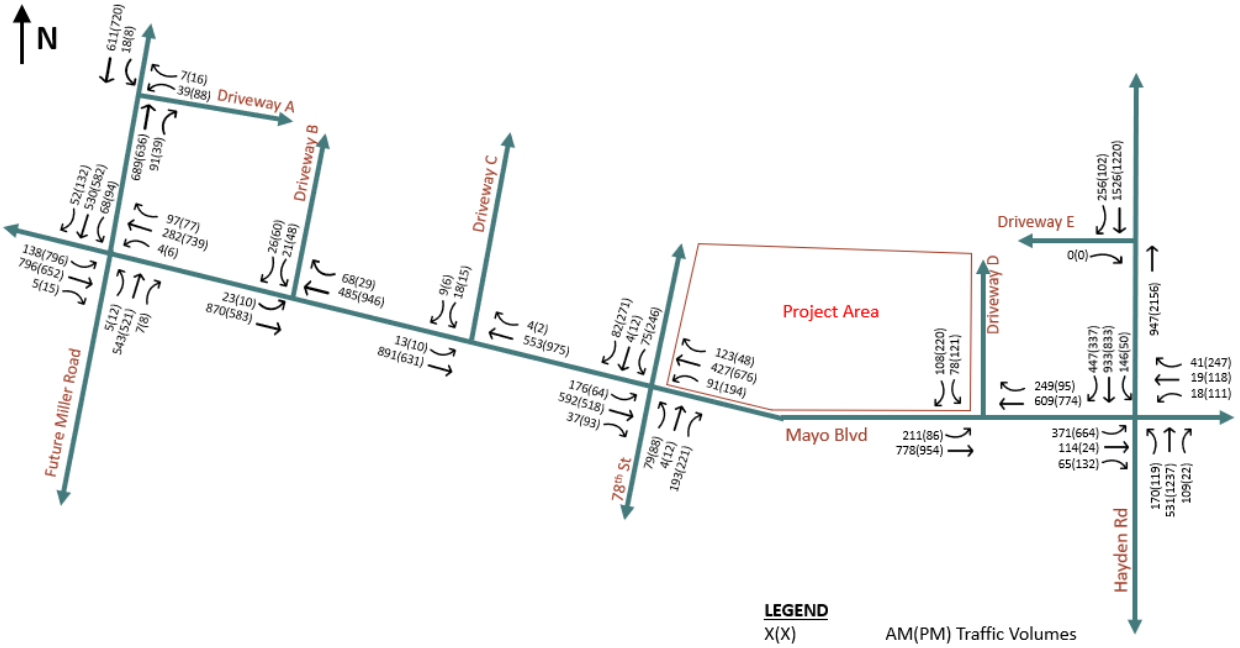


Figure 10 – Future Total Traffic (2040)

An additional 2040 scenario was also analyzed that excluded the Axon development. The total traffic anticipated for that scenario is shown in **Figure 11**.

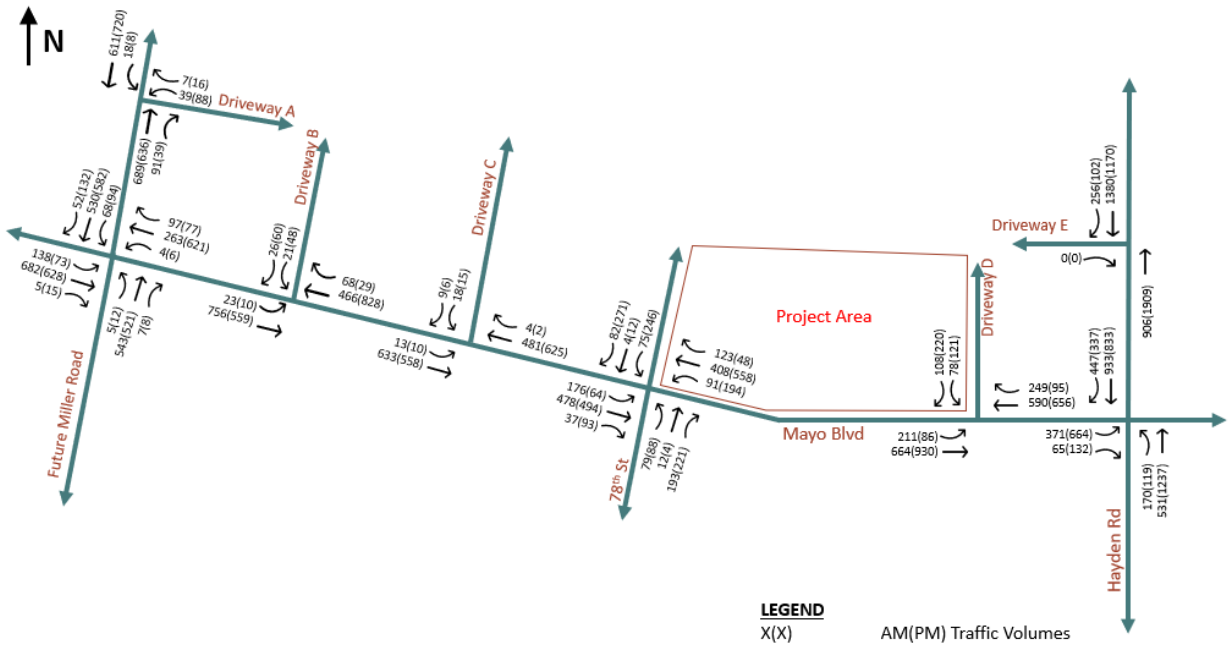


Figure 11 – Future Total Traffic w/o Axon (2040)

V. TRAFFIC ANALYSIS

A. Site Access

The Overall Site is planned to have six access points for the portion of the development bound by Miller Road, Hayden Road, Loop 101, and Mayo Boulevard. One of these is planned to provide full access from Miller Road (Driveway A). Four of these access points are planned to provide direct access from Mayo Boulevard (Driveway B, C, D and 78th Street). The Mayo Boulevard and 78th Street access is expected to primarily provide access to patients entering or exiting the site for the MOB+ in addition to Driveway D and Driveway E. Mayo Boulevard & Driveway D is a proposed full access driveway and will be shared with the future retail, office and hotel uses directly adjacent to Hayden Road. Driveway E will provide the most direct access to the future planned emergency room for hospital patients. The close proximity to the Loop 101 interchange is vital in providing quick access to the planned hospital when needed. **Figure 12** provides a schematic layout of the proposed site driveways.

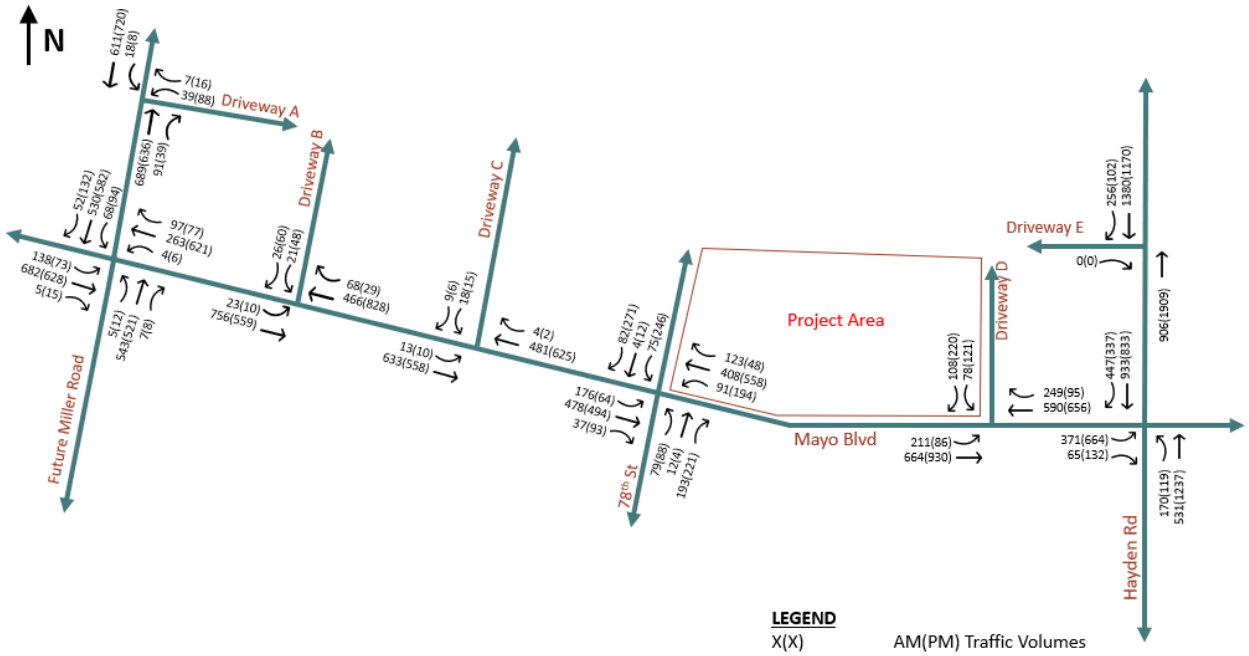


Figure 12 – Site Access

B. Turn Lane Warrants

The following turn lane warrants were completed in accordance with the City of Scottsdale 2018 Design Standards and Policies Manual Chapter 5 Section 3. The manual states that dedicated right turn lanes are required at all street intersections on major arterials while dedicated left turn lanes are required at all street intersections on major collectors and arterials. The results are summarized in **Table 3** for right turn lanes and in **Table 4** for left turn lanes. Turning movements that have an existing dedicated turn lane are not included in these tables. Dedicated turn lanes planned or warranted in the following tables were assumed to be built in the capacity analysis included in this Report.

Table 3 –Right Turn Lane Warrants

Intersection	Access	Turning Movement	Lane Warranted Due to City Prescriptive Requirements?
Miller Rd & Driveway A	Full	NBR	No
		SBR	No
Mayo Blvd & Driveway B	Full	EBR	No
		WBR	No
Mayo Blvd & 78th St	Full	EBR	No
		WBR	No
		NBR	No
		SBR	No
Mayo Blvd & Driveway C	Full	EBR	No
		WBR	No
Mayo Blvd & Driveway D	Full	EBR	No
		WBR	No
Hayden Rd & Driveway E	RI	EBR	No
		SBR	No
Hayden Rd & Mayo Blvd	Full	WBR	Planned*
		NBR	No
Mayo Blvd & Miller Rd	Full	EBR	Planned
		WBR	Planned
		NBR	Planned
		SBR	Planned

City Prescriptive Requirements includes a right turn lane on all major arterials and a left turn lane on all major collectors or arterials in accordance with the City of Scottsdale Design Standards and Policies Manual, 2018 Chapter 5

RI = Right-In Only

Planned = already planned by other developments, does not yet exist

**Planned to be a dual*

Table 4 –Left Turn Lane Warrants

Intersection	Access	Turning Movement	Lane Warranted Due to City Prescriptive Requirements?
Miller Rd & Driveway A	Full	NBL	Yes
		SBL	Yes
Mayo Blvd & Driveway B	Full	EBL	Yes
		WBL	Yes
Mayo Blvd & 78th St	Full	EBL	Yes
		WBL	Yes
		NBL	Yes
		SBL	Yes
Mayo Blvd & Driveway C	Full	EBL	Yes
		WBL	Yes
Mayo Blvd & Driveway D	Full	EBL	Yes
		WBL	Yes
Hayden Rd & Mayo Blvd	Full	EBL	Exists*
		WBL	Yes
		NBL	Exists*
		SBL	Planned*
Mayo Blvd & Miller Rd	Full	EBL	Planned
		WBL	Planned
		NBL	Planned
		SBL	Planned

City Prescriptive Requirements includes a right turn lane on all major arterials and a left turn lane on all major collectors or arterials in accordance with the City of Scottsdale Design Standards and Policies Manual, 2018 Chapter 5

Planned = already planned by other developments, does not yet exist

**Planned to be a dual*

Although the driveways along Mayo Boulevard and Miller Road do not warrant right turn lanes based on City guidelines, Banner Health would still like to provide right turn lanes at the heavily used driveways and the driveway closest to the Mayo Boulevard and Hayden intersection to improve traffic operations and help reduce the rear end crash potential. **Table 5** provides a summary of the driveways where right turn lanes are planned and an explanation of why providing these right turn lanes is desirable.

Table 5 – Traffic Operations Issues & Considerations

Intersection	Turning Movement	Issues & Consideration
Mayo Blvd & Driveway B	WBR	Warranted due to the high volume anticipated to be using this intersection. This dedicated right turn lane will allow space for right-turning vehicles to slow down outside of the main travel way. This will reduce the chance of a queue forming behind a right-turning vehicle. It also reduces the risk of rear-end crashes at this intersection.
Mayo Blvd & Driveway C	WBR	Warranted due to the types of vehicles anticipated to use this intersection. This dedicated right turn would allow a place for emergency vehicles to slow down in order to turn the corner gently outside of the main travel way. Additionally, large delivery trucks that are anticipated to use this driveway require more room to slow down. This would also decrease the risk of rear-end crashes at this intersection.
Mayo Blvd & Driveway D	WBR	Warranted due to the close proximity to the Hayden Road & Mayo Boulevard intersection. This dedicated right turn lane will allow space for right-turning vehicles to slow down outside of the main travel way. This will reduce the chance of a queue forming behind a right-turning vehicle which would have the potential to back up to the Hayden Road & Mayo Boulevard intersection. It also reduces the risk of rear-end crashes at this intersection.
Mayo Blvd & Driveway E	SBR	Warranted due to the close proximity to the Hayden Road & Loop 101 interchange. This dedicated right turn lane will allow space for right-turning vehicles to slow down outside of the main travel way. This will reduce the chance of a queue forming behind a right-turning vehicle which would have the potential to back up near the interchange. It also reduces the risk of rear-end crashes at this intersection.

C. Capacity and Level of Service

The capacity analysis was conducted using Synchro 11 software. **Table 6, Table 7, Table 8,** and **Table 9** summarize the level of service (LOS) results for the analyzed turning movements for opening day in 2040 both without site traffic (background traffic) and with site traffic (total traffic), respectively. Note that a level of service "E" or "F" is typically considered a "failing" level of service during peak traffic times and will sometimes require some sort of mitigation to bring the level of service back to a "D" or better, if possible. However, sometimes it is not feasible nor warranted to mitigate due to a number of considerations including the current traffic demand.

The southbound left turning movement at Driveway D experiences what would be considered a "failing" level of service for the 2040 horizon year both with and without the Axon development. It is important to note that this delay is experienced on site and the vehicle queues do not exceed more than 2-4 vehicles (roughly 40-80 feet) depending on the peak hours.

Table 6 –Opening Day Background (2040) LOS

Intersection	Peak Hour	Intersection		EBL		EBT		EBR		WBL		WBT		WBR		NBL		NBT		NBR		SBL		SBT		SBR	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Mayo Blvd & 78th St	AM	6.5	A	0.0	A	7.0	A	7.0	A	9.0	A	6.3	A	0.0	A	9.9	A	0.0	A	3.2	A	0.0	A	0.0	A	0.0	A
	PM	7.4	A	0.0	A	6.3	A	6.3	A	14.5	B	7.0	A	0.0	A	13.5	B	0.0	A	2.5	A	0.0	A	0.0	A	0.0	A
Mayo Blvd & Driveway D	AM	-	-	9.0	A	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	20.1	C	-	-	10.2	B
	PM	-	-	9.7	A	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	22.2	C	-	-	11.7	B
Hayden Rd & Mayo Blvd	AM	17.5	B	30.5	C	16.5	B	2.5	A	26.6	C	25.6	C	0.4	A	31.1	C	12.5	B	12.5	B	28.6	C	16.8	B	2.3	A
	PM	23.9	C	33.9	C	12.9	B	3.6	A	39.3	D	29.2	C	5.9	A	42.4	D	23.7	C	23.7	C	38.8	D	26.3	C	4.7	A
Mayo Blvd & Miller Rd	AM	8.8	A	9.1	A	9.6	A	0.0	A	8.2	A	8.4	A	3.4	A	7.4	A	9.2	A	0.6	A	8.2	A	9.1	A	3.1	A
	PM	8.9	A	9.6	A	9.3	A	1.5	A	8.3	A	9.9	A	3.8	A	7.8	A	8.9	A	0.9	A	9.6	A	9.3	A	3.2	A

Table 7 –Opening Day (2026) Total Traffic LOS

Intersection	Peak Hour	Intersection		EBL		EBT		EBR		WBL		WBT		WBR		NBL		NBT		NBR		SBL		SBT		SBR	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Miller & Driveway A	AM	-	-	-	-	-	-	-	-	-	-	-	-	8.3	A	-	-	0.0	A	0.0	A	-	-	0.0	A	-	-
	PM	-	-	-	-	-	-	-	-	-	-	-	-	8.4	A	-	-	0.0	A	0.0	A	-	-	0.0	A	-	-
Mayo Blvd & Driveway B	AM	-	-	9.2	A	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	19.5	C	-	-	10.2	B
	PM	-	-	11.0	B	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	28.8	D	-	-	14.1	B
Mayo Blvd & Driveway C	AM	-	-	10.6	B	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	19.5	C	-	-	14.6	B
	PM	-	-	9.6	A	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	-	-	-	-	11.5	B
Mayo Blvd & 78th St	AM	-	-	7.6	A	0.0	A	0.0	A	7.3	A	0.0	A	0.0	A	0.0	A	-	-	9.2	A	12.4	B	-	-	8.9	A
	PM	-	-	7.5	A	0.0	A	0.0	A	7.3	A	0.0	A	0.0	A	0.0	A	-	-	8.7	A	11.3	B	-	-	9.5	A
Mayo Blvd & Driveway D	AM	-	-	7.6	A	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	9.8	A	-	-	8.6	A
	PM	-	-	7.4	A	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	9.8	A	-	-	8.7	A
Mayo Blvd & Driveway E	AM	-	-	-	-	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	-	-	-	-	0.0	A
	PM	-	-	-	-	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	-	-	-	-	0.0	A
Hayden Rd & Mayo Blvd	AM	4.8	A	19.3	B	-	-	0.1	A	-	-	-	-	-	-	20.1	C	2.3	A	-	-	-	-	4.9	A	1.7	A
	PM	5.6	A	17.3	B	-	-	0.2	A	-	-	-	-	-	-	15.0	B	4.1	A	-	-	-	-	5.8	A	0.1	A
Mayo Blvd & Miller Rd	AM	-	-	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	9.4	A	0.0	A	0.0	A
	PM	-	-	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	10.4	B	0.0	A	0.0	A

Table 8 – Future (2040) Total Traffic LOS

Intersection	Peak Hour	Intersection		EBL		EBT		EBR		WBL		WBT		WBR		NBL		NBT		NBR		SBL		SBT		SBR	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Miller & Driveway A	AM	-	-	-	-	-	-	-	-	18.8	C	-	-	11.3	B	-	-	0.0	A	0.0	A	9.7	A	0.0	A	-	-
	PM	-	-	-	-	-	-	-	-	20.6	C	-	-	10.9	B	-	-	0.0	A	0.0	A	9.2	A	0.0	A	-	-
Mayo Blvd & Driveway B	AM	-	-	8.8	A	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	16.0	C	-	-	10.1	B
	PM	-	-	10.6	B	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	24.1	C	-	-	13.2	B
Mayo Blvd & Driveway C	AM	-	-	8.8	A	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	-	-	-	-	14.6	B
	PM	-	-	10.6	B	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	-	-	-	-	19.6	C
Mayo Blvd & 78th St	AM	7.3	A	10.9	B	6.8	A	6.8	A	8.7	A	6.1	A	2.1	A	13.3	B	6.9	A	6.9	A	13.9	B	5.0	A	5.0	A
	PM	12.2	B	11.3	B	9.0	A	9.0	A	25.3	C	10.1	B	3.1	A	15.4	B	4.0	A	4.0	A	26.0	C	9.9	A	9.9	A
Mayo Blvd & Driveway D	AM	-	-	12.2	B	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	38.4	E	-	-	11.6	B
	PM	-	-	10.7	B	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	45.0	E	-	-	15.5	C
Mayo Blvd & Driveway E	AM	-	-	-	-	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	-	-	-	-	0.0	A
	PM	-	-	-	-	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	-	-	-	-	0.0	A
Hayden Rd & Mayo Blvd	AM	18.7	B	42.5	D	16.5	B	4.2	A	26.7	C	25.7	C	0.5	A	36.0	D	12.4	B	12.4	B	28.8	C	17.8	B	3.8	A
	PM	29.1	C	43.7	D	12.1	B	2.9	A	43.9	D	32.0	C	10.8	B	50.6	D	27.7	C	27.7	C	42.2	D	33.3	C	5.2	A
Mayo Blvd & Miller Rd	AM	10.4	B	11.1	B	10.9	B	0.0	A	8.0	A	8.0	A	3.0	A	8.8	A	11.7	B	0.6	A	13.1	B	11.6	B	3.8	A
	PM	10.1	B	12.6	B	10.7	B	2.0	A	8.5	A	10.6	B	3.3	A	8.8	A	10.3	B	0.8	A	13.0	B	10.8	B	4.2	A

Table 9 – Future (2040) Total Traffic w/o Axon LOS

Intersection	Peak Hour	Intersection		EBL		EBT		EBR		WBL		WBT		WBR		NBL		NBT		NBR		SBL		SBT		SBR	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Miller & Driveway A	AM	-	-	-	-	-	-	-	-	18.8	C	-	-	11.3	B	-	-	0.0	A	0.0	A	9.7	A	0.0	A	-	-
	PM	-	-	-	-	-	-	-	-	20.6	C	-	-	10.9	B	-	-	0.0	A	0.0	A	9.2	A	0.0	A	-	-
Mayo Blvd & Driveway B	AM	-	-	8.7	A	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	15.2	C	-	-	10.0	A
	PM	-	-	10.0	A	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	20.9	C	-	-	12.3	B
Mayo Blvd & Driveway C	AM	-	-	8.7	A	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	-	-	-	-	14.0	B
	PM	-	-	10.0	A	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	-	-	-	-	17.5	C
Mayo Blvd & 78th St	AM	7.0	A	11.1	B	6.4	A	6.4	A	8.1	A	6.2	A	2.1	A	12.9	B	5.1	A	5.1	A	13.5	B	5.0	A	5.0	A
	PM	11.5	B	10.3	B	9.0	A	9.0	A	24.6	C	9.6	A	3.1	A	14.8	B	3.9	A	3.9	A	24.5	C	7.0	A	7.0	A
Mayo Blvd & Driveway D	AM	-	-	12.0	B	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	34.9	D	-	-	11.5	B
	PM	-	-	10.0	A	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	35.3	E	-	-	14.0	B
Mayo Blvd & Driveway E	AM	-	-	-	-	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	-	-	-	-	0.0	A
	PM	-	-	-	-	0.0	A	-	-	-	-	0.0	A	0.0	A	-	-	-	-	-	-	-	-	-	-	0.0	A
Hayden Rd & Mayo Blvd	AM	12.2	B	25.4	C	-	-	0.7	A	-	-	-	-	-	-	31.8	C	4.2	A	4.2	A	-	-	13.1	B	2.9	A
	PM	14.5	B	25.1	C	-	-	2.7	A	-	-	-	-	-	-	36.4	D	9.2	A	9.2	A	-	-	17.2	B	3.3	A
Mayo Blvd & Miller Rd	AM	10.0	B	11.3	B	10.3	B	0.0	A	8.0	A	8.0	A	3.1	A	8.6	A	11.2	B	0.6	A	12.4	B	11.1	B	3.7	A
	PM	10.1	B	12.6	B	10.7	B	2.0	A	8.5	A	10.6	B	3.3	A	8.8	A	10.3	B	0.8	A	13.0	B	10.8	B	4.2	A

D. Traffic Signals

It is already planned for Hayden Road & Mayo Boulevard to be signalized in the near future. It is also already anticipated that Mayo Boulevard & Miller Road will be a signalized intersection for future developments. All other intersections studied in this Report are anticipated to operate acceptably given the conditions and mitigations mentioned in this report. As previously mentioned, the Axon development may be delayed or the project may not be built. The Axon development is currently responsible for the signal at Mayo Boulevard and Hayden Road, however if the MOB+ and/or the remainder of the Overall Site is built before Axon, the signal would not exist. A signal warrant analysis was therefore conducted to determine if the MOB+ development warrants the signal at the intersection as well as the remainder of the Overall Site without the Axon development per the peak hour warrant from the Manual on Uniform Traffic Control Devices. The analysis was also conducted for both scenarios for the Miller Road and 78th Street intersections with Mayo Boulevard. The results are summarized in **Table 10**. The warrant analysis is also included in **Appendix F.**

Table 10 –Signal Warrant Results

Intersection	Scenario	
	MOB+ Only 2026	NWC Development 2040 w/o Axon
Mayo Blvd & Miller Rd	No	Yes (Both Peaks)
Mayo Blvd & 78th St	No	Yes (Both Peaks)
Mayo Blvd & Hayden Road	Yes (PM Peak)	Yes (Both Peaks)

E. Site Circulation and Parking

The traffic accessing the MOB+ will generally be split between 78th Street and Driveway D to access the site with a small amount of the traffic anticipated to access the site using Driveway E from Hayden Road. The remaining driveways will provide access to the potential future expansion of a medical campus and for other commercial uses on the Overall Site.

VI. IMPROVEMENT ANALYSIS

A. Queueing Analysis

The following queueing analysis is completed with the assumption that the recommendations made throughout this Report are completed. This analysis is also completed using the City of Scottsdale's minimum storage length requirements as outlined in the City of Scottsdale's 2018 Design Standards and Policies Manual Section Chapter 5 Section 3. The 95th percentile from Synchro 11 was used to obtain each anticipated queue length. **Table 11** provides the recommended right turn lane storage lengths and **Table 12** provides the recommended left turn lane storage lengths based on the total traffic anticipated by 2040. The intent of focusing on the 2040 vehicle queues is to determine what storage lengths will be needed for all access points to the Overall Site in the future to avoid adding additional storage at a later date after the roadways and driveways are already constructed.

Table 11 –Right Turn Lane Queues

Intersection	Turning Movement	Current Length (ft)	2040 Queue Length (ft)	City of Scottsdale Minimum Length (ft)	Recommended 2040 Storage Length (ft)
Mayo Blvd & Driveway B	WBR	-	0	100	100
Mayo Blvd & Driveway C	WBR	-	0	100	100
Mayo Blvd & Driveway D	WBR	-	0	100	100
Mayo Blvd & Driveway E	WBR	-	0	100	100
Mayo Blvd & 78th St	NBR	-	17	100	100
Hayden Rd & Mayo Blvd	EBR	170	29	100	170
	WBR	-	51	100	100
	SBR	185	62	100	185
Mayo Blvd & Miller Rd	EBR	-	5	100	100
	WBR	-	20	100	100
	NBR	-	2	100	100
	SBR	-	17	100	100

Table 12 –Left Turn Lane Queues

Intersection	Turning Movement	Current Length (ft)	2040 Queue Length (ft)	City of Scottsdale Minimum Length (ft)	Recommended 2040 Storage Length (ft)
Miller Rd & Driveway A	SBL	-	20	100	100
Mayo Blvd & Driveway B	EBL	-	20	100	100
Mayo Blvd & 78th St	EBL	-	20	100	100
	WBL	-	20	100	100
Mayo Blvd & Driveway C	EBL	-	20	100	100
Mayo Blvd & Driveway D	EBL	-	20	100	100
Mayo Blvd & Driveway E	EBL	-	20	100	100
Hayden Rd & Mayo Blvd	EBL	300	303	100	300
	WBL	-	115	100	120
	NBL	150	75	100	150
	SBL	-	57	100	100
Mayo Blvd & Miller Rd	EBL	-	**24**	100	100
	WBL	-	**6**	100	100
	NBL	-	**9**	100	100
	SBL	-	**35**	100	100

VII. FINDINGS

A. Site Accessibility

The proposed site accesses are anticipated to operate acceptably with the given conditions and the construction of the turn lanes and traffic signals mentioned in the Report.

B. Traffic Impacts

The addition of this MOB+ Site is anticipated to have a minimal impact along Mayo Boulevard and Hayden Road.

C. Need for Improvements

Mayo Boulevard & 78th Street

This intersection operates with an acceptable level of service as a two-way stop controlled intersection with Mayo Boulevard traffic free flowing for opening day of the MOB+, however, a signal will eventually be warranted as the Overall Site is developed. This intersection should maintain two egress southbound lanes for a dedicated left turn lane and a dedicated right turn lane to minimize the vehicle queue. A westbound right turn lane should be provided at this driveway.

Mayo Boulevard & Miller Road

This intersection operates with an acceptable level of service as a two-way stop controlled intersection with Mayo Boulevard traffic free flowing for opening day of the MOB+, however, a signal will eventually be warranted as the Overall Site is developed.

Mayo Boulevard & Driveway B

This driveway should maintain two egress southbound lanes for a dedicated left turn lane and a dedicated right turn lane to minimize the vehicle queue. In general it is recommended to provide a dedicated left and right turn lane for all full access driveways along Mayo Boulevard and Miller Road. A westbound right turn lane should be provided at this driveway.

Mayo Boulevard & Driveway D

This driveway should also maintain two egress southbound lanes for a dedicated left turn lane and a dedicated right turn lane to minimize the vehicle queue. A westbound right turn lane should be provided at this driveway.

Hayden Road & Driveway E

This driveway shall include a southbound right turn lane to account for any potential queue for the southbound right turn lane and to avoid conflicts with the Loop 101 egress ramp traffic.

D. Compliance with Applicable City Codes

The City of Scottsdale Design Standards and Policies Manual, 2018 was referenced throughout this analysis as mentioned throughout this Report.

VIII. RECOMMENDATIONS

A. Roadway Improvements

Based on the analysis of this Report there are several recommendations for the Overall Site driveways and adjacent intersections by opening day of the MOB+ that also take into consideration the additional future development surrounding the Overall Site. The recommendations are in alignment with the approved Kimley Horn TIMA.

Overall, it is recommended to provide a right turn lane for driveways B, C, D, E, and at 78th Street into the Overall Site. Additional recommendations for specific driveways and adjacent intersections are as follows:

Hayden Road & Driveway E

With a dedicated southbound right turn lane at Hayden Road & Driveway E, the queue length is not anticipated to extend beyond the boundary of the right turn lane. Therefore, the queue is not anticipated to have a negative impact on the operation of the Loop 101 and Hayden interchange.

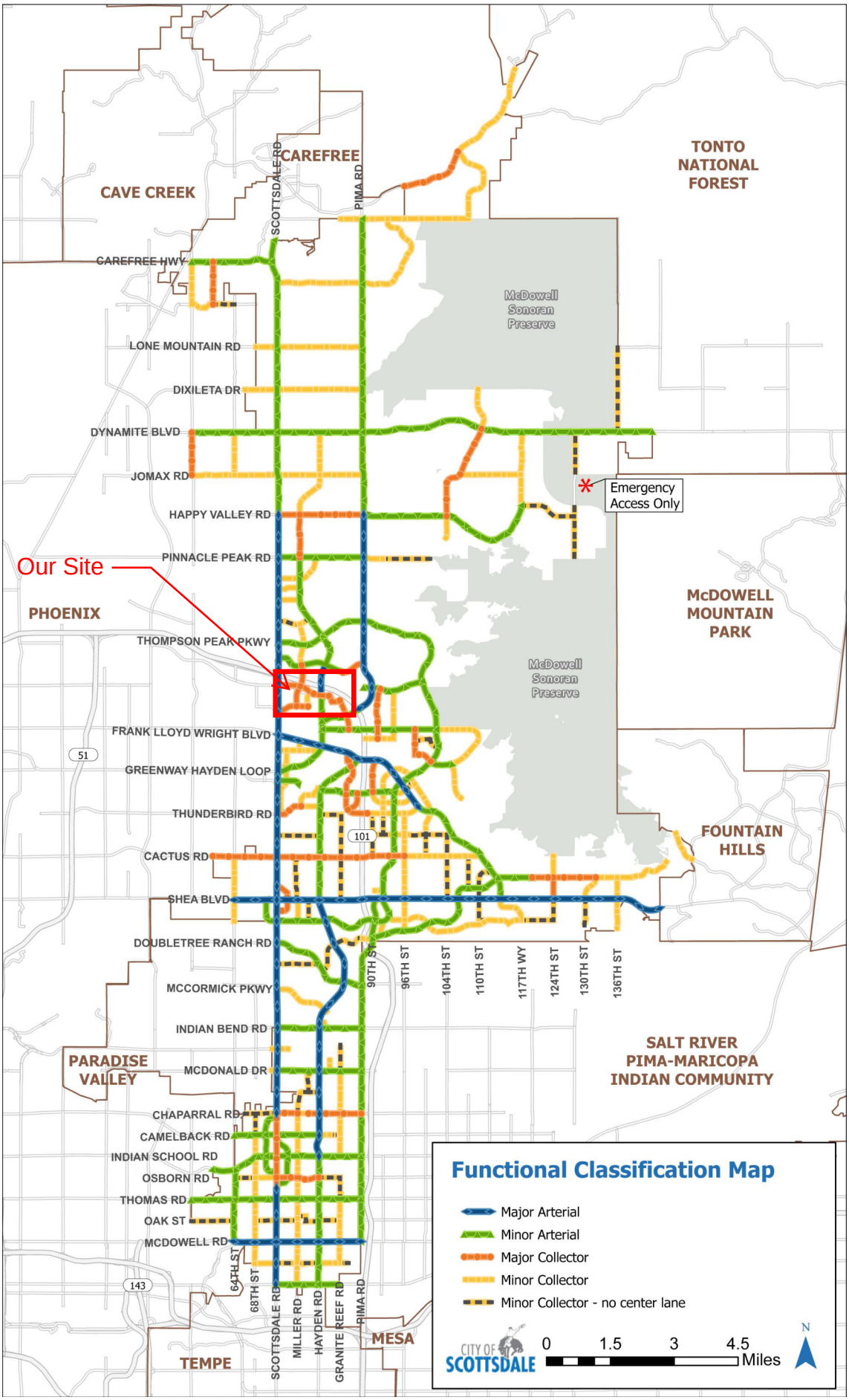
Mayo Boulevard & 78th Street
A signal is not warranted from both a vehicle capacity and delay perspective for opening day of the MOB+. A signal is warranted in the future as the Overall Site is developed. It is recommended to install signal pull boxes on all four corners of Mayo Boulevard and 78th Street as well as signal conduit connections between the pull boxes for a future traffic signal for opening day of the MOB+. With the construction of the MOB+, the intersection operates at an acceptable level of service with two-way stop control and Mayo Boulevard traffic free flowing.

Mayo Boulevard & Hayden Road
Provide a southbound right turn lane at the intersection, which is already planned. Additionally, if the Axon development is delayed and the signal is not installed by the completion of the MOB+, a signal will be warranted at the intersection by opening day of the MOB+.

Mayo Boulevard & Miller Road
A signal is not warranted at this intersection from both a vehicle capacity and delay perspective for opening day of the MOB+. A signal will be warranted in the future scenarios with the further development of the Overall Site. With the construction of the MOB+, the intersection operates at an acceptable level of service with two-way stop control and Mayo Boulevard traffic free flowing. It is recommended to install signal pull boxes on all four corners of Mayo Boulevard and Miller Road as well as signal conduit connections between the pull boxes for a future traffic signal for opening day of the MOB+.

Recommended turn lane storage lengths for all new intersections and turn lanes are given in **Table 11** – **Table 12**.

Appendix A Scottsdale Roadway Functional Classification Map


CAREFREE
CAVE CREEK
TONTO NATIONAL FOREST
SCOTTSDALE RD
PIMA RD
CAREFREE HWY
McDowell Sonoran Preserve
LONE MOUNTAIN RD
DIXILETA DR
DYNAMITE BLVD
JOMAX RD
Emergency Access Only
HAPPY VALLEY RD
PINNACLE PEAK RD
Our Site
PHOENIX
McDOWELL MOUNTAIN PARK
THOMPSON PEAK PKWY
McDowell Sonoran Preserve
FRANK LLOYD WRIGHT BLVD
51
GREENWAY HAYDEN LOOP
THUNDERBIRD RD
101
FOUNTAIN HILLS
CACTUS RD
SHEA BLVD
DOUBLETREE RANCH RD
90TH ST
96TH ST
104TH ST
110TH ST
117TH WY
124TH ST
130TH ST
136TH ST
MCCORMICK PKWY
INDIAN BEND RD
SALT RIVER PIMA-MARICOPA INDIAN COMMUNITY
PARADISE VALLEY
MCDONALD DR
CHAPARRAL RD
CAMELBACK RD
INDIAN SCHOOL RD
OSBORN RD
THOMAS RD
OAK ST
MCDOWELL RD
64TH ST
68TH ST
143
SCOTTSDALE RD
MILLER RD
HAYDEN RD
GRANITE REEF RD
PIMA RD
MESA
TEMPE
Functional Classification Map
Major Arterial
Minor Arterial
Major Collector
Minor Collector
Minor Collector - no center lane
CITY OF SCOTTSDALE
0
1.5
3
4.5
Miles
N

Appendix B Site Plan

SALVAGE PLANT LEGEND

SYM.	BOTANICAL NAME (COMMON NAME)	QTY.
	TREES	
	PARKINSONIA FLORIDA BLUE PALO VERDE	6
	PROSOPIS VELUTINA MESQUITE	22
	OLNEYA TESOTA IRONWOOD	1

TREES

- PARKINSONIA FLORIDA BLUE PALO VERDE
- PARKINSONIA X 'AZT' AZT THORNLESS PALO VERDE
- PROSOPIS VELUTINA VELVET MESQUITE
- PROSOPIS X COOPERI COOPERI MESQUITE
- QUERCUS VIRGINIANA SOUTHERN LIVE OAK

KEYNOTES

1. RIGHT OF WAY LINE
2. EASEMENT
3. LIMIT OF CONSTRUCTION / DISTURBANCE
4. UNDERGROUND UTILITY - SEE CIVIL
5. DETENTION BASIN - SEE CIVIL
6. TRANSFORMER - SEE ELEC.
7. SERVICE YARD
8. FUTURE PHASE BUILDING EXPANSION
9. STAFF PATIO
10. MOBILE MRI UNIT
11. EV CHARGING STATION
12. DROP OFF ENTRY AREA
13. BUILDING CANOPY - SEE ARCH.
14. ENTRY SIGNAGE - SEE ARCH.
15. TRASH ENCLOSURE - SEE ARCH.
16. SOLAR PARKING CANOPY - SEE ARCH.
17. LANDSCAPE BERM
18. LANDSCAPE AREA
19. 3' HEIGHT CMU SCREEN WALL - SEE DETAIL 03/LS500
20. STABILIZED DG PATH
21. CROSSWALK

MATERIALS LEGEND

	LOCATION	MATERIAL	COLOR	FINISH	HATCH
	VEHICULAR PAVING				
A	ENTRY PLAZA	3/8" EXP. AG. CONCRETE	DAVIS COLORS KAILUA 677	50% EXPOSED	
B	CROSSWALK	3/8" EXP. AG. CONCRETE	NATURAL GRAY	50% EXPOSED	
C	SERVICE AREA	C.I.P. CONCRETE	NATURAL GRAY	MEDIUM BROOM	
	PEDESTRIAN PAVING				
D	SIDEWALKS	C.I.P. CONCRETE	NATURAL GRAY	LIGHT BROOM	
E	ACCENT PAVING	C.I.P. CONCRETE	DAVIS COLORS KAILUA 677	LIGHT SANDBLAST	
F	WELLNESS PATH	STABILIZED DECOMPOSED GRANITE	SEE LANDSCAPE		
	LANDSCAPE MATERIALS				
L	LANDSCAPE AREAS	3/4" SCREENED DECOMPOSED GRANITE	SEE LANDSCAPE		
M	LANDSCAPE AREAS	1"-3" COBBLE	SEE LANDSCAPE		
N	LANDSCAPE AREAS	HYDROSEED MIX	SEE LANDSCAPE		
O	LANDSCAPE AREAS	COBBLE - SIZE PER CIVIL	SEE LANDSCAPE /CIVIL		

NOTE:
PROVIDE VEHICULAR RATED PAVING DEPTH AT ALL FIRELANE/DRIVE AREAS - SEE CIVIL DRAWINGS FOR LOCATION AND DEPTH, SEE GEOTECH/SOILS REPORT FOR MORE INFORMATION

FOR CONCRETE WALKS SEE DETAIL 1/LS500.

—— EXPANSION JOINT - SEE DETAIL 1/LS500

—— CONTROL JOINT - SEE DETAIL 1/LS500

Plot Date:

Banner Health Center Plus

SCOTTSDALE CAMPUS

NW Corner of Hayden Rd. and Mayo Blvd.
Scottsdale, Arizona 85255

NexCore GROUP
1550 Market Street
Suite 200
Denver, CO 80202

SMITHGROUP
455 NORTH THIRD STREET
SUITE 250
PHOENIX, AZ 85004
602.265.2200
smithgroup.com

ISSUED FOR	REV	DATE
DEVELOPMENT REVIEW BOARD		07MAR24

SEALS AND SIGNATURES

NOT FOR CONSTRUCTION

KEY PLAN

SHEET TITLE

ILLUSTRATIVE LANDSCAPE PLAN

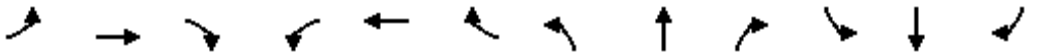
NORTH
SCALE: 1"=50'
50
100

PROJECT NUMBER 14303.000

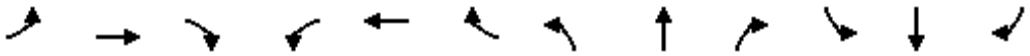
DRB L000.1

SHEET NUMBER

Appendix C Synchro Reports



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	274	114	50	18	19	41	121	531	109	146	933	111
Future Volume (vph)	274	114	50	18	19	41	121	531	109	146	933	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		170	150		130	150		0	355		0
Storage Lanes	2		1	1		2	2		0	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	0.88	0.97	0.91	0.91	0.97	0.95	1.00
Frt			0.850			0.850		0.975				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1770	3539	2787	3433	4958	0	3433	3539	1583
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	1863	3539	2787	3433	4958	0	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			87			153		60				153
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		700			1025			944			517	
Travel Time (s)		15.9			23.3			16.1			8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	298	124	54	20	21	45	132	577	118	159	1014	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	298	124	54	20	21	45	132	695	0	159	1014	121
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases			4	8		8						6

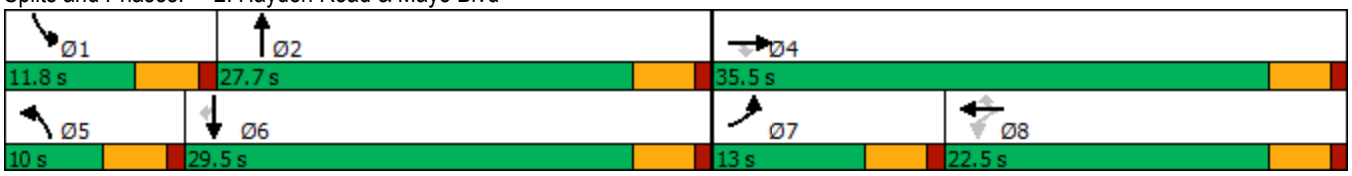


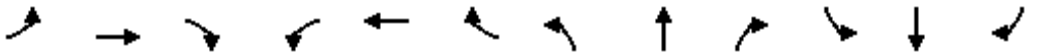
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5
Total Split (s)	13.0	35.5	35.5	22.5	22.5	22.5	10.0	27.7		11.8	29.5	29.5
Total Split (%)	17.3%	47.3%	47.3%	30.0%	30.0%	30.0%	13.3%	36.9%		15.7%	39.3%	39.3%
Maximum Green (s)	8.5	31.0	31.0	18.0	18.0	18.0	5.5	23.2		7.3	25.0	25.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max		None	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effct Green (s)	8.6	14.9	14.9	6.7	6.7	6.7	5.7	24.4		7.1	25.8	25.8
Actuated g/C Ratio	0.15	0.26	0.26	0.12	0.12	0.12	0.10	0.42		0.12	0.45	0.45
v/c Ratio	0.58	0.14	0.11	0.09	0.05	0.10	0.39	0.32		0.37	0.64	0.15
Control Delay	30.5	16.5	2.5	26.6	25.6	0.4	31.1	12.5		28.6	16.8	2.3
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	30.5	16.5	2.5	26.6	25.6	0.4	31.1	12.5		28.6	16.8	2.3
LOS	C	B	A	C	C	A	C	B		C	B	A
Approach Delay		23.6			12.7			15.5			16.9	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)	57	17	0	7	4	0	25	63		29	168	0
Queue Length 95th (ft)	#99	34	12	25	13	0	51	95		57	247	19
Internal Link Dist (ft)		620			945			864			437	
Turn Bay Length (ft)	400		170	150		130	150			355		
Base Capacity (vph)	523	1966	918	600	1141	1002	338	2142		449	1585	793
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	0.57	0.06	0.06	0.03	0.02	0.04	0.39	0.32		0.35	0.64	0.15

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 57.5			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.64			
Intersection Signal Delay: 17.5		Intersection LOS: B	
Intersection Capacity Utilization 55.7%		ICU Level of Service B	
Analysis Period (min) 15			

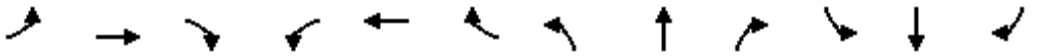
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Hayden Road & Mayo Blvd





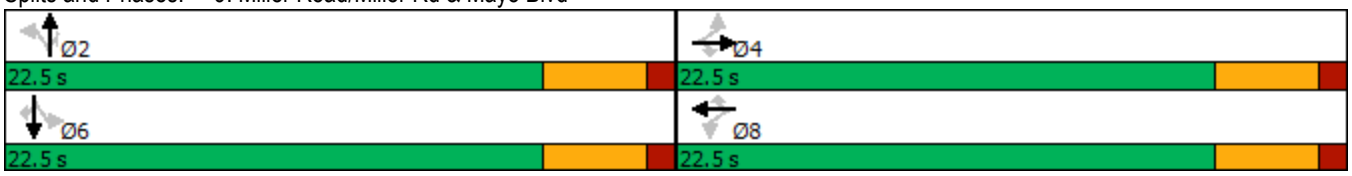
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	443	3	4	213	91	5	543	7	26	530	24
Future Volume (vph)	47	443	3	4	213	91	5	543	7	26	530	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		250	250		250	250		250	250		250
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.607			0.477			0.435			0.429		
Satd. Flow (perm)	1131	3539	1583	889	3539	1583	810	3539	1583	799	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			99			36			36
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		2264			949			2008			642	
Travel Time (s)		51.5			21.6			34.2			10.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	482	3	4	232	99	5	590	8	28	576	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	482	3	4	232	99	5	590	8	28	576	26
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes						Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6

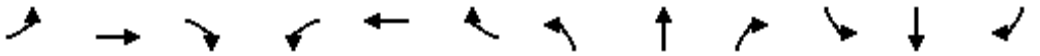


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	10.6	10.6	10.6	10.6	10.6	10.6	11.5	11.5	11.5	11.5	11.5	11.5
Actuated g/C Ratio	0.34	0.34	0.34	0.34	0.34	0.34	0.37	0.37	0.37	0.37	0.37	0.37
v/c Ratio	0.13	0.41	0.01	0.01	0.20	0.17	0.02	0.46	0.01	0.10	0.45	0.04
Control Delay	9.1	9.6	0.0	8.2	8.4	3.4	7.4	9.2	0.6	8.2	9.1	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.1	9.6	0.0	8.2	8.4	3.4	7.4	9.2	0.6	8.2	9.1	3.1
LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay		9.5			6.9			9.1			8.8	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	5	28	0	1	12	0	1	34	0	3	33	0
Queue Length 95th (ft)	24	71	0	5	35	20	5	79	1	15	77	8
Internal Link Dist (ft)		2184			869			1928			562	
Turn Bay Length (ft)	250		250	250		250	250		250	250		250
Base Capacity (vph)	679	2126	965	534	2126	990	486	2126	965	480	2126	965
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.23	0.00	0.01	0.11	0.10	0.01	0.28	0.01	0.06	0.27	0.03

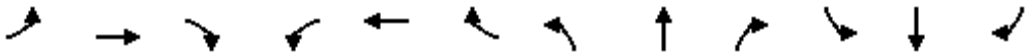
Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 31.5			
Natural Cycle: 45			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.46			
Intersection Signal Delay: 8.8		Intersection LOS: A	
Intersection Capacity Utilization 49.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Miller Road/Miller Rd & Mayo Blvd





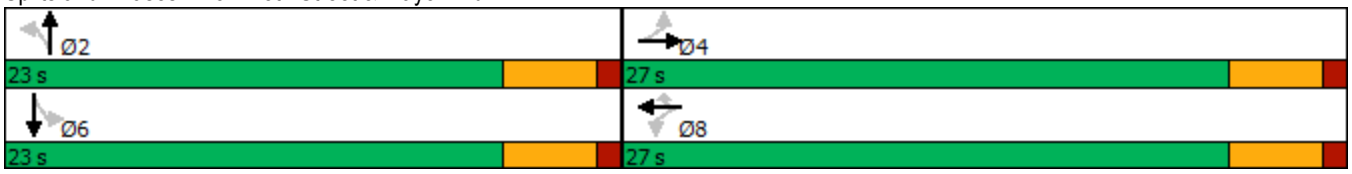
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	485	35	90	327	0	74	0	190	0	0	0
Future Volume (vph)	0	485	35	90	327	0	74	0	190	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	100		0	100		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.990						0.850				
Flt Protected				0.950			0.950					
Satd. Flow (prot)	1863	3504	0	1770	3539	1863	1770	1583	0	1863	1863	0
Flt Permitted				0.440			0.757					
Satd. Flow (perm)	1863	3504	0	820	3539	1863	1410	1583	0	1863	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19						236				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		337			945			1455			417	
Travel Time (s)		7.7			21.5			33.1			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	527	38	98	355	0	80	0	207	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	565	0	98	355	0	80	207	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	23.0	23.0		23.0	23.0	
Total Split (%)	54.0%	54.0%		54.0%	54.0%	54.0%	46.0%	46.0%		46.0%	46.0%	
Maximum Green (s)	22.5	22.5		22.5	22.5	22.5	18.5	18.5		18.5	18.5	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	
Act Effct Green (s)		10.4		10.4	10.4		7.4	7.4				
Actuated g/C Ratio		0.39		0.39	0.39		0.27	0.27				
v/c Ratio		0.42		0.31	0.26		0.21	0.34				
Control Delay		7.0		9.0	6.3		9.9	3.2				
Queue Delay		0.0		0.0	0.0		0.0	0.0				
Total Delay		7.0		9.0	6.3		9.9	3.2				
LOS		A		A	A		A	A				
Approach Delay		7.0			6.9			5.1				
Approach LOS		A			A			A				
Queue Length 50th (ft)		23		8	14		8	0				
Queue Length 95th (ft)		54		30	35		30	22				
Internal Link Dist (ft)		257			865			1375			337	
Turn Bay Length (ft)				100			100					
Base Capacity (vph)		2985		698	3012		997	1189				
Starvation Cap Reductn		0		0	0		0	0				
Spillback Cap Reductn		0		0	0		0	0				
Storage Cap Reductn		0		0	0		0	0				
Reduced v/c Ratio		0.19		0.14	0.12		0.08	0.17				

Intersection Summary			
Area Type:	Other		
Cycle Length: 50			
Actuated Cycle Length: 27			
Natural Cycle: 45			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.42			
Intersection Signal Delay: 6.5		Intersection LOS: A	
Intersection Capacity Utilization 42.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 37: 78th Street & Mayo Blvd



Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	943	1526	256
Future Vol, veh/h	0	0	0	943	1526	256
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	1025	1659	278

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	830	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	269	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	269	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	0	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	689	0	0	611
Future Vol, veh/h	0	0	689	0	0	611
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	749	0	0	664

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1081	375	0	0	749	0
Stage 1	749	-	-	-	-	-
Stage 2	332	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	212	623	-	-	856	-
Stage 1	428	-	-	-	-	-
Stage 2	699	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	212	623	-	-	856	-
Mov Cap-2 Maneuver	330	-	-	-	-	-
Stage 1	428	-	-	-	-	-
Stage 2	699	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	-	856	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	-	-	0	0	0	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	-	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	114	859	485	68	28	44
Future Vol, veh/h	114	859	485	68	28	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	124	934	527	74	30	48

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	601	0	-	0	1242	264
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	715	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	972	-	-	-	167	734
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	446	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	972	-	-	-	146	734
Mov Cap-2 Maneuver	-	-	-	-	279	-
Stage 1	-	-	-	-	486	-
Stage 2	-	-	-	-	446	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	13.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	972	-	-	-	279	734
HCM Lane V/C Ratio	0.127	-	-	-	0.109	0.065
HCM Control Delay (s)	9.2	-	-	-	19.5	10.2
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.4	0.2

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	886	553	4	18	9
Future Vol, veh/h	13	886	553	4	18	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	963	601	4	20	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	605	0	-	0	1111	301
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	510	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	969	-	-	-	203	695
Stage 1	-	-	-	-	510	-
Stage 2	-	-	-	-	568	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	969	-	-	-	200	695
Mov Cap-2 Maneuver	-	-	-	-	334	-
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	568	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	14.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	969	-	-	-	404
HCM Lane V/C Ratio	0.015	-	-	-	0.073
HCM Control Delay (s)	8.8	-	-	-	14.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

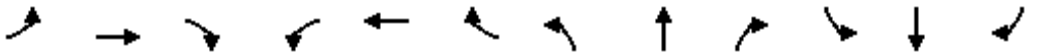
Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	130	675	417	56	66	75
Future Vol, veh/h	130	675	417	56	66	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	141	734	453	61	72	82

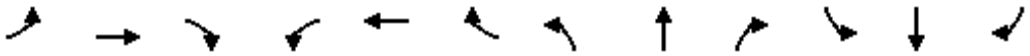
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	514	0	-	0	1102	227
Stage 1	-	-	-	-	453	-
Stage 2	-	-	-	-	649	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1048	-	-	-	206	776
Stage 1	-	-	-	-	607	-
Stage 2	-	-	-	-	482	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1048	-	-	-	178	776
Mov Cap-2 Maneuver	-	-	-	-	310	-
Stage 1	-	-	-	-	525	-
Stage 2	-	-	-	-	482	-

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	14.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1048	-	-	-	310	776
HCM Lane V/C Ratio	0.135	-	-	-	0.231	0.105
HCM Control Delay (s)	9	-	-	-	20.1	10.2
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.5	-	-	-	0.9	0.4



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	358	24	85	111	118	247	100	1237	22	50	833	209
Future Volume (vph)	358	24	85	111	118	247	100	1237	22	50	833	209
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		170	150		130	150		0	355		0
Storage Lanes	2		1	1		2	2		0	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	0.88	0.97	0.91	0.91	0.97	0.95	1.00
Frt			0.850			0.850		0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1770	3539	2787	3433	5070	0	3433	3539	1583
Flt Permitted	0.950			0.739			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	1377	3539	2787	3433	5070	0	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			92			268		3				227
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		700			1025			944			517	
Travel Time (s)		15.9			23.3			16.1			8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	389	26	92	121	128	268	109	1345	24	54	905	227
Shared Lane Traffic (%)												
Lane Group Flow (vph)	389	26	92	121	128	268	109	1369	0	54	905	227
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases			4	8		8						6

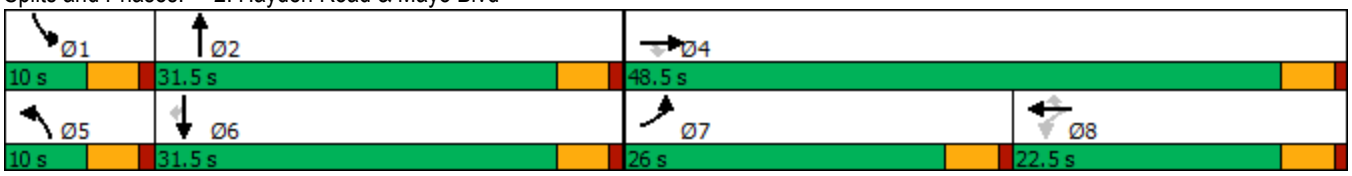


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5
Total Split (s)	26.0	48.5	48.5	22.5	22.5	22.5	10.0	31.5		10.0	31.5	31.5
Total Split (%)	28.9%	53.9%	53.9%	25.0%	25.0%	25.0%	11.1%	35.0%		11.1%	35.0%	35.0%
Maximum Green (s)	21.5	44.0	44.0	18.0	18.0	18.0	5.5	27.0		5.5	27.0	27.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max		None	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effct Green (s)	13.8	30.9	30.9	12.4	12.4	12.4	5.6	29.7		5.6	27.7	27.7
Actuated g/C Ratio	0.18	0.41	0.41	0.16	0.16	0.16	0.07	0.39		0.07	0.37	0.37
v/c Ratio	0.62	0.02	0.13	0.53	0.22	0.39	0.43	0.68		0.21	0.70	0.31
Control Delay	33.9	12.9	3.6	39.3	29.2	5.9	42.4	23.7		38.8	26.3	4.7
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	33.9	12.9	3.6	39.3	29.2	5.9	42.4	23.7		38.8	26.3	4.7
LOS	C	B	A	D	C	A	D	C		D	C	A
Approach Delay		27.3			19.5			25.1			22.7	
Approach LOS		C			B			C			C	
Queue Length 50th (ft)	90	3	0	54	28	0	26	211		12	197	0
Queue Length 95th (ft)	142	10	24	111	55	34	56	#323		33	#321	49
Internal Link Dist (ft)		620			945			864			437	
Turn Bay Length (ft)	400		170	150		130	150			355		
Base Capacity (vph)	1004	2118	984	337	866	885	256	2004		256	1300	725
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	0.39	0.01	0.09	0.36	0.15	0.30	0.43	0.68		0.21	0.70	0.31

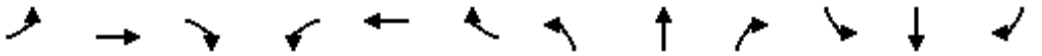
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 75.3			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 23.9		Intersection LOS: C	
Intersection Capacity Utilization 56.7%		ICU Level of Service B	
Analysis Period (min) 15			

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

Splits and Phases: 2: Hayden Road & Mayo Blvd



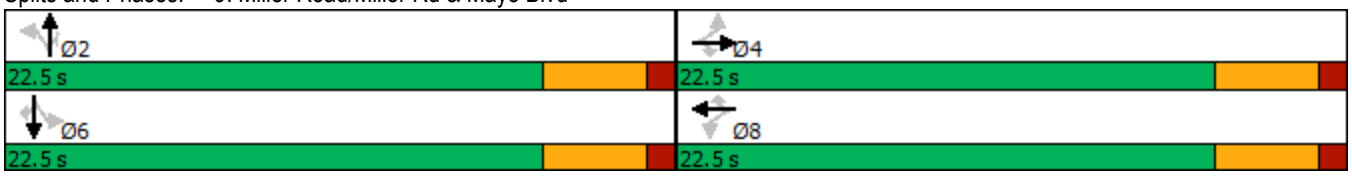
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	343	11	6	437	50	12	521	8	59	582	68
Future Volume (vph)	34	343	11	6	437	50	12	521	8	59	582	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		250	250		250	250		250	250		250
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.480			0.530			0.412			0.439		
Satd. Flow (perm)	894	3539	1583	987	3539	1583	767	3539	1583	818	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			54			36			74
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		2264			949			2008			642	
Travel Time (s)		51.5			21.6			34.2			10.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	373	12	7	475	54	13	566	9	64	633	74
Shared Lane Traffic (%)												
Lane Group Flow (vph)	37	373	12	7	475	54	13	566	9	64	633	74
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes						Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6

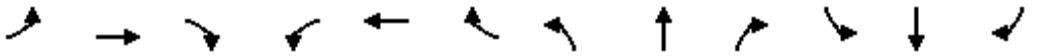


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	10.8	10.8	10.8	10.8	10.8	10.8	12.4	12.4	12.4	12.4	12.4	12.4
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.33	0.33	0.38	0.38	0.38	0.38	0.38	0.38
v/c Ratio	0.12	0.32	0.02	0.02	0.40	0.10	0.04	0.42	0.01	0.21	0.47	0.11
Control Delay	9.6	9.3	1.5	8.3	9.9	3.8	7.8	8.9	0.9	9.6	9.3	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	9.3	1.5	8.3	9.9	3.8	7.8	8.9	0.9	9.6	9.3	3.2
LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Delay		9.1			9.3			8.8			8.8	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	4	23	0	1	31	0	1	33	0	6	37	0
Queue Length 95th (ft)	19	54	3	6	69	14	9	79	2	29	89	16
Internal Link Dist (ft)		2184			869			1928			562	
Turn Bay Length (ft)	250		250	250		250	250		250	250		250
Base Capacity (vph)	517	2050	932	571	2050	940	444	2050	932	473	2050	948
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.18	0.01	0.01	0.23	0.06	0.03	0.28	0.01	0.14	0.31	0.08

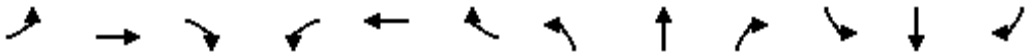
Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 32.7			
Natural Cycle: 45			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.47			
Intersection Signal Delay: 8.9		Intersection LOS: A	
Intersection Capacity Utilization 51.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 9: Miller Road/Miller Rd & Mayo Blvd





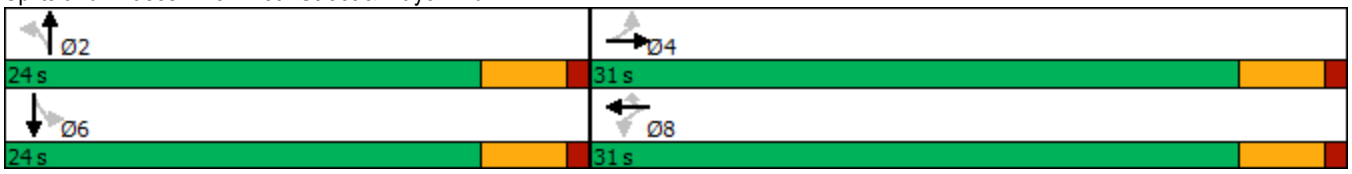
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	424	89	191	506	0	86	0	220	0	0	0
Future Volume (vph)	0	424	89	191	506	0	86	0	220	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	100		0	100		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.974						0.850				
Flt Protected				0.950			0.950					
Satd. Flow (prot)	1863	3447	0	1770	3539	1863	1770	1583	0	1863	1863	0
Flt Permitted				0.443			0.757					
Satd. Flow (perm)	1863	3447	0	825	3539	1863	1410	1583	0	1863	1863	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		62						315				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		337			945			1455			417	
Travel Time (s)		7.7			21.5			33.1			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	461	97	208	550	0	93	0	239	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	558	0	208	550	0	93	239	0	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	31.0	31.0		31.0	31.0	31.0	24.0	24.0		24.0	24.0	
Total Split (%)	56.4%	56.4%		56.4%	56.4%	56.4%	43.6%	43.6%		43.6%	43.6%	
Maximum Green (s)	26.5	26.5		26.5	26.5	26.5	19.5	19.5		19.5	19.5	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	
Act Effct Green (s)		15.0		15.0	15.0		8.2	8.2				
Actuated g/C Ratio		0.45		0.45	0.45		0.25	0.25				
v/c Ratio		0.35		0.55	0.34		0.26	0.38				
Control Delay		5.5		12.8	6.1		14.4	2.9				
Queue Delay		0.0		0.0	0.0		0.0	0.0				
Total Delay		5.5		12.8	6.1		14.4	2.9				
LOS		A		B	A		B	A				
Approach Delay		5.5			8.0			6.1				
Approach LOS		A			A			A				
Queue Length 50th (ft)		22		20	25		12	0				
Queue Length 95th (ft)		53		73	58		50	21				
Internal Link Dist (ft)		257			865			1375			337	
Turn Bay Length (ft)				100			100					
Base Capacity (vph)		2932		699	3001		900	1125				
Starvation Cap Reductn		0		0	0		0	0				
Spillback Cap Reductn		0		0	0		0	0				
Storage Cap Reductn		0		0	0		0	0				
Reduced v/c Ratio		0.19		0.30	0.18		0.10	0.21				

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 33			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 6.8		Intersection LOS: A	
Intersection Capacity Utilization 50.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 37: 78th Street & Mayo Blvd



Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	2148	1220	102
Future Vol, veh/h	0	0	0	2148	1220	102
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	2335	1326	111

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	663	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	346	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	346	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	0	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	15.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	16	636	0	720	8
Future Vol, veh/h	0	16	636	0	720	8
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	17	691	0	783	9

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2262	346	0	0	691	0
Stage 1	691	-	-	-	-	-
Stage 2	1571	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	35	650	-	-	900	-
Stage 1	459	-	-	-	-	-
Stage 2	157	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	5	650	-	-	900	-
Mov Cap-2 Maneuver	18	-	-	-	-	-
Stage 1	459	-	-	-	-	-
Stage 2	20	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	28.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	650	900	-
HCM Lane V/C Ratio	-	-	-	0.027	0.87	-
HCM Control Delay (s)	-	-	0	10.7	28.9	-
HCM Lane LOS	-	-	A	B	D	-
HCM 95th %tile Q(veh)	-	-	-	0.1	11.3	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	49	559	946	29	64	100
Future Vol, veh/h	49	559	946	29	64	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	53	608	1028	32	70	109

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1060	0	-	0	1438	514
Stage 1	-	-	-	-	1028	-
Stage 2	-	-	-	-	410	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	653	-	-	-	124	505
Stage 1	-	-	-	-	306	-
Stage 2	-	-	-	-	638	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	653	-	-	-	114	505
Mov Cap-2 Maneuver	-	-	-	-	220	-
Stage 1	-	-	-	-	281	-
Stage 2	-	-	-	-	638	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	19.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	653	-	-	-	220	505
HCM Lane V/C Ratio	0.082	-	-	-	0.316	0.215
HCM Control Delay (s)	11	-	-	-	28.8	14.1
HCM Lane LOS	B	-	-	-	D	B
HCM 95th %tile Q(veh)	0.3	-	-	-	1.3	0.8

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	619	975	2	15	6
Future Vol, veh/h	10	619	975	2	15	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	673	1060	2	16	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1062	0	-	0	1419	530
Stage 1	-	-	-	-	1060	-
Stage 2	-	-	-	-	359	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	652	-	-	-	128	493
Stage 1	-	-	-	-	294	-
Stage 2	-	-	-	-	677	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	652	-	-	-	126	493
Mov Cap-2 Maneuver	-	-	-	-	230	-
Stage 1	-	-	-	-	289	-
Stage 2	-	-	-	-	677	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	19.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	652	-	-	-	271
HCM Lane V/C Ratio	0.017	-	-	-	0.084
HCM Control Delay (s)	10.6	-	-	-	19.5
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	59	644	697	25	67	76
Future Vol, veh/h	59	644	697	25	67	76
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	700	758	27	73	83

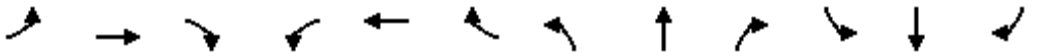
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	785	0	-	0	1236	379
Stage 1	-	-	-	-	758	-
Stage 2	-	-	-	-	478	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	829	-	-	-	168	619
Stage 1	-	-	-	-	423	-
Stage 2	-	-	-	-	590	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	829	-	-	-	155	619
Mov Cap-2 Maneuver	-	-	-	-	281	-
Stage 1	-	-	-	-	390	-
Stage 2	-	-	-	-	590	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	16.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	829	-	-	-	281	619
HCM Lane V/C Ratio	0.077	-	-	-	0.259	0.133
HCM Control Delay (s)	9.7	-	-	-	22.2	11.7
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.3	-	-	-	1	0.5

Total Traffic 2026 MOB+ Only Reports

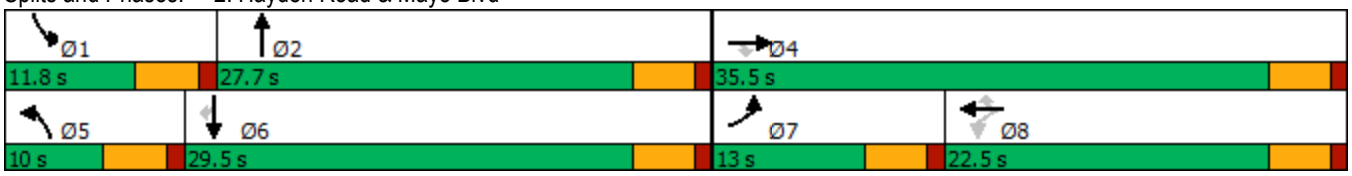
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	0	10	0	0	0	27	398	0	0	882	136
Future Volume (vph)	65	0	10	0	0	0	27	398	0	0	882	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		170	150		130	150		0	355		0
Storage Lanes	2		1	1		2	2		0	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	0.88	0.97	0.91	0.91	0.97	0.95	1.00
Frt			0.850									0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3433	3539	1583	1863	3539	3278	3433	5085	0	3614	3539	1583
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	3433	3539	1583	1863	3539	3278	3433	5085	0	3614	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			227									153
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		700			1025			944			517	
Travel Time (s)		15.9			23.3			16.1			8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	71	0	11	0	0	0	29	433	0	0	959	148
Shared Lane Traffic (%)												
Lane Group Flow (vph)	71	0	11	0	0	0	29	433	0	0	959	148
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot		Perm	Perm		Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases			4	8		8						6

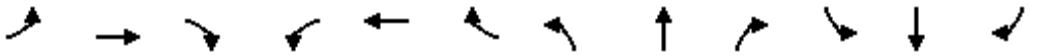


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5
Total Split (s)	13.0	35.5	35.5	22.5	22.5	22.5	10.0	27.7		11.8	29.5	29.5
Total Split (%)	17.3%	47.3%	47.3%	30.0%	30.0%	30.0%	13.3%	36.9%		15.7%	39.3%	39.3%
Maximum Green (s)	8.5	31.0	31.0	18.0	18.0	18.0	5.5	23.2		7.3	25.0	25.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max		None	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effct Green (s)	6.5		6.4				5.5	38.1			36.3	36.3
Actuated g/C Ratio	0.14		0.14				0.12	0.80			0.77	0.77
v/c Ratio	0.15		0.03				0.07	0.11			0.35	0.12
Control Delay	19.3		0.1				20.1	2.3			4.9	1.7
Queue Delay	0.0		0.0				0.0	0.0			0.0	0.0
Total Delay	19.3		0.1				20.1	2.3			4.9	1.7
LOS	B		A				C	A			A	A
Approach Delay		16.7						3.4			4.4	
Approach LOS		B						A			A	
Queue Length 50th (ft)	10		0				4	11			45	0
Queue Length 95th (ft)	24		0				13	19			144	20
Internal Link Dist (ft)		620			945			864			437	
Turn Bay Length (ft)	400		170				150					
Base Capacity (vph)	619		1118				400	4092			2710	1248
Starvation Cap Reductn	0		0				0	0			0	0
Spillback Cap Reductn	0		0				0	0			0	0
Storage Cap Reductn	0		0				0	0			0	0
Reduced v/c Ratio	0.11		0.01				0.07	0.11			0.35	0.12

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 47.4			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay: 4.8		Intersection LOS: A	
Intersection Capacity Utilization 36.0%		ICU Level of Service A	
Analysis Period (min) 15			

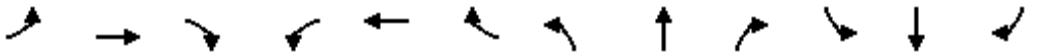
Splits and Phases: 2: Hayden Road & Mayo Blvd





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	125	0	0	49	4	0	0	0	18	0	0
Future Volume (vph)	0	125	0	0	49	4	0	0	0	18	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		250	250		250	250		250	250		250
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850						
Flt Protected										0.950		
Satd. Flow (prot)	1863	3539	1863	1863	3539	1583	1863	1863	1863	1770	1863	1863
Flt Permitted										0.950		
Satd. Flow (perm)	1863	3539	1863	1863	3539	1583	1863	1863	1863	1770	1863	1863
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		2264			949			2008			642	
Travel Time (s)		51.5			21.6			34.2			10.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	136	0	0	53	4	0	0	0	20	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	136	0	0	53	4	0	0	0	20	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes						Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	13.5%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	33	0	20	17	52	0	7	43	20	2	36
Future Volume (vph)	111	33	0	20	17	52	0	7	43	20	2	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.886			0.872			0.857	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1770	3539	0	1770	3136	0	1863	1624	0	1770	1596	0
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	1770	3539	0	1770	3136	0	1863	1624	0	1770	1596	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		337			945			1455			417	
Travel Time (s)		7.7			21.5			33.1			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	121	36	0	22	18	57	0	8	47	22	2	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	36	0	22	75	0	0	55	0	22	41	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	943	1526	256
Future Vol, veh/h	0	0	0	943	1526	256
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	1025	1659	278

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	830	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	269	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	269	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	0	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	4	4	0	0	18
Future Vol, veh/h	0	4	4	0	0	18
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	4	0	0	20

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	14	2	0	0	4	0
Stage 1	4	-	-	-	-	-
Stage 2	10	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	1003	1081	-	-	1616	-
Stage 1	1018	-	-	-	-	-
Stage 2	1011	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1003	1081	-	-	1616	-
Mov Cap-2 Maneuver	920	-	-	-	-	-
Stage 1	1018	-	-	-	-	-
Stage 2	1011	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.3	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	1081	1616	-
HCM Lane V/C Ratio	-	-	-	0.004	-	-
HCM Control Delay (s)	-	-	0	8.3	0	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	114	859	485	68	28	44
Future Vol, veh/h	114	859	485	68	28	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	124	934	527	74	30	48

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	601	0	-	0	1242	264
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	715	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	972	-	-	-	167	734
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	446	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	972	-	-	-	146	734
Mov Cap-2 Maneuver	-	-	-	-	279	-
Stage 1	-	-	-	-	486	-
Stage 2	-	-	-	-	446	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	13.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	972	-	-	-	279	734
HCM Lane V/C Ratio	0.127	-	-	-	0.109	0.065
HCM Control Delay (s)	9.2	-	-	-	19.5	10.2
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.4	0.2

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	886	553	4	18	9
Future Vol, veh/h	13	886	553	4	18	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	963	601	4	20	10

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	605	0	-	0	1111	301			
Stage 1	-	-	-	-	601	-			
Stage 2	-	-	-	-	510	-			
Critical Hdwy	4.14	-	-	-	6.84	6.94			
Critical Hdwy Stg 1	-	-	-	-	5.84	-			
Critical Hdwy Stg 2	-	-	-	-	5.84	-			
Follow-up Hdwy	2.22	-	-	-	3.52	3.32			
Pot Cap-1 Maneuver	969	-	-	-	203	695			
Stage 1	-	-	-	-	510	-			
Stage 2	-	-	-	-	568	-			
Platoon blocked, %		-	-	-					
Mov Cap-1 Maneuver	969	-	-	-	200	695			
Mov Cap-2 Maneuver	-	-	-	-	334	-			
Stage 1	-	-	-	-	503	-			
Stage 2	-	-	-	-	568	-			

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	14.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	969	-	-	-	404
HCM Lane V/C Ratio	0.015	-	-	-	0.073
HCM Control Delay (s)	8.8	-	-	-	14.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	1.8

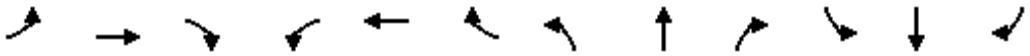
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	33	63	72	92	12	17
Future Vol, veh/h	33	63	72	92	12	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	68	78	100	13	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	178	0	-	0	184	39
Stage 1	-	-	-	-	78	-
Stage 2	-	-	-	-	106	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1395	-	-	-	788	1024
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	907	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1395	-	-	-	768	1024
Mov Cap-2 Maneuver	-	-	-	-	766	-
Stage 1	-	-	-	-	912	-
Stage 2	-	-	-	-	907	-

Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1395	-	-	-	766	1024
HCM Lane V/C Ratio	0.026	-	-	-	0.017	0.018
HCM Control Delay (s)	7.6	-	-	-	9.8	8.6
HCM Lane LOS	A	-	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0.1

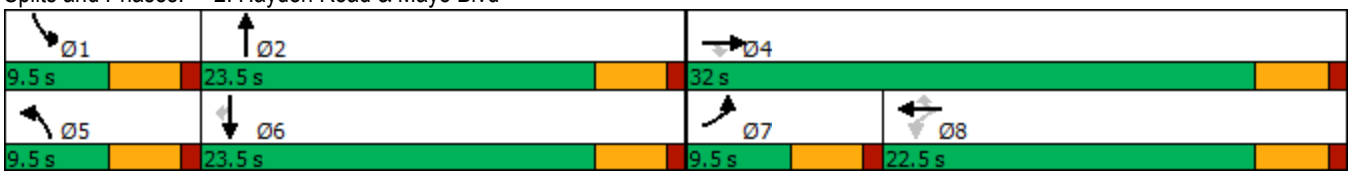
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	165	0	24	0	0	0	12	1157	0	0	705	51
Future Volume (vph)	165	0	24	0	0	0	12	1157	0	0	705	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		170	150		130	150		0	355		0
Storage Lanes	2		1	1		2	2		0	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	0.88	0.97	0.91	0.91	0.97	0.95	1.00
Frt			0.850									0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3433	3539	1583	1863	3539	3278	3433	5085	0	3614	3539	1583
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	3433	3539	1583	1863	3539	3278	3433	5085	0	3614	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			252									176
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		700			1025			944			517	
Travel Time (s)		15.9			23.3			16.1			8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	179	0	26	0	0	0	13	1258	0	0	766	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	179	0	26	0	0	0	13	1258	0	0	766	55
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot		Perm	Perm		Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases			4	8		8						6

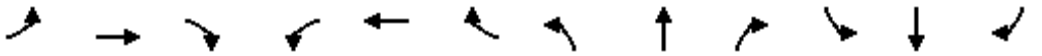


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5
Total Split (s)	9.5	32.0	32.0	22.5	22.5	22.5	9.5	23.5		9.5	23.5	23.5
Total Split (%)	14.6%	49.2%	49.2%	34.6%	34.6%	34.6%	14.6%	36.2%		14.6%	36.2%	36.2%
Maximum Green (s)	5.0	27.5	27.5	18.0	18.0	18.0	5.0	19.0		5.0	19.0	19.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max		None	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effct Green (s)	5.6		5.6				5.1	24.9			23.2	23.2
Actuated g/C Ratio	0.14		0.14				0.13	0.63			0.58	0.58
v/c Ratio	0.37		0.06				0.03	0.39			0.37	0.06
Control Delay	17.3		0.2				15.0	4.1			5.8	0.1
Queue Delay	0.0		0.0				0.0	0.0			0.0	0.0
Total Delay	17.3		0.2				15.0	4.1			5.8	0.1
LOS	B		A				B	A			A	A
Approach Delay		15.2						4.2			5.5	
Approach LOS		B						A			A	
Queue Length 50th (ft)	14		0				1	36			30	0
Queue Length 95th (ft)	42		0				7	51			100	0
Internal Link Dist (ft)		620			945			864			437	
Turn Bay Length (ft)	400		170				150					
Base Capacity (vph)	485		1192				441	3190			2063	996
Starvation Cap Reductn	0		0				0	0			0	0
Spillback Cap Reductn	0		0				0	0			0	0
Storage Cap Reductn	0		0				0	0			0	0
Reduced v/c Ratio	0.37		0.02				0.03	0.39			0.37	0.06

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 39.7			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.39			
Intersection Signal Delay: 5.6		Intersection LOS: A	
Intersection Capacity Utilization 34.6%		ICU Level of Service A	
Analysis Period (min) 15			

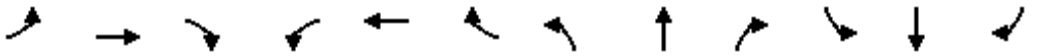
Splits and Phases: 2: Hayden Road & Mayo Blvd





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	43	0	0	213	19	0	0	0	6	0	0
Future Volume (vph)	0	43	0	0	213	19	0	0	0	6	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		250	250		250	250		250	250		250
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850						
Flt Protected										0.950		
Satd. Flow (prot)	1863	3539	1863	1863	3539	1583	1863	1863	1863	1770	1863	1863
Flt Permitted										0.950		
Satd. Flow (perm)	1863	3539	1863	1863	3539	1583	1863	1863	1863	1770	1863	1863
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		2264			949			2008			642	
Travel Time (s)		51.5			21.6			34.2			10.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	47	0	0	232	21	0	0	0	7	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	47	0	0	232	21	0	0	0	7	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes						Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 15.9%		ICU Level of Service A	
Analysis Period (min) 15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	11	0	14	76	18	0	3	48	87	8	156
Future Volume (vph)	38	11	0	14	76	18	0	3	48	87	8	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	100		0	100		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.971			0.858			0.858	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1770	3539	0	1770	3437	0	1863	1598	0	1770	1598	0
Flt Permitted	0.950			0.950						0.950		
Satd. Flow (perm)	1770	3539	0	1770	3437	0	1863	1598	0	1770	1598	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		337			945			1455			417	
Travel Time (s)		7.7			21.5			33.1			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	12	0	15	83	20	0	3	52	95	9	170
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	12	0	15	103	0	0	55	0	95	179	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	2148	1220	102
Future Vol, veh/h	0	0	0	2148	1220	102
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	2335	1326	111

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	663	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	346	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	346	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	0	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	19	19	0	0	6
Future Vol, veh/h	0	19	19	0	0	6
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	21	21	0	0	7

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	25	11	0	0	21	0
Stage 1	21	-	-	-	-	-
Stage 2	4	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	987	1067	-	-	1593	-
Stage 1	999	-	-	-	-	-
Stage 2	1018	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	987	1067	-	-	1593	-
Mov Cap-2 Maneuver	909	-	-	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	1018	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	-	1067	1593	-
HCM Lane V/C Ratio	-	-	-	0.019	-	-
HCM Control Delay (s)	-	-	0	8.4	0	-
HCM Lane LOS	-	-	A	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	49	559	946	29	64	100
Future Vol, veh/h	49	559	946	29	64	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	53	608	1028	32	70	109

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1060	0	-	0	1438	514
Stage 1	-	-	-	-	1028	-
Stage 2	-	-	-	-	410	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	653	-	-	-	124	505
Stage 1	-	-	-	-	306	-
Stage 2	-	-	-	-	638	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	653	-	-	-	114	505
Mov Cap-2 Maneuver	-	-	-	-	220	-
Stage 1	-	-	-	-	281	-
Stage 2	-	-	-	-	638	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	19.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	653	-	-	-	220	505
HCM Lane V/C Ratio	0.082	-	-	-	0.316	0.215
HCM Control Delay (s)	11	-	-	-	28.8	14.1
HCM Lane LOS	B	-	-	-	D	B
HCM 95th %tile Q(veh)	0.3	-	-	-	1.3	0.8

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	619	975	2	15	6
Future Vol, veh/h	10	619	975	2	15	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	673	1060	2	16	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1062	0	-	0	1419	530
Stage 1	-	-	-	-	1060	-
Stage 2	-	-	-	-	359	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	652	-	-	-	128	493
Stage 1	-	-	-	-	294	-
Stage 2	-	-	-	-	677	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	652	-	-	-	126	493
Mov Cap-2 Maneuver	-	-	-	-	230	-
Stage 1	-	-	-	-	289	-
Stage 2	-	-	-	-	677	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	19.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	652	-	-	-	271
HCM Lane V/C Ratio	0.017	-	-	-	0.084
HCM Control Delay (s)	10.6	-	-	-	19.5
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	3.8

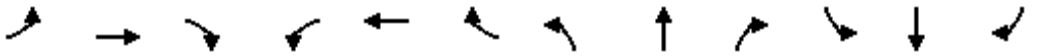
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	135	32	32	53	76
Future Vol, veh/h	11	135	32	32	53	76
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	147	35	35	58	83

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	70	0	-	0	133	18
Stage 1	-	-	-	-	35	-
Stage 2	-	-	-	-	98	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1529	-	-	-	847	1056
Stage 1	-	-	-	-	983	-
Stage 2	-	-	-	-	915	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1529	-	-	-	840	1056
Mov Cap-2 Maneuver	-	-	-	-	811	-
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	915	-

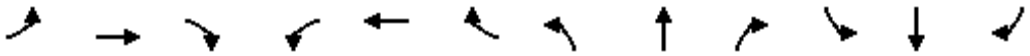
Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1529	-	-	-	811	1056
HCM Lane V/C Ratio	0.008	-	-	-	0.071	0.078
HCM Control Delay (s)	7.4	-	-	-	9.8	8.7
HCM Lane LOS	A	-	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.3

Total Traffic 2040 w/Axon Reports



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	371	114	65	18	19	41	170	531	109	146	933	447
Future Volume (vph)	371	114	65	18	19	41	170	531	109	146	933	447
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		170	150		130	150		0	355		0
Storage Lanes	2		1	1		2	2		0	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	0.88	0.97	0.91	0.91	0.97	0.95	1.00
Frt			0.850			0.850		0.975				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1770	3539	2787	3433	4958	0	3433	3539	1583
Flt Permitted	0.950			0.976			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	1818	3539	2787	3433	4958	0	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			87			153		60				486
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		700			1025			944			517	
Travel Time (s)		15.9			23.3			16.1			8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	403	124	71	20	21	45	185	577	118	159	1014	486
Shared Lane Traffic (%)												
Lane Group Flow (vph)	403	124	71	20	21	45	185	695	0	159	1014	486
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases			4	8		8						6

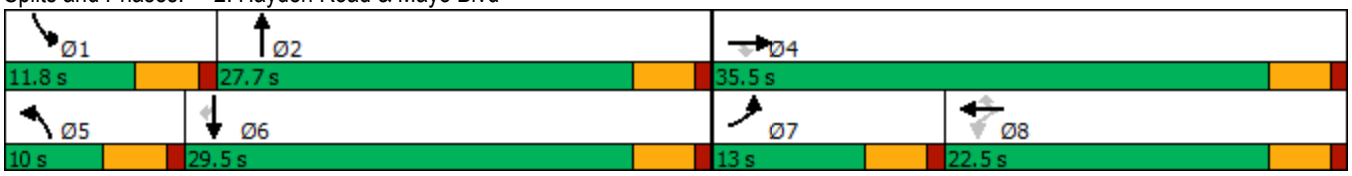


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5
Total Split (s)	13.0	35.5	35.5	22.5	22.5	22.5	10.0	27.7		11.8	29.5	29.5
Total Split (%)	17.3%	47.3%	47.3%	30.0%	30.0%	30.0%	13.3%	36.9%		15.7%	39.3%	39.3%
Maximum Green (s)	8.5	31.0	31.0	18.0	18.0	18.0	5.5	23.2		7.3	25.0	25.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max		None	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effct Green (s)	8.6	15.2	15.2	6.6	6.6	6.6	5.6	26.2		7.1	25.3	25.3
Actuated g/C Ratio	0.14	0.26	0.26	0.11	0.11	0.11	0.09	0.44		0.12	0.42	0.42
v/c Ratio	0.82	0.14	0.15	0.10	0.05	0.10	0.58	0.31		0.39	0.68	0.51
Control Delay	42.5	16.5	4.2	26.7	25.7	0.5	36.0	12.4		28.8	17.8	3.8
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	42.5	16.5	4.2	26.7	25.7	0.5	36.0	12.4		28.8	17.8	3.8
LOS	D	B	A	C	C	A	D	B		C	B	A
Approach Delay		32.5			12.7			17.3			14.8	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)	79	17	0	7	4	0	36	63		29	168	0
Queue Length 95th (ft)	#158	34	19	25	13	0	#75	95		57	247	53
Internal Link Dist (ft)		620			945			864			437	
Turn Bay Length (ft)	400		170	150		130	150			355		
Base Capacity (vph)	494	1859	873	554	1079	956	319	2209		424	1499	950
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	0.82	0.07	0.08	0.04	0.02	0.05	0.58	0.31		0.38	0.68	0.51

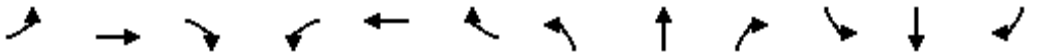
Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 59.6			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 18.7		Intersection LOS: B	
Intersection Capacity Utilization 59.1%		ICU Level of Service B	
Analysis Period (min) 15			

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

Splits and Phases: 2: Hayden Road & Mayo Blvd



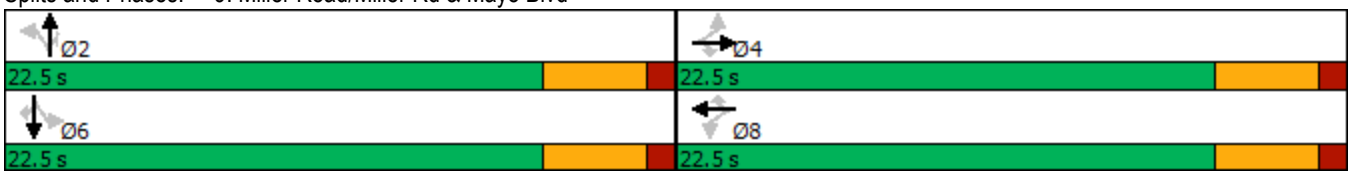
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	796	5	4	282	97	5	543	7	68	530	52
Future Volume (vph)	138	796	5	4	282	97	5	543	7	68	530	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		250	250		250	250		250	250		250
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.565			0.270			0.419			0.408		
Satd. Flow (perm)	1052	3539	1583	503	3539	1583	780	3539	1583	760	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			105			36			57
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		2264			949			2008			642	
Travel Time (s)		51.5			21.6			34.2			10.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	150	865	5	4	307	105	5	590	8	74	576	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	150	865	5	4	307	105	5	590	8	74	576	57
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes						Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6



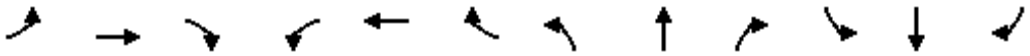
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	15.5	15.5	15.5	15.5	15.5	15.5	12.4	12.4	12.4	12.4	12.4	12.4
Actuated g/C Ratio	0.42	0.42	0.42	0.42	0.42	0.42	0.33	0.33	0.33	0.33	0.33	0.33
v/c Ratio	0.34	0.59	0.01	0.02	0.21	0.15	0.02	0.50	0.01	0.29	0.49	0.10
Control Delay	11.1	10.9	0.0	8.0	8.0	3.0	8.8	11.7	0.6	13.1	11.6	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.1	10.9	0.0	8.0	8.0	3.0	8.8	11.7	0.6	13.1	11.6	3.8
LOS	B	B	A	A	A	A	A	B	A	B	B	A
Approach Delay		10.8			6.7			11.6			11.1	
Approach LOS		B			A			B			B	
Queue Length 50th (ft)	19	64	0	0	18	0	1	54	0	12	53	0
Queue Length 95th (ft)	61	134	0	5	45	20	5	86	1	35	84	15
Internal Link Dist (ft)		2184			869			1928			562	
Turn Bay Length (ft)	250		250	250		250	250		250	250		250
Base Capacity (vph)	527	1774	811	252	1774	846	391	1774	811	381	1774	822
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.49	0.01	0.02	0.17	0.12	0.01	0.33	0.01	0.19	0.32	0.07

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 37.3			
Natural Cycle: 45			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 10.4		Intersection LOS: B	
Intersection Capacity Utilization 60.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 9: Miller Road/Miller Rd & Mayo Blvd



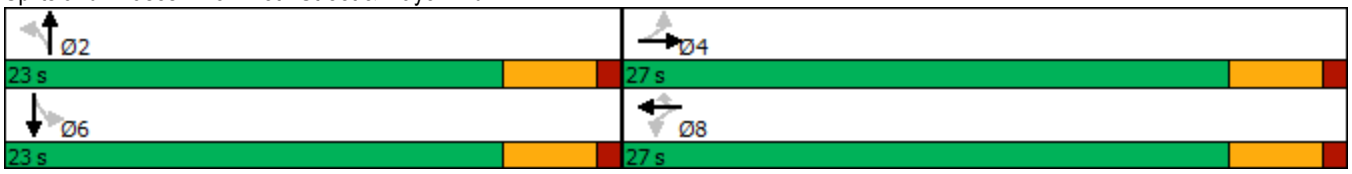
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	592	37	91	427	123	79	12	193	75	4	82
Future Volume (vph)	176	592	37	91	427	123	79	12	193	75	4	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	100		0	100		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991				0.850		0.859			0.856	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3507	0	1770	3539	1583	1770	1600	0	1770	1595	0
Flt Permitted	0.485			0.392			0.697			0.619		
Satd. Flow (perm)	903	3507	0	730	3539	1583	1298	1600	0	1153	1595	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				134		167			89	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		337			945			1455			417	
Travel Time (s)		7.7			21.5			33.1			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	191	643	40	99	464	134	86	13	210	82	4	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	191	683	0	99	464	134	86	223	0	82	93	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	23.0	23.0		23.0	23.0	
Total Split (%)	54.0%	54.0%		54.0%	54.0%	54.0%	46.0%	46.0%		46.0%	46.0%	
Maximum Green (s)	22.5	22.5		22.5	22.5	22.5	18.5	18.5		18.5	18.5	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	
Act Effct Green (s)	14.2	14.2		14.2	14.2	14.2	8.2	8.2		8.2	8.2	
Actuated g/C Ratio	0.45	0.45		0.45	0.45	0.45	0.26	0.26		0.26	0.26	
v/c Ratio	0.48	0.44		0.31	0.30	0.17	0.26	0.42		0.28	0.20	
Control Delay	10.9	6.8		8.7	6.1	2.1	13.3	6.9		13.9	5.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	10.9	6.8		8.7	6.1	2.1	13.3	6.9		13.9	5.0	
LOS	B	A		A	A	A	B	A		B	A	
Approach Delay		7.7			5.7			8.7			9.2	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	18	32		9	21	0	11	7		10	1	
Queue Length 95th (ft)	64	74		35	50	17	42	49		42	24	
Internal Link Dist (ft)		257			865			1375			337	
Turn Bay Length (ft)	100			100			100			100		
Base Capacity (vph)	671	2610		542	2630	1211	798	1048		708	1015	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.28	0.26		0.18	0.18	0.11	0.11	0.21		0.12	0.09	

Intersection Summary			
Area Type:	Other		
Cycle Length: 50			
Actuated Cycle Length: 31.9			
Natural Cycle: 45			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 7.3		Intersection LOS: A	
Intersection Capacity Utilization 54.3%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 37: 78th Street & Mayo Blvd



Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	947	1526	256
Future Vol, veh/h	0	0	0	947	1526	256
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	1029	1659	278

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	830	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	269	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	269	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	0	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	39	7	689	91	18	611
Future Vol, veh/h	39	7	689	91	18	611
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	8	749	99	20	664

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1171	424	0	0	848	0
Stage 1	799	-	-	-	-	-
Stage 2	372	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	186	579	-	-	785	-
Stage 1	403	-	-	-	-	-
Stage 2	667	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	181	579	-	-	785	-
Mov Cap-2 Maneuver	303	-	-	-	-	-
Stage 1	403	-	-	-	-	-
Stage 2	650	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	303	579	785	-
HCM Lane V/C Ratio	-	-	0.14	0.013	0.025	-
HCM Control Delay (s)	-	-	18.8	11.3	9.7	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0	0.1	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	23	870	485	68	21	26
Future Vol, veh/h	23	870	485	68	21	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	946	527	74	23	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	601	0	-	0	1050	264
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	523	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	972	-	-	-	223	734
Stage 1	-	-	-	-	557	-
Stage 2	-	-	-	-	559	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	972	-	-	-	217	734
Mov Cap-2 Maneuver	-	-	-	-	350	-
Stage 1	-	-	-	-	543	-
Stage 2	-	-	-	-	559	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	12.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	972	-	-	-	350	734
HCM Lane V/C Ratio	0.026	-	-	-	0.065	0.039
HCM Control Delay (s)	8.8	-	-	-	16	10.1
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	0.1

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	891	553	4	18	9
Future Vol, veh/h	13	891	553	4	18	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	968	601	4	20	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	605	0	-	0	1113	301
Stage 1	-	-	-	-	601	-
Stage 2	-	-	-	-	512	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	969	-	-	-	203	695
Stage 1	-	-	-	-	510	-
Stage 2	-	-	-	-	567	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	969	-	-	-	200	695
Mov Cap-2 Maneuver	-	-	-	-	334	-
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	567	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	14.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	969	-	-	-	404
HCM Lane V/C Ratio	0.015	-	-	-	0.073
HCM Control Delay (s)	8.8	-	-	-	14.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	3.4

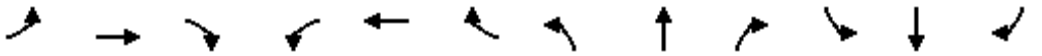
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	211	778	609	249	78	108
Future Vol, veh/h	211	778	609	249	78	108
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	229	846	662	271	85	117

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	933	0	-	0	1543	331
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	881	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	729	-	-	-	106	665
Stage 1	-	-	-	-	475	-
Stage 2	-	-	-	-	365	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	729	-	-	-	~ 73	665
Mov Cap-2 Maneuver	-	-	-	-	190	-
Stage 1	-	-	-	-	326	-
Stage 2	-	-	-	-	365	-

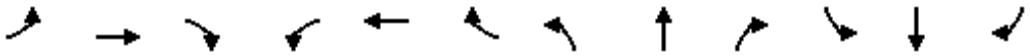
Approach	EB	WB	SB
HCM Control Delay, s	2.6	0	22.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	729	-	-	-	190	665
HCM Lane V/C Ratio	0.315	-	-	-	0.446	0.177
HCM Control Delay (s)	12.2	-	-	-	38.4	11.6
HCM Lane LOS	B	-	-	-	E	B
HCM 95th %tile Q(veh)	1.3	-	-	-	2.1	0.6

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



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	664	24	132	111	118	247	119	1237	22	50	833	337
Future Volume (vph)	664	24	132	111	118	247	119	1237	22	50	833	337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		170	150		130	150		0	355		0
Storage Lanes	2		1	1		2	2		0	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	0.88	0.97	0.91	0.91	0.97	0.95	1.00
Frt			0.850			0.850		0.997				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1770	3539	2787	3433	5070	0	3433	3539	1583
Flt Permitted	0.950			0.739			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	1377	3539	2787	3433	5070	0	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			210		3				366
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		700			1025			944			517	
Travel Time (s)		15.9			23.3			16.1			8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	722	26	143	121	128	268	129	1345	24	54	905	366
Shared Lane Traffic (%)												
Lane Group Flow (vph)	722	26	143	121	128	268	129	1369	0	54	905	366
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Perm	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases			4	8		8						6

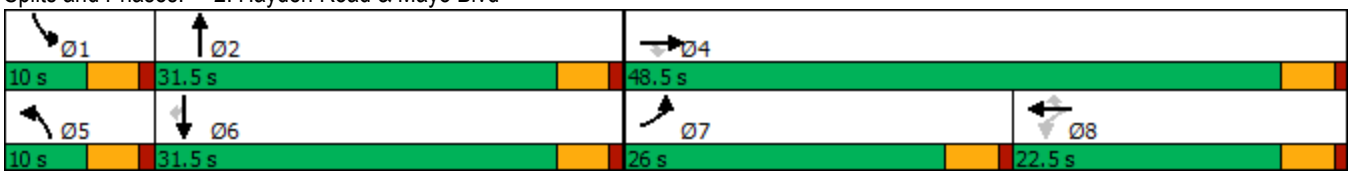


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5
Total Split (s)	26.0	48.5	48.5	22.5	22.5	22.5	10.0	31.5		10.0	31.5	31.5
Total Split (%)	28.9%	53.9%	53.9%	25.0%	25.0%	25.0%	11.1%	35.0%		11.1%	35.0%	35.0%
Maximum Green (s)	21.5	44.0	44.0	18.0	18.0	18.0	5.5	27.0		5.5	27.0	27.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max		None	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effct Green (s)	20.4	38.0	38.0	13.0	13.0	13.0	5.5	31.4		5.5	27.1	27.1
Actuated g/C Ratio	0.24	0.45	0.45	0.15	0.15	0.15	0.07	0.37		0.07	0.32	0.32
v/c Ratio	0.87	0.02	0.18	0.57	0.23	0.44	0.57	0.72		0.24	0.79	0.48
Control Delay	43.7	12.1	2.9	43.9	32.0	10.8	50.6	27.7		42.2	33.3	5.2
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	43.7	12.1	2.9	43.9	32.0	10.8	50.6	27.7		42.2	33.3	5.2
LOS	D	B	A	D	C	B	D	C		D	C	A
Approach Delay		36.2			23.8			29.7			25.9	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	190	3	0	61	32	15	35	250		14	234	0
Queue Length 95th (ft)	#303	10	29	115	56	51	#72	#357		34	#355	62
Internal Link Dist (ft)		620			945			864			437	
Turn Bay Length (ft)	400		170	150		130	150			355		
Base Capacity (vph)	880	1858	899	295	759	763	225	1895		225	1140	758
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	0.82	0.01	0.16	0.41	0.17	0.35	0.57	0.72		0.24	0.79	0.48

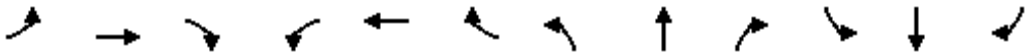
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 84.2			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 29.1		Intersection LOS: C	
Intersection Capacity Utilization 65.4%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 2: Hayden Road & Mayo Blvd



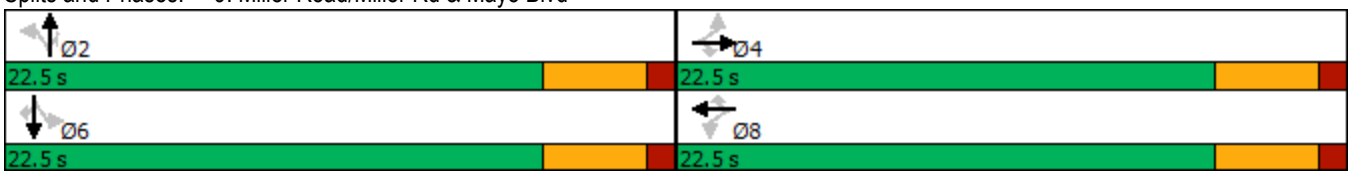
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	652	15	6	739	77	12	521	8	94	582	132
Future Volume (vph)	73	652	15	6	739	77	12	521	8	94	582	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		250	250		250	250		250	250		250
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.294			0.348			0.382			0.431		
Satd. Flow (perm)	548	3539	1583	648	3539	1583	712	3539	1583	803	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			84			36			75
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		2264			949			2008			642	
Travel Time (s)		51.5			21.6			34.2			10.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	709	16	7	803	84	13	566	9	102	633	143
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	709	16	7	803	84	13	566	9	102	633	143
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes						Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6



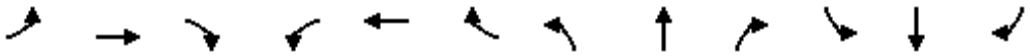
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	15.0	15.0	15.0	15.0	15.0	15.0	13.3	13.3	13.3	13.3	13.3	13.3
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.35	0.35	0.35	0.35	0.35	0.35
v/c Ratio	0.36	0.50	0.02	0.03	0.57	0.12	0.05	0.45	0.02	0.36	0.51	0.24
Control Delay	14.8	10.5	1.9	8.3	11.2	3.2	9.1	10.8	0.8	13.7	11.3	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	10.5	1.9	8.3	11.2	3.2	9.1	10.8	0.8	13.7	11.3	6.1
LOS	B	B	A	A	B	A	A	B	A	B	B	A
Approach Delay		10.7			10.4			10.6			10.8	
Approach LOS		B			B			B			B	
Queue Length 50th (ft)	11	54	0	1	64	0	2	48	0	16	56	10
Queue Length 95th (ft)	42	105	5	6	122	18	9	82	2	46	93	36
Internal Link Dist (ft)		2184			869			1928			562	
Turn Bay Length (ft)	250		250	250		250	250		250	250		250
Base Capacity (vph)	272	1761	806	322	1761	830	354	1761	806	399	1761	825
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.40	0.02	0.02	0.46	0.10	0.04	0.32	0.01	0.26	0.36	0.17

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 37.7			
Natural Cycle: 45			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.57			
Intersection Signal Delay: 10.6		Intersection LOS: B	
Intersection Capacity Utilization 59.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 9: Miller Road/Miller Rd & Mayo Blvd



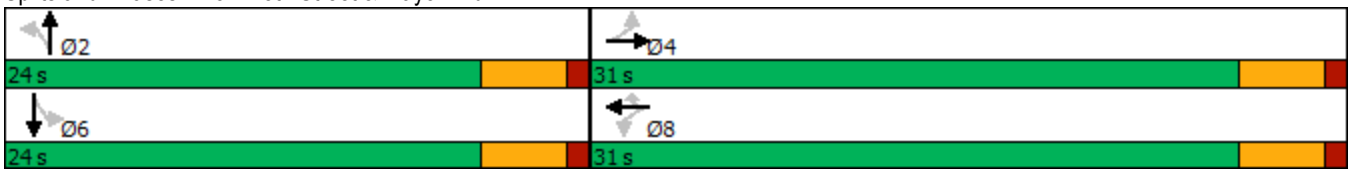
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	518	93	194	676	48	88	4	221	246	12	271
Future Volume (vph)	64	518	93	194	676	48	88	4	221	246	12	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	100		0	100		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.977				0.850		0.852			0.856	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3458	0	1770	3539	1583	1770	1587	0	1770	1595	0
Flt Permitted	0.331			0.370			0.516			0.603		
Satd. Flow (perm)	617	3458	0	689	3539	1583	961	1587	0	1123	1595	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		51				52		237			146	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		337			945			1455			417	
Travel Time (s)		7.7			21.5			33.1			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	563	101	211	735	52	96	4	240	267	13	295
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	664	0	211	735	52	96	244	0	267	308	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	31.0	31.0		31.0	31.0	31.0	24.0	24.0		24.0	24.0	
Total Split (%)	56.4%	56.4%		56.4%	56.4%	56.4%	43.6%	43.6%		43.6%	43.6%	
Maximum Green (s)	26.5	26.5		26.5	26.5	26.5	19.5	19.5		19.5	19.5	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	
Act Effct Green (s)	20.4	20.4		20.4	20.4	20.4	15.8	15.8		15.8	15.8	
Actuated g/C Ratio	0.44	0.44		0.44	0.44	0.44	0.34	0.34		0.34	0.34	
v/c Ratio	0.26	0.42		0.69	0.47	0.07	0.29	0.35		0.69	0.48	
Control Delay	11.3	9.0		25.3	10.1	3.1	15.4	4.0		26.0	9.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	11.3	9.0		25.3	10.1	3.1	15.4	4.0		26.0	9.9	
LOS	B	A		C	B	A	B	A		C	A	
Approach Delay		9.2			13.0			7.2			17.4	
Approach LOS		A			B			A			B	
Queue Length 50th (ft)	12	61		48	76	0	21	1		69	36	
Queue Length 95th (ft)	35	93		#140	112	13	53	39		#168	92	
Internal Link Dist (ft)		257			865			1375			337	
Turn Bay Length (ft)	100			100			100			100		
Base Capacity (vph)	384	2172		428	2203	1005	440	855		514	809	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.18	0.31		0.49	0.33	0.05	0.22	0.29		0.52	0.38	

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 46			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 12.2		Intersection LOS: B	
Intersection Capacity Utilization 70.5%		ICU Level of Service C	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 37: 78th Street & Mayo Blvd



Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	2156	1220	102
Future Vol, veh/h	0	0	0	2156	1220	102
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	2343	1326	111

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	663	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	346	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	346	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	0	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	88	16	636	39	8	720
Future Vol, veh/h	88	16	636	39	8	720
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	96	17	691	42	9	783

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1122	367	0	0	733	0
Stage 1	712	-	-	-	-	-
Stage 2	410	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	200	630	-	-	868	-
Stage 1	447	-	-	-	-	-
Stage 2	638	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	198	630	-	-	868	-
Mov Cap-2 Maneuver	325	-	-	-	-	-
Stage 1	447	-	-	-	-	-
Stage 2	632	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.1	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	325	630	868	-
HCM Lane V/C Ratio	-	-	0.294	0.028	0.01	-
HCM Control Delay (s)	-	-	20.6	10.9	9.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.2	0.1	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	583	946	29	48	60
Future Vol, veh/h	10	583	946	29	48	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	634	1028	32	52	65

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1060	0	-	0	1367	514
Stage 1	-	-	-	-	1028	-
Stage 2	-	-	-	-	339	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	653	-	-	-	138	505
Stage 1	-	-	-	-	306	-
Stage 2	-	-	-	-	693	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	653	-	-	-	136	505
Mov Cap-2 Maneuver	-	-	-	-	240	-
Stage 1	-	-	-	-	301	-
Stage 2	-	-	-	-	693	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	18
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	653	-	-	-	240	505
HCM Lane V/C Ratio	0.017	-	-	-	0.217	0.129
HCM Control Delay (s)	10.6	-	-	-	24.1	13.2
HCM Lane LOS	B	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8	0.4

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	631	975	2	15	6
Future Vol, veh/h	10	631	975	2	15	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	686	1060	2	16	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1062	0	-	0	1425	530
Stage 1	-	-	-	-	1060	-
Stage 2	-	-	-	-	365	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	652	-	-	-	126	493
Stage 1	-	-	-	-	294	-
Stage 2	-	-	-	-	673	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	652	-	-	-	124	493
Mov Cap-2 Maneuver	-	-	-	-	229	-
Stage 1	-	-	-	-	289	-
Stage 2	-	-	-	-	673	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	19.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	652	-	-	-	270
HCM Lane V/C Ratio	0.017	-	-	-	0.085
HCM Control Delay (s)	10.6	-	-	-	19.6
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	86	954	774	95	121	220
Future Vol, veh/h	86	954	774	95	121	220
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	93	1037	841	103	132	239

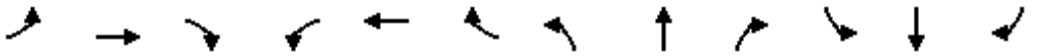
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	944	0	-	0	1546	421
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	705	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	722	-	-	-	~ 105	581
Stage 1	-	-	-	-	383	-
Stage 2	-	-	-	-	451	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	722	-	-	-	~ 91	581
Mov Cap-2 Maneuver	-	-	-	-	215	-
Stage 1	-	-	-	-	334	-
Stage 2	-	-	-	-	451	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	26
HCM LOS			D

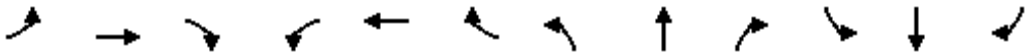
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	722	-	-	-	215	581
HCM Lane V/C Ratio	0.129	-	-	-	0.612	0.412
HCM Control Delay (s)	10.7	-	-	-	45	15.5
HCM Lane LOS	B	-	-	-	E	C
HCM 95th %tile Q(veh)	0.4	-	-	-	3.5	2

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

Total Traffic 2040 w/o Axon Reports



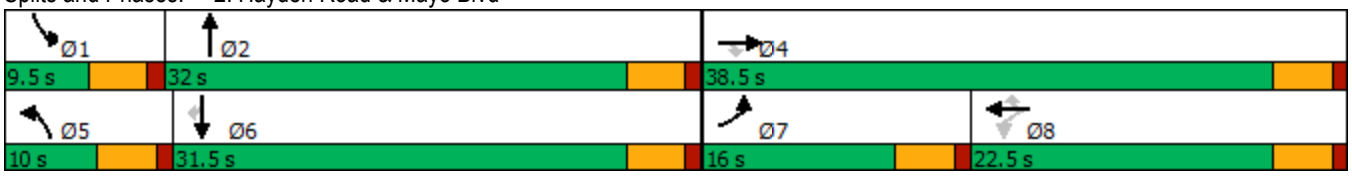
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	371	0	65	0	0	0	170	531	0	0	933	447
Future Volume (vph)	371	0	65	0	0	0	170	531	0	0	933	447
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		170	150		130	150		0	355		0
Storage Lanes	2		1	1		2	2		0	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	0.88	0.97	0.91	0.91	0.97	0.95	1.00
Frt			0.850									0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3433	3539	1583	1863	3539	3278	3433	5085	0	3614	3539	1583
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	3433	3539	1583	1863	3539	3278	3433	5085	0	3614	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			186									486
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		700			1025			944			517	
Travel Time (s)		15.9			23.3			16.1			8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	403	0	71	0	0	0	185	577	0	0	1014	486
Shared Lane Traffic (%)												
Lane Group Flow (vph)	403	0	71	0	0	0	185	577	0	0	1014	486
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot		Perm	Perm		Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases			4	8		8						6



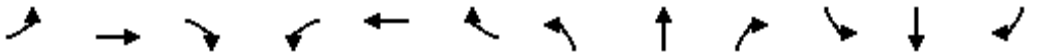
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5
Total Split (s)	16.0	38.5	38.5	22.5	22.5	22.5	10.0	32.0		9.5	31.5	31.5
Total Split (%)	20.0%	48.1%	48.1%	28.1%	28.1%	28.1%	12.5%	40.0%		11.9%	39.4%	39.4%
Maximum Green (s)	11.5	34.0	34.0	18.0	18.0	18.0	5.5	27.5		5.0	27.0	27.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max		None	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effct Green (s)	11.0		11.0				5.5	37.0			27.0	27.0
Actuated g/C Ratio	0.19		0.19				0.10	0.65			0.47	0.47
v/c Ratio	0.61		0.16				0.56	0.17			0.61	0.48
Control Delay	25.4		0.7				31.8	4.2			13.1	2.9
Queue Delay	0.0		0.0				0.0	0.0			0.0	0.0
Total Delay	25.4		0.7				31.8	4.2			13.1	2.9
LOS	C		A				C	A			B	A
Approach Delay		21.7						10.9			9.8	
Approach LOS		C						B			A	
Queue Length 50th (ft)	65		0				32	24			127	0
Queue Length 95th (ft)	103		0				59	35			180	41
Internal Link Dist (ft)		620			945			864			437	
Turn Bay Length (ft)	400		170				150					
Base Capacity (vph)	692		1019				331	3299			1675	1005
Starvation Cap Reductn	0		0				0	0			0	0
Spillback Cap Reductn	0		0				0	0			0	0
Storage Cap Reductn	0		0				0	0			0	0
Reduced v/c Ratio	0.58		0.07				0.56	0.17			0.61	0.48

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 57			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 12.2		Intersection LOS: B	
Intersection Capacity Utilization 52.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Hayden Road & Mayo Blvd



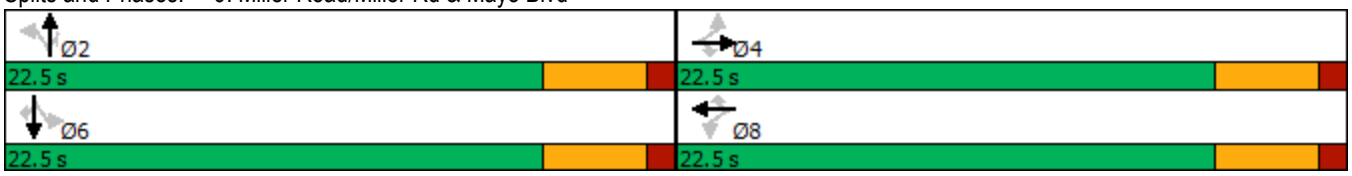
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	682	5	4	263	97	5	543	7	68	530	52
Future Volume (vph)	138	682	5	4	263	97	5	543	7	68	530	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		250	250		250	250		250	250		250
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.576			0.334			0.428			0.418		
Satd. Flow (perm)	1073	3539	1583	622	3539	1583	797	3539	1583	779	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			105			36			57
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		2264			949			2008			642	
Travel Time (s)		51.5			21.6			34.2			10.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	150	741	5	4	286	105	5	590	8	74	576	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	150	741	5	4	286	105	5	590	8	74	576	57
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes						Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6

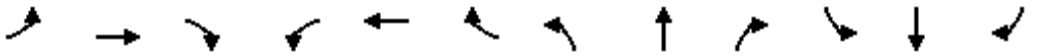


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	14.2	14.2	14.2	14.2	14.2	14.2	12.3	12.3	12.3	12.3	12.3	12.3
Actuated g/C Ratio	0.40	0.40	0.40	0.40	0.40	0.40	0.34	0.34	0.34	0.34	0.34	0.34
v/c Ratio	0.35	0.53	0.01	0.02	0.20	0.15	0.02	0.49	0.01	0.28	0.48	0.10
Control Delay	11.3	10.3	0.0	8.0	8.0	3.1	8.6	11.2	0.6	12.4	11.1	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.3	10.3	0.0	8.0	8.0	3.1	8.6	11.2	0.6	12.4	11.1	3.7
LOS	B	B	A	A	A	A	A	B	A	B	B	A
Approach Delay		10.4			6.7			11.0			10.6	
Approach LOS		B			A			B			B	
Queue Length 50th (ft)	19	52	0	0	17	0	1	48	0	11	47	0
Queue Length 95th (ft)	60	111	0	5	43	20	5	86	1	34	84	15
Internal Link Dist (ft)		2184			869			1928			562	
Turn Bay Length (ft)	250		250	250		250	250		250	250		250
Base Capacity (vph)	564	1861	849	327	1861	882	418	1861	849	409	1861	859
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.40	0.01	0.01	0.15	0.12	0.01	0.32	0.01	0.18	0.31	0.07

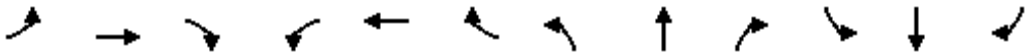
Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 35.9			
Natural Cycle: 45			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 10.0		Intersection LOS: B	
Intersection Capacity Utilization 57.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 9: Miller Road/Miller Rd & Mayo Blvd





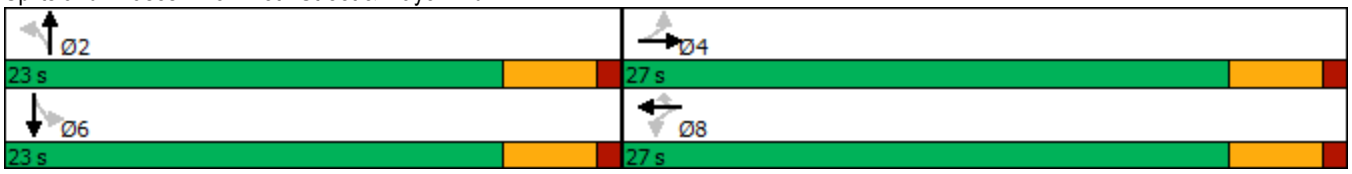
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	478	37	91	408	123	79	12	193	75	4	82
Future Volume (vph)	176	478	37	91	408	123	79	12	193	75	4	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	100		0	100		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.989				0.850		0.859			0.856	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3500	0	1770	3539	1583	1770	1600	0	1770	1595	0
Flt Permitted	0.495			0.442			0.697			0.619		
Satd. Flow (perm)	922	3500	0	823	3539	1583	1298	1600	0	1153	1595	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21				134		210			89	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		337			945			1455			417	
Travel Time (s)		7.7			21.5			33.1			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	191	520	40	99	443	134	86	13	210	82	4	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	191	560	0	99	443	134	86	223	0	82	93	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	27.0	27.0		27.0	27.0	27.0	23.0	23.0		23.0	23.0	
Total Split (%)	54.0%	54.0%		54.0%	54.0%	54.0%	46.0%	46.0%		46.0%	46.0%	
Maximum Green (s)	22.5	22.5		22.5	22.5	22.5	18.5	18.5		18.5	18.5	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	
Act Effct Green (s)	13.2	13.2		13.2	13.2	13.2	8.1	8.1		8.1	8.1	
Actuated g/C Ratio	0.43	0.43		0.43	0.43	0.43	0.26	0.26		0.26	0.26	
v/c Ratio	0.48	0.37		0.28	0.29	0.18	0.25	0.39		0.27	0.19	
Control Delay	11.1	6.4		8.1	6.2	2.1	12.9	5.1		13.5	5.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	11.1	6.4		8.1	6.2	2.1	12.9	5.1		13.5	5.0	
LOS	B	A		A	A	A	B	A		B	A	
Approach Delay		7.6			5.6			7.3			9.0	
Approach LOS		A			A			A			A	
Queue Length 50th (ft)	18	24		8	19	0	10	1		10	1	
Queue Length 95th (ft)	62	57		32	46	17	42	39		42	24	
Internal Link Dist (ft)		257			865			1375			337	
Turn Bay Length (ft)	100			100			100			100		
Base Capacity (vph)	706	2685		630	2710	1243	828	1097		735	1049	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.27	0.21		0.16	0.16	0.11	0.10	0.20		0.11	0.09	

Intersection Summary			
Area Type:	Other		
Cycle Length: 50			
Actuated Cycle Length: 30.9			
Natural Cycle: 45			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 7.0		Intersection LOS: A	
Intersection Capacity Utilization 52.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 37: 78th Street & Mayo Blvd



Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	906	1526	256
Future Vol, veh/h	0	0	0	906	1526	256
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	985	1659	278

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	830	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	269	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	269	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	0	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	39	7	689	91	18	611
Future Vol, veh/h	39	7	689	91	18	611
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	8	749	99	20	664

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1171	424	0	0	848	0
Stage 1	799	-	-	-	-	-
Stage 2	372	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	186	579	-	-	785	-
Stage 1	403	-	-	-	-	-
Stage 2	667	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	181	579	-	-	785	-
Mov Cap-2 Maneuver	303	-	-	-	-	-
Stage 1	403	-	-	-	-	-
Stage 2	650	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	303	579	785	-
HCM Lane V/C Ratio	-	-	0.14	0.013	0.025	-
HCM Control Delay (s)	-	-	18.8	11.3	9.7	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0	0.1	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	23	756	466	68	21	26
Future Vol, veh/h	23	756	466	68	21	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	822	507	74	23	28

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	581	0	-	0	968	254
Stage 1	-	-	-	-	507	-
Stage 2	-	-	-	-	461	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	989	-	-	-	251	745
Stage 1	-	-	-	-	570	-
Stage 2	-	-	-	-	601	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	989	-	-	-	245	745
Mov Cap-2 Maneuver	-	-	-	-	375	-
Stage 1	-	-	-	-	556	-
Stage 2	-	-	-	-	601	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	989	-	-	-	375	745
HCM Lane V/C Ratio	0.025	-	-	-	0.061	0.038
HCM Control Delay (s)	8.7	-	-	-	15.2	10
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2	0.1

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	777	534	4	18	9
Future Vol, veh/h	13	777	534	4	18	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	845	580	4	20	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	584	0	-	0	1031	290
Stage 1	-	-	-	-	580	-
Stage 2	-	-	-	-	451	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	987	-	-	-	229	707
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	609	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	987	-	-	-	226	707
Mov Cap-2 Maneuver	-	-	-	-	357	-
Stage 1	-	-	-	-	516	-
Stage 2	-	-	-	-	609	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	987	-	-	-	428
HCM Lane V/C Ratio	0.014	-	-	-	0.069
HCM Control Delay (s)	8.7	-	-	-	14
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	3.4

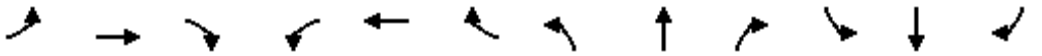
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	211	664	590	249	78	108
Future Vol, veh/h	211	664	590	249	78	108
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	229	722	641	271	85	117

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	912	0	-	0	1460	321
Stage 1	-	-	-	-	641	-
Stage 2	-	-	-	-	819	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	743	-	-	-	120	675
Stage 1	-	-	-	-	487	-
Stage 2	-	-	-	-	394	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	743	-	-	-	~ 83	675
Mov Cap-2 Maneuver	-	-	-	-	203	-
Stage 1	-	-	-	-	337	-
Stage 2	-	-	-	-	394	-

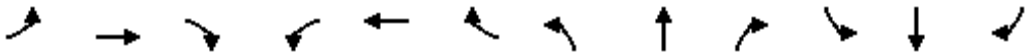
Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	21.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	743	-	-	-	203	675
HCM Lane V/C Ratio	0.309	-	-	-	0.418	0.174
HCM Control Delay (s)	12	-	-	-	34.9	11.5
HCM Lane LOS	B	-	-	-	D	B
HCM 95th %tile Q(veh)	1.3	-	-	-	1.9	0.6

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



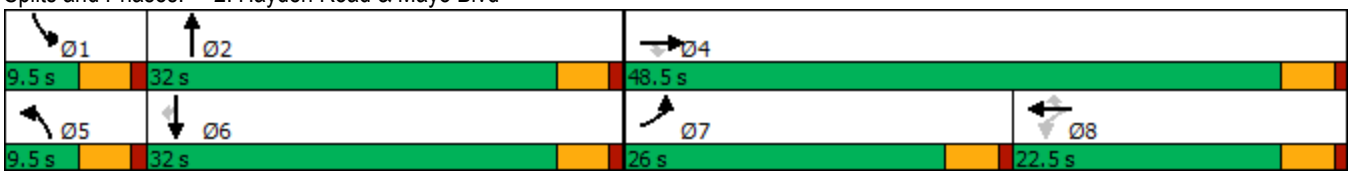
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	664	0	132	0	0	0	119	1237	0	0	833	337
Future Volume (vph)	664	0	132	0	0	0	119	1237	0	0	833	337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		170	150		130	150		0	355		0
Storage Lanes	2		1	1		2	2		0	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	0.88	0.97	0.91	0.91	0.97	0.95	1.00
Frt			0.850									0.850
Flt Protected	0.950						0.950					
Satd. Flow (prot)	3433	3539	1583	1863	3539	3278	3433	5085	0	3614	3539	1583
Flt Permitted	0.950						0.950					
Satd. Flow (perm)	3433	3539	1583	1863	3539	3278	3433	5085	0	3614	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			184									366
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		700			1025			944			517	
Travel Time (s)		15.9			23.3			16.1			8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	722	0	143	0	0	0	129	1345	0	0	905	366
Shared Lane Traffic (%)												
Lane Group Flow (vph)	722	0	143	0	0	0	129	1345	0	0	905	366
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot		Perm	Perm		Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases			4	8		8						6



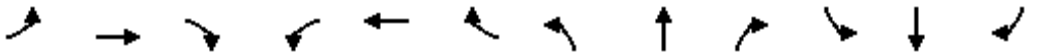
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	8	8	8	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	22.5	22.5	9.5	22.5		9.5	22.5	22.5
Total Split (s)	26.0	48.5	48.5	22.5	22.5	22.5	9.5	32.0		9.5	32.0	32.0
Total Split (%)	28.9%	53.9%	53.9%	25.0%	25.0%	25.0%	10.6%	35.6%		10.6%	35.6%	35.6%
Maximum Green (s)	21.5	44.0	44.0	18.0	18.0	18.0	5.0	27.5		5.0	27.5	27.5
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Max		None	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0		7.0			7.0	7.0
Flash Dont Walk (s)		11.0	11.0	11.0	11.0	11.0		11.0			11.0	11.0
Pedestrian Calls (#/hr)		0	0	0	0	0		0			0	0
Act Effct Green (s)	19.1		19.1				5.0	37.0			27.5	27.5
Actuated g/C Ratio	0.29		0.29				0.08	0.57			0.42	0.42
v/c Ratio	0.72		0.24				0.49	0.47			0.61	0.42
Control Delay	25.1		2.7				36.4	9.2			17.2	3.3
Queue Delay	0.0		0.0				0.0	0.0			0.0	0.0
Total Delay	25.1		2.7				36.4	9.2			17.2	3.3
LOS	C		A				D	A			B	A
Approach Delay		21.4						11.6			13.2	
Approach LOS		C						B			B	
Queue Length 50th (ft)	130		0				26	109			147	0
Queue Length 95th (ft)	185		22				52	146			208	45
Internal Link Dist (ft)		620			945			864			437	
Turn Bay Length (ft)	400		170				150					
Base Capacity (vph)	1133		1129				263	2889			1494	879
Starvation Cap Reductn	0		0				0	0			0	0
Spillback Cap Reductn	0		0				0	0			0	0
Storage Cap Reductn	0		0				0	0			0	0
Reduced v/c Ratio	0.64		0.13				0.49	0.47			0.61	0.42

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 65.2			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 14.5		Intersection LOS: B	
Intersection Capacity Utilization 58.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Hayden Road & Mayo Blvd



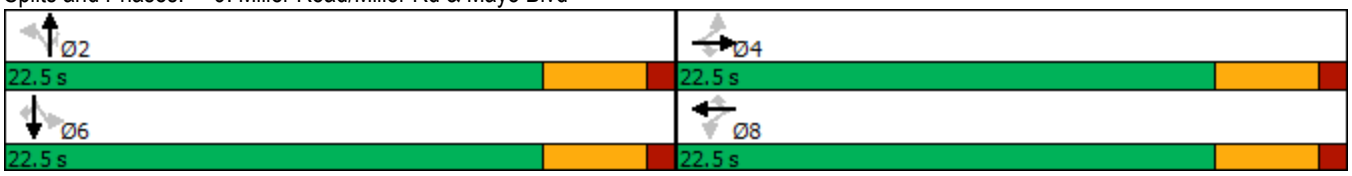
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	628	15	6	621	77	12	521	8	94	582	132
Future Volume (vph)	73	628	15	6	621	77	12	521	8	94	582	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		250	250		250	250		250	250		250
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.368			0.363			0.392			0.439		
Satd. Flow (perm)	685	3539	1583	676	3539	1583	730	3539	1583	818	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			36			84			36			117
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		2264			949			2008			642	
Travel Time (s)		51.5			21.6			34.2			10.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	79	683	16	7	675	84	13	566	9	102	633	143
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	683	16	7	675	84	13	566	9	102	633	143
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes						Yes	
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6



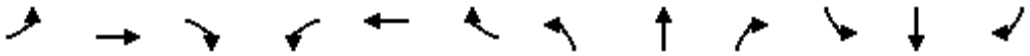
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Maximum Green (s)	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	13.6	13.6	13.6	13.6	13.6	13.6	13.1	13.1	13.1	13.1	13.1	13.1
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.38	0.38	0.36	0.36	0.36	0.36	0.36	0.36
v/c Ratio	0.31	0.51	0.03	0.03	0.51	0.13	0.05	0.44	0.02	0.34	0.49	0.22
Control Delay	12.6	10.7	2.0	8.5	10.6	3.3	8.8	10.3	0.8	13.0	10.8	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.6	10.7	2.0	8.5	10.6	3.3	8.8	10.3	0.8	13.0	10.8	4.2
LOS	B	B	A	A	B	A	A	B	A	B	B	A
Approach Delay		10.7			9.8			10.1			10.0	
Approach LOS		B			A			B			A	
Queue Length 50th (ft)	10	50	0	1	49	0	2	43	0	14	49	3
Queue Length 95th (ft)	38	101	5	6	100	18	9	82	2	46	93	28
Internal Link Dist (ft)		2184			869			1928			562	
Turn Bay Length (ft)	250		250	250		250	250		250	250		250
Base Capacity (vph)	359	1854	846	354	1854	869	382	1854	846	428	1854	885
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.37	0.02	0.02	0.36	0.10	0.03	0.31	0.01	0.24	0.34	0.16

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 36.2			
Natural Cycle: 45			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 10.1		Intersection LOS: B	
Intersection Capacity Utilization 56.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 9: Miller Road/Miller Rd & Mayo Blvd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	494	93	194	558	48	88	4	221	246	12	271
Future Volume (vph)	64	494	93	194	558	48	88	4	221	246	12	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	100		0	100		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.976				0.850		0.852			0.856	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3454	0	1770	3539	1583	1770	1587	0	1770	1595	0
Flt Permitted	0.404			0.385			0.526			0.607		
Satd. Flow (perm)	753	3454	0	717	3539	1583	980	1587	0	1131	1595	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		54				52		240			210	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		337			945			1455			417	
Travel Time (s)		7.7			21.5			33.1			9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	537	101	211	607	52	96	4	240	267	13	295
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	638	0	211	607	52	96	244	0	267	308	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane		Yes			Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		

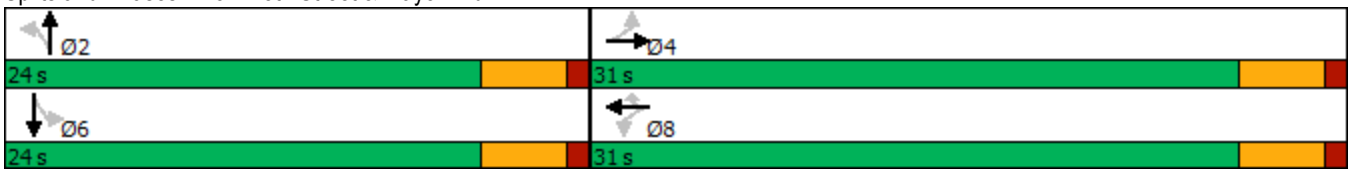


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	31.0	31.0		31.0	31.0	31.0	24.0	24.0		24.0	24.0	
Total Split (%)	56.4%	56.4%		56.4%	56.4%	56.4%	43.6%	43.6%		43.6%	43.6%	
Maximum Green (s)	26.5	26.5		26.5	26.5	26.5	19.5	19.5		19.5	19.5	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0		0	0	
Act Effct Green (s)	19.0	19.0		19.0	19.0	19.0	15.6	15.6		15.6	15.6	
Actuated g/C Ratio	0.43	0.43		0.43	0.43	0.43	0.35	0.35		0.35	0.35	
v/c Ratio	0.22	0.42		0.69	0.40	0.07	0.28	0.34		0.67	0.44	
Control Delay	10.3	9.0		24.6	9.6	3.1	14.8	3.9		24.5	7.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	10.3	9.0		24.6	9.6	3.1	14.8	3.9		24.5	7.0	
LOS	B	A		C	A	A	B	A		C	A	
Approach Delay		9.1			12.8			7.0			15.1	
Approach LOS		A			B			A			B	
Queue Length 50th (ft)	12	55		45	58	0	19	1		62	18	
Queue Length 95th (ft)	33	89		#136	91	13	53	38		#167	70	
Internal Link Dist (ft)		257			865			1375			337	
Turn Bay Length (ft)	100			100			100			100		
Base Capacity (vph)	483	2238		460	2274	1035	470	886		542	874	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.14	0.29		0.46	0.27	0.05	0.20	0.28		0.49	0.35	

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 44.4			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 11.5		Intersection LOS: B	
Intersection Capacity Utilization 69.9%		ICU Level of Service C	
Analysis Period (min) 15			

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

Splits and Phases: 37: 78th Street & Mayo Blvd



Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	1909	1220	102
Future Vol, veh/h	0	0	0	1909	1220	102
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	2075	1326	111

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	663	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	346	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	346	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	0	-	-
HCM Lane LOS	-	A	-	-
HCM 95th %tile Q(veh)	-	-	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	88	16	636	39	8	720
Future Vol, veh/h	88	16	636	39	8	720
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	0	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	96	17	691	42	9	783

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1122	367	0	0	733	0
Stage 1	712	-	-	-	-	-
Stage 2	410	-	-	-	-	-
Critical Hdwy	6.84	6.94	-	-	4.14	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	200	630	-	-	868	-
Stage 1	447	-	-	-	-	-
Stage 2	638	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	198	630	-	-	868	-
Mov Cap-2 Maneuver	325	-	-	-	-	-
Stage 1	447	-	-	-	-	-
Stage 2	632	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.1	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	325	630	868	-
HCM Lane V/C Ratio	-	-	0.294	0.028	0.01	-
HCM Control Delay (s)	-	-	20.6	10.9	9.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	1.2	0.1	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	559	828	29	48	60
Future Vol, veh/h	10	559	828	29	48	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	608	900	32	52	65

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	932	0	-	0	1226	450
Stage 1	-	-	-	-	900	-
Stage 2	-	-	-	-	326	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	730	-	-	-	171	556
Stage 1	-	-	-	-	357	-
Stage 2	-	-	-	-	704	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	730	-	-	-	168	556
Mov Cap-2 Maneuver	-	-	-	-	278	-
Stage 1	-	-	-	-	352	-
Stage 2	-	-	-	-	704	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	16.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	730	-	-	-	278	556
HCM Lane V/C Ratio	0.015	-	-	-	0.188	0.117
HCM Control Delay (s)	10	-	-	-	20.9	12.3
HCM Lane LOS	B	-	-	-	C	B
HCM 95th %tile Q(veh)	0	-	-	-	0.7	0.4

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	607	857	2	15	6
Future Vol, veh/h	10	607	857	2	15	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	660	932	2	16	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	934	0	-	0	1284	466
Stage 1	-	-	-	-	932	-
Stage 2	-	-	-	-	352	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	729	-	-	-	157	543
Stage 1	-	-	-	-	344	-
Stage 2	-	-	-	-	683	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	729	-	-	-	155	543
Mov Cap-2 Maneuver	-	-	-	-	266	-
Stage 1	-	-	-	-	339	-
Stage 2	-	-	-	-	683	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	17.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	729	-	-	-	311
HCM Lane V/C Ratio	0.015	-	-	-	0.073
HCM Control Delay (s)	10	-	-	-	17.5
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	86	930	656	95	121	220
Future Vol, veh/h	86	930	656	95	121	220
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	100	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	93	1011	713	103	132	239

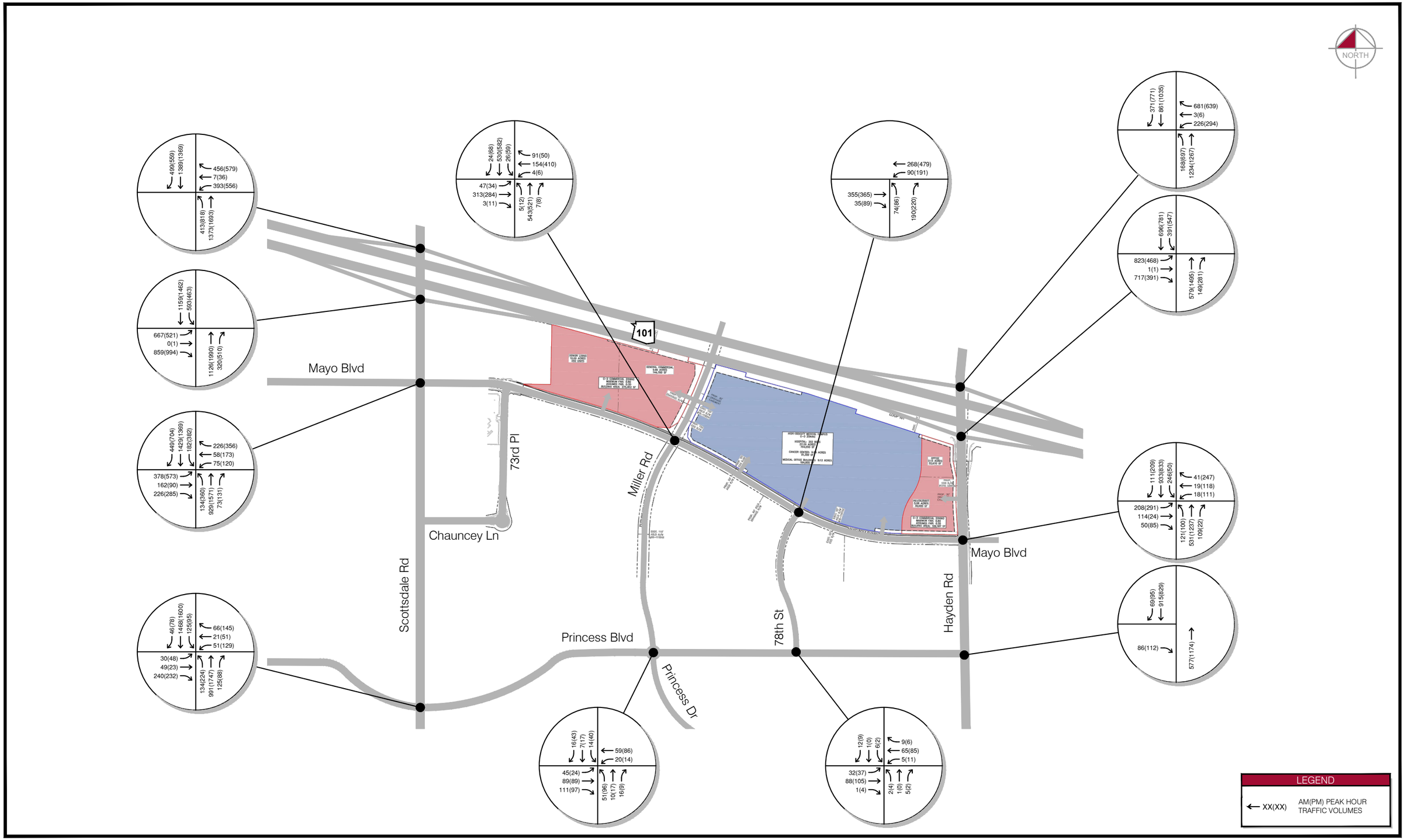
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	816	0	-	0	1405	357
Stage 1	-	-	-	-	713	-
Stage 2	-	-	-	-	692	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	807	-	-	-	~ 130	639
Stage 1	-	-	-	-	447	-
Stage 2	-	-	-	-	458	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	807	-	-	-	~ 115	639
Mov Cap-2 Maneuver	-	-	-	-	246	-
Stage 1	-	-	-	-	396	-
Stage 2	-	-	-	-	458	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	21.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	807	-	-	-	246	639
HCM Lane V/C Ratio	0.116	-	-	-	0.535	0.374
HCM Control Delay (s)	10	-	-	-	35.3	14
HCM Lane LOS	B	-	-	-	E	B
HCM 95th %tile Q(veh)	0.4	-	-	-	2.9	1.7

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

Appendix D Background Traffic Exhibit



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March 2023

Figure

2040 Total Traffic Without Banner Site Traffic

NWC Hayden Road & Mayo Boulevard | Traffic Impact & Mitigation Analysis

Appendix E Kimley Horn TIMA Report

TRAFFIC IMPACT AND MITIGATION ANALYSIS

NWC Hayden Road and Mayo Boulevard

Scottsdale, Arizona

Prepared for:

Hayden Loop 101 Investors, LLC

Kimley»Horn

TRAFFIC IMPACT AND MITIGATION ANALYSIS

NWC Hayden Road and Mayo Boulevard
Scottsdale, Arizona

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ACCEPTED WITH COMMENTS
CITY OF SCOTTSDALE
TRANSPORTATION DEPARTMENT

DATE: 6/14/2023

REVIEWER: P Murphy

37-SA-2023 v2 rec. 5/18/23

291268016
April 2023
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Contents

1.0 Executive Summary 4
1.1 Introduction 4
1.2 Report Purpose and Objectives 4
1.3 Principal Findings and Recommendations 4
2.0 Proposed Development 7
2.1 Site Location 7
2.2 Land Use and Site Plan 7
2.3 Site Accessibility 7
2.4 Site Circulation 7
3.0 Study Area 10
3.1 Study Area 10
3.2 Adjacent Land Use 10
4.0 Existing Conditions 12
4.1 Physical Characteristics 12
4.2 Traffic Volumes 13
4.3 Level of Service 14
4.4 Crash History 16
5.0 Projected Traffic 19
5.1 Site Traffic Forecasts 19
5.2 Future Traffic Forecasting 20
5.3 Total Traffic 21
6.0 Traffic and Improvement Analysis 26
6.1 Level of Service Analysis 26
6.2 Left-Turn Storage Analysis 31
6.3 Right-Turn Lanes 35
6.4 Sight Triangles 38
7.0 Conclusions and Recommendations 39

Figures

Figure 1. Vicinity Map....8
Figure 2. Site Plan....9
Figure 3. Existing Conditions....18
Figure 4. Trip Distribution....22
Figure 5. Site Traffic Assignment....23
Figure 6. 2040 Background Traffic....24
Figure 7. 2040 Total Traffic and Geometry....25

Tables

Table 1. Land Uses....7
Table 2. Existing Level of Service: Unsignalized Intersections....15
Table 3. Existing Level of Service: Signalized Intersections....15
Table 4. Crashes by Injury Severity....16
Table 5. Crashes by Crash Type....17
Table 6. Project Trip Generation....19
Table 7. 2040 Background Level of Service: Unsignalized Intersections....26
Table 8. 2040 Background Level of Service: Signalized Intersections....27
Table 9. 2040 Total Traffic Level of Service: Unsignalized Intersections....28
Table 10. 2040 Total Traffic Level of Service: Signalized Intersections....29
Table 11. 2040 Total Traffic Level of Service: Miller Road & Mayo Boulevard Roundabout....30
Table 12. Left-Turn Storage....31
Table 13. Right-Turn Storage....35

1.0 EXECUTIVE SUMMARY

1.1 INTRODUCTION

This report documents a traffic impact and mitigation analysis (TIMA) performed for the master plan associated with a proposed mixed-use development located on the northwest corner of the intersection of Hayden Road and Mayo Boulevard in Scottsdale, Arizona. The site is anticipated to include hospital, medical office, retail, senior living, office, and restaurant land uses. This report documents a 2040 build out analysis of the key street intersections in the area.

1.2 REPORT PURPOSE AND OBJECTIVES

Kimley-Horn and Associates, Inc. has been retained by Hayden Loop 101 Investors, LLC to perform the TIMA for the proposed development.

The purpose of this study is to address traffic and transportation impacts of the proposed development on surrounding streets and intersections. This traffic impact analysis was prepared based on the Category 3 TIMA criteria set forth by the City of Scottsdale. The specific objectives of this study are:

- To evaluate lane requirements on all existing roadway links and at all existing intersections within the study area;
- To determine future level of service (LOS) for all existing intersections within the study area and recommend any capacity-related improvements;
- To determine appropriate functional classification and cross-section at buildout of all study area roadways; and
- To evaluate the need for auxiliary lanes at all study area intersections.

1.3 PRINCIPAL FINDINGS AND RECOMMENDATIONS

The proposed development is expected to add 30,854 new daily trips, 1,878 new AM peak hour trips, and 2,570 new PM peak hour trips to the roadway network. The purpose of this report was to review key street intersections for a 2040 buildout scenario to determine appropriate intersection geometry. It is recommended that volumes in the area be monitored and additional analysis be considered with detailed site plans or adjacent development plans.

- The intersections of Mayo Boulevard with Miller Road and 78th Street were evaluated as standard intersections with this report. The addition of traffic signal control is anticipated to be necessary at the Miller Road & Mayo Boulevard intersection. The intersection of 78th Street & Mayo Boulevard operates acceptably as a two-way stop-controlled intersection except for the northbound and southbound left-turn movements. Traffic signal warrants should be reviewed with a more detailed site plan. Alternate intersection configurations could also be considered at these intersections. Previous documents have contemplated roundabouts in addition to a standard intersection configuration. At the City's request, the intersection of Miller Road & Mayo Boulevard was also evaluated as a roundabout and the LOS was satisfactory under that condition.

- At the Loop 101 TI, Hayden Road was constructed to accommodate a third southbound through lane. It is anticipated that a third southbound through lane will extend south of the Loop 101 to the Mayo Boulevard intersection where the third through lane is anticipated to transition to a right-turn only lane. The Axon signing and pavement marking plans include a third northbound through lane at the intersection of Hayden Road and Mayo Boulevard that is anticipated to continue north to the Loop 101 TI. Hayden Road has three travel lanes in each direction north of the Loop 101.

- Mayo Boulevard is anticipated to be constructed to a City of Scottsdale urban major collector cross-section between 73rd Place and Hayden Road with two travel lanes and bike lanes in each direction and a two-way left-turn lane.

- Miller Road is anticipated to be constructed to an urban major collector cross-section with two travel lanes and bike lanes in each direction and a two-way left-turn lane.

- The unsignalized and signalized intersections are anticipated to operate at an overall acceptable level of service in the 2040 total traffic condition except for the Hayden Road & Loop 101 TI during the PM peak hour. The overall level of service at the Hayden Road & Loop 101 TI is driven by the delay associated with the northbound left-turn movement. Considerations for improvement to the northbound left-turn movement for the 2040 total traffic condition are discussed in additional detail with the next item.

- The Hayden Road & Loop 101 northbound left-turn storage should be reconfigured and coordinated with the Axon development to extend the left-turn storage. The signing and pavement marking plans associated with the Axon development include proposed 355-foot dual southbound left-turn lanes at the intersection of Hayden Road & Mayo Boulevard. The northbound left-turn lane storage at the Hayden Road & Loop 101 traffic interchange could provide approximately 550 feet of storage to maximize the available space between intersections; however, there may be an ability to extend the storage further if the dual southbound left-turn length is reduced at the Hayden Road and Mayo Boulevard intersection into the Axon development. As an additional consideration, the inside through lane at the Hayden Rd & Loop 101 TI may be able to be utilized as a second northbound left-turn lane, and two northbound through lanes would be maintained through the TI. Traffic volumes should be monitored and coordination with surrounding development should occur.

- The westbound left-turn lane at the intersection of Scottsdale Road & Princess Boulevard may require additional storage in future traffic conditions. Volumes are recommended to be monitored at this location. Consider refining the storage length with development of the land on the northeast corner of the intersection.

- It is recommended that the northbound approach to the intersection of Hayden Road & Mayo Boulevard by re-striped to provided dual left-turn lanes. The pavement marking modifications should occur at or after the time of signalization of the intersection.

- It is recommended that the eastbound approach to the intersection of Hayden Road & Mayo Boulevard provide dual left-turn lanes with 400 feet of storage in each lane. The Crossroads East Planning Unit VII Circulation Plan indicated that there may be an ability to provide two full-access driveway locations along Mayo Boulevard between 78th Street and Hayden Road; however, a single

full-access driveway location is recommended given the eastbound left-turn storage demand at the Hayden Road & Mayo Boulevard intersection. It is recommended that the full-access driveway be located approximately at the midpoint of the approximate 1,600-foot Mayo Boulevard roadway segment between 78th Street and Hayden Road to provide full access to both sides of Mayo Boulevard. Cross access should be considered between the restaurant/office portion of the plan and medical campus portion of the current proposed plan.

- It is recommended that 250 feet of left-turn lane and right-turn lane storage be provided along all approaches to the intersection of Miller Road & Mayo Boulevard. This more conservative recommendation is provided due to the higher level of uncertainty associated with the background traffic volumes at the intersection. When the intersection is constructed, a reassignment of traffic volumes will occur to utilize the Miller Road underpass.

- The future westbound right-turn lane at the intersection of Scottsdale Road & Mayo Boulevard is anticipated to be constructed by the Optima McDowell Mountain Village development. A continuous right-turn lane should be provided to accommodate the anticipated queue demand of 575 feet, while not interfering with the planned roundabout at the intersection of 73rd Place and Mayo Boulevard.

- Access spacing, turn lane warrants, and storage recommendations at driveway locations should be reviewed with development of detailed site plans.

- It is recommended that sight triangles be provided at all intersections to give drivers exiting the site a clear view of oncoming traffic. The landscaping within sight triangles must not obstruct drivers' views of the adjacent travel lanes.

2.0 PROPOSED DEVELOPMENT

2.1 SITE LOCATION

The proposed development is located on the northwest corner of the intersection of Hayden Road and Mayo Boulevard in the City of Scottsdale, Arizona. The project location is shown in **Figure 1**.

2.2 LAND USE AND SITE PLAN

The overall development consists of hospital, medical office, retail, senior living, office, and restaurant land uses. The total site area is approximately 73.2 acres. **Table 1** illustrates the land uses of the proposed development.

Table 1. Land Uses

General Description	ITE Land Use	Size
Senior Adult Housing-Multifamily	252	250 Dwelling Units
Hospital	610	352 Beds
General Office Building	710	32,670 Square Feet
Medical-Dental Office Building	720	276,100 Square Feet
Shopping Plaza (40-150k)	821	144,780 Square Feet
High-Turnover (Sit-Down) Restaurant	932	30,000 Square Feet

The layout of the site is illustrated in **Figure 2**.

2.3 SITE ACCESSIBILITY

The site will be accessed locally via Mayo Boulevard, Miller Road, and Hayden Road. Regional access is expected to be provided by Pima Freeway (Loop 101) and by the other arterial streets in the vicinity such as Scottsdale Road.

2.4 SITE CIRCULATION

The site plan is shown in previously referenced **Figure 2**.

The site is anticipated to construct a full-access driveway on the north leg of the intersection of 78th Street and Mayo Boulevard to provide access to the site. Additional access to the development is anticipated to be provided along Mayo Boulevard, Hayden Road, and the future Miller Road alignment. Anticipated site access points included in this study are preliminary and do not necessarily reflect the ultimate access point locations. Final access locations and provisions to the site will be determined with a more detailed site plan.

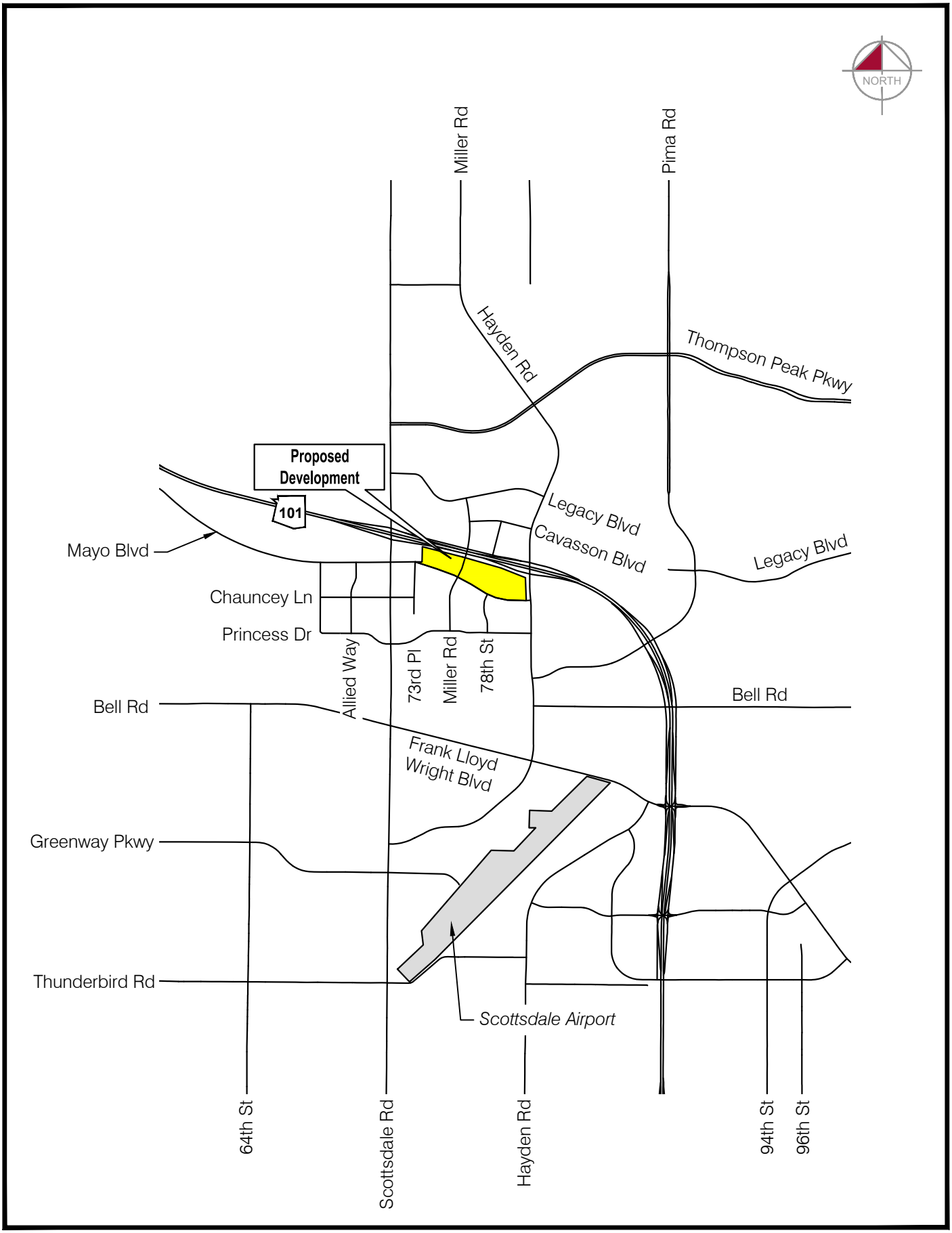

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Figure 1
Vicinity Map

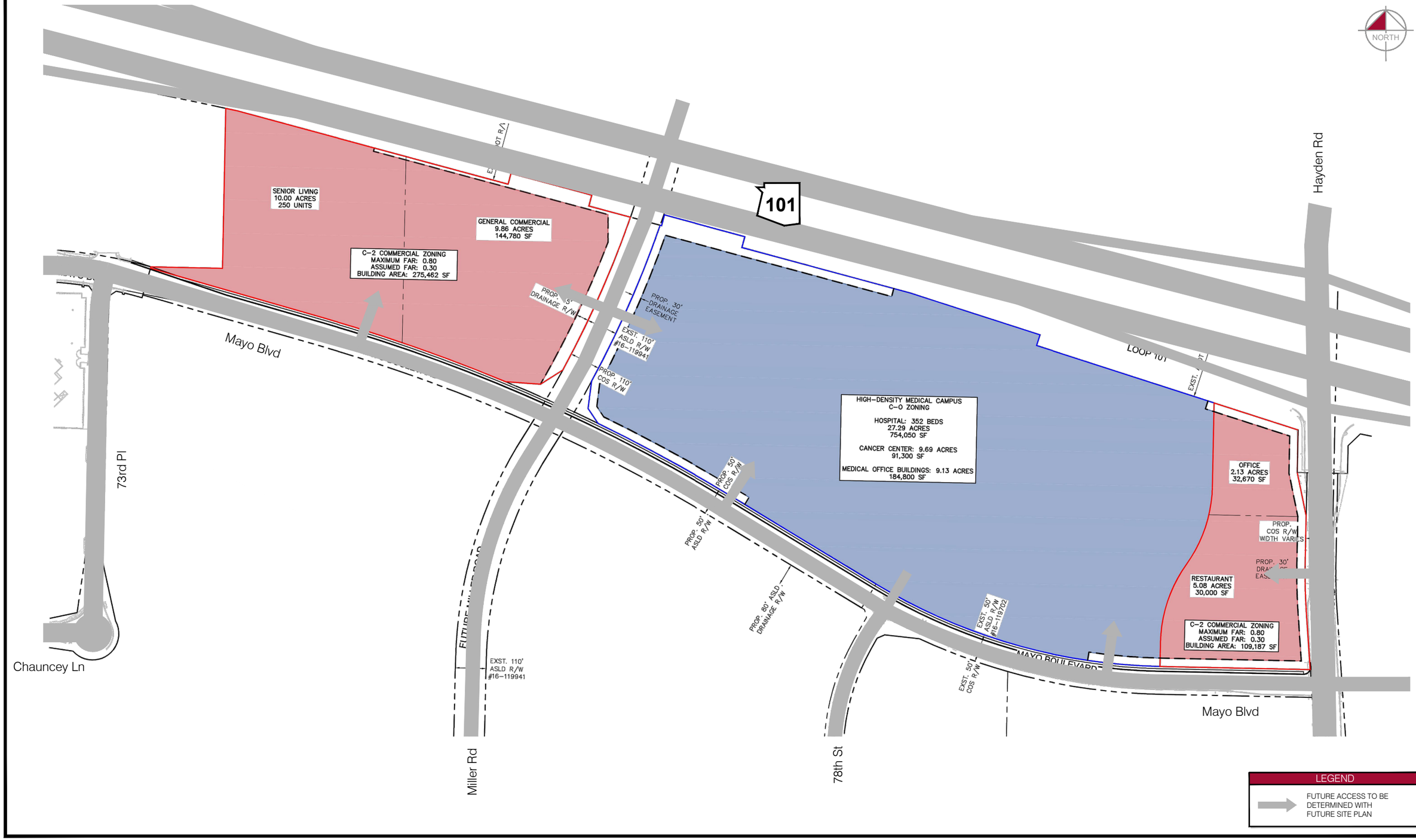

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Figure 2
Site Plan

3.0 STUDY AREA

3.1 STUDY AREA

The study area includes the following existing intersections:

- Scottsdale Road & Loop 101 WB Ramps;
- Scottsdale Road & Loop 101 EB Ramps;
- Hayden Road & Loop 101 WB Ramps;
- Hayden Road & Loop 101 EB Ramps;
- Scottsdale Road & Mayo Boulevard;
- Scottsdale Road and Princess Boulevard;
- Princess Drive & Princess Boulevard;
- 78th Street & Princess Boulevard;
- 78th Street & Mayo Boulevard;
- Hayden Road & Mayo Boulevard; and
- Hayden Road & Princess Boulevard.

Additionally, the future intersection of Miller Road and Mayo Boulevard was analyzed.

3.2 ADJACENT LAND USE

The area in the vicinity of the site primarily includes retail, residential, and undeveloped land uses. The land north, east, and south of the site is largely undeveloped, with commercial and residential land uses located further from the site. The land west of the site contains various retail land uses. Loop 101 borders the north of the site.

The following adjacent developments are anticipated to be built prior to the proposed site:

The **Cavasson** development is currently under construction on the northwest corner of Hayden Road and Loop 101. An addendum to the approved Cavasson Master TIMA was approved on October 23, 2020. The development contains shopping center, office building, hotel, restaurant, and multifamily residential land uses and is planned to be constructed in three phases, with Phase 1, Phase 2, and Phase 3 constructing the southeast, southwest, and northern portions of the site, respectively. Phase 1 is currently under construction. All phases of the development are anticipated to be completed by the year 2030. The Cavasson site traffic assignment volumes were included in the 2040 background traffic volumes in this study. Relevant excerpts from the Cavasson TIMA addendum are included in the **Appendix**.

The **HonorHealth Medical Campus** development is proposed on the northeast corner of Hayden Road and Loop 101. The site was previously proposed to be a Banner Health Medical Campus. A TIMA, titled *Banner Scottsdale Transportation Impact & Mitigation Study* (Banner Health TIMA), was accepted for the former development plan on September 20, 2022. The Banner Health site consisted of hospital and medical-dental office land uses. Due to the similar land uses between the former Banner Health campus and the new HonorHealth campus, the full buildout site traffic assignment volumes from the Banner Health TIMA were included in the 2040 background traffic volumes in this study. Relevant excerpts from the Banner Health TIMA are included in the **Appendix**.

The **Axon Campus** development is proposed on the northeast corner of Hayden Road and Mayo Boulevard. An enhanced traffic impact statement for the Axon Campus development was submitted on September 10, 2020. The development proposes warehousing and general office land uses and is anticipated to be completed by 2035. The Axon Campus development is anticipated to construct an additional northbound travel lane on Hayden Road from Mayo Boulevard to the Loop 101 WB Ramps as well as construct Mayo Boulevard with two travel lanes in each direction east of Hayden Road as part of the development's offsite improvements. The Axon Campus site traffic assignment volumes were included in the 2040 background traffic volumes in this study. The signing and pavement marking plans associated with the development offsite improvements include dual southbound left-turn lanes and dual westbound right-turn lanes at the intersection of Hayden Road and Mayo Boulevard. A third northbound through lane is also reflected in the plans along with the addition of traffic signal control at the intersection. Relevant excerpts from the Axon Campus enhanced traffic statement and signing and pavement marking plans are included in the **Appendix**.

The **Optima McDowell Mountain Village** development is proposed on the northeast corner of Scottsdale Road and Mayo Boulevard. A TIMA for the development was submitted in August 2022 and has since been accepted by the City of Scottsdale. The development proposes mid-rise multifamily residential housing and retail land uses and is anticipated to be completed by 2025. The Optima McDowell Mountain Village development is anticipated to widen Mayo Boulevard to three lanes per direction along its site frontage as part of its offsite improvements. The Optima McDowell Mountain Village site traffic assignment volumes were included in the 2040 background traffic volumes in this study. Relevant excerpts from the Optima McDowell Mountain Village TIMA are included in the **Appendix**.

The **Crossroads East Planning Unit VII** is located on the southwest corner of the intersection of Hayden Road and Mayo Boulevard and includes the area bound by Hayden Road, Princess Boulevard, and the future Mayo Boulevard and Miller Road alignments. A traffic master plan was completed by Kimley-Horn for the planning unit in May 2018. Planning Unit VII is anticipated to include residential, office, and retail land uses. A multifamily residential development was under construction or had been constructed at the time of this analysis. Planning Unit VII traffic assignment volumes were projected for the intersection of 78th Street and Mayo Boulevard and included in the 2040 background traffic volumes. According to the Planning Unit VII circulation plan, the geometry concept shows the intersections of Mayo Boulevard with Miller Road and 78th Street with roundabout or standard intersection configuration options. For the purposes of this study, the intersections were evaluated as standard intersections. The alternate intersection configuration could be considered with development of detailed site plans. Relevant excerpts from the Crossroads East Planning Unit VII traffic master plan are included in the **Appendix**.

4.0 EXISTING CONDITIONS

4.1 PHYSICAL CHARACTERISTICS

The existing roadway network within the study area includes the Loop 101, Scottsdale Road, Hayden Road, Princess Boulevard, Princess Drive, Mayo Boulevard, and 78th Street. The existing intersection lane use and traffic control are shown in **Figure 3**.

Loop 101 extends east-west in the vicinity of the site and borders the site to the north. Loop 101 has traffic interchanges (TIs) with Scottsdale Road and Hayden Road in the vicinity of the site.

Scottsdale Road extends north-south with three travel lanes and a bike lane in each direction and a raised median. Curb, gutter, and sidewalk are in place along both sides of Scottsdale Road. The posted speed limit is 45 miles per hour (mph) within the vicinity of the site. The City of Scottsdale classifies Scottsdale Road as a major arterial roadway in the vicinity of the site. The City of Scottsdale Functional Classification Map is included in the **Appendix**.

Hayden Road extends north-south with two travel lanes and a bike lane in each direction and a raised median adjacent to the site. Hayden Road becomes Greenway-Hayden Loop south of the site and transitions to become Miller Road north of the Loop 101. Curb, gutter, and sidewalk are generally in place along both sides of Hayden Road north of the Loop 101 TI and south of Mayo Boulevard. The posted speed limit is 45 mph north of Loop 101 and 40 mph south of Loop 101. The City of Scottsdale classifies Hayden Road as a minor arterial roadway.

At the Loop 101 TI, Hayden Road was constructed to accommodate a third southbound through lane. It is anticipated that a third southbound through lane will extend south of the Loop 101 to the Mayo Boulevard intersection, where the third through lane is anticipated to transition to a right-turn only lane. The Axon signing and pavement marking plans include a third northbound through lane at the intersection of Hayden Road and Mayo Boulevard that is anticipated to continue north to the Loop 101 TI. Hayden Road has three travel lanes in each direction north of the Loop 101.

Princess Boulevard extends east-west with two travel lanes in each direction and a raised median. Princess Boulevard becomes Princess Drive west of Scottsdale Road and terminates at Hayden Road to the east. Concrete curb, gutter, and sidewalk are in place along the south side of Princess Boulevard between Scottsdale Road and 78th Street and along both sides of Princess Boulevard west of Scottsdale Road and east of 78th Street. The posted speed limit is generally 30 mph in the vicinity of the site. The City of Scottsdale classifies Princess Boulevard as a major collector roadway.

Princess Drive is a curvilinear roadway with two travel lanes in each direction and a raised median. Princess Drive extends south from Princess Boulevard and curves east before turning into Pima Road at Loop 101. Concrete curb, gutter, and sidewalk are in place along both sides of Princess Drive. The posted speed limit is 25 mph within the vicinity of the site.

Mayo Boulevard is a discontinuous roadway that currently extends east-west with three eastbound travel lanes, two westbound travel lanes, bike lanes in each direction, and a raised median in the vicinity of the Scottsdale Road intersection. Mayo Boulevard currently extends east of Scottsdale Road to 73rd Place

and between 78th Street and Hayden Road. Concrete curb, gutter, and sidewalk are in place on both sides of Mayo Boulevard west of 73rd Place. The posted speed limit is 45 mph west of Scottsdale Road and 30 mph east of 78th Street. The City of Scottsdale classifies Mayo Boulevard as a major collector roadway east of Scottsdale Road. The City of Phoenix classifies Mayo Boulevard as an arterial roadway with an "A" cross-section west of Scottsdale Road. Mayo Boulevard is anticipated to be constructed to a City of Scottsdale urban major collector cross-section between 73rd Place and Hayden Road with two travel lanes and bike lanes in each direction and a two-way left-turn lane. Mayo Road is then anticipated to transition to a City of Phoenix "A" cross-section between 73rd Place and Scottsdale Road to match the street section on the west side of Scottsdale Road. Relevant City of Scottsdale and City of Phoenix cross-sections are included in the **Appendix**.

78th Street extends north-south with one travel lane and a bike lane in each direction. A two-way left-turn lane is present for approximately 620 feet north of Princess Boulevard. 78th Street terminates at Mayo Boulevard to the north and Princess Boulevard to the south. Concrete curb, gutter, and sidewalk are in place along the west side of 78th Street for approximately 620 feet north of Princess Boulevard and along the entire east side. The posted speed limit is 30 mph. The City of Scottsdale classifies 78th Street as a minor collector roadway.

The future ***Miller Road*** alignment will extend generally north-south between Princess Boulevard and Legacy Boulevard. Miller Road will tie into the existing Princess Drive to the south and the future 76th Street to the north. The existing Miller Road Underpass will provide grade separation for traffic on Miller Road and the Loop 101, allowing for free flow on both facilities. The City of Scottsdale classifies Miller Road as a major collector roadway in the vicinity of the site. Miller Road is anticipated to be constructed to an urban major collector cross-section with two travel lanes and bike lanes in each direction and a two-way left-turn lane.

The following existing intersections are analyzed in this report:

- Scottsdale Road & Loop 101 WB Ramps (signalized; protected left-turn phasing);
- Scottsdale Road & Loop 101 EB Ramps (signalized; protected left-turn phasing);
- Scottsdale Road & Mayo Boulevard (signalized; NB/SB protected left-turn phasing, EB/WB split phasing);
- Scottsdale Road & Princess Boulevard (signalized; protected + permitted left-turn phasing);
- Princess Drive & Princess Boulevard (roundabout);
- 78th Street & Princess Boulevard (all-way stop control);
- Hayden Road & Loop 101 WB Ramps (signalized; protected left-turn phasing);
- Hayden Road & Loop 101 EB Ramps (signalized; protected left-turn phasing);
- Hayden Road & Mayo Boulevard (eastbound stop-control); and
- Hayden Road & Princess Boulevard (eastbound stop-control).

4.2 TRAFFIC VOLUMES

Turning movement counts were collected at the intersections of Scottsdale Road & Loop 101 WB Ramps, Scottsdale Road & Loop 101 EB Ramps, Scottsdale Road & Mayo Boulevard, Scottsdale Road & Princess Boulevard, Princess Drive & Princess Boulevard, 78th Street & Princess Boulevard, Hayden Road & Loop 101 WB Ramps, Hayden Road & Loop 101 EB Ramps, Hayden Road & Mayo Boulevard,

and Hayden Road & Princess Boulevard on Thursday, October 27, 2022. The counts were performed between 7:00 AM and 9:00 AM and between 4:00 PM and 6:00 PM.

Additionally, 24-hour bidirectional traffic counts were collected on Scottsdale Road and Hayden Road north of Mayo Boulevard on Thursday, October 27, 2022. Copies of the traffic counts are attached in the **Appendix.**

The City of Scottsdale generally requires that collected volumes be adjusted to account for seasonal variations in traffic volumes. Based on the monthly adjustment factors provided in the City of Scottsdale average daily segment traffic volume map (0.99 for the 2020 map and 1.00 for the 2018 map), the collected counts are representative of annual average conditions since they were taken in October. The results of these traffic counts are shown in **Figure 3**. The City of Scottsdale 2020 and 2018 average daily segment traffic volume maps are included in the **Appendix**. The 2018 map was looked at in addition to the 2020 map for purposes of reviewing monthly adjustment factors since the 2020 adjustment factors were during atypical conditions with the COVID pandemic; however, there was not a discernable difference in the monthly factors. With both maps, October was representative of typical conditions.

4.3 LEVEL OF SERVICE

The LOS at the existing study area intersections was evaluated using the traffic counts collected on Thursday, October 27, 2022. The LOS for the intersections was evaluated using the *Highway Capacity Manual 6th Edition* methodology for unsignalized and signalized intersections using *Synchro 11* analysis software. The intersections at the traffic interchanges of Loop 101 with Scottsdale Road and Hayden Road were analyzed using Synchro methodology for signalized traffic interchanges. The existing intersection geometry and control, shown in **Figure 3**, was used to obtain the LOS. Signalized intersections were evaluated using the existing signal timing data provided by City of Scottsdale. The results of this analysis are shown in **Table 2** and **Table 3**. LOS analysis worksheets and existing signal timing data are included in the **Appendix**.

Table 2. Existing Level of Service: Unsignalized Intersections

Intersection	NB			SB			EB			WB		
	L	T	R	L	T	R	L	T	R	L	T	R
Princess Drive & Princess Boulevard												
AM Peak	A		A					A	A	A		
PM Peak	A		A					A	A	A		
78th Street & Princess Boulevard												
AM Peak	A			A	A		A	A		A	A	
PM Peak	A			A	A		A	A		A	A	
Hayden Road & Princess Boulevard												
AM Peak		-			-	-			B			
PM Peak		-			-	-			A			
Hayden Road & Mayo Boulevard												
AM Peak	A	-			-	-	B		B			
PM Peak	A	-			-	-	C		A			

The existing unsignalized intersections operate at a satisfactory LOS.

Table 3. Existing Level of Service: Signalized Intersections

Intersection	NB			SB			EB			WB			Intersection
	L	T	R	L	T	R	L	T	R	L	T	R	LOS
Scottsdale Road & Loop 101 WB Ramps													
AM Peak	B	A			C	A				D	D	B	B
PM Peak	B	A			D	C				D	E	D	C
Scottsdale Road & Loop 101 EB Ramps													
AM Peak		D	B	B	A		E	D	D				C
PM Peak		C	B	C	A		D	E	D				C
Hayden Road & Loop 101 WB Ramps													
AM Peak	D	C			C	A				E	B	B	C
PM Peak	F	B			D	A				E	B	B	D
Hayden Road & Loop 101 EB Ramps													
AM Peak		D	A	C	B		D	C	A				C
PM Peak		C	A	F	B		D	D	A				D
Scottsdale Road & Mayo Boulevard													
AM Peak	D	C	C	E	E	E	D	D	E	D	D	E	D
PM Peak	D	D	C	E	E	F	E	D	F	D	D	E	F
Scottsdale Road & Princess Boulevard													
AM Peak	C	D	D	A	C	B	D	D	F	E	D	E	D
PM Peak	C	D	C	B	C	B	D	D	F	E	D	F	E

The existing signalized intersections operate at an overall satisfactory LOS except for the intersections of Scottsdale Road with Mayo Boulevard and Princess Boulevard during the PM peak hour. The intersection of Scottsdale Road & Mayo Boulevard currently operates with split east-west left-turn phasing due to the low traffic volumes associated with the east leg of the intersection in the existing condition. The intersections are anticipated to operate at acceptable levels of service with signal timing adjustments,

including the change from split phasing to protected left-turn phasing at the Scottsdale Road & Mayo Boulevard intersection.

4.4 CRASH HISTORY

Crash data at the existing study area intersections was obtained from the City of Scottsdale for the years 2019 to 2021. The City of Scottsdale also provided the 2020 Traffic Volume & Collision Report, revised June 2022, which contains segment and intersection crash volumes and rates for 2018 to 2020. The crash data provided by the City of Scottsdale is included in the **Appendix**.

Table 4 summarizes the number of crashes by injury severity at each intersection, and **Table 5** summarizes the number of crashes by crash type at each intersection for the years 2019 to 2021.

Table 4. Crashes by Injury Severity

Intersection	Injury Severity						Total
	No Injury	Possible Injury	Non-Incapacitating Injury	Incapacitating Injury	Fatal Injury	Not Reported/ Unknown	
Scottsdale Road & Loop 101 TI	5	0	1	0	0	0	6
Scottsdale Road & Mayo Boulevard	38	6	3	2	0	1	50
Scottsdale Road & Princess Boulevard	47	13	11	1	0	1	73
Hayden Road & Loop 101 TI	34	5	2	0	0	0	41
Hayden Road & Mayo Boulevard	2	0	1	0	0	0	3
Hayden Road & Princess Boulevard	1	1	0	0	0	0	2

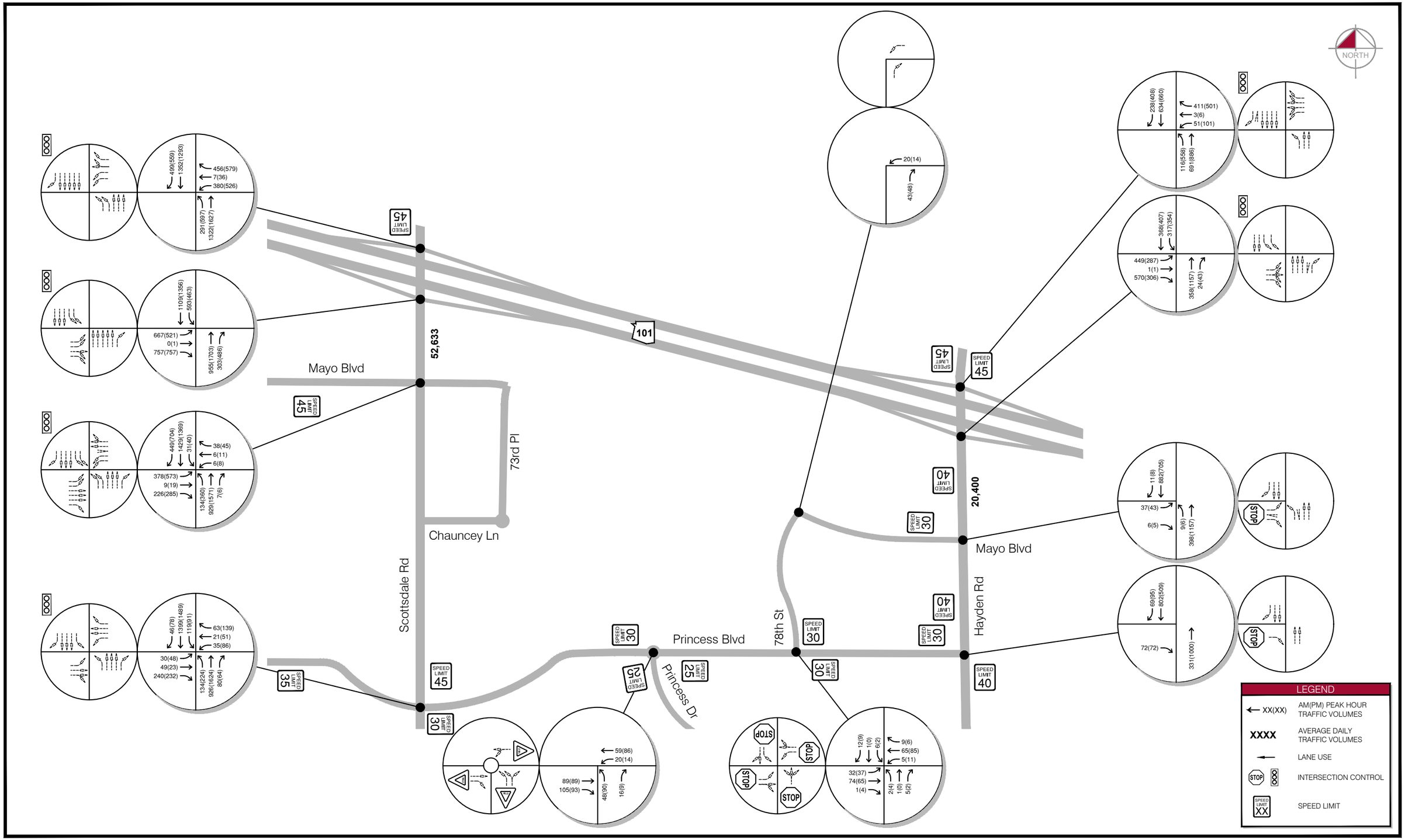
Table 5. Crashes by Crash Type

Intersection	Crash Type											Total
	Single Vehicle	Angle	Left Turn	Rear End	Head-on	Sideswipe (same direction)	Sideswipe (opposite direction)	Rear-to-Side	Rear-to-Rear	Other	Unknown	
Scottsdale Road & Loop 101 TI	0	3	0	0	1	2	0	0	0	0	0	6
Scottsdale Road & Mayo Boulevard	2	3	5	31	0	9	0	0	0	0	0	50
Scottsdale Road & Princess Boulevard	5	6	13	43	0	5	0	0	0	1	0	73
Hayden Road & Loop 101 TI	3	7	2	28	0	1	0	0	0	0	0	41
Hayden Road & Mayo Boulevard	0	0	1	1	0	1	0	0	0	0	0	3
Hayden Road & Princess Boulevard	1	0	0	0	0	1	0	0	0	0	0	2

Based on the 2020 intersection crash rate data provided in the COS 2020 Traffic Volume & Collision Report, the Scottsdale Road & Loop 101 TI has the fifth highest crash rate of all intersections and interchanges within the City of Scottsdale, with a rate of 1.56 crashes per million entering vehicles. It is worth noting that the number of TIs included in the COS crash data is limited, and the data is largely comprised of standard intersections.

The City of Scottsdale average intersection crash rate was 0.54 crashes per million entering vehicles across 202 intersections included with the data. The average crash rate at major arterial/major arterial intersections was 1.03 crashes per million entering vehicles. The average crash rate at the intersection of a minor arterial roadway with a major arterial or minor arterial roadway was 0.60 and 0.58 crashes per million entering vehicles, respectively. The average crash rate at the intersection of a major collector roadway with a major arterial, minor arterial, or major collector roadway was 0.56, 0.66, and 0.74 crashes per million entering vehicles, respectively.

The intersection of Scottsdale Road & Princess Boulevard had the 46th highest crash rate at 0.81 crashes per million entering vehicles, the Hayden Road & Loop 101 TI had the 59th highest crash rate at 0.74 crashes per million entering vehicles, and the intersection of Scottsdale Road & Mayo Boulevard had the 85th highest crash rate at 0.55 crashes per million entering vehicles.



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April 2023

Figure 3
Existing Conditions

5.0 PROJECTED TRAFFIC

5.1 SITE TRAFFIC FORECASTS

5.1.1 TRIP GENERATION

The Institute of Transportation Engineers' (ITE) *Trip Generation, 11th Edition* was used to obtain daily and peak hour trip generation rates and inbound-outbound percentages, which were then used to estimate the number of daily and peak hour trips that can be attributed to the proposed development. The trip generation characteristics of the site are summarized in **Table 6**. Trip generation calculations can be found in the **Appendix**.

Table 6. Project Trip Generation

Land Use	ITE Code	Quantity	Units	Daily Total	AM Peak			PM Peak		
					In	Out	Total	In	Out	Total
Senior Adult Housing-Multifamily	252	250	DUs	810	17	33	50	35	28	63
Hospital	610	352	Beds	7,858	454	176	630	196	399	595
General Office Building	710	32,760	SF	440	56	8	64	11	55	66
Medical-Dental Office Building	720	276,100	SF	9,700	607	142	749	209	626	835
Shopping Plaza (40-150k)	821	144,780	SF	9,776	155	95	250	368	383	751
High-Turnover (Sit-Down) Restaurant	932	30,000	SF	3,216	158	129	287	166	106	272
Trips Subtotal				**31,800**	**1,447**	**583**	**2,030**	**985**	**1,596**	**2,581**
Internal Capture Trip Reductions				-946	-76	-76	-152	-6	-6	-12
Total Trips				**30,854**	**1,371**	**507**	**1,878**	**979**	**1,591**	**2,570**

The proposed development is expected to generate 31,800 daily trips, with 2,030 trips occurring in the AM peak hour and 2,581 trips occurring in the PM peak hour. Owing to the proposed land uses, trip reductions are anticipated and justified below.

5.1.2 TRIP REDUCTIONS

It is reasonable to expect that internal trip interaction will result considering the hospital, medical office building, office building, and restaurant land uses. To account for this interaction, the methodology for estimating internally captured trips described in the *ITE Trip Generation Handbook, 3rd Edition* was used. The worksheets calculating internal capture using the ITE method and the resulting internal trip generation are shown in the **Appendix**. Interaction is also anticipated with the retail and senior adult residential uses; however, reductions were not considered for those uses to remain conservative since the uses are anticipated to be located on the west side of Miller Road.

Taking into consideration internal capture trips, the proposed development is expected to add 30,854 new daily trips, 1,878 new AM peak hour trips, and 2,570 new PM peak hour trips to the roadway network.

5.1.3 TRIP DISTRIBUTION

Daily trips were distributed over the cardinal directions based on the Maricopa Association of Governments' (MAG) estimate of total households within an 11.5-mile radius of the site. This radius is based on the average employment-based trip length as reported in the *2017 National Household Travel Survey*.

Percent to and from:	2020	2040
North	11 %	13 %
East	9 %	9 %
South	31 %	29 %
West	49 %	49 %

The results of this distribution were used as a basis for determining the ultimate trip distribution for the site. In addition to the MAG land use database for current and future land use projections, the ultimate surrounding roadway system was also taken into consideration when trip distribution was determined; therefore, the distribution shown above was further refined by considering the future roadway network near the site. **Figure 4** illustrates the trip distribution for the study area.

5.1.4 SITE TRAFFIC ASSIGNMENT

Trips generated by the proposed development were assigned to the roadway network based on the trip distribution and the likely travel patterns to and from the site. **Figure 5** shows the results of the site traffic assignment.

5.2 FUTURE TRAFFIC FORECASTING

The background traffic volumes for the buildout year 2040 were calculated based on the 2022 traffic counts and anticipated adjacent site traffic. Adjacent site traffic volumes from the previously discussed Cavasson, HonorHealth Medical Campus, Axon Campus, and Optima McDowell Mountain Village were included in the analysis. A 15% adjustment was applied to these site assignment volumes to account for an internal interaction factor between the sites. Additionally, since the Crossroads East Planning Unit VII traffic master plan did not include intersection volumes, turning movement volumes were estimated at the intersection of 78th Street & Mayo Boulevard based on the trip generation and anticipated traffic patterns to and from the development.

The City of Scottsdale provided 2040 average daily traffic (ADT) volumes from the MAG model that were used in concert with the 2035 transportation network map as a basis for providing additional future traffic growth projections. Review of the MAG traffic volume projections indicated that an additional adjustment to the Miller Road volumes was appropriate for consistency with the magnitude of the 2040 buildout traffic volumes. An additional 500 vehicles per hour were added to the through traffic volumes along Miller Road north of Princess Boulevard in the 2040 background traffic scenario. The 2035 transportation network map was provided by the City during development of the Crossroads East Planning Unit VII circulation plan. The 2035 network included higher level of granularity as the City model had five traffic analysis

zones where the MAG model had one traffic analysis zone, TAZ 1745. The Mayo Boulevard traffic volume projections were higher with the 2035 traffic model projections than the 2040 MAG projections. The 2035 projections appear to be a more refined traffic volume projection. Therefore, the Mayo Boulevard through volumes were increased by an additional 20% for consistency with the 2035 model projections.

The adjusted adjacent site traffic volumes were added to the existing turning movements to obtain background traffic volumes for the year 2040. The resulting 2040 background traffic volumes are shown in **Figure 6**. The adjacent site traffic assignment volumes with the adjustments described above is shown in the **Appendix**.

5.3 TOTAL TRAFFIC

The results of the site traffic assignment were added to the 2040 background traffic volumes shown in **Figure 6** to produce total traffic volumes for the study area. These total traffic volumes are shown in **Figure 7**.

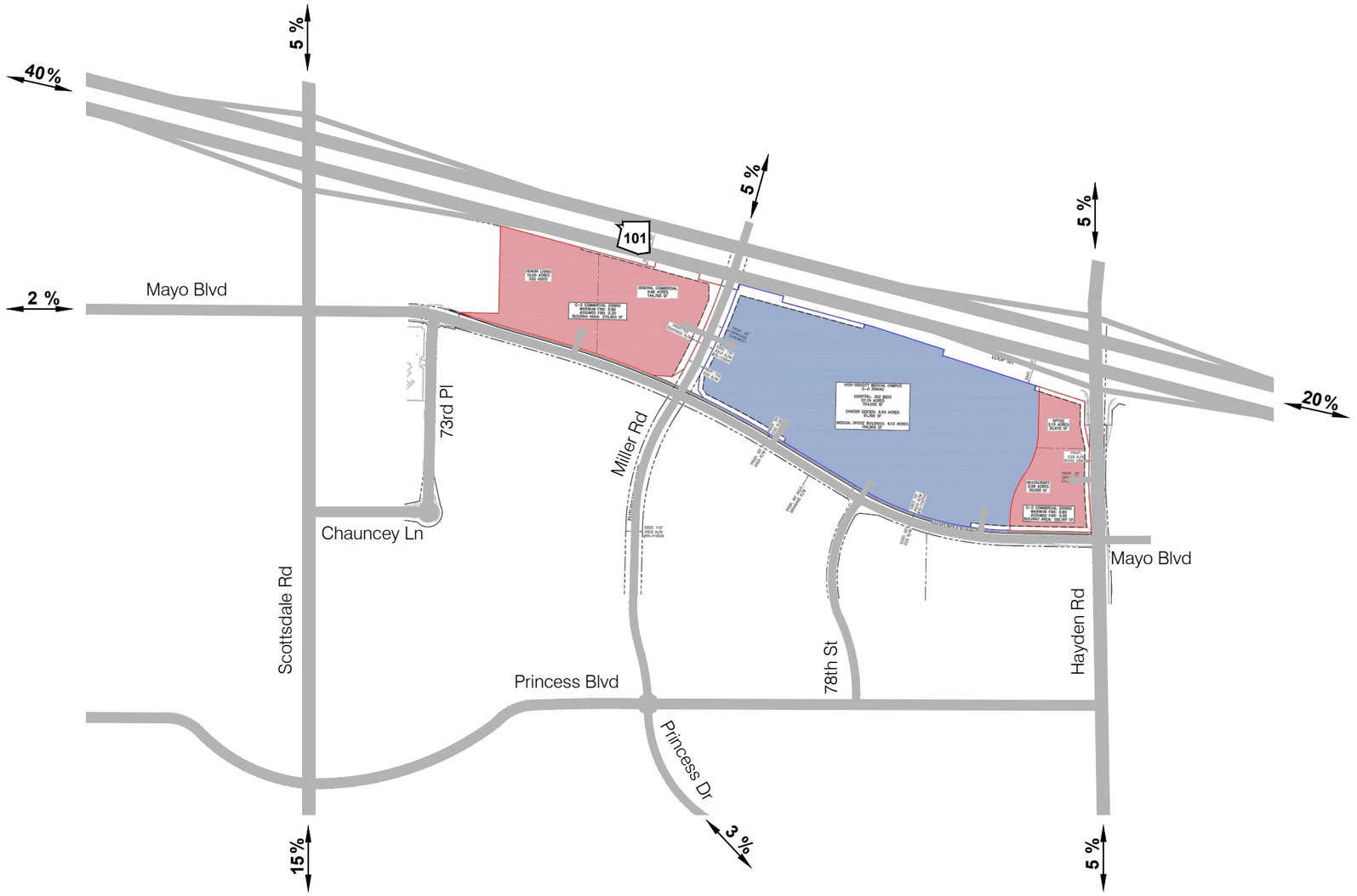

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Figure 4
Trip Distribution

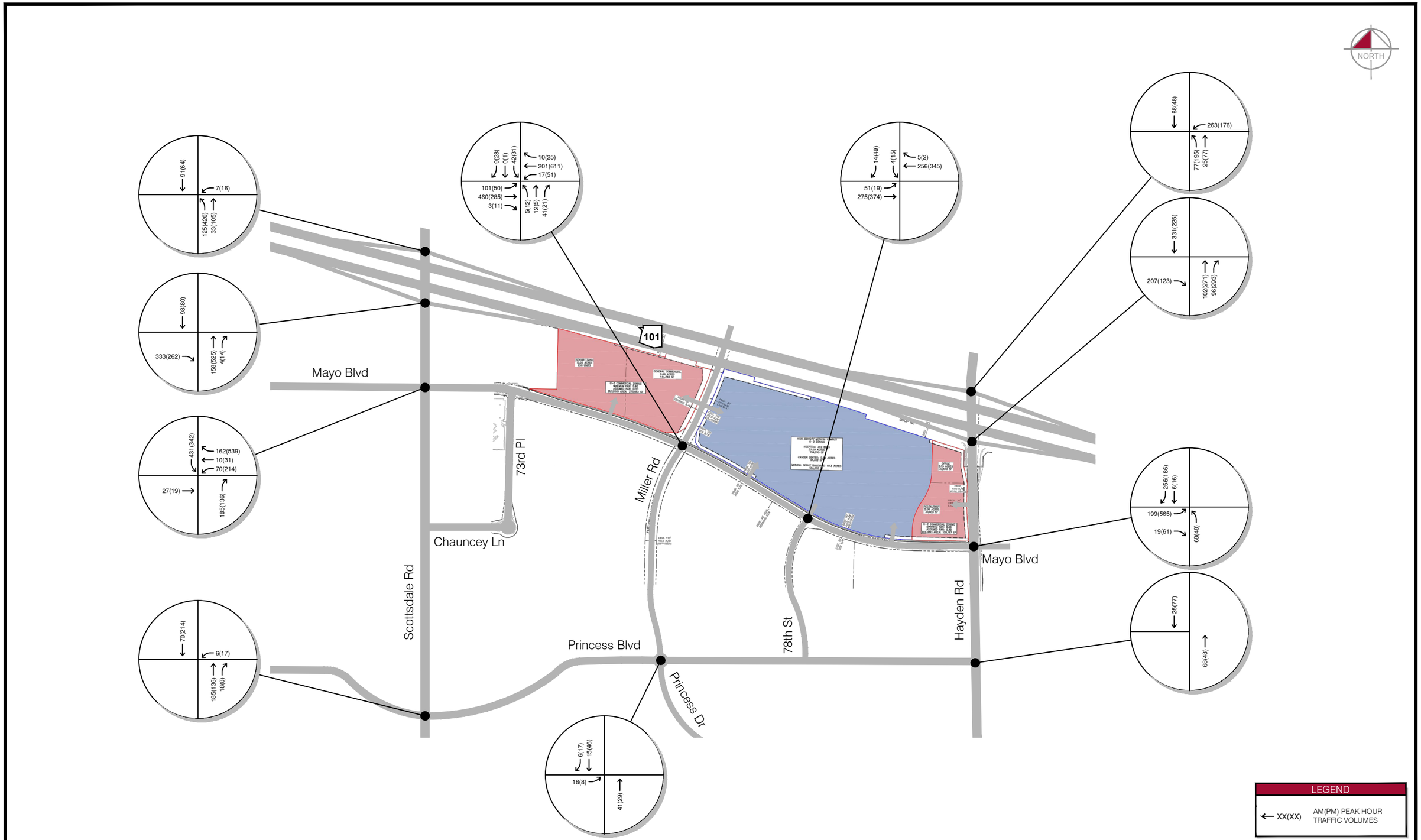

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Figure 5
Site Traffic Assignment

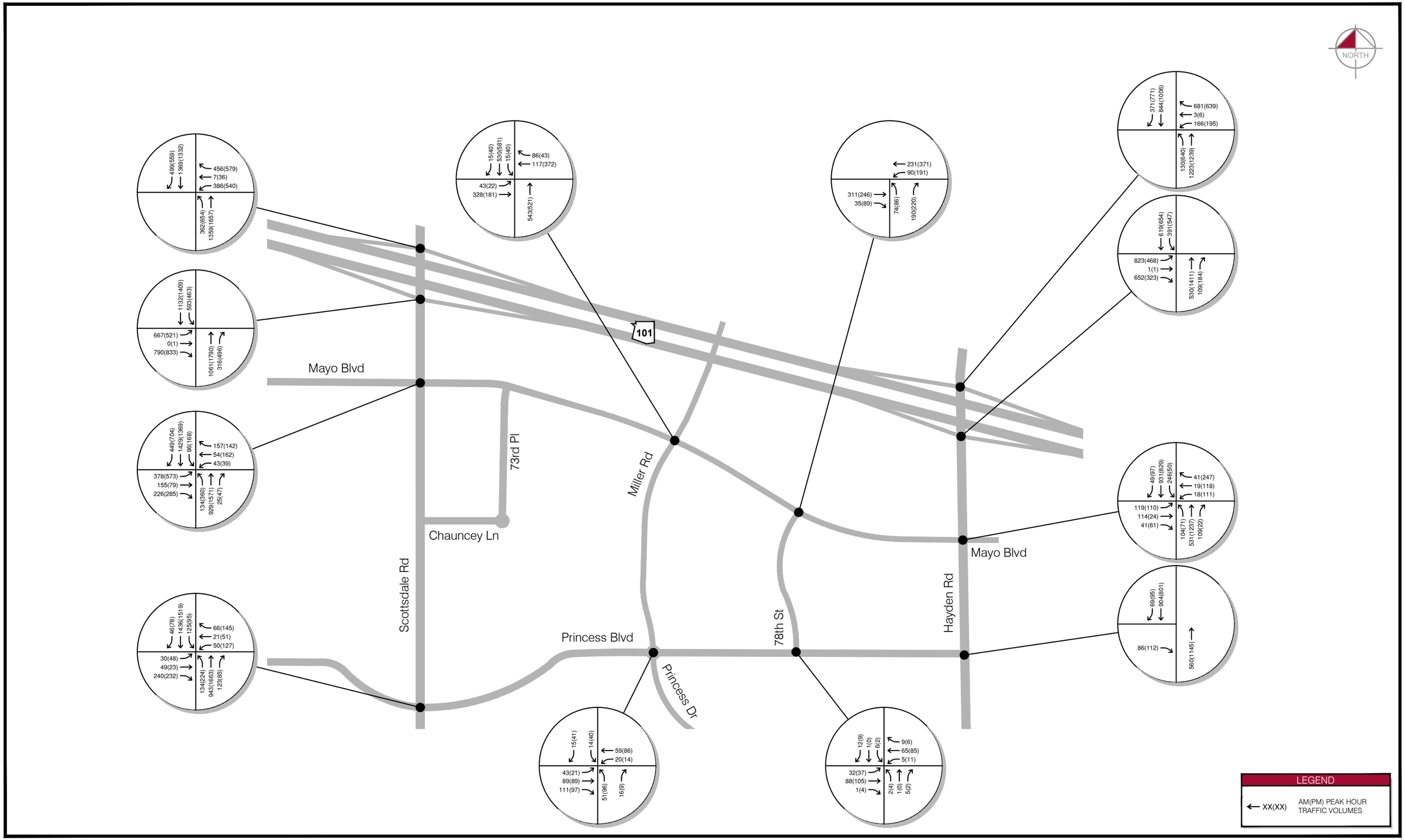

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Figure 6
2040 Background Traffic

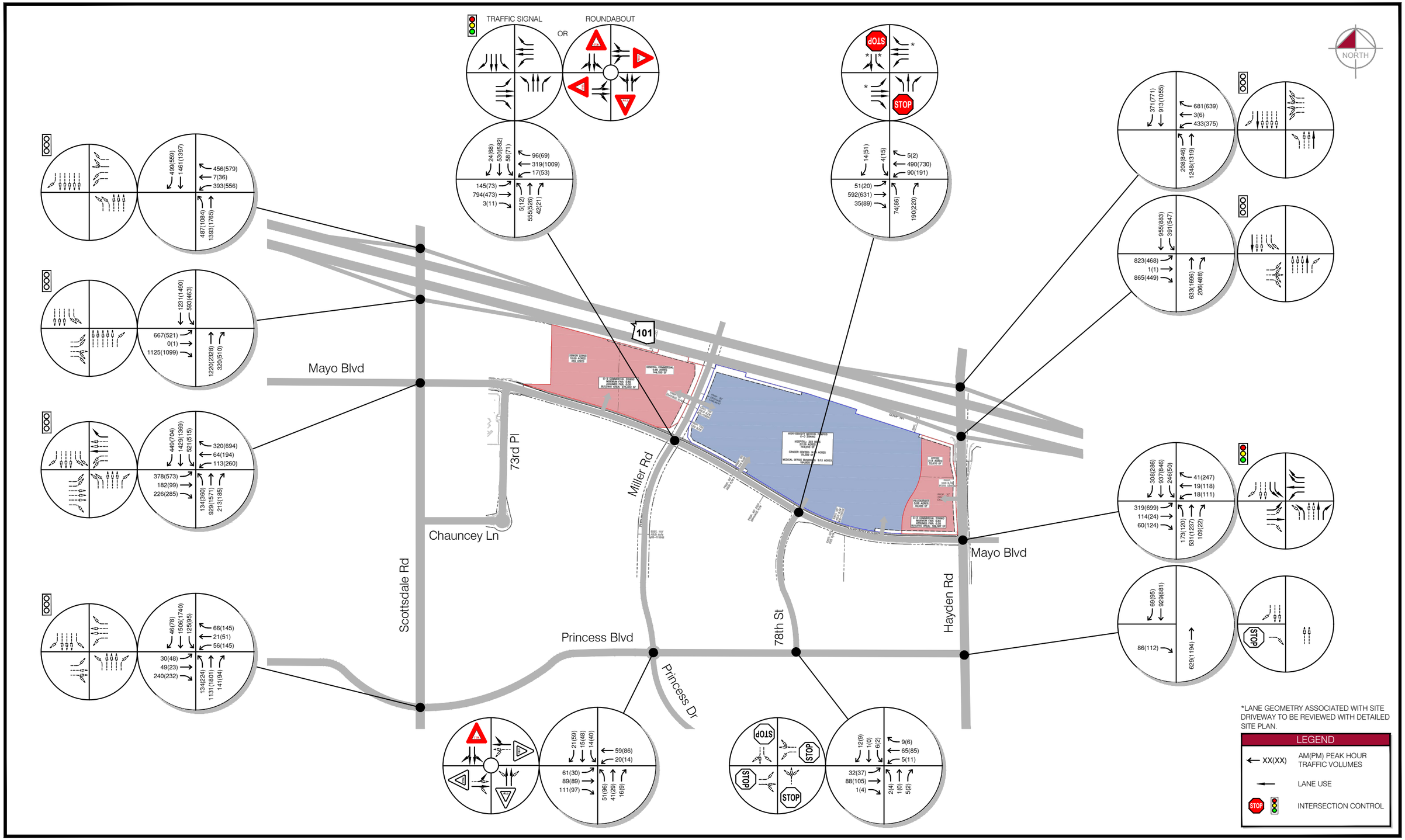

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Figure 7
2040 Total Traffic and Geometry

6.0 TRAFFIC AND IMPROVEMENT ANALYSIS

6.1 LEVEL OF SERVICE ANALYSIS

The LOS for the study area intersections for 2040 was evaluated using the *Highway Capacity Manual 6th Edition* methodology for unsignalized and signalized intersections using *Synchro 11* analysis software. The intersections at the traffic interchanges of Loop 101 with Scottsdale Road and Hayden Road were analyzed using Synchro methodology for signalized traffic interchanges. The existing signal timing data provided by the City of Scottsdale was used as a basis for evaluating and optimizing future traffic signal operations in the background and total traffic conditions. LOS analysis worksheets and signal timing assumptions are included in the **Appendix**.

6.1.1 2040 BACKGROUND TRAFFIC LEVEL OF SERVICE ANALYSIS

The unsignalized intersections in the study area were evaluated based on the 2040 background traffic shown in **Figure 6** and the future geometry shown in **Figure 7**. The results of this analysis are shown in **Table 7**.

Table 7. 2040 Background Level of Service: Unsignalized Intersections

Intersection	NB			SB			EB			WB		
	L	T	R	L	T	R	L	T	R	L	T	R
Princess Drive/Miller Road & Princess Boulevard												
AM Peak	A		A	A		A	A		A	A		A
PM Peak	A		A	A		A	A		A	A		A
78th Street & Princess Boulevard												
AM Peak	A			A		A	A		A	A		
PM Peak	A			A		A	A		A	A		
Hayden Road & Princess Boulevard												
AM Peak		-			-	-			B			
PM Peak		-			-	-			B			
78th Street & Mayo Boulevard												
AM Peak	B		B					-	-	A	-	
PM Peak	C		B					-	-	A	-	

The unsignalized intersections are expected to operate at a satisfactory LOS in 2040 background traffic conditions.

The signalized intersections in the study area were evaluated based on the 2040 background traffic shown in **Figure 6** and the future geometry shown in **Figure 7**. Additionally, a right-turn overlap phase was considered at the southbound and westbound approaches to the intersection of Scottsdale Road and Mayo Boulevard as well as at the westbound approach to the intersection of Hayden Road and Mayo Boulevard. The results of this analysis are shown in **Table 8**.

Table 8. 2040 Background Level of Service: Signalized Intersections

Intersection	NB			SB			EB			WB			Intersection LOS
	L	T	R	L	T	R	L	T	R	L	T	R	
Scottsdale Road & Loop 101 WB Ramps													
AM Peak	D	A			D	A				D	D	B	C
PM Peak	D	A			D	B				D	D	B	C
Scottsdale Road & Loop 101 EB Ramps													
AM Peak		D	B	D	B		C	B	B				C
PM Peak		D	B	E	B		C	D	C				D
Hayden Road & Loop 101 WB Ramps													
AM Peak	D	C			C	A				C	A	A	C
PM Peak	E	A			D	D				D	A	A	C
Hayden Road & Loop 101 EB Ramps													
AM Peak		C	A	D	B		D	D	A				C
PM Peak		D	B	D	C		E	D	A				C
Scottsdale Road & Mayo Boulevard													
AM Peak	E	D	C	E	D	C	E	D	E	D	D	D	D
PM Peak	E	D	C	E	D	D	E	D	E	D	D	D	D
Scottsdale Road & Princess Boulevard													
AM Peak	C	D	D	B	C	B	D	D	E	E	D	E	D
PM Peak	D	D	C	D	D	C	D	D	E	E	D	E	D
Hayden Road & Mayo Boulevard													
AM Peak	E	B	A	D	A	A	E	E	D	E	D	E	C
PM Peak	E	C	B	E	A	A	E	D	E	E	E	F	D
Miller Road & Mayo Boulevard													
AM Peak	A	A	A	A	A	A	A	A	A	A	A	A	A
PM Peak	A	A	A	A	A	A	A	A	A	A	A	A	A

The signalized intersections are expected to operate at a satisfactory overall LOS in 2040 background traffic conditions.

6.1.2 2040 TOTAL TRAFFIC LEVEL OF SERVICE ANALYSIS

The unsignalized intersections in the study area were evaluated based on the 2040 total traffic and geometry shown in **Figure 7**. The results of this analysis are shown in **Table 9**.

Table 9. 2040 Total Traffic Level of Service: Unsignalized Intersections

Intersection	NB			SB			EB			WB		
	L	T	R	L	T	R	L	T	R	L	T	R
Princess Drive/Miller Road & Princess Boulevard												
AM Peak	A		A	A		A	A		A	A		A
PM Peak	A		A	A		A	A		A	A		A
78th Street & Princess Boulevard												
AM Peak	A			A		A	A			A		A
PM Peak	A			A		A	A			A		A
Hayden Road & Princess Boulevard												
AM Peak		-			-	-			B			
PM Peak		-			-	-			B			
78th Street & Mayo Boulevard												
AM Peak	E	A	B	D		A	A	-	-	A	-	-
PM Peak	F	A	B	F		A	A	-	-	B	-	-

The unsignalized intersections are expected to operate at a satisfactory overall LOS in 2040 total traffic conditions except for the northbound and southbound left-turn movements at the intersection of 78th Street & Mayo Boulevard. It is common for left-turn movements from a two-way stop-controlled minor street to experience a poor level of service during peak hours due to a reduction in acceptable gaps in major street through traffic. It is anticipated that the intersection operates at an acceptable level of service outside of peak hours. For comparative purposes, the intersection of 78th Street & Mayo Boulevard was also analyzed with traffic signal control below. Alternate intersection configurations could be evaluated at the intersection of 78th Street & Mayo Boulevard with development of a detailed site plan.

The signalized intersections in the study area were evaluated based on the 2040 total traffic and geometry shown in **Figure 7**. A right-turn overlap phase was considered at the southbound and westbound approaches to the intersection of Scottsdale Road and Mayo Boulevard as well as at the westbound approach to the intersection of Hayden Road and Mayo Boulevard, which was consistent with the 2040 background traffic analysis. The results of this analysis are shown in **Table 10**.

Table 10. 2040 Total Traffic Level of Service: Signalized Intersections

Intersection	NB			SB			EB			WB			Intersection LOS
	L	T	R	L	T	R	L	T	R	L	T	R	
Scottsdale Road & Loop 101 WB Ramps													
AM Peak	D	A			D	A				D	D	B	C
PM Peak	E	A			D	C				D	E	B	D
Scottsdale Road & Loop 101 EB Ramps													
AM Peak		D	B	D	B		C	C	C				C
PM Peak		E	A	E	C		C	E	D				D
Hayden Road & Loop 101 WB Ramps													
AM Peak	D	D			D	A				C	A	A	C
PM Peak	F	B			D	D				D	B	A	E
Hayden Road & Loop 101 EB Ramps													
AM Peak		D	A	D	C		D	D	A				C
PM Peak		C	A	D	C		D	D	A				C
Scottsdale Road & Mayo Boulevard													
AM Peak	E	D	D	E	D	C	E	D	D	E	D	C	D
PM Peak	E	D	C	E	D	B	E	C	D	E	D	E	D
Scottsdale Road & Princess Boulevard													
AM Peak	D	D	C	B	C	B	D	D	E	E	D	E	D
PM Peak	D	D	C	D	D	B	D	D	E	E	D	E	D
Hayden Road & Mayo Boulevard													
AM Peak	E	B	B	E	A	A	E	D	D	E	E	D	C
PM Peak	E	D	C	E	B	B	E	D	D	E	F	E	D
Miller Road & Mayo Boulevard													
AM Peak	B	B	A	B	B	A	A	A	A	B	A	A	A
PM Peak	B	B	B	B	B	B	B	A	A	A	A	A	B
78th Street & Mayo Boulevard													
AM Peak	A	A	B	A	A	A	A	A	A	A	A	A	A
PM Peak	B	A	B	B	A	B	A	A	A	A	A	A	A

The signalized intersections are expected to operate at a satisfactory overall LOS in 2040 total traffic conditions except for the intersection of Hayden Road & Loop 101 WB Ramps during the PM peak hour. The poor LOS is driven by the northbound left-turn movement, which is constrained to a single turn lane. The interchange cannot accommodate dual left-turn lanes without substantial changes to the existing interchange geometry. Consideration could be given to repurposing one of the northbound through lanes as a northbound left-turn lane in the future as described in the left-turn storage analysis section.

The City requested that the intersection of Miller Road & Mayo Boulevard also be analyzed as a roundabout. Therefore, the intersection was analyzed as a roundabout in addition to a signalized intersection. The results of the roundabout analysis are shown in **Table 11**.

Table 11. 2040 Total Traffic Level of Service: Roundabout Alternative

Intersection	NB			SB			EB			WB			Intersection LOS
	L	T	R	L	T	R	L	T	R	L	T	R	
Miller Road & Mayo Boulevard													
AM Peak	C	C		A	A		C	C		B	A		B
PM Peak	B	A		E	E		B	B		D	D		C

The intersection of Miller Road & Mayo Boulevard is expected to operate at a satisfactory overall LOS in 2040 total traffic conditions.

6.2 LEFT-TURN STORAGE ANALYSIS

The City of Scottsdale requires left-turn lanes at all street intersections on major collector and arterial roadways. Turn lane lengths are to be determined based on the anticipated turning volume and the traffic control type. The City of Scottsdale recommends that left-turn lanes be constructed with a standard storage length of 150 feet. The minimum storage length is 100 feet per City of Scottsdale guidelines. Left-turn lanes should be constructed with a reverse curve length per COS Standard Detail 2225. Where raised median is not present, an appropriate striping gap of 100 feet should be provided for the turn lane opening.

The signalized and unsignalized intersections in the study area were analyzed to determine the left-turn storage needed to accommodate the expected traffic volumes in the buildout year 2040. The left-turn storage calculations at the traffic interchanges utilized ADOT turn lane criteria. Per ADOT TGP 430, ADOT calculates storage length by summing queue length multiplied by a factor of 1.5 to 2 times plus braking distance. The left-turn storage calculations at the remaining intersections utilized AASHTO turn lane criteria. Additionally, Synchro 95th percentile queues were analyzed at the traffic interchanges, and HCM 95th percentile queues were analyzed at all other intersections. **Table 12** provides the recommended left-turn storage at the study area intersections. The recommended storage lengths are based on total traffic volumes shown in **Figure 7**. The calculations associated with these conclusions and the relevant COS and ADOT standards are included in the **Appendix**.

Table 12. Left-Turn Storage

Intersection and Approach	*Existing Storage Length*	Calculated Queue Length	Desired (Minimum) Braking Distance	95th Percentile Storage Length	**Recommended Storage**
Scottsdale Road & Loop 101 WB Ramps					
Northbound Approach	625 feet (Dual)	685 feet (Dual)	200 feet (85 feet)	501 feet (Dual)	625 feet (Dual) [(1)(3)]
Westbound Approach	315 feet (Dual)	355 feet (Dual)	200 feet (85 feet)	260 feet (Dual)	315 feet (Dual) [(1)(2)]
Scottsdale Road & Loop 101 EB Ramps					
Southbound Approach	710 feet (Dual)	375 feet (Dual)	200 feet (85 feet)	381 feet (Dual)	710 feet (Dual) [(1)]
Eastbound Approach	200 feet (Dual)	420 feet (Dual)	200 feet (85 feet)	265 feet (Dual)	200 feet (Dual) [(2)]
Hayden Road & Loop 101 WB Ramps					
Northbound Approach	385 feet	1060 feet	200 feet (85 feet)	1312 feet	550 feet [(3)]
Westbound Approach	495 feet (LT) 495 feet (Th/LT)	280 feet (LT) 280 feet (Th/LT)	200 feet (85 feet)	275 feet (LT) 275 feet (Th/LT)	495 feet (LT) [(1)(2)] 495 feet (Th/LT)

Intersection and Approach	*Existing Storage Length*	Calculated Queue Length	Desired (Minimum) Braking Distance	95th Percentile Storage Length	**Recommended Storage**
Hayden Road & Loop 101 EB Ramps					
Southbound Approach	545 feet (Dual)	345 feet (Dual)	200 feet (85 feet)	312 feet (Dual)	545 feet (Dual) [(1)]
Eastbound Approach	430 feet (LT) 430 feet (LT/Th/RT)	690 feet (LT) 690 feet (LT/Th/RT)	200 feet (85 feet)	710 feet (LT) 710 feet (LT/Th/RT)	430 feet (LT) [(2)(4)] 430 feet (LT/Th/RT)
Scottsdale Road & Mayo Boulevard					
Northbound Approach	240 feet (Dual)	225 feet (Dual)	N/A	275 feet (Dual)	240 feet (Dual) [(1)(4)]
Southbound Approach	165 feet (Dual)	325 feet (Dual)	N/A	375 feet (Dual)	165 feet (Dual) [(3)]
Eastbound Approach	325 feet (Dual)	350 feet (Dual)	N/A	450 feet (Dual)	325 feet (Dual) [(4)]
Westbound Approach	165 feet (Dual)	175 feet (Dual)	N/A	200 feet (Dual)	165 feet (Dual) [(3)]
Scottsdale Road & Princess Boulevard					
Northbound Approach	250 feet	300 feet	N/A	300 feet	250 feet [(4)]
Southbound Approach	235 feet	200 feet	N/A	125 feet	235 feet [(1)]
Eastbound Approach	205 feet	100 feet	N/A	75 feet	205 feet [(1)]
Westbound Approach	165 feet	225 feet	N/A	225 feet	225 feet
Hayden Road & Mayo Boulevard					
Northbound Approach	150 feet	125 feet (Dual)	N/A	150 feet (Dual)	150 feet (Dual)
Southbound Approach	-	175 feet (Dual)	N/A	200 feet (Dual)	355 feet (Dual) [(4)(5)]
Eastbound Approach	300 feet	400 feet (Dual)	N/A	525 feet (Dual)	400 feet (Dual)
Westbound Approach	-	175 feet	N/A	575 feet	150 feet [(4)(5)]
78th Street & Princess Boulevard					
Southbound Approach	100 feet	50 feet	N/A	25 feet	100 feet [(1)]
Eastbound Approach	110 feet	50 feet	N/A	25 feet	110 feet [(1)]
Westbound Approach	100 feet	50 feet	N/A	25 feet	100 feet [(1)]

Intersection and Approach	*Existing Storage Length*	Calculated Queue Length	Desired (Minimum) Braking Distance	95th Percentile Storage Length	**Recommended Storage**
Miller Road & Mayo Boulevard					
Northbound Approach	-	50 feet	N/A	25 feet	250 feet
Southbound Approach	-	75 feet	N/A	50 feet	250 feet
Eastbound Approach	-	125 feet	N/A	50 feet	250 feet
Westbound Approach	-	75 feet	N/A	25 feet	250 feet
78th Street & Mayo Boulevard					
Northbound Approach	-	200 feet	N/A	150 feet	200 feet [4]
Westbound Approach	-	125 feet	N/A	25 feet	150 feet [4]

LT = Exclusive left-turn lane.

Th/LT = Shared through/left-turn lane.

LT/Th/RT = Shared left-turn/through/right-turn lane.

Dual = Two left-turn lanes.

[1] Calculated or 95% Percentile Storage Length value less than or equal to existing.

[2] Additional storage available beyond striped turn lane.

[3] Turn lane is geometrically constrained.

[4] Site does not contribute or minimally contributes traffic to movement.

[5] Value represents proposed storage per adjacent site traffic report/roadway plan.

The left-turn lanes should provide the storage recommended in **Table 12** and an appropriate reverse curve length per COS Standard Detail 2225 with development of detailed site plans or with adjacent development.

The Hayden Road & Loop 101 northbound left-turn storage should be reconfigured and coordinated with the Axon development to extend the left-turn storage. The signing and pavement marking plans associated with the Axon development include proposed 355-foot dual southbound left-turn lanes at the intersection of Hayden Road & Mayo Boulevard. The northbound left-turn lane storage at the Hayden Road & Loop 101 traffic interchange could provide approximately 550 feet of storage to maximize the available space between intersections; however, the storage may be extended further if the dual southbound left-turn length is reduced at the Hayden Road and Mayo Boulevard intersection into the Axon development. The Axon TIA and calculations from this report indicate that the 355 feet of dual southbound left-turn storage may be more than necessary for typical peak hour conditions. As an additional consideration, the inside through lane at the Hayden Rd & Loop 101 TI may be able to be utilized as a second northbound left-turn lane, and two northbound through lanes would be maintained through the TI. Traffic volumes should be monitored and coordination with surrounding development should occur.

The westbound left-turn lane at the intersection of Scottsdale Road & Princess Boulevard may require additional storage in future traffic conditions. Volumes are recommended to be monitored at this location. The storage length should be refined with development of the land on the northeast corner of the intersection.

It is recommended that the northbound approach to the intersection of Hayden Road & Mayo Boulevard by re-striped to provided dual left-turn lanes. The pavement marking modifications should occur at or after the time of signalization of the intersection.

It is recommended that the eastbound approach to the intersection of Hayden Road & Mayo Boulevard provide dual left-turn lanes with 400 feet of storage in each lane. The Crossroads East Planning Unit VII Circulation Plan indicated that there may be an ability to provide two full-access driveway locations along Mayo Boulevard between 78th Street and Hayden Road; however, a single full-access driveway location is recommended given the eastbound left-turn storage demand at the Hayden Road & Mayo Boulevard intersection. It is recommended that the full-access driveway be located approximately at the midpoint of the approximate 1,600-foot Mayo Boulevard roadway segment between 78th Street and Hayden Road to provide full access to both sides of Mayo Boulevard. Cross access should be considered between the restaurant/office portion of the plan and medical campus portion of the current proposed plan.

It is recommended that 250 feet of left-turn storage be provided along all approaches to the intersection of Miller Road & Mayo Boulevard. This more conservative recommendation is provided due to the higher level of uncertainty associated with the background traffic volumes at the intersection. When the intersection is constructed, a reassignment of traffic volumes will occur to utilize the Miller Road underpass.

Southbound and eastbound left-turn storage at the intersection of 78th Street & Mayo Boulevard should be determined with a more detailed site plan along with turn storage recommendations at all other site driveway locations.

6.3 RIGHT-TURN LANES

Right-turn lanes are often recommended on roadways where right-turning vehicles create delays or safety concerns for other traffic movements. The need for a right-turn lane depends on the speed of traffic on the road, the volume of traffic turning right, and the through traffic volume in the same lane as the right-turning traffic.

6.3.1 INTERSECTIONS

The City of Scottsdale recommends a right-turn deceleration lane at all street intersections on major arterial roadways and on other roadways based on anticipated turning volumes and traffic control. The City of Scottsdale recommends that right-turn lanes be constructed with a standard storage length of 150 feet. The minimum storage length for right-turn lanes per City of Scottsdale requirements is 100 feet. Right-turn lanes should be constructed with a reverse curve length per COS Standard Detail 2225.

The signalized and unsignalized intersections in the study area were analyzed to determine the right-turn storage needed to accommodate the expected traffic volumes in the horizon year 2040. The right-turn storage calculations at the traffic interchanges utilized ADOT turn lane criteria. Per ADOT TGP 430, ADOT calculates storage length by summing queue length multiplied by a factor of 1.5 to 2 times plus braking distance. The right-turn storage calculations at the remaining intersections utilized AASHTO turn lane criteria. Additionally, Synchro 95th percentile queues were analyzed at the traffic interchanges, and HCM 95th percentile queues were analyzed at all other intersections. **Table 13** provides the recommended right-turn storage at the study area intersections. The recommended storage lengths are based on total traffic volumes shown in **Figure 7**. The calculations associated with these conclusions and the relevant COS and ADOT standards are included in the **Appendix**.

Table 13. Right-Turn Storage

Intersection and Approach	*Existing Storage Length*	Calculated Queue Length	Desired (Minimum) Braking Distance	95th Percentile Storage Length	**Recommended Storage**
Scottsdale Road & Loop 101 WB Ramps					
Southbound Approach	400 feet	425 feet	200 feet (85 feet)	313 feet	400 feet [(1)(4)]
Westbound Approach	320 feet (RT) 320 feet (Th/RT)	255 feet (RT) 255 feet (Th/RT)	200 feet (85 feet)	189 feet (RT) 189 feet (Th/RT)	320 feet (RT) [(1)(4)] 320 feet (Th/RT)
Scottsdale Road & Loop 101 EB Ramps					
Northbound Approach	600 feet	400 feet	200 feet (85 feet)	173 feet	600 feet [(1)]
Eastbound Approach	205 feet (RT) 205 feet (Th/RT)	495 feet (RT) 495 feet (Th/RT)	200 feet (85 feet)	556 feet (RT) 556 feet (Th/RT)	205 feet (RT) [(2)] 205 feet (Th/RT)

Intersection and Approach	*Existing Storage Length*	Calculated Queue Length	Desired (Minimum) Braking Distance	95th Percentile Storage Length	**Recommended Storage**
Hayden Road & Loop 101 WB Ramps					
Southbound Approach	180 feet	585 feet	200 feet (85 feet)	563 feet	180 feet [4]
Westbound Approach	500 feet (RT) 500 feet (Th/RT)	300 feet (RT) 300 feet (Th/RT)	200 feet (85 feet)	73 feet (RT) 73 feet (Th/RT)	500 feet (RT) [1][4] 500 feet (Th/RT)
Hayden Road & Loop 101 EB Ramps					
Northbound Approach	200 feet	375 feet	200 feet (85 feet)	128 feet	200 feet [1]
Eastbound Approach	435 feet (RT) 435 feet (LT/Th/RT)	510 feet (RT) 510 feet (LT/Th/RT)	200 feet (85 feet)	180 feet (RT) 180 feet (LT/Th/RT)	435 feet (RT) [1][2] 435 feet (LT/Th/RT)
Scottsdale Road & Mayo Boulevard					
Northbound Approach	155 feet	225 feet	N/A	225 feet	155 feet [3]
Southbound Approach	340 feet	600 feet	N/A	375 feet	340 feet [4]
Eastbound Approach	330 feet	275 feet	N/A	250 feet	330 feet [1][4]
Westbound Approach	-	575 feet	N/A	700 feet	575 feet [6]
Scottsdale Road & Princess Boulevard					
Northbound Approach	250 feet	175 feet	N/A	125 feet	250 feet [1]
Southbound Approach	250 feet	125 feet	N/A	50 feet	250 feet [1]
Westbound Approach	80 feet	175 feet	N/A	175 feet	80 feet [4]
Hayden Road & Mayo Boulevard					
Northbound Approach	-	150 feet	N/A	50 feet	210 feet [4][5]
Southbound Approach	185 feet	300 feet	N/A	125 feet	185 feet (Trap) [2]
Eastbound Approach	165 feet	150 feet	N/A	125 feet	165 feet [1]
Westbound Approach	-	125 feet (Dual)	N/A	450 feet (Dual)	130 feet (Dual) [4][5]

Intersection and Approach	*Existing Storage Length*	Calculated Queue Length	Desired (Minimum) Braking Distance	95th Percentile Storage Length	**Recommended Storage**
Miller Road & Mayo Boulevard					
Northbound Approach	-	50 feet	N/A	25 feet	250 feet
Southbound Approach	-	75 feet	N/A	25 feet	250 feet
Eastbound Approach	-	50 feet	N/A	25 feet	250 feet
Westbound Approach	-	75 feet	N/A	25 feet	250 feet
78th Street & Mayo Boulevard					
Northbound Approach	-	200 feet	N/A	50 feet	200 feet (4)
Eastbound Approach	-	75 feet	N/A	25 feet	150 feet (4)

RT = Exclusive right-turn lane.

Th/RT = Shared through/right-turn lane.

LT/Th/RT = Shared left-turn/through/right-turn lane.

Dual = Two right-turn lanes.

Trap = Through lane that transitions to right-turn only lane.

(1) Calculated or 95% Percentile Storage Length value less than or equal to existing.

(2) Additional storage available beyond striped turn lane.

(3) Turn lane is geometrically constrained.

(4) Site does not contribute or minimally contributes traffic to movement.

(5) Value represents proposed storage per adjacent site traffic report/roadway plan.

(6) Turn lane anticipated to be constructed by Optima McDowell Mountain Village development. Proposed storage not clearly stated in traffic report. A continuous right-turn lane should be provided to accommodate the anticipated queue demand, while not interfering with the planned roundabout at the intersection of 73rd Place and Mayo Boulevard.

The right-turn lanes should provide the storage recommended in **Table 13** and an appropriate reverse curve length per COS Standard Detail 2225 with development of detailed site plans or with adjacent development.

The future westbound right-turn lane at the intersection of Scottsdale Road & Mayo Boulevard is anticipated to be constructed by the Optima McDowell Mountain Village development. A continuous right-turn lane should be provided to accommodate the anticipated queue demand of 575 feet, while not interfering with the planned roundabout at the intersection of 73rd Place and Mayo Boulevard.

It is recommended that the anticipated third southbound through lane along Hayden Road, south of the Loop 101, transition to a right-turn only lane at the Mayo Boulevard intersection.

It is recommended that 250 feet of right-turn storage be provided along all approaches to the intersection of Miller Road & Mayo Boulevard. This more conservative recommendation is provided due to the higher

level of uncertainty associated with the background traffic volumes at the intersection. When the intersection is constructed, a reassignment of traffic volumes will occur to utilize the Miller Road underpass.

Westbound right-turn lane warrants and storage at the intersection of 78th Street & Mayo Boulevard should be determined with a more detailed site plan along with turn storage recommendations at all other site driveway locations.

6.4 SIGHT TRIANGLES

Per City of Scottsdale DSPM Section 5-3.123D, it is recommended that sight triangles be provided at all intersections to give drivers exiting the site a clear view of oncoming traffic. The landscaping within sight triangles must not obstruct drivers' views of the adjacent travel lanes.

7.0 CONCLUSIONS AND RECOMMENDATIONS

The proposed development is expected to add 30,854 new daily trips, 1,878 new AM peak hour trips, and 2,570 new PM peak hour trips to the roadway network. The purpose of this report was to review key street intersections for a 2040 buildout scenario to determine appropriate intersection geometry. It is recommended that volumes in the area be monitored and additional analysis be considered with detailed site plans or adjacent development plans.

The intersections of Mayo Boulevard with Miller Road and 78th Street were evaluated as standard intersections with this report. The addition of traffic signal control is anticipated to be necessary at the Miller Road & Mayo Boulevard intersection. The intersection of 78th Street & Mayo Boulevard operates acceptably as a two-way stop-controlled intersection except for the northbound and southbound left-turn movements. Traffic signal warrants should be reviewed with a more detailed site plan. Alternate intersection configurations could also be considered at these intersections. Previous documents have contemplated roundabouts in addition to a standard intersection configuration. At the City's request, the intersection of Miller Road & Mayo Boulevard was also evaluated as a roundabout and the LOS was satisfactory under that condition.

At the Loop 101 TI, Hayden Road was constructed to accommodate a third southbound through lane. It is anticipated that a third southbound through lane will extend south of the Loop 101 to the Mayo Boulevard intersection where the third through lane is anticipated to transition to a right-turn only lane. The Axon signing and pavement marking plans include a third northbound through lane at the intersection of Hayden Road and Mayo Boulevard that is anticipated to continue north to the Loop 101 TI. Hayden Road has three travel lanes in each direction north of the Loop 101.

Mayo Boulevard is anticipated to be constructed to a City of Scottsdale urban major collector cross-section between 73rd Place and Hayden Road with two travel lanes and bike lanes in each direction and a two-way left-turn lane.

Miller Road is anticipated to be constructed to an urban major collector cross-section with two travel lanes and bike lanes in each direction and a two-way left-turn lane.

The unsignalized and signalized intersections are anticipated to operate at an overall acceptable level of service in the 2040 total traffic condition except for the Hayden Road & Loop 101 TI during the PM peak hour. The overall level of service at the Hayden Road & Loop 101 TI is driven by the delay associated with the northbound left-turn movement. Considerations for improvement to the northbound left-turn movement for the 2040 total traffic condition are discussed in additional detail with the next item.

The Hayden Road & Loop 101 northbound left-turn storage should be reconfigured and coordinated with the Axon development to extend the left-turn storage. The signing and pavement marking plans associated with the Axon development include proposed 355-foot dual southbound left-turn lanes at the intersection of Hayden Road & Mayo Boulevard. The northbound left-turn lane storage at the Hayden Road & Loop 101 traffic interchange could provide approximately 550 feet of storage to maximize the available space between intersections; however, there may be an ability to extend the storage further if the dual southbound left-turn length is reduced at the Hayden Road and Mayo Boulevard intersection into the Axon development. As an additional consideration, the inside through lane at the Hayden Rd & Loop

101 TI may be able to be utilized as a second northbound left-turn lane, and two northbound through lanes would be maintained through the TI. Traffic volumes should be monitored and coordination with surrounding development should occur.

The westbound left-turn lane at the intersection of Scottsdale Road & Princess Boulevard may require additional storage in future traffic conditions. Volumes are recommended to be monitored at this location. Consider refining the storage length with development of the land on the northeast corner of the intersection.

It is recommended that the northbound approach to the intersection of Hayden Road & Mayo Boulevard by re-striped to provided dual left-turn lanes. The pavement marking modifications should occur at or after the time of signalization of the intersection.

It is recommended that the eastbound approach to the intersection of Hayden Road & Mayo Boulevard provide dual left-turn lanes with 400 feet of storage in each lane. The Crossroads East Planning Unit VII Circulation Plan indicated that there may be an ability to provide two full-access driveway locations along Mayo Boulevard between 78th Street and Hayden Road; however, a single full-access driveway location is recommended given the eastbound left-turn storage demand at the Hayden Road & Mayo Boulevard intersection. It is recommended that the full-access driveway be located approximately at the midpoint of the approximate 1,600-foot Mayo Boulevard roadway segment between 78th Street and Hayden Road to provide full access to both sides of Mayo Boulevard. Cross access should be considered between the restaurant/office portion of the plan and medical campus portion of the current proposed plan.

It is recommended that 250 feet of left-turn lane and right-turn lane storage be provided along all approaches to the intersection of Miller Road & Mayo Boulevard. This more conservative recommendation is provided due to the higher level of uncertainty associated with the background traffic volumes at the intersection. When the intersection is constructed, a reassignment of traffic volumes will occur to utilize the Miller Road underpass.

The future westbound right-turn lane at the intersection of Scottsdale Road & Mayo Boulevard is anticipated to be constructed by the Optima McDowell Mountain Village development. A continuous right-turn lane should be provided to accommodate the anticipated queue demand of 575 feet, while not interfering with the planned roundabout at the intersection of 73rd Place and Mayo Boulevard.

Access spacing, turn lane warrants, and storage recommendations at driveway locations should be reviewed with development of detailed site plans.

It is recommended that sight triangles be provided at all intersections to give drivers exiting the site a clear view of oncoming traffic. The landscaping within sight triangles must not obstruct drivers' views of the adjacent travel lanes.

APPENDIX

- Adjacent Site Traffic Study/Plan Excerpts
- Traffic Counts
- City of Scottsdale Average Daily Segment Volume Maps
- City of Scottsdale Signal Timing Data
- Existing AM Traffic Capacity Analysis
- Existing PM Traffic Capacity Analysis
- City of Scottsdale Crash Data
- Trip Generation and Reductions
- Adjusted Adjacent Site Traffic Assignment
- 2040 Background AM Traffic Capacity Analysis
- 2040 Background PM Traffic Capacity Analysis
- 2040 Total AM Traffic Capacity Analysis
- 2040 Total PM Traffic Capacity Analysis
- AASHTO Storage Calculations
- ADOT Storage Calculations
- Relevant City of Scottsdale Standards
- Relevant ADOT Standards
- Relevant City of Phoenix Standards

Adjacent Site Traffic Study/Plan Excerpts

CivTech

October 12, 2020

NWGH, LLC

ICO:
Mr. James K. Rost, Vice-President
Nationwide Reality Investors
375 North Front Street, Suite 200
Phone: 614.857.2330
Email: rostj@nationwide.com

Registered Professional Engineer (Civil)
CERTIFICATE NO.
35879
DAWN D.
CARTIER
Date Signed 10-13-2020
ARIZONA, U.S.A.

RE: MASTER TRAFFIC IMPACT AND MITIGATION ANALYSIS FOR THE NRI – SCOTTSDALE DEVELOPMENT – SCOTTSDALE, ARIZONA

Dear Mr. Rost:

CivTech is pleased to present this addendum to the Master Traffic Impact and Analysis for the Cavasson Development located on the northwest corner of Hayden Road and Loop 101, south of Legacy Boulevard in Scottsdale, Arizona.

BACKGROUND

The Cavasson development is a ±134-acre project located on the southwest corner of Hayden Road and Legacy Boulevard in Scottsdale, Arizona. This development is separated into three (3) phases. Phase 1 consists of a 135-key hotel, 350 multi-family residential dwelling units, 11,000 square feet of retail with 6,000 square feet of restaurant attached, and 740,000 square feet of office space. Previously, the approved TIMA considered all of Phase 2 and Phase 3 to be included in a single buildout phase (in its entirety noted as Phase 2). Therefore, the TIMA Phase 2 included both the Cavasson Phase 2 and Phase 3 plans of development.

This second buildout phase of Cavasson was to consist of multiple hotels totaling 265 keys, 1,250 multi-family dwelling units, 183,000 square feet of retail with 6,000 square feet of restaurant attached, and 1,060,000 square feet of office space. Previously, there was not a comprehensive site plan available that depicted the exact location of each of the land uses for the buildout condition, so it was assumed that of all the Phase 3 site trips, approximately 77% of them would be located north of Cavasson Boulevard and 23% of them would be located in the southwest quadrant known as Phase 2. The north half of the site, noted as Phase 3 in the plan of development, as provided in an updated site plan, will now consist of 67,500 square feet of retail, 219,000 square feet of office space, 18,000 square feet of fast-casual restaurant, a 265-key hotel and approximately 400 multi-family residential units.

There are 15 access points and internal intersections that are associated with this project which will be-reanalyzed in this addendum. The land uses and sizes in the northeast quadrant of the site have changed from the approved Cavasson TIMA, sealed May 17, 2019. Along with the updated land uses

3-PP-2019#2
10/23/20

and sizes, two additional connections have been added since the previous TIMA. The purpose of this addendum is to compare the previous trip generation with an updated trip generation with the revised land uses to determine is the queue storage length recommendations and other recommended offsite improvements from the previous TIA are sufficient. The proposed site plan can be found in **Attachment A**.

FUTURE ROADWAY CONDITIONS

Miller Road will be expanded from the northern subdivision, south to Legacy Boulevard, during the construction of Phase 1. This expansion will provide access to the Cavasson development and the surrounding Crossroads East development. By phase 2 opening year 2030, Miller Road will be constructed south as an underpass for the Loop 101 and will terminate at Princess Boulevard, creating a new four-legged intersection.

Internal to the site, Cavasson Boulevard has been constructed east-west bisecting the north and south halves of the site. Claret Drive has been constructed north-south to connect the Loop 101 Frontage Road to Cavasson Boulevard and will continue north, connecting to Legacy Boulevard. Construction of both Cavasson Boulevard and Claret Drive south of Cavasson Boulevard were contemplated with Phase 1 and are nearing completion. The north connection of Claret Drive, as well as construction of two additional north-south roadways, connecting Claret Drive to Legacy Boulevard, will be a part of phase 3.

SITE ACCESS

The site can be accessed via Miller Road alignment, Hayden Road, Legacy Boulevard and Westbound SR-101 Frontage Road.

- **Access *A*** is a proposed full unsignalized access located north of the westbound SR-101 Frontage Road along the future Miller Road alignment. Access A is planned to directly service Phase II of the proposed Cavasson development and may need to be restricted in the future if sight distance cannot be achieved after the construction of the Miller Road underpass.
- **Access *B*** is the proposed full movement signalized site access (Cavasson Boulevard and Miller Road intersection) which is located between the SR-101 Frontage Road and Legacy Boulevard. Access B is generally located north of Access A and south of Access C along the Miller Road Alignment. Access B is planned to be constructed as part of the Phase I development and will serve as one of the primary access points into the proposed Cavasson development.
- **Access *C*** is a proposed restricted ¾ unsignalized access providing left-in/right-in/right-out movements only. Access C is located south of Legacy Boulevard and north of Access B along the Miller Road Alignment. Access C is planned to be constructed as part of Phase II of the Cavasson development.
- **Access *D*** is a proposed full movement unsignalized access located east of Miller Road. Access D is planned to be constructed as part of the Phase II development.
- **Access *E*** is a proposed full movement unsignalized access located between Miller Road and Hayden Road, located generally east of Access D and west of Access F along Legacy Boulevard. Access E is planned to be constructed as part of the Phase II development.

3-PP-2019#2
10/23/20

Table 2 – New Phase 3 Trip Generation Summary

Proposed Use	ITE LUC	Size	Units	Weekday Trips						
				Daily	AM Peak Hour			PM Peak Hour		
				Total	In	Out	Total	In	Out	Total
Shopping Center	820	67.5	KSF	2,548	39	24	63	123	134	257
General Office Building	710	218.5	KSF	2,264	200	32	232	38	201	239
Hotel or motel	310	265	Rooms	2,564	75	52	127	88	85	173
Fast Casual Restaurant	930	17.5	KSF	5,516	24	12	36	136	111	247
Apartments	220	400	DU	2,984	41	137	178	128	75	203
			Subtotals	15,876	379	257	636	513	606	1,119
			Internal Capture Reduction	*(2,858)*	*(30)*	*(21)*	*(51)*	*(104)*	*(120)*	*(224)*
			External Trips	**13,018**	**349**	**236**	**585**	**409**	**486**	**895**
			Difference in Trips	*-6,092*	*-338*	*-238*	*-576*	*-337*	*-446*	*-783*

With the updated Phase 3 land use densities and intensities, the new northern half of the Cavasson development is anticipated to generate 13,018 external daily trips with 585 trips occurring during the AM peak hour (349 in/236 out) and 895 trips occurring during the PM peak hour (409 in/486 out).

This new site plan is anticipated to generate 6,092 fewer weekday daily trips with 576 fewer trips occurring during the AM peak hour (338 fewer in/238 fewer out) and 783 fewer trips occurring during the PM peak hour (337 fewer in/446 fewer out) when compared to the trip generation included in the May 2019 TIMA. The site generated trips resulting from the new trip generation, which includes all trips produced by the site during both phase 1, phase 2, and phase 3 have been included as **Attachment C**.

QUEUE STORAGE ANALYSIS

Adequate turn storage should be supplied on any approach where turn lanes are permitted and/or warranted. A queuing analysis was performed for all warranted/recommended and existing intersection turn lanes where site traffic is expected as well as left turn lanes adjacent to the site. According to the methodology documented in *A Policy on Geometric Design of Highways and Streets* (the AASHTO "Green Book"*)*, the storage length for a turn lane is typically estimated as the length required to hold the average number of arriving vehicles per two minutes, where unsignalized, or per one-and-a half signal cycles, where signalized.[1] The formulas used for the calculations are shown below.

For signalized intersections, the storage length is determined by the following formula:

[1] *The American Association of Highway and Transportation Officials on pages 714-715 of its publication,* Geometric Design of Highways and Streets *("AASHTO Green Book"), indicates that storage length for a turn lane, exclusive of taper, "should usually be based on one and one-half to two times the average number of vehicles that would store per cycle" at a signalized intersection.*

Conclusions

The following conclusions and recommendations have been documented in this statement:

- With the new Phase 3 land use densities and intensities, the new northern half of the Cavasson development is anticipated to generate 13,018 external daily trips with 585 trips occurring during the AM peak hour (349 in/236 out) and 895 trips occurring during the PM peak hour (409 in/486 out).
    - This new site plan is anticipated to generate 6,092 fewer weekday daily trips with 576 fewer trips occurring during the AM peak hour (338 fewer in/238 fewer out) and 783 fewer trips occurring during the PM peak hour (337 fewer in/446 fewer out) when compared to the trip generation included in the May 2019 TIMA.
    - All proposed turn lanes will only require the City of Scottsdale minimum turn lane requirement with the exception of the northbound left turn lane at Access H, which will require 155 feet of queue length, the westbound left turn lane at Hayden Road and Legacy Boulevard, which will require 205 feet and the eastbound right turn lane at the same intersection, which will require 255 feet.
        - The northbound left turn, eastbound left turn and eastbound right turn approaches at the intersection of Hayden Road and Cavasson Boulevard are all recommended to be constructed with dual turn lanes, each striped at 150 feet. Dual left turn lanes are also recommended on the northbound and eastbound approaches at the intersection of Hayden Road and Legacy Boulevard as well as the northbound approach at the intersection of Miller Road and Legacy Boulevard.

Thank you for allowing CivTech to assist you on this project. We wish you the best as you proceed with the development. Please call me if you have any questions about this statement and/or if we can be of further assistance.

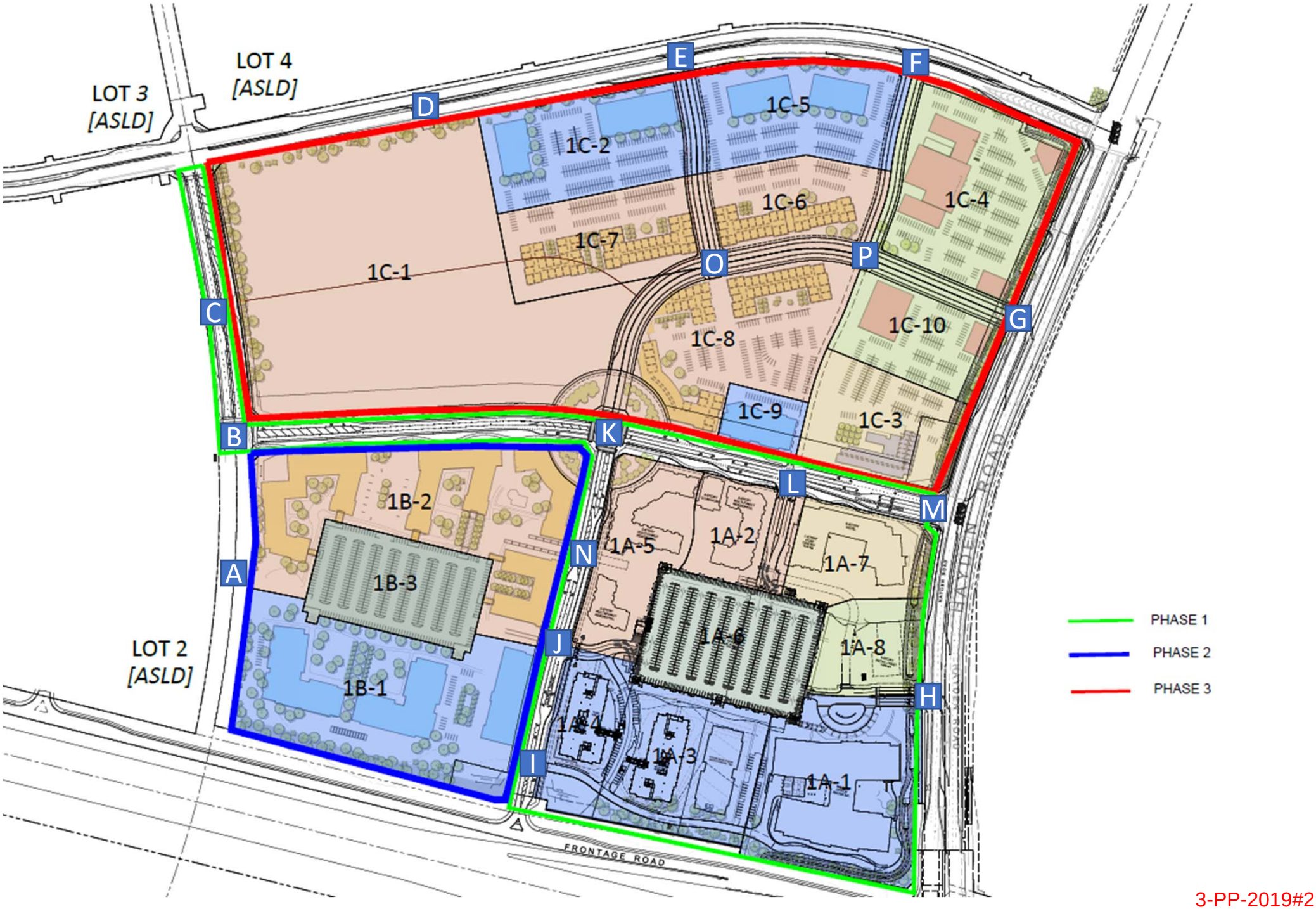
Sincerely,

CivTech

Dawn D Cartier, P.E., PTOE
Project Manager/President

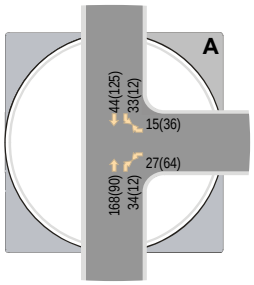
Attachments:

A. Site Plan
B. Original and New Trip Generations
C. New site generated trips and total trips
D. Queue Storage Analysis

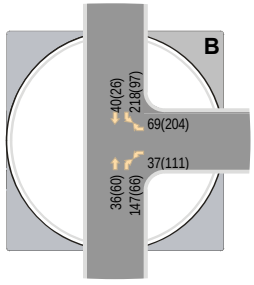


3-PP-2019#2
10/23/20

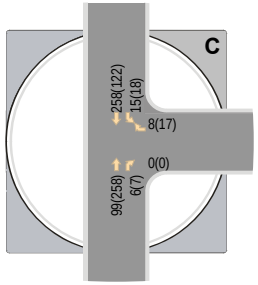
Site Access Volumes



Miller Rd & Access A



Miller Rd & Access B



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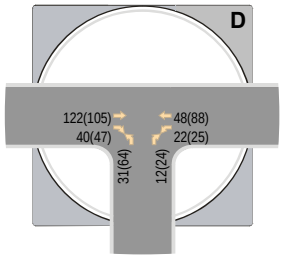
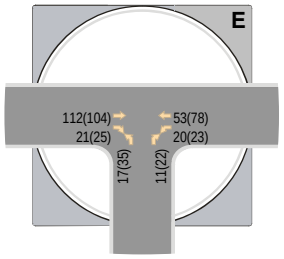


Access D & Legacy Blvd



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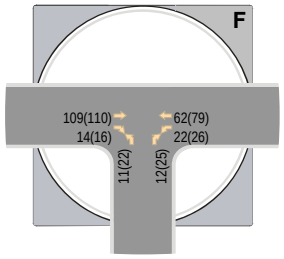

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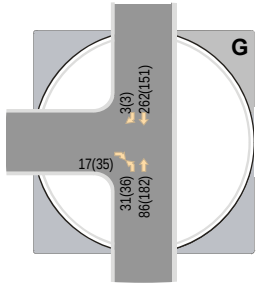

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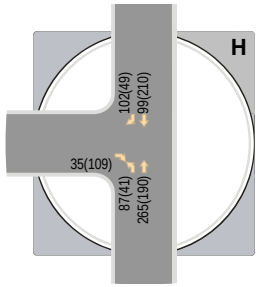

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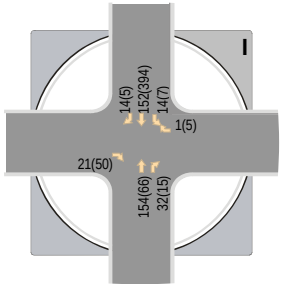

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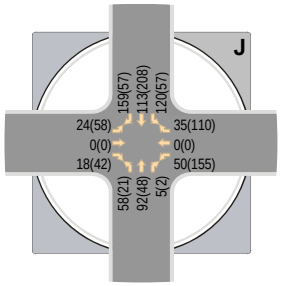

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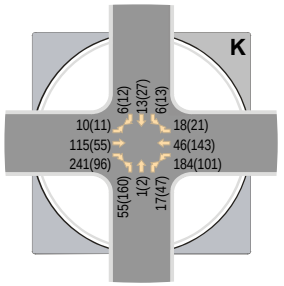

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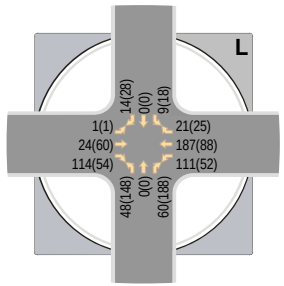

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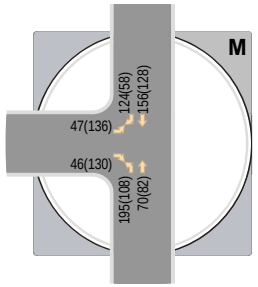

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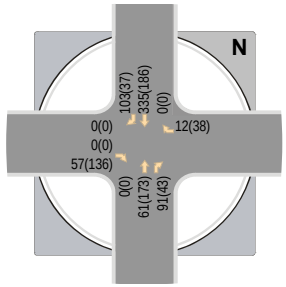

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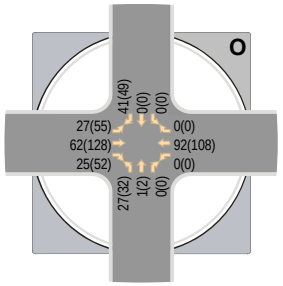

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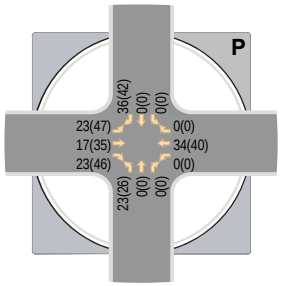

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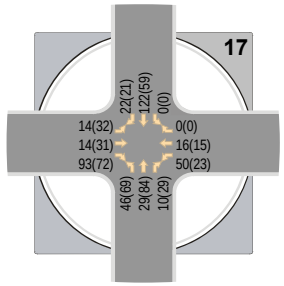
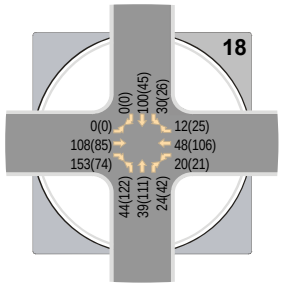


Hayden Rd. & Legacy Blvd.



Miller Rd. & Legacy Blvd.

3-PP-2019#2
10/23/20

Banner Scottsdale
Transportation Impact & Mitigation Study
City of Scottsdale

Project No.: 1121151

Date: July 2022

ACCEPTED
WITH COMMENT

Study was submitted without certification of seal of a registered professional engineer. (DSPM 5-1.1003)

DIBBLE

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5-ZN-2022
9/20/2022

I. Introduction and Summary

A. Purpose of report & study objectives

The purpose of this traffic study is to determine the traffic impacts of a proposed Banner Health medical campus project within the City of Scottsdale. The proposed Banner Health medical campus is proposed to be developed on an approximately 45-acre parcel of State Trust Land located on the east side of Hayden Road between Loop 101 and the Cavasson Boulevard extension (the "Banner Property"). The Banner Property is located on a portion of a parcel referred to as Planning Unit 9 of the Crossroads East Planned Community District. The remaining portion of Planning Unit 9, also approximately 45 acres, is located north of the Cavasson Boulevard extension and east of Hayden Road and is referred to as Parcel B1 within this traffic study.

This report also compares the difference between the previously anticipated land use trip generation for the Banner Property and the proposed land use for the Banner medical campus. The report further includes analysis that assumes the development of Parcel B1 and evaluates potential future traffic impacts.

B. Executive summary

1. Site Locations & Study Area

The Banner Property is located within the City of Scottsdale, east of Hayden Road between Loop 101 and Cavasson Boulevard. **Figure 1** shows the Banner Property location. This study includes the analysis of the following intersections:

- Loop 101 EB Ramp & Hayden Road
- Loop 101 WB Ramp & Hayden Road
- Main Entrance & Hayden Road
- Cavasson Boulevard & Hayden Road
- Legacy Boulevard & Hayden Road
- Cavasson Boulevard & Driveway 1
- Cavasson Boulevard & Driveway 2

2. Development Description

The Banner Health medical campus project will be developed in three phases ("Banner Project"). The first phase includes two buildings (Phase 1-A and 1-B). Phase 1-A will be a 340,000 SF hospital building with 108 beds in a 4-story hospital building and a 2-story Diagnostic & Treatment building block to house emergency, surgery, laboratory, Pharmacy and associated support services. Phase 1-B will include a 3-story, 120,000 SF Medical Office Building that will be separate from the hospital. The estimated completion date for Phases 1-A and 1-B is 2025. Phase 2 of the Banner Project is anticipated to include a 3-story, 90,000 SF Cancer Center along with a 4-level parking structure. For the purposes of this report, Phase 2 is assumed to be completed in 2032. The final Phase 3 is planned to expand on the Phase 1-A hospital building and will add an additional 162 to 192 beds for a total bed capacity of 270-300 beds at full build out of the hospital. For the purposes of this report, Phase 3 is assumed to be completed in 2045.

3. Principal Findings

Through capacity and improvement analysis, it was found that providing right turn lanes at all site driveways into the Banner Property is beneficial. It was also determined that for the two site driveways along Cavasson Boulevard, it is beneficial to provide separate egress left and right turn lanes to reduce vehicle queues within the parking lot.

5-ZN-2022
9/20/2022

Through the capacity analysis, it was found that the background traffic growth has impacts to the intersection of Cavasson Boulevard & Hayden Road by 2032 (Phase 2 timeframe) without the addition of Banner traffic or Parcel B1. During the morning peak hour, the delay is 64.6 seconds with a LOS E by 2032. The northbound left begins to fail for the background traffic with the addition of Parcel B1 by 2025 (Phase 1 timeframe). The delay with the addition of Parcel B1 is 83.6 second (LOS F) during the morning peak hour and 77.2 seconds (LOS E) during the afternoon peak hour. The addition of the site traffic also has some impacts to the northbound left turn lane at Cavasson Boulevard & Hayden Road due to the addition of the east leg of the intersection as well as overall increased traffic to the intersection. Without the addition of Parcel B1, the northbound left turn has a delay of 79.3 seconds (LOS E) for the morning peak and 91.9 seconds (LOS F) for the afternoon peak hour by Phase 1 opening day 2025. With the addition of both Banner Phase 1 and Parcel B1, the morning peak hour delay is 67.7 seconds (LOS E) and the afternoon peak hour delay is 82.5 seconds (LOS F). The turning movement delay was found to decrease to an acceptable delay for the background traffic only scenarios as well as with the addition of the Banner traffic scenarios when the northbound and southbound left turns are made a protected/permissive. The queue length was also significantly reduced so as not to exceed the storage length of the northbound left turn lane. The LOS becomes a D with 45.5 second delay in the morning peak hour and C with a 34.5 second delay in the afternoon peak hour for the northbound left background traffic scenario by 2025 with the improvement and remaining an acceptable level of service for by 2032 and 2042. Once Parcel B1 is added to the background traffic and the improvement is made to the intersection, the delay is decreased to 18 seconds (LOS B) for the morning peak and 31 seconds (LOS C) for the afternoon peak hour by 2025. Note the signal timing was also optimized in all scenarios. The LOS and delay remain at an acceptable level of service by 2032 and 2042. Once the Banner traffic is added at the protected/permissive improvements are added, the delay is decreased to 19.6 seconds (LOS B) and 30.2 (LOS C) for the morning and afternoon peak hour without Parcel B1 by Phase 1 opening day (2025). The turn remains at an acceptable level of service by Phases 2 & 3 opening days.

The westbound left turns at Cavasson Boulevard and Hayden Road will exceed 300 vehicles per hour during the afternoon peak hour with the Banner Project. Per the City's guidelines, dual left turn lanes should be considered. Through capacity analysis, it was determined that dual left turn lanes would provide the most efficiency for the westbound left turning vehicles and create more space for left turning vehicles to queue.

The northbound left turn lane for the Loop 101 interchange for the westbound ramps is currently at a LOS D with a 41.7 second delay during the afternoon peak hour and a queue that exceeds the capacity of the turn lane. Once background traffic is increased to accommodate more development in the area and Parcel B1 traffic is added, the northboubd left turn increases to a 79.7 second delay (LOS E) by 2025. Pavement already exists at the the Loop 101 and Hayden interchange that could accommodate an additional through lane in the northbound and southbound directions. Reconfiguring pavement markings to incorporate this currently unused pavement to add an additional through lane in the north and south direction would benefit traffic as well as making the northbound left turn a protected/permissive left turn instead of a protected left turn. This would allow for more throughput traffic capacity in the northbound and southbound directions and thus allow for more of the signal cycle length to be dedicated to the northbound left turning movement. Making the left turn a protected/permissive left also allows additional vehicles to make a left when there are gaps in the throughput traffic. It is also important to note that based on the traffic counts collected in the field, the northbound left does already exceeds the 300 vehicles per hour threshold in the afternoon peak hour. Per the City guidelines, the intersection meets the threshold today for investigating a dual northbound left turn lane.

4. Conclusions

The Banner Project includes three phases that are anticipated to be completed over the next 20 years. Phase 1 of the Banner Project is anticipated to generate 7,485 weekday trips, 601 morning peak hour trips and 633 afternoon peak hour trips. Phase 2 of the Banner Project is anticipated to generate 2,867 weekday trips, 241

5-ZN-2022
9/20/2022

morning peak hour trips and 256 afternoon peak hour trips. Phase 3 of the Banner Project is anticipated to generate 3,183 weekday trips, 242 morning peak hour trips and 254 afternoon peak hour trips. The three phases combined are anticipated to generate 13,535 weekday trips, 1,084 morning peak hour trips and 1,143 afternoon peak hour trips total for the Banner Project.

A significant portion of the Banner Project traffic is anticipated to use the intersection of Hayden Road & Cavasson Boulevard. Providing dual left turns for the eastbound and westbound approaches significantly benefits the delay and level of service for all turning movements at the intersection. The eastbound approach already has dual left turn lanes and it is recommended for the dual lefts to remain. The westbound approach is recommended to have dual left turn lanes based on the City's guidelines. The dual westbound lefts also significantly reduce delay and queues for westbound left turning vehicles

The future development of Parcel B1 and the associated north/south connector road between Cavasson Blvd. and Hualapai Drive will help to lower the traffic demand at the intersection of Hayden Road & Cavasson Boulevard by providing alternative routes for site traffic to access Pima Road and the Loop 101.

5. Recommendations

The following list includes the recommendations for site access to the Banner Property:

- Provide northbound right turn lane with a minimum 100-foot storage length at the main entrance along Hayden Road.
- Provide eastbound right turn lane with a minimum 100-foot storage length at the west site driveway along Cavasson Boulevard for Phase 1.
- The east driveway onto the Banner site is not anticipated to have a lot of use until Phases 2 and 3 are constructed. It is therefore recommended to plan for a future eastbound right turn lane with 100-foot storage and further investigate when the right turn lane will be needed with the future phases and as Cavasson Boulevard continues to develop.
- Provide dedicated northbound left turn lanes at two site driveways along Cavasson Boulevard for egress traffic as well as a dedicated northbound right turn lane.

The following list includes all recommendations of off-site improvements for Base traffic that will also improve traffic once Banner traffic is added:

- Reconfigure pavement markings to make the additional unused pavement a shared through/right southbound lane if not already planned at Hayden Road & the Loop 101 westbound interchange.
- Change the northbound left turn lane at Hayden Road and Cavasson Boulevard to a protected/permissive left turn lane by phase 1 opening day (2025) to reduce delay and queues for the turning movement.

The following list includes all recommendations of off-site improvements to accommodate Banner Project site traffic:

- Cavasson Boulevard along the north boundary of the Banner Property is recommended to be a two-lane roadway section to be widened at the intersection of Hayden Road.
- Provide dual westbound left turn lanes with at least 300-foot storage length at Hayden Road & Cavasson Boulevard and a westbound shared through/right turn lane.
- Reconfigure pavement markings for the 1st eastbound right turn lane to be a through lane at Hayden Road & Cavasson Boulevard while maintaining the eastbound dual left turn lane and outer dedicated right turn lane.
- When updating the signal at Hayden Road & Cavasson to accommodate the new east leg of Cavasson, provide protected/permissive southbound left turn indications. The dual eastbound left

5-ZN-2022
9/20/2022

turn lanes will need to be updated to protected left indications. The dual westbound left turn lanes will also require protected left turn indications.

- Provide a southbound left turn lane at the main entrance on Hayden Road with a storage length that fits within the constraints of available space within the existing median.

II. Proposed Development

A. Off-Site Development

The proposed development of the Banner Project will include the design and construction of the currently non-existent east leg of the Hayden Road & Cavasson Boulevard intersection. Cavasson Boulevard, as collector road, will be constructed along the length of Banner Property and terminate with a temporary turn-around at the east end of the Banner Property. The construction of the east leg of Cavasson Boulevard will include the addition of a southbound left turn lane at the intersection as well as restriping the west leg to accommodate a through lane at the intersection. Additionally, the main entrance to the Banner Project will be located along Hayden Road to align with the Hayden Road entrance for the new Nationwide/Cavasson development on the west side of Hayden Road. Due to the proximity of the Loop 101, the main entrance will have limited access to include left-in, right-in and right-out. Left-out will be restricted at this access location.

B. Description of On-Site Development

1. Lane Use & Intensity

The Banner Project will have 3 main access locations. As previously mentioned, one main entrance driveway with ¾ access along Hayden Road as well as two driveways along Cavasson Boulevard will be constructed.

2. Location

The Banner Project site is located within the City of Scottsdale, east of Hayden Road between Loop 101 and Cavasson Boulevard. **Figure 1** shows the project location.

5-ZN-2022
9/20/2022

Figure 1 – Site Location

5-ZN-2022
9/20/2022

IV. Projected Traffic

A. Site Traffic

1. Trip Generation

The trip generation for each phase of the Banner Project were calculated using the ITE Trip Generation Manual, 11th Edition. The calculations are summarized in **Table 3**.

Table 3 – Trip Generation

Phase	Land Use	Land Use Code	Quant	Units	Weekday			Morning Peak			Afternoon Peak		
					Total	Ingress	Egress	Total	Ingress	Egress	Total	Ingress	Egress
1	Hospital	610	340	1000 SF	3662	1831	1831	279	187	92	292	102	190
	Medical Dental Office	720	120	1000 SF	3823	1912	1911	322	261	61	341	85	256
	Phase 1 Total				**7485**	**3743**	**3742**	**601**	**448**	**153**	**633**	**187**	**446**
2	Medical Dental Office	720	90	1000 SF	2867	1434	1433	241	195	46	256	64	192
	Phase 2 Total				**2867**	**1434**	**1433**	**241**	**195**	**46**	**256**	**64**	**192**
3	Hospital	610	295.5	1000 SF	3183	1592	1591	242	162	80	254	89	165
	Phase 3 Total				**3183**	**1592**	**1591**	**242**	**162**	**80**	**254**	**89**	**165**
Total for All Phases					**13535**	**6769**	**6766**	**1084**	**805**	**279**	**1143**	**340**	**803**

2. Trip Distribution

The trip distribution was determined based on anticipated patient origins as well as employees. Most traffic is anticipated to arrive from the east and west on the Loop 101. Some traffic is anticipated to arrive from the north of the Banner Property along Scottsdale Road, Hayden Road and Pima Road. Some traffic is also anticipated to arrive from the south from Scottsdale Road and Hayden Road.

5-ZN-2022
9/20/2022

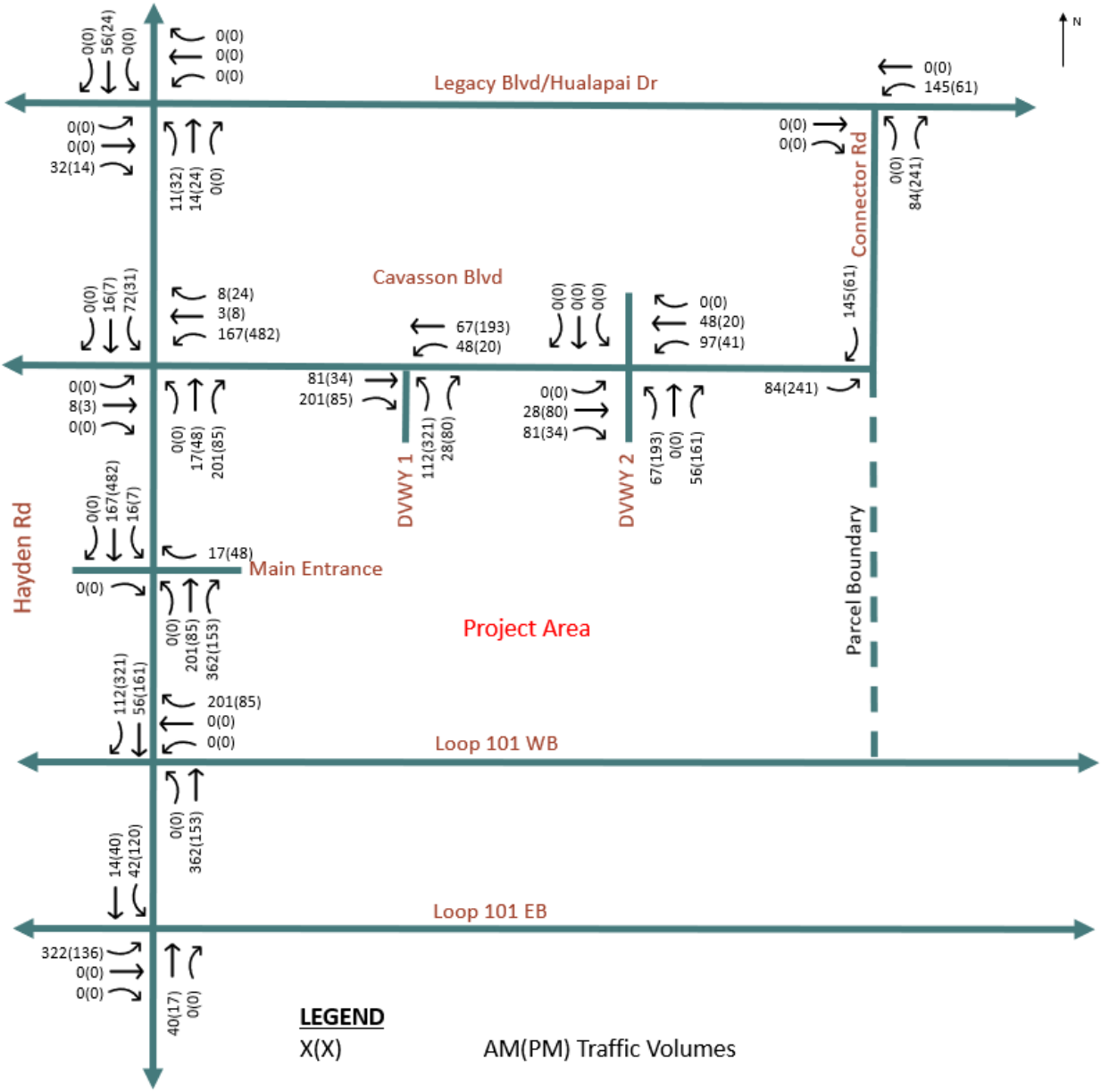


Figure 11 – Trip Assignment All Phases Combined w/Parcel B1

B. Through Traffic

1. Method of Projection

The background traffic for this study was determined using a few different resources. The first source of data came from traffic data that was collected by Field Data Services (FDS) of Arizona as previously mentioned.

The existing traffic was increased by a growth rate of 1% per year for each horizon year. This growth rate was determined based on the remaining empty land within the vicinity of the project. The increased traffic for each horizon year are summarized in the following tables.

5-ZN-2022
9/20/2022

CivTech

September 10, 2020

Charles Huellmantel
Huellmantell & Affiliates
605 South Ash Avenue
Tempe, Arizona 85281
Telephone: (480) 921-2800
Email: charles@huellmantel.com

RE: ENHANCED TRAFFIC STATEMENT FOR THE AXON CAMPUS – SCOTTSDALE, ARIZONA

Dear Mr. Huellmantel:

CivTech is pleased to present this enhanced traffic statement for the proposed Axon Campus (`project site') located in on the south and west side of Loop 101, north of the Mayo Boulevard/Union Hills alignment and east of Hayden Road in Scottsdale, Arizona. The proposed project would develop one (1) parcel on approximately 70 acres that was previously proposed as a part of the Crossroads East PCD (Parcel 13). The previous assumptions for this parcel included industrial, manufacturing and warehousing uses totaling approximately 1.5 million square feet. The Axon Campus is an allowable use for Parcel 13 with the PCD. The proposed trip generation assumptions utilized during the Crossroads East TIA prepared for the PCD zoning process with the Arizona State Land Department (ASLD) were similar in scale. The proposed site plan can be found in **Attachment A**.

PURPOSE AND SCOPE

The purpose of this traffic statement is to determine if the relocated Mayo Boulevard, which is now proposed in a different location than originally shown within the Crossroads East TIA, can utilize roundabouts to help realign the roadway and provide more developable land for the Axon Campus. The location and potential size of roundabouts used in the relocation will be reviewed to determine if adequate spacing is provided from the arterial street network to avoid queueing through the roundabout. The typical section required for Mayo Boulevard east of Hayden Road with the Axon Campus is also being reviewed as part of this statement.

The Crossroads east TIA was approved by the City of Scottsdale on September 23, 2011 with a stipulation that the developer provide an additional lane in the northbound direction on Hayden Road fronting the project. This lane has been considered within the analysis. A trip generation comparison will be conducted as well as a capacity analysis to determine if there are additional changes to the surrounding roadway network that are needed due to the development of this parcel.

Table 1 - Trip Generation Summary

Land Use	ITE Code	Land Use Name	Quantity Units+	AM Distribution		PM Distribution	
				In	Out	In	Out
Previous Assumption (Crossroads East)							
Industrial Park	130	Industrial Park	490.766 KSF	82%	18%	21%	79%
Manufacturing	140	Manufacturing	490.766 KSF	78%	22%	36%	64%
Warehousing	150	Warehousing	490.766 KSF	79%	21%	25%	75%
Proposed							
General Office Building	710	General Office building	780.000 KSF	86%	14%	16%	84%
Warehousing	150	Warehousing	130.000 KSF	77%	23%	27%	73%

Land Use	ADT		AM Peak Hour				PM Peak Hour			
	Avg. Rate*	Total	Avg. Rate*	In	Out	Total	Avg. Rate*	In	Out	Total
Previous Assumption (Crossroads East)										
Industrial Park	5.25	2,576	0.49	196	43	239	0.79	81	305	386
Manufacturing	3.87	1,900	0.82	313	88	402	0.77	137	243	380
Warehousing	3.13	1,534	0.19	74	20	94	0.18	23	68	91
Total		**6,010**		**583**	**151**	**732**		**241**	**616**	**857**
Proposed										
General Office Building	9.98	7,782	0.97	654	106	760	1.03	128	673	801
Warehousing	1.93	250	0.31	32	9	41	0.33	12	31	43
Total		**8,032**		**686**	**115**	**801**		**140**	**704**	**844**
Difference (Proposed-Previous Assumption)		**1,797**		**103**	**-36**	**66**		**-101**	**88**	**-13**
Difference (%)		**30%**		**18%**	**-24%**	**9%**		**42%**	**14%**	**-2%**

Notes: *All average rates were calculated by dividing total trips generated using regression equation by the number of dwelling units. (See below.)
+ KSF = 1,000 square feet

CALCULATIONS (Equations shown only where applicable)			
Land Use [Units]	*Daily*	*AM Peak Hour*	*PM Peak Hour*
General Office Building [X = 780 SF]	FC: LN(T)=0.97*LN(X)+2.5 [9.98]	FC: T=0.94*X+26.49 [0.97]	FC: LN(T)=0.95*LN(X)+0.36 [1.03]
Warehousing [X = 130 SF]	FC: T=1.58*X+45.54 [1.93]	FC: T=0.12*X+25.32 [0.31]	FC: T=0.12*X+27.82 [0.33]

The proposed Axon Campus development could generate up to 8,032 weekday daily trips with 801 trips occurring during the AM peak hour (686 in/115 out) and 844 trips occurring during the PM peak hour (140 in/704 out)

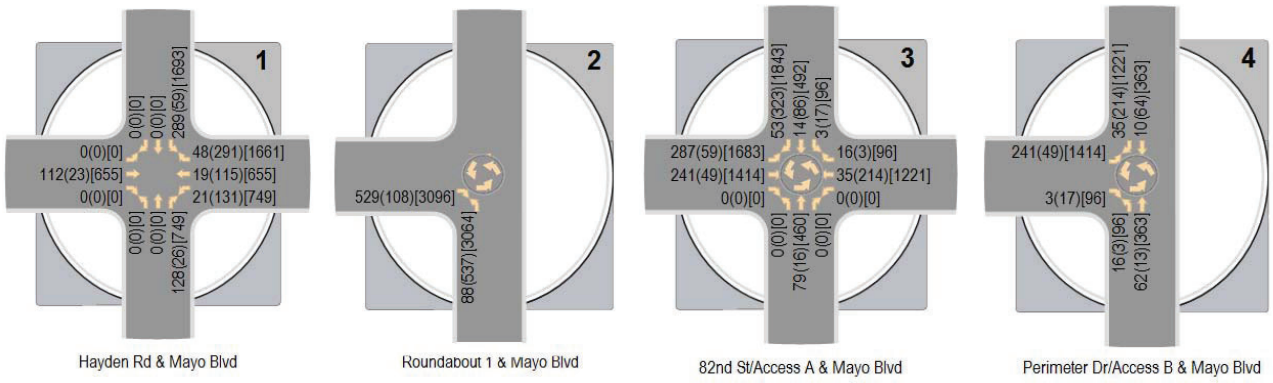
The Axon Campus is expected to generate 1,797 additional external daily trips as compared to the original Crossroads East TIA, with 66 additional trips generated during the AM peak hour (103 trips in/-36 trips out) and 13 fewer trips generated during the PM peak hour (-101 trips in/88 trips out).

TRIP DISTRIBUTION AND ASSIGNMENT

A single trip distribution pattern was taken from the previously approved Crossroads East TIA. It is expected that the development will generate trips based on future population within a 10-mile radius of the site. Future total population within a 10-mile radius of the site, as predicted by the 2030 socio-economic data compiled by the Maricopa Association of Governments (MAG), was used in that study as a basis to estimate trip distribution for the development.

Based on this information and the local street network, distribution percentages were assigned to the study roadway network. The resulting trip distribution percentages were applied to the generated trips to determine the AM and PM peak hour site traffic at the intersections within the study area and are illustrated in **Figure 1**.

Figure 1 – Site Trip Distribution



BACKGROUND TRAFFIC GROWTH PROJECTIONS

Background traffic along Hayden Road was determined by growing the existing 2020 traffic volumes by 2.1% per year to the opening year 2035. This gives a growth factor of 1.366 applied to the existing Hayden Road volumes.

CivTech recently conducted a traffic study for the Cavasson development, located on the southwest corner of Hayden Road and Legacy Boulevard. This development is anticipated to produce additional traffic on Hayden Road by the horizon year 2035. This anticipated additional traffic was added to the grown existing volumes to represent future traffic on the surrounding roadway network.

Along with the Cavasson development, Mayo Boulevard is currently being constructed so that it connects west to Scottsdale Road. The original Crossroads East TIA projected volumes for this portion of Mayo Boulevard between Hayden Road and Scottsdale Road. In order to have a more conservative estimate of approach traffic volumes, the eastbound and westbound volumes from Crossroads East for this portion of Mayo Boulevard were included in place of the existing volumes since the roadway is not yet completed and existing traffic that was present is likely construction vehicles. The horizon year for Crossroads East TIA was 2030, so the volumes used in the Axon Campus background traffic were grown by 2.1% per year for 5 years in order to represent the 2035 horizon year as projected for the Cavasson development.

Background traffic calculations as well as the Cavasson and Crossroads East volumes referenced above are located within **Attachment C**.

one-and-a half signal cycles, where signalized.[1] The formulas used for the calculations are shown below.

For signalized intersections, the storage length is determined by the following formula:

Storage Length = [1.5 x (veh/hr)/(cycles/hr)] x 25 feet

For unsignalized intersections, the storage length is determined by the following formula:

Storage Length = [(veh/hr)/(30 periods/hr)] x 25 feet

The total projected traffic volumes were utilized for the calculations. From this, the resulting turn lane storage for turn movements using AASHTO guidelines were calculated and are summarized in **Table** . Calculations for the AASHTO queue storage length recommendations and the 50th percentile HCM 2016 queue storage length recommendations are provided in **Appendix E**. The 50th percentile HCM 2016 queue storage lengths are given in vehicles and multiplied by 25 feet per vehicle to determine the storage length.

Table 6 – Queue Storage Lengths

ID	Intersection	Intersection Control	Movement	Queue Storage		
				AASHTO	HCM(2)	Recommended
1	Hayden Road & Mayo Boulevard	Signalized	NB Left	50′	35′	150′
			SB Left	900′	45′	(1)300′
			EB Left	50′	225′	150′
			WB Left	225′	85′	150′
			SB Right	75′	160′	200′
			WB Right	1025′	390′	(3)

(1) A minimum of 150-feet of queue storage is recommended at all signalized intersections.
(2) HCM 50th percentile queue reported in vehicles/lane, assuming 1 vehicle ~ 25 feet.
(3) Westbound right-turn lane is a through trap lane that will provide more then the calculated queue storage.

The recommended storage lengths in **Table 6** is provided for study horizon year 2035 using the total traffic projections.

[1] *The American Association of Highway and Transportation Officials on pages 714-715 of its publication,* Geometric Design of Highways and Streets *("AASHTO Green Book"), indicates that storage length for a turn lane, exclusive of taper, "should usually be based on one and one-half to two times the average number of vehicles that would store per cycle" at a signalized intersection.*

Conclusions

The following conclusions and recommendations have been documented in this statement:

- The proposed Axon Campus development could generate up to 8,032 weekday daily trips with 801 trips occurring during the AM peak hour (686 in/115 out) and 844 trips occurring during the PM peak hour (140 in/704 out).
- The Axon Campus is expected to generate 1,797 additional external daily trips as compared to the original Crossroads East TIA, with 66 additional trips generated during the AM peak hour (103 trips in/-36 trips out) and 13 fewer trips generated during the PM peak hour (-101 trips in/88 trips out).
- All proposed intersections are anticipated to operate at acceptable levels of service.
- All intersections are anticipated to operate at acceptable levels of service with the proposed intersection lane configuration and the following roadway typical sections:
    - Mayo Boulevard should be constructed with a four-lane section, two lanes in each direction of travel between Hayden Road and 82nd Street. This will require the construction of a two-lane roundabout approximately 400 feet east of the Hayden Road alignment.
    - Mayo Boulevard could be reduced to provide a two-lane section, one lane in each direction of travel from 82nd Street to Perimeter Drive.
- Queue storage recommendations and proposed lane configuration recommendation have been provided in **Attachment E**.

Thank you for allowing CivTech to assist you on this project. We wish you the best as you proceed with the development. Please call me if you have any questions about this statement and/or if we can be of further assistance.

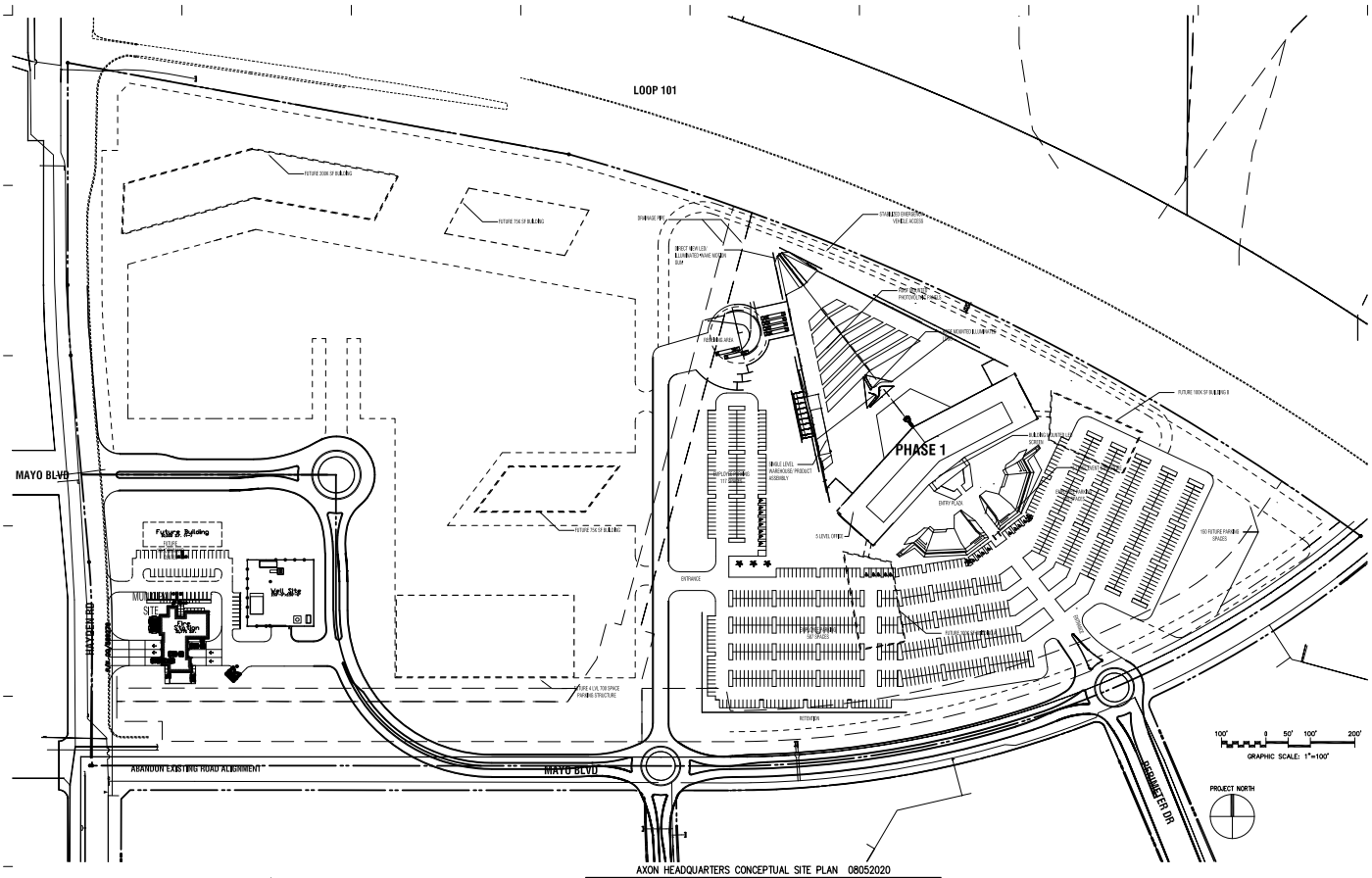
Sincerely,

CivTech

Dawn D Cartier, P.E., PTOE
Project Manager/President

Attachments:

A. Site Plan
B. Existing Conditions Analysis
C. Background Growth Calculations
D. 2035 Analysis Worksheets
E. Queue Storage Analysis



AXON HEADQUARTERS CONCEPTUAL SITE PLAN 08052020

1"=100'

SMITHGROUP
455 NORTH THIRD STREET
SUITE 250
PHOENIX, AZ 85004
602.265.2200
www.smithgroup.com

AXON

NOT FOR CONSTRUCTION

ISSUED FOR	YR	DATE
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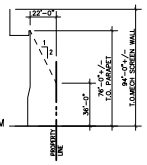
01/13/2020

BUILDING SETBACK DIAGRAM



AXON CORPORATE HEADQUARTERS| FUTURE BLDG A PROPOSED

BLDG HEIGHT		76'-0" +/- TO PARAPET
ZONING		PCD
OFFICE (B OCC)	275,000SF +/- @1/300	825 Spaces
PARKING REQUIRED		3077 Spaces
ADA REQUIRED 4%		109 Spaces

AXON CORPORATE HEADQUARTERS| FUTURE BLDG

BLDG HEIGHT		76'-0" +/- TO PARAPET
ZONING		PCD
OFFICE (B OCC)	75,000SF +/- @1/300	225 Spaces
PARKING REQUIRED		1682 Spaces
ADA REQUIRED 4%		76 Spaces

AXON CORPORATE HEADQUARTERS| BLDG B PROPOSED

BLDG HEIGHT		76'-0" +/- TO PARAPET
ZONING		PCD
OFFICE (B OCC)	100,000SF +/- @1/300	308 Spaces
PARKING REQUIRED		1627 Spaces
ADA REQUIRED 4%		66 Spaces

AXON CORPORATE HEADQUARTERS| BLDG A PROPOSED

BLDG HEIGHT		76'-0" +/- TO PARAPET
ZONING		PCD
OFFICE (B OCC)	100,000SF +/- @1/300	300 Spaces
PARKING REQUIRED		1327 Spaces
ADA REQUIRED 4%		54 Spaces

AXON CORPORATE HEADQUARTERS| PHASE 1

BLDG HEIGHT		76'-0" +/- TO PARAPET
ZONING		PCD
OFFICE (B OCC)	200,000SF +/- @1/300	707 Spaces
ASSEMBLY/ WAREHOUSE (F-1)	130,000SF +/- @1/200	260 Spaces
PARKING REQUIRED		1027 Spaces
ADA REQUIRED 4%		42 Spaces
PARKING PROVIDED		1027 Spaces
ADA PROVIDED		21 Spaces*

*Reduction to 2% (26 spaces) will be requested per Sec. 5.3.10(C.)(4) of Z.O. Southeast Overlay code for Phase 1.

ASP05

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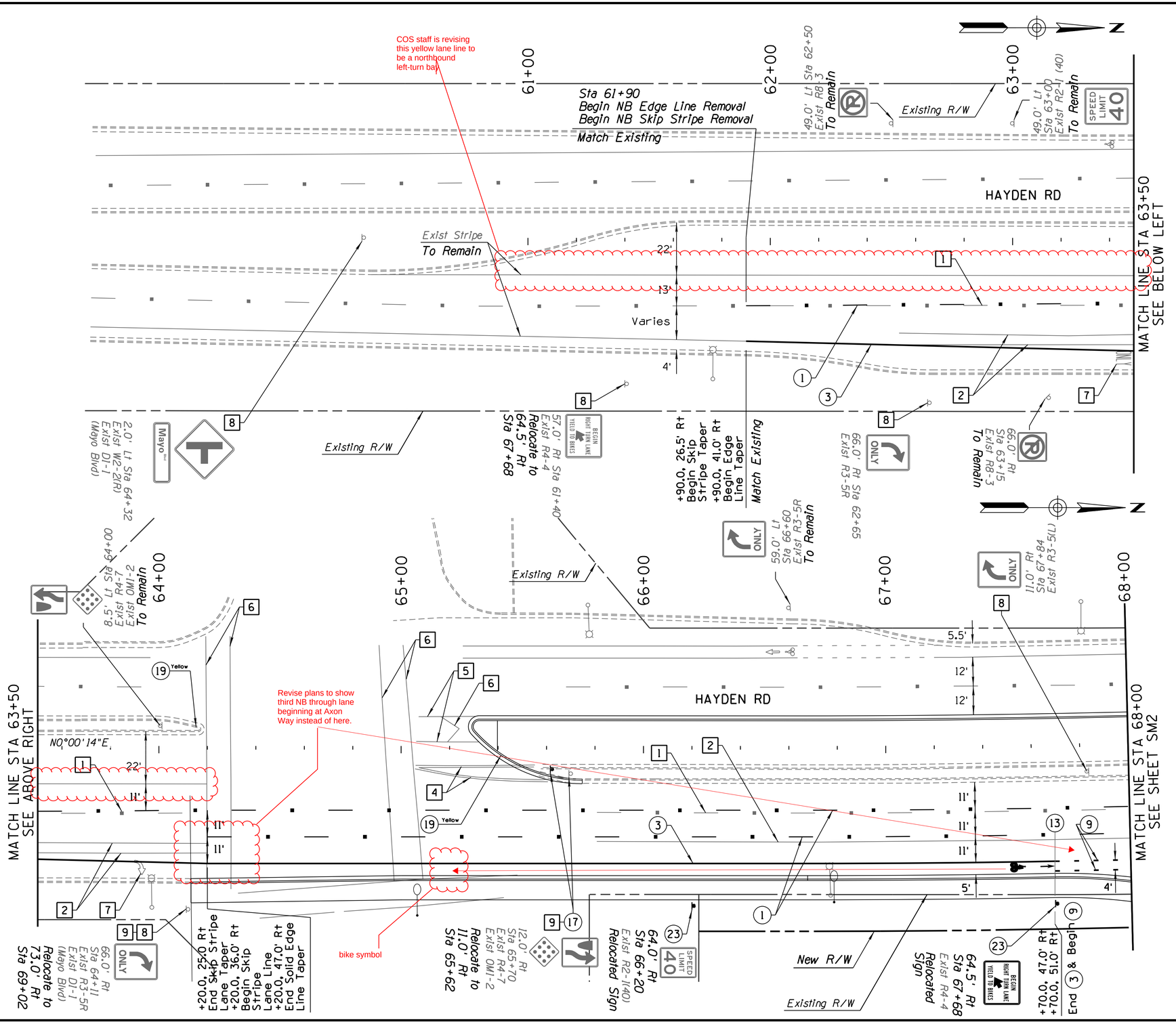

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REMOVAL & RELOCATION NOTES

	DESCRIPTION	UNIT	QUAN
1	Remove Existing 4" Skip Stripe with Raised Pavement Markers	LF	459
2	Remove Existing 4" Solid Stripe	LF	334
4	Remove Existing 4" Dbl Yellow Solid Stripe	LF	105
5	Remove Existing 8" Stripe	LF	50
6	Remove Existing 12" Stripe	LF	407
7	Remove Existing Pvmt Marking Arrow or Legend	EA	2
8	Remove Sign, Post, & Post Base	EA	4
9	Remove & Relocate Existing Sign Remove Post & Post Base	EA	3

CONSTRUCTION NOTES

	DESCRIPTION	UNIT	QUAN
1	4" White Skip Stripe with Type G Markers per COS Std Dtl 2132	LF	990
3	8" Solid White Line	LF	580
9	8" White Skip Stripe 2' Stripe with 6' Gap	LF	60
13	New Bicycle Pvmt Symbol & Arrow per Detail TA	EA	1
17	New Median Nose Signing, Type A per COS Std Dtl 2133-1	EA	1
19	New Median Nose Paint & Markers per COS Std Dtl 2226 or Dtl TE	LF	80
23	Relocated Existing Sign New Sign Post and Foundation per COS Std Dtl 2131	EA	2

GENERAL NOTES

1. All dimensions are measured to lip of gutter or center of lane line, unless otherwise shown.

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ARIZONA811
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DATE	REVISION	BY

ENGINEER
41977 KAREN C. HOBBS
Registered Professional Engineer
Date Signed 07/20/2022
Expires 3/31/23

CITY OF SCOTTSDALE ARIZONA

PUBLIC WORKS
CAPITAL PROJECT MANAGEMENT
7447 E. INDIAN SCHOOL RD.
SCOTTSDALE, ARIZONA 85251

SHEET TITLE
SIGNING AND PAVEMENT MARKING

PROJECT TITLE
AXON WAY
HAYDEN RD TO PERIMETER DR

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=20'	DK/KH	07/2022		SM1
VERT. N/A	DRAWN TML	AS-BUILT	PROJECT NO. 4474-21-6	68 OF 148

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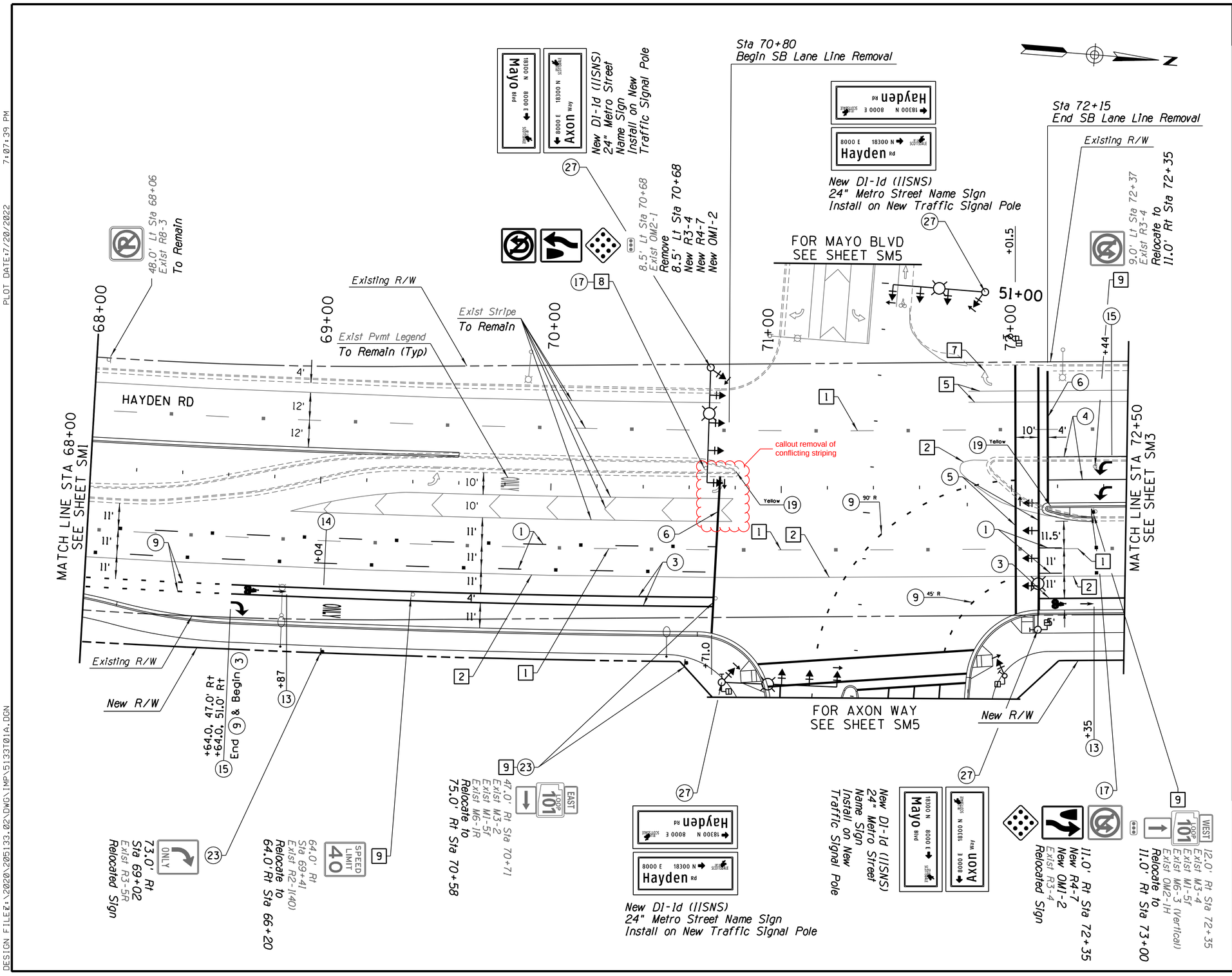

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REMOVAL & RELOCATION NOTES

	DESCRIPTION	UNIT	QUAN
1	Remove Existing 4" Skip Stripe with Raised Pavement Markers	LF	585
2	Remove Existing 4" Solid Stripe	LF	513
5	Remove Existing 8" Stripe	LF	140
7	Remove Existing Pvmt Marking Legend	EA	1
8	Remove Sign, Post, & Post Base	EA	1
9	Remove & Relocate Existing Sign Remove Post & Post Base	EA	4

CONSTRUCTION NOTES

	DESCRIPTION	UNIT	QUAN
1	4" White Skip Stripe with Type G Markers per COS Std Dtl 2132	LF	622
3	8" Solid White Line	LF	455
4	8" Solid White Line with Type G Markers per COS Std Dtl 2132	LF	70
5	12" Solid White Line	LF	217
6	18" Solid White Line	LF	116
9	8" White Skip Stripe 2' Stripe with 6' Gap	LF	290
13	New Bicycle Pvmt Symbol & Arrow per Detail TA	EA	2
14	New Pavement Legend per ADOT Std M-6, M-7 & M-8	EA	1
15	New Pavement Symbol per ADOT Std M-10	EA	3
17	New Median Nose Signing, Type A per COS Std Dtl 2133-1	EA	2
19	New Median Nose Paint & Markers per COS Std Dtl 2226 or Dtl TE	LF	50
20	New Sign, Post & Foundation per COS Std Dtl 2131	EA	1
23	Relocate Existing Sign New Sign Post and Foundation per COS Std Dtl 2131	EA	2
27	New 24" Internally Illuminated Street Name Sign (IISNS) on New Traffic Signal Pole per COS Std Dtl 2134-4	EA	4

GENERAL NOTES

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DATE	REVISION	BY

ENGINEER
41977 KAREN C. HOBBS
Registered Professional Engineer
Date Signed 07/20/22
Expires 3/31/23

PUBLIC WORKS
CAPITAL PROJECT MANAGEMENT
7447 E. INDIAN SCHOOL RD.
SCOTTSDALE, ARIZONA 85251

SHEET TITLE
SIGNING AND PAVEMENT MARKING

PROJECT TITLE
AXON WAY
HAYDEN RD TO PERIMETER DR

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=20'	DK/KH	07/2022		SM2
VERT. N/A	DRAWN TML	AS-BUILT	PROJECT NO. 4474-21-6	69 OF 148

SM2
69

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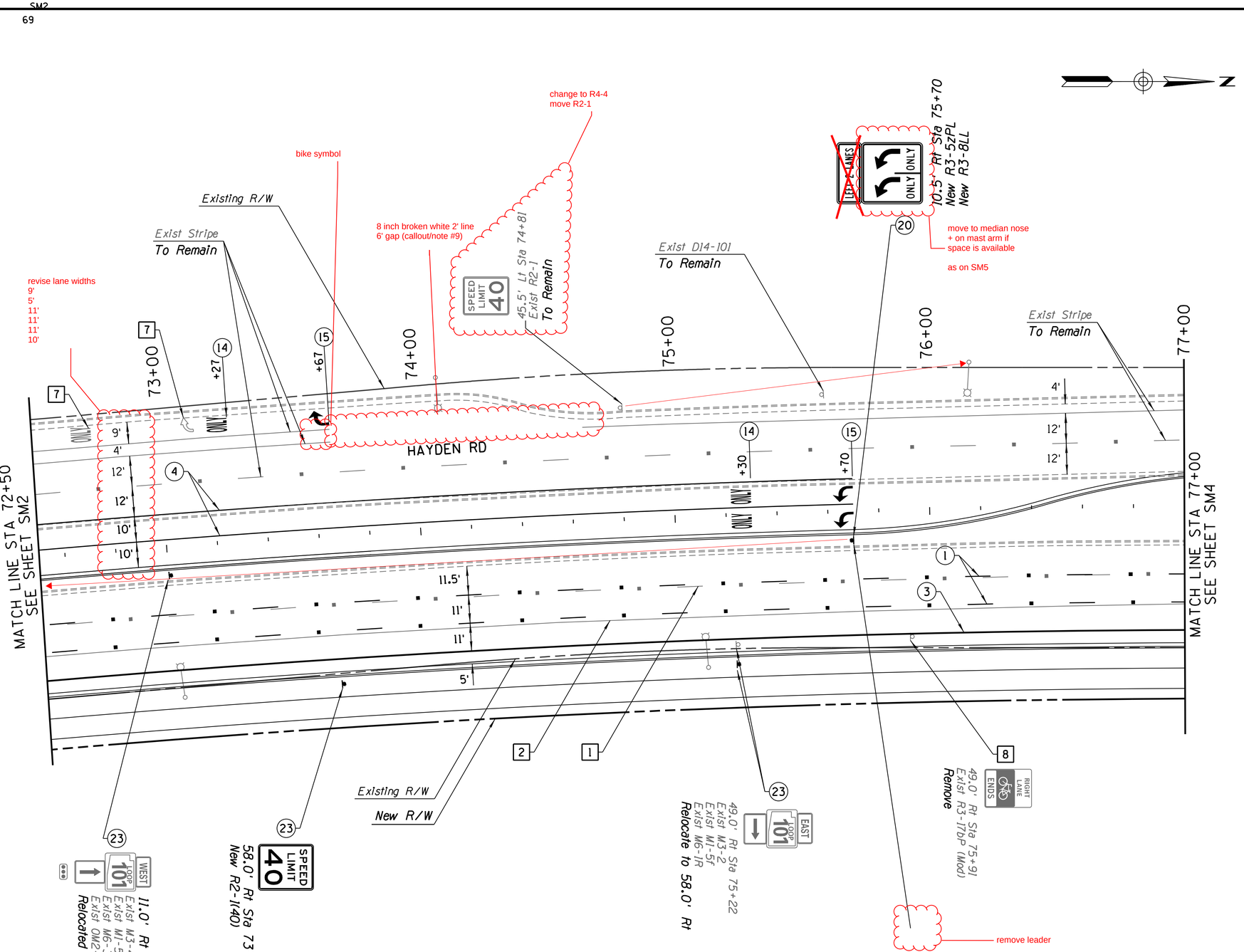

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REMOVAL & RELOCATION NOTES

	DESCRIPTION	UNIT	QUAN
1	Remove Existing 4" Skip Stripe with Raised Pavement Markers	LF	450
2	Remove Existing 4" Solid Stripe	LF	450
7	Remove Existing Pvmt Marking Legend	EA	2
8	Remove Sign, Post, & Post Base	EA	1

CONSTRUCTION NOTES

	DESCRIPTION	UNIT	QUAN
1	4" White Skip Stripe with Type G Markers per COS Std Dtl 2132	LF	900
3	8" Solid White Line	LF	450
4	8" Solid White Line with Type G Markers per COS Std Dtl 2132	LF	640
14	New Pavement Legend per ADOT Std M-6, M-7 & M-8	EA	3
15	New Pavement Symbol per ADOT Std M-10	EA	3
20	New Sign, Post & Foundation per COS Std Dtl 2131	EA	1
23	Relocate Existing Sign New Sign Post and Foundation per COS Std Dtl 2131	EA	3

GENERAL NOTES

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DATE	REVISION	BY

ENGINEER
Registered Professional Engineer
CERTIFICATE NO.
41977
KAREN C. HOBBS
Date Signed 07/20/2022
ARIZONA, U.S.A.
Expires 3/31/23

CITY OF SCOTTSDALE
ARIZONA

PUBLIC WORKS
CAPITAL PROJECT MANAGEMENT
7447 E. INDIAN SCHOOL RD.
SCOTTSDALE, ARIZONA 85251

SHEET TITLE
SIGNING AND PAVEMENT MARKING

PROJECT TITLE
AXON WAY
HAYDEN RD TO PERIMETER DR

SCALE	DESIGNED	DATE	BID NO.	SHT.
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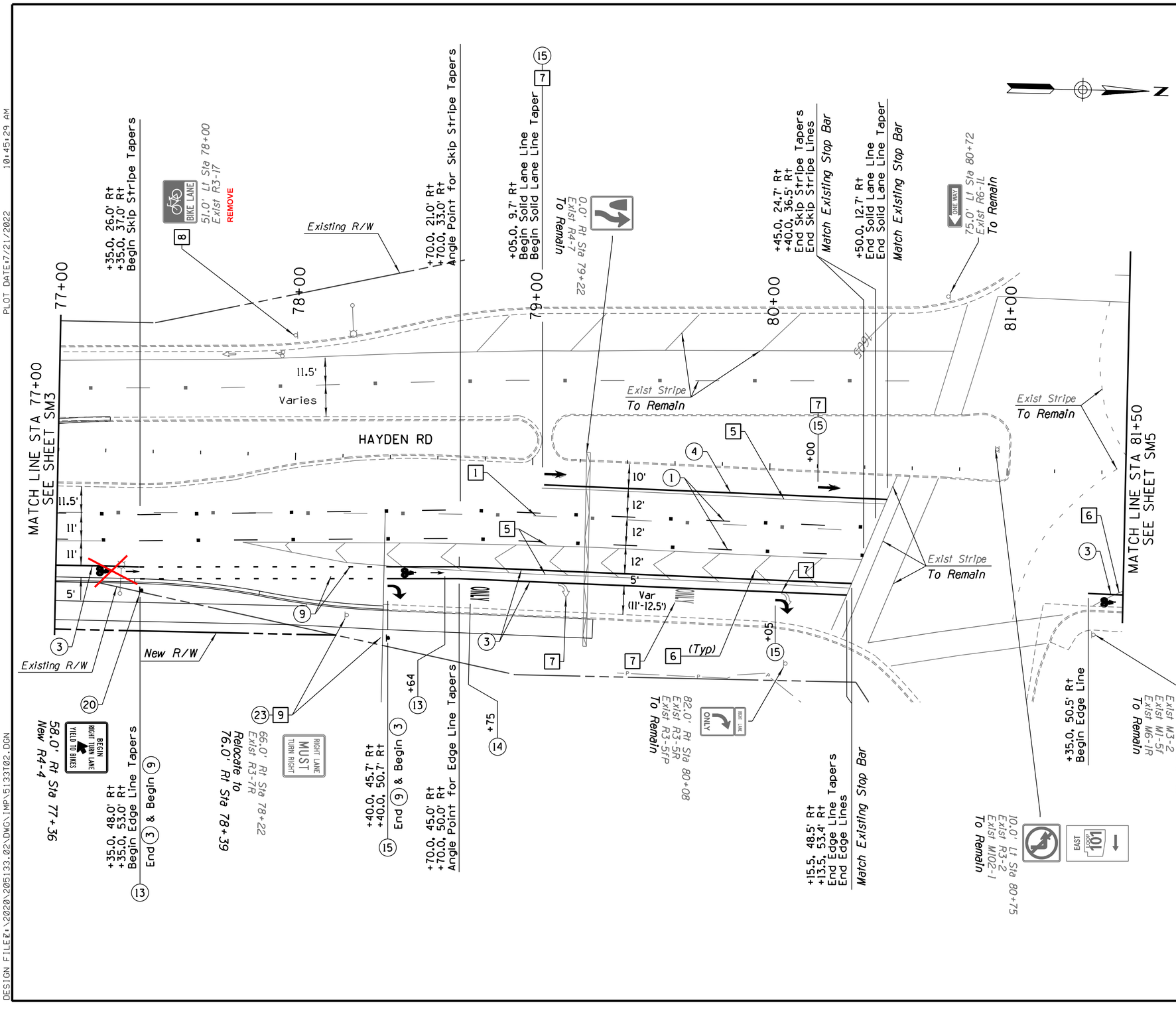
VERT. N/A	DRAWN TML	AS-BUILT	PROJECT NO. 4474-21-6	70 OF 148



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REMOVAL & RELOCATION NOTES

	DESCRIPTION	UNIT	QUAN
1	Remove Existing 4" Skip Stripe with Raised Pavement Markers	LF	343
5	Remove Existing 8" Stripe	LF	595
6	Remove Existing 12" Stripe	LF	185
7	Remove Existing Pvmt Marking Arrow or Legend	EA	5
8	Remove Sign, Post, & Post Base	EA	1
9	Remove & Relocate Existing Sign Remove Post & Post Base	EA	1

CONSTRUCTION NOTES

	DESCRIPTION	UNIT	QUAN
1	4" White Skip Stripe with Type G Markers per COS Std Dtl 2132	LF	690
3	8" Solid White Line	LF	450
4	8" Solid White Line with Type G Markers per COS Std Dtl 2132	LF	145
9	8" White Skip Stripe 2' Stripe with 6' Gap	LF	210
13	New Bicycle Pvmt Symbol & Arrow per Detail TA	EA	2
14	New Pavement Legend per ADOT Std M-6, M-7 & M-8	EA	1
15	New Pavement Symbol per ADOT Std M-10	EA	4
20	New Sign, Post & Foundation per COS Std Dtl 2131	EA	1
23	Relocate Existing Sign New Sign Post and Foundation per COS Std Dtl 2131	EA	1

GENERAL NOTES

1. All dimensions are measured to lip of gutter or center of lane line, unless otherwise shown.

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Registered Professional Engineer
41977
KAREN C. HOBBS
Date Signed 07/21/2022
Expires 9/30/23
ARIZONA, U.S.A.

CITY OF SCOTTSDALE
ARIZONA

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7447 E. INDIAN SCHOOL RD.
SCOTTSDALE, ARIZONA 85251

SHEET TITLE
SIGNING AND PAVEMENT MARKING

PROJECT TITLE
AXON WAY
HAYDEN RD TO PERIMETER DR

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=20'	DK/KH	07/2022		SM4
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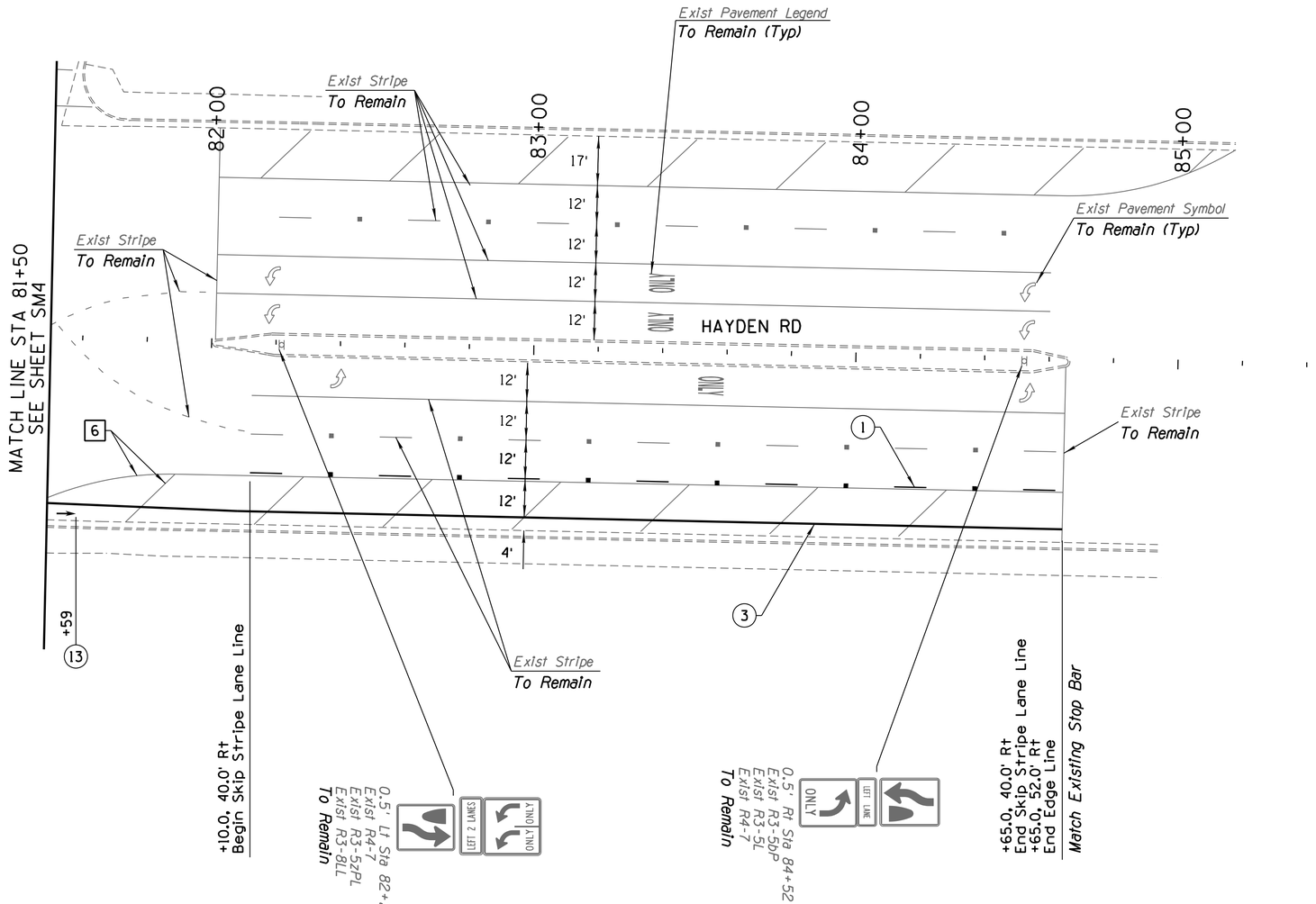

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REMOVAL & RELOCATION NOTES

DESCRIPTION	UNIT	QUAN
6 Remove Existing 12" Stripe	LF	465

CONSTRUCTION NOTES

DESCRIPTION	UNIT	QUAN
(1) 4" White Skip Stripe with Type G Markers per COS Std Dtl 2132	LF	255
(3) 8" Solid White Line	LF	315
(13) New Bicycle Pvmt Symbol & Arrow per Detail TA	EA	1

GENERAL NOTES

1. All dimensions are measured to lip of gutter or center of lane line, unless otherwise shown.

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DATE	REVISION	BY

ENGINEER
Registered Professional Engineer
41977
KAREN C. HOBBS
Date Signed 07/20/2022
ARIZONA, U.S.A.
Expires 9/30/23

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ARIZONA

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7447 E. INDIAN SCHOOL RD.
SCOTTSDALE, ARIZONA 85251

SHEET TITLE
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PROJECT TITLE
AXON WAY
HAYDEN RD TO PERIMETER DR

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=20'	DK/KH	07/2022		SM5
VERT. N/A	DRAWN TML	AS-BUILT	PROJECT NO. 4474-21-6	72 OF 148

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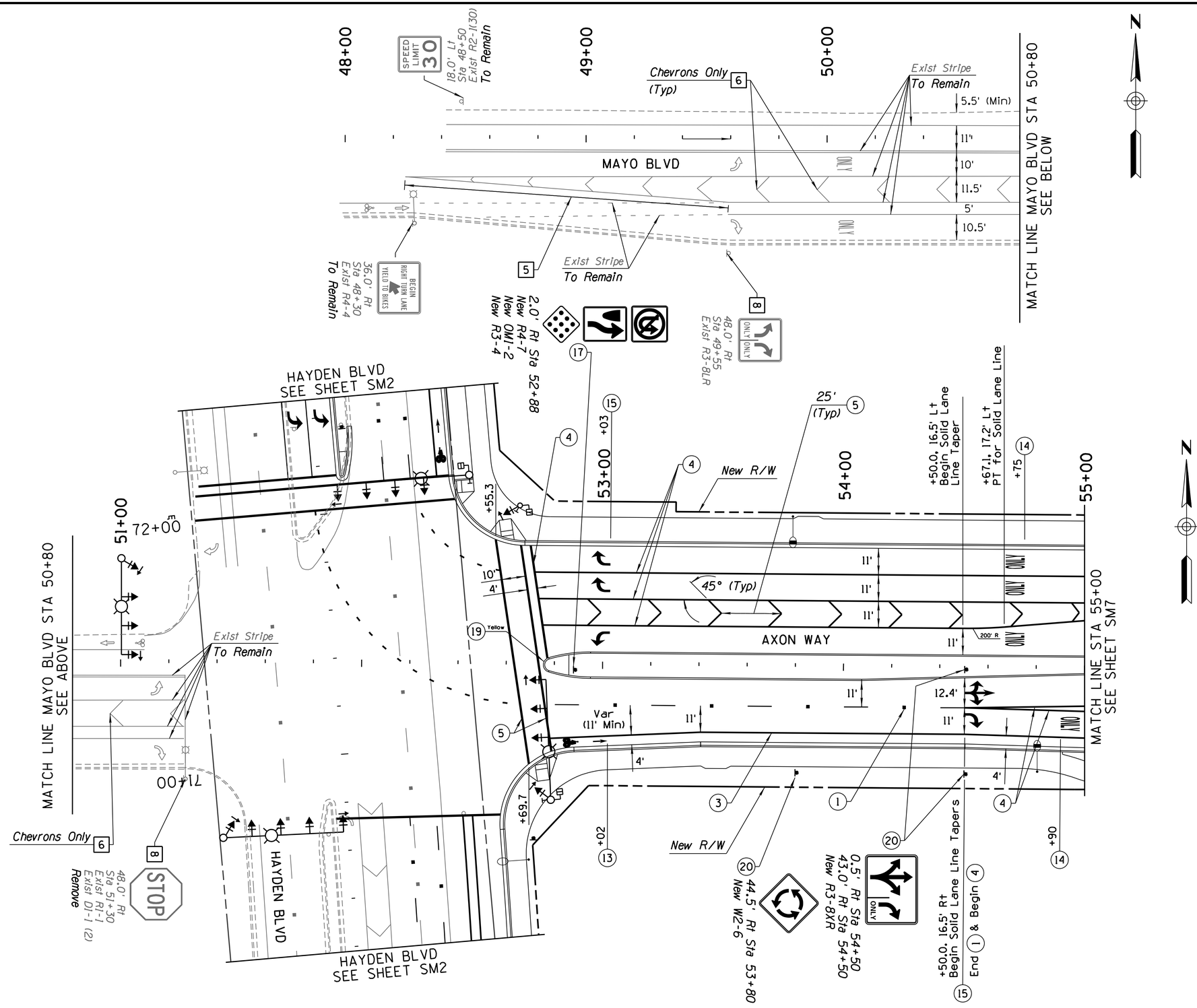

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REMOVAL & RELOCATION NOTES

	DESCRIPTION		QUAN
5	Remove Existing 8" Stripe	LF	152
6	Remove Existing 12" Stripe	LF	1
8	Remove Sign, Post, & Post Base	EA	1

CONSTRUCTION NOTES

	DESCRIPTION	UNIT	QUAN
1	4" White Skip Stripe with Type G Markers per COS Std Dtl 2132	LF	175
3	8" Solid White Line	LF	222
4	8" Solid White Line with Type G Markers per COS Std Dtl 2132	LF	780
5	12" Solid White Line	LF	123
6	18" Solid White Line	LF	48
13	New Bicycle Pvmt Symbol & Arrow per Detail TA	EA	1
14	New Pavement Legend per ADOT Std M-6, M-7 & M-8	EA	4
15	New Pavement Symbol per ADOT Std M-10	EA	5
17	New Median Nose Signing, Type A per COS Std Dtl 2133-1	EA	1
19	New Median Nose Paint & Markers per COS Std Dtl 2226 or Dtl TE	LF	33
20	New Sign, Post & Foundation per COS Std Dtl 2131	EA	2

GENERAL NOTES

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DATE	REVISION	BY

ENGINEER
Registered Professional Engineer — ARIZONA, U.S.A. — 41977 KAREN C. HOBBS — Date Signed 07/20/2022 — Expires 3/31/23

PUBLIC WORKS
CAPITAL PROJECT MANAGEMENT
7447 E. INDIAN SCHOOL RD.
SCOTTSDALE, ARIZONA 85251

SHEET TITLE
SIGNING AND PAVEMENT MARKING

PROJECT TITLE
AXON WAY
HAYDEN RD TO PERIMETER DR

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=20'	DK/KH	07/2022		SM6
VERT. 1"=2'	DRAWN TML	AS-BUILT	PROJECT NO. 4474-21-6	73 OF 148

PLOT DATE: 7/20/2022 7:07:45 PM
DESIGN FILE: z:\2020\205133.02\DWG\IMP\5133T04.DGN

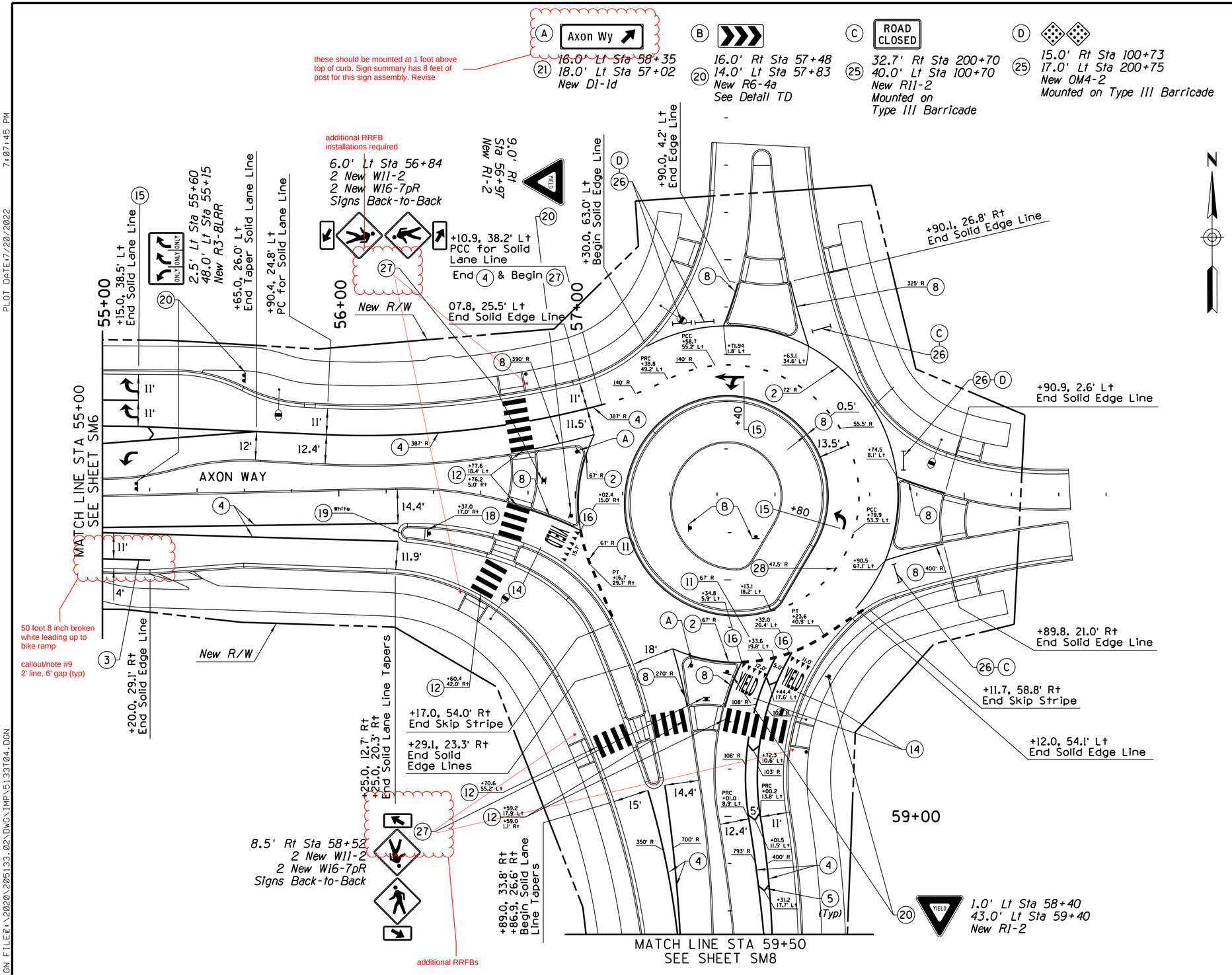
these should be mounted at 1 foot above top of curb. Sign summary has 8 feet of post for this sign assembly. Revise

additional RRFB installations required

50 foot 8 inch broken white leading up to bike ramp

callout/note #9
2' line, 6' gap (typ)

additional RRFBs



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CONSTRUCTION NOTES

	DESCRIPTION	UNIT	QUAN
2	4" Solid White Line	LF	279
3	8" Solid White Line	LF	20
4	8" Solid White Line with Type G Markers per COS Std Dtl 2132	LF	604
5	12" Solid White Line	LF	15
8	4" Solid Yellow Line	LF	467
11	24" White Skip Stripe 2' Stripe with 1' Gap	LF	104
12	High Resolution Crosswalk 10' x 24" Transverse Lines per Detail TB	EA	29
14	New Pavement Legend per ADOT Std M-6, M-7 & M-8	EA	3
15	New Pavement Symbol per ADOT Std M-10	EA	5
16	New Yield Line per Detail TC	EA	3
18	New Median Nose Signing, Type B per COS Std Dtl 2133-1	EA	1
19	New Median Nose Paint & Markers per COS Std Dtl 2226 or Dtl TE	LF	38
20	New Sign, Post & Foundation per COS Std Dtl 2131	EA	7
21	New Directional Street Name Sign, Post and Foundation per COS Std Dtl 2134-5	EA	2
25	New Sign Panel on New Barricade	EA	6
26	New Type III Barricade	EA	5
27	New Sign Panel on RRFB Assembly per Detail TG	LS	1
28	8" White Skip Stripe 6' Stripe with 3' Gap	LF	210

GENERAL NOTES

1. All dimensions are measured to lip of gutter or center of lane line, unless otherwise shown.

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811 BLUE STAKE, INC.
Call 811 or click Arizona811.com

DATE	REVISION	BY

ENGINEER
Registered Professional Engineer
41977
KAREN C. HOBBS
Date Signed 07/20/2022
ARIZONA, U.S.A.
Expires 9/30/23

CITY OF SCOTTSDALE
ARIZONA

PUBLIC WORKS
CAPITAL PROJECT MANAGEMENT
7447 E. INDIAN SCHOOL RD.
SCOTTSDALE, ARIZONA 85251

SHEET TITLE
SIGNING AND PAVEMENT MARKING

PROJECT TITLE
AXON WAY
HAYDEN RD TO PERIMETER DR

SCALE	DESIGNED	DATE	BID NO.	SHT.
HORIZ. 1"=20'	DK/KH	07/2022		SM7
VERT. N/A	DRAWN TML	AS-BUILT	PROJECT NO. 4474-21-6	74 OF 148

Optima McDowell Mountain Village

Traffic Impact and Mitigation Analysis

South of Loop 101 Pima Freeway
and East of Scottsdale Road
in Scottsdale, Arizona

August 2022
Project No. 21-1830

ACCEPTED WITH COMMENTS

Figure 14 in study shows incorrect future lane configuration at the intersections of Scottsdale Rd/Mayo Blvd (no 4th eastbound through lane) and the Loop 101 Ramps/Hayden Road intersections (additional northbound and southbound through lanes expected, currently hatched out).

Prepared For:
DCH Development
7157 East Rancho Vista Dr., Suite 109
Scottsdale, Arizona 85251

For Submittal to:
City of Scottsdale

Prepared By:

CivTech

10605 North Hayden Road Suite 140
Scottsdale, Arizona 85260
480-659-4250

INTRODUCTION

The Optima McDowell Mountain Village is a proposed mixed-use development located north of Mayo Boulevard and east of Scottsdale Road in the City of Scottsdale, Arizona. The development plans to consist of up to 1,390 dwelling units of luxury multi-family residences in six individual buildings with some retail on the ground floor and a lower courtyard area. The development will also provide an underground parking lot for residences that can be accessed from Mayo Boulevard. Alternatively, a right in only access will be provided along Scottsdale Road to assist with the inflow of traffic to the development. The vicinity of the site is provided in **Figure 1**.

CivTech, Inc. has been retained by DCH Development, Inc. to prepare the Traffic Impact and Mitigation Analysis Report (TIMA) for the proposed development. The purpose of this TIMA is to address the traffic and transportation impacts of the proposed development on the surrounding streets and intersections.

STUDY REQUIREMENTS

This TIMA analyzes the traffic impact due to the proposed development on the surrounding street network. The TIMA has been prepared in conformance with the *City of Scottsdale Design Standards and Policy Manual* Section 5-1 *Transportation Impact Study* dated 2018. The specific objectives of the TIMA are:

- To determine whether the planned street system in the vicinity of the site is adequate to accommodate the increased traffic that results from the proposed development.
- To recommend additional street improvements or traffic control devices, where necessary, to mitigate the additional site-generated traffic.

STUDY AREA

The Study Area has been defined as including the following Study Intersections:

1. Scottsdale Rd & Thompson Peak Pkwy
2. Scottsdale Rd & Legacy Blvd
3. Scottsdale Rd & Loop 101 WB Ramps
4. Scottsdale Rd & Loop 101 EB Ramps
5. 68th St & Mayo Blvd
6. Allied Way & Mayo Blvd
7. Scottsdale Rd & Mayo Blvd
8. Lexus Drwy & Mayo Blvd
9. Hayden Rd & Loop 101 WB Ramps
10. Hayden Rd & Loop 101 EB Ramps
11. Scottsdale Rd & Chauncey Ln
12. 73rd Pl & Chauncey Ln
13. Hayden Rd & Mayo Blvd
14. Scottsdale Rd & Princess Dr

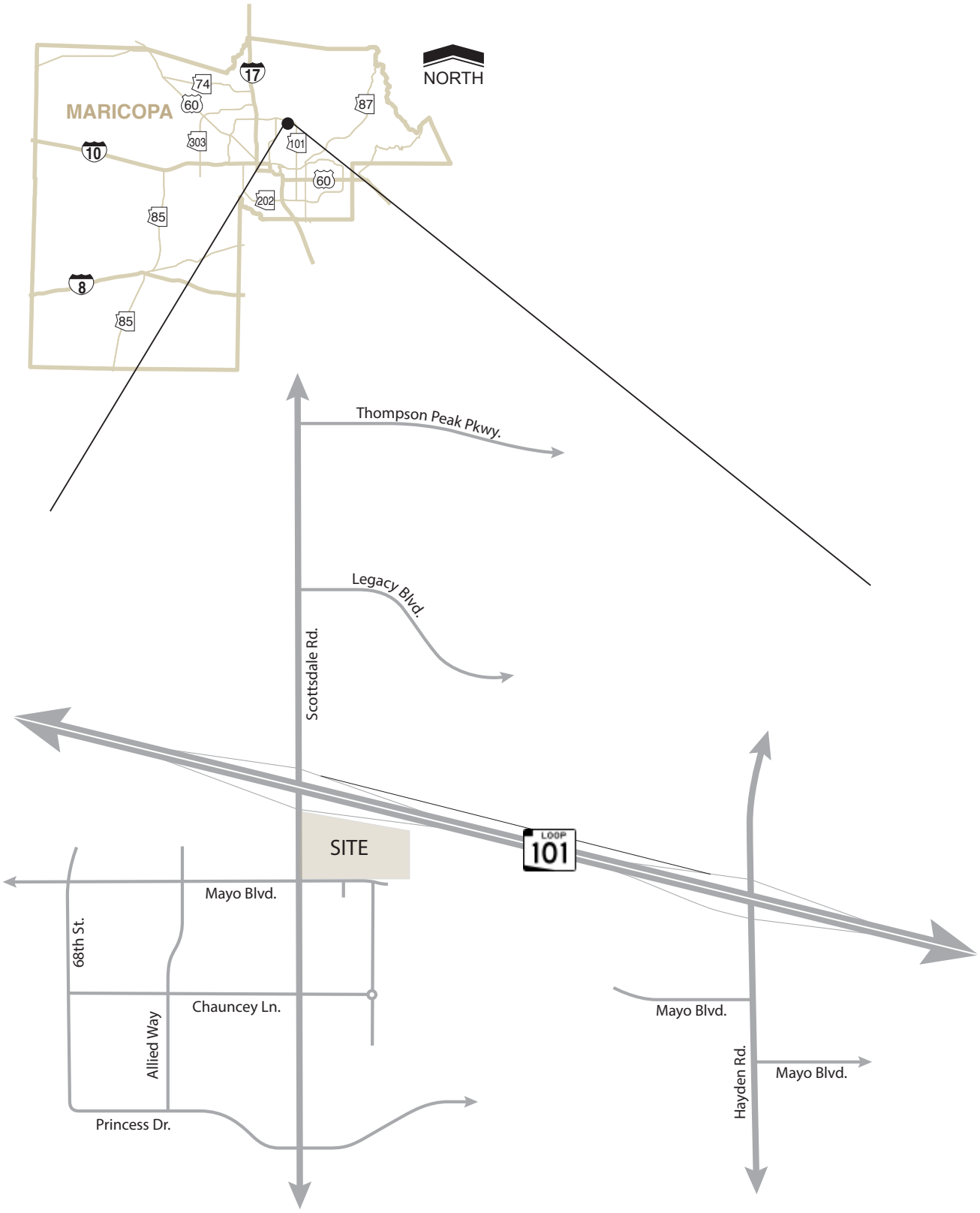


Figure 1: Vicinity Map

TRIP GENERATION

The potential trip generation for the proposed development was estimated utilizing the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition* and *Trip Generation Handbook, 3rd Edition*. The ITE *Trip Generation Manual* contains data collected by various transportation professionals for a wide range of different land uses. The data are summarized in the report and average rates and equations have been established that correlate the relationship between an independent variable that describes the development size and generated trips for each categorized land use. The report provides information for daily and Peak Hour trips.

The project site will consist of 6 buildings in total with some retail on the ground floor. Three of the buildings will contain 9 stories of residential dwelling units, which is considered a mid-rise building (LUC 221); the other three buildings will be 10-story buildings which are considered high rise (LUC 222). Additionally, around 36,000 square feet of retail will be provided on-site at the ground level of a few of the buildings. Since less than 40,000 sf of retail will be provided the ITE LUC 822 for a strip retail plaza may be used. The retail component of the site is aimed more towards resident use; however, non-residents are also permitted to use this retail so an internal capture reduction has been applied to account for the internal use of the retail. A 30% reduction has been applied, although this internal capture will likely be much higher due to the nature of the site, 30% has been used in order to be conservative.

The anticipated trip generation is summarized in **Table 4**. Detailed trip generation calculations are provided in **Appendix E**.

Table 4 – Trip Generation

				Weekday Trips						
				Daily	AM Peak Hour			PM Peak Hour		
Proposed Use	ITE LUC	Size	Units	Total	In	Out	Total	In	Out	Total
Building 1	222	278	DU	1,262	26	49	75	50	39	89
Building 2	222	238	DU	1,080	22	42	64	43	33	76
Building 3	221	209	DU	948	18	59	77	50	32	82
Building 4	221	211	DU	958	18	60	78	50	32	82
Building 5	221	209	DU	948	18	59	77	50	32	82
Building 6	222	245	DU	1,112	22	44	66	44	34	78
Retail Plaza	822	36,000	SF	1,748	40	27	67	97	96	193
Subtotals				**8,056**	**164**	**340**	**504**	**384**	**298**	**682**
Internal Capture Reduction (Retail)				*(524)*	*(10)*	*(10)*	*(20)*	*(29)*	*(29)*	*(58)*
Total External Trips				**7,532**	**154**	**330**	**484**	**355**	**269**	**624**

The proposed development it anticipated to generate up to 7,532 external weekday daily trips with 484 trips occurring during the AM Peak Hour (154 in/330 out) and 624 trips occurring during the PM Peak Hour (355 in/269 out).

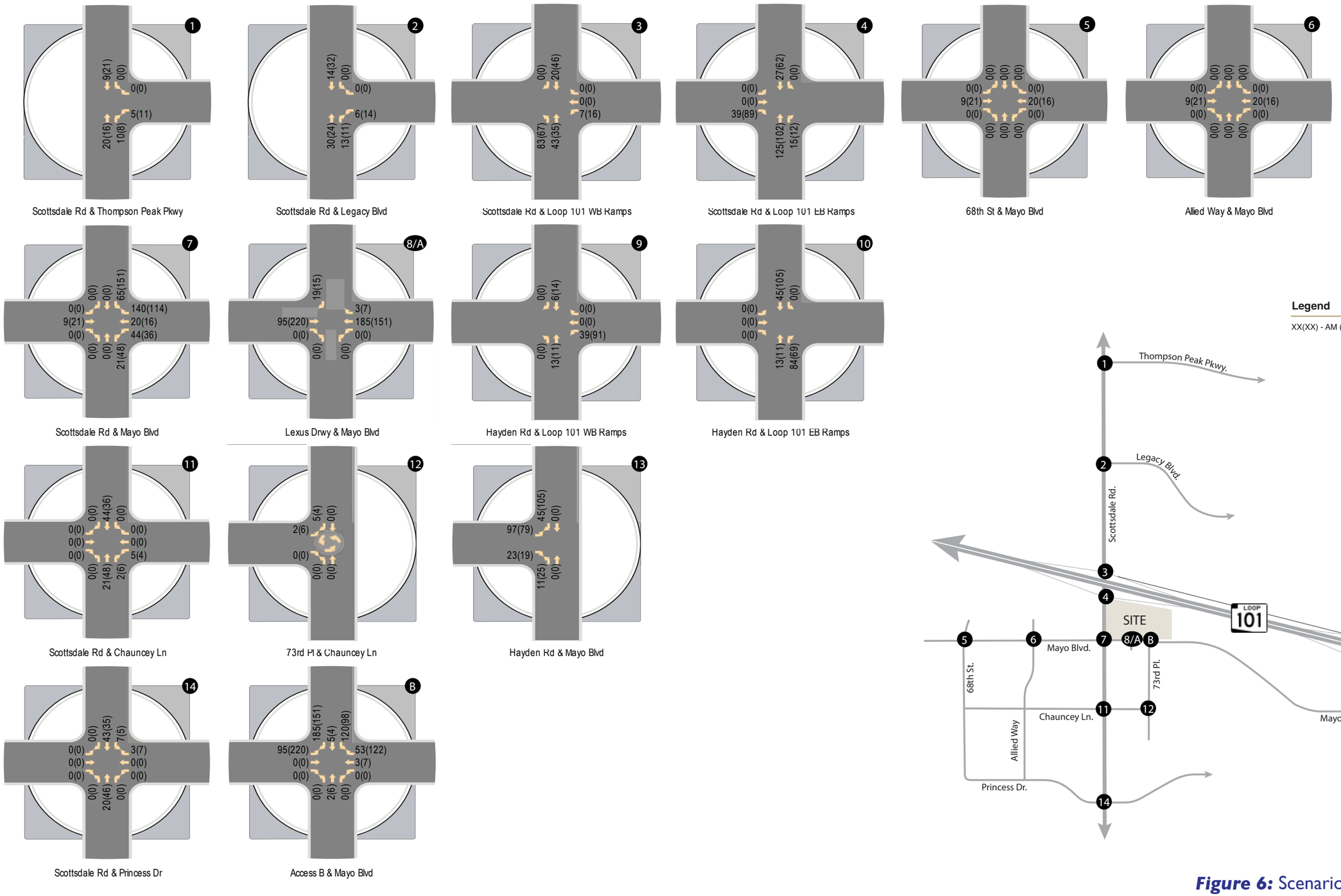


Figure 6: Scenario 1 Site Traffic Volumes

Table 7 – Queue Storage Lengths

ID	Intersection	Intersection Control	Movement	Queue Storage			
				Existing[1]	AASHTO	HCM[2]	Recommended
1	Scottsdale Rd & Thompson Peak Pkwy	Signal	NB Left	-	125’	<25’	[4] 150’
			SB Left	200’	250’	135’	No Change
			EB Left	-	0’	<25’	[4] 2@320’
			WB Left	2@135’	975’	345’	[6] 2@175’
			NB Right	520’	650’	225’	No Change
			SB Right	-	0’	<25’	[4] 150’
			EB Right	-	75’	<25’	[4] 150’
			WB Right	225’	300’	40’	No Change
2	Scottsdale Rd & Legacy Blvd	Signal	NB Left	-	75’	<25’	[4] 150’
			SB Left	195’	175’	60’	No Change
			EB Left	-	0’	<25’	[4] 2@185’
			WB Left	2@225’	550’	175’	No Change
			NB Right	145’	475’	<25’	No Change
			SB Right	-	0’	<25’	[4] 150’
			EB Right	-	0’	<25’	[4] 150’
			WB Right	330’	225’	45’	No Change
3	Scottsdale Rd & Loop 101 WB Ramps	Signal	NB Left	2@245’	1,025’	435’	No Change
			WB Left	2@315’	1,525’	725’	No Change
			SB Right	400’	1,125’	620’	[6][7] No Change
			WB Right	2x315’	1,575’	200’	No Change
4	Scottsdale Rd & Loop 101 EB Ramps	Signal	SB Left	2@265’	1,650’	615’	[6][7] No Change
			EB Left	2@205’	975’	525’	[6][7] No Change
			NB Right	605’	1,500’	485’	No Change
			EB Right	2@215’	1,250’	105’	No Change
5	68th St & Mayo Blvd	Signal	NB Left	140’	800’	450’	[3][6] 350’
			SB Left	160’	175’	45’	No Change
			EB Left	240’	150’	60’	No Change
			WB Left	255’	150’	50’	No Change
			NB Right	140’	150’	40’	No Change
			EB Right	105’	600’	60’	No Change
			WB Right	170’	75’	<25’	No Change
6	Allied Way & Mayo Blvd	Signal	NB Left	190’	375’	200’	No Change
			SB Left	145’	225’	450’	[6][7] No Change
			EB Left	150’	225’	65’	No Change
			WB Left	185’	250’	50’	No Change
			NB Right	195’	375’	40’	No Change
			EB Right	170’	250’	30’	No Change
			WB Right	200’	500’	55’	No Change
7	Scottsdale Rd & Mayo Blvd	Signal	NB Left	2@240’	750’	315’	No Change
			SB Left	2@165’	425’	95’	No Change
			EB Left	2@325’	1,225’	435’	No Change
			WB Left	2@165’	125’	35’	No Change
			NB Right	160’	125’	<25’	No Change
			SB Right	240’	1,600’	175’	No Change
			EB Right	335’	650’	95’	No Change

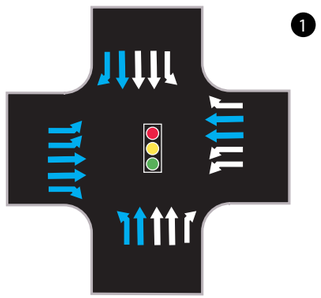
ID	Intersection	Intersection Control	Movement	Queue Storage			
				Existing[1]	AASHTO	HCM[2]	Recommended
8/A	Lexus Drwy/Access A & Mayo Blvd	2-way stop (NB/SB)	NB Left	-	50’	<25’	[3] 100’
			SB Left	-	50’	<25’	[3] 100’
			EB Left	95’	25’	<25’	No Change
			WB Left	75’	25’	<25’	No Change
			EB Right	75’	50’	<25’	No Change
9	Hayden Rd & Loop 101 WB Ramps	Signal	NB Left	240’	1,350’	1,085’	[6][7] No Change
			WB Left	2@485’	475’	120’	No Change
			SB Right	235’	825’	175’	No Change
			WB Right	2@500’	1,300’	105’	No Change
10	Hayden Rd & Loop 101 EB Ramps	Signal	SB Left	2@250’	1,300’	440’	No Change
			EB Left	2@425’	1,425’	770’	No Change
			NB Right	255’	475’	200’	No Change
			EB Right	2@430’	1,250’	185’	No Change
11	Scottsdale Rd & Chauncey Ln	Signal	NB Left	195’	225’	190’	No Change
			SB Left	175’	150’	65’	No Change
			EB Left	165’	300’	205’	[6][7] No Change
			WB Left	170’	225’	150’	No Change
			NB Right	130’	125’	<25’	No Change
			SB Right	165’	250’	35’	No Change
			EB Right	110’	250’	145’	[6][7] No Change
			WB Right	180’	150’	80’	No Change
13	Hayden Rd & Mayo Blvd	Signal	NB Left	-	100’	40’	[5] 250’
			SB Left	370’	500’	145’	[5] 2@370’
			EB Left	-	275’	90’	[5] 2@265’
			WB Left	-	250’	175’	[5] 295’
			NB Right	-	250’	<25’	[5] 150’
			SB Right	185’	325’	<25’	No Change
			EB Right	165’	125’	<25’	No Change
			WB Right	-	525’	260’	[5] 200’
14	Scottsdale Rd & Princess Dr	Signal	NB Left	255’	550’	175’	2@255’
			SB Left	240’	375’	110’	2@240’
			EB Left	210’-	125’	80’	No Change
			WB Left	175’	350’	270’	[6]270’
			NB Right	250’	400’	85’	No Change
			SB Right	255’	175’	45’	No Change
			WB Right	85’	300’	70’	No Change
B	Access B & Mayo Blvd	2-way stop (NB/SB)	NB Left	105’	25’	<25’	No Change
			SB Left	-	25’	<25’	[3] 100’
			EB Left	285’	25’	<25’	No Change
			WB Left	-	0’	<25’	[3] 100’
			EB Right	190’	25’	<25’	No Change
			WB Right	-	75’	<25’	[3] 100’
C	Scottsdale Rd & Access C	Free	NB Right	115’	25’	<25’	No Change

(1) Measured from beginning of stop bar
(2) HCM 95th percentile queue reported in vehicles/lane, assuming 1 vehicle ~ 25 feet.
(3) Per City of Scottsdale DS&PM, a minimum turn lane length of 150 feet is recommended for all new turn lanes with a minimum recommendation of 100 feet. Maximum recommended turn lane length is 350 feet.
(4) Turn lane recommendation from Cavasson TIMA.
(5) Turn lane recommendation from AXON TIA.
(6) Optima site contributes little or no traffic to this movement.
(7) Existing ROW restrictions prevent extension of turn lane.

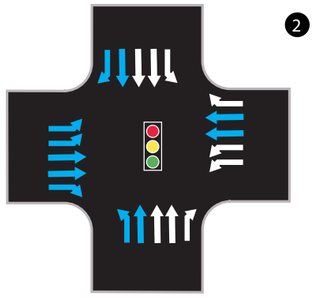
Many of the recommendations for this Study Area are based on the HCM 95th percentile queue lengths. Synchro 11 software takes into account peak hour factors, number of approach lanes, signal timing etc. in order to calculate 95th percentile queue lengths. Since more data is taken into consideration when completing these calculations, they provide a better idea of what storage lengths will actually be needed once the development is constructed and the extra vehicles are added to the roadway network. The values presented in the "recommended" column of Table 7 are based on the HCM 95th percentile calculations instead of the AASHTO calculations.

For dual left turn lanes, the values presented in the AASHTO and HCM columns represent the total recommended length of both lanes; divide value by 2 to achieve a per-lane length. Both the Cavasson TIMA and the Axon TIA provide recommended storage lengths for the new lanes provided by each of the respective developers. These recommendations have been included here as well and noted in the table.

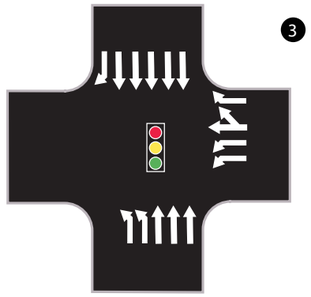
The recommended storage lengths in **Table 7** are provided for Study Horizon Year 2030 using the Total Traffic volumes. Proposed lane configurations are shown in **Figure 14**.



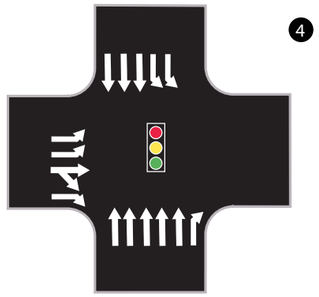
Scottsdale Rd & Thompson Peak Pkwy



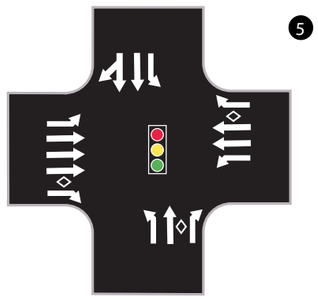
Scottsdale Rd & Legacy Blvd



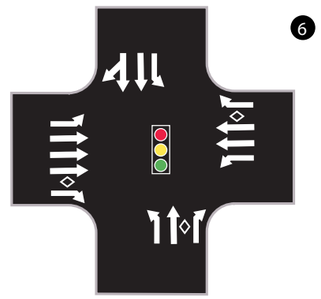
Scottsdale Rd & Loop 101 WB Ramps



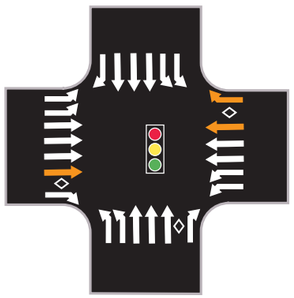
Scottsdale Rd & Loop 101 EB Ramps



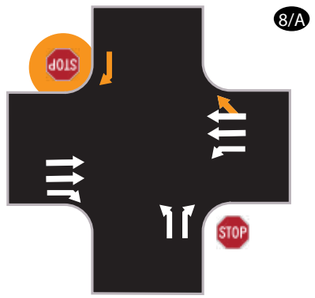
68th St & Mayo Blvd



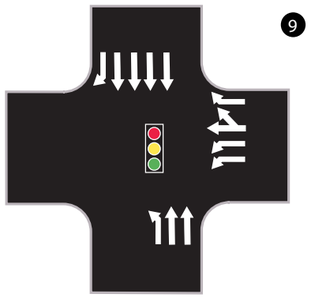
Allied Way & Mayo Blvd



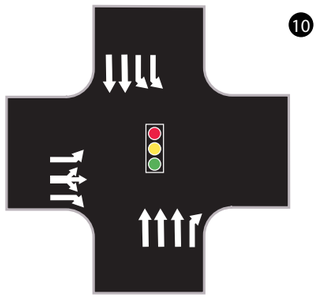
Scottsdale Rd & Mayo Blvd



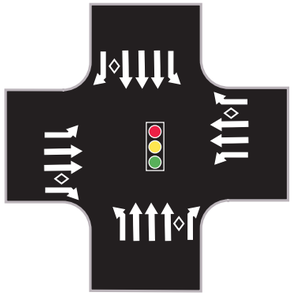
Lexus Drwy & Mayo Blvd



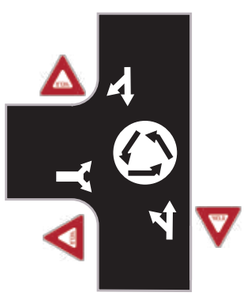
Hayden Rd & Loop 101 WB Ramps



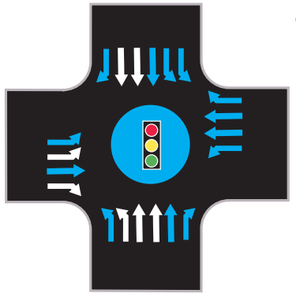
Hayden Rd & Loop 101 EB Ramps



Scottsdale Rd & Chauncey Ln



73rd Pl & Chauncey Ln



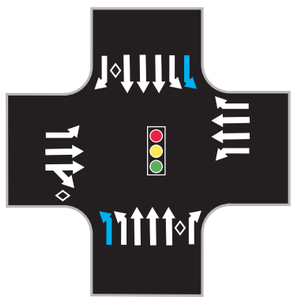
Hayden Rd & Mayo Blvd

LEGEND

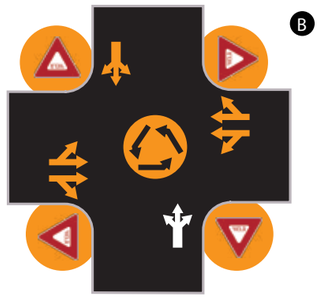
NORTH

- Thru or Turning Movement
- Two-Way Left Turn-Lane
- Raised Median
- Bike Lane
- Traffic Signal
- Stop Sign
- Speed Limit

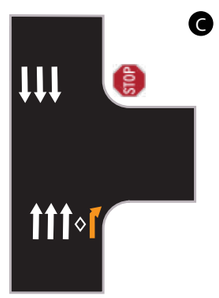
- Recommended Improvements by 2025
- Recommended improvements by 2030



Scottsdale Rd & Princess Dr



Access B & Mayo Blvd



Scottsdale Rd & Access C

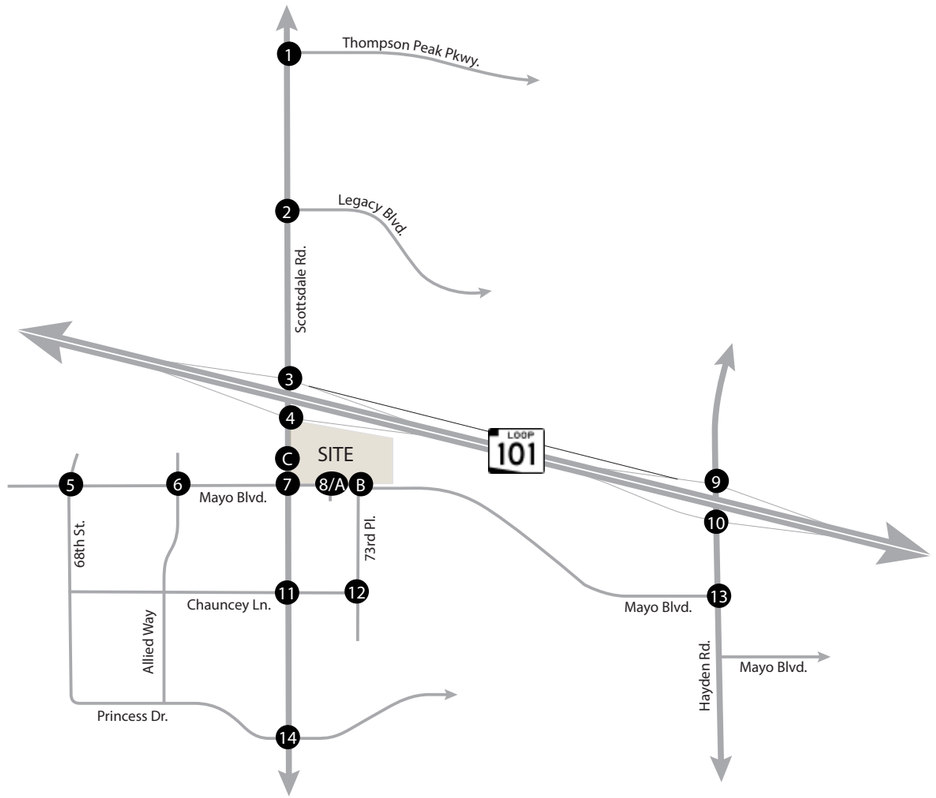


Figure 14: Proposed Lane Configurations and Traffic Controls

CONCLUSIONS

In conclusion, the proposed mixed-use development can be developed with the following recommendations documented in this TIMA.

GENERAL

- Of all of the crashes listed that have been recorded within the Study Area, none have involved fatalities or pedestrians. A majority of the crashes within the Study Area have been rear end crashes, which cannot be mitigated, which is basically driver inattention and speed. The next highest incident being left turn crashes and angle crashes.
- The project site will consist of 6 buildings in total with some retail on the ground floor. Three of the buildings will contain 9 stories of residential dwelling units, which is considered a mid-rise building (LUC 221); the other three buildings will be 10-story buildings which are considered high rise (LUC 222). Additionally, around 36,000 square feet of retail will be provided on-site at the ground level of a few of the buildings.
- The proposed development it anticipated to generate up to 7,532 external weekday daily trips with 484 trips occurring during the AM Peak Hour (154 in/330 out) and 624 trips occurring during the PM Peak Hour (355 in/269 out).
- No new streets and thoroughfares are proposed as part of this development. The existing streets are suitable and adequate to serve the proposed development and the anticipated traffic it will generate.
- The site is ideally located for higher density development given it is located adjacent to the 101 freeway which will allow the residents to conveniently transit to local and regional destinations without impacting the Scottsdale Road network.
- A new bus bay and bus stop will be constructed on Scottsdale Road just north of the Mayo Boulevard intersection to allow convenient access to mass transportation. Bus Route 72 has one of the highest frequencies and has the highest ridership of all the north-south routes in the City of Scottsdale. This helps support its use in an area that really has not been transit minded.

RESULTS – EXISTING CONDITIONS

- The results of the 2021 existing conditions analysis indicate that most Study Intersections operate with acceptable Levels of Service (LOS D or better), with the exception of the following intersections. The poor Levels of Service are a direct result of the existing development within the Study Area of this TIMA.
    - The signalized intersection of **Scottsdale Road and Legacy Boulevard** currently operates at LOS E for the WB approach during the AM Peak Hour. The current delay is 55 seconds per vehicle (sec/veh) which is the minimum threshold value for LOS E.
    - The signalized intersection of **Scottsdale Road and Loop 101 WB Ramps** currently operates at LOS F for the WB approach during both the AM and PM Peak Hours. This delay is due to the high volume of vehicles utilizing this approach during both Peak

Hours, 1,200 vehicles in the AM peak and 1,127 vehicles in the PM peak. The existing delays are 463.7 sec/veh in the AM and 221.8 sec/veh in the PM.

- The signalized intersection of **Scottsdale Road and Loop 101 EB Ramps** currently operates at LOS E/F for the SB approach during the AM and PM Peak Hours respectively. This delay is due to the high volume of SB approach vehicles during both Peak Hours, 1,902 SB through vehicles in the AM and 735 SB left turning vehicles in the PM. The existing delays are 73.3 sec/veh in the AM and 107.6 sec/veh in the PM.
- The signalized intersection of **68th Street and Mayo Boulevard** currently operates at LOS E for the NB approach during the PM Peak Hour only. This delay is due to the high volume of NB left turning vehicles and only a single left turn lane, 370 vehicles. The existing delay is 70.9 sec/veh.
- The signalized intersection of **Scottsdale Road and Mayo Boulevard** currently operates at LOS E for the WB approach during the AM Peak Hour and on the SB and EB approaches during the PM Peak Hour. The AM Peak Hour delay is caused by the split phasing of the EB/WB approaches and very few vehicles approaching on the WB. During the PM Peak Hour, the volume of SB right turn volume is very high, 738 vehicles, with only a single turn lane and no overlap phasing and the EB left turn volume is also very high, 574 vehicles, with split phasing. The existing delays during the AM are 55.9 sec/veh on the WB, during the PM there is 72.0 sec/veh on the SB during and 62.6 sec/veh on the EB.
- The signalized intersection of **Hayden Road and Loop 101 WB Ramps** currently operates with LOS E on the NB approach during the PM Peak Hour only. The delay is caused by the high volume of NB left turning vehicles, 491 vehicles, and only a single left turn lane. The existing delay is 73.7 sec/veh.
- The signalized intersection of **Hayden Road and Loop 101 EB Ramps** currently operates with LOS E on the EB approach during the AM and on the SB approach during the PM. The AM delay is due to the high volume of vehicles exiting the Loop 101 on the EB Ramps, 1,035 vehicles, and not enough green time allocated to the approach. During the PM peak, the delay is caused by the SB left turn approach not having enough green time allocated. The existing delay during the AM is 55.9 sec/veh on the EB and during the PM it is 74.6 sec/veh on the SB approach.
- The unsignalized intersection of **Hayden Road and Mayo Boulevard** currently operates with LOS E on the EB left turn approach during the PM Peak Hour. This delay is due to the high volume of NB and SB through traffic on Hayden Road and the intersection being unsignalized. This intersection will be signalized in the future and should reduce the existing delays. The delay is currently 37.5 sec/veh on the EB left turn approach.
- The signalized intersection of **Scottsdale Road and Princess Drive** currently operates with LOS E on the EB approach during the AM peak and on the EB and WB approaches during the PM peak. The AM peak delay is due to the high volume of EB right turns, 229 vehicles, and no dedicated right turn lane on the approach. During the

PM peak, the EB approach delay is caused by the high volume of right turns, 230 vehicles, and no dedicated right turn lane/not enough green time allocated to the approach and the WB approach delay is also due to not enough green time being allocated to the approach. During the AM, the existing delay is 77.2 sec/veh; during the PM, the existing EB delay is 381.1 sec/veh and the WB delay is 68.0 sec/veh.

RESULTS – STUDY HORIZON YEAR 2025 – OPENING YEAR

- The signalized intersection of **Scottsdale Road and Legacy Boulevard** is expected to operate with 55.4 sec/veh and 95.5 sec/veh of delay during the AM and PM Peak Hours, respectively. The AM Peak Hour delay in the EB and WB approaches cannot be mitigated at this time since it is due to not enough vehicles approaching the EB and WB approaches during the AM Peak Hour and the signal being actuated. An actuated signal prioritizes the movement along the primary corridor and in this case the priority is given to Scottsdale Road. If there is a period of a few seconds after the minimum allotted green time where no vehicle passes through the intersection in the NB and SB directions, then the signal could cut the green phase short and allow the next phase to proceed earlier. If there are not enough vehicles on the EB and WB approaches in this initial green phase, higher delays can occur, which is likely what is happening at this intersection during the 2025 opening year of the site.
    - During the PM Peak Hour, it is recommended that the WB green phase be extended from 14 seconds to 31 seconds to reduce the delay from 96.6 sec/veh to 55.4 sec/veh.
- The signalized intersection of **Scottsdale Road and Loop 101 Interchange** is expected to operate with delay on most of the approaches by the 2025 opening year due to the high volume of vehicles utilizing the interchange. There are existing delays at this interchange already, so little can be done in terms of mitigation to improve the delays. Green times were adjusted to try and minimize the delays, however, without providing alternate routes or adding lanes to the intersection, the overall intersection delays can only be reduced slightly.
    - WB Ramps from 200.7 sec/veh to 89.4 sec/veh in the AM Peak Hour and 120.4 sec/veh to 116.0 sec/veh in the PM Peak Hour
    - EB Ramps from 103.1 sec/veh to 82.3 sec/veh in the AM Peak Hour and 134.4 sec/veh to 77.2 sec/veh in the PM Peak Hour
- The signalized intersection of **68th Street and Mayo Boulevard** is expected to operate with 97.1 sec/veh of delay during the PM Peak Hour on the NB approach. This delay is due to the high volume of NB left turning vehicles during the Peak Hour and only one NB left turn lane. The current right-of-way at this intersection is not sufficient to provide dual NB left turn lanes, so instead it is recommended that the NB phasing be changed from permissive-only phasing to protected-permissive phasing to allow more green time for the NB left turning movement, and therefore, more time for vehicles to clear the intersection. This mitigation is anticipated to reduce the NB approach delay from 97.1 sec/veh to 46.8 sec/veh.
- The signalized intersection of **Scottsdale Road and Mayo Boulevard** is expected to operate with 57.2 sec/veh of delay on the SB approach and 85.9sec/veh of delay on the EB approach

TRAFFIC MASTER PLAN

Crossroads East
Planning Unit VII
Scottsdale, Arizona

Kimley»Horn

1.0 INTRODUCTION

1.1 PROJECT DESCRIPTION

This report documents a traffic master plan analysis performed for Arizona State Land Department (ASLD) Crossroads East Planning Unit VII located near the northwest corner of Hayden Road and the Princess Boulevard alignment in Scottsdale, Arizona. Planning Unit VII is anticipated to include residential, office, and retail land uses.

1.2 SITE LOCATION

Planning Unit VII encompasses approximately 111 acres in north Scottsdale, near the northwest corner of Hayden Road and the Princess Boulevard alignment. More specifically, Planning Unit VII is bounded by the future Mayo Boulevard alignment and vacant undeveloped parcels to the north, Hayden Road to the east, Princess Boulevard and existing multi-family and hotel developments to the south, and the future Miller Road alignment and vacant undeveloped parcels to the west. The planning unit location is depicted in the Proposed Planning Units exhibit and Land Use Map, which are included in the **Appendix**.

Approximately 47 acres of Planning Unit VII (hereinafter known as the Sale Parcel) were purchased from ASLD by Princess-Hayden LLC at public auction on February 13, 2018. The Sale Parcel is located in a portion of the Northeast Quarter of Section 35, Township 4 North, Range 4 East of the Gila and Salt River Base and Meridian in Maricopa County, Arizona. The Sale Parcel is bounded by the future Mayo Boulevard alignment and vacant undeveloped parcels to the north, Hayden Road to the east, Princess Boulevard and existing multi-family and hotel developments to the south, and vacant undeveloped parcels to the west. The Land Use Map is included in the **Appendix**.

Approximately 64 acres of Planning Unit VII (hereinafter known as the Remainder Parcel) currently remains with the ASLD.

1.3 REPORT PURPOSE AND OBJECTIVES

The Traffic Master Plan for Crossroads East Planning Unit VII is intended to satisfy the City of Scottsdale traffic master plan requirement of the Development Agreement recorded against the property (19-ZN-2002#2) for Planning Unit VII. It provides a description of the transportation requirements, access locations, street cross-sections and intersection control at buildout of study area roadways for Planning Unit VII.

2.0 LAND USE AND ACCESSIBILITY

2.1 LAND USE

Planning Unit VII is anticipated to include residential, office, and retail land uses. **Table 1** illustrates the land use, size, and anticipated development density of Planning Unit VII.

Table 1. Land Use

Parcel	General Description	ITE Land Use	Area (Acres)	Assumed Density	No. of Units	Building Area	Independent Variable
Sale	Multifamily Housing	220	37	23 DU / Acre	851	-	DU
Sale	Senior Living	252	10	23 DU / Acre	230	-	DU
Remainder	Multifamily Housing	220	8.6	23 DU / Acre	198	-	DU
Remainder	Office Park	750	39.4	0.35 FAR	-	600	1,000 SF
Remainder	Retail	820	16	0.25 FAR	-	174	1,000 SF

DU = Dwelling Units
FAR = Floor Area Ratio
SF = Square Feet

The layout of Planning Unit VII is illustrated in the Land Use Map included in the **Appendix**.

2.2 ACCESSIBILITY

Planning Unit VII is accessed locally via Hayden Road, Princess Boulevard, and the future Miller Road and Mayo Boulevard alignments. Regional access is expected to be provided by SR 101L, a major freeway in the vicinity of the planning unit with traffic interchanges at Hayden Road, Scottsdale Road, Princess Drive, Bell Road, and Frank Lloyd Wright Boulevard. Regional access is also expected to be provided by the other arterial streets in the vicinity such as Scottsdale Road and Frank Lloyd Wright Boulevard.

2.3 SITE CIRCULATION

Planning Unit VII's potential access points and the surrounding street system are illustrated in the Traffic Master Plan exhibit, which is included in the **Appendix**. The access points identified are generally compliant with the City of Scottsdale Design Standards and Policy Manual (DSPM).

The future Miller Road alignment serves as the west boundary of the planning unit, and the future Mayo Boulevard alignment is the north boundary of the planning unit. The future 78th Street alignment, located midway between the future Miller Road alignment and Hayden Road, connects Princess Boulevard to the future Mayo Boulevard alignment.

3.0 STUDY AREA ANALYSIS

3.1 STREET CLASSIFICATIONS

The Miller Road and Mayo Boulevard alignments are classified as a major collector with urban character in the City of Scottsdale's Transportation Master Plan, which was adopted by City Council on July 5, 2016. Princess Boulevard is also classified as a major collector with urban character, west of 78th Street. 78th Street is classified as a minor collector with urban character. Princess Boulevard, between 78th Street and Hayden Road, is proposed to have a modified local collector cross-section.

3.2 TYPICAL STREET SECTIONS

The typical sections for Miller Road, Mayo Boulevard, Princess Boulevard, and 78th Street are shown in the Roadway Sections exhibit in the **Appendix**.

3.3 ADJACENT LAND USE

Access to the existing developments south of the Princess Boulevard alignment should be maintained when the Princess Boulevard connection is made between Miller Road and Hayden Road. Modification of the existing access is recommended for the Scottsdale Villa Mirage Resort Condominiums access to Princess Boulevard and the Scottsdale Pinnacle Condominiums access to Hayden Road when the Princess Boulevard connection is made.

The Scottsdale Villa Mirage Resort Condominiums has an existing site access driveway at the northwest corner of the parcel. Modification of the existing driveway is recommended to provide full access to Princess Boulevard. The recommended full access location is shown in the Traffic Master Plan exhibit in the **Appendix**. If the property owner does not want to modify existing access, right turns out of the development should be restricted due the geometric constraint of the existing Princess Boulevard connection.

The existing Scottsdale Pinnacle condominium driveway access on Hayden Road, south of the Princess Boulevard right in/right out access, does not satisfy spacing requirements when the Princess Boulevard connection is constructed. Additionally, turning movement counts were collected at the Scottsdale Pinnacle Condominium driveway on Hayden Road on Thursday, March 15, 2018. The counts were performed between 7:00 AM and 9:00 AM and between 4:00 PM and 6:00 PM. During the AM peak hour there were four southbound right turns into the development and one eastbound right turn out of the development. During the PM peak hour there were three southbound right turns into the development and six eastbound right turns out of the development. A copy of the counts is attached in the **Appendix**. The counts show that the existing driveway is not used by a large percentage of traffic to the condominiums. The existing Scottsdale Pinnacle Condominium driveway access on Hayden Road could be relocated to a new full access driveway on Princess Boulevard, west of Hayden Road. The alternative access is illustrated in the Traffic Master Plan exhibit, which is included in the **Appendix**.

4.0 PROJECTED TRAFFIC

4.1 TRAFFIC FORECASTS

4.1.1 TRIP GENERATION

The Institute of Transportation Engineers' (ITE) *Trip Generation, 10th Edition,* was used to obtain daily and peak-hour trip generation rates and inbound-outbound percentages, which were then used to estimate the number of daily and peak hour trips that can be attributed to Planning Unit VII. The trip generation characteristics are summarized in **Table 2**.

Table 2. Planning Unit VII Trip Generation

Land Use	ITE Code	Quantity	Units	Daily Total	AM Peak			PM Peak		
					In	Out	Total	In	Out	Total
Multifamily Housing (Low-Rise)	220	1,049	DUs	7,680	111	372	483	370	217	587
Senior Adult Housing-Attached	252	230	DUs	852	16	30	46	33	27	60
Office Park	750	600,000	SF	6,650	797	98	895	120	679	799
Shopping Center	820	174,000	SF	6,578	102	62	164	319	345	664
Total Trips				21,760	1,026	562	1,588	842	1,268	2,110

Planning Unit VII is expected to generate 21,760 daily trips, with 1,588 trips occurring in the AM peak hour and 2,110 trips occurring in the PM peak hour. Owing to the mix of uses, trip reductions are anticipated and justified below.

4.1.2 TRIP REDUCTIONS

It is reasonable to expect that trip interaction will result considering the mix of residential, office, and retail land uses. To account for this interaction, the methodology for estimating internally captured trips in the *ITE Trip Generation Handbook, 10th Edition* was used. The worksheet calculating internal capture using the ITE method and the resulting internal trip generation is located in the **Appendix**.

As documented in the ITE publication, *Trip Generation*, 10*th Edition*, shopping centers do not typically generate all new traffic on a roadway system. The total traffic generation is a combination of pass-by trips, or traffic drawn directly from the passing traffic flow on the adjacent streets, and primary trips, which represent new traffic drawn to the facility. In order to assess the pass-by trips, the data published in the ITE *Trip Generation Handbook* was used to estimate the pass-by percentages for the commercial parcels. It should be noted that pass-by trip reductions do not reduce driveway traffic volumes. Pass-by reductions are shown in the **Appendix**.

Taking into consideration internal capture and pass-by trips, Planning Unit VII is expected to add 18,434 new daily trips, 1,468 new AM peak hour trips, and 1,579 new PM peak hour trips to the roadway network.

4.2 PROJECTED TRAFFIC VOLUME INFORMATION

The City of Scottsdale provided 2035 traffic volume projections based on traffic analysis zone (TAZ) information. The average daily traffic (ADT) volume projections are shown in the Traffic Master Plan exhibit in the **Appendix**. Princess Boulevard west of Hayden is expected to carry less than 5,000 vehicles per day. The projected volumes are consistent with the average daily traffic ranges for the various street classifications.

4.2.1 TRAFFIC ANALYSIS ZONE INFORMATION

The TAZ information, provided by the City of Scottsdale, is included in the **Appendix**. Planning Unit VII includes TAZ 3208 and a portion of TAZ 3207. All boundaries between TAZ 3207 and TAZ 3208 with

Planning Unit VII are consistent, with the exception of the western boundary of TAZ 3207 and Planning Unit VII. TAZ 3207 is bounded by the future Miller Road alignment to the west. The future Miller Road alignment was revised to connect to the northern extension of Princess Drive at the north leg of the existing roundabout. This alignment revision created a difference in the western boundary of TAZ 3207 and Planning Unit VII. For this reason, TAZ 3207 is split between Planning Unit VII and Planning Unit III. The TAZ 3207 variation with the current Planning Unit VII boundary is not expected to significantly impact the 2035 traffic volume projections that were provided by the City of Scottsdale.

TAZ 3207 is approximately 70 acres. Approximately 44 acres of TAZ 3207 is within Planning Unit VII and approximately 26 acres is within Planning Unit III. TAZ 3208 is approximately 90 acres.

Key socioeconomic data for TAZ 3207 and TAZ 3208 is summarized in **Table 3** and **Table 4**, respectively. The full socioeconomic TAZ data spreadsheet, provided by the City of Scottsdale, is included in the **Appendix**. The TAZ data is based on 2035 socioeconomic projections.

Table 3. TAZ 3207 Socioeconomic Data

Portion of TAZ 3207	Retail Employees	Office Employees	Industrial Employees	Multifamily Households
Full (70 Acres)	378	135	0	189
Planning Unit III (26 Acres)	140	50	0	70
Planning Unit VII (44 Acres)	238	85	0	119

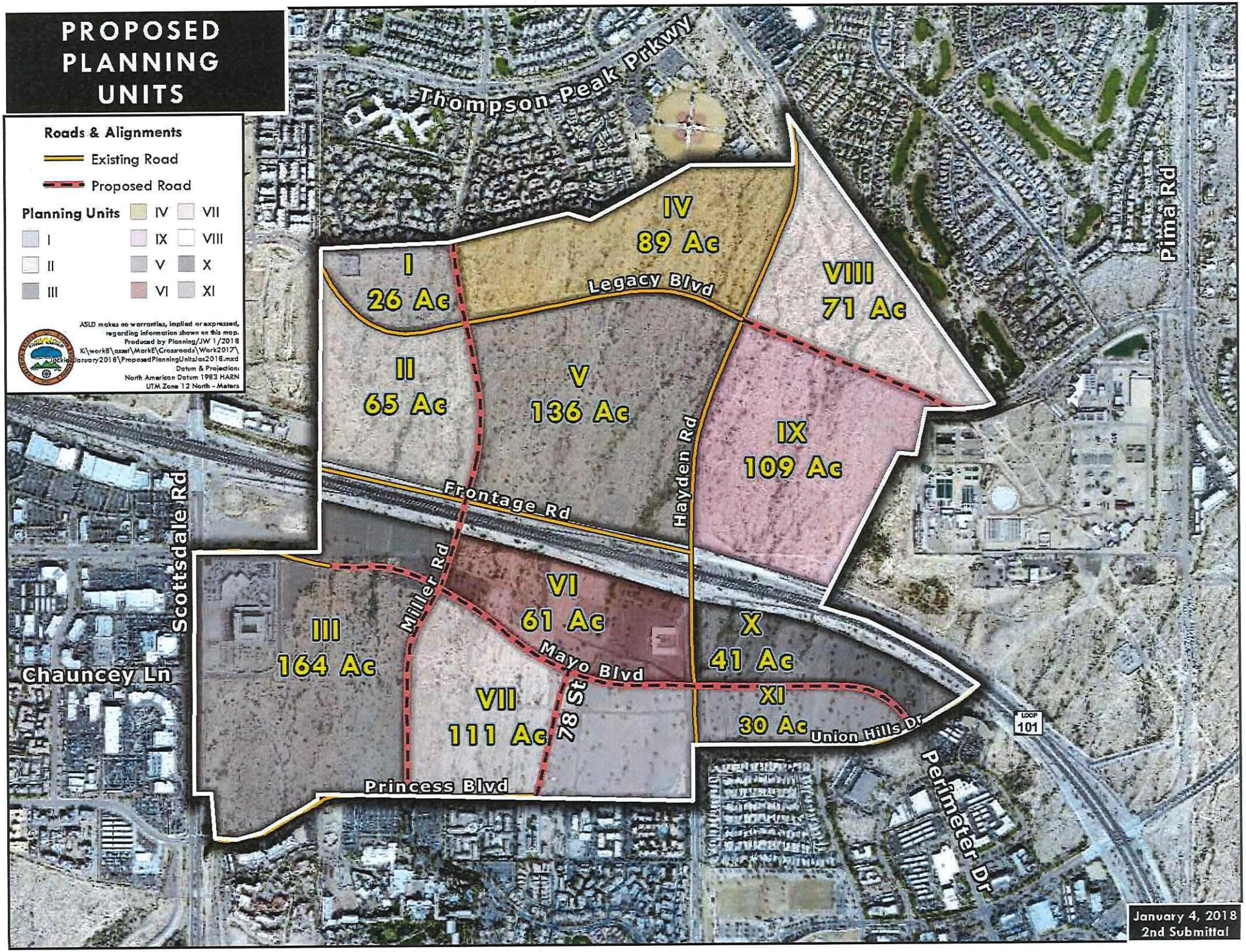
Table 4. TAZ 3208 Socioeconomic Data

Total Area	Retail Employees	Office Employees	Industrial Employees	Multifamily Households
90 Acres (All in Planning Unit VII)	346	106	101	244

Based on the TAZ data, Planning Unit VII is expected to have 584 retail employees, 191 office employees, 101 industrial employees, and 363 multifamily households in 2035.

5.0 CONCLUSIONS

While the specific number of Planning Unit VII employees and residential units may not precisely match the socioeconomic data from the 2035 TAZ projections, the proposed land uses are consistent. The proposed street sections have capacities in excess of the 2035 projected volumes.


PROPOSED PLANNING UNITS
Roads & Alignments
Existing Road
Proposed Road
Planning Units
I
II
III
IV
V
VI
VII
VIII
IX
X
XI
ASLD makes no warranties, implied or expressed, regarding information shown on this map.
Produced by Planning/JW 1/2018
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Datum & Projection:
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UTM Zone 12 North - Meters
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Pima Rd
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89 Ac
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V
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IX
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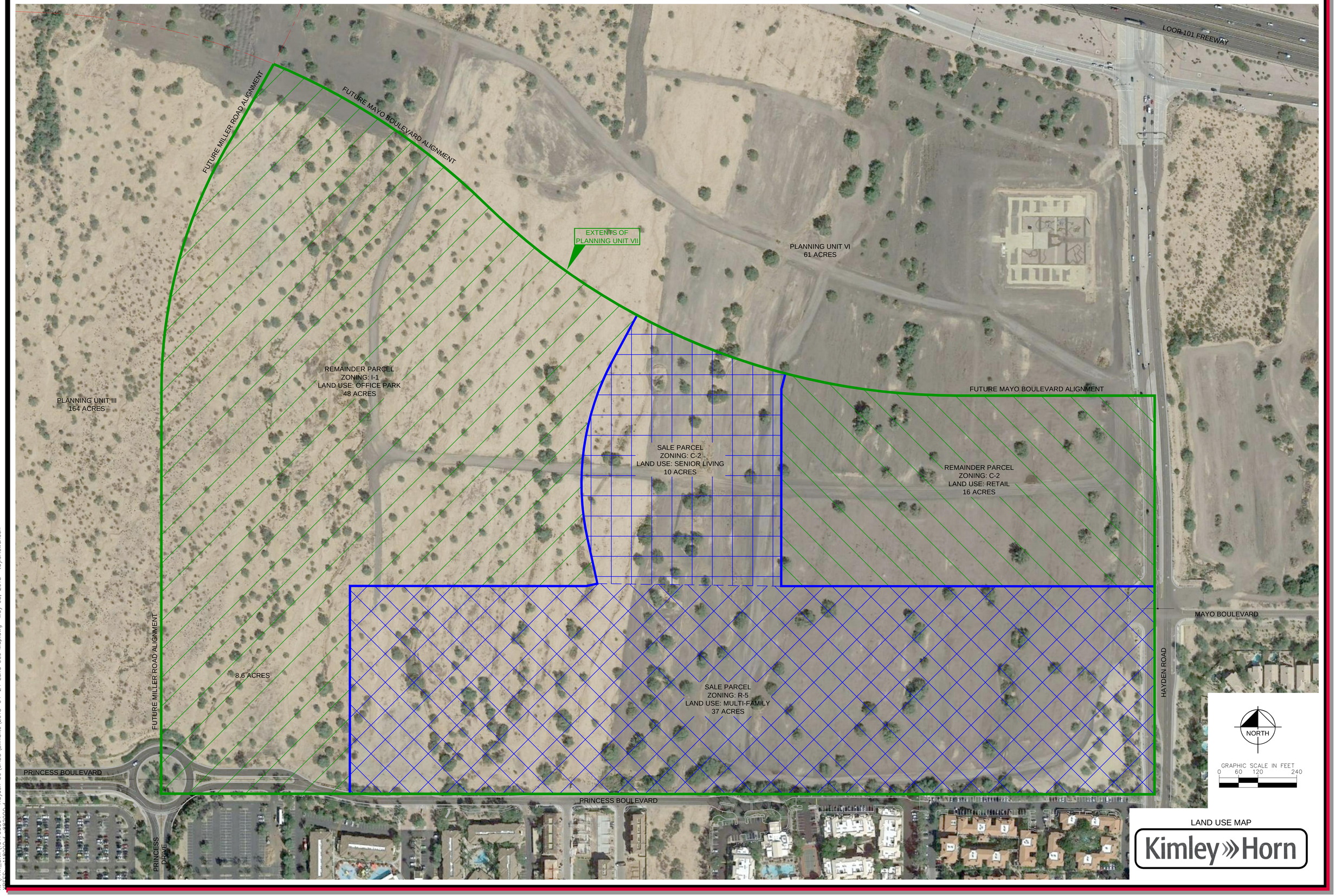
Hayden Rd
Frontage Rd
Scottsdale Rd
Miller Rd
VI
61 Ac
III
164 Ac
X
41 Ac
Mayo Blvd
Chauncey Ln
VII
111 Ac
78 St
XI
30 Ac
Union Hills Dr
LOOP 101
Perimeter Dr
Princess Blvd
January 4, 2018
2nd Submittal



LAND USE MAP

Kimley»Horn

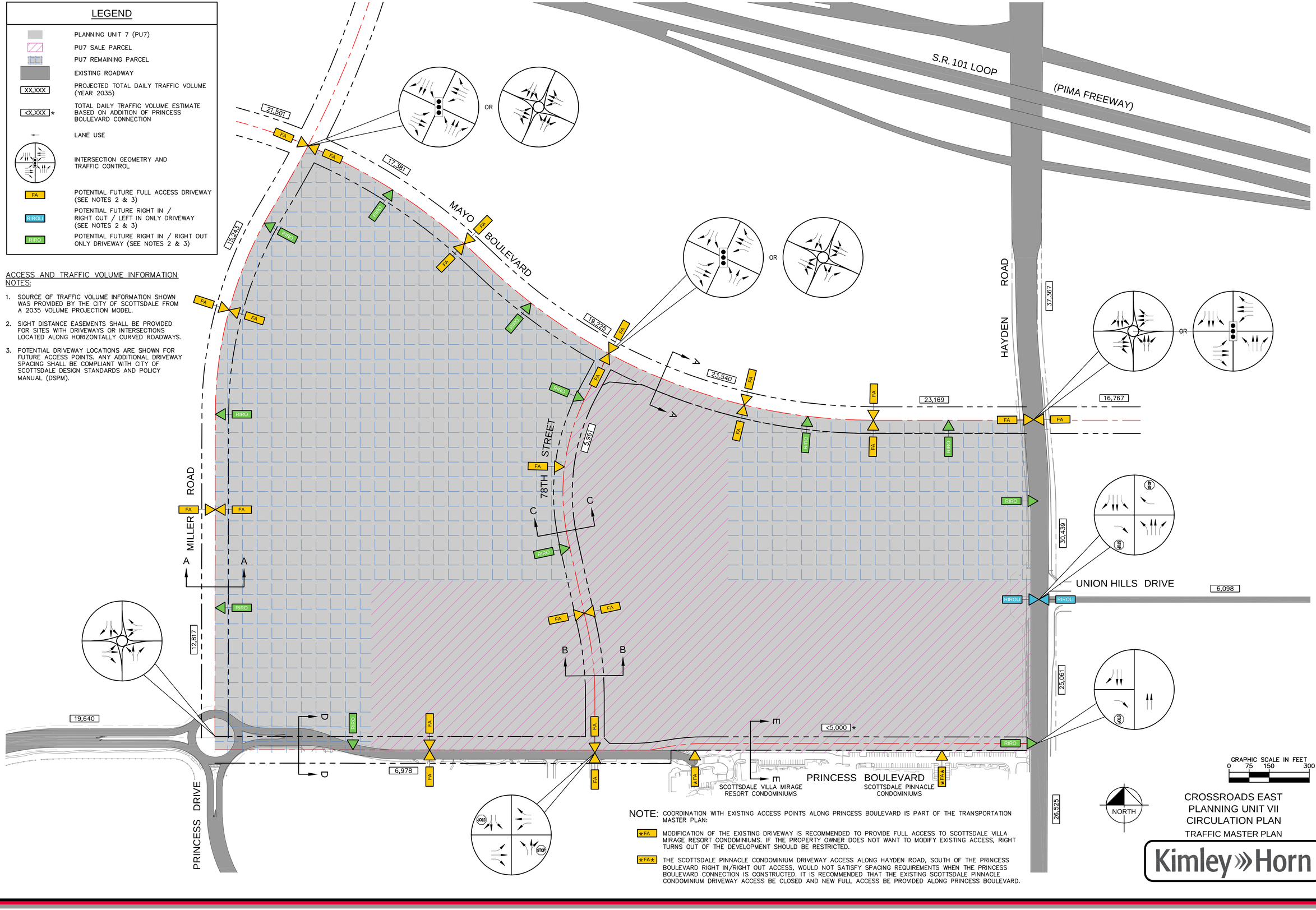
K:\PHX_Civil\191769004 - Hayden 50\CADD\Exhibits\2018-04-24 Land Use Map.dwg May 08, 2018 taylor.swanson

LEGEND

- PLANNING UNIT 7 (PU7)
- PU7 SALE PARCEL
- PU7 REMAINING PARCEL
- EXISTING ROADWAY
- XX,XXX — PROJECTED TOTAL DAILY TRAFFIC VOLUME (YEAR 2035)
- <X,XXX * — TOTAL DAILY TRAFFIC VOLUME ESTIMATE BASED ON ADDITION OF PRprincess BOULEVARD CONNECTION
- LANE USE
- INTERSECTION GEOMETRY AND TRAFFIC CONTROL
- FA — POTENTIAL FUTURE FULL ACCESS DRIVEWAY (SEE NOTES 2 & 3)
- RIROLI — POTENTIAL FUTURE RIGHT IN / RIGHT OUT / LEFT IN ONLY DRIVEWAY (SEE NOTES 2 & 3)
- RIRO — POTENTIAL FUTURE RIGHT IN / RIGHT OUT ONLY DRIVEWAY (SEE NOTES 2 & 3)

ACCESS AND TRAFFIC VOLUME INFORMATION NOTES:

1. SOURCE OF TRAFFIC VOLUME INFORMATION SHOWN WAS PROVIDED BY THE CITY OF SCOTTSDALE FROM A 2035 VOLUME PROJECTION MODEL.
2. SIGHT DISTANCE EASEMENTS SHALL BE PROVIDED FOR SITES WITH DRIVEWAYS OR INTERSECTIONS LOCATED ALONG HORIZONTALLY CURVED ROADWAYS.
3. POTENTIAL DRIVEWAY LOCATIONS ARE SHOWN FOR FUTURE ACCESS POINTS. ANY ADDITIONAL DRIVEWAY SPACING SHALL BE COMPLIANT WITH CITY OF SCOTTSDALE DESIGN STANDARDS AND POLICY MANUAL (DSPM).



NOTE: COORDINATION WITH EXISTING ACCESS POINTS ALONG PRINCESS BOULEVARD IS PART OF THE TRANSPORTATION MASTER PLAN:

- *FA — MODIFICATION OF THE EXISTING DRIVEWAY IS RECOMMENDED TO PROVIDE FULL ACCESS TO SCOTTSDALE VILLA MIRAGE RESORT CONDOMINIUMS. IF THE PROPERTY OWNER DOES NOT WANT TO MODIFY EXISTING ACCESS, RIGHT TURNS OUT OF THE DEVELOPMENT SHOULD BE RESTRICTED.
- *FA* — THE SCOTTSDALE PINNACLE CONDOMINIUM DRIVEWAY ACCESS ALONG HAYDEN ROAD, SOUTH OF THE PRINCESS BOULEVARD RIGHT IN/RIGHT OUT ACCESS, WOULD NOT SATISFY SPACING REQUIREMENTS WHEN THE PRINCESS BOULEVARD CONNECTION IS CONSTRUCTED. IT IS RECOMMENDED THAT THE EXISTING SCOTTSDALE PINNACLE CONDOMINIUM DRIVEWAY ACCESS BE CLOSED AND NEW FULL ACCESS BE PROVIDED ALONG PRINCESS BOULEVARD.

CROSSROADS EAST
PLANNING UNIT VII
CIRCULATION PLAN
TRAFFIC MASTER PLAN

Kimley»Horn

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1745
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3208
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3204
2982
1750

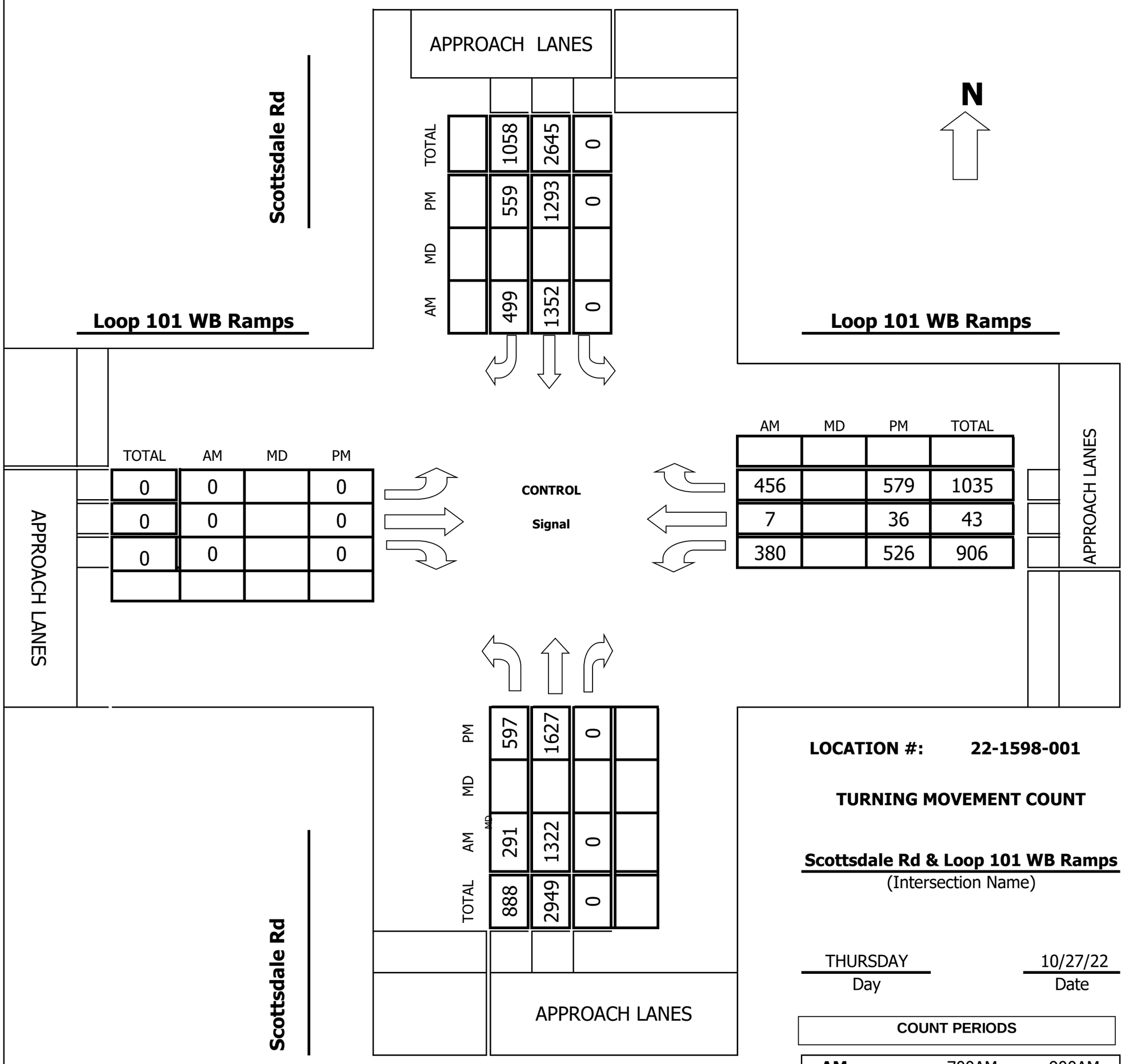
Traffic Counts

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 22-1598-001

TMC SUMMARY OF Scottsdale Rd & Loop 101 WB Ramps



LOCATION #: 22-1598-001

TURNING MOVEMENT COUNT

Scottsdale Rd & Loop 101 WB Ramps
(Intersection Name)

THURSDAY — Day
10/27/22 — Date

COUNT PERIODS

AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 800 AM

NOON PEAK HOUR

PM PEAK HOUR 430 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Scottsdale Rd	DATE:	10/27/22	LOCATION:	Scottsdale
E-W STREET:	Loop 101 WB Ramps	DAY:	THURSDAY	PROJECT#	22-1598-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	3	0	0	5	1	0	0	0	2	0.5	1.5	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	54	255	0	0	243	115	0	0	0	51	1	85	804
7:15 AM	68	304	0	0	340	119	0	0	0	59	0	86	976
7:30 AM	79	321	0	0	385	150	0	0	0	60	1	113	1109
7:45 AM	78	397	0	0	349	114	0	0	0	97	0	119	1154
8:00 AM	83	292	0	0	323	128	0	0	0	89	3	116	1034
8:15 AM	91	315	0	0	305	113	0	0	0	87	0	96	1007
8:30 AM	56	313	0	0	360	117	0	0	0	110	3	121	1080
8:45 AM	61	402	0	0	364	141	0	0	0	94	1	123	1186
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	570	2599	0	0	2669	997	0	0	0	647	9	859	8350
Approach %	17.99	82.01	0.00	0.00	72.80	27.20	####	####	####	42.71	0.59	56.70	
App/Depart	3169	/	3458	3666	/	3316	0	/	0	1515	/	1576	

AM Peak Hr Begins at: 800 AM

PEAK													
Volumes	291	1322	0	0	1352	499	0	0	0	380	7	456	4307
Approach %	18.04	81.96	0.00	0.00	73.04	26.96	####	####	####	45.08	0.83	54.09	

PEAK HR. FACTOR:	0.871	0.916	0.000	0.901	0.908

CONTROL: Signal
COMMENT 1:
GPS: 33.658758, -111.925339

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Scottsdale Rd 0	DATE:	10/27/22	LOCATION:	Scottsdale
E-W STREET:	Loop 101 WB Ramps	DAY:	THURSDAY	PROJECT#	22-1598-001

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	3	0	0	5	1	0	0	0	2	0.5	1.5	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	187	353	0	0	303	152	0	0	0	95	9	122	1221
4:15 PM	172	389	0	0	286	151	0	0	0	109	11	119	1237
4:30 PM	149	433	0	0	333	131	0	0	0	119	9	128	1302
4:45 PM	134	381	0	0	294	150	0	0	0	137	9	140	1245
5:00 PM	163	378	0	0	321	153	0	0	0	114	10	140	1279
5:15 PM	151	435	0	0	345	125	0	0	0	156	8	171	1391
5:30 PM	140	439	0	0	312	100	0	0	0	95	6	157	1249
5:45 PM	149	357	0	0	274	110	0	0	0	122	1	112	1125
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	1245	3165	0	0	2468	1072	0	0	0	947	63	1089	10049
Approach %	28.23	71.77	0.00	0.00	69.72	30.28	####	####	####	45.12	3.00	51.88	
App/Depart	4410	/	4254	3540	/	3415	0	/	0	2099	/	2380	

PM Peak Hr Begins at: 430 PM

PEAK													
Volumes	597	1627	0	0	1293	559	0	0	0	526	36	579	5217
Approach %	26.84	73.16	0.00	0.00	69.82	30.18	####	####	####	46.10	3.16	50.74	
PEAK HR. FACTOR:		0.949			0.977			0.000			0.851		0.938

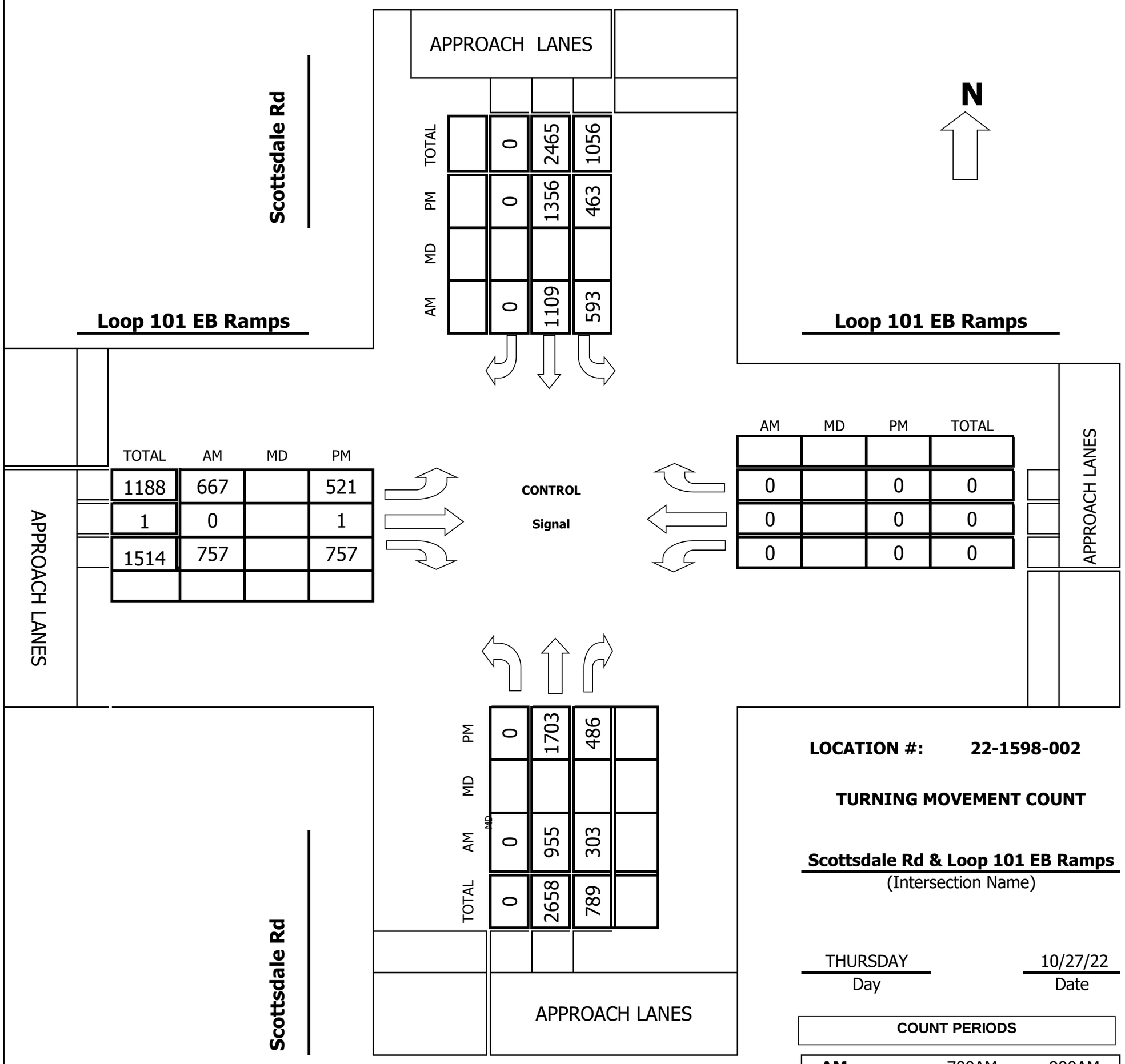
CONTROL:	Signal
COMMENT 1:	0
GPS:	33.658758, -111.925339

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 22-1598-002

TMC SUMMARY OF Scottsdale Rd & Loop 101 EB Ramps



LOCATION #: 22-1598-002

TURNING MOVEMENT COUNT

Scottsdale Rd & Loop 101 EB Ramps
(Intersection Name)

THURSDAY — Day
10/27/22 — Date

COUNT PERIODS			
AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 715 AM

NOON PEAK HOUR

PM PEAK HOUR 430 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Scottsdale Rd	DATE:	10/27/22	LOCATION:	Scottsdale
E-W STREET:	Loop 101 EB Ramps	DAY:	THURSDAY	PROJECT#	22-1598-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	5	1	2	3	0	2	0.5	1.5	0	0	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	147	54	148	146	0	162	0	189	0	0	0	846
7:15 AM	0	211	73	144	255	0	161	0	203	0	0	0	1047
7:30 AM	0	207	74	179	266	0	193	0	205	0	0	0	1124
7:45 AM	0	288	70	122	324	0	187	0	207	0	0	0	1198
8:00 AM	0	249	86	148	264	0	126	0	142	0	0	0	1015
8:15 AM	0	312	71	116	276	0	94	0	125	0	0	0	994
8:30 AM	0	194	80	151	319	0	175	0	200	0	0	0	1119
8:45 AM	0	279	74	126	332	0	184	2	251	0	0	0	1248
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	0	1887	582	1134	2182	0	1282	2	1522	0	0	0	8591
Approach %	0.00	76.43	23.57	34.20	65.80	0.00	45.69	0.07	54.24	####	####	####	
App/Depart	2469	/	3169	3316	/	3704	2806	/	1718	0	/	0	

AM Peak Hr Begins at: 715 AM

PEAK													
Volumes	0	955	303	593	1109	0	667	0	757	0	0	0	4384
Approach %	0.00	75.91	24.09	34.84	65.16	0.00	46.84	0.00	53.16	####	####	####	

PEAK HR. FACTOR:	0.878	0.954	0.894	0.000	0.915

CONTROL: Signal
COMMENT 1:
GPS: 33.657620, -111.925365

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Scottsdale Rd 0	DATE:	10/27/22	LOCATION:	Scottsdale
E-W STREET:	Loop 101 EB Ramps	DAY:	THURSDAY	PROJECT#	22-1598-002

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	5	1	2	3	0	2	0.5	1.5	0	0	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	0	422	121	118	280	0	118	0	150	0	0	0	1209
4:15 PM	0	441	111	115	280	0	120	2	183	0	0	0	1252
4:30 PM	0	451	118	127	325	0	131	1	206	0	0	0	1359
4:45 PM	0	383	116	108	323	0	132	0	185	0	0	0	1247
5:00 PM	0	426	132	120	315	0	115	0	161	0	0	0	1269
5:15 PM	0	443	120	108	393	0	143	0	205	0	0	0	1412
5:30 PM	0	470	122	108	299	0	109	2	159	0	0	0	1269
5:45 PM	0	391	100	82	314	0	115	0	167	0	0	0	1169
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	0	3427	940	886	2529	0	983	5	1416	0	0	0	10186
Approach %	0.00	78.47	21.53	25.94	74.06	0.00	40.89	0.21	58.90	####	####	####	
App/Depart	4367	/	4410	3415	/	3945	2404	/	1831	0	/	0	

PM Peak Hr Begins at: 430 PM

PEAK													
Volumes	0	1703	486	463	1356	0	521	1	757	0	0	0	5287
Approach %	0.00	77.80	22.20	25.45	74.55	0.00	40.73	0.08	59.19	####	####	####	
PEAK HR. FACTOR:		0.962			0.908			0.919			0.000		0.936

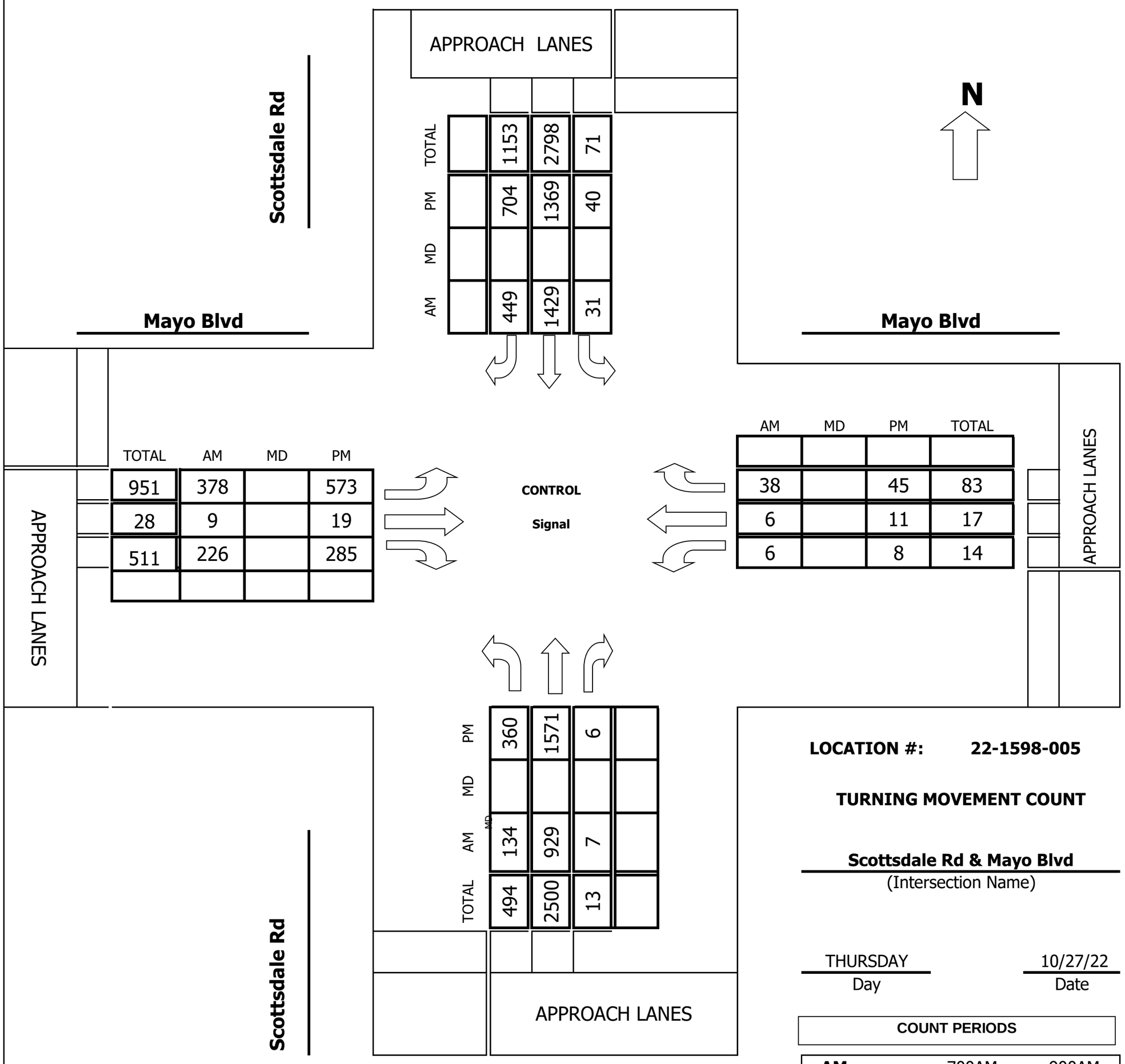
CONTROL:	Signal
COMMENT 1:	0
GPS:	33.657620, -111.925365

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 22-1598-005

TMC SUMMARY OF Scottsdale Rd & Mayo Blvd



LOCATION #: 22-1598-005

TURNING MOVEMENT COUNT

Scottsdale Rd & Mayo Blvd
(Intersection Name)

THURSDAY — Day
10/27/22 — Date

COUNT PERIODS

AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 800 AM

NOON PEAK HOUR

PM PEAK HOUR 430 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Scottsdale Rd	DATE:	10/27/22	LOCATION:	Scottsdale
E-W STREET:	Mayo Blvd	DAY:	THURSDAY	PROJECT#	22-1598-005

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	3	1	2	3	1	2	3	1	2	2	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	11	137	0	4	257	74	60	1	24	1	2	4	575
7:15 AM	27	195	2	8	368	82	80	2	37	3	2	9	815
7:30 AM	33	185	1	8	395	68	85	4	45	1	2	11	838
7:45 AM	49	283	2	9	421	101	63	7	42	1	2	12	992
8:00 AM	41	228	3	9	287	110	92	0	58	1	3	15	847
8:15 AM	30	273	0	5	289	107	99	2	53	1	0	11	870
8:30 AM	36	165	1	8	402	109	101	5	63	1	2	8	901
8:45 AM	27	263	3	9	451	123	86	2	52	3	1	4	1024
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	254	1729	12	60	2870	774	666	23	374	12	14	74	6862
Approach %	12.73	86.67	0.60	1.62	77.48	20.90	62.65	2.16	35.18	12.00	14.00	74.00	
App/Depart	1995	/	2469	3704	/	3256	1063	/	95	100	/	1042	

AM Peak Hr Begins at: 800 AM

PEAK													
Volumes	134	929	7	31	1429	449	378	9	226	6	6	38	3642
Approach %	12.52	86.82	0.65	1.62	74.86	23.52	61.66	1.47	36.87	12.00	12.00	76.00	
PEAK HR. FACTOR:		0.883			0.819			0.907			0.658		0.889

CONTROL: Signal
COMMENT 1:
GPS: 33.655158, -111.925364

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Scottsdale Rd 0	DATE:	10/27/22	LOCATION:	Scottsdale
E-W STREET:	Mayo Blvd	DAY:	THURSDAY	PROJECT#	22-1598-005

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	3	1	2	3	1	2	3	1	2	2	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	65	389	5	12	271	147	135	3	77	8	5	19	1136
4:15 PM	81	386	1	8	288	167	152	2	72	7	3	14	1181
4:30 PM	80	432	3	10	350	171	121	3	70	3	2	16	1261
4:45 PM	86	334	1	11	322	175	155	4	69	1	4	10	1172
5:00 PM	66	392	0	11	299	166	151	6	75	2	1	15	1184
5:15 PM	128	413	2	8	398	192	146	6	71	2	4	4	1374
5:30 PM	64	438	2	5	258	195	148	5	75	0	4	6	1200
5:45 PM	95	325	1	11	287	183	161	6	62	4	3	5	1143
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	665	3109	15	76	2473	1396	1169	35	571	27	26	89	9651
Approach %	17.55	82.05	0.40	1.93	62.69	35.39	65.86	1.97	32.17	19.01	18.31	62.68	
App/Depart	3789	/	4367	3945	/	3071	1775	/	126	142	/	2087	

PM Peak Hr Begins at: 430 PM

PEAK													
Volumes	360	1571	6	40	1369	704	573	19	285	8	11	45	4991
Approach %	18.59	81.10	0.31	1.89	64.79	33.32	65.34	2.17	32.50	12.50	17.19	70.31	

PEAK HR. FACTOR:	0.892	0.883	0.945	0.762	0.908

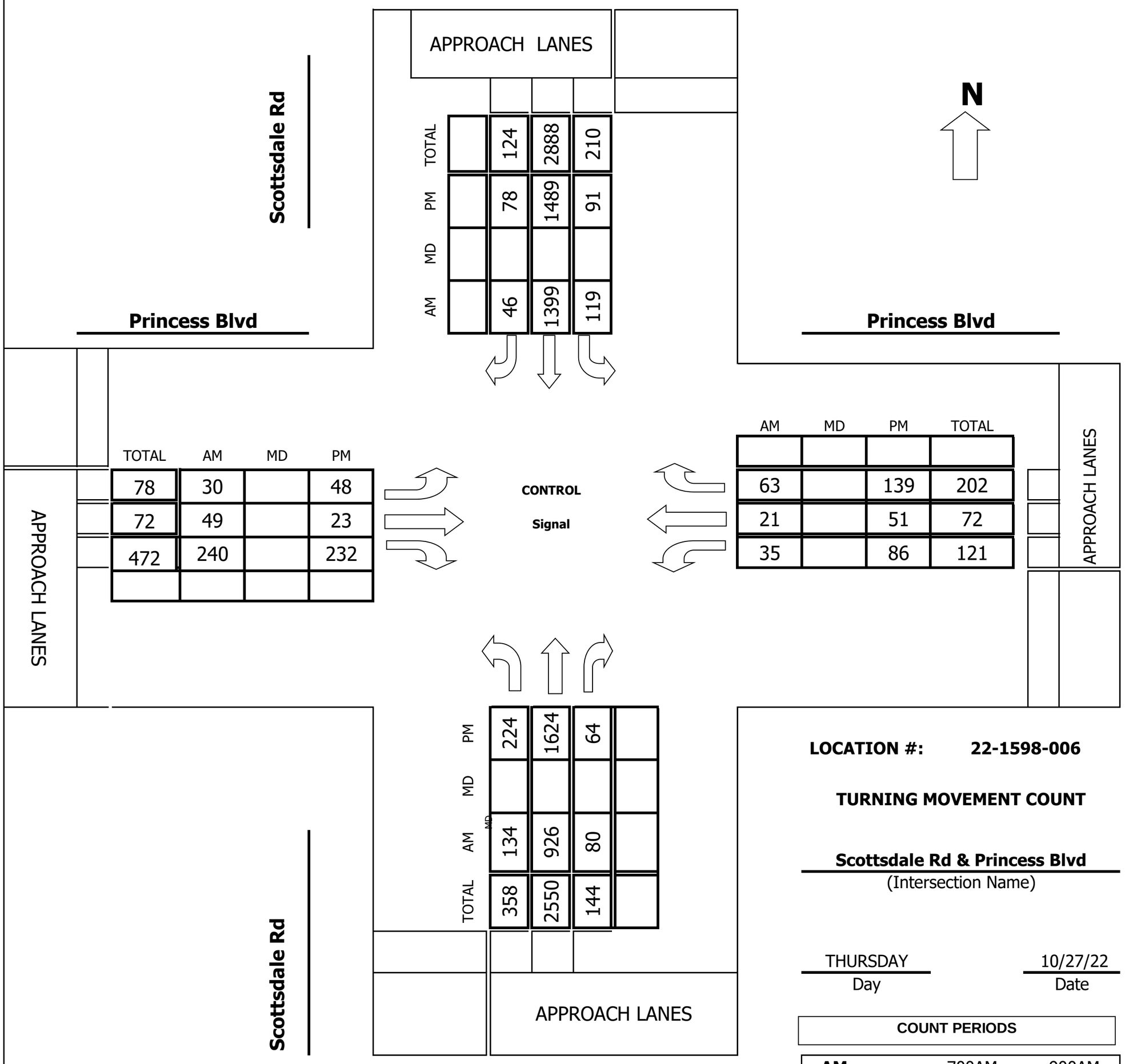
CONTROL:	Signal
COMMENT 1:	0
GPS:	33.655158, -111.925364

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 22-1598-006

TMC SUMMARY OF Scottsdale Rd & Princess Blvd



LOCATION #: 22-1598-006

TURNING MOVEMENT COUNT

Scottsdale Rd & Princess Blvd
(Intersection Name)

THURSDAY — Day
10/27/22 — Date

COUNT PERIODS			
AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 730 AM

NOON PEAK HOUR

PM PEAK HOUR 430 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Scottsdale Rd	DATE:	10/27/22	LOCATION:	Scottsdale
E-W STREET:	Princess Blvd	DAY:	THURSDAY	PROJECT#	22-1598-006

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	1	1	3	1	1	2	0	1	2	1	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	23	136	20	21	250	14	4	4	45	13	4	10	544
7:15 AM	26	162	19	25	354	10	5	5	54	8	3	13	684
7:30 AM	34	211	22	36	365	12	12	11	70	7	8	15	803
7:45 AM	37	268	24	35	411	11	3	15	57	6	4	19	890
8:00 AM	35	220	19	29	315	12	6	9	52	14	3	16	730
8:15 AM	28	227	15	19	308	11	9	14	61	8	6	13	719
8:30 AM	31	204	20	40	371	21	11	9	53	13	3	18	794
8:45 AM	45	260	29	42	391	17	8	10	50	11	5	18	886
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	259	1688	168	247	2765	108	58	77	442	80	36	122	6050
Approach %	12.25	79.81	7.94	7.92	88.62	3.46	10.05	13.34	76.60	33.61	15.13	51.26	
App/Depart	2115	/	1868	3120	/	3287	577	/	492	238	/	403	

AM Peak Hr Begins at: 730 AM

PEAK													
Volumes	134	926	80	119	1399	46	30	49	240	35	21	63	3142
Approach %	11.75	81.23	7.02	7.61	89.45	2.94	9.40	15.36	75.24	29.41	17.65	52.94	
PEAK HR. FACTOR:		0.866			0.856			0.858			0.902		0.883

CONTROL: Signal
COMMENT 1:
GPS: 33.646692, -111.925376

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Scottsdale Rd 0	DATE:	10/27/22	LOCATION:	Scottsdale
E-W STREET:	Princess Blvd	DAY:	THURSDAY	PROJECT#	22-1598-006

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	1	1	3	1	1	2	0	1	2	1	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	46	410	10	22	343	16	17	8	43	20	7	38	980
4:15 PM	56	440	18	24	352	14	3	5	54	21	11	32	1030
4:30 PM	51	368	19	28	375	19	8	9	54	30	22	28	1011
4:45 PM	51	401	14	19	369	18	9	3	58	13	6	31	992
5:00 PM	54	420	15	24	349	18	17	5	59	25	12	39	1037
5:15 PM	68	435	16	20	396	23	14	6	61	18	11	41	1109
5:30 PM	75	344	16	21	318	10	13	4	62	15	13	44	935
5:45 PM	45	380	20	23	326	8	6	8	59	19	17	29	940
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	446	3198	128	181	2828	126	87	48	450	161	99	282	8034
Approach %	11.82	84.78	3.39	5.77	90.21	4.02	14.87	8.21	76.92	29.70	18.27	52.03	
App/Depart	3772	/	3567	3135	/	3439	585	/	357	542	/	671	

PM Peak Hr Begins at: 430 PM

PEAK													
Volumes	224	1624	64	91	1489	78	48	23	232	86	51	139	4149
Approach %	11.72	84.94	3.35	5.49	89.81	4.70	15.84	7.59	76.57	31.16	18.48	50.36	
PEAK HR. FACTOR:		0.921			0.944			0.935			0.863		0.935

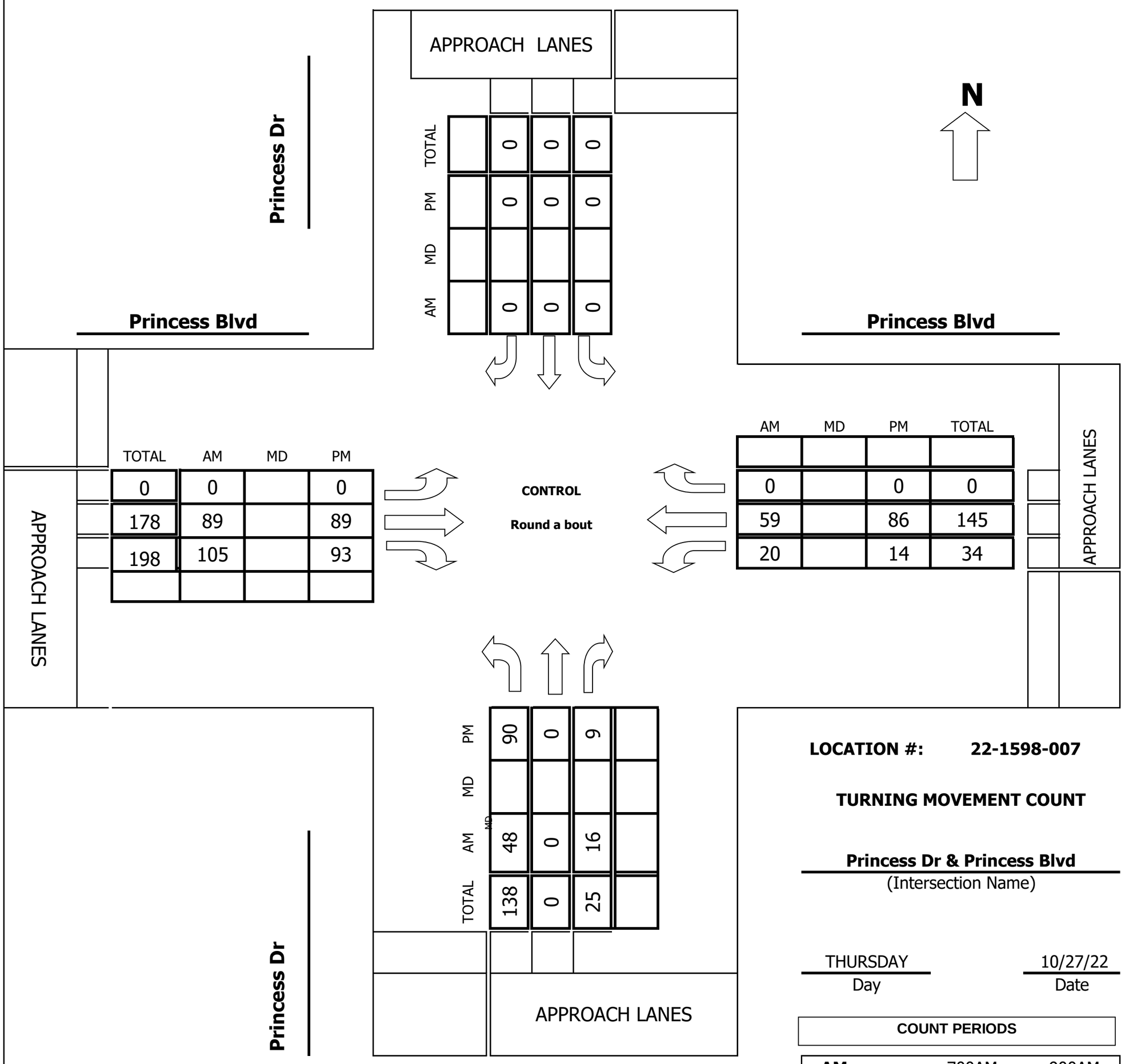
CONTROL:	Signal
COMMENT 1:	0
GPS:	33.646692, -111.925376

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 22-1598-007

TMC SUMMARY OF Princess Dr & Princess Blvd



LOCATION #: 22-1598-007

TURNING MOVEMENT COUNT

Princess Dr & Princess Blvd
(Intersection Name)

THURSDAY (Day) 10/27/22 (Date)

COUNT PERIODS

AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 700 AM

NOON PEAK HOUR

PM PEAK HOUR 445 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Princess Dr	DATE:	10/27/22	LOCATION:	Scottsdale
E-W STREET:	Princess Blvd	DAY:	THURSDAY	PROJECT#	22-1598-007

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0	0.5	0	0	0	0	1	1	0	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	10	0	5	0	0	0	0	23	25	8	19	0	90
7:15 AM	14	0	3	0	0	0	0	26	23	7	10	0	83
7:30 AM	13	0	5	0	0	0	0	16	28	4	16	0	82
7:45 AM	11	0	3	0	0	0	0	24	29	1	14	0	82
8:00 AM	7	0	1	0	0	0	0	16	11	2	12	0	49
8:15 AM	14	0	1	0	0	0	0	17	26	2	17	0	77
8:30 AM	16	0	2	0	0	0	0	20	27	5	29	0	99
8:45 AM	11	0	1	0	0	0	0	13	28	3	37	0	93
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	96	0	21	0	0	0	0	155	197	32	154	0	655
Approach %	82.05	0.00	17.95	####	####	####	0.00	44.03	55.97	17.20	82.80	0.00	
App/Depart	117	/	0	0	/	229	352	/	176	186	/	250	

AM Peak Hr Begins at: 700 AM

PEAK													
Volumes	48	0	16	0	0	0	0	89	105	20	59	0	337
Approach %	75.00	0.00	25.00	####	####	####	0.00	45.88	54.12	25.32	74.68	0.00	
PEAK HR. FACTOR:	0.889			0.000			0.915			0.731			0.936

CONTROL:	Round a bout
COMMENT 1:	
GPS:	33.648033, -111.917939

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Princess Dr 0	DATE:	10/27/22	LOCATION:	Scottsdale
E-W STREET:	Princess Blvd	DAY:	THURSDAY	PROJECT#	22-1598-007

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0	0.5	0	0	0	0	1	1	0	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	23	0	5	0	0	0	0	10	22	3	20	0	83
4:15 PM	23	0	3	0	0	0	0	23	32	4	23	0	108
4:30 PM	14	0	2	0	0	0	0	18	25	5	15	0	79
4:45 PM	30	0	1	0	0	0	0	9	28	4	13	0	85
5:00 PM	17	0	5	0	0	0	0	27	19	6	31	0	105
5:15 PM	20	0	0	0	0	0	0	27	18	2	18	0	85
5:30 PM	23	0	3	0	0	0	0	26	28	2	24	0	106
5:45 PM	20	0	3	0	0	0	0	11	19	4	19	0	76
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	170	0	22	0	0	0	0	151	191	30	163	0	727
Approach %	88.54	0.00	11.46	####	####	####	0.00	44.15	55.85	15.54	84.46	0.00	
App/Depart	192	/	0	0	/	221	342	/	173	193	/	333	

PM Peak Hr Begins at: 445 PM

PEAK													
Volumes	90	0	9	0	0	0	0	89	93	14	86	0	381
Approach %	90.91	0.00	9.09	####	####	####	0.00	48.90	51.10	14.00	86.00	0.00	
PEAK HR. FACTOR:		0.798			0.000			0.843			0.676		0.899

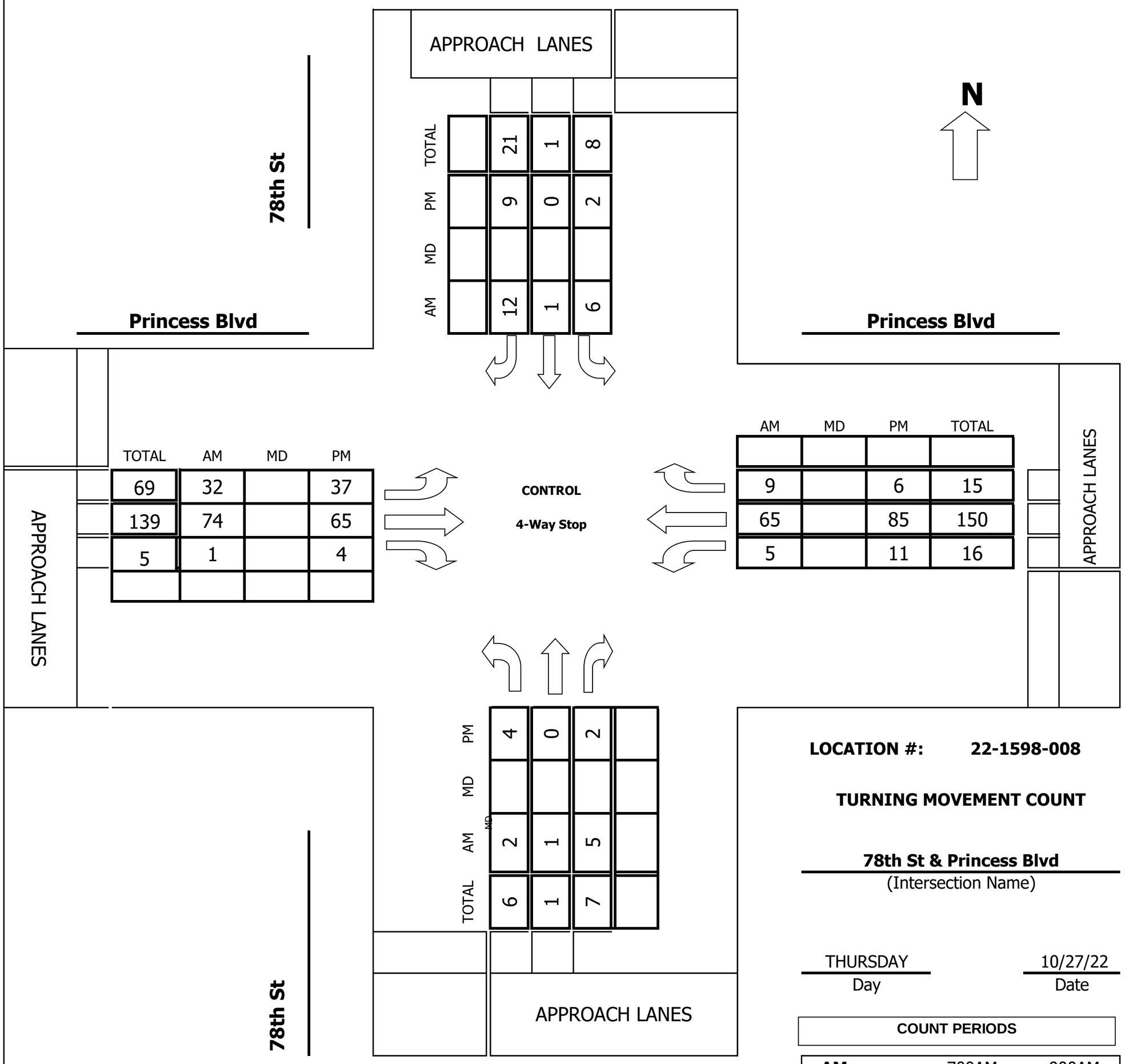
CONTROL:	Round a bout
COMMENT 1:	0
GPS:	33.648033, -111.917939

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 22-1598-008

TMC SUMMARY OF 78th St & Princess Blvd



LOCATION #: 22-1598-008

TURNING MOVEMENT COUNT

78th St & Princess Blvd
(Intersection Name)

THURSDAY — Day
10/27/22 — Date

COUNT PERIODS			
AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 715 AM

NOON PEAK HOUR

PM PEAK HOUR 500 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	78th St	DATE:	10/27/22	LOCATION:	Scottsdale
E-W STREET:	Princess Blvd	DAY:	THURSDAY	PROJECT#	22-1598-008

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	1	0	1	1	0	1	1	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	2	1	1	0	1	9	6	0	0	13	0	33
7:15 AM	0	1	1	1	0	5	10	18	0	1	19	2	58
7:30 AM	1	0	1	2	1	4	6	21	0	1	15	2	54
7:45 AM	0	0	2	1	0	3	9	12	0	2	17	2	48
8:00 AM	1	0	1	2	0	0	7	23	1	1	14	3	53
8:15 AM	0	3	2	2	1	2	3	15	0	3	11	3	45
8:30 AM	1	1	0	1	1	2	6	12	1	2	20	0	47
8:45 AM	0	1	1	0	0	1	3	18	0	2	34	3	63
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	3	8	9	10	3	18	53	125	2	12	143	15	401
Approach %	15.00	40.00	45.00	32.26	9.68	58.06	29.44	69.44	1.11	7.06	84.12	8.82	
App/Depart	20	/	76	31	/	17	180	/	144	170	/	164	

AM Peak Hr Begins at: 715 AM

PEAK													
Volumes	2	1	5	6	1	12	32	74	1	5	65	9	213
Approach %	25.00	12.50	62.50	31.58	5.26	63.16	29.91	69.16	0.93	6.33	82.28	11.39	
PEAK HR. FACTOR:		1.000			0.679			0.863			0.898		0.918

CONTROL: 4-Way Stop
COMMENT 1:
GPS: 33.647857, -111.913295

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	78th St 0	DATE:	10/27/22	LOCATION:	Scottsdale
E-W STREET:	Princess Blvd	DAY:	THURSDAY	PROJECT#	22-1598-008

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	1	0	1	1	0	1	1	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	1	0	1	1	0	2	5	20	1	2	19	1	53
4:15 PM	0	0	2	1	0	2	2	13	0	1	17	2	40
4:30 PM	1	0	3	4	0	1	6	15	3	4	26	0	63
4:45 PM	0	2	2	3	0	2	5	13	0	1	15	2	45
5:00 PM	1	0	0	1	0	2	11	11	1	3	18	1	49
5:15 PM	1	0	1	0	0	3	5	20	2	2	27	1	62
5:30 PM	1	0	1	0	0	2	5	15	0	4	20	2	50
5:45 PM	1	0	0	1	0	2	16	19	1	2	20	2	64
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	6	2	10	11	0	16	55	126	8	19	162	11	426
Approach %	33.33	11.11	55.56	40.74	0.00	59.26	29.10	66.67	4.23	9.90	84.38	5.73	
App/Depart	18	/	68	27	/	27	189	/	147	192	/	184	

PM Peak Hr Begins at: 500 PM

PEAK													
Volumes	4	0	2	2	0	9	37	65	4	11	85	6	225
Approach %	66.67	0.00	33.33	18.18	0.00	81.82	34.91	61.32	3.77	10.78	83.33	5.88	
PEAK HR. FACTOR:		0.750			0.917			0.736			0.850		0.879

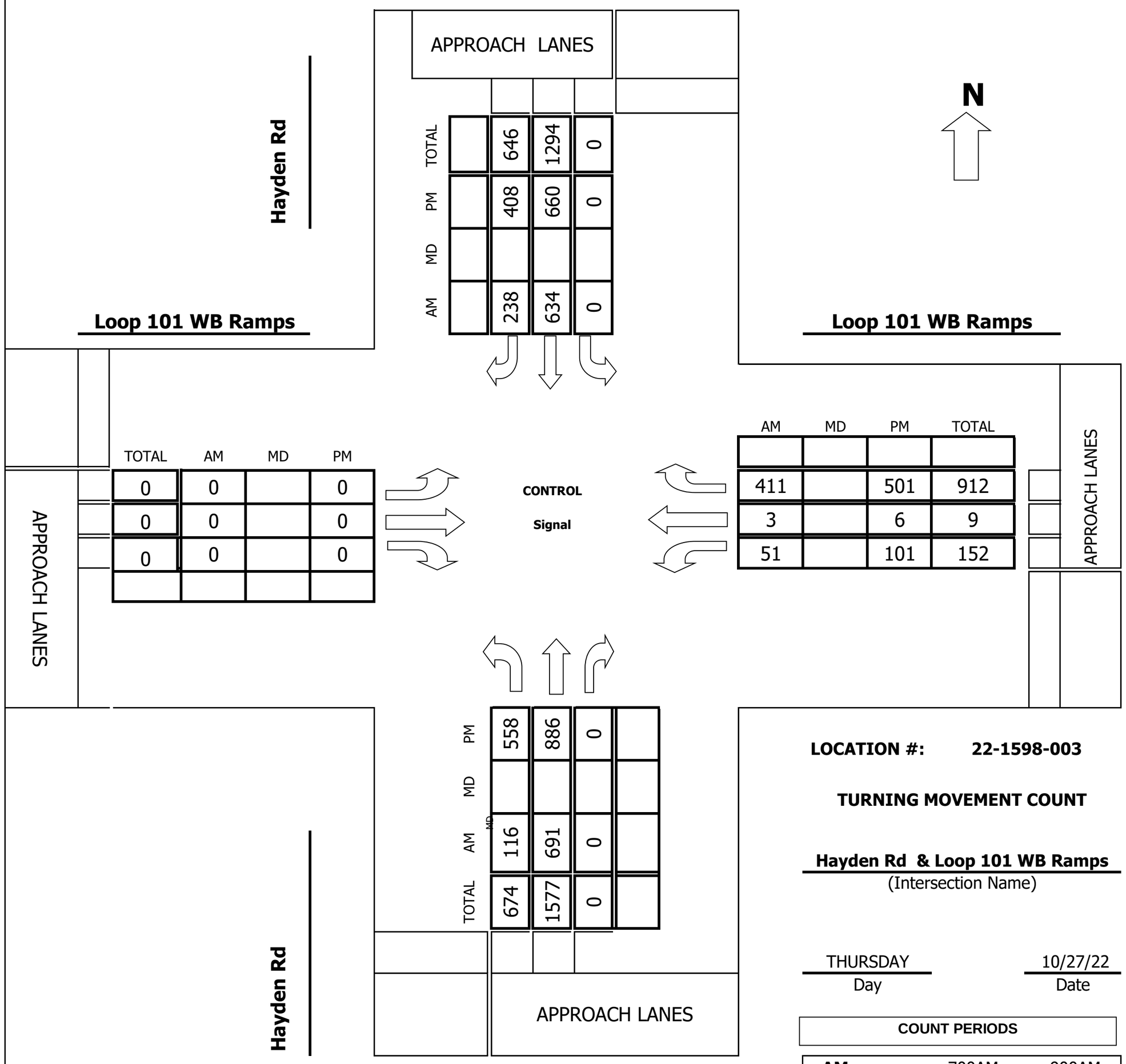
CONTROL: 4-Way Stop
COMMENT 1: 0
GPS: 33.647857, -111.913295

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 22-1598-003

TMC SUMMARY OF Hayden Rd & Loop 101 WB Ramps



LOCATION #: 22-1598-003

TURNING MOVEMENT COUNT

Hayden Rd & Loop 101 WB Ramps
(Intersection Name)

THURSDAY — Day
10/27/22 — Date

COUNT PERIODS			
AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 715 AM

NOON PEAK HOUR

PM PEAK HOUR 415 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Hayden Rd	DATE:	10/27/22	LOCATION:	Scottsdale
E-W STREET:	Loop 101 WB Ramps	DAY:	THURSDAY	PROJECT#	22-1598-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	4	1	0	0	0	2	0.5	1.5	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	25	120	0	0	163	58	0	0	0	8	0	63	437
7:15 AM	24	154	0	0	166	74	0	0	0	11	0	99	528
7:30 AM	29	183	0	0	174	54	0	0	0	10	0	103	553
7:45 AM	33	167	0	0	140	52	0	0	0	14	1	101	508
8:00 AM	30	187	0	0	154	58	0	0	0	16	2	108	555
8:15 AM	32	159	0	0	140	65	0	0	0	13	1	85	495
8:30 AM	28	151	0	0	181	60	0	0	0	19	0	89	528
8:45 AM	24	144	0	0	154	66	0	0	0	21	1	99	509
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	225	1265	0	0	1272	487	0	0	0	112	5	747	4113
Approach %	15.10	84.90	0.00	0.00	72.31	27.69	####	####	####	12.96	0.58	86.46	
App/Depart	1490	/	2012	1759	/	1384	0	/	0	864	/	717	

AM Peak Hr Begins at: 715 AM

PEAK													
Volumes	116	691	0	0	634	238	0	0	0	51	3	411	2144
Approach %	14.37	85.63	0.00	0.00	72.71	27.29	####	####	####	10.97	0.65	88.39	
PEAK HR. FACTOR:		0.930			0.908			0.000			0.923		0.966

CONTROL:	Signal
COMMENT 1:	
GPS:	33.655160, -111.907976

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Hayden Rd	DATE:	10/27/22	LOCATION:	Scottsdale
	0				
E-W STREET:	Loop 101 WB Ramps	DAY:	THURSDAY	PROJECT#	22-1598-003

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	4	1	0	0	0	2	0.5	1.5	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	114	200	0	0	154	103	0	0	0	24	1	110	706
4:15 PM	122	238	0	0	152	111	0	0	0	25	2	124	774
4:30 PM	152	224	0	0	162	104	0	0	0	24	1	125	792
4:45 PM	141	212	0	0	183	108	0	0	0	28	2	141	815
5:00 PM	143	212	0	0	163	85	0	0	0	24	1	111	739
5:15 PM	133	227	0	0	151	103	0	0	0	20	0	133	767
5:30 PM	104	226	0	0	185	101	0	0	0	16	0	136	768
5:45 PM	85	161	0	0	154	105	0	0	0	19	1	111	636
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	994	1700	0	0	1304	820	0	0	0	180	8	991	5997
Approach %	36.90	63.10	0.00	0.00	61.39	38.61	####	####	####	15.27	0.68	84.05	
App/Depart	2694	/	2691	2124	/	1484	0	/	0	1179	/	1822	

PM Peak Hr Begins at: 415 PM

PEAK													
Volumes	558	886	0	0	660	408	0	0	0	101	6	501	3120
Approach %	38.64	61.36	0.00	0.00	61.80	38.20	####	####	####	16.61	0.99	82.40	
PEAK HR. FACTOR:		0.960			0.918			0.000			0.889		0.957

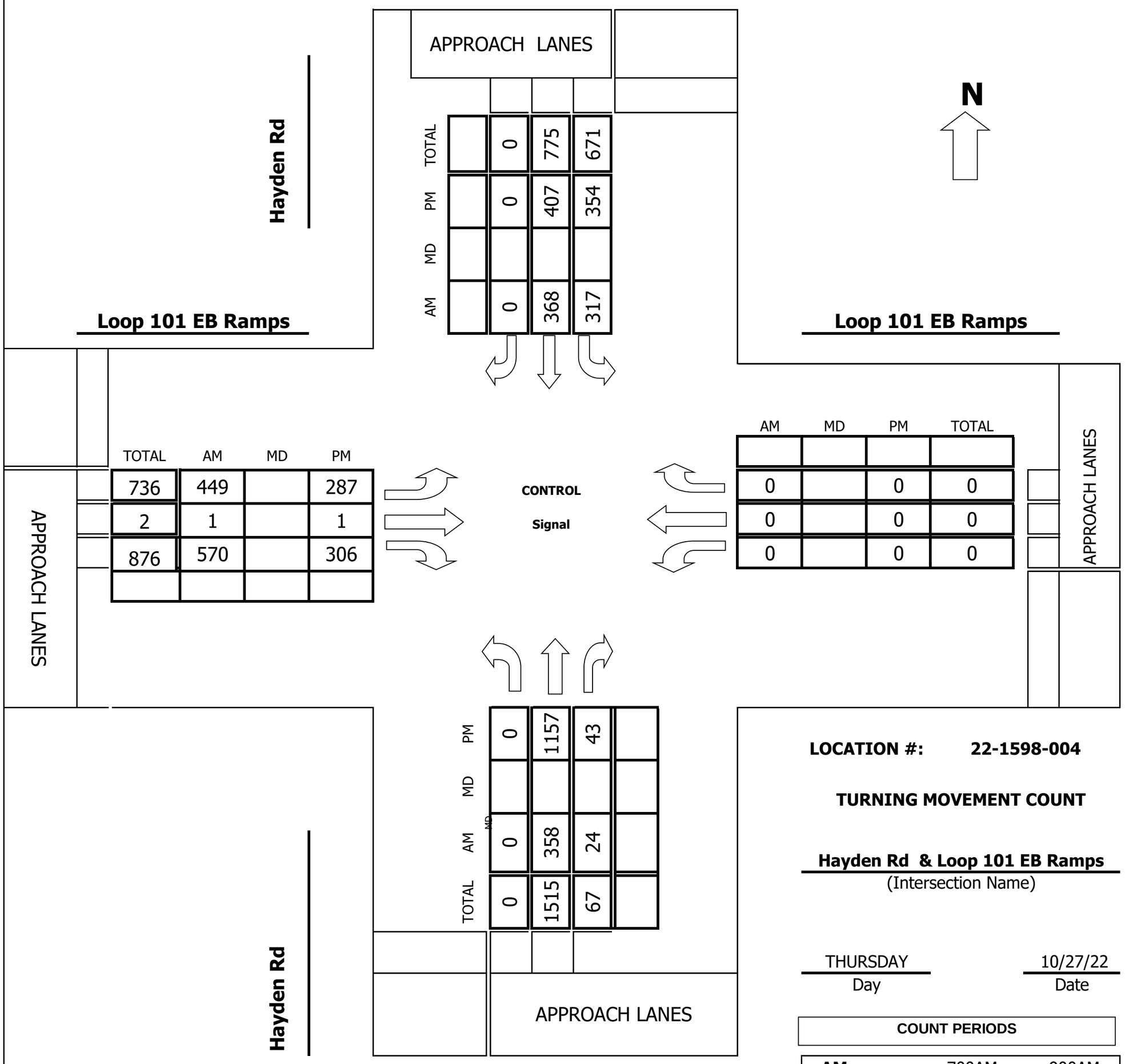
CONTROL:	Signal
COMMENT 1:	0
GPS:	33.655160, -111.907976

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 22-1598-004

TMC SUMMARY OF Hayden Rd & Loop 101 EB Ramps



LOCATION #: 22-1598-004

TURNING MOVEMENT COUNT

Hayden Rd & Loop 101 EB Ramps
(Intersection Name)

THURSDAY (Day) 10/27/22 (Date)

COUNT PERIODS			
AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 715 AM

NOON PEAK HOUR

PM PEAK HOUR 415 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Hayden Rd	DATE:	10/27/22	LOCATION:	Scottsdale
E-W STREET:	Loop 101 EB Ramps	DAY:	THURSDAY	PROJECT#	22-1598-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	1	2	2	0	1.3	0.3	1.3	0	0	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	76	5	85	86	0	69	0	67	0	0	0	388
7:15 AM	0	76	3	74	103	0	102	1	104	0	0	0	463
7:30 AM	0	90	6	78	106	0	122	0	117	0	0	0	519
7:45 AM	0	79	9	80	74	0	121	0	208	0	0	0	571
8:00 AM	0	113	6	85	85	0	104	0	141	0	0	0	534
8:15 AM	0	106	9	89	64	0	85	1	100	0	0	0	454
8:30 AM	0	105	8	99	101	0	74	0	120	0	0	0	507
8:45 AM	0	93	5	90	85	0	75	0	136	0	0	0	484
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	0	738	51	680	704	0	752	2	993	0	0	0	3920
Approach %	0.00	93.54	6.46	49.13	50.87	0.00	43.05	0.11	56.84	####	####	####	
App/Depart	789	/	1490	1384	/	1697	1747	/	733	0	/	0	

AM Peak Hr Begins at: 715 AM

PEAK													
Volumes	0	358	24	317	368	0	449	1	570	0	0	0	2087
Approach %	0.00	93.72	6.28	46.28	53.72	0.00	44.02	0.10	55.88	####	####	####	

PEAK HR. FACTOR:	0.803	0.931	0.775	0.000	0.914

CONTROL: Signal
COMMENT 1:
GPS: 33.653965, -111.908026

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Hayden Rd 0	DATE:	10/27/22	LOCATION:	Scottsdale
E-W STREET:	Loop 101 EB Ramps	DAY:	THURSDAY	PROJECT#	22-1598-004

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	3	1	2	2	0	1.3	0.3	1.3	0	0	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	0	248	14	78	100	0	66	0	41	0	0	0	547
4:15 PM	0	300	10	80	97	0	60	0	75	0	0	0	622
4:30 PM	0	302	11	86	100	0	74	0	85	0	0	0	658
4:45 PM	0	278	8	89	122	0	75	1	86	0	0	0	659
5:00 PM	0	277	14	99	88	0	78	0	60	0	0	0	616
5:15 PM	0	280	10	90	81	0	80	1	54	0	0	0	596
5:30 PM	0	245	11	98	103	0	85	0	41	0	0	0	583
5:45 PM	0	172	8	87	86	0	74	0	43	0	0	0	470
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	0	2102	86	707	777	0	592	2	485	0	0	0	4751
Approach %	0.00	96.07	3.93	47.64	52.36	0.00	54.87	0.19	44.95	####	####	####	
App/Depart	2188	/	2694	1484	/	1262	1079	/	795	0	/	0	

PM Peak Hr Begins at: 415 PM

PEAK													
Volumes	0	1157	43	354	407	0	287	1	306	0	0	0	2555
Approach %	0.00	96.42	3.58	46.52	53.48	0.00	48.32	0.17	51.52	####	####	####	
PEAK HR. FACTOR:		0.958			0.902			0.917			0.000		0.969

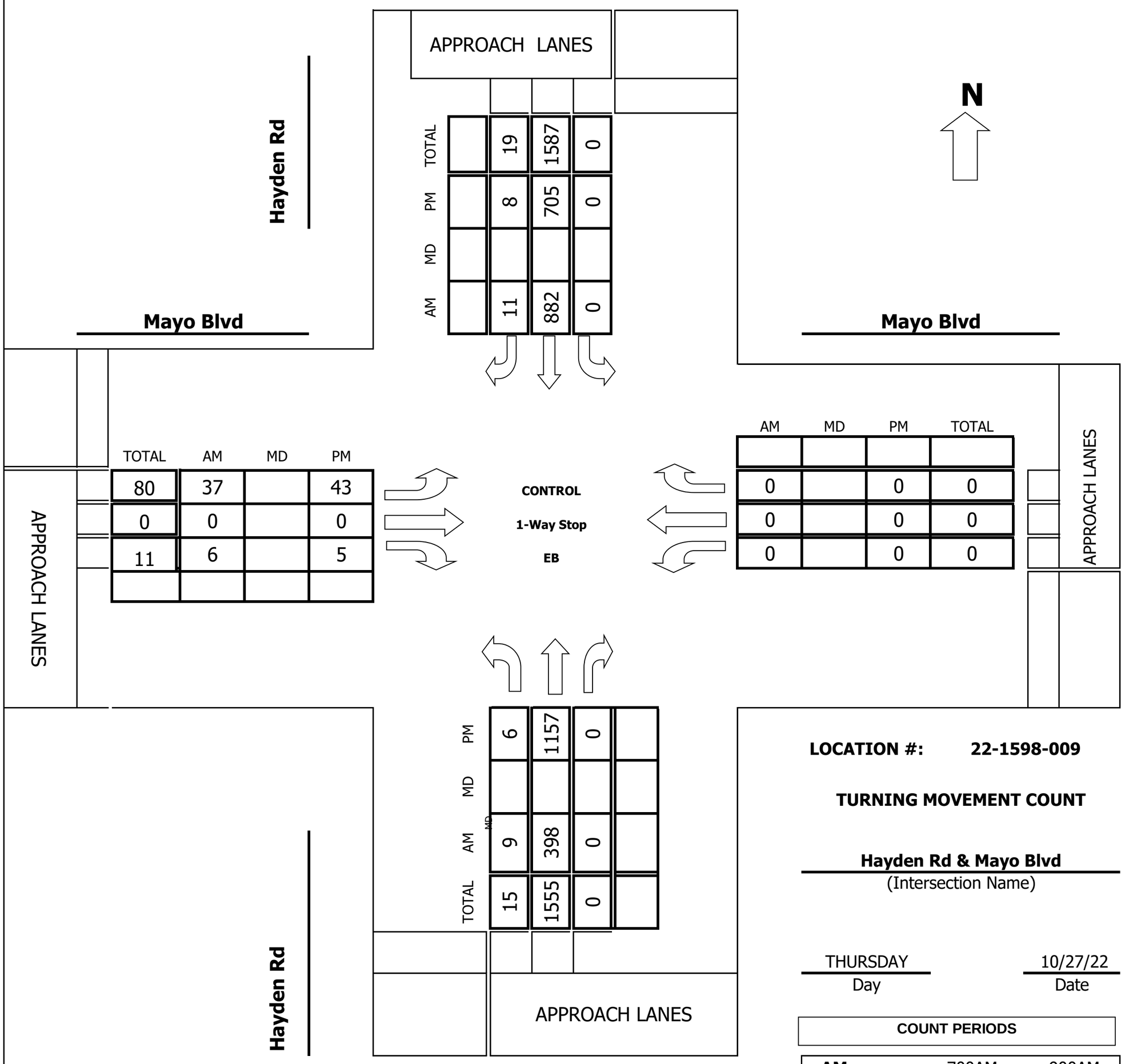
CONTROL:	Signal
COMMENT 1:	0
GPS:	33.653965, -111.908026

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 22-1598-009

TMC SUMMARY OF Hayden Rd & Mayo Blvd



N

LOCATION #: 22-1598-009

TURNING MOVEMENT COUNT

Hayden Rd & Mayo Blvd
(Intersection Name)

THURSDAY — Day

10/27/22 — Date

COUNT PERIODS			
AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 745 AM

NOON PEAK HOUR

PM PEAK HOUR 415 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Hayden Rd	DATE:	10/27/22	LOCATION:	Scottsdale
E-W STREET:	Mayo Blvd	DAY:	THURSDAY	PROJECT#	22-1598-009

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	2	1	1	0	1	0	0	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	1	72	0	0	138	15	9	0	1	0	0	0	236
7:15 AM	3	70	0	0	202	5	9	0	3	0	0	0	292
7:30 AM	3	89	0	0	220	3	7	0	2	0	0	0	324
7:45 AM	1	80	0	0	280	2	8	0	2	0	0	0	373
8:00 AM	1	109	0	0	224	2	10	0	0	0	0	0	346
8:15 AM	5	106	0	0	160	4	9	0	1	0	0	0	285
8:30 AM	2	103	0	0	218	3	10	0	3	0	0	0	339
8:45 AM	3	89	0	0	215	6	9	0	1	0	0	0	323
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	19	718	0	0	1657	40	71	0	13	0	0	0	2518
Approach %	2.58	97.42	0.00	0.00	97.64	2.36	84.52	0.00	15.48	####	####	####	
App/Depart	737	/	789	1697	/	1670	84	/	0	0	/	59	

AM Peak Hr Begins at: 745 AM

PEAK													
Volumes	9	398	0	0	882	11	37	0	6	0	0	0	1343
Approach %	2.21	97.79	0.00	0.00	98.77	1.23	86.05	0.00	13.95	####	####	####	
PEAK HR. FACTOR:	0.917			0.792			0.827			0.000			0.900

CONTROL:	1-Way Stop (EB)
COMMENT 1:	
GPS:	33.651278, -111.907900

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Hayden Rd 0	DATE:	10/27/22	LOCATION:	Scottsdale
E-W STREET:	Mayo Blvd	DAY:	THURSDAY	PROJECT#	22-1598-009

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	0	2	1	1	0	1	0	0	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	3	255	0	0	141	0	7	0	1	0	0	0	407
4:15 PM	2	302	0	0	170	2	8	0	1	0	0	0	485
4:30 PM	1	307	0	0	182	3	6	0	0	0	0	0	499
4:45 PM	1	265	0	0	207	1	21	0	2	0	0	0	497
5:00 PM	2	283	0	0	146	2	8	0	2	0	0	0	443
5:15 PM	1	286	0	0	135	0	4	0	2	0	0	0	428
5:30 PM	2	250	0	0	144	0	6	0	4	0	0	0	406
5:45 PM	1	166	0	0	125	4	14	0	5	0	0	0	315
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	13	2114	0	0	1250	12	74	0	17	0	0	0	3480
Approach %	0.61	99.39	0.00	0.00	99.05	0.95	81.32	0.00	18.68	####	####	####	
App/Depart	2127	/	2188	1262	/	1267	91	/	0	0	/	25	

PM Peak Hr Begins at: 415 PM

PEAK													
Volumes	6	1157	0	0	705	8	43	0	5	0	0	0	1924
Approach %	0.52	99.48	0.00	0.00	98.88	1.12	89.58	0.00	10.42	####	####	####	
PEAK HR. FACTOR:		0.944			0.857			0.522			0.000		0.964

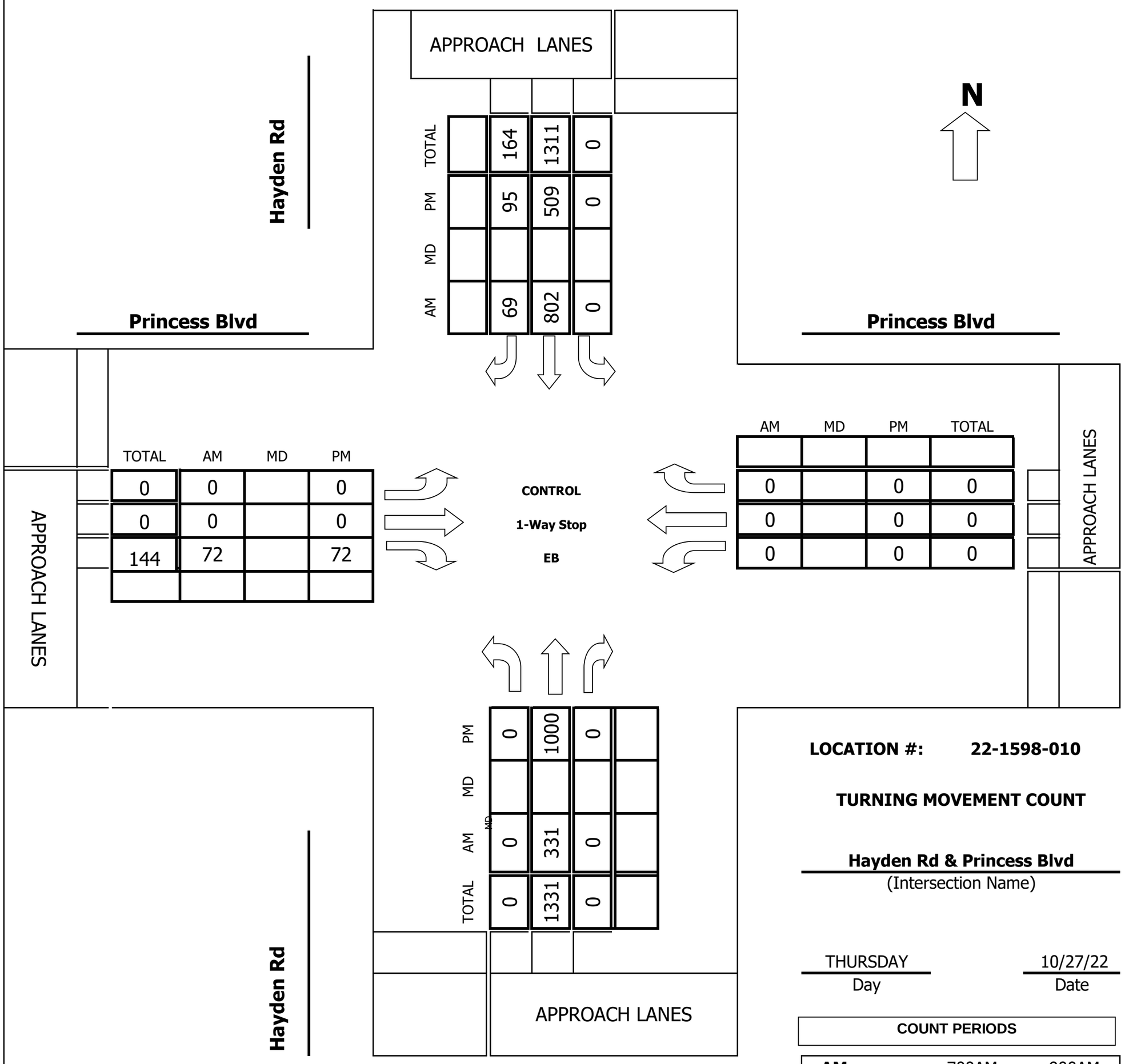
CONTROL:	1-Way Stop (EB)
COMMENT 1:	0
GPS:	33.651278, -111.907900

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 22-1598-010

TMC SUMMARY OF Hayden Rd & Princess Blvd



LOCATION #: 22-1598-010

TURNING MOVEMENT COUNT

Hayden Rd & Princess Blvd
(Intersection Name)

THURSDAY — Day

10/27/22 — Date

COUNT PERIODS			
AM	700AM	-	900AM
NOON		-	
PM	400PM	-	600PM

AM PEAK HOUR 715 AM

NOON PEAK HOUR

PM PEAK HOUR 415 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Hayden Rd	DATE:	10/27/22	LOCATION:	Scottsdale
E-W STREET:	Princess Blvd	DAY:	THURSDAY	PROJECT#	22-1598-010

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	1	0	0	1	0	0	0	
6:00 AM													
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	0	72	0	0	113	16	0	0	12	0	0	0	213
7:15 AM	0	58	0	0	175	15	0	0	14	0	0	0	262
7:30 AM	0	92	0	0	212	27	0	0	19	0	0	0	350
7:45 AM	0	71	0	0	244	13	0	0	18	0	0	0	346
8:00 AM	0	110	0	0	171	14	0	0	21	0	0	0	316
8:15 AM	0	81	0	0	127	14	0	0	16	0	0	0	238
8:30 AM	0	102	0	0	181	29	0	0	17	0	0	0	329
8:45 AM	0	72	0	0	202	33	0	0	14	0	0	0	321
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	0	658	0	0	1425	161	0	0	131	0	0	0	2375
Approach %	0.00	100.00	0.00	0.00	89.85	10.15	0.00	0.00	100.00	####	####	####	
App/Depart	658	/	658	1586	/	1556	131	/	0	0	/	161	

AM Peak Hr Begins at: 715 AM

PEAK													
Volumes	0	331	0	0	802	69	0	0	72	0	0	0	1274
Approach %	0.00	100.00	0.00	0.00	92.08	7.92	0.00	0.00	100.00	####	####	####	

PEAK HR. FACTOR:	0.752	0.847	0.857	0.000	0.910

CONTROL: 1-Way Stop (EB)
COMMENT 1:
GPS: 33.647968, -111.907826

Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytrafficgroup

N-S STREET:	Hayden Rd 0	DATE:	10/27/22	LOCATION:	Scottsdale
E-W STREET:	Princess Blvd	DAY:	THURSDAY	PROJECT#	22-1598-010

	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	2	0	0	2	1	0	0	1	0	0	0	
1:00 PM													
1:15 PM													
1:30 PM													
1:45 PM													
2:00 PM													
2:15 PM													
2:30 PM													
2:45 PM													
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM	0	248	0	0	128	26	0	0	20	0	0	0	422
4:15 PM	0	253	0	0	124	21	0	0	19	0	0	0	417
4:30 PM	0	236	0	0	111	24	0	0	21	0	0	0	392
4:45 PM	0	221	0	0	146	22	0	0	16	0	0	0	405
5:00 PM	0	290	0	0	128	28	0	0	16	0	0	0	462
5:15 PM	0	244	0	0	108	22	0	0	19	0	0	0	393
5:30 PM	0	213	0	0	127	23	0	0	19	0	0	0	382
5:45 PM	0	161	0	0	112	19	0	0	21	0	0	0	313
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
Volumes	0	1866	0	0	984	185	0	0	151	0	0	0	3186
Approach %	0.00	100.00	0.00	0.00	84.17	15.83	0.00	0.00	100.00	####	####	####	
App/Depart	1866	/	1866	1169	/	1135	151	/	0	0	/	185	

PM Peak Hr Begins at: 415 PM

PEAK													
Volumes	0	1000	0	0	509	95	0	0	72	0	0	0	1676
Approach %	0.00	100.00	0.00	0.00	84.27	15.73	0.00	0.00	100.00	####	####	####	
PEAK HR. FACTOR:		0.862			0.899			0.857			0.000		0.907

CONTROL:	1-Way Stop (EB)
COMMENT 1:	0
GPS:	33.647968, -111.907826

Prepared by: Field Data Services of Arizona/Veracity Traffic Group (520) 316-6745

Volumes for: Thursday, October 27, 2022 City: Scottsdale Project #: 22-1598-011

Location: Scottsdale Rd north of Mayo Blvd

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	19		16					12:00	459		518				
00:15	29		21					12:15	456		552				
00:30	26		9					12:30	451		490				
00:45	26	100	15	61			161	12:45	492	1858	534	2094			3952
01:00	26		25					13:00	465		502				
01:15	6		11					13:15	505		466				
01:30	12		9					13:30	483		416				
01:45	10	54	15	60			114	13:45	437	1890	479	1863			3753
02:00	18		7					14:00	580		439				
02:15	10		7					14:15	559		414				
02:30	8		3					14:30	535		472				
02:45	6	42	9	26			68	14:45	500	2174	427	1752			3926
03:00	3		9					15:00	496		392				
03:15	10		14					15:15	557		428				
03:30	7		23					15:30	572		479				
03:45	13	33	33	79			112	15:45	518	2143	476	1775			3918
04:00	20		37					16:00	543		430				
04:15	18		26					16:15	552		463				
04:30	20		68					16:30	569		531				
04:45	20	78	100	231			309	16:45	499	2163	508	1932			4095
05:00	41		88					17:00	558		476				
05:15	47		123					17:15	563		598				
05:30	47		158					17:30	592		458				
05:45	62	197	217	586			783	17:45	491	2204	481	2013			4217
06:00	69		215					18:00	511		385				
06:15	129		236					18:15	424		381				
06:30	161		287					18:30	349		363				
06:45	164	523	375	1113			1636	18:45	377	1661	346	1475			3136
07:00	201		335					19:00	457		255				
07:15	284		458					19:15	340		196				
07:30	281		471					19:30	308		224				
07:45	358	1124	531	1795			2919	19:45	297	1402	170	845			2247
08:00	335		406					20:00	275		153				
08:15	383		401					20:15	249		148				
08:30	274		519					20:30	222		121				
08:45	353	1345	583	1909			3254	20:45	256	1002	123	545			1547
09:00	279		565					21:00	211		129				
09:15	294		442					21:15	190		104				
09:30	312		472					21:30	163		98				
09:45	327	1212	510	1989			3201	21:45	145	709	83	414			1123
10:00	338		508					22:00	158		77				
10:15	346		452					22:15	113		70				
10:30	376		504					22:30	103		63				
10:45	380	1440	519	1983			3423	22:45	82	456	43	253			709
11:00	343		462					23:00	83		46				
11:15	391		487					23:15	68		36				
11:30	389		561					23:30	50		30				
11:45	447	1570	574	2084			3654	23:45	35	236	28	140			376
Total Vol.		7718		11916			**19634**			17898		15101			**32999**

GPS Coordinates: 33.656283, -111.925388

Daily Totals

NB	SB	EB	WB	**Combined**
25616	27017			**52633**

	AM			**PM**		
Split %	39.3%	60.7%	**37.3%**	54.2%	45.8%	**62.7%**
Peak Hour	11:45	11:30	**11:30**	16:45	16:30	**16:30**
Volume	1813	2205	**3956**	2212	2113	**4302**
P.H.F.	0.99	0.96	**0.97**	0.93	0.88	**0.93**

Prepared by: Field Data Services of Arizona/Veracity Traffic Group (520) 316-6745

Volumes for: Thursday, October 27, 2022 City: Scottsdale Project #: 22-1598-012

Location: Hayden Rd north of Mayo Blvd

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	5		14					12:00	122		152				
00:15	7		11					12:15	131		141				
00:30	10		8					12:30	124		143				
00:45	11	33	9	42			75	12:45	145	522	139	575			1097
01:00	3		9					13:00	185		166				
01:15	6		8					13:15	189		161				
01:30	9		5					13:30	196		154				
01:45	5	23	7	29			52	13:45	199	769	174	655			1424
02:00	8		5					14:00	204		175				
02:15	4		8					14:15	245		185				
02:30	7		6					14:30	258		181				
02:45	5	24	9	28			52	14:45	252	959	187	728			1687
03:00	8		13					15:00	286		174				
03:15	6		16					15:15	296		176				
03:30	9		16					15:30	301		163				
03:45	13	36	14	59			95	15:45	325	1208	155	668			1876
04:00	16		21					16:00	262		141				
04:15	18		42					16:15	310		172				
04:30	14		41					16:30	313		185				
04:45	14	62	54	158			220	16:45	286	1171	208	706			1877
05:00	21		65					17:00	291		148				
05:15	42		60					17:15	290		135				
05:30	41		76					17:30	256		144				
05:45	54	158	74	275			433	17:45	180	1017	129	556			1573
06:00	65		85					18:00	174		110				
06:15	60		104					18:15	145		107				
06:30	76		122					18:30	128		108				
06:45	74	275	128	439			714	18:45	133	580	85	410			990
07:00	81		153					19:00	130		86				
07:15	79		207					19:15	128		103				
07:30	96		223					19:30	124		96				
07:45	88	344	282	865			1209	19:45	141	523	99	384			907
08:00	119		226					20:00	111		90				
08:15	115		164					20:15	104		85				
08:30	113		221					20:30	85		76				
08:45	98	445	221	832			1277	20:45	76	376	60	311			687
09:00	99		204					21:00	60		65				
09:15	90		214					21:15	65		52				
09:30	87		196					21:30	54		55				
09:45	74	350	199	813			1163	21:45	41	220	50	222			442
10:00	78		161					22:00	42		54				
10:15	80		154					22:15	28		41				
10:30	85		174					22:30	24		47				
10:45	74	317	175	664			981	22:45	21	115	45	187			302
11:00	78		185					23:00	14		50				
11:15	80		189					23:15	16		43				
11:30	96		196					23:30	13		30				
11:45	103	357	144	714			1071	23:45	9	52	21	144			196
Total Vol.		2424		4918			**7342**			7512		5546			**13058**

GPS Coordinates: 33.652388, -111.907992

Daily Totals

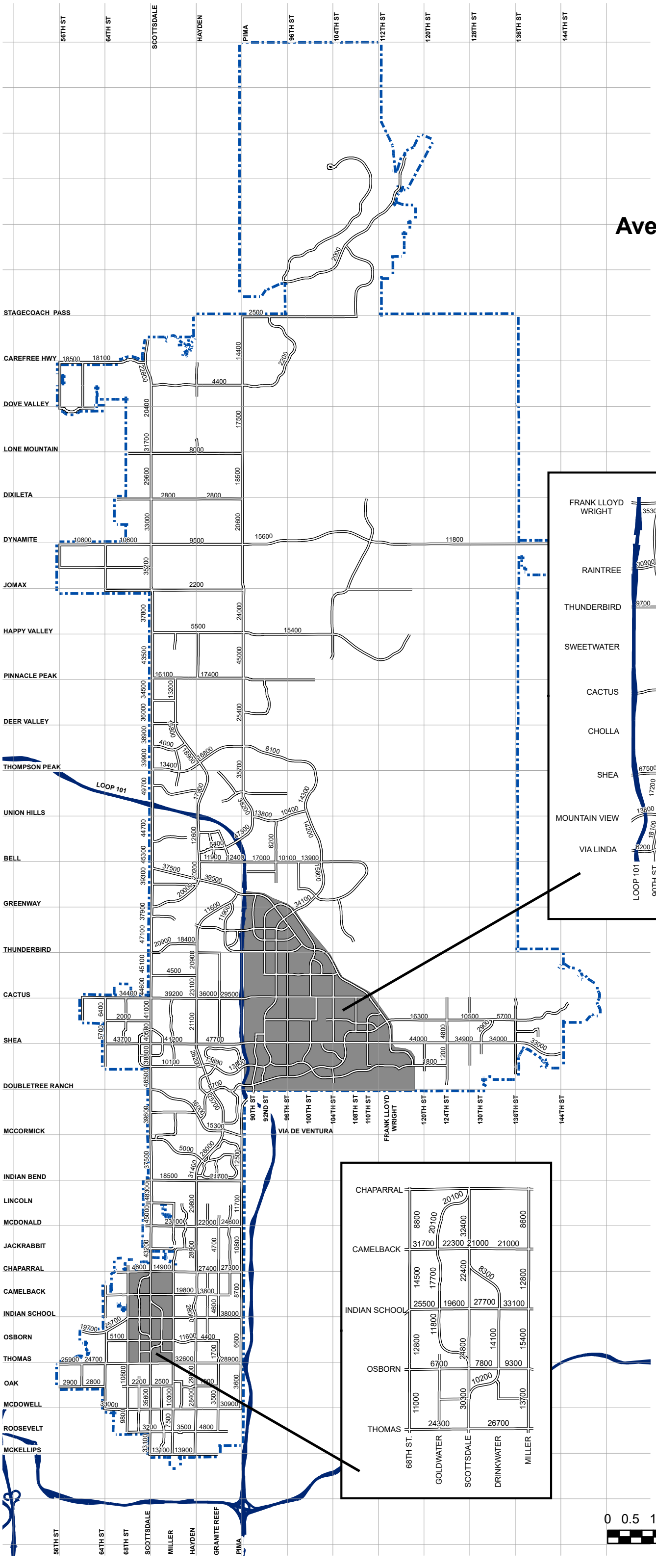
NB	SB	EB	WB	**Combined**
9936	10464			**20400**

	AM			**PM**		
Split %	33.0%	67.0%	**36.0%**	57.5%	42.5%	**64.0%**
Peak Hour	11:45	07:15	**07:45**	15:45	14:00	**16:15**
Volume	480	938	**1328**	1210	728	**1913**
P.H.F.	0.92	0.83	**0.90**	0.93	0.97	**0.96**

City of Scottsdale
Average Daily Segment Volume Maps

CITY OF SCOTTSDALE

2018
Average Daily Traffic Volumes
SEGMENT



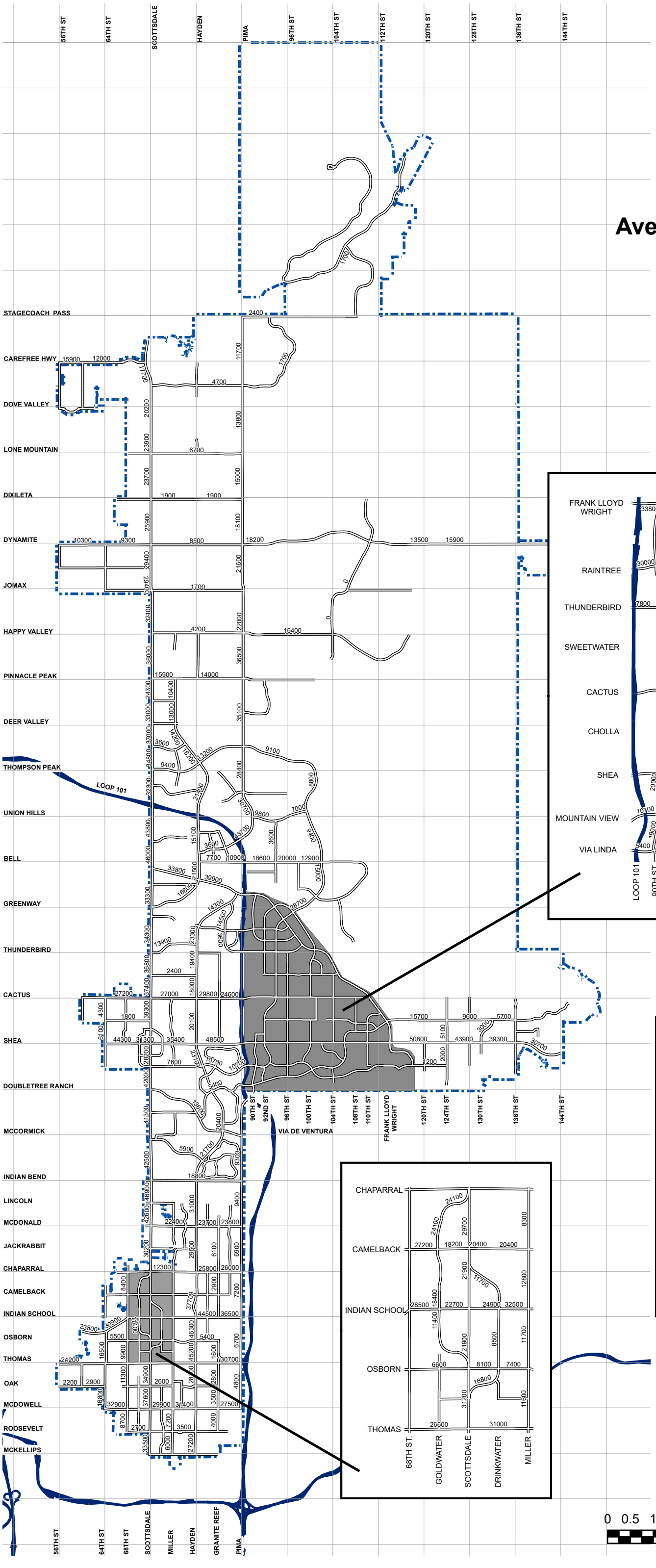
CITYWIDE MONTHLY ADJUSTMENT FACTORS	
MONTH	**FACTOR**
JANUARY	1.00
FEBRUARY	0.95
MARCH	0.93
APRIL	0.96
MAY	1.01
JUNE	1.03
JULY	1.05
AUGUST	1.05
SEPTEMBER	1.02
OCTOBER	1.00
NOVEMBER	1.00
DECEMBER	0.99

0 0.5 1 2 3 4 Miles

N

CITY OF SCOTTSDALE

2020
Average Daily Traffic Volumes
SEGMENT



CITYWIDE MONTHLY ADJUSTMENT FACTORS	
MONTH	FACTOR
JANUARY	1.003
FEBRUARY	1.045
MARCH	1.040
APRIL	1.044
MAY	1.022
JUNE	0.972
JULY	0.930
AUGUST	0.975
SEPTEMBER	0.995
OCTOBER	0.994
NOVEMBER	1.008
DECEMBER	0.974

NORTH SCOTTSDALE MONTHLY ADJUSTMENT FACTORS	
MONTH	FACTOR
JANUARY	0.953
FEBRUARY	0.921
MARCH	0.901
APRIL	0.884
MAY	0.950
JUNE	1.152
JULY	1.174
AUGUST	1.216
SEPTEMBER	1.049
OCTOBER	0.923
NOVEMBER	0.967
DECEMBER	0.862

City of Scottsdale Signal Timing Data

SCOTTSDALE RD & LOOP 101

System # 254

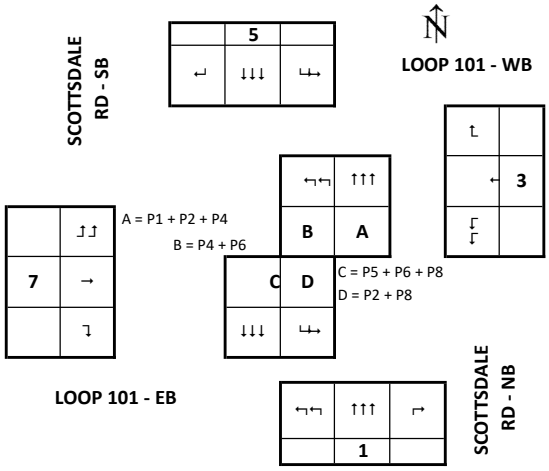
BASIC TIMING PLAN

Section #	I.P. Address	Date Designed
	MM1-5-1	
	172.27.12.54	6/18/2020

	Phase	1	2	3	4	5	6	7	8
	Movement	NBT		WBT		SBT		EBT	
	NOTES								
	MIN GRN	10	5	7	2	10	5	7	2
	BK MGRN								
	CS MGRN								
	DLY GRN								
	WALK	4		4		4		4	
	WALK2								
	WLK MAX								
	PED CLR/FDW	18		46		20		44	
	PD CLR2								
	PC MAX								
	PED CO								
	VEH EXT	2	2	2	2	2	2	2	2
	VH EXT2								
	MAX 1	50	30	40	12	50	30	40	4
	MAX 2	70	50	60	35	70	50	60	4
	MAX 3								
	DYM MAX	70	50	60	35	70	50	60	4
	DYM STP	5	5	5	5	5	5	5	5
	YELLOW	4.7	4.0	4.7	4	4.7	4	4.7	4
	RED CLR	1	2.0	2	2.0	1	2.0	2	2.0
	RED MAX								
	RED RVT	2	2	2	2	2	2	2	2
	ACT B4								
	SEC/ACT								
	MAX INT								
	TIME B4								
	CARS WT								
	STPTDUC								
	TTREDUC								
	MIN GAP								
	LOCK DET								
	VEH RECALL	X				X			
	PED RECALL								
	MAX RECALL				X				X
	SOFT RECALL								
	NO REST								
	ADD INIT CAL								

TIMING PLAN - MM-2-1

RECALLS - MM-2-8



PHASING SEQUENCES

TOD: MORNING

R1	1	2	3	4	
R2	6	5	8	7	
		B		B	

Use Timing plan:

TOD: MIDDAY

R1	1	2	3	4	
R2	6	5	8	7	
		B		B	

Use Timing plan:

TOD: EVENING

R1	1	2	3	4	
R2	6	5	8	7	
		B		B	

Use Timing plan:

TOD: NIGHT

R1	1	2	3	4	
R2	6	5	8	7	
		B		B	

Use Timing plan:

FREE

R1	1	2	3	4	
R2	6	5	8	7	
		B		B	

Use Timing plan: 254

NOTES

OVLP A = Ph1 + Ph2 + Ph4;
OVLP B = Ph4 + Ph6;
OVLP C = Ph5 + Ph6 + Ph8;
OVLP D = Ph2 + Ph8;

Approved By

Effective Date

SCOTTSDALE RD & LOOP 101

System #	254

COORDINATOR	Section #	Date Updated
	0	6/18/2020

PHASE	1	2	3	4	5	6	7	8
FDW	18		46	0	20		44	
YELLOW	4.7	4	4.7	4	4.7	4	4.7	4
ALL RED	1	2	2	2	1	2	2	2
WALK				0				

PLAN 1 AM PLAN OPERATIVE TIMES **6:00**

										COORD PATTERN	OFFSET
R1	1	↰	2	→	3	↰	4	↓			
R2	6	←	5	↳	8	↑	7	↳		Balanced	85
	RING 1				RING 2						
PHASE	1	2	3	4	5	6	7	8			
SPLIT	38	42	30	10	48	32	36	4		Target Cycle Length	
COORD	X				X					120	
RECALLS	V				V					Actual Cycle Length	
GREEN	32.3	36.0	23.3	4.0	###	26.0	29.3	-2.0		120	

PLAN 2 MIDDAY PLAN OPERATIVE TIMES **9:00**

										COORD PATTERN	OFFSET
R1	1	↰	2	→	3	↰	4	↓			
R2	6	←	5	↳	8	↑	7	↳		Balanced	14
	RING 1				RING 2						
PHASE	1	2	3	4	5	6	7	8			
SPLIT	40	29	29	10	32	37	35	4		Target Cycle Length	
COORD	X				X					108	
RECALLS	V				V					Actual Cycle Length	
GREEN	34.3	23.0	22.3	4.0	###	31.0	28.3	-2.0		108	

PLAN 3 PM PLAN OPERATIVE TIMES **15:00**

										COORD PATTERN	OFFSET
R1	1	↰	2	→	3	↰	4	↓			
R2	6	←	5	↳	8	↑	7	↳		Balanced	9
	RING 1				RING 2						
PHASE	1	2	3	4	5	6	7	8			
SPLIT	48	30	32	10	35	43	38	4		Target Cycle Length	
COORD	X				X					120	
RECALLS	V				V					Actual Cycle Length	
GREEN	42.3	24.0	25.3	4.0	###	37.0	31.3	-2.0		120	

PLAN 4 MIDNIGHT PLAN OPERATIVE TIMES

										COORD PATTERN	OFFSET
R1	1	↰	2	→	3	↰	4	↓			
R2	6	←	5	↳	8	↑	7	↳		Balanced	83
	RING 1				RING 2						
PHASE	1	2	3	4	5	6	7	8			
SPLIT	33	25	22	10	33	25	30	2		Target Cycle Length	
COORD	X				X					90	
RECALLS	V				V					Actual Cycle Length	
GREEN	27.3	19.0	15.3	4.0	###	19.0	23.3	-4.0		90	

PLAN 254 **FREE** PLAN OPERATIVE TIMES **22:00**

										COORD PATTERN	OFFSET
R1	1	↰	2	→	3	↰	4	↓			
R2	6	←	5	↳	8	↑	7	↳		Balanced	
	RING 1				RING 2						
PHASE	1	2	3	4	5	6	7	8			
SPLIT										Target Cycle Length	
COORD										XXX	
RECALLS										Actual Cycle Length	
GREEN	-5.7	-6.0	-6.7	-6.0	-5.7	-6.0	-6.7	-6.0		0	

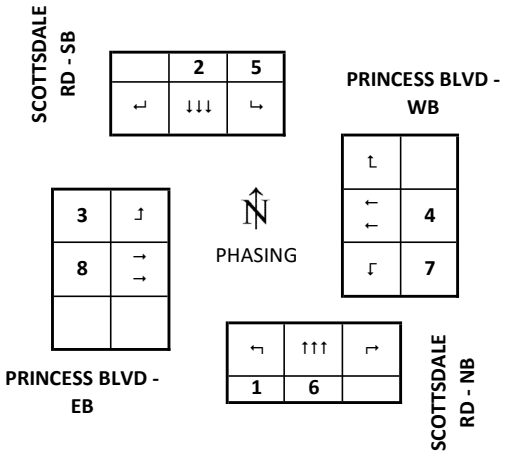
SCOTTSDALE RD & PRINCESS BLVD

System # 163

BASIC TIMING PLAN

Section #	I.P. Address	Date Designed
	MM1-5-1	
	172.27.11.63	1/15/2021

	Phase	1	2	3	4	5	6	7	8
TIMING PLAN - MM-2-1	Movement	NBL	SBT	EBL	WBT	SBL	NBT	WBL	EBT
	NOTES	p&P	COORD	p&P		p&P	COORD	p&P	
	MIN GRN	5	10	5	7	5	10	5	7
	BK MGRN								
	CS MGRN								
	DLY GRN								
	WALK		7		9		7		9
	WALK2								
	WLK MAX								
	PED CLR/FDW		19		31		19		31
	PD CLR2								
	PC MAX								
	PED CO								
	VEH EXT	2	1	2	2	2	1	2	2
	VH EXT2								
	MAX 1	20	65	15	50	20	65	15	50
	MAX 2	35	80	35	60	35	80	35	60
	MAX 3								
	DYM MAX								
	DYM STP								
	YELLOW	4	4.7	3.3	4	4	4.7	3.3	4
	RED CLR	2	1.2	2	2.1	2	1.2	2	2.1
	RED MAX								
	RED RVT	2	2	2	2	2	2	2	2
	ACT B4								
	SEC/ACT								
	MAX INT								
	TIME B4								
	CARS WT								
	STPTDUC								
	TTREDUC								
	MIN GAP								
RECALLS - MM-2-8	LOCK DET								
	VEH RECALL		X				X		
	PED RECALL								
	MAX RECALL								
	SOFT RECALL								
	NO REST								
	ADD INIT CAL								



PHASING SEQUENCES					
TOD: MORNING					
R1	2	1	4	3	
R2	6	5	8	7	
	B	B	B	B	
Use Timing plan:					
TOD: MIDDAY					
R1	2	1	4	3	
R2	6	5	8	7	
	B	B	B	B	
Use Timing plan:					
TOD: EVENING					
R1	2	1	4	3	
R2	6	5	8	7	
	B	B	B	B	
Use Timing plan:					
TOD: NIGHT					
R1	2	1	4	3	
R2	6	5	8	7	
	B	B	B	B	
Use Timing plan:					
FREE					
R1	2	1	4	3	
R2	6	5	8	7	
	B	B	B	B	
Use Timing plan: 254					

NOTES

Approved By
Effective Date

SCOTTSDALE RD & PRINCESS BLVD

System #	163

COORDINATOR	Section #	Date Updated
	0	1/15/2021

	PHASE	1	2	3	4	5	6	7	8	
	FDW		19		31		19		31	
	YELLOW	4	4.7	3.3	4	4	4.7	3.3	4	
	ALL RED	2	1.2	2	2.1	2	1.2	2	2.1	
	WALK		19		31		19		31	

										COORD PATTERN	OFFSET
PLAN 1 AM PLAN OPERATIVE TIMES 6:00	R1	2	↓	1	↰	4	←	3	↥		
	R2	6	↑	5	↳	8	→	7	↧	Balanced	65
		RING 1				RING 2					
	PHASE	1	2	3	4	5	6	7	8		
	SPLIT	12	71	11	26	12	71	11	26	Target Cycle Length	
	COORD		X				X			120	
	RECALLS		V				V			Actual Cycle Length	
	GREEN	6.0	65.1	5.7	19.9	6.0	65.1	5.7	19.9	120	

										COORD PATTERN	OFFSET
PLAN 2 MIDDAY PLAN OPERATIVE TIMES 9:00	R1	2	↓	1	↰	4	←	3	↥		
	R2	6	↑	5	↳	8	→	7	↧	Balanced	87
		RING 1				RING 2					
	PHASE	1	2	3	4	5	6	7	8		
	SPLIT	12	68	12	16	12	68	12	16	Target Cycle Length	
	COORD		X				X			108	
	RECALLS		V				V			Actual Cycle Length	
	GREEN	6.0	62.1	6.7	9.9	6.0	62.1	6.7	9.9	108	

										COORD PATTERN	OFFSET
PLAN 3 PM PLAN OPERATIVE TIMES 15:00	R1	2	↓	1	↰	4	←	3	↥		
	R2	6	↑	5	↳	8	→	7	↧	Balanced	67
		RING 1				RING 2					
	PHASE	1	2	3	4	5	6	7	8		
	SPLIT	19	74	11	16	19	74	11	16	Target Cycle Length	
	COORD		X				X			120	
	RECALLS		V				V			Actual Cycle Length	
	GREEN	13.0	68.1	5.7	9.9	###	68.1	5.7	9.9	120	

										COORD PATTERN	OFFSET
PLAN 4 MIDNIGHT PLAN OPERATIVE TIMES 22:00	R1	2	↓	1	↰	4	←	3	↥		
	R2	6	↑	5	↳	8	→	7	↧	Balanced	49
		RING 1				RING 2					
	PHASE	1	2	3	4	5	6	7	8		
	SPLIT	13	41	11	25	13	41	11	25	Target Cycle Length	
	COORD		X				X			90	
	RECALLS		P				P			Actual Cycle Length	
	GREEN	7.0	35.2	5.7	18.9	7.0	35.2	5.7	18.9	90	

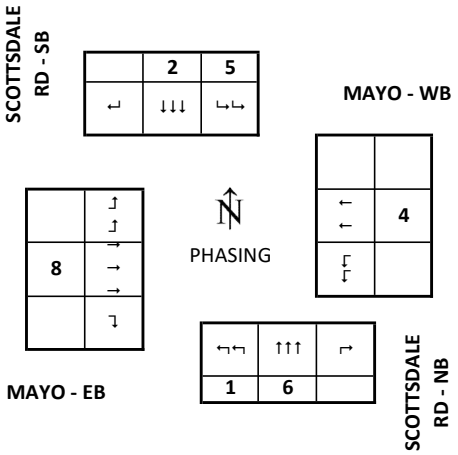
SCOTTSDALE RD & MAYO

System # 215

BASIC TIMING PLAN

Section #	I.P. Address	Date Designed
	MM1-5-1	1/15/2021
	172.27.12.15	

	Phase	1	2		4	5	6		8
	Movement	NBL	SBT		WBT	SBL	NBT		EBT
	NOTES	PROT	COORD		SPLIT	L-P	COORD		SPLIT
TIMING PLAN - MM-2-1	MIN GRN	5	10		7	5	10		7
	BK MGRN								
	CS MGRN								
	DLY GRN								
	WALK		4		4		4		4
	WALK2								
	WLK MAX								
	PED CLR/FDW		35		31		28		33
	PD CLR2								
	PC MAX								
	PED CO								
	VEH EXT	2	1		2	2	1		3
	VH EXT2								
	MAX 1	25	60		50	25	60		25
	MAX 2	35	70		60	35	70		60
	MAX 3								
	DYM MAX								
	DYM STP								
	YELLOW	4.7	4.7		3.4	4	4.7		4
	RED CLR	1.5	1.7		2.6	2	1.7		2.6
	RED MAX								
	RED RVT	2	2		2	2	2		2
	ACT B4								
	SEC/ACT								
	MAX INT								
	TIME B4								
	CARS WT								
	STPTDUC								
	TTREDUC								
	MIN GAP								
RECALLS - MM-2-8	LOCK DET								
	VEH RECALL		X				X		
	PED RECALL								
	MAX RECALL								
	SOFT RECALL								
	NO REST								
	ADD INIT CAL								



PHASING SEQUENCES

TOD: MORNING
R1 2 1 8 4
R2 5 6
B B
Use Timing plan:

TOD: MIDDAY
R1 2 1 8 4
R2 5 6
B B
Use Timing plan:

TOD: EVENING
R1 2 1 8 4
R2 5 6
B B
Use Timing plan:

TOD: NIGHT
R1 2 1 8 4
R2 5 6
B B
Use Timing plan:

FREE
R1 2 1 8 4
R2 5 6
B B
Use Timing plan: 254

NOTES

Approved By
Effective Date

SCOTTSDALE RD & MAYO

System #	215

COORDINATOR

Section #	Date Updated
0	1/15/2021

PHASE	1	2	3	4	5	6	7	8
FDW		35		31		28		33
YELLOW	4.7	4.7		3.4	4	4.7		4
ALL RED	1.5	1.7		2.6	2	1.7		2.6
WALK		35		31		28		33

PLAN 1 — AM PLAN OPERATIVE TIMES 6:30

										COORD PATTERN	OFFSET
R1	2	↓	1	↰	8	→	4	←			
R2	5	↳	6	↑						Balanced	33
	RING 1				RING 2						
PHASE	1	2		4	5	6		8			
SPLIT	17	54		13	25	46		36		Target Cycle Length	
COORD		X				X				120	
RECALLS		V				V				Actual Cycle Length	
GREEN	10.8	47.6		7.0	19.0	39.6		29.4		120	

PLAN 2 — MIDDAY PLAN OPERATIVE TIMES 9:00

										COORD PATTERN	OFFSET
R1	2	↓	1	↰	8	→	4	←			
R2	5	↳	6	↑						Balanced	65
	RING 1				RING 2						
PHASE	1	2		4	5	6		8			
SPLIT	20	42		14	15	47		32		Target Cycle Length	
COORD		X				X				108	
RECALLS		V				V				Actual Cycle Length	
GREEN	13.8	35.6		8.0	9.0	40.6		25.4		108	

PLAN 3 — PM PLAN OPERATIVE TIMES 15:00

										COORD PATTERN	OFFSET
R1	2	↓	1	↰	8	→	4	←			
R2	5	↳	6	↑						Balanced	43
	RING 1				RING 2						
PHASE	1	2		4	5	6		8			
SPLIT	25	43		22	12	56		30		Target Cycle Length	
COORD		X				X				120	
RECALLS		V				V				Actual Cycle Length	
GREEN	18.8	36.6		16.0	6.0	49.6		23.4		120	

PLAN 4 — MIDNIGHT PLAN OPERATIVE TIMES 22:00

										COORD PATTERN	OFFSET
R1	2	↓	1	↰	8	→	4	←			
R2	5	↳	6	↑						Balanced	41
	RING 1				RING 2						
PHASE	1	2		4	5	6		8			
SPLIT	15	39		12	11	43		24		Target Cycle Length	
COORD		X				X				90	
RECALLS		V				V				Actual Cycle Length	
GREEN	8.8	32.6		6.0	5.0	36.6		17.4		90	

HAYDEN & LOOP 101

System # 255

BASIC TIMING PLAN

Section #	I.P. Address	Date Designed
	MM1-5-1	
	172.27.12.55	4/8/2019

	Phase	1	2	3		5	6	7	
	Movement	NBL	SBT	WBT		SBL	NBT	EBT	
	NOTES	PROT		PERM		PROT		PERM	
TIMING PLAN - MM-2-1	MIN GRN	12	16	7		12	5	7	
	BK MGRN								
	CS MGRN								
	DLY GRN								
	WALK	5		7			5	7	
	WALK2								
	WLK MAX								
	PED CLR/FDW	20	45	33		30	35	33	
	PD CLR2								
	PC MAX								
	PED CO								
	VEH EXT	5	2	2		2	5	2	
	VH EXT2								
	MAX 1	45	35	30		45	35	45	
	MAX 2	60	55	55		60	55	55	
	MAX 3								
	DYM MAX	1	2	55		5	6	55	
	DYM STP	20	36			5	5	5	
	YELLOW	4.4	4.4	4.3		4.4	4.4	4.3	
	RED CLR	1.6	1.6	2.7		1.6	1.6	2.7	
	RED MAX								
	RED RVT	2		2		2		2	
	ACT B4								
	SEC/ACT								
	MAX INT								
	TIME B4								
	CARS WT								
	STPTDUC								
	TTREDUC								
	MIN GAP		V				V		
RECALLS - MM-2-8	LOCK DET								
	VEH RECALL		X				X		
	PED RECALL								
	MAX RECALL								
	SOFT RECALL								
	NO REST								
	ADD INIT CAL								

HAYDEN - SB

	2	5
↵	↓↓↓	↳↳

LOOP 101 - WB

↰	
←	3
↲↲	

	↴↴
7	
	↴

PHASING

↰↰	↑↑↑	↦
1	6	

LOOP 101 - EB

HAYDEN - NB

PHASING SEQUENCES

TOD: MORNING

R1	1	2	3	7
R2	6	5		
		B		B

Use Timing plan:

TOD: MIDDAY

R1	1	2	3	7
R2	6	5		
		B	7	B

Use Timing plan:

TOD: EVENING

R1	1	2	3	7
R2	6	5		
		B		B

Use Timing plan:

TOD: WEEKEND

R1	1	2	3	7
R2	6	5		
		B		B

Use Timing plan:

FREE

R1	1	2	3	7
R2	6	5		
		B		B

Use Timing plan: 254

NOTES

PHS 3&7 EXCL, OVERLAPS: OL-A=1+5+6+7, OL-B=6+7,OL-C=1+2+3+5, OL-D=2+3
REASSIGN SP: SP-2=4(D), O SP-4=1(A), O SP-6=2(B), O SP-8=3(C), O

EXPIRES XX/XX/XXXX

HAYDEN & LOOP 101

System # 255

COORDINATOR

Section #	Date Updated
0	4/8/2019

PHASE	1	2	3	4	5	6	7	8
FDW	20	45	33	0	30	35	33	0
YELLOW	4.4	4.4	4.3	0	4.4	4.4	4.3	0
ALL RED	1.6	1.6	2.7	0	1.6	1.6	2.7	0
WALK	12	16		0	12	5		0

PLAN 1 — 6:00 AM PLAN OPERATIVE TIMES

									COORD PATTERN	OFFSET
R1	1	↰	2	↓	3	↰	7	↳		
R2	6	↑	5	↳	0	↑↑	0	↑↑	Balanced	98
	RING 1				RING 2					
PHASE	1	2	3		5	6	7			
SPLIT	20	45	25		30	35	30		Target Cycle Length	
COORD		X				X			120	
RECALLS		V				V			Actual Cycle Length	
GREEN	14.0	39.0	18.0	0.0	24.0	29.0	23.0	0.0	120	

PLAN 2 — 9:00 AM MIDDAY PLAN OPERATIVE TIMES

									COORD PATTERN	OFFSET
R1	1	↰	2	↓	3	↰	7	↳		
R2	45	⇠↑	30	↑↑	45	⇠↑	0	↑↑	Balanced	25
	RING 1				RING 2					
PHASE	1	2	3		5	6	7			
SPLIT	20	36	26		23	33	26		Target Cycle Length	
COORD		X				X			108	
RECALLS		V				V			Actual Cycle Length	
GREEN	14.0	30.0	19.0	0.0	17.0	27.0	19.0	0.0	108	

PLAN 3 — 15:00PM PLAN OPERATIVE TIMES

									COORD PATTERN	OFFSET
R1	1	↰	2	↓	3	↰	7	↳		
R2	6	↑	5	↳	0	↑↑	0	↑↑	Balanced	26
	RING 1				RING 2					
PHASE	1	2	3		5	6	7			
SPLIT	32	33	35		18	47	20		Target Cycle Length	
COORD		X				X			120	
RECALLS		V				V			Actual Cycle Length	
GREEN	26.0	27.0	28.0	0.0	12.0	41.0	13.0	0.0	120	

PLAN 4 — 22:00 MIDNIGHT PLAN OPERATIVE TIMES

									COORD PATTERN	OFFSET
R1	1	↰	2	↓	3	↰	7	↳		
R2	6	↑	5	↳	0	↑↑	0	↑↑	Balanced	83
	RING 1				RING 2					
PHASE	1	2	3		5	6	7			
SPLIT	18	34	22		18	34	16		Target Cycle Length	
COORD		X				X			90	
RECALLS		V				V			Actual Cycle Length	
GREEN	12.0	28.0	15.0	0.0	12.0	28.0	9.0	0.0	90	

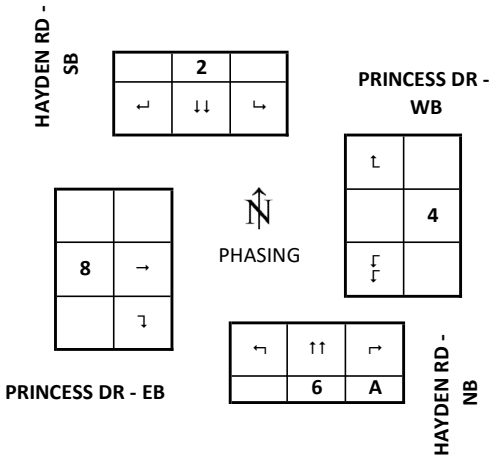
HAYDEN RD & PRINCESS DR

System # 265

BASIC TIMING PLAN

Section #	I.P. Address	Date Designed
	MM1-5-1	
	172.27.12.65	8/31/2020

	Phase		2		4		6		8
TIMING PLAN - MM-2-1	Movement		SBT		WBT		NBT		EBT
	NOTES		COORD		SPLIT		COORD		SPLIT
	MIN GRN		10		7		10		7
	BK MGRN								
	CS MGRN								
	DLY GRN								
	WALK		4		4		4		4
	WALK2								
	WLK MAX								
	PED CLR/FDW		25		17		25		22
	PD CLR2								
	PC MAX								
	PED CO								
	VEH EXT		1		2		1		2
	VH EXT2								
	MAX 1		65		35		65		25
	MAX 2		90		40		90		30
	MAX 3								
	DYM MAX		90		40		90		30
	DYM STP		5		5		5		5
	YELLOW		4.0		4.4		4		4.4
	RED CLR		2.0		1.0		2.0		1.0
	RED MAX								
	RED RVT		2		2		2		2
	ACT B4								
	SEC/ACT								
	MAX INT								
	TIME B4								
	CARS WT								
	STPTDUC								
	TTREDUC								
	MIN GAP								
RECALLS - MM-2-8	LOCK DET								
	VEH RECALL								
	PED RECALL								
	MAX RECALL		X				X		
	SOFT RECALL								
	NO REST								
	ADD INIT CAL								



PHASING SEQUENCES

TOD: MORNING
R1: 2 4 8
R2: 6
B B
Use Timing plan:

TOD: MIDDAY
R1: 2 4 8
R2: 6
B B
Use Timing plan:

TOD: EVENING
R1: 2 4 8
R2: 6
B B
Use Timing plan:

TOD: NIGHT
R1: 2 4 8
R2: 6
B B
Use Timing plan:

FREE
R1: 2 4 8
R2: 6
B B
Use Timing plan: 254

NOTES

Approved By
Effective Date

HAYDEN RD & PRINCESS DR

System #	265

COORDINATOR	Section #	Date Updated
	0	8/31/2020

PHASE	1	2	3	4	5	6	7	8
FDW		25		17		25		22
YELLOW		4		4.4		4		4.4
ALL RED		2		1		2		1
WALK		25		17		25		22

PLAN 1
6:00 AM PLAN OPERATIVE TIMES
6:00

									COORD PATTERN	OFFSET
R1	2	↓			4	←	8	→		
R2	6	↑							Balanced	7
	RING 1				RING 2					
PHASE		2		4		6		8		
SPLIT		75		27		75		18	Target Cycle Length	
COORD		X				X			120	
RECALLS		M				M			Actual Cycle Length	
GREEN		69.0		21.6		69.0		12.6	120	

PLAN 2
9:00 MIDDAY PLAN OPERATIVE TIMES
9:00

									COORD PATTERN	OFFSET
R1	2	↓			4	←	8	→		
R2	6	↑							Balanced	68
	RING 1				RING 2					
PHASE		2		4		6		8		
SPLIT		55		28		55		25	Target Cycle Length	
COORD		X				X			108	
RECALLS		M				M			Actual Cycle Length	
GREEN		49.0		22.6		49.0		19.6	108	

PLAN 3
15:00 PM PLAN OPERATIVE TIMES
15:00

									COORD PATTERN	OFFSET
R1	2	↓			4	←	8	→		
R2	6	↑							Balanced	57
	RING 1				RING 2					
PHASE		2		4		6		8		
SPLIT		75		25		75		20	Target Cycle Length	
COORD		X				X			120	
RECALLS		M				M			Actual Cycle Length	
GREEN		69.0		19.6		69.0		14.6	120	

PLAN 4
22:00 MIDNIGHT PLAN OPERATIVE TIMES

									COORD PATTERN	OFFSET
R1	2	↓			4	←	8	→		
R2	6	⇧				⇧			Balanced	7
	RING 1				RING 2					
PHASE		2		4		6		8		
SPLIT		50		22		50		18	Target Cycle Length	
COORD		X				X			90	
RECALLS		M				M			Actual Cycle Length	
GREEN		44.0		16.6		44.0		12.6	90	

Appendix F Signal Warrant Analysis

Mayo & Miller
w/Axon

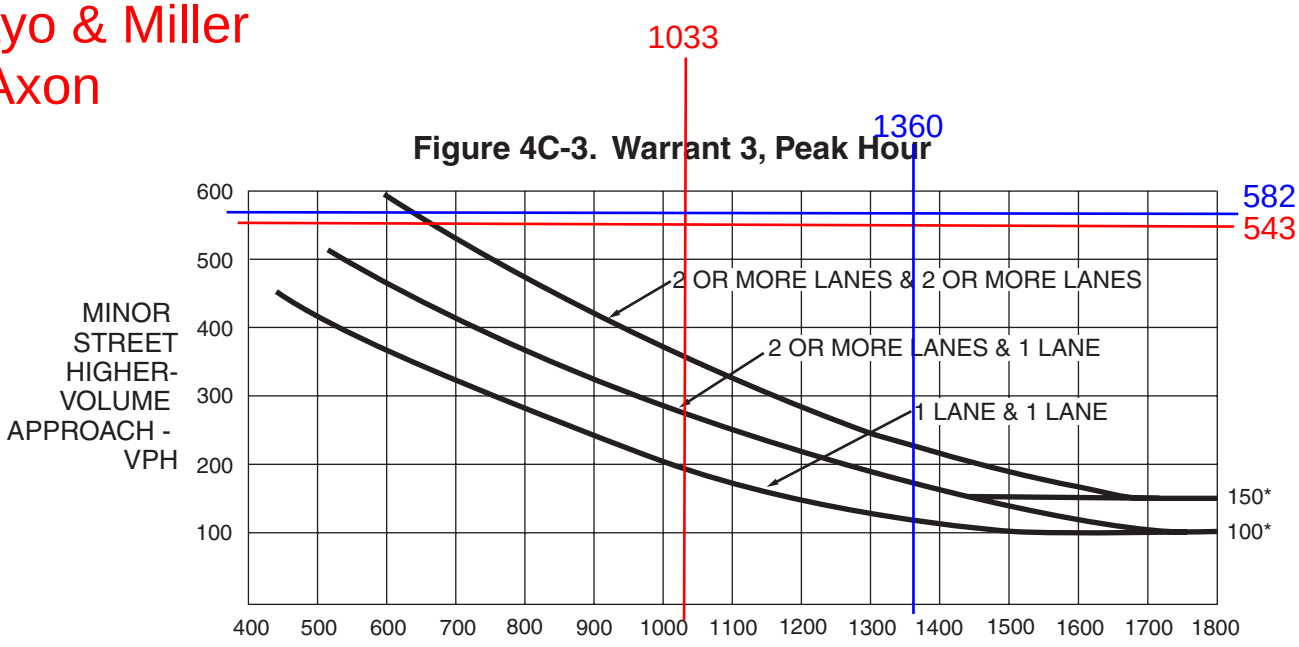


Figure 4C-3. Warrant 3, Peak Hour

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

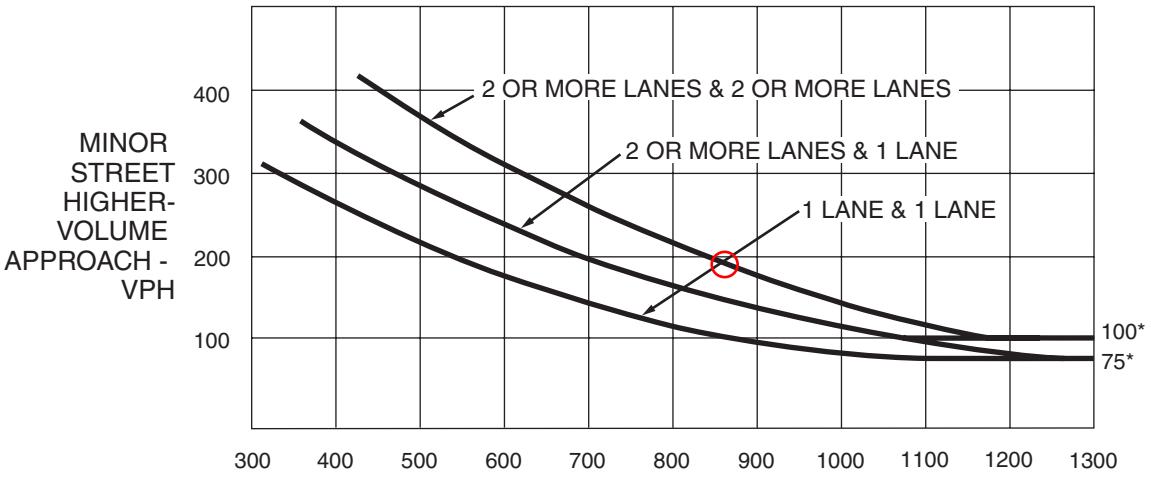


Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Mayo & Miller
w/o Axon

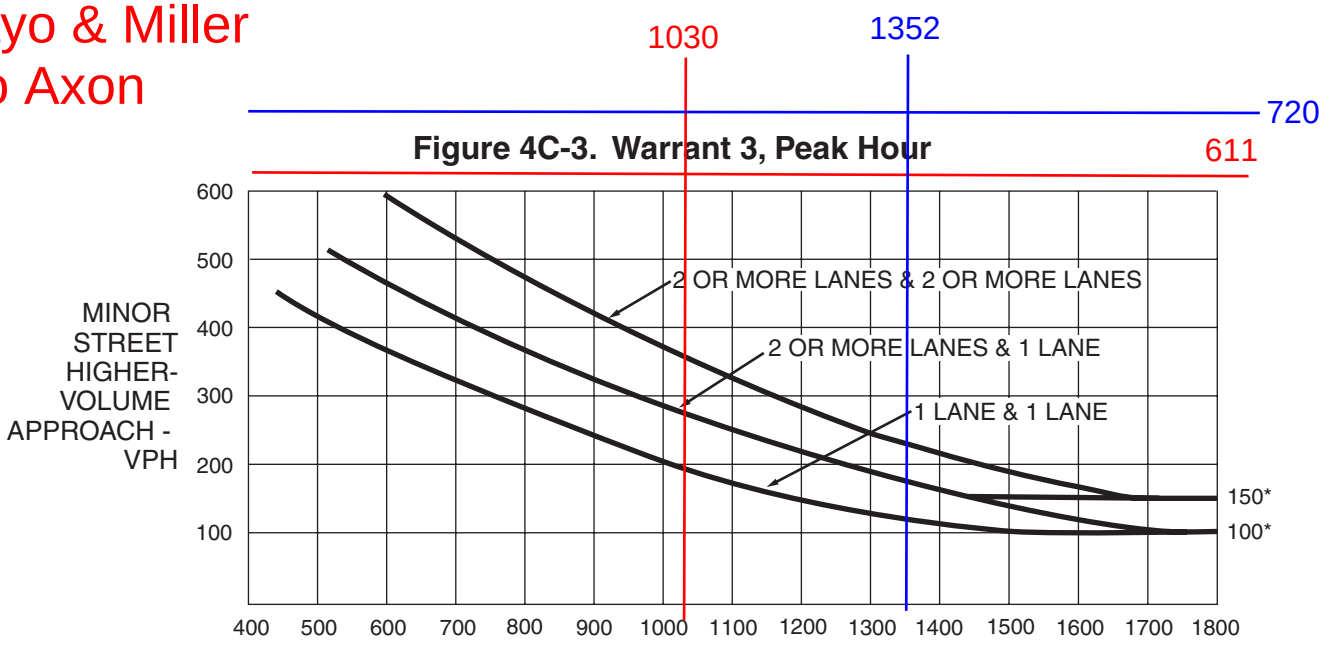
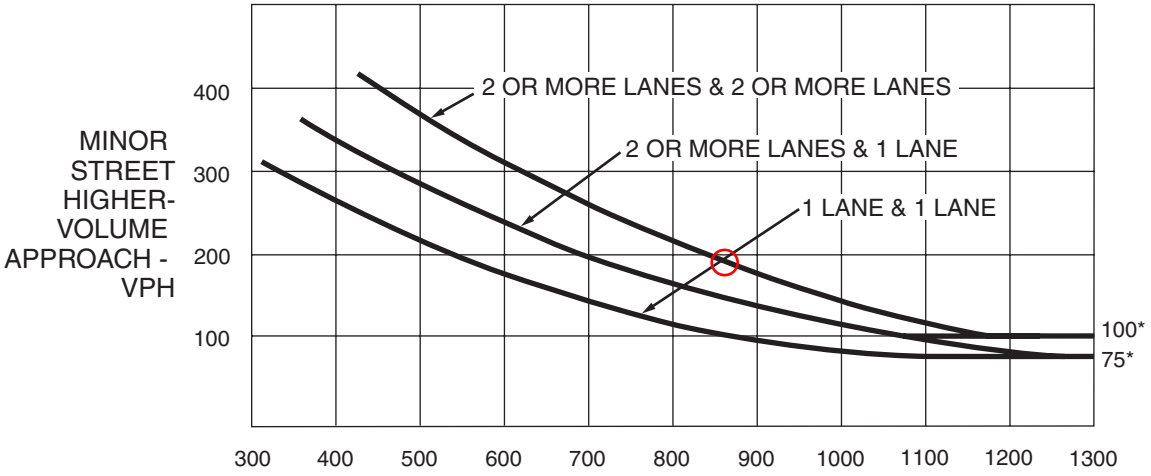


Figure 4C-3. Warrant 3, Peak Hour

*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Mayo & Miller
MOB+ Only

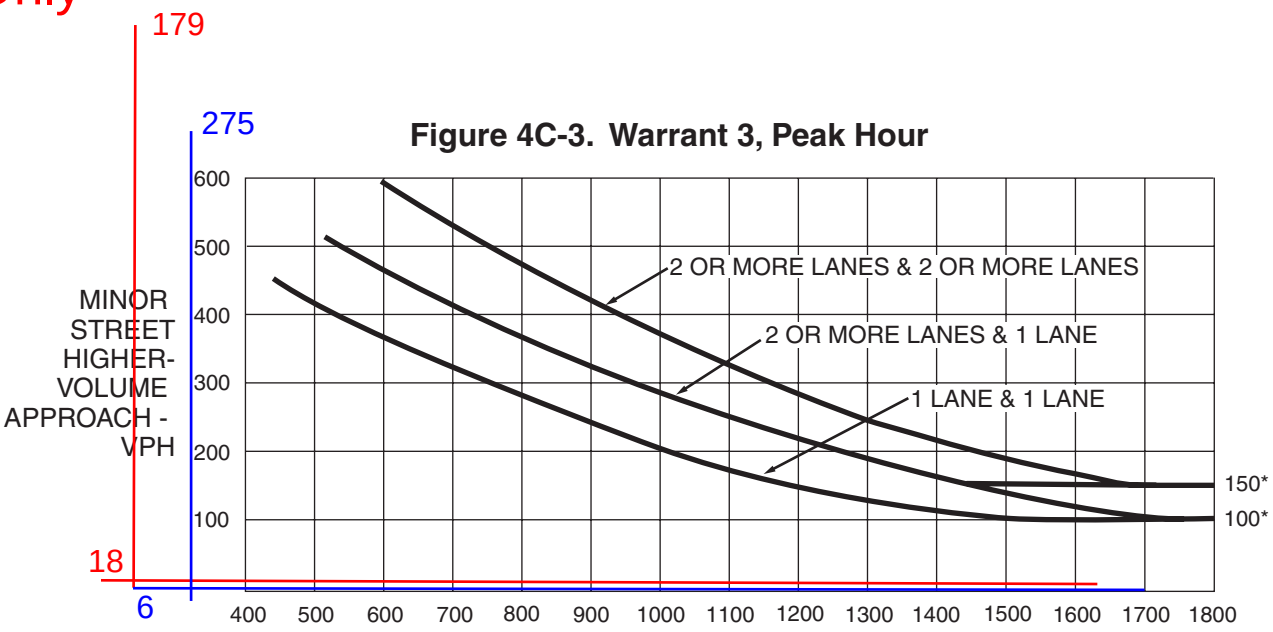


Figure 4C-3. Warrant 3, Peak Hour

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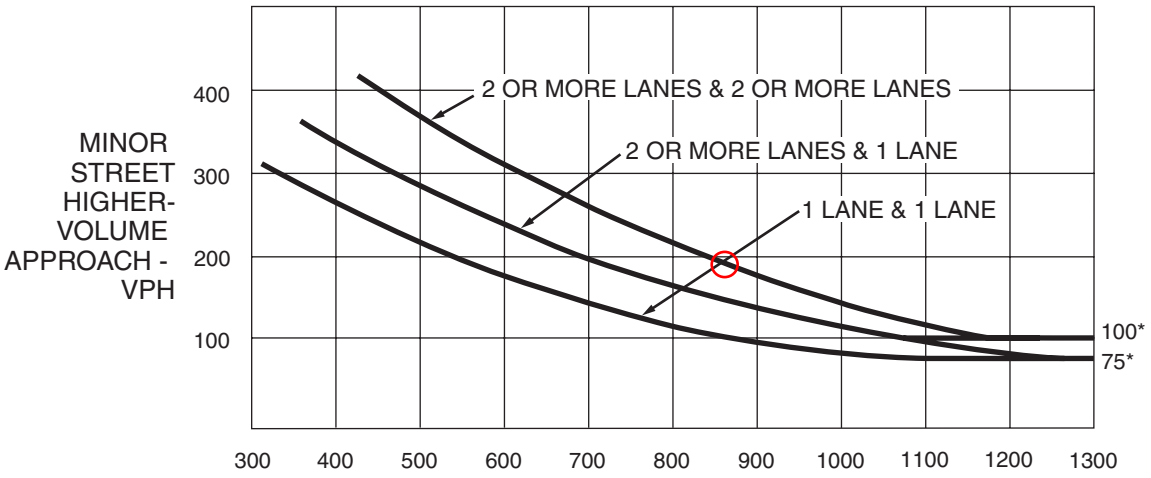
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Mayo & 78th w/Axon

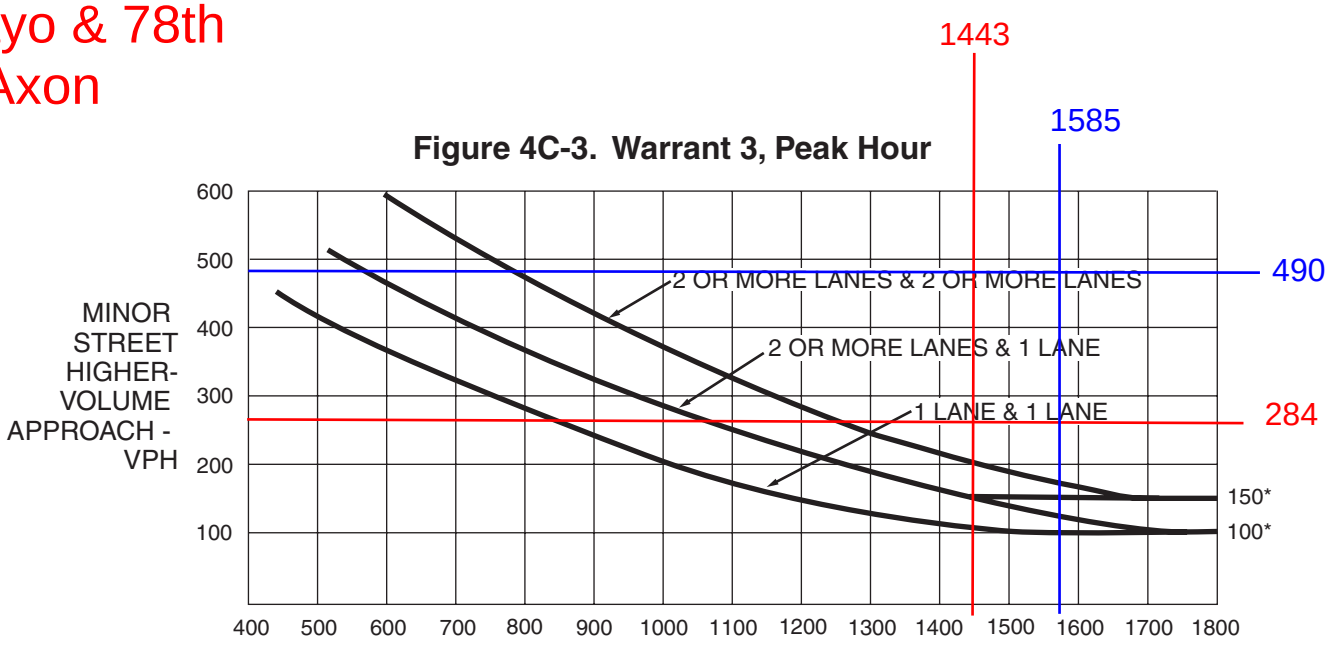


Figure 4C-3. Warrant 3, Peak Hour

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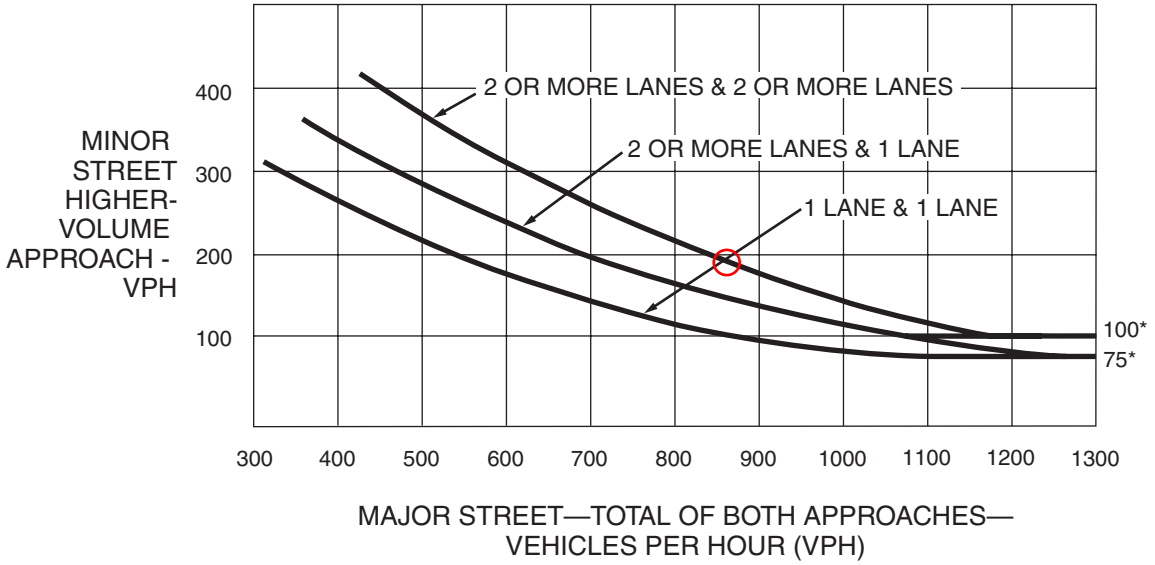

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)

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Mayo & 78th
w/o Axon

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1443

Figure 4C-3. Warrant 3, Peak Hour

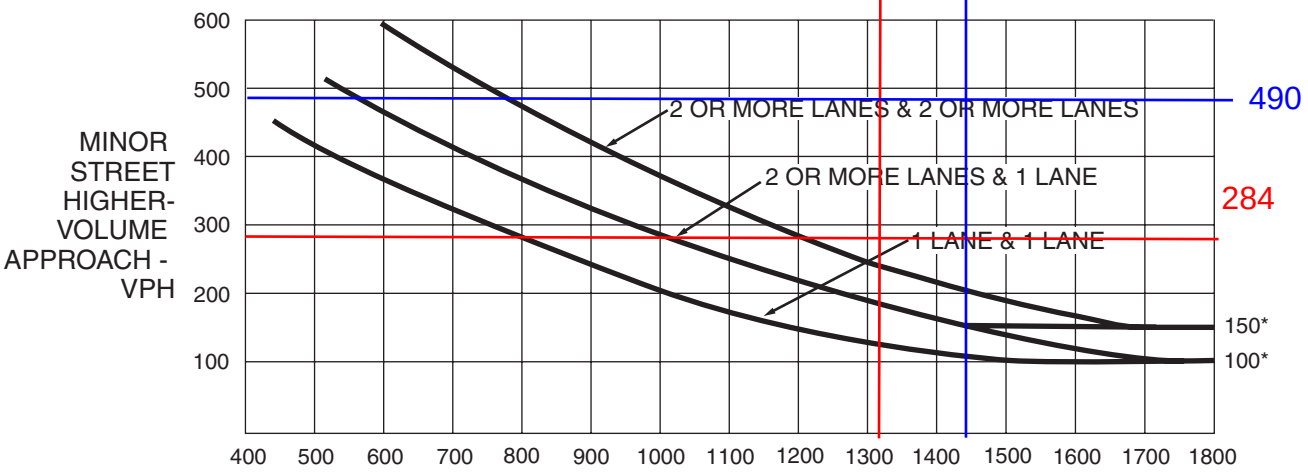

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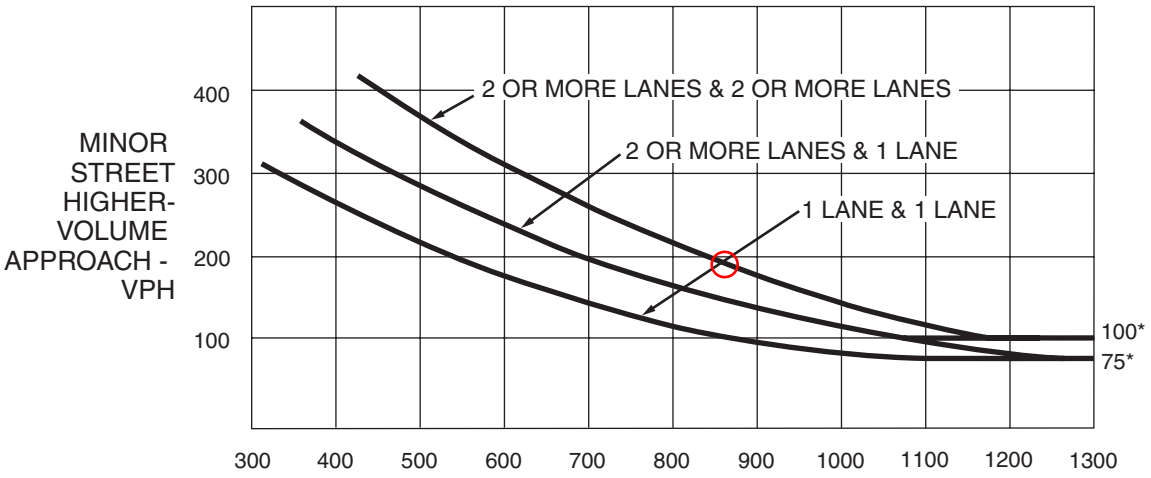
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



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Mayo & 78th
2026 MOB
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Figure 4C-3. Warrant 3, Peak Hour

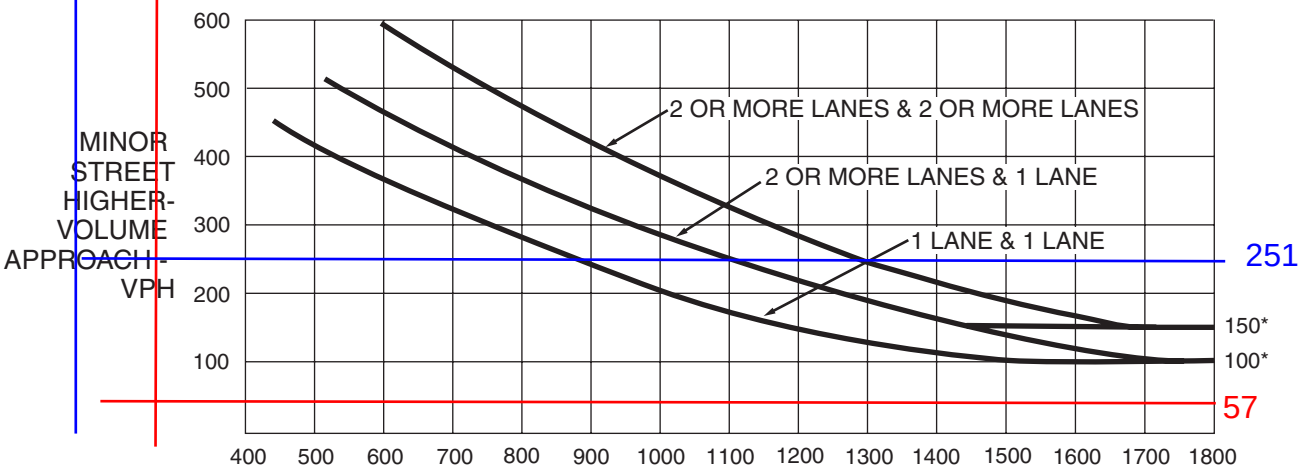

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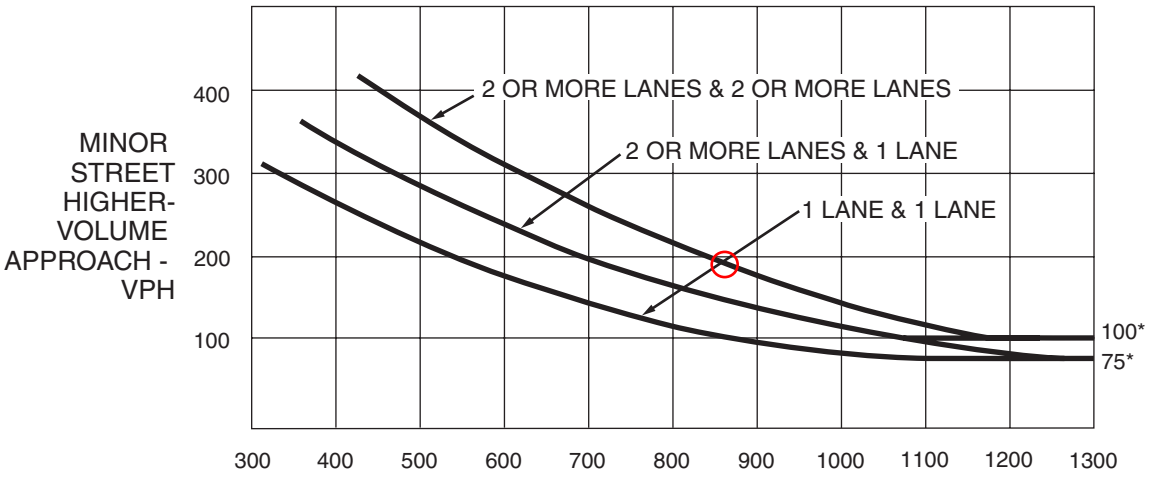
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Hayden & Mayo
w/Axon

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Figure 4C-3. Warrant 3, Peak Hour

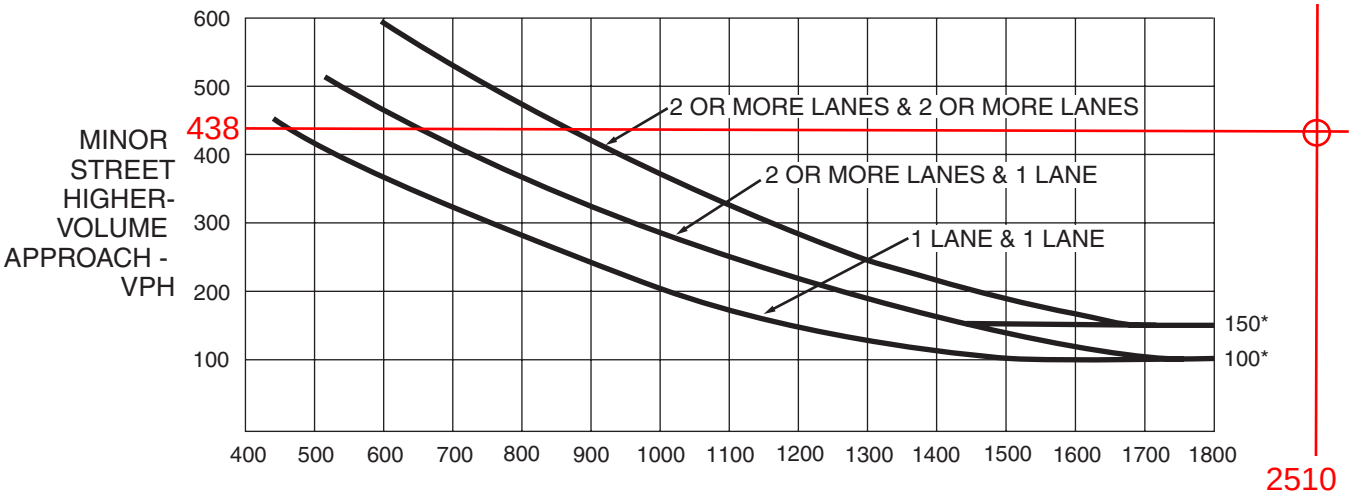

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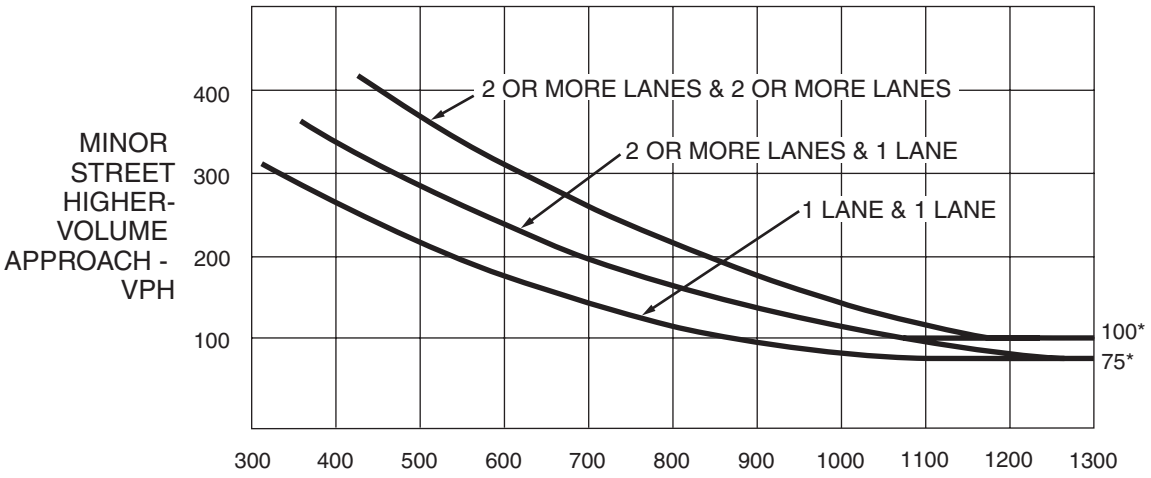
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

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Figure 4C-3. Warrant 3, Peak Hour

2070

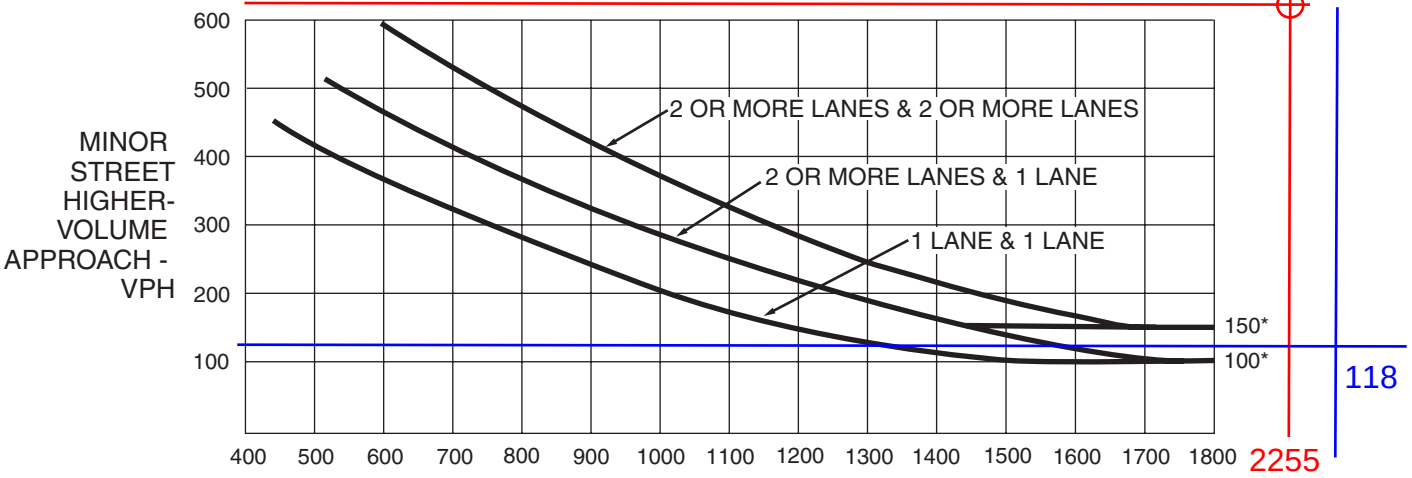

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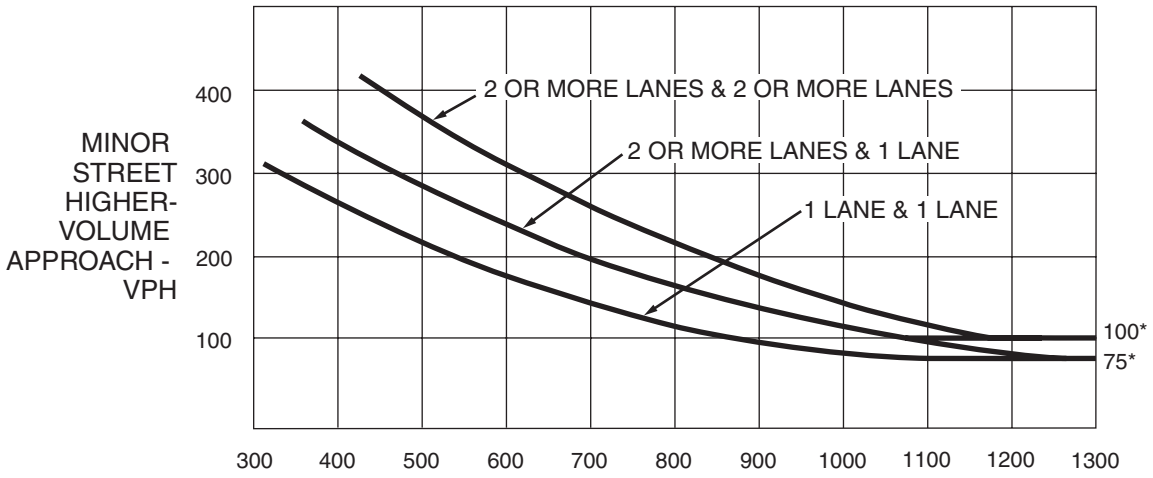
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

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Figure 4C-3. Warrant 3, Peak Hour

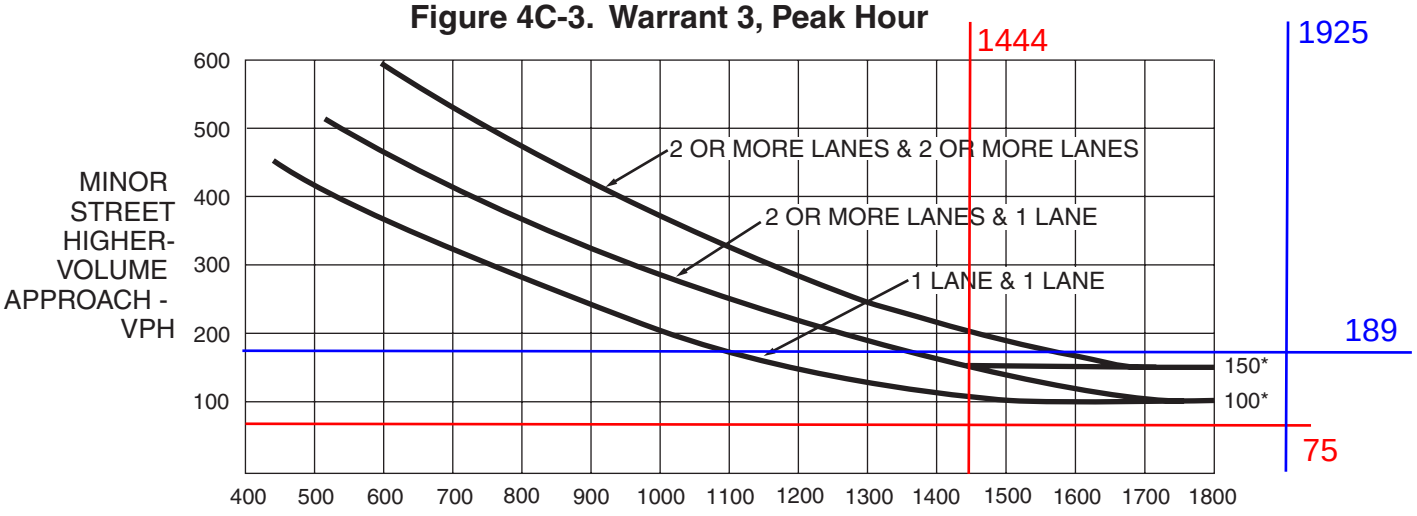

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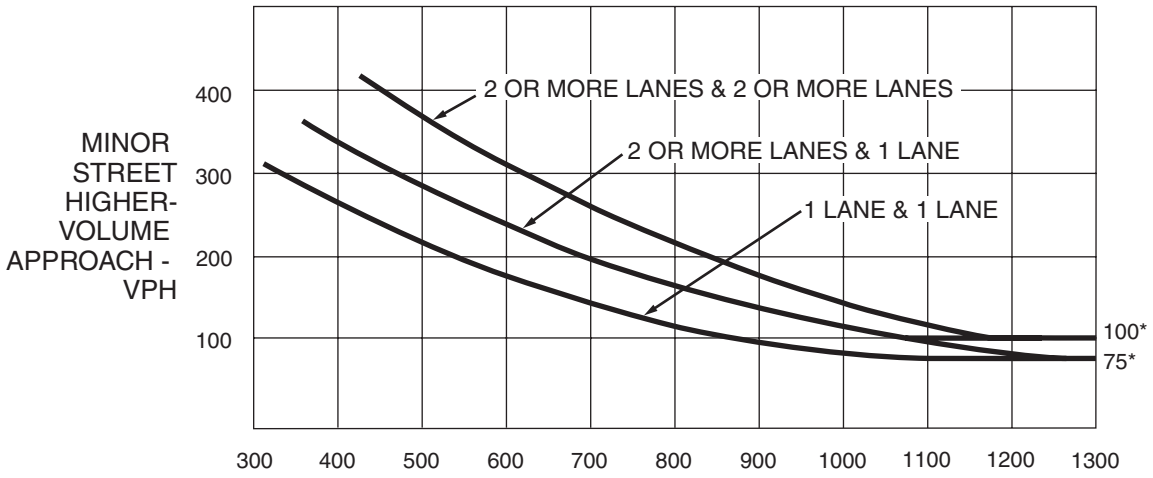
Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



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