INTERNATIONAL DRIVE
PEDESTRIAN OVERPASS
Intersection Analysis and Overpass Conceptual Design

Prepared for

Orange County Public Works

Project No. Y21-803-CH

April 2025

Prepared by

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EXECUTIVE SUMMARY

The purpose of this study is to develop and evaluate alternatives of a pedestrian overpass to connect the four intersection corners at the intersection of International Drive and Sand Lake Road in Orange County, Florida.

Orange County is using the Roadway Conceptual Analysis method to perform the Study because this format meets the requirements of the NEPA process and keeps the possibility open for the project to obtain federal grant funding in the future for design, CEI or construction efforts. The format is also similar to the FDOT Project Development and Environmental (PD&E) process which is detailed in the FDOT PD&E Manual.

The project has two major goals for Orange County. The first goal is to improve safety at the intersection. There is a great deal of pedestrian and bicycle traffic that has to intermix with the high volume of vehicular traffic. This creates many conflicts. The second goal is that the County wants to use this opportunity to create an iconic structure that will not only serve as a functional pedestrian overpass, but will also provide a signature gateway into the International Drive Tourist Area.

The project analyzed six geometric options for the overpass to provide safe and efficient access to all four corners of the intersection. These options are summarized and evaluated in the Alternatives Analysis of this report. The Alternatives were presented and discussed with many agencies, interested parties and the Project Advisory Group (PAG) made up of stakeholders and property owners in the I-Drive corridor. Four PAG meetings were held throughout the study timeline. After the first two PAG meetings, the six geometric options were narrowed down to two alternatives, an I-shape and reverse back-to-back Cs.

The third and fourth PAG meetings refined the alternatives. Two designs were created that bridged the schemes and ended with a recommendation from the group that is the preferred alternative presented in this Study. The PAG, as a whole, was very positive about the project and offered significant input, much of which was incorporated into the preferred alternative.

The alternatives were also presented to interested members of the public at two advertised Community Meetings. Public comments were primarily positive with a single attendee opposed to the project in general. The alternatives were narrowed down to two alternatives called “The Wave” and “The Drone” which were developed based on the alternatives presented to the PAG and input received from that group. These concepts provided more detail and were re-presented to the PAG at meeting number 4. The PAG unanimously voted to recommend The Drone as the preferred alternative to the Orange County Board of County Commissioners.

The preferred alternative appears as back-to-back "Cs" meeting in the middle of the intersection and topped with photovoltaic panels that gives the bridge a "drone" look from the air. The main bridge spans will be designed with steel truss sections enhanced with architectural materials to provide the overall look. Aesthetic lighting will be added to provide safety and also a unique look during evening hours.

Following approval by the Board, the project will move into the design phase. A depiction of the Drone Concept is shown below.

Project Advisory Group Meeting #4 | "The Drone" Concept – Aerial View
ORANGE COUNTY FLORIDA | International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study | #Y20-803-CH
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SECTION 1 INTRODUCTION

1.1 INTRODUCTION

The goal of this study is to evaluate the safety needs of the intersection of International Drive (I-Drive) and Sand Lake Road in Orange County, Florida. This intersection is in the heart of the Orlando Tourist District and is surrounded by numerous entertainment facilities including hotel resorts, convention centers, amusement parks, restaurants, and other attractions.

The intersection is one of the most heavily traveled in Central Florida for both vehicles and pedestrians. Traffic delays are common and pedestrians are observed regularly having a difficult time maneuvering through and around the intersection via the crosswalks.

Past discussions have entertained the idea of a pedestrian overpass that would connect all four corners of the intersection and previous privately funded studies have been started to demonstrate possible overpass scenarios. This study intends to document the alternatives to improve safety at this intersection and develop a preferred alternative to develop moving forward. The study has been performed following NEPA requirements to maintain eligibility for Federal Grants.

Orange County intends for the preferred alternative to serve as an iconic entry or gateway feature into the International Drive Tourist Area. The intention is also to improve the aesthetics and character of the intersection.

1.2 STUDY AREA

The Study Area is the intersection of I-Drive and SR 482/Sand Lake Road extending 400-feet away from the intersection on each of the four roadway approaches.

1.3 PURPOSE AND NEED

The need for this project is based on safety, primarily for pedestrians at this intersection. Visual observations indicate pedestrian ways are often blocked by vehicles trapped in the intersection due to backed-up traffic, causing pedestrians to walk around the vehicles in order to cross the street.

The purpose of the study is to evaluate alternative configurations of overpasses that would allow pedestrians to traverse the intersection without the need to interact with vehicle traffic.

A secondary purpose is to add a significant overpass structure to serve as a visual statement representing the importance of the I-Drive Tourist Area to the Orlando Community. The overpass is also consistent with the I-Drive Overlay District and Vision 2050 policy. The bridge meets two of the five goals in the policy applicable to the Regional Center. They are:

- Connected: Celebrate pedestrians by improving walkability, activating the streets, and offering ample multimodal options
- Authentic: Reinforce community identity and authenticity

The pedestrian bridge is also consistent with I-Drive's VISION 2040 which anticipates and guides the creation of District Gateways at main point of arrivals to the I-Drive District. As part of our Vision Zero commitment, Orange County employs a variety of measures to ensure pedestrians, cyclists, and alternative mobility user safety. Separating the pedestrian and vehicle flows is a clear way to reduce pedestrian fatalities and severe injuries by reducing conflict points. Part of the Vision Zero approach starts by recognizing human behavior and designing the infrastructure accordingly.

SECTION 2 EXISTING CONDITIONS

2.1 EXISTING ROADWAY CONDITIONS/CHARACTERISTICS

This section presents an overview of the existing physical characteristics and conditions of the I-Drive and Sand Lake Road intersection, the roadway geometry, pedestrian and bicycle movements, and transit.

2.1.1 Roadway Characteristics

I-Drive is a 4-lane undivided roadway with Type F curb and gutter along both sides of the road. I-Drive is classified as an Urban Minor Arterial and has a posted speed limit of 30 miles per hour (mph). Sand Lake Road is a 6-lane divided roadway with Type F curb and gutter along both sides of the road. Sand Lake Road is classified as an Urban Major Collector and has a posted speed limit of 40 mph.

2.1.1.1 Roadway Geometry

I-Drive is predominantly a 4-lane undivided roadway. As I-Drive approaches Sand Lake Road from the south, the road widens to 5 lanes, allowing for 2 left turn lanes, 2 through lanes, and 1 right turn lane. As I-Drive approaches Sand Lake Road from the north, the road widens to 4 lanes, allowing for 1 left turn lane, 2 through lanes, and 1 right turn lane. Sand Lake Road is predominantly a 6-lane divided roadway. As Sand Lake Road approaches I-Drive from the west, the road widens to 5 lanes, allowing for 2 left turn lanes, 2 through lanes, and 1 right turn lane. As Sand Lake Road approaches I-Drive from the east, the road widens to 5 lanes, allowing for 2 left turn lanes, 2 through lanes, and 1 right turn lane.

2.1.1.2 Bicycle Features

There is a bike lane that starts on Sand Lake Road at the I-Drive intersection heading eastbound on the south side. There is also a bike lane that ends on Sand Lake Road at the I-Drive intersection heading westbound on the north side. I-Drive does not provide a bike lane for either the northbound or southbound directions in the study limits.

2.1.1.3 Pedestrian Features

A sidewalk that varies between six and ten-feet in width is provided along the west side of I-Drive through the study limits. A sidewalk that varies between six and twelve feet in width is provided along the east side of I-Drive through the study limits. Some sidewalks run east to west on both sides of Sand Lake Road. The north sidewalk on Sand Lake Road varies between six and eight feet in width. The south sidewalk on Sand Lake Road varies between six and ten feet in width. All four corners of the I-Drive and Sand Lake Road intersection currently provide pedestrian crossings with special emphasis crosswalks, pedestrian signals, and detectable warning surfaces.

2.1.1.4 Transit

LYNX has three transit routes that cross the I-Drive and Sand Lake Road intersection-Route 8, 38, and 42. Route 8 runs from LYNX central station in Downtown Orlando south to the Vineland Premium Outlets. Route 38 runs from Universal Studios south to the Orange County Convention Center, using Universal Blvd and I-Drive. Route 42 runs from Orlando International Airport west towards the I-Drive and Sand Lake Road intersection. This route utilizes Oak Ridge Rd and runs south across the I-Drive and Sand Lake Road intersection. All 3 LYNX routes use the intersection north/south. There is one stop in front of the Mango's Tropical Café parking garage. The routes are shown on the following page:

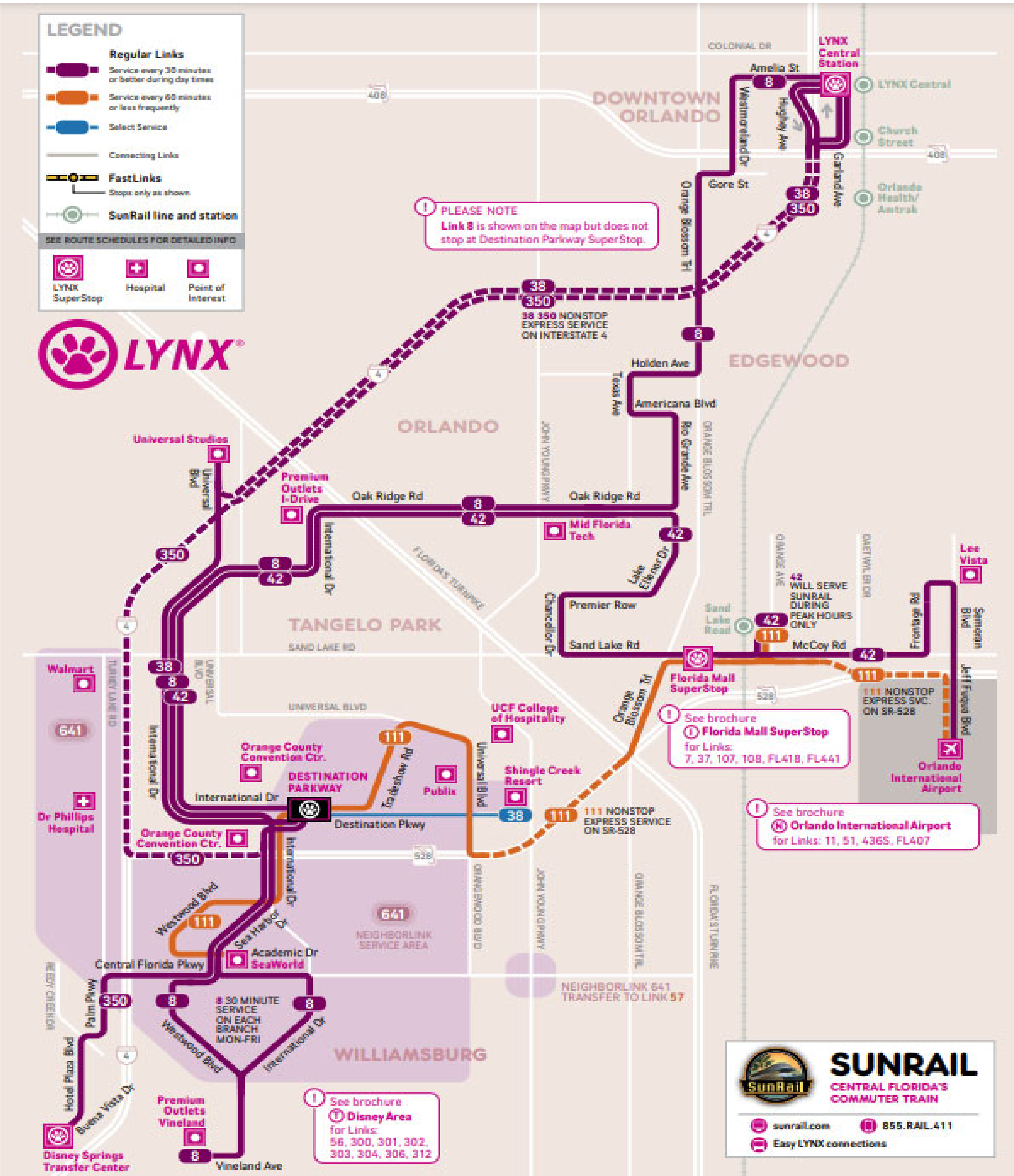


Figure 2-1: SunRail Central Florida's Commuter Train

2.2 EXISTING SEGMENT TRAFFIC CONDITIONS.

Each approach of the intersection of I-Drive and Sand Lake Road was considered a separate roadway segment. The traffic features of the four segments are listed below:

International Drive - North Approach

- Non-State Signalized
- Posted Speed 30 MPH (Class II)
- Through Lanes NB and SB
- Undivided Median
- Exclusive Left Lanes
- Exclusive Right Lanes

International Drive - South Approach

- Non-State Signalized
- Posted Speed 35 MPH (Class II)
- 2 Through Lanes NB and SB
- Divided Median
- Exclusive Left Lanes
- Exclusive Right Lanes

Sand Lake Road - West Approach

- State Signalized - SR 482
- Posted Speed 40 MPH (Class I)
- 3 Through Lanes EB and WB
- Divided Median
- Exclusive Left Lanes
- Exclusive Right Lanes

Sand Lake Road - East Approach

- State Signalized - SR 482
- Posted Speed 40 MPH (Class I)

- 3 Through Lanes EB and WB
- Divided Median
- Exclusive Left Lanes
- Exclusive Right Lanes

The existing segment traffic volumes and levels-of-service are discussed in Section 3.

2.3 CRASH ANALYSIS

Vehicular crashes in the vicinity of the I-Drive and Sand Lake Road intersection were analyzed for any that involved pedestrians and bicycles between May 2017 and May 2022. Crash reports were collected using data downloaded from Signal Four Analytics (signal4analytics.com). The Signal Four Analytics system "receives data from Florida's statutory custodian of records, the Florida Department of Highway Safety and Motor Vehicles (FLHSMV)."

Based on our query, 661 crash reports (or events) were reported. Of these crashes, 12 were identified to involve pedestrians and one involved a bicycle. These 13 crashes were all within 650-feet of the intersection. The table below summarizes the crash reports.

**Table 2-1: Crash Analysis – Crashes Involving Pedestrians and Bicycles
May 2017 through May 2022**

International Drive Pedestrian Bridge International Drive at Sand Lake Road Crash Analysis - Crashes Involving Pedestrians and Bicycles May 2017 through May 2022					
Crash Year	**Crash Location**	**Action Prior To Crash**	**Non-Motorist Description**	**Injury Severity**	**Non-Motorist Action**
2017	Driveway Access	Walking/Cycling on Sidewalk	Pedestrian	Possible	No Improper Action
2017	Intersection - Marked Crosswalk	Walking/Cycling on Sidewalk	Pedestrian	Possible	No Improper Action
2017	Travel Lane - Other Location	In Roadway - Other	Pedestrian	Possible	Failure to Yield Right-of-Way
2017	Travel Lane - Other Location	Crossing Roadway	Pedestrian	Non-Incapacitating	Dart/Dash
2017	Travel Lane - Other Location	Crossing Roadway	Pedestrian	Incapacitating	Dart/Dash
2018	Other	None	Pedestrian	Non-Incapacitating	No Improper Action
2019	Intersection - Unmarked Crosswalk	Walking/Cycling on Sidewalk	Pedestrian	Non-Incapacitating	No Improper Action
2021	Intersection - Marked Crosswalk	Crossing Roadway	Pedestrian	Possible	Other
2021	Intersection - Marked Crosswalk	Crossing Roadway	Pedestrian	Non-Incapacitating	No Improper Action
2021	Travel Lane - Other Location	Crossing Roadway	Bicyclist	Possible	Failure to Yield Right-of-Way
2021	Travel Lane - Other Location	Crossing Roadway	Pedestrian	Incapacitating	Dart/Dash
2021	Other	Crossing Roadway	Pedestrian	Non-Incapacitating	Dart/Dash
2021	Travel Lane - Other Location	Crossing Roadway	Pedestrian	Possible	Failure to Yield Right-of-Way

2.4 UTILITIES ASSESSMENT

Thirteen Utility Agency/Owners (UAO) have been identified within the project area through a Sunshine 811 Design Ticket and utility coordination efforts. There are numerous existing utilities within the project corridor including overhead and underground electric, fiber, water and wastewater mains, gas mains, and communication lines. All the utility operators and providers were contacted on March 29th, 2022 and were provided with aerial map PDFs of the project for review. Based on the aerial map PDFs, UAOs were asked to assist in locating and identifying their existing and planned facilities within the area of study. Details of the UAOs contacted on the project and a description of the facilities identified within the corridor are summarized in the table below.

Table 2-2: UAOs Contacted and Facilities Identified within the Corridor

Company	Utility Type	Status
AT&T Florida Lake Orange & Sumter County	Phone/Fiber	- 5G Concrete Pole SW corner of intersection. - 16-4" PVC Duct line along the south side of Sand Lake. - 18.5'x7'x11' vault in SW corner. - 24-4" PVC Duct Line along the west side of I-Drive, south of intersection. - 300,600,900 pr cable in 4" conduit crossing west leg. - 600 pr cable along north side of Sand Lake and east side of I-Drive.
Lumen F/K/A CenturyLink, Level 3	Fiber	- Underground facilities along the north and south sides of Sand Lake Road. - Aboveground facilities along the north side of Sand Lake Road's western approach, crosses I-Drive and continues north along the east side of the road. - Underground facilities along the west side of I-Drive's southern approach.
Charter Communications	Phone/Fiber	
ComCast Communications	Fiber	Fiber in Conduit along the north side of Sand Lake Road and west side of I-Drive along the NW corner of the intersection.
Crown Castle	Fiber	Fiber in Conduit along the north side of Sand Lake Road and west side of I-Drive

Company	Utility Type	Status
Duke Energy	Electric	Underground power runs along the NW curb return, north side of Sand Lake Road, as well as the east and west sides of I-Drive south of the intersection, including streetlight poles.
MCI	Fiber	2" HDPE/FOC and Hand Holes NE and SW Curb Returns and approaches, Crosses South Leg and East Leg of intersection
Orange County Utilities	Water/Sewer	- 24-inch FM along the north side of Sand Lake Rd. - 16-inch FM along the east side of I-Drive south of Sand Lake. - 8" FM along the west side of I-Drive north of Sand Lake. - Abandoned in place lines and removed lines are within project area as well.
OUC-Water	Water	- 12" and 24" DIP WM along the south side of Sand Lake Road. - 16" DIP along the west side of I-Drive, south of the intersection. - 12" DIP WM along the east side of International Diver, north of the intersection.
Smart City	Fiber	Fiber in 2-inch HDPE under Sand Lake Road (more than 30-feet below grade).
Summit Broadband	Fiber	FOC along the north side of Sand Lake Road and west side of I-Drive.
TECO	Gas	- 6" Coated Steel Gas Distribution line North side of Sand Lake Road crossing over I-Drive. - East side of I-Drive to the north of the intersection.
Zayo Group	Fiber	Fiber along the west side of I-Drive Fiber along the south side of Sand Lake Road, West of the intersection.

A plan showing the location of all these utilities is included in **Appendix D.**

2.5 CONSISTENCY WITH LOCAL PLANS

The most overriding Local Plan in the area is the I-Drive District Overlay Zone, The I-Drive District allows for the highest intensity of building within Orange County. The code reflects the goals established in the Orange County Comprehensive Plan, the “Our Home for Life” Sustainability Plan, and the I-Drive District 2040 Vision. It includes the following objectives:

A. To achieve mixed-use development that is appropriate in scale.
B. To establish a relationship between buildings, streets, and open spaces that is pedestrian, bicycle, and transit-oriented through achieving target height-to-width ratios between 1:2, 1:3, and 1:4.
C. To preserve and enhance the county’s natural resources, energy, water, and open spaces and to promote innovative development that sustainably manages these issues, including stormwater runoff and reducing urban heat island effect.
D. To ensure that a variety of housing types and sizes can be developed to meet the needs of the entire community.
E. To promote a variety of transportation options for residents and visitors.

Another overriding policy that can help to guide this project development is Policy ID1.4.1 in the I-Drive Element of the current 2010 to 2030 Comprehensive Development Plan, which states that all future development and redevelopment within the I-Drive District Overlay shall strive to achieve the following District goals:

- Connected: Celebrate pedestrians by improving walkability, activating the streets, and offering ample multimodal options;
- Complete: Enable a complete community by ensuring that a diversity of uses, including residential, can be accommodated in the District;
- Authentic: Reinforce community identity and authenticity by providing civic and gathering spaces featuring public art;
- Prosperous: Foster economic development by promoting and facilitating infill and redevelopment opportunities within the District;
- Sustainable: Promote efficient use of natural resources by incorporating green building practices and capitalizing on local resources.

The development of the I-Drive – Sand Lake Road Pedestrian Overpass is consistent with high-density development and the promotion of a variety of transportation options. The proposed bridge is not only consistent with Local Plans but also consistent and compatible with the surrounding land uses and character.

2.6 GEOTECHNICAL ANALYSIS

According to the Soil Survey of Orange County, Florida (1989), the proposed project area (I-Drive intersection with 500-foot buffer) consists of one mapped soil type which is Urban land (50). A soil boring was done at the intersection to evaluate foundation types for the bridge structure. The investigation identified the soil strata encountered as those summarized below. The full geotechnical report can be found in Appendix F.

Table 2-3: Generalized Subsurface Profile

Location	Boring ID (Station & Offset)	Approx. Elevation, Feet (NAVD-88)	Soil Description	Range of N-Values (blows/foot)
International Drive & Sand Lake Road	B-1 (123+67.5, 45.95' LT)	+126.9 – +113.9	Loose to medium dense, gray fine SAND, with trace silt (SP)	HA – 18
		+113.9 – 108.9	Medium dense dark brown fine SAND, with salt and trace of organics (SP-SM)	29
		+108.9 – +103.9	Medium dense, brown silty SAND (SM)	19
		+103.9 – +98.9	Very dense, light grey fine SAND, with silt (SP-SM)	76
		+98.9 – +93.9	Medium dense, brown silty SAND (SM)	29
		+93.9 – +83.9	Loose to medium dense, light brown to grey clayey SAND (SC)	9 – 15
		+83.9 – +78.9	Medium dense, gray fine SAND, with silt (SP-SM)	22
		+78.9 – +73.9	Stiff, gray sandy CLAY (CH)	15
		+73.9 – +53.9	Loose to medium dense, gray silty SAND (SM)	4 – 26
		+53.9 – +46.9	Very stiff to hard, gray sandy SILT (ML)	27 – 37

2.7 ENVIRONMENTAL SITE ASSESSMENT

2.7.1 Methodology

A contamination screening evaluation of the I-Drive Sand Lake Road intersection project area was conducted to identify potential contamination issues within the proposed project limits from properties or operations located within the vicinity of the project. For this report, the radius of the study area includes a circle of about 200-feet centered on the intersection of I-Drive and Sand Lake Road. The area was extended to a radius of 500-feet to include adjacent properties. This evaluation consisted of tasks that are described below. Initially, since this was a Level I desk-top review all data reviewed was obtained from either online data sources or the site visit and field observations, no regulatory agencies or water management districts were contacted. Sites were ranked based on past activities, the concept design of each of the corner's structural piers, and the potential to affect that construction.

2.7.1.1 Regulatory Review

An environmental database search was performed by EDR Lightbox. The resulting Environmental Data Report (referred to as the EDR report), dated April 28, 2022 and provided in **Appendix B**, included potential hazardous materials and petroleum contamination sites that were listed in the US Environmental Protection Agency (USEPA) and the Florida Department of Environmental Protection (FDEP) databases. The EDR report provides sites within 0.5 miles of the project center (intersection). The EDR database search utilized a geographic information system (GIS) integrated database that included the following federal and state regulated databases that included both federal and state regulated sites. This review filtered out sites based on the site's distance to the study segments. The following search distance buffers were used based on guidance provided in the FDOT PD&E Manual, Part 2, Chapter 20. The following buffer distance are recommended:

- 500-feet from the site's geo-location for petroleum, dry cleaners, and non-petroleum sites;
- 1,000-feet from the site's geo-location for non-landfill solid waste sites; and
- 0.5 miles from the geo-location for CERCLA, NPL, Superfund Sites, or Landfill Sites.

The agency list descriptions define the regulator databases reviewed for this report. The following databases provided support documentation for the evaluation process.

Federal Databases (USEPA)

1. National Priorities List (NPL) – The NPL is a subset of the Comprehensive Environmental Response, Compensation, and Liability Information System List (CERCLIS) and identifies over 1,200 sites for priority cleanup under the Superfund Program.

2. CERCLIS/Superfund Enterprise Management System (SEMS) – Tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list, formerly known as CERCLIS, was renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies, and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the NPL and the sites that are in the screening and assessment phase for possible inclusion on the NPL.

3. Records of Decisions (ROD) System – ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

4. Archived CERCLIS Sites (No Further Remedial Action Planned (NFRAP) List)/SEMS Archive. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the NPL unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that based on available information, the location is not judged to be a potential NPL site.

5. Emergency Response Notification System (ERNS) List – This database stores information on the notification of oil discharges and hazardous substance releases. It is a cooperative data-sharing effort among the USEPA, the US Department of Transportation, and the National Response Center.

6. Resource Conservation and Recovery Information System (RCRIS) Handlers with Corrective Action Activity (CORRACTS) – This database lists hazardous waste handlers that have undergone Resource Conservation and Recovery Act (RCRA) corrective action activity.

7. Hazardous Waste Data Management System (HWDMS) – This historical database was replaced by RCRIS. The HWDMS list formerly tracked sites involved in the generation, transportation, treatment, storage, and/or disposal of hazardous waste.

8. RCRA-Large Quantity Generator (LQG), Small Quantity Generator (SQG), Conditionally Exempt SQG and Transporters (Non-TSD) – This list is a subset of the USEPA RCRIS list and identifies facilities that generate and transport hazardous wastes.

9. RCRA Treatment, Storage, and/or Disposal Sites (TSD) – This list is a subset of the USEPA RCRA Info System and identifies facilities that treat, store, and/or dispose of hazardous waste.

10. RCRA Administrative Action Tracking System (RAATS) – This list is a historical RCRA enforcement database that tracked facilities found to be major violators under RCRA. Data entry in this database was discontinued in 1995.

11. Tribal Lust List (TRIBLLUST) – This database lists active and closed storage tank facilities on Native American lands. The database is created by extracting records from the storage tank databases that have indicated current or past releases.

12. Tribal Tanks List (TRIBLTANKS) – This database lists active and closed storage tanks on Native American lands.

13. Facility Registry System (FRS) – The FRS is a centrally-managed database of sites regulated by Program Offices of the USEPA, such as air, water, and waste. The FRS has replaced the Facility Index System List (FINDS).

14. Toxic Release Inventory System (TRIS) List – This list identifies facilities that are required to submit annual reports relative to the estimated routine and accidental release of toxic chemicals to the environment, as stipulated under current federal laws.

15. Biennial Reporting System – This system collects data on the generation and management of hazardous waste from large quantity generators and treatment, storage, and disposal facilities. The data are reported on even years by the facilities to state environmental agencies that provide the information to regional and national USEPA offices.

16. PCB Activity Data System (PADS) – This list contains sites that have notified the USEPA of their activities relative to the generation, transportation, permitted storage, and permitted disposal of polychlorinated biphenyls (PCBs) under the Toxic Substances Control Act.

17. Permit Compliance System (PCS) – This is a data system for the National Pollutant Discharge Elimination System (NPDES) permit holding facilities.

18. Brownfields Management System (USBRWNFLDS) – This database stores information reported by USEPA brownfields grant recipients on brownfields properties assessed or clean up with grant funding.

19. Enforcement and Compliance History Online (ECHO) – This online database helps determine whether compliance inspections have been conducted by USEPA or state/local governments, if violations were deterred or if enforcement actions were taken, and if penalties were assessed in response to environmental law violations.

    a. Clean Water Act Significant Non-Compliance – The NPDES program uses the term Significant Non-Compliance (SNC). Examples of events that could result in an SNC code include unauthorized charges are:

        - failure of a Publicly Owned Treatment Works to enforce its approved pretreatment program.
        - failure to meet a construction deadline; failure to file a discharge monitoring report;
        - filing a discharge monitoring report more than 30 days late; or violating any judicial or administrative order.

Removal of the SNC designation occurs once the facility's discharge monitoring report reports show a consistent pattern of compliance with permit limits, or if USEPA or a state agency issues a formal enforcement order to address the violations that resulted in the SNC and the facility has returned to compliance.

b. RCRA SNC is a term used to describe a site determined to cause actual exposure or has a substantial likelihood of causing exposure to a hazardous waste or constitute; is a chronic or recalcitrant violator, or deviates substantially from the terms of a permit, order or agreement, or RCRA statutory or regulatory requirements. Under the RCRA program, the SNC is removed when the site is in full physical compliance with statutory and/or regulatory requirements.

<u>State Databases (FDEP)</u>

1. Underground/Aboveground Storage Tanks (TANKS) – This database contains sites with registered aboveground storage tanks (AST) or UST containing regulated petroleum products.

2. Leaking Underground Storage Tanks List (LUST) – This list identifies facilities and/or locations that have notified the FDEP of a possible release of contaminants from storage systems.

3. Solid Waste Facilities List (SLDWST) – This list identifies locations that have been permitted to conduct solid waste handling activities. Activities may include landfills, transfer stations, and sites handling biohazardous wastes.

4. State Sites List (STCERC) – This historical list contains sites that the Florida Department of Environmental Protection (FDEP) compiled to track suspect contamination sites. The FDEP updated this list, previously known as the Florida SITES list, in 1989.

5. State Funded Action Sites (STNPL) – This list contains facilities and/or locations that have been identified by the FDEP as having known environmental contamination and are currently being addressed through State funded cleanup action.

6. State Hazardous Waste Notifiers (STRCRA) – This list identifies facilities that generate, transport, treat, store, and dispose of hazardous waste.

7. State Institutional and/or Engineering Controls (INSTENG) – This list contains sites that have had institutional and/or engineering controls implemented to regulate exposure to environmental hazards.

8. State Designated Brownfields (BRWNFLDS) – This database contains a listing of State-designated brownfield areas. Brownfield areas are typically abandoned, idled, or underused industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination.

9. State Voluntary Cleanup (VOLCLNUP) List – Derived from the FDEP Brownfields Site Rehabilitation Agreement database, the VOLCLNUP database identifies sites that have signed an agreement to voluntarily clean up a brownfield site per the FDEP's requirements.

10. Florida Dry Cleaners List (DRY) – This list is comprised of data from the FDEP Storage Tank and Contamination Monitoring database and the Dry-Cleaning Solvent Cleanup Program Priority Ranking List. This list contains dry-cleaning sites (and suspected historical dry-cleaning sites) that have registered with the FDEP for the Dry-Cleaning Solvent Cleanup Program.

11. Oculus Data Management System – FDEP stores documents using the Electronic Document Management System. Documents available included sites registered with storage tanks, classified as handling hazardous waste on sites with past and current waste cleanup assessments, spill incident reports reporting by the Bureau of Emergency Response (BER), and more.

In addition to the database searches described above, and a desktop review, a site visit, and field observations were also performed for the site and adjacent properties on April 29, 2022. The site reconnaissance consisted of walking the properties within the 200-foot radius, and also those within the extended 500-foot radius (where accessible and within the public ROW) to locate potential contamination involvement. The sites were evaluated for possible contamination risks to roadway ROW and potential construction activities. They were also researched for evidence of documented contamination, apparent changes to the ground surface and landscaping, ground staining, standing liquids, odors, sink holes, ventilation pipes, drums and other storage containers, and other indications of current or previous petroleum and hazardous materials use and/or storage.

2.7.1.2 Review of Other Information

2.7.1.2.1 Interviews

Onsite interviews and telephone calls were not conducted during this study. Further coordination with properties may be needed to obtain access to private properties that potentially present a risk to the planned construction project of the overpass, which at present to not appear to exist.

2.7.1.2.2 Aerial Photographs

Due to the urbanized land uses, topographic mapping was not reviewed. However available historical aerials and GOOGLE EARTH aerials were reviewed. Sanborn Maps were unavailable for the study area at this time, confirmed by EDR staff and further research. **Appendix B** contains the historical aerial photos.

2.7.1.2.3 Drainage

At this time there are no future proposed drainage improvements for the pedestrian overpass walkway project alignment or any changes to the existing drainage features of the project area.

2.7.1.3 Risk Rankings

Of the properties and areas assessed within the project area, those which did not present any indication of past or current environmental contamination potential to the project were eliminated from a more intense review which includes the following ranking system.

A hazardous materials ranking system that expresses the degree of concern for potential contamination problems was used to rank the identified sites. The rankings are LOW, MEDIUM, and HIGH and are generally defined as follows.

LOW: A review of available information indicates that past or current activities on the property have an ongoing contamination issue; the site has a hazardous waste generator identification (ID) number, or the site stores, handles, or manufactures hazardous materials. However, based on the review of conceptual or design plans and/or findings from this Level I evaluation, it is not likely that there would be any contamination impacts to the project.

MEDIUM: After a review of conceptual or design plans and findings from this Level I screening evaluation, a potential contamination impact to the project has been identified. If there was insufficient information (such as regulatory records or site historical documents) to decide as to the potential for contamination impact, and there was reasonable suspicion that contamination may exist, the property was ranked at least as MEDIUM. Properties used historically as gasoline stations and which have not been evaluated or assessed by regulatory agencies, sites with abandoned in place underground petroleum storage tanks, or currently operating gasoline stations received this ranking.

HIGH: After a review of all available information and conceptual or design plans, there is appropriate analytical data that shows contamination would substantially impact construction activities, have implications to ROW acquisition, or have other potential transfer of contamination-related liability to the FDOT.

2.7.1.4 Definitions

Hazardous Material – A general term that includes all materials and substances which are not designated or defined as hazardous by federal or state law or by the rules or regulations of the state or any federal agency: Title 40 of the Code of Federal Regulations (CFR) Part 261.30 (40 CFR § 261.30), 40 CFR § 261.4, 40 CFR §§ 261.21- 261.24, Section 376.301, Florida Statutes (F.S.), and Section 403.74, F.S.

Solid Waste – The Resource Conservation and Recovery Act (RCRA) defines solid waste as: “any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contaminated gaseous material resulting from industrial, commercial or mining and agricultural operations, and from community activities …[excluding]…solid or dissolved materials in domestic sewage, or solid or dissolved materials in irrigation return flows, or industrial discharges which are point sources subject to permits under Section 402 of the Federal Water Pollution Control Act."

Potential Contaminated Site – A site, within or adjacent to the project limits, suspected to have existing contamination based on past or current activities on or near the site as evidenced by records review, historical land use evaluation, or field reconnaissance.

Contamination – The presence of any contaminant in surface, groundwater, soil, sediment, or upon the land, in concentrations that exceed the applicable Cleanup Target Levels (CTLs) specified in Chapter 62-777, F.A.C., or water quality standards in Chapter 62-302 or 62-520, F.A.C., or in concentrations that may result in contaminated sediment.

2.7.2 Findings

For sites ranked LOW for potential contamination, no further action is required at this time. These sites/facilities have the potential to impact the study area but based on select variables have been determined to have low risk to the project at this time. Variables that may change the risk ranking include a facility's non-compliance to environmental regulations, new discharges to the soil or groundwater, and modifications to current permits. Should any of these variables change additional assessment of the facilities would be conducted.

If sites had been found with a risk ranking of MEDIUM or HIGH, Level II field screening would have been recommended to be conducted during future project implementation phases since those sites would have been determined to have potential contaminants, which may impact the project. Any required contamination assessments would then have been conducted to the degree necessary to determine levels of contamination and evaluate clean-up options and the associated costs, if necessary. Subsequent sampling/analysis would occur to avoid and/or minimize the acquisition of contaminated ROW areas and potential impacts on construction activities during excavation in the areas, as appropriate.

Should a Level II Contamination Assessment be needed in the future due to changed conditions, it would include field screening and the collection of soil and groundwater samples for laboratory analysis, where applicable. If the results of the testing indicate no evidence of soil or groundwater contamination, the rating of the site would likely be revised downward. Typically, the rating of field-tested sites with no evidence of contamination would be revised to LOW.

2.7.3 Conclusion

Of the six (6) sites investigated, the following risk rankings have been applied: all 6 are LOW ranking sites. None of the sites are Medium or High-ranking sites. Specific details for each site are outlined in the full report included in **Appendix B**. This screening evaluation is based on current conceptual plans of implementing **International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study**. Once final design plans are defined and intrusive work activity areas are determined, these sites may need to be reevaluated with an updated regulatory review search and site reconnaissance.

2.8 LAND USE AND DEVELOPMENTS

2.8.1 Existing Land Use

The I-Drive District and the extended area around Sand Lake Road is a diverse mix of land uses including Commercial and Services, Vacant, Institutional, and some Residential. However, the immediate project site and area extending approximately 500-feet is predominately public roadway and Commercial & Services use.

The area was predominately natural and farmland (mostly citrus) at least until 1954, and it appears that significant construction of the area occurred just before 1969. By 1980 the intersection and immediately surrounding area had already taken on a commercial use basis. Other than individual business type changes, the area has been developed as it currently exists since approximately 1995.

On the northeast corner is a Perkins Restaurant with off-street parking. On the northwest corner is a McDonalds Restaurant with a drive-through service window and off-street parking. On the southeast corner is a Walgreens Store with a drive-through prescription window and off-street parking.

The southwest corner is a strip mall with various retailers and a small parking lot. There is also a 3-sided billboard on the parcel that is located on a deeded parcel that includes air rights over the strip mall.

2.8.2 Future Land Use

The Future Land Use of the entire study area is Commercial as designated by the Orange County Comprehensive Development Plan. Commercial uses include neighborhood and commercial scale commercial and office development that serves neighborhood, community, or village needs. Examples include neighborhood centers, community centers, and village commercial.

Existing Zoning at the intersection is a mix of C-1, C-2, and Planned Development with restrictions. There is one I-2/I-3 parcel east of the intersection on the corner of Canada Avenue.

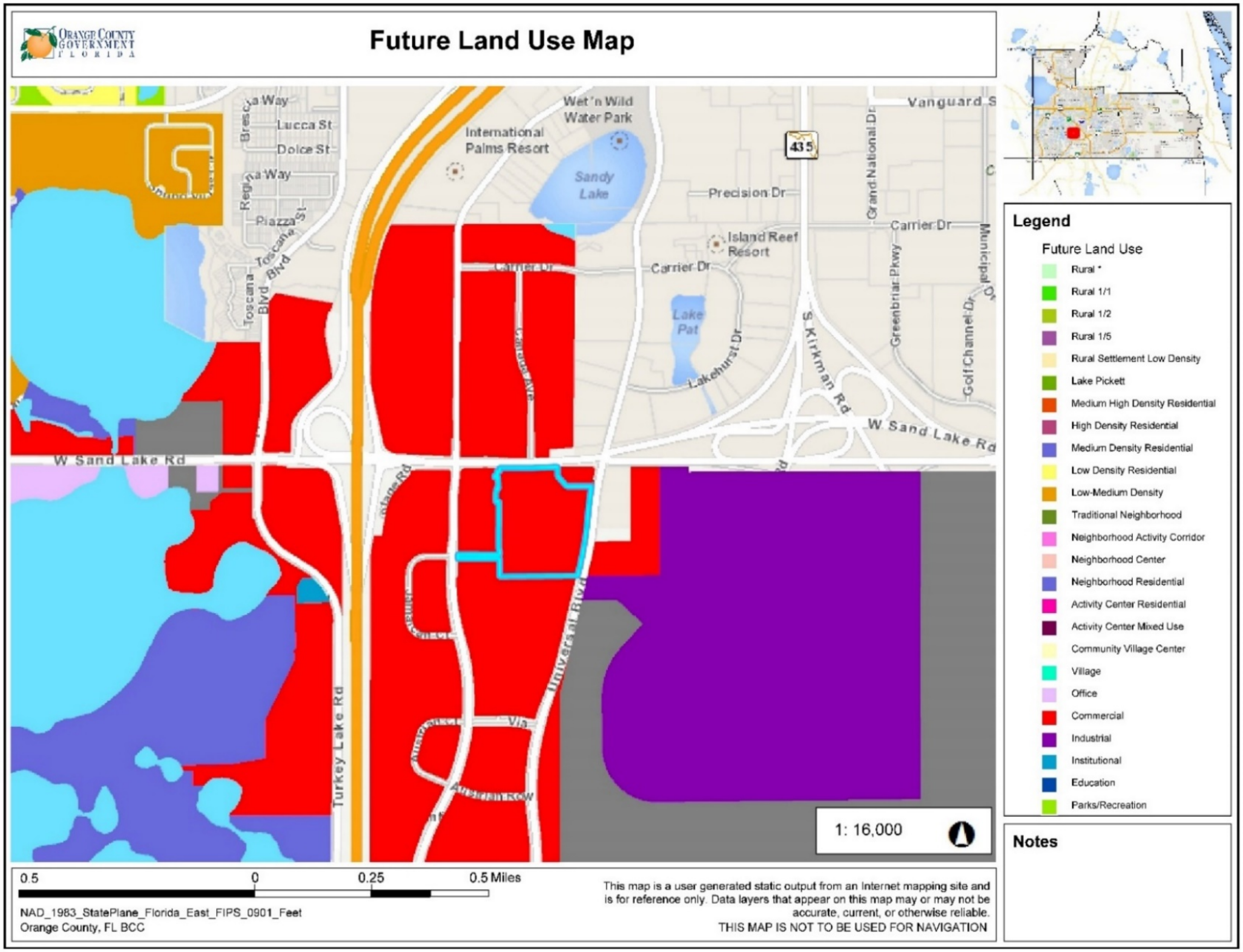


Figure 2-2: Future Land Use Map

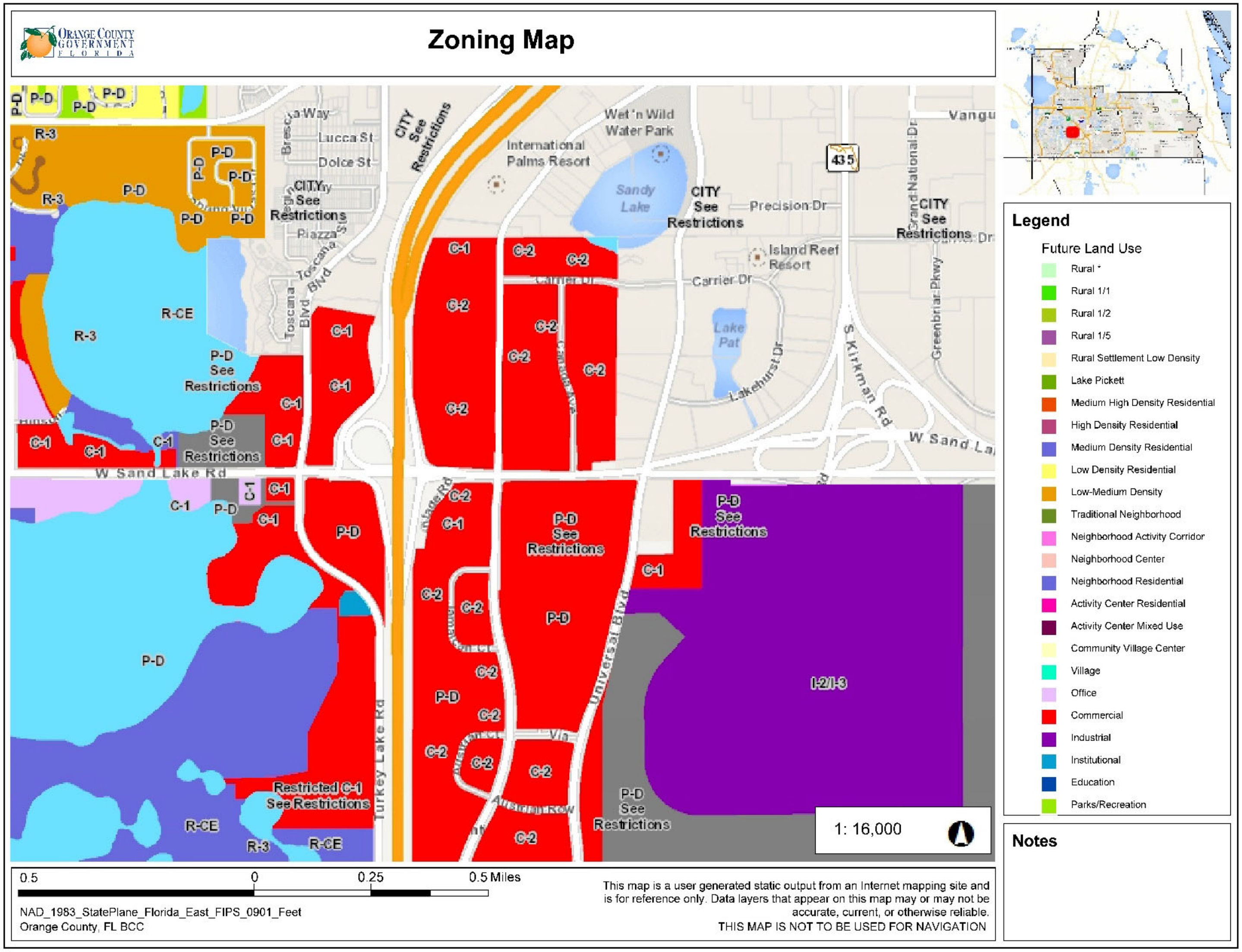


Figure 2-3: Zoning Map

2.8.3 Development Plans

The properties on the southwest and northwest corners are currently zoned as straight C-2 Zoning and therefore have no Development Plans on file. The other corners have approved PDs that are included in **Appendix J** and described as follows.

The northeast corner has an approved PD called Skyplex Orlando PD and includes the Perkins property plus additional properties to the northeast for a total of 12.96 acres. The Land Use Plan indicates the Tourist Commercial as the development type. The specific development program is approved for 39,823 square feet of Restaurant, 384,511 square feet of Entertainment Retail, 79,441 square feet of General Retail, and 450 Hotel Rooms.

The southeast corner has an approved PD called Wyndham Orlando Resorts and Shops PD. It includes the Walgreens parcel plus additional land for a total of 41.84 acres owned by I SHOPS, LLC. The remainder of the site currently serves as the Wyndham Resort. The approved development program is 138,000 square feet of Commercial/Retail, 1,613 Hotel Rooms, and 110,310 square feet of Convention Center.

2.8.4 Streetscape Requirements

Streetscape shall comply with the Orange County Code and the I-Drive Overly District Requirements. Sand Lake Road is owned by the Florida Department of Transportation and will have guidelines that govern traffic and pedestrian safety.

2.9 CULTURAL FEATURES

2.9.1 Schools

There are no schools located within the limits of this project area surrounding the urbanized intersection.

2.9.2 Parks and Community Centers

There are no Parks or Community Centers located within the limits of this project area surrounding the urbanized intersection. The Wyndham Resort is located on the southeast corner of the intersection and does include a private convention center associated with the hotel.

2.9.3 Hospitals

There are no hospitals located within the limits of this project area surrounding the urbanized intersection.

2.9.4 Religious Institutions

There are no religious institutions located within the limits of this project area surrounding the urbanized intersection.

2.9.5 Fire/Police Protection

The area is primarily served by Orange County Fire and Rescue and the Orange County Sheriff's Office. The City of Orlando has jurisdiction in the area just to the northeast of the Study Area and may respond to incidents based on first-response agreements between the two agencies.

The nearest Fire Station is Number 52 located at 4765 Sand Lake Road approximately 1.71 miles from the Study Area. The next closest facility is Fire Station 31 at 6116 Apopka Vineland Road which is approximately 3.1 miles driving miles away from the project corridor.

There are no fire facilities located within the project study limits.

Law enforcement is provided by the Orange County Sherriff's Sector IV Command located at 2400 West 33rd Street, Orlando, FL 32839. This is located approximately 6 miles from the Study Area. There are no law enforcement facilities located within the study limits.

2.9.6 Parking

There are several private parking garages and lots near the study area and some private parking lots within the study area. Private parking within the study area exists at the following businesses:

- McDonald's on the northwest corner of the intersection.
- Perkins on the northeast corner of the intersection.
- Walgreens on the southeast corner of the intersection.
- International Square Shopping Center on the southwest corner of the intersection.
- Checkers, immediately adjacent to International Square to the west.

2.10 ARCHAEOLOGICAL AND HISTORIC FEATURES

The Florida Master Site File as searched for the Study Area and not cultural resources are recorded at the intersection of Sand Lake Road & I-Drive. The Negative Letter from the Division of Historical Resources is included in **Appendix E**.

2.11 HYDRAULIC AND NATURAL FEATURES

The project area is within Orange County, Florida (Orange County), and is underlain by the Upper and Lower Floridan aquifer. The Upper Floridan Aquifer is generally located from the surface to a depth of approximately 350 to 900-feet where it interfaces with the Lower Floridan Aquifer. This carbonate-rock aquifer consists of layers of limestone and dolomite. The Floridan aquifer spans most of Florida, Alabama, Georgia, and some of South Carolina. The transmissivity is 25,000 to greater than 1,000,000-feet squared per day in areas where the upper confining material of the aquifer is less than 100-feet thick. Groundwater flow in this portion of Orange County is generally south, southeast, or southwest of the Floridan Aquifer. According to the U.S. Department of the Interior Topographic Quadrangle map for the project, and the EDR Report indicate the land is relatively flat with the project site (intersection) elevation at approximately 129-feet (NGVD) above mean sea level (MSL). The topology gently slopes to approximately 95-feet MSL to the east, 123-feet MSL to the south, and initially rises to approximately 134-feet MSL west followed by a gentle drop eventually to approximately 100-feet MSL. Elevation to the north remains generally flat.

Urban land (50) – Urban land is a miscellaneous area covered by urban facilities including shopping centers, parking lots, industrial buildings, houses, streets, sidewalks, and airports. The natural soil cannot be observed and the depth to seasonal high-water table is dependent on the functionality of established drainage systems. There are no surface water features (wetlands, lakes, canals) or wells within the immediate project area. Surface water run-off drains to established engineered stormwater curbs and drainage systems, or percolates through grassy and landscaped areas.

2.11.1 Wetlands and Surface Waters

As the site is fully developed and an urban setting, there are no wetlands or surface waters in the study corridor.

2.11.2 Conservation Areas

As the site is fully developed and in an urban setting, there are no conservation areas in the study corridor.

2.11.3 Mitigation Sites

As the site is fully developed and in an urban setting, there are no mitigation sites in the study corridor.

2.11.4 Threatened and Endangered Species

As the site is fully developed and in an urban setting, there are no threatened and endangered species in the study corridor.

2.11.5 Protected Wildlife Species

As the site is fully developed and in an urban setting, there are no protected wildlife species in the study corridor.

2.11.6 Protected Plant Species

As the site is fully developed and in an urban setting, there are no protected plant species in the study corridor.

SECTION 3 EXISTING TRAFFIC ANALYSIS

3.1 TRAFFIC DATA SOURCES

Existing Turning Movements

Existing traffic data for the intersection of I-Drive and Sand Lake Road was collected using StreetLight Insight software. StreetLight Insight is an online software that allows a user to select a geographic zone and analyze traffic data over a period of time. StreetLight uses Big Data based on "archival location records that are created by mobile devices such as smartphones, connected cars, wearables (fit bits, smartwatches, etc.), and trucks with commercial fleet management systems. These include navigation-GPS records and Location-Based Services records." Using validation based on traditional turning movement counts and machine-learning algorithms, StreetLight InSight is a recognized method for deriving valid estimates for intersection turning movement counts, as well as for identifying intersection Peak Hour and Peak Hour Factors.

Existing Pedestrian Counts On Corners – Arrivals and Departures

For this report, existing pedestrian data at the intersection of I-Drive and Sand Lake Road was collected using video cameras set up for a 24-hr. period on Saturday, September 3, 2022 (Labor Day Weekend). Once the video was collected for each corner, the pedestrian movements were tabulated as arriving/departing and to/from which direction. The data was classified as pedestrians, bicycles, scooters, and pedicabs in 15-min. increments.

3.2 TRAFFIC DATA COLLECTION

Existing Turning Movements

For this report, we performed a StreetLight InSight Turning Movement Count analysis during AM and PM peak hours for all of 2021 at the intersection of I-Drive and Sand Lake Road. The turning movement count data analysis included:

- All data for Year 2021 (January 1 through December 31)
- For all days, weekdays, and weekend days
- During the AM peak hours of 6 AM – 10 AM
- During the PM peak hours of 3 PM – 7 PM

Year 2021 AM and PM peak hour turning volumes at the intersection of I-Drive and Sand Lake Road are summarized in the table and exhibits on the following pages.

Existing Pedestrian Counts On Corners – Arrivals and Departures

Also note that the AM and PM peak hours for vehicle turning movement counts and pedestrian traffic do not necessarily occur at the same time, especially for a weekend holiday. The pedestrian data analysis resulted in:

- The AM peak hour of 11 AM – 12 Noon
- The PM peak hour of 9:15 PM – 10:15 PM

The pedestrian volumes were significantly higher than the other classification; therefore, only the pedestrian data are summarized in the tables and exhibits on the following pages.

3.3 SEGMENT TRAFFIC VOLUME LEVELS-OF-SERVICE

Segments on I-Drive and Sand Lake Road were analyzed for level-of-service (LOS) using peak traffic volumes collected using StreetLight Insight software for turning movement counts. The segment volumes were then used with the FDOT's Generalized Service Volume Tables found in the FDOT's 2020 Quality/Level of Service Handbook (Q/LOS Handbook). The tables are the primary analysis tools that provide LOS threshold volumes that can be used at a planning level.

The FDOT's Generalized Service Volume Tables are categorized into three types of traffic volume data:

- Annual Average Daily Service Volume Tables
- Peak Hour Two-Way Service Volume
- Peak Hour Directional Service Volume

Orange County traditionally prefers the LOS based on the Peak Hour Directional Service Volumes; however, this analysis also includes the LOS based on the Peak Hour Two-Way Service Volumes for comparison.

The FDOT's Generalized Service Volume Tables further group different area types under each of the data categories:

- Urbanized areas
- Areas transitioning into urbanized/urban areas, or cities with a population of more than 5,000 not in urbanized areas
- Rural undeveloped areas, or cities and developed areas with a population of less than 5,000

According to the Q/LOS Handbook, "Core urbanized and urbanized areas are defined as an approved boundary, which encompasses the entire Census Urbanized Area, as well as the surrounding geographic area likely to become urbanized within the next 20 years… Core urbanized area types are distinguished by whether the area's population is more or less than 1 million." Currently, Orlando is one of several Florida central cities referred to as "core urbanized." The minimum population for an urbanized area has been set at 50,000. Based on these standards, the intersection of I-Drive and Sand Lake Road would be considered to be in an urbanized area for the Generalized Service Volume Tables.

The FDOT's 2020 Generalized Service Volume Tables further fine-tune volumes and thresholds using factors that cover criteria such as State versus Non-States roads, traffic signal density, speed limits, number of lanes, median type (divided versus undivided), and exclusive left and/or right-turn lanes to name a few.

For this report, we performed a segment LOS analysis during the weekday and weekend AM and PM peak hours for all of 2021 at the four approaches of I-Drive and Sand Lake Road. Using the existing segment features with the FDOT's 2020 Generalized Service Volume Tables, including the adjustments, the LOS thresholds for I-Drive and Sand Lake Road are shown below:

Peak Hour Directional

International Drive

- LOS B: N/A
- LOS C: 695
- LOS D: 1,550
- LOS E: 1,615

Sand Lake Road (SR 482)

LOS B: N/A
LOS C: 2,940
LOS D: 3,020

Peak Hour Two-Way

International Drive

- LOS B: N/A
- LOS C: 1,245
- LOS D: 2,775
- LOS E: 2,890

Sand Lake Road (SR 482)

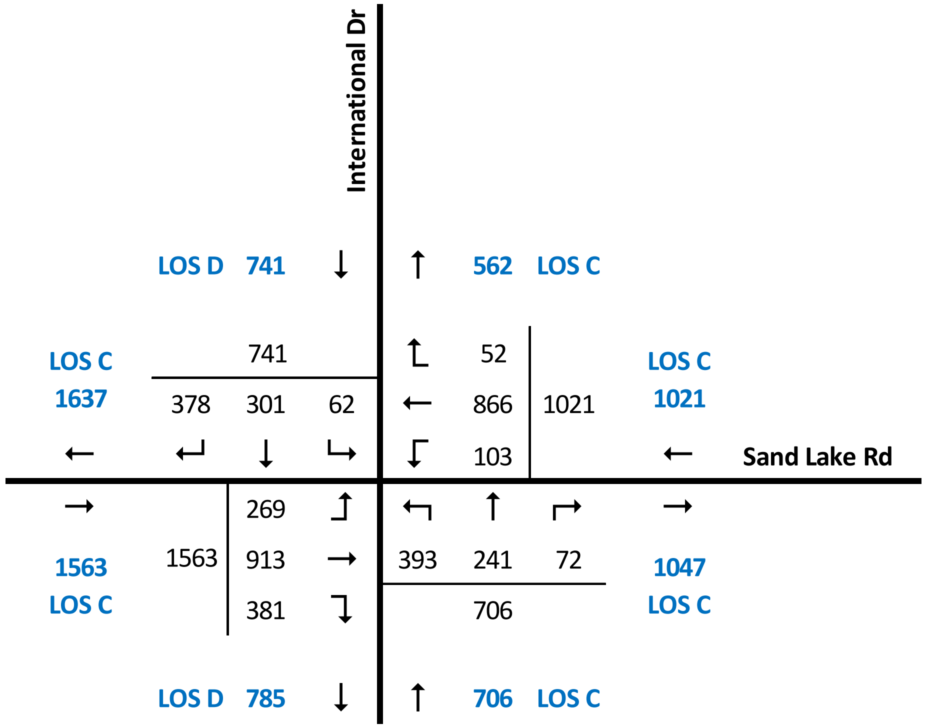
LOS B: N/A
LOS C: 2,940
LOS D: 3,020

Segment volumes that exceed these thresholds are designated as the next lower LOS.

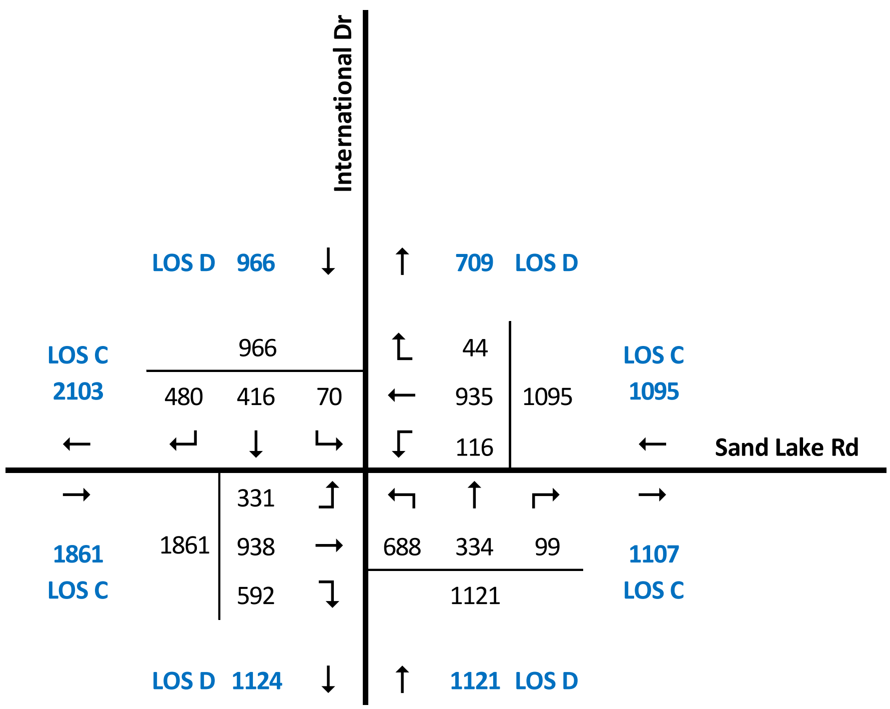
The resulting traffic volumes and LOS are summarized in the exhibits on the following pages.

Peak Hour Directional

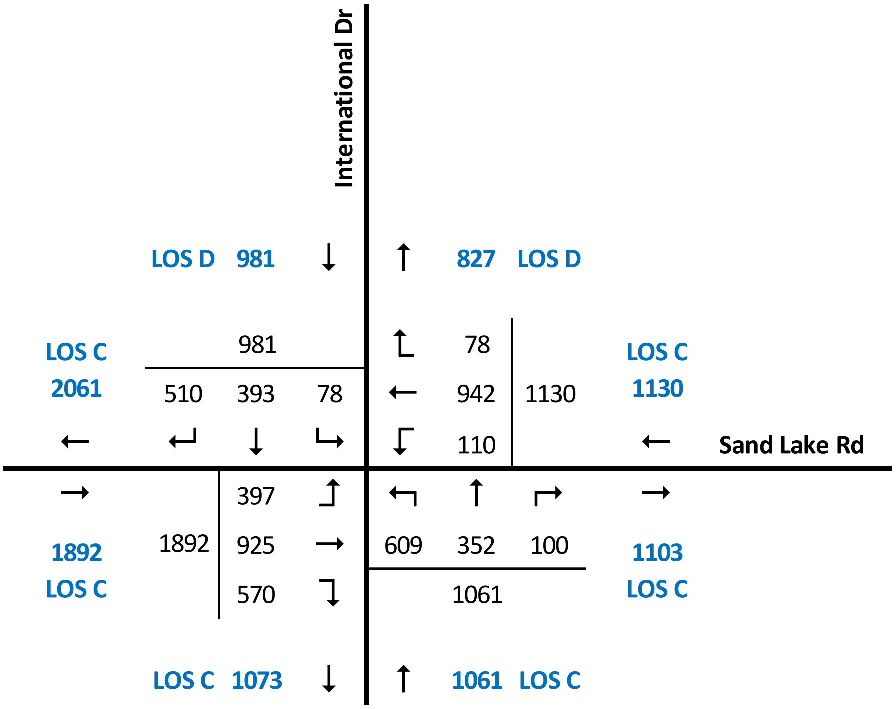
Weekday AM Peak Directional:



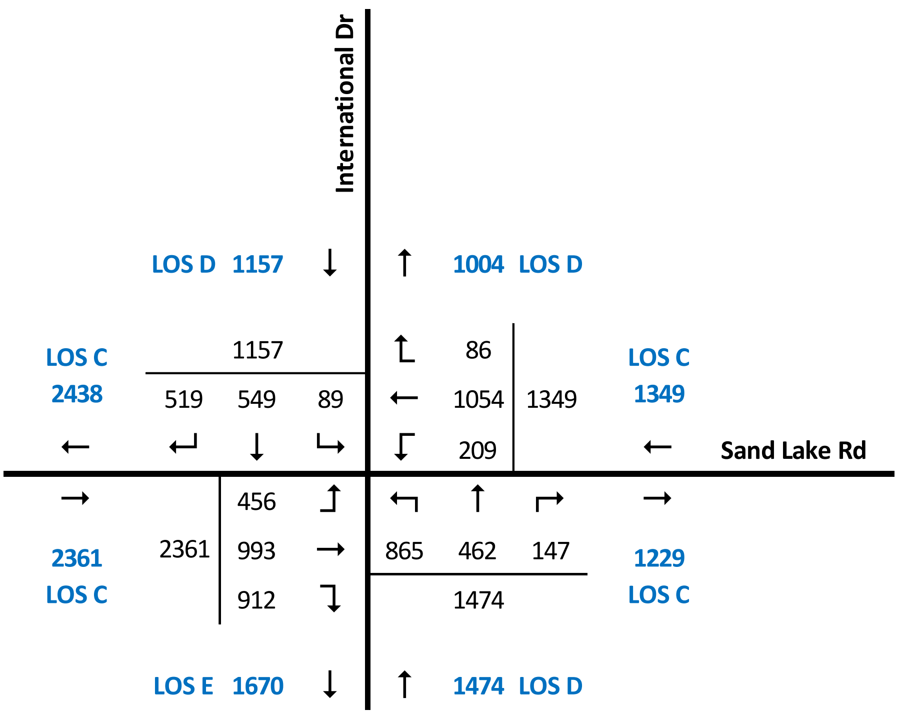
Weekday PM Peak Directional:



Weekend AM Peak Directional:

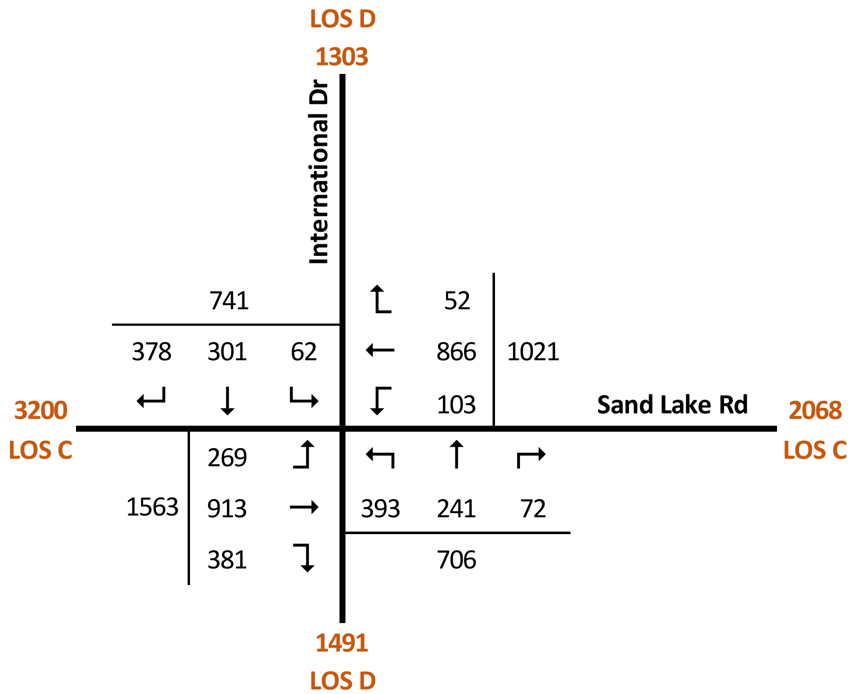


Weekend PM Peak Directional:

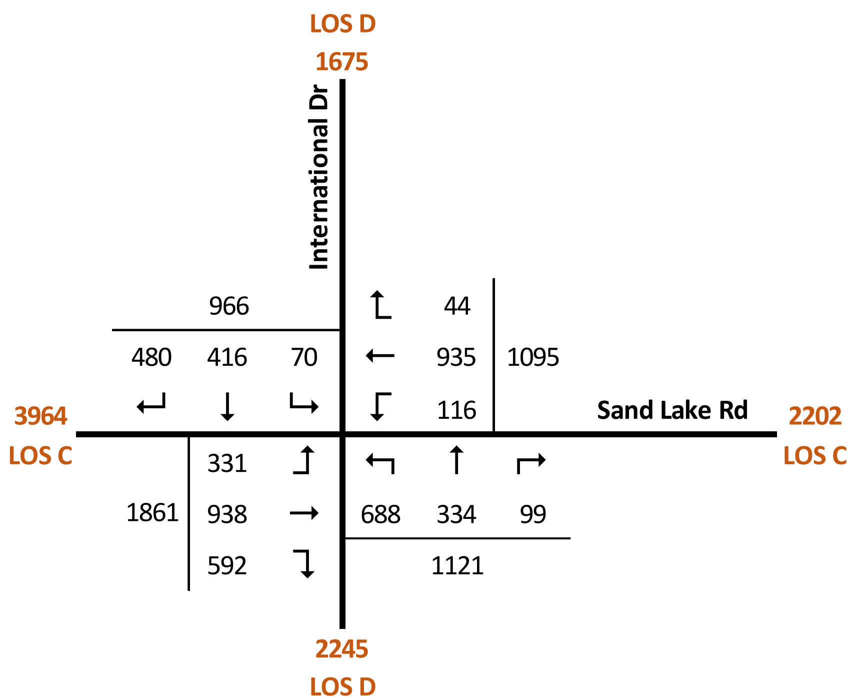


Peak Hour Two-Way

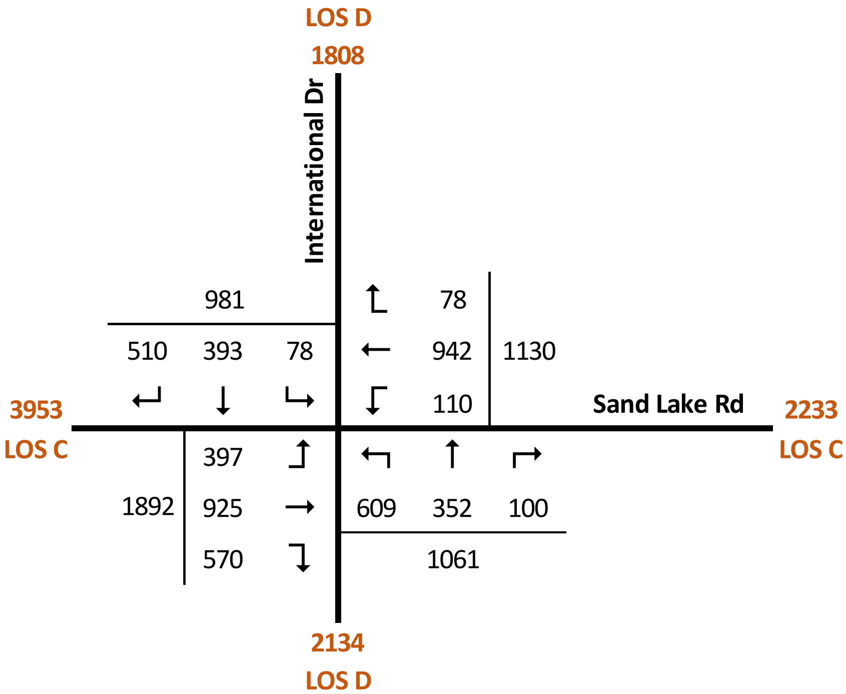
Weekday AM Peak Two-Way:



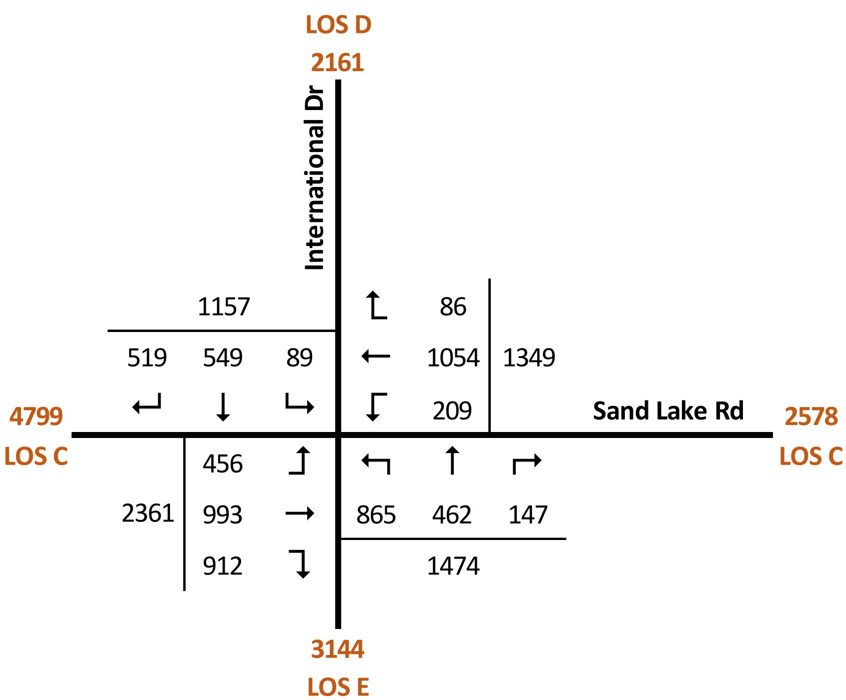
Weekday PM Peak Two-Way:



Weekend AM Peak Two-Way:



Weekend PM Peak Two-Way:



FDOT's Policy on Level of Service Targets for the State Highway System (SHS) identifies the automobile mode LOS targets for the SHS during peak travel hours are D in urbanized areas. Both approaches on Sand Lake Road operate at LOS C for the weekday and weekend AM and PM peak hours. Both approaches on I-Drive operate at LOS C or D except for the south approach on the weekend when it operates at LOS E.

3.4 INTERSECTION TRAFFIC VOLUMES

The previous section evaluated the highway segments for level of service. This section evaluates the intersections and includes vehicle, pedestrian and bicycle counts. This information is documented here and will be used later in the alternatives analysis section.

Existing Turning Movements

International Drive Pedestrian Bridge
International Drive at Sand Lake Road
Peak Hour Vehicle Turning Movement Counts - 2021

	International Dr - SB (Southbound)			Sand Lake Rd - WB (Westbound)			International Dr - NB (Northbound)			Sand Lake Rd - EB (Eastbound)			Total	Total %
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
Weekday, Peak AM														
11:00am	16	75	97	21	202	14	99	62	17	62	220	83	968	0.2401
11:15am	15	76	92	27	216	12	101	58	17	67	226	94	1001	0.2483
11:30am	16	76	97	27	220	14	98	60	18	70	233	99	1028	0.255
11:45am	15	74	92	28	228	12	95	61	20	70	234	105	1034	0.2565
Hourly Total	62	301	378	103	866	52	393	241	72	269	913	381	4031	1
Hourly Total %	0.0837	0.4062	0.5101	0.1009	0.8482	0.0509	0.5567	0.3414	0.102	0.1721	0.5841	0.2438		
PHF	0.97	0.99	0.97	0.92	0.95	0.93	0.97	0.97	0.9	0.96	0.98	0.91		
Weekday, Peak PM														
	International Dr - SB (Southbound)			Sand Lake Rd - WB (Westbound)			International Dr - NB (Northbound)			Sand Lake Rd - EB (Eastbound)			Total	Total %
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
5:00pm	18	97	118	28	260	11	162	80	25	76	233	142	1250	0.2479
5:15pm	17	100	120	27	243	10	184	88	23	81	235	141	1269	0.2516
5:30pm	16	108	126	29	220	10	178	80	25	87	235	143	1257	0.2493
5:45pm	19	111	116	32	212	13	164	86	26	87	235	166	1267	0.2512
Hourly Total	70	416	480	116	935	44	688	334	99	331	938	592	5043	1
Hourly Total %	0.0725	0.4306	0.4969	0.1059	0.8539	0.0402	0.6137	0.2979	0.0883	0.1779	0.504	0.3181		
PHF	0.92	0.94	0.95	0.91	0.9	0.85	0.93	0.95	0.95	0.95	1	0.89		
All Days, Peak AM														
	International Dr - SB (Southbound)			Sand Lake Rd - WB (Westbound)			International Dr - NB (Northbound)			Sand Lake Rd - EB (Eastbound)			Total	Total %
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
11:00am	17	83	111	23	215	15	119	71	20	74	221	97	1066	0.2427
11:15am	16	82	106	27	225	14	119	71	20	82	227	107	1096	0.2495
11:30am	17	84	104	28	227	16	116	70	21	78	238	114	1113	0.2534
11:45am	17	85	98	29	230	14	116	67	21	78	238	124	1117	0.2543
Hourly Total	67	334	419	107	897	59	470	279	82	312	924	442	4392	1
Hourly Total %	0.0817	0.4073	0.511	0.1007	0.8438	0.0555	0.5656	0.3357	0.0987	0.1859	0.5507	0.2634		
PHF	0.99	0.98	0.94	0.92	0.97	0.92	0.99	0.98	0.98	0.95	0.97	0.89		
All Days, Peak PM														
	International Dr - SB (Southbound)			Sand Lake Rd - WB (Westbound)			International Dr - NB (Northbound)			Sand Lake Rd - EB (Eastbound)			Total	Total %
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
6:15pm	19	116	117	40	238	14	177	94	33	95	226	198	1367	0.2483
6:30pm	19	120	121	41	243	14	179	91	29	91	232	193	1373	0.2494
6:45pm	18	118	123	45	241	17	186	91	29	99	226	202	1395	0.2534
7:00pm	18	119	118	43	236	18	184	90	31	94	228	192	1371	0.249
Hourly Total	74	473	479	169	958	63	726	366	122	379	912	785	5506	1
Hourly Total %	0.0721	0.461	0.4669	0.142	0.805	0.0529	0.598	0.3015	0.1005	0.1826	0.4393	0.3781		
PHF	0.97	0.99	0.97	0.94	0.99	0.88	0.98	0.97	0.92	0.96	0.98	0.97		
Weekend Day, Peak AM														
	International Dr - SB (Southbound)			Sand Lake Rd - WB (Westbound)			International Dr - NB (Northbound)			Sand Lake Rd - EB (Eastbound)			Total	Total %
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
11:00am	21	100	143	26	236	19	157	87	25	97	220	127	1258	0.2484
11:15am	16	93	135	26	246	20	151	98	25	111	222	137	1280	0.2528
11:30am	18	96	119	30	234	20	150	90	26	96	246	145	1270	0.2508
11:45am	23	104	113	28	226	19	151	77	24	93	237	161	1256	0.248
Hourly Total	78	393	510	110	942	78	609	352	100	397	925	570	5064	1
Hourly Total %	0.0795	0.4006	0.5199	0.0973	0.8336	0.069	0.574	0.3318	0.0943	0.2098	0.4889	0.3013		
PHF	0.85	0.94	0.89	0.92	0.96	0.97	0.97	0.9	0.96	0.89	0.94	0.89		
Weekend Day, Peak PM														
	International Dr - SB (Southbound)			Sand Lake Rd - WB (Westbound)			International Dr - NB (Northbound)			Sand Lake Rd - EB (Eastbound)			Total	Total %
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
6:00pm	21	141	132	54	262	24	221	117	33	111	234	217	1567	0.2471
6:15pm	22	136	126	51	266	22	211	116	41	116	249	236	1592	0.2511
6:30pm	24	140	132	47	267	19	210	118	36	113	263	230	1599	0.2522
6:45pm	22	132	129	57	259	21	223	111	37	116	247	229	1583	0.2496
Hourly Total	89	549	519	209	1054	86	865	462	147	456	993	912	6341	1
Hourly Total %	0.0769	0.4745	0.4486	0.1549	0.7813	0.0638	0.5868	0.3134	0.0997	0.1931	0.4206	0.3863		
PHF	0.93	0.97	0.98	0.92	0.99	0.9	0.97	0.98	0.9	0.98	0.94	0.97		

Source: StreetLight Insight, 2021 TMC Analysis. Run October 7, 2022.

Table 3-1: Peak Hour Vehicle Turning Movement Counts - 2021

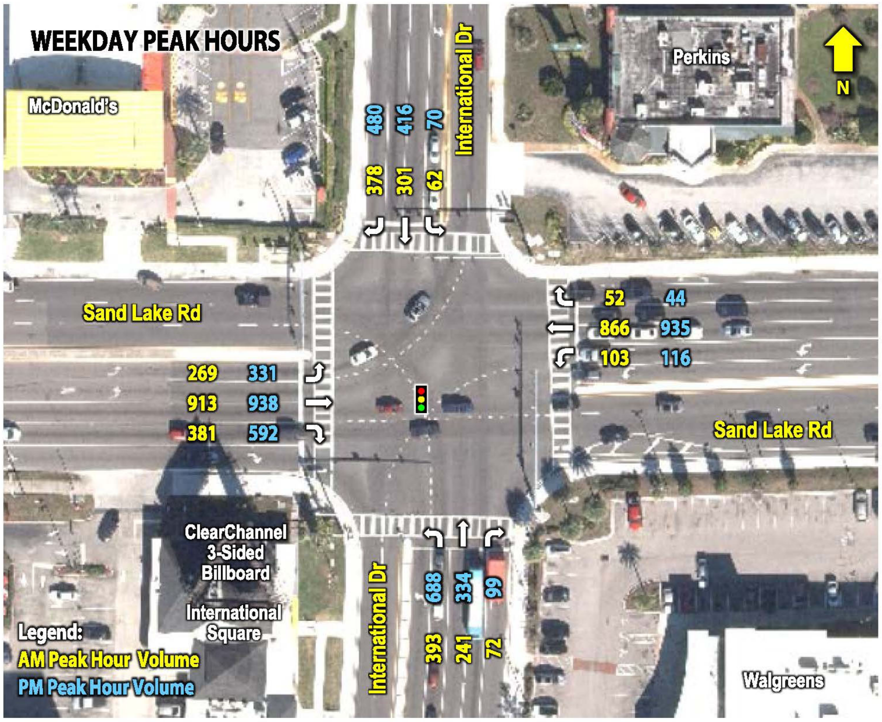


Figure 3-1: Weekday AM-PM Peak Hours

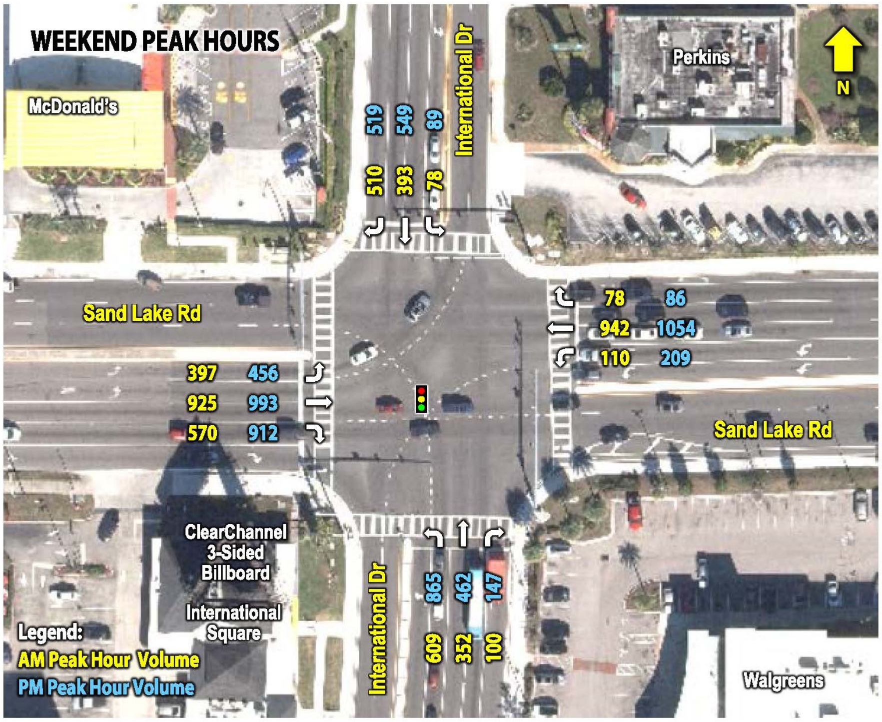


Figure 3-2: Weekend AM-PM Peak Hours

Existing Pedestrian Counts On Corners – Arrivals and Departures

International Drive Pedestrian Bridge
International Drive at Sand Lake Road
Pedestrians Arriving Corners

Date Time	Northwest (NW) Corner								Northeast (NE) Corner								Southeast (SE) Corner								Southwest (SW) Corner							
	From Northeast Corner (Peds)				From Southwest Corner (Peds)				From Northwest Corner (Peds)				From Southeast Corner (Peds)				From Northeast Corner (Peds)				From Southwest Corner (Peds)				From Northwest Corner (Peds)				From Southeast Cormer (Peds)			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
Weekend, AM Peak Hour																																
9/3/2022 11:00	2	7	0	9	6	3	2	11	0	9	0	9	0	6	6	12	0	5	1	6	0	2	9	11	2	0	0	2	7	1	0	8
9/3/2022 11:15	3	9	0	12	0	2	0	2	2	1	0	3	2	0	6	8	0	7	0	7	0	0	0	0	0	2	7	9	4	3	0	7
9/3/2022 11:30	0	4	2	6	5	3	0	8	5	2	0	7	0	2	0	2	7	4	0	11	0	3	9	12	0	3	3	6	0	1	7	8
9/3/2022 11:45	0	1	2	3	0	5	3	8	0	8	0	8	3	6	3	12	0	4	0	4	0	0	0	0	2	7	0	9	0	0	3	3
Totals	5	21	4	30	11	13	5	29	7	20	0	27	5	14	15	34	7	20	1	28	0	5	18	23	4	12	10	26	11	5	10	26
Weekend, PM Peak Hour																																
9/3/2022 21:15	0	4	0	4	3	5	4	12	0	0	6	6	4	8	3	15	4	8	6	18	3	3	3	9	5	1	6	12	7	8	4	19
9/3/2022 21:30	6	7	6	19	6	0	6	12	1	3	4	8	2	8	9	19	0	6	0	6	0	10	6	16	4	7	2	13	6	11	4	21
9/3/2022 21:45	1	10	4	15	5	3	0	8	5	5	0	10	0	12	6	18	4	5	3	12	0	12	2	14	6	3	6	15	5	8	4	17
9/3/2022 22:00	4	4	6	14	8	2	1	11	5	0	6	11	3	4	4	11	3	2	4	9	0	6	8	14	4	2	5	11	6	8	7	21
Totals	11	25	16	52	22	10	11	43	11	8	16	35	9	32	22	63	11	21	13	45	3	31	19	53	19	13	19	51	24	35	19	78

Table 3-2: Pedestrians Arriving Corners

International Drive Pedestrian Bridge
International Drive at Sand Lake Road
Pedestrians Departing Corners

Date Time	Northwest (NW) Corner								Northeast (NE) Corner								Southeast (SE) Corner								Southwest (SW) Corner							
	Eastbound Direction (Peds)				Southbound Direction (Peds)				Southbound Direction (Peds)				Westbound Direction (Peds)				Westbound Direction (Peds)				Northbound Direction (Peds)				Northbound Direction (Peds)				Eastbound Direction (Peds)			
	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total	Left	Thru	Right	Total
Weekend, AM Peak Hour																																
9/3/2022 11:00	0	9	4	13	0	2	0	2	0	4	2	6	2	7	3	12	0	1	0	1	7	8	2	17	2	10	10	22	1	1	0	2
9/3/2022 11:15	0	2	5	7	1	4	0	5	2	7	0	9	0	9	2	11	0	4	2	6	3	10	0	13	2	2	0	4	0	0	2	2
9/3/2022 11:30	1	7	3	11	0	3	0	3	0	9	3	12	2	1	4	7	1	1	0	2	7	2	0	9	0	8	9	17	0	3	0	3
9/3/2022 11:45	4	8	5	17	0	4	0	4	4	3	2	9	1	1	0	2	3	0	6	9	3	6	0	9	0	5	0	5	3	0	0	3
Totals	5	26	17	48	1	13	0	14	6	23	7	36	5	18	9	32	4	6	8	18	20	26	2	48	4	25	19	48	4	4	2	10
Weekend, PM Peak Hour																																
9/3/2022 21:15	0	6	5	11	0	6	0	6	1	8	1	10	10	3	0	13	0	7	7	14	12	8	4	24	0	8	3	11	4	6	0	10
9/3/2022 21:30	2	8	7	17	0	6	1	7	3	3	0	6	3	19	3	25	0	7	7	14	14	12	0	26	3	12	5	20	0	11	1	12
9/3/2022 21:45	0	7	6	13	3	9	0	12	5	5	3	13	7	12	0	19	1	4	6	11	13	10	6	29	0	8	5	13	0	9	0	9
9/3/2022 22:00	0	9	4	13	2	7	0	9	2	4	4	10	5	10	0	15	0	9	3	12	12	8	7	27	0	9	7	16	2	7	2	11
Totals	2	30	22	54	5	28	1	34	11	20	8	39	25	44	3	72	1	27	23	51	51	38	17	106	3	37	20	60	6	33	3	42

Table 3-3: Pedestrians Departing Corners

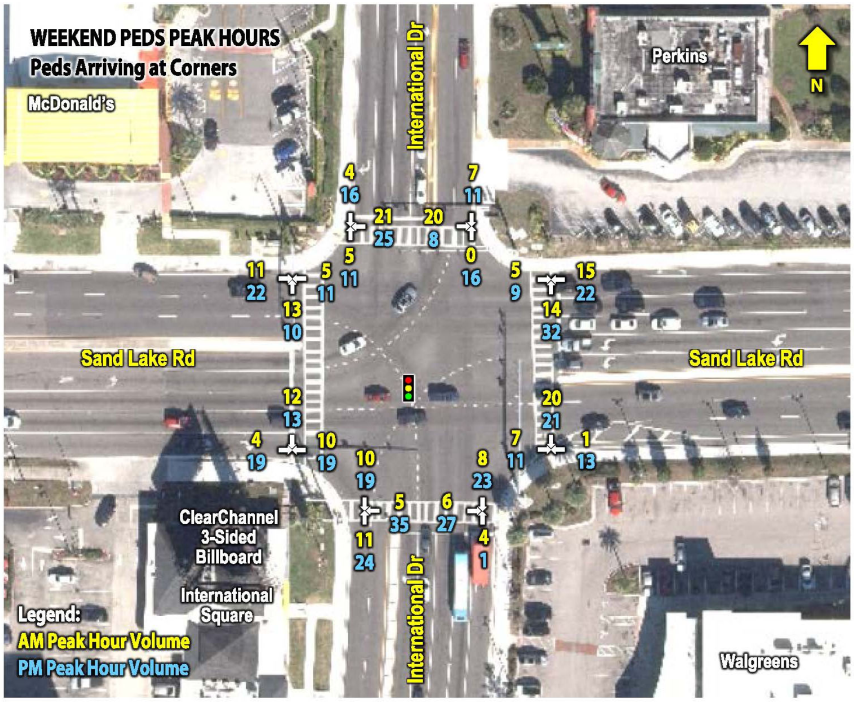


Figure 3-3: Weekend Pedestrian Peak Hours – Pedestrians Arriving at Corners

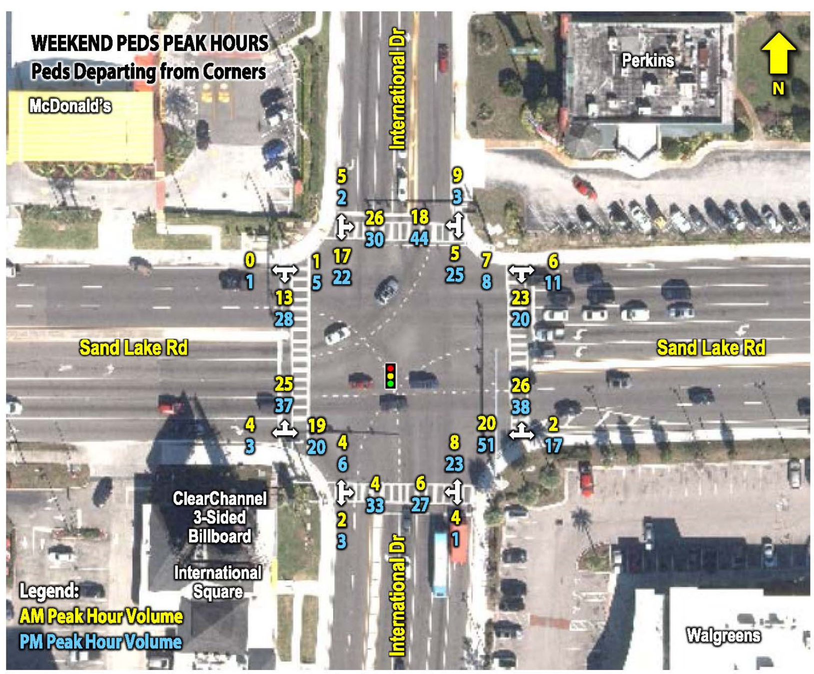


Figure 3-4: Weekend Pedestrian Peak Hours – Pedestrians Departing from Corners

3.5 INTERSECTION TRAFFIC OPERATIONS

Intersection traffic operations were based in part on video recordings used to collect pedestrian data at the intersection of I-Drive and Sand Lake Road on Saturday, September 3, 2022 (Labor Day Weekend).

As previously discussed, I-Drive is predominantly a 4-lane undivided roadway. Sand Lake Road is predominantly a 6-lane divided roadway. The northbound approach to the intersection provides 5 lanes - 2 left turn lanes, 2 through lanes, and 1 right turn lane. The southbound approach to the intersection provides 4 lanes - 1 left turn lane, 2 through lanes, and 1 right turn lane. The eastbound approach to the intersection provides 5 lanes - 2 left turn lanes, 2 through lanes, and 1 right turn lane. The westbound approach to the intersection provides 5 lanes - 2 left turn lanes, 2 through lanes, and 1 right turn lane.

Crosswalks, pedestrian signals, and pedestrian detectors are provided on all four approaches and corners. Pedestrians cross the entire roadway width since refuge islands are not provided. The longest crosswalk crosses Sand Lake Road on the west leg of the intersection. Based on a standard 3.5 ft/sec walk speed, the 118-foot distance could require 33.7 seconds to cross, while vehicles may be turning right across the path. Pedestrians that start to cross after the initial 7 seconds of solid walk indicator may not complete the crossing before the light turns green for the conflicting through movement.

AM Peak Hour Signal Operations

Based on the video, the light traffic volumes through the intersection on a weekend morning resulted in some inconsistencies from cycle to cycle. The intersection traffic signal may be using a dynamic signal operating plan that could change phasing plans as needed during the AM peak hour or it could be that some turn lanes were vacant and skipped during a cycle. Left turns were all in protected operation likely due to the number of turn lanes and/or size of the intersection and traffic volumes. All turn phases appeared to have a recall function for left turns if time was still available in the cycle.

For Sand Lake Road, sometimes the traffic signal exhibited simultaneous left turns followed by through movements. At other times, it appeared to be lead-lag phasing with left turns and through movements in one direction, followed by through movements for both directions, and ending in left turns for the lagging direction. I-Drive appeared to be operating as lead-lag phasing with left turns and through movements in one direction, followed by through movements for both directions, and ending in left turns for the lagging direction.

PM Peak Hour Signal Operations

Based on the video, Sand Lake Road appeared to be operating as lead-lag phasing with left turns and through movements in one direction, followed by through movements for both directions, and ending in left turns for the lagging direction. I-Drive appeared to operate with simultaneous left turns followed by through movements.

It should be noted that pedestrians were sometimes observed crossing I-Drive behind or in between queued vehicles to avoid the marked crosswalk and possible pedestrian signal crossing delay. Vehicles also made last-minute lane changes to access I-4. Double-length LYNX buses obstructed visibility for pedestrians attempting to cross. As previously discussed, LYNX has three transit routes that cross the I-Drive and Sand Lake Road intersection - Route 8, 38. and 42.

SECTION 4 ROADWAY DESIGN CRITERIA

4.1 ROADWAY DESIGN CRITERIA

Sources used to determine the design criteria for the I-Drive Pedestrian Bridge RCA include the FDOT Design Manual (FDM), the FDOT Design Standards for Design, Construction, Maintenance, and Utility Operations on the State Highway System, the FDOT Manual of Uniform Minimum Standards for Design, Construction, and Maintenance for Streets and Highways (Florida Greenbook), and the Manual of Uniform Traffic Control Devices (MUTCD). Specific design criteria used for the development of the proposed design are identified below:

Table 4-1: Design Criteria Used for the Development of the Proposed Design

Design Element	Design Standard	Sources
Roadway Classification	I-Drive – Urban Minor Arterial Sand Lake Road – Urban Major Collector	FDOT District 5 2010 Urban Area Boundary & Federal Functional Classification Orange County, FL
Design Vehicle	Passenger Vehicle (P)	Predominant vehicle usage for corridor. FDM 212.11.1
Design Speed **Maintenance of Traffic Regulatory Speed**	30 mph I- Drive 40 mph Sand Lake Road Use posted speed or a reduced speed. Should not be reduced more than 10 mph below posted speed.	Per Posted Speed Per Posted Speed FDOT Standard Plans for Road and Bridge Construction 2022 Index 102-600, Page 3 of 12
Clear Sight	From I-Drive: Right turn – 625-feet Left turn – protected From Sand Lake Rd: Right turn – 375 ft Left turn – signalized, protected	FDM 212.11.1, Exhibit 212-7 FDM 212.11.1, Exhibit 212-5
Sidewalk	4-inch-thick concrete sidewalk Min. 5-feet width 2% Max. Slope	2022 FDOT Standard Plans Index 522-001 FDM Table 222.1.1 2022 FDOT Standard Plans Index 522-001 ADA Public Rights-of-Way Proposed Guidelines (2011) R302.6

Design Element	Design Standard	Sources
Curb Ramps & Curb and Gutter	Curb ramp Types A, C, F and G Curb and gutter Types E and F	2022 FDOT Standard Plans Index 522-002 2022 FDOT Standard Plans Index 520-001
Curb Returns and Curb Return Profiles	50-ft radii Minimum 0.3% longitudinal slope	UCF / Alafaya Pedestrian Safety Study 2022 FDM Table 212.12.3 2022 FDM Section 210.10.1.1
Temporary Traffic Control	Varies based on construction location	2022 FDOT Standard Plans Index 102 Series
Signalization	Mast arm design Mast arm clear zone 4-ft from face of curb Signal head locations / Timings	2022 FDM 232 and 2022 FDM 261 Structures Manual (SM), Volume 3 2022 FDOT Standard Plans Index 649-030 2022 FDOT Standard Plans Index 649-031 2022 FDM Table 215.2.2 2009 MUTCD Part 4 Highway Capacity Manual (HCM) 2010
Signing and Pavement Markings	Standard signs Sign panels: 2-feet Min. horizontal offset from face of curb, 7-feet Min / 8-feet Max. vertical offset Pavement markings (Thermoplastic/Preformed)	2009 MUTCD Part 2 2022 FDOT Standard Plans Index 700-101 2009 MUTCD Part 3 2022 FDM Chapter 230.3 2022 FDOT Standard Plans Index 711-001

4.2 DRAINAGE CRITERIA

4.2.1 Drainage Design and Permitting

The project site is located within the Shingle Creek Drainage Basin and is under the jurisdiction of the South Florida Water Management District (SFWMD). The site is permitted under the Sand Lake Road Complex master stormwater management system (Permit No. 48-102657-P, dated December 27th, 2019), and is located within the subbasin "I4SLR". The subbasin is permitted for an equivalent curve number of 94.00, with a maximum discharge of 31.10 cfs, and is located near the north-westernmost boundary of the master-planned watershed. As shown on the SLRC Conceptual Stormwater Update "Current Conditions Nodal Map" and "Ponds and Discharge Map", the existing structures at the project intersection connect to the outfall pipe of the Rosen Medical Center pond and discharge directly to the Central Canal.

The Sand Lake Road Complex watershed encompasses the Universal Boulevard Planned Development from Sand Lake Road (N) to S.R. 528 (S), and from I-4 (W) to Shingle Creek (E), the ultimate discharge point. The entire watershed contains approximately 3,000 acres and collects the majority of the flow through the Newover Canal on the south, and the Central Canal on the north. The Central Canal discharges into Shingle Creek near the intersection of Destination Parkway and S. John Young Parkway, and the Newover Canal discharges at the point where Shingle Creek reaches S.R. 528.

The existing stormwater system at the intersection of I-Drive and Sand Lake Road is collecting and discharging directly to the Central Canal as part of the SLRC master system. The existing conditions were modified during the SFWMD permit modification No. 48-104518-P (Dated January 14th, 2016) with a widening of West Sand Lake Road. The current site conditions consist of seven (7) drainage manholes, two (2) FDOT Type '2' inlets, and one (1) FDOT Type '6' inlet. The images on the following pages show the locations of potential connection points to the stormwater system.

Figure 4-1: Type '2' Inlet and Type '6' Inlet along the North Side of Sand Lake Road (S-24 Left, S-27A Right)

Figure 4-2: Drainage Manholes (2) and Type '2' Inlet along the South Side of Sand Lake Road (S-27 Left, S-26 Center, S-25 Right)

Figure 4-3: Type '2' Inlet along the South Side of W Sand Lake Road (S-25)

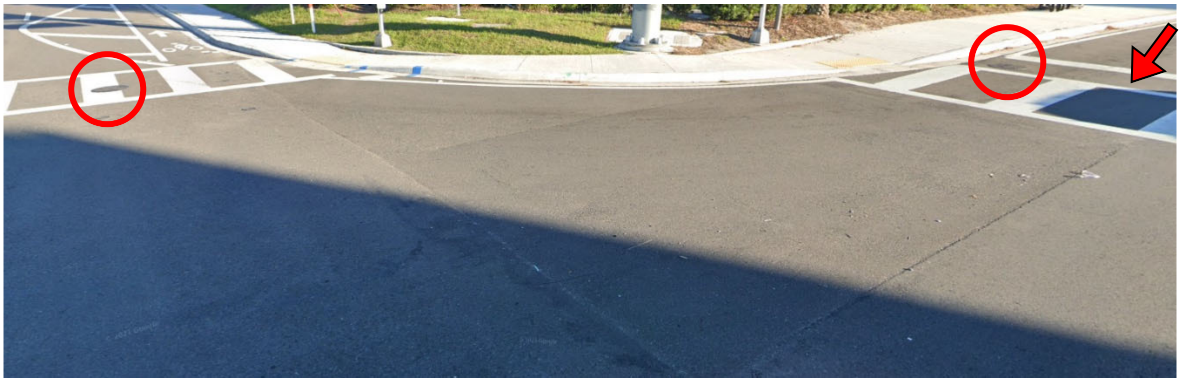


Figure 4-4: Drainage Manholes (2) at the South-West Corner of I-Drive and Sand Lake Road (S-30A Left, S-87 Right)

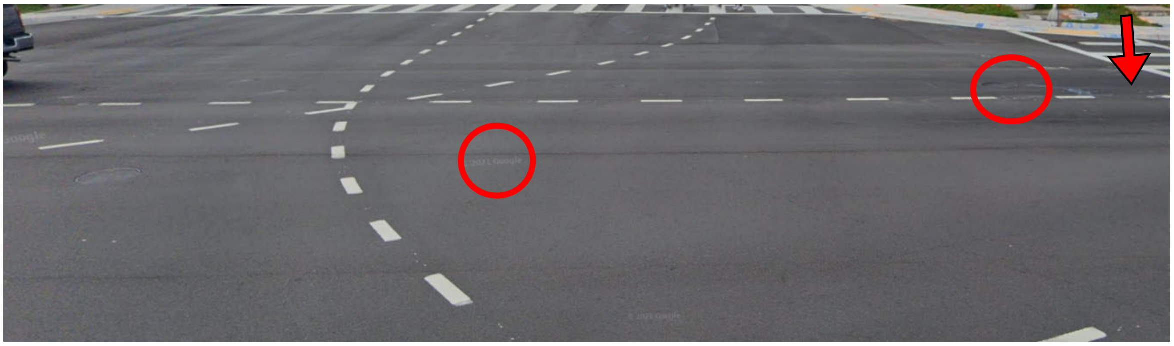


Figure 4-5: Drainage Manholes (2) at the intersection of I-Drive and Sand Lake Road (S-30 Left, S-28 Right)

Figure 4-6: Drainage Manhole at the Intersection of I-Drive and Sand Lake Road (S-29)

4.3 PEDESTRIAN BRIDGE CRITERIA

4.3.1 General Requirements

This section addresses design and performance requirements for typical pedestrian bridges intended to carry pedestrians, bicyclists, and light maintenance vehicles.

4.3.2 Code Requirements

Design shall be per AASHTO LRFD, except as modified by the AASHTO *LRFD Guide Specifications for the Design of Pedestrian Bridges* and this Criteria Package.

4.3.3 Performance Requirements

4.3.3.1 Service Life

Pedestrian bridges must be designed to achieve a minimum service life of 75 years.

4.3.3.2 Maintenance Requirements

Pedestrian bridges should be designed to allow ease of inspection and maintenance. Periodic preventive maintenance and inspections will be performed on all pedestrian bridges to extend the useful life of the structure. Preventive maintenance may include cleaning, removing debris, painting, sealing deck joints, etc.

4.3.3.3 Aesthetic Goals

Refer to Section 4.3.7 of this Criteria Package for information about aesthetic requirements.

4.3.4 Geometry and Clearances

4.3.4.1 Geometry

4.3.4.1.1 Width

Bridge deck width should be based on the type of anticipated local usage and corresponding current *ADA Standards for Accessible Design guidelines*. Clear width should be measured from face to face of the rail.

Wider bridges are preferred for two-directional pedestrian traffic rather than narrow decks with passing spaces due to the difficulty in design and constructability of the landings. However, when passing spaces are used, they should conform to ADA requirements and be located at reasonable intervals, not to exceed 200-feet.

Coordinate with the Local Agency to determine the final section on a pedestrian or bicycle bridge.

4.3.4.1.2 Profile and Grade

Refer to current *ADA Standards for Accessible Design guidelines* for the maximum grade allowed on pedestrian bridges.

4.3.4.1.3 Ramps

Pedestrian overpass structures, if practical, may be provided with both ramps and stairways, but under no condition should a structure be built with stairs only. Maximum grades on approach ramps shall conform to ADA requirements. Whenever existing structures or other local constraints prevent design of the structure that satisfies the maximum grade requirement, landings shall be provided to accommodate a maximum rise of 2.5-feet. Landings shall be level, the full width of the bridge, and a minimum of 5-feet in length. Landings shall also be provided whenever the direction of the ramp changes. However, straight grades or vertical curves are preferred instead of landings whenever possible. The deck and ramps shall have a non-skid surface, such as a transverse fiber broom finish for concrete. Concrete bridge decks must have transverse joints to minimize map cracking. The Designer shall specify the spacing of the joints.

4.3.4.1.4 Physical Requirements

The deck of the bridge should maintain the cross-slope of the approach trail or sidewalk. Cover plates should be provided at all expansion joints to minimize tripping hazards. Approach slabs are not required on pedestrian bridges unless requested by the Owner.

Section 2.4 of this Design Criteria Package outlines the requirements for pedestrian and bicycle railing.

4.3.4.2 Clearances

4.3.4.2.1 Vertical Clearances

The minimum vertical clearance from an under-passing roadway surface to a pedestrian bridge shall be 17.5-feet. The minimum vertical clearance from a pedestrian or bicycle path to an overhead obstruction shall be 8-feet 4-inches, measured at 1-foot from the face of curb, parapet, or rail.

4.3.4.2.2 Horizontal Clearances

Horizontal clearances shall conform to AASHTO. ***AASHTO 2.3.3,***

4.3.5 Loads and Deflections

4.3.5.1 Live Loads

4.3.5.1.1 Pedestrians

Refer to the current edition of AASHTO *LRFD Guide Specifications for the Design of Pedestrian Bridges* for the design value of the pedestrian live load.

4.3.5.1.2 Maintenance Vehicles

Whenever vehicle access is not prevented by permanent physical methods, pedestrian/bicycle bridges shall be designed for vehicle live load. In most cases, maintenance vehicle H5 or H10 will be used (refer to AASHTO *LRFD Guide Specifications for the Design of Pedestrian Bridges* for maintenance vehicle configurations). The Designer must coordinate with the owner to determine the type of live load required on each pedestrian bridge. The bridge project special specification must discuss live load selection. No vehicle live load is required for bridges with clear widths equal to or less than 7-feet.

All pedestrian bridges designed to carry vehicle load must be rated, with the rating factor specified on the plans or shop drawings. Either the truss manufacturer or the Engineer of Record is expected to perform the rating. Rating requirements should be coordinated with the owner to determine the appropriate vehicles and load case assumptions.

4.3.5.1.3 Collision

Vehicular collision load will not be considered in the structural design of the pedestrian bridge superstructure. However, all pedestrian bridges must be provided with the means to prevent the superstructure from sliding off the supports and onto the highway in case of collision. These means can include shear keys, keeper blocks, and anchor bolts at piers and abutments. Design of the sliding prevention mechanisms can be done based on a concentrated 54 kips collision load applied at the support. Note that this load value is taken directly from AASHTO Table A13.2-1, as transverse collision load on the traffic barrier at Test Level-4. No additional research or case studies were performed prior to publication to improve the accuracy of this value. The Designer must exercise engineering judgment when using this design method.

4.3.5.2 Deflection

4.3.5.2.1 Deflection Limits

AASHTO LRFD Guide Specifications for the Design of Pedestrian Bridges outlines requirements for deflection limits of pedestrian bridges.

4.3.5.2.2 Vibration Limits

AASHTO *LRFD Guide Specifications for the Design of Pedestrian Bridges* outlines requirements for vibration limits of pedestrian bridges. However, in rare cases that experience unusually high pedestrian traffic loads, setting lower vibration limits is advised, such as bridges next to sports stadiums. The designer is expected to exercise engineering judgment and consult similar projects.

4.3.6 Fracture Critical Designation

Fracture critical members and welds shall satisfy provisions of AASHTO *LRFD Guide Specifications for the Design of Pedestrian Bridges* and be clearly identified on both the structural plans and the shop drawings. The reviewing engineer is responsible for identifying missing fracture critical designations while checking vendor shop drawings.

4.3.7 Railing and Fencing Requirements

Pedestrian railings shall be designed per AASHTO *LRFD Guide Specifications for the Design of Pedestrian Bridges.* Handrails shall be provided for all stairs and ramps with grades greater than 5%. Refer to *ADA Standards for Accessible Design guidelines* and

4.3.8 Covered/Enclosed Structures

This pedestrian structure shall contain a roof enclosure. The roof of the enclosure should be designed to all applicable Local Agencies' loads and load cases, including the uplift wind forces. The designer shall consult the Florida Building Code and ASCE 7 – Minimum Design Loads for Buildings and Other Structures.

4.3.9 Deck

Any available deck types, except steel grid, are allowed on pedestrian bridge structures. The Designer should consider the use of protection systems on all pedestrian bridge decks to extend the useful life of the structure. Use of innovative materials is encouraged but must be discussed with County Staff. All pedestrian bridge decks shall have non-skid surfaces.

4.3.10 Lighting

For pedestrian bridge lighting requirements, refer to Section 5.4 of this Criteria Package.

4.3.11 Drainage

Curbs shall be provided on both sides of pedestrian bridges that crossroads and highways to prevent water from running over the sides. Drainage systems must be installed at bridge ends in combination with the curbs. Positive deck cross-slope may be used to facilitate drainage.

SECTION 5 ALTERNATIVES ANALYSIS

5.1 PEDESTRIAN OVERPASS ARCHITECTURAL ALTERNATIVES

This section of the report analyzes the advantages and disadvantages of Vertical Circulation options including Elevators, Ramps, Stairs and Escalators.

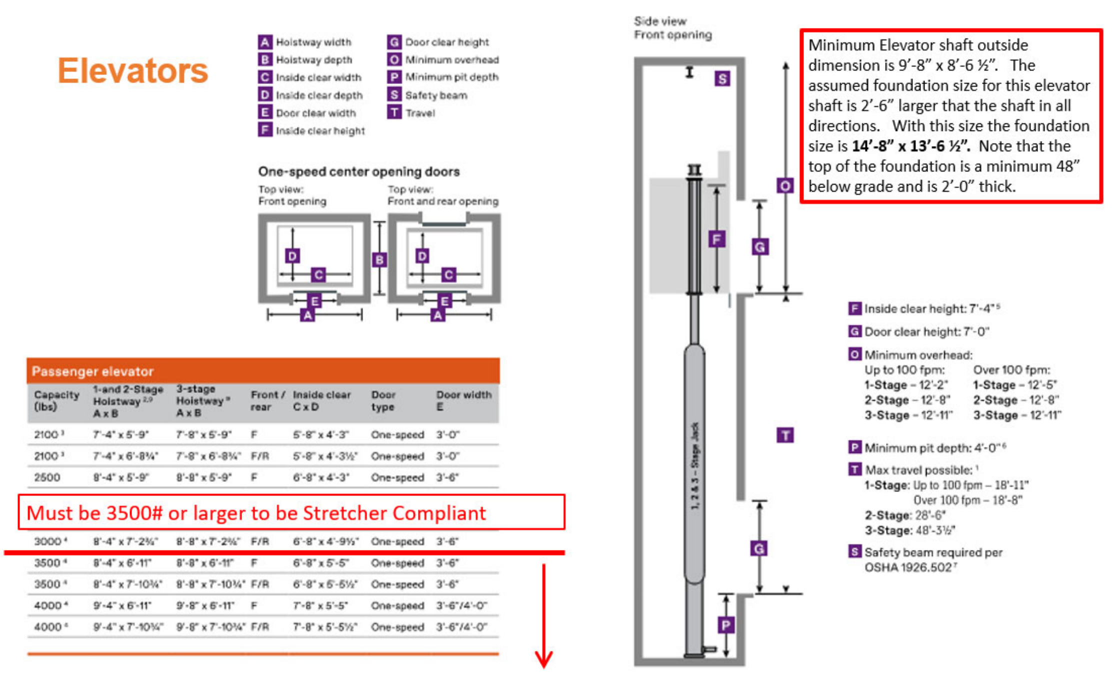
5.1.1 Elevators

Advantages

1. Provides Accessibility
2. Small Footprint
3. Can accommodate bicycles, strollers, or wheelchairs
4. Minimal waiting (Only two stops)
5. Reduces walking or climbing

Disadvantages

1. Not a Means of Egress
2. Requires power and maintenance
3. Security must be addressed



Passenger elevator

Capacity (lbs)	1-and 2-Stage Hoistway 2,9 A x B	3-stage Hoistway 8 A x B	Front / rear	Inside clear C x D	Door type	Door width E
2100 3	7'-4" x 5'-9"	7'-8" x 5'-9"	F	5'-8" x 4'-3"	One-speed	3'-0"
2100 3	7'-4" x 6'-8¾"	7'-8" x 6'-8¾"	F/R	5'-8" x 4'-3½"	One-speed	3'-0"
2500	8'-4" x 5'-9"	8'-8" x 5'-9"	F	6'-8" x 4'-3"	One-speed	3'-6"
3000 4	8'-4" x 7'-2¾"	8'-8" x 7'-2¾"	F/R	6'-8" x 4'-9½"	One-speed	3'-6"
3500 4	8'-4" x 6'-11"	8'-8" x 6'-11"	F	6'-8" x 5'-5"	One-speed	3'-6"
3500 4	8'-4" x 7'-10¾"	8'-8" x 7'-10¾"	F/R	6'-8" x 5'-5½"	One-speed	3'-6"
4000 4	9'-4" x 6'-11"	9'-8" x 6'-11"	F	7'-8" x 5'-5"	One-speed	3'-6"/4'-0"
4000 4	9'-4" x 7'-10¾"	9'-8" x 7'-10¾"	F/R	7'-8" x 5'-5½"	One-speed	3'-6"/4'-0"

Figure 5-1: Elevator Specifications

Elevators

Considerations

1. Hydraulic Elevators are the most economical for low rise applications
2. Although elevator speeds are lower with hydraulic elevators, with only two stops and 24' of travel, speed is not a critical factor
3. Elevators above 3500# are Stretcher Compliant for Emergency Responders
4. Hydraulic Elevators have fewer moving parts than Traction MRL elevators with easier installation and reduced maintenance costs.
5. Modern Hydraulic Elevators are available with Machine room-less applications
6. Available with twin post above ground jack applications. (No below grade Hydraulic Jack configuration)
7. Utilizes Biodegradable Hydraulic Fluid or can utilize vegetable-based hydraulic fluid.

5.1.2 Ramps

Advantages

1. Provide both Accessibility and Egress
2. Meets all required functions in a single circulation element
3. No power required and no maintenance
4. Accommodates bicycles

Disadvantages

1. To get to elevation +24' requires user to climb or descend 343 linear feet of ramp
2. Requires a larger site area than stairs or elevators
3. Creates a visual obstacle to properties at the corner.
4. Additional travel distance may discourage use.
5. May require a roof for shade.

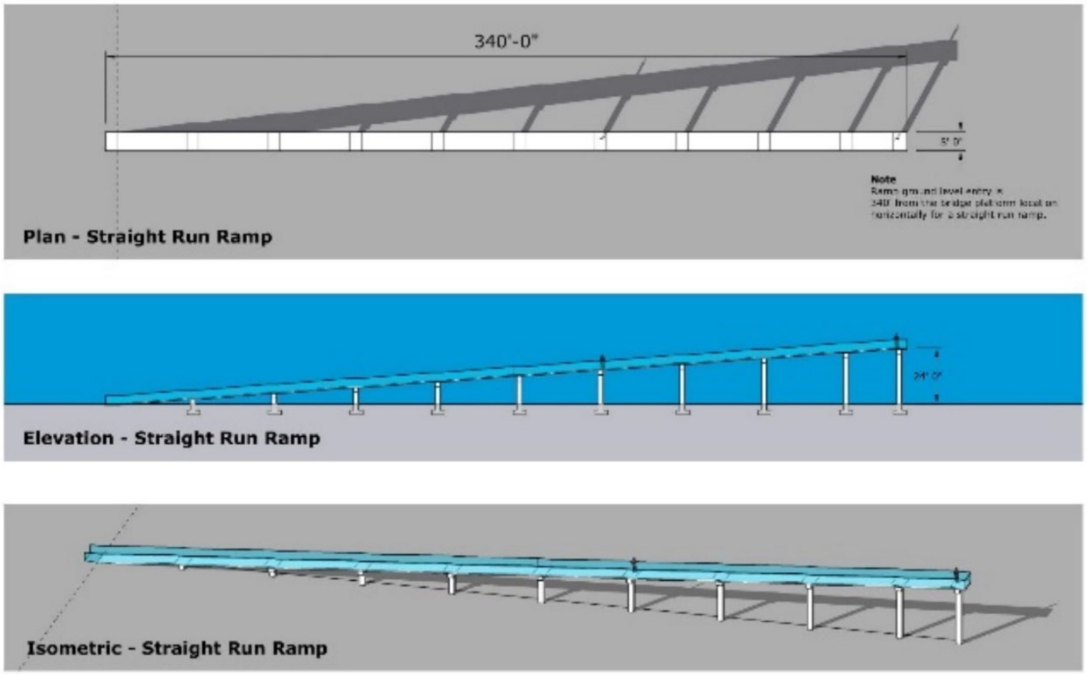


Figure 5-2: Straight Run Ramp

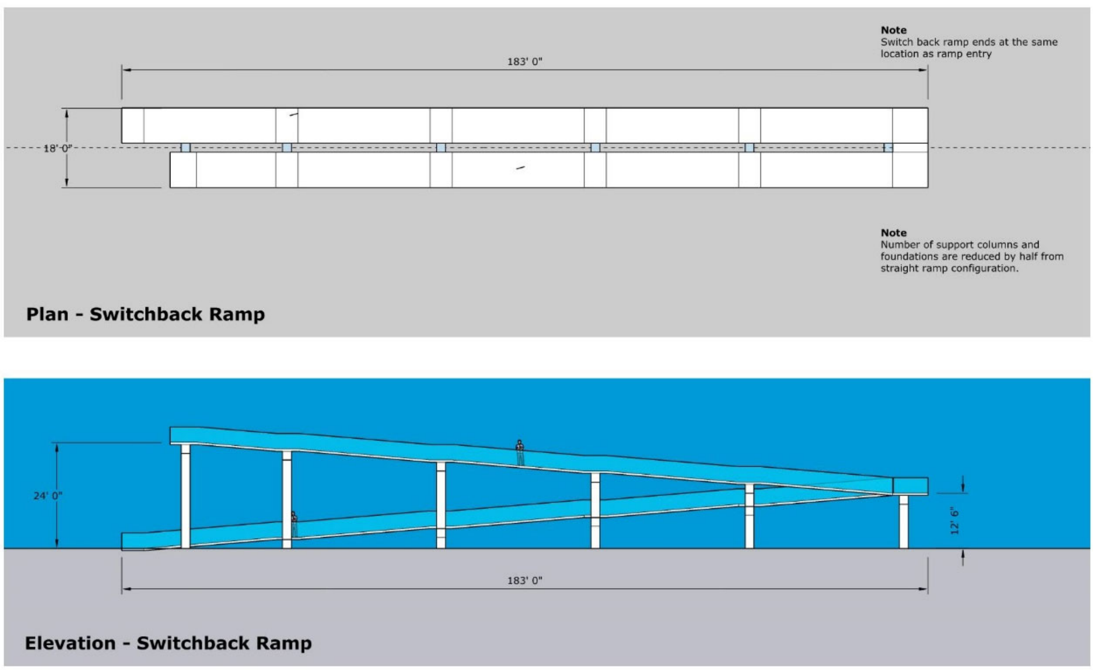


Figure 5-3: Switchback Ramp

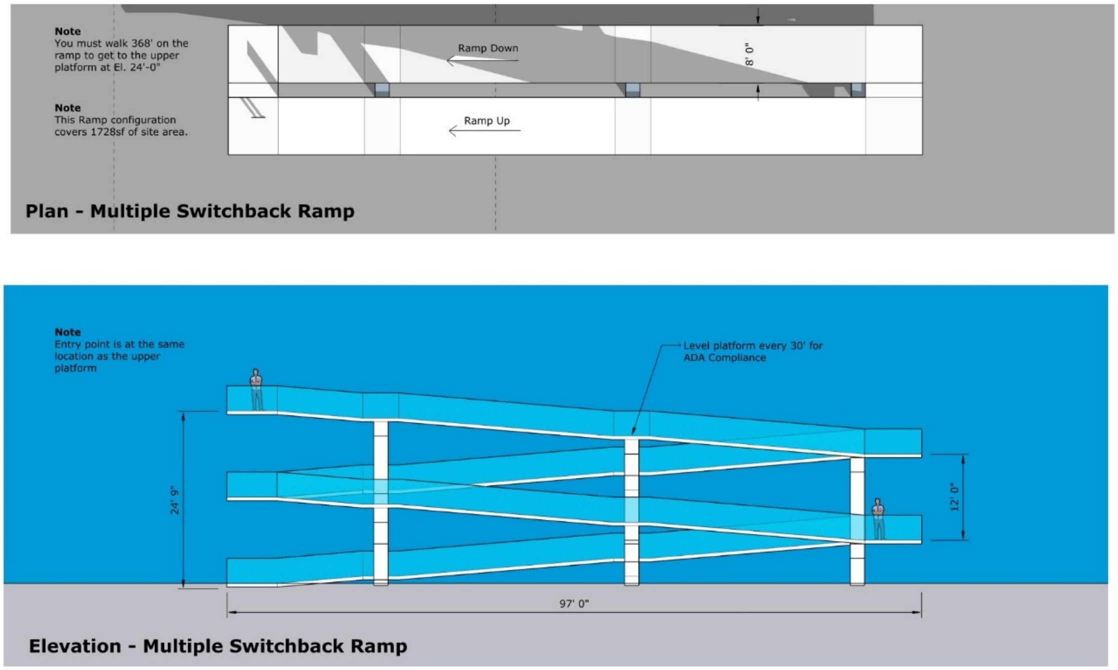


Figure 5-4: Plan & Elevation – Multiple Switchback Ramp

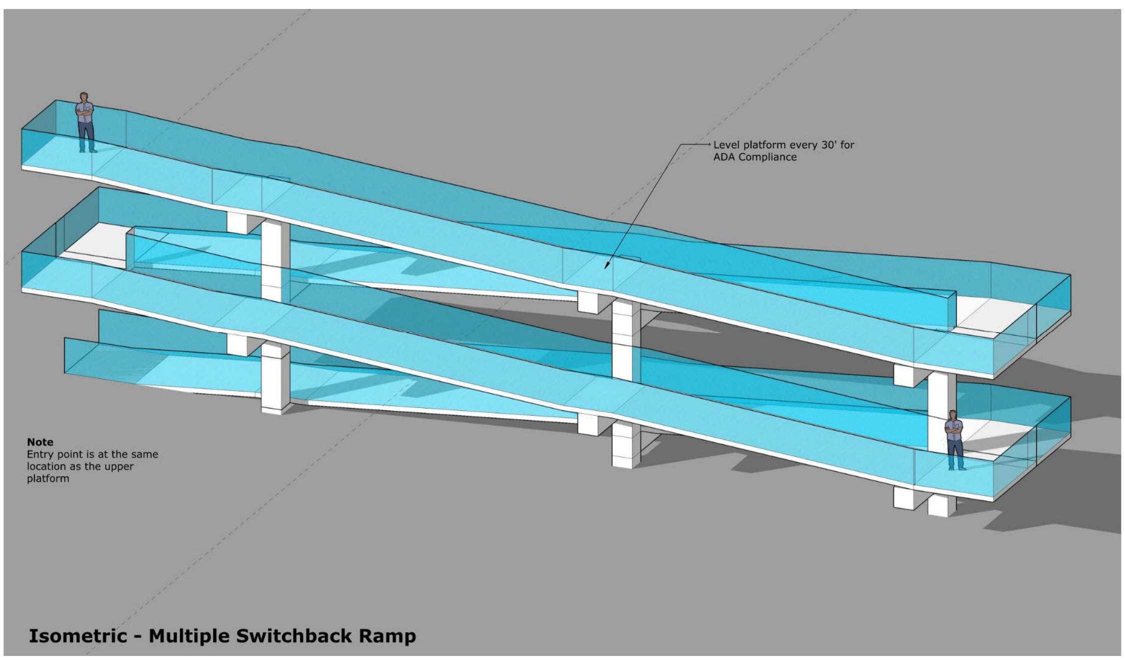


Figure 5-5: Isometric – Multiple Switchback Ramp

5.1.3 Stairs

Advantages

1. Provide Egress
2. Small Footprint
3. No power required and no maintenance
4. No waiting
5. High capacity

Disadvantages

1. Not Accessible
2. Does not work for bicycles, strollers, or wheelchairs
3. Climbing stairs 24'vertically is not physically possible for all.

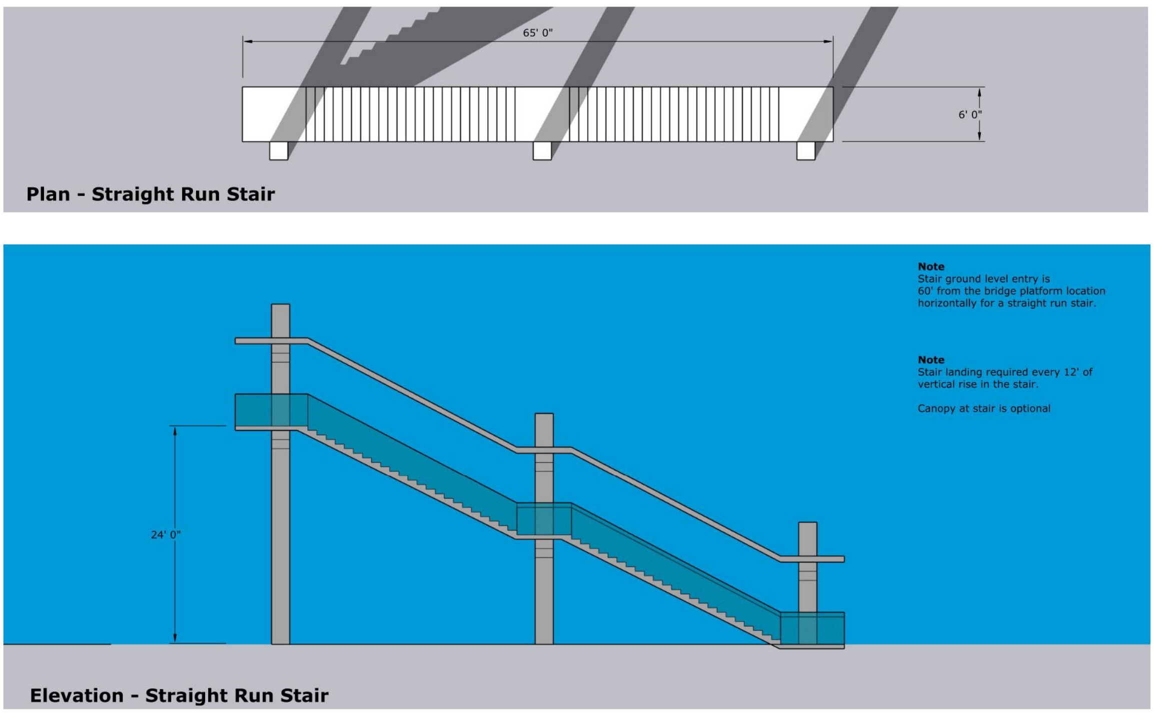


Figure 5-6: Straight Run Stair

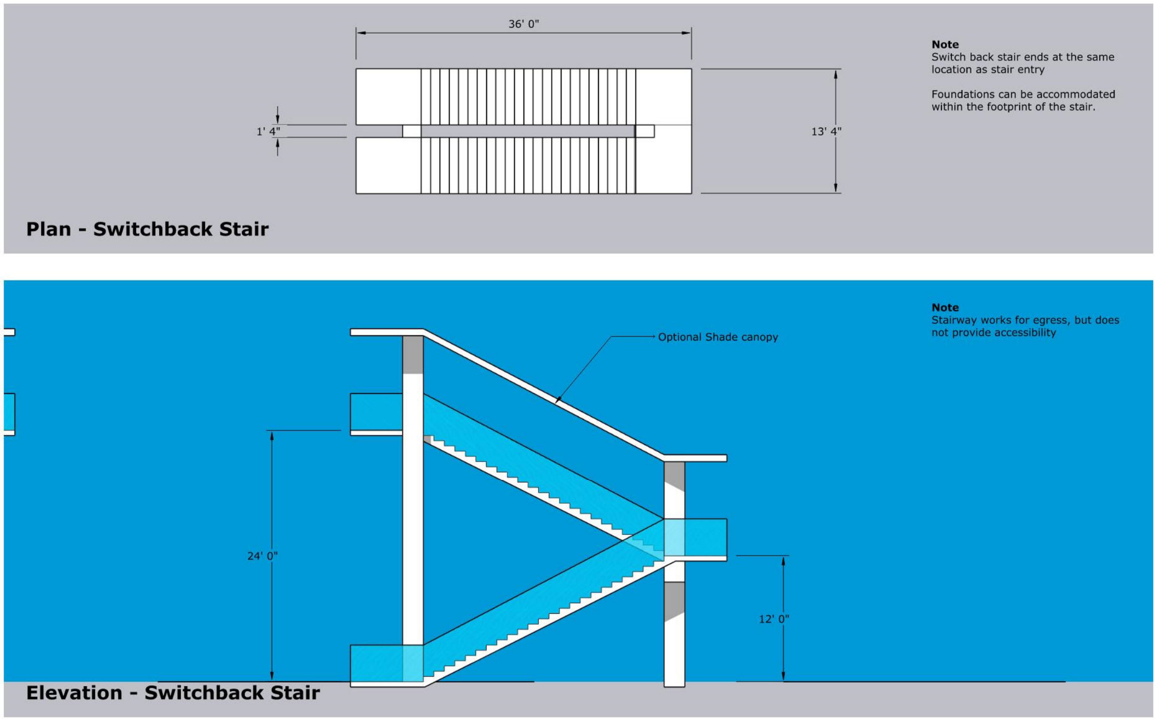


Figure 5-7: Switchback Stair

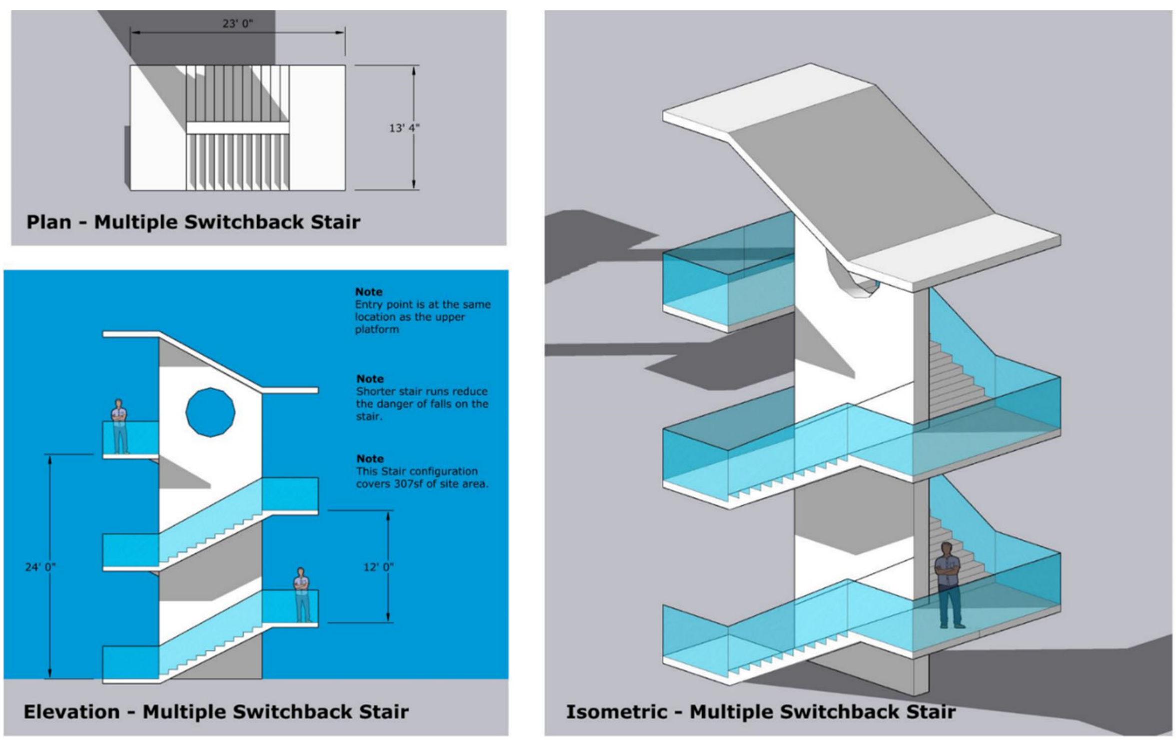


Figure 5-8: Multiple Switchback Stair

5.1.4 Escalator

Escalators

Advantages

1. High Capacity
2. No waiting
3. Reduces walking or climbing

Disadvantages

1. Not Accessible or a Means of Egress
2. Requires both an Up and Down Escalator (2)
3. Requires power and maintenance
4. Cannot handle bicycles, strollers or wheelchairs
5. Requires a canopy
6. Larger footprint and only works in linear configuration
7. Most expensive of the options

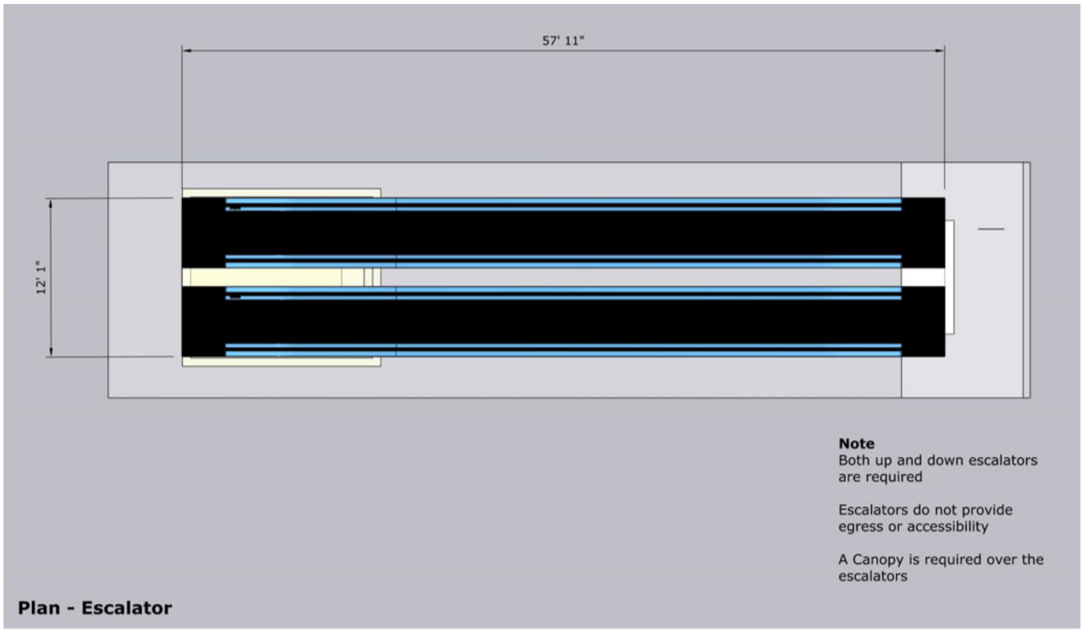


Figure 5-9: Escalator - Plan

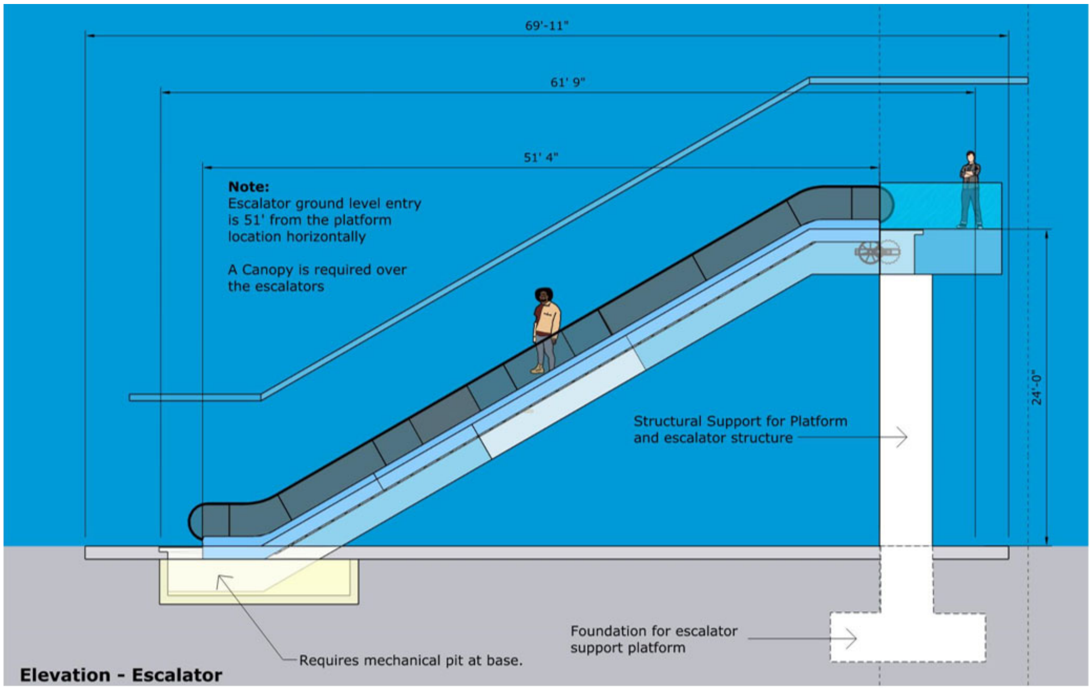


Figure 5-10: Escalator - Elevation

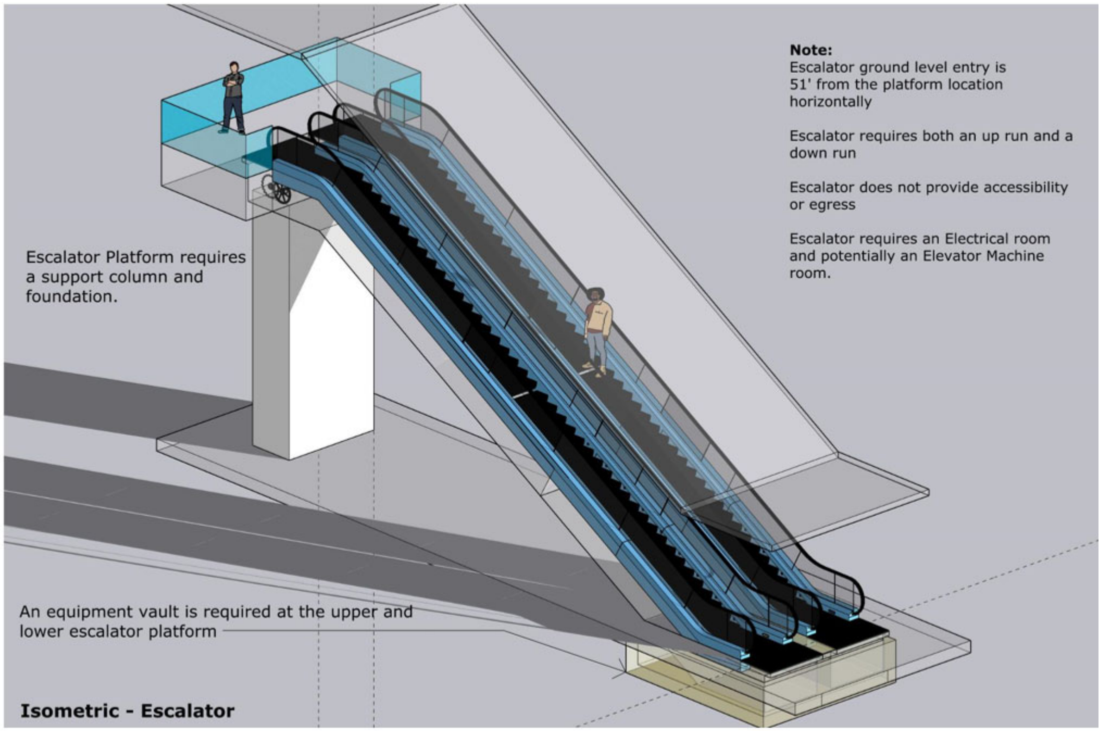


Figure 5-11: Escalator - Isometric

5.1.4.1 Table of Access Requirements

VERTICAL CIRCULATION COMPARISON MATRIX
(Lower score is better)

AREA REQUIRED				FOUNDATION SIZE	MEANS OF EGRESS		ACCESSIBILE		COST	OPERATING COST		POWER REQ.		HORIZONTAL TRAVEL DISTANCE		SCORE
		Largest Area =4 Smallest Area=1			Yes=0 No=1		Yes=0 No=1		1=Lowest 4=Highest	Yes=1 No=0		Yes=1 No=0		1=Lowest 4=Highest		
RAMP	8' X 343' 18' X 96'	2744 sf 1728 sf	4	(3) 12' X 12'	YES	0	YES	0	2	NO	0	NO	0	343'	3	9
STAIR	6' X 63' 13'-4" X 27' 13'4" X 23'	378 sf 360sf 307sf	2	12' X 17'	YES	0	NO	1	1	NO	0	NO	0	52'	2	**6**
ELEVATOR	11'-4" X 11'-4"	128 sf	1	16' X 16' X 2'	NO	1	YES	0	3	YES	1	YES	1	0'	1	**7**
ESCALATOR (pair)	11' X 60'	660 sf	3	15' X 64'	NO	1	NO	1	4	YES	1	YES	1	0'	1	11

NOTES
1. Must include one Accessible means of access at each intersection.
2. Must include at least two means of egress on the bridge. (preferably one at each corner of the intersection.
3. A ramp will meet both the need for Egress as well as the need for Accessibility.
4. An escalator does not meet the need for Accessibility or Egress

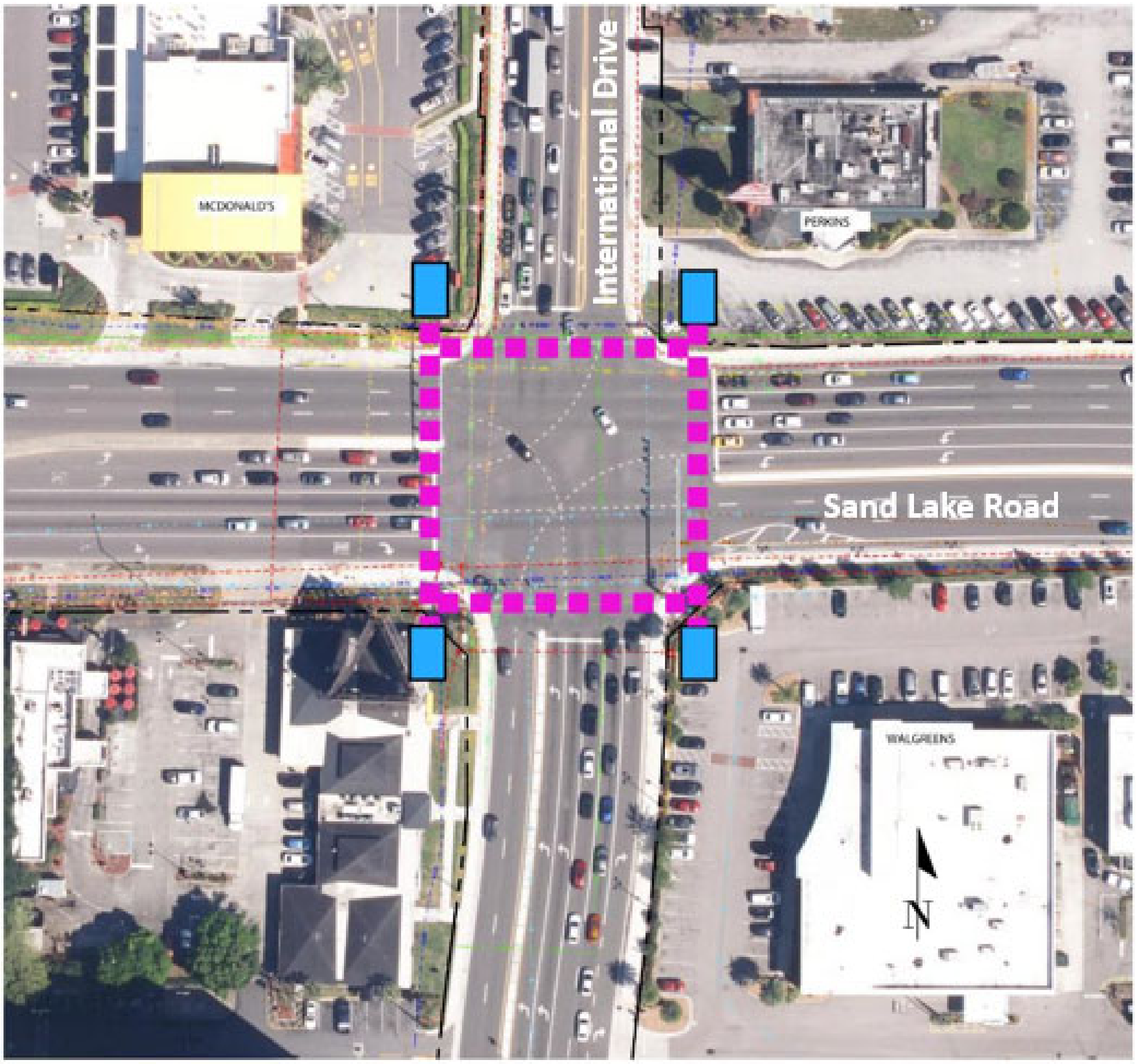
The lowest scoring options are either the Ramp at all four corners, which meets all requirements, or the combination of a stair and an elevator which also meets all project requirements.

Table 5-1: Table of Access Requirements

Based on the limited availability of right-of-way and land to support ramps and/or escalators, the team recommended a combination of stairs and elevators which together, meet both emergency egress and accessibility requirements. This recommendation was accepted by the PAG at meeting No. 2.

5.2 PEDESTRIAN OVERPASS GEOMETRY ALTERNATIVES

5.2.1 Square Configuration



Option 1
Square Configuration

Simple configuration utilizes straight prefabricated bridge sections. Users must travel either right or left to the final destination. If the destination is diagonal, you will have to travel two segments of the bridge.

Figure 5-12: Square Configuration

5.2.2 "X" Configuration

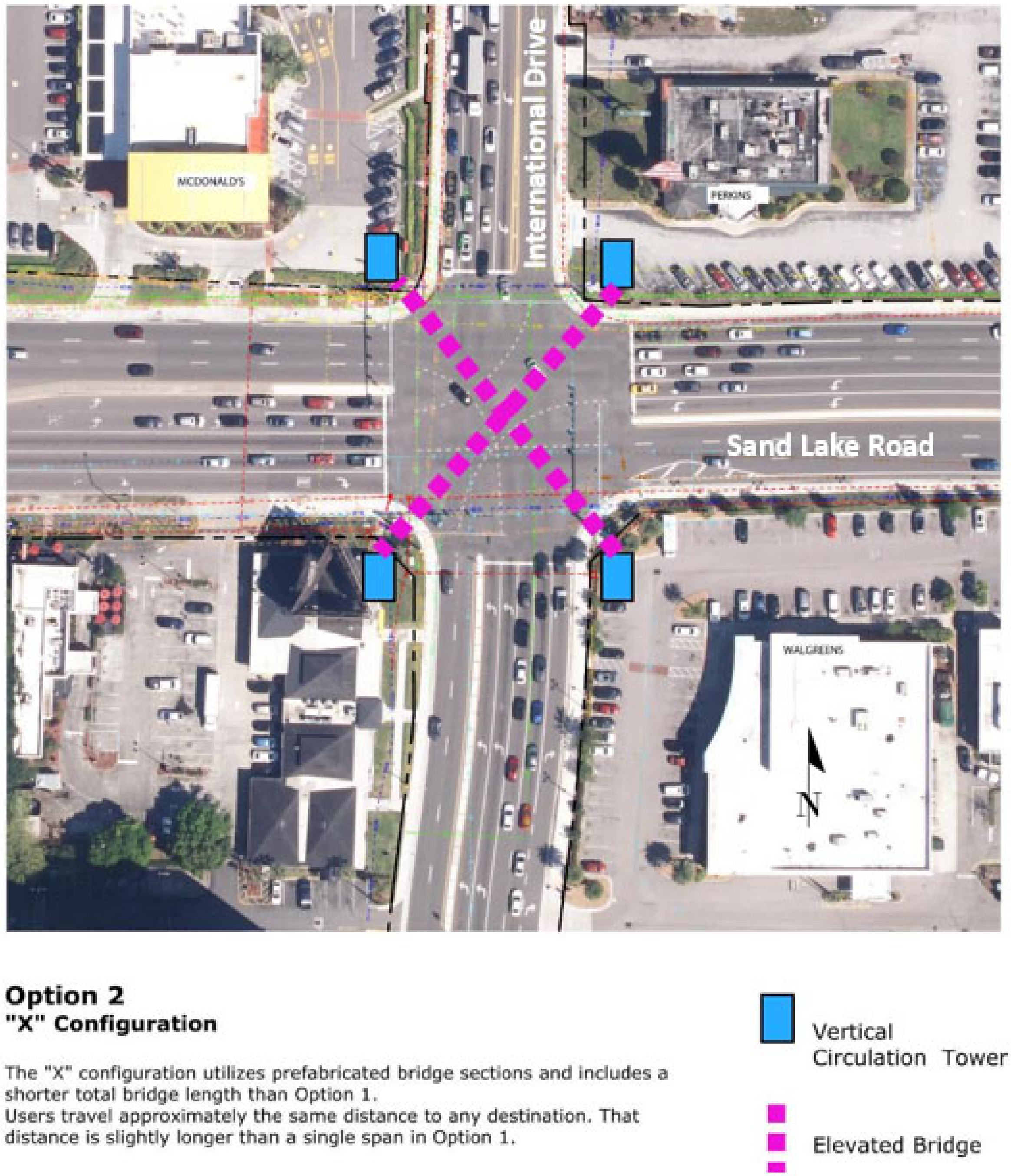
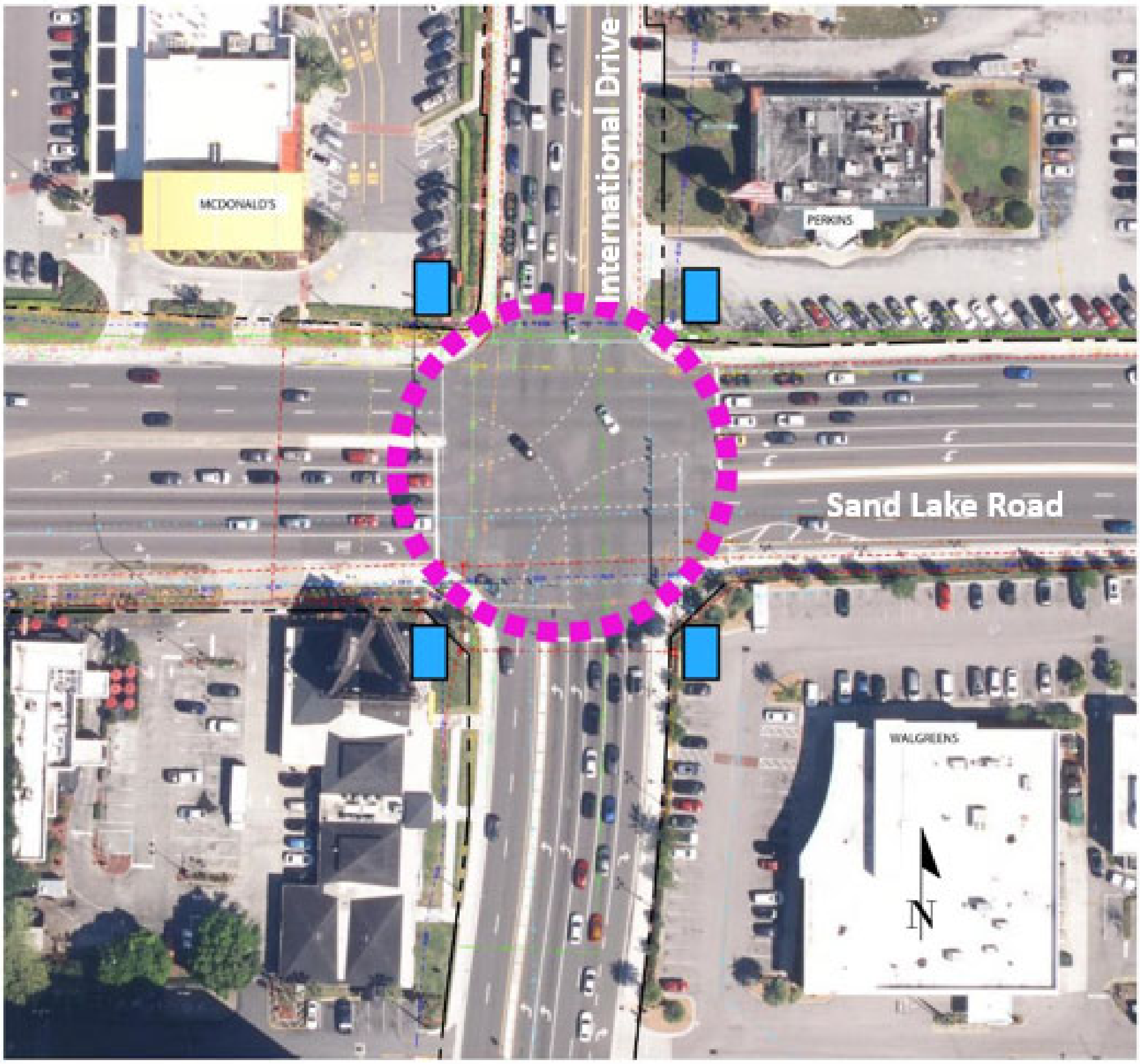


Figure 5-13: "X" Configuration

5.2.3 Circular Configuration

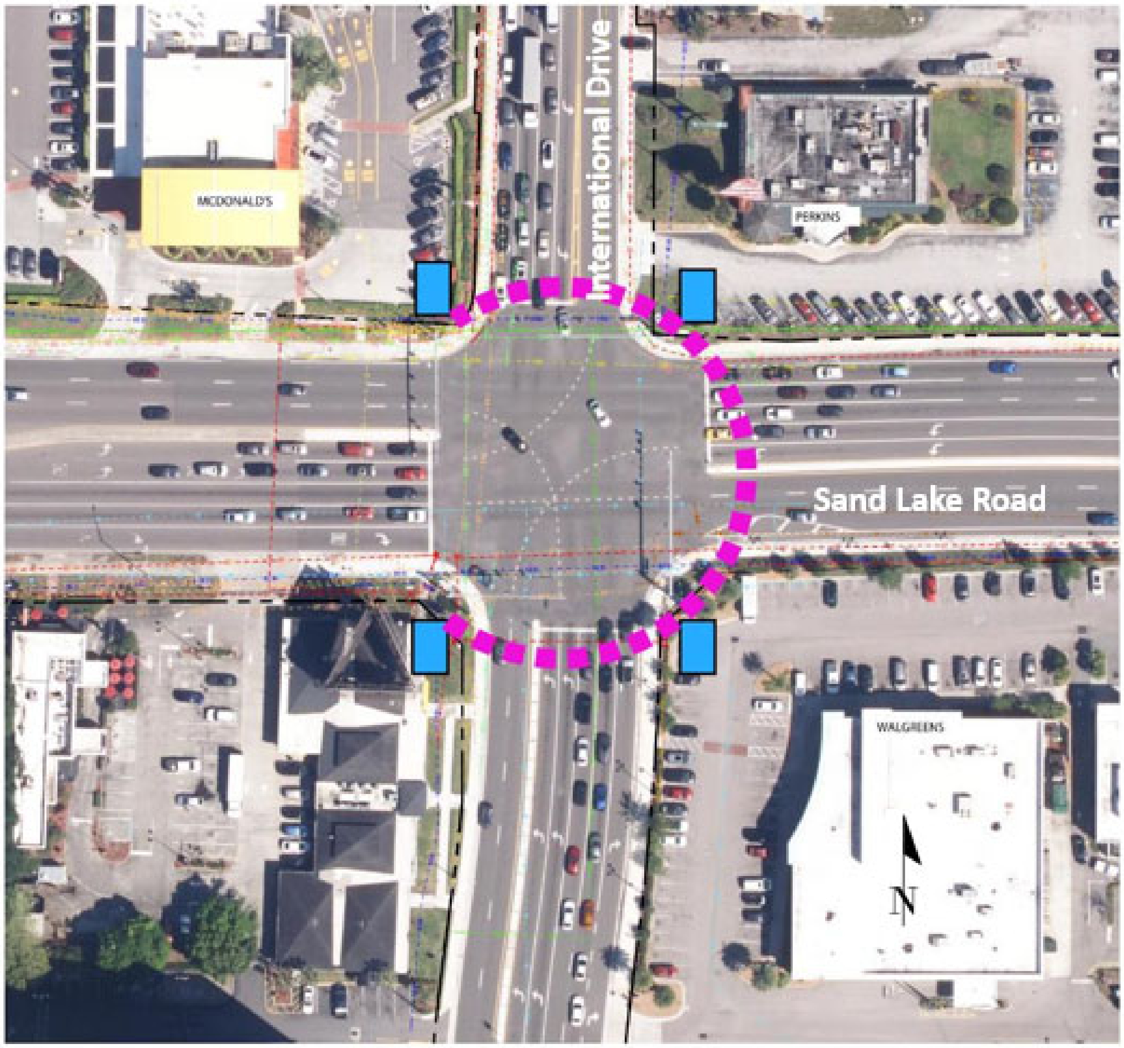


Option 3
Circular Configuration

Operationally similar to the Square configuration, the Circular bridge eliminates 90 degree intersections and allows smooth flow around bridge in either direction. By walking in a continuous curve the appearance of the distance to the destination is reduced. This configuration can be assembled from Pre-fabricated bridge sections.

Figure 5-14: Circular Configuration

5.2.4 "C" Configuration



Option 4
"C" Configuration

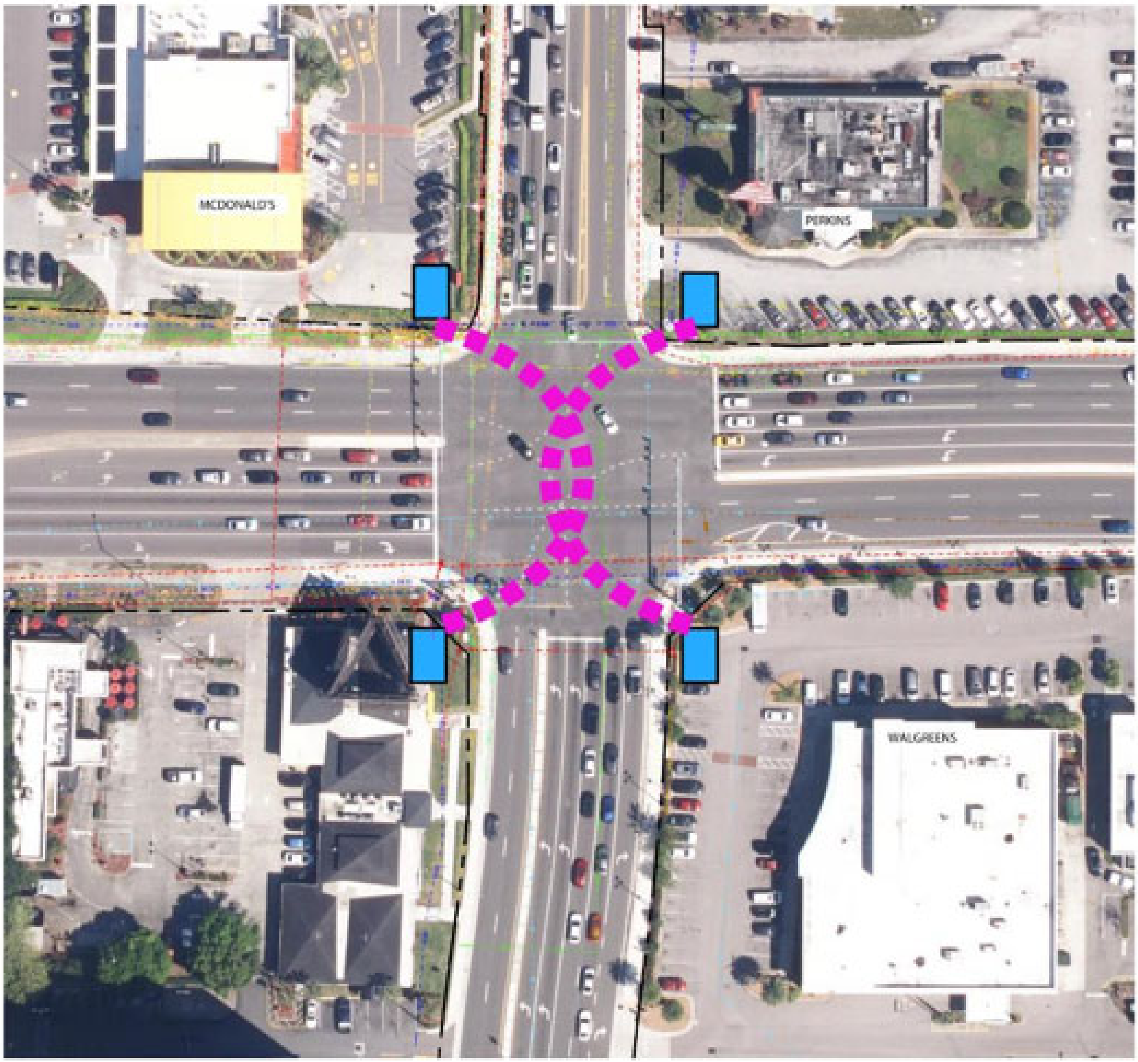
The "C" configuration utilizes prefabricated bridge sections and includes a shorter total bridge length than Option 3.
This configuration only increases the travel distance between the NW and SW corners. This configuration creates a unique gateway for automobiles coming from the I-4 interchange.

Vertical Circulation Tower

Elevated Bridge

Figure 5-15: "C" Configuration

5.2.4.1 Intersecting "C" Configuration

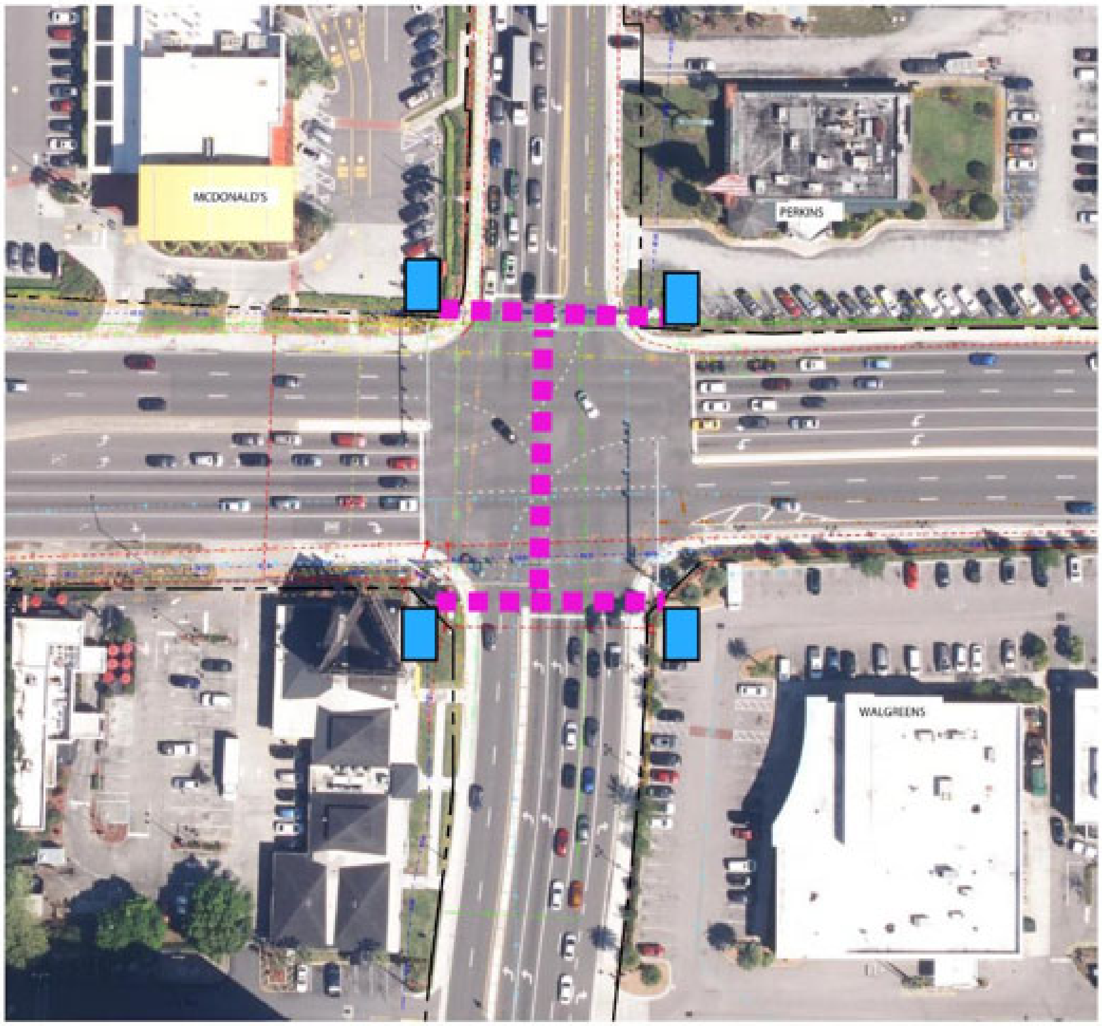


Option 5
Chanel Logo Configuration

Operationally similar to the "X" configuration, this bridge consists of two curved bridge sections that touch and connect in the middle. More dynamic than the "X" configuration, this configuration eliminates long straight views and can accommodate a transition area in the center of the intersection. This configuration can be assembled from Pre-fabricated bridge sections.

Figure 5-16: Intersecting "C" Configuration

5.2.4.2 "I" Configuration



Option 6
"I" Configuration

The "I" configuration utilizes prefabricated bridge sections and includes a shorter total bridge length than Option 3.
This configuration is made up of simple straight bridge sections and creates a unique gateway for automobiles coming from the I-4 interchange. Similar to Option 5, this configuration provides shorter travel distances crossing east and west.

Vertical Circulation Tower

Elevated Bridge

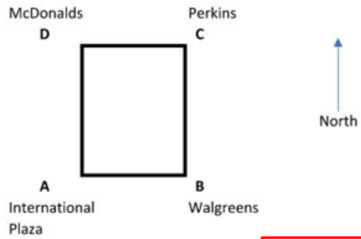
Figure 5-17: "I" Configuration

5.2.4.2.1 Matrix Comparison

Bridge Configuration Evaluation Matrix
(lower score is higher ranking)

	Travel Dist. Int. A-B	Travel Dist. Int. A-C	Travel Dist. Int. A-D	Avg. Walk Dist.	Rank	Bridge Length	Rank	Total Score	Rank
Square Configuration	126	292	166	195	**1**	584	**5**	**6**	**2**
"X" Configuration	210	210	210	210	**3**	420	**3**	**6**	**2**
Circular Configuration	171	408	272	284	**5**	816	**7**	**12**	**5**
"C" Configuration	171	408	579	386	**6**	579	**4**	**10**	**4**
"I" Configuration	126	276	276	226	**4**	402	**2**	**6**	**2**
Modified "I" Configuration	126	229	229	195	**1**	686	**6**	**7**	**3**
Intersecting "C" Configuration	158	229	229	205	**2**	395	**1**	**3**	**1**

Exist. Crosswalk Distance	
A-B	96'
A-C	259'
A-D	132'
Avg.	162'



Note:
Distance from A-C is the same as B-D

The lowest scoring option is the Intersecting "C" configuration.

Table 5-2: Bridge Configuration Evaluation Matrix

The analysis documented in the matrix comparison included travel lengths from each corner to the other corners and bridge length as the primary points. The travel length was included as the team and PAG felt this would represent the likelihood that pedestrians would use the bridge and provide the most convenience. The bridge length was used to reflect relative construction costs at this conceptual level of design.

5.3 PEDESTRIAN OVERPASS STRUCTURAL ALTERNATIVES

The most appropriate structural system can be determined based on supporting the alternatives and evaluating the availability of materials, fabrication costs, shipping methods, complexity of construction techniques, minimizing the impacts to the roadway below, and maintaining visibility to the surrounding businesses. The final structural system chosen must provide for a design that can be constructed using ordinary means and methods and bring a competitive price.

Several alternatives for the bridge superstructure were considered, including precast concrete girders, steel trusses, and a cable stayed suspension bridge. Construction of the superstructure will require several precautions to minimize impact to the traveling public including maintaining visibility and clear lines of sight for the drivers.

The following sections describe each alternative while listing their advantages and disadvantages.

5.3.1 Concrete Options

The concrete options evaluated included precast, prestressed concrete bridge girders which have been successfully constructed in several Florida locations including the U-Section tub girders that were utilized in the flyover from SR 417 and Boggy Creek Road (see figure below). These girders are manufactured in local precast concrete plants under closely monitored and controlled conditions, transported to the construction site in uniform sections, and erected in a specified sequence so that the units abut each other, and loads transferred using specially designed connections. Precast girders can be pretensioned at the plant and transported to the site or post-tensioned once erected with stay-in-place forms that span from the center pier to the stair tower foundations.

Figure 5-18: Curved Concrete Girders at SR 417

Advantages of this alternative include:

- Precast construction allows for quicker and more efficient construction.
- Long lasting and low maintenance
- Lower material cost

Disadvantages of this alternative include:

- Uniform appearance, but becomes more costly for architectural upgrades and/or theming of the bridge structure.

- Superstructure depth will exceed 84 inches which will potentially obstruct advertising structures and require the final bridge tower elevations to be constructed well over 40 feet.
- Strict conditions at precast plant must be followed and special detailed, lateral stability provided to beams during shipping and handling
- Higher cost in custom forms, specialized girders
- Specialized bridge girder carrier required to transport girders, might require segmented construction and post-tensioning near site
- Traffic will need to be closed for post-tensioning and/or when lifting structures in place
- Pedestrian fall protection will be drilled into deck and will require waterproofing to prevent corrosion to prestressing strands

Sources:

Summit Engineering Group designed a U-shaped precast concrete girder for a bridge project that spans Interstate 25 just north of the U.S. Route 36 and Interstate 76 interchange in Denver, Colorado. The longest span of the bridge (Fig. 4) was 200 ft (61 m).

https://www.pci.org/PCI_Docs/Design_Resources/Guides_and_manuals/references/bridge_design_manual/JL-08-November-December_Curved_Precast,_Pretensioned_Concrete_I-Girder_Bridges.pdf

PCI's Precast Prestressed Concrete Bridge Design Manual Ch 12 and ABAM 1988 https://www.pci.org/PCI/Design_Resources/About_Precast/Transportation_Components.aspx

5.3.2 Steel Options

5.3.2.1 Trusses/Moment Frame

The proposed truss alternative consists of a series of steel members organized in a triangular pattern to support the load. The individual members are welded or bolted together to span over the intersection. The top and bottom members, known as chords, are continuous and tie the overall span together. Intermediate members, known as struts or braces, can be oriented vertically, horizontally, and diagonally to provide additional stiffness and load carrying capacity. Truss bridges have traditionally been for straight spans however the Cross Seminole Trail pedestrian bridge over 17-92 in Central Florida features an S-shape constructed truss in plan.

Figure 5-19: Pedestrian Bridge Over 17-92

Advantages of this alternative include:

- Appealing aesthetically
- Truss can be transported in segments and assembled close to the site.
- Utilizes majority readily available steel sections.
- Strong due to interconnecting triangles.
- Truss frames permit architectural decorations around exterior.

Disadvantages of this alternative include:

- Curvature of bridge requires unique connections resulting in high fabrication costs for brace and moment frame connections, including field welding.
- Susceptible to corrosion and requires waterproofing and good drainage details.
- Minimum required height of bridge is 21 feet per AASHTO for deflection control, resulting in large self-weight.
- Truss bridges are considered fracture critical and require stringent inspections every 24 months resulting in higher maintenance costs.
- Construction will be done in segments and requires great precision and coordination during construction to ensure segments will align correctly.

5.3.2.2 Cable Stayed Suspension Bridge

A cable stayed pedestrian bridge consists of a deck/main girder supported by cables connected to one or more towers or pylons. A cable stayed bridge is a subcategory of suspension bridges in that the “suspender” cables go directly back to the towers instead of a main cable. Typically, the towers have symmetrical loading on opposite sides, but because of the bridge configuration the loading will be asymmetrical like the Sundial Bridge found in Sacramento, California.

Figure 5-20: Sundial Bridge, an Example of an Asymmetrical Cable-Stayed Pedestrian Bridge

Advantages of this alternative include:

- Lighter overall superstructure
- Aesthetically pleasing
- Allows drivers to see advertising structures from approaching directions.

Disadvantages of this alternative include:

- Asymmetrical loading in towers requires large substructures, especially for areas with soft soils. Could potentially require cables to counter load.
- Towers will need to extend up several stories, encroaching into air space or adjacent structures.
- Higher maintenance costs for cables, as they are susceptible to fatigue and corrosion.
- Not suitable for areas with severe weather, as wind loads can cause premature deck failure if not constructed with additional costly redundant support elements.

5.3.3 Constructability

5.3.3.1 Maintenance of Traffic

It is anticipated that temporary lane closures may be required during foundation installation at each corner tower. Most deep foundation installation procedures can be achieved by methods that keep the installation equipment off the roadway and onto the individual corner properties, however, the heavy equipment movements from one corner to the other will require lane closures. These movements should be restricted to off peak hours or overnight activity.

The installation of the pedestrian bridge over the intersection may require the use of temporary supports placed in the travel way to erect the individual truss elements and perform final fit up procedures.

5.3.4 Foundation Analysis

The most appropriate foundation system will need to be determined based on the site conditions, proximity to neighboring structures, constructability dealing with a heavily travelled roadway with very restricted traffic control requirements (i.e., Minimum disruption), and noise restrictions. The designer is responsible for providing a constructible design using ordinary means and methods in the foundation industry so that multiple bidders can compete to perform the work and provide Orange County with a competitive fixed price for the work.

The analysis for the foundations to support the bridge, elevator, and stair towers indicate the need for a deep foundation system. Construction in this circumstance requires a number of precautions to minimize or prevent damage to adjacent properties. These precautions should include preconstruction surveys which include photographs, videos, and documentation coordination and permission with the adjacent property owners to monitor their facility foundations. Structural monitoring shall be according to FDOT standard specification section 108 *Monitor Existing Structures.*

5.3.4.1 Shallow Foundations

Spread footing foundations have been ruled out for the bridge and tower foundations. The width required for the footings to support the loads without causing large displacement or settlement cannot fit within the concept study available right-of-way. Smaller spread footings may be utilized to accommodate the stair tower foundations if kept separate from the main elevator shaft and bridge abutments.

5.3.4.2 Deep Foundations

5.3.4.2.1 Drilled Shafts

Drilled shafts are an option for the tower foundations and can be utilized for the bridge abutment pier columns. They provide excellent axial support but are limited in lateral support unless used in conjunction with a large footing cap. This means that they must be installed with redundancy to resist overturning forces applied to the above ground structure. Monitoring of existing structures during drilled shaft installation is only required within a distance of five shaft diameters or the estimated depth of drilled shafts. The costs of drilled shafts, however, include the additional installation testing requirements including Pilot Holes, Method Shafts, and Load Test Shafts. Test hole logs, pilot hole logs and load test reports must be reviewed by a Geotechnical Engineer who provides the final production drilled shaft tip elevations.

5.3.4.2.2 Driven Piles

Driven piles are deep foundation elements installed using impact or vibration hammers to a design depth or resistance. Driven piles do not create spoils and do not require any curing time after installation; therefore, they can be installed in sequence, speeding up the overall production time. Driven precast prestressed concrete (PCC) piles and Steel “H” piles were evaluated as a deep foundation option. Steel “H” piles will be protected from the effects of corrosion through measures such as a coating or a sacrificial thickness of the steel members.

5.3.4.2.3 Auger Cast Displacement Piles

Auger cast displacement piles (ACDP) are installed by rotating a hollow-stem auger into the ground to the required pile depth with sufficient downward thrust to prevent mining of the soil. Then Portland Cement Grout is pumped into the auger shaft under continuous positive pressure as the auger is slowly withdrawn. A reinforcing steel cage is then inserted into the fluid grout following the completion of grout placement. Auger cast piles require monitoring with special equipment during installation. ACDP has the advantage of being suitable for most soils found in Florida, are rapidly installed, environmentally friendly, cause minimal vibration and low noise during installation. The major disadvantages are sensitivity to operator performance, which can lead to poor pile integrity or inconsistent quality, however, ACDP may be the preferred foundation system for the pedestrian bridge since they provide supports for very heavy foundation loads with high lateral forces and can be installed near occupied buildings in dense urban areas that have vibration concerns.

5.3.4.3 Geotechnical Discussion

The geotechnical engineer will be required for final design to evaluate the foundation system based on the final design force effects for the life of the structure across the anticipated range of ground conditions and with enough reserve strength to accommodate uncertainties.

5.4 PEDESTRIAN OVERPASS LIGHTING ALTERNATIVES

5.4.1 General

Lighting shall be designed in accordance with the requirements of:

- FDOT Design Manual (FDM) chapter 231.
- Illumination Engineering Society of North America RP-8-21.
- Florida Building Code 2023 (8th Edition).
- Florida Fire Prevention Code (8th Edition) (NFPA 101)

All lighting sources (lamps) shall be LED technology. All white lamp sources to be correlated color temperature of 3000 K.

5.4.2 Aesthetic Lighting

5.4.2.1 Outline Lighting

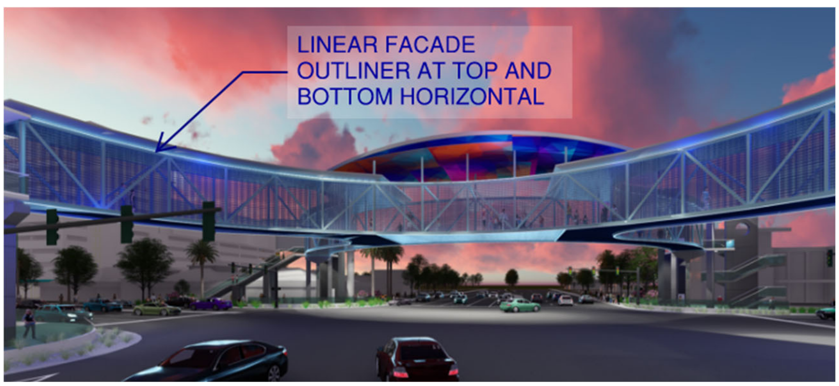


Figure 5-21: Outline Lighting

Provide a color changing continuous linear façade LED light fixture along the upper and lower horizontal structure of the elevated walkway. LED light color would change slowly between a pre-programmed color band.

5.4.2.2 Elevator Shaft Lighting

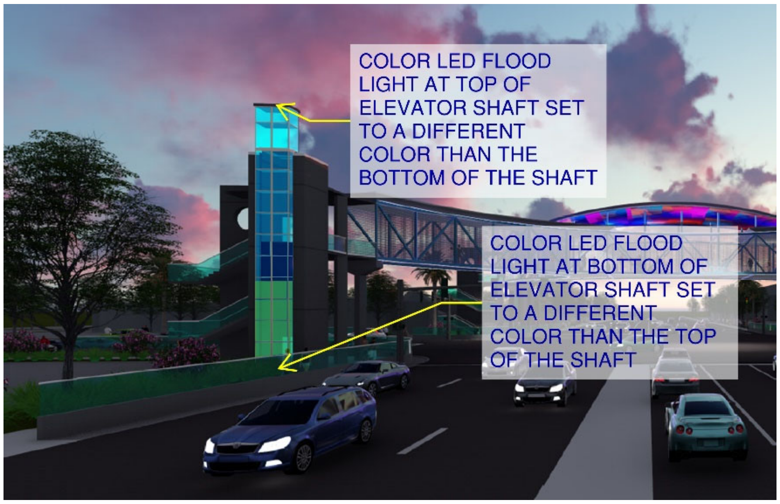


Figure 5-22: Elevator Shaft Lighting

A color flood light located at the bottom and top of the elevator shaft set to complimentary colors to light the interior of the shaft. Elevator cab would be the dynamic separator between the colors in the shaft. As the elevator moves, the volume of the two colors changes within the shaft. The colors can be set to be to be static or change on a schedule.

5.4.2.3 Bridge Ceiling Lighting

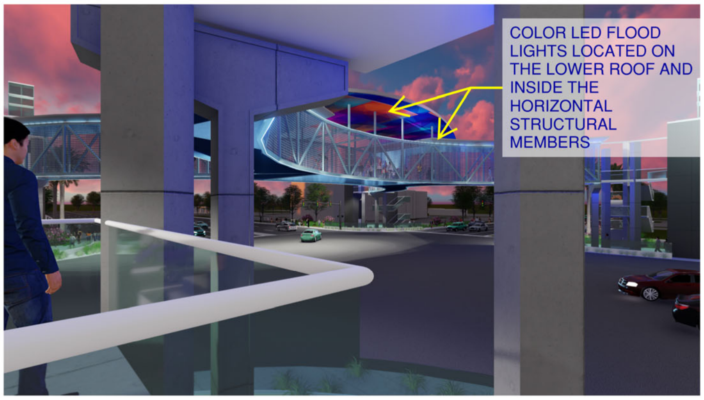


Figure 5-23: Bridge Ceiling Lighting

Color flood lights located on the roof of the walkway and along the horizontal structural members directed up to the upper arched ceiling. These color changing LED flood lights are to provide a dynamic color changing canvas with each light cycling the color output providing a multi-color gradient across the entire arch ceiling. The lights would be centrally controlled through a DMX control system along with the outline lighting.

5.4.3 Functional Lighting

5.4.3.1 Stair Lighting

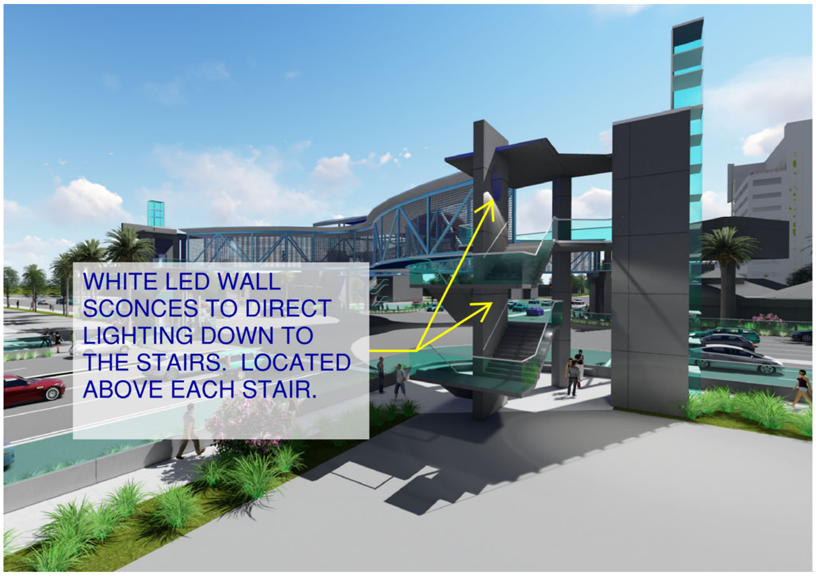
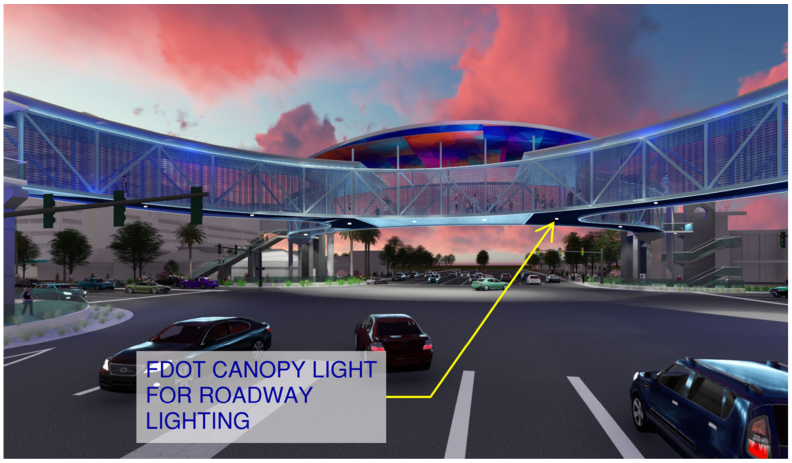


Figure 5-24: Star Lighting

Wall mounted sconce lighting located high on the center stair wall to provide the required illumination. An illumination level of 10 footcandles minimum at the walking surface is to be provided (Florida Building Code 1008.2.1). Under loss of power, the lighting level shall be a minimum of 1 footcandle (Florida Building Code 1008.3.5). Select fixtures shall be powered under loss of power from a central inverter system.

Fixture shall be LED lamp source with a correlated color temperature of 3000 K.

5.4.3.2 Roadway Lighting Below Bridge



The lighting design criteria for the I-Drive Pedestrian Bridge intersection include FDOT Standards for photometric requirements and safety considerations.

The underside of the pedestrian bridge shall provide infill lighting at the roadway intersection. Lighting shall be provided in accordance with the FDOT Design Manual for signalized intersection. Providing an average illumination level of 3.0 foot candles (horizontal) and 1.5 foot candles (vertical). Average to minimum illumination uniformity of 4:1 or less. A maximum to minimum illumination uniformity ratio of 10:1 or less. The lighting source shall be LED with a correlated color temperature of 3,000 K.

The fixtures shall be approved by the Florida Department of Transportation (FDOT).

5.4.3.3 Adjacent Sidewalks

Figure 5-25: Adjacent Sidewalks

Adjacent ground level pedestrian walkways (sidewalks) along the pedestrian barriers shall be in accordance with the Illumination Engineering Society of North America RP-8-21. Street adjacent with high pedestrian activity the lighting levels are to be an average illuminance of an average 1 foot candles with a correlated color temperature of 3000 K.

Utilize flush mounted step type lighting mounted into the pedestrian barrier between the sidewalk and the roadway with LED lamp sources for illumination of the sidewalks.

5.4.3.4 Pedestrian Bridge Walkway

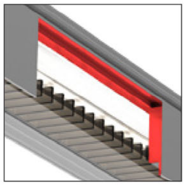


Figure 5-26: Pedestrian Bridge Walkway

The pedestrian bridge elevated walkway is to be illuminated with horizontal linear lights mounted to the side of the horizontal structural members with the light fixture mounted flush with the bottom of the structural members. The linear lights should incorporate a micro baffle to reduce the glare and light spill of the fixtures from the ground and pedestrians on the bridge.

The lighting should produce a minimum of 2.5 foot candles on the walking surface and 10 foot candles at the elevator thresholds. Maximum to minimum lighting ratio of 5:1 maximum. LED lamps with a correlated color temperature of 3,000 K

Under loss of power, the lighting level shall be a minimum of 1 footcandle (Florida Building Code 1008.3.5). Select fixtures shall be powered under loss of power from a central inverter system.

5.4.4 Lighting Controls

All functional lighting shall operate through a relay cabinet with on/off control by photocell operation. A manual override test switch shall be installed adjacent to the relay panel for testing and manual on in case of photocell error.

All Aesthetic Lighting shall operate on/off through the same relay panel as the functional lighting. A central DMX computerized controller is to be utilized for color control of the color producing lighting as described above.

5.4.5 Emergency Lighting

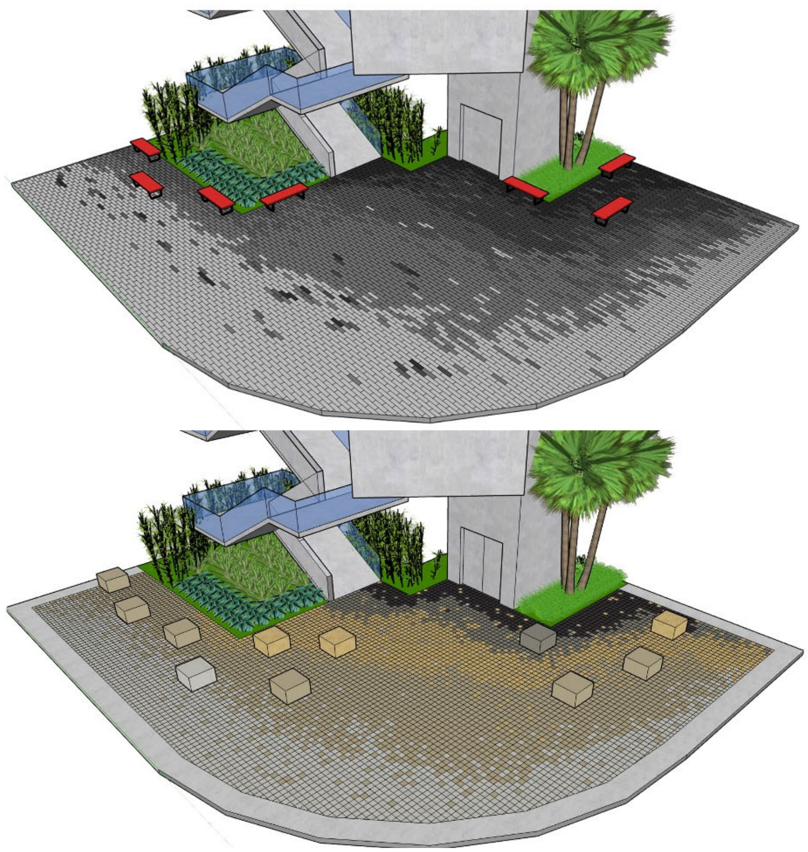
Emergency lighting levels of 1fc minimum under loss of normal power shall be provided on the elevated walkway and stairs as described above. A central inverter system shall be provided in the main electrical room to provide backup power. The system shall be installed and wired in accordance with National Electrical Code Article 700.

Provide battery capacity for the connected lighting to operate at full output for a minimum of 90 minutes.

5.5 STREETSCAPE ALTERNATIVES

5.5.1 Hardscape

Hardscape to consist of pavers, colored concrete, standard concrete and/or stamped concrete of the horizontal surfaces to add aesthetic appeal consistent with the bridge design. In addition; an emphasis on pedestrian safety and directional flow to the bridge and other pedestrian connections will be employed. The area of work is limited in size and the design will need to reflect this.



HARDSCAPE CONCEPT A

Plank pavers in several grey tones gradating to darker colors at points of pedestrian access to stairs and elevators.

Landscape to soften hardscape edges and screen poor views.

HARDSCAPE CONCEPT B

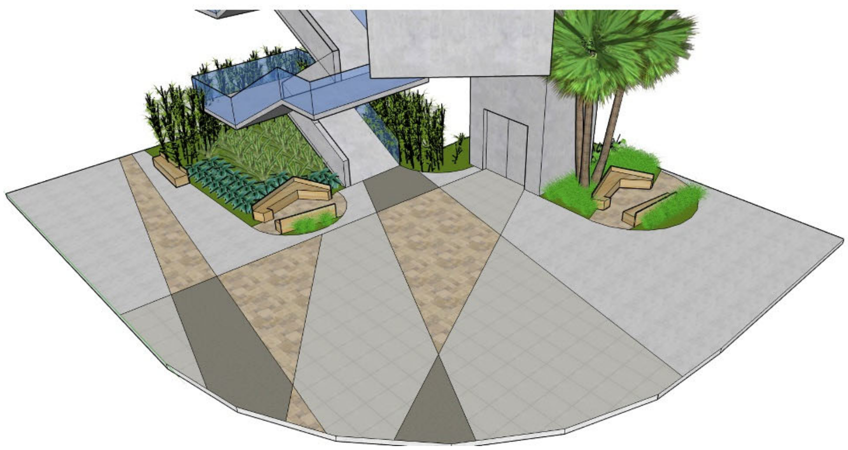
6″ square pavers in several brown tones gradating with a 2″ flush concrete boarder to darker colors at points of pedestrian access to stairs and elevators.
Landscape to soften hardscape edges and screen poor views.

Figure 5-27: Hardscape Concepts A & B

HARDSCAPE CONCEPT C

Colored concrete and faux wood accent panel and planting beds to create a dynamic interactive plaza area.

Landscape to soften hardscape edges and screen poor views as well as create view opportunities from the bridge area.



HARDSCAPE CONCEPT D

Use concrete and pavers to create space. L-shaped wooden benches merge organically with the verdant plantings around them, provding rest area for people.

Landscape to soften hardscape edges and screen poor views.

Figure 5-28: Hardscape Concepts C & D

5.5.2 Landscape

Landscape to consist of trees, palms, shrubs, groundcovers and accent plants to add aesthetic appeal in line with the bridge design. The design will showcase the bridge while keeping line of sites to pedestrians, traffic and existing signage open. Landscaping shall take into account the need to soften the harsh environment and provide shade to reduce the heat island effect within the large amount of pavement. Landscaping shall meet Native Plant / Florida Friendly guidelines, be low maintenance and adhere to County, and FDOT standards.

5.5.3 CPTED

Landscape design shall implement CPTED into the planting design to make sure that the areas around the bridge are safe for pedestrians with an emphasis on crime prevention.

5.6 SUSTAINABILITY OPTIONS

Several Sustainability options were considered including types of materials, treatment of stormwater, solar power and energy efficient elevators. While all can be considered during final design, solar power seems to present a unique opportunity at this location and can potentially add to the architectural character of the overpass.

Orange County's 2030 Sustainable Operations & Resilience Action Plan (Plan) aims to foster a more sustainable and resilient community. To achieve this vision, the County is dedicated to setting an example by implementing internal actions and practices across its operations, assets, and day-to-day procedures. Additionally, the Plan aims to align and update community-wide initiatives to benefit all residents and businesses within the area.

The AVCON/HCCP project team has integrated goals from the Plan into the planning and design of the I4 Pedestrian Bridge / Drone project. This integration contributes to the County's broader endeavor of building a more sustainable and resilient future.

Please check the items that the design team took into consideration during project design:

Sustainable Design Components

- ☐ Native or adapted non-native plant species were implemented in the design to require less water and maintenance and support local wildlife via food and shelter.
- ☐ If permanent irrigation is required, drip irrigation or rainwater harvesting has been considered.
- ☐ Permeable material (permeable pavers/gravel) is used in hardscape areas.
- ☐ The addition of rain gardens, bioswales, and retention ponds to manage stormwater runoff and improve water quality.

Energy

- ☐ Renewable energy, such as rooftop solar, will be included.

Lighting

- ☐ The project is utilizing daylight to reduce energy impact.
- ☐ Outdoor lighting fixtures were selected to minimize light pollution and minimally impact wildlife.

Material Sourcing

- ☐ Materials such as steel and concrete were sourced locally.
- ☐ The project uses recycled materials.
- ☐ The materials used are either sustainable or renewable.

Waste

- ☐ There are plans to include recycling containers if waste receptacles are included.

5.6.1 Solar Summary

After carefully reviewing the provided design information, ecoPreserve has made the following assumptions for our calculations:

- Total Solar Array Square Footage: 2,392 SF
- Estimated Annual Energy Usage: 139,000 kWh/yr.
- Peak Day Energy Usage: 378 kWh

Based on these assumptions, we estimate the solar array attributes as follows:

- DC system size: 17-21 kW
- Annual production: 23,500-27,400 kWh
- Estimated cost: $4.5/Watt, dependent on complexity, accessibility, and mounting design
- Construction cost: $80,000-$90,000
- A federal direct payment program to municipalities could potentially reimburse 30% or more of the total cost.

While the solar array's size and generation potential are not insignificant, they will not fully offset the projected energy consumption for the pedestrian bridge. The renewable energy could offset about 17%-20% of the facility's energy needs. If the elevator's electrical load is excluded, approximately 88% of the lighting load could be offset.

Even though the cost of batteries is decreasing, adding energy storage to the system would significantly increase the overall price and require additional space within the facility.

The proposed solar system would be conventionally routed through conduit into inverters that aggregate energy and convert DC to AC. These inverters, similar in size to large briefcases, would require two or three units depending on the final design. Mounting them on the wall of an interior electrical room is preferable. Once the energy passes through the inverters, it will flow into the Main Disconnect Panel. If there is a surplus of renewables, the excess energy will be transferred back to the grid via a bi-directional meter provided by OUC.

Implementing the proposed solar system will save approximately 24,000 pounds of CO2 greenhouse gases annually compared to a non-solar design.

5.7 INTERSECTION TRAFFIC OPERATIONS AND ALTERNATIVES

Pedestrian crossing data was collected by Accurate Traffic Counts, Inc. using video cameras on all four corners of the intersection of International Drive and Sand Lake Road on Saturday, September 3, 2022 (Labor Day Weekend). The video data was tabulated to determine arrivals and departures in every direction.

Turning movement counts were based on data collected by StreetLight Data, Inc. for the intersection of International Drive and Sand Lake Road. StreetLight Data is an international program that collects and analyzes big data to report traffic statistics, such as turning movement counts. The Florida Department of Transportation (FDOT) is just one of their many clients. This Year 2021 raw volume data was multiplied by a growth factor of 1.15 to approximate an estimated growth rate of 2% over the next 7 years.

Synchro V11 by Trafficware is a software package used for modeling, optimizing, and simulating traffic systems. In this case, Synchro was used to model the intersection of International Drive and Sand Lake Road. The intersection was analyzed with existing at grade crossings (painted crosswalks) and without at grade crossings (with a pedestrian bridge). AM and PM peak hour pedestrian crossings were used during the AM and PM traffic periods to model a potential worst-case scenario for the available data. The results of these analyses are summarized in the tables on the following pages, and the full SYNCHRO software output can be found in **Appendix G.**

With At Grade Crossings

AM Peak Hour Weekday – Crosswalks

International Drive Pedestrian Overpass
International Drive at Sand Lake Road
Intersection LOS Without Pedestrian Overpass
Synchro - AM Peak Hour Weekday

Movement	Without Pedestrian Overpass (With Pedestrian Conflicts)											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing 2021 Volume (vph)	269	913	381	103	866	52	393	241	72	62	301	378
Growth Rate (2% for 7 Years)	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Future 2028 Volume (vph)	309	1,050	438	118	996	60	452	277	83	71	346	435
Existing Conflicting Pedestrians (#/hr)	82	-	48	59	-	93	48	-	59	93	-	82
Future Conflicting Pedestrians (#/hr)	94	-	55	68	-	107	55	-	68	107	-	94
Total Lane Delay (s)	75.3	50.4	9.9	93.4	45.1		87.4	27.4		66.5	36.7	68.0
Lane LOS	E	D	A	F	D		F	C		E	D	E
Approach Delay (s)	44.8			50.0			60.8			55.2		
Approach LOS	D			D			E			E		
95th %ile Queue (ft)	#214	#578	151	#107	358	-	#308	154	-	110	170	#485
Intersection Signal Delay (s/veh)	50.8											
Intersection LOS	D											

Source: Synchro plus SimTraffic 11, Trafficware - A Cubic Company.
Note: # - 95th Percentile volume exceed capacity, queue may be longer.

PM Peak Hour Weekday - Crosswalks

International Drive Pedestrian Overpass
International Drive at Sand Lake Road
Intersection LOS With and Without Pedestrian Overpass
Synchro - PM Peak Hour Weekday

	Without Pedestrian Overpass (With Pedestrian Conflicts)											
Existing 2021 Volume (vph)	331	938	592	116	935	44	688	334	99	70	416	480
Growth Rate (2% for 7 Years)	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Future 2028 Volume (vph)	381	1,079	681	133	1,075	51	791	384	114	81	478	552
Existing Conflicting Pedestrians (#/hr)	82	-	48	59	-	93	48	-	59	93	-	82
Future Conflicting Pedestrians (#/hr)	94	-	55	68	-	107	55	-	68	107	-	94
Total Lane Delay (s)	213.3	106.9	108.3	171.0	69.8		226.4	25.9		66.5	35.9	186.6
Lane LOS	F	F	F	F	F		F	C		E	D	F
Approach Delay (s)	129.5			80.6			148.9			113.0		
Approach LOS	F			F			F			F		
95th %ile Queue (ft)	#321	#687	#672	#136	#454	-	#585	202	-	121	226	#733
Intersection Signal Delay (s/veh)	120.0											
Intersection LOS	F											

AM Peak Hour Weekend- Crosswalks

International Drive Pedestrian Overpass
International Drive at Sand Lake Road
Intersection LOS With Pedestrian Overpass
Synchro - AM Peak Hour Weekend

Movement	Without Pedestrian Overpass (With Pedestrian Conflicts)											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing 2021 Volume (vph)	397	925	570	110	942	78	609	352	100	78	393	510
Growth Rate (2% for 7 Years)	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Future 2028 Volume (vph)	457	1,064	656	127	1,083	90	700	405	115	90	452	587
Existing Conflicting Pedestrians (#/hr)	82	-	48	59	-	93	48	-	59	93	-	82
Future Conflicting Pedestrians (#/hr)	94	-	55	68	-	107	55	-	68	107	-	94
Total Lane Delay (s)	189.2	72.0	39.1	155.9	81.7		186.7	28.7		68.8	37.3	177.2
Lane LOS	F	E	D	F	F		F	C		E	D	F
Approach Delay (s)	86.6			88.9			119.4			112.6		
Approach LOS	F			F			F			F		
95^{th} %ile Queue (ft)	#360	#634	#534	#129	#487	-	#511	220	-	131	219	#765
Intersection Signal Delay (s/veh)	99.0											
Intersection LOS	F											

Source: Synchro plus SimTraffic 11, Trafficware - A Cubic Company.
Note: # - 95th Percentile volume exceed capacity, queue may be longer.

PM Peak Hour Weekend - Crosswalks

International Drive Pedestrian Overpass
International Drive at Sand Lake Road
Intersection LOS Without Pedestrian Overpass
Synchro - PM Peak Hour Weekend

Movement	Without Pedestrian Overpass (With Pedestrian Conflicts)											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing 2021 Volume (vph)	456	993	912	209	1,054	86	865	462	147	89	549	519
Growth Rate (2% for 7 Years)	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Future 2028 Volume (vph)	524	1,142	1,049	240	1,212	99	995	531	169	102	631	597
Existing Conflicting Pedestrians (#/hr)	82	-	48	59	-	93	48	-	59	93	-	82
Future Conflicting Pedestrians (#/hr)	94	-	55	68	-	107	55	-	68	107	-	94
Total Lane Delay (s)	447.4	56.5	338.3	359.6	47.5		503.3	38.6		83.3	47.9	374.7
Lane LOS	F	E	F	F	D		F	D		F	D	F
Approach Delay (s)	240.8			95.8			311.2			197.3		
Approach LOS	F			F			F			F		
95^{th} %ile Queue (ft)	#462	#645	#1349	#238	#449	-	#809	336	-	#173	331	#912
Intersection Signal Delay (s/veh)	218.4											
Intersection LOS	F											

Source: Synchro plus SimTraffic 11, Trafficware - A Cubic Company.
Note: # - 95th Percentile volume exceed capacity, queue may be longer.

Without At Grade Crossings

AM Peak Hour Weekday – Pedestrian Bridge

International Drive Pedestrian Overpass International Drive at Sand Lake Road Intersection LOS With Pedestrian Overpass Synchro - AM Peak Hour Weekday												
Movement	With Pedestrian Overpass (No Pedestrian Conflicts)											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing 2021 Volume (vph)	269	913	381	103	866	52	393	241	72	62	301	378
Growth Rate (2% for 7 Years)	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Future 2028 Volume (vph)	309	1,050	438	118	996	60	452	277	83	71	346	435
Existing Conflicting Pedestrians (#/hr)	-	-	-	-	-	-	-	-	-	-	-	-
Future Conflicting Pedestrians (#/hr)	-	-	-	-	-	-	-	-	-	-	-	-
Total Lane Delay (s)	69.5	42.4	7.3	83.5	40.8		74.9	29.5		66.5	40.8	55.4
Lane LOS	E	D	A	F	D		E	C		E	D	E
Approach Delay (s)		38.5			45.1			54.8			50.4	
Approach LOS		D			D			D			D	
95th %ile Queue (ft)	#202	522	121	#107	350	-	#296	158	-	110	177	#445
Intersection Signal Delay (s/veh)	45.2											
Intersection LOS	D											
Source: Synchro plus SimTraffic 11, Trafficware - A Cubic Company. Note: # - 95th Percentile volume exceed capacity, queue may be longer.												

PM Peak Hour Weekday – Pedestrian Bridge

International Drive Pedestrian Overpass International Drive at Sand Lake Road Intersection LOS With Pedestrian Overpass Synchro - PM Peak Hour Weekday												
Movement	With Pedestrian Overpass (No Pedestrian Conflicts)											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing 2021 Volume (vph)	331	938	592	116	935	44	688	334	99	70	416	480
Growth Rate (2% for 7 Years)	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Future 2028 Volume (vph)	381	1,079	681	133	1,075	51	791	384	114	81	478	552
Existing Conflicting Pedestrians (#/hr)	-	-	-	-	-	-	-	-	-	-	-	-
Future Conflicting Pedestrians (#/hr)	-	-	-	-	-	-	-	-	-	-	-	-
Total Lane Delay (s)	145.7	68.6	18.5	171.0	54.8		136.4	28.6		66.5	44.7	130.7
Lane LOS	F	E	B	F	D		F	C		E	D	F
Approach Delay (s)		66.4			67.1			94.7			89.0	
Approach LOS		E			E			F			F	
95th %ile Queue (ft)	#297	#637	343	#136	#424	-	#537	211	-	121	250	#678
Intersection Signal Delay (s/veh)	77.2											
Intersection LOS	E											
Source: Synchro plus SimTraffic 11, Trafficware - A Cubic Company. Note: # - 95th Percentile volume exceed capacity, queue may be longer.												

AM Peak Hour Weekend – Pedestrian Bridge

International Drive Pedestrian Overpass
International Drive at Sand Lake Road
Intersection LOS With Pedestrian Overpass
Synchro - AM Peak Hour Weekend

Movement	With Pedestrian Overpass (No Pedestrian Conflicts)											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing 2021 Volume (vph)	397	925	570	110	942	78	609	352	100	78	393	510
Growth Rate (2% for 7 Years)	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Future 2028 Volume (vph)	457	1,064	656	127	1,083	90	700	405	115	90	452	587
Existing Conflicting Pedestrians (#/hr)	-	-	-	-	-	-	-	-	-	-	-	-
Future Conflicting Pedestrians (#/hr)	-	-	-	-	-	-	-	-	-	-	-	-
Total Lane Delay (s)	155.4	58.9	18.4	139.1	67.9	-	140.5	30.1	-	68.8	41.5	137.0
Lane LOS	F	E	B	F	E		F	C		E	D	F
Approach Delay (s)	66.9			74.5			93.4			93.3		
Approach LOS	E			E			F			F		
95th %ile Queue (ft)	#348	#610	339	#119	#468	-	#487	224	-	131	230	#727
Intersection Signal Delay (s/veh)	79.3											
Intersection LOS	E											

Source: Synchro plus SimTraffic 11, Trafficware - A Cubic Company.
Note: # - 95th Percentile volume exceed capacity, queue may be longer.

PM Peak Hour Weekend – Pedestrian Bridge

International Drive Pedestrian Overpass
International Drive at Sand Lake Road
Intersection LOS With Pedestrian Overpass
Synchro - PM Peak Hour Weekend

Movement	With Pedestrian Overpass (No Pedestrian Conflicts)											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing 2021 Volume (vph)	456	993	912	209	1,054	86	865	462	147	89	549	519
Growth Rate (2% for 7 Years)	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Future 2028 Volume (vph)	524	1,142	1,049	240	1,212	99	995	531	169	102	631	597
Existing Conflicting Pedestrians (#/hr)	-	-	-	-	-	-	-	-	-	-	-	-
Future Conflicting Pedestrians (#/hr)	-	-	-	-	-	-	-	-	-	-	-	-
Total Lane Delay (s)	265.6	76.0	162.9	254.7	69.4	-	285.7	37.3	-	66.8	58.9	194.9
Lane LOS	F	E	F	F	E		F	D		E	E	F
Approach Delay (s)	146.2			98.0			183.0			120.6		
Approach LOS	F			F			F			F		
95th %ile Queue (ft)	#426	#682	#1112	#226	#520	-	#738	336	-	143	#373	#781
Intersection Signal Delay (s/veh)	139.8											
Intersection LOS	F											

Source: Synchro plus SimTraffic 11, Trafficware - A Cubic Company.
Note: # - 95th Percentile volume exceed capacity, queue may be longer.

Recommendation

It should be noted that the pedestrian data may not represent a standard day due to remnants of the pandemic, time of year, and fear of crossing the intersection. As shown by the data, the levels-of-service have improved for many of the approaches and intersections, the delay times also improved significantly by removing the pedestrians from the intersection. Therefore, the Intersection Traffic Operations and Alternatives section of the analysis recommends removal of the crosswalks and construction of a pedestrian structure to reduce pedestrian and vehicle delay, improve safety and increase pedestrian usage of the intersection.

For convenience, the same data presented in this section is provided in side-by-side comparisons on the following pages.

AM Peak Hour Weekday

International Drive Pedestrian Overpass
International Drive at Sand Lake Road
Intersection LOS With and Without Pedestrian Overpass
Synchro - AM Peak Hour Weekday

Movement	Without Pedestrian Overpass (With Pedestrian Conflicts)												With Pedestrian Overpass (No Pedestrian Conflicts)											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing 2021 Volume (vph)	269	913	381	103	866	52	393	241	72	62	301	378	269	913	381	103	866	52	393	241	72	62	301	378
Growth Rate (2% for 7 Years)	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Future 2028 Volume (vph)	309	1,050	438	118	996	60	452	277	83	71	346	435	309	1,050	438	118	996	60	452	277	83	71	346	435
Existing Conflicting Pedestrians (#/hr)	82	-	48	59	-	93	48	-	59	93	-	82	-	-	-	-	-	-	-	-	-	-	-	-
Future Conflicting Pedestrians (#/hr)	94	-	55	68	-	107	55	-	68	107	-	94	-	-	-	-	-	-	-	-	-	-	-	-
Total Lane Delay (s)	75.3	50.4	9.9	93.4	45.1		87.4	27.4		66.5	36.7	68.0	69.5	42.4	7.3	83.5	40.8		74.9	29.5		66.5	40.8	55.4
Lane LOS	E	D	A	F	D		F	C		E	D	E	E	D	A	F	D		E	C		E	D	E
Approach Delay (s)	44.8			50.0			60.8			55.2			38.5			45.1			54.8			50.4		
Approach LOS	D			D			E			E			D			D			D			D		
95th %ile Queue (ft)	#214	#578	151	#107	358	-	#308	154	-	110	170	#485	#202	522	121	#107	350	-	#296	158	-	110	177	#445
Intersection Signal Delay (s/veh)	50.8												45.2											
Intersection LOS	D												D											

Source: Synchro plus SimTraffic 11, Trafficware - A Cubic Company.
Note: # - 95th Percentile volume exceed capacity, queue may be longer.

PM Peak Hour Weekday

International Drive Pedestrian Overpass
International Drive at Sand Lake Road
Intersection LOS With and Without Pedestrian Overpass
Synchro - PM Peak Hour Weekday

Movement	Without Pedestrian Overpass (With Pedestrian Conflicts)												With Pedestrian Overpass (No Pedestrian Conflicts)											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing 2021 Volume (vph)	331	938	592	116	935	44	688	334	99	70	416	480	331	938	592	116	935	44	688	334	99	70	416	480
Growth Rate (2% for 7 Years)	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Future 2028 Volume (vph)	381	1,079	681	133	1,075	51	791	384	114	81	478	552	381	1,079	681	133	1,075	51	791	384	114	81	478	552
Existing Conflicting Pedestrians (#/hr)	82	-	48	59	-	93	48	-	59	93	-	82	-	-	-	-	-	-	-	-	-	-	-	-
Future Conflicting Pedestrians (#/hr)	94	-	55	68	-	107	55	-	68	107	-	94	-	-	-	-	-	-	-	-	-	-	-	-
Total Lane Delay (s)	213.3	106.9	108.3	171.0	69.8		226.4	25.9		66.5	35.9	186.6	145.7	68.6	18.5	171.0	54.8		136.4	28.6		66.5	44.7	130.7
Lane LOS	F	F	F	F	F		F	C		E	D	F	F	E	B	F	D		F	C		E	D	F
Approach Delay (s)	129.5			80.6			148.9			113.0			66.4			67.1			94.7			89.0		
Approach LOS	F			F			F			F			E			E			F			F		
95^{th} %ile Queue (ft)	#321	#687	#672	#136	#454	-	#585	202	-	121	226	#733	#297	#637	343	#136	#424	-	#537	211	-	121	250	#678
Intersection Signal Delay (s/veh)	120.0												77.2											
Intersection LOS	F												E											

Source: Synchro plus SimTraffic 11, Trafficware - A Cubic Company.
Note: # - 95th Percentile volume exceed capacity, queue may be longer.

AM Peak Hour Weekend

International Drive Pedestrian Overpass
International Drive at Sand Lake Road
Intersection LOS With and Without Pedestrian Overpass
Synchro - AM Peak Hour Weekend

Movement	Without Pedestrian Overpass (With Pedestrian Conflicts)												With Pedestrian Overpass (No Pedestrian Conflicts)											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing 2021 Volume (vph)	397	925	570	110	942	78	609	352	100	78	393	510	397	925	570	110	942	78	609	352	100	78	393	510
Growth Rate (2% for 7 Years)	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Future 2028 Volume (vph)	457	1,064	656	127	1,083	90	700	405	115	90	452	587	457	1,064	656	127	1,083	90	700	405	115	90	452	587
Existing Conflicting Pedestrians (#/hr)	82	-	48	59	-	93	48	-	59	93	-	82	-	-	-	-	-	-	-	-	-	-	-	-
Future Conflicting Pedestrians (#/hr)	94	-	55	68	-	107	55	-	68	107	-	94	-	-	-	-	-	-	-	-	-	-	-	-
Total Lane Delay (s)	189.2	72.0	39.1	155.9	81.7		186.7	28.7		68.8	37.3	177.2	155.4	58.9	18.4	139.1	67.9	-	140.5	30.1	-	68.8	41.5	137.0
Lane LOS	F	E	D	F	F		F	C		E	D	F	F	E	B	F	E		F	C		E	D	F
Approach Delay (s)	86.6			88.9			119.4			112.6			66.9			74.5			93.4			93.3		
Approach LOS	F			F			F			F			E			E			F			F		
95th %ile Queue (ft)	#360	#634	#534	#129	#487	-	#511	220	-	131	219	#765	#348	#610	339	#119	#468	-	#487	224	-	131	230	#727
Intersection Signal Delay (s/veh)	99.0												79.3											
Intersection LOS	F												E											

Source: Synchro plus SimTraffic 11, Trafficware - A Cubic Company.
Note: # - 95th Percentile volume exceed capacity, queue may be longer.

PM Peak Hour Weekend

International Drive Pedestrian Overpass
International Drive at Sand Lake Road
Intersection LOS With and Without Pedestrian Overpass
Synchro - PM Peak Hour Weekend

Movement	Without Pedestrian Overpass (With Pedestrian Conflicts)												With Pedestrian Overpass (No Pedestrian Conflicts)											
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Existing 2021 Volume (vph)	456	993	912	209	1,054	86	865	462	147	89	549	519	456	993	912	209	1,054	86	865	462	147	89	549	519
Growth Rate (2% for 7 Years)	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Future 2028 Volume (vph)	524	1,142	1,049	240	1,212	99	995	531	169	102	631	597	524	1,142	1,049	240	1,212	99	995	531	169	102	631	597
Existing Conflicting Pedestrians (#/hr)	82	-	48	59	-	93	48	-	59	93	-	82	-	-	-	-	-	-	-	-	-	-	-	-
Future Conflicting Pedestrians (#/hr)	94	-	55	68	-	107	55	-	68	107	-	94	-	-	-	-	-	-	-	-	-	-	-	-
Total Lane Delay (s)	447.4	56.5	338.3	359.6	47.5		503.3	38.6		83.3	47.9	374.7	265.6	76.0	162.9	254.7	69.4	-	285.7	37.3	-	66.8	58.9	194.9
Lane LOS	F	E	F	F	D		F	D		F	D	F	F	E	F	F	E		F	D		E	E	F
Approach Delay (s)	240.8			95.8			311.2			197.3			146.2			98.0			183.0			120.6		
Approach LOS	F			F			F			F			F			F			F			F		
95^{th} %ile Queue (ft)	#462	#645	#1349	#238	#449	-	#809	336	-	#173	331	#912	#426	#682	#1112	#226	#520	-	#738	336	-	143	#373	#781
Intersection Signal Delay (s/veh)	218.4												139.8											
Intersection LOS	F												F											

Source: Synchro plus SimTraffic 11, Trafficware - A Cubic Company.
Note: # - 95th Percentile volume exceed capacity, queue may be longer.

Barrier vs. No Barrier

The purpose of installing a pedestrian overpass over the International Drive and Sand Lake Road Intersection is pedestrian safety, better flow of traffic and to provide an Iconic structure, among many. The International Drive and Sand Lake Road intersection is one of the busiest intersections in Orange County, and minimizing the number of motorist-pedestrian conflicts will prove beneficial. The International Drive corridor is an epicenter for tourism in Orlando, and includes many retail shops, restaurants, businesses, and hotels. The result of this tourism produces many pedestrians, most that are not familiar with the area. Based on the above analysis of crosswalk vs. no crosswalk, the question then becomes should a barrier be installed at the edge of pavement to restrict / discourage pedestrians from attempting to cross the roadway at grade.

Along with pedestrian safety, the intent of the barrier wall is to protect the bridge piers from vehicle impacts. This will ensure that the overpass will remain structurally sufficient, as well as protect pedestrians at the four corners of the intersection. There will be a bridge pier at each of the four corners of the intersection. The areas that will accommodate the piers outside of the right-of-way will be established easements dedicated to Orange County from each of the four private properties on the corners of the intersection.

Throughout initial and conceptual design, it has been determined that additional right-of-way or easements will be needed to accommodate each of the 4 legs/corners of the bridge. Discussions with those owners are being made now, along with utility coordination.

As for the approaches to the intersection, two potential options were taken into consideration regarding a barrier wall. One is a 1’-3” concrete barrier wall, offset 4’ from face of curb, running from the first driveway of each approach to the intersection. The second option is a 1’-3” concrete barrier wall offset 1’-4” from the edge of pavement, utilizing FDOT standard index 521-001. The first option provided inadequate sidewalk width given the offset from face of curb and the Right-of-Way line along each of the approaches. Some spots show only having 3’ of width. Using option two, and utilizing FDOT standard index 521-001, specifically the detailed Curb and Gutter Barrier shown on sheet 20 of 26, will provide adequate sidewalk width along the approach to the intersection. Standard Index 521-001 will provide superior pedestrian accommodation, including PROWAG viable access.

The additional right-of-way required to maintain a 7' sidewalk on the east approach of the Northeast corner will require re-grading of the Perkins parking lot with option 1. With FDOT Standard Index 521-001, there will be the appropriate 7' offset to accommodate the sidewalk without need for additional right-of-way.

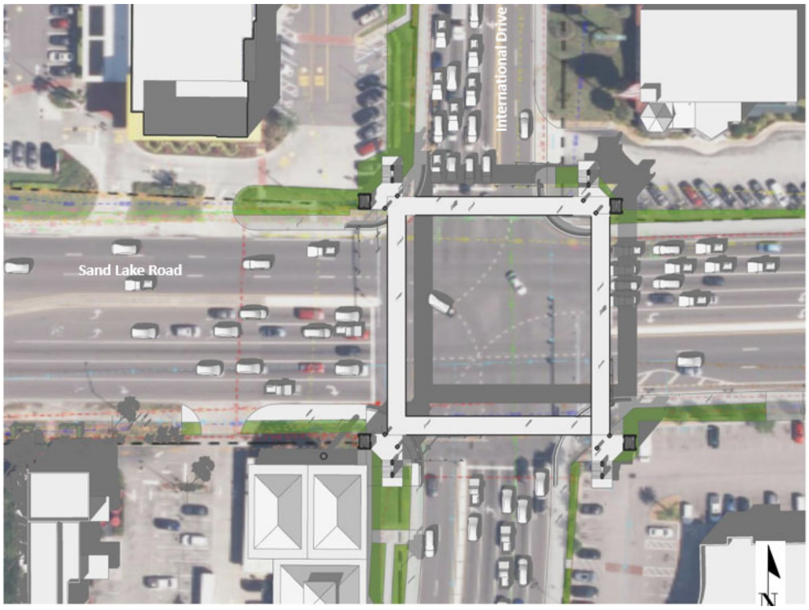
Another benefit to using the barrier wall from FDOT standard index 521-001 is discouraging pedestrians from crossing over the wall and using the intersection at-grade. With there only being 1'-4" from face of barrier wall to edge of pavement, pedestrians should have a better understanding of using the right side of the sidewalk at each of the approaches. With option 1, and a 4' offset, pedestrians may get confused and use that 4' buffer as a walking space, and not use the proposed intersection bridge as intended.

Based on the FDOT Standard Index 521-001 for Concrete Barrier Wall, it is recommended that these details are utilized to provide adequate sidewalk widths, given the Right-of-Way restraints along the approaches, and to promote using the proposed pedestrian overpass as intended and deter pedestrians from crossing the intersection at-grade.

5.8 ALTERNATIVE CONCEPTS

The next step in the Alternative Evaluation was to further develop the six geometric shapes that were initially envisioned. This section depicts a model that can better represent the massing and physical characteristics of each geometrical option. It is noted that each of the alternatives at each corner use the combination stair / elevator for vertical circulation.

5.8.1 Square Configuration



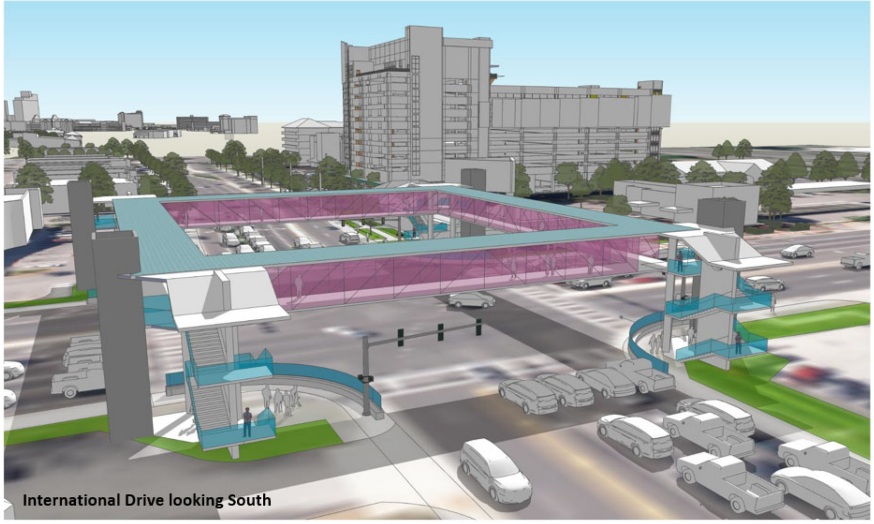


Figure 5-29: Square Configuration

5.8.2 "X" Configuration

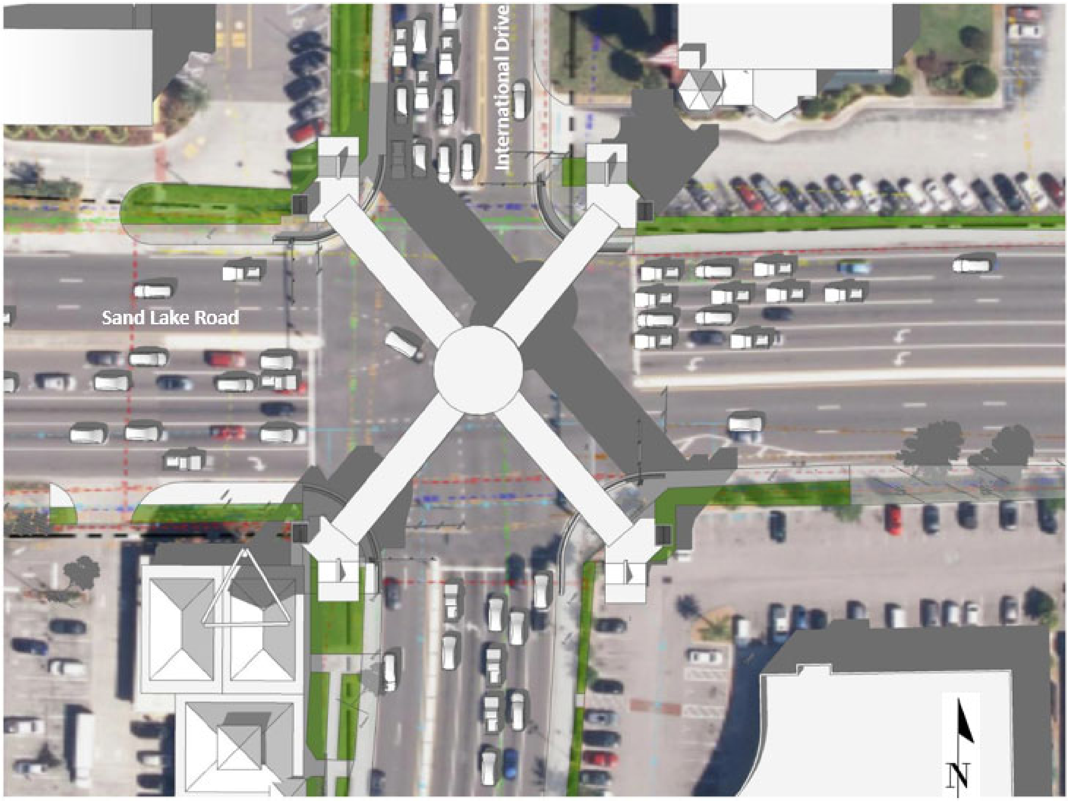


Figure 5-30: "X" Configuration

5.8.3 Circular Configuration

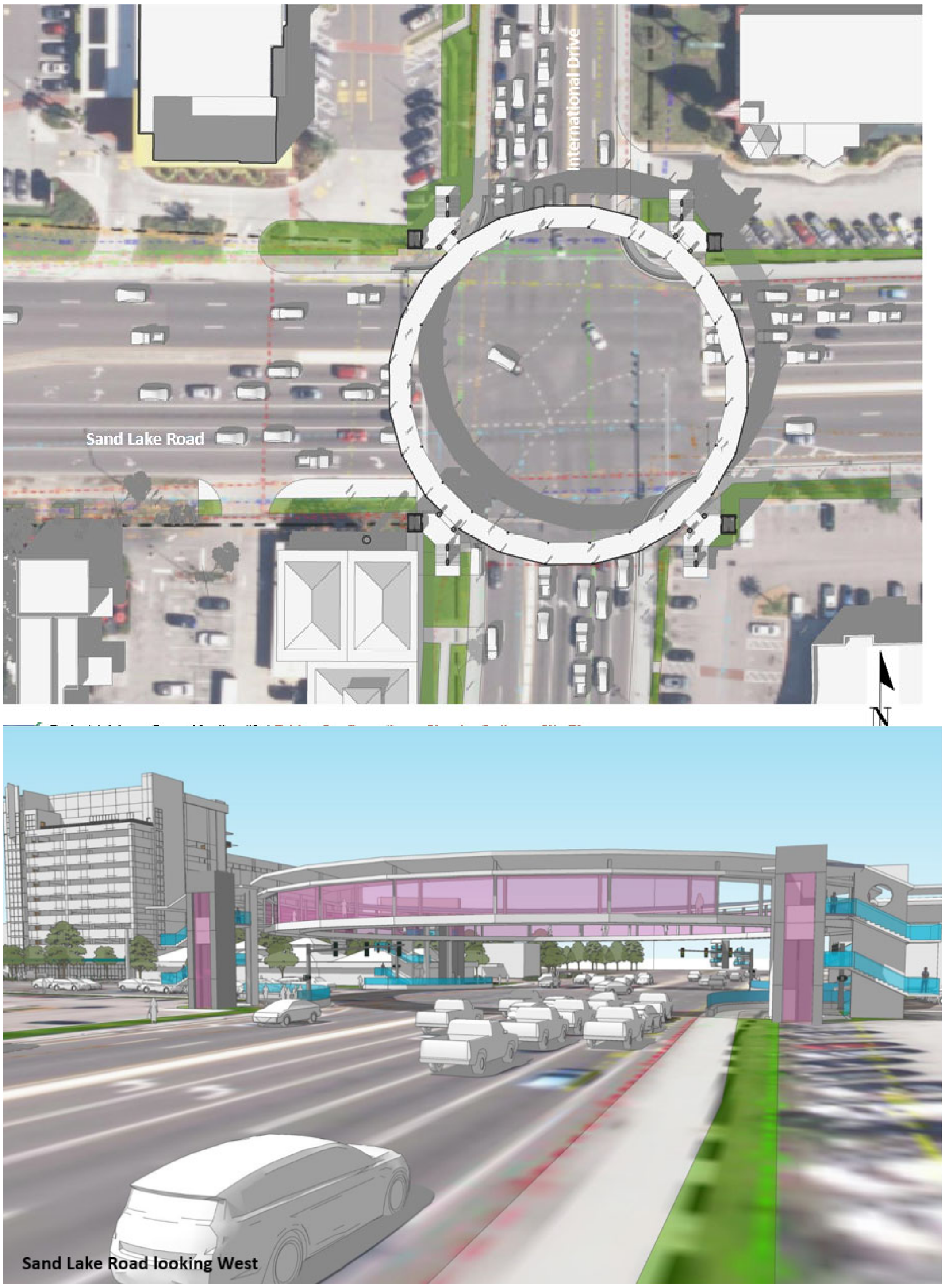


Figure 5-31: Circular Configuration

5.8.4 “C” Configuration

Figure 5-32: “C” Configuration

5.8.5 "I" Configuration

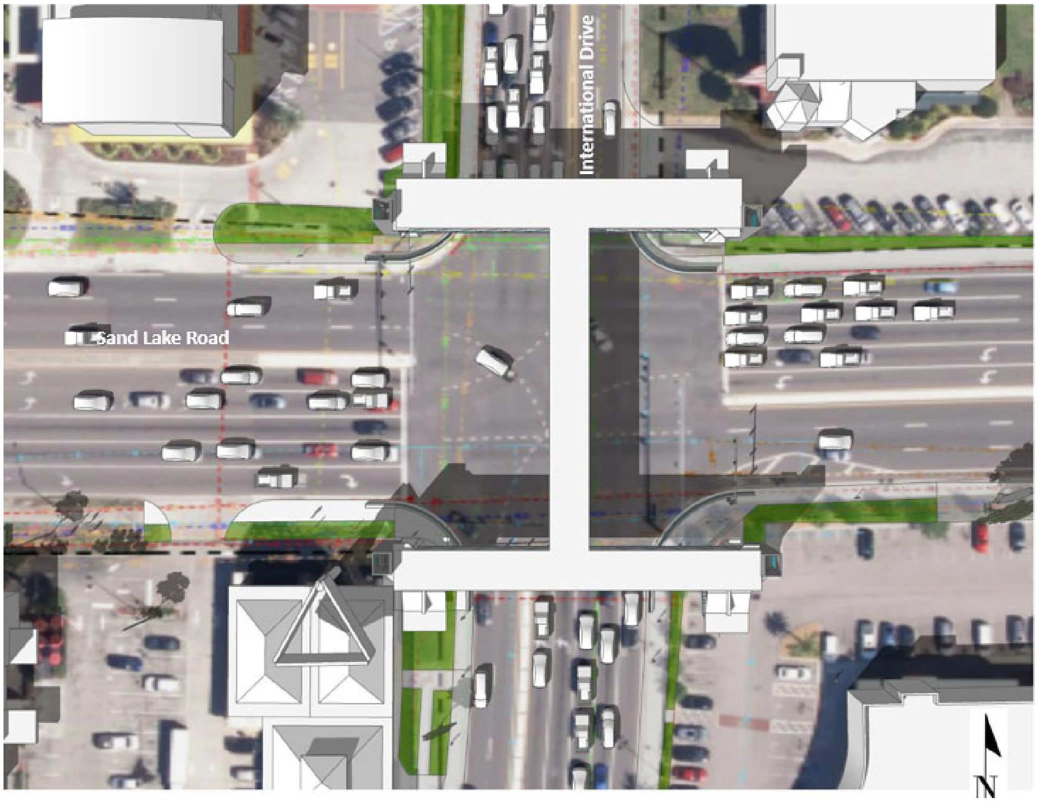


Figure 5-33: "I" Configuration

5.8.6 Modified "I" Configuration

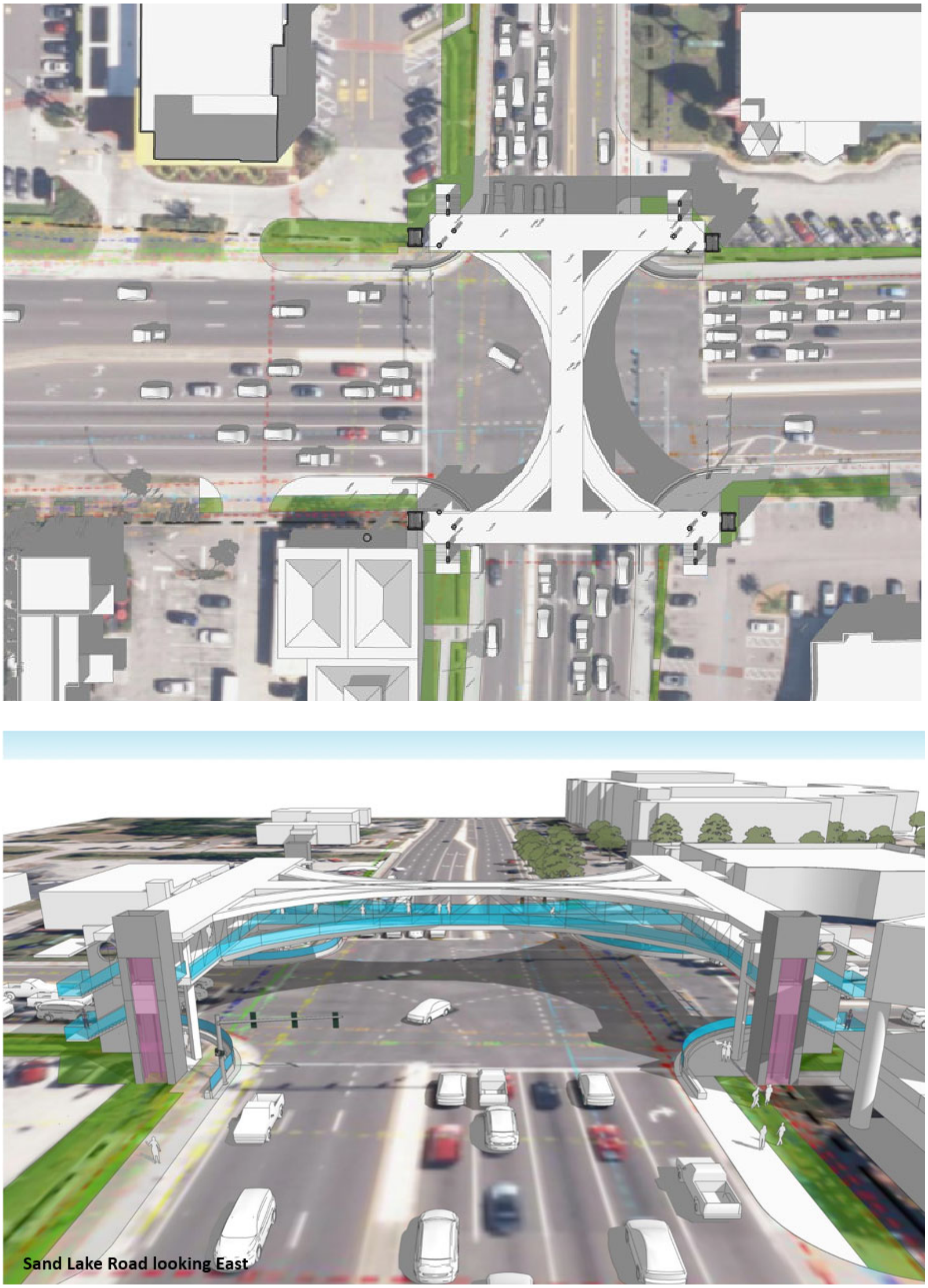


Figure 5-34: Modified "I" Configuration

5.9 COMPARISON MATRIX REFINED

Based on a more detailed review of these geometry options, the alternatives matrix was refined and expanded to include a number of new factors. They include:

Complexity of the Structure: This rating criteria considered structural design and construction complexity. Items such as the use of standard industry details and minimizing field activities (such as welding) were considered. A preliminary structural analysis and constructability analysis was performed on each bridge configuration.

Relative Cost: Relative cost was determined by using the total length of bridge structure and adding factors to represent complexities such as curved sections and the potential large loads to be created at inherently weak point of the structure (such as the I shape)

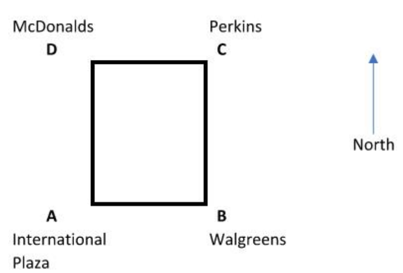
Design Icon Value: This rating is somewhat subjective and intended to evaluate each shape for its potential to create an iconic structure in accordance with Orange County's Vision.

The results of the Team and the PAG are summarized below/

Bridge Configuration Evaluation Matrix
(lower score is higher ranking)

	Travel Dist. Int. A-B	Travel Dist. Int. A-C	Travel Dist. Int. A-D	Avg. Walk Dist.	Rank	Bridge Length	Rank	Total Score	Rank
Square Configuration	126	292	166	195	**1**	584	**5**	**6**	**2**
"X" Configuration	210	210	210	210	**3**	420	**3**	**6**	**2**
Circular Configuration	171	408	272	284	**5**	816	**7**	**12**	**5**
"C" Configuration	171	408	579	386	**6**	579	**4**	**10**	**4**
"I" Configuration	126	276	276	226	**4**	402	**2**	**6**	**2**
Modified "I" Configuration	126	229	229	195	**1**	686	**6**	**7**	**3**
Intersecting "C" Configuration	158	229	229	205	**2**	395	**1**	**3**	**1**

Exist. Crosswalk Distance	
A-B	96'
A-C	259'
A-D	132'
Avg.	162'



Note:
Distance from A-C is the same as B-D

Bridge Configuration Evaluation Matrix
(lower score is higher ranking)

	Bridge Length	Rank	Structural Complexity	Relative Cost	Design Icon Value	Total Score	Rank
Square Configuration	584	**5**	**1**	**3**	**7**	**11**	**4**
"X" Configuration	420	**3**	**4**	**2.5**	**6**	**12.5**	**5**
Circular Configuration	816	**7**	**2**	**4.5**	**3**	**9.5**	**3**
"C" Configuration	579	**4**	**3**	**3.5**	**2**	**8.5**	**1**
"I" Configuration	402	**2**	**5**	**3.5**	**4**	**12.5**	**5**
Modified "I" Configuration	686	**6**	**6**	**6**	**5**	**17**	**6**
Intersecting "C" Configuration	395	**1**	**5**	**3**	**1**	**9**	**2**

Bridge length not included in aggregate score, but is used to calculate relative cost.

$$\text{Relative Cost} = \frac{\text{Bridge Length Rating} + \text{Structural Complexity Rating}}{2}$$

Table 5-3: Bridge Configuration Evaluation Matrix

Based on Adding the two rating scales above, the Intersecting "C" has the lowest total combined ranking of 3 and was therefore selected as one of the final alternatives to evaluate. The PAG also felt that the "I" Configuration was a viable option and tied nicely to the I-Drive. Therefore, those two options were selected for the final analysis and selection of a Recommended Alternative.

SECTION 6 RECOMMENDED ALTERNATIVE

6.1 RECOMMENDED ALTERNATIVE SUMMARY

As the traffic volume has continued to increase at the intersection of Sand Lake Road and International Drive, the safety of pedestrians crossing at this intersection has become an increasing topic of concern. The idea of a pedestrian bridge at this intersection has been a reoccurring idea that was formally introduced in the Orange County Planning department Vision 2020, and designs have been suggested by both Orange County and the neighbors that anchor the corners of the intersection.

This study has utilized the Public Advisory Group (PAG) as a key design partner in the development of the bridges design.

Through this analysis, multiple options have been studied for:

- Bridge location
- Bridge Configuration
- Vertical Circulation Options
- Right of way needs (minimizing footprint)
- Structural Systems
- Security and Emergency Responder Input
- Impact on vehicular circulation
- Safety of pedestrians at the intersection and on the bridge
- ADA accessibility
- Iconic Gateway Criteria

Through the process of analyzing the bridge design criteria it was determined:

- No intermediate bridge supports could be placed in the intersection or roadway median.
- Ability to shut down traffic flow during construction would be very limited (resulting in prefabricated construction preference).
- Deep foundations would likely be required due to the limited utility-free areas in the ROW.
- A complete cage at bridge locations over the roadway will be required.
- Barriers will be required at the intersections to protect pedestrians and prevent people from attempting on grade crossings.
- The bridge design should be a unique and iconic Orlando design.

Bridge Concept

A key criterion in the development of the pedestrian bridge "Concept" and its iconic form and appearance relied on the continued incorporation of input from the Orange County Transportation Department, the Public Advisory Group (PAG) and the public presentations that were a part of the design "process".

The key iconic elements from the bridge were the result of many criteria including:

- Serving all four corners of the intersection.
- Minimizing the travel distance whenever possible.
- Creating curving walk paths to enhance the experience (appearance of distance and encouraging views to bridge surroundings).
- Incorporation of a photovoltaic array on the bridge.
- Utilizing lighting to enhance the bridge form and pedestrian/vehicular experience.
- Compatibility with the design of the future I-4 and Sand Lake Rd. diverging diamond interchange.
- Creating a unique experience that is representative of the quality experiences visitors to Orlando expect.
- Creation of a gateway to the Orange County Entertainment and Convention Center District.

The impact of these criteria resulted in a design that is unique, relies on engineering expression, and results in an experience and iconic image that is uniquely Orlando.

Building on the alternatives matrix that selected the Intersecting "C" and "I" configurations as the two final alternatives, the design team prepared two options that are unique modifications to the Reverse "C" and "I". They incorporate elements of both geometries into the design and provide two unique architectural styles for consideration.

6.1.1 The "Wave" Configuration

The Wave Configuration gets its name from the shape of the roof structure. The slowly varying height of the roof creates a wavy look to the structure. This creates some interesting views and angles and provides a unique appearance. It has characteristic of both the Intersecting "C" and the "I" configurations.

The Wave is a bit closer to the Reverse "C"s concept but has a connector platform in the center that can be seen on the plan view shown on the following page. The bridge piers include the elevators which will be glass and visible to the outside on at least one side. This side will face the main access road to and from I-4 (Sand Lake) and can be used for lighting enhancements thus increasing the iconic value of the structure.

Figure 6-1: Wave Configuration Plan View

Figure 6-2: Wave Configuration View from the North

Figure 6-3: Wave Configuration View from West

Figure 6-4: Wave Configuration Nighttime View from the East.

6.1.2 The “Drone” Configuration

The Drone Configuration has some characteristics of the “I” Bridge using a straight section in the center. The corner have been rounded to reduce walking distance and create varying views as you cross the overpass. The center portion of the bridge creates a nice opportunity to install a photovoltaic cell for solar energy production. The combination of the solar array and bridge shape gives it the look of a drone, hence the name.

Figure 6-5: The “Drone” Site Plan

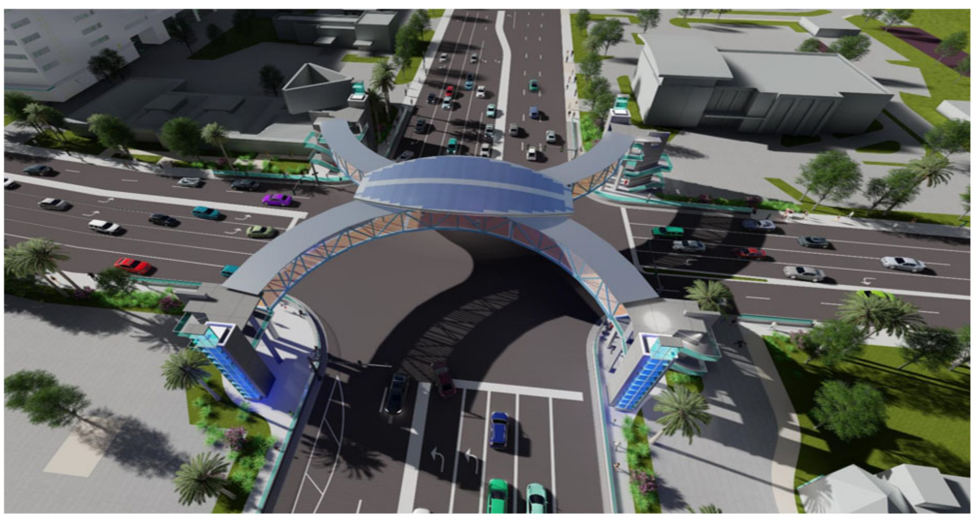


Figure 6-6: The “Drone” Aerial View

Figure 6-7: The "Drone" View to West on Sand Lake Road

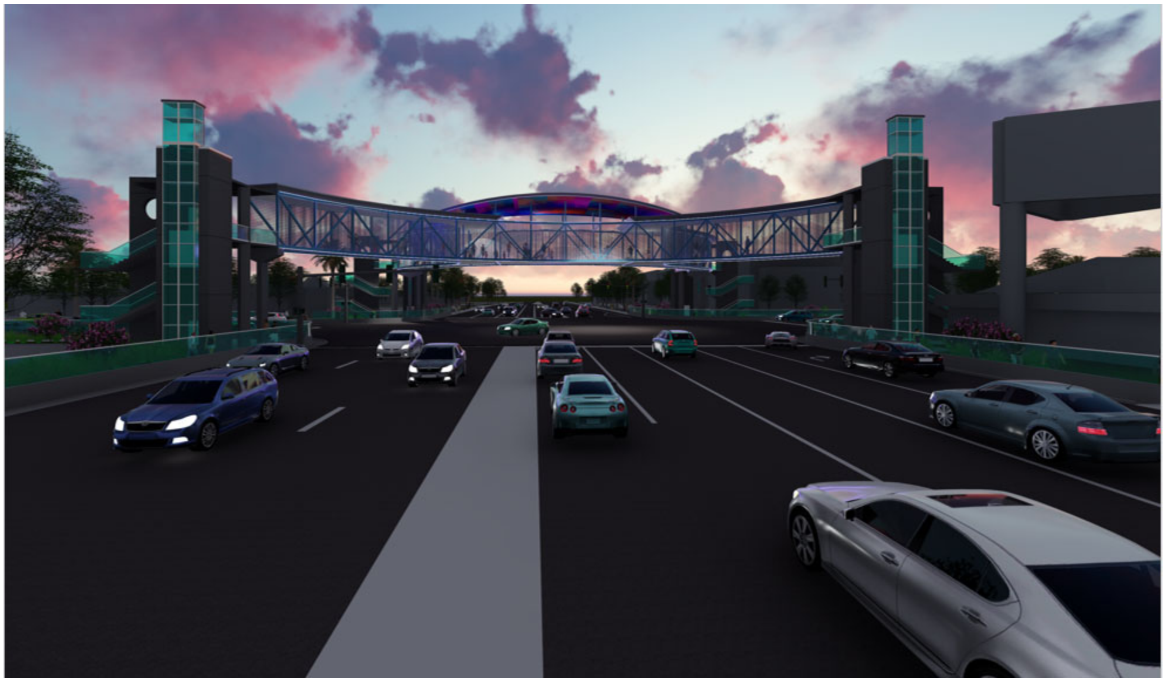


Figure 6-8: The "Drone" View Looking East on Sand Lake Road

6.1.3 Pedestrian Bridge Recommended Alternative

Based on all of the documentation gathered as part of this study, input from the many stakeholders including the Project Advisory Group (PAG), FDOT, Orange County Departments, other interested agencies and stakeholders, the summary table below has been prepared to identify potential impacts and issues related to each of the final two alternatives.

The two alternatives and the below information was presented to the PAG at meeting 4 and to the Board of County Commissioners at a workshop. The PAG unanimously voted for the Drone to be the recommended alternative. The Study Team is therefore recommending the Drone as the Recommended and Preferred Alternative to Orange County and the Board of County Commissioners.

Table 6-1: Alternative Matrix Drone and Wave

ORANGE COUNTY GOVERNMENT FLORIDA

INTERNATIONAL DRIVE PEDESTRIAN OVERPASS

HHCP&AVCON A JOINT VENTURE

INTERSECTION ANALYSIS AND OVERPASS CONCEPTUAL DESIGN

ALTERNATIVE MATRIX DRONE AND WAVE

EVALUATION CRITERIA	NO-BUILD ALTERNATIVE	PREFERRED ALTERNATIVE THE DRONE	2ND ALTERNATIVE THE WAVE
ADJACENT PROPERTY IMPACTS			
Easements Required	None	4 - One on Each Corner	4 - One on Each Corner
Physical Impacts	None	Approximately 6 Parking Spaces Lost (Adjacent Properties)	Approximately 6 Parking Spaces Lost (Adjacent Properties)
Agreements	None	1 Comcast Billboard / 4 Easement Agreements / Bridge Air Rights Agreement	1 Comcast Billboard / 4 Easement Agreements / Bridge Air Rights Agreement
SOCIAL, NATURAL AND PHYSICAL IMPACTS			
Social and Neighborhood	None	Improved Connectivity	Improved Connectivity
Environmental	None	Improved Air Quality Due to Less Car Idling	Improved Air Quality Due to Less Car Idling
Stormwater / Floodplain	None	None	None
Contamination Sites	None	None	None
Physical Impacts	None	Improved Safety	Improved Safety
ESTIMATED COSTS (PRESENT DAY)			
Bridge Construction Cost	No Cost	$27,900,000	$28,623,000
Design, Adm Cost (15% of Construction)	No Cost	$4,180,000	$4,300,000
CEI (12% of Construction)	No Cost	$3,348,000	$3,434,760
Right-of-Way Costs	No Cost	$0	$0
Environmental Mitigation	No Cost	None	None
Utility Relocation	No Cost	$200,000	$200,000
TOTAL ESTIMATED COST		**$35,628,000**	**$36,557,760**

6.1.4 Right-of-Way / Easement Needs

As noted earlier in this report, there is limited right-of-way at each corner to provide available land to construct the bridge piers. Each property owner has been met with individually and were included as part of the Project Advisory Group. The Study team has presented pier layouts to determine the space required from each property owner. These have been presented at the PAG meetings and to several other stakeholders including FDOT.

Discussions with County staff and FDOT staff have produced a recommendation that the areas required be considered easements granted by the individual property owners to Orange County. Orange County will be the owner of the bridge and therefore needs to have the legal rights to construct, operate and maintain the structure on the private properties.

In addition, since Sand Lake Road is a state-owned highway, a right-of-way use agreement will be required to allow portion of the bridge piers to be constructed in FDOT right-of-way and to grant “air” rights to the County for the overpass to be constructed above existing FDOT right-of-way.

A discussion of each corner and corresponding sketches follows:

6.1.4.1 Northwest Corner – McDonald’s

The northwest corner of the intersection is a 2.3-acre site and home of one of the busiest McDonald’s in the United States. The site has parking lots adjacent to both International Drive and Sand Lake Road and driveway access from both roadways. The driveway along Sand Lake Road is very close to the intersection with International Drive and is important to the operation of the drive-thru based on conversations with the owners. The owners were open to losing some parking spaces but did not want the driveway access points impacted.

The proposed layout, shown below, does not impact the referenced driveway access points but does eliminate three (3) parking spaces. This recommended layout is provided for consideration by the property owner to grant an easement (shown in red) to Orange County for use to construct the pedestrian overpass that will improve access to the McDonald’s.

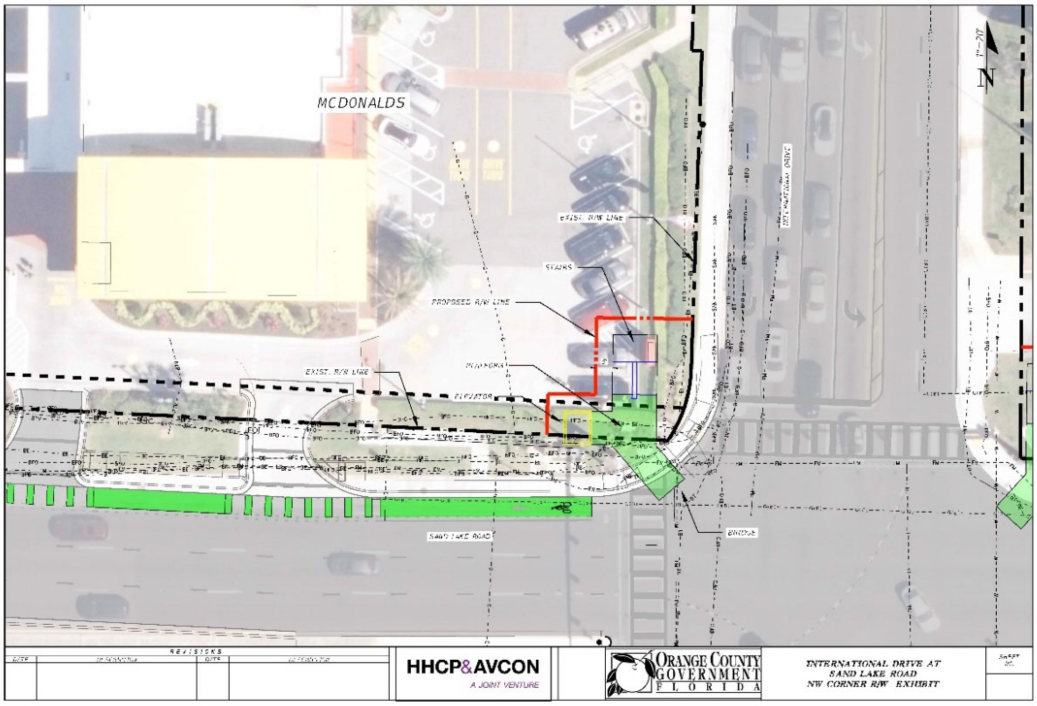


Figure 6-9: I-Drive at Sand Lake Road NW Corner R/W Exhibit

6.1.4.2 Northeast Corner – Perkins / Skyplex PD

The northeast corner of the intersection is a 12.96 acre property and is home to a Perkins Restaurant. It has also been approved as the Skyplex PD for future uses including restaurants, entertainment retail, general retail and hotel. The site has parking lots adjacent to Sand Lake Road and driveway access from both roadways. The existing driveway along International is very close to the intersection with Sand Lake Road and is subject to be relocated upon redevelopment in accordance with the approved PD. The owners were open to losing some parking spaces and wanted the option to connect to the bridge at the second level in the future.

The proposed layout, shown below, does not impact the referenced driveway access points but does eliminate one (1) parking space. This recommended layout is provided for consideration by the property owner to grant an easement (shown in red) to Orange County for use to construct the pedestrian overpass that will improve access to Perkins and the future Skyplex Development.

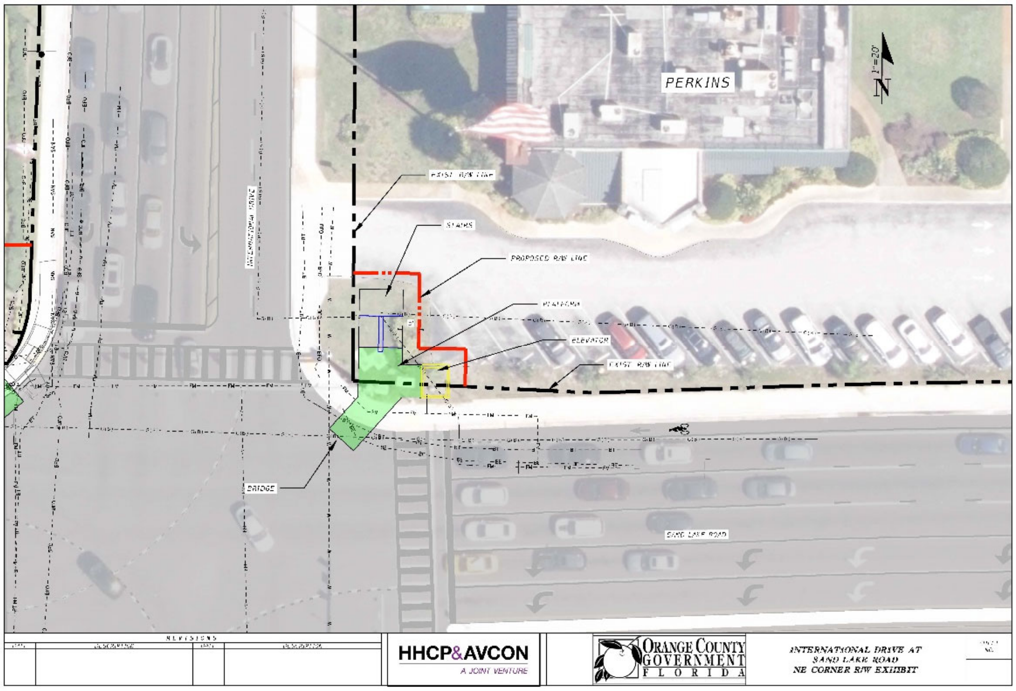


Figure 6-10: I-Drive at Sand Lake Road NE Corner R/W Exhibit

6.1.4.3 Southeast Corner – Walgreens / Wyndam Orlando Resorts & SHOPS PD

The southeast corner of the intersection is a 41.84-acre property and is home to a Walgreens on the corner and the Wyndham Resort. It has also been approved as the Wyndam and SHOPS PD for future uses including commercial, retail, gas station, hotel and all uses in the C1 zoning. The site has parking lots adjacent to Sand Lake Road and

International Drive with and driveway access from both roadways. The existing driveways are located away from the intersection and will not be impacted by the proposed bridge piers. The owners were open to losing some parking spaces and wanted the option to connect to the bridge at the second level in the future.

The proposed layout, shown below, does not impact the referenced driveway access points but does eliminate two (2) parking spaces. This recommended layout is provided for consideration by the property owner to grant an easement (shown in red) to Orange County for use to construct the pedestrian overpass that will improve access to Walgreens and the future PD Development.

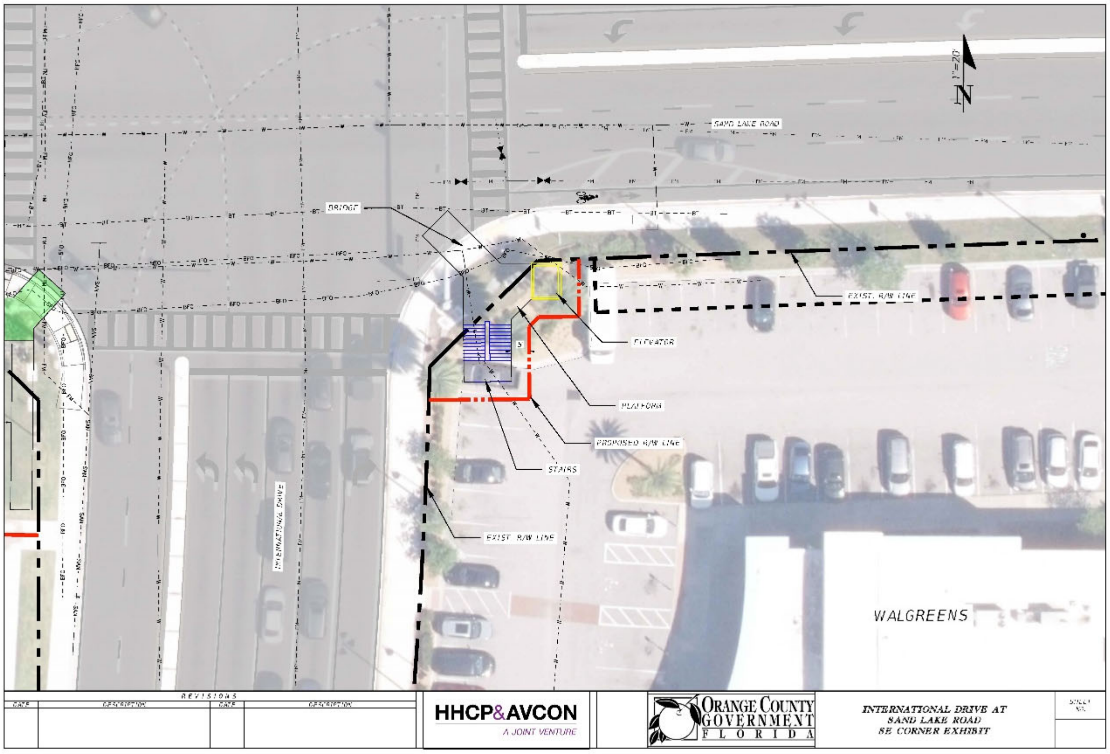


Figure 6-11: I-Drive at Sand Lake Road SE Corner Exhibit

6.1.4.4 Southwest Corner – International Square

The southeast corner of the intersection is a 0.46-acre property and is home to a retail shopping plaza. There is actually no parking on this specific property, but the Checkers to the west in owned by the same corporation have joint access and parking from a driveway off Sand Lake Road. The existing driveway is located close to the International Drive intersection and is critical to the operation of both the retail shops and Checkers. The retail center is on the corner and very close to the right-of-way of both streets.

The corner property is also the home of a three paneled billboard owned by Clear Channel. The billboard exists through a granted easement from International Square, Inc. Clear Chanel has expressed concerns with visibility of the billboard after bridge construction. This issue is being discussed between Orange County and Clear Channel.

Due to the available property on this corner, the bridge pier configuration was modified to be fully constructed within the existing right-of-way, including clearances for maintenance.

The layout also provides a location for the relocated mast arm signal pole that will serve southbound International Drive traffic. This corner will not require an easement from the property owner for construction of the bridge.

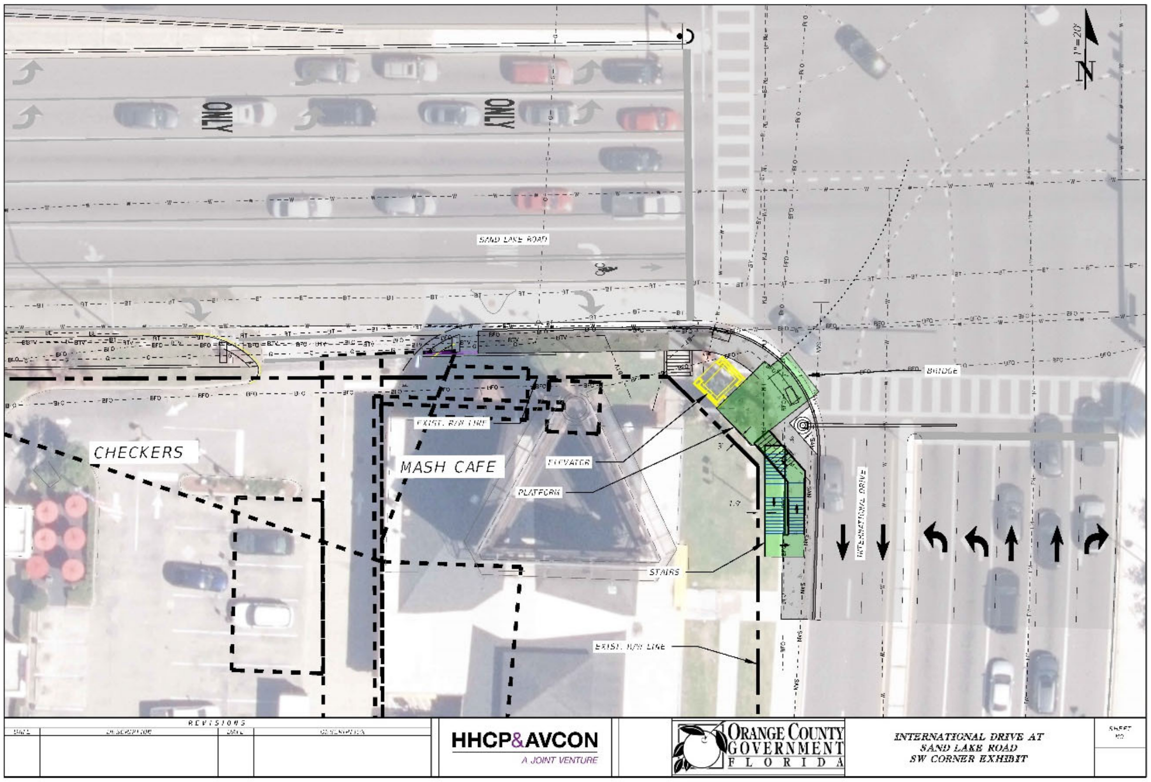


Figure 6-12: I-Drive at Sand Lake Road SW Corner Exhibit

6.2 OPINION OF PROBABLE COST

The full construction opinion of probable cost is included in Appendix J. The estimate has been prepared by a professional in the construction industry separate from the study team. The assumptions and conditions that were included in the cost analysis are documented here.

6.2.1 General Conditions

- Construction time estimated at twelve months for completion of the project.
- One full time Supervisor
  - Onsite management
  - Subcontractor coordination

- Overall construction
- Jobsite reports
- One full time Project Manager
  - Project documentation
  - Project contracts, purchase orders and change orders
- One full time field assistant to assist with construction services and Quality Control.
- Administrative support staff throughout the project.
- Dumpsters, barricades, temp facilities, temp office, temp labor, final clean.
- Surveying for layout and as-built needs throughout construction.
- 15% design contingency is included.
- 5% construction contingency is included.
- No cost escalation is currently figured.
- Permit fee assumptions are included.
- Design fees are not included.

6.2.2 Demolition

- Demolition of existing signalization.
- Saw cutting and removal of the existing sidewalks as needed for installation of new construction items.

6.2.3 Testing

- Testing service to include proctors, densities, and structural inspections as needed to complete construction.

6.2.4 Concrete

- Strip and isolated foundations for the stair and elevator towers.
- Tilt wall construction of the stair and elevator towers.
- Stairs and landings at each tower location.
- Concrete safety wall at each intersection corner.
- New sidewalks around the towers at each intersection corner.
- Overpass walkway superstructure.

6.2.5 Metals

- Structural steel for the walkway and associated roofing and screening.

- Structural steel for the stairs and elevators areas.
- Barrier wall screening.

6.2.6 Roofing

- Provide and install new roofing systems over the walkways and towers.
- Provide and install solar panel system over the walkways.

6.2.7 Doors, Hardware, & Glazing

- Supply and install new hollow metal frames, doors, and associated hardware for the elevator equipment rooms/maintenance areas.
- Supply and install glazing systems for the elevator towers.
- Supply and install glazing wall system for the stairways.

6.2.8 Paint

- Prime and paint new doors and frames.
- Paint for exterior walls.

6.2.9 Signage

- New signage for roadways.

6.2.10 Elevator

- (4) New elevator cabs. One at each corner.

6.2.11 Electrical

- Extension of the existing power system to provide power and lighting for the new elevators and walkway areas.
- Installation of subpanels for power distribution as needed.
- LED fixtures.
- Battery backed up devices for emergency power needs.
- Power requirements for lab devices per plan assumptions.
- General outlets, data, and voice for general layout.
- Lightning protection for the building additional.

- Audio/Video, CCTV, and Security System is not included in pricing.

6.2.12 Exterior Improvements

- Cost to complete the site improvements include the following:
  - Clearing and demolition of existing parking and green areas needed for new construction.
  - Mobilization
  - Silt fence
  - Maintenance of traffic.
  - Mill and re-asphalt of drive isles as needed after construction is complete for areas that were disturbed during construction activity.
  - New landscaping around the new walkways.
  - Modification of existing irrigation as needed due to construction.
  - New signalization due to the construction of the new walkway system.
  - Relocation of existing utilities for the construction of the new towers and walkway systems.

6.2.13 Statement of Probable Costs

This opinion/cost analysis is made on the basis of experience, qualifications, and best judgement of a professional construction consultant familiar with the construction industry. A staff of professional cost consultants has prepared this opinion in accordance with generally accepted principles and practices.

6.2.14 Architectural and Engineering Design Costs

Architectural and Engineering Design Costs have been estimated based on a percentage of construction cost that is typically standard in the industry. For this project based on its complexity, 15% has been used to estimate the design cost.

6.2.15 Construction Engineering and Inspection (CEI) Costs

Construction Engineering and Inspection (CEI) Costs have been estimated based on a percentage of construction cost that is typically standard in the industry. For this project based on its complexity, 12% has been used to estimate the design cost.

6.2.16 Right-of-Way Costs

The Project will require an easement from three of the four property corners in order to install the bridge piers to support the overpass. The County has taken the position that these required easements will be made available by the property owners in exchange for the benefits the properties will receive from the construction of the overpass. The three property owners impacted have indicated they are open to this arrangement.

The recommendation from the study team and County staff is to create easement dedicated to the County for the areas required. FDOT has noted they approve of this approach.

6.2.17 Contingency Costs

The construction cost has included approximately $3,500,000 (15%) as a design contingency for items not fully detailed at the study level this project is currently designed to. This is also a standard contingency level for this phase of a projects. As the project details are better defined through the design process, the contingency can generally be reduced.

6.2.18 Project Schedule

The project is not fully funded for construction, but funds have been identified for the design phase. It is anticipated that the RFP for design services will be advertised in mid 2025 with anticipated notice-to-proceed on or about January 1, 2026. The design is anticipated to take about 18 months so construction advertisement can be advertised sometime in 2027. It is anticipated that the construction will take approximately 18 months, with an additional 6 months being added to account for utility relocations and potential long lead times for elements such as bridge fabrication.

6.3 ENVIRONMENTAL AND COMMUNITY IMPACTS

Based on the information presented in the Data Collection Section and the preferred alternative, there have been no negative environmental and community impacts. In fact, some of the impacts to the community are anticipated to be positive to the community and one of the largest tourist development areas in the world.

6.3.1 Land Use

The intersection is located In the I-Drive Zoning Overlay District which promotes growth of the community, connectivity, mobility and safe/efficient access to the businesses in the corridor.

The Pedestrian Overpass enhances all of the goals of the overlay district and it completely consistent with the Future Land Use and Zoning regulations.

6.3.2 Community Cohesion

The Pedestrian Overpass will provide a much-needed connection between the four corners of this intersection. Being located in the heart of the tourist district, this area sees a high volume of pedestrians since many tourists do not have cars for mobility along the corridor.

This connectivity will significantly add to the cohesion of the business and hospitality community along the corridor and provide better transportation services to the international visitors that typically travel to the Central Florida area.

6.3.3 Land Use

The intersection is located In the I-Drive Zoning Overlay District which promotes growth of the community, connectivity, mobility and safe/efficient access to the businesses in the corridor.

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The Pedestrian Overpass will provide a much-needed connection between the four corners of this intersection. Being located in the heart of the tourist district, this area sees a high volume of pedestrians since many tourists do not have cars for mobility along the corridor.

This connectivity will significantly add to the cohesion of the business and hospitality community along the corridor and provide better transportation services to the international visitors that typically travel to the Central Florida area.

6.4 ENVIRONMENTAL ASSESSMENT

Based on the overall development of the existing intersection, there are no environmental assets that will be impacted by the proposed development. The Pedestrian Overpass will provide a benefit to the environment in two distinct ways:

- Reduced air pollution due to the reduction of delay time at the intersection for vehicle thereby reducing their idling time.
- Reduced power requirements due to the photovoltaic cells that will be installed on the roof of the structure.

6.5 UTILITIES IMPACTS

Construction of the Pedestrian Overpass will impact a number of utilities at the site of the bridge piers on each corner. These utilities include the following:

Northwest Corner – McDonald's

- Several Buried Fiber Optic Cables – the selected design team will need to coordinate with the communication companies to have these relocated. They are not located in easements and will not have cost impact.
- Buried Electric: Duke Energy has an underground distribution cables located directly under the proposed bridge pier and in an existing easement. The selected design team will need to work with Duke to relocate these lines. The cost of this relocation has been included in the project costs since the lines exist by easement.
- There is a natural gas line that runs below the bridge platform and will need to be relocated or protected as part of the design process. This is not located in an easement and should not add any cost to the project.
- Orange County Utilities has a force main running near the bridge column that may be impacted by construction. The design team will need to work closely with Orange County Utilities on the disposition of this item.

Northeast Corner – Perkins and Skyplex

- There is a natural gas line that runs below the bridge platform and will need to be relocated or protected as part of the design process. This is not located in an easement and should not add any cost to the project.
- Orange County Utilities has a force main running near the bridge columns that may be impacted by construction. The design team will need to work closely with Orange County Utilities on the disposition of this item.

Southeast Corner - Walgreens / Wyndam - SHOPS

- Orange County Utilities has potable water line running near the bridge columns that may be impacted by construction. The design team will need to work closely with Orange County Utilities on the disposition of this item.

Southwest Corner International Plaza

- Several Buried Fiber Optic Cables – the selected design team will need to coordinate with the communication companies to have these relocated. They are not located in easements and will not have cost impact.
- Orange County Utilities has an abandoned force main running near the bridge column that may be impacted by construction. The design team will need to work closely with Orange County Utilities on the disposition of this item.

SECTION 7 PUBLIC INVOLVEMENT

Public involvement in the International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study ("I-Drive Pedestrian Overpass Study") was critical to the success of this long-sought improvement to pedestrian safety and an aesthetic gateway to one of Orange County's most heavily traveled tourism corridors.

At the start of the study, a Public Involvement Plan (PIP) was created to outline the process of public engagement and involvement in the project. As part of ensuring an open and transparent flow of information between the study team and stakeholders, the team held a series of stakeholder and/or public meetings, which are detailed in this section, along with corresponding materials included in the appendix.

Key project stakeholders were initially identified in the PIP, included in **Appendix C**, with additional interested parties identified throughout the Study process. A project website at www.idriveoverpass.com also was established to provide project updates and solicit feedback throughout the Study.

7.1 PROJECT ADVISORY GROUP MEETINGS

The Study Collaborative Team created a Project Advisory Group that met four times throughout the project to review the study findings and recommendations and provide input that helped move the project forward.

The in-person group included representatives from businesses and business owners with properties in the Study area; public safety officials; Orlando tourism community and business leaders; the Florida Department of Transportation; the I-Drive Community Redevelopment Agency; and the I-Drive Resort Area Chamber of Commerce. Each meeting was facilitated by Orange County Project Manager Blanche Hardy, PG, from the Transportation Planning Division, and Rick Baldocchi, P.E., Vice President, of AVCON, Inc. with a presentation from HHCP President and Director of Design Michael Chatham, AIA, LEED AP, and a question-and-answer with meeting attendees.

The meetings were held on the following dates:

- August 2, 2022
- September 20, 2022

- October 18, 2022
- June 12, 2023

Each meeting provided key area stakeholders an update on the Study and an opportunity for participants to provide strategic guidance and comments. The meetings included discussions of Study objectives, the site conditions for the Study area, vertical circulation options, bridge tower configurations, and issues related to the project.

Appendix C includes presentation materials from each meeting, as well as meeting minutes and responses to questions.

7.2 AGENCY AND SMALL GROUP MEETINGS

As part of the Study process, HHCP&AVCON conducted numerous small group meetings with organizations interested in the project, including citizen advisory committees, homeowners, businesses, property owners, and tourist or business associations. These meetings provided opportunities for the exchange of information and resident involvement in the Study process.

The team provided the County with summaries and information from the meetings to help inform the Study's findings and recommendations. Agendas, minutes, emails and other correspondence are included in Appendix I.

7.3 PUBLIC MEETINGS

The Study team coordinated two public information meetings as part of the process to provide the general public with information on the project and solicit comments from attendees. Both meetings were facilitated by Orange County Project Manager Blanche Hardy, PG, from the Transportation Planning Division, and Rick Baldocchi, P.E., Vice President, of AVCON, Inc. with a presentation from HHCP President and Director of Design Michael Chatham, AIA, LEED AP, and a question-and-answer with attendees.

In advance of each public meeting, newsletters with study information and updates were created and distributed to stakeholders. The newsletters were mailed to project stakeholders and interested parties and were available in English and Spanish. Copies of the newsletters are included in **Appendix C**. The Study team also provided press releases and coordinated public notice via newspaper ads in English and Spanish, included in **Appendix C**, as well as posted meeting dates and locations, presentation materials, and minutes on the project website.

7.3.1 Alternatives Public Meeting

A Kick-Off Alternatives Information Public Meeting was held on February 22, 2023, at Lake Buena Vista High School. This meeting presented Study findings to date, alternative intersection improvements, and the aesthetic design concepts of two preferred schemes under development for the pedestrian overpass design.

The meeting minutes and presentation materials are included in **Appendix C**.

7.3.2 Recommended Alternative Meeting and Feedback

A Recommended Improvement Concept Public Meeting was held on August 2, 2023, at Embassy Suites near International Drive. This meeting reviewed the alternative analysis activities and presented a recommended improvement concept to the public for review and comment prior to presentation to the Orange County Board of County Commissioners in a work session on September 26, 2023.

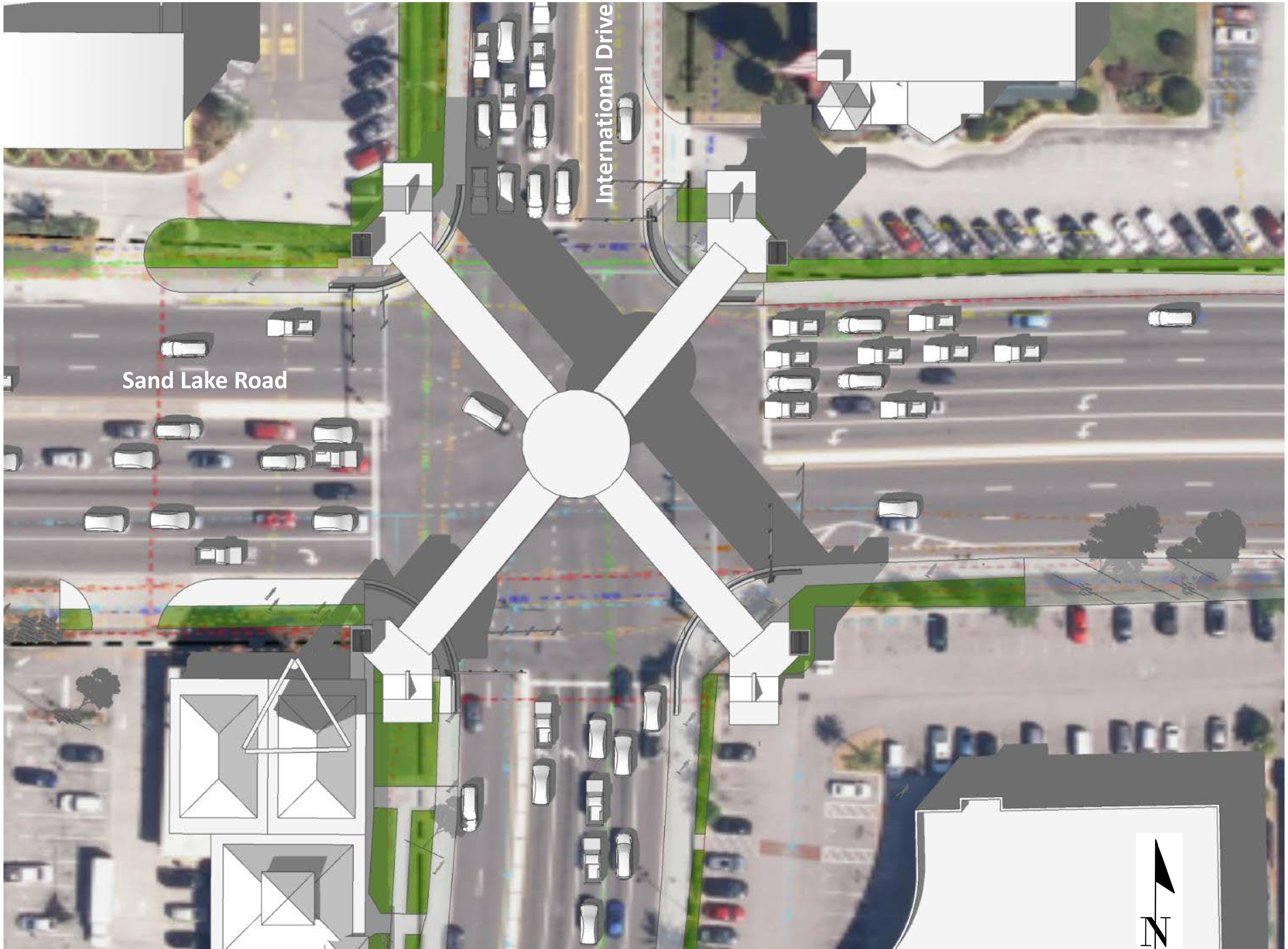
These meeting minutes and presentation materials are included in **Appendix C**.

APPENDICES

APPENDIX A

CONCEPT PLANS

(Electronic Only)



Bridge Configuration "X" Option

Description

The "X" configuration consists of two straight bridge runs intersecting in the middle of the intersection.

The overall length of the bridge in the "X" configuration is the third shortest of all options at 420' of length and has the third shortest average travel distances of the options considered.

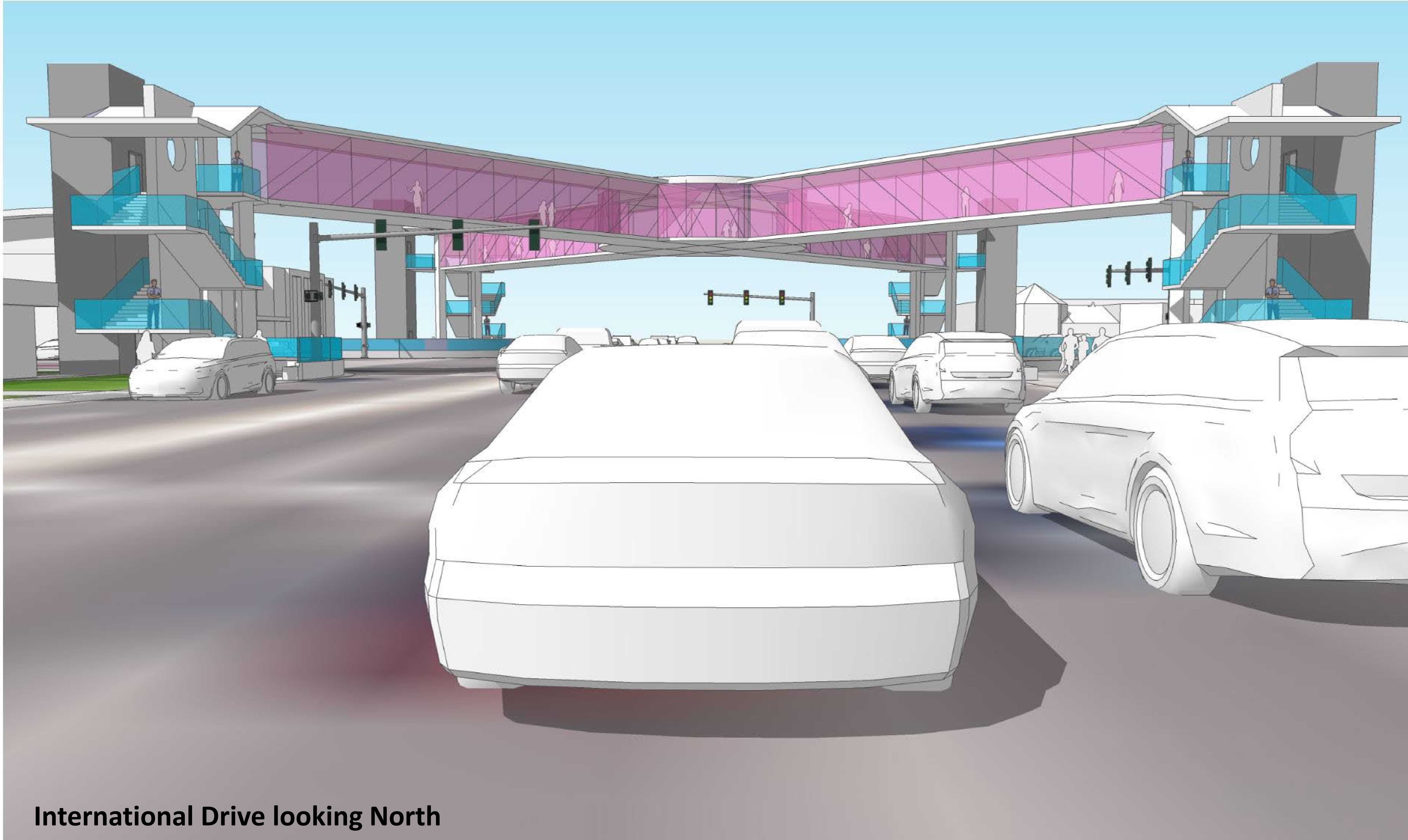
One benefit of this configuration is that the travel distance to every other intersection is exactly the same. The negative of this configuration is that the shorter distances across International drive are actually longer in this design.

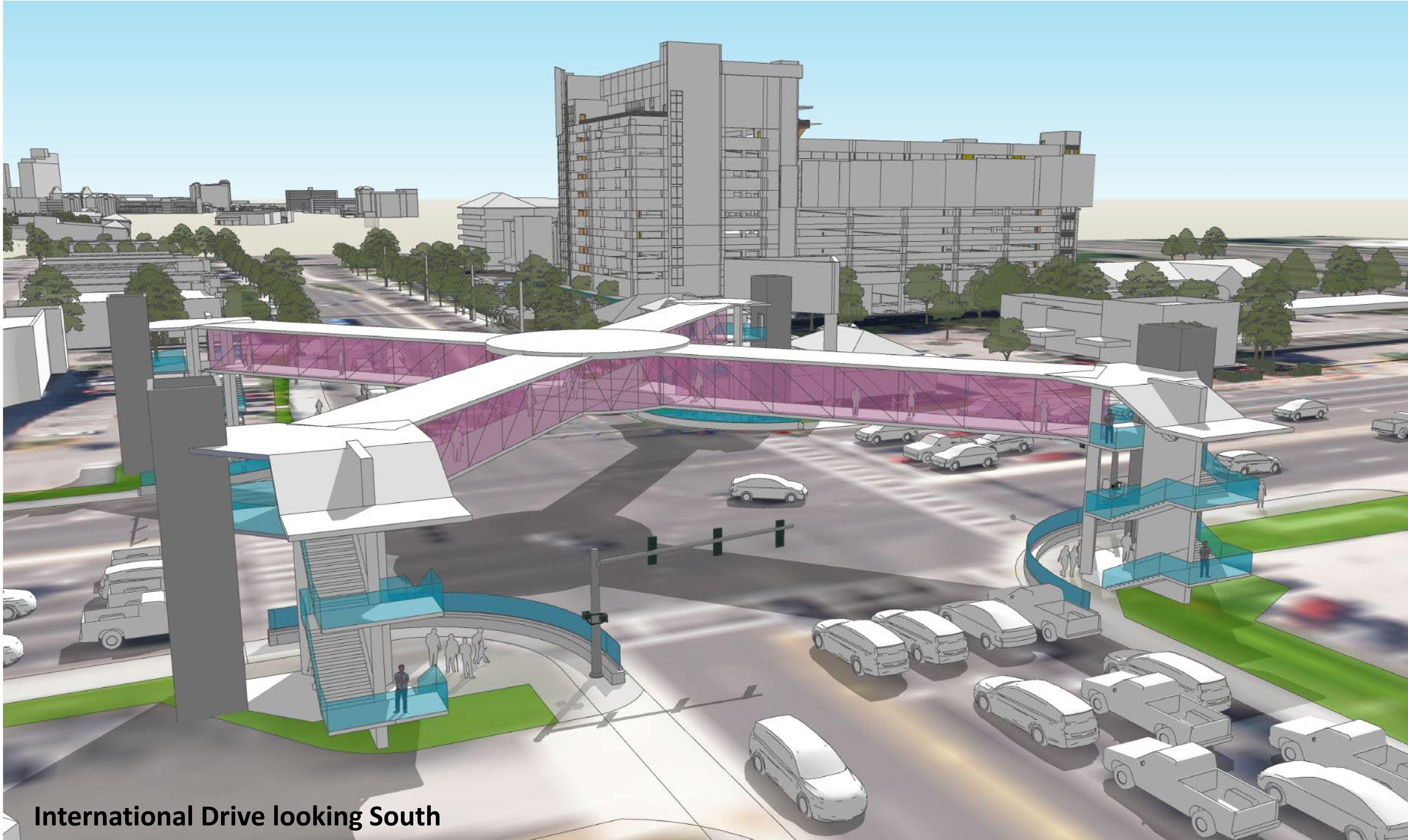
There is an opportunity for a unique feature at the crossing point of the bridge which all users will experience.

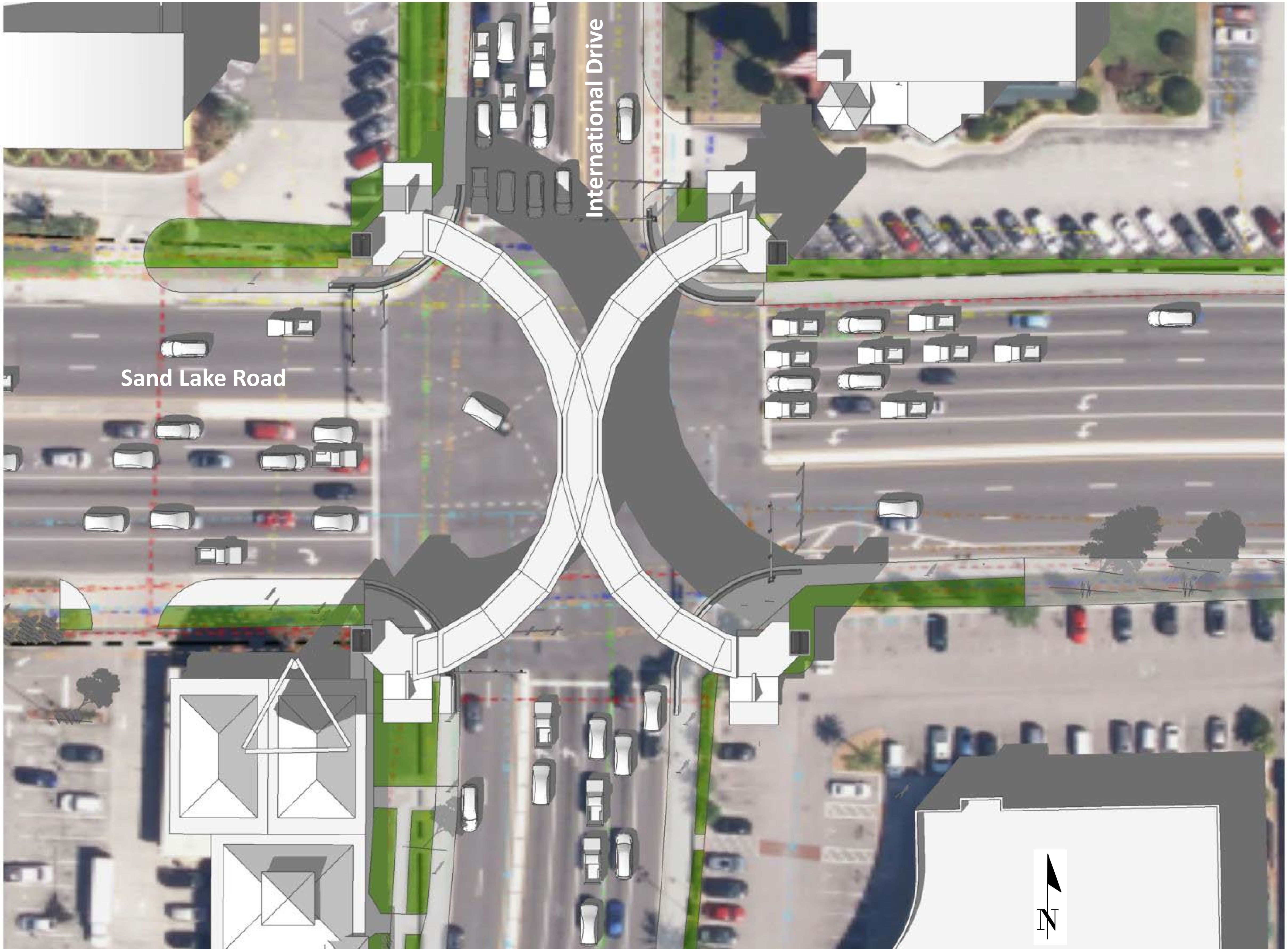
The straight bridge sections create a less desirable experience and users have to make a turn at the center section unless they are traveling diagonally across the intersection.

Summary

Average Travel Distance	210'
Bridge Length	420'
Bridge Width	12'-0"


International Drive looking North


International Drive looking South



Bridge Configuration Intersecting "C" Option

Description

The interlocking "C" Shaped bridge configuration evolved from the "I" configuration. This bridge configuration provides a similar travel distance to all intersections served.

The overall length of the bridge in the Interlocking "C" configuration is the shortest of all options at 395' of length and has one of the shortest average travel distances of the options considered.

In addition the curved sections add to the crossing experience by limiting the long view across the bridge and maximizing the views to surrounding businesses while the users traverse the bridge.

There is an opportunity for a unique feature at the crossing point of the bridge which all users will experience.

This configuration creates a unique gateway for automobiles from all directions. The effect is different for vehicles on International Drive and Sand Lake Rd.

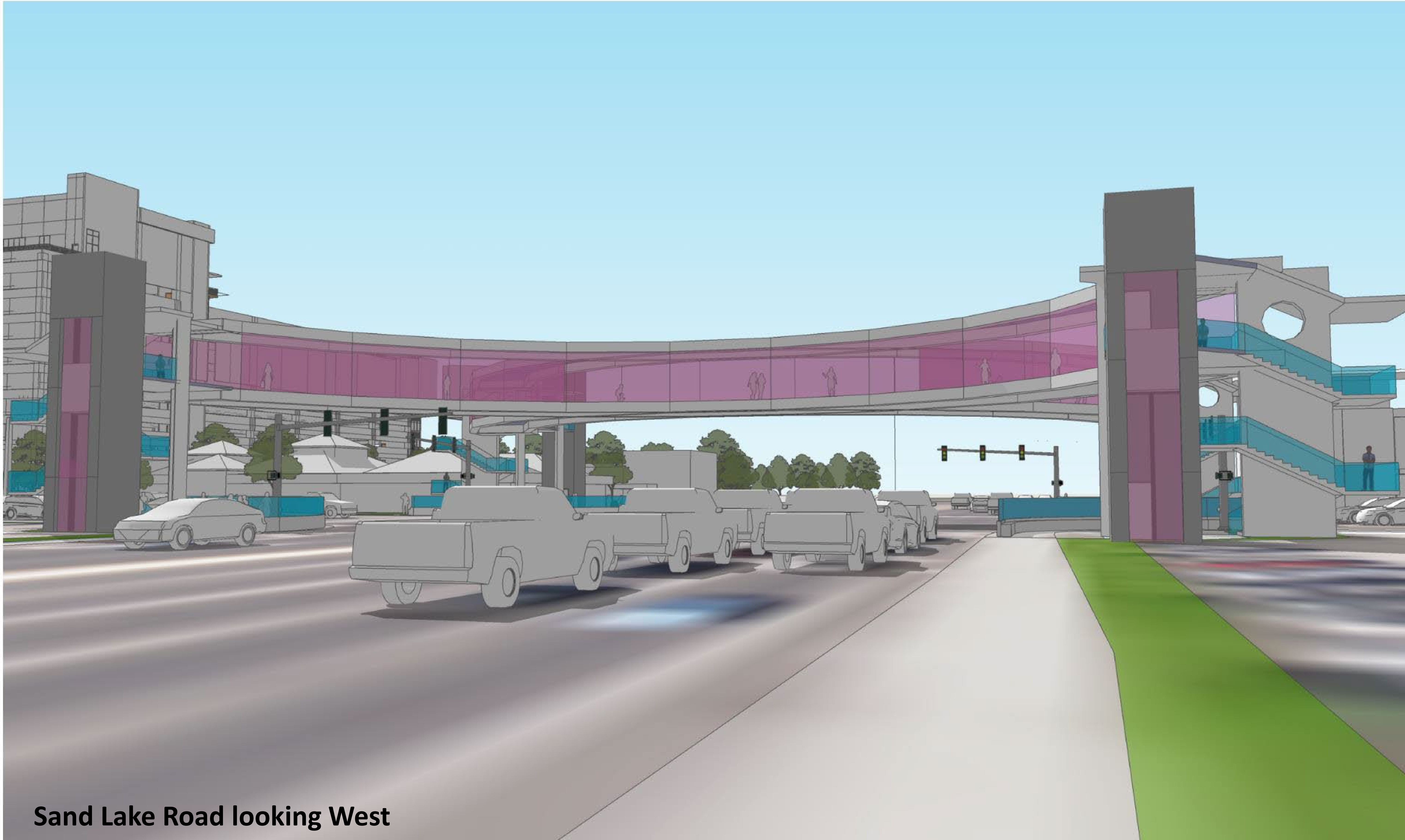
Summary

Average Travel Distance	205'
Bridge Length	395'
Bridge Width	12'-0"


Sand Lake Road looking East

Project Advisory Group Meeting #3 | **Bridge Configuration – Interlocking "C" Option – Sand Lake Road looking East**


International Drive looking North


Sand Lake Road looking West

“Drone” Site Plan

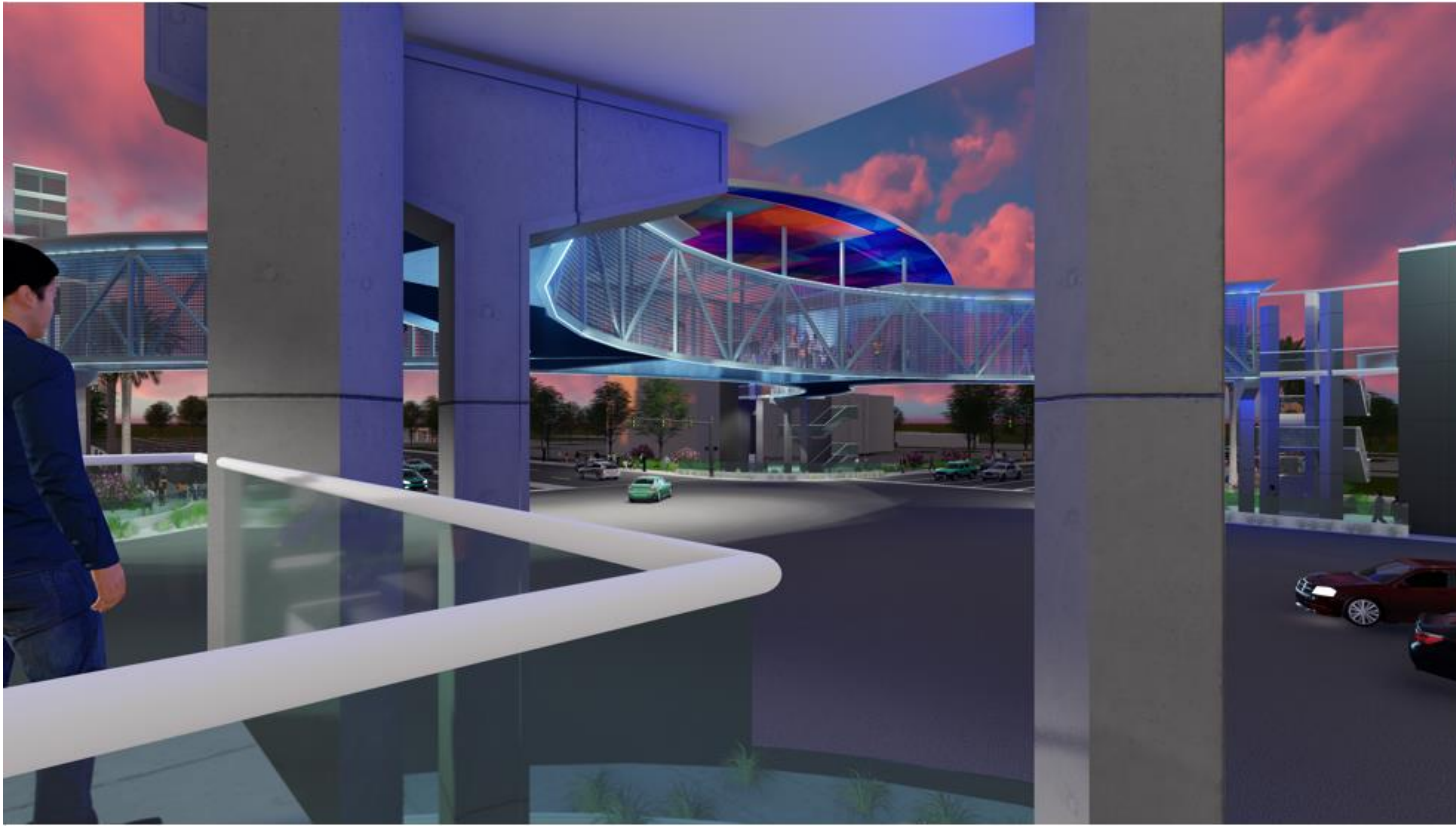
“Drone” Aerial View

“Drone” Aerial View

“Drone” View to West on Sand Lake Road

“Drone” View Looking East on Sand Lake Road

“Drone” View Looking South on International Drive



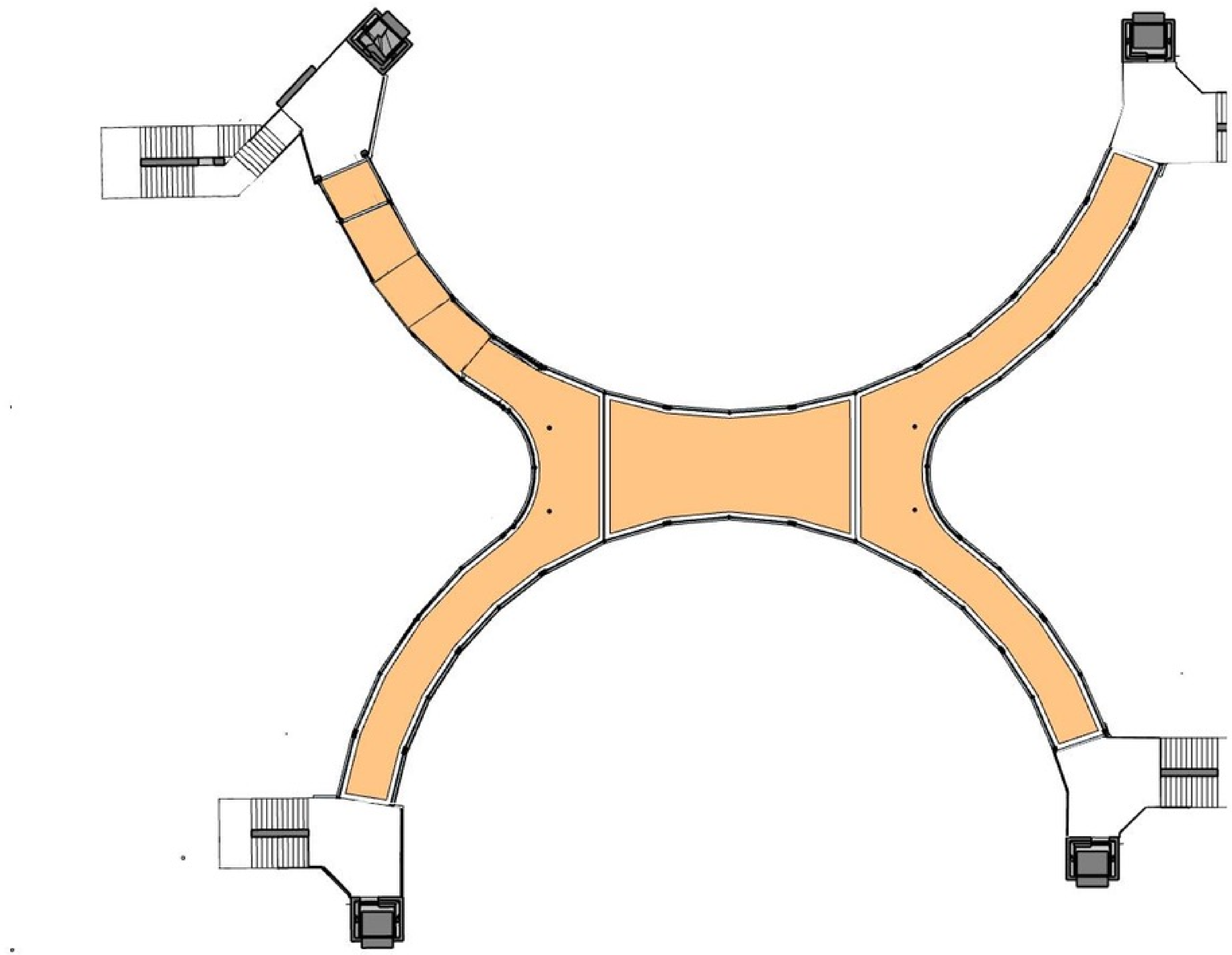
“Drone” View from Stair Landing

“Drone” View Looking North on International Drive

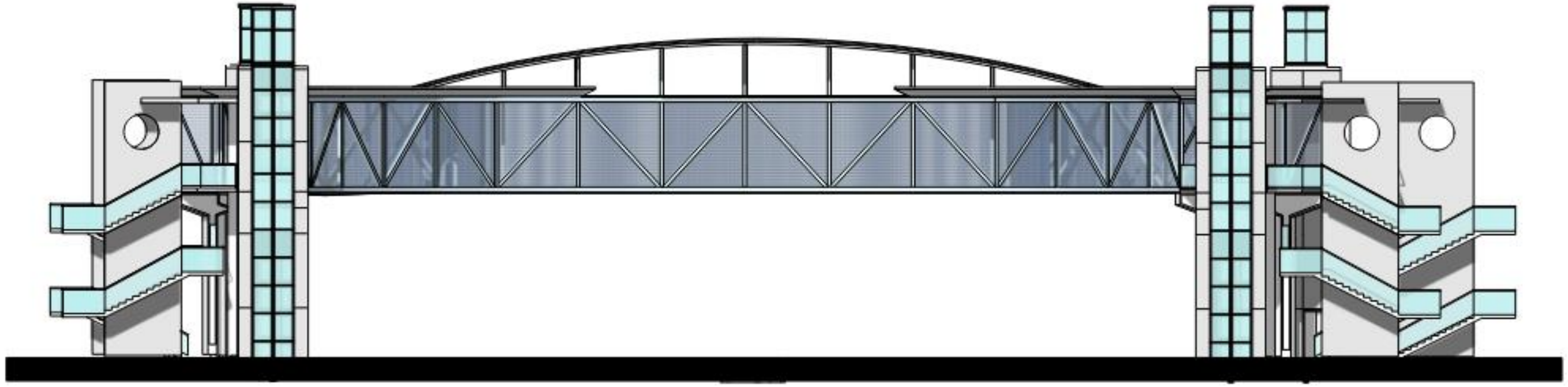
“Drone” View Looking South on International Drive

"Drone" View Looking East on Sand Lake Road

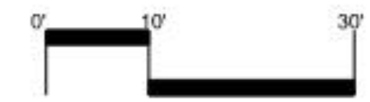
“Drone” Pedestrian View on Bridge

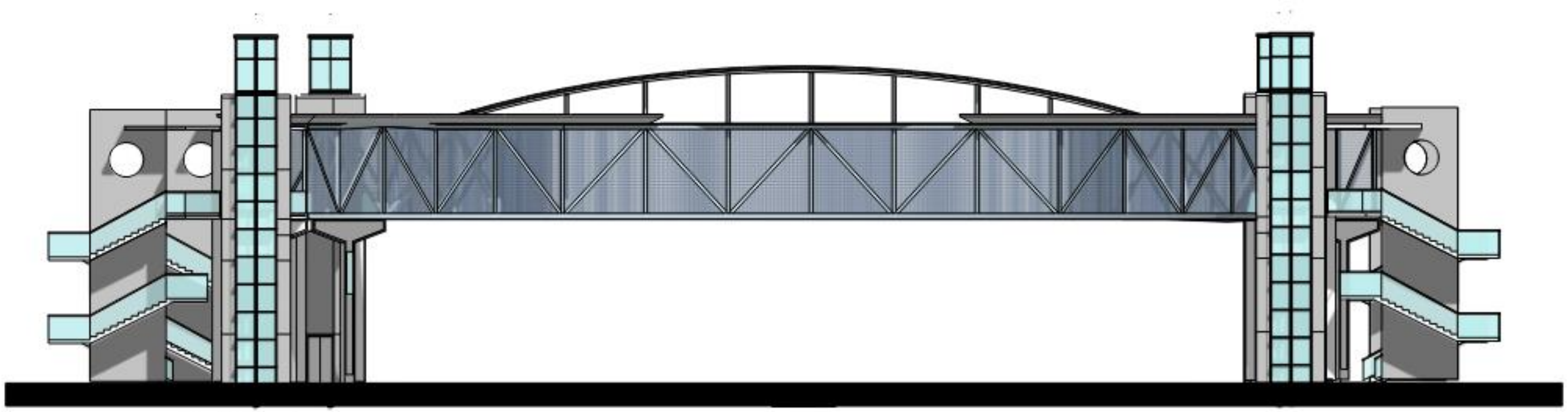


“Drone” Floor Plan

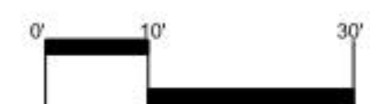


East Elevation
1/8"=1'-0"

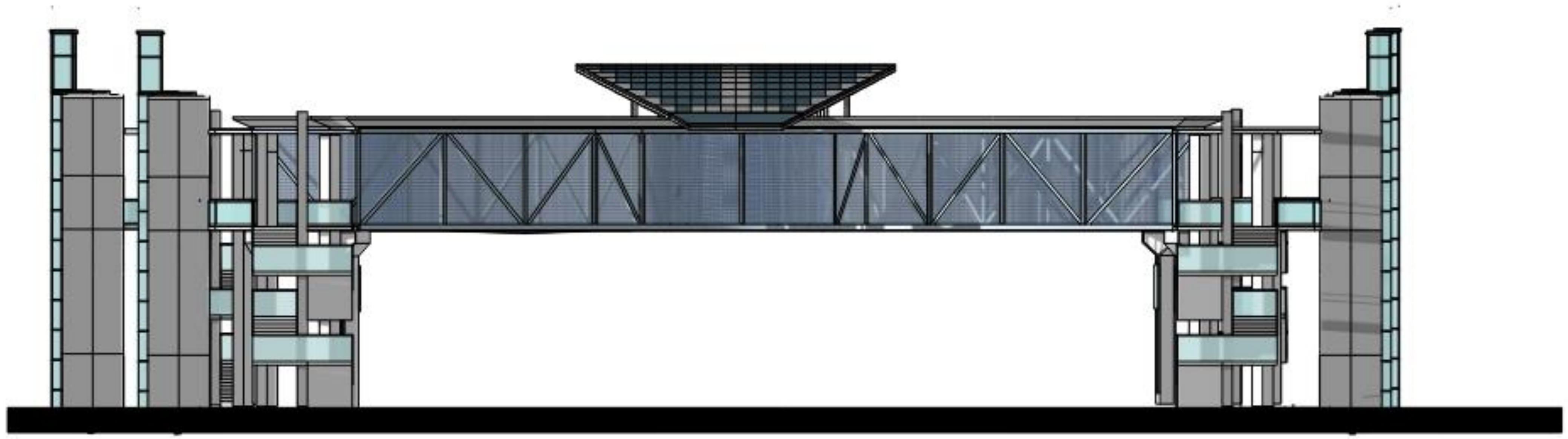




West Elevation
1/8"=1'-0"

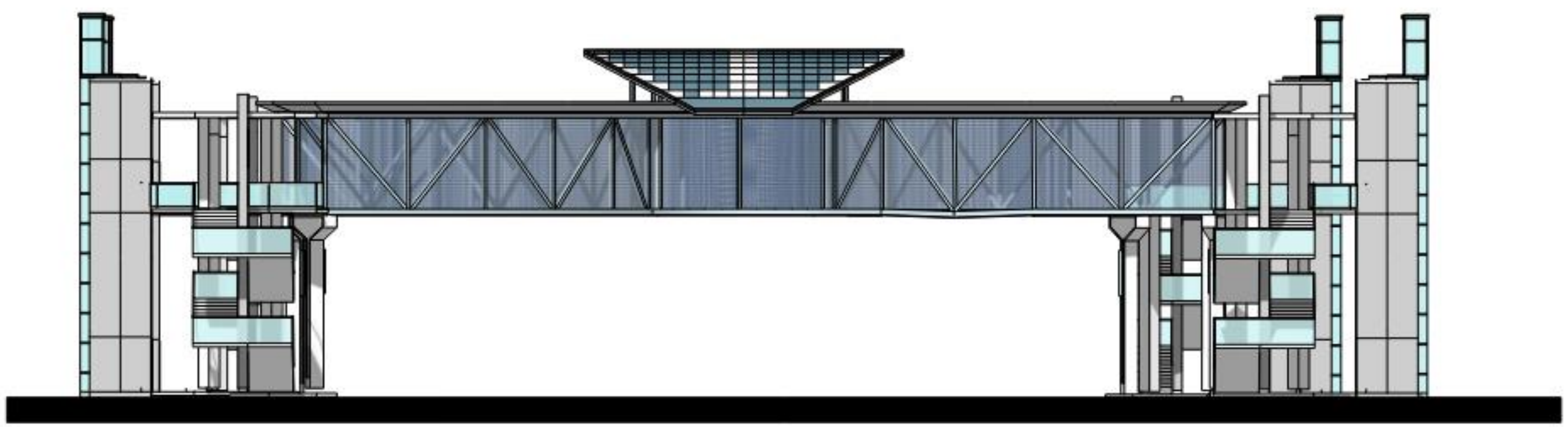


"Drone" Elevations – East and West



North Elevation

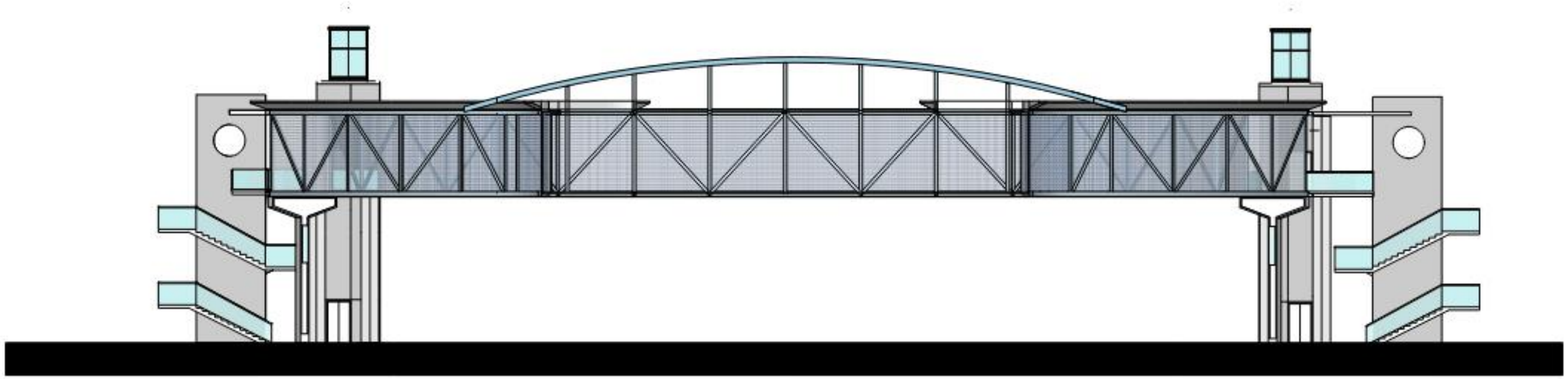
1/8"=1'-0"



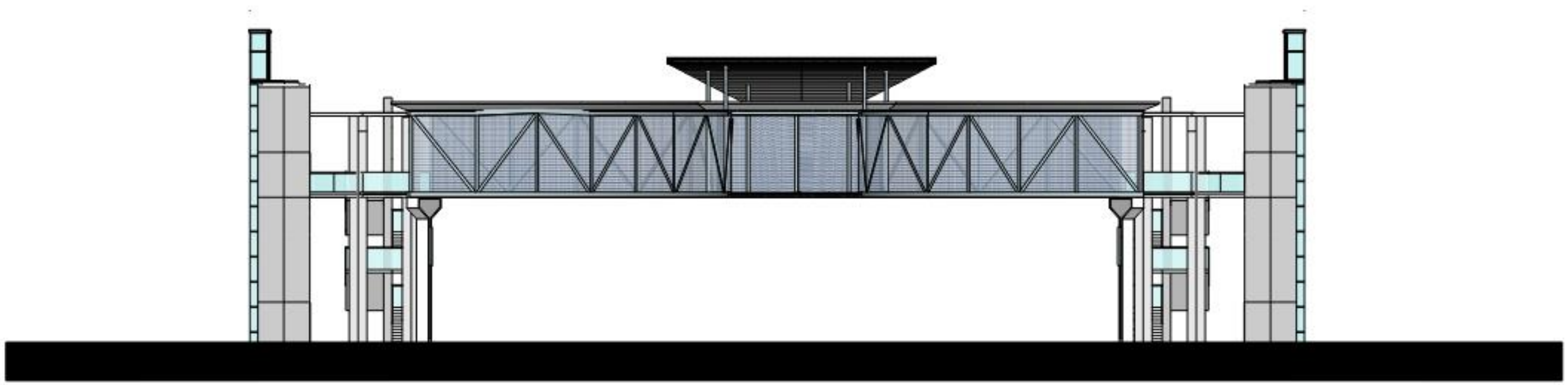
South Elevation

1/8"=1'-0"

"Drone" Elevations – North and South



Section A-A
1"=10'



Section B-B
1"=10'

“Drone” Elevations – Sections A-A and B-B

APPENDIX B

CONTAMINATION SCREENING EVALUATION REPORT

(Electronic Only)

International Drive and Sand Lake Road

Pedestrian Overpass Contamination Screening Evaluation Report

Executive Summary

This Level I Contamination Screening Evaluation Report (CSER) has been prepared using the Florida Department of Transportation (FDOT) Project Development & Environmental (PD&E) Manual, Part 2, Chapter 20 (July 2020) as a guide for report formatting and standard environmental assessment practices of reviewing records of regulatory agencies, site reconnaissance, and literature review. For the purpose of this report, the project study area includes primarily the International Drive (I-Drive) and Sand Lake Road intersection and a radius of approximately 500 feet around that area. It also includes a distance of up to approximately one-half mile for any potentially contamination source which may also affect the project.

Of the six (6) sites investigated shown below in **Table 1,** the following risk rankings have been applied: six (6) LOW ranking sites, no MEDIUM-ranking sites, and no High-ranking sites. Specific details for each site are outlined in Section 4.0 of this document. This screening evaluation is based on current conceptual plans of implementing the study and design for a pedestrian overpass above the I-Drive and Sand Lake Road intersection.

Table -1 | Potential Contaminated Sites Summary

Site No	Site Name	Site Address	Distance from Project Area	Details	Risk Ranking
1	Sand Lake 66 Service	6813 Sand Lake Rd A1	200 ft	Gasoline service station in 1974. No reports of violations or spills. A Google Earth review and the site visit shows this site is a Perkins restaurant.	LOW
2	Chevron #42157	6908 Sand Lake Rd A2 A3	200	Discharge in 1988 and granted cleanup completion status in 2017. A Google Earth review and the site visit shows this site is now a Checkers.	LOW
3	Exxon Mobil Corporate/7-Eleven Store #3488	6877 Sand Lake Rd A4, 5, 6, 9	200	Completion status in 1992. A Google Earth review and the site visit shows this site is now a McDonalds.	LOW
4	Sand Lake Shell	6942 Sand Lake Rd	350 ft	Discharge in 1998 and in 2015. Site assessments are still ongoing. Site reconnaissance showed this site was	LOW

	Service/Circle K #2708960	A7, A8		a BP/Circle K gas station. Observation monitoring wells were located in the parking lot.	
5	Sand Lake Exxon	6879 Sand Lake Rd A10	360	Gasoline service station in 1981. No reports of violations or spills. A Google Earth review and the site visit shows this site is now McDonalds – shared property with the 6877 Sand Lake Road address.	LOW
6	Sand Lake former TEXECO station, currently a SHELL gas station	6941 Sand Lake Rd	>500 feet	A gasoline services station and convenience store since the 1970s. A TEXECO Station for most of its history, the Site visit showed that it is currently a SHELL gas Station.	LOW

For sites ranked with either NO potential, or LOW potential for contamination, no further action is required at this time. These sites/facilities have the potential to impact the study area but, based on select variables, have been determined to have LOW risk to the project. Variables that may change the risk ranking include a facility's non-compliance to environmental regulations, new discharges to the soil or groundwater, changes to design, or modifications to current permits. Should any of these variables change additional assessment of the facilities would be conducted. However, these are all dependent on final design plans and the need for intrusive work or dewatering. If a MEDIUM or HIGH site is not located within an area of intrusive work, this may warrant the risk ranking to be revised to LOW. Additional information may become available or site-specific conditions may change from the time this report was prepared and will be considered prior to proceeding with the pedestrian overhead walkway construction.

CONTENTS

TABLES

FIGURES

APPENDICES

ABREVIATIONS

AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
BER	Bureau of Emergency Response
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CSER	Contamination Screening Evaluation Report
ECHO	Enforcement and Compliance History Online
EDR	Environmental Data Resources, Inc.
EPA	Environmental Protection Agency
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
FDEP	Florida Department of Environmental Protection
FDOT	Florida Department of Transportation
FINDS	Facility Index System List
FRS	Facility Registry System
GIS	Geographic Information System
HWDMS	Hazardous Waste Data Management System
I-Drive	International Drive
LQG	Large Quantity Generator
LUST	Leaking Underground Storage Tank
NFRAP	No Further Remedial Action Planned
NPDES	Natural Pollutant Discharge Elimination System
NPL	National Priorities List
PADS	PCB Activity Data System
PCB	Polychlorinated Biphenyls
PCS	Permit Compliance System
PD&E	Project Development & Environmental
RAATS	RCRA Administrative Action Tracking System
RCRA	Resource Conservation and Recovery Act
RCRIS	Resource Conversation and Recovery Information System
ROD	Records of Decisions
ROW	Right of Way
SEMS	Superfund Enterprise Management System
SNC	Significant Non-Compliance
SQG	Small Quantity Generator
TRIS	Toxic Release Inventory System
TSD	Treatment, Storage and/or Disposal Sites
TFATA	Transit Feasibility and Alternative Technology Assessment
UST	Underground Storage Tank
VSQG	Very Small Quantity Generator

1.0 Introduction

Orange County is conducting a Conceptual Analysis Study (Study) process for a proposed pedestrian overpass structure crossing over the International Drive and Sand Lake Road intersection. As part of that process, this Contamination Screening Evaluation Report (CSER) has been developed to present the findings of a contamination screening evaluation for the **International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study.** This CSER has been prepared using the Florida Department of Transportation (FDOT) Project Development & Environmental (PD&E) Manual, Part 2, Chapter 20 (July 2020) as a guide for report formatting and standard environmental assessment practices of reviewing records of regulatory agencies, site reconnaissance, and literature review. This CSER identifies and evaluates known or potential contamination sites within or adjacent to the project area that may affect implementation of the project. The CSER also presents recommendations for additional analysis and documents possible project impacts and mitigations if required.

The areas addressed within the Project study area generally includes the International Drive (I-Drive) and Sand Lake Road (SR 482) intersection extending in a radius of 200 feet from the center of that intersection, and then an additional 300 feet beyond to address any “adjacent” areas. **Figures 1 and 2** show where the study site is located. **Figure 3** presents the approximate location of the ranked Sites.

This CSER is a professional opinion of the possibility of contamination impacts to the I-Drive and Sand Lake Road intersection pedestrian overpass project site through direct visual observation and review of available file information compiled by others. The report is limited to conditions that existed at the time of the investigation and does not address such environmental issues as naturally occurring toxic substances in the subsurface soils, rocks, water and/or toxicity of on-site flora; toxicity of common household or business products, building materials or consumables; contaminants or contaminant concentrations that are not now a concern but may be under future regulations; contamination by asbestos-containing materials, radon gas, or lead in drinking water or paint. This level of environmental investigation does not include intrusive testing or analysis of soils or groundwater to verify any suspected contamination, nor does it include inspections of individual businesses. This report recommends whether any further investigative action may be prudent to confirm suspected contaminants.

Dewatering/excavation activities adjacent to known or suspect contamination sites could potentially cause a contamination plume to migrate into the ROW.

2.0 Project Description

The Project proposes a pedestrian overpass structure with appropriate end treatments/approaches transversely across SR 482/Sand Lake Road on I-Drive located generally 400 feet north of SR 482/Sand Lake Road and extending approximately 400 feet south of the intersection. The general purpose of the project is to enhance pedestrian and vehicle safety while at the same time maintaining and improving traffic flow through the intersection.

The Study is generally needed since the intersection is currently a major thoroughfare populated by numerous modes of transportation (vehicle, cycle, busses, etc.) and a large number of pedestrian traffic including many tourists all intent on safety and speed. The current one-dimensional (horizontal) traffic layout needs to be improved. Additionally, this Project needs to consider conceptual design alternatives for the creation of a pedestrian overpass structure which will serve as both a functional pedestrian/bicycle crossing and an aesthetic gateway to the I- Drive District. The overpass will provide access to, and allow passage between, each of the four corners of the intersection. The Project Study will determine if additional Right of Way (ROW) will be required; some amount will most likely be required at each corner to allow the construction of the bridge piers and/or access ramps to the pedestrian overpass.

3.0 Project Alternatives

Alternatives will be developed within the Project Study in accordance with published standards to preserve existing intersection street level cross walks, drainage, lighting, signage, signalization, and major utility relocation improvements that will address the existing and future demands of all modes of transportation while utilizing all available right-of-way and identifying additional right-of-way needed for the I-Drive Pedestrian Overpass Access. Alternates including the use of elevators and stairs, straight and switchback approach ramps and combinations of these scenarios, and other appropriate options will be studied.

At the time of this CSER writing specific alternatives have not been studied in depth, however two conceptual alternatives are shown in **Figures 4 and 5.** All alternative “footprints” are assumed to be within the immediate radius (200 ft) of the intersection for the purposes of the CSER.

4.0 Methodology

A contamination screening evaluation of the I-Drive Sand Lake Road intersection project area was conducted to identify potential contamination issues within the proposed project limits from properties or operations located within the vicinity of the project. For the purpose of this report, the radius of the study area includes a circle of about 200 feet centered on the intersection of I-Drive and Sand Lake Road. The area was extended to a radius of 500 feet to include adjacent properties. This evaluation consisted of tasks which are described below. Initially, since this a Level I desk-top review all data reviewed was obtained from either on-line data sources or the site visit and field observations, no regulatory agencies or water management districts were contacted. Sites were ranked based on past activities, the concept design of each of the corner's structural piers, and the potential to affect that construction.

4.1 Regulatory Review

An environmental database search was performed by EDR Lightbox. The resulting Environmental Data Report (referred to as the EDR report), dated April 28, 2022, and provided in **Appendix A**, included potential hazardous materials and petroleum contamination sites that were listed in the US Environmental Protection Agency (USEPA) and the Florida Department of Environmental Protection (FDEP) databases. The EDR report provides sites within 0.5 miles of the project center (intersection). The EDR database search utilized a geographic information system (GIS) integrated database that included the following federal and state regulated databases that included both federal and state regulated sites. This review filtered out sites based on the site's distance to the study segments. The following search distance buffers were used based on guidance provided in the FDOT PD&E Manual, Part 2, Chapter 20. The following buffer distance are recommended:

- 500 feet from the site's geo-location for petroleum, drycleaners, and non-petroleum sites;
- 1,000 feet from the sites geo-location for non-landfill solid waste sites; and
- 0.5 miles from the geo-location for CERCLA, NPL, Superfund Sites, or Landfill Sites.

The agency list descriptions define the regulator databases reviewed for this report. The following databases provided support documentation for the evaluation process.

<u>Federal Databases (USEPA)</u>

1. National Priorities List (NPL) – The NPL is a subset of the Comprehensive Environmental Response, Compensation and Liability Information System List (CERCLIS) and identifies over 1,200 sites for priority cleanup under the Superfund Program.

2. CERCLIS/Superfund Enterprise Management System (SEMS) – Tracks hazardous waste sites, potentially hazardous waste sites and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly known as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies, and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the NPL and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

3. Records of Decisions (ROD) System – ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

4. Archived CERCLIS Sites (No Further Remedial Action Planned (NFRAP) List)/SEMS Archive. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the NPL, unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that based upon available information, the location is not judged to be potential NPL site.

5. Emergency Response Notification System (ERNS) List – This database stores information on the notification of oil discharges and hazardous substance releases. It is a cooperative data sharing effort among the USEPA, US Department of Transportation, and the National Response Center.

6. Resource Conservation and Recovery Information System (RCRIS) Handlers with Corrective Action Activity (CORRACTS) – This database lists hazardous waste handlers that have undergone Resource Conservation and Recovery Act (RCRA) corrective action activity.

7. Hazardous Waste Data Management System (HWDMS) – This historical database was replaced by RCRIS. The HWDMS list formerly tracked sites involved in the generation, transportation, treatment, storage, and/or disposal of hazardous waste.

8. RCRA-Large Quantity Generator (LQG), Small Quantity Generator (SQG), Conditionally Exempt SQG and Transporters (Non-TSD) – This list is a subset of the USEPA RCRIS list and identifies facilities that generate and transport hazardous wastes.

9. RCRA Treatment, Storage and/or Disposal Sites (TSD) – This list is a subset of the USEPA RCRA Info System and identifies facilities that treat, store, and/or dispose of hazardous waste.

10. RCRA Administrative Action Tracking System (RAATS) – This list is a historical RCRA enforcement database that tracked facilities found to be major violators under RCRA. Data entry in this database discontinued in 1995.

11. Tribal Lust List (TRIBLLUST) – This database lists active and closed storage tank facilities on Native American lands. The database is created by extracting records from the storage tank databases that have indicated current or past releases.

12. Tribal Tanks List (TRIBLTANKS) – This database lists active and closed storage tanks on Native American lands.

13. Facility Registry System (FRS) – The FRS is a centrally-managed database of sites regulated by Program Offices of the USEPA, such as air, water, and waste. The FRS has replaced the Facility Index System List (FINDS).

14. Toxic Release Inventory System (TRIS) List – This list identifies facilities that are required to submit annual reports relative to the estimated routine and accidental release of toxic chemicals to the environment, as stipulated under current federal laws.

15. Biennial Reporting System – This system collects data on the generation and management of hazardous waste from large quantity generators and treatment, storage, and disposal facilities. The data are reported on even years by the facilities to state environmental agencies that provide the information to regional and national USEPA offices.

16. PCB Activity Data System (PADS) – This list contains sites that have notified the USEPA of their activities relative to the generation, transportation, permitted storage, and permitted disposal of polychlorinated biphenyls (PCBs) under the Toxic Substances Control Act.

17. Permit Compliance System (PCS) – This is a data system for the National Pollutant Discharge Elimination System (NPDES) permit holding facilities.

18. Brownfields Management System (USBRWNFLDS) – This database stores information reported by USEPA brownfields grant recipients on brownfields properties assessed or cleanup up with grant funding.

19. Enforcement and Compliance History Online (ECHO) – This online database helps determine whether compliance inspections have been conducted by USEPA or state/local governments, if violations were deterred or if enforcement actions were taken, and if penalties were assessed in response to environmental law violations.

a. Clean Water Act Significant Non-Compliance – The NPDES program uses the term Significant Non-Compliance (SNC). Examples of events that could result in a SNC code include unauthorized charges are:

-failure of a Publicly Owned Treatment Works to enforce its approved pretreatment program.

-failure to meet a construction deadline; failure to file a discharge monitoring report;

-filing a discharge monitoring report more than 30 days late; or violating any judicial or administrative order.

Removal of the SNC designation occurs once the facility's discharge monitoring report reports show a consistent pattern of compliance with permit limits, or if USEPA or a state agency issues a formal enforcement order to address the violations that resulted in the SNC and the facility has returned to compliance.

b. RCRA SNC is a term used to describe a site determined to cause actual exposure or has a substantial likelihood of causing exposure to a hazardous waste or constitute; is a chronic or recalcitrant violator, or deviates substantially from the terms of a permit, order or agreement, or from RCRA statutory or regulatory requirements. Under the RCRA program, the SNC is removed when the site is in full physical compliance with statutory and/or regulatory requirements.

<u>State Databases (FDEP)</u>

1. Underground/Aboveground Storage Tanks (TANKS) – This database contains sites with registered aboveground storage tanks (AST) or UST containing regulated petroleum products.

2. Leaking Underground Storage Tanks List (LUST) – This list identifies facilities and/or locations that have notified the FDEP of a possible release of contaminants from storage systems.

3. Solid Waste Facilities List (SLDWST) – This list identifies locations that have been permitted to conduct solid waste handling activities. Activities may include landfills, transfer stations, and sites handling biohazardous wastes.

4. State Sites List (STCERC) – This historical list contains sites that the Florida Department of Environmental Protection (FDEP) compiled to track suspect contamination sites. The FDEP updated this list, previously known as the Florida SITES list, in 1989.

5. State Funded Action Sites (STNPL) – This list contains facilities and/or locations that have been identified by the FDEP as having known environmental contamination and are currently being addressed through State funded cleanup action.

6. State Hazardous Waste Notifiers (STRCRA) – This list identifies facilities that generate, transport, treat, store, and dispose of hazardous waste.

7. State Institutional and/or Engineering Controls (INSTENG) – This list contains sites that have had institutional and/or engineering controls implemented to regulate exposure to environmental hazards.

8. State Designated Brownfields (BRWNFLDS) – This database contains a listing of State-designated brownfield areas. Brownfield areas are typically abandoned, idled, or underused industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination.

9. State Voluntary Cleanup (VOLCLNUP) List – Derived from the FDEP Brownfields Site Rehabilitation Agreement database, the VOLCLNUP database identifies sites that have signed an agreement to voluntarily cleanup a brownfield site in accordance with the FDEP‟s requirements.

10. Florida Dry Cleaners List (DRY) – This list is comprised of data from the FDEP Storage Tank and Contamination Monitoring database and the Dry Cleaning Solvent Cleanup Program Priority Ranking List. This list contains dry cleaning sites (and suspected historical dry cleaning sites) that have registered with the FDEP for the Dry Cleaning Solvent Cleanup Program.

11. Oculus Data Management System – FDEP stores documents using the Electronic Document Management System. Documents available included sites registered with storage tanks, classified as handling hazardous waste on, sites with past and current waste cleanup assessment, spill incident reports reporting by the Bureau of Emergency Response (BER) and more.

In addition to the database searches described above, and a desktop review, a site visit and field observations were also performed for the site and adjacent properties on April 29, 2022. The site reconnaissance consisted of walking the properties within the 200-foot radius, and also those within the extended 500-foot radius (where accessible and within the public ROW) to locate potential contamination involvement. The sites were evaluated for possible contamination risks to roadway ROW and potential construction activities. They were also researched for evidence of documented contamination, apparent changes to the ground surface and landscaping, ground staining, standing liquids, odors, sink holes, ventilation pipes, drums and other storage containers, and other indications of current or previous petroleum and hazardous materials use and/or storage.

4.2 Review of Other Information

4.2.1 Interviews

Onsite interviews and telephone calls were not conducted during this study. Further coordination with properties may be needed to obtain access to private properties that potentially present a risk to the planned construction project of the overpass, which at the present time to not appear to exist.

4.2.2 Aerial Photographs

Due to the urbanized land uses, topographic mapping was not reviewed. However available historical aerials and GOOGLE EARTH aerials were reviewed. Sanborn Maps were unavailable for the study area at this time, confirmed by EDR staff and further research. **Appendix B** contains the historical aerial photos.

4.2.3 Drainage

At this time there are no future proposed drainage improvements for the pedestrian overpass walkway project alignment or any changes to the existing drainage features of the project area.

4.3 Risk Rankings

Of the properties and areas assessed within the project area, those which did not present any indication of past or current environmental contamination potential to the project were eliminated from a more intense review which includes the following ranking system.

A hazardous materials ranking system that expresses the degree of concern for potential contamination problems was used to rank the identified sites. The rankings are LOW, MEDIUM, and HIGH and are generally defined as follows.

LOW: A review of available information indicates that past or current activities on the property have an ongoing contamination issue; the site has a hazardous waste generator identification (ID) number, or the site stores, handles, or manufactures hazardous materials. However, based on the review of conceptual or design plans and/or findings from this Level I evaluation, it is not likely that there would be any contamination impacts to the project.

MEDIUM: After a review of conceptual or design plans and findings from this Level I screening evaluation, a potential contamination impact to the project has been identified. If there was insufficient information (such as regulatory records or site historical documents) to make a determination as to the potential for contamination impact, and there was reasonable suspicion that contamination may exist, the property was ranked at least as MEDIUM. Properties used historically as gasoline stations and which have not been evaluated or assessed by regulatory agencies, sites with abandoned in place underground petroleum storage tanks or currently operating gasoline stations received this ranking.

HIGH: After a review of all available information and conceptual or design plans, there is appropriate analytical data that shows contamination would substantially impact construction activities, have implications to ROW acquisition or have other potential transfer of contamination related liability to the FDOT.

4.4 Definitions

Hazardous Material

A general term that includes all materials and substances which are not designated or defined as hazardous by federal or state law or by the rules or regulations of the state or any federal agency: Title 40 of the Code of Federal Regulations (CFR) Part 261.30 (40 CFR § 261.30), 40 CFR § 261.4, 40 CFR §§ 261.21- 261.24, Section 376.301, Florida Statutes (F.S.), and Section 403.74, F.S.

Solid Waste

The Resource Conservation and Recovery Act (RCRA) defines a solid waste as: "any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contaminated gaseous material resulting from industrial, commercial or mining and agricultural operations, and from community activities …[excluding]…solid or dissolved materials in domestic sewage, or solid or dissolved materials in irrigation return flows, or industrial discharges which are point sources subject to permits under Section 402 of the Federal Water Pollution Control Act."

Hazardous Waste Site

A site at which wastes as defined in Chapter 62-730 of the Florida Administrative Code (F.A.C.), and 40 CFR §§ 260-272, have been disposed, treated, or stored.

Potential Contaminated Site

A site, within or adjacent to the project limits, suspected to have existing contamination based on past or current activities on or near the site as evidenced by records review, historical land use evaluation, or field reconnaissance.

Contamination

The presence of any contaminant in surface, groundwater, soil, sediment, or upon the land, in concentrations that exceed the applicable Cleanup Target Levels (CTLs) specified in Chapter 62-777, F.A.C., or water quality standards in Chapter 62-302 or 62-520, F.A.C., or in concentrations that may result in contaminated sediment.

<u>Hazardous Material</u>

A general term that includes all materials and substances which are not designated or defined as hazardous by federal or state law or by the rules or regulations of the state or any federal agency: Title 40 of the Code of Federal Regulations (CFR) Part 261.30 (40 CFR § 261.30), 40 CFR § 261.4, 40 CFR §§ 261.21- 261.24, Section 376.301, Florida Statutes (F.S.), and Section 403.74, F.S.

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<u>Potential Contaminated Site</u>

A site, within or adjacent to the project limits, suspected to have existing contamination based on past or current activities on or near the site as evidenced by records review, historical land use evaluation, or field reconnaissance.

5.0 Land Uses

The I-Drive District and the extended area around Sand Lake Road is a diverse mix of land uses including Commercial and Services, Vacant, Institutional, and some Residential. However, the immediate project site and area extending approximately 500 feet is predominately public roadway and Commercial & Services use. **Appendix B** contains historical aerial photos which show that the area was predominately natural and farmland (mostly citrus) at least until 1954, and it appears that significant construction of the area occurred just prior to 1969. By 1980 the intersection and immediately surrounding area had already taken on a commercial use basis. Other than individual business type changes, the area has been developed as it currently exists since approximately 1995. **Appendix C** contains a photographic log of the subject location and buildings which were observed during the site visit on April 29, 2022. **Appendix D** contains the City Directory for the area dating back to 1981 for some addresses.

6.0 Hydrologic and Natural Features

The project area is within Orange County, Florida (Orange County) and is underlain by the Upper and Lower Floridan aquifer. The Upper Floridan Aquifer is generally located from the surface to a depth of approximately 350 to 900 feet where it interfaces with the Lower Floridan Aquifer. This carbonate-rock aquifer consists of layers of limestone and dolomite. The Floridan aquifer spans most of Florida, Alabama, Georgia, and some of South Carolina. The transmissivity is 25,000 to greater than 1,000,000 feet squared per day in areas where the upper confining material of the aquifer is less than 100 feet thick. Groundwater flow in this portion of Orange County is generally south, southeast or southwest the Floridan Aquifer. According to the U.S. Department of the Interior Topographic Quadrangle map for the project, and the EDR Report indicate the land is relatively flat with the project site (intersection) elevation at approximately 129 (NGVD) above mean sea level (MSL). The topology gently slopes to approximately 95 feet MSL to the east, 123 feet MSL to the south and initially rising to approximately 134 feet MSL west followed by a gentle drop eventually to approximately 100 feet MSL. Elevation to the north remains generally flat.

According to the Soil Survey of Orange County, Florida (1989), the proposed project area (I-Drive intersection with 500 ft. buffer) consists of one mapped soil type which is Urban land (50). No intrusive soil investigation was conducted to verify soil types

Urban land (50) – Urban land is a miscellaneous area covered by urban facilities including shopping centers, parking lots, industrial buildings, houses, streets, sidewalks, and airports. The natural soil cannot be observed and the depth to seasonal high-water table is dependent on the functionality of established drainage systems. There are no surface water features (wetlands, lakes, canals) or wells within the immediate project area. Surface water run off drains to established engineered stormwater curbs and drainage systems, or percolates through grassy and landscaped areas.

7.0 Project Impacts Evaluation

Of the potential sites reviewed as listed within the EDR Report (Appendix A), six (6) sites were determined as having the potential for contamination concern. Of the 6 sites investigated, all of them were ranked LOW and there were NO sites ranked MEDIUM or HIGH risk.

Table 1 lists the sites with potential contamination concern to the study segments. **Figure 3** shows the location of potential contamination sites in relation to the proposed pedestrian overhead project area. As shown in the table all sites appear to have a LOW risk of project site impact. Photos from site reconnaissance are provided in **Appendix C**.

Table 1: List of Sites with Potential Contamination Concerns

Site No	Site Name	Site Address	Distance from Project Area	Details	Risk Ranking
1	Sand Lake 66 Service	6813 Sand Lake Rd A1	200 ft	Gasoline service station in 1974. No reports of violations or spills. A Google Earth review shows this site is a Perkins.	LOW
2	Chevron #42157	6908 Sand Lake Rd A2 A3	200	Discharge in 1988 and granted cleanup completion status in 2017. A Google Earth review shows this site is now a Checkers.	LOW
3	Exxon Mobil Corporate/7-Eleven Store #3488	6877 Sand Lake Rd A4, 5, 6, 9	200	completion status in 1992. A Google Earth review shows this site is now a McDonalds.	LOW
4	Sand Lake Shell Service/Circle K #2708960	6942 Sand Lake Rd A7, A8	350 ft	Discharge in 1998 and in 2015. Site assessments are still ongoing. During site reconnaissance, this site was a BP/Circle K gas station. Observation monitoring wells were located in the parking lot.	LOW
5	Sand Lake Exxon	6879 Sand Lake Rd A10	360	Gasoline service station in 1981. No reports of violations or spills. A Google Earth review shows this site is now McDonalds – shared property with the 6877 Sand Lake Road address.	LOW
6	Sand Lake former TEXECO station, currently a SHELL gas station	6941 Sand Lake Rd C-12	>500 feet	A gasoline services station and convenience store since the 1970s. A TEXECO Station for most of its history, the Site visit showed that it is currently a SHELL gas Station.	LOW

7.1 Hazardous Site Summary

The following provides a description of the potential contamination sites by location, property use, contamination concern, summary of regulatory database information and field reviews.

SITE NO. 1 (A1)– SAND LAKE 66 SERVICE (CURRENTLY A PERKINS)

6813 SAND LAKE ROAD

• Concern: Historic Auto mechanic and gasoline

• Risk Ranking: LOW

Based on the EDR report, the site was a gasoline service station in 1974. No reports of violations or spills. Based on a Google Earth review, the site is and has been a Perkins since approximately 1981.

SITE NO. 2 (A2, A3) CHEVRON #42157 (CURRENTLY CHECKERS)

6908 SAND LAKE ROAD

• Concern: Historic Auto, LUST (Leaky underground storage tanks)

• Risk Ranking: LOW

Based on FDEP reports, a discharge notification form was submitted in 1988 in response to an unknown contamination discovered by an odor in the monitoring wells. The discharge was granted partial eligibility excluding waste oil contamination. Tank closure activities were conducted in 1992 where four (4) USTs and contaminated soils were removed. A contamination assessment report and monitoring only plan was submitted in 1993 and deemed incomplete. These reports were resubmitted in 1994 and approved. Monitoring was performed in 1994 through 1995 and was discontinued in response to Senate Bill 1290. A Task 1 Health and Safety Plan was submitted and approved in 2015. A Task 2 Supplemental Site

Assessment report was submitted and approved in 2016. A Task 3 Confirmatory Groundwater Sampling results report/No Further Action Proposal was submitted and approved in 2016. Well abandonment activities were completed in 2016. The discharge was granted cleanup completion status in 2017. Based on a Google Earth review, and the site visit, the site is a Checkers resturant.

SITE NO. 3 (A4,5,6,9)– EXXON MOBIL/7-ELEVEN #3488 (CURRENTLY MCDONALDS)

6877 SAND LAKE ROAD

• Concern: Historic Auto and gasoline retail

• Risk Ranking: LOW

Based on FDEP reports, a discharge reporting form was submitted in 1988 in response to contamination discovered from water analysis. Liquid phase hydrocarbon recovery was initiated in 1989. Initial remediation activities were initiated in 1989 and completed in 1990. A contamination assessment report was submitted in 1991 and was deemed incomplete. An addendum report was submitted in 1992 and approved. A Monitoring Only Plan was submitted and approved in 1992. Monitoring was performed in 1992 through 1993. The discharge was granted cleanup completion status in 1992. Based on a Site visit and Google Earth review, the site is a large McDonalds and associated parking lot.

SITE NO. 4 (A7, 8)– SAND LAKE SHELL SERVICE/CIRCLE K #2708960 (CURRENTLY BP/CIRCLE K)

6942 SAND LAKE ROAD

• Concern: Historic Auto gasoline retail

• Risk Ranking: LOW

During site reconnaissance, this site was a BP/Circle K gas station. Multiple observation monitoring wells were located in the parking lot. Based on FDEP reports, a discharge reporting form was submitted in 1998 in response to unleaded gasoline contamination discovered from a groundwater sample collected from a monitoring well. Another discharge occurred in 2015 due to a spill bucket fail. Site assessments are still ongoing. Groundwater is generally in a southernly direction and at a significant distance from the Project Study area limits where a potential plume may have traveled.

SITE NO. 5 (A10) – SAND LAKE EXXON (CURRENTLY MCDONALDS)

6879 SAND LAKE ROAD

• Concern: Historic Auto gasoline UST retail

• Risk Ranking: LOW

Based on the EDR report, the site was a gasoline service station in 1981. No reports of violations or spills. Based on a Google Earth review, the site is a large McDonalds and associated parking lot, sharing the property with the 6877 Sand Lake Road address.

SITE NO. 6 – SAND LAKE FORMER TEXICO AND CURRENTLY SHELL

6410 SAND LAKE SOUND ROAD

• Concern: Auto Gasoline Retail

• Risk Ranking: LOW

Sand Lake former TEXECO station, currently a SHELL gas station A gasoline services station and convenience store since the 1970s. A TEXECO Station for most of its history, the Site visit showed that it is currently a SHELL gas Station.

Table 2 below presents the photographic log of the photos which were taken on April 29, 2022. The first 10 photos depict the immediate project area which is the general location of the I-Drive and Sand Lake Road intersection (and corners). The remaining 22 photos present aspects of the ranked SITES 1 through 6. Photos are contained in **Appendix C.**

Table 2: Photographic Log

Photo	Description of Photo taken
1	View looking southeast across I-Drive and Sand Lake Road intersection
2	View looking east across I-Drive at PERKINS restaurant on the northeastern corner
3	View looking southwest across the intersection and one-story shops on the southwest corner and adjacent multi-story parking garage further south
4	View looking south across Sand Lake Rd at the Walgreens on the southeast corner
5	View from the southeast corner looking across the intersection at McDonalds on the northwest corner
6	View from the southeast corner looking north across Sand Lake Road at PERKINS restaurant
7	View from the southeast corner looking west across I-Drive at the shops on the southwest corner
8	View from the southwest corner looking north across I-Drive at McDonalds on the northwest corner
9	View from the southwest corner looking east across I-Drive at Walgreens on the southeast corner
10	View from the southwest corner across the intersection at PERKINS restaurant
11	**SITE 1**- Former gas station now PERKINS parking lot looking west; left boundary is Sand Lake Road
12	**SITE 1** former gas station now PERKINS building and parking lot looking northwest
13	**SITE 1** Eastern parking lot of PERKINS looking north
14	**SITE 1** far eastern boundary of PERKINS parking lot; drainage swale on the eastern boundary
15	**SITE 2**- former gas station- view of northern side of property (now CHECKERS) looking west; adjacent to Sand Lake Road seen on the right
16	**SITE 2** –Former gas station-view from CHECKERS parling lot looking east towards Sand Lake Road intersection (monitor well in the foreground)
17	**SITE 2** View of CHECKERS parking lot looking southwest (monitor well in the foreground)
18	**SITE 2** View of parking lot facing north, (monitor well in the foreground)
19	View of street/ally south of CHECKERS, multi-story parking garage to the left
20	Lift Station in ally-way behind (south of) CHECKERS parking lot
21	**SITE 3 and 5** former gas stations now McDonalds and parking lot, view from northwest boundary looking south across parking lot
22	**SITE 3 and 5** former gas stations now McDonalds and parking property boundary view along Sand Lake Road looking west
23	**SITE 3 and 5** View looking west at property boundary; lift station adjacent to the right
24	**SITE 3 and 5** View looking south along I-Drive and McDonalds property eastern boundary
25	**SITE 4** Former gasoline station, currently a BP /Circle K station view looking east along Sand Lake Road, station property to the right
26	**SITE 4** Former gasoline station, currently a BP /Circle K station view looking southeast at the gas station
27	**SITE 4** view looking east along property boundary with Sand Lake Road
28	**SITE 4** Former gasoline station, currently a BP /Circle K station view looking southeast at the gas station (monitoring well in the foreground)
29	**SITE 6** View of former gas station-currently a SHELL gas station looking north across Sand Lake Rd
30	**SITE 6** former gas station, currently a SHELL; view looking west at station pumps and monitoring wells and fuel take fill access pits in foreground
31	**SITE 6-** view looking south along east property boundary at tank access areas, monitoring wells
32	**SITE 6** view southeast corner of the property looking south; monitoring well in the foreground

8.0 Conclusion

Of the six (6) sites investigated, the following risk rankings have been applied: all 6 are LOW ranking sites. None of the sites are MEDIUM or HIGH-ranking sites. Specific details for each site are outlined in Section 7.0 of this document. This screening evaluation is based on current conceptual plans of implementing **International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study**. Once final design plans are defined and intrusive work activity areas are determined, these sites may need to be reevaluated with an updated regulatory review search and site reconnaissance.

9.0 Summary of Findings and Recommendations

For sites ranked LOW for potential contamination, no further action is required at this time. These sites/facilities have the potential to impact the study area but based on select variables have been determined to have low risk to the project at this time. Variables that may change the risk ranking include a facility's non-compliance to environmental regulations, new discharges to the soil or groundwater, and modifications to current permits. Should any of these variables change additional assessment of the facilities would be conducted.

If sites had been found with a risk ranking of MEDIUM or HIGH, Level II field screening would have been recommended to be conducted during future project implementation phases since those sites would have been determined to have potential contaminants, which may impact the project. Any required contamination assessments would then have been conducted to the degree necessary to determine levels of contamination and evaluate clean-up options and the associated costs, if necessary. Subsequent sampling/analysis would occur to avoid and/or minimize the acquisition of contaminated ROW areas and potential impacts on construction activities during excavation in the areas, as appropriate.

Should a Level II Contamination Assessment be needed in the future due to changed conditions, it would include field screening and the collection of soil and groundwater samples for laboratory analysis, where applicable. If the results of the testing indicate no evidence of soil or groundwater contamination, the rating of the site would likely be revised downward. Typically, the rating of field-tested sites with no evidence of contamination would be revised to LOW.

APPENDIX C

PUBLIC INVOLVEMENT

(Public Involvement Plan and Summary Material)

(Electronic Only)

APPENDIX C

Public Involvement Plan (PIP)
w/Orlando Sentinel Proof of Publication Affidavit

PUBLIC INVOLVEMENT PLAN

International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study

Y21-803-CH

Prepared for Orange County Government

March 14, 2022

Prepared by HHCP&AVCON A Joint Venture

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PURPOSE OF THE PUBLIC INVOLVEMENT PLAN

The public's involvement in the International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study ("I-Drive Pedestrian Overpass Study") is critical to the success of this long-sought-after project to improve pedestrian safety and traffic and serve as an aesthetic gateway to one of Orange County's most-heavily traveled tourism corridors.

This Public Involvement Plan (PIP) sets the groundwork for contacting the public, businesses, and other interested parties, and for responding and recording their input so the County ultimately may develop a pedestrian overpass structure that meets the area's unique transportation needs and is supported by the community it intends to serve. The PIP's purpose is to provide for two-way communication during all phases of this Study, with ample opportunities to involve the community in the project development and decision-making process. This PIP is comprised of several primary elements that will extend through the project's duration:

- Small group and advisory meetings
- Public notifications
- Public information meetings and hearings

The sections below detail communication strategies to ensure an open and transparent flow of information between the Study team and stakeholders, as well as delineate efforts between the County and HHCP&AVCON A Joint Venture to inform and involve Orange County's citizens, appropriate State and local agencies, and responsible appointed and elected public officials throughout the Study process.

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PROJECT INFORMATION

This project is in Orange County and proposes a pedestrian overpass structure with appropriate end treatments/approaches transversely across SR 482/Sand Lake Road on International Drive located generally 400 feet north of SR 482/Sand Lake Road and extending approximately 400 feet south of the intersection (*Figure 1*). The overpass shall provide access to, and allow passage between, each of the four corners of the intersection.

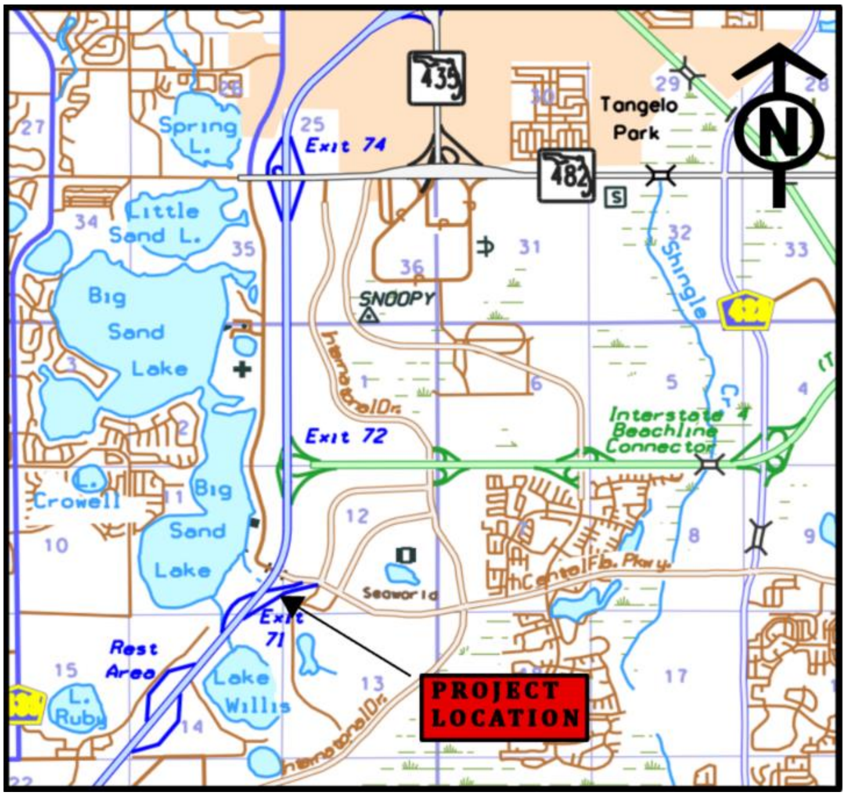

Figure 1: Project Location Map

The Study will consider and reflect the direction and objectives of the I-Drive 2040 Strategic Vision, the I-Drive 2040 District Overlay Zone, the I-Drive Activity Center, the current Orange County Comprehensive Plan International Drive Element, and the I-Drive Signage and Wayfinding Plan, as well as the I-4 Beyond the Ultimate plans for the I-4 and Sand Lake Road intersection.

PROJECT STAKEHOLDERS

Elected and appointed officials and additional interested parties who will be included on the project mailing list are shown below. The Study Collaborative Team will develop and maintain contact lists with the following stakeholder groups, as well as additional interested parties identified throughout the Study process. Further details on the mailing list are included later in the PIP.

ORANGE COUNTY COMMISSIONERS

Mayor Jerry L. Demings
Commissioner Nicole H. Wilson – District 1
Commissioner Christine Moore – District 2
Commissioner Mayra Uribe – District 3
Commissioner Maribel Gomez Cordero – District 4
Commissioner Emily Bonilla – District 5
Commissioner Victoria P. Siplin – District 6

ORANGE COUNTY SCHOOL BOARD

Teresa Jacobs – Chair
Angie Gallo – District 1
Johanna López – District 2
Linda Kobert – District 3
Pam Gould – District 4
Vicki-Elaine Felder – District 5
Karen Castor Dentel – District 6
Melissa Byrd – District 7

U.S. AND FLORIDA SENATE AND REPRESENTATIVES

U.S. Senator Marco Rubio
U.S. Senator Rick Scott
Congresswoman Val Butler Demings – District 10
State Senator Randolph Bracy – District 11
State Representative Geraldine F. "Geri" Thompson – District 44

METROPLAN ORLANDO

Gary Huttmann, AICP – Executive Director
Nick Lepp, AICP CTP – Director of Transportation Planning
Keith Caskey, AICP – Manager of Planning Services
Virginia L. Whittington – Director of Regional Partnerships

CENTRAL FLORIDA REGIONAL TRANSPORTATION AUTHORITY (LYNX)

Norm Hickling – Director of Operations
Bruce Detweiler – Interim Director of Planning and Development

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Richard Lott, P.E. – Engineering Section Leader

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Aaron Watkins – Director, Central District

FLORIDA DEPARTMENT OF TRANSPORTATION
Jared Perdue – District 5 Secretary

FLORIDA FISH & WILDLIFE CONSERVATION COMMISSION
Greg Workman – Northeast Regional Director

ORANGE COUNTY KEY STAFF
Jeffrey Newton – County Attorney
Byron Brooks – County Administrator
Daniel Banks – Deputy County Administrator
Carla Bell Johnson – Deputy County Administrator
Eduardo Torres – Utilities Director
Joe Kunkel – Public Works Director
Diana M. Almodovar, P.E. – Public Works Deputy Director
Dale V. Mudrak, P.E. – Manager, Development Engineering Division
Mike Drozeck, P.E., CFM – Manager, Stormwater Management Division
Jonathan Weiss – Planning, Environmental and Development Services Director
Renzo Nastasi, AICP – Manager, Transportation Planning Division
Alissa Barber Torres, FAICP, CLTD – Chief Planner, Transportation Planning Division
Blanche Hardy, PG – Project Manager, Transportation Planning Division
Mindy T. Cummings – Manager, Real Estate Management Division
David Jones, P.E., CEP – Manager, Environmental Protection Department

INTERNATIONAL DRIVE BUSINESS IMPROVEMENT DISTRICT
(Members not already listed in the above categories)
Orlando Commissioner Bakari F. Burns – District 6
Sibille Pritchard – Vice President, Orlando Plaza Partners
Harris Rosen – President, Rosen Hotels & Resorts
Joshua Wallack – Chief Operating Officer, Mango's Tropical Café
Russ Dagon – Senior Vice President of Resort Development, Universal Orlando Creative
Marco Manzie – President, Paramount Hospitality Group
Luann Brooks – Executive Director, International Drive Business Improvement District
Caitlin Glassman – Special Projects and Communications

INTERNATIONAL DRIVE CRA ADVISORY COMMITTEE
Marc S. Reicher – Mayor's Representative
Chadwick Hardee – At Large Representative
Melanie H. Becker – University Boulevard Property Owners Association, Inc. Representative
Samuel Butler, Jr. – Tangelo Park Civic Association Representative
Daniel P. Giordano – International Drive Resort Area Chamber of Commerce Representative
Robert Haywood – International Drive Master Transit and Improvement District Representative
Tim Swan – Efficient Transportation for the Community of Central Florida, Inc. Representative

PUBLIC INVOLVEMENT ACTIVITIES

Public involvement in this Study process will be critical to its success. This section summarizes the various types of public involvement activities that will be used to ensure an open and transparent flow of information and provide for two-way communication between the Study team and stakeholders during all phases of the project.

MEETINGS

AGENCY COORDINATION MEETINGS

HHCP&AVCON, with the County, will conduct initial meetings/telephone calls and up to 10 follow-up conversations with the following local and state organizations to provide details about the Study and solicit initial input on the project:

Florida Department of Environmental Protection	Orange County Public Schools
Florida Department of Transportation	Orange County Real Estate Management Division
International Drive Business Improvement District	Orange County Sheriff's Office
LYNX	Orange County Utilities Department
Orange County Environmental Protection Department	Regional Power Providers
Orange County Fire Rescue	South Florida Water Management District
Orange County Planning Department	St. Johns River Water Management District

PROJECT ADVISORY GROUP MEETINGS

The Study Collaborative Team will create a Project Advisory Group, subject to approval by County staff, that will meet five (5) times to review the Study findings and recommendations and provide input that will help move the project forward. This group could include, but is not limited to, representatives from the following organizations:

City of Orlando	Orange County Convention Center
Clear Channel Outdoor	Orange County Convention Center Client Advisory Board
Dowdy Realty North International Drive	Paramount Hospitality Management Group/Avanti Hotel
Efficient Transportation for the Community of Central Florida, Inc.	Plaza International/Brooksville Group
Florida Department of Transportation	Rosen Hotels & Resorts
Hilton Orlando	SeaWorld
Hyatt Regency Orlando	Unicorp National Developments
ICON Orlando	Visit Orlando

International Drive Master Transit and Improvement District	Westwood Property Association
International Drive Resort Area Chamber of Commerce	Universal Boulevard Property Owners Association
Mango's Tropical Café	Universal Orlando
McDonald's (Intersection Corner)	

These Project Advisory Group meetings will be scheduled into summer 2022.

SMALL GROUP MEETINGS

HHCP&AVCON will conduct up to 14 small group meetings with organizations interested in the project, which could include citizen advisory committees, homeowners, businesses, property owners, and tourist or business associations. These meetings will be organized in a manner that promotes the exchange of information and proactively involves citizens in the Study process. The team will provide the County with support materials, meeting summaries, and any requested follow-up information, subject to approval by County staff.

PUBLIC NOTIFICATION

This project will involve multiple types of outreach strategies to ensure stakeholders receive information about the Study and have an opportunity to provide feedback or other comments.

MAILING LIST

The Study Collaborative Team will maintain and update a mailing list (initially provided by County staff) of all homeowners/property owners located within the Study corridor. This list may be expanded during the Study process to include additional interested parties (businesses, organizations, or individuals), including potential permitting or review agencies, area elected and appointed officials, community leaders, and media representatives. The Study Collaborative Team will provide an updated mailing list for public meetings, including Local Planning Agency (LPA) and Board of County Commissioners (BCC) public hearings.

NEWSLETTERS

HHCP&AVCON will develop and distribute a newsletter branded for Orange County in English and Spanish five (5) times during the Study, according to the following schedule:

- **Edition 1:** Prior to Kick-Off Alternatives Information Public Meeting *(TBD)*
- **Edition 2:** Prior to the Recommended Improvement Concept Meeting *(TBD)*
- **Edition 3:** Prior to the LPA Public Hearing *(TBD)*
- **Edition 4:** Prior to the BCC Public Hearing *(TBD)*
- **Edition 5:** After final action by the BCC *(TBD)*

The newsletters will be designed and printed in color on 8.5” x 11” sheets with content and design subject to approval by County staff. In addition to providing pertinent project information, newsletters will include project contact information and a project webpage address to ensure multiple avenues for input and exchange of information.

Each English newsletter shall include a Spanish point of contact supplied by the County. English copies of the newsletter will be printed in 110% quantities of totals from the mailing list, along with 15 additional copies for County internal distribution. The Assistant Manager of Transportation Planning Division and the County Communication Office will approve all final newsletter proofs prior to printing. All newsletters will adhere to the County’s Title VI Nondiscrimination Policy and Plan.

WEBSITE

The Study Collaborative Team will maintain a microsite within Orange County Government’s website at least three (3) weeks prior to the Public Kick-Off Alternatives Meeting. This site will provide updates about the project, including meeting minutes and materials and project updates, as well as an interactive comment form for public feedback. The site will be compliant with the Americans with Disabilities Act, with materials maintained online for the duration of the project. At the conclusion of the Study, the team will transfer the website to the County for archival purposes.

ADVERTISEMENTS/NEWS RELEASES

Advertisements will announce the purpose, date, time, and location of each public meeting and hearing. HHCP&AVCON and its team will prepare and coordinate the publication of display advertisements and calendar of events listings in the Sunday Orange County Extra section of the *Orlando Sentinel* and *El Sentinel* at least two (2) weeks prior to each public meeting or hearing. The advertisements shall be display ads approximately 4” x 5” in size. The Study Collaborative Team also will create news releases prior to each public meeting. News releases will be delivered to the County Project Manager at least four (4) weeks prior to each public meeting or hearing. All advertisements and news releases will be approved by the Assistant Manager of the Transportation Planning Division and the County Communication Office.

PUBLIC INFORMATION MEETINGS AND HEARINGS

The Study Collaborative Team will coordinate two (2) public information meetings as part of this process, to include all preparations and presentation materials for the meetings whether virtual or in-person. The Study Collaborative Team will receive direction from the County prior to beginning work on meeting materials, such as PowerPoints, scripts, or displays, and will provide materials for review to the County at least (3) three weeks prior to each meeting.

The public information meetings will be:

- A **Kick-Off Alternatives Information Public Meeting** within 20 weeks of the Notice to Proceed meeting to present data collection findings, alternative intersection improvements, and the aesthetic design concepts of the preferred alternative.

- A **Recommended Improvement Concept Public Meeting** after completing the alternative analysis activities and identification of a Recommended Improved Concept. This meeting will present the draft Recommended Improvement Concept to the public for review and comment prior to presentation to the LPA and BCC.

As part of each meeting, the Study Collaborative Team also will document and summarize comments gathered in-person/virtually and through the preparation and distribution of comment forms or surveys to meeting participants. Comments will be submitted to the County and evaluated during the alternative analysis process to help guide the selection of a Recommended Improvement Concept for the project.

PUBLIC HEARINGS

Nearing the final stages of the project, the Study Collaborative Team will prepare for, participate in, and provide all necessary support to County staff to conduct a Work Session and Public Hearing with the LPA, and later with the BCC for a final decision. The Work Session and Public Hearing presentations to the LPA will reflect the Recommended Improvement Concept. Backup materials and related reports will be due to the County at least three (3) weeks prior, with the final digital presentation due to the County at least two (2) business days prior to the scheduled LPA meeting time.

The Final Public Hearing presentation to the BCC will reflect the Recommended Improvement Concept and any comments received from the LPA and BCC Work Sessions and LPA Public Hearing. The Study Collaborative Team will provide backup materials and supporting reports for the BCC Work Session and Public Hearing at least three (3) weeks prior to these meetings. The final digital presentation will be due to the County at least two (2) business days prior to the meeting.

PUBLIC INVOLVEMENT ACTIVITIES SCHEDULE

Agency Coordination Meetings	Up to 14 meetings (TBD)
Small Group Meetings	Up to 14 meetings (TBD)
Project Advisory Group (PAG) Meetings	5 meetings (TBD)

PAG Meeting	Date
PAG Meeting #1	TBD
PAG Meeting #2	TBD
PAG Meeting #3	TBD
PAG Meeting #4	TBD
PAG Meeting #5	TBD
Kick-Off Alternatives Meeting	Thursday, July 21, 2022
Recommended Improvement Concept Meeting	Thursday, August 25, 2022
LPA Work Session and Public Hearing	Thursday, September 22, 2022
BCC Work Session and Public Hearing	Thursday, October 13, 2022

FINAL SUMMARY

The Study Collaborative Team will provide a final summary to the County of all public involvement activities during the Study, including copies of presentations, handouts, informational displays, comments, response letters, and related materials.

TITLE VI NONDISCRIMINATION POLICY AND PLAN COMPLIANCE

All activities in this plan will actively support and follow nondiscrimination laws and regulations, including Title VI of the Civil Rights Act of 1964 and other nondiscrimination authorities as outlined in Orange County Government, Florida's Title VI Nondiscrimination Policy and Plan approved by the Orange County Board of County Commissioners.

This policy states that Orange County, Florida values diversity and welcomes input from all interested parties, regardless of cultural identity, background, or income level. Moreover, the County believes that the best public policy and governmental services result from careful consideration of the needs of all of its communities and when those communities are involved in the public policy and governmental services decision-making process. Thus, the County does not tolerate discrimination in any of its programs, services, or activities. Pursuant to Title VI of the Civil Rights Act of 1964, 42 U.S.C. § 2000d et seq. (Title VI, and related laws and regulations), and Orange County, Florida Regulations and Standard Operating Procedures, the County will not exclude from participation in, deny the benefits of, or subject to discrimination any person on the grounds of race, color, national origin, sex, age, disability, religion, income, or family status.

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State Of Florida
County Of Orange

Before the undersigned authority personally appeared Rose Williams, who on oath says that he or she is a duly authorized representative of the ORLANDO SENTINEL, a DAILY newspaper published in ORANGE County, Florida; that the attached copy of advertisement, being a Legal Notice in:

The matter of 11200-Misc. Legal
Was published in said newspaper by print in the issues of, or by publication on the newspaper's website, if authorized on Feb 12, 2023.

Affiant further says that the newspaper complies with all legal requirements for publication in Chapter 50, Florida Statutes.

Rose Williams

Signature of Affiant

Rose Williams

Name of Affiant

Sworn to and subscribed before me on this 16 day of February, 2023,
by above Affiant, who is personally known to me (X) or who has produced identification ( ).

LeAnne Rollins

Signature of Notary Public

LEANNE ROLLINS
Notary Public - State of Florida
Commission # GG 982233
My Comm. Expires Apr 27, 2024
Bonded through National Notary Assn.

Name of Notary, Typed, Printed, or Stamped

7377105

Still more quake survivors rescued

Amid moments of joy, tragedy's death toll exceeds 28,000

By Justin Spike, Abdelrahman Shaheen and Zeynep Bilginsoy
Associated Press

Rescue workers carry survivor Kamil Can Agdas to an ambulance Saturday in Kahramanmaras, Turkey. ISMAIL COSKUN/IHA

LATAKIA, Syria — Five days after two powerful earthquakes hours apart in Turkey and Syria caused thousands of buildings to collapse, killing more than 28,000 people and leaving millions homeless, rescuers Saturday were still pulling unlikely survivors from the ruins — one of them just 7 months old.

Although each rescue elicited hugs and cheers from the weary men and women working tirelessly in the freezing temperatures to save lives, they were the exception in a region blanketed by grief, desperation and mounting frustration.

More than a dozen survivors were rescued Saturday, including a family in Kahramanmaras, the Turkish city closest to the epicenter of Monday's quake. Crews there helped 12-year-old Nehir Naz Narli to safety before going back for her parents.

In Gaziantep province, which borders Syria, a family of five was rescued from a demolished building in the city of Nurdagi and a man and his 3-year-old daughter were pulled from debris in the town of Islahiye, television network HaberTurk reported. A 7-year-old girl was also rescued in Hatay province.

In Elbistan, a district in Kahramanmaras province, 20-year-old Melisa Ulku and another person were saved from the rubble 132 hours after the quake struck.

Turkish TV station NTV reported that a 44-year-old man in Iskenderun, in Hatay province, was rescued 138 hours into his ordeal. Crying rescuers called it a miracle, with one saying they weren't expecting to find anyone alive but as they were digging, they saw his eyes and he said his name. In the same province, NTV also reported that a baby boy named Hamza was found alive in Antakya 140 hours after the quake. Some details of his rescue, including how he survived so long, weren't immediately clear.

Not every attempt ended happily. Zeynep Kahraman, who was brought out of the rubble after a rescue that took 50 hours, died at a hospital overnight.

The rescues came amid frustration over the Turkish government's response to the earthquake, which has killed 24,617 people and injured at least 80,000 people in Turkey alone.

Turkish President Recep Tayyip Erdogan acknowledged last week that the initial response was hampered by extensive damage. During a tour of damaged cities Saturday, Erdogan again referred to the tragedy as the "disaster of the century."

But the challenges facing aid efforts were of little comfort to those waiting for help.

In Antakya, scattered rescue crews were still hard at work but many residents had left by Saturday. Among those who stayed were people with family still buried. Many had been camping in the streets for days and sleeping in cars.

Acting on a tip, a rescue team from Hong Kong found three survivors under a building near the city's center on Saturday, said Gallant Wong, the group's spokesperson.

But Bulent Cifcifli, a local man, said he has been waiting for days for crews to pull his mother's body from her collapsed home. He said rescuers were working to retrieve her body, but they were called to another location because they suspected there were survivors.

"Six days later, we don't know how many are still under the rubble, and how many are dead or alive," Cifcifli said.

Yazi al-Ali, a Syrian refugee who came to Antakya from Reyhanli, has been living in a tent as she waits for crews to find her mother, two sisters, including one who was pregnant, and their families. At one point, she stood over the rubble of the home in Antakya's old city center where she believes her pregnant sister was buried and, in a cracking voice, shouted her sister's name.

"No one is answering to us, and no one comes to look," she said. "They have stopped us from looking ourselves. I don't know why."

Even though experts say trapped people can live for a week or more, the odds of finding any additional survivors are quickly waning. Rescuers were shifting to thermal cameras to help identify life amid the rubble, a sign that any remaining survivors could be too weak to call for help.

A large makeshift graveyard was under construction Saturday in Antakya's outskirts. Backhoes and bulldozers dug pits in the field as trucks and ambulances loaded with black body bags arrived continuously.

A worker with Turkey's Ministry of Religious Affairs who didn't wish to be identified because of orders not to share information with the media said around 800 bodies were brought to the cemetery Friday. By midday Saturday, he said, as many as 2,000 had been buried.

The disaster compounded suffering in a region beset by Syria's 12-year civil war, which has displaced millions within the country and left them dependent on aid. The fighting sent millions more to seek refuge in Turkey.

The death toll in Syria's northwestern rebel-held region has reached 2,166, according to the rescue worker group the White Helmets. The overall death toll in Syria stood at 3,553 on Saturday.

PUBLIC NOTICE

International Drive Pedestrian Overpass Wednesday, February 22, 2023

Orange County invites the community to a public meeting regarding the International Drive Pedestrian Overpass. Orange County is evaluating concepts for designing a pedestrian overpass across Sand Lake Road at International Drive. The project's goals are to improve pedestrian safety and create an aesthetic gateway to one of Orange County's most-heavily traveled tourism corridors.

The purpose of this meeting is to present design concepts for the overpass and hear community feedback.

The public meeting will be held on Wednesday, February 22, 2023, at Lake Buena Vista High School's cafeteria at 11305 Daryl Carter Parkway, Orlando, FL 32836. The meeting will begin with an open house from 5:30 to 6:00 p.m., followed by a formal presentation at 6:00 p.m.

The public will have opportunities to ask questions and provide comments to Orange County project representatives. Project information also is available on the project website at www.idriveoverpass.com or on the Orange County website at https://www.orangecountyfl.net/TrafficTransportation/TransportationProjects/InternationalDrivePedestrianOverpass.aspx.

Public participation is solicited without regard to race, color, national origin, age, sex, religion, income, disability, or family status. Persons who require language translation or interpretative services, which are provided at no cost, should contact **Yevette Best, Orange County Title VI/Nondiscrimination Coordinator**, at 407-836-5825 or yevette.best@ocfl.net at least seven (7) days prior to the meeting.

Persons requiring accommodations under the Americans with Disabilities Act of 1990 (ADA) may request assistance from **Nicola Norton, County ADA Coordinator,** at 407-836-6568 or nicola.norton@ocfl.net at least seven (7) days prior to the meeting.

For more information, please contact **Blanche Hardy, P.G., Project Manager for Orange County Planning Environmental and Development Services Department, Transportation Planning Division,** at 407-836-0257 or blanche.hardy@ocfl.net.

Para información en español, contactar a **Esther Fernández Cañizares, Staff Engineer, Orange County Public Works, Engineering Division.** Teléfono: 407-836-7982; Correo Electrónico: esther.fernandez@ocfl.net.

NOTIFICACIÓN PÚBLICA

Puente Peatonal "International Drive" Miércoles, 22 de Febrero del 2023

El Condado de Orange invita a la comunidad a una reunión pública referente al puente peatonal "International Drive." El Condado Orange está evaluando conceptos para diseñar un puente peatonal a través de Sand Lake Road e International Drive. Los objetivos del proyecto son mejorar la seguridad de los peatones y crear una puerta de entrada estética a uno de los corredores turísticos más transitados del Condado Orange.

El propósito de esta reunión es presentar los conceptos de diseño para el Puente Peatonal y escuchar los comentarios de la comunidad.

La reunión pública se llevará a cabo el Miércoles, 22 de febrero del 2023 en la cafetería de Lake Buena Vista High School, ubicada en 11305 Daryl Carter Parkway, Orlando, FL 32836. La reunión comenzará con una jornada de puertas abiertas de 5:30 a 6:00 p.m., seguida de una presentación formal a las 6:00 p.m. El público tendrá la oportunidad de hacer preguntas y proveer comentarios al Condado Orange y a los representantes del proyecto.

La información del proyecto también está disponible en su sitio web: www.idriveoverpass.com, o en el sition web del Condado Orange https://www.orangecountyfl.net/TrafficTransportation/TransportationProjects/InternationalDrivePedestrianOverpass.aspx.

Se solicita la participación pública sin distinción de raza, color, origen nacional, edad, sexo, religión, ingresos, discapacidad o estado familiar. Las personas que requieran servicios de interpretación o traducción de idiomas, los cuales se brindan sin costo alguno, deben comunicarse **con Yevette Best, Coordinadora de Título VI/No Discriminación del Condado Orange**, al 407-836-5825; Correo Electrónico: yevette.best@ocfl.net al menos siete (7) días antes de la reunión.

Las personas que requieran adaptaciones bajo la ley Americans with Disabilities Act of 1990 (ADA) pueden solicitar asistencia de **Nicola Norton, Coordinador de ADA del Condado**, al 407-836-6568; Correo Electrónico: nicola.norton@ocfl.net al menos siete (7) días antes de la reunión.

Para obtener más información, contactar a **Blanche Hardy, P.G., Gerente de Proyectos del Departamento de Servicios de Desarrollo y Medio Ambiente de Planificación del Condado Orange, División de Planificación de Transporte**, al 407-836-0257; Correo Electrónico: blanche.hardy@ocfl.net.

Para información en español, contactar a **Esther Fernández Cañizares, Staff Engineer, Orange County Public Works, Engineering Division.** Teléfono: 407-836-7982; Correo Electrónico: esther.fernandez@ocfl.net.

APPENDIX C

08-02-22 PAG Meeting #1
Meeting Minutes and Presentation

HHCP&AVCON
A JOINT VENTURE

Meeting Minutes

Date	September 15, 2022	Meeting Date	August 2, 2022
Project Name	International Drive (I-Drive) Pedestrian Bridge Overpass Intersection Analysis and Overpass Conceptual Design Study	Project #:	
Subject	Project Advisory Group (PAG) Meeting #1		
Participants	See Below		
Location	Embassy Suites 8250 Jamaican Court Orlando, FL 32819	Prepared By	Rick Baldocchi, P.E. Christine Dellert
Distribution	Meeting Participants		

- **Introduction of Participants**

  Blanche Hardy, Orange County
  Rick Baldocchi, AVCON, Inc.
  Michael Chatham, HHCP
  Pam Allard, Walgreens
  Krista Barber, OCCC
  Marcos Bastian, Orange County
  Loreen Bobo, FDOT-District 5
  Allan Bradley, Huber Group, LLC
  Brian Brink, OCFR
  Fernando Ching, Rosen Hotels & Resorts
  Kristen Darby, Visit Orlando
  Megan Dowdy, Dowdy Realty
  RJ Dowdy, Dowdy Realty
  Cpl. Kyle Gabrus, OCSO
  Anthony Hernandez, AMCOR Media
  Jesslyn Hernandez, Coldwell Banker Realty
  Stacy Huber, International Square, Inc.
  Georgette LeMieux, Oerther Foods
  Sgt. Gerald (David) McDaniels, OCSO
  Chris Mueller, Hilton Orlando
  Renzo Nastasi, Orange County
  Carmen Petersen, Universal
  Ian Phyars, Orange County
  Marc Reicher, I-Drive CRA
  Jason Sorensen, Orange County
  John Stein, Starflyer Gallery
  Tim Swan, Westwood Property Association
  Craig Swygert, Clear Channel Outdoor
  Maria Triscari, I-Drive Resort Area COC
  Michael Wajda, OCFR
  Josh Wallack, Mango's Tropical Café
  Cpt. Don Woods, OCSO
  Scott Workman, OCFR Fire Marshal

The purpose of this meeting was to introduce key area stakeholders, provide a general overview of the International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study, and solicit initial comments from participants. A summary of the discussion is below.

Blanche Hardy introduced the project and purpose of the meeting and shared a PowerPoint presentation with information on the project overview, goals, work to date, and initial questions and comments from participants. Items discussed included:

1. PAG
    a. The PAG consists of key study partners who will periodically meet (4-5 times) to provide strategic guidance and support to ensure the study meets its objectives.
2. Background on the Pedestrian Overpass Intersection Analysis
    a. Several district goals already have been identified for future development of the I-Drive corridor. They include (1) connected — to improve walkability and provide ample multimodal options; (2) complete — to create a complete atmosphere with a variety of uses; (3) authentic — to develop and reinforce community identity and provide civic gathering spaces; (4) prosperous — to be an economic generator for the region and Orange County; and (5) sustainable — to promote efficient use of natural resources and incorporate green building practices, making sure to incorporate local assets.
    b. Connected is the priority goal for the project.
3. Challenges
    a. There are challenges mainly related to the connected goal of this project. This area currently has a 45 out of 100 walkability score. Bicycle lanes recently were added to part of Sand Lake Road, west of where the bridge would be. The County is installing the first transit lanes on International Drive south of where the bridge would be.
    b. Other challenges are related to make this a complete district by connecting north, south, east, and west safely.
4. General Overview of the Project
    a. The County already has met with the Florida Department of Transportation (FDOT) to provide a general overview of the project. FDOT would need to approve eliminating the existing pedestrian walkways on the street.
    b. The project will consider design and visibility and visualization of the existing buildings and their businesses in this study.
    c. There are plans currently underway to convert the intersection of Sand Lake Road and Interstate-4, directly west of the project, to a diverging diamond configuration to increase traffic flow and reduce left-hand turns and crashes in the area. The project is going out for bid in 2023 and hopefully will be completed in 2025.
    d. The pedestrian bridge project is located at the intersection of Sand Lake Road and International Drive. This is the key northern entry point for cars coming from Interstate-4 and entering the Convention Center District. The improved traffic flow and reduced cross traffic should reduce backups and decrease congestion.
    e. A list of project challenges includes utilities, right-of-way impacts, access impacts, visibility impacts, traffic speed impacts, ADA accessibility, fire/rescue access and parking, pedestrian use, and security. Several of the items will be addressed during upcoming Project Advisory Group meetings to inform the design of the project.
    f. The study area is the intersection of International Drive and Sand Lake Road with businesses on the intersection that include McDonalds, Perkins/Skyplex, Walgreens, International Plaza/Checkers. This is an eight-lane to eight-lane roadway on Sand Lake Road 120 feet across. International Drive is six lanes wide north of Sand Lake Road and seven lanes wide south of Sand Lake Road — over 100 feet for a pedestrian to cross.

g. There are 22,500 average annual daily traffic (AADT) counts on International Drive; 28,000 AADT on Sand Lake Road to the west and 36,500 AADT on Sand Lake to the east. Pedestrian activity is limited by the existing conditions.
h. A diagram showed the walkshed of 5-, 10-, and 15-minutes from the intersection. This bridge will facilitate the customers of businesses beyond the intersection, impacting pedestrians traveling to many of the restaurants and other businesses in the larger walkshed.

5. Project Goals
   a. The goals of this project include providing pedestrians a safe crossing at the intersection; be iconic — even “Instagrammable” — as a gateway to the district; improve the vehicular capacity and better manage those vehicles; minimize the impacts on the adjacent properties; minimize relocating existing utilities; enhance the pedestrian nature of the district and match work already done or underway in the district; provide ADA accessibility; make a positive and fun experience for pedestrians; and utilize lighting to enhance the experience and safety.
6. Safety
   a. The County showed a series of photos of people on bicycles or foot trying to navigate the intersection under dangerous conditions when they have the right of way. All photos were taken within an hour on July 27, 2022.
   b. In Florida, there are eight fatalities and 49 injuries per day on the roads. In 2021, there were 444 pedestrian deaths — a 31% increase from 2020.
   c. If you are 60 or older, your chances go up of being a fatality in a vehicle conflict.
   d. Orange County will work with FDOT on reducing speed in the intersection and immediate area. The department has come up with a new target speed criteria that will be incorporated into this project, which is the highest speed at which a vehicle should operate on a thoroughfare in a specific context, consistent with the level of activity around it.
7. Iconic Gateway
   a. The County showed a series of examples of recognizable structures from around the world that create a symbol that says “you’re in a special place. Something significant is happening here.” This area will be a transition from a high-speed highway to a walkable entertainment district.
   b. One example showed a circular pedestrian bridge in Europe with ramps, elevators, and stairways. Responses from groups like this and other stakeholders and data will inform this bridge’s unique design.
8. Questions and Discussion
   a. The County shared a list of questions with participants that included:
      i. Maintain crosswalk surface crossing or create barrier to on grade crossing?
      ii. Provide a roof for sun/rain protection?
      iii. Options for vertical circulation (i.e., combination of stairs, elevators, escalators, or ramps)?
      iv. Provide space for activities and vendors on the bridge?
      v. Can the bridge facilitate connection into venues on the corners?
      vi. Can the bridge entry points be moved away from the corner?
      vii. Is there a preference to provide ramps?

   viii. Can vertical circulation include elevators?
   ix. Can audio and visual components be included on the bridge?
   x. Is it desirable to include a photovoltaic component to the bridge?
   xi. Will there be security required on the bridge? Cameras?
   xii. Will barriers be required at the bridge perimeter?
   xiii. Will FDOT limit lighting elements on the bridge?

b. **RJ Dowdy:** Project needs to eliminate surface crosswalks to direct pedestrian traffic to bridge. Roof is not necessary but could use solar panels for some shade or shelter. Escalators and elevators in all four corners are critical; ramps would be ideal, but space is limited. Should also consider needs for future transit projects when discussing the project with the corner property owners.

c. **Orange County Sheriff's Office:** Clarifies that there have been four bicycle or pedestrian injuries at the project intersection during the past 12 years.

d. **Megan Dowdy:** Bridge does not need vendors, activities, or charging stations. It should be more functional.

e. **Josh Wallack:** Need to block off and heavily landscape the project area at grade to direct all pedestrian traffic to the bridge. Functional is important, but people expect to see an iconic gateway to reflect existing and future developments in the district.

f. **Marc Reicher:** What is the ADA requirement for the bridge?
   i. If the project uses elevators, the County already has spoken with Orange County Sheriff's Office and Fire Rescue to understand their needs. But also have to consider the project footprint. Will provide different options at the next meeting but will meet all ADA requirements.

g. **RJ Dowdy:** Because the intersection is at different elevations on various sides, see differences in how customers behave and visit the properties based upon steps. Elevators or escalators would help increase safety.
   i. Code requires two means of egress when people are coming off elevated platforms or bridges.

h. **Chris Mueller:** The crosswalk was left open on the Hyatt bridge project, which eventually needed to be barricaded so that guests would use the bridge.

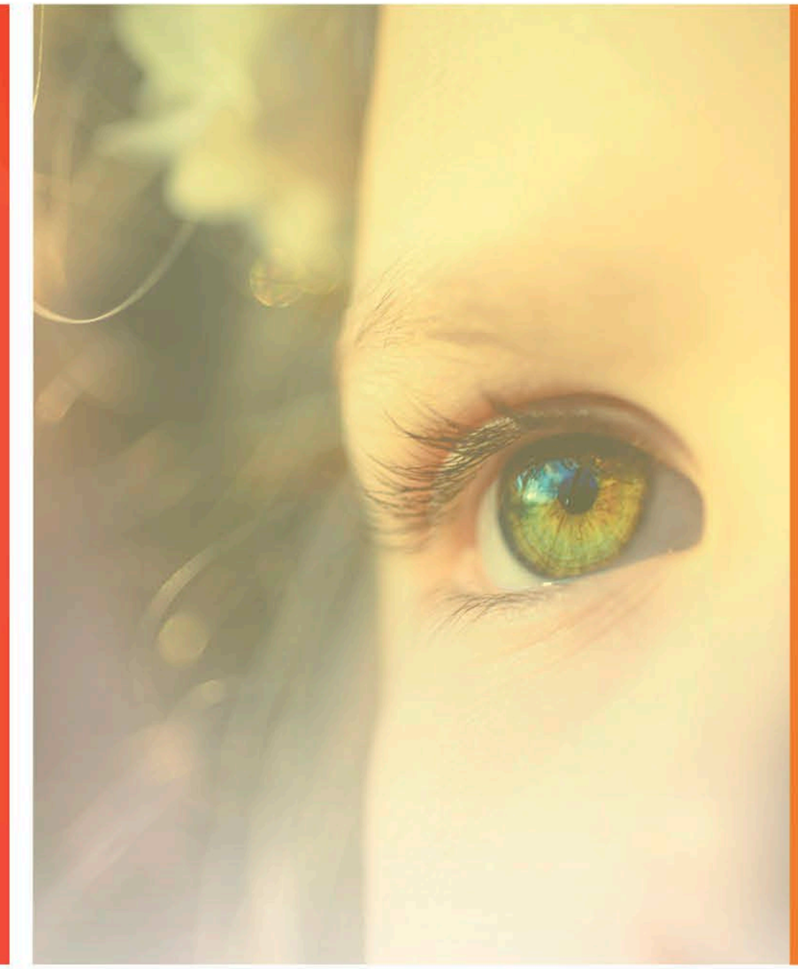
i. **Allan Bradley:** Asks if there are pedestrian traffic counts for project area.
   i. Still at the data collection phase but will have them.

j. **Cpt. Don Woods:** OCSO does not favor an enclosed bridge for security reasons. Prefers no seating. Would want to include cameras.

k. **Brian Brink:** Would like to know if this project will overlap with the diamond divergent project on Interstate-4 at Sand Lake and the I-4 Express lanes being built toward Champion's Gate.
   i. It should not overlap; anticipate bringing this project before the Board of County Commissioners next spring for approval of the study. Probably at least five years out from construction.
   ii. County agreed to undertake feasibility study but moving forward will require participation of property owners to facilitate the right-of-way for this project.

l. **Fernando Ching:** Would like to know if there is a count for scooters or bicyclists.
    i. These are included in the pedestrian counts but could look at data via video.
m. **Loreen Bobo:** Will need to direct people only toward the bridge, not a surface crosswalk option. FDOT does have some design requirements at the top of the bridge. Consider providing shade on bridge due to environmental conditions. Will be able to provide further details on lighting requirements.
n. **Craig Swygert:** Where are we at from a funding model and what is the participation of the corner property owners?
    i. At the feasibility study phase working with FDOT to place a pedestrian bridge within primarily FDOT right-of-way. The next phase is going to the Board of County Commissioners. The next phase would be design, but we need to ensure all the property owners agree about the impacts to the four quadrants. The County has applied for a federal grant to cover a portion of the cost.
o. **Josh Wallack:** We are committed to making sure that our corner participates in every way possible.
p. **Georgette LeMieux:** We are fully committed to the project, as well. Need to consider how signage and parking capacity on that corner will be impacted.

9. Next Meeting Date
    a. Will share and provide more details on way overpass could be designed to look at the next meeting.
    b. More information on the project also can be found at: https://www.orangecountyfl.net/TrafficTransportation/TransportationProjects/InternationalDrivePedestrianOverpass.aspx#.YvWs_-zMLDI



ORANGE COUNTY GOVERNMENT
FLORIDA

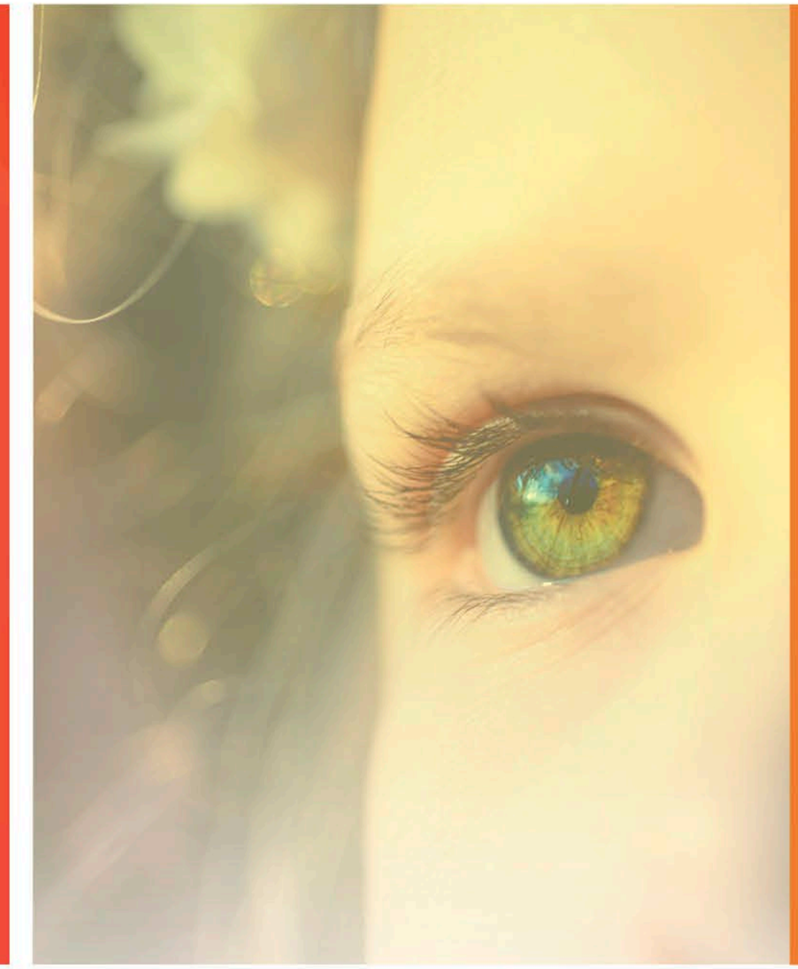
INTERNATIONAL DRIVE PEDESTRIAN OVERPASS

ANALYSIS AND OVERPASS CONCEPTUAL DESIGN STUDY

PROJECT ADVISORY GROUP MEETING #1

HHCP&AVCON

A JOINT VENTURE



Meeting Number One

Introduction of Participants

ORANGE COUNTY GOVERNMENT FLORIDA

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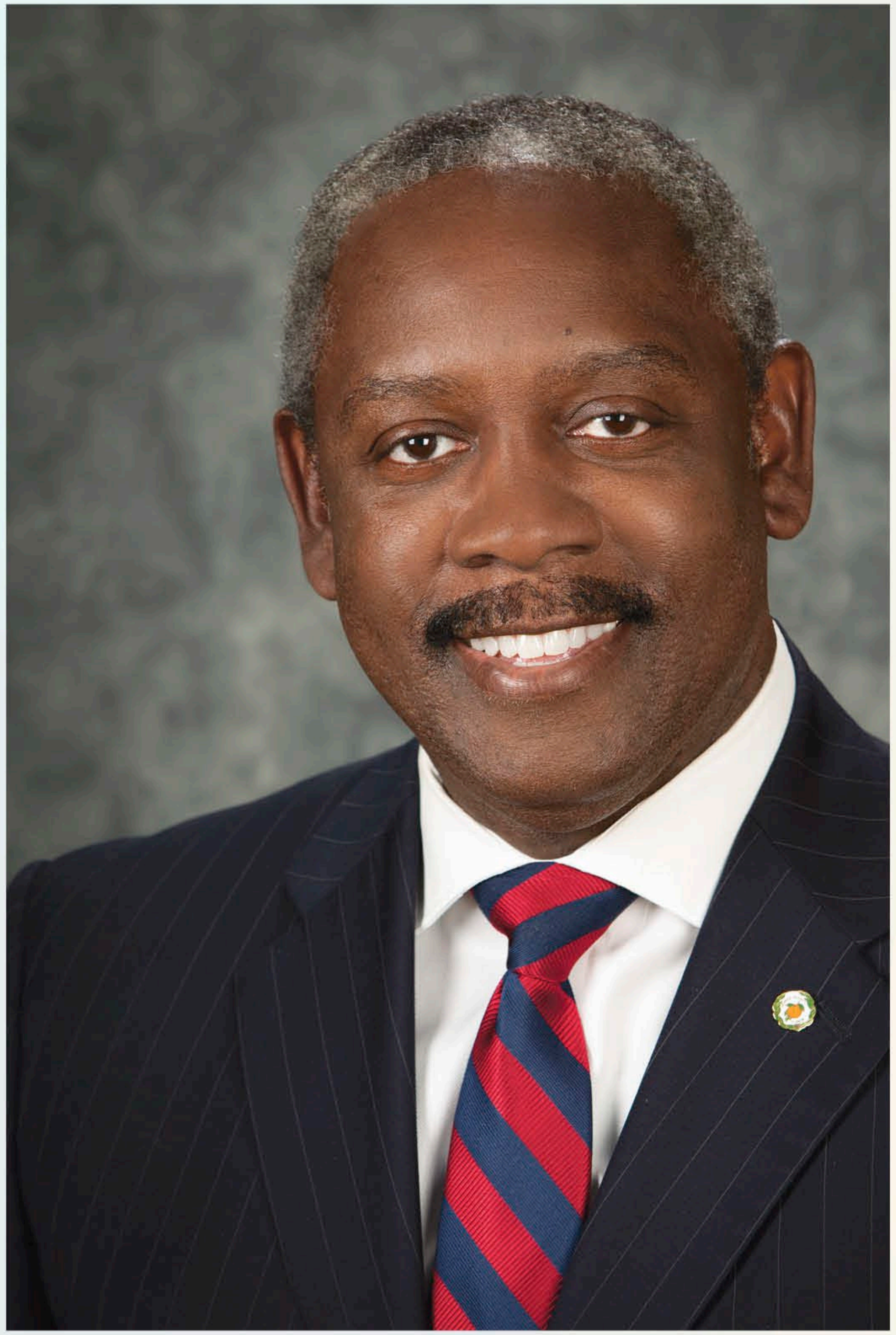


Jerry L. Demings
Orange County Mayor

Victoria P. Siplin
District 6 Commissioner

Project Advisory Group Meeting Objectives

Meeting Number One

- Introduction of Participants
- General Overview of Project
- Initial Comments from Group Members

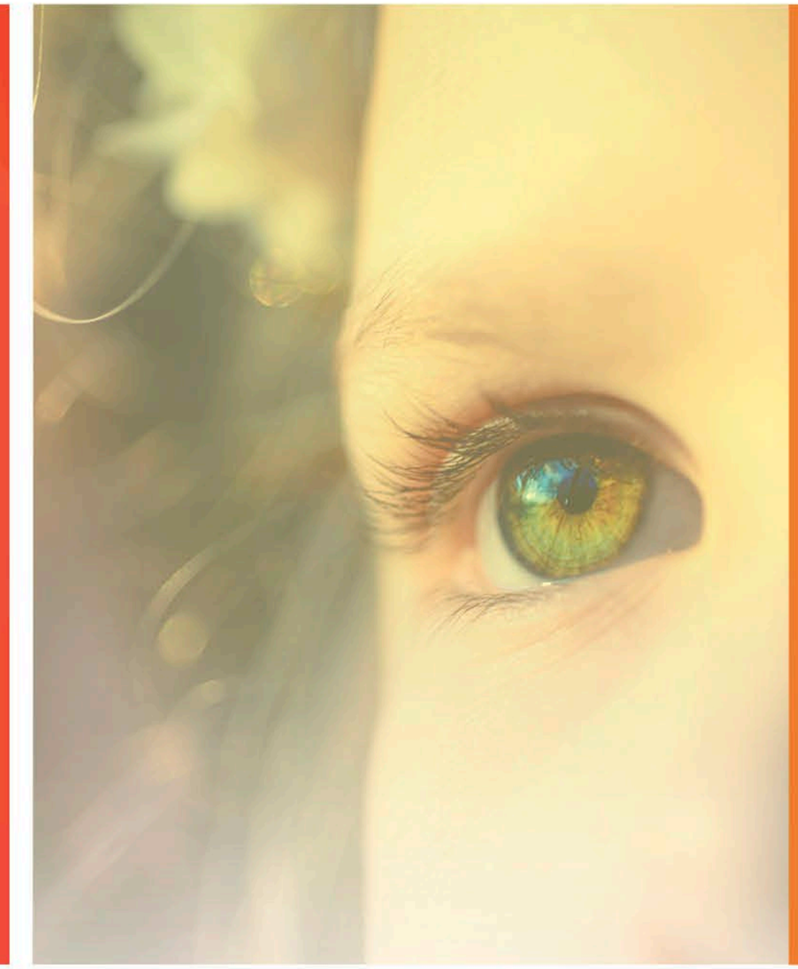
Meeting Number One
Introduction of Participants
General Overview of Project
Initial Comments from Group Members

Meeting Number Two
Presentation on findings of Existing Conditions
Discussion of General Bridge Features
Ramps, Stairs Elevators, etc.
Comments from Group Members

Meeting Number Three
Presentation of Preliminary Bridge Concepts
Comparison of Aesthetics for Each Concept
Discussion of Right-of-Way and Access impacts
Discussion of Utility Impacts
Comments from Group Members

Meeting Number Four
Presentation of Refined Bridge Concepts
Discussion of Refined Aesthetics
Further Discussion of Right-of-Way and Access Impacts
Further Discussion of Utility Impacts
Final Comments from Group Members

Meeting Number Five
Presentation of Final Concept Plans for 3 Alternatives
Presentation on Evaluation Method and Rankings
Discuss Rankings and Determination of Preferred Alternative



Meeting Number One

Project Background

ORANGE COUNTY GOVERNMENT FLORIDA

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District Goals

Stakeholder input was used to develop the District goals listed below.

CONNECTED - celebrate pedestrians by improving walkability, activating streets, and offering ample multimodal options.

Complete - enable a complete community by ensuring that a diversity of uses, including residential, can be accommodated in the District.

Authentic - reinforce community identity and authenticity by providing civic and gathering spaces featuring public art.

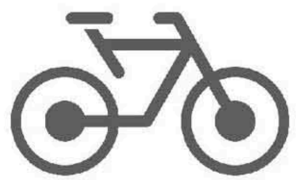
Prosperous - foster economic development by promoting and facilitating infill and redevelopment opportunities within the District.

Sustainable - promote efficient use of natural resources by incorporating green building practices and capitalizing on local assets.

Connected District

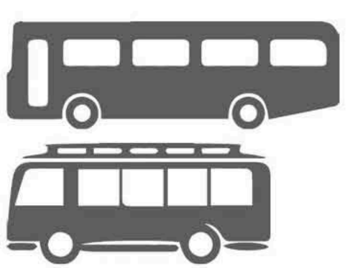
Walkability is rated **45** out of a possible **100** score

There are **0 bicycle lanes** in the district

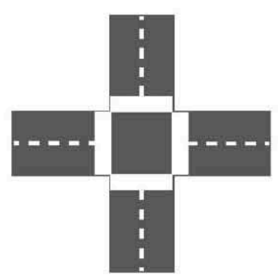


International Drive has **58 miles of** vehicular **lanes**

There are currently **0 transit lanes**



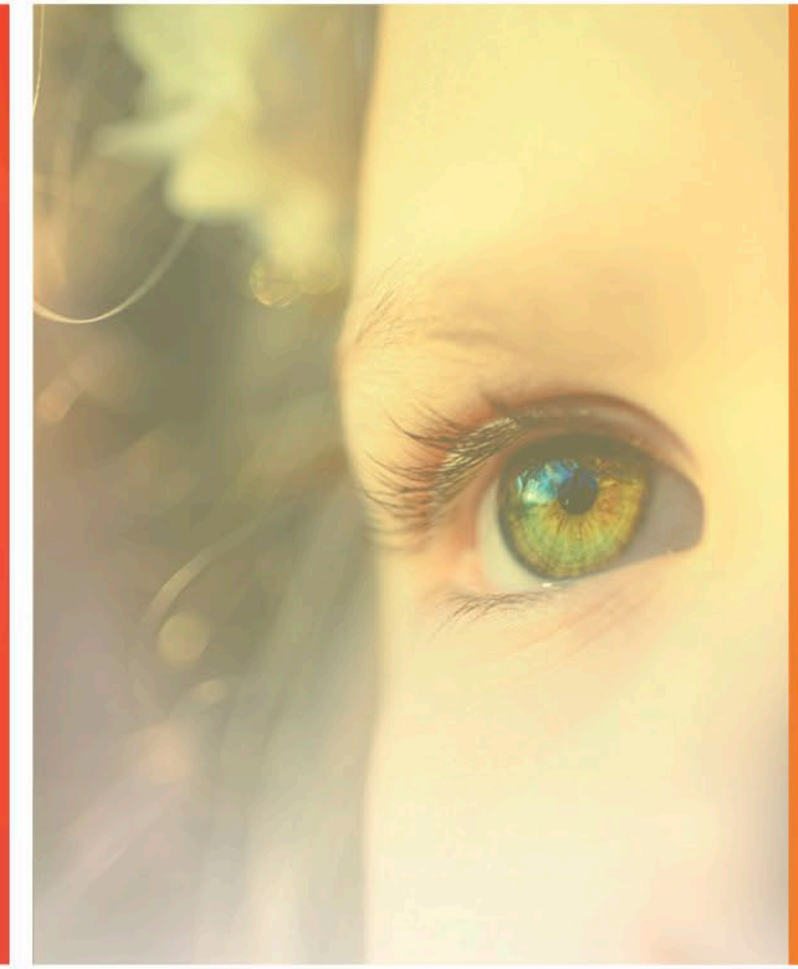
About 10% of pedestrians take public transit



There are currently **12 intersections** per square mile

Complete District

HOTEL	49%	RETAIL	7%
CONVENTION CENTER	21%	OFFICE	6%
RESIDENTIAL	10%	TOURIST ATTRACTION	6%
RESTAURANT	2%		

Meeting Number One

General Overview of Project

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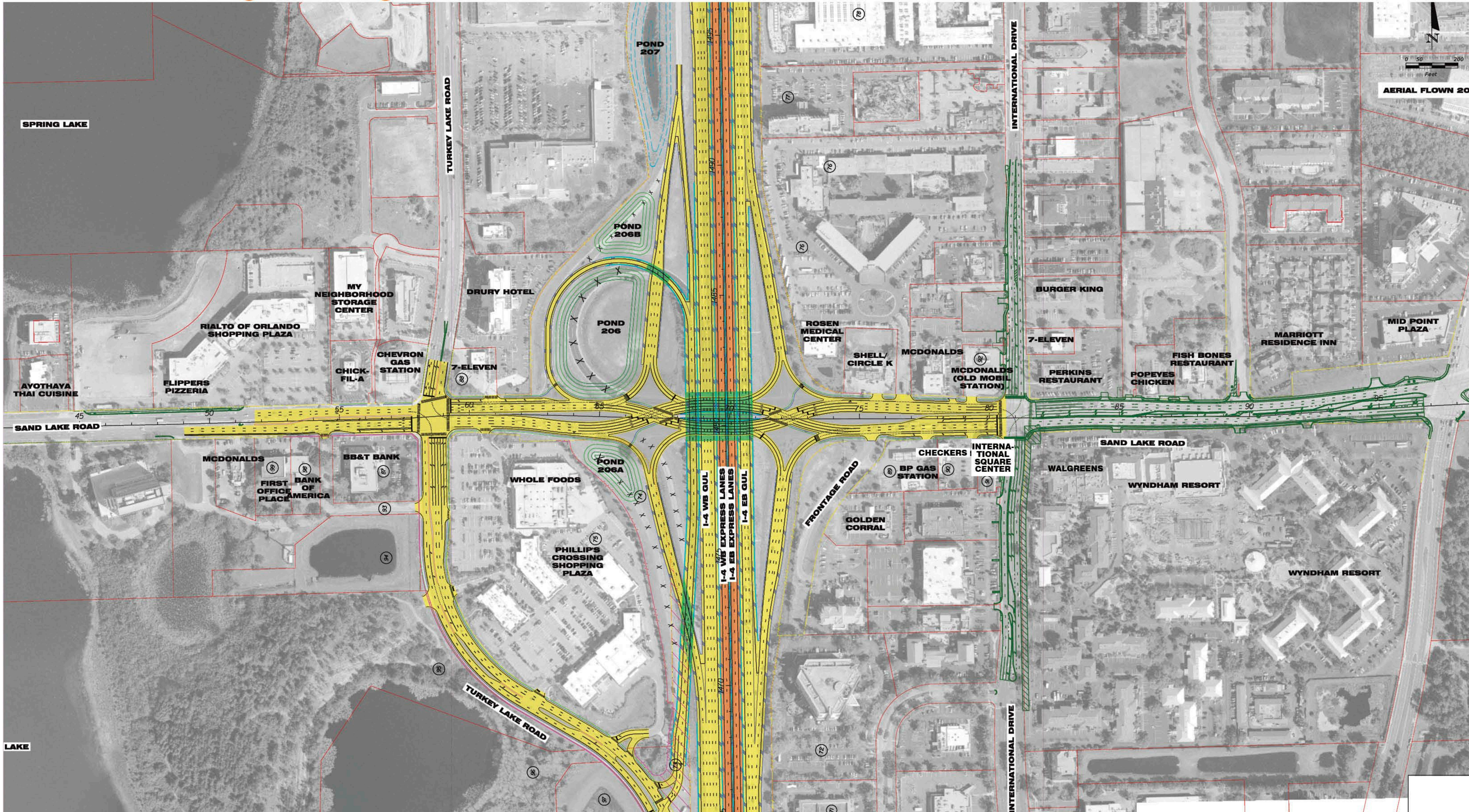
Previous Collaboration Meetings

Florida Department of Transportation (FDOT)

- General Overview of Project
- Letting for the Sand Lake Interchange Improvements is anticipated in 2023
- FDOT would need to approve eliminating on grade pedestrian crossing at intersection
- Coordinate visibility & any changes to signalization
- FDOT has regulations regarding visibility of billboards
- Selected design will require review & approval by FDOT

I-4 Interchange – Design Build 2023



PROJECT ADVISORY GROUP MEETING #1 | I-4 - SAND LAKE RD FUTURE INTERSECTION CONFIGURATION

ORANGE COUNTY FLORIDA | INTERNATIONAL DRIVE PEDESTRIAN OVERPASS ANALYSIS AND OVERPASS CONCEPTUAL DESIGN STUDY | #Y20-803-CH

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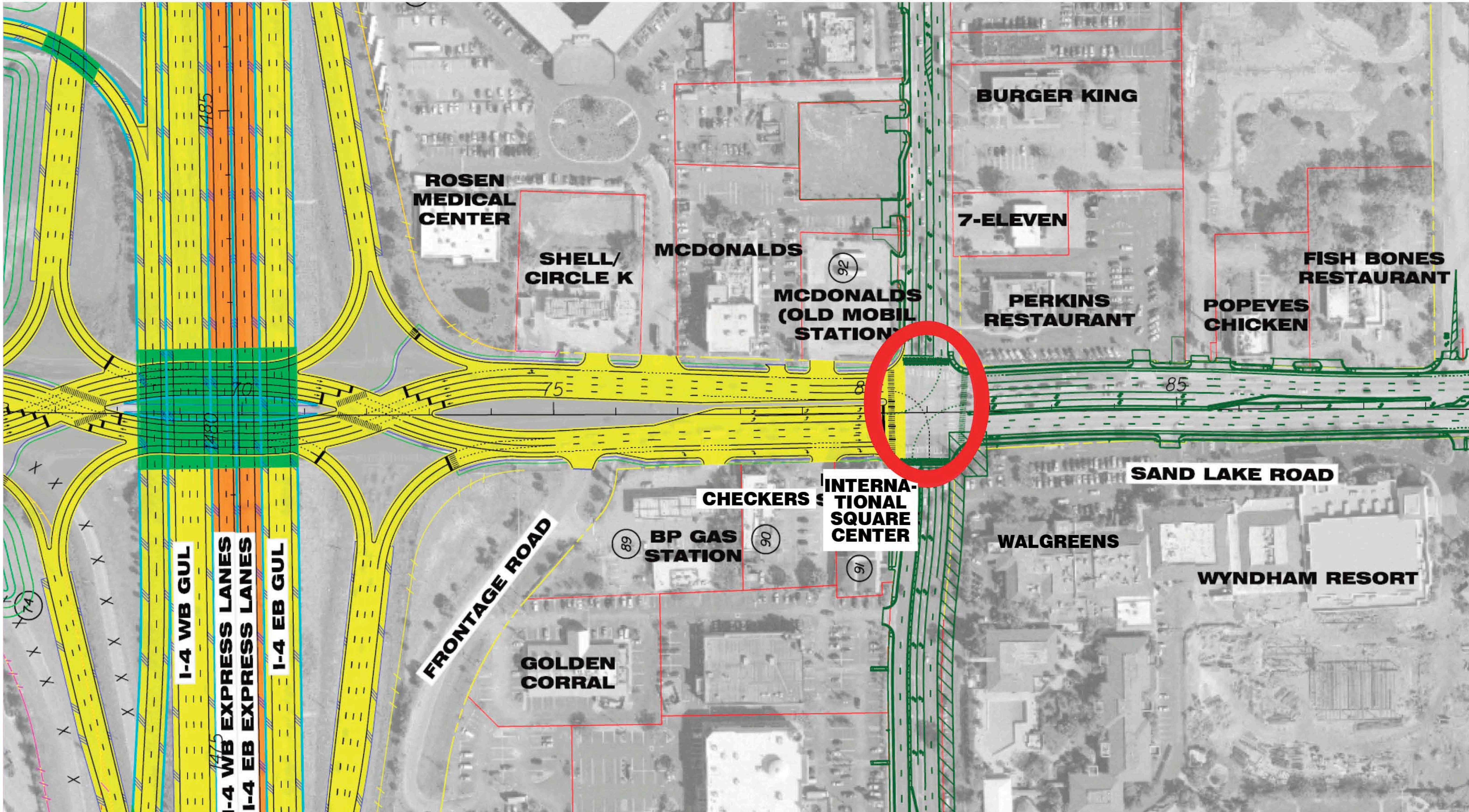
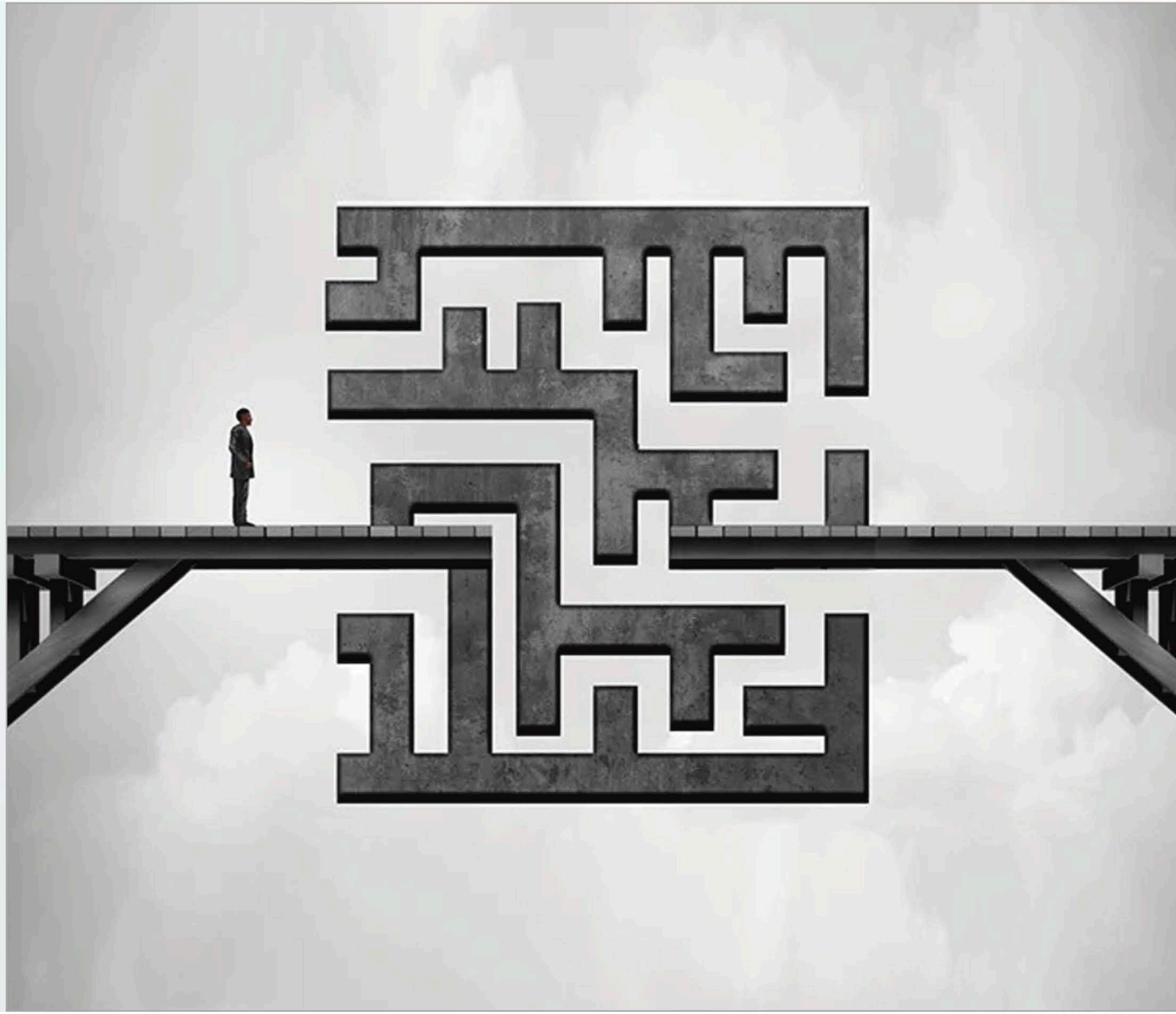
Pedestrian Bridge Location



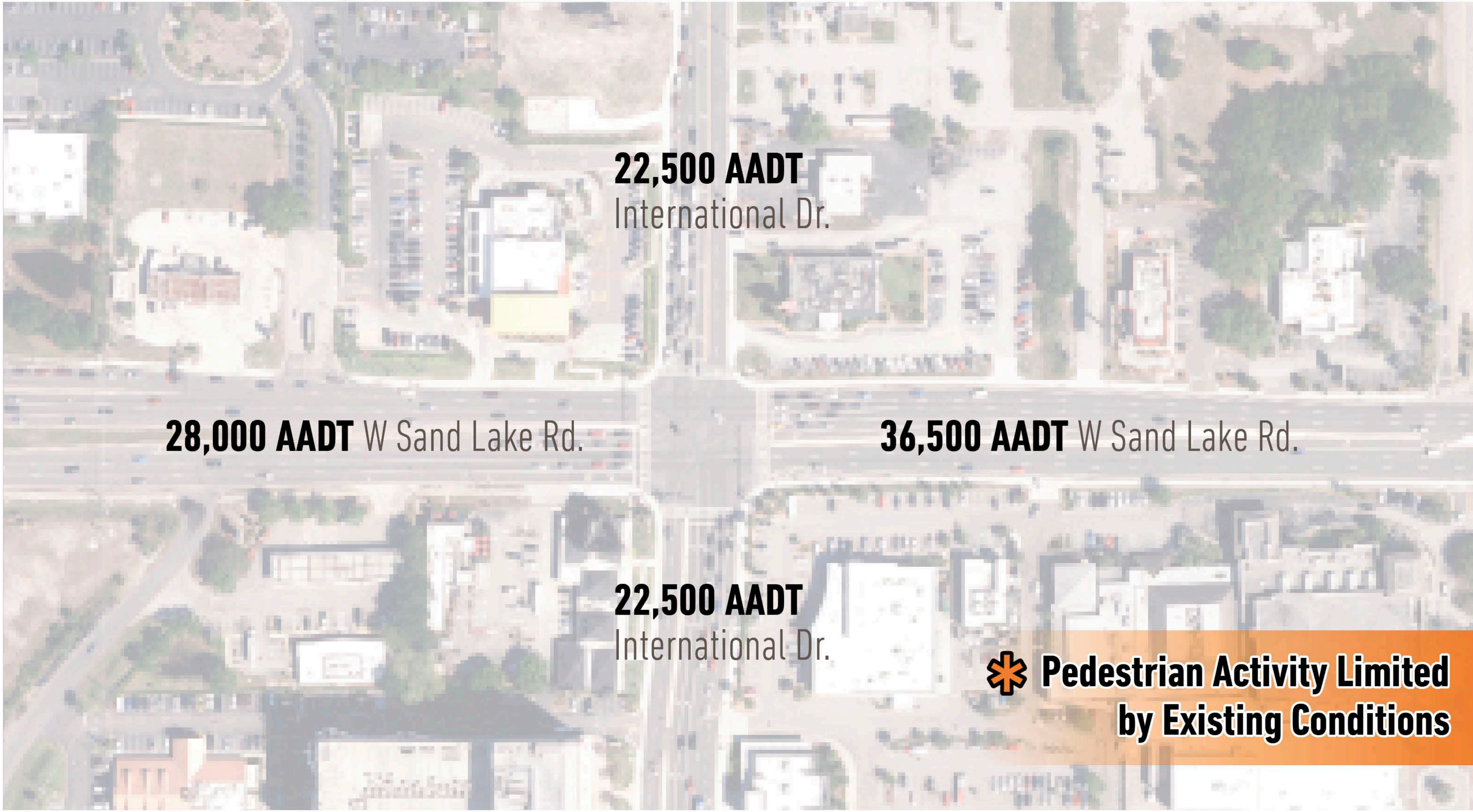
Challenges

1. Utility Impacts
2. Right-of-Way Impacts
3. Access Impacts
4. Visibility Impacts
5. Traffic Speed Impacts
6. ADA Accessibility
7. Fire/Rescue Access
8. Fire/Rescue Parking
9. Pedestrian Use – Extra Walking Distance
10. Security

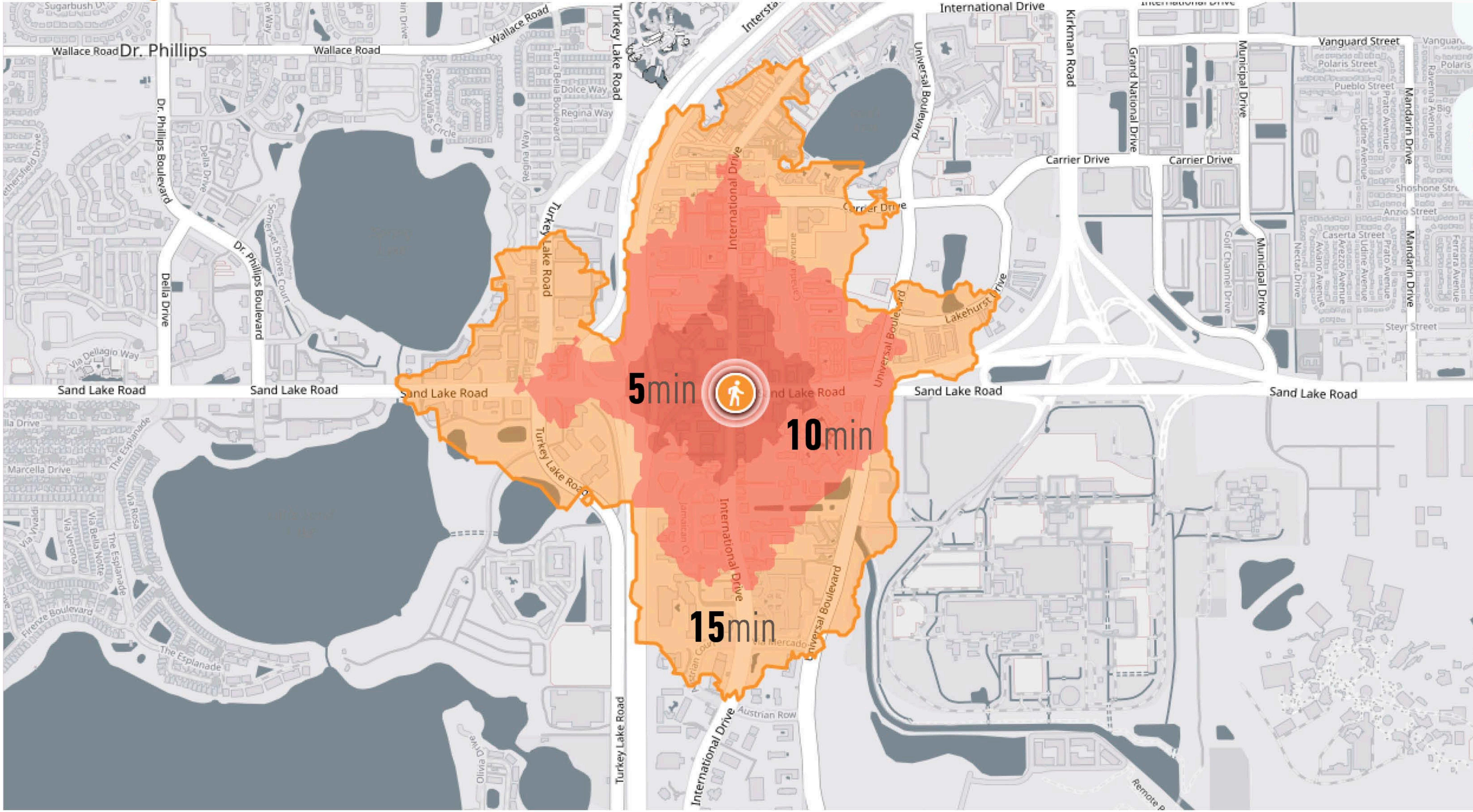


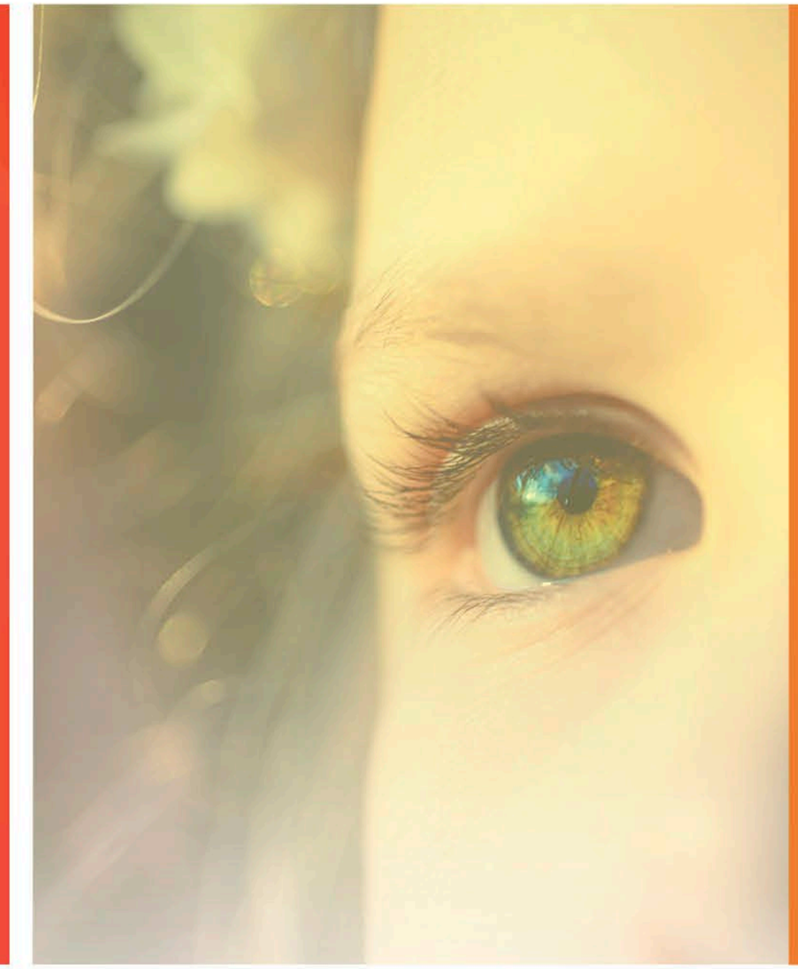
Adjacent Business and Lane Counts

AADT - Average Daily Traffic Count



Walking Radius





Meeting Number One

Project Goals

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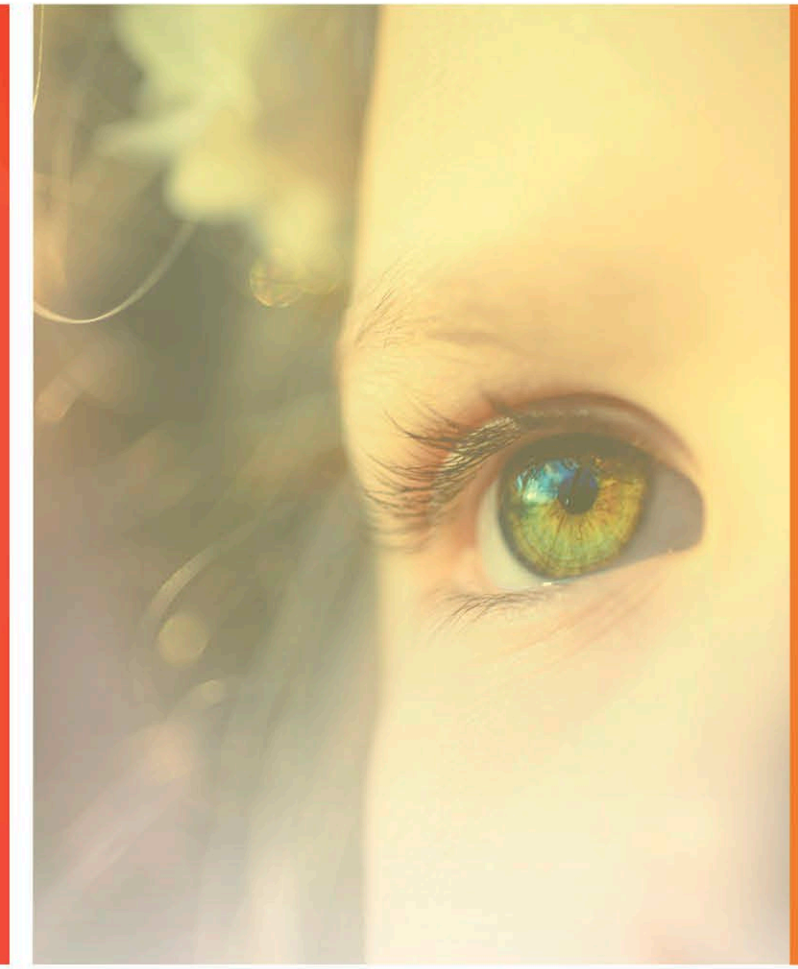
Project Goals

1. Provide pedestrians **safe** crossing to all four intersection corners
2. **Iconic** Gateway to I-Drive Entertainment and Convention Center District
3. Improve Vehicular capacity at the intersection
4. Minimize impact on adjacent property owners
5. Minimize need to relocate existing utilities
6. Enhance **pedestrian** nature of the district
7. Provide ADA **accessibility** at bridge connections
8. Make the **experience** of using the bridge a positive, memorable, and Instagram-able
9. Utilize **lighting** to enhance the experience and safety of the bridge at night



Meeting Number One

Safety

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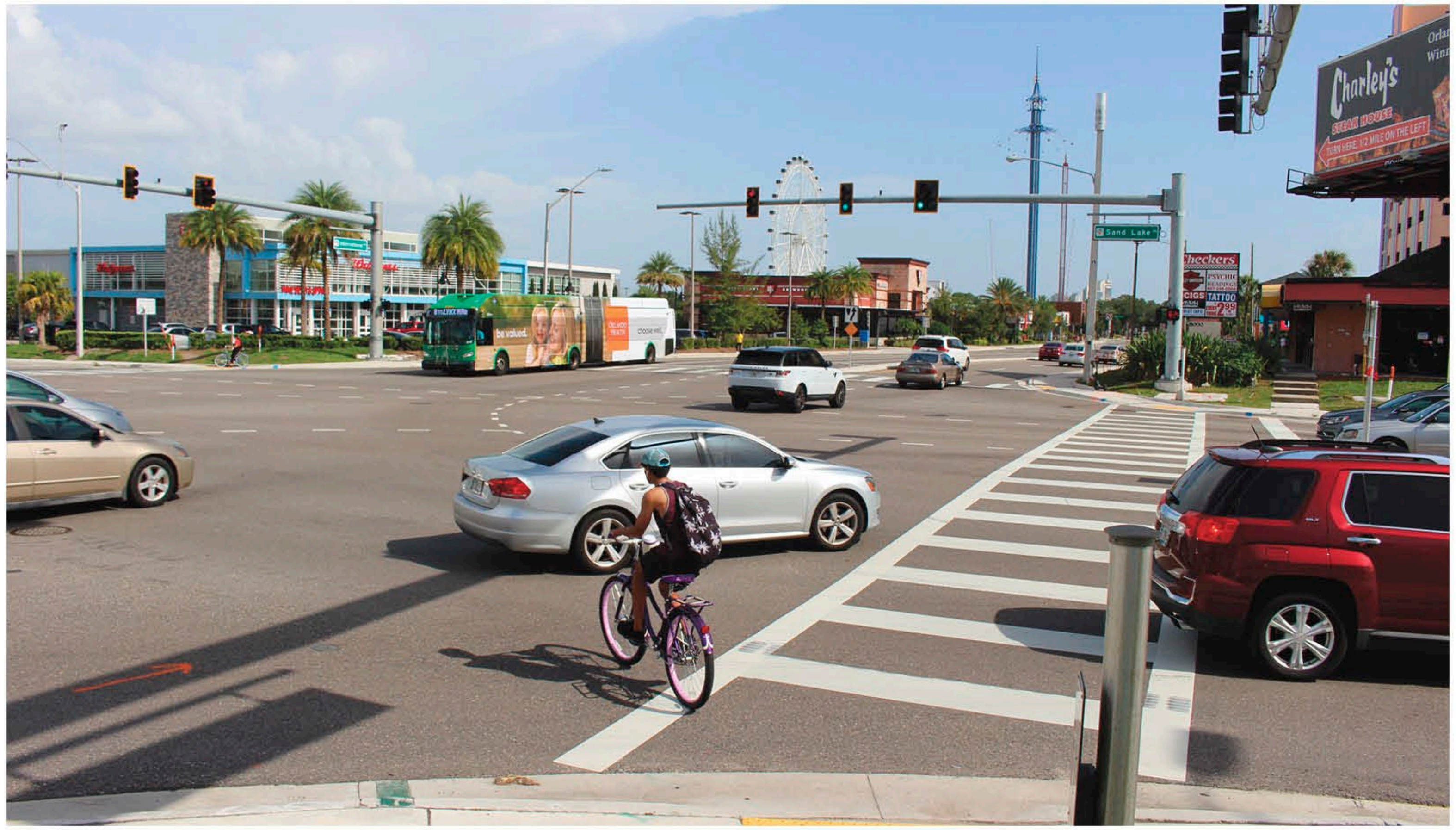
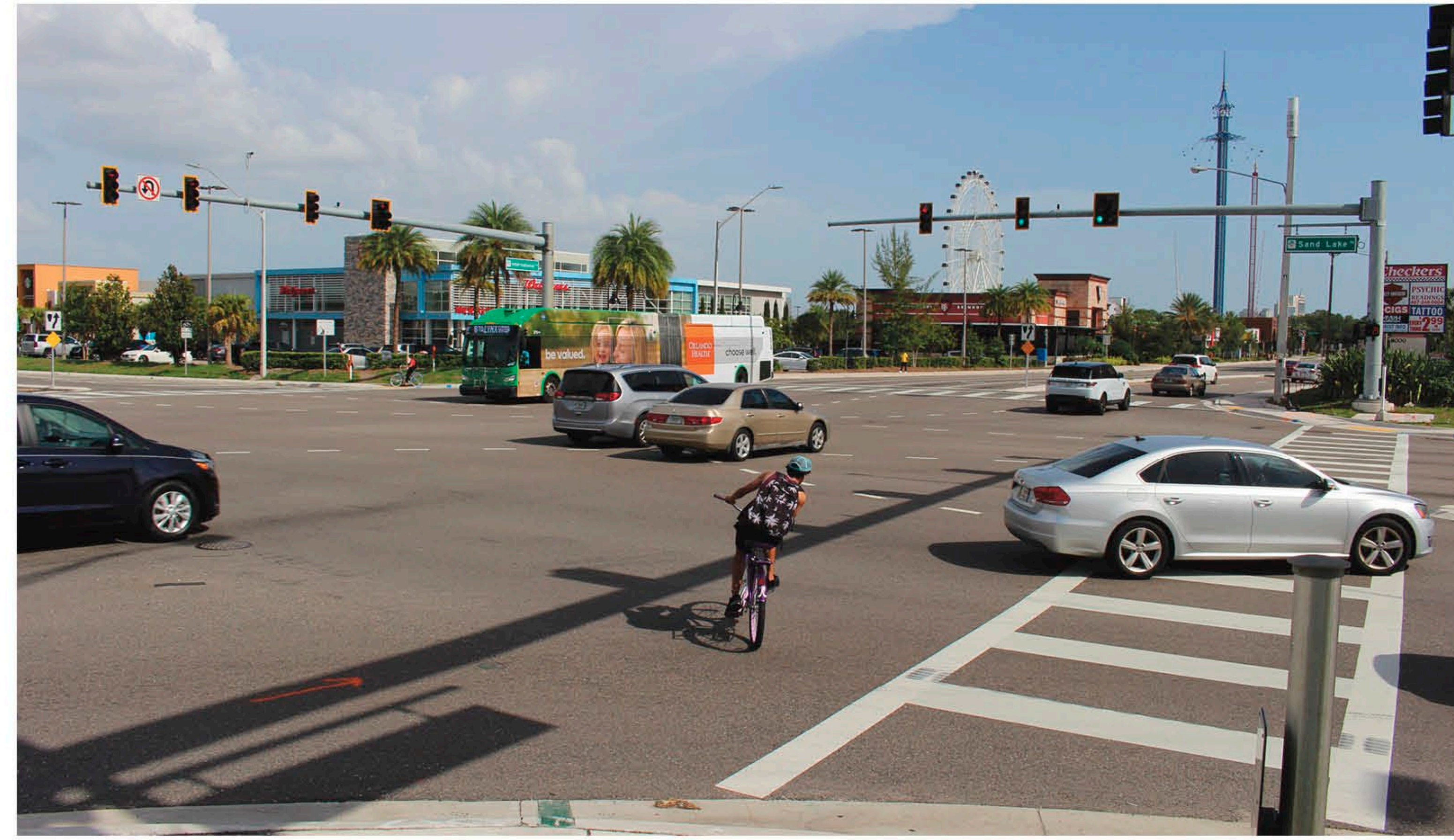
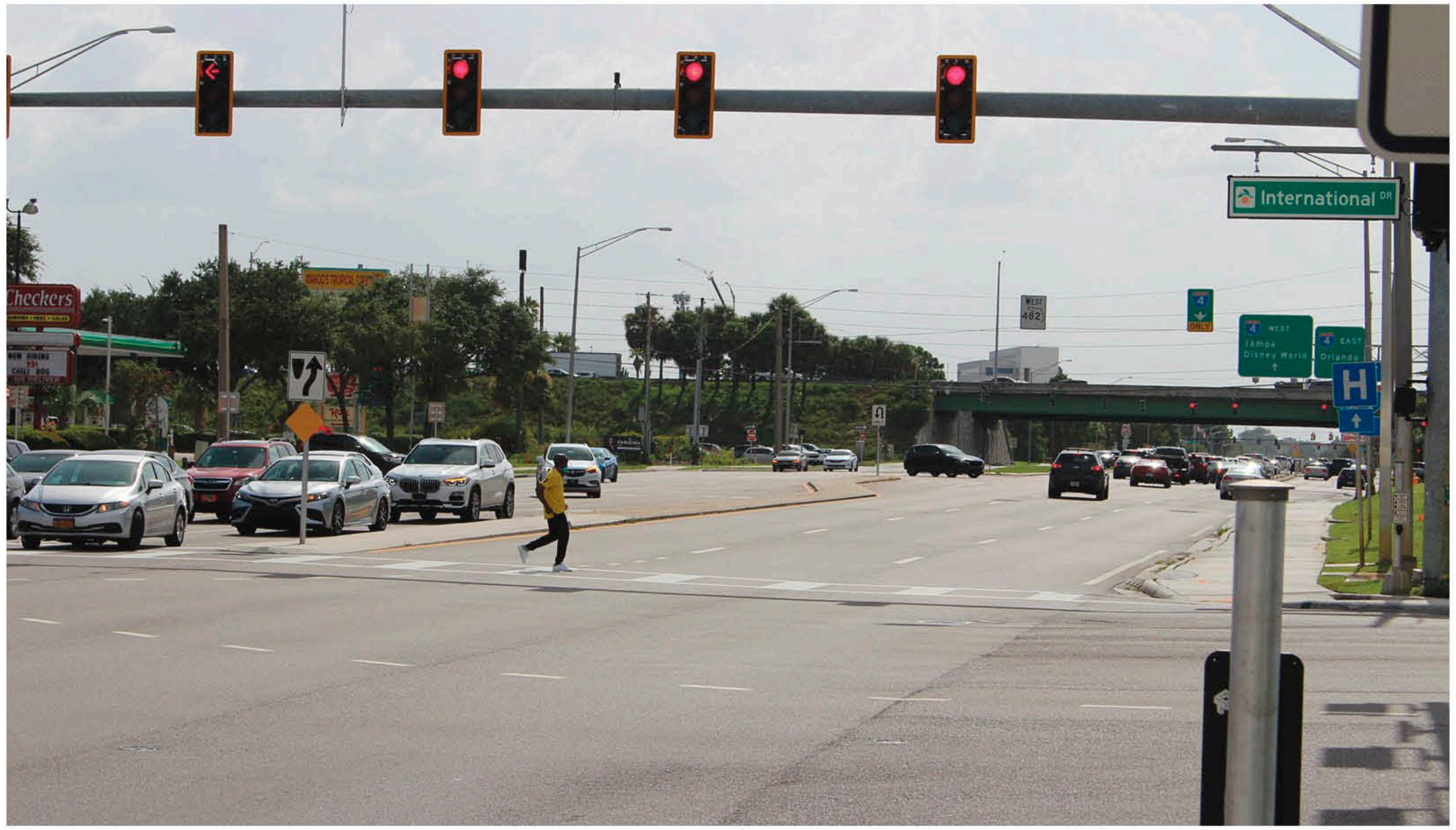
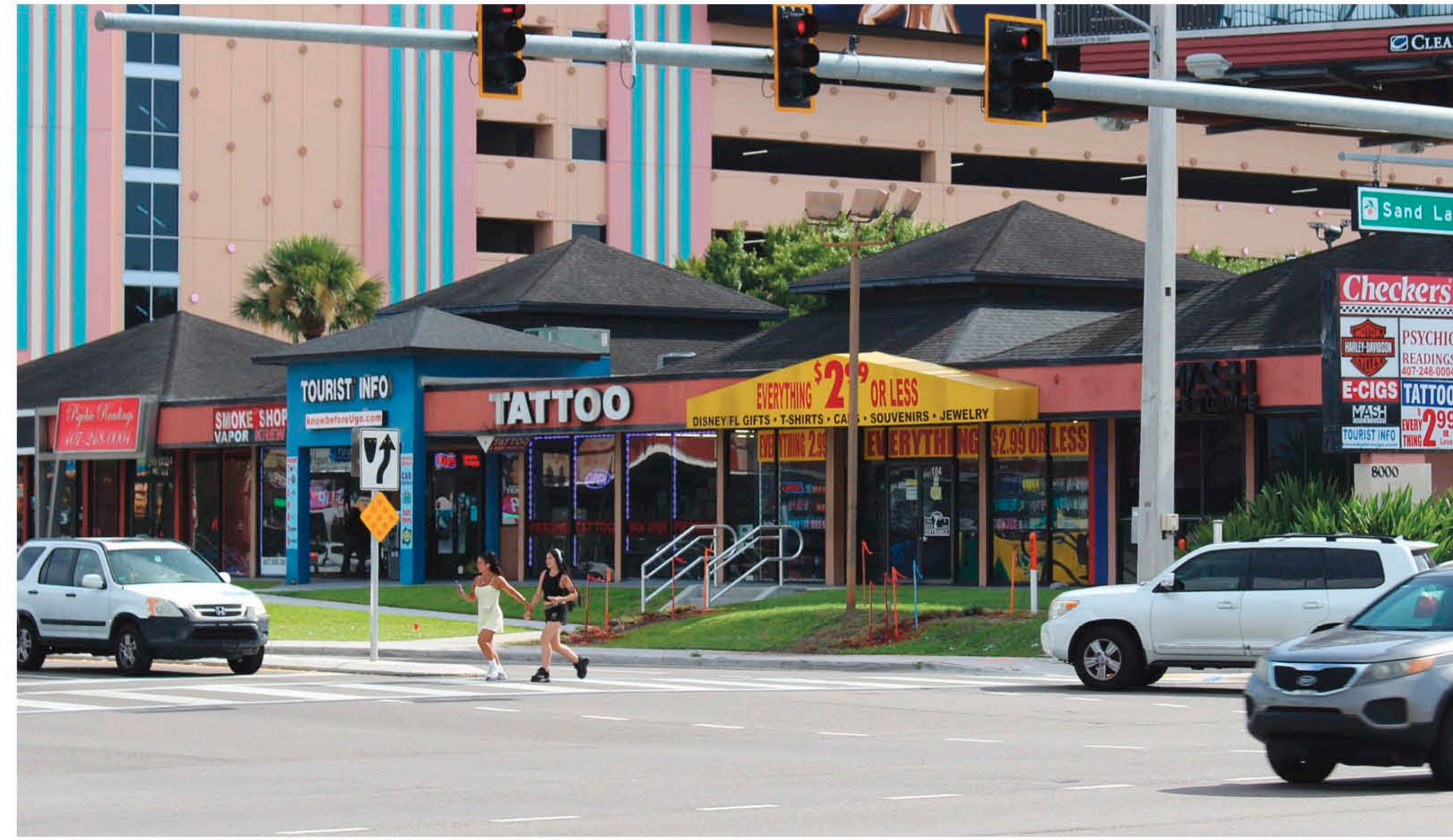
BICYCLE CROSSING WITH CROSSWALK





FEELING COMPELLED TO RUN WITH CROSSWALK

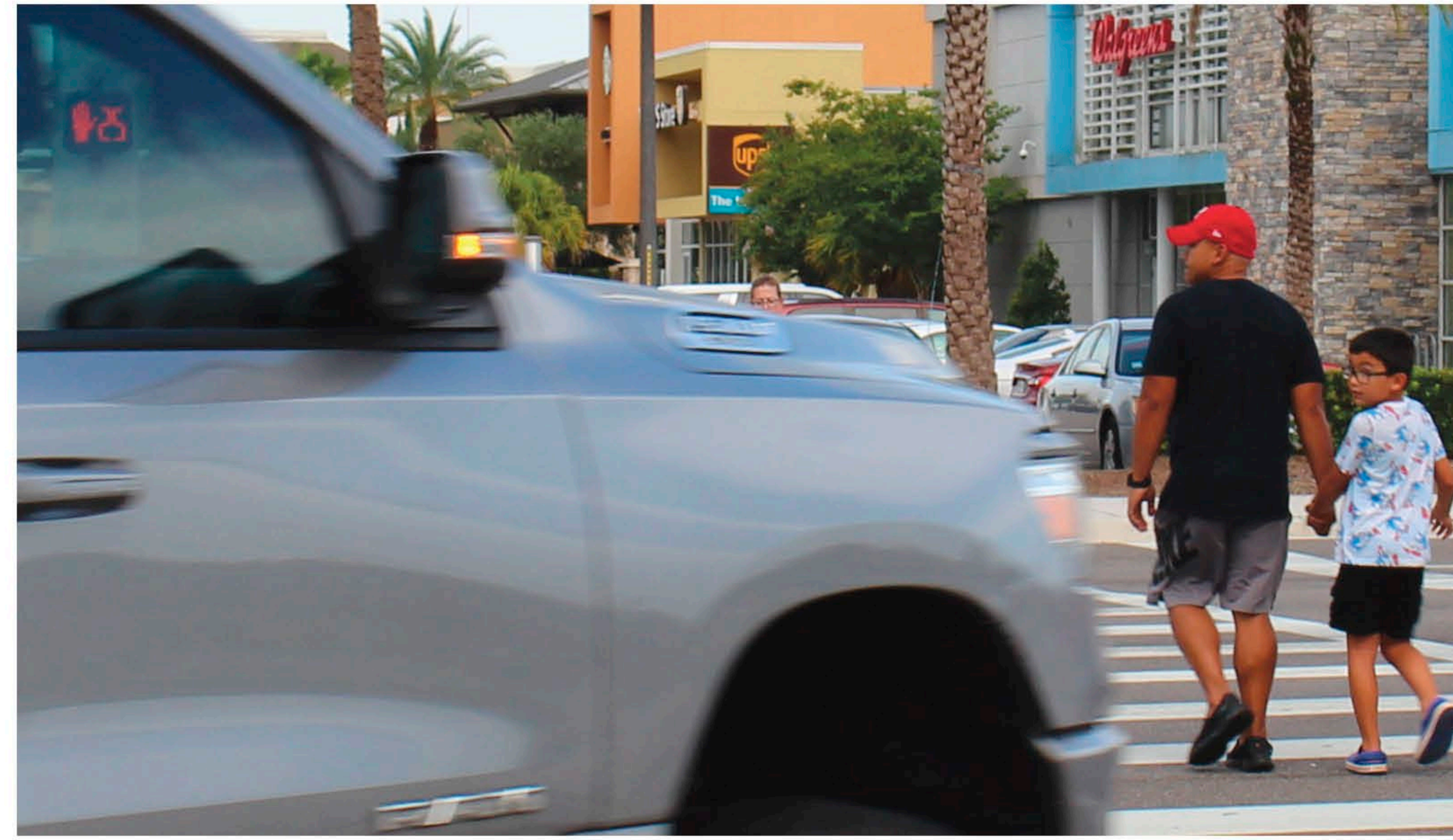


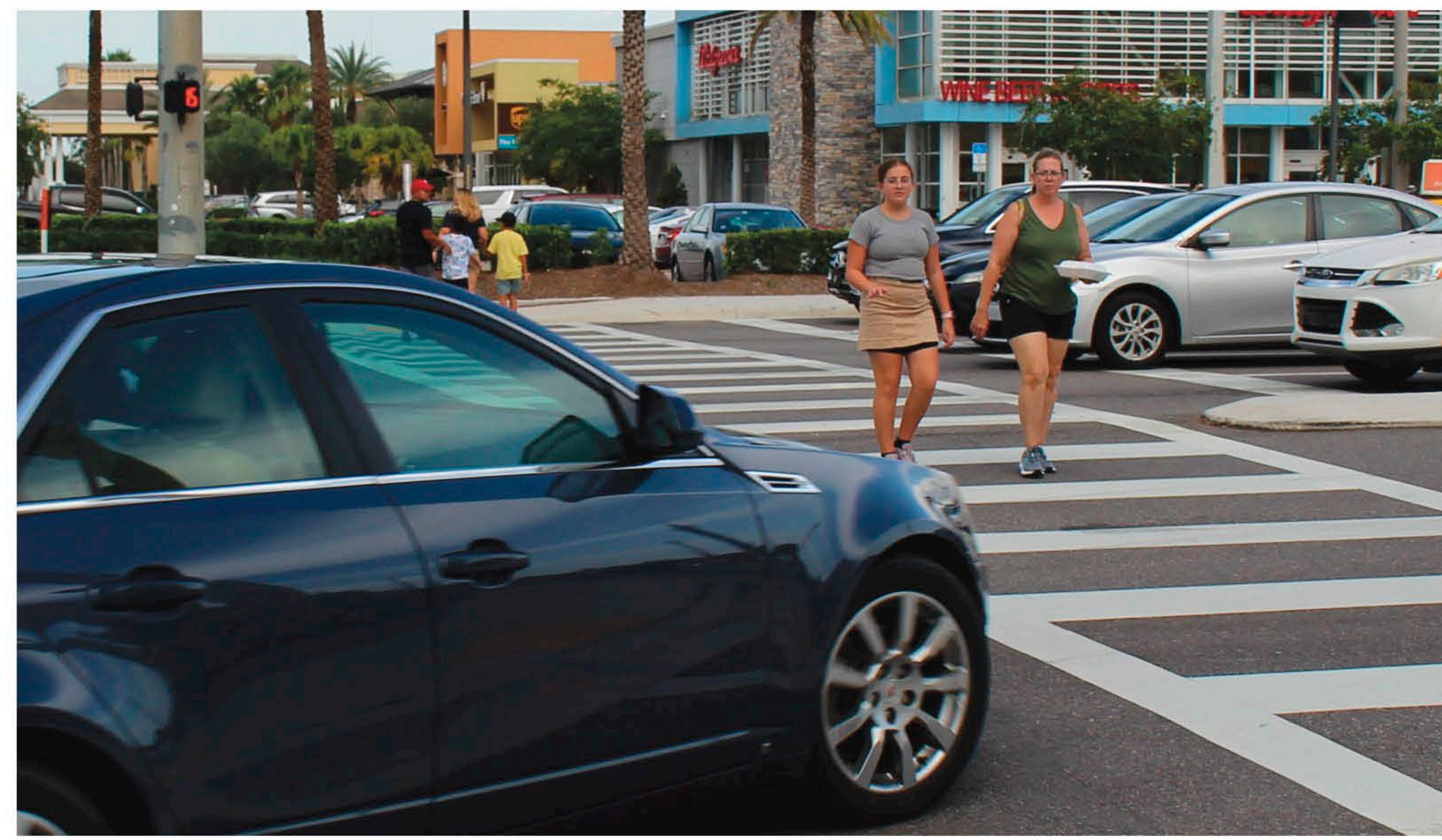


WEAVING THROUGH TRAFFIC IN CROSSWALK

WEAVING THROUGH TRAFFIC IN CROSSWALK

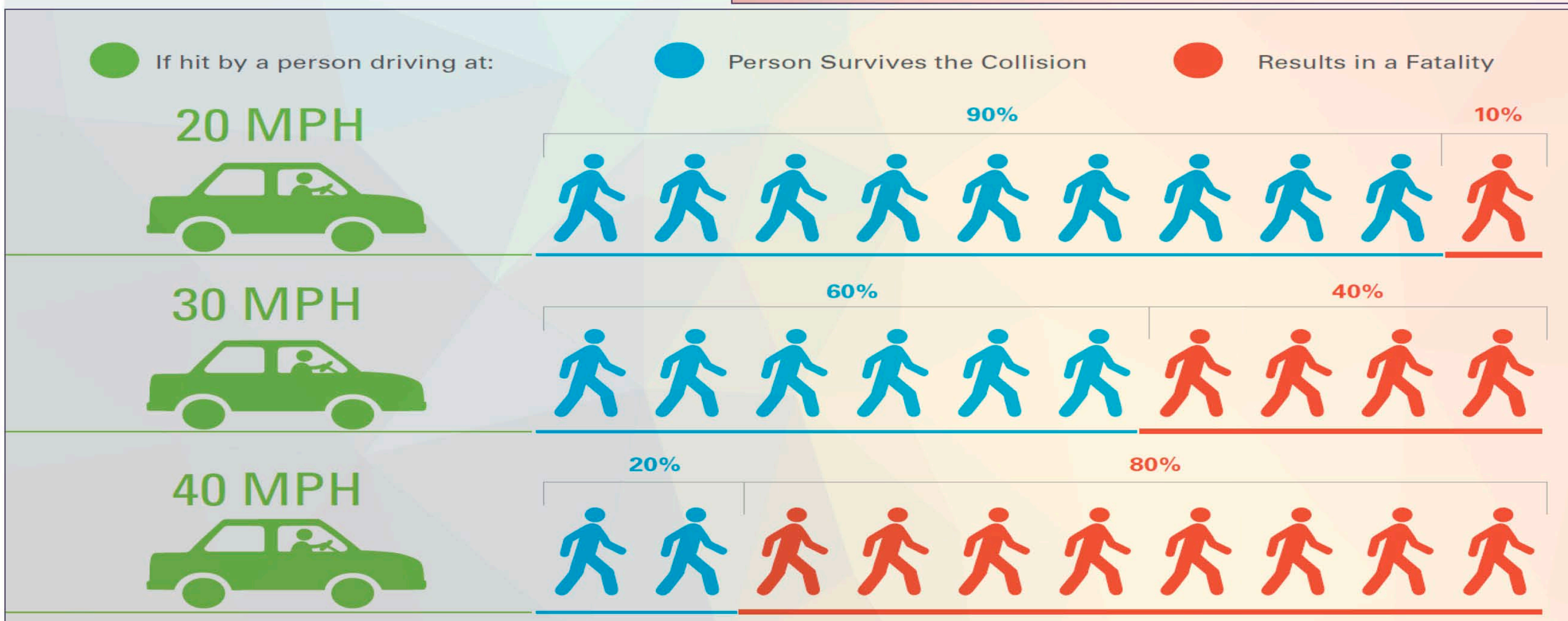
TRAFFIC INTERACTIONS





UNSIGHTED DOUBLE TURN

Why Do We Need to Provide Safety for Pedestrians?

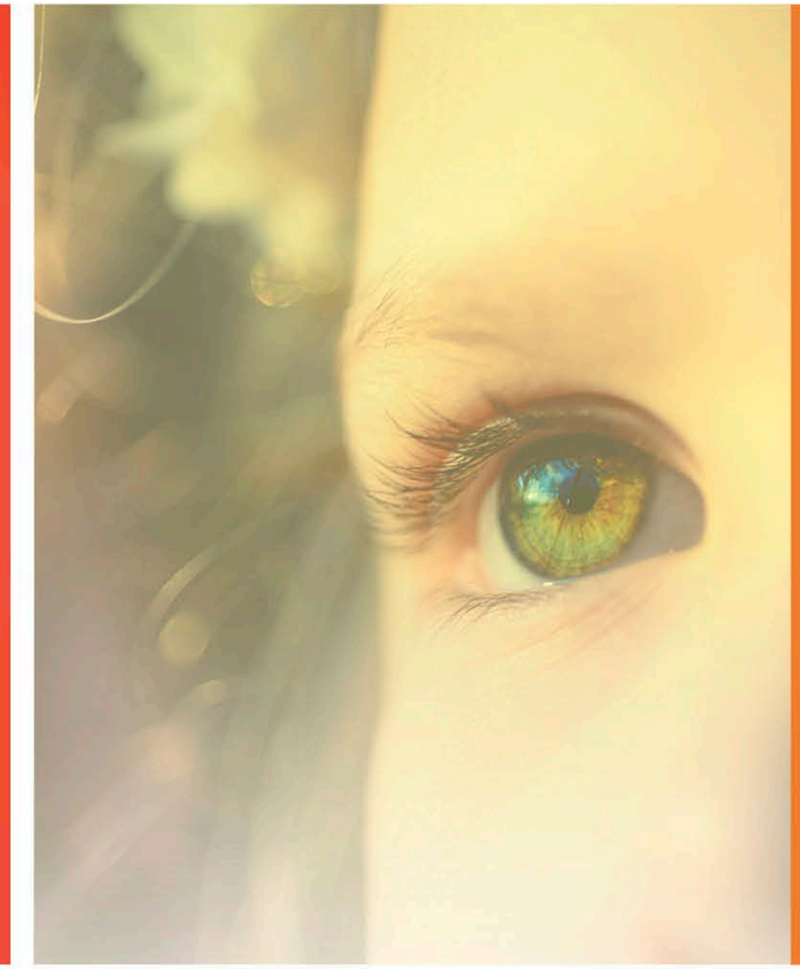


Safety

1. **Diverging Diamond –** Sand Lake Road & I-4 Interchange
2. **Design Speed**
   - A principal design control that regulates the selection of many of the project standards and criteria used to design a roadway project.
3. **Posted Speed**
   - Maximum speed allowed in a speed zone as designated by a sign within the zone.

Sand Lake Road Interchange Improvements

4. **Target Speed**
   - Highest speed at which vehicles should operate on a thoroughfare in a specific context, consistent with the level of multi modal activity generated by adjacent land uses, to provide both mobility for motor vehicles and a supportive environment for pedestrians, bicyclists, and public transit users.



Meeting Number One

Iconic Gateway

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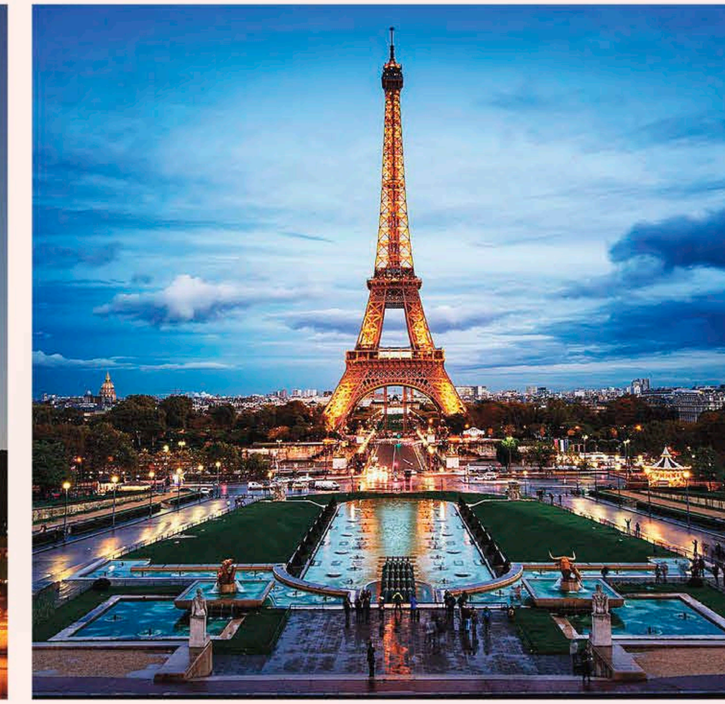
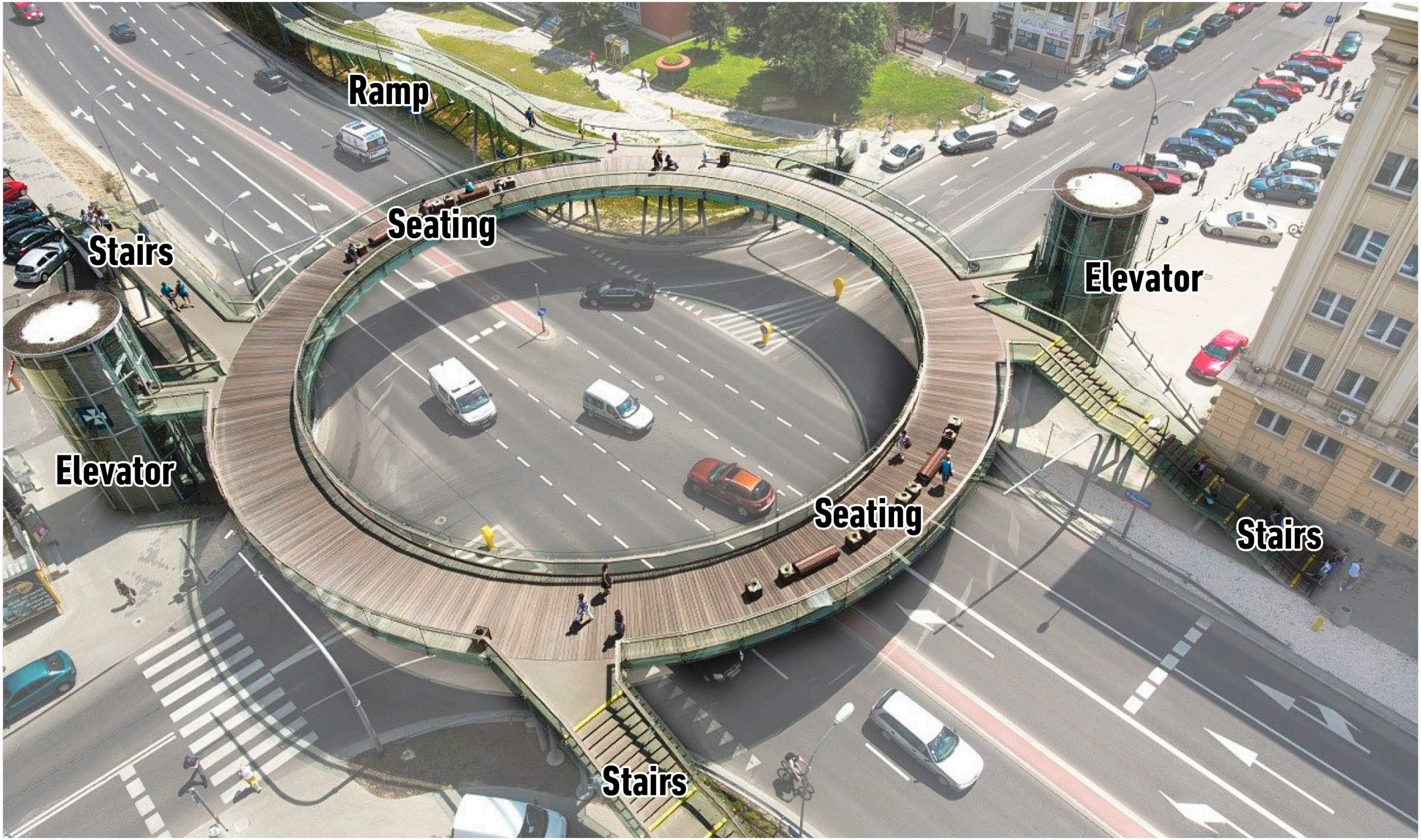
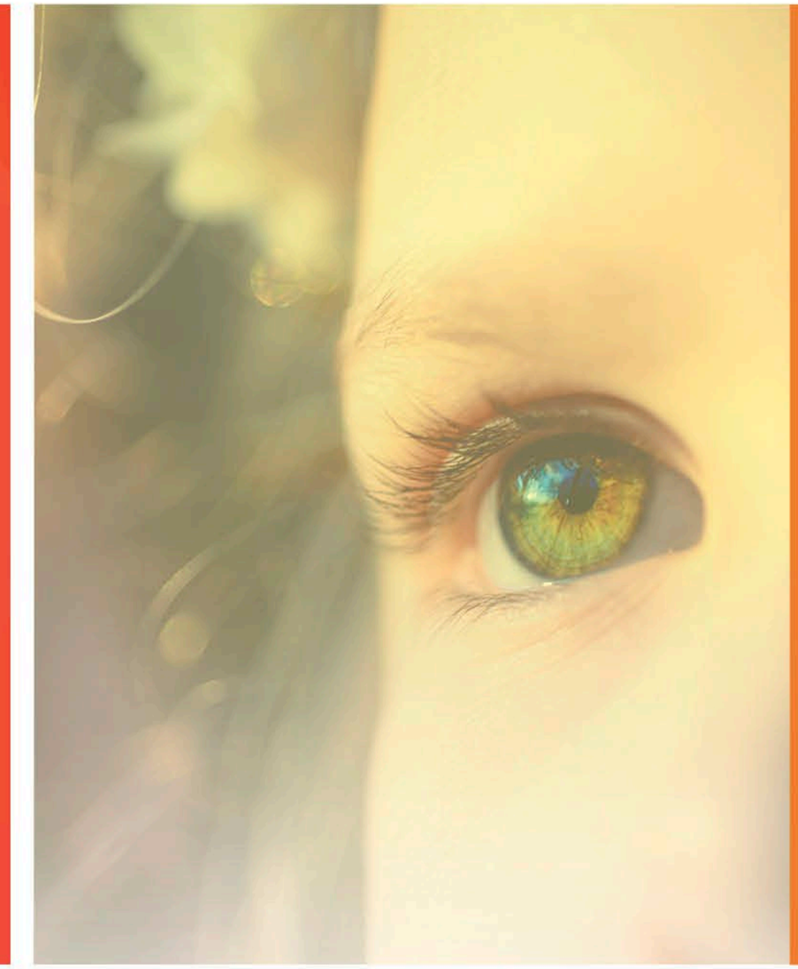
Why Do We Want an Iconic Gateway?




Ramp
Seating
Stairs
Elevator
Elevator
Seating
Stairs
Stairs


HOVENRING
Innovative Circular Cycle Bridge, The Netherlands
Central Support
Unique Supports



Meeting Number One

Questions and Discussion

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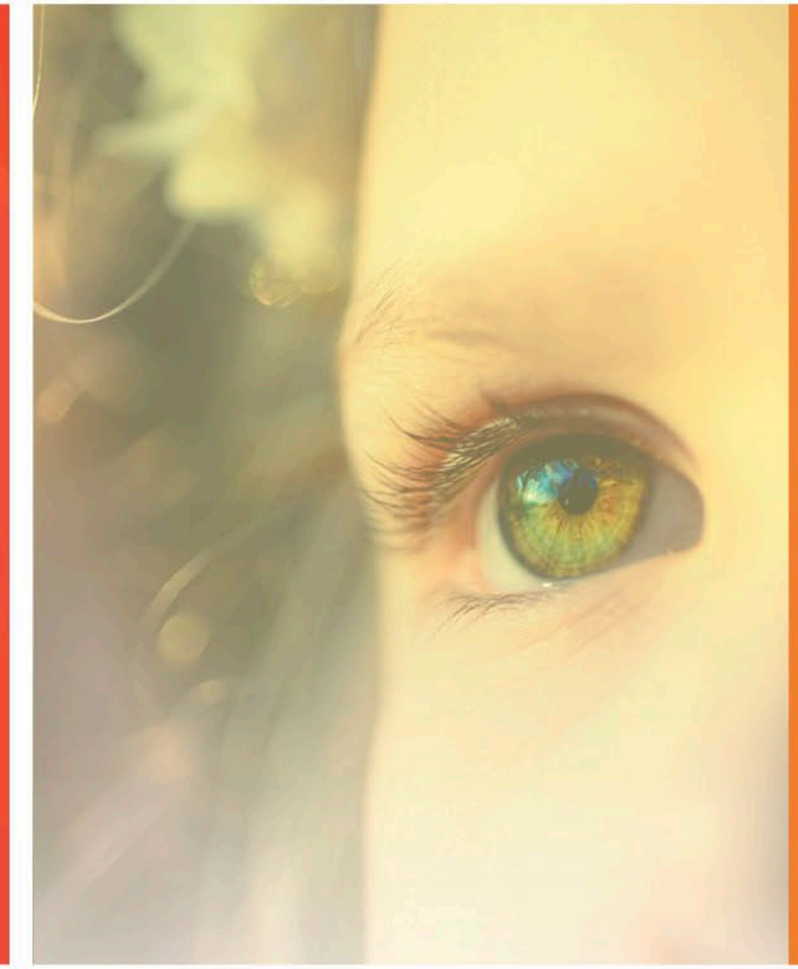
Questions and Discussion

1. **Maintain crosswalk surface crossing or create barrier to on grade crossing?**
2. **Provide a roof for sun/rain protection?**
3. **Options for vertical circulation**
   - Stair + Elevator
   - Stair + Ramp
   - Stair + Escalator + Elevator
4. **Provide space for activities and vendors on the bridge?**
5. **Can the bridge facilitate connection into venues on the corners?**
6. **Can the bridge entry points be moved away from the corner?**
7. **Is there a preference to provide ramps** *(280' ramp to rise 20')*
8. **Can vertical circulation include elevators?** *(which require service and maintenance)*
9. **Can Audio and Video components be included on the bridge?**
10. **Is it desirable to include a photovoltaic component to the bridge?**
11. **Will there be security required on the bridge? Cameras?**
12. **Will barriers be required at the bridge perimeter** *(to prevent trash, falls, etc.)*
13. **Will FDOT limit lighting elements on the bridge?**



Meeting Number One

Initial Comments from Group Members

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FLORIDA

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APPENDIX C

09-20-22 PAG Meeting #2
Meeting Minutes and Presentation

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A JOINT VENTURE

Meeting Minutes

Date	October 11, 2022	Meeting Date	September 20, 2022
Project Name	International Drive (I-Drive) Pedestrian Bridge Overpass Intersection Analysis and Overpass Conceptual Design Study	Project #:	
Subject	Project Advisory Group (PAG) Meeting #2		
Participants	See Below		
Location	Embassy Suites 8250 Jamaican Court Orlando, FL 32819	Prepared By	Rick Baldocchi, P.E. Christine Dellert
Distribution	Meeting Participants		

- **Introduction of Participants**

Nicole Wilson, Orange County Commissioner
Blanche Hardy, Orange County
Rick Baldocchi, AVCON, Inc.
Michael Chatham, HHCP
Krista Barber, OCCC
Marcos Bastian, Orange County
Loreen Bobo, FDOT-District 5
Luann Brooks, I-Drive District
James Bridges, OCSO
Fernando Ching, Rosen Hotels & Resorts
Megan Dowdy, Dowdy Realty
RJ Dowdy, Dowdy Realty
Cpl. Kyle Gabrus, OCSO
David Janssen, OCFR
Marco Manzie, Paramount Hospitality Management
Sgt. Gerald (David) McDaniels, OCSO
Tabitha Moore, International Square
Chris Mueller, Hilton Orlando
Renzo Nastasi, Orange County
Marc Reicher, I-Drive CRA
Brian Sanders, Orange County
John Stein, Starflyer Gallery
Tim Swan, Westwood Property Association
Craig Swygert, Clear Channel Outdoor
Alberto Vargas, Orange County
Josh Wallack, Mango's Tropical Café
Scott Workman, OCFR Fire Marshal

The second Public Advisory Group meeting provided further details on the International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study, including existing site conditions and options for vertical circulation for the bridge and preliminary ideas for the bridge configuration. The meeting organizers also solicited comments from participants. A summary of the discussion is below.

Blanche Hardy introduced the purpose of the meeting and shared a PowerPoint presentation with information on the project's existing site, vertical circulation options, and other site considerations. Items discussed included:

1. PAG
    a. The PAG consists of key study partners who will periodically meet (4-5 times) to provide strategic guidance and support to ensure the study meets its objectives.
    b. The project has the support of Orange County leadership. Commissioner Nicole Wilson, whose adjacent District 1 will also benefit from the project, is attending today's meeting.
2. Meeting Objectives
    a. This second meeting's purpose is to introduce the PAG to the project team, provide information on the site conditions and discuss several vertical circulation options for the bridge, as well as share initial ideas for the design of a pedestrian overpass at the intersection of International Drive and Sand Lake Road. Comments and questions will be solicited from the group.
3. Vertical Circulation Options
    a. Blanche introduced Michael Chatham with HHCP to discuss four options: ramps, stairs, elevators, and escalators.
    b. Ramps
        i. Ramps have advantages, such as accessibility and egress in one component. There is no power required and very little maintenance, and they accommodate bicycles, wheelchairs, and strollers.
        ii. There are several disadvantages, too. To get to the project planning height elevation of 24' requires the user to climb 343'. Ramps require a larger footprint than other options. They also will potentially block visibility of businesses on the corner. People may not want to travel because of the distance and would need a roof for shade.
        iii. **Rick Baldocchi** asked Michael to explain accessibility vs. egress.
            1. People must be able to get off the bridge if there is an emergency and need at least two means of egress. Ideally, there would be means of egress at each corner of the intersection. Stairs or ramps can be used for egress, while elevators and escalators cannot. Accessibility is specifically to meet the ADA requirements of the bridge for use with people with disabilities and must be included at every interchange.
        iv. Michael showed a series of possible ramp configurations, beginning with a straight run ramp. The ramp would need to be a minimum of 8' wide and no foot traffic would be able to pass under the first third of the ramp. Foundations would be needed about every 35' to support it. The ramp entry would be 340' from the intersection.
        v. A switch-back ramp would use less area and have the user start and end at the same location. To further improve the ramp, a double switch-back ramp would use a smaller footprint of 97' long and 18' wide.

c. Stairs
   i. The biggest advantage to stairs is that they provide egress in an emergency with a smaller footprint. No power requirement and no maintenance. However, they are not accessible. They do not work for bicycles, strollers, or wheelchairs. Climbing 24' of stairs is not physically possible for all users.
   ii. Michael showed a series of possible stair configurations, starting with a straight run stair where the entry would be 60' away from the intersection. Could also consider a switch-back staircase that starts and ends at the same location. They could additionally consider a multiple switch-back configuration that would minimize the footprint with each run of stairs going up 6', making it more inviting for users.
   iii. The team is looking at a reduced rise in the stairs to make the stairs easier to climb.
   iv. **Josh Wallack:** Is it possible to put an elevator in the core of the multiple switch back stair configuration?
      1. Michael said this is one of the most efficient ways and will share that option shortly.

d. Elevators
   i. Elevators provide accessibility and a smaller footprint. They can accommodate bicycles, wheelchairs, and strollers and would be high capacity. There would be minimal waiting because there are only two stops and reduce walking or climbing.
   ii. The disadvantages are that elevators are not a means of egress in an emergency; they require power and maintenance; and there may be security issues because they are an enclosed space.
   iii. In an emergency, the project team looked at what first responders would need to get a stretcher into an elevator—3500-pound capacity. The team only looked at elevators at least that size. The elevator shaft would be about 9'8" by 8'6.5" and the foundations would be about 5' larger. The elevator pit would extend down about 4' and 2' thick.
   iv. The project team looked at multiple types of elevators and recommended a hydraulic elevator for this project. These elevators have fewer moving parts and less maintenance and can use biodegradable or vegetable-based hydraulic fluid, which has no odor and less likely to cause environmental damage.

e. Escalators
   i. Escalators have high capacity; there is no waiting; and they reduce walking and climbing.

   ii. The disadvantages are that they are not accessible and not a means of egress. The team would also have to design up-and-down escalators; they require power and maintenance; they don't handle bicycles, strollers, or wheelchairs; they would likely need a canopy; they must be built linearly; and they are the most expensive option.
   iii. An escalator would need to be 57' in length to go up 24'. Michael showed several diagrams of an escalator configuration. He said that it would block some of the visibility of the adjoining properties and would need to support a foundation base and mechanical pits at base and top. They would need a canopy on them.
   iv. Michael commented on challenges of keeping escalators running all the time in Florida's weather and other environmental challenges.
f. Vertical circulation comparison matrix
   i. The team provided a comparison matrix that attributed scores to each option according to its footprint; means of egress; accessibility; cost; operating cost; power requirement; and horizontal travel distance. The lower score the better.
   ii. The lowest-scoring options were either the ramp at all four corners, which meets all the requirements, or the combination of a stair and an elevator, which also meets all project requirements.
   iii. **Marc Reicher:** Is there a possibility of a switch back ramp with an elevator in the center for accessibility?
      1. Michael said they could be combined, but the ramp alone would meet all the requirements.

4. Site Conditions
   a. Michael introduced Rick Baldocchi of AVCON, Inc. to discuss the site conditions impacting the bridge and project area.
   b. Rick shared a series of drawings that show the utility locations at the intersection of International Drive and Sand Lake Road, as well as the location plans for each corner.
   c. Rick showed the road right of way on the project site. The maps also showed the multiple utility lines in the right of way—fiber optics, power, water, sewer, and gas. The team has not found any easements through a title search. All the utilities are located within the right of way.
   d. The site has limited right of way to start with and many utilities underground there. Utilities can be relocated, but there are limited options where they could be put.
   e. Another consideration is sight distance and safety for the traveling public at the intersection. Rick showed two diagrams of view angles at the site—one leaving the crosswalks on grade with the stop bars pulled back; the other has the crosswalks removed and stop bars moved up with better sight distance.

5. Bridge Tower Configurations
    a. Michael said there is very little room within the right of way for foundations because of the existing utilities. He showed a series of possible configurations that would minimize footprint and minimize the impact on the surrounding properties.
    b. The first option had an elevator and multiple switch back stairs with each run 6’ in rise, with a platform in the center. The elevator would be on the side. The footprint would be about 20’ by 13’4”.
    c. From conversations with the Sheriff’s Office and first responders, Michael said that there was a concern that if access to on-grade crossing wasn’t blocked people would still try to walk across the street. The team is looking at incorporating a barrier at the corner of each intersection that would block pedestrian use on grade and remove the crosswalk. This could be a seat wall or other decorative element.
    d. Michael showed diagrams with this first configuration on different intersections, including the southwest intersection corner, which would be the tightest fit. At each intersection, it is likely they would have to relocate a utility, but not all utilities; the team wants to relocate as few as possible.
    e. The team is looking at glass elevators to address safety concerns and could use them as a visual element to make the elevators a dynamic piece of art.
    f. Michael showed several three-dimensional conceptual renderings of what this configuration could look like, including at the southwest intersection and the overall project site and what the configuration would look like from the perspective of driving down Sand Lake Road looking east. The glass elevators could become a gateway for drivers.
    g. The second option includes a stair and elevator placed at 45-degrees as a result of studying the different intersections. Each intersection is different, and each vertical circulation may not need to be the same. This configuration could allow properties to connect into the bridge. This configuration also hugs the property lines, so it does not encroach as much on the adjacent properties. Michael showed a series of renderings of what this configuration would like at the intersection and in a three-dimensional view.
    h. **Marc Reicher:** What are the dimensions of the stairs and platform and on the ramp?
        i. Michael said the stairs are 6’ wide and where the stairs turn the platforms are about 6’ deep and 13’ wide. They are 5’ deep on the ramp and width of the ramp, which is 8’. If a ramp is the circulation option, there would not be another option.
    i. **Josh Wallack:** How wide is the landscape buffer at the intersection and would it have multiple layers?

   i. Michael said the barrier is not right up on the roadway; it was brought back about 18-24" from the curb line and created a seat wall with glass above it. This conceptual rendering shows the wall at 2.5' thick and 2' to the curb. The barrier could involve landscaping or lit glass, and design would be studied further if they move toward this concept.

j. **Marcos Bastian:** What's your height limitation?
   i. Michael said they incorporated glass into the design so that the barriers would not be a visual impediment. If the pedestrian crosswalk is removed that view angle would not impede outside of the intersection.

k. The third option is to take the elevator and wrap the stairs around it; it has a small footprint and could be supported off the elevator shaft. The big difference is that when you're looking through the elevator, now you're looking at the properties on the corner. Michael showed a series of images of this wrap-around vertical configuration. The footprint would be 22' by 24'.

l. The team looked at the ramp as a fourth option: a double-switch back ramp because it is the smallest footprint. It would block a portion of the adjacent properties. Michael showed a diagram of the what the ramp configuration would look like on all four corners and for drivers looking down Sand Lake Road and International Drive. The design would need a small platform because it would connect directly into the bridge.

6. Conceptual Bridge Configuration Diagrams
   a. Michael showed several diagrams with options for the bridge design: a square configuration; "X" configuration; circular configuration; "C" configuration; "Chanel logo" configuration; and "H" configuration.
      i. A square configuration would be the most pragmatic design approach.
      ii. A "X" configuration would be the same length on either side and could have a node in the middle.
      iii. A circular configuration would be dynamic, but users would travel a farther distance if going across diagonally.
      iv. A "C" configuration would have the users travel the longest distance to go to the fourth point but could form an interesting visual gateway to the district.
      v. A "Chanel logo" configuration—interlocking C's—creates a node in the middle and is a modified "X" layout.
      vi. A "H" configuration would be two simple bridges on the short connections with a connector down the middle.
   b. **Marc Reicher:** Which option would be the most cost efficient?
      i. Michael said he will have further cost details at the next meeting.
   c. **Megan Dowdy:** Could we rename the "H" configuration an "I" configuration?
   d. **Marcos Bastian:** How would the bridge options address pedicab travel?

        i. Michael said that pedicabs typically run in the vehicle lanes, as opposed to using the bridge. The bridge design would need to be considered for pedicabs if they are going to use it.

7. Summary Discussion and Comments
    a. Blanche Hardy shared a summary for the PAG:
        i. Preference for eliminating pedestrian crossing on grade.
        ii. Elimination of the crosswalks will increase pedestrian safety and reduce traffic congestion.
        iii. Wrapping corner seat wall or barriers will be required to prevent people from attempting to cross the intersection on grade.
        iv. Determined limited space exists in the ROW for bridge vertical circulation tower and supports.
        v. Evaluation of vertical circulation options identifies ramps or combination of elevator and stairs as the most viable options.
        vi. We are seeking PAG input on vertical circulation tower option preferences and will prepare development of bridge configuration options for the next PAG meeting.
    b. **Tim Swan:** Is I-Drive being built to accommodate pedicabs on the street?
        i. The County advised that pedicabs are treated as vehicles in the travel lane; there is a bicycle lane that has been added along Sand Lake Road, but they are not on all the roads now.
    c. **Josh Wallack:** Eliminate pedestrian crossings on grade and give a major jaywalking fine if pedestrians try to cross on grade. Each corner has its own unique footprint, and various configurations can all be employed at the site. Constructability and feasibility are the most important. We have seen solutions for all four corners.
        i. Blanche asked if the property owners would favor different designs for each corner if they are cohesive, gave the same message, shared an aesthetic that tied them together—and then each corner could have a custom structure. Property owners in attendance and PAG members agreed.
        ii. Rick clarified that none of the vertical circulation options completely fit within the public right of way.
    d. **RJ Dowdy:** Favors the 45-degree alignment because it opens up future development of these corners and users are looking at the businesses. Would like to see these four corner developers make use and activate on this development.
    e. **Rick Baldocchi** asks **Loreen Bobo:** Could different options be discussed regarding FDOT criteria, such as length of development from curb. Loreen said that options could be discussed.
    f. **Loreen Bobo:** Agree that eliminating the crosswalks makes the most sense and having a barrier.
    g. **Commissioner Wilson:** What about motorized devices like motorized bicycles or other micro-mobility devices?

        i. The County says it is working on an ordinance that will clarify this issue.
    h. **Megan Dowdy:** The barrier needs to be tiered, hardscaped, and permanent so that it cannot be breached.
    i. **RJ Dowdy:** Would prefer to see a barrier with minimal maintenance. Asks if there could be other use for the vacant lot next to McDonald's.
        i. The County has been looking at that property for other uses, such as additional parking and ways to enhance the property with this project.
    j. **John Stein:** Would like to see rails put in to guide pedestrians onto using the bridge, before they get to the corner, to further prevent people from trying to cross on grade.
    k. **Commissioner Wilson:** How are we balancing the need for visibility for security purposes and translucent elevators in the Florida climate?
        i. Michael said that diagrams are showing options as translucent, but these elements would evolve as the project develops. The County advised that there was a concern about covering the top because it would become a gathering place; they also cannot allow the sides of the bridge to be open because it could be a hazard for the drivers below. Coverings will be discussed at the next PAG meeting.
    l. **JR Dowdy:** The covers will be more aesthetic than functional and could become a place for vagrants and does not want to be forcing pedestrians to walk through, as well. How does someone in a wheelchair get off the bridge in an emergency if an elevator is not an egress? Does this meet ADA?
        i. Yes, the design will meet ADA requirements. Stairs are an egress, and this is similar to designs in buildings.
    m. **Josh Wallack:** Is there an update on the financing or the grant?
        i. The County advised that they did not receive the grant but will continue to pursue partners in financing and other grant opportunities.
    n. **Marc Reicher:** Are you going to come back to us and share with us walk patterns and efficiency costs for these designs? Are we going to be able to build any of these configurations as a clear span?
        i. The team will provide more information at the next meeting and has done other single-span bridges of equivalent spans. Michael says the bridge supports are still to be determined.
8. Next Meeting
    a. Will share more details on the bridge design at the next meeting.

ORANGE COUNTY GOVERNMENT FLORIDA

International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study

Project Advisory Group Meeting #2

HHCP&AVCON

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Project Advisory Group
Meeting Objectives

Meeting Number Two

- Presentation on Findings of Existing Conditions
- Discussion of General Bridge Features; Ramps, Stairs Elevators, etc.
- Comments from Group Members

Meeting Number One
Introduction of Participants
General Overview of Project
Initial Comments from Group Members

Meeting Number Two
Presentation on Findings of Existing Conditions
Discussion of General Bridge Features; Ramps, Stairs Elevators, etc.
Comments from Group Members

Meeting Number Three
Presentation of Preliminary Bridge Concepts
Comparison of Aesthetics for Each Concept
Discussion of Right-of-Way and Access impacts
Discussion of Utility Impacts
Comments from Group Members

Meeting Number Four
Presentation of Refined Bridge Concepts
Discussion of Refined Aesthetics
Further Discussion of Right-of-Way and Access Impacts
Further Discussion of Utility Impacts
Final Comments from Group Members

Meeting Number Five
Presentation of Final Concept Plans for 3 Alternatives
Presentation on Evaluation Method and Rankings
Discuss Rankings and Determination of Preferred Alternative

Jerry L. Demings
Orange County Mayor

Victoria P. Siplin
District 6 Commissioner

Meeting Number Two

Vertical Circulation

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Vertical Circulation

Options

1. Ramps
2. Stairs
3. Elevators
4. Escalators

Ramps

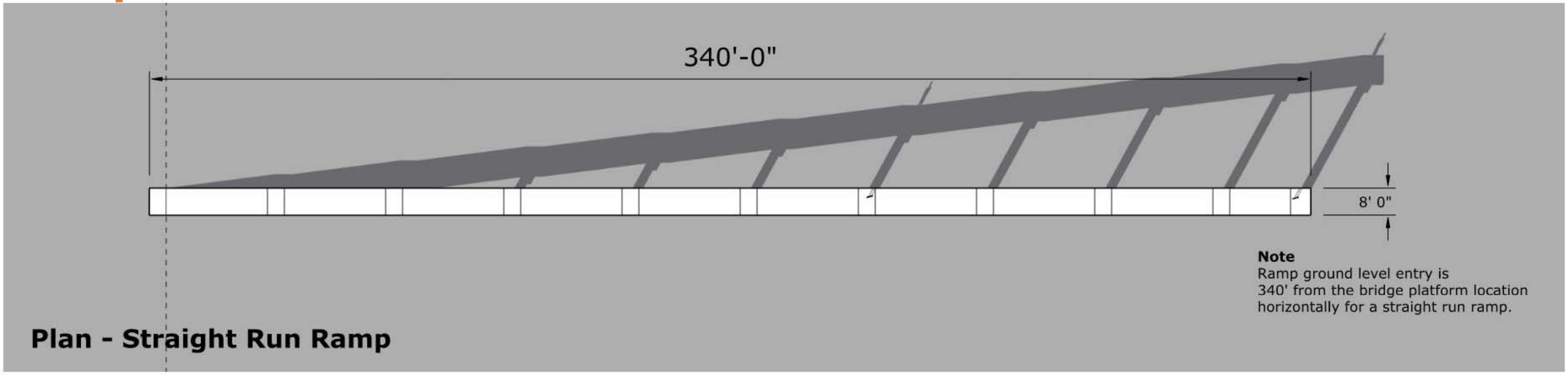
Advantages

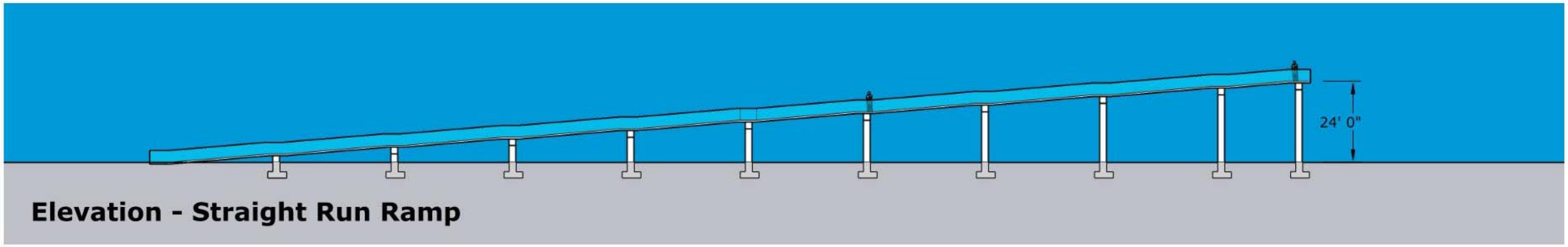
1. Provide both Accessibility and Egress
2. Meets all required functions in a single circulation element
3. No power required and no maintenance
4. Accommodates bicycles

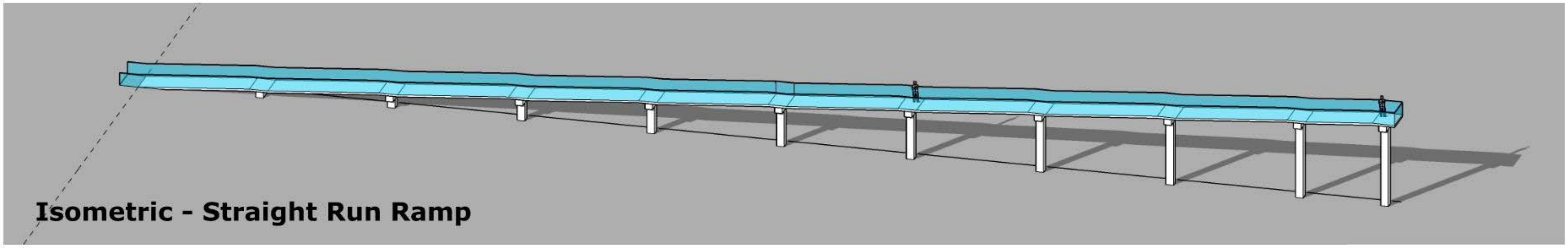
Disadvantages

1. To get to elevation +24' requires user to climb or descend 343 linear feet of ramp
2. Requires a larger site area than stairs or elevators
3. Creates a visual obstacle to properties at the corner.
4. Additional travel distance may discourage use.
5. May require a roof for shade.

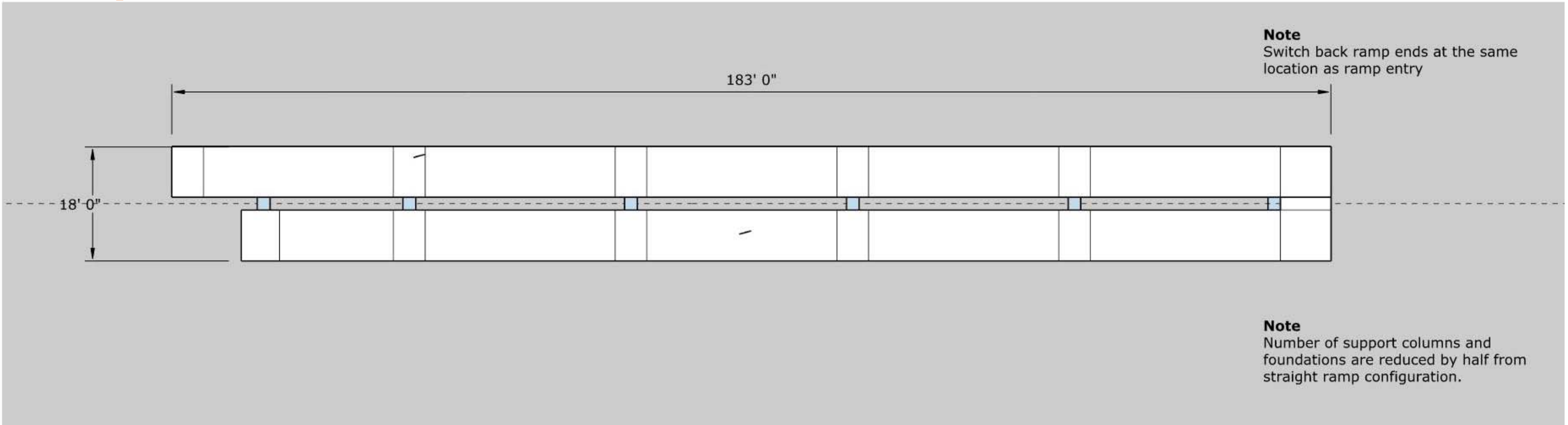
Ramps


340'-0"
8' 0"
Note
Ramp ground level entry is
340' from the bridge platform location
horizontally for a straight run ramp.
Plan - Straight Run Ramp

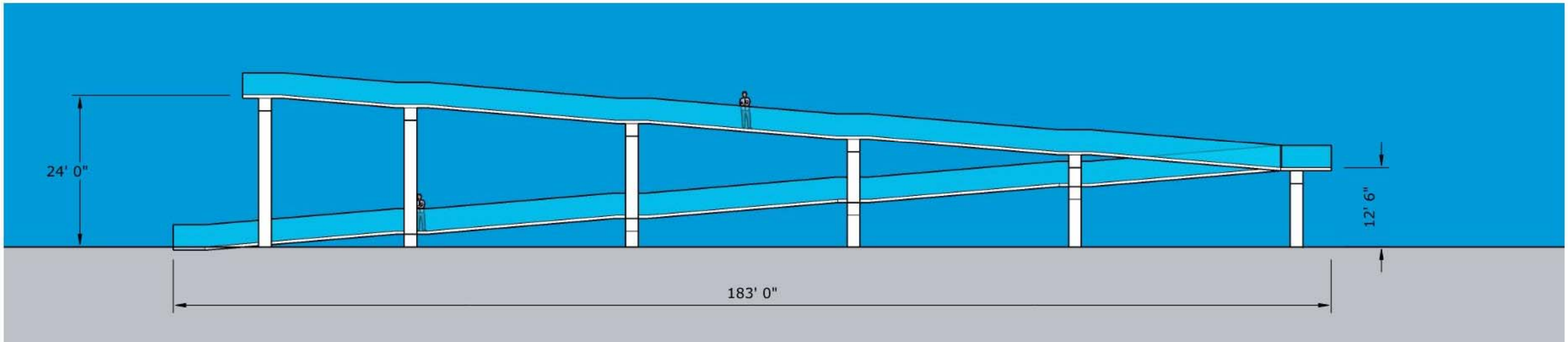

24' 0"
Elevation - Straight Run Ramp


Isometric - Straight Run Ramp

Ramps

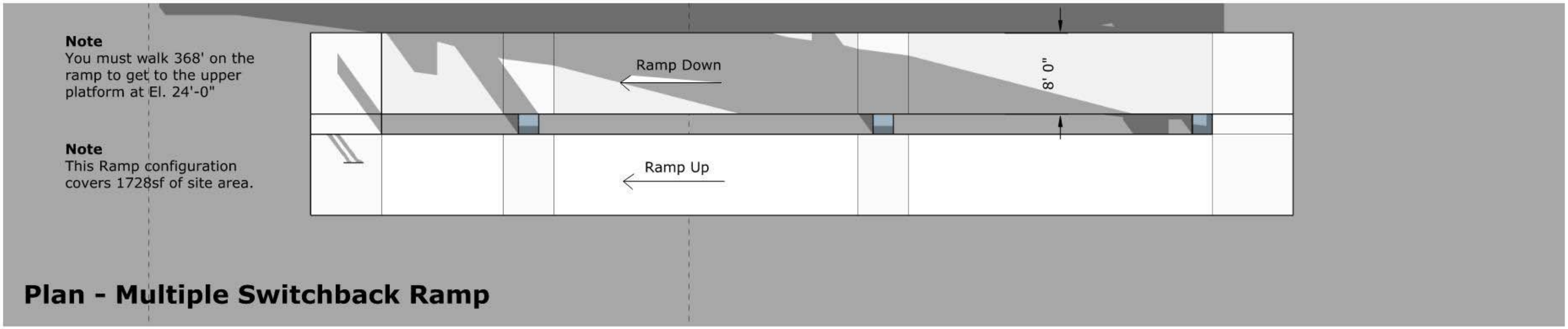


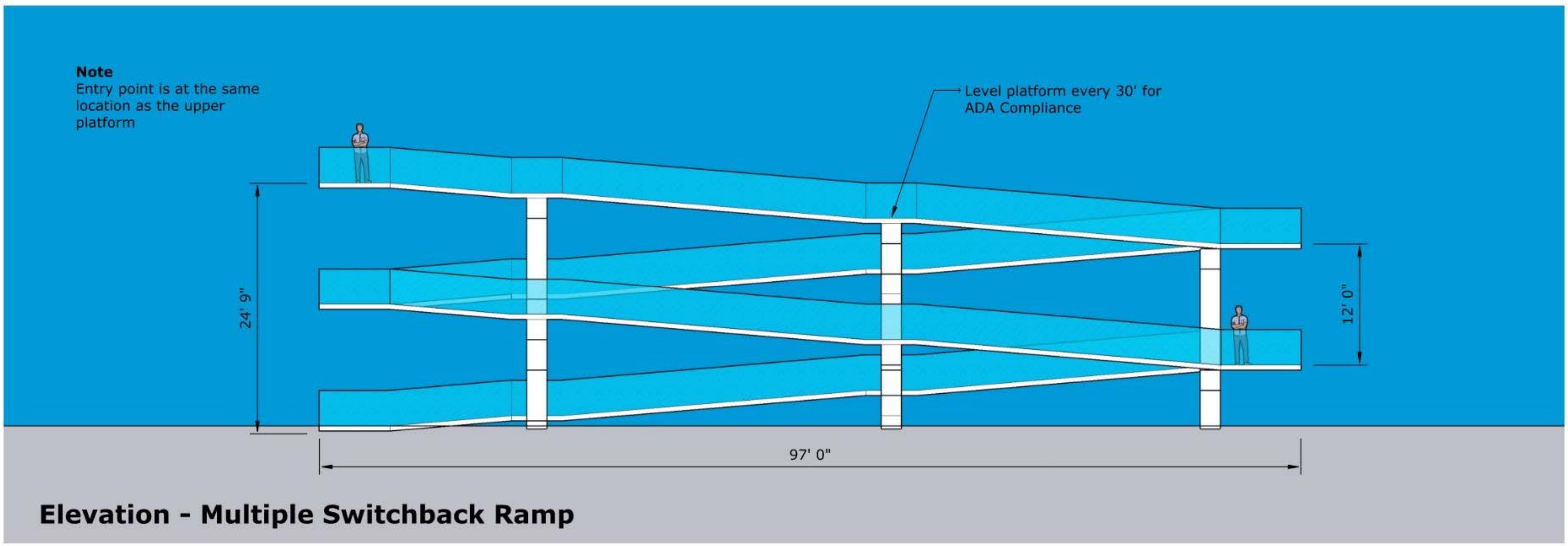
Plan - Switchback Ramp



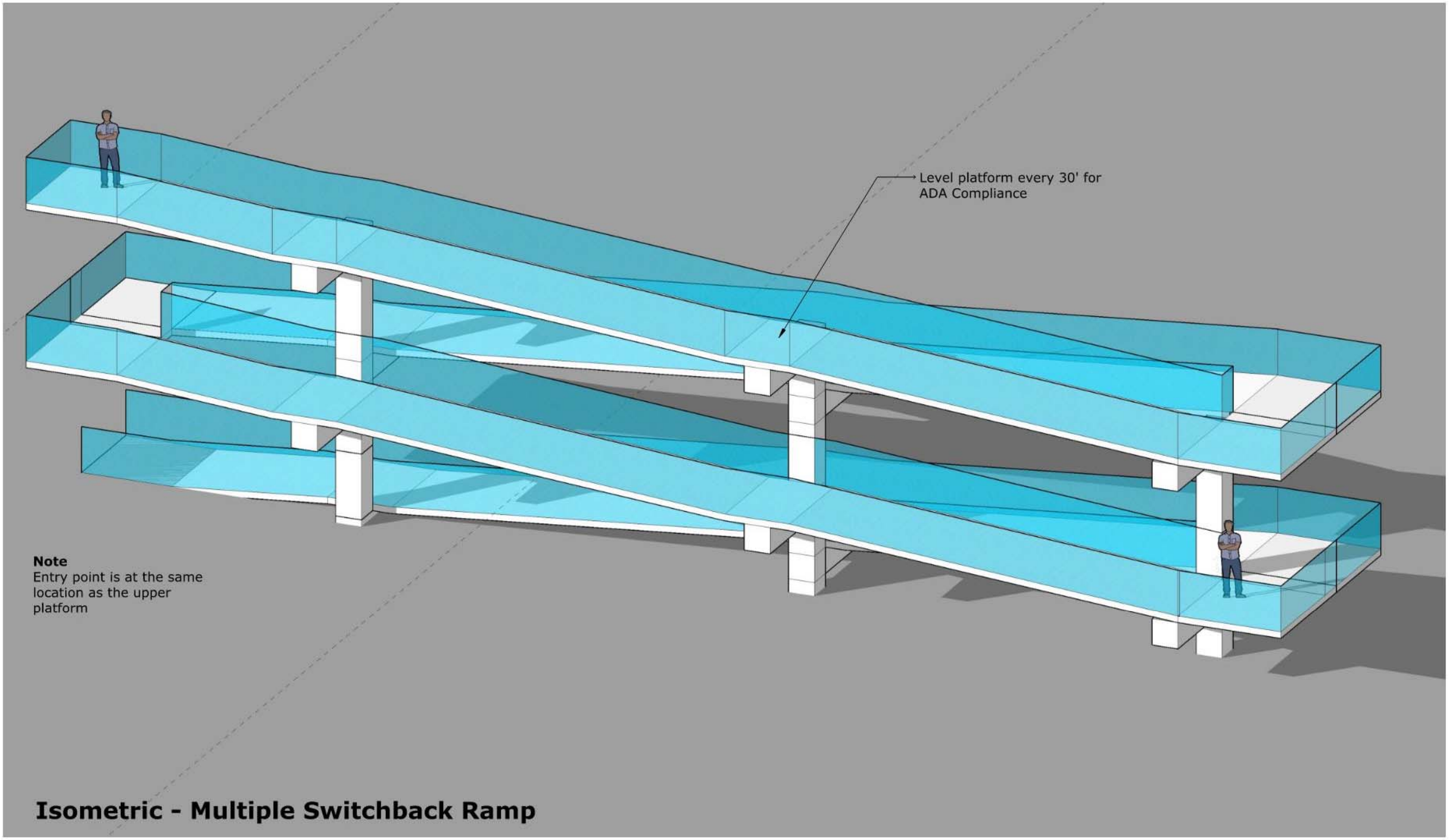
Elevation - Switchback Ramp

Ramps


Note
You must walk 368' on the ramp to get to the upper platform at El. 24'-0"
Note
This Ramp configuration covers 1728sf of site area.
Ramp Down
Ramp Up
8' 0"
Plan - Multiple Switchback Ramp


Note
Entry point is at the same location as the upper platform
Level platform every 30' for ADA Compliance
24' 9"
12' 0"
97' 0"
Elevation - Multiple Switchback Ramp

Ramps


Level platform every 30' for
ADA Compliance
Note
Entry point is at the same
location as the upper
platform
Isometric - Multiple Switchback Ramp

Stairs

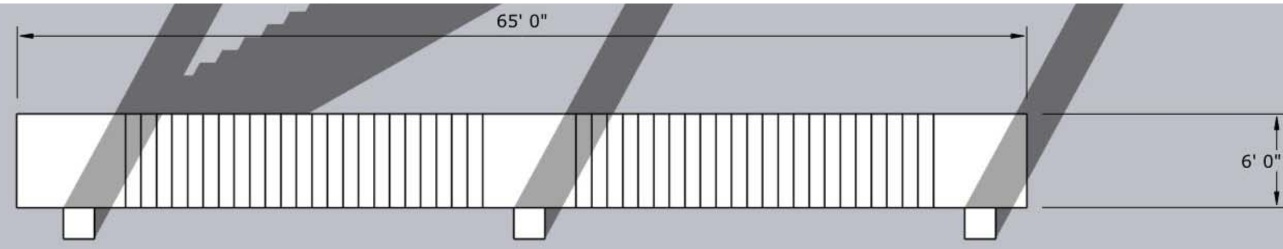
Advantages

1. Provide Egress
2. Small Footprint
3. No power required and no maintenance
4. No waiting
5. High capacity

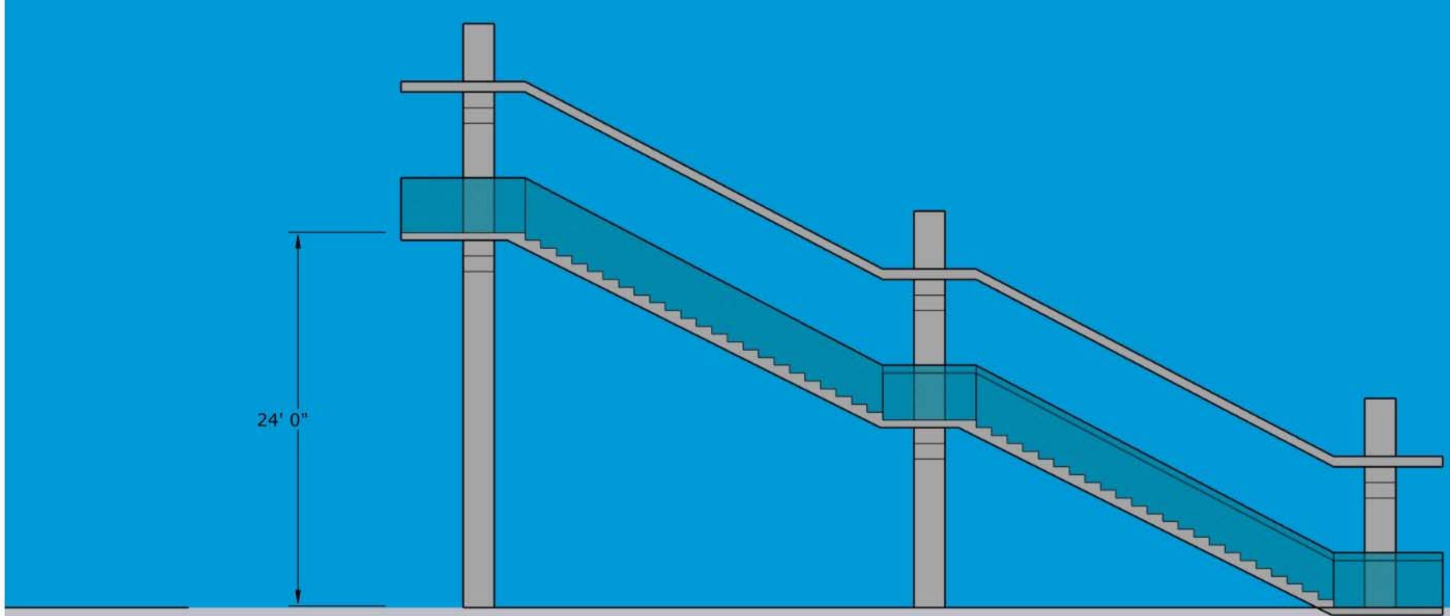
Disadvantages

1. Not Accessible
2. Does not work for bicycles, strollers, or wheelchairs
3. Climbing stairs 24’vertically is not physically possible for all.

Stairs



Plan - Straight Run Stair



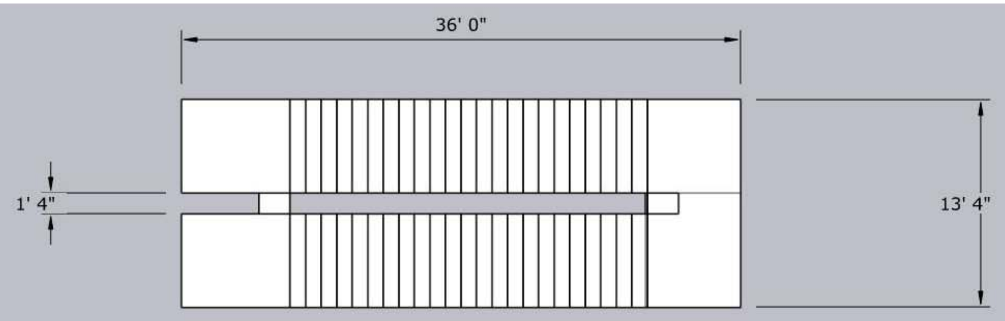
Note
Stair ground level entry is 60' from the bridge platform location horizontally for a straight run stair.

Note
Stair landing required every 12' of vertical rise in the stair.

Canopy at stair is optional

Elevation - Straight Run Stair

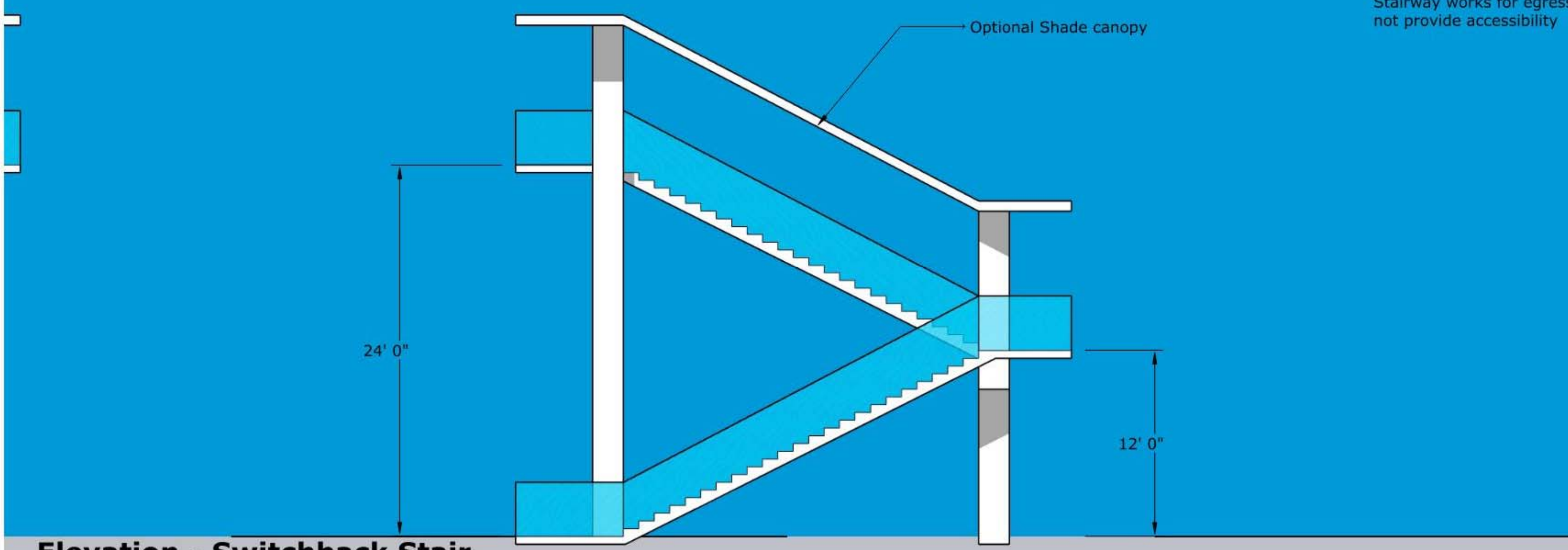
Stairs



Plan - Switchback Stair

Note
Switch back stair ends at the same location as stair entry

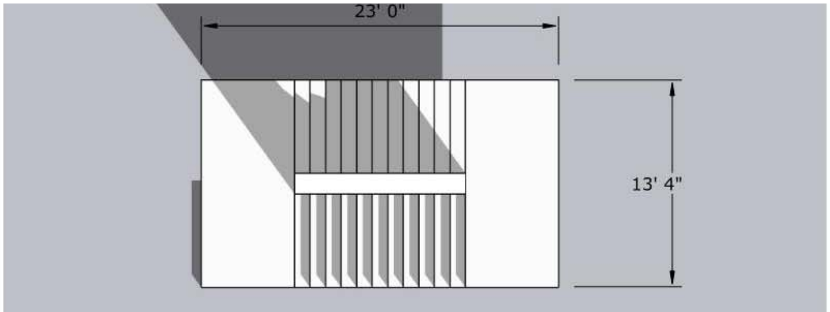
Foundations can be accommodated within the footprint of the stair.



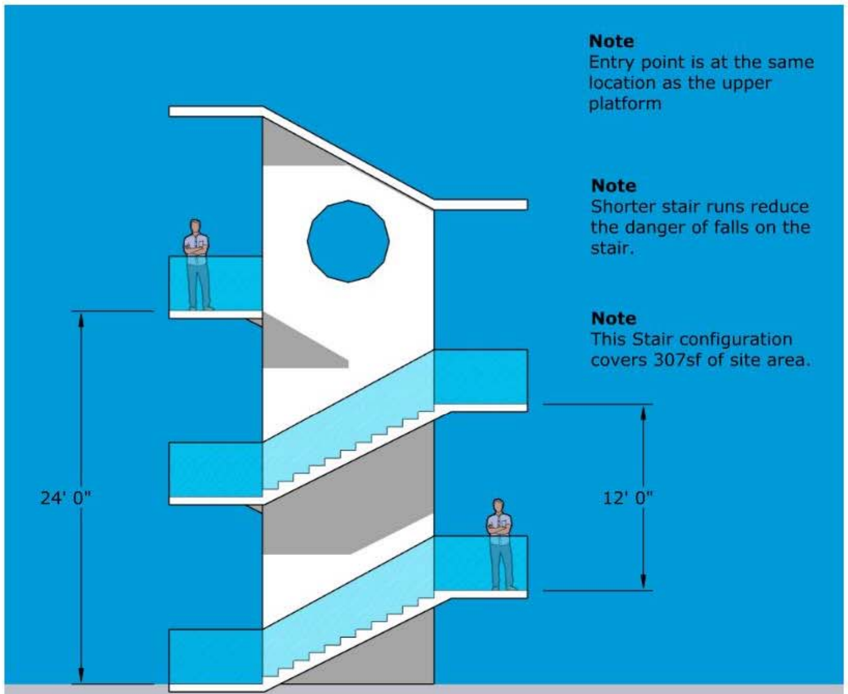
Elevation - Switchback Stair

Note
Stairway works for egress, but does not provide accessibility

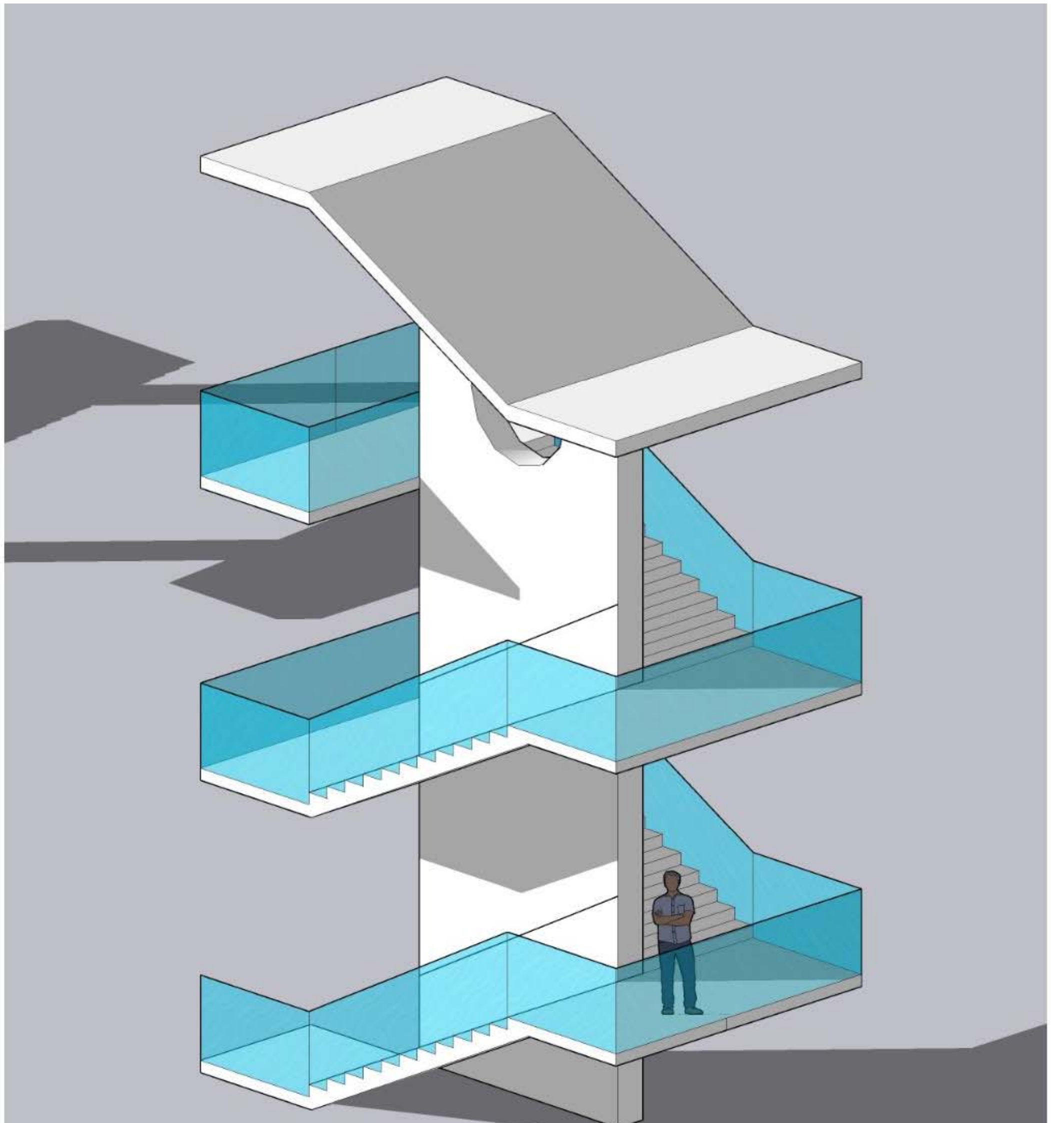
Stairs



Plan - Multiple Switchback Stair



Elevation - Multiple Switchback Stair



Isometric - Multiple Switchback Stair

Elevators

Advantages

1. Provides Accessibility
2. Small Footprint
3. Can accommodate bicycles, strollers, or wheelchairs
4. Minimal waiting (Only two stops)
5. Reduces walking or climbing

Disadvantages

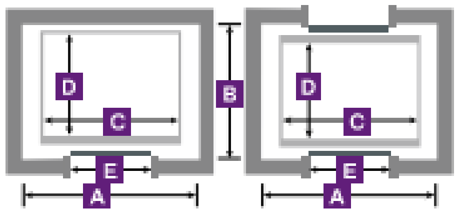
1. Not a Means of Egress
2. Requires power and maintenance
3. Security must be addressed

Elevators

- **A** Hoistway width
- **B** Hoistway depth
- **C** Inside clear width
- **D** Inside clear depth
- **E** Door clear width
- **F** Inside clear height
- **G** Door clear height
- **O** Minimum overhead
- **P** Minimum pit depth
- **S** Safety beam
- **T** Travel

One-speed center opening doors

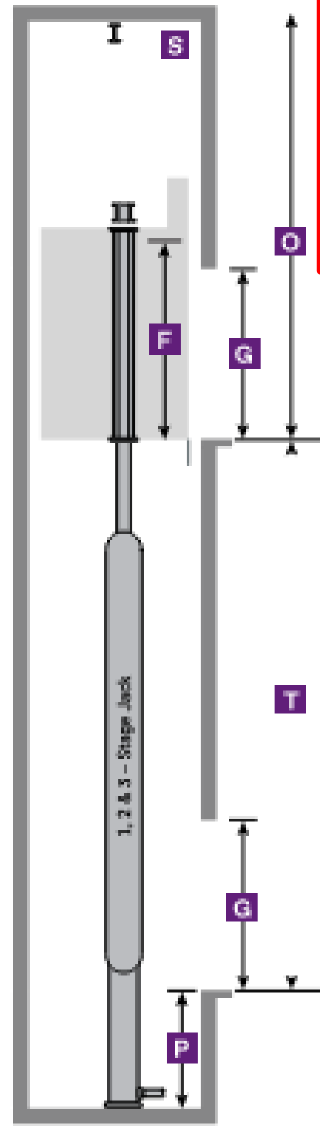
Top view: Front opening | Top view: Front and rear opening



Passenger elevator						
Capacity (lbs)	1-and 2-Stage Hoistway [2,3] A x B	3-stage Hoistway [8] A x B	Front / rear	Inside clear C x D	Door type	Door width E
2100 [3]	7'-4" x 5'-9"	7'-8" x 5'-9"	F	5'-8" x 4'-3"	One-speed	3'-0"
2100 [3]	7'-4" x 6'-8¼"	7'-8" x 6'-8¼"	F/R	5'-8" x 4'-3½"	One-speed	3'-0"
2500	8'-4" x 5'-9"	8'-8" x 5'-9"	F	6'-8" x 4'-3"	One-speed	3'-6"
3000 [4]	8'-4" x 7'-2¼"	8'-8" x 7'-2¼"	F/R	6'-8" x 4'-9½"	One-speed	3'-6"
3500 [4]	8'-4" x 6'-11"	8'-8" x 6'-11"	F	6'-8" x 5'-5"	One-speed	3'-6"
3500 [4]	8'-4" x 7'-10¼"	8'-8" x 7'-10¼"	F/R	6'-8" x 5'-5½"	One-speed	3'-6"
4000 [4]	9'-4" x 6'-11"	9'-8" x 6'-11"	F	7'-8" x 5'-5"	One-speed	3'-6"/4'-0"
4000 [4]	9'-4" x 7'-10¼"	9'-8" x 7'-10¼"	F/R	7'-8" x 5'-5½"	One-speed	3'-6"/4'-0"

Must be 3500# or larger to be Stretcher Compliant

Side view
Front opening



Minimum Elevator shaft outside dimension is 9'-8" x 8'-6 ½". The assumed foundation size for this elevator shaft is 2'-6" larger that the shaft in all directions. With this size the foundation size is **14'-8" x 13'-6 ½".** Note that the top of the foundation is a minimum 48" below grade and is 2'-0" thick.

- **F** Inside clear height: 7'-4" [5]
- **G** Door clear height: 7'-0"
- **O** Minimum overhead:
  - Up to 100 fpm: **1-Stage** – 12'-2", **2-Stage** – 12'-8", **3-Stage** – 12'-11"
  - Over 100 fpm: **1-Stage** – 12'-5", **2-Stage** – 12'-8", **3-Stage** – 12'-11"
- **P** Minimum pit depth: 4'-0" [6]
- **T** Max travel possible: [1]
  - **1-Stage:** Up to 100 fpm – 18'-11"; Over 100 fpm – 18'-8"
  - **2-Stage:** 28'-6"
  - **3-Stage:** 48'-3½"
- **S** Safety beam required per OSHA 1926.502 [7]

Elevators

Considerations

1. Hydraulic Elevators are the most economical for low rise applications
2. Although elevator speeds are lower with hydraulic elevators, with only two stops and 24’ of travel, speed is not a critical factor
3. Elevators above 3500# are Stretcher Compliant for Emergency Responders
4. Hydraulic Elevators have fewer moving parts than Traction MRL elevators with easier installation and reduced maintenance costs.
5. Modern Hydraulic Elevators are available with Machine room-less applications
6. Available with twin post above ground jack applications. (No below grade Hydraulic Jack configuration)
7. Utilizes Biodegradable Hydraulic Fluid or can utilize vegetable-based hydraulic fluid.

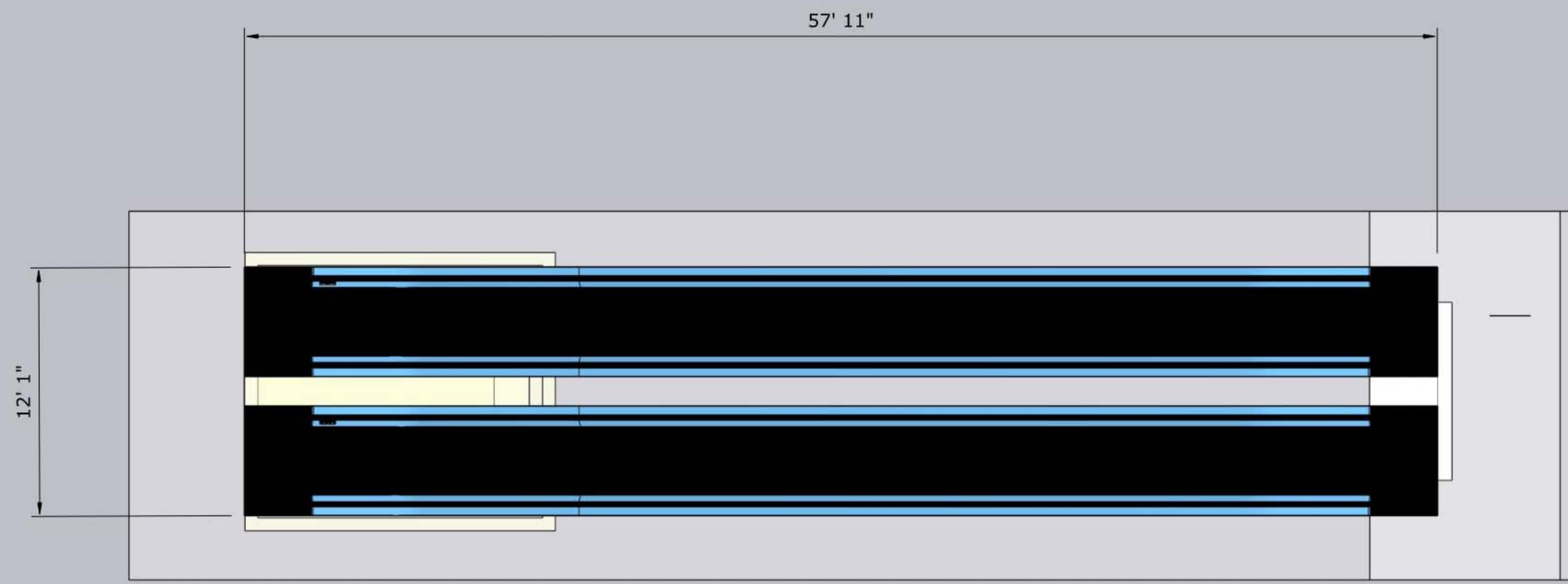
Escalators

Advantages

1. High Capacity
2. No waiting
3. Reduces walking or climbing

Disadvantages

1. Not Accessible or a Means of Egress
2. Requires both an Up and Down Escalator (2)
3. Requires power and maintenance
4. Cannot handle bicycles, strollers or wheelchairs
5. Requires a canopy
6. Larger footprint and only works in linear configuration
7. Most expensive of the options

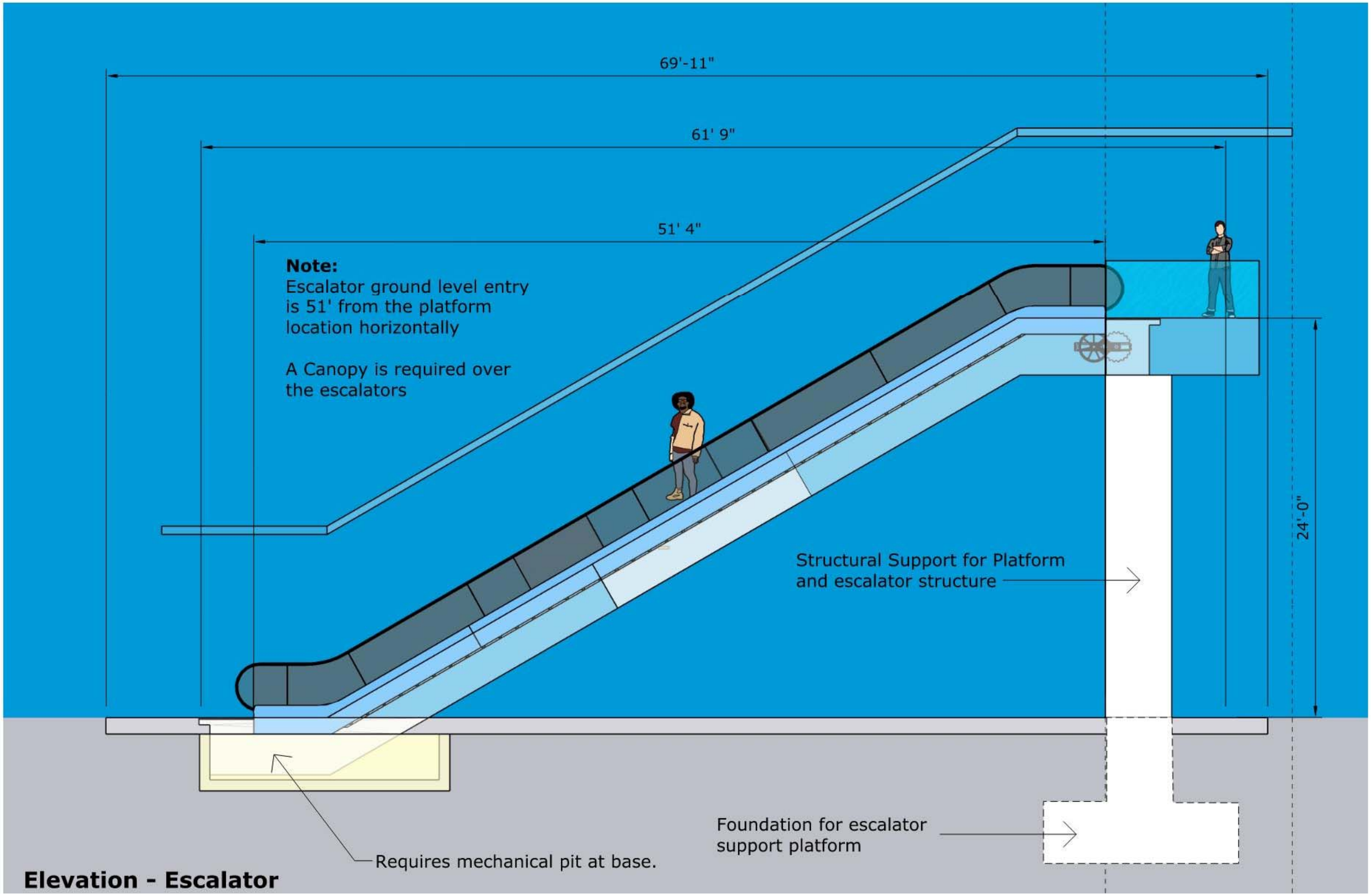


Note
Both up and down escalators are required

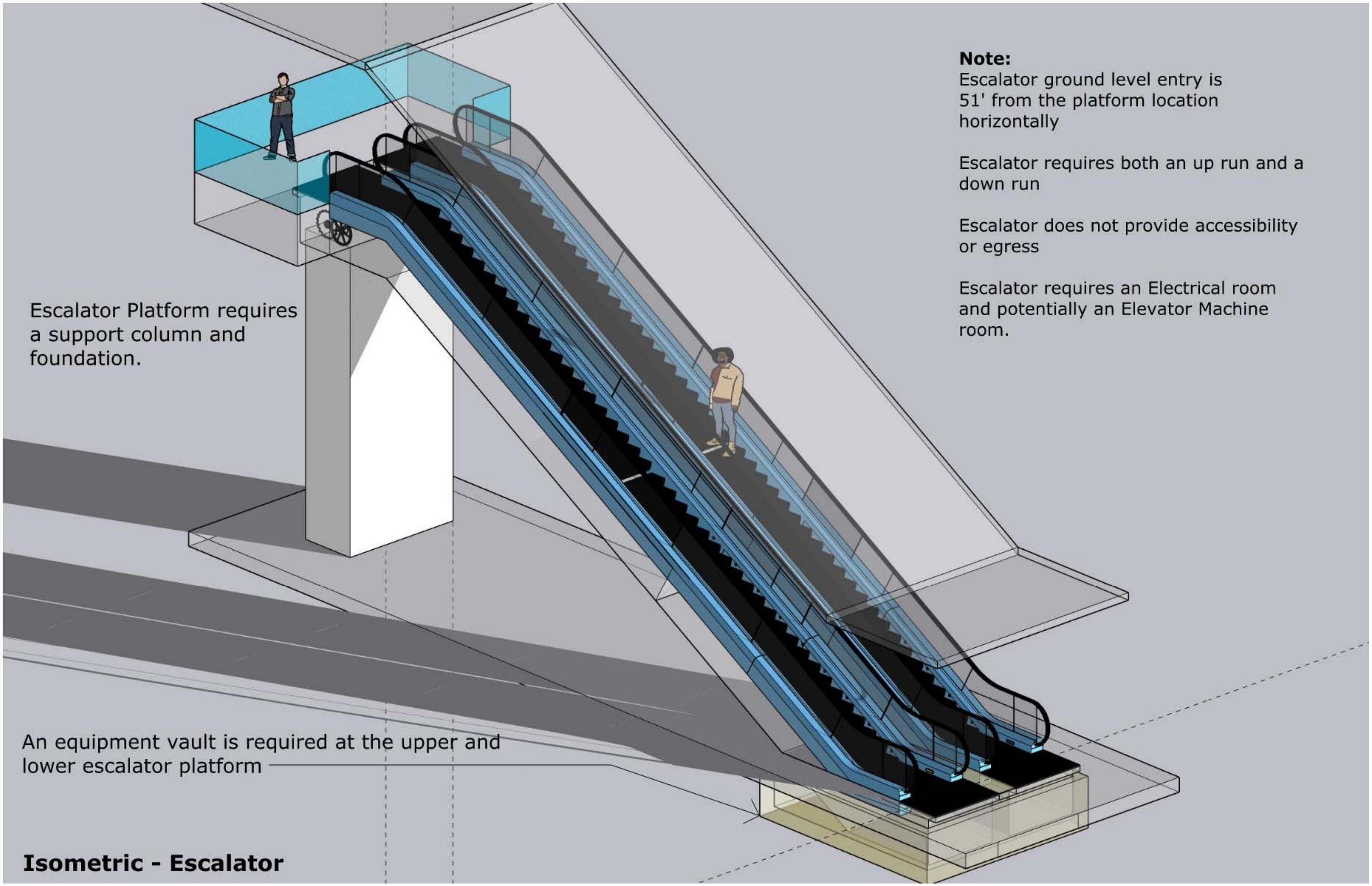
Escalators do not provide egress or accessibility

A Canopy is required over the escalators

Plan - Escalator



Elevation - Escalator


Note:
Escalator ground level entry is 51' from the platform location horizontally

Escalator requires both an up run and a down run

Escalator does not provide accessibility or egress

Escalator requires an Electrical room and potentially an Elevator Machine room.

Escalator Platform requires a support column and foundation.

An equipment vault is required at the upper and lower escalator platform

Isometric - Escalator

VERTICAL CIRCULATION COMPARISON MATRIX

(Lower score is better)

	AREA REQUIRED			FOUNDATION SIZE	MEANS OF EGRESS		ACCESSIBILE		COST	OPERATING COST		POWER REQ.		HORIZONTAL TRAVEL DISTANCE		SCORE
		Largest Area =4 Smallest Area=1			Yes=0 No=1		Yes=0 No=1		1=Lowest 4=Highest	Yes=1 No=0		Yes=1 No=0		1=Lowest 4=Highest		
RAMP	8' X 343' 18' X 96'	2744 sf 1728 sf	4	(3) 12' X 12'	YES	0	YES	0	2	NO	0	NO	0	343'	3	9
STAIR	6' X 63' 13'-4" X 27' 13'4" X 23'	378 sf 360sf 307sf	2	12' X 17'	YES	0	NO	1	1	NO	0	NO	0	52'	2	**6**
ELEVATOR	11'-4" X 11'-4"	128 sf	1	16' X 16' X 2'	NO	1	YES	0	3	YES	1	YES	1	0'	1	**7**
ESCALATOR (pair)	11' X 60'	660 sf	3	15' X 64'	NO	1	NO	1	4	YES	1	YES	1	0'	1	11

NOTES

1. Must include one Accessible means of access at each intersection.
2. Must include at least two means of egress on the bridge. (preferably one at each corner of the intersection.
3. A ramp will meet both the need for Egress as well as the need for Accessibility.
4. An escalator does not meet the need for Accessibility or Egress

The lowest scoring options are either the Ramp at all four corners, which meets all requirements, or the combination of a stair and an elevator which also meets all project requirements.


Meeting Number Two

Site Considerations

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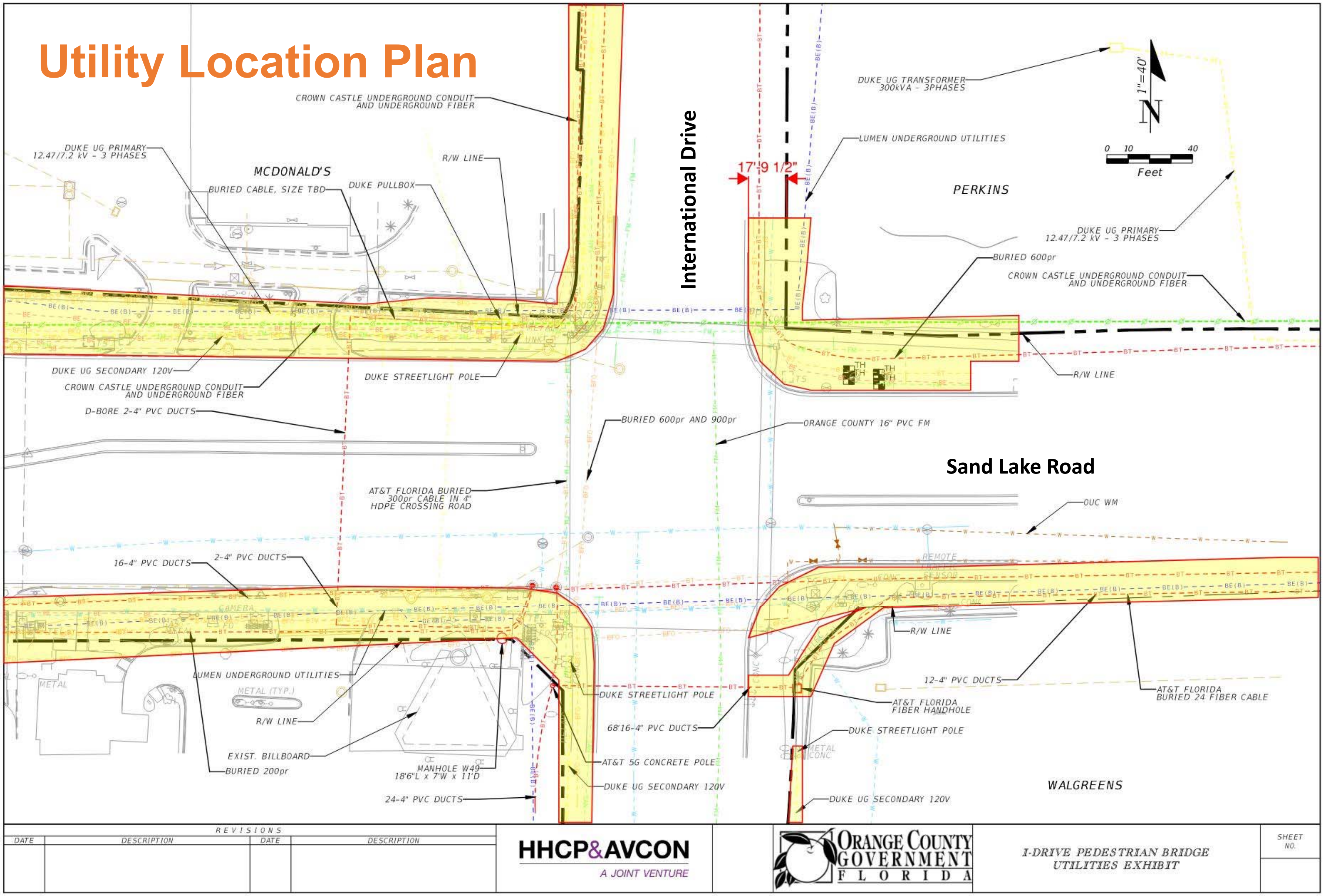
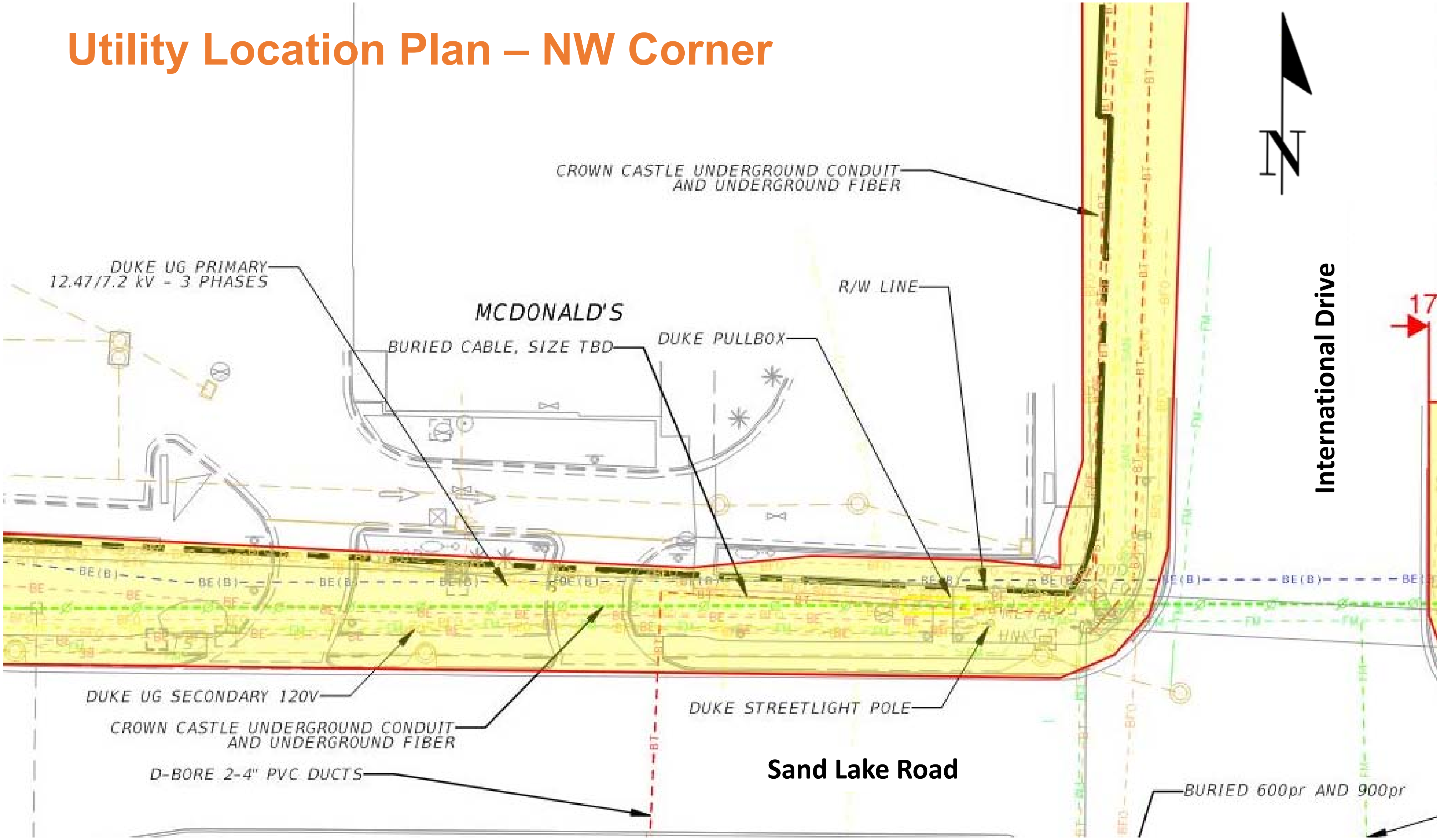
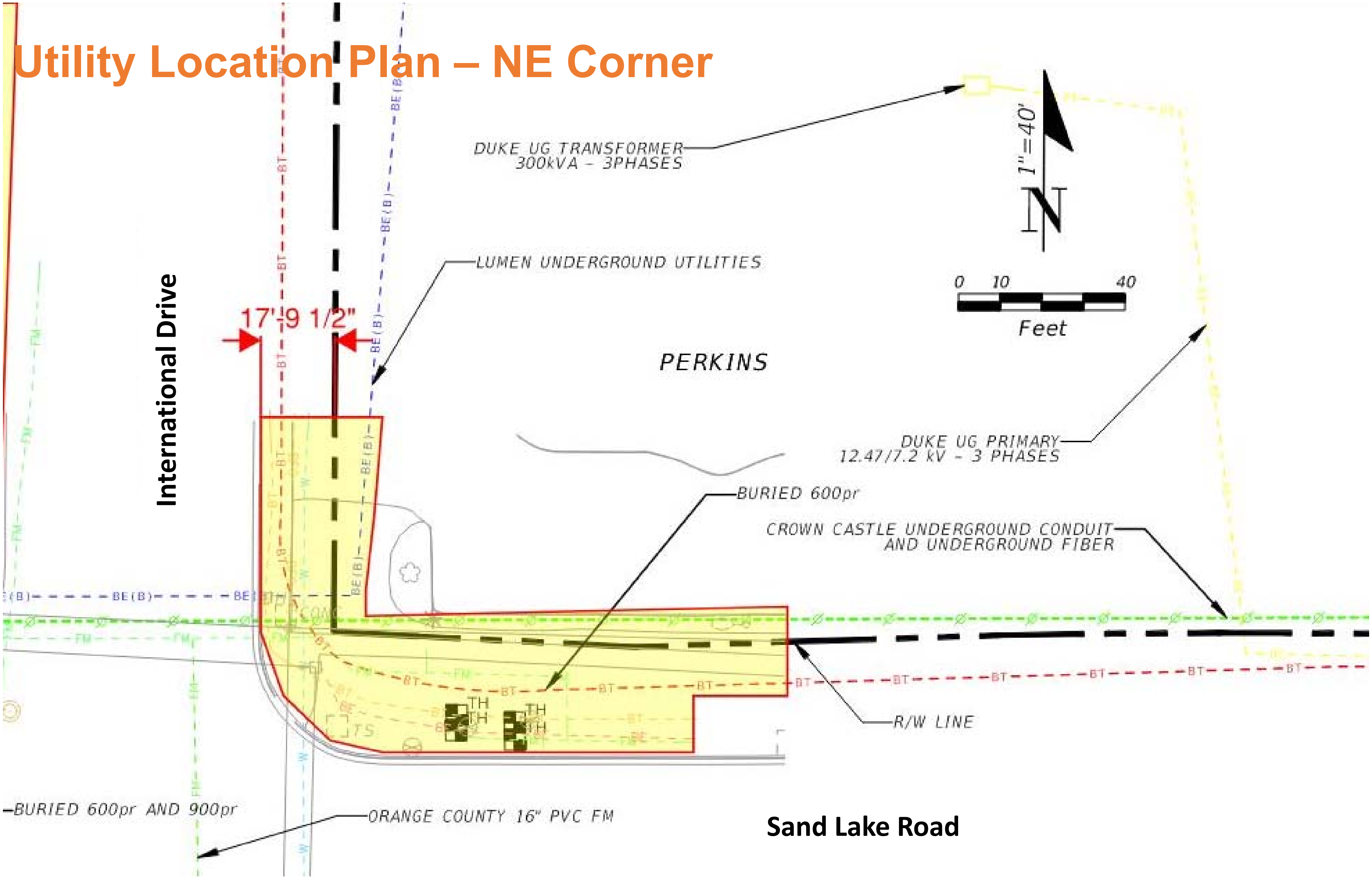
Utility Location Plan



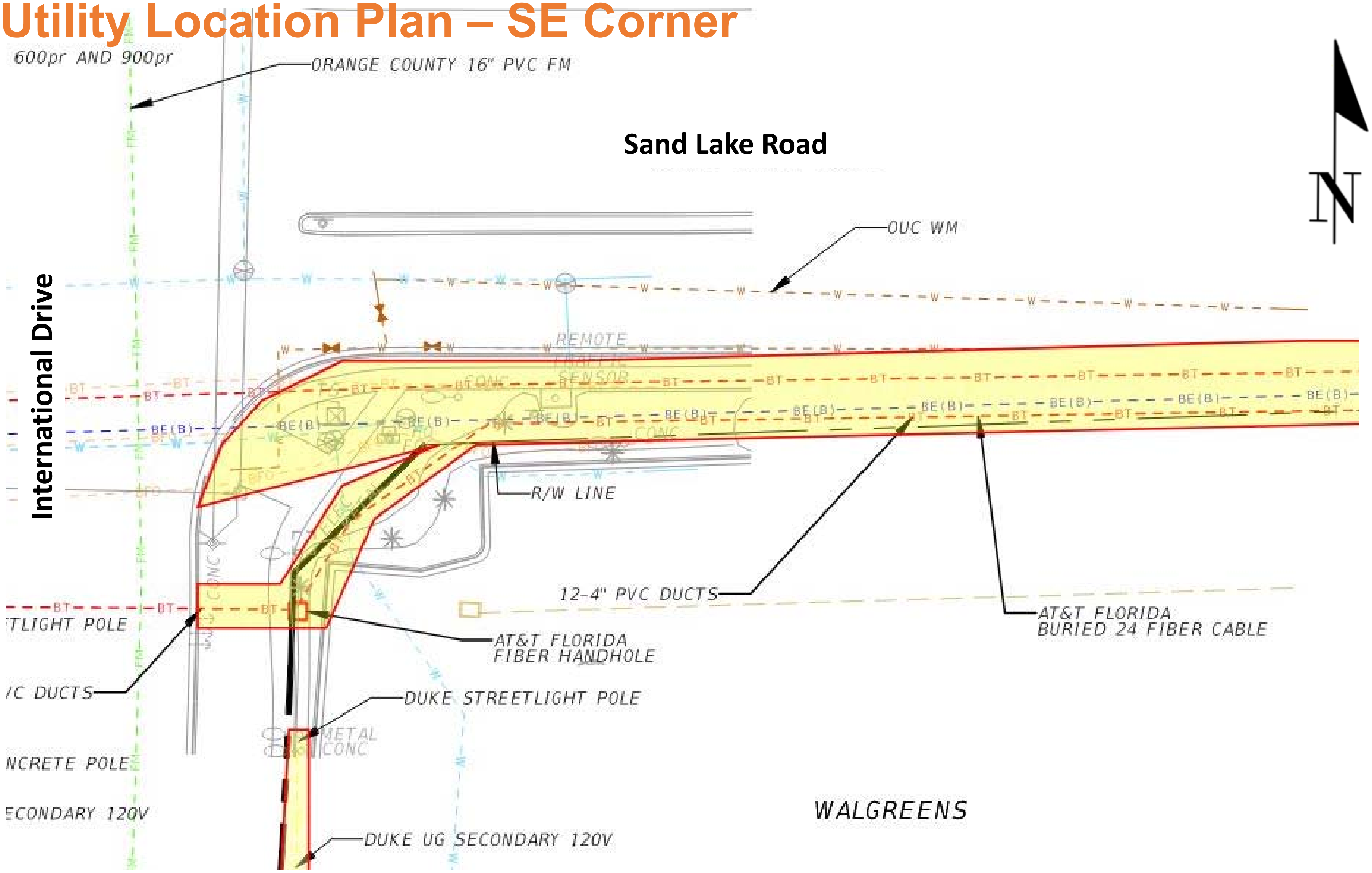
Utility Location Plan – NW Corner



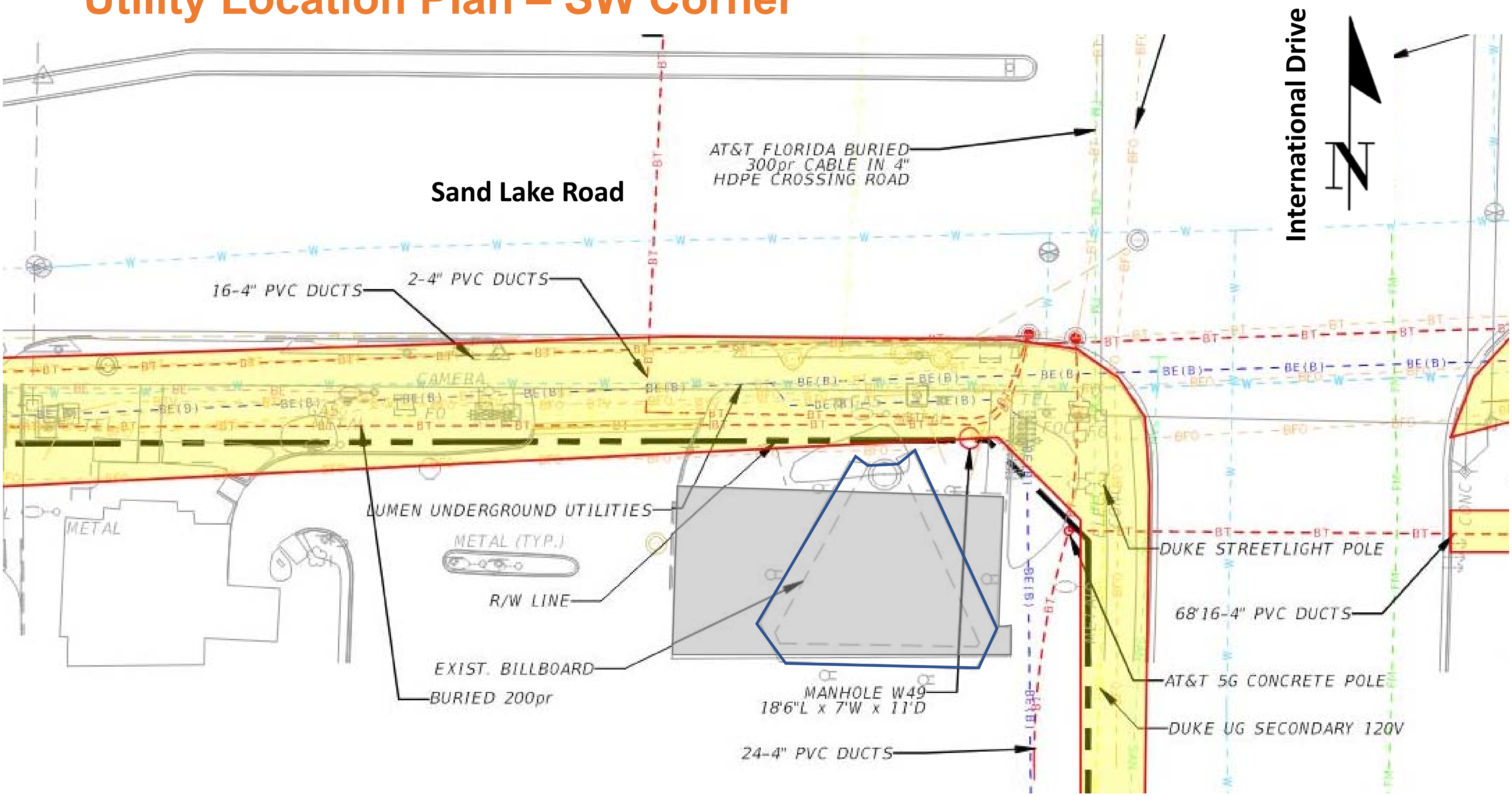
Utility Location Plan – NE Corner



Utility Location Plan – SE Corner

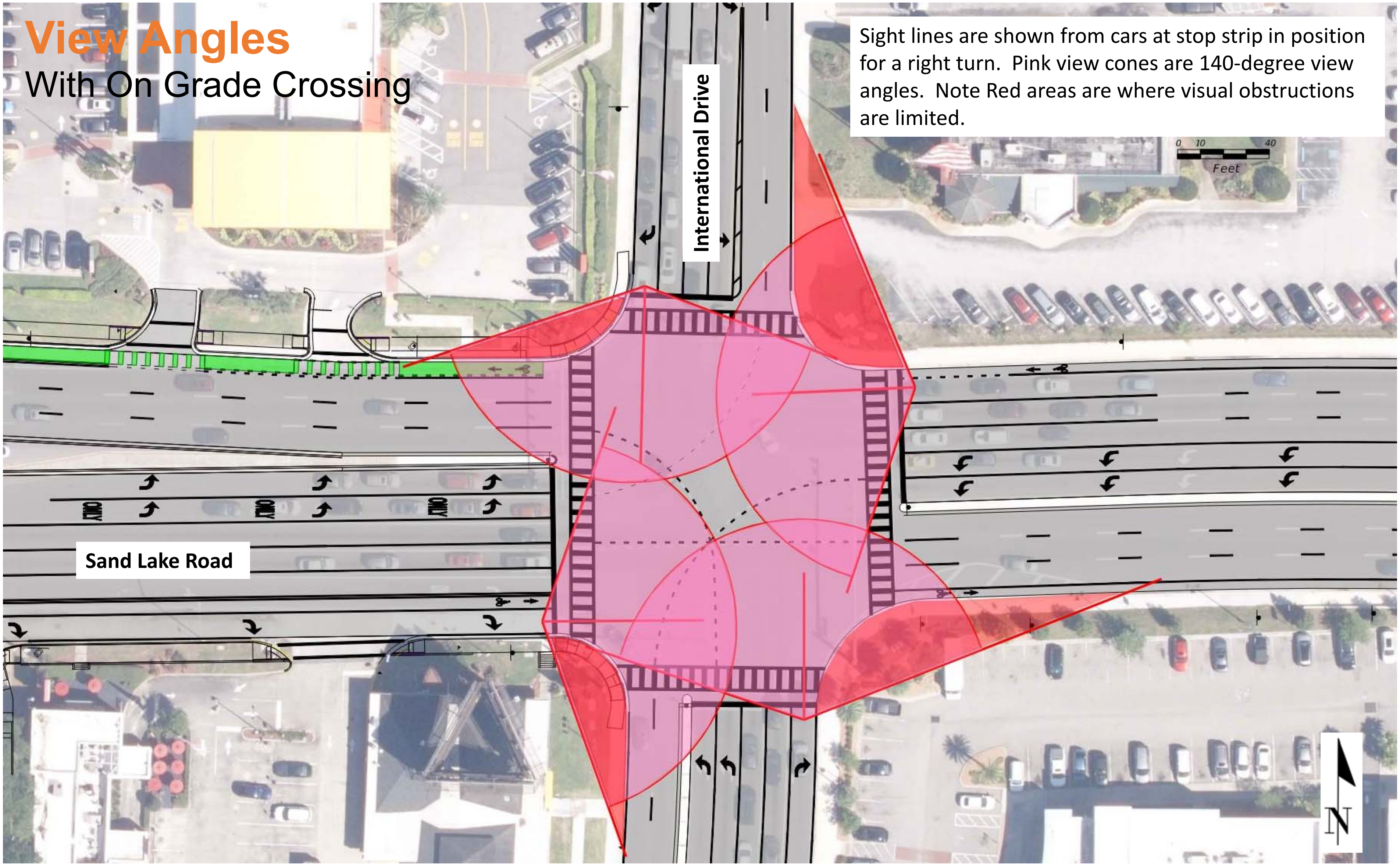


Utility Location Plan – SW Corner



View Angles

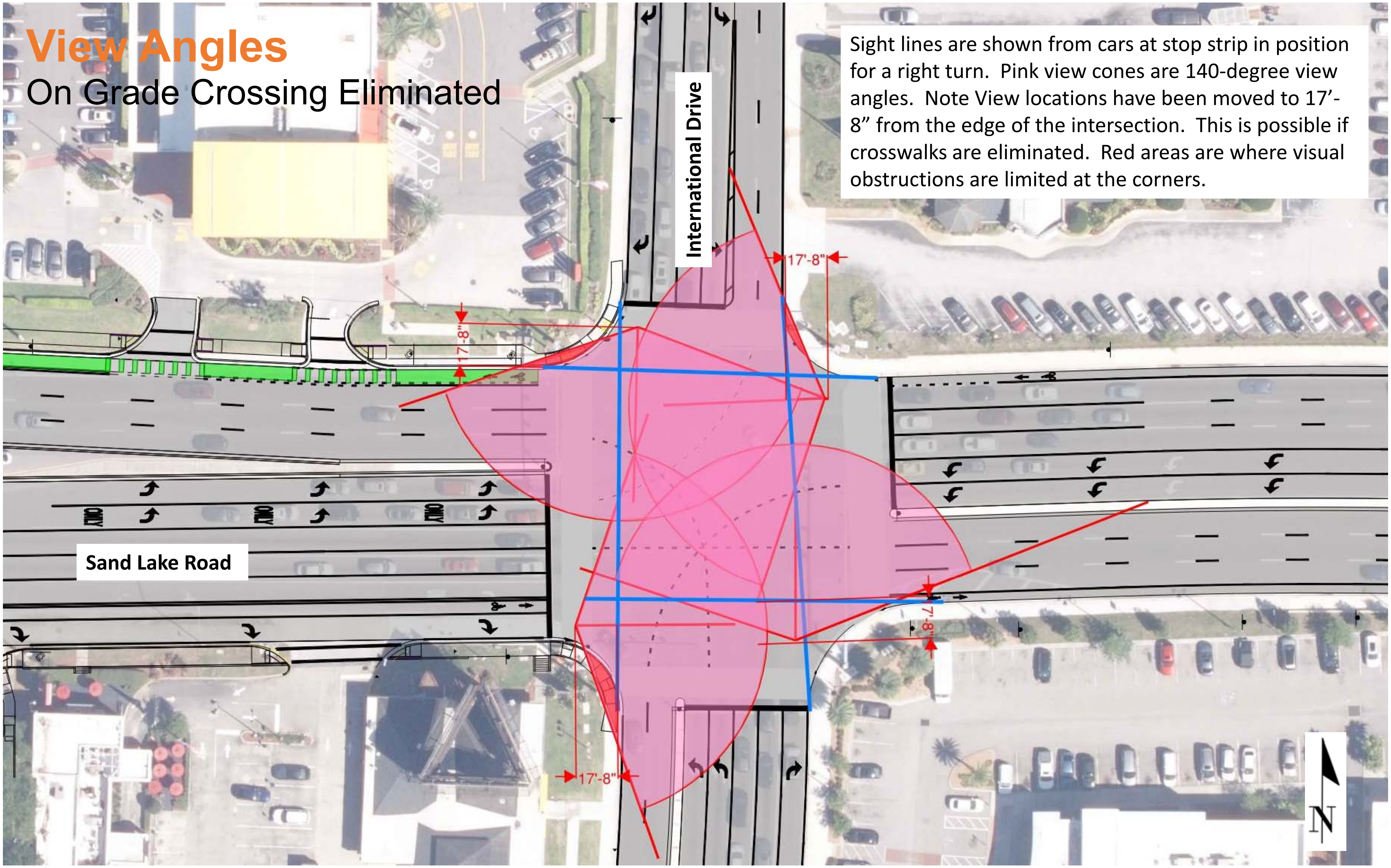
With On Grade Crossing



View Angles

On Grade Crossing Eliminated

Sight lines are shown from cars at stop strip in position for a right turn. Pink view cones are 140-degree view angles. Note View locations have been moved to 17’-8” from the edge of the intersection. This is possible if crosswalks are eliminated. Red areas are where visual obstructions are limited at the corners.



Meeting Number Two

Bridge Tower Configurations

ORANGE COUNTY GOVERNMENT FLORIDA

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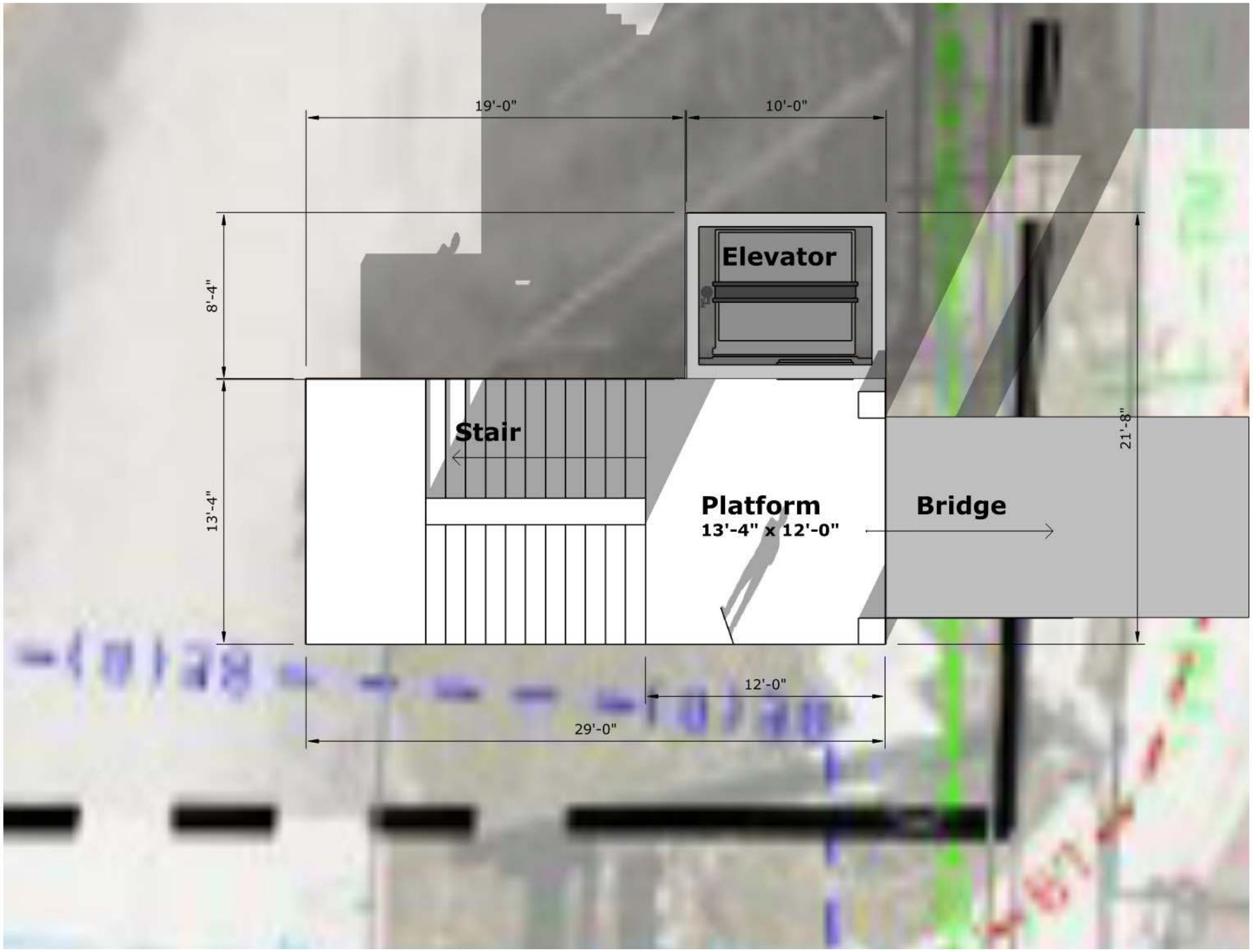


Bridge Tower Option 1

Description

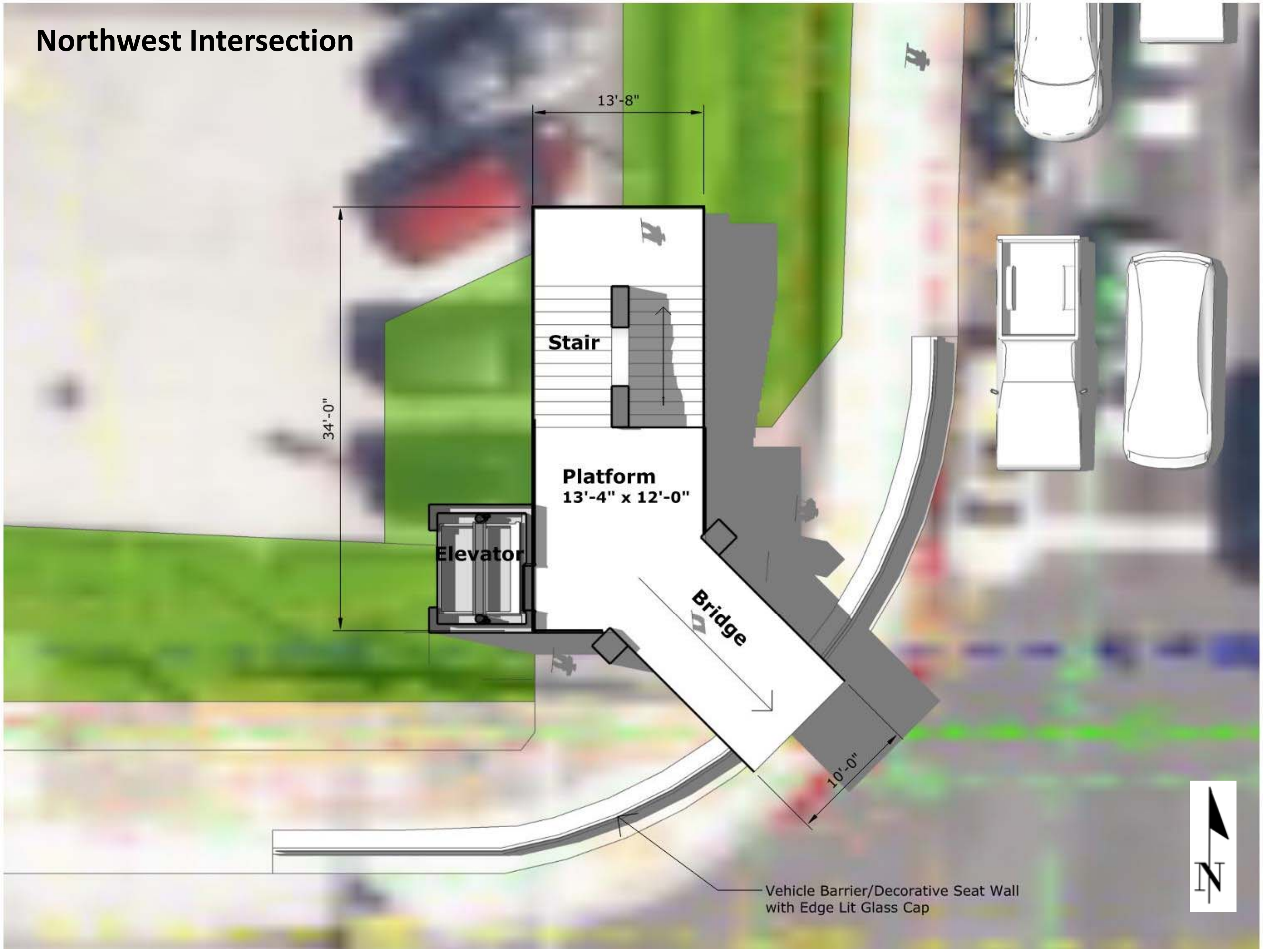
A very inviting stair traversing 24'-0" in height. Each stair run is 6' rise. The treads are 12" and the risers are 6" for easy climbing.

The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 35' x 28'

Summary

Ground Floor Platform	160sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	470sf
Bridge Width	10'-0"



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Description

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The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 22' x 24'

Glass Back Elevator provides additional Safety and creates a visual feature

Seat bench barrier and protective screen wall protects pedestrians and prevents on grade crossing.

Crosswalks have been removed.

Summary

Ground Floor Platform	192sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
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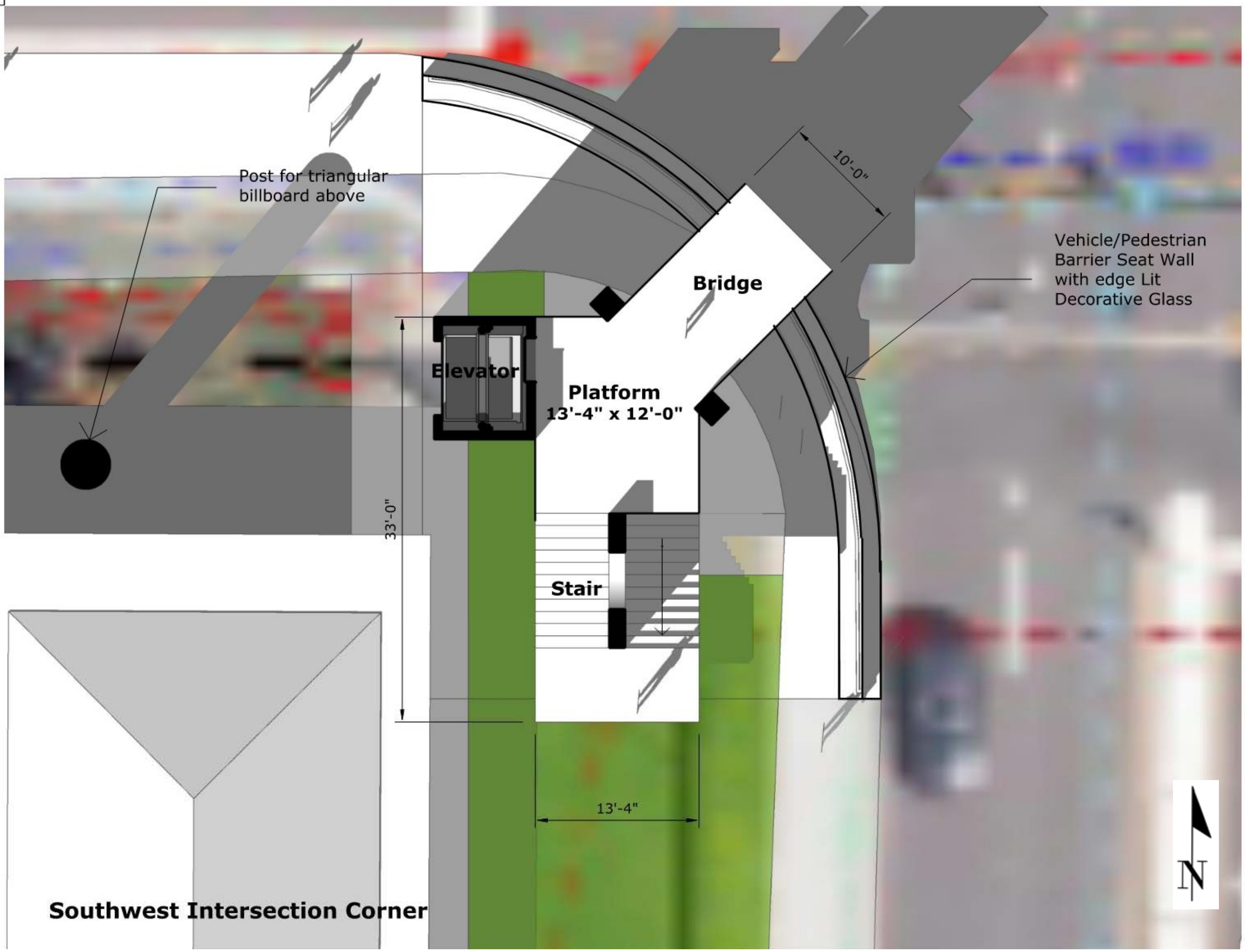

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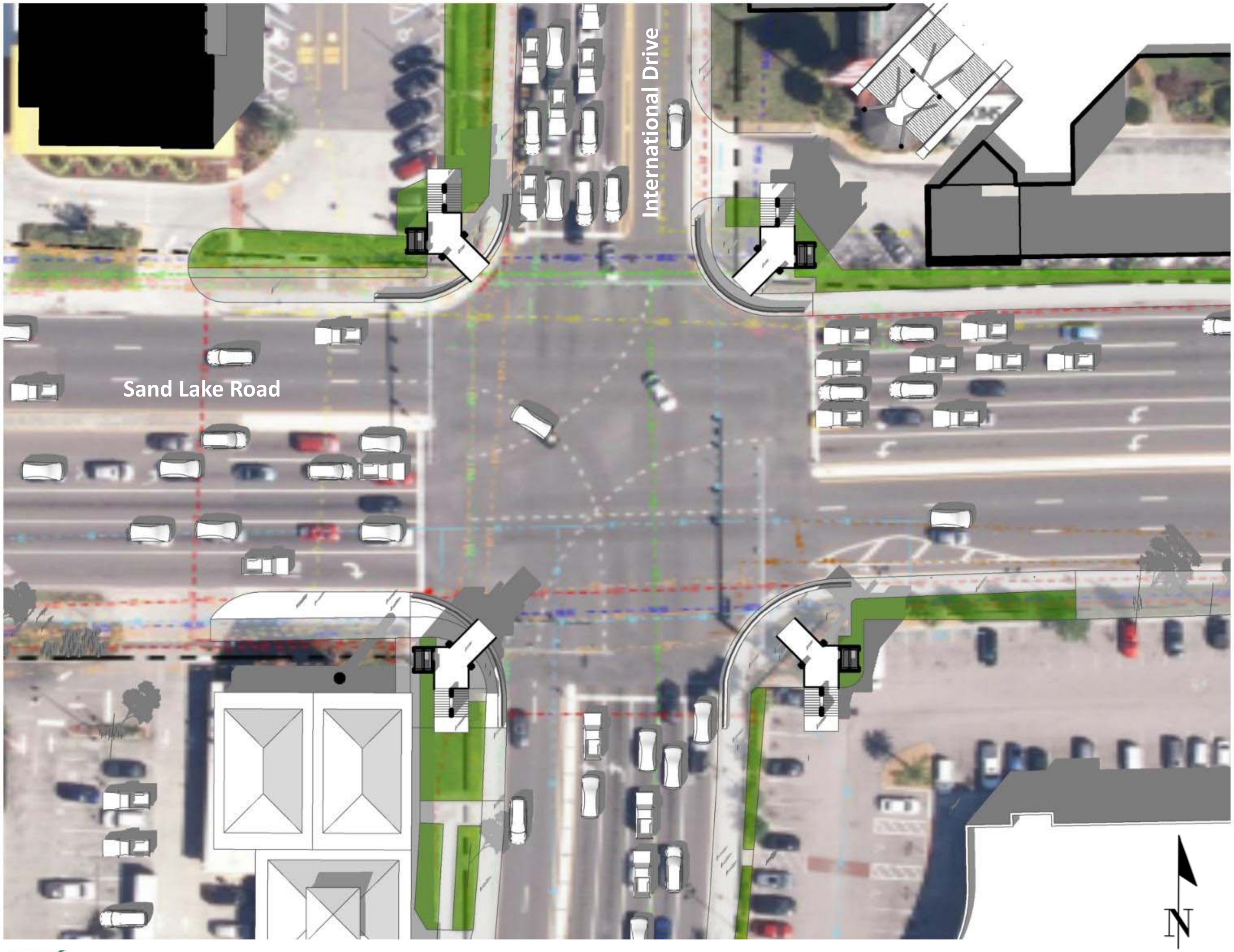

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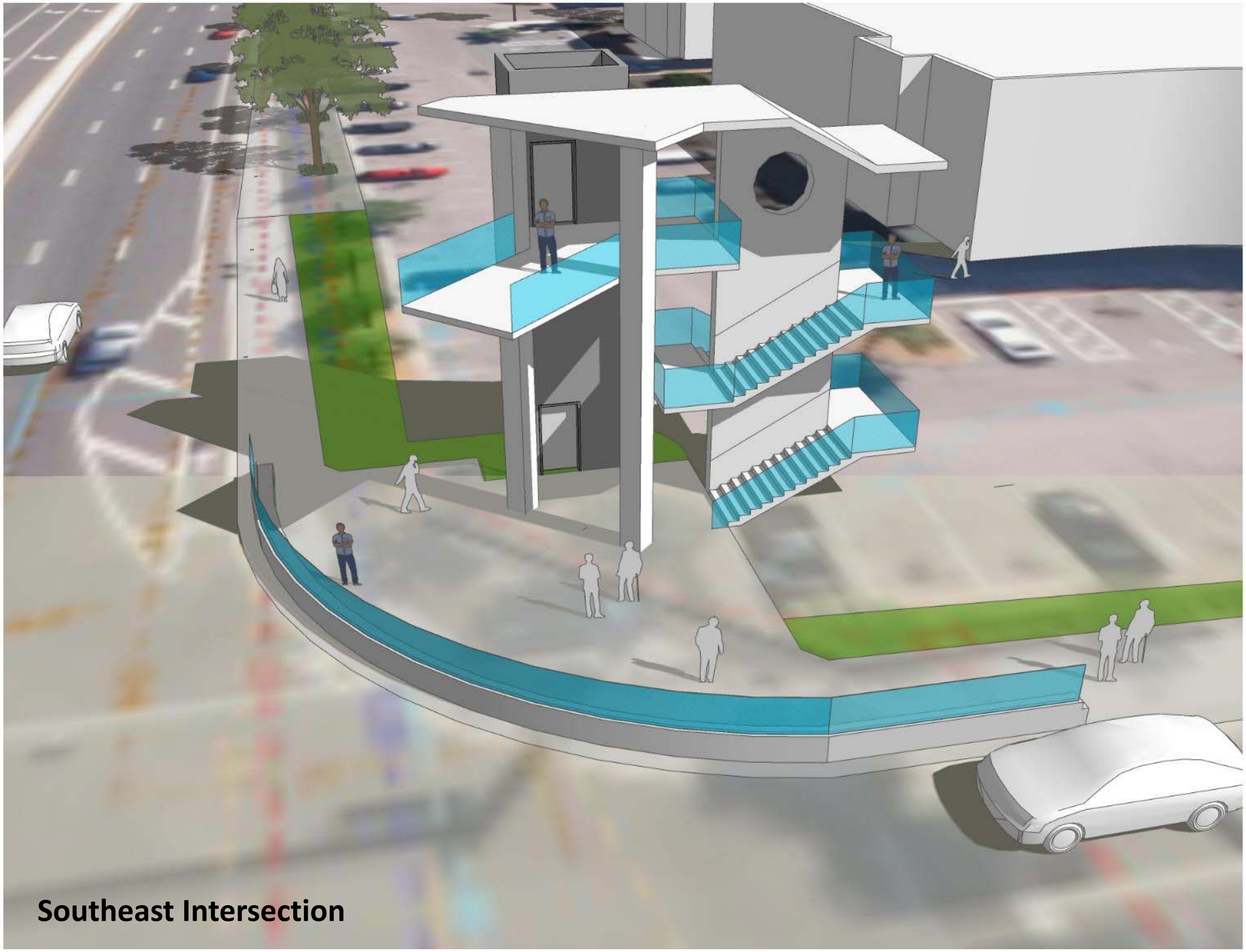

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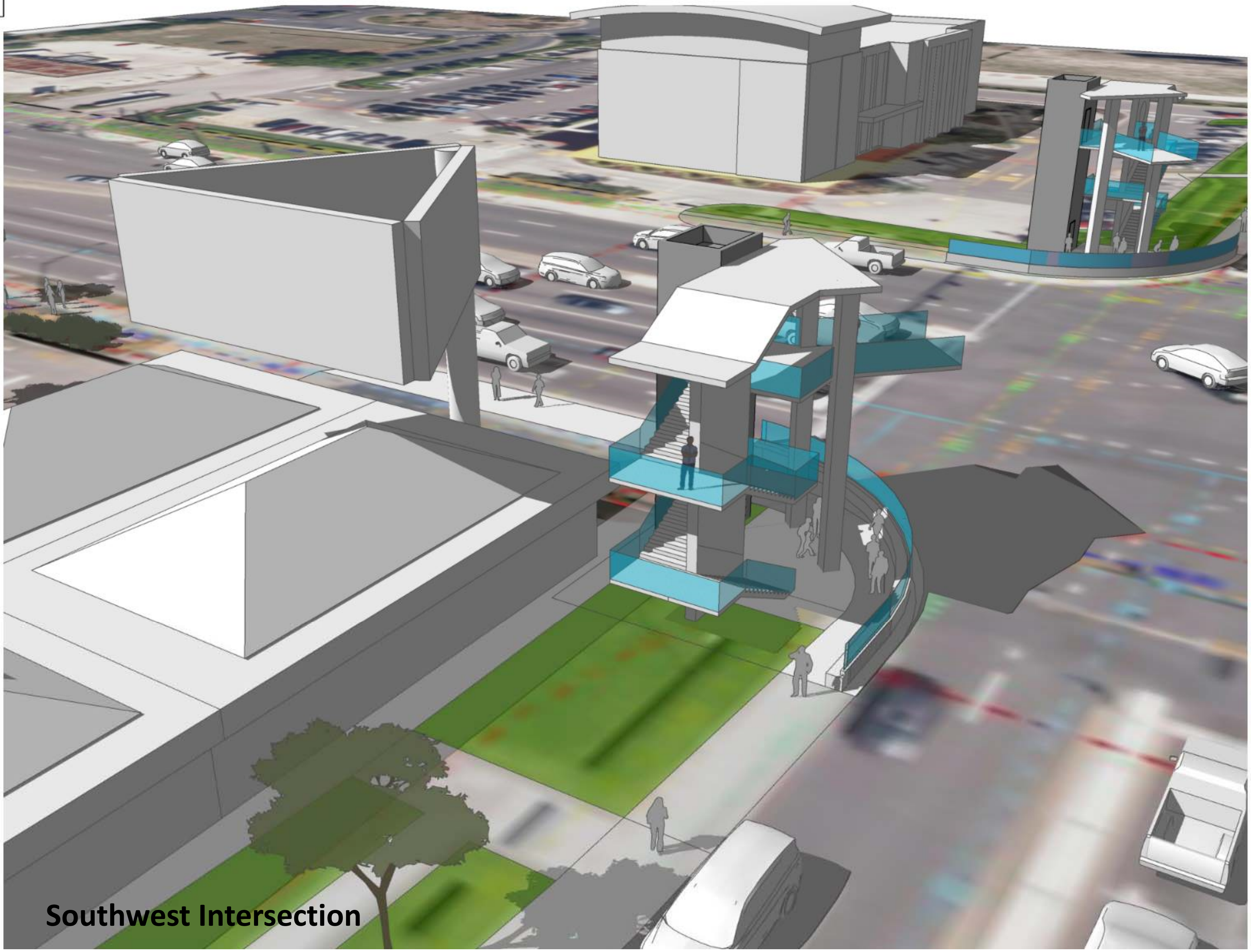

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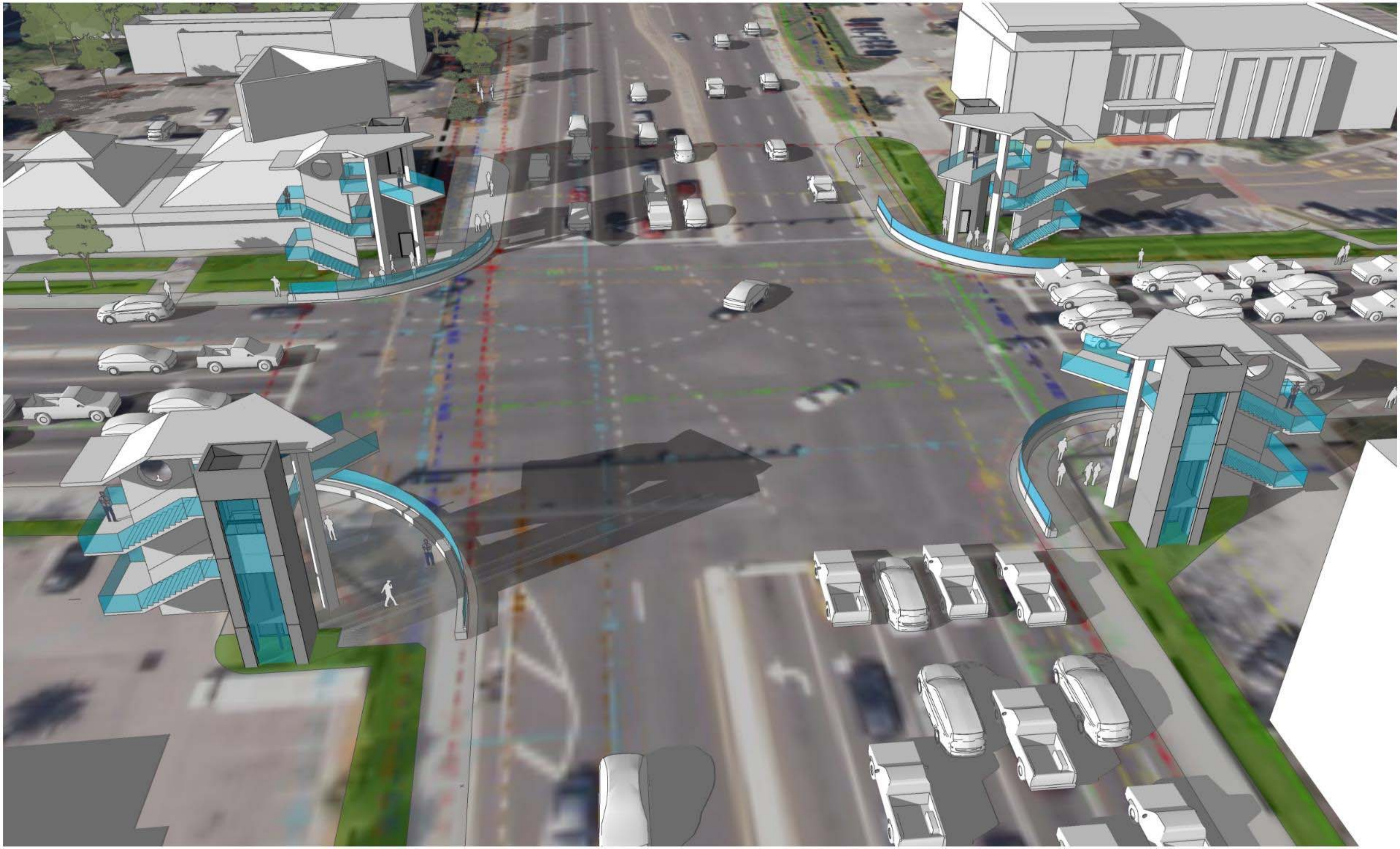

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The overall site area required for this configuration is 35' x 28'

Crosswalks have been removed.

Summary

Ground Floor Platform	160sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	470sf

Bridge Tower Option 2

Description

A very inviting stair traversing 24'-0" in height. Each stair run is 6' rise. The treads are 12" and the risers are 6" for easy climbing.

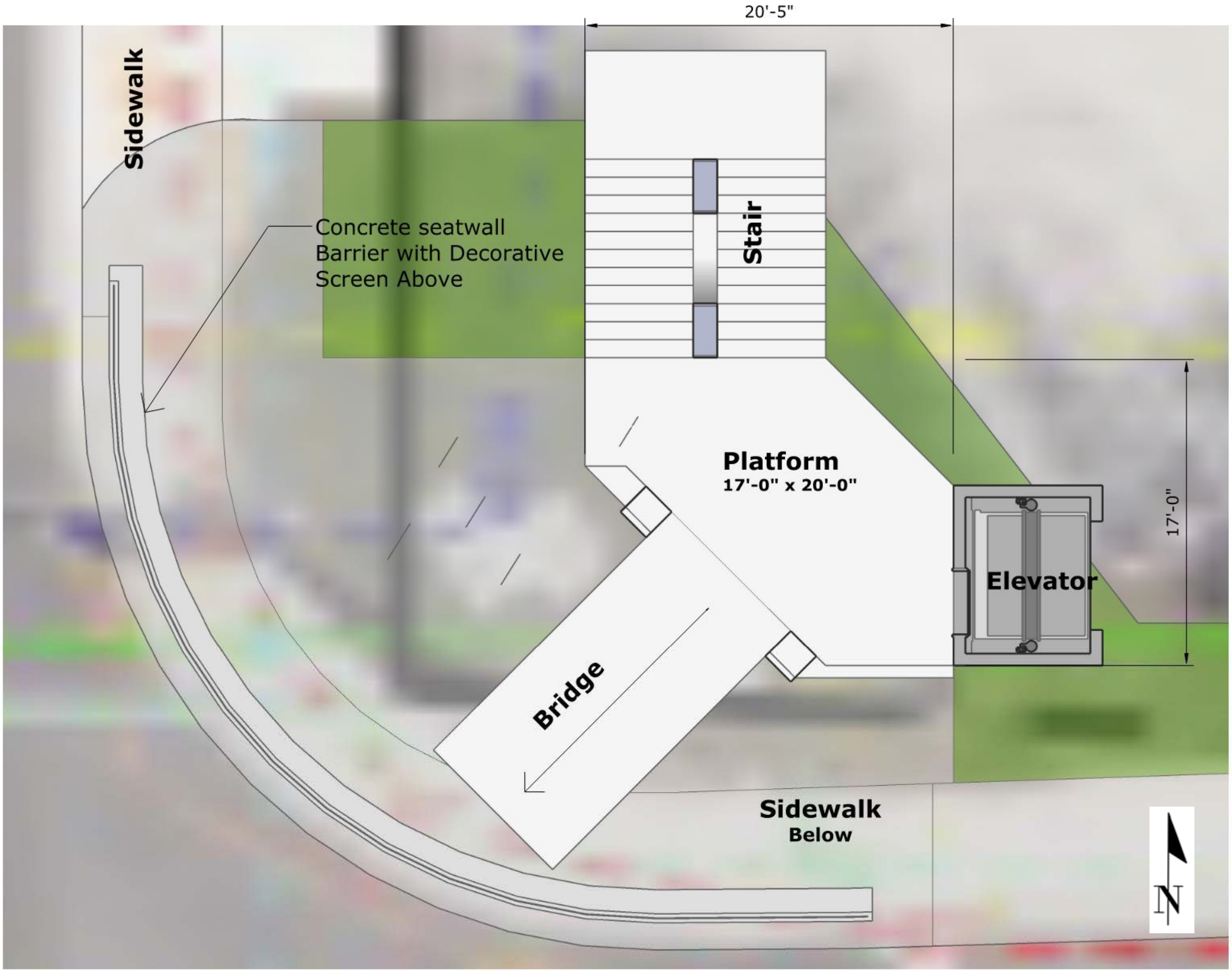
The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 35' x 40'

Crosswalks have been removed.

Summary

Ground Floor Platform	221sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	531sf
Bridge Width	10'-0"



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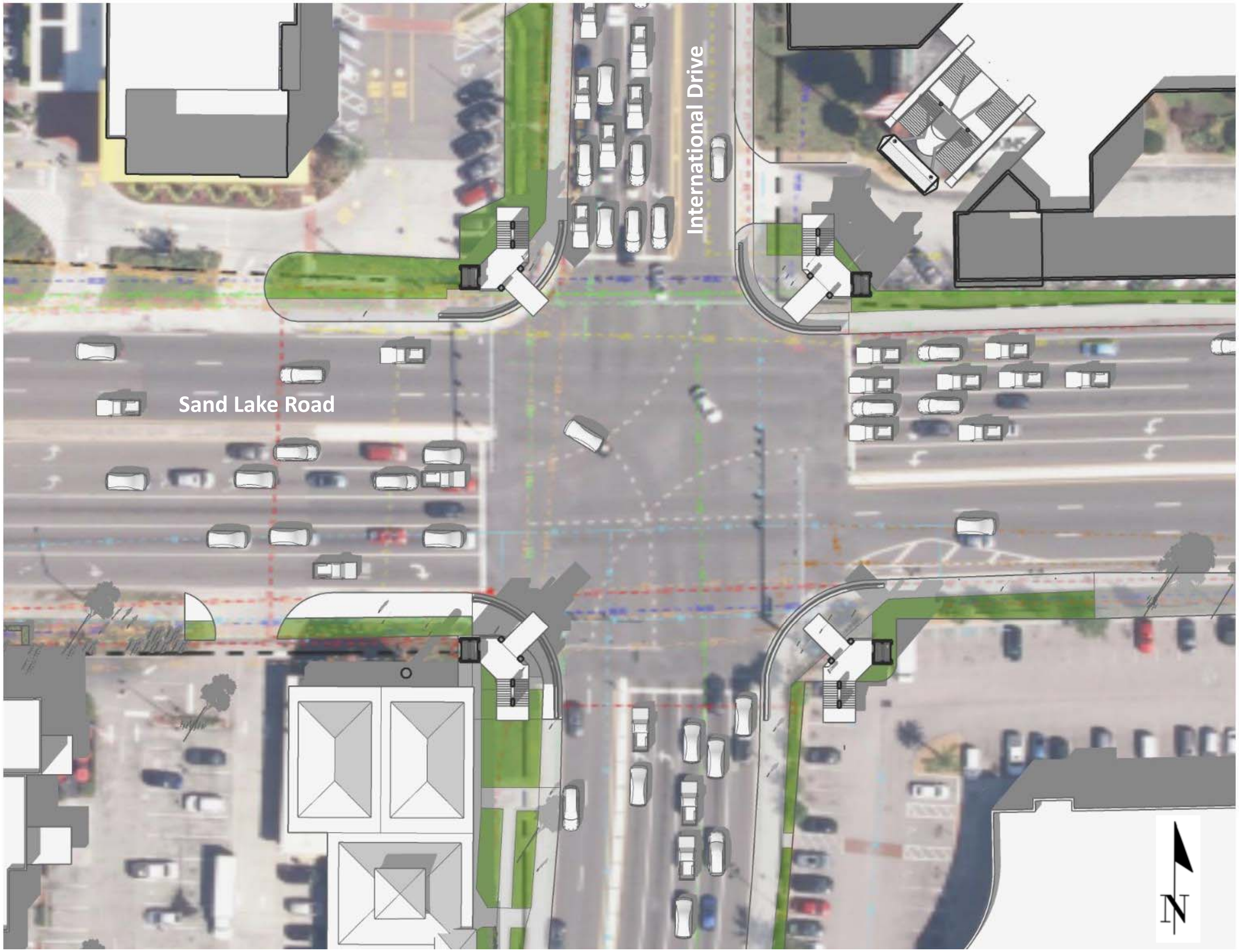

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Description

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The Elevator is 3500# capacity and is stretcher compliant

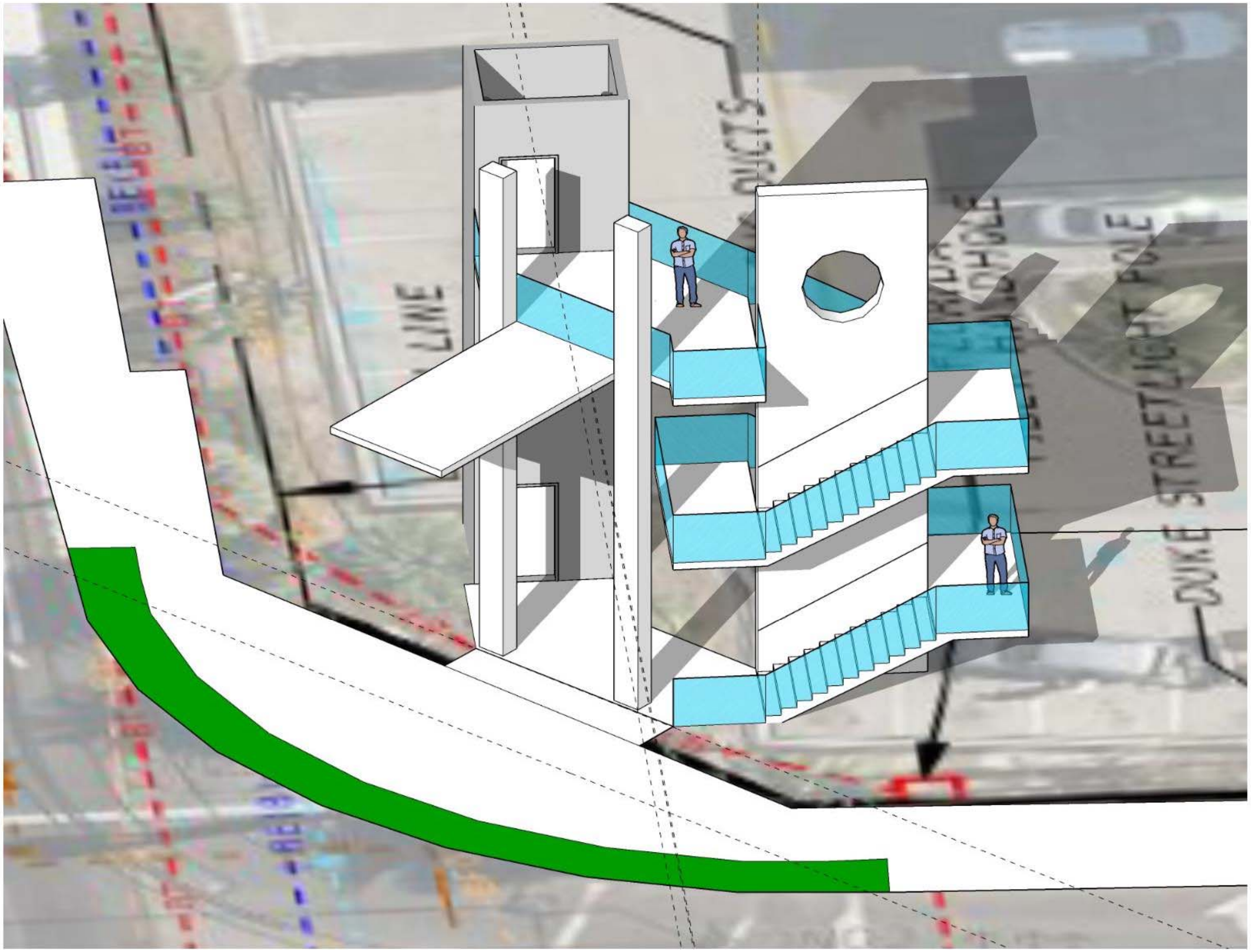
The overall site area required for this configuration is 35' x 40'

Crosswalks have been removed.

Summary

Ground Floor Platform	221sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	531sf
Bridge Width	10'-0"

Bridge Tower Option 2



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Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	470sf

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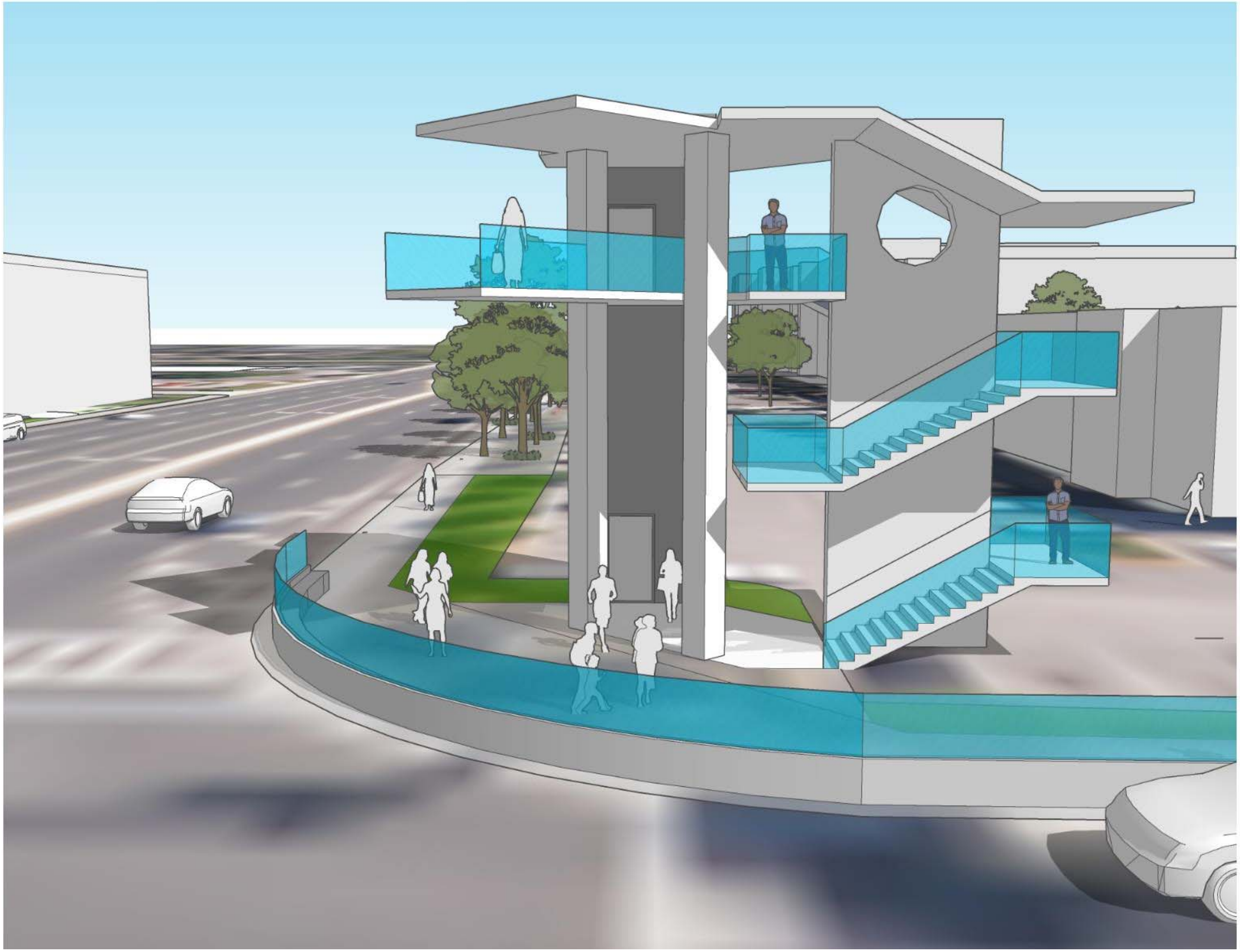
The overall site area required for this configuration is 34' x 28'



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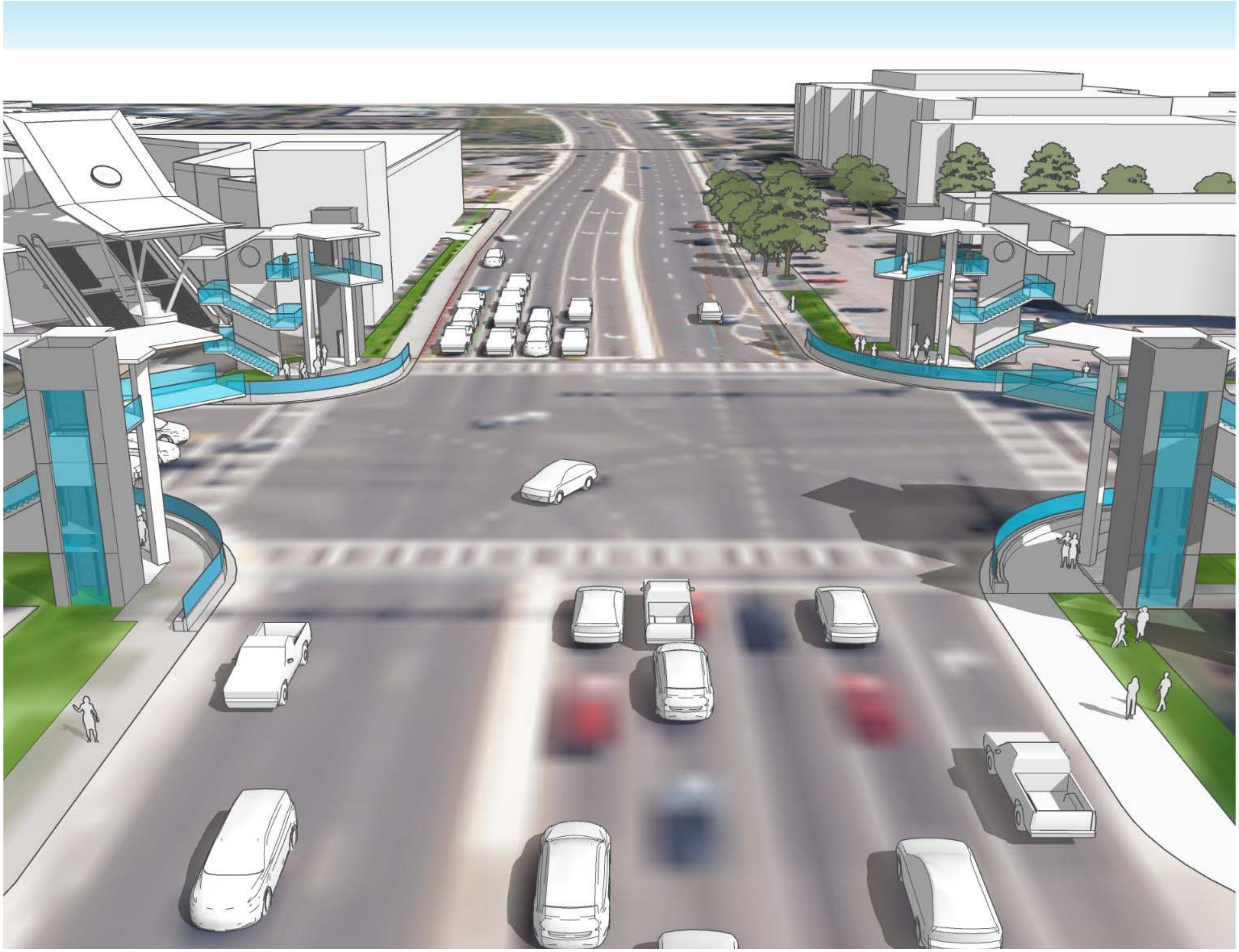

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The overall site area required for this configuration is 35' x 40'

Glass back elevator shafts provide additional security and create an opportunity for feature lighting element.

Crosswalks have been removed.

Summary

Ground Floor Platform	221sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
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Total Ground Level Footprint	531sf
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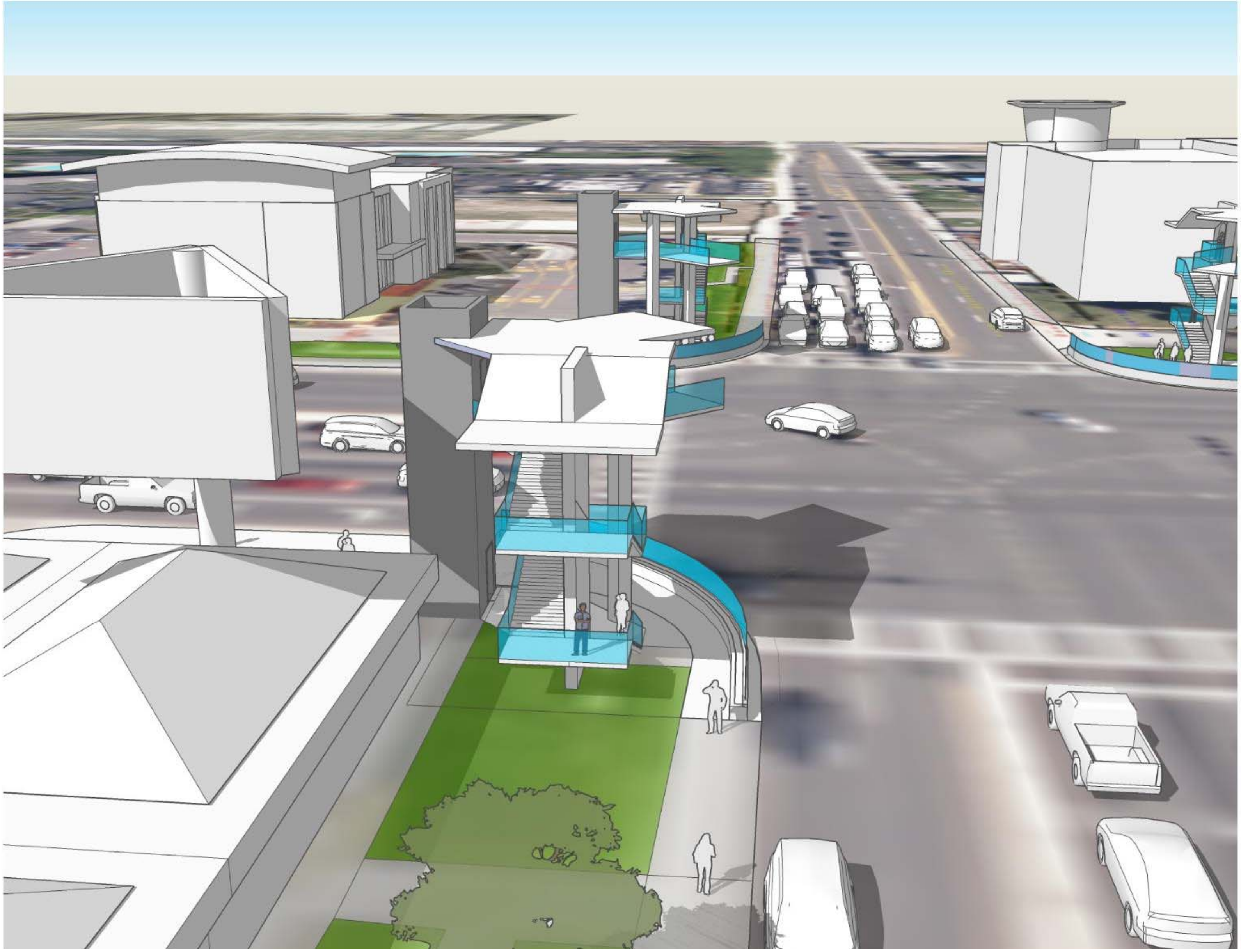

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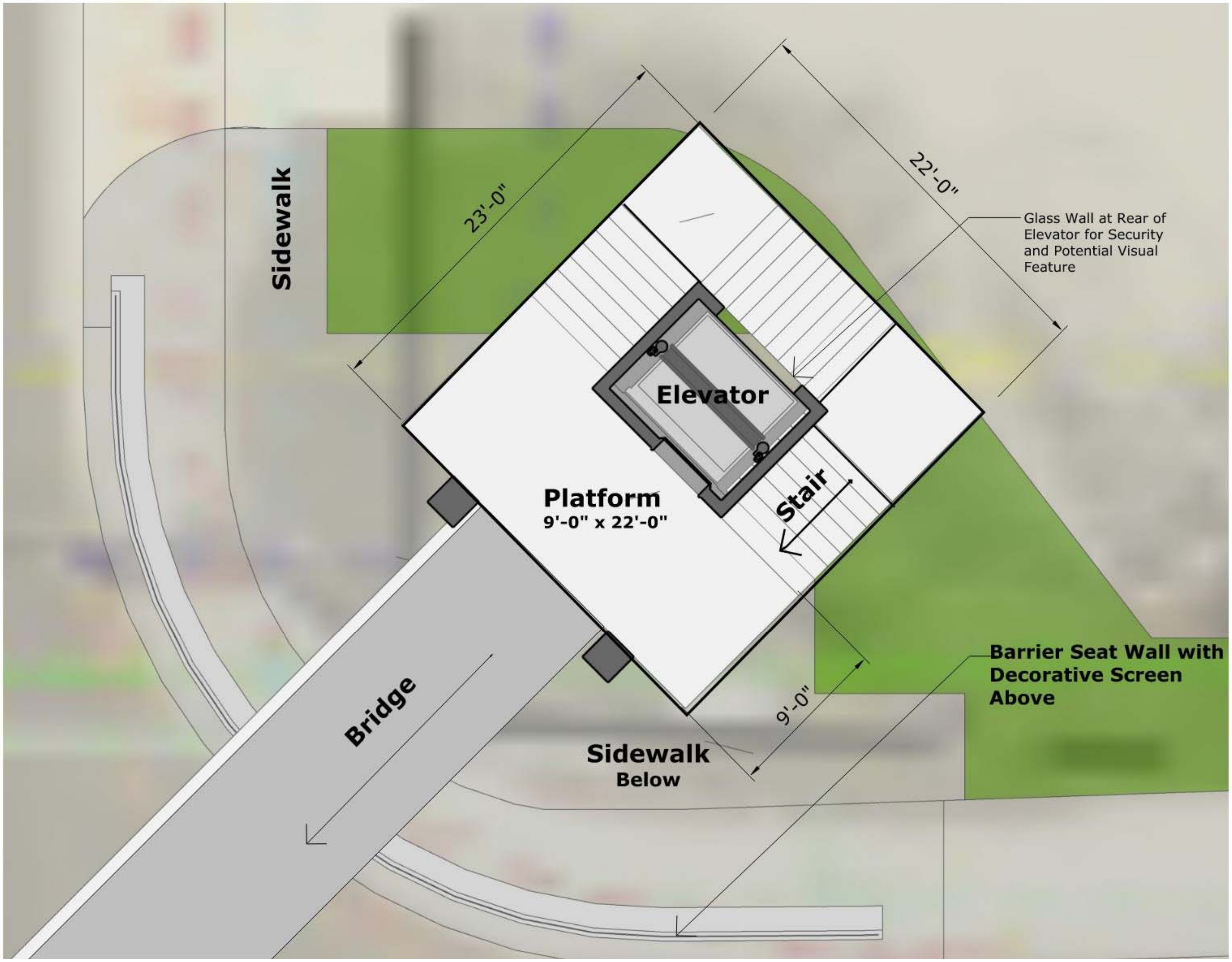


Bridge Tower Option 3

Description

A very inviting stair traversing 24'-0" in height. Each stair run is 4' rise. The treads are 12" and the risers are 6" for easy climbing.

The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 22' x 24'

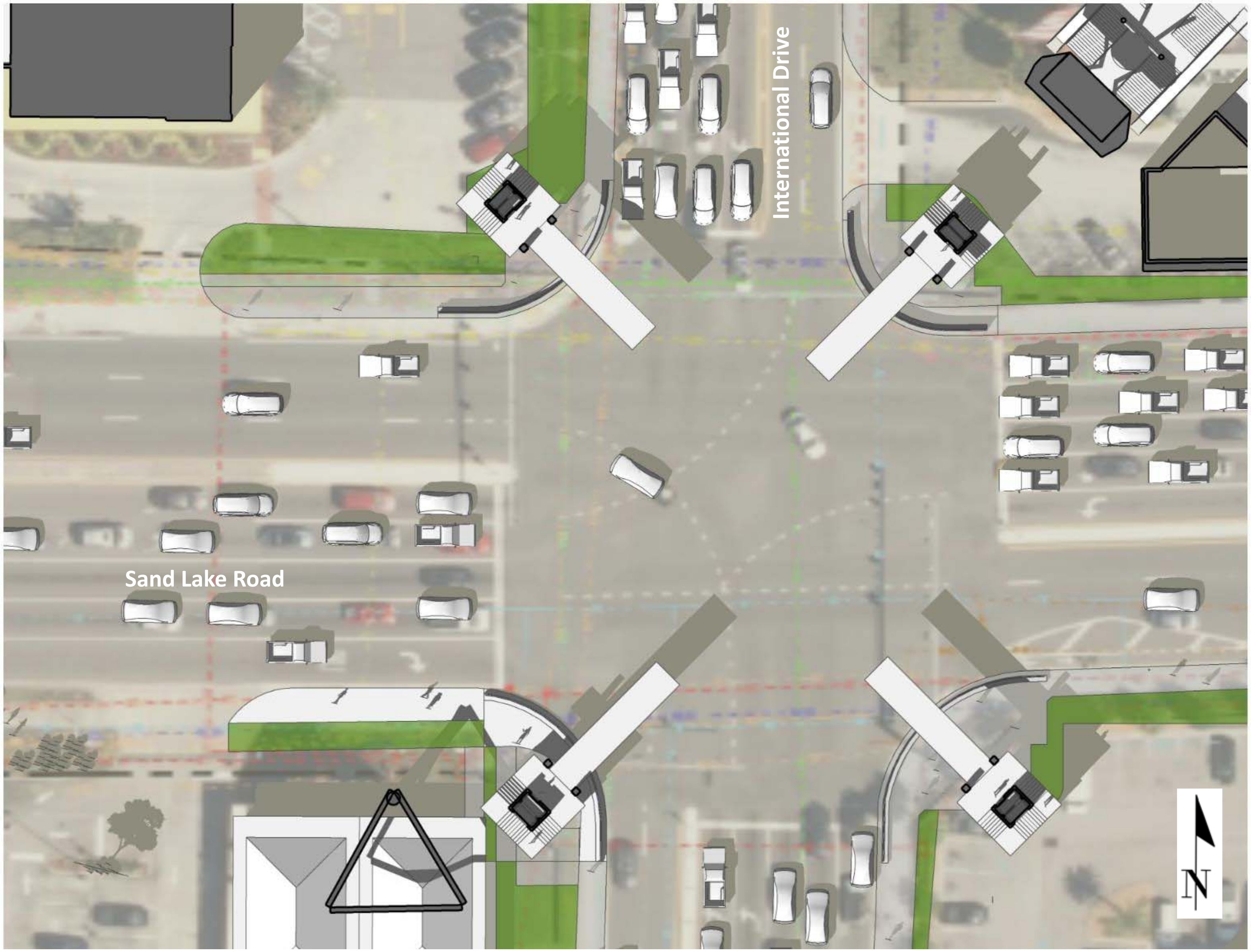
Glass Back Elevator provides additional Safety and creates a visual feature

Seat bench barrier and protective screen wall protects pedestrians and prevents on grade crossing.

Crosswalks have been removed.

Summary

Ground Floor Platform	192sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	506sf
Bridge Width	10'-0"



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A very inviting stair traversing 24'-0" in height. Each stair run is 4' rise. The treads are 12" and the risers are 6" for easy climbing.

The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 22' x 24'

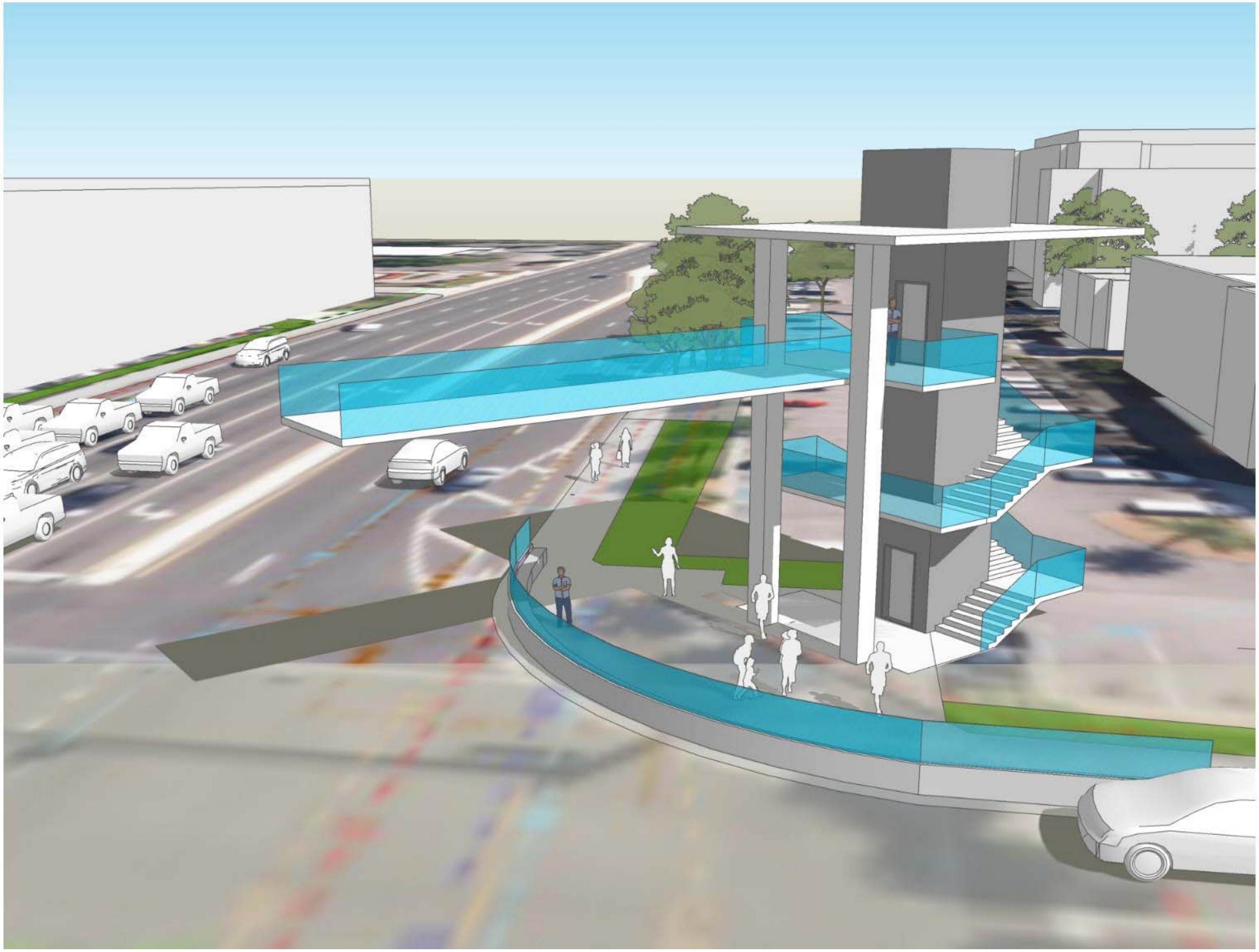
Glass Back Elevator provides additional Safety and creates a visual feature

Seat bench barrier and protective screen wall protects pedestrians and prevents on grade crossing. They also have potential to be a visual element accenting the bridge.

Crosswalks have been removed

Summary

Ground Floor Platform	192sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	506sf
Bridge Width	10'-0"



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The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 22' x 24'

Glass Back Elevator provides additional Safety and creates a view of businesses at the associated corner.

Seat bench barrier and protective screen wall protects pedestrians and prevents on grade crossing.

Crosswalks have been removed.

Summary

Ground Floor Platform	192sf
Stair Width	6' Wide
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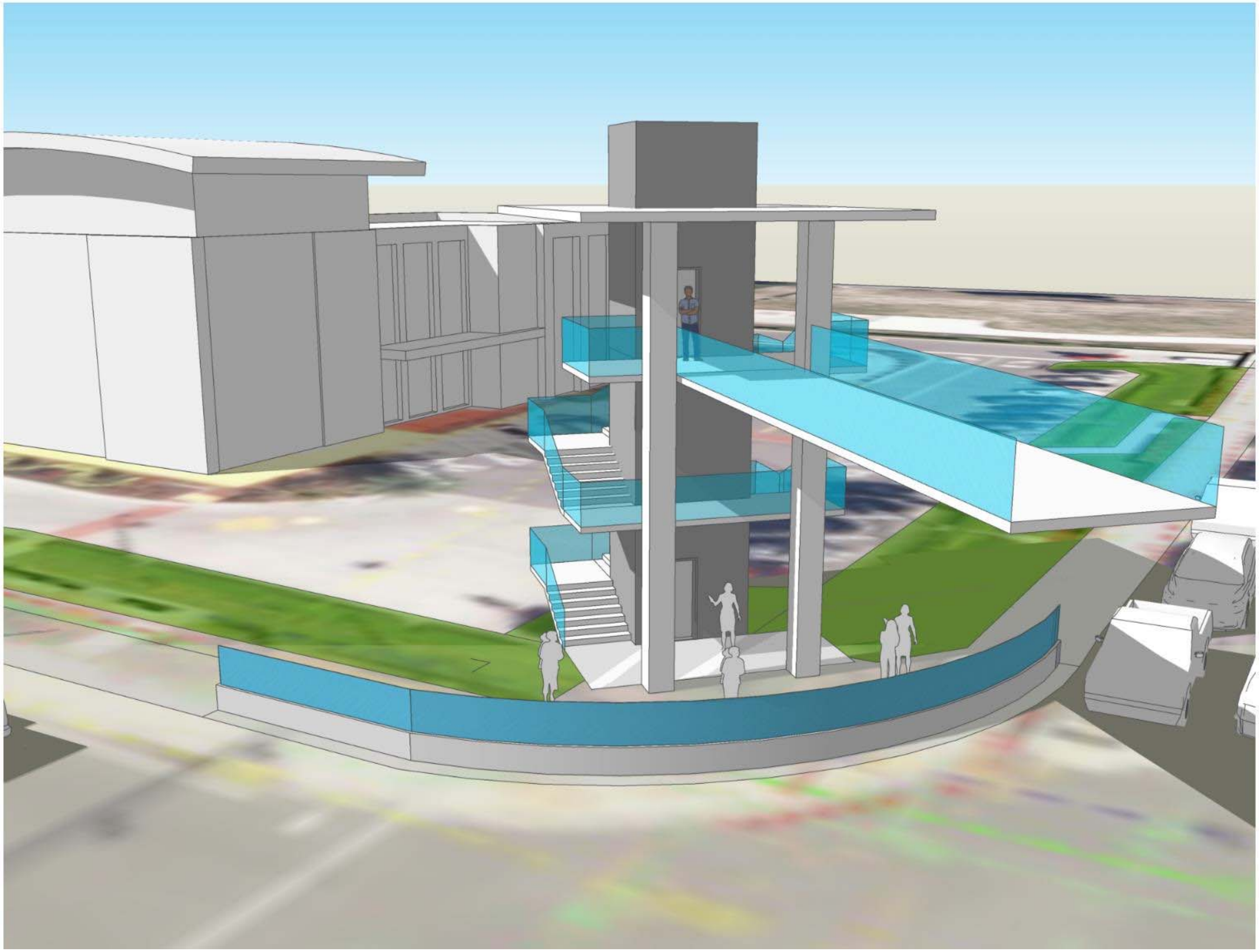

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Summary

Ground Floor Platform	192sf
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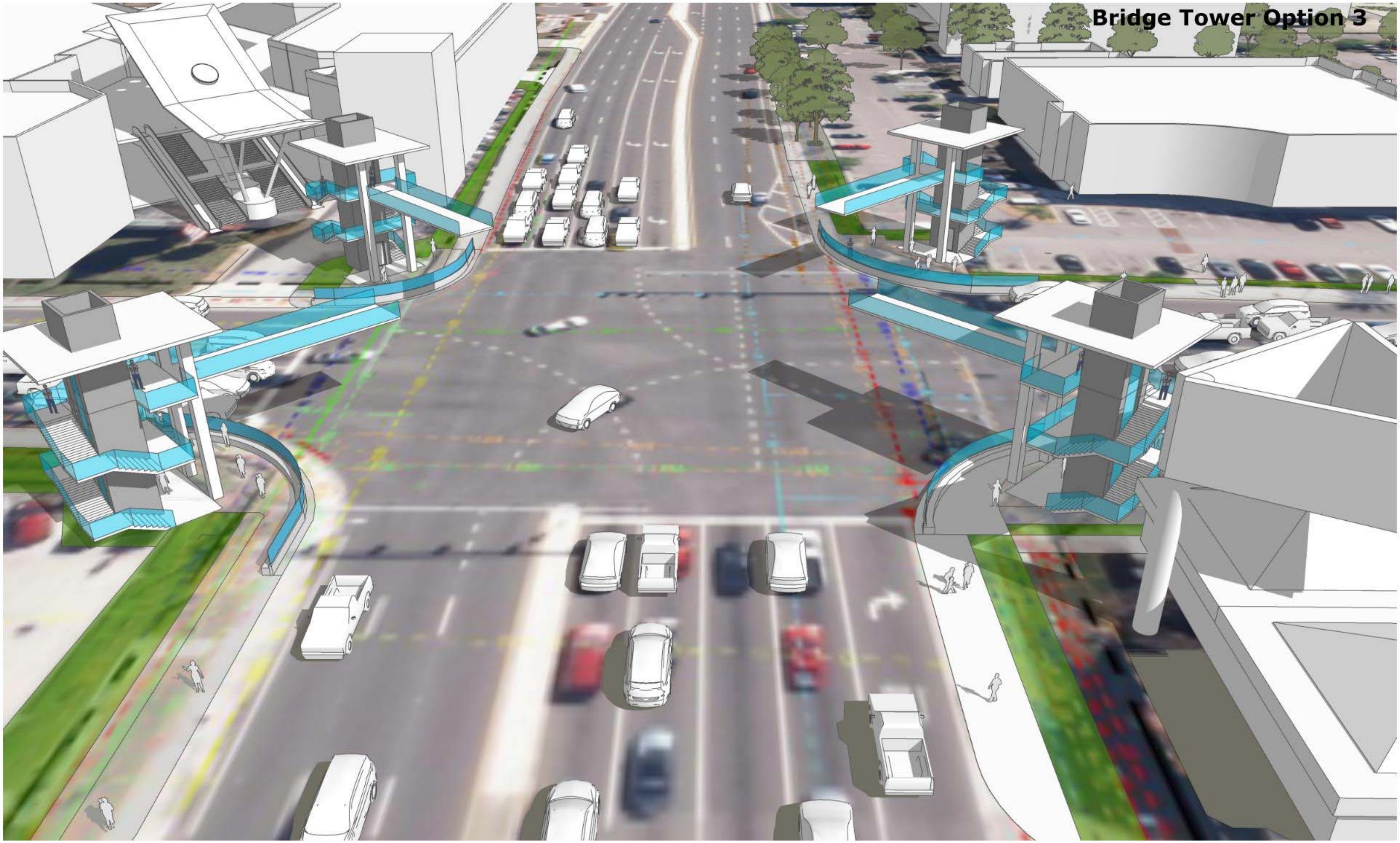
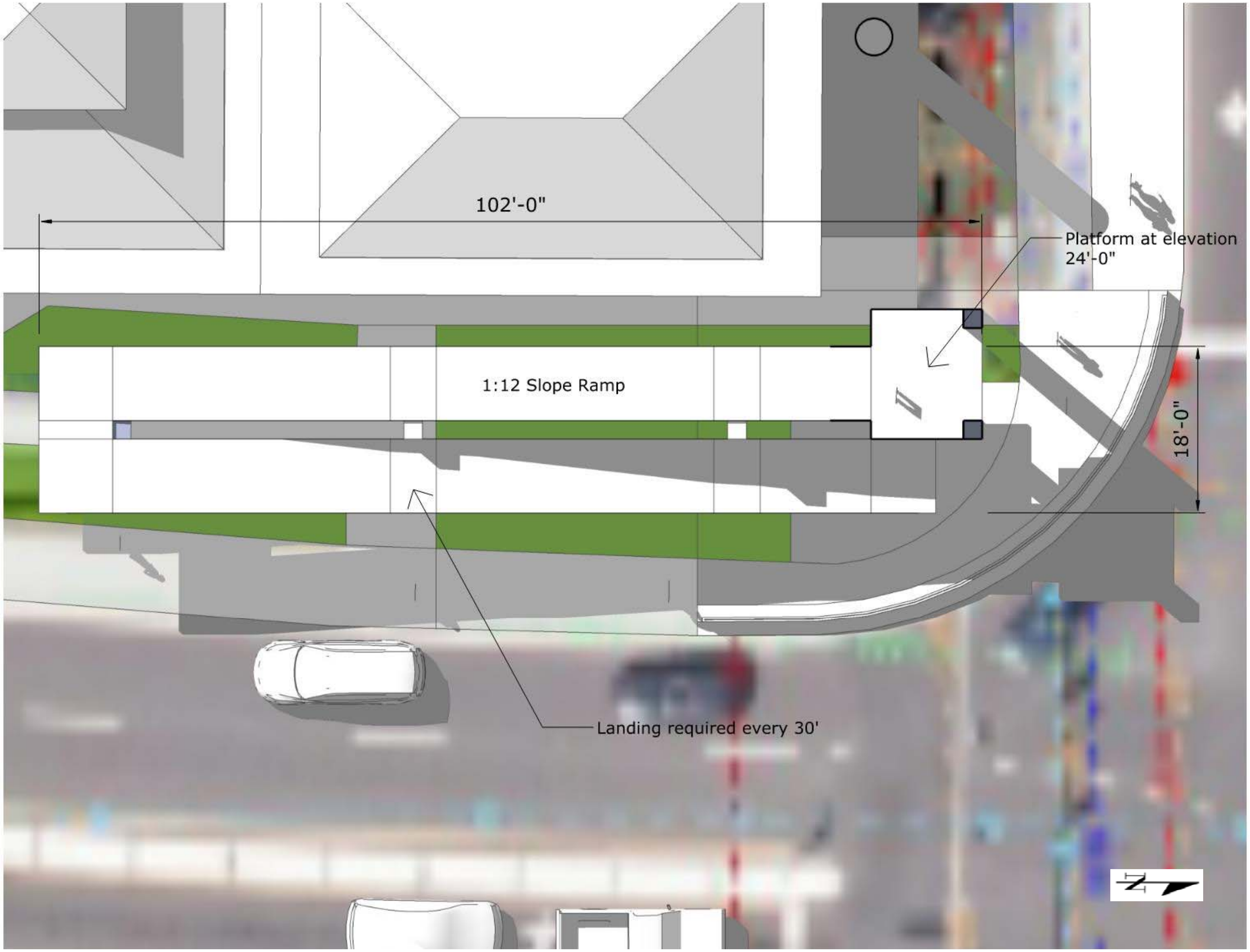

Bridge Tower Option 3



Ramp Option 4

Description

The Ramp option meets the needs of egress and accessibility in a single ramp component. The disadvantage to the ramp configuration is that users must climb or descend a ramp that is almost 350' long. The ramp is useable by strollers and bicycles. This option requires very little maintenance and has no power requirements or moving parts.

The biggest drawback to the ramp is its footprint size and its visual obstruction of the businesses on the 4 corners of the intersection.

The ramps are located along International Drive based on the availability or right of way and unencubered property along this roadway.

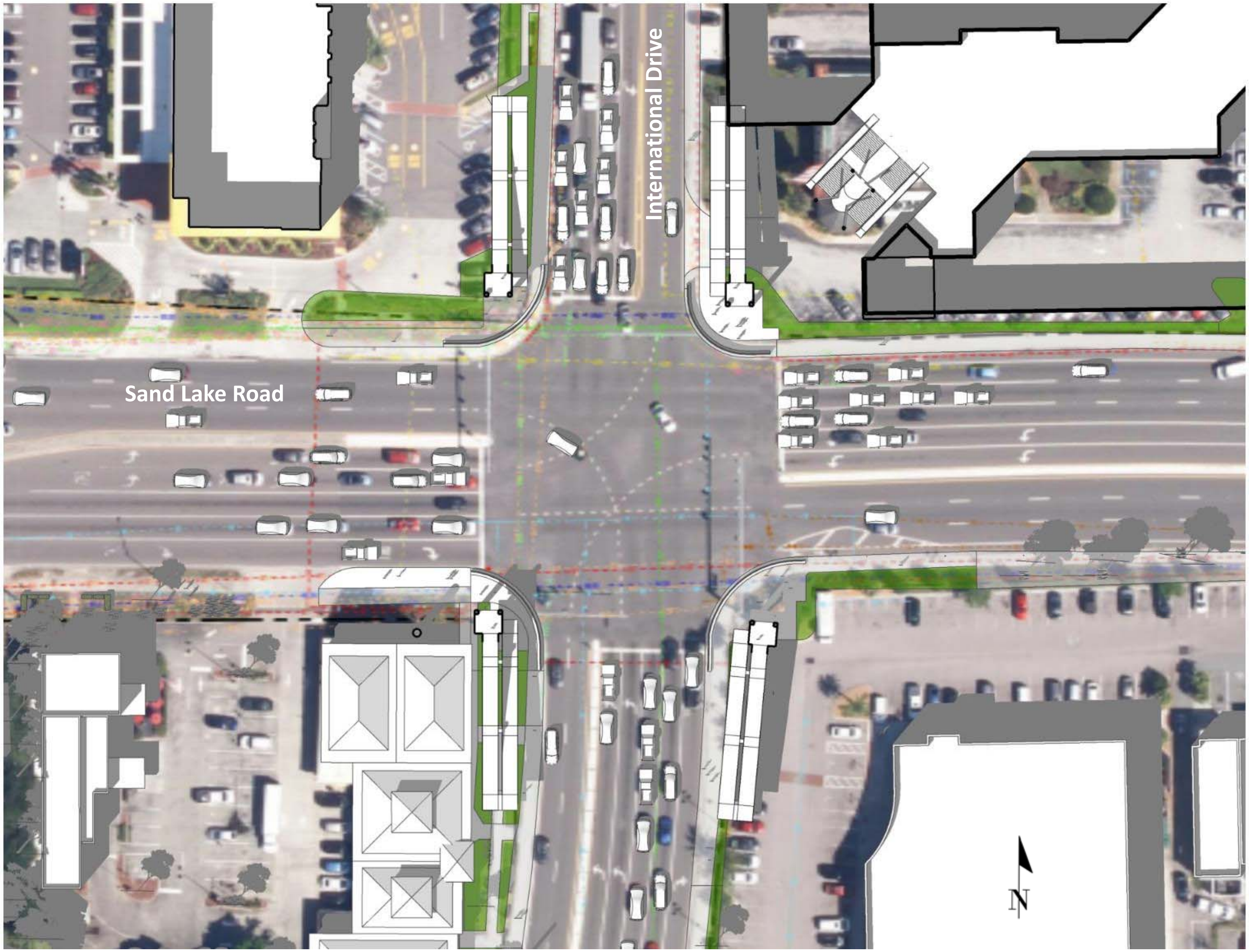
The Ramp is stretcher compliant and accessible by first responders.

The area required for this option is 18' x 100'.

Crosswalks have been removed.

Summary

Ground Floor Platform	192sf
Ramp Width	8' Wide
Total Ground Level Footprint	1728sf
Bridge Width	10'-0"



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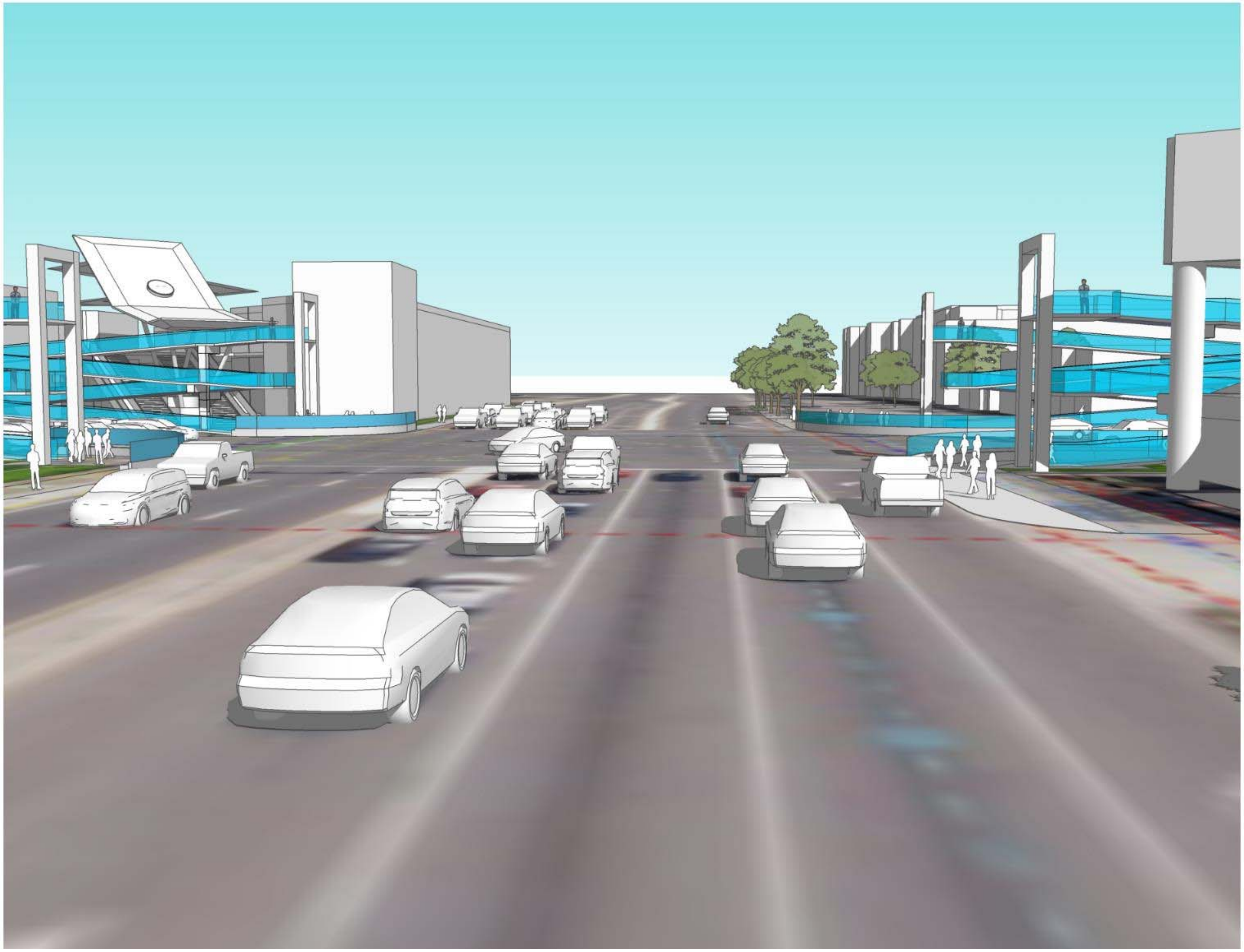

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The ramps are located along International Drive based on the availability or right of way and unencubered property along this roadway.

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The area required for this option is 18' x 96'.

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Ground Floor Platform	192sf
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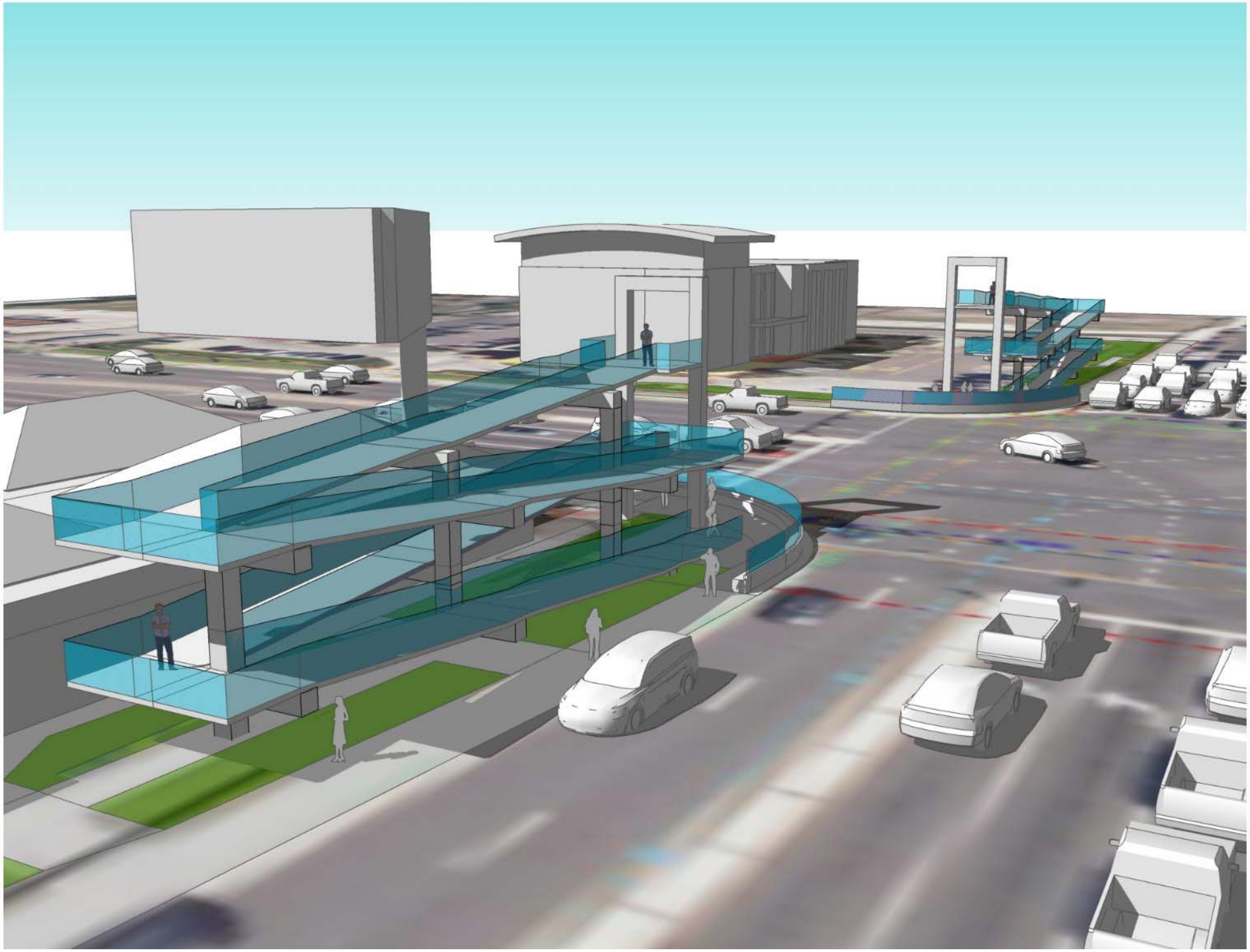

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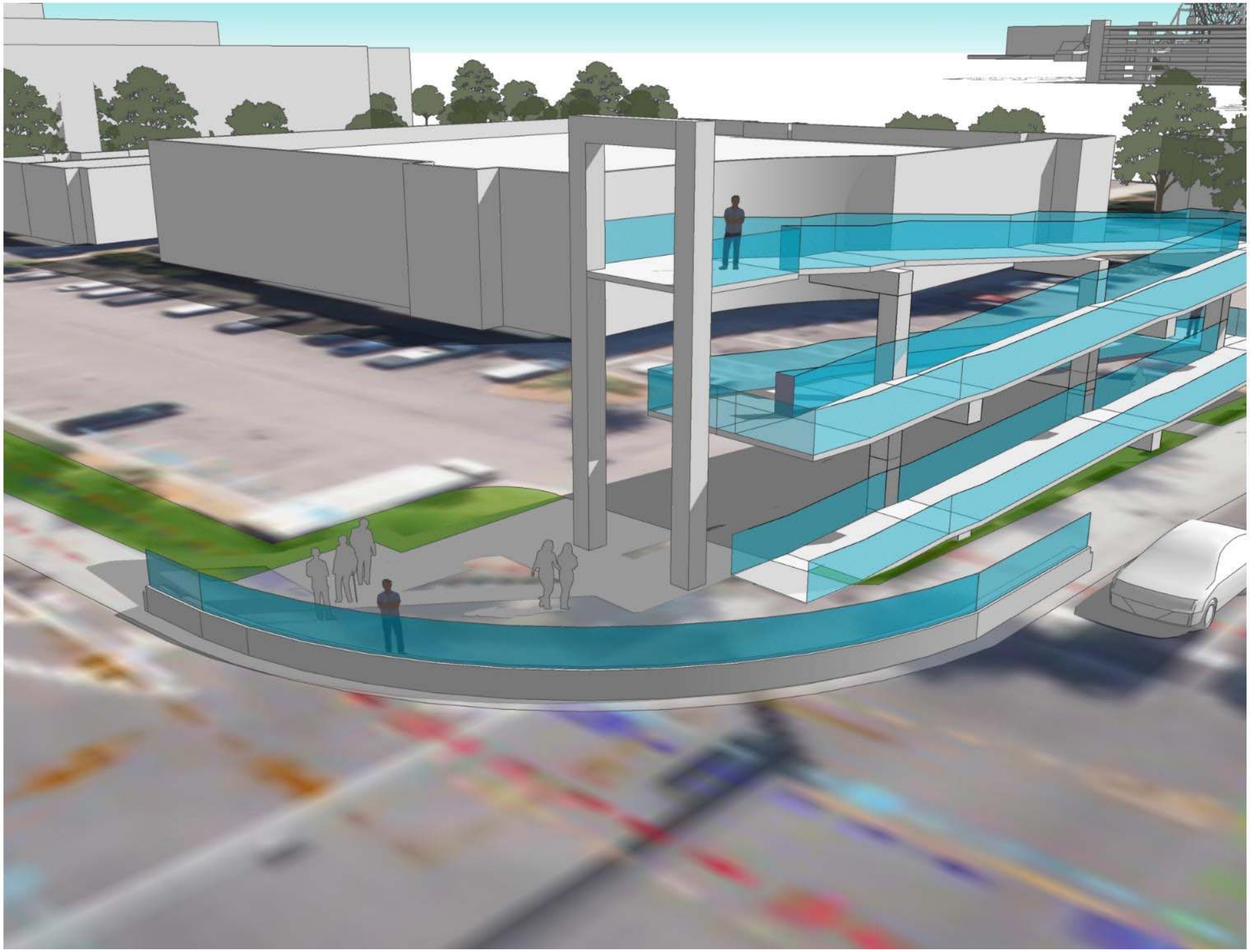

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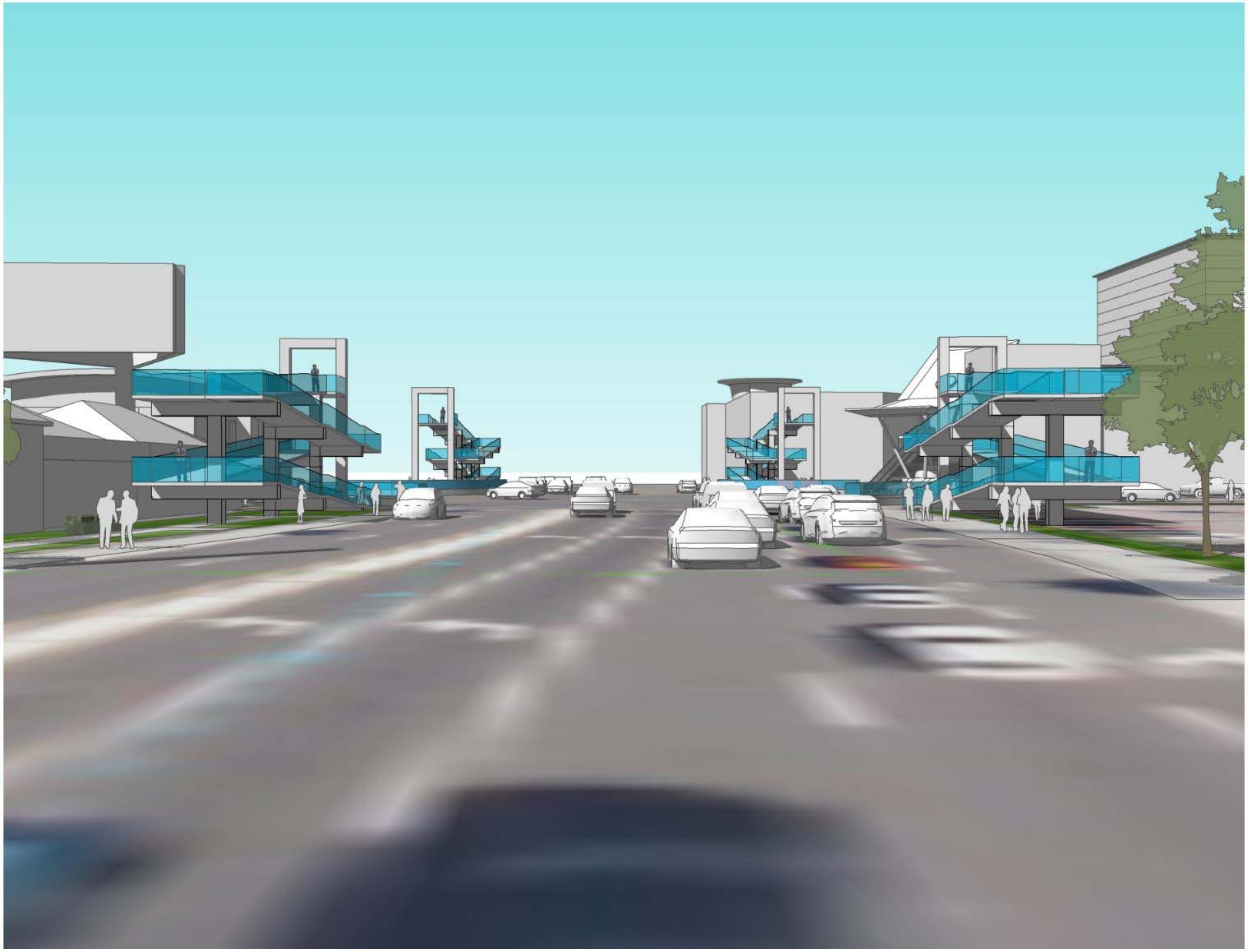

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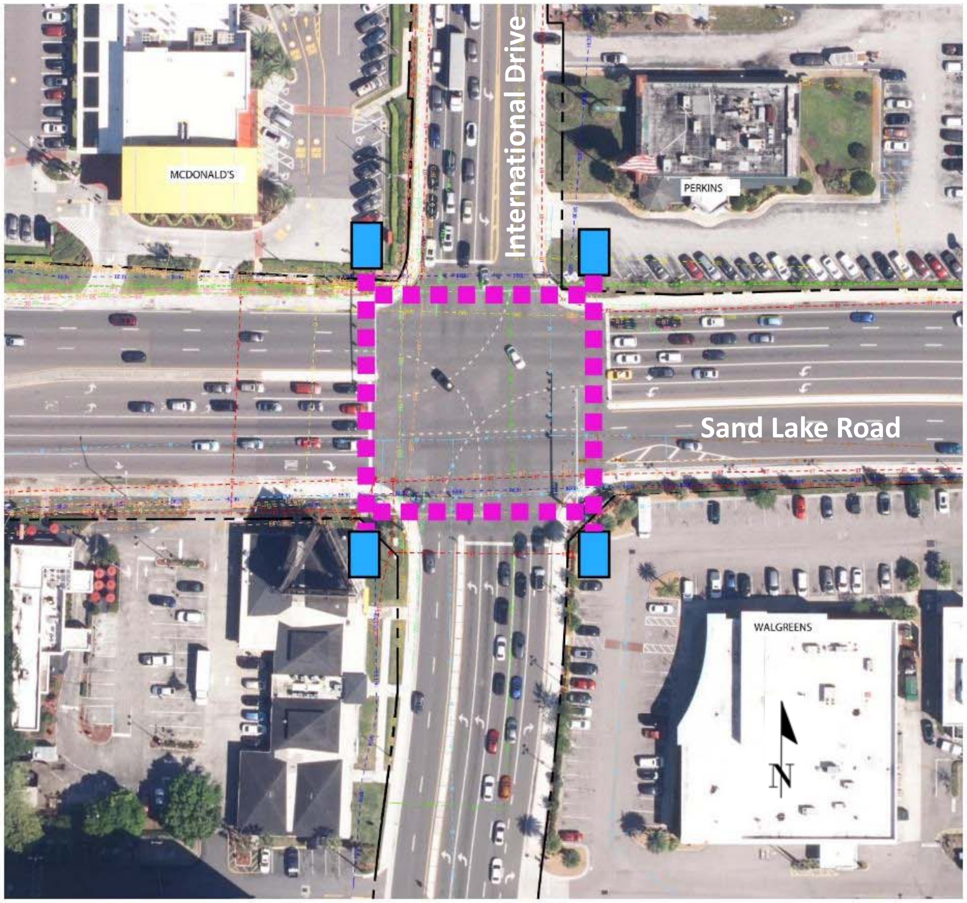
Meeting Number Two

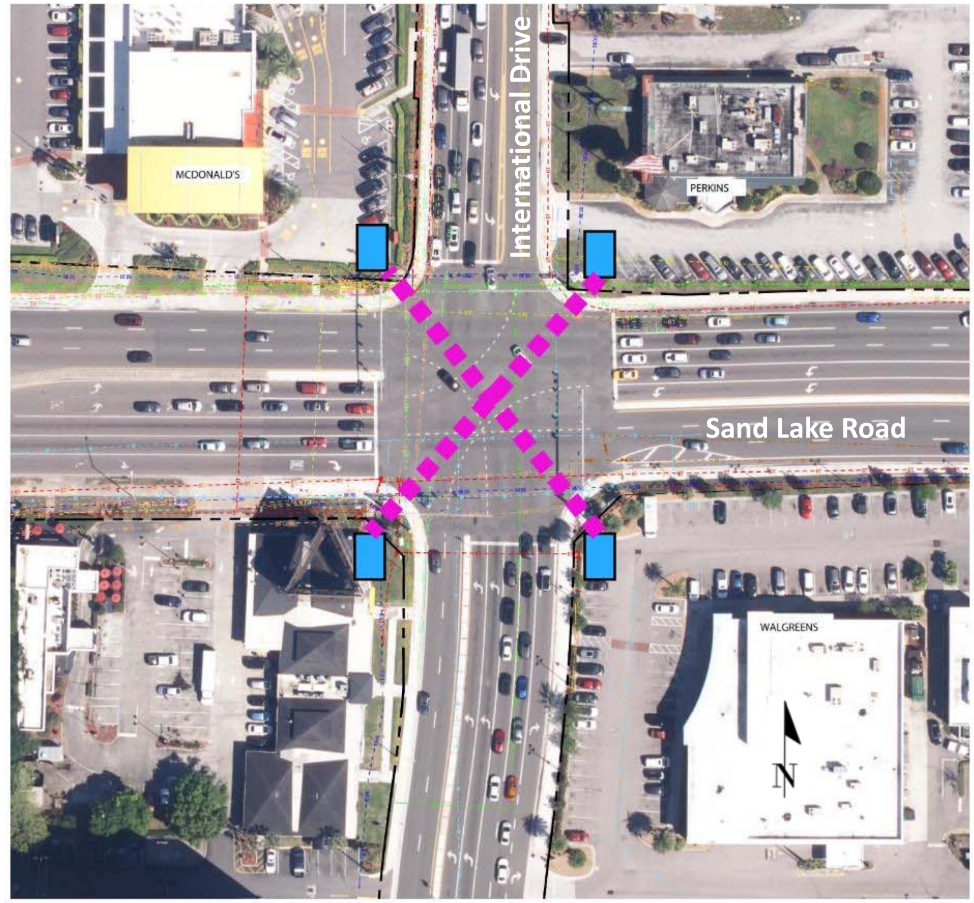
Conceptual Bridge Configuration Diagrams

ORANGE COUNTY GOVERNMENT FLORIDA

HHCP&AVCON
A JOINT VENTURE

Bridge Configurations





Option 1
Square Configuration

Simple configuration utilizes straight prefabricated bridge sections. Users must travel either right or left to the final destination. If the destination is diagonal, you will have to travel two segments of the bridge.

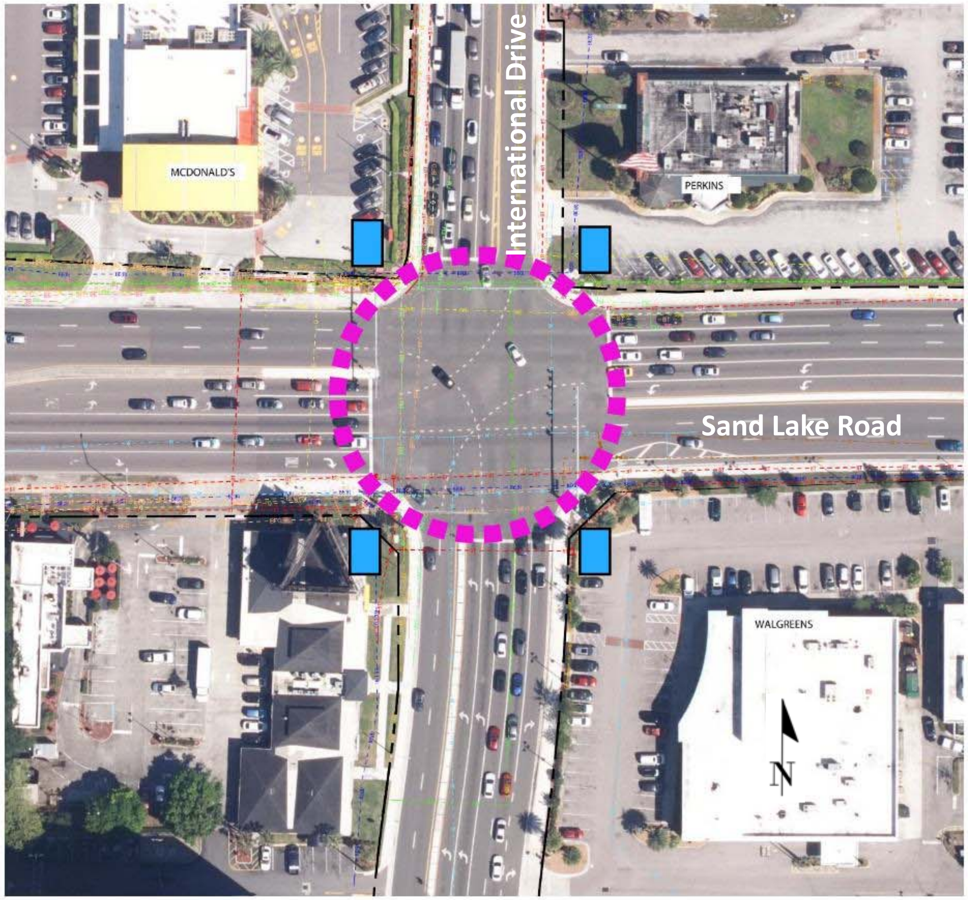
Option 2
"X" Configuration

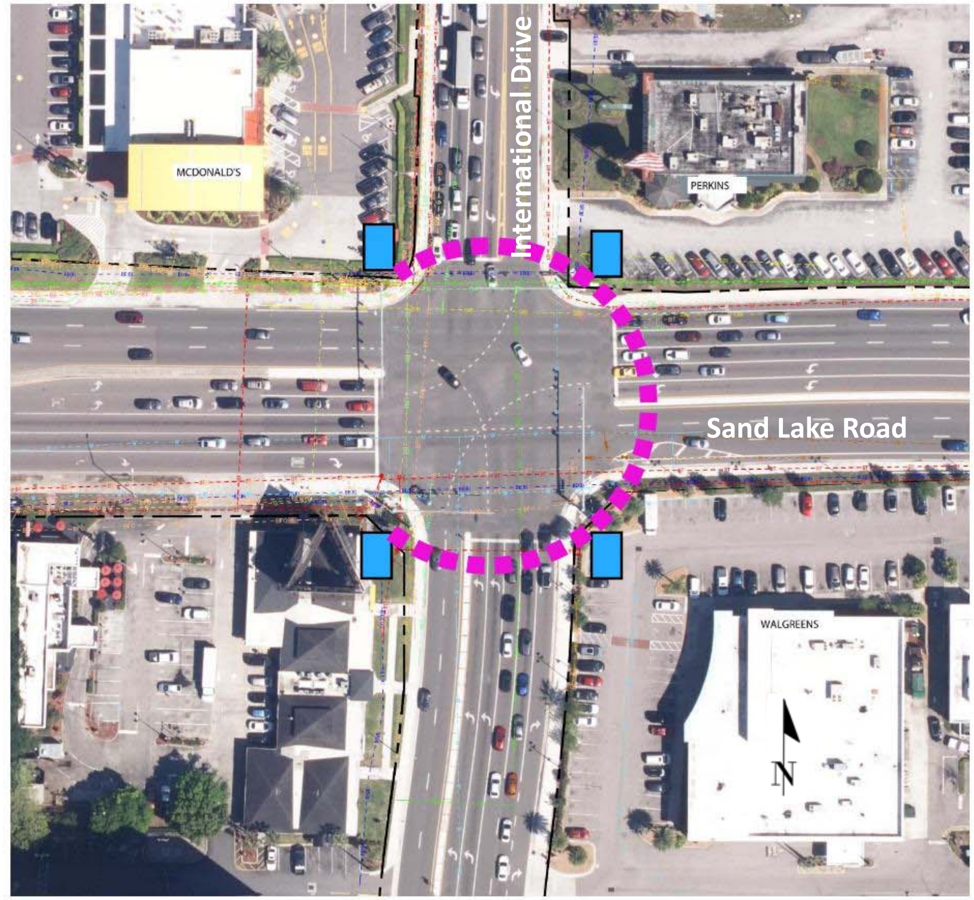
The "X" configuration utilizes prefabricated bridge sections and includes a shorter total bridge length than Option 1. Users travel approximately the same distance to any destination. That distance is slightly longer than a single span in Option 1.

Vertical Circulation Tower

Elevated Bridge

Bridge Configurations





Option 3
Circular Configuration

Operationally similar to the Square configuration, the Circular bridge eliminates 90 degree intersections and allows smooth flow around bridge in either direction. By walking in a continuous curve the appearance of the distance to the destination is reduced. This configuration can be assembled from Pre-fabricated bridge sections.

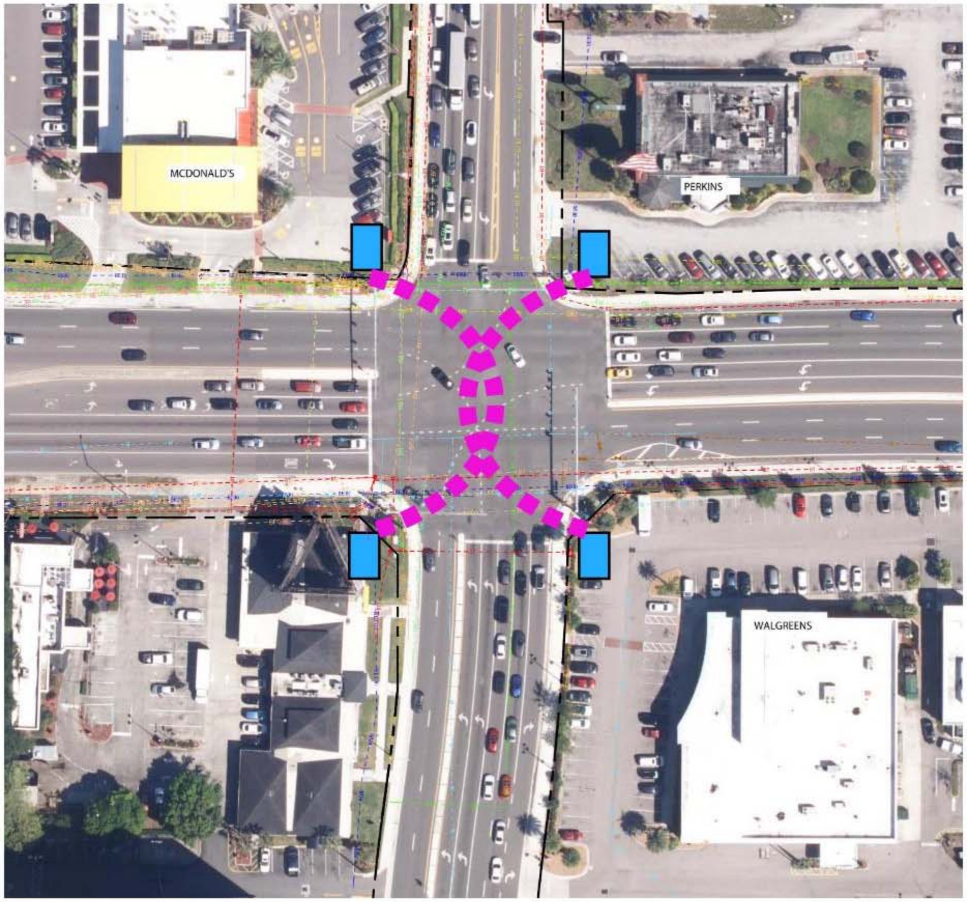
Option 4
"C" Configuration

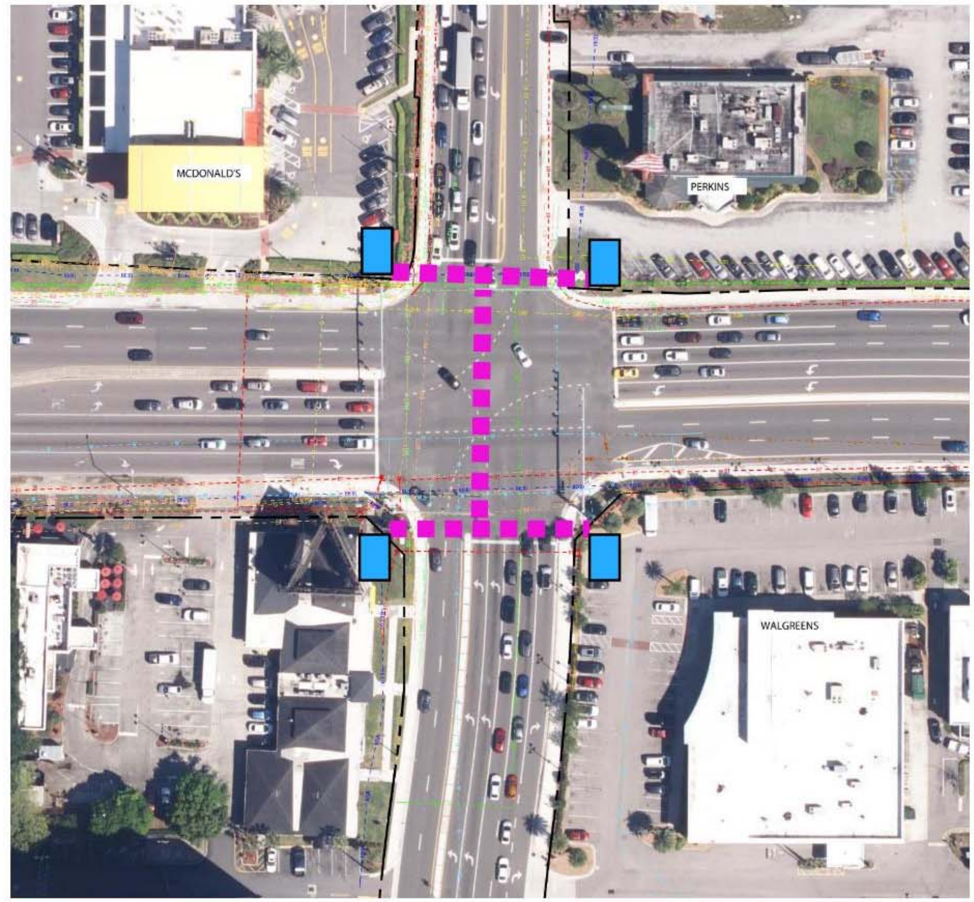
The "C" configuration utilizes prefabricated bridge sections and includes a shorter total bridge length than Option 3.
This configuration only increases the travel distance between the NW and SW corners. This configuration creates a unique gateway for automobiles coming from the I-4 interchange.

Vertical Circulation Tower

Elevated Bridge

Bridge Configurations





Option 5
Chanel Logo Configuration

Operationally similar to the "X" configuration, this bridge consists of two curved bridge sections that touch and connect in the middle. More dynamic than the "X" configuration, this configuration eliminates long straight views and can accommodate a transition area in the center of the intersection. This configuration can be assembled from Pre-fabricated bridge sections.

Option 6
"I" Configuration

The "I" configuration utilizes prefabricated bridge sections and includes a shorter total bridge length than Option 3.
This configuration is made up of simple straight bridge sections and creates a unique gateway for automobiles coming from the I-4 interchange. Similar to Option 5, this configuration provides shorter travel distances crossing east and west.

Vertical Circulation Tower

Elevated Bridge

Summary

- Preference for eliminating pedestrian crossing on grade.
- Elimination of the crosswalks will increase pedestrian safety and reduce traffic congestion.
- Wrapping Corner seat wall/barriers will be required to prevent people from attempting to cross the intersection on grade.
- Determined limited space exists in the ROW for Bridge vertical circulation tower and supports.
- Evaluation of Vertical Circulation Options identifies Ramps or Combination of Elevator and Stairs as the most viable options.
- We are seeking PAG input on Vertical Circulation Tower option preferences and will prepare development of Bridge Configuration options for next PAG meeting.

APPENDIX C

10-18-22 PAG Meeting #3
Meeting Minutes and Presentation

HHCP&AVCON
A JOINT VENTURE

Meeting Minutes

Date	October 18, 2022	Meeting Date	October 18, 2022
Project Name	International Drive (I-Drive) Pedestrian Bridge Overpass Intersection Analysis and Overpass Conceptual Design Study	Project #:	
Subject	Project Advisory Group (PAG) Meeting #3		
Participants	See Below		
Location	Embassy Suites 8250 Jamaican Court Orlando, FL 32819	Prepared By	Rick Baldocchi, P.E. Christine Dellert
Distribution	Meeting Participants		

- **Introduction of Participants**

Blanche Hardy, Orange County
Clint Pletzer, AVCON
Michael Chatham, HHCP
Krista Barber, OCCC
Marcos Bastian, Orange County
Richard Bilbao, Orlando Business Journal
Loreen Bobo, FDOT-District 5
Lucas Boyce, I-Drive CRA
James Bridge, OCSO
Brian Brink, OCFR
Luann Brooks, I-Drive District
Kristen Darby, Visit Orlando
Megan Dowdy, Dowdy Realty
RJ Dowdy, Dowdy Realty
Bradley Goeb, Universal Orlando
Stacy Huber, International Square
Georgette LeMieux, Oerther Foods Second Gen.
Marco Manzie, Paramount Hospitality Management
Sgt. Gerald (David) McDaniels, OCSO
Tabitha Moore, International Square
Chris Mueller, Hilton Orlando
Renzo Nastasi, Orange County
Marc Reicher, I-Drive CRA
Elizabeth Stone, OCFR
Craig Swygert, Clear Channel Outdoor
Alberto Vargas, Orange County
Josh Wallack, Mango's Tropical Café
Capt. Donald Woods, OCSO
Scott Workman, OCFR Fire Marshal

Public Advisory Group (PAG) Meeting #3 provided further details on the International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study, including a presentation of preliminary bridge concepts and a comparison of aesthetics for each concept. The meeting organizers also solicited comments from participants. A summary of the discussion is below.

Blanche Hardy introduced the purpose of the meeting and shared a PowerPoint presentation with information on preliminary bridge configuration concepts and a summary of findings. Items discussed included:

1. PAG
    a. The PAG consists of key study partners who will periodically meet (4-5 times) to provide strategic guidance and support to ensure the study meets its objectives.
    b. The project has the support of Orange County leadership, including Mayor Demings, who continues to look to this group to help provide the district with a vibrant pedestrian and bicyclist environment that enhances the entertainment and hospitality amenities of the area. The bridge is within Commissioner Siplin's District and adjacent to Commissioner Wilson's District.
2. Meeting Objectives
    a. The third meeting's purpose is to present preliminary bridge concepts and a comparison of aesthetics for each concept for a pedestrian overpass at the intersection of International Drive and Sand Lake Road. Comments and questions will be solicited from the group.
    b. Blanche offered a summary of the first two PAG meetings, which included:
        i. Including a barrier at intersections to prevent on-grade crossing;
        ii. Utilizing stairs and elevators at each intersection;
        iii. Minimizing impacts to the existing utilities and the property owners;
        iv. Creating an iconic gateway to the Convention and Entertainment District;
        v. Considering potential bridge connections to adjacent properties (both elevated and on-grade);
        vi. Considering the experience of those traveling under the bridge on foot or in vehicles, as well as those traveling on it;
        vii. Accommodate pedestrians, strollers, and bicycles in the bridge design; and
        viii. Ensuring ADA accessibility, as well as making sure the bridge is safe and accessible by area public safety officers and first responders.
3. Preliminary Bridge Concepts
    a. Blanche introduced Michael Chatham with HHCP to discuss six preliminary concepts.
    b. The team began reviewing the possible concepts based on bridge length. Every foot of the bridge could cost upward of $1,000. The team also considered walking distance and convenience for pedestrians as they developed preliminary concepts.
    c. Michael reviewed six configurations and showed diagrams of what each could look like:
        i. The square configuration has lengths of 126' and 166' bridge spans. If the destination is diagonal, you must travel the two segments of the bridge.
        ii. The "X" configuration is a much shorter configuration with two 210' spans, and no matter which corner you are traveling to, the walking distance will be the same.
        iii. The circular configuration is the longest of these options, however it provides a more dynamic experience for the pedestrian or traveler on the bridge. The distance between the points would be 171' and 237'.

iv. The "C" configuration removes one of the legs of the circular configuration, but it offers a much longer walk distance from Intersection A to Intersection D.
v. The "Chanel logo"—or "Intersecting "C"—is less in bridge length and walking distance and offers some advantages.
vi. The "I" configuration could be confusing for pedestrians because of the 90-degree turns.

4. Selected Bridge Tower Configurations
   a. Michael shared an image of a vertical circulation option discussed at the last meeting, which involved a switch-back staircase and an elevator. This option would provide an on-grade connection directly to the businesses and has an option for an elevator connection for businesses on the corners. This is the option his team used in its examples of the bridge concepts for this meeting.
5. Preliminary Bridge Configuration Concepts
   a. Michael showed several conceptual renderings of what the square configuration would look like from various angles.
   b. Michael shared an "X" configuration concept from various angles, with a small node in the center that provides extra space for travelers. This is the third shortest of the options studied.
   c. **Josh Wallack:** Would the "X" configuration be considered less massive than the previous option?
      i. Michael agreed that it would be because its bridge length is shorter.
   d. Michael shared an image from the I-Drive 2040 Vision Plan, which included a circular bridge. This was the least efficient option and the longest bridge of all the designs the team studied. However, because of its long, curving form, it is a nice experience for the pedestrian or traveler.
   e. Michael showed a series of conceptual renderings of the "C" configuration, which is an attempt to create a gateway coming from I-4 with different perspectives.
   f. Michael then showed "I" configuration conceptual renderings. This bridge option has several 90-degree corners that pedestrians would have to navigate, and walking distances are long.
   g. The team then showed a variation of the "I" that superimposed more curves into the "I" form.
   h. Michael shared a new concept with an "Intersecting C," which is the shortest walking distance of all the options concerned and all the lengths are curved so the experience is more dynamic for pedestrians, and it created a unique profile from all directions.
   i. Michael provided a Bridge Configuration Evaluation Matrix that rated each of the options based on travel distances between the intersections, the average travel distance, and bridge length.
      i. The Intersecting "C" configuration scored best, followed by the "I" configuration and "X" configuration tied.

ii. **RJ Dowdy:** How is the "I" configuration shorter than the 'X?"
1. Michael said the "I" is shorter because the center section was only measured once.

iii. **Marc Reicher:** On the "Intersecting C" configuration, what would happen if you connected east and west I-Drive straight across?
1. Michael said that is a possibility the team could look at as these are developed further.

iv. **Josh Wallack:** Would each of these options need the same footprint from adjacent properties to build?
1. Michael said it could vary depending upon the structure and would have more information as the study continues. The team expects it can build it in the same/similar footprint.

j. Michael provided a second evaluation matrix that scored each configuration option based upon structural complexity, predicted relative cost factor, and design icon value. The "C" configuration scored the best, followed by the "Intersecting C" configuration.

6. Summary Discussion and Comments

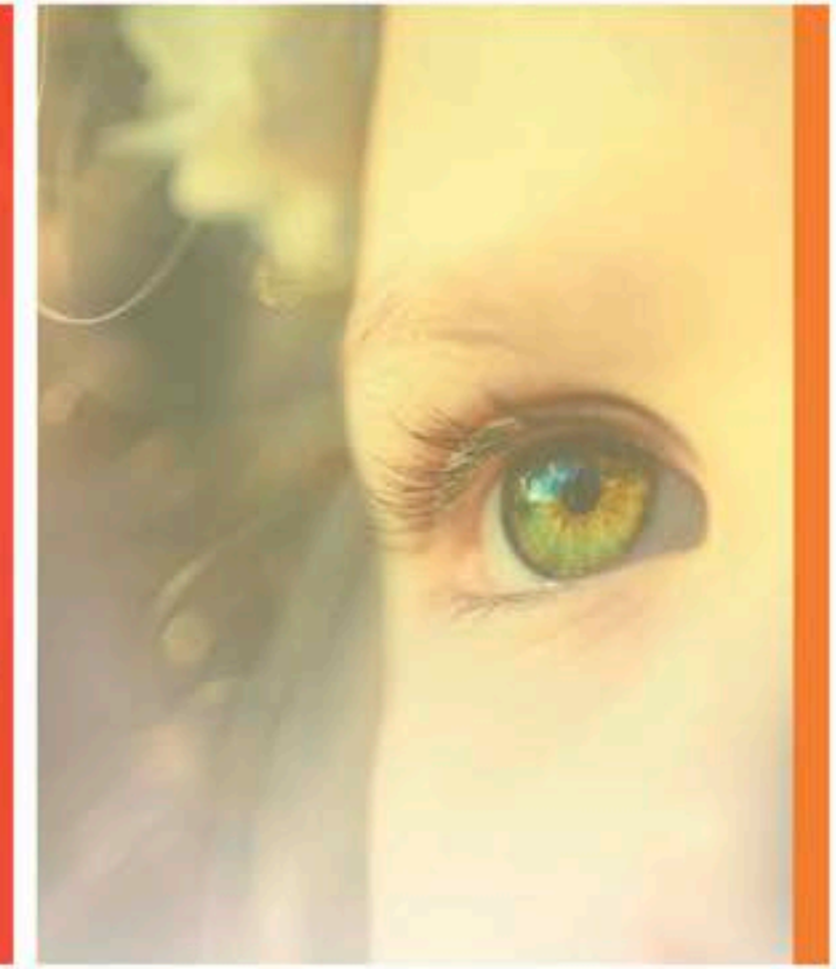
a. Blanche Hardy shared a summary for the PAG:
i. The curved bridge configurations create a more dynamic visual and a better experience for the bridge user.
ii. The elimination of the crosswalks will increase pedestrian safety and reduce traffic congestion.
iii. The corner wrapping seat wall/barrier will be required to prevent people from attempting to cross the intersection on grade.
iv. The bridge configuration has little impact on space required at intersection corners.
v. The Bridge Configuration Evaluation Matrix showed the "Intersecting C" configuration to be the highest-rated option (lowest score).
vi. We are seeking input from the PAG on the preferred configuration to meet the operational, aesthetic, budget, and iconic gateway criteria.

b. **RJ Dowdy:** Any of the bridges can be made iconic; the cost and ability to complete the project outweigh other considerations. The square configuration is the least attractive. Prefers the "X" for its simplicity. The pedestrians' goal is to get back on the ground and arrive at their destination.

c. **Brian Brink:** Will the bridge be covered the entire way? Anything on the bridge or covering it could limit Fire Rescue's ability to access it, including any structure over the middle of the intersection.
i. Blanche said there are several options and would bring those back next time and would like to have the option of installing solar. Blanche also asked for Fire Rescue's truck clearances.
ii. Michael said that in the 2040 Vision plan there were 10-story buildings that could exist one day along Sand Lake Road.

d. **Chris Mueller:** The "Intersecting C" design would keep people moving.
e. **Josh Wallack:** The corners' existing conditions have been well thought through, and the project looks more viable without a lot of displacement. The options have been thoughtfully designed to avoid massive changes at the four intersection properties.
f. **Marc Reicher:** Why would the bridge be enclosed and covered? This could become a gathering space for people. Would rather spend project money on the project's aesthetics and making it iconic.
    i. Michael said he believes there is an FDOT requirement to prevent people from throwing items into the intersection below. Blanche said they had looked at some type of covering options that would allow for the installation of photovoltaics and would bring back more options at the next meeting.
g. **Scott Workman:** The configurations do not matter as much as meeting the life safety protocol. For a non-sprinkled structure, would prefer a shorter travel distance.
h. **Georgette LeMieux:** The "C" configuration does not provide us with the benefits of the properties on the other corners. Pedestrian safety is paramount.
i. **Krista Barber:** In favor of the "Intersecting C" design so that people do not miss their turns while walking in a straight line and offering a nice view.
j. **Sgt. Gerald McDaniels:** Concerned that all the renderings are showing barriers that are so short on grade that they will not stop people from trying to cross in traffic.
    i. Michael said these will need to be extended and expanded.
k. **Craig Swygert:** Would it be helpful to rank these based on the Fire Department's protocol?
l. **Clint Pletzer:** Asked about the clearance for the fire trucks in the middle of the intersection and requested the dimensions.
    i. Brian provided details on how the trucks could be maneuvered in traffic. Orange County said it would discuss this issue in more detail.
m. **Tabitha Moore:** Has the team considered the future FDOT project to widen Sand Lake Road?
    i. Clint said they have the information on the project and are taking it into account.
n. **RJ Dowdy:** Could the team provide a larger site plan or basic overlay to look at the project site? The team also needs to consider security and special patrolling.
o. Blanche summarized that the team heard a favor for the "Intersecting C" and the need to meet with the Fire Department. The team will consider what was said at this meeting to propose modifications to that configuration.
p. **Stacy Huber:** We are in favor of the "X" configuration.
q. **RJ Dowdy:** Also in favor of the "X" configuration.
r. **Josh Wallack:** Can we also say that the bridge right now is constructable without displacing any tenants?

        i. Blanche says it appears that way.
    s. Orange County called for an informal vote from non-County PAG attendees on configuration preference:
        i. Square—0
        ii. Open C—0
        iii. Circle—0
        iv. I—0
        v. X—7
        vi. Intersecting C—5
    t. The team will move forward with further exploration of the “X” and “Intersecting C” configurations.
7. Next Meeting
    a. Will share more details on the bridge design at the next meeting.



ORANGE COUNTY GOVERNMENT FLORIDA

International Drive Pedestrian Overpass
Analysis and Overpass Conceptual Design Study

Project Advisory Group Meeting #3

HHCP&AVCON
A JOINT VENTURE

Project Advisory Group
Meeting Objectives

Meeting Number Three
- Presentation of Preliminary Bridge Concepts
- Comparison of Aesthetics for Each Concept
- Comments from Group Members

Meeting Number One
Introduction of Participants
General Overview of Project
Initial Comments from Group Members

Meeting Number Two
Presentation on Findings of Existing Conditions
Discussion of General Bridge Features; Ramps, Stairs Elevators, etc.
Discussion of Right-of-Way and Access impacts
Discussion of Utility Impacts
Comments from Group Members

Meeting Number Three
Presentation of Preliminary Bridge Concepts
Comparison of Aesthetics for Each Concept
Comments from Group Members

Meeting Number Four
Presentation of Refined Bridge Concepts
Discussion of Refined Aesthetics
Further Discussion of Right-of-Way and Access Impacts
Further Discussion of Utility Impacts
Final Comments from Group Members

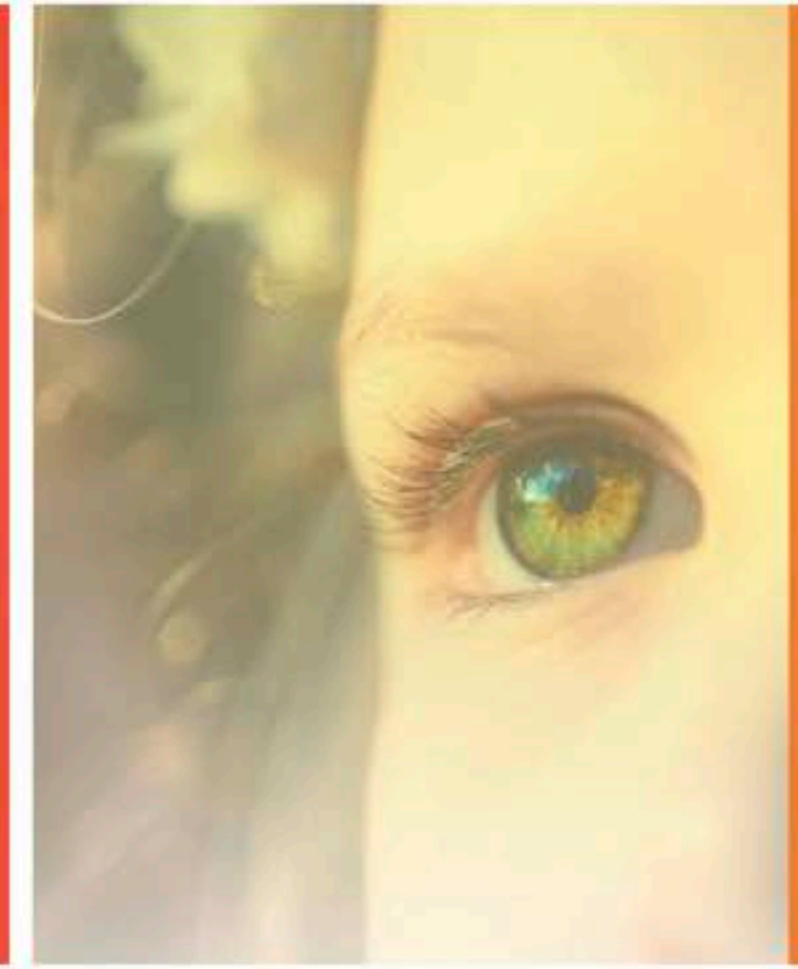
Meeting Number Five
Presentation of Final Concept Plans for 3 Alternatives
Presentation on Evaluation Method and Rankings
Discuss Rankings and Determination of Preferred Alternative

Jerry L. Demings
Orange County Mayor

Victoria P. Siplin
District 6 Commissioner

Results of PAG meeting 1 & 2

1. Include barrier at intersections to prevent on grade crossing.
2. Utilize Stair and Elevator at each intersection (best option for each corner)
3. Minimize impact on existing utilities and on adjacent property owners.
4. Create an Iconic Gateway to the Convention and Entertainment District
5. Consider potential bridge connections to adjacent properties (both elevated and on grade).
6. Consider experience of those traveling under the bridge as well as those experiencing the bridge by crossing it.
7. Bridge design should consider pedestrians, strollers, and bicycles.
8. ADA accessibility is critical at all intersections.



Meeting Number Three

Preliminary Bridge Concepts

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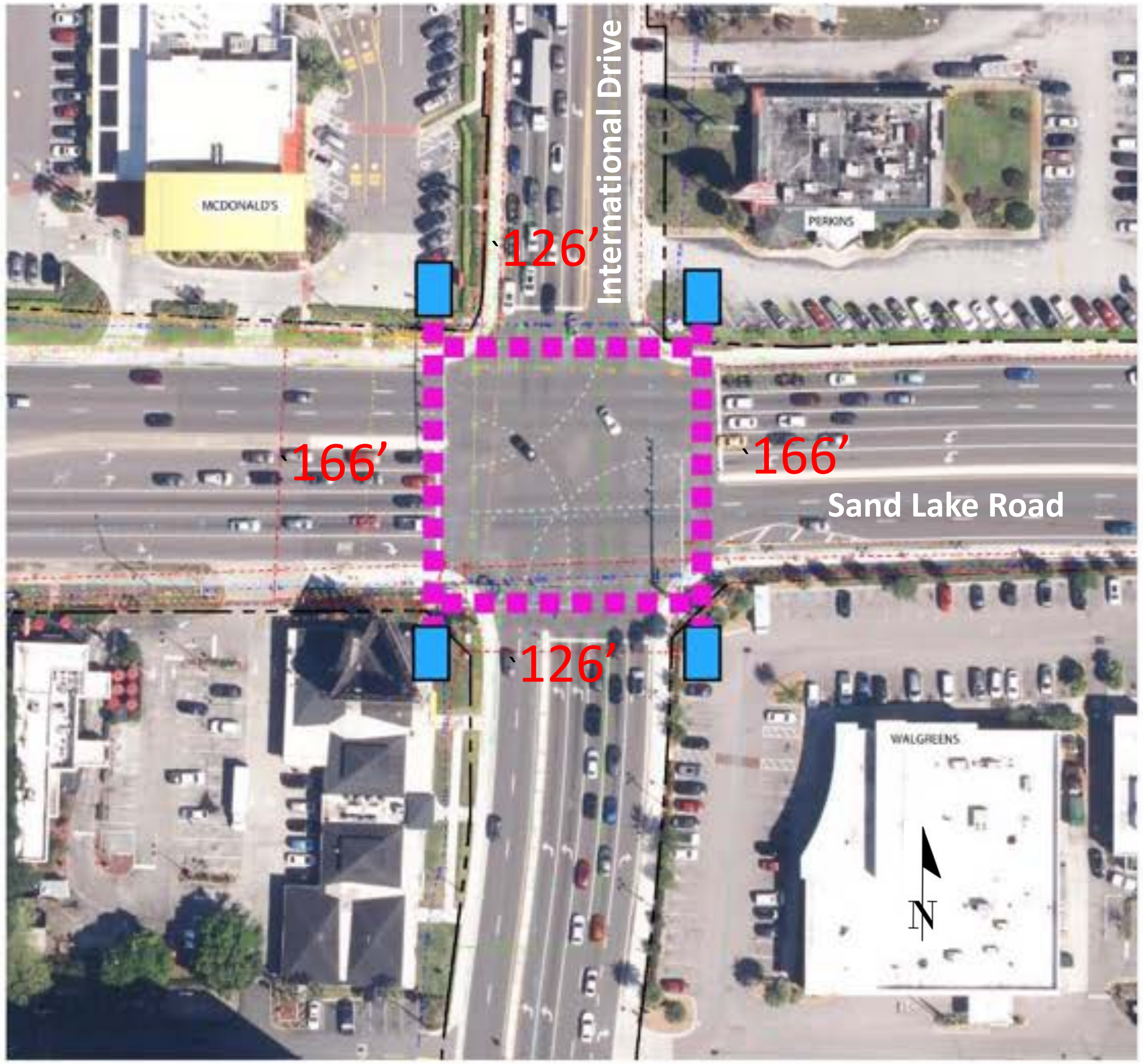
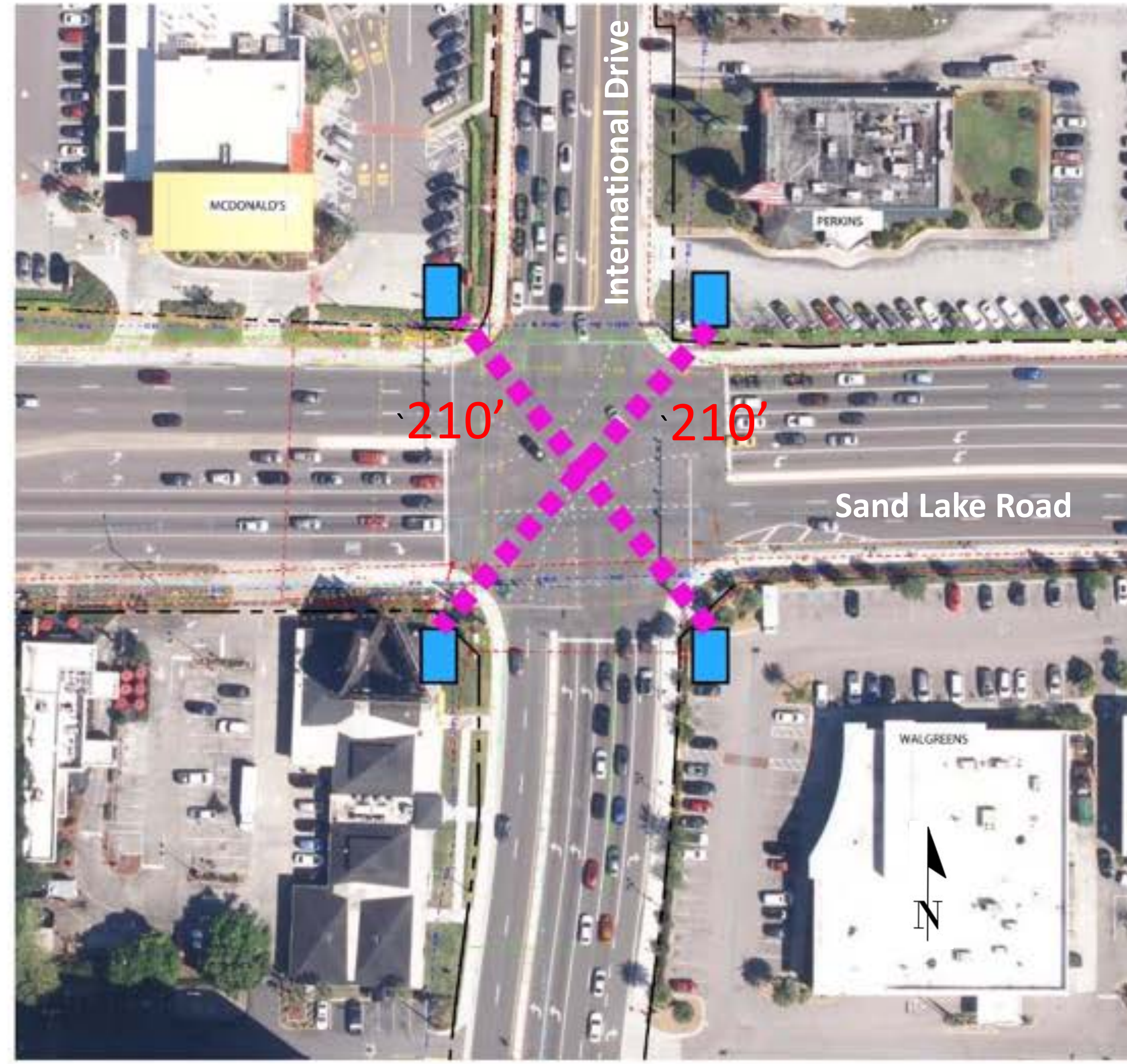
Bridge Configurations





Option 1
Square Configuration

Simple configuration utilizes straight prefabricated bridge sections. Users must travel either right or left to the final destination. If the destination is diagonal, you will have to travel two segments of the bridge.

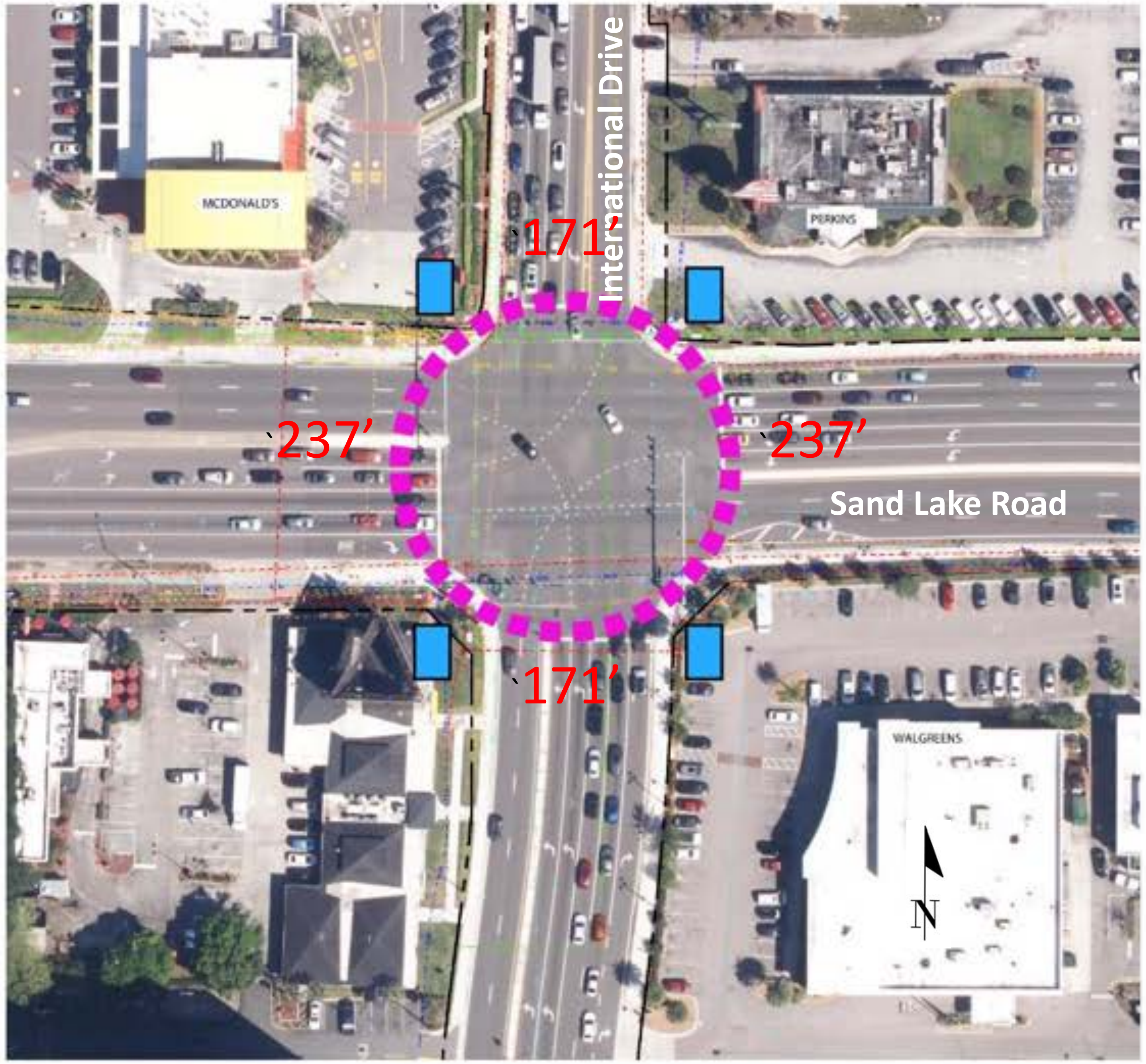
Option 2
"X" Configuration

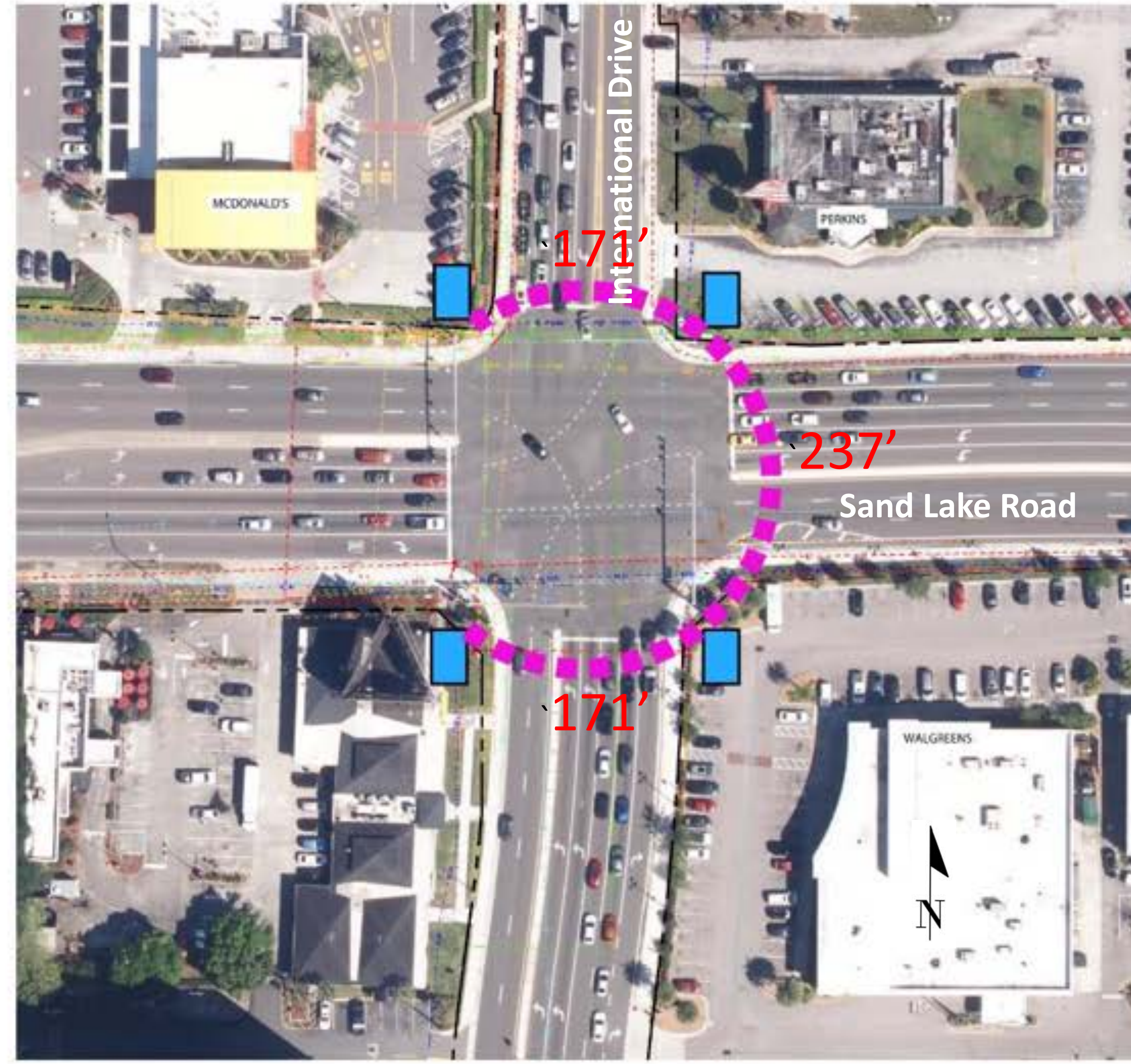
The "X" configuration utilizes prefabricated bridge sections and includes a shorter total bridge length than Option 1. Users travel approximately the same distance to any destination. That distance is slightly longer than a single span in Option 1.

Vertical Circulation Tower

Elevated Bridge

Bridge Configurations





Option 3
Circular Configuration

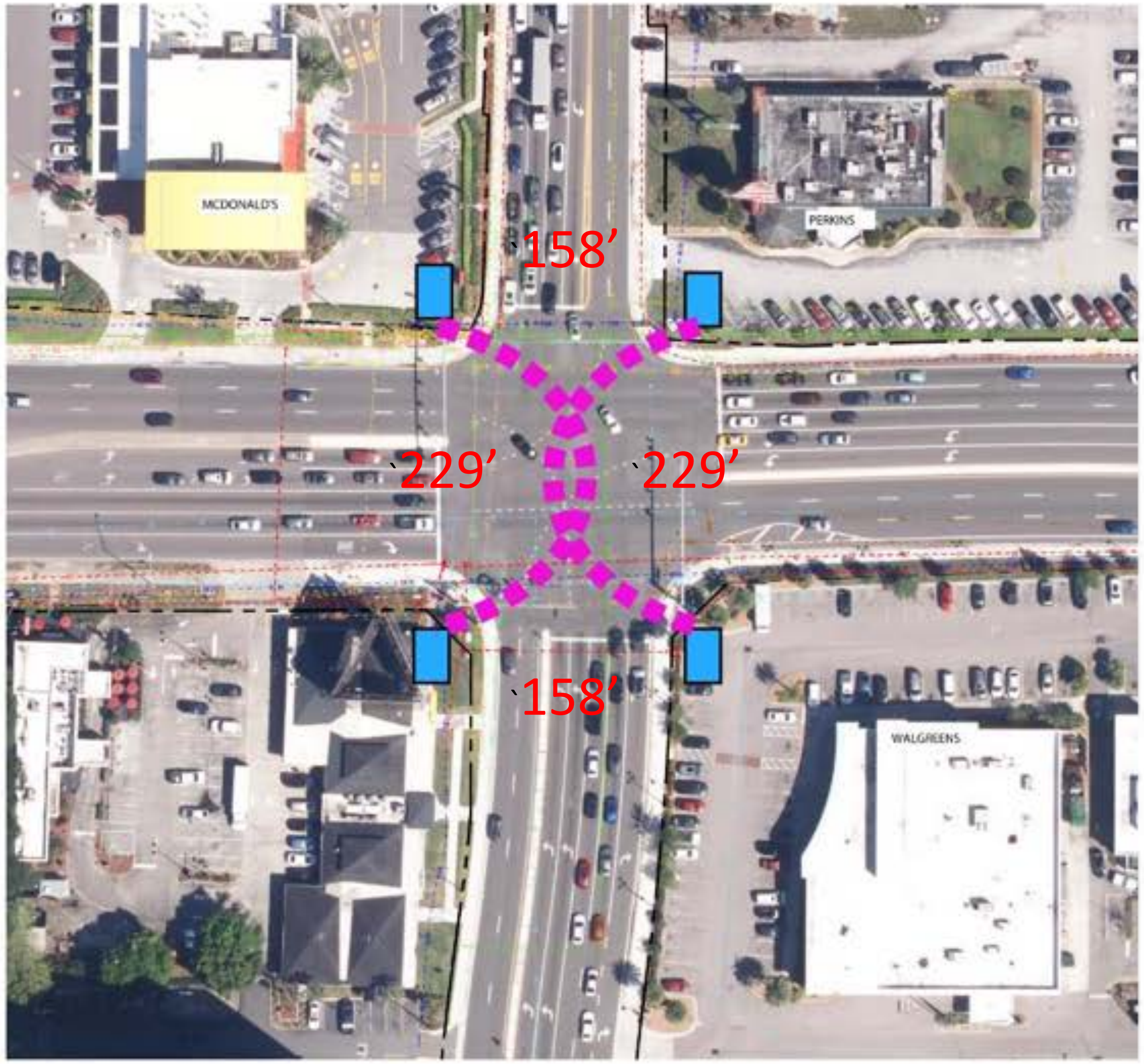
Operationally similar to the Square configuration, the Circular bridge eliminates 90 degree intersections and allows smooth flow around bridge in either direction. By walking in a continuous curve the appearance of the distance to the destination is reduced. This configuration can be assembled from Pre-fabricated bridge sections.

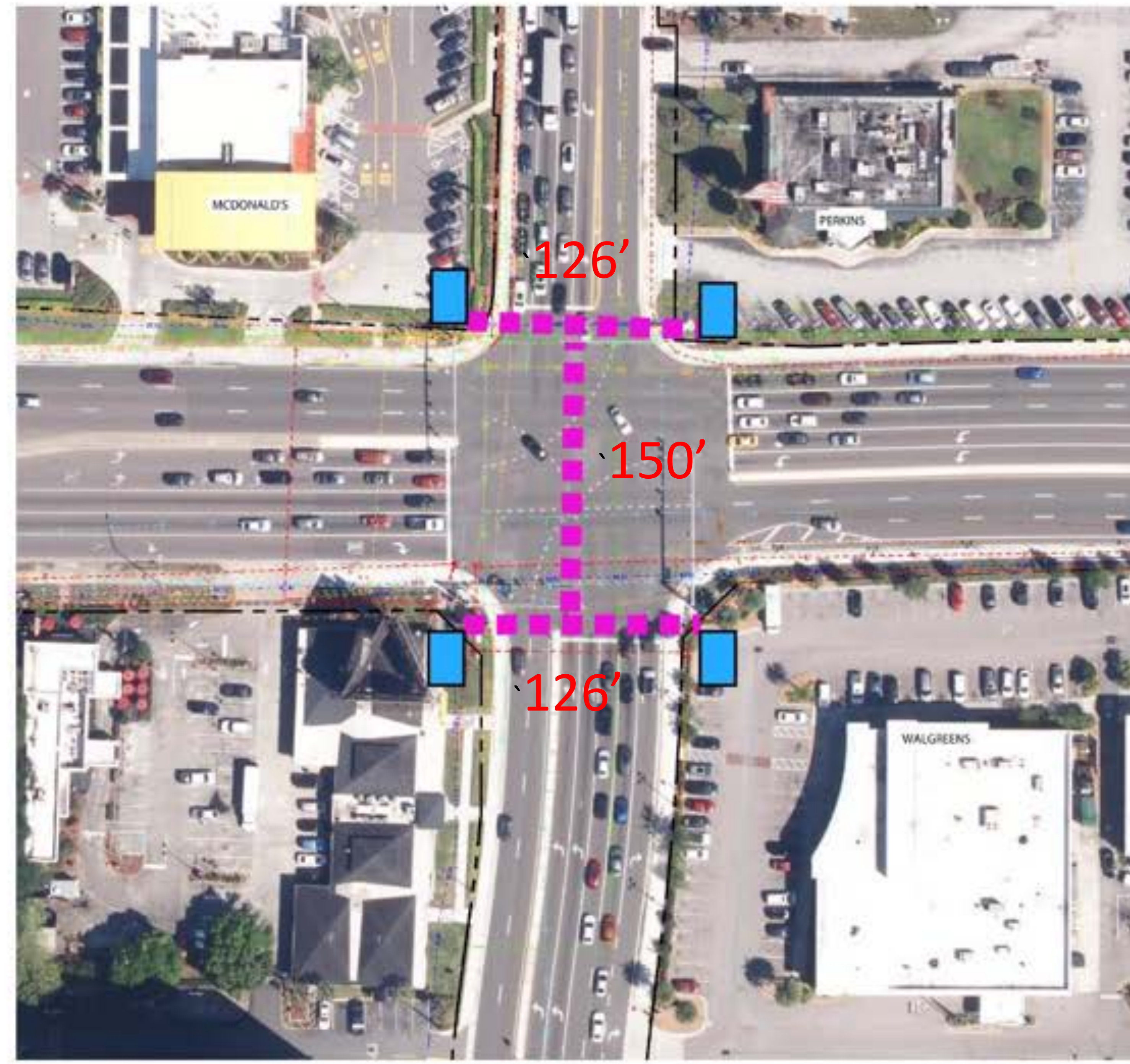
Option 4
"C" Configuration

The "C" configuration utilizes prefabricated bridge sections and includes a shorter total bridge length than Option 3.
This configuration only increases the travel distance between the NW and SW corners. This configuration creates a unique gateway for automobiles coming from the I-4 interchange.

Vertical Circulation Tower

Elevated Bridge





Option 5
Chanel Logo Configuration

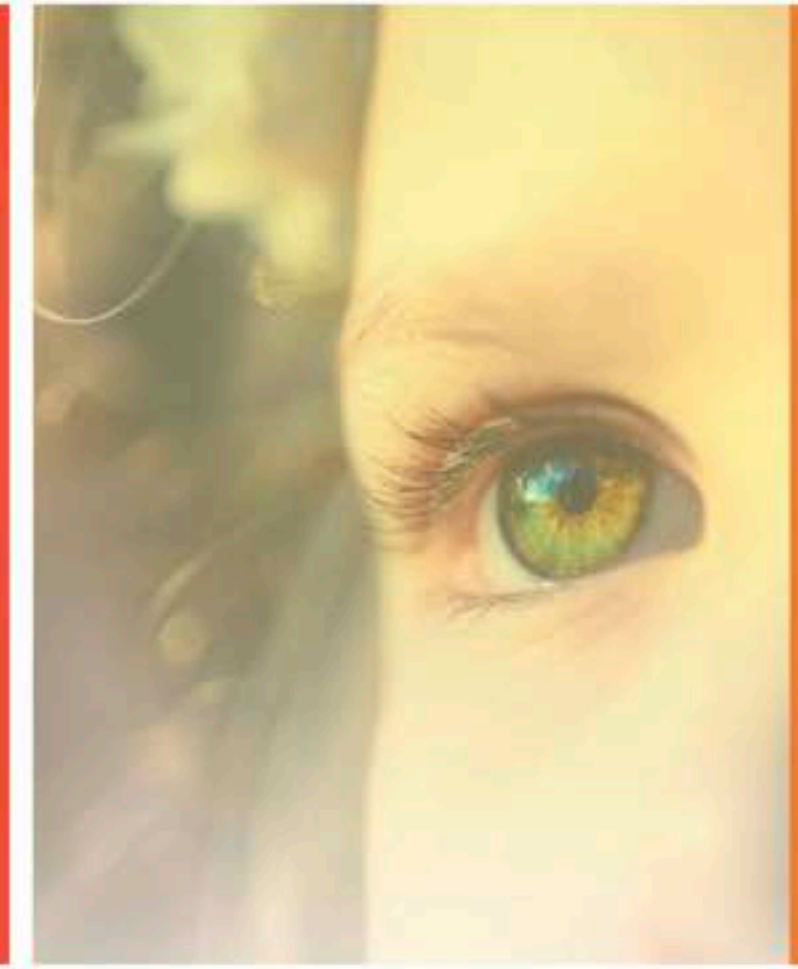
Operationally similar to the "X" configuration, this bridge consists of two curved bridge sections that touch and connect in the middle. More dynamic than the "X" configuration, this configuration eliminates long straight views and can accommodate a transition area in the center of the intersection. This configuration can be assembled from Pre-fabricated bridge sections.

Option 6
"I" Configuration

The "I" configuration utilizes prefabricated bridge sections and includes a shorter total bridge length than Option 3.
This configuration is made up of simple straight bridge sections and creates a unique gateway for automobiles coming from the I-4 interchange. Similar to Option 5, this configuration provides shorter travel distances crossing east and west.

Vertical Circulation Tower

Elevated Bridge



Meeting Number Three

Selected Bridge Tower Configurations

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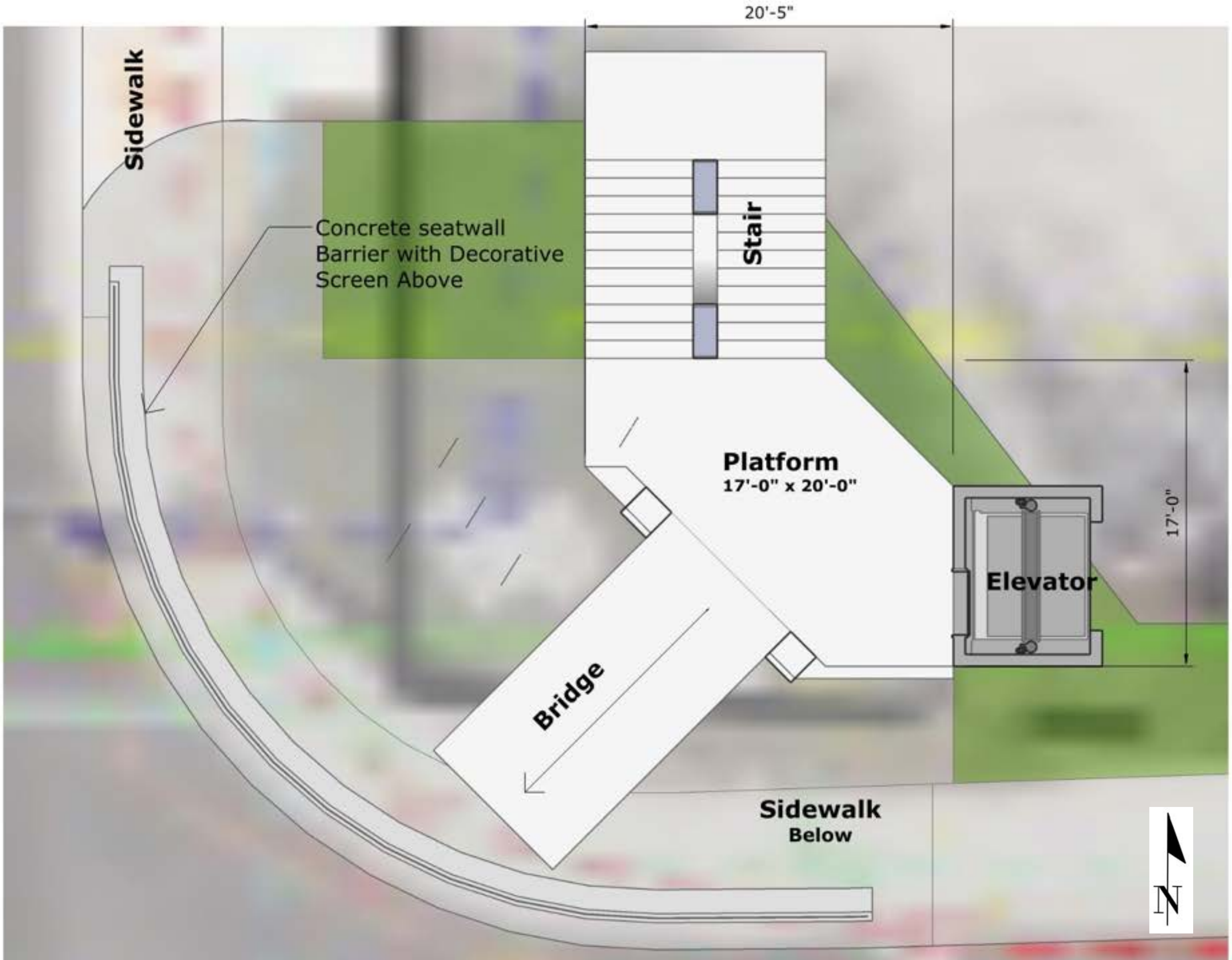


Bridge Tower Option 2

Description

A very inviting stair traversing 24'-0" in height. Each stair run is 6' rise. The treads are 12" and the risers are 6" for easy climbing.

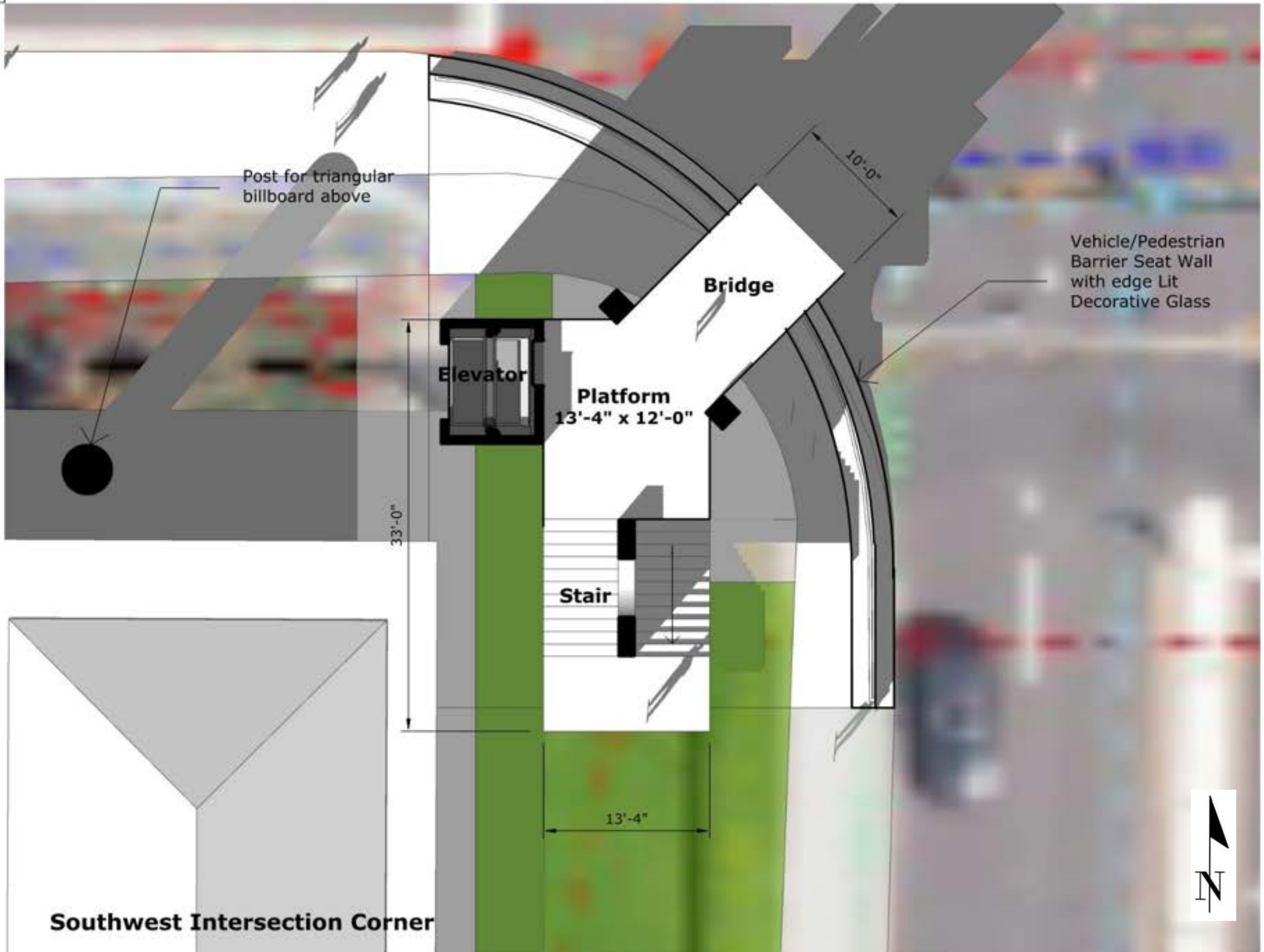
The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 35' x 40'

Crosswalks have been removed.

Summary

Ground Floor Platform	221sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	531sf
Bridge Width	10'-0"



Bridge Tower Option 1

Description

A very inviting stair traversing 24'-0" in height. Each stair run is 4' rise. The treads are 12" and the risers are 6" for easy climbing.

The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 22' x 24'

Glass Back Elevator provides additional Safety and creates a visual feature

Seat bench barrier and protective screen wall protects pedestrians and prevents on grade crossing.

Crosswalks have been removed.

Summary

Ground Floor Platform	192sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	506sf
Bridge Width	10'-0"

Bridge Tower Option 3

Description

A very inviting stair traversing 24'-0" in height. Each stair run is 4' rise. The treads are 12" and the risers are 6" for easy climbing.

The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 22' x 24'

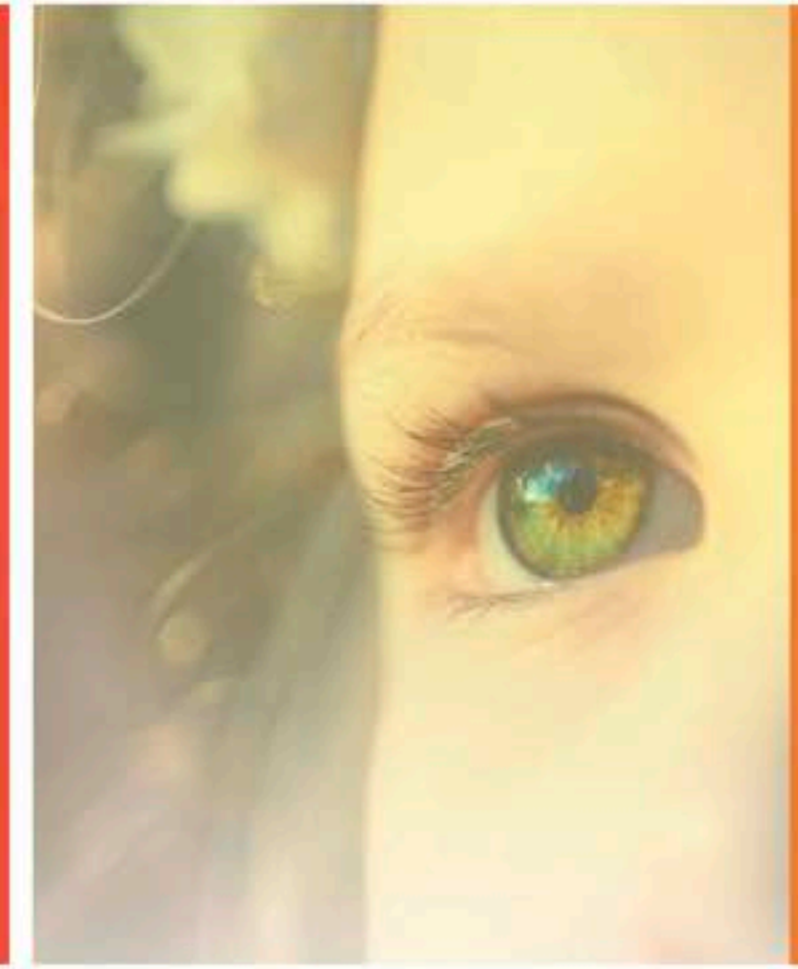
Glass Back Elevator provides additional Safety and creates a visual feature

Seat bench barrier and protective screen wall protects pedestrians and prevents on grade crossing.

Crosswalks have been removed.

Summary

Ground Floor Platform	192sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	506sf
Bridge Width	10'-0"

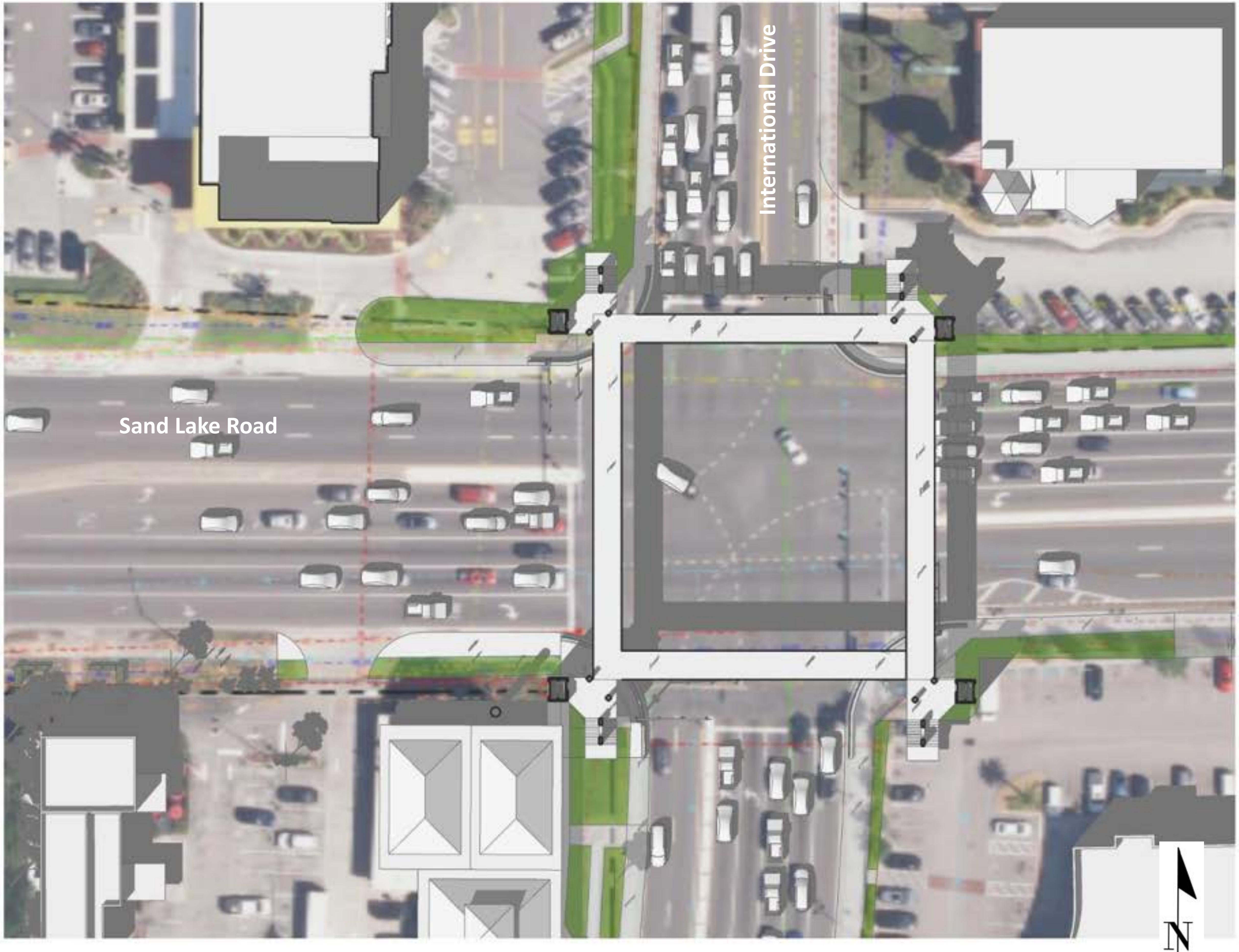


Meeting Number Three

Preliminary Bridge Configuration Concepts

ORANGE COUNTY GOVERNMENT FLORIDA

HHCP&AVCON
A JOINT VENTURE



Bridge Configuration Square Option

Description

The square bridge configuration is the most pragmatic of the options reviewed.

The square bridge has the simplest structural configuration with four simple bridge spans.

The most challenging part of this configuration is its simplistic form, and lack of dynamic quality. This option suffers from its lack of positive user experience with the focus of crossing being straight ahead with people walking with you and against you. Also the requirement to make 90 degree turns at the intersections make this the least favorable user experience.

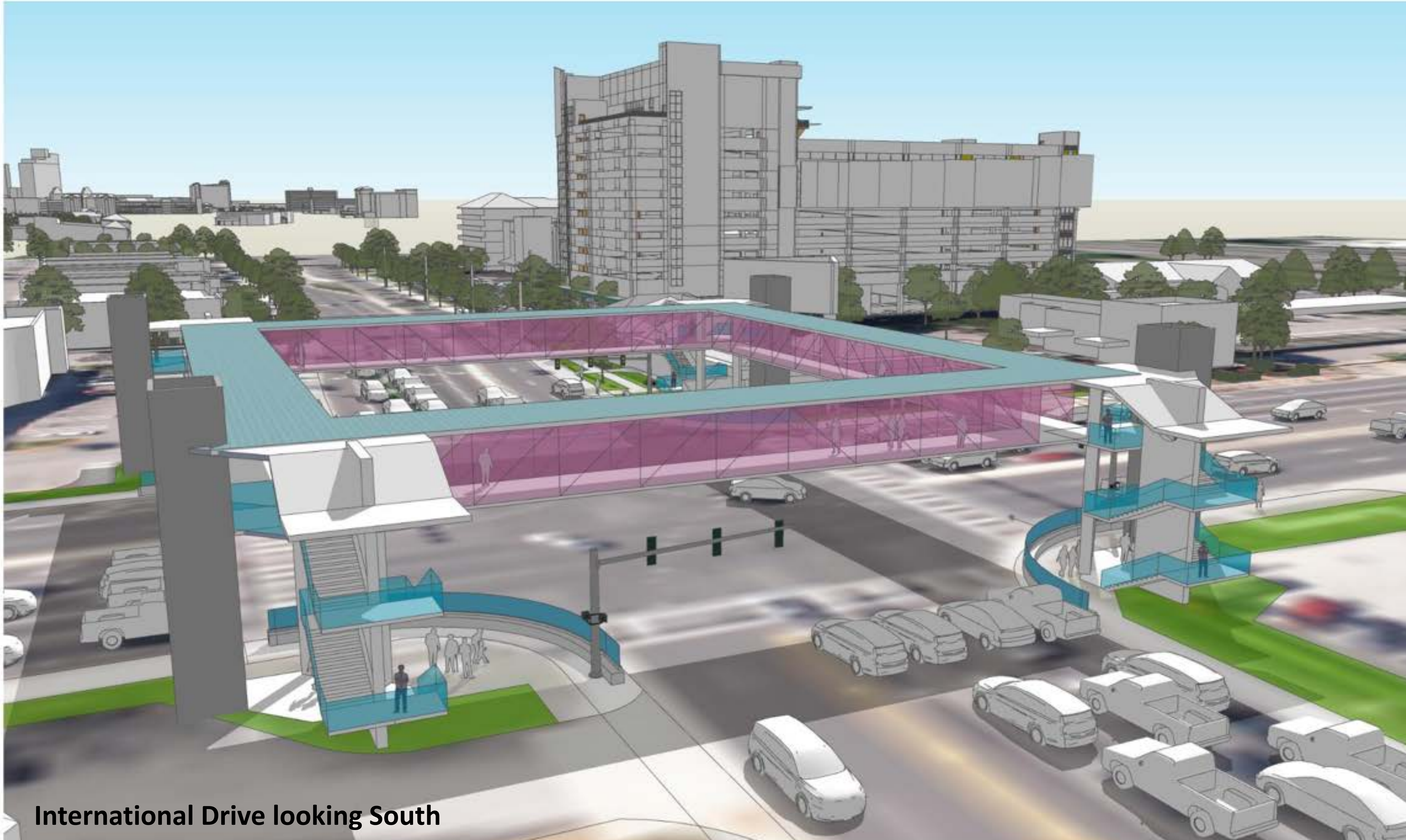
The overall length of the bridge in the square configuration is the third longest of all options at 584' of length.

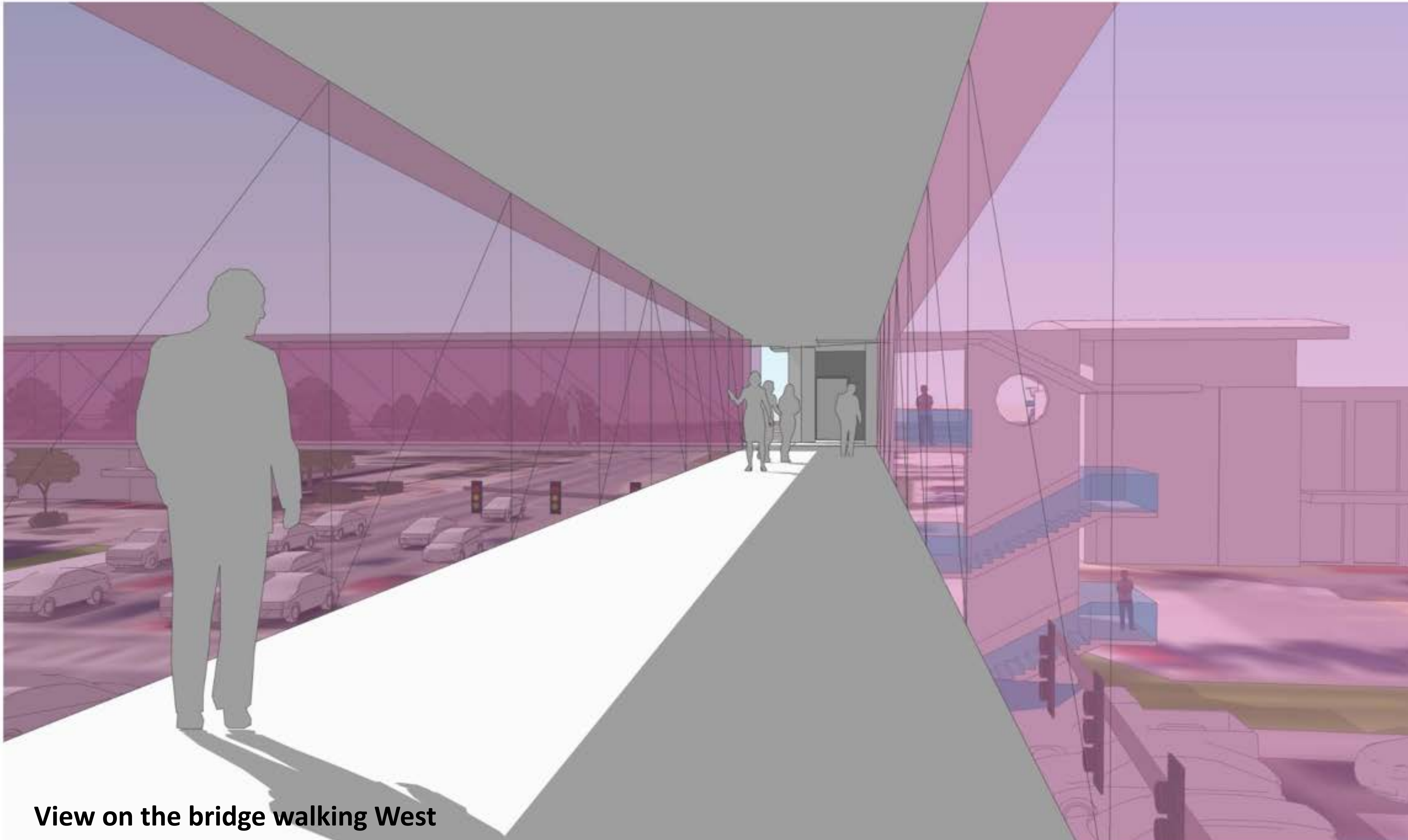
Summary

Average Travel Distance	279'
Bridge Length	584'
Bridge Width	12'-0"

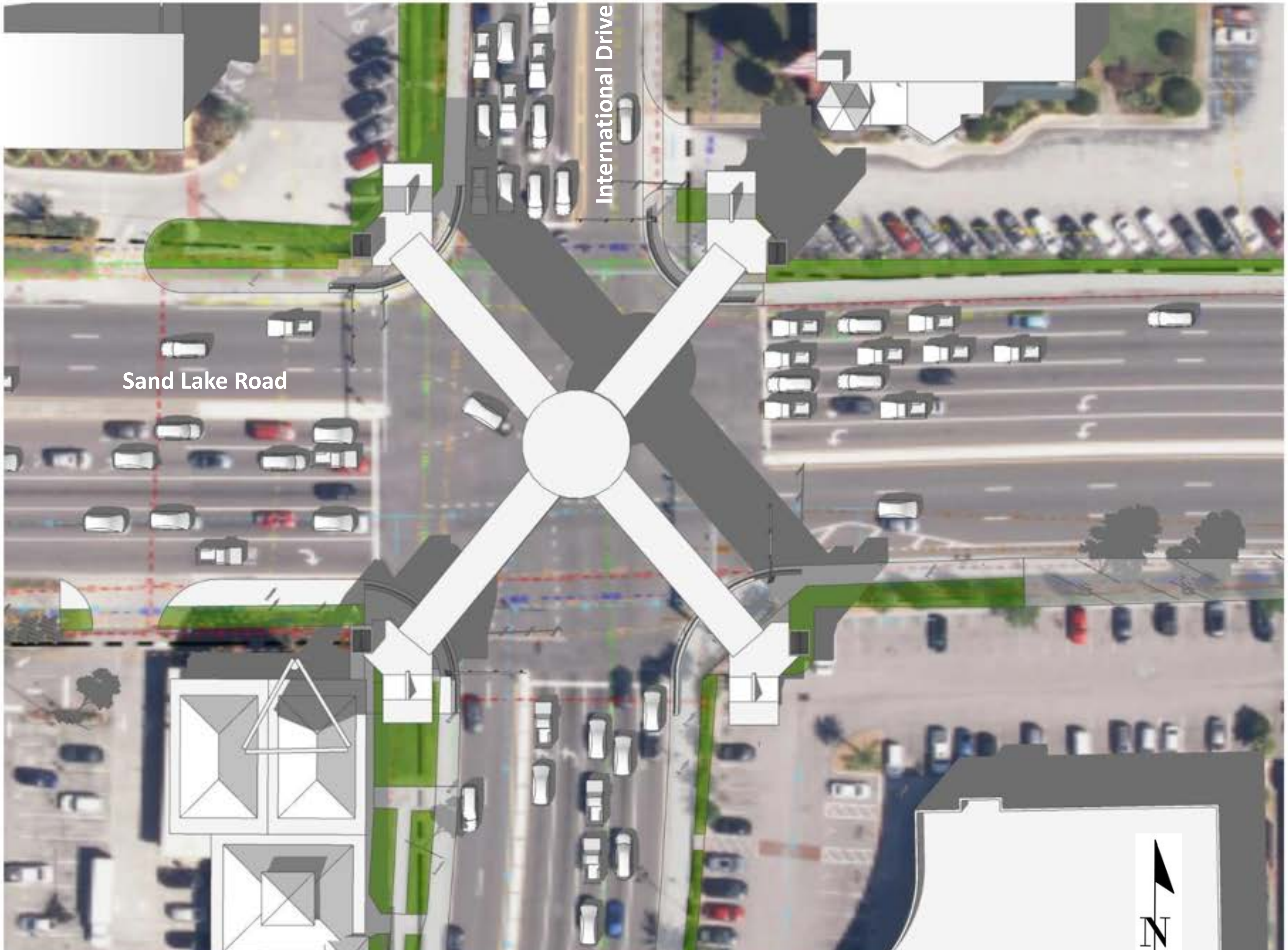

Sand Lake Road looking East


Sand Lake Road looking East


International Drive looking South



View on the bridge walking West



Bridge Configuration "X" Option

Description

The "X" configuration consists of two straight bridge runs intersecting in the middle of the intersection.

The overall length of the bridge in the "X" configuration is the third shortest of all options at 420' of length and has the third shortest average travel distances of the options considered.

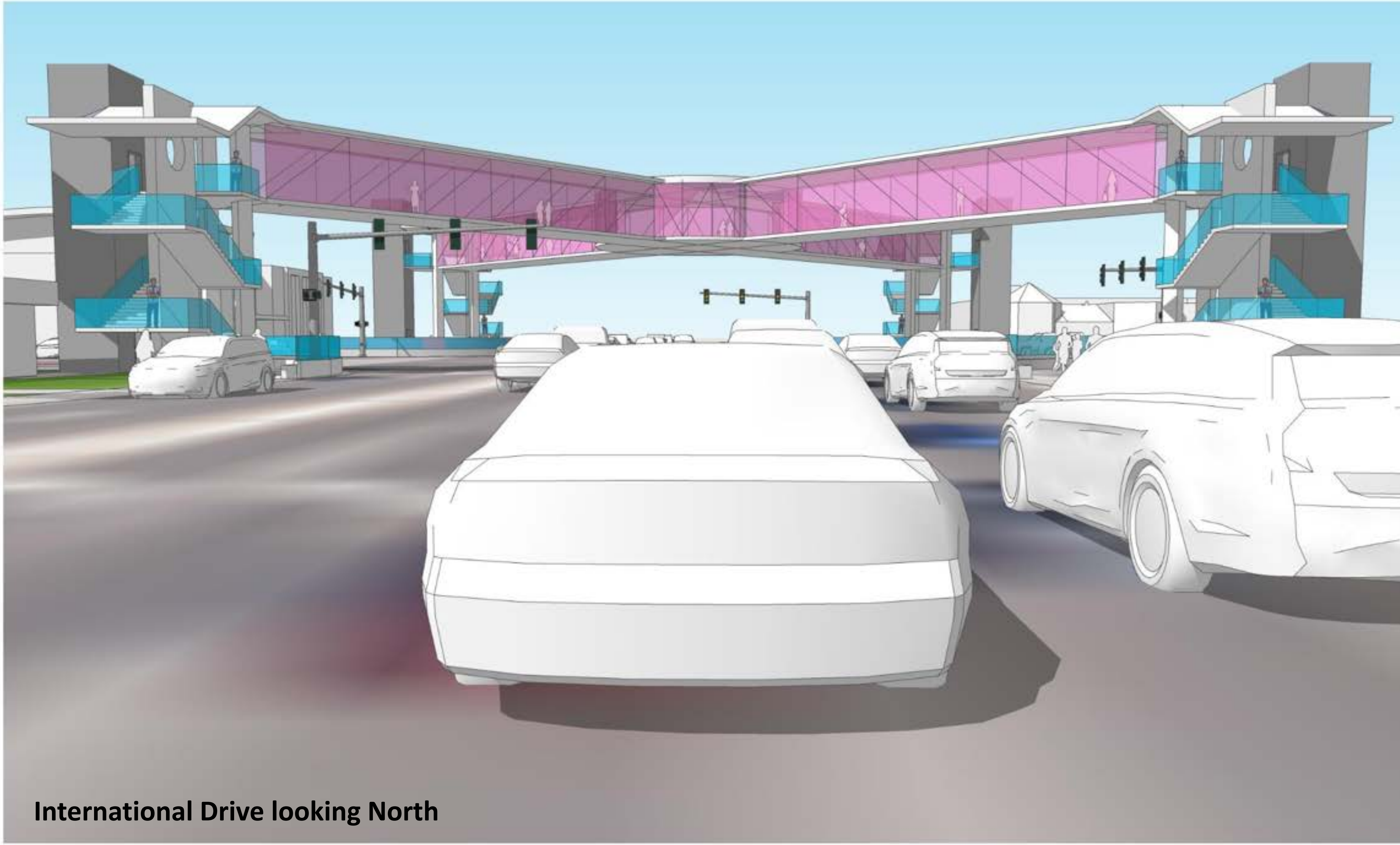
One benefit of this configuration is that the travel distance to every other intersection is exactly the same. The negative of this configuration is that the shorter distances across International drive are actually longer in this design.

There is an opportunity for a unique feature at the crossing point of the bridge which all users will experience.

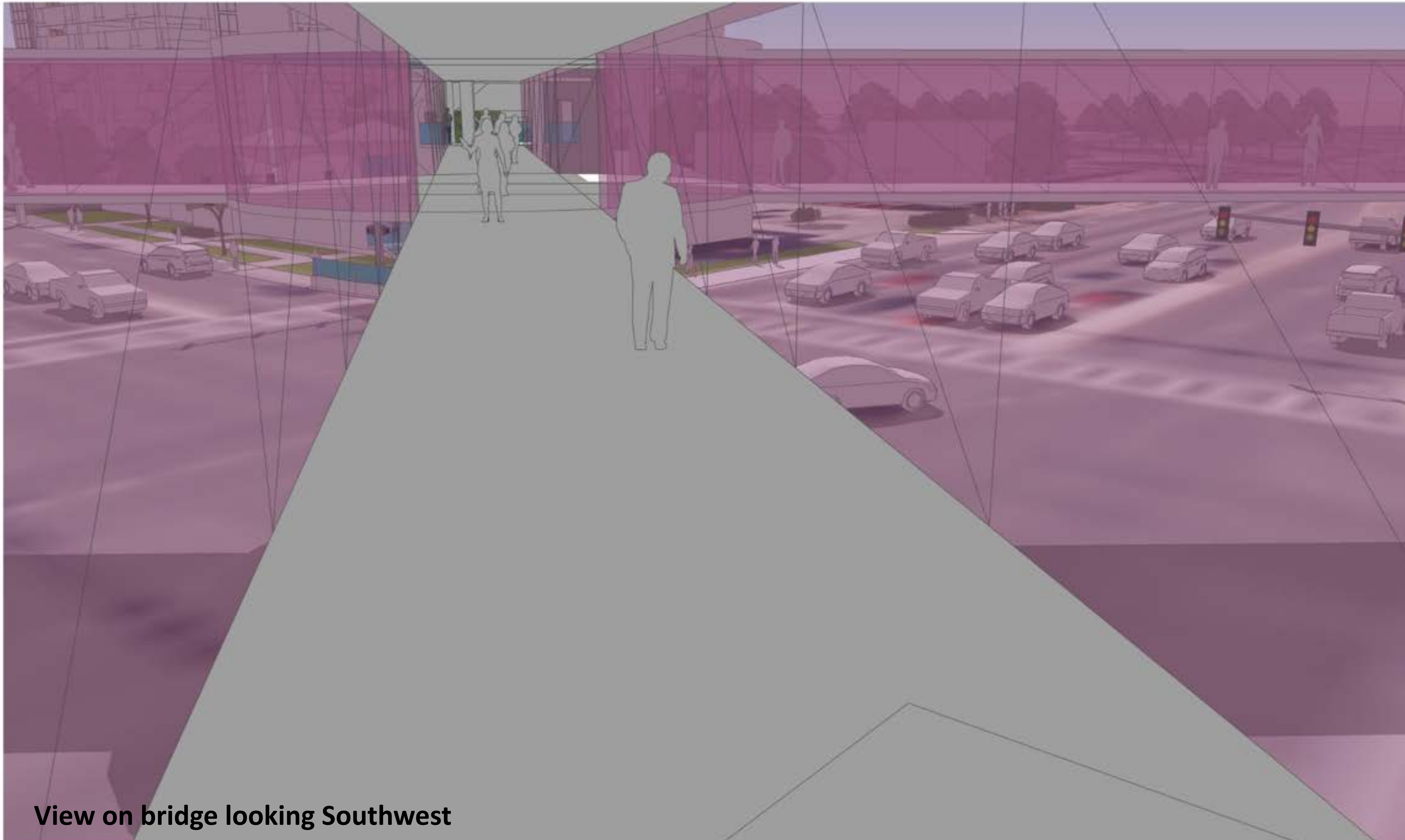
The straight bridge sections create a less desirable experience and users have to make a turn at the center section unless they are traveling diagonally across the intersection.

Summary

Average Travel Distance	210'
Bridge Length	420'
Bridge Width	12'-0"


International Drive looking North


International Drive looking South


View on bridge looking Southwest

DISTRICT GATEWAYS

Many memorable places have gateways that mark entrances for locals and visitors alike. Having gateways present a unique opportunity to market an area or place and highlight an area's major branding components such as its logo, name, and its signature colors.

The I-Drive District contains several gateway opportunities within its network of streets: the intersection of International Drive and Sand Lake Road, exits off of Interstate 4, and at the junction of International Drive and S.R. 528, with S.R. 528 being the major transportation route connecting the District with the Orlando International Airport. The potential Sand Lake Road and I-Drive intersection gateway offers a unique opportunity to improve pedestrian safety at one of the busiest intersections in Central Florida. It could also benefit from the planned Interstate 4 improvements (I-4 Beyond Ultimate) and current redevelopment proposals on some corners of this intersection. The Steering Review Group was presented with various design options and creative concepts for this major gateway.

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Bridge Configuration Circular Option

Description

The I -Drive 2040 Vision Plan identified the importance of the I-Drive / Sand Lake Rd. intersection as a key gateway opportunity for the Convention and Entertainment District.

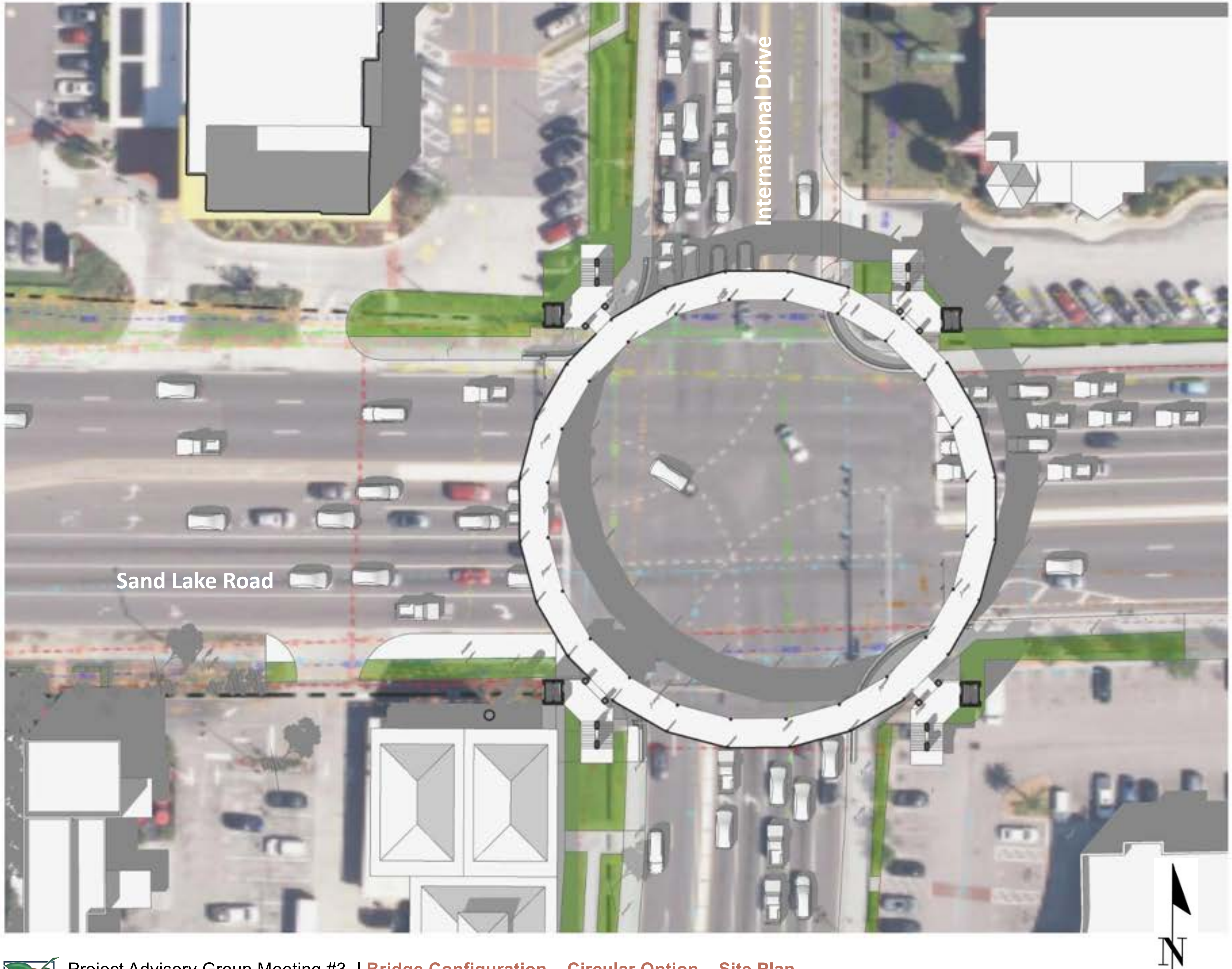
Not only does this intersection have the opportunity to create a unique gateway for visitors coming from I-4 and the International Airport, but it also can improve pedestrian safety at one of the busiest intersections in Central Florida.

The steering group looked at multiple examples of gateways around the world and the circular option was represented in the 2040 Visioning Book.

The overall length of the bridge in the Circular configuration is the longest of all options at 816' of bridge length.

Summary

Average Travel Distance	284'
Bridge Length	816'
Bridge Width	12'-0"



Bridge Configuration Circular Option

Description

The I -Drive 2040 Vision Plan identified the importance of the I-Drive / Sand Lake Rd. intersection as a key gateway opportunity for the Convention and Entertainment District.

Not only does this intersection have the opportunity to create a unique gateway for visitors coming from I-4 and the International Airport, but it also can improve pedestrian safety at one of the busiest intersections in Central Florida.

The steering group looked at multiple examples of gateways around the world and the circular option was represented in the 2040 Visioning Book.

The overall length of the bridge in the Circular configuration is the longest of all options at 816' of bridge length.

Summary

Average Travel Distance	284'
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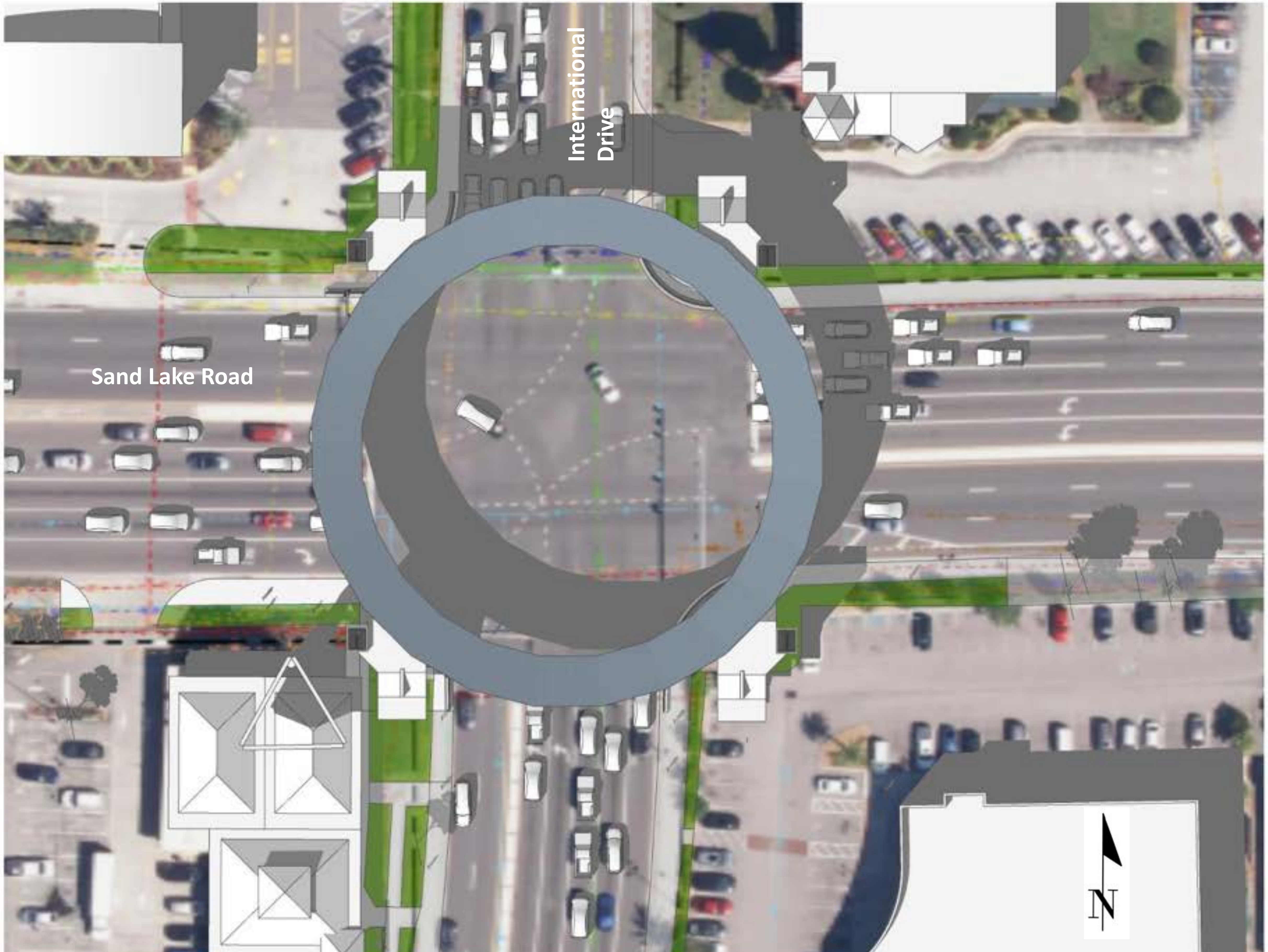
Bridge Width	12'-0"



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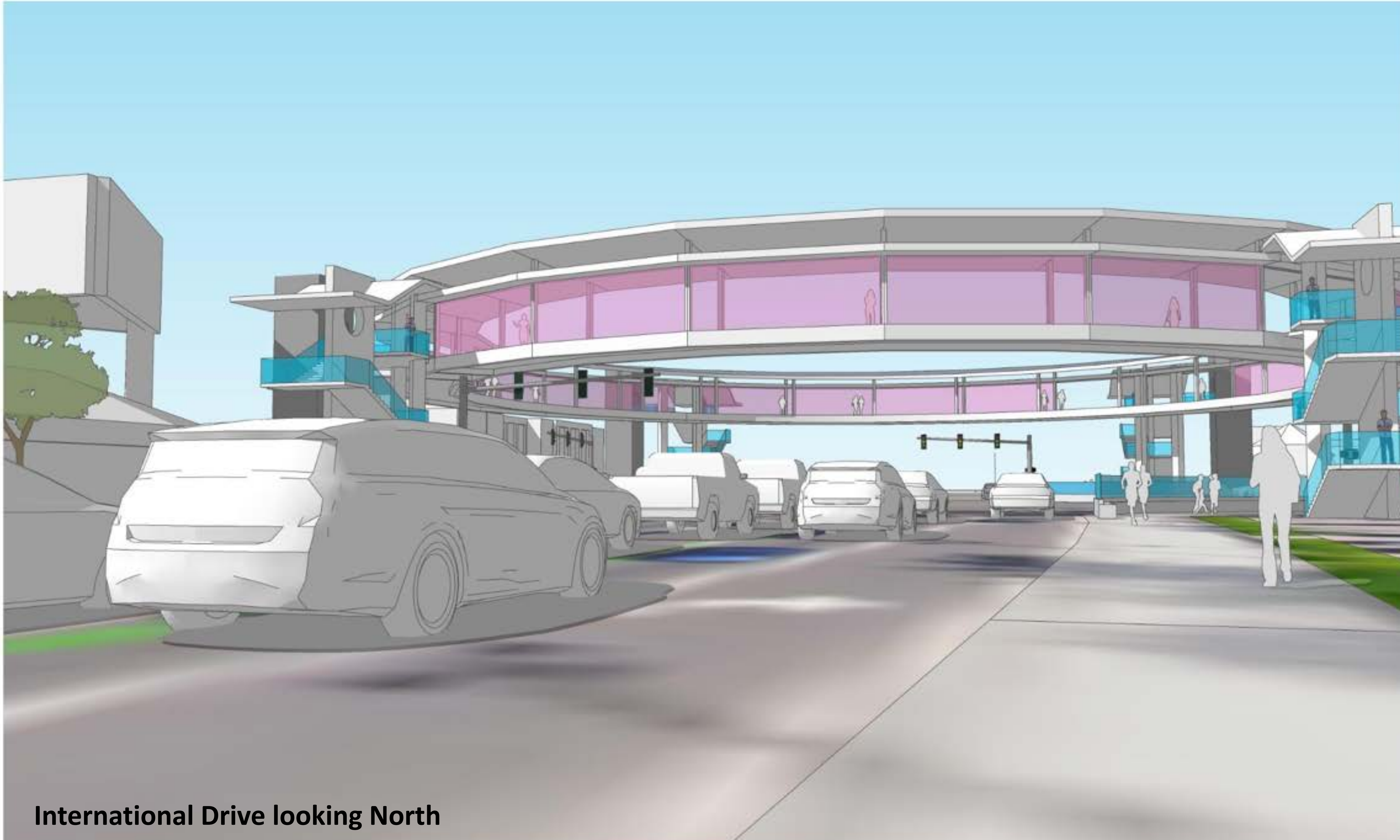
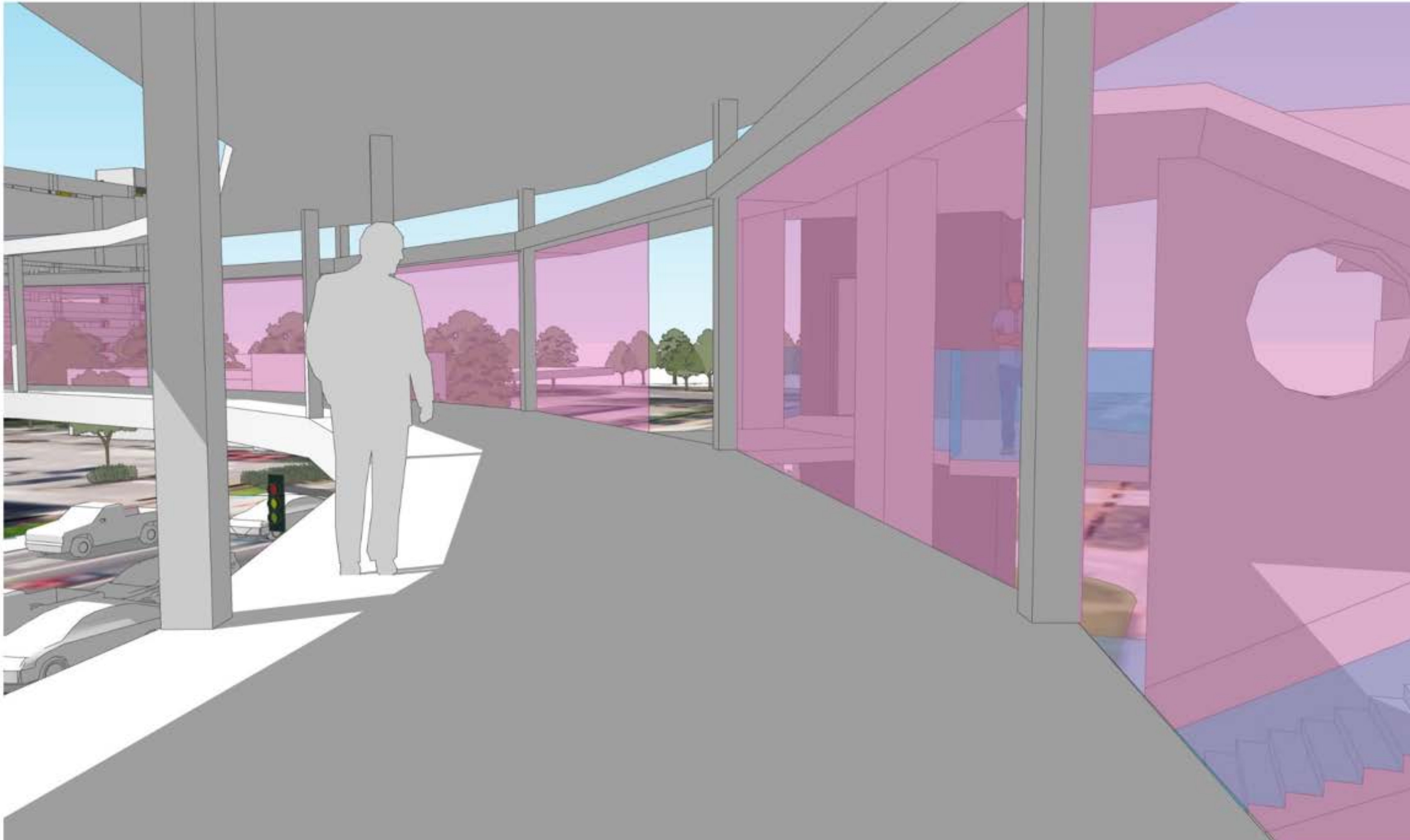
Summary

Average Travel Distance	284'
Bridge Length	816'
Bridge Width	12'-0"

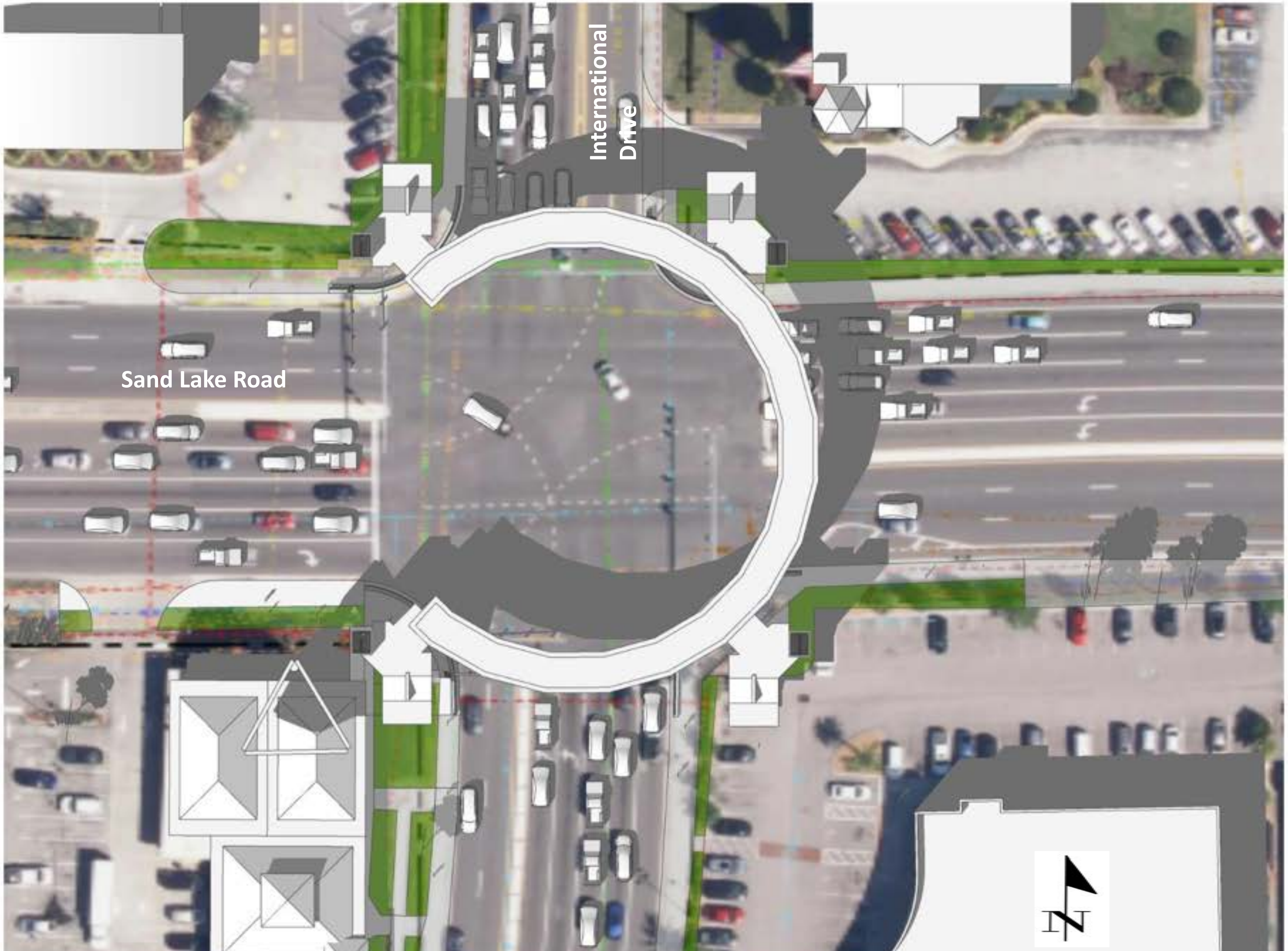

Sand Lake Road looking East


International Drive looking North


Sand Lake Road looking West



Project Advisory Group Meeting #3 | **Bridge Configuration – Circular Option – View from Bridge**



Bridge Configuration "C" Option

Description

The "C" Shaped bridge configuration provides most of the benefits of the Circular bridge configuration, but reduces the overall bridge length by 237'.

The overall length of the bridge in the Circular configuration is the longest of all options at 579' of bridge length making it the fourth most efficient configuration of the bridges analyzed.

In addition the curved sections add to the crossing experience by limiting the long view across the bridge and maximizing the views to surrounding businesses while the users traverse the bridge.

The open leg of the bridge creates a unique gateway for cars coming from I-4 traveling in any direction.

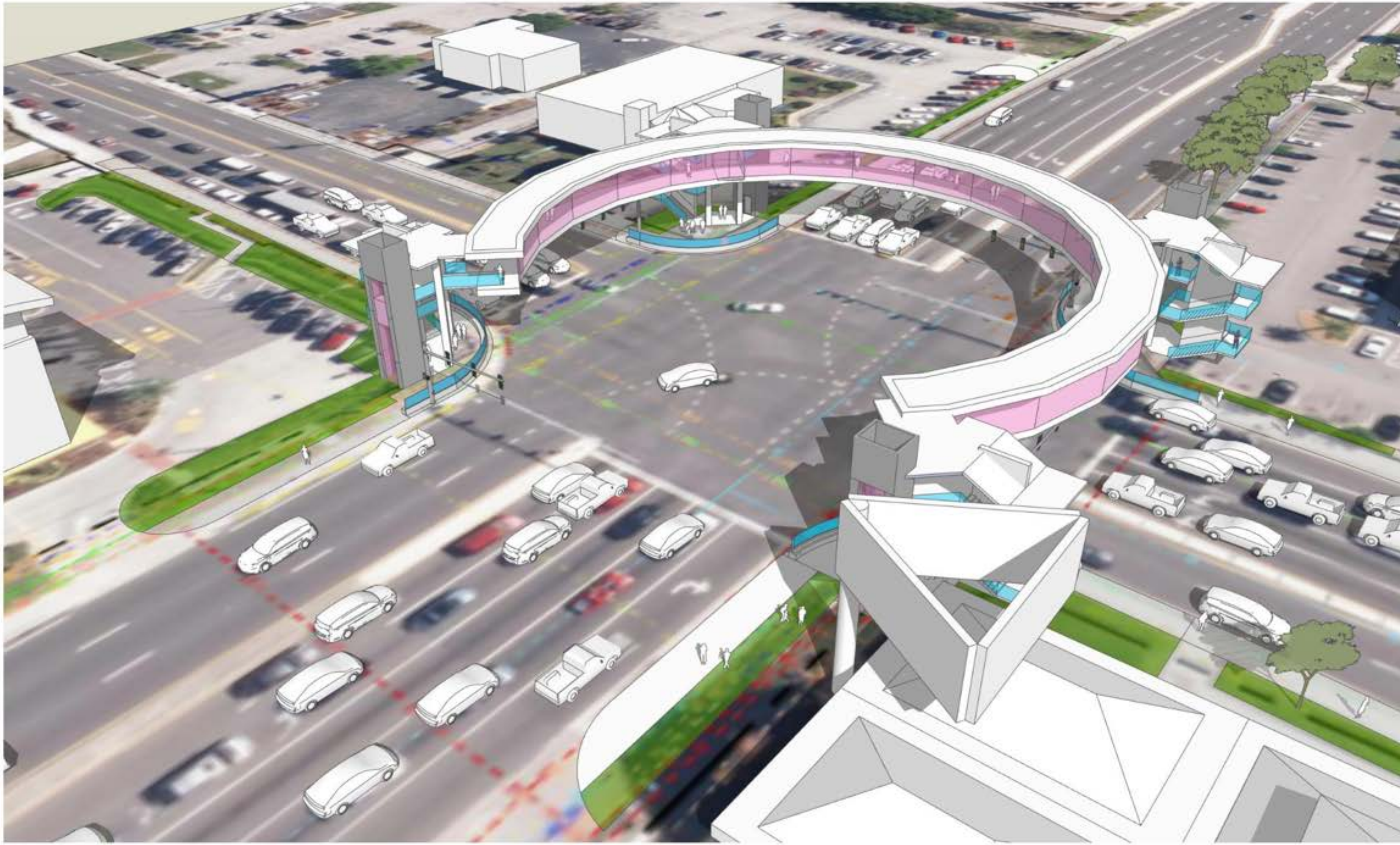
The biggest negative of this configuration is the increase in travel distance when traveling between the SW and NW intersections.

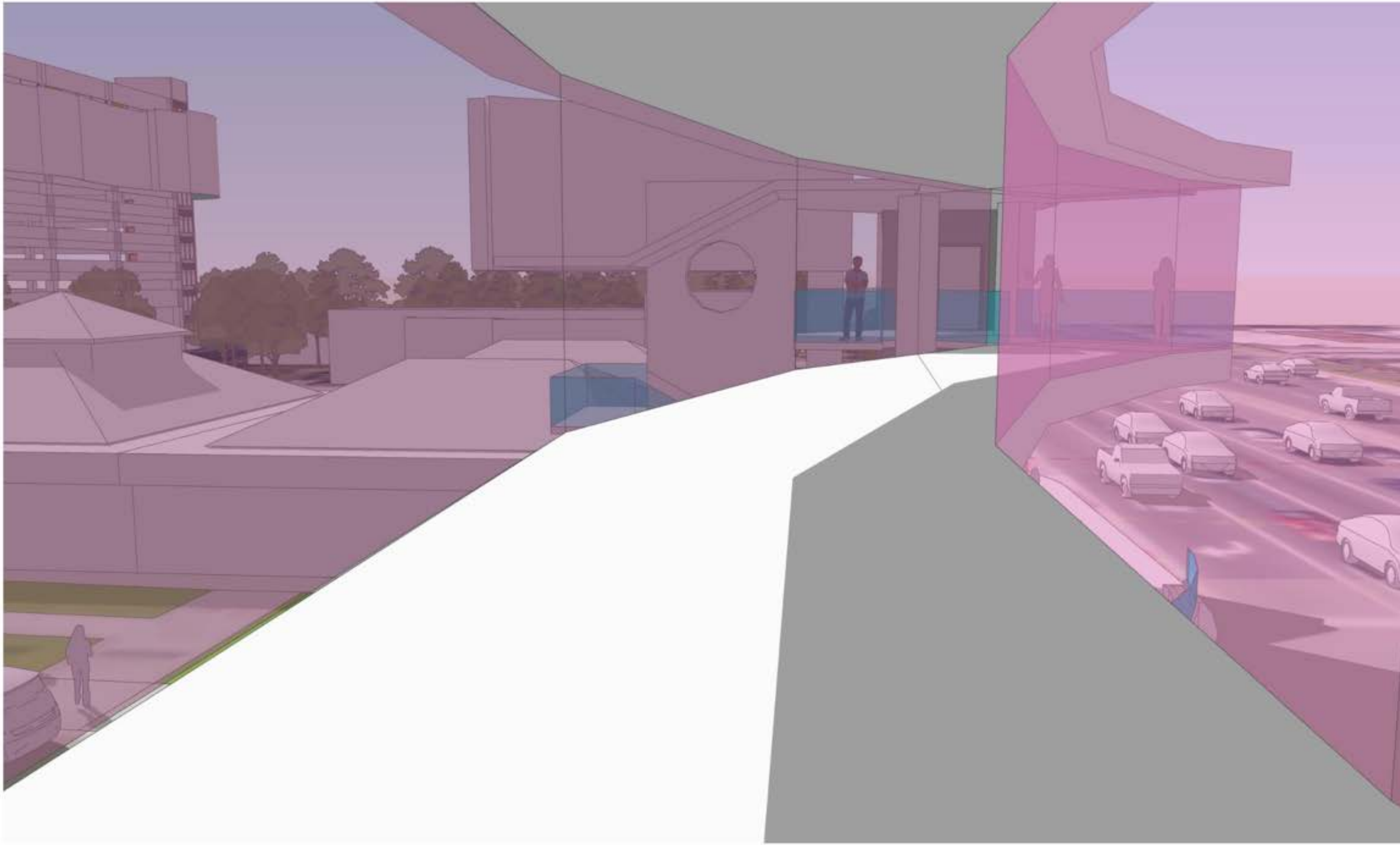
Summary

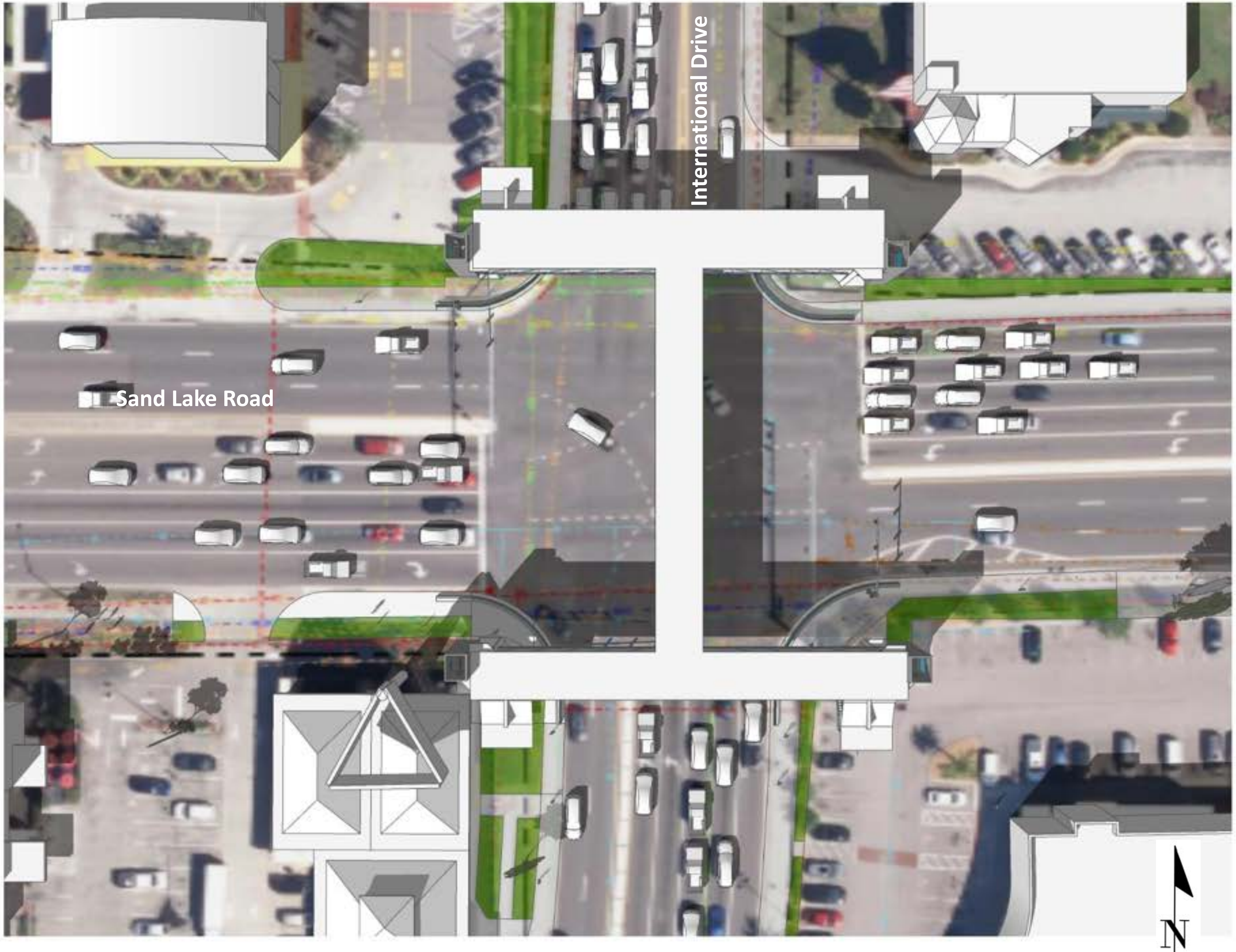
Average Travel Distance	386'
Bridge Length	579'
Bridge Width	12'-0"


Sand Lake Road looking East

International Drive looking North







Bridge Configuration "I" Option

Description

In PAG meeting #2 there was interest expressed for the "I" configuration with an obvious connection to International Drive.

We originally looked at the "I" configuration and were concerned over the 90 degree turns in the bridge and straight runs of bridge section with 2-way traffic. First thought was to start to round the intersections of the "I" to create serif's.

With the new curved serif's on the "I" it no longer seemed necessary to have the straight connector sections crossing International Drive.

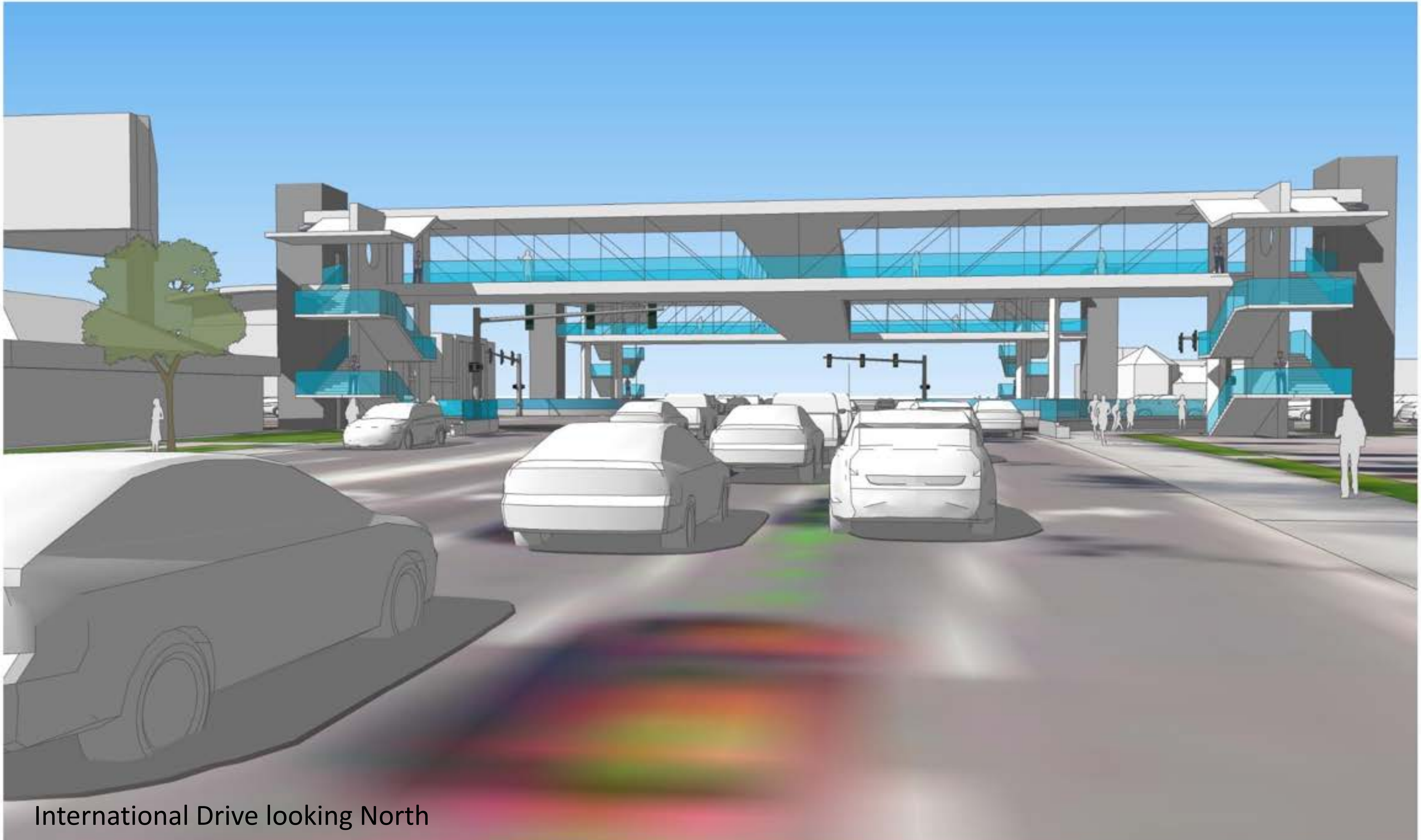
This thought process led to the evolution of the "I" configuration into the Interlocking "C" configuration.

The overall length of the bridge in the "I" configuration is the second shortest of all options at 402' of length.

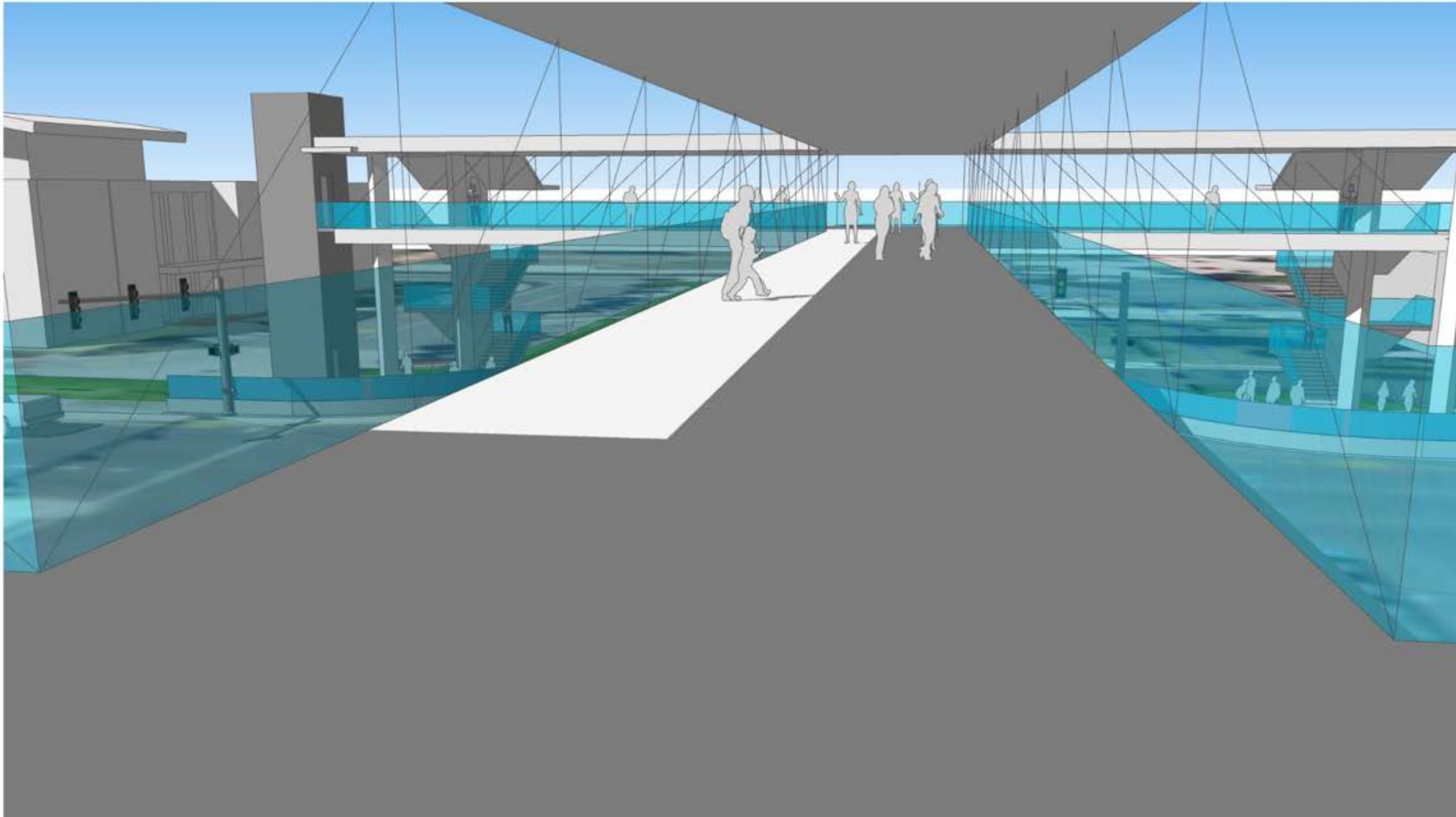
Summary

Average Travel Distance	226'
Bridge Length	402'
Bridge Width	12'-0"

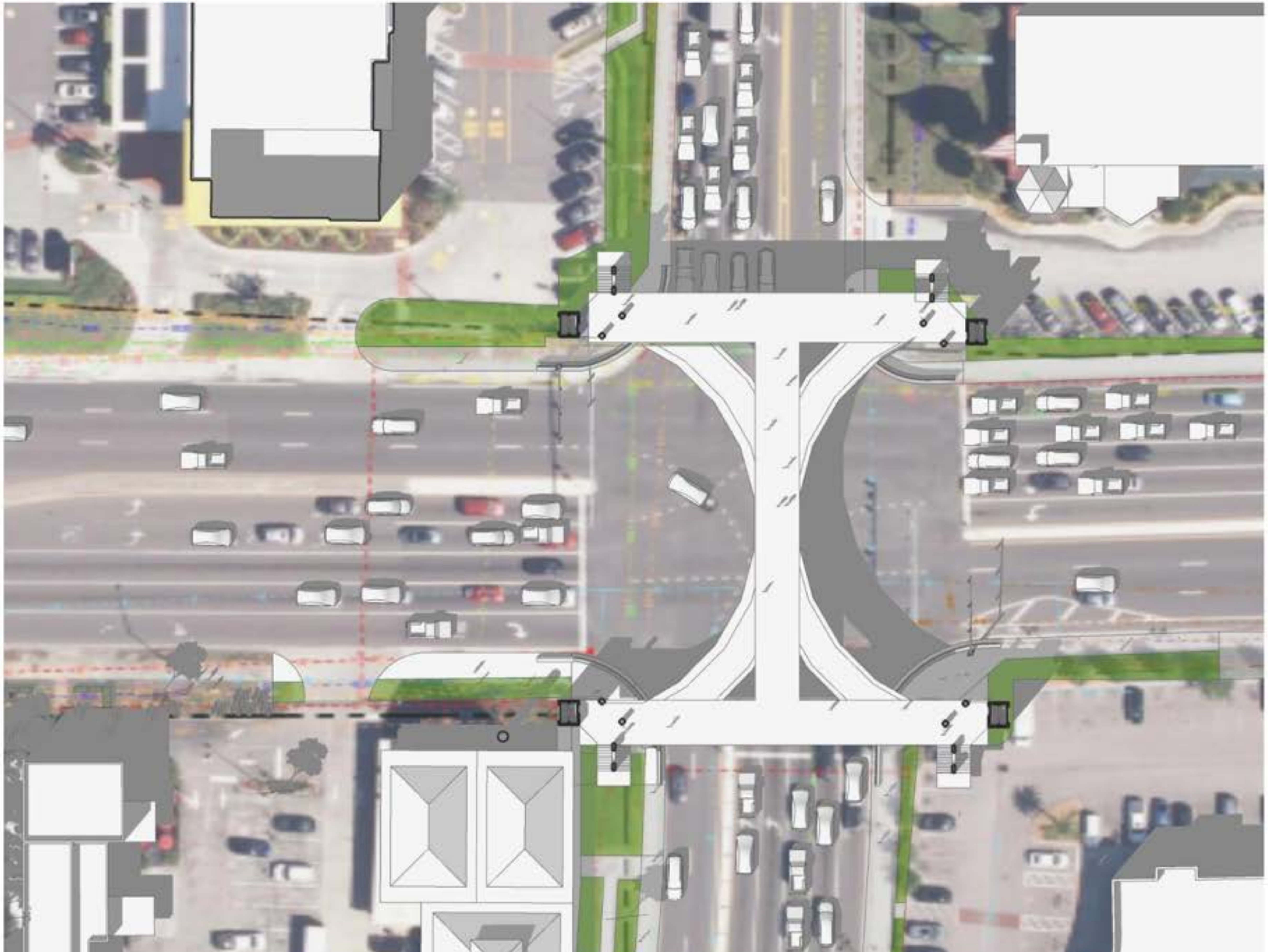

Sand Lake Road looking East


International Drive looking North


Sand Lake Road looking East



Walking North on the “I”



Bridge Configuration "I" Option - Modified

Description

In PAG meeting #2 there was interest expressed for the "I" configuration with an obvious connection to International Drive.

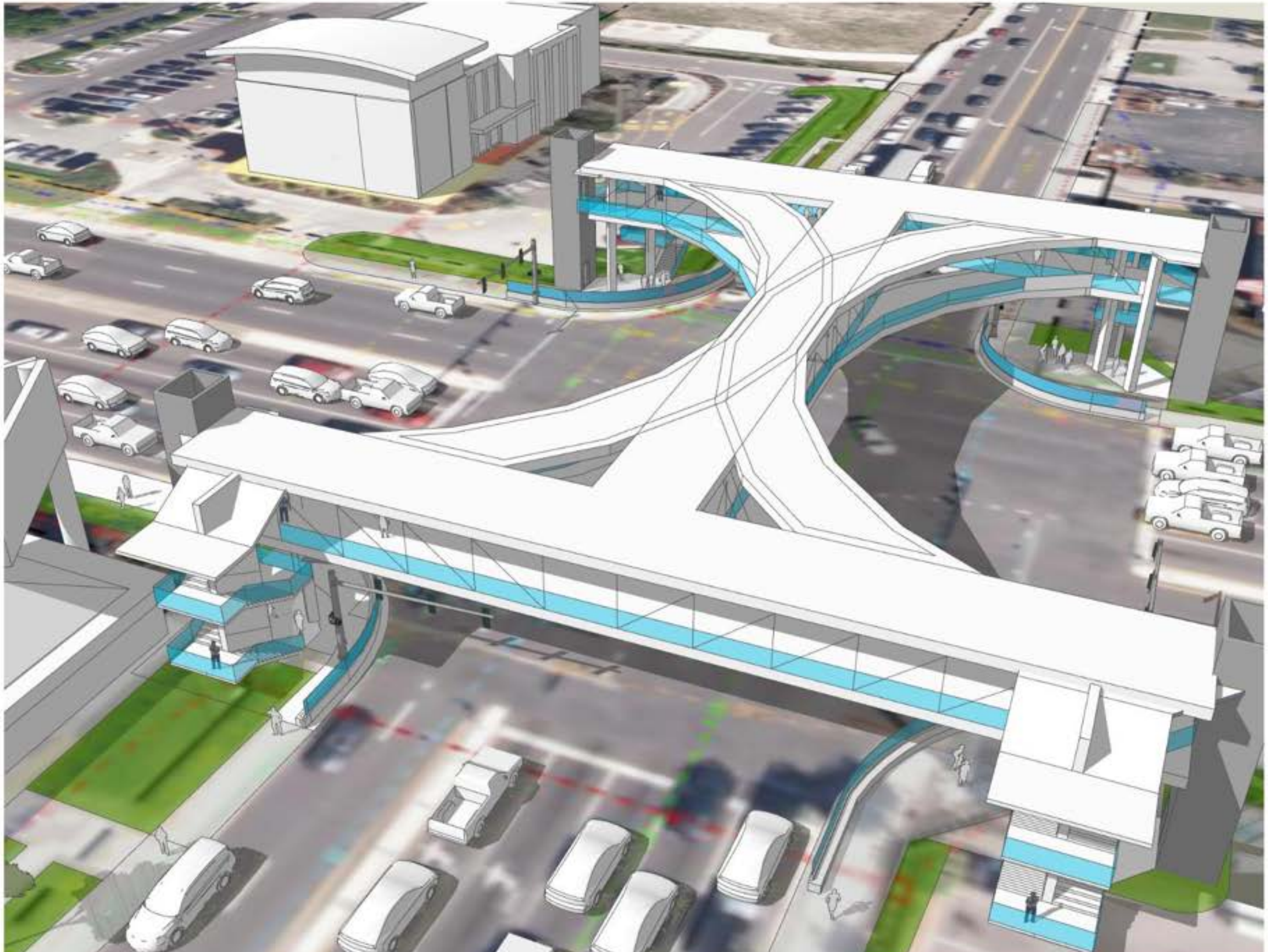
We originally looked at the "I" configuration and were concerned over the 90 degree turns in the bridge and straight runs of bridge section with 2-way traffic. First thought was to start to round the intersections of the "I" to create serif's.

These new connectors make the bridge pedestrian experience better but create multiple paths and greatly increase the length of the bridge.

The overall length of the bridge in the modified "I" configuration becomes much longer than the "I" option at 686' of length.

Summary

Average Travel Distance	195'
Bridge Length	686'
Bridge Width	12'-0"



Bridge Configuration "I" Option

Description

In PAG meeting #2 there was interest expressed for the "I" configuration with an obvious connection to International Drive.

We originally looked at the "I" configuration and were concerned over the 90 degree turns in the bridge and straight runs of bridge section with 2-way traffic. First thought was to start to round the intersections of the "I" to create serif's.

These new connectors make the bridge pedestrian experience better but create multiple paths and greatly increase the length of the bridge.

The overall length of the bridge in the modified "I" configuration becomes much longer than the "I" option at 686' of length.

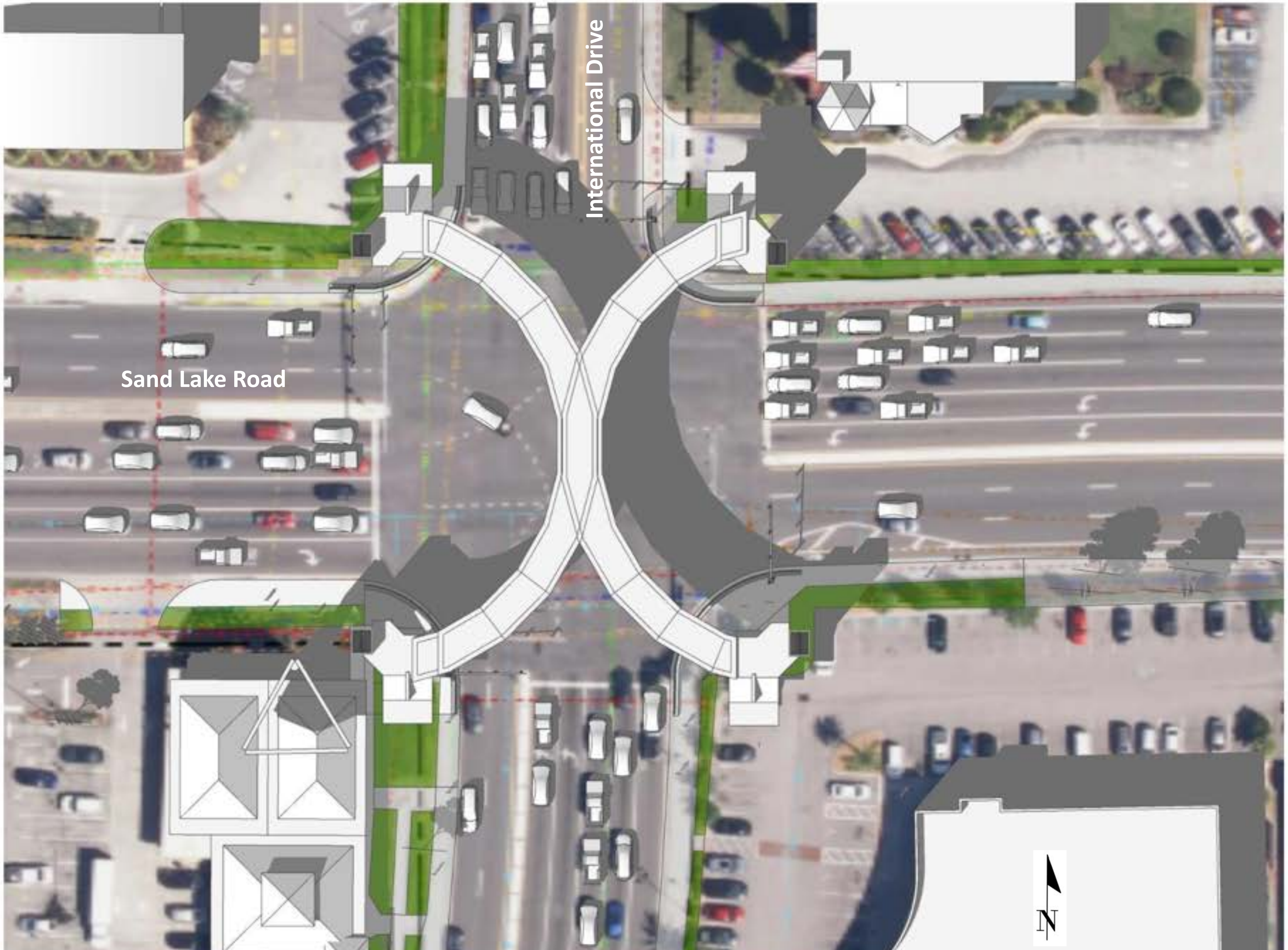
Summary

Average Travel Distance	195'
Bridge Length	686'
Bridge Width	12'-0"


Sand Lake Road looking East


International Drive looking North


Sand Lake Road looking East



Bridge Configuration Intersecting "C" Option

Description

The interlocking "C" Shaped bridge configuration evolved from the "I" configuration. This bridge configuration provides a similar travel distance to all intersections served.

The overall length of the bridge in the Interlocking "C" configuration is the shortest of all options at 395' of length and has one of the shortest average travel distances of the options considered.

In addition the curved sections add to the crossing experience by limiting the long view across the bridge and maximizing the views to surrounding businesses while the users traverse the bridge.

There is an opportunity for a unique feature at the crossing point of the bridge which all users will experience.

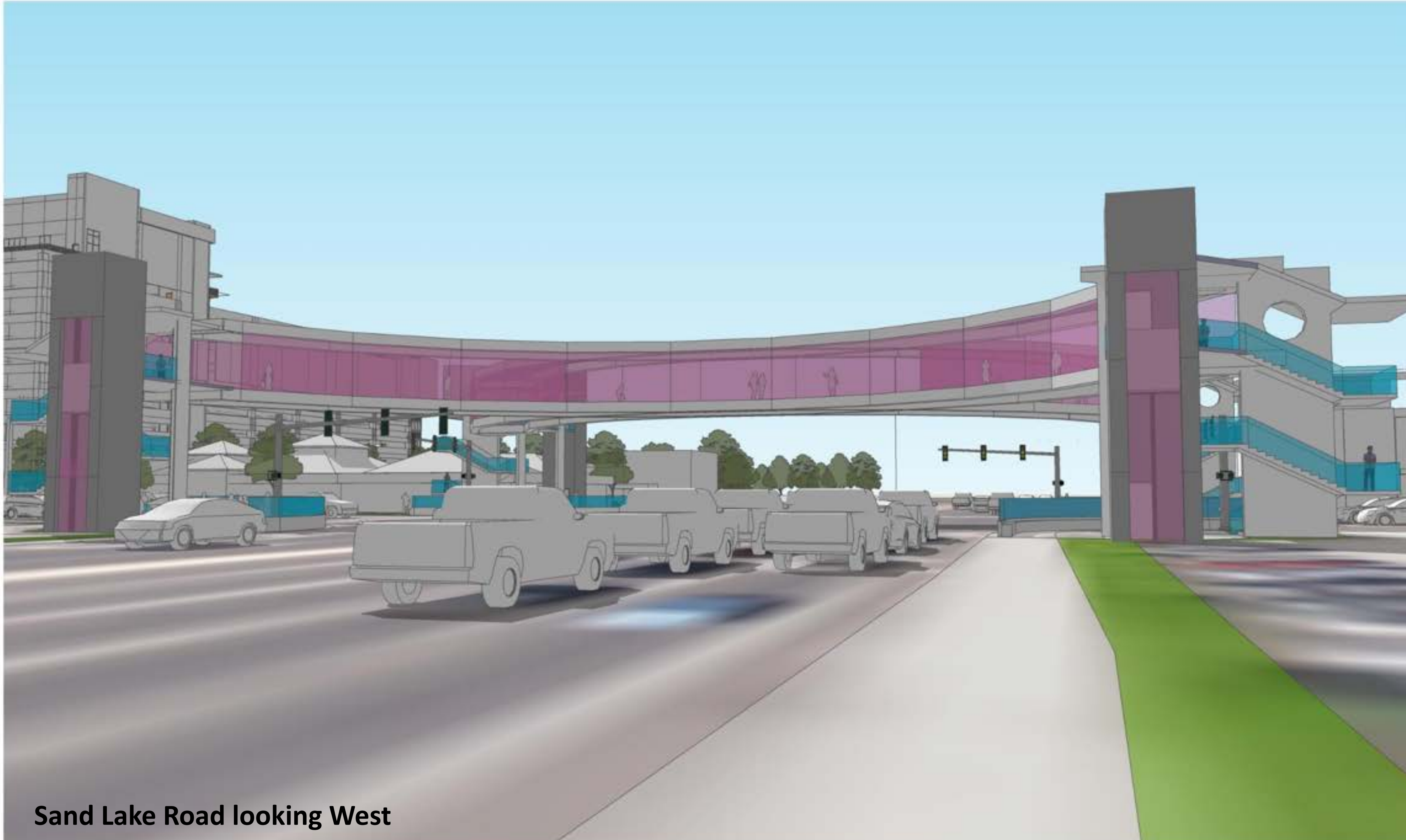
This configuration creates a unique gateway for automobiles from all directions. The effect is different for vehicles on International Drive and Sand Lake Rd.

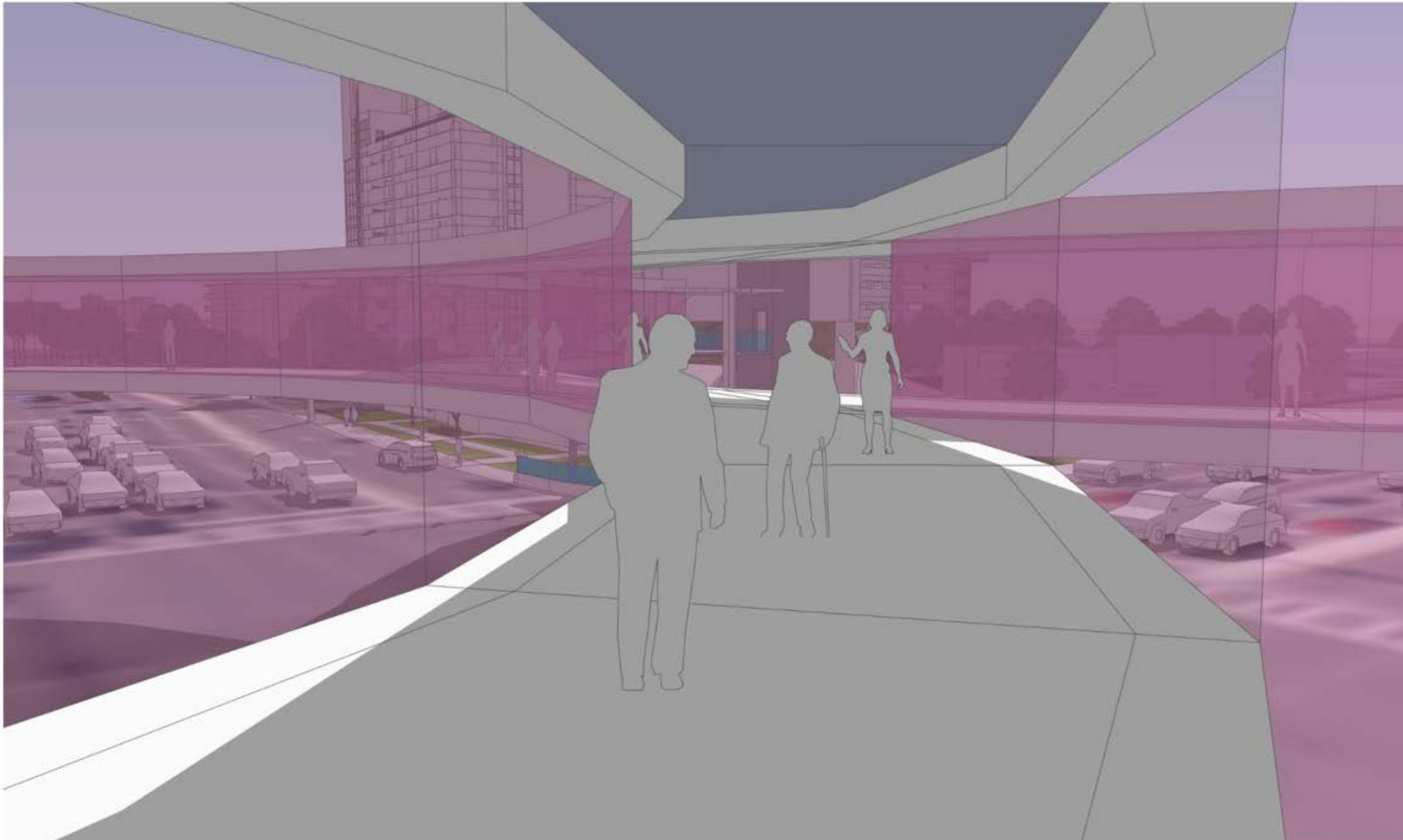
Summary

Average Travel Distance	205'
Bridge Length	395'
Bridge Width	12'-0"


Sand Lake Road looking East


International Drive looking North

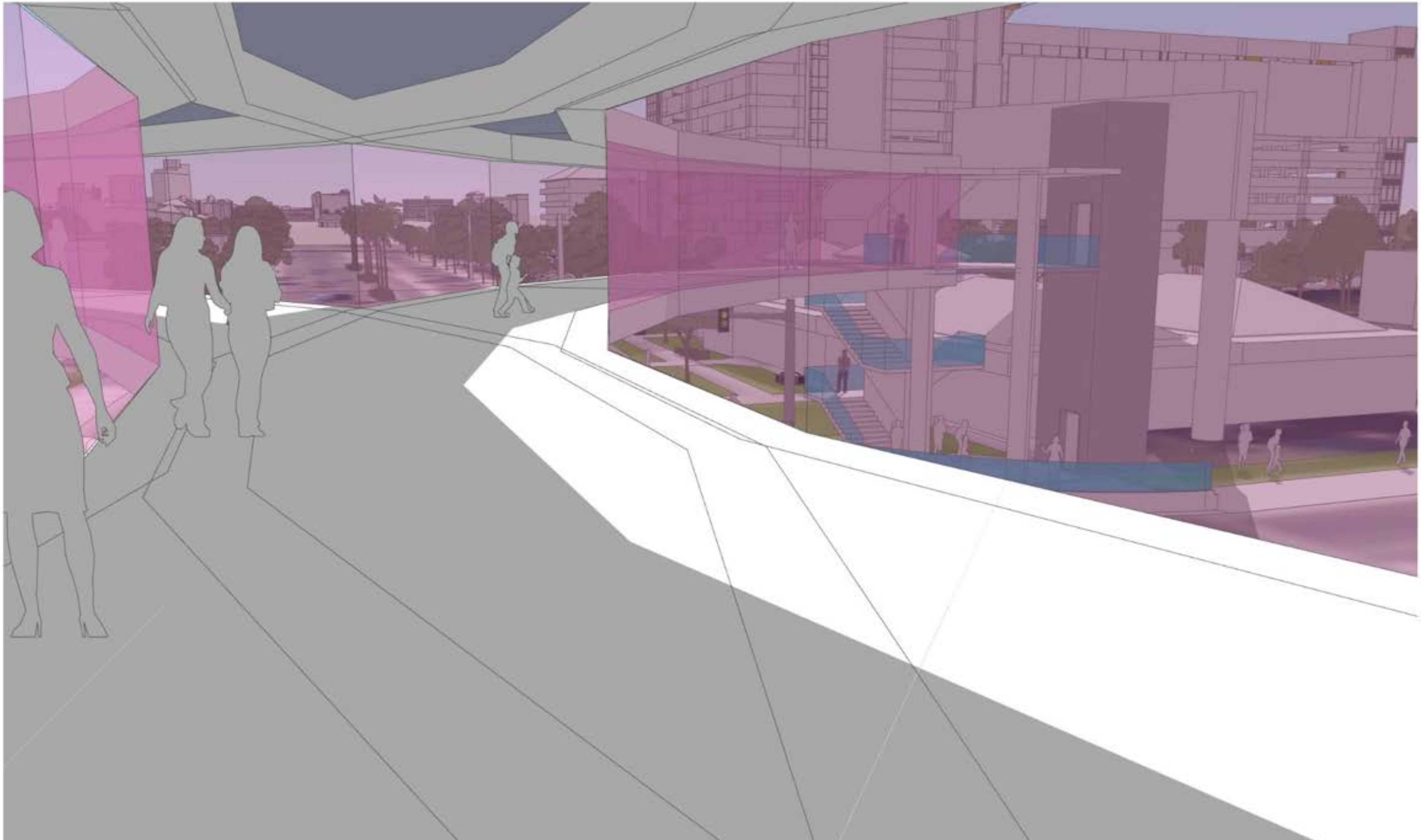

Sand Lake Road looking West



Project Advisory Group Meeting #3 | **Bridge Configuration – Interlocking "C" Option – View from Bridge**

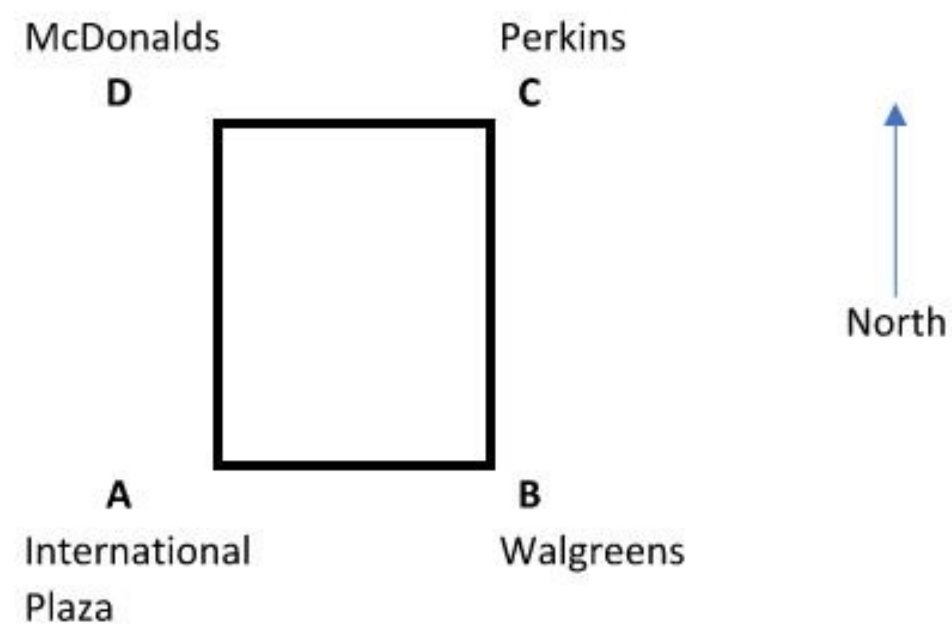
ORANGE COUNTY FLORIDA | International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study | #Y20-803-CH

HHCP&AVCON
A JOINT VENTURE



Bridge Configuration Evaluation Matrix
(lower score is higher ranking)

	Travel Dist. Int. A-B	Travel Dist. Int. A-C	Travel Dist. Int. A-D	Avg. Walk Dist.	Rank	Bridge Length	Rank	Total Score	Rank
Square Configuration	126	292	418	279	**5**	584	**5**	**10**	**4**
"X" Configuration	210	210	210	210	**3**	420	**3**	**6**	**2**
Circular Configuration	171	408	272	284	**6**	816	**7**	**13**	**6**
"C" Configuration	171	408	579	386	**7**	579	**4**	**11**	**5**
"I" Configuration	126	276	276	226	**4**	402	**2**	**6**	**2**
Modified "I" Configuration	126	229	229	195	**1**	686	**6**	**7**	**3**
Intersecting "C" Configuration	158	229	229	205	**2**	395	**1**	**3**	**1**



Exist. Crosswalk Distance	
A-B	96'
A-C	259'
A-D	132'
Avg.	162'

Note:
Distance from A-C is the same as B-D

The lowest scoring option is the Intersecting "C" configuration.

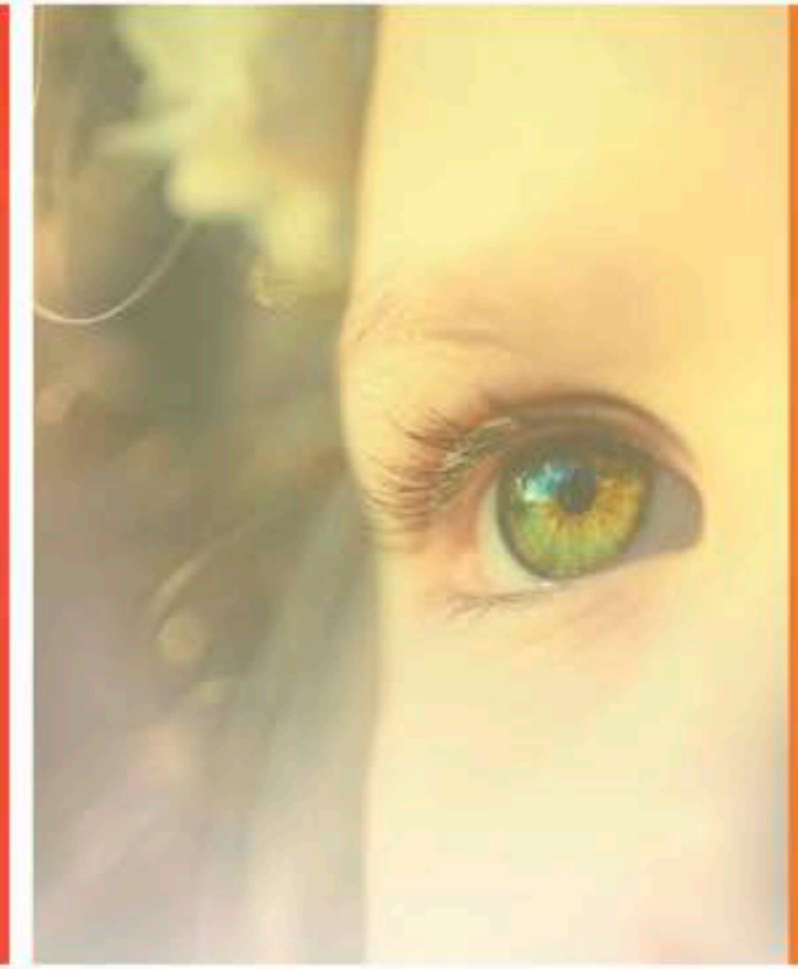
Bridge Configuration Evaluation Matrix
(lower score is higher ranking)

	Bridge Length	Rank		Structural Complexity		Relative Cost		Design Icon Value		Total Score		Rank
Square Configuration	584	**5**		**1**		**3**		**7**		**11**		**4**
"X" Configuration	420	**3**		**4**		**2.5**		**6**		**12.5**		**5**
Circular Configuration	816	**7**		**2**		**4.5**		**3**		**9.5**		**3**
"C" Configuration	579	**4**		**3**		**3.5**		**2**		**8.5**		**1**
"I" Configuration	402	**2**		**5**		**3.5**		**4**		**12.5**		**5**
Modified "I" Configuration	686	**6**		**6**		**6**		**5**		**17**		**6**
Intersecting "C" Configuration	395	**1**		**5**		**3**		**1**		**9**		**2**

Bridge length not included in aggregate score, but is used to calculate relative cost.

$$\frac{\text{Relative Cost = Bridge Length Rating + Structural Complexity Rating}}{2}$$

The lowest scoring option is the "C" configuration.



Meeting Number Three

Summary of Findings

ORANGE COUNTY GOVERNMENT
FLORIDA

HHCP&AVCON
A JOINT VENTURE

Summary

- Curved bridge configurations create a more dynamic visual and a better experience for bridge users.
- Elimination of the crosswalks will increase pedestrian safety and reduce traffic congestion.
- Corner wrapping seat wall/barriers will be required to prevent people from attempting to cross the intersection on grade.
- Bridge configuration has little impact on space required at intersection corners.
- Bridge Configuration Evaluation Matrix shows the “Intersecting C” configuration to be the highest rated option (lowest score).
- We are seeking input from the PAG on the preferred configuration to meet the operational, aesthetic, budget, and iconic gateway criteria.

APPENDIX C

2-22-23 Public Alternatives Meeting #1:

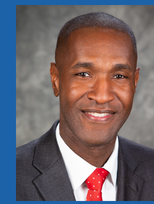
- Newsletter
- Public Notice
- Press Release
- Minutes
- Presentation

ORANGE COUNTY GOVERNMENT FLORIDA

INTERNATIONAL DRIVE PEDESTRIAN OVERPASS

ANALYSIS & CONCEPTUAL DESIGN STUDY

ORANGE COUNTY MAYOR
JERRY L. DEMINGS



DISTRICT 6 COMMISSIONER
MICHAEL "MIKE" SCOTT

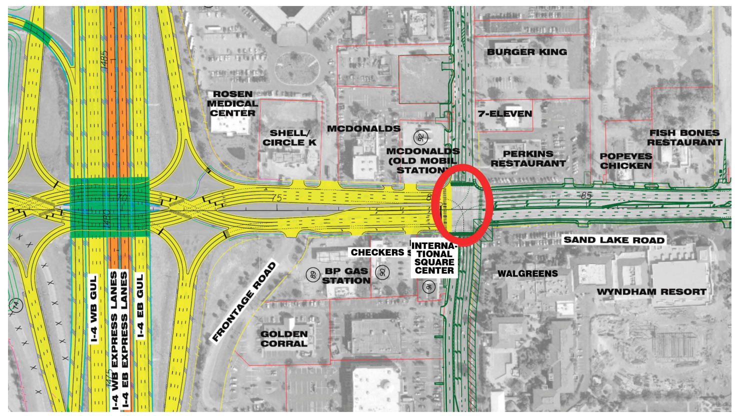
ISSUE #1 - January 2023

PEDESTRIAN OVERPASS DESIGN PUBLIC MEETING SCHEDULED FOR FEB. 22

Orange County is evaluating concepts for designing a pedestrian overpass across Sand Lake Road at International Drive with the goals of improving pedestrian safety and creating an aesthetic gateway to one of Orange County's most-heavily traveled tourism corridors.

All design concepts included elevated pedestrian bridges over the intersection to provide a safe, walkable alternative for foot and bike traffic at the intersection. The design concepts also considered using switchback stairways and elevators to access the overpass. The differences between the design concepts are the shape of the elevated portion and the movement of pedestrians over the intersection.

The County invites you to attend a public community meeting to review the preferred alternatives under consideration and to provide input on **Wednesday, February 22, 2023, at Lake Buena Vista High School's Cafeteria, 11305 Daryl Carter Parkway, Orlando, FL 32836.** An open house will begin at 5:30 p.m. with a presentation at 6:00 p.m. The presentation will be followed by a question-and-answer forum.



PEDESTRIAN BRIDGE LOCATION - SAND LAKE ROAD & INTERNATIONAL DRIVE

Maps and displays depicting project information will be available for public review and comment. Project representatives will also be present to discuss the project and answer any questions.

Learn more at the project website:
www.idriveoverpass.com or **www.orangecountyfl.net**

OPPORTUNITIES TO PARTICIPATE IN INTERNATIONAL DRIVE OVERPASS DESIGN STUDY

Alternatives Public Meeting

When: Wednesday, February 22, 2023

Where: Lake Buena Vista High School Cafeteria
11305 Daryl Carter Parkway
Orlando, FL 32836

Open House: 5:30 p.m.

Presentation: 6:00 p.m.

UPCOMING PUBLIC MEETINGS

Recommendations Public Meeting

Planning & Zoning Commission Public Hearing

Board of County Commissioners Public Hearing

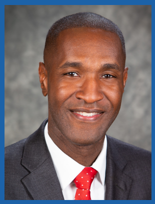
When: Spring 2023 (details to be determined)

Public participation is solicited without regard to race, color, national origin, age, sex, religion, income, disability, or family status. Persons who require language translation or interpretation services, which are provided at no cost, should contact Yevette Best, Orange County Title VI/Nondiscrimination Coordinator, at 407-836-5825 or via email at yevette.best@ocfl.net at least seven (7) days prior to the meeting. Persons requiring special accommodations under the Americans with Disabilities Act of 1990 (ADA) may request assistance from Nicola Norton, County ADA Coordinator, at 407-836-6568 or nicola.norton@ocfl.net at least seven (7) days prior to the meeting.

INTERNATIONAL DRIVE PEDESTRIAN OVERPASS

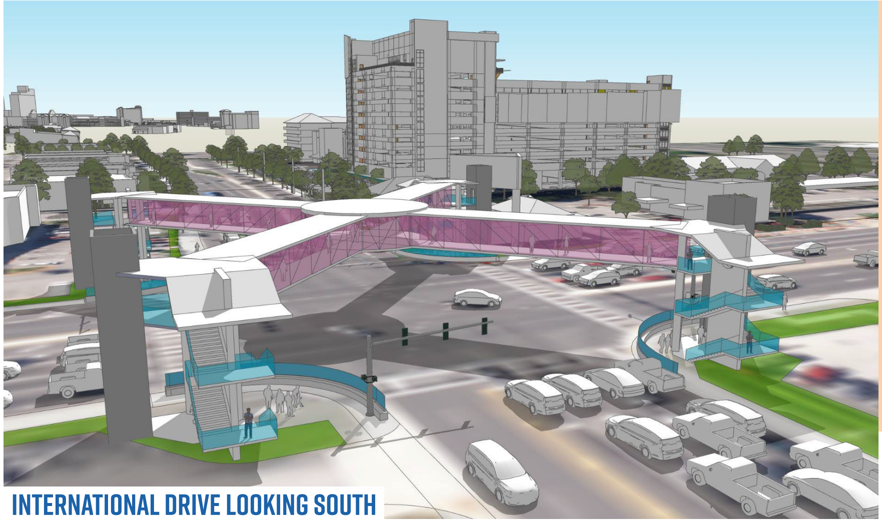
ANALYSIS & CONCEPTUAL DESIGN STUDY

ORANGE COUNTY MAYOR
JERRY L. DEMINGS



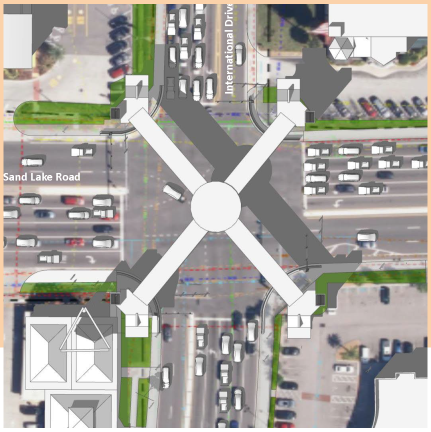
DISTRICT 6 COMMISSIONER
MICHAEL "MIKE" SCOTT

ALTERNATIVE DESIGNS FOR PEDESTRIAN OVERPASS - TWO BRIDGE OPTIONS TO BE DISCUSSED



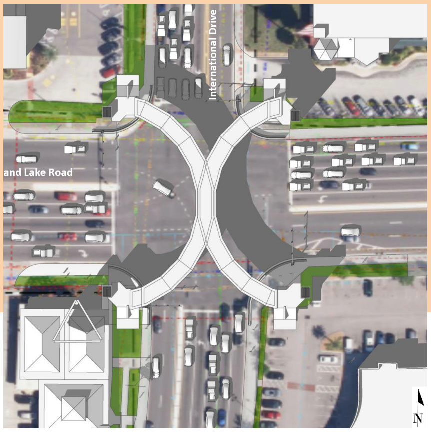
INTERNATIONAL DRIVE LOOKING SOUTH

BRIDGE CONFIGURATION "X"



SAND LAKE ROAD LOOKING EAST

BRIDGE CONFIGURATION "INTERLOCKING C"



QUESTIONS OR COMMENTS?

You may contact a member of the project team directly.

Blanche Hardy, PG, Project Manager
Transportation Planning Division

Orange County Planning, Environmental and Development Services (PEDS) Department
4200 S. John Young Parkway, Orlando, FL 32839

Email: blanche.hardy@ocfl.net
Phone: 407-836-0257

Rick Baldocchi, P.E. Project Manager
Consultant Project Manager

HHCP&AVCON, A Joint Venture
5555 E. Michigan Street, Suite 200
Orlando, FL 32822

Email: rvb@avconinc.com
Phone: 407-947-1584

Para información en español:

Esther Fernandez, P.E.
Engineer II

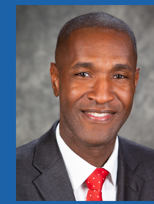
Orange County Public Works Department
4200 S. John Young Parkway, Orlando, FL 32839

Email: esther.fernandez@ocfl.net
Phone: 407-836-7982

PUENTE PEATONAL “INTERNATIONAL DRIVE”

ANÁLISIS Y ESTUDIO DE DISEÑO CONCEPTUAL

ALCALDE DE ORANGE COUNTY
JERRY L. DEMINGS



COMISIONADO DEL DISTRITO 6
MICHAEL “MIKE” SCOTT

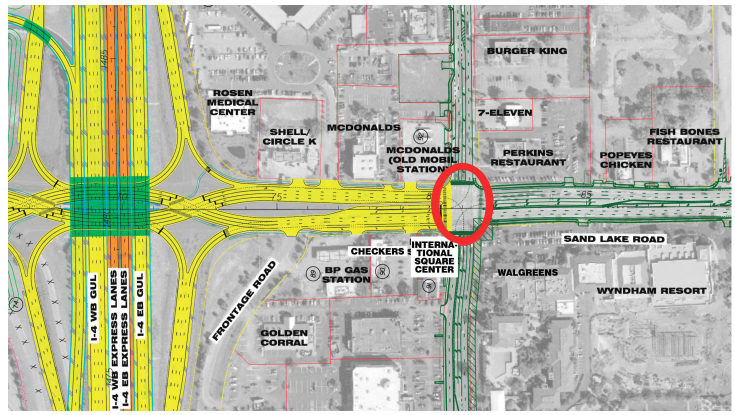
EDICIÓN #1 - Enero 2023

REUNIÓN PÚBLICA REFERENTE AL DISEÑO DEL PUENTE PEATONAL PROGRAMADA PARA EL 22 DE FEBRERO

El Condado de Orange está evaluando conceptos para diseñar un paso elevado para peatones a través de Sand Lake Road e International Drive con el objetivo de mejorar la seguridad de los peatones y crear una puerta de entrada estética a uno de los corredores turísticos más transitados del condado de Orange.

Ambos diseños involucran un puente peatonal elevado sobre la intersección para brindar una alternativa segura y accesible para el tránsito de peatones y ciclistas en la intersección. Ambos diseños utilizarían ascensores y escaleras de cambio para acceder al Puente Peatonal. La diferencia en los dos diseños es la forma en la parte elevada y el movimiento de los peatones sobre la intersección.

El condado lo invita a asistir a una reunión comunitaria pública para revisar las alternativas preferidas que se están considerando y brindar su opinión **el miércoles 22 de febrero de 2023, en la cafetería de Lake Buena Vista High School, 11305 Daryl Carter Parkway, Orlando, FL 32836.** Una jornada de puertas abiertas comenzará a las 5:30 p.m. con una presentación a las 6:00 p.m. La presentación será seguida por un foro de preguntas y respuestas. Los mapas y las pantallas que representan la información del proyecto estarán disponibles para la revisión y comentarios del público. Los representantes del proyecto también estarán presentes para discutir el proyecto y responder cualquier pregunta.



UBICACIÓN DEL PUENTE PEATONAL - SAND LAKE ROAD & INTERNATIONAL DRIVE

Obtenga más información:
www.idriveoverpass.com o **www.orangecountyfl.net**

OPORTUNIDADES PARA PARTICIPAR EN EL ESTUDIO DEL DISEÑO DEL PUENTE PEATONAL

Reunión Pública De Alternativas

Cuando:	Miércoles 22 de Febrero de 2023
Dónde:	Lake Buena Vista High School Cafeteria 11305 Daryl Carter Parkway Orlando, FL 32836
Puertas Abiertas:	5:30 p.m.
Presentación:	6:00 p.m.

Próximas Reuniones Públicas (Primavera 2023)

REUNIÓN PÚBLICA DE RECOMENDACIONES

AUDIENCIA PÚBLICA DE LA COMISIÓN DE PLANIFICACIÓN Y ZONIFICACIÓN

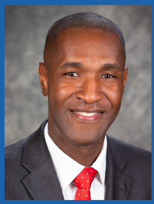
AUDIENCIA PÚBLICA DE LA JUNTA DE COMISIONADOS DEL CONDADO

SE SOLICITA LA PARTICIPACIÓN PÚBLICA SIN DISTINCIÓN DE RAZA, COLOR, ORIGEN NACIONAL, EDAD, SEXO, RELIGIÓN, INGRESOS, DISCAPACIDAD O ESTADO FAMILIAR. LAS PERSONAS QUE REQUIERAN SERVICIOS DE TRADUCCIÓN O INTERPRETACIÓN DE IDIOMAS, LOS CUALES SE BRINDAN SIN COSTO, DEBEN COMUNICARSE CON YEVETTE BEST, COORDINADORA DE TÍTULO VI/NO DISCRIMINACIÓN DEL CONDADO DE ORANGE, AL 407-836-5825 O POR CORREO ELECTRÓNICO A YEVETTE.BEST@OCFL.NET AL MENOS SIETE (7) DÍAS ANTES DE LA REUNIÓN LAS PERSONAS QUE REQUIERAN ADAPTACIONES BAJO LA LEY AMERICANS WITH DISABILITIES ACT OF 1990 (ADA) PUEDEN SOLICITAR ASISTENCIA DE NICOLA NORTON, COORDINADOR DE ADA DEL CONDADO, AL 407-836-6568; CORREO ELECTRÓNICO: NICOLA.NORTON@OCFL.NET AL MENOS SIETE (7) DÍAS ANTES DE LA REUNIÓN.

PUENTE PEATONAL "INTERNATIONAL DRIVE"

ANÁLISIS Y ESTUDIO DE DISEÑO CONCEPTUAL

ALCALDE DE ORANGE COUNTY
JERRY L. DEMINGS

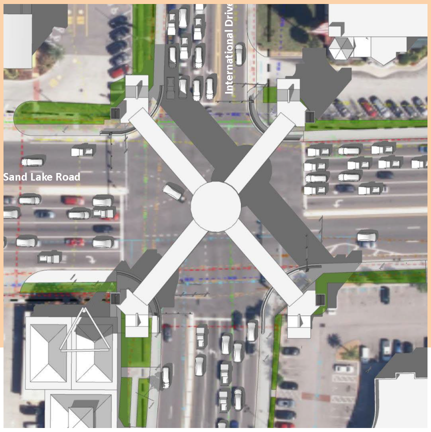


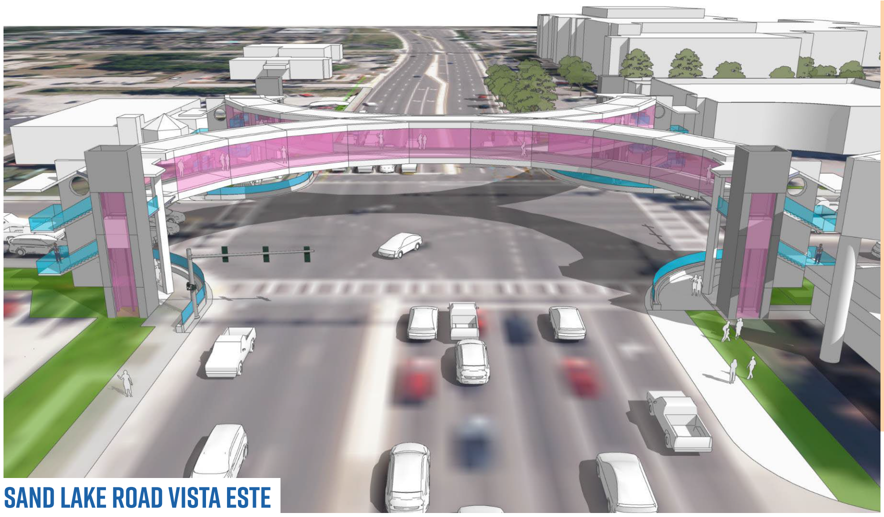
COMISIONADO DEL DISTRITO 6
MICHAEL "MIKE" SCOTT

DISEÑOS ALTERNATIVOS PARA EL PASO ELEVADO PEATONAL - DOS OPCIONES

INTERNATIONAL DRIVE VISTA SUR

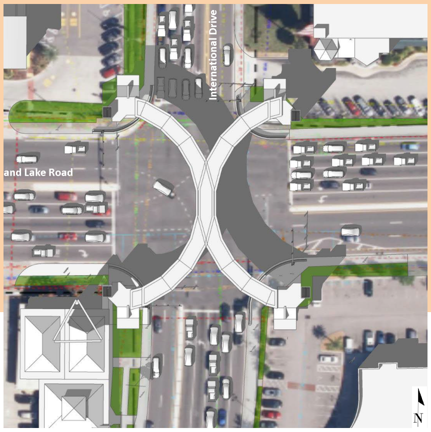
CONFIGURACION DE PUENTE "X"





SAND LAKE ROAD VISTA ESTE

CONFIGURACION DE PUENTE ENTRELAZADO "C"



¿PREGUNTAS O COMENTARIOS?

PUEDE PONERSE EN CONTACTO CON UN MIEMBRO DEL EQUIPO DEL PROYECTO DIRECTAMENTE.

Blanche Hardy, PG, Project Manager
Transportation Planning Division

Orange County Planning, Environmental and Development Services (PEDS) Department
4200 S. John Young Parkway, Orlando, FL 32839

Correo electrónico: blanche.hardy@ocfl.net
Teléfono: 407-836-0257

Rick Baldocchi, P.E. Project Manager
Consultant Project Manager

HHCP&AVCON, A Joint Venture
5555 E. Michigan Street, Suite 200
Orlando, FL 32822

Correo electrónico: rvb@avconinc.com
Teléfono: 407-947-1584

Para información en español:

Esther Fernandez, P.E.
Engineer II

Orange County Public Works Department
4200 S. John Young Parkway, Orlando, FL 32839

Correo electrónico: esther.fernandez@ocfl.net
Teléfono: 407-836-7982

PUBLIC NOTICE

INTERNATIONAL DRIVE PEDESTRIAN OVERPASS

FEBRUARY 22, 2023

Orange County invites the community to a public meeting regarding the International Drive Pedestrian Overpass. Orange County is evaluating concepts for designing a pedestrian overpass across Sand Lake Road at International Drive. The project's goals are to improve pedestrian safety and create an aesthetic gateway to one of Orange County's most-heavily traveled tourism corridors.

The purpose of this meeting is to present design concepts for the overpass and hear community feedback.

The public meeting will be held on **Wednesday, February 22, 2023, at Lake Buena Vista High School's cafeteria at 11305 Daryl Carter Parkway, Orlando, FL 32836.** The meeting will begin with an open house from 5:30 to 6:00 p.m., followed by a formal presentation at 6:00 p.m. The public will have opportunities to ask questions and provide comments to Orange County project representatives. Project information also is available on the project website at www.idriveoverpass.com or on the Orange County website at https://www.orangecountyfl.net/TrafficTransportation/TransportationProjects/InternationalDrivePedestrianOverpass.aspx.

Public participation is solicited without regard to race, color, national origin, age, sex, religion, income, disability, or family status. Persons who require language translation or interpretative services, which are provided at no cost, should contact Yevette Best, Orange County Title VI/Nondiscrimination Coordinator, at 407-836-5825 or yevette.best@ocfl.net at least seven (7) days prior to the meeting.

Persons requiring accommodations under the Americans with Disabilities Act of 1990 (ADA) may request assistance from Nicola Norton, County ADA Coordinator, at 407-836-6568 or nicola.norton@ocfl.net at least seven (7) days prior to the meeting.

For more information, please contact Blanche Hardy, P.G., Project Manager for Orange County Planning Environmental and Development Services Department, Transportation Planning Division, at 407-836-0257 or blanche.hardy@ocfl.net.

Para información en español, contactar a Esther Fernández Cañizares, Staff Engineer, Orange County Public Works, Engineering Division. Teléfono: 407-836-7982; Correo Electrónico: esther.fernandez@ocfl.net.

WHAT:	Public Meeting
WHERE:	Lake Buena Vista High School
WHEN:	Open House - 5:30 p.m.
	Presentation - 6:00 p.m.

NOTIFICACIÓN PÚBLICA

PUENTE PEATONAL “INTERNATIONAL DRIVE”
22 DE FEBRERO DEL 2023

El Condado de Orange invita a la comunidad a una reunión pública referente al puente peatonal “International Drive.” El Condado Orange está evaluando conceptos para diseñar un puente peatonal a través de Sand Lake Road e International Drive. Los objetivos del proyecto son mejorar la seguridad de los peatones y crear una puerta de entrada estética a uno de los corredores turísticos más transitados del Condado Orange.

El propósito de esta reunión es presentar los conceptos de diseño para el Puente Peatonal y escuchar los comentarios de la comunidad.

La reunión pública se llevará a cabo el **Miércoles, 22 de febrero del 2023 en la cafetería de Lake Buena Vista High School, ubicada en 11305 Daryl Carter Parkway, Orlando, FL 32836.** La reunión comenzará con una jornada de puertas abiertas de 5:30 a 6:00 p.m., seguida de una presentación formal a las 6:00 p.m. El público tendrá la oportunidad de hacer preguntas y proveer comentarios al Condado Orange y a los representantes del proyecto.

La información del proyecto también está disponible en su sitio web: www.idriveoverpass.com, o en el sition web del Condado Orange: https://www.orangecountyfl.net/TrafficTransportation/TransportationProjects/InternationalDrivePedestrianOverpass.aspx

Se solicita la participación pública sin distinción de raza, color, origen nacional, edad, sexo, religión, ingresos, discapacidad o estado familiar. Las personas que requieran servicios de interpretación o traducción de idiomas, los cuales se brindan sin costo alguno, deben comunicarse con Yevette Best, Coordinadora de Título VI/No Discriminación del Condado Orange, al 407-836-5825; Correo Electrónico: yevette.best@ocfl.net al menos siete (7) días antes de la reunión.

Las personas que requieran adaptaciones bajo la ley Americans with Disabilities Act of 1990 (ADA) pueden solicitar asistencia de Nicola Norton, Coordinador de ADA del Condado, al 407-836-6568; Correo Electrónico: nicola.norton@ocfl.net al menos siete (7) días antes de la reunión.

Para más información, contactar a
Blanche Hardy, P.G., Gerente de Proyectos del Departamento de Servicios de Desarrollo y Medio Ambiente de Planificación del Condado Orange, División de Planificación de Transporte, al 407-836-0257; Correo Electrónico: blanche.hardy@ocfl.net.

Para información en español, contactar a
Esther Fernández Cañizares, Orange County Public Works, Engineering Division.
Teléfono: 407-836-7982; Correo Electrónico: esther.fernandez@ocfl.net.

FOR IMMEDIATE RELEASE

[RELEASE DATE GOES HERE]

International Drive Pedestrian Overpass
Public Meeting on February 22, 2023

Orange County, Fla. -- Orange County is evaluating concepts for designing a pedestrian overpass across Sand Lake Road at International Drive with the goals of improving pedestrian safety and creating an aesthetic gateway to one of Orange County's most-heavily traveled tourism corridors. After receiving feedback from adjacent property owners and community members, two preferred alternatives are being advanced and refined.

All design concepts included elevated pedestrian bridges over the intersection to provide a safe, walkable alternative for foot and bike traffic at the intersection. The design concepts also considered using switchback stairways and elevators to access the overpass. The differences between the designs are the shape of the elevated portion and the movement of pedestrians over the intersection.

The County invites you to attend a community meeting to review the preferred alternatives under consideration and to provide input.

Wednesday, February 22, 2023 at 5:30 p.m. | Presentation at 6 p.m.
Lake Buena Vista High School Cafeteria
11305 Daryl Carter Parkway, Orlando, FL 32836

There will be a presentation followed by a question-and-answer forum. Maps and displays depicting project information will be available for public review and comment. Project representatives will also be present to discuss the project and answer any questions.

Public participation is solicited without regard to race, color, national origin, age, sex, religion, income, disability, or family status. Persons who require language translation or interpretation services, which are provided at no cost, should contact **Yevette Best, Orange County Title VI/Nondiscrimination Coordinator**, at 407-836-5825 or via email at yevette.best@ocfl.net at least seven (7) days prior to the meeting. Persons requiring special accommodations under the Americans with Disabilities Act of 1990 (ADA) may request assistance from **Nicola Norton, County ADA Coordinator,** at 407-836-6568 or nicola.norton@ocfl.net at least seven (7) days prior to the meeting.

If you have any questions regarding the project or meeting, please visit the project website at www.idriveoverpass.com or contact Blanche Hardy, P.G., Orange County Project Manager, at 407-836-0257 or via email at blanche.hardy@ocfl.net. Para información en español, llame a Esther Fernández Cañizares, P.E., Orange County Public Works, Engineering Division, 4200 S. John Young Parkway, Orlando, FL 32839. Teléfono: 407-836-7982; Correo Electrónico: esther.fernandez@ocfl.net.

###

About Orange County Government: Orange County Government strives to serve its residents and guests with integrity, honesty, fairness and professionalism. Located in Central Florida, Orange County includes 13 municipalities and is home to world-famous theme parks, one of the nation's largest convention centers and a thriving life science research park. Seven elected members make up the Board of County Commissioners, including the Mayor, who is elected countywide. For more information, please visit www.OCFL.net or go to Orange County Government's social media channels.

HHCP&AVCON
A JOINT VENTURE

Meeting Minutes

Date	March 5, 2023	Meeting Date	February 22, 2023
Project	International Drive (I-Drive) Pedestrian Bridge Overpass Intersection Analysis and Overpass Conceptual Design Study		
Subject	Alternatives Public Meeting		
Participants	See Below		
Location	Lake Buena Vista High School Cafeteria (11305 Daryl Carter Parkway, Orlando, FL 32836)	Prepared By	Rick Baldocchi, P.E. Christine Dellert
Distribution	Public Website		

Attendees:

Commissioner Mike Scott, Orange County
Blanche Hardy, Orange County
Rick Baldocchi, AVCON
Michael Chatham, HHCP
Chris Atcachunas, Atcachunas Law
Micah Bass, 7200 Wyndham
Lucas Boyce, I-Drive CRA
Luann Brooks, I-Drive District
Russ Dagon, Universal Orlando
Michelle Frank, Orange County
Carter Gresham, Orange County
Brenda Hampton, McDonald's Corp.
Stacy Huber, International Square
Guamay Martell, Telemundo
Deonte Moore, Orange County
Tabitha Moore, International Square
Renzo Nastasi, Orange County
Carmen Petersen, I-Drive CRA
Clint Pletzer, AVCON
Ian Phyars, Orange County
Brian Sanders, Orange County
Krista Taraszewski, Orange County
Thuy Thach, Travel Lodge

The Alternatives Public Meeting provided background and project details on the International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study, including work to date and the preferred bridge concepts for the overpass. The meeting organizers also solicited comments from the public. A summary of the meeting discussion is below.

Blanche Hardy introduced the purpose of the meeting and shared a PowerPoint presentation with information on the overpass study and its work to date. This included:

1. Project Introduction and Feedback
    a. The project has the support of Orange County leadership, including Mayor Demings and Commissioner Mike Scott for District 6, which the area of study is in. Commissioner Scott is with the group this evening.
    b. There are several ways for the public to provide feedback on the project, including project manager contact information, speaker cards, public comment forms, and the project website.

c. The presentation will be followed by a question-and-answer period, and anyone who would like to receive a newsletter should provide their address to be included on the mailing list.
d. Blanche introduced Michael Chatham with HHCP to provide additional project background, goals, and the alterative design concepts that have been developed with input from the Project Advisory Group (PAG).
e. The PAG is made up of business representatives in the surrounding project area, county representatives, emergency first responders, the Convention Center, and FDOT. Three PAG meetings have been held to date to discuss project objectives, existing conditions, and preliminary bridge concepts and preferred directions. At the next meeting, the team expects to show the renderings and refined design for the bridge.
f. Michael reviewed the diverging diamond interchange design at I-4 and Sand Lake Road and traffic conditions and the impact it would have on this project. He referenced the project location at the intersection of Sand Lake Road and International Drive, with businesses on each corner of the intersection.
g. Michael reviewed several of the project's challenges, including:
    i. Utility impacts
    ii. Right-of-way
    iii. Access impacts
    iv. Visibility impacts
    v. Traffic speed impacts
    vi. ADA accessibility
    vii. Fire and rescue access and parking
    viii. Pedestrian travel
    ix. Security
h. Michael also provided an average daily traffic count at the intersection: 28,000 AADT on W Sand Lake Road (west side of intersection); 36,500 AADT on W Sand Lake Road (east side of the intersection); and 22,500 AADT on International Drive.
i. A 5-, 10-, and 15-minute walking radius map showed the areas and businesses that could be impacted by this project.

2. Project Goals
    a. Provide pedestrians safe crossing to all four intersections;
    b. Create an iconic gateway to the I-Drive Entertainment and Convention Center District;
    c. Improve vehicular capacity at the intersection;
    d. Minimize the impact on adjacent property owners;
    e. Enhance the pedestrian nature of the district;
    f. Provide ADA accessibility at bridge connections;
    g. Make the experience of using the bridge positive, memorable, and "Instagram-able;" and
    h. Utilize lighting to enhance the experience and safety of the bridge at night.
    i. As part of this study, the team documented many dangerous interactions at the intersection, including people on foot and bicycle trying to cross the street around cars. Michael showed a series of pictures of these interactions taken in one hour.
    j. Every day, there are eight fatalities and 49 serious injuries on Florida roadways. As you slow cars down, the number of fatalities and serious incidents are reduced. This project would eliminate the ability to cross on grade and make everyone on foot use the bridge. The project target speed for the roadway below has not yet been determined.
    k. Michael shared photos of iconic gateways in other geographic locations and talked about the need to create a link between the image of the bridge and what is happening on International Drive.

3. Vertical Circulation
    a. The team studied different methods of vertical circulation on all four corners, including ramps, elevators, stairs, and escalators and reviewed the advantages and disadvantages to each, including the travel distance, power and maintenance, footprint, whether it is a visual obstacle, and accessibility.
    b. Every corner must have accessible access and emergency egress.
    c. The team created a scoring matrix of advantages and disadvantages and determined that either a ramp or a stair and escalator combination at each corner would meet all project requirements.
    d. Michael also showed a series of maps with dense utility locations on the site and at each corner, which the team would need to consider in design.
    e. Michael said the team also considered the visibility impact of vertical circulation. If placed in the right of way, they would block the businesses' visibility to the public and hinder the cars turning at the intersection. By eliminating the crosswalks, the walk strips could be moved closer to the intersection to improve visibility.
    f. Michael showed a modified design of a platform, staircase, and elevator that allows users to walk directly onto the corner properties. He also showed an alternative design with stairs wrapped around the elevator and direct access to the properties. Any of the designs with the stair and elevator combination could be utilized, depending upon what fits best on each corner.
    g. Michael also showed a conceptual design with a ramp that covers the entire side of a corner property and said that is one of the reasons the team does not consider this a preferred option.
4. Preliminary Bridge Concepts
    a. The first bridge concept the team explored was a square configuration, as well as a circular configuration. The circulation configuration was the longest and had the longest walking distance.
    b. Another option the team explored was a "C" configuration, but this configuration does not connect all four corners equally.
    c. The team also provided and explored an "I" configuration (and a modified version) for the bridge.
    d. One of the preferred configurations for the bridge was an "X" configuration.
    e. The other preferred option was an intersecting "C" bridge, which is the shortest of all the options and has the shortest average travel distance. This configuration also provides an opportunity for a unique crossing experience because of the curved section and maximizes the views to the surrounding area and businesses. Michael showed a series of conceptual images of this design.
    f. Michael showed a scoring matrix with bridge criteria and each configuration, which includes travel distances, average walking distance, and bridge length. The highest-ranking option is the intersecting "C" configuration.
    g. The results of the PAG's work to date include:
        i. The highest-ranked and preferred concepts included the intersecting "C" and "X" concepts.
        ii. The project would utilize stairs and elevators or ramp at each intersection (best option for each corner).
        iii. The project will minimize the impact on existing utilities and on adjacent property owners.
        iv. The project will create an iconic gateway to the Convention and Entertainment District.

        v. The project will consider potential bridge connections to adjacent properties, both elevated and on grade.
        vi. The project will consider the experience of those traveling under the bridge, as well as those experiencing the bridge by crossing it.
        vii. The bridge design should consider pedestrians, strollers, and bicyclists.
        viii. ADA accessibility is critical at all corners.
        ix. The team will further develop the two preferred alternatives (intersecting “C” and “X”).
    h. Michael also shared several summary points as the team continues their work:
        i. Curved bridge configurations create a more dynamic visual and a better experience for bridge users.
        ii. The elimination of the crosswalks will increase pedestrian safety and reduce traffic congestion.
        iii. The team intends to put in barriers at the intersections that will keep people from crossing, and corner wrapping or seat walls will be required to prevent people from attempting to cross the intersection at grade.
        iv. The bridge configuration has little impact on space required at intersection corners.
        v. The team is seeking input on the preferred configuration to meet the operational, aesthetic, budget, and iconic gateway criteria.
    i. Michael showed overhead design concepts of the bridge configurations that included photovoltaic panels in the center to help with powering lighting features. As part of these designs, Michael showed two curved bridge sections with a connection in the middle as a possible modified “X” configuration.
    j. The team will provide animations and renderings of bridge designs at the next meeting.
5. Public Questions and Comments
    a. **Question:** How will security be handled on the bridge?
        i. Michael said the bridge will have security cameras and the team has met with OCSO and Fire Rescue about their patrol of the bridge. The elevators will be glass so that people will be able to see in and out as a passive safety measure. The bridge may have a roof to protect pedestrians from weather. The elevators and shafts will be lit.
    b. **Question:** Was pedestrian traffic studied and which intersections were traveled the most, and to which destination?
        i. Michael said the majority of traffic is going north and south on International Drive. Rick Baldocchi said the team is working on an analysis of the intersection that includes the pedestrian count and modeling the intersection with and without the crosswalk, and will share this data with FDOT.
    c. **Question:** What is the anticipated date of construction?
        i. Blanche said past conceptual analyses have led the County to this point of a design concept study and ability to construct the bridge. The intention is to bring the concepts back to the PAG in the next 4-6 weeks and then bring the proposed alternative design to a public meeting for additional comments and feedback. A recommended alternative would then go to the local planning agency and to the Board of County Commissioners’ work sessions. The project would then go into public hearings with the Board of County Commissioners. At the end of the public hearings, the project team will ask the BCC to approve this study and for permission to design and construct this structure. A significant portion of the funding is in place through the CRA, as well as requests for federal and state

funding. Blanche said the hope is to see activity within 5 years. The County project team will go to the Board for approvals sometime this summer; it takes 6 months to hire a designer; will be in design for 2 years, which includes negotiating with the property owners for right of way acquisition; it will take 6 months to hire a contractor to construct the bridge; that leaves another year and a half for construction. For a transportation project of this size that is very fast.

d. **Question:** So, 5 years is a minimum for construction? What are the taxpayers getting? What about the millions of dollars put into this project if the property owners or the County Commissioners do not agree to move forward?
    i. Blanche says this was a conceptual project for many years but did not have an engineering firm or architects under contract to study the components of this bridge. The project is being funded through the CRA.
    ii. Renzo Nastasi said the first attempt to address this overpass did not go to the County Commissioners because the County could not get the property owners to agree. This is the first time that the County has a consultant on board to go through this feasibility study. The project has to go through the BCC for its approval, and the County will still have to negotiate with the property owners. This study is the first one and it costs $600,000.
e. **Question:** How much funding already is earmarked for this?
    i. Renzo Nastasi says there is a line item in the CRA that identifies this project. The County also is in the process of applying for federal grants for the project, including matching grants. The dollars collected in the CRA are spent within the CRA by statute.
f. **Question:** Can you show us any of the agreements with the property owners at the four corners?
    i. Renzo Nastasi says final agreements will be public.
    ii. Rick says that the team cannot negotiate with the property owners yet because it needs to get to a level of design to identify how much right of way would be needed. Part of this study is to finalize those lines to provide to the County so it can enter into negotiation.
g. **Question:** Are you studying subterranean?
    i. Rick and Michael said they are, but the utilities would be a much larger challenge if they went subterranean.

6. Final Comments
    a. Blanche reminded people to ensure they have signed up for the mailing list and to look for project updates on the website, including materials from this meeting.

Transportation Planning Division

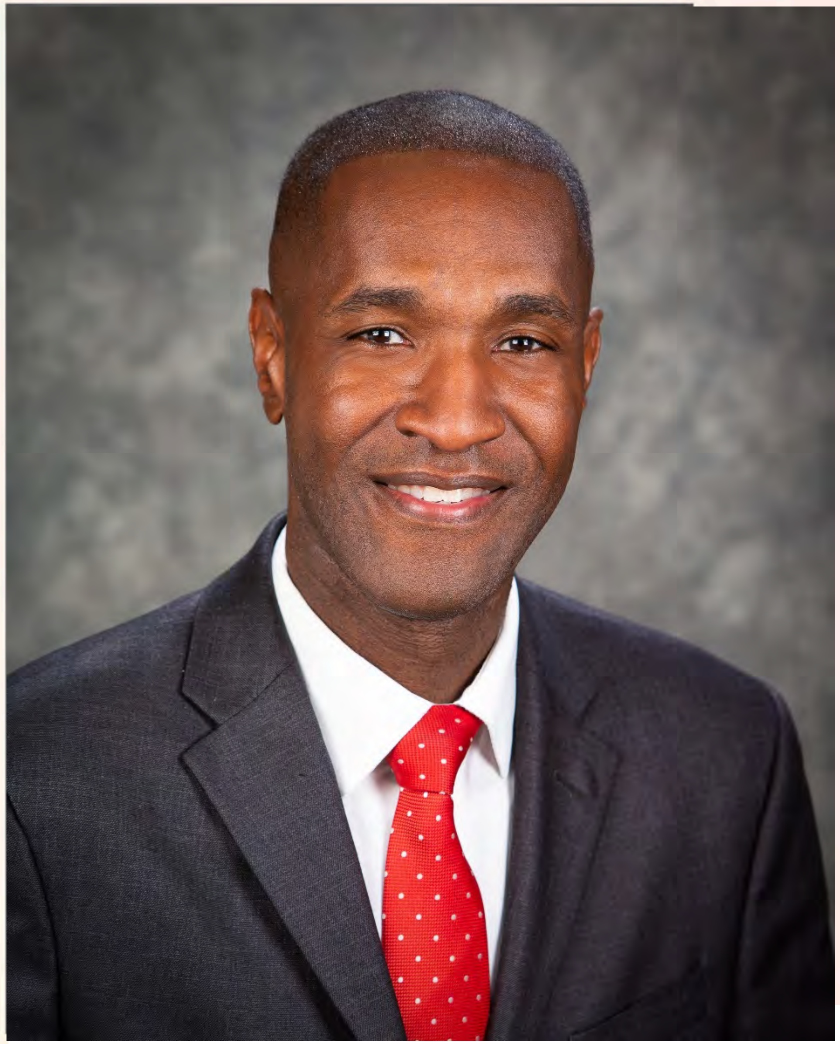
ORANGE COUNTY GOVERNMENT
FLORIDA

International Drive Pedestrian Overpass
Analysis and Overpass Conceptual Design Study

Public Meeting #1

HHCP&AVCON
A JOINT VENTURE

Jerry L. Demings
Orange County Mayor



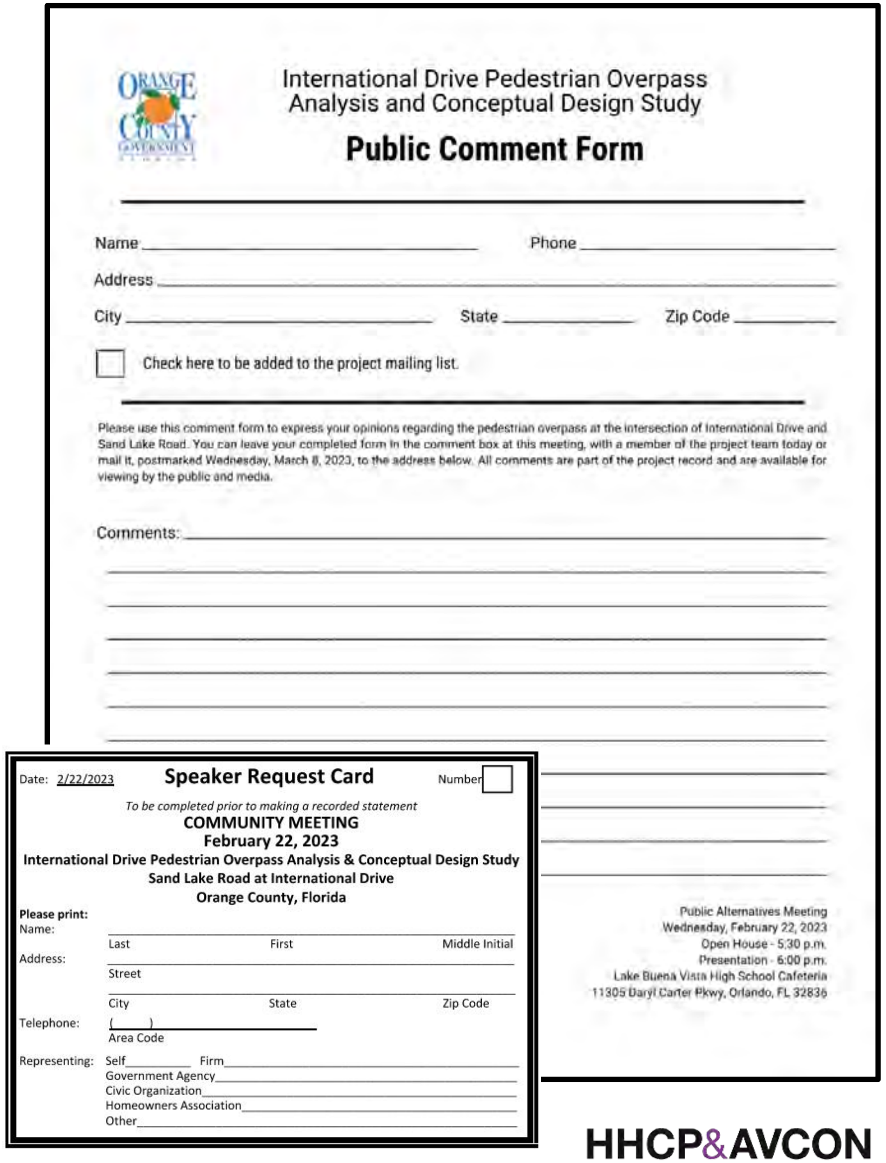
Michael "Mike" Scott
District 6 Commissioner

Ways to Provide Feedback

Orange County Project Contact:
Blanche Hardy P.G., ARM
Project Manager
Community, Environmental and Development Services
Transportation Planning Division
4200 John Young Parkway
Orlando, FL 32839
Email: blanche.hardy@ocfl.net
Phone: (407) 836-0267
Fax: (407) 836-8079

Consultant Project Contact:
Rick Baldocchi, PE
AVCON
5555 E. Michigan Street, Suite 200
Orlando, FL 32822
Email: RVB@avconinc.com
Phone: (407)-599-1122

Call or Email (website, *www.idriveoverpass.com* newsletter and this presentation)



International Drive Pedestrian Overpass Analysis and Conceptual Design Study

Public Comment Form

Name ______ Phone ______

Address ______

City ______ State ______ Zip Code ______

☐ Check here to be added to the project mailing list.

Please use this comment form to express your opinions regarding the pedestrian overpass at the intersection of International Drive and Sand Lake Road. You can leave your completed form in the comment box at this meeting, with a member of the project team today or mail it, postmarked Wednesday, March 8, 2023, to the address below. All comments are part of the project record and are available for viewing by the public and media.

Comments: ______

Public Alternatives Meeting
Wednesday, February 22, 2023
Open House - 5:30 p.m.
Presentation - 6:00 p.m.
Lake Buena Vista High School Cafeteria
11305 Daryl Carter Pkwy, Orlando, FL 32836

Date: 2/22/2023 **Speaker Request Card** Number ☐

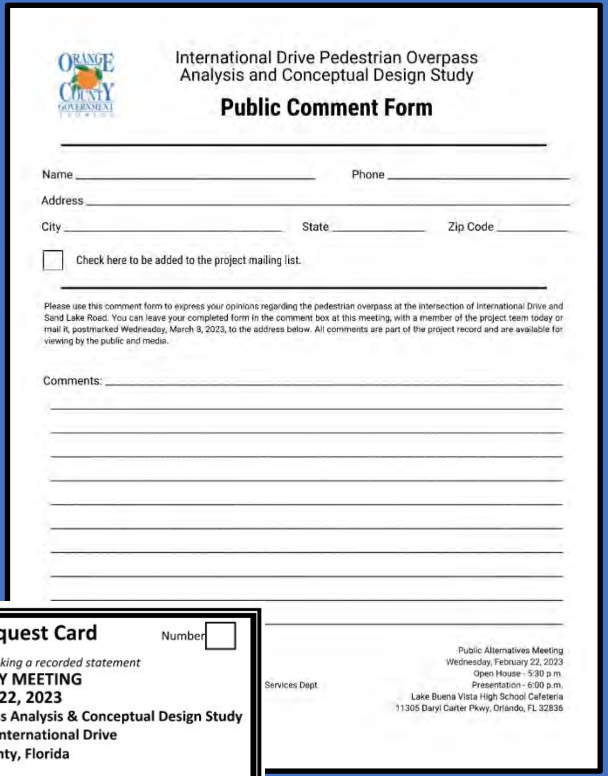
To be completed prior to making a recorded statement

COMMUNITY MEETING
February 22, 2023
International Drive Pedestrian Overpass Analysis & Conceptual Design Study
Sand Lake Road at International Drive
Orange County, Florida

Please print:
Name: ______ Last / First / Middle Initial
Address: ______ Street
______ City / State / Zip Code
Telephone: ( ) ______ Area Code
Representing: Self______ Firm______
Government Agency______
Civic Organization______
Homeowners Association______
Other______

Meeting Instructions

- The presentation will be followed by a question-and-answer period.
- If you would like to speak, please fill out a comment card. Comments will be addressed in the order they are received.
- Comment forms are available at the sign in desk.
- If you received a newsletter, you are on the project mailing list. If you did not, please sign in and provide your address to be added to the mailing list.



International Drive Pedestrian Overpass Analysis and Conceptual Design Study

Public Comment Form

Name ______ Phone ______

Address ______

City ______ State ______ Zip Code ______

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Services Dept.

Public Alternatives Meeting
Wednesday, February 22, 2023
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Lake Buena Vista High School Cafeteria
11305 Daryl Carter Pkwy, Orlando, FL 32836

Date: 2/22/2023 **Speaker Request Card** Number ☐

To be completed prior to making a recorded statement

COMMUNITY MEETING
February 22, 2023
International Drive Pedestrian Overpass Analysis & Conceptual Design Study
Sand Lake Road at International Drive
Orange County, Florida

Please print:
Name: ______ Last / First / Middle Initial
Address: ______ Street
______ City / State / Zip Code
Telephone: ( ) ______ Area Code
Representing: Self______ Firm______
Government Agency______
Civic Organization______
Homeowners Association______
Other______

Project Advisory Group
Meeting Objectives

Meeting Number One
- Introduction of Prticipants
- General Overview of Project
- Initial Comments from Group Members

Meeting Number One
Introduction of Participants
General Overview of Project
Initial Comments from Group Members

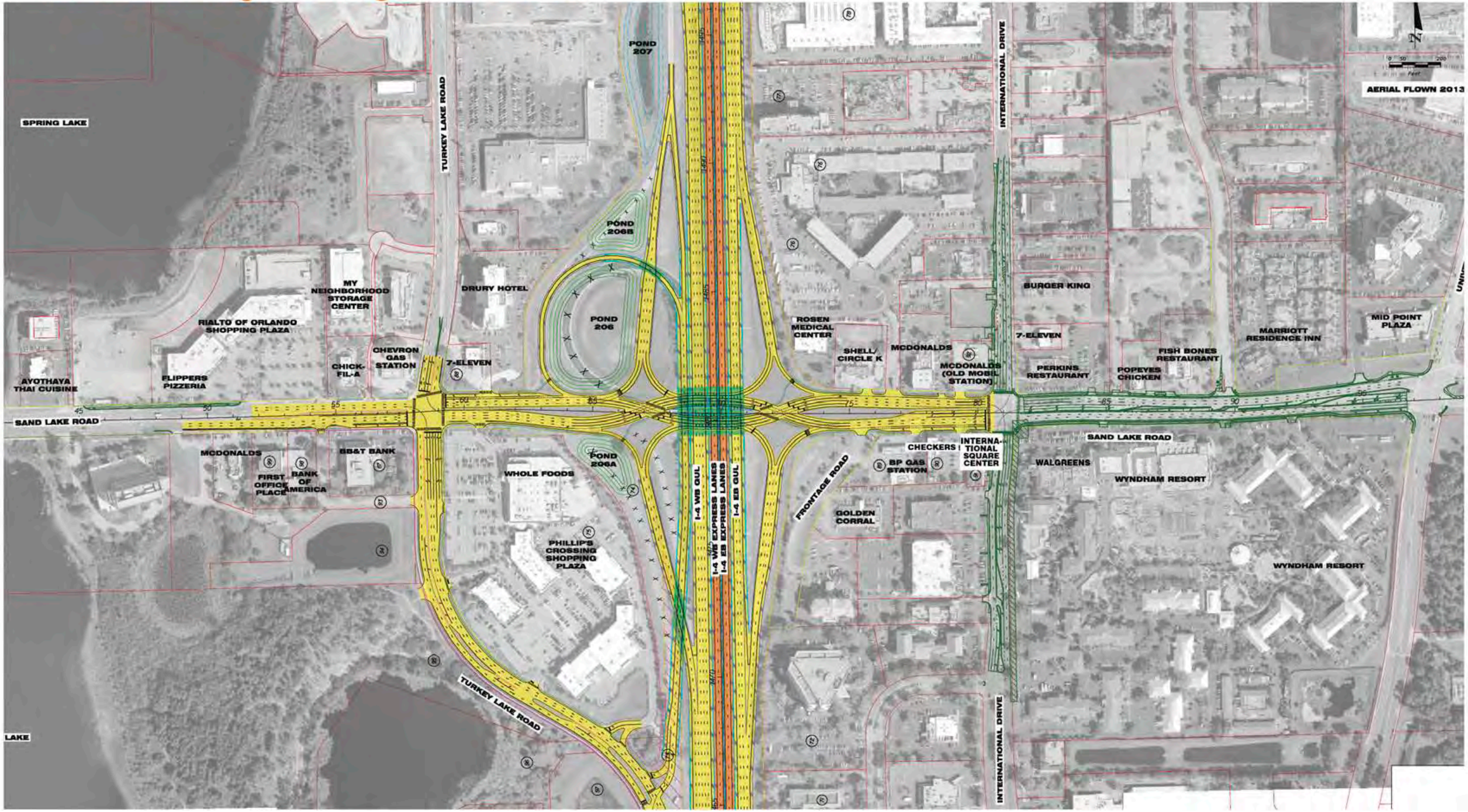
Meeting Number Two
Presentation on Findings of Existing Conditions
Discussion of General Bridge Features; Ramps, Stairs Elevators, etc.
Discussion of Right-of-Way and Access impacts
Discussion of Utility Impacts
Comments from Group Members

Meeting Number Three
Presentation of Preliminary Bridge Concepts
Comparison of Aesthetics for Each Concept
Comments from Group Members

Meeting Number Four
Presentation of Refined Bridge Concepts
Discussion of Refined Aesthetics
Further Discussion of Right-of-Way and Access Impacts
Further Discussion of Utility Impacts
Final Comments from Group Members

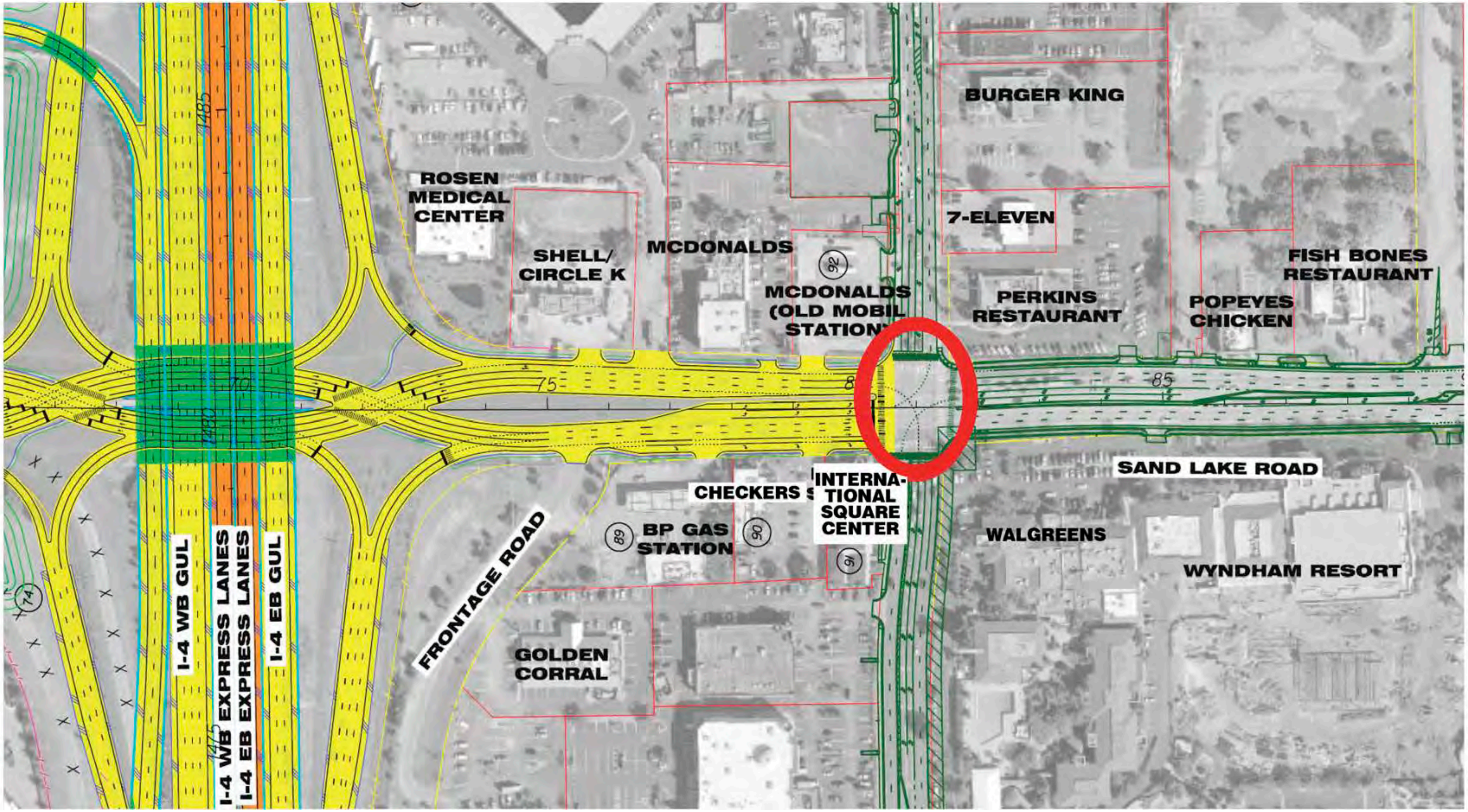
Meeting Number Five
Presentation of Final Concept Plans for 3 Alternatives
Presentation on Evaluation Method and Rankings
Discuss Rankings and Determination of Preferred Alternative

I-4 Interchange – Design Build 2023



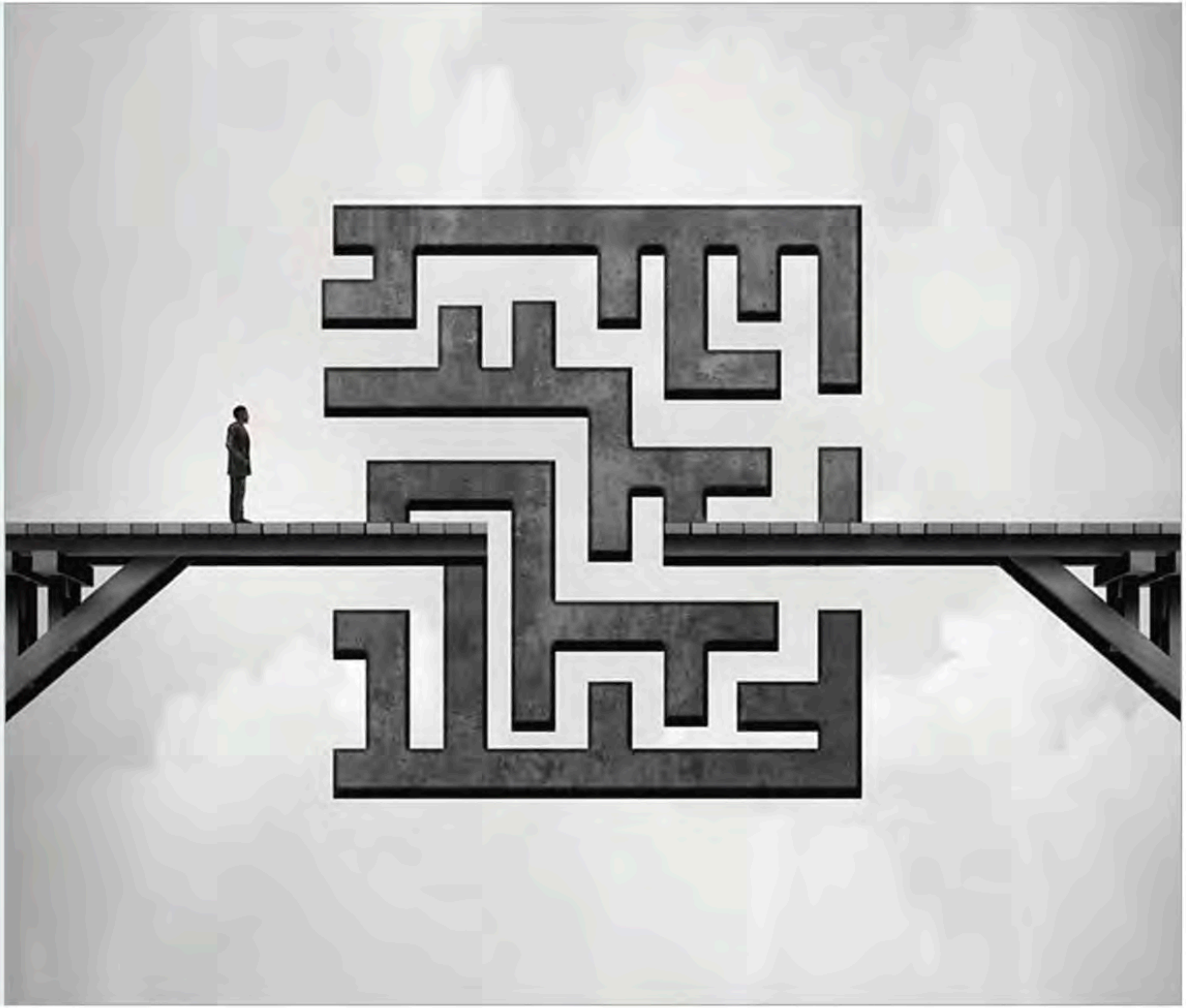
Public Meeting #1

Pedestrian Bridge Location

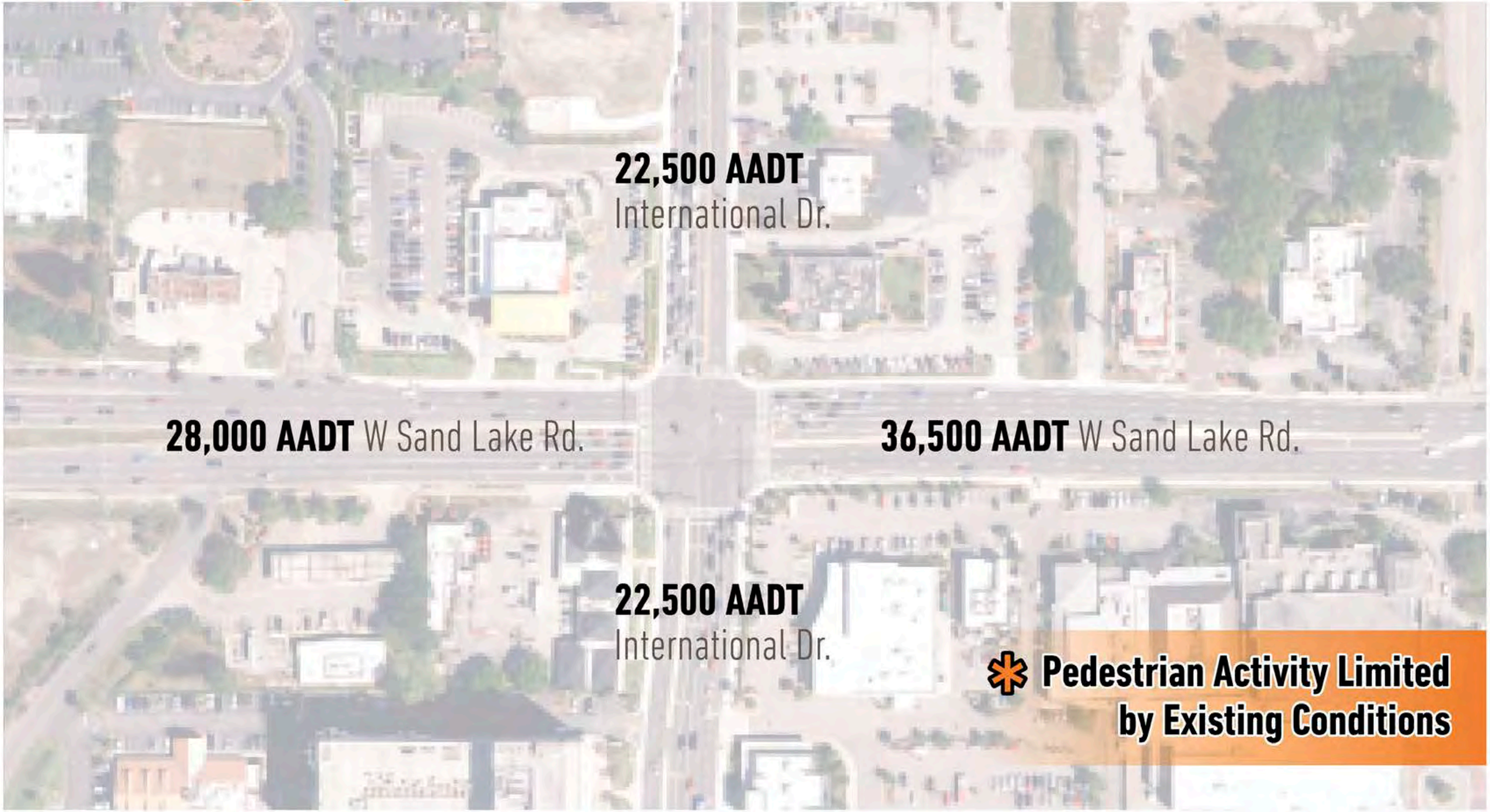


Challenges

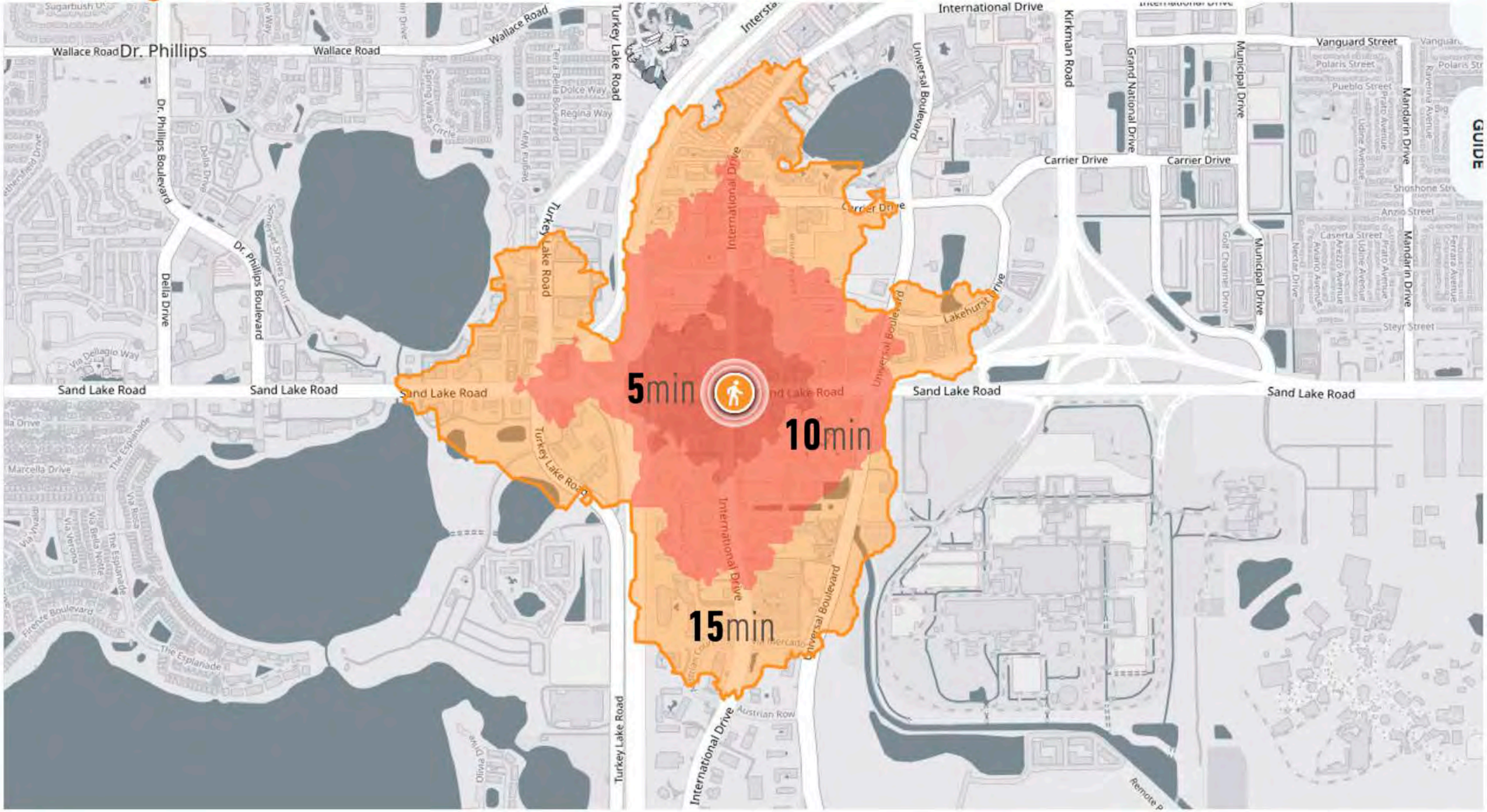
1. Utility Impacts
2. Right-of-Way Impacts
3. Access Impacts
4. Visibility Impacts
5. Traffic Speed Impacts
6. ADA Accessibility
7. Fire/Rescue Access
8. Fire/Rescue Parking
9. Pedestrian Use – Extra Walking Distance
10. Security



AADT - Average Daily Traffic Count



Walking Radius

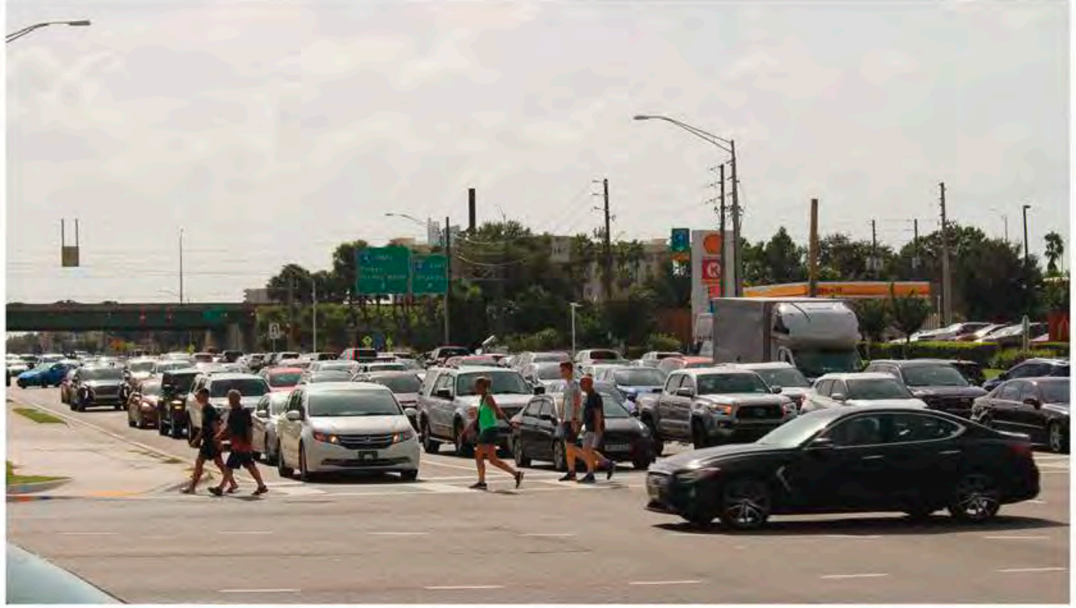


Project Goals

1. Provide pedestrians **safe** crossing to all four intersection corners
2. **Iconic** Gateway to I-Drive Entertainment and Convention Center District
3. Improve Vehicular capacity at the intersection
4. Minimize impact on adjacent property owners
5. Minimize need to relocate existing utilities
6. Enhance **pedestrian** nature of the district
7. Provide ADA **accessibility** at bridge connections
8. Make the **experience** of using the bridge a positive, memorable, and Instagram-able
9. Utilize **lighting** to enhance the experience and safety of the bridge at night

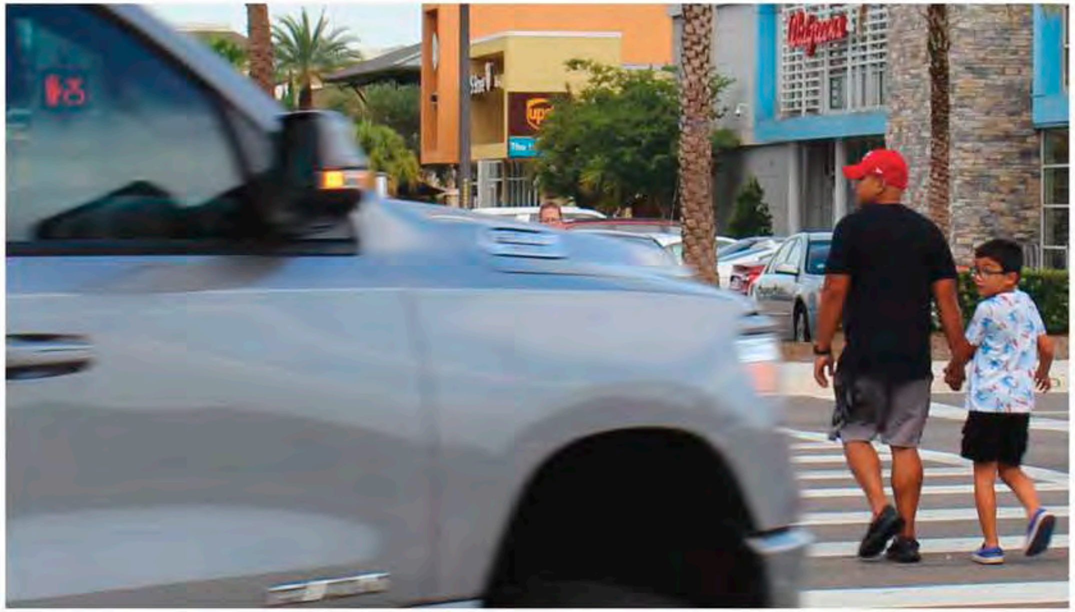
BICYCLE CROSSING WITH CROSSWALK

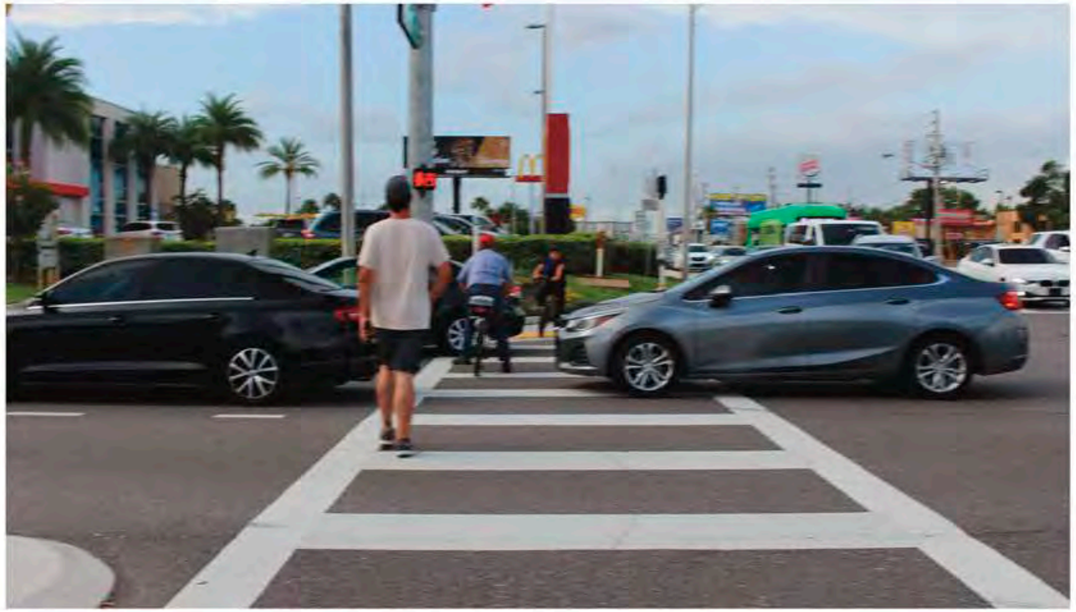
FEELING COMPELLED TO RUN WITH CROSSWALK

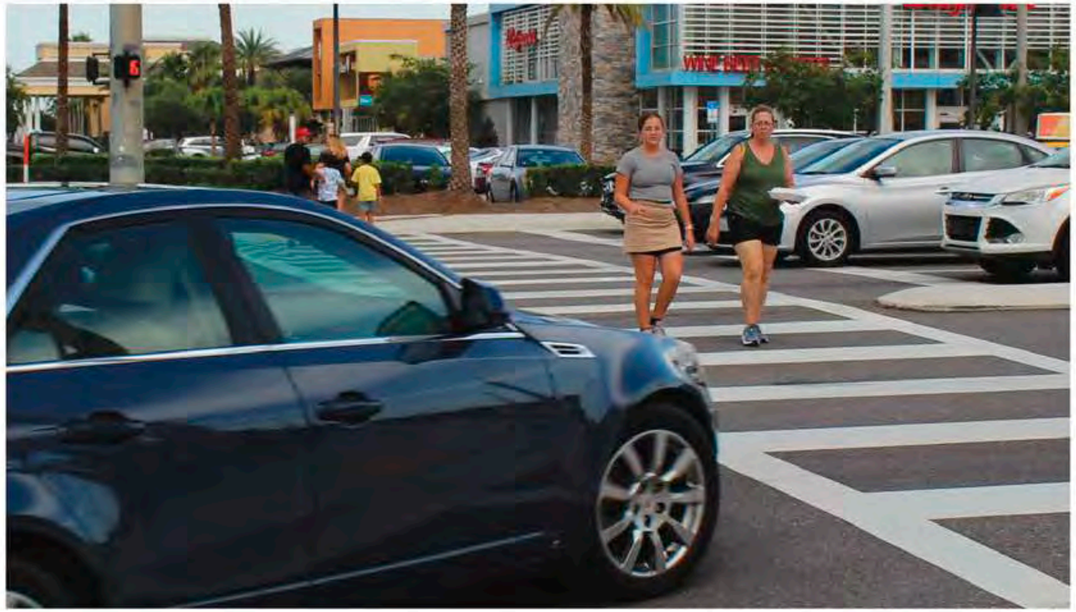


WEAVING THROUGH TRAFFIC IN CROSSWALK

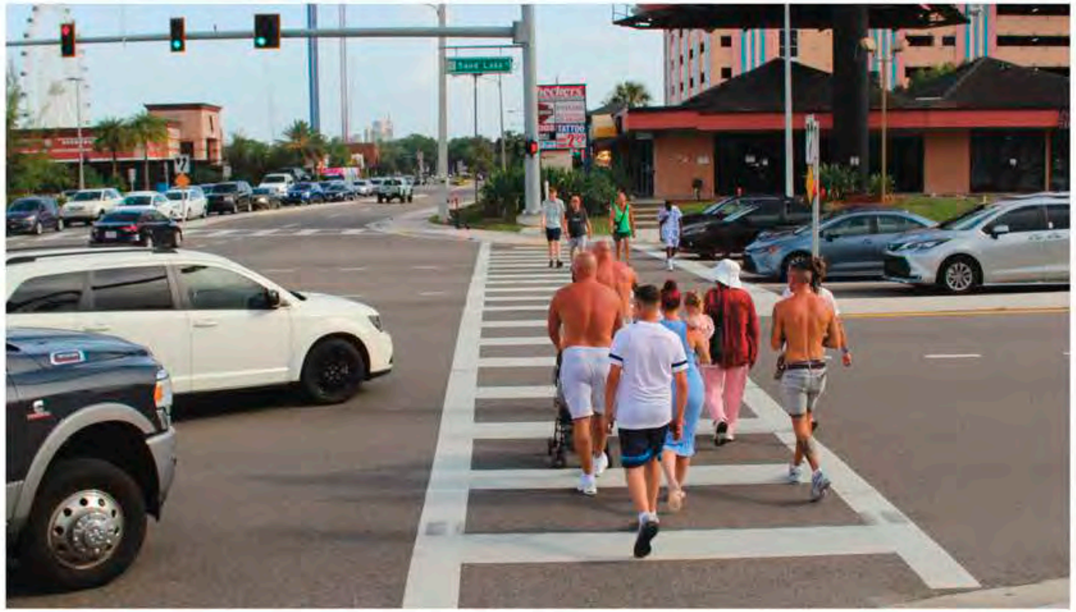
TRAFFIC INTERACTIONS

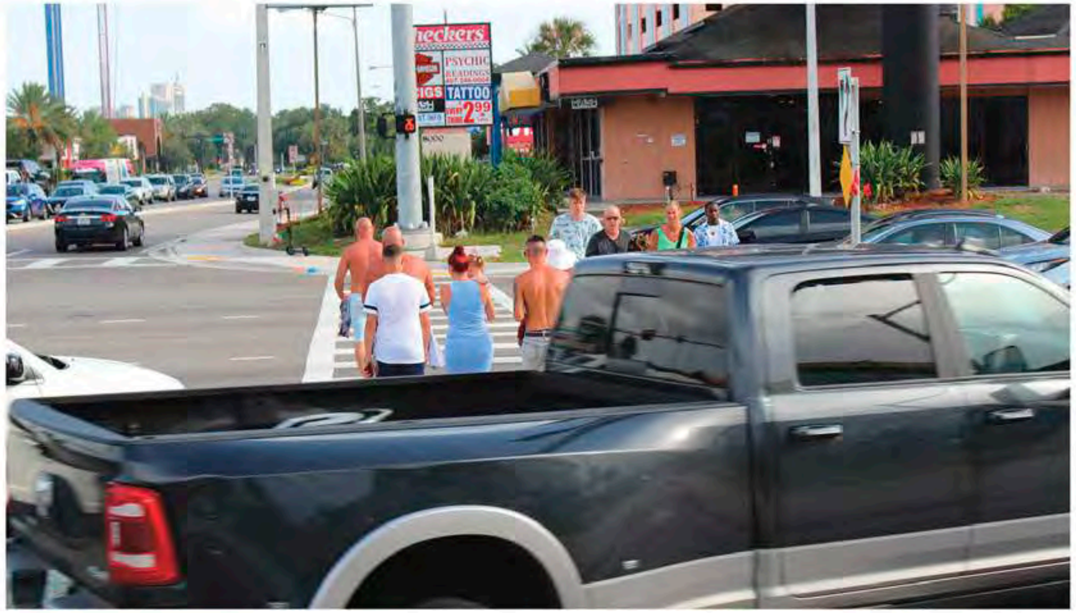




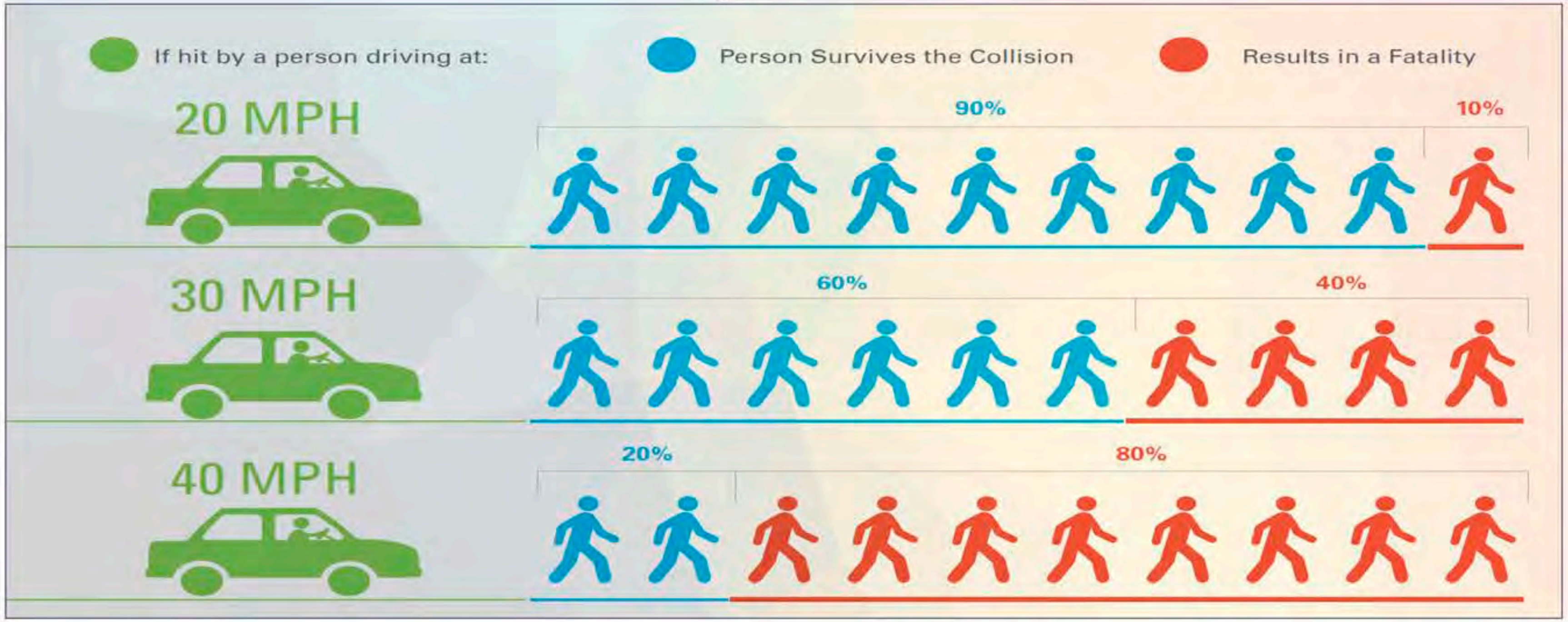


UNSIGHTED DOUBLE TURN





Why Do We Need to Provide Safety for Pedestrians?



Safety

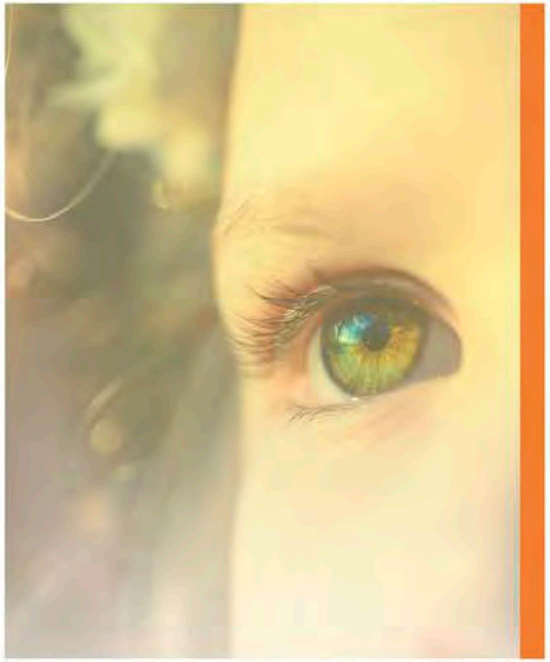
1. **Diverging Diamond –** Sand Lake Road & I-4 Interchange
2. **Design Speed**
   - A principal design control that regulates the selection of many of the project standards and criteria used to design a roadway project.
3. **Posted Speed**
   - Maximum speed allowed in a speed zone as designated by a sign within the zone.

Sand Lake Road Interchange Improvements

4. **Target Speed**
   - Highest speed at which vehicles should operate on a thoroughfare in a specific context, consistent with the level of multi modal activity generated by adjacent land uses, to provide both mobility for motor vehicles and a supportive environment for pedestrians, bicyclists, and public transit users.

Why Do We Want an Iconic Gateway?


ETCO PARK

Meeting Number Two

Vertical Circulation

ORANGE COUNTY GOVERNMENT FLORIDA

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Vertical Circulation

Options

1. Ramps
2. Stairs
3. Elevators
4. Escalators

Ramps

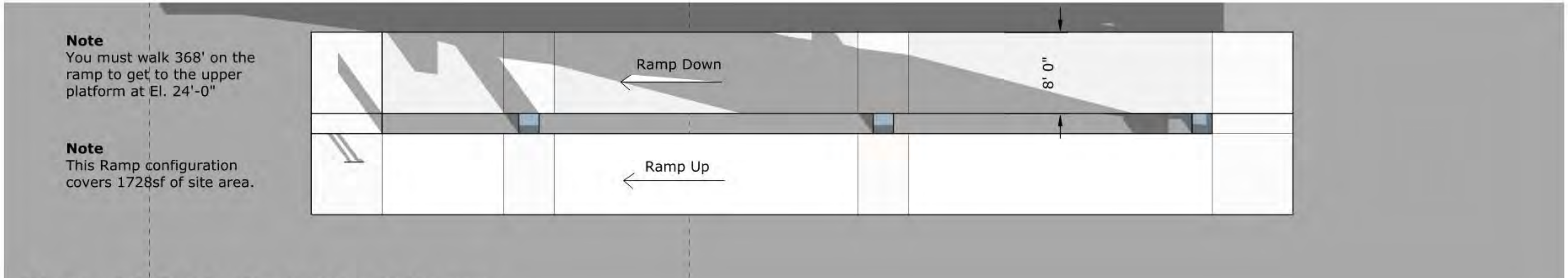
Advantages

1. Provide both Accessibility and Egress
2. Meets all required functions in a single circulation element
3. No power required and no maintenance
4. Accommodates bicycles

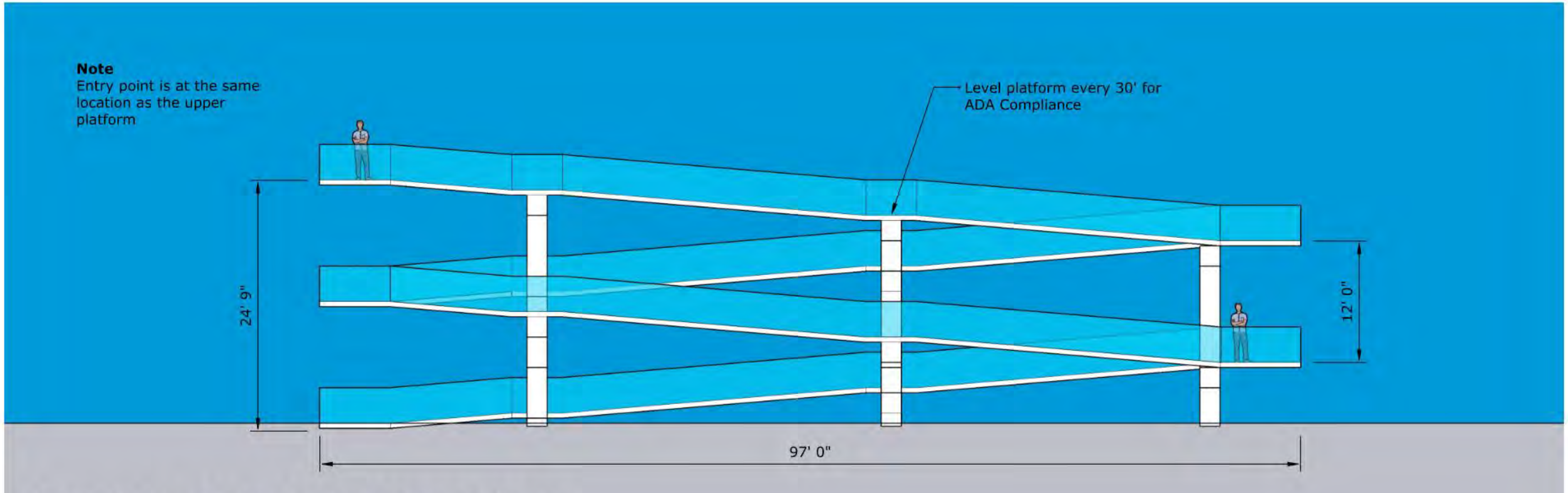
Disadvantages

1. To get to elevation +24’ requires user to climb or descend 343 linear feet of ramp
2. Requires a larger site area than stairs or elevators
3. Creates a visual obstacle to properties at the corner.
4. Additional travel distance may discourage use.
5. May require a roof for shade.

Ramps



Plan - Multiple Switchback Ramp



Elevation - Multiple Switchback Ramp

Stairs

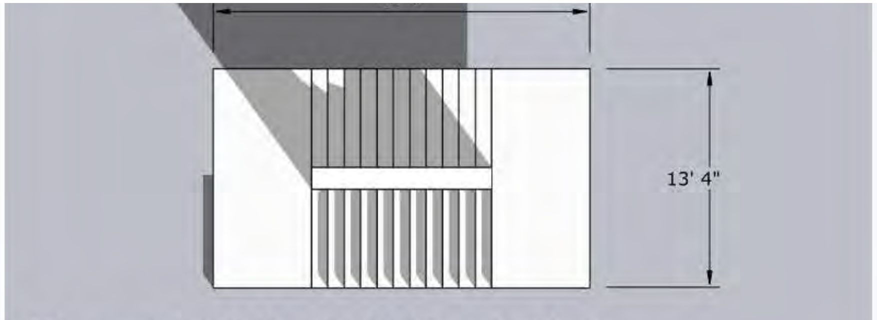
Advantages

1. Provide Egress
2. Small Footprint
3. No power required and no maintenance
4. No waiting
5. High capacity

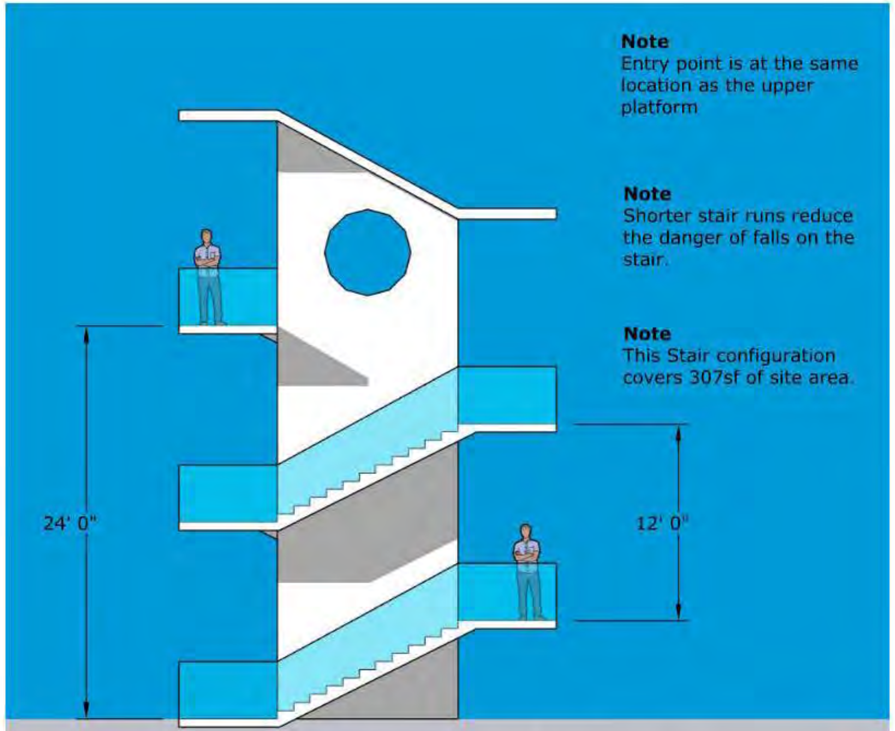
Disadvantages

1. Not Accessible
2. Does not work for bicycles, strollers, or wheelchairs
3. Climbing stairs 24'vertically is not physically possible for all.

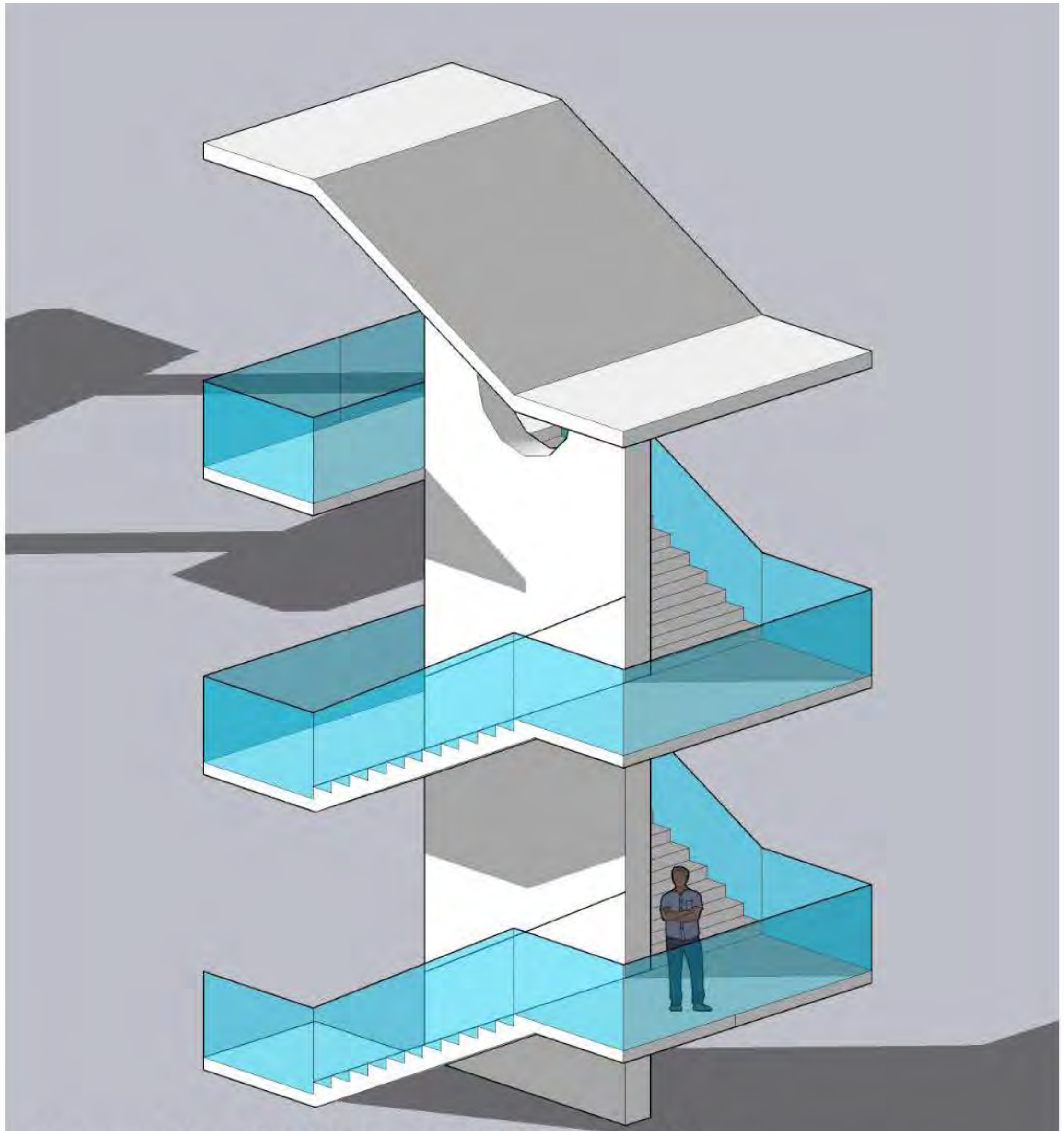
Stairs



Plan - Multiple Switchback Stair



Elevation - Multiple Switchback Stair



Isometric - Multiple Switchback Stair

Elevators

Advantages

1. Provides Accessibility
2. Small Footprint
3. Can accommodate bicycles, strollers, or wheelchairs
4. Minimal waiting (Only two stops)
5. Reduces walking or climbing

Disadvantages

1. Not a Means of Egress
2. Requires power and maintenance
3. Security must be addressed

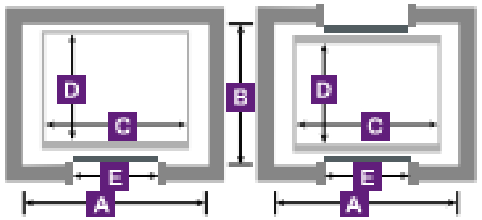
Elevators

A Hoistway width
B Hoistway depth
C Inside clear width
D Inside clear depth
E Door clear width
F Inside clear height
G Door clear height
O Minimum overhead
P Minimum pit depth
S Safety beam
T Travel

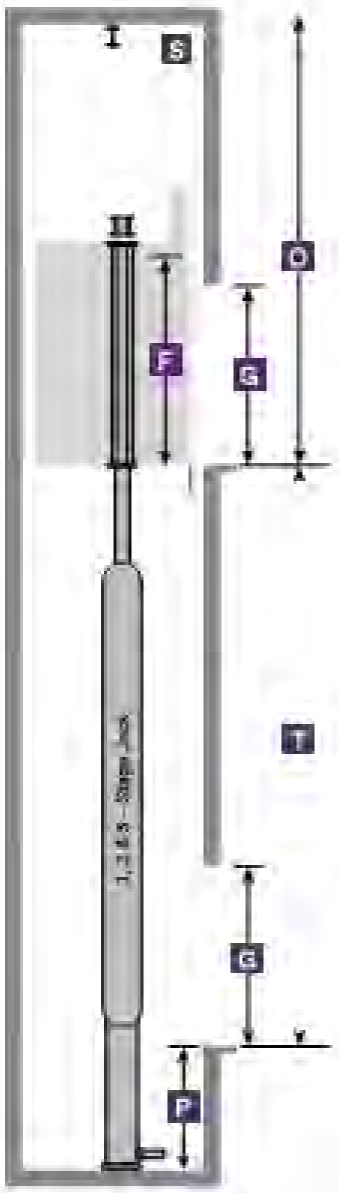
One-speed center opening doors

Top view:
Front opening

Top view:
Front and rear opening



Side view
Front opening



Minimum Elevator shaft outside dimension is 9'-8" x 8'-6 ½". The assumed foundation size for this elevator shaft is 2'-6" larger that the shaft in all directions. With this size the foundation size is **14'-8" x 13'-6 ½".** Note that the top of the foundation is a minimum 48" below grade and is 2'-0" thick.

Passenger elevator

Capacity (lbs)	1-and 2-Stage Hoistway [2,9] A x B	3-stage Hoistway [9] A x B	Front / rear	Inside clear C x D	Door type	Door width E
2100 [3]	7'-4" x 5'-9"	7'-8" x 5'-9"	F	5'-8" x 4'-3"	One-speed	3'-0"
2100 [3]	7'-4" x 6'-8¾"	7'-8" x 6'-8¾"	F/R	5'-8" x 4'-3½"	One-speed	3'-0"
2500	8'-4" x 5'-9"	8'-8" x 5'-9"	F	6'-8" x 4'-3"	One-speed	3'-6"
3000 [4]	8'-4" x 7'-2¾"	8'-8" x 7'-2¾"	F/R	6'-8" x 4'-9½"	One-speed	3'-6"
3500 [4]	8'-4" x 6'-11"	8'-8" x 6'-11"	F	6'-8" x 5'-5"	One-speed	3'-6"
3500 [4]	8'-4" x 7'-10¾"	8'-8" x 7'-10¾"	F/R	6'-8" x 5'-6½"	One-speed	3'-6"
4000 [4]	9'-4" x 6'-11"	9'-8" x 6'-11"	F	7'-8" x 5'-5"	One-speed	3'-6"/4'-0"
4000 [4]	9'-4" x 7'-10¾"	9'-8" x 7'-10¾"	F/R	7'-8" x 5'-5½"	One-speed	3'-6"/4'-0"

Must be 3500# or larger to be Stretcher Compliant

F Inside clear height: 7'-4" [5]

G Door clear height: 7'-0"

O Minimum overhead:

Up to 100 fpm:	Over 100 fpm:
1-Stage – 12'-2"	**1-Stage** – 12'-5"
2-Stage – 12'-8"	**2-Stage** – 12'-8"
3-Stage – 12'-11"	**3-Stage** – 12'-11"

P Minimum pit depth: 4'-0" [6]

T Max travel possible: [1]
1-Stage: Up to 100 fpm – 18'-11"
Over 100 fpm – 18'-8"
2-Stage: 28'-6"
3-Stage: 48'-3½"

S Safety beam required per OSHA 1926.502 [7]

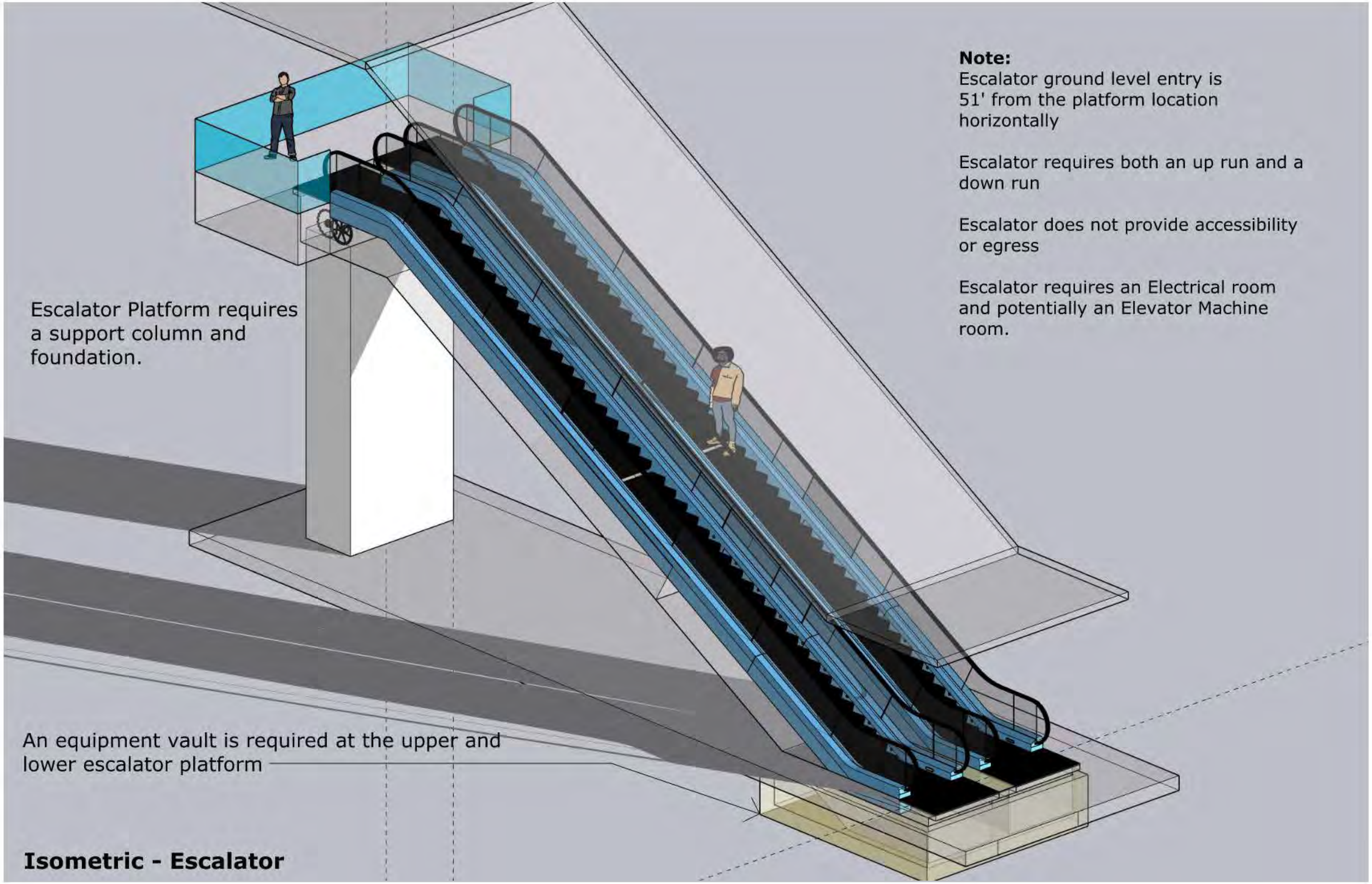
Escalators

Advantages

1. High Capacity
2. No waiting
3. Reduces walking or climbing

Disadvantages

1. Not Accessible or a Means of Egress
2. Requires both an Up and Down Escalator (2)
3. Requires power and maintenance
4. Cannot handle bicycles, strollers or wheelchairs
5. Requires a canopy
6. Larger footprint and only works in linear configuration
7. Most expensive of the options


Note:
Escalator ground level entry is 51' from the platform location horizontally
Escalator requires both an up run and a down run
Escalator does not provide accessibility or egress
Escalator requires an Electrical room and potentially an Elevator Machine room.
Escalator Platform requires a support column and foundation.
An equipment vault is required at the upper and lower escalator platform
Isometric - Escalator

VERTICAL CIRCULATION COMPARISON MATRIX

(Lower score is better)

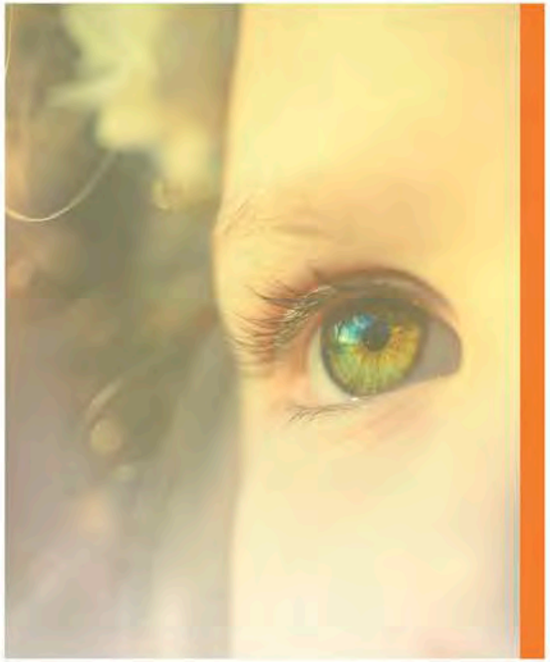
AREA REQUIRED				FOUNDATION SIZE	MEANS OF EGRESS		ACCESSIBILE		COST	OPERATING COST		POWER REQ.		HORIZONTAL TRAVEL DISTANCE		SCORE
		Largest Area =4 Smallest Area=1			Yes=0 No=1		Yes=0 No=1		1=Lowest 4=Highest	Yes=1 No=0		Yes=1 No=0		1=Lowest 4=Highest		
RAMP	8' X 343' 18' X 96'	2744 sf 1728 sf	4	(3) 12' X 12'	YES	0	YES	0	2	NO	0	NO	0	343'	3	9
STAIR	6' X 63' 13'-4" X 27' 13'4" X 23'	378 sf 360sf 307sf	2	12' X 17'	YES	0	NO	1	1	NO	0	NO	0	52'	2	**6**
ELEVATOR	11'-4" X 11'-4"	128 sf	1	16' X 16' X 2'	NO	1	YES	0	3	YES	1	YES	1	0'	1	**7**
ESCALATOR (pair)	11' X 60'	660 sf	3	15' X 64'	NO	1	NO	1	4	YES	1	YES	1	0'	1	11

NOTES

1. Must include one Accessible means of access at each intersection.
2. Must include at least two means of egress on the bridge. (preferably one at each corner of the intersection.
3. A ramp will meet both the need for Egress as well as the need for Accessibility.
4. An escalator does not meet the need for Accessibility or Egress

The highest scoring options are either the Ramp at all four corners, which meets all requirements, or the combination of a stair and an elevator which also meets all project requirements.

(Lower score = Highest Ranking)

Meeting Number Two

Site Considerations

ORANGE COUNTY GOVERNMENT FLORIDA

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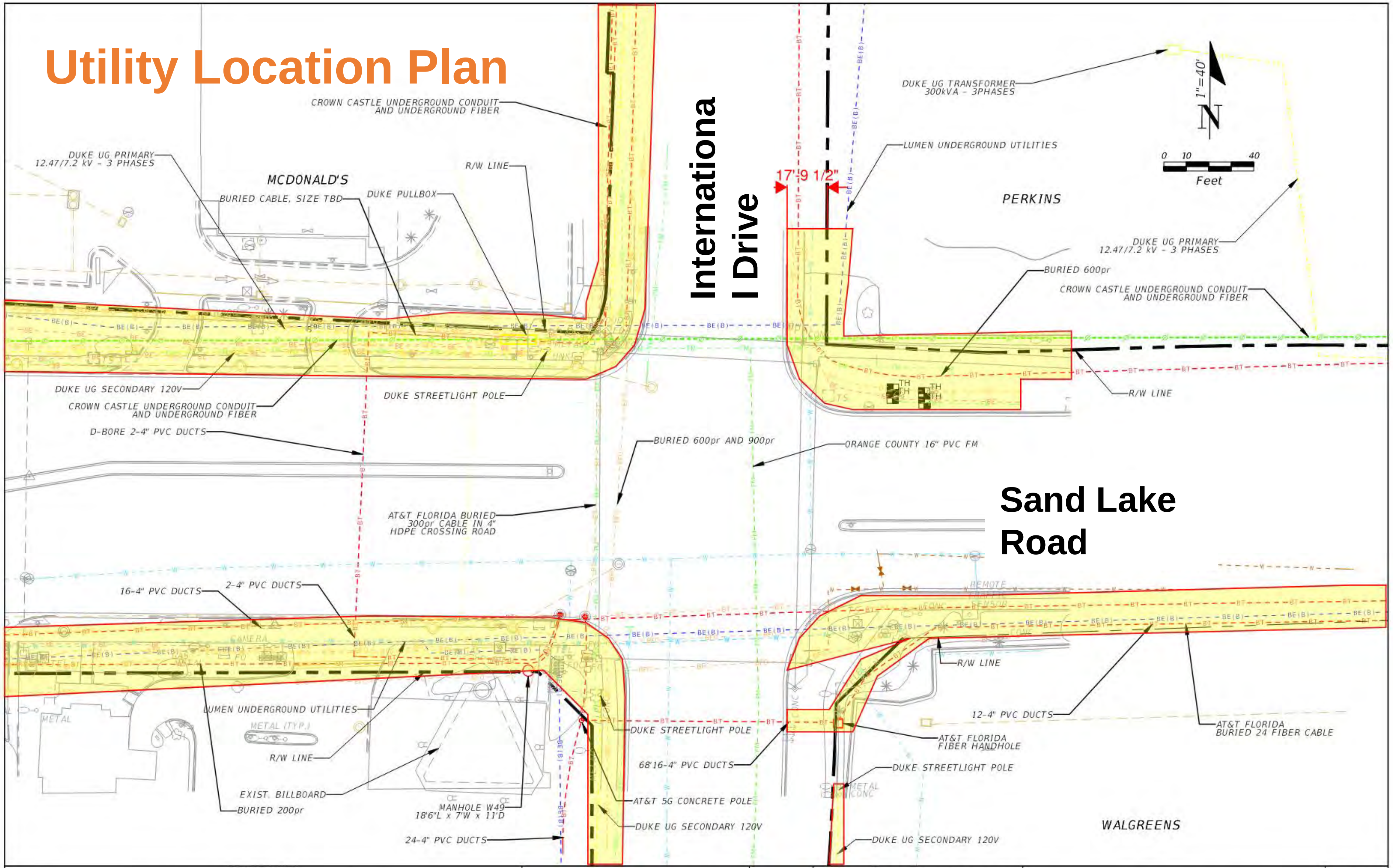
Utility Location Plan



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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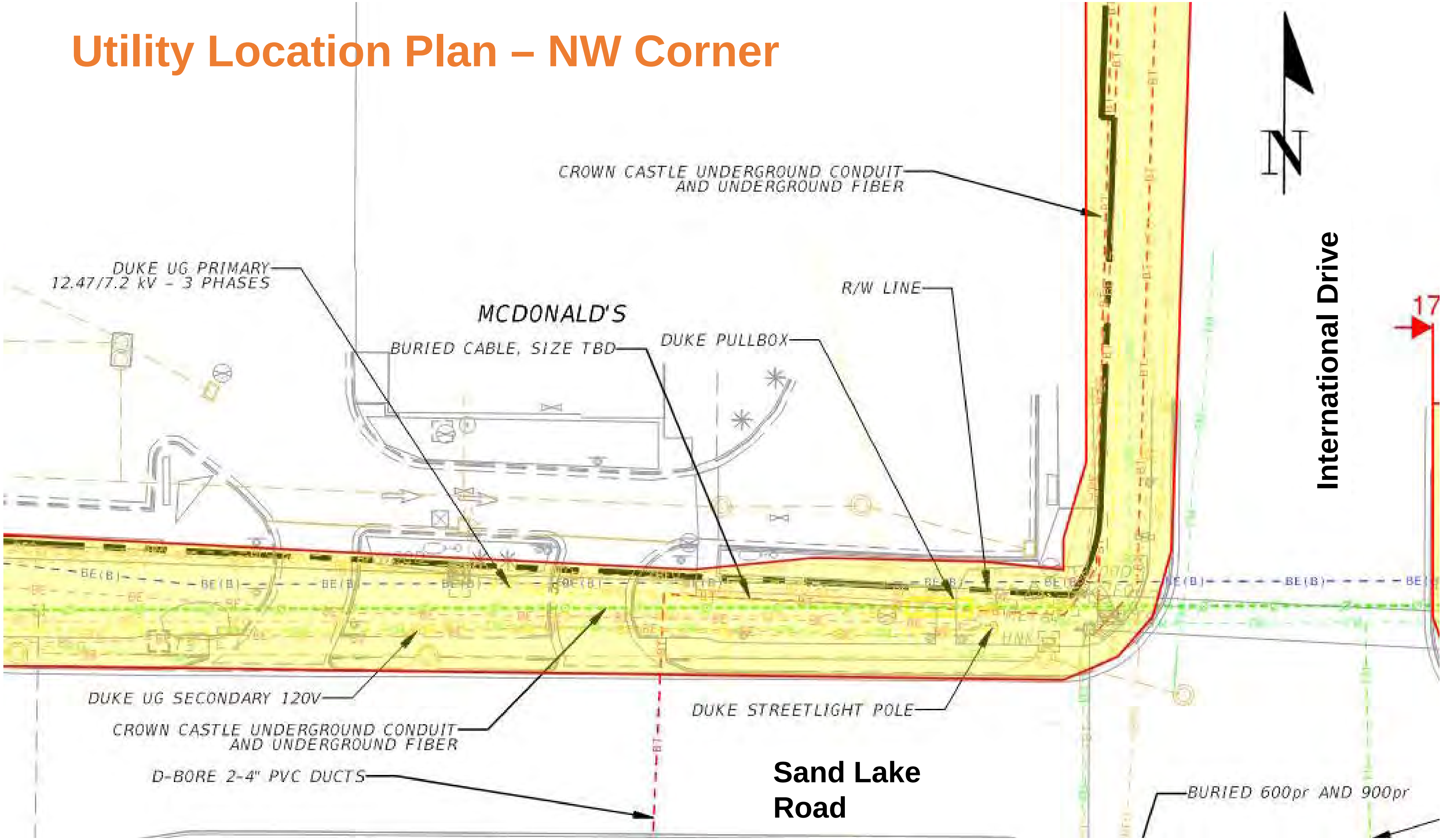
ORANGE COUNTY GOVERNMENT FLORIDA

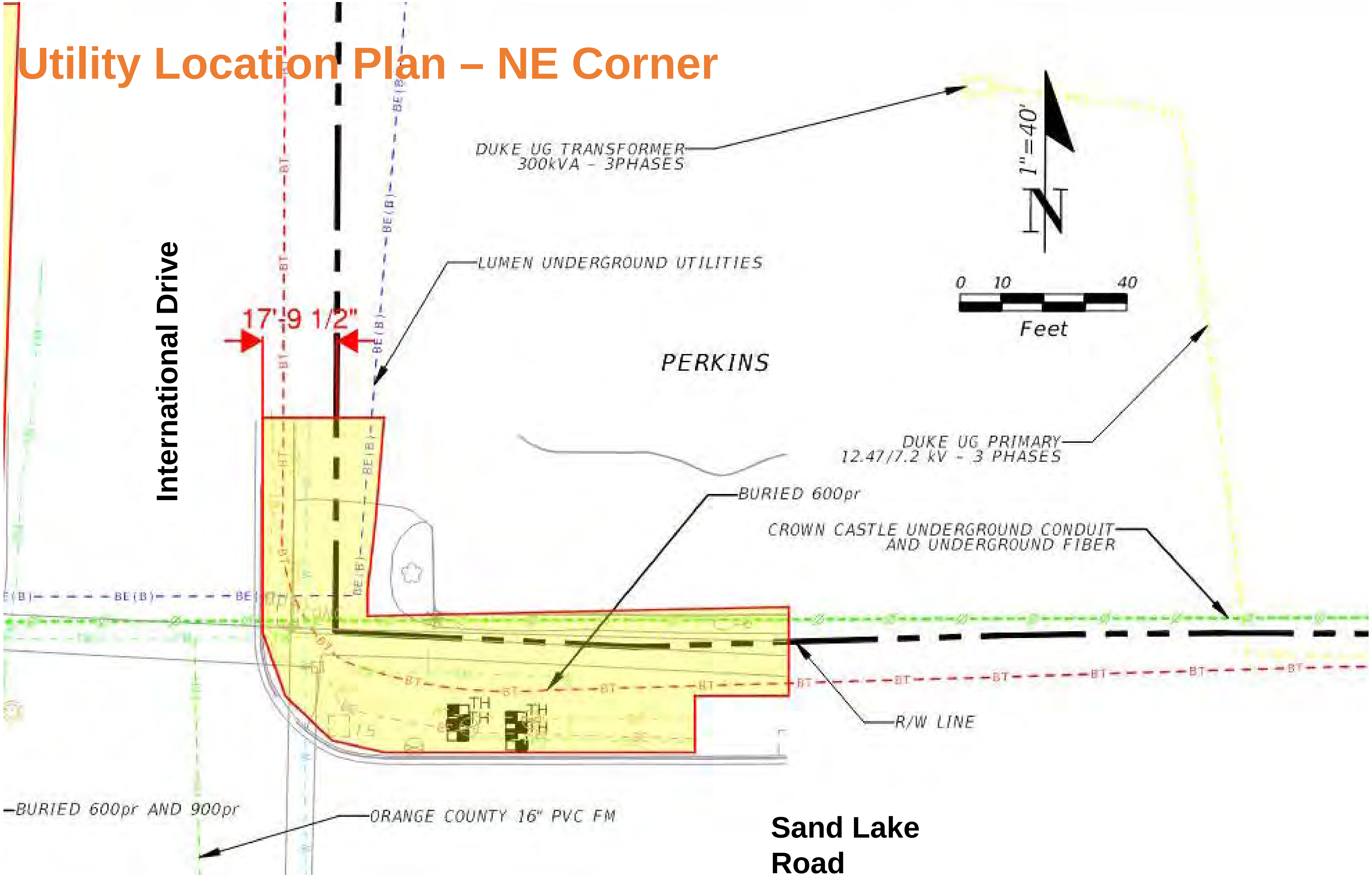
I-DRIVE PEDESTRIAN BRIDGE UTILITIES EXHIBIT

SHEET NO.

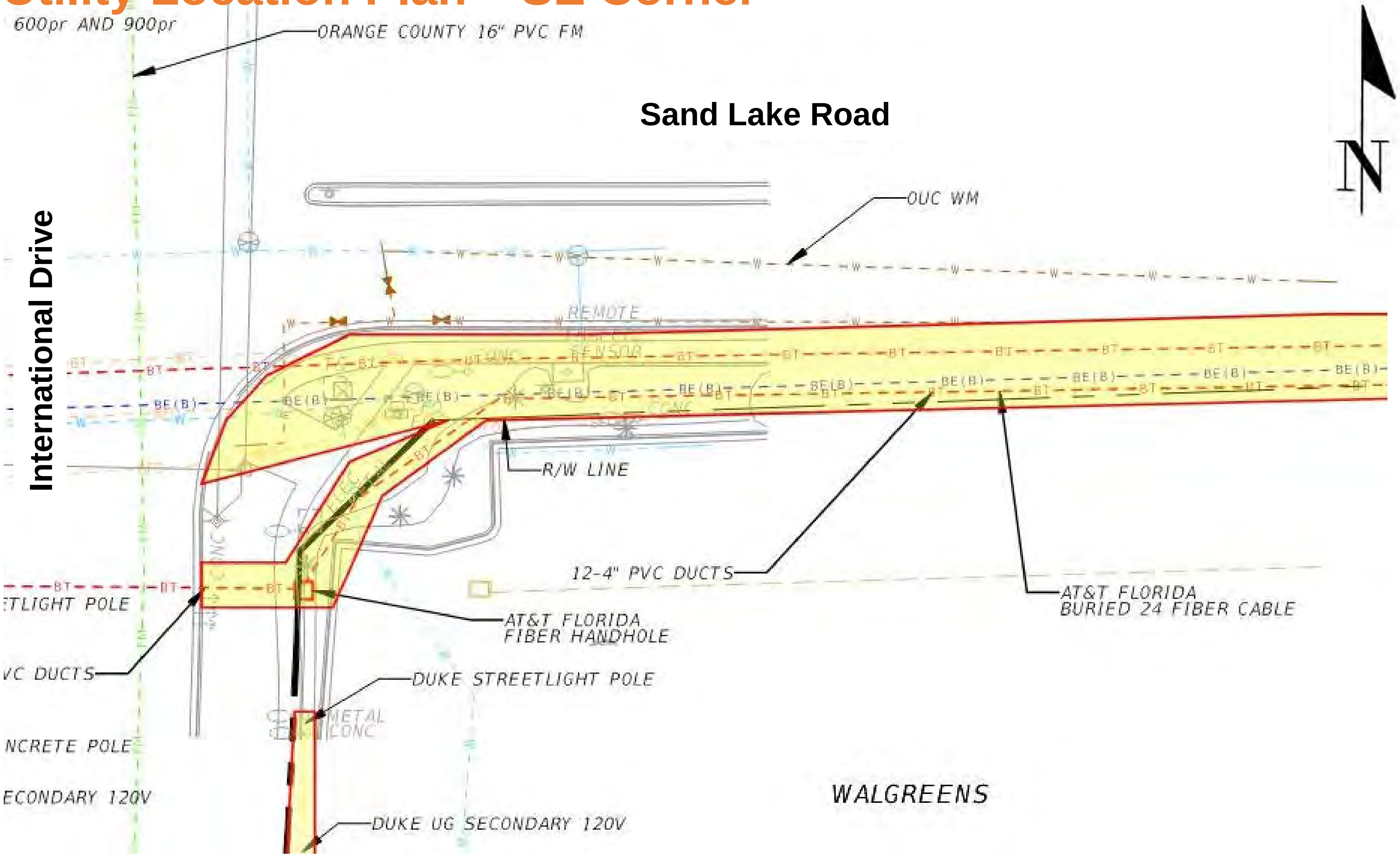
Utility Location Plan – NW Corner



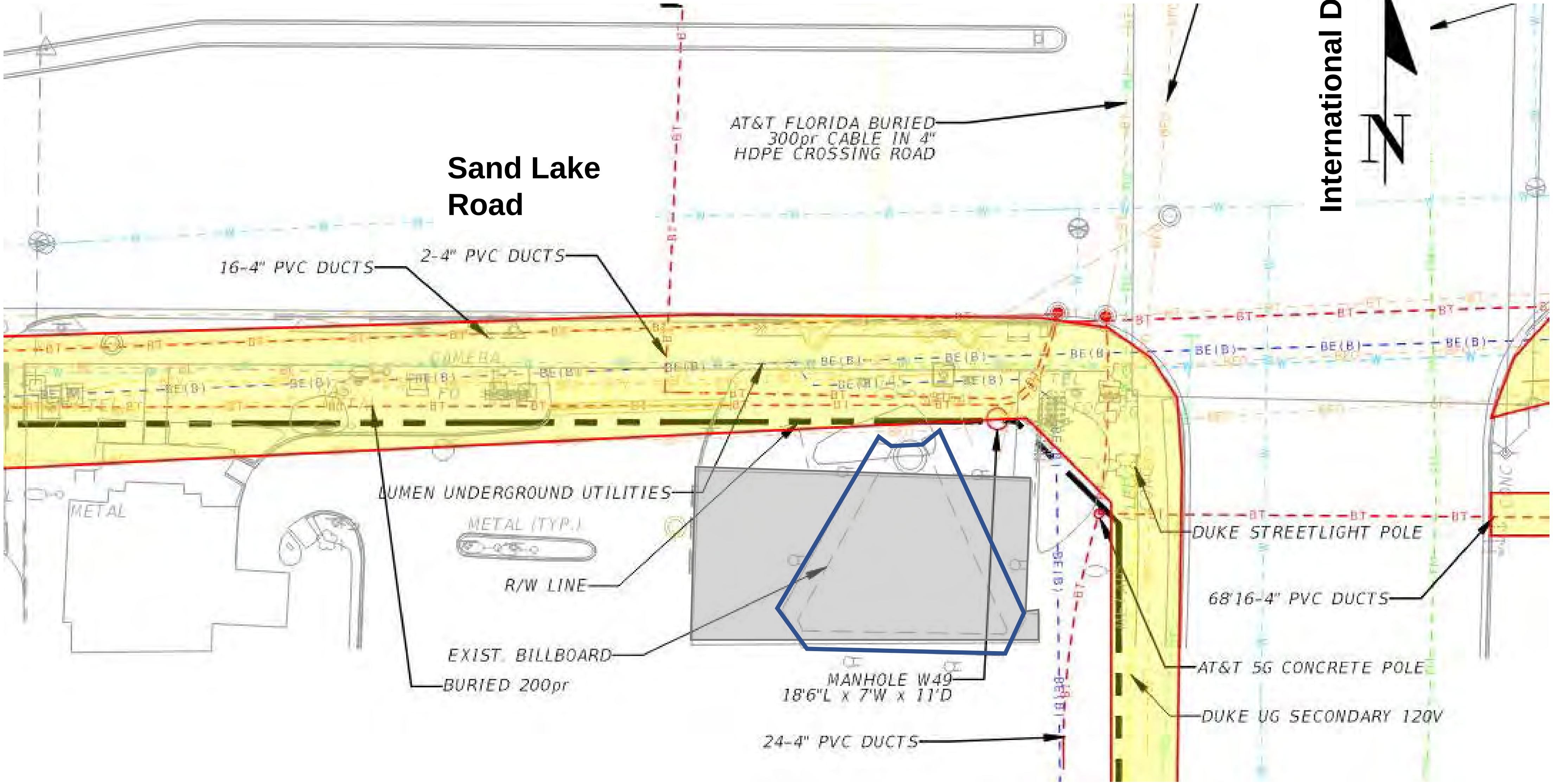
Utility Location Plan – NE Corner

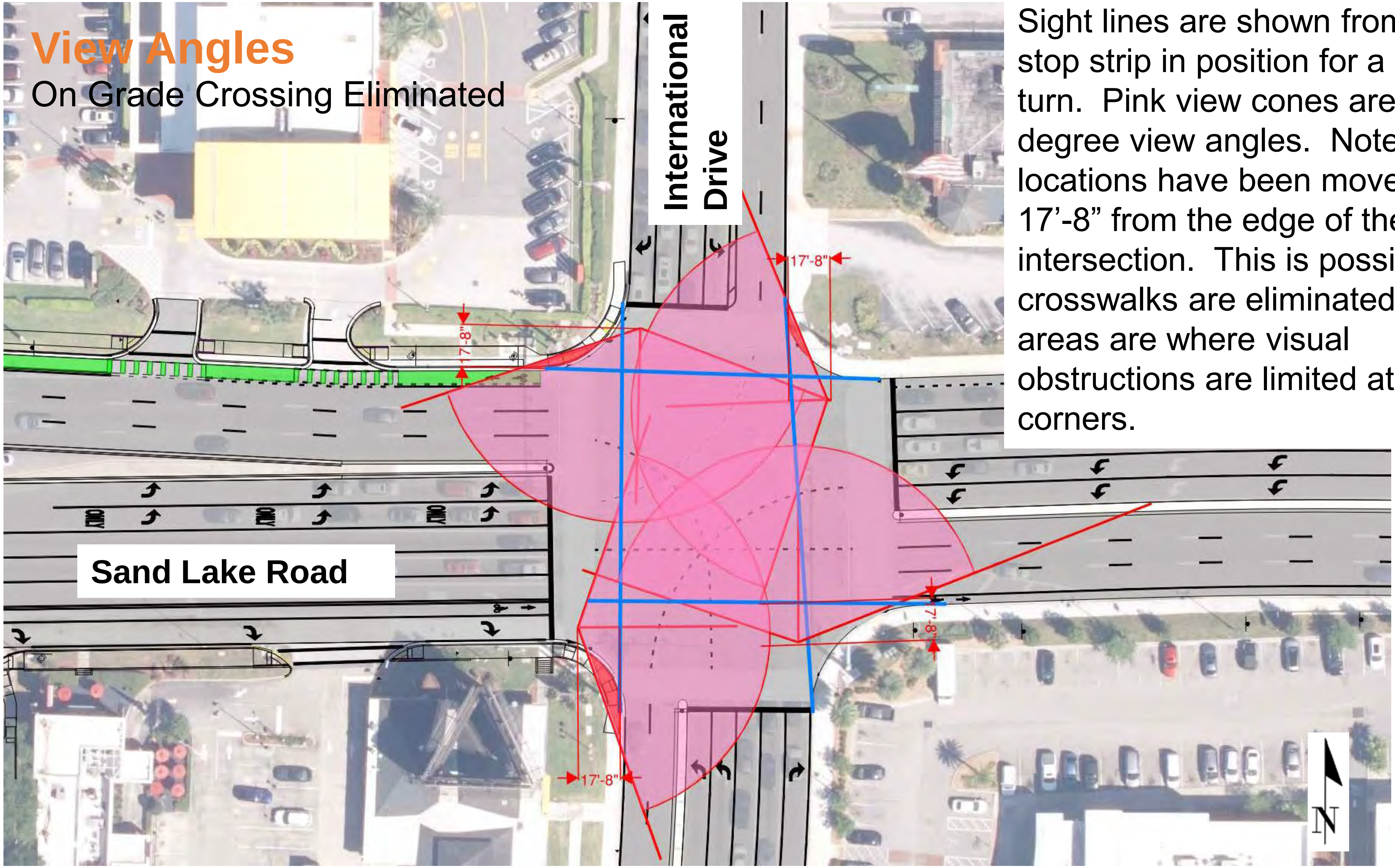


Utility Location Plan – SE Corner

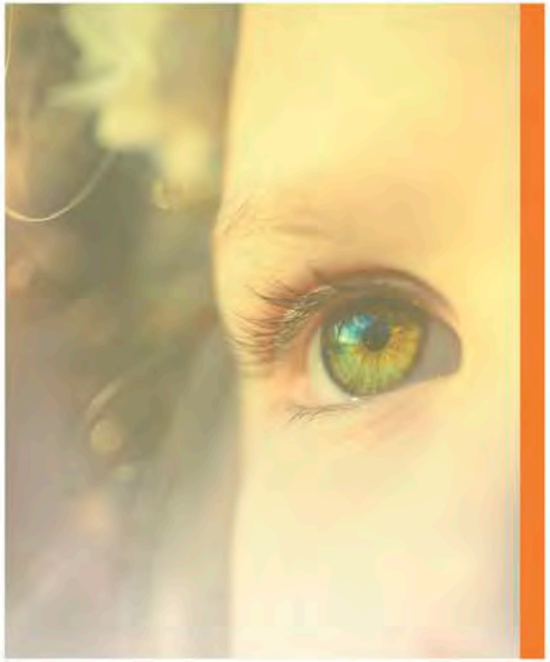


Utility Location Plan – SW Corner





Sight lines are shown from cars at stop strip in position for a right turn. Pink view cones are 140-degree view angles. Note View locations have been moved to 17'-8" from the edge of the intersection. This is possible if crosswalks are eliminated. Red areas are where visual obstructions are limited at the corners.



Meeting Number Two

Bridge Tower Configurations

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FLORIDA

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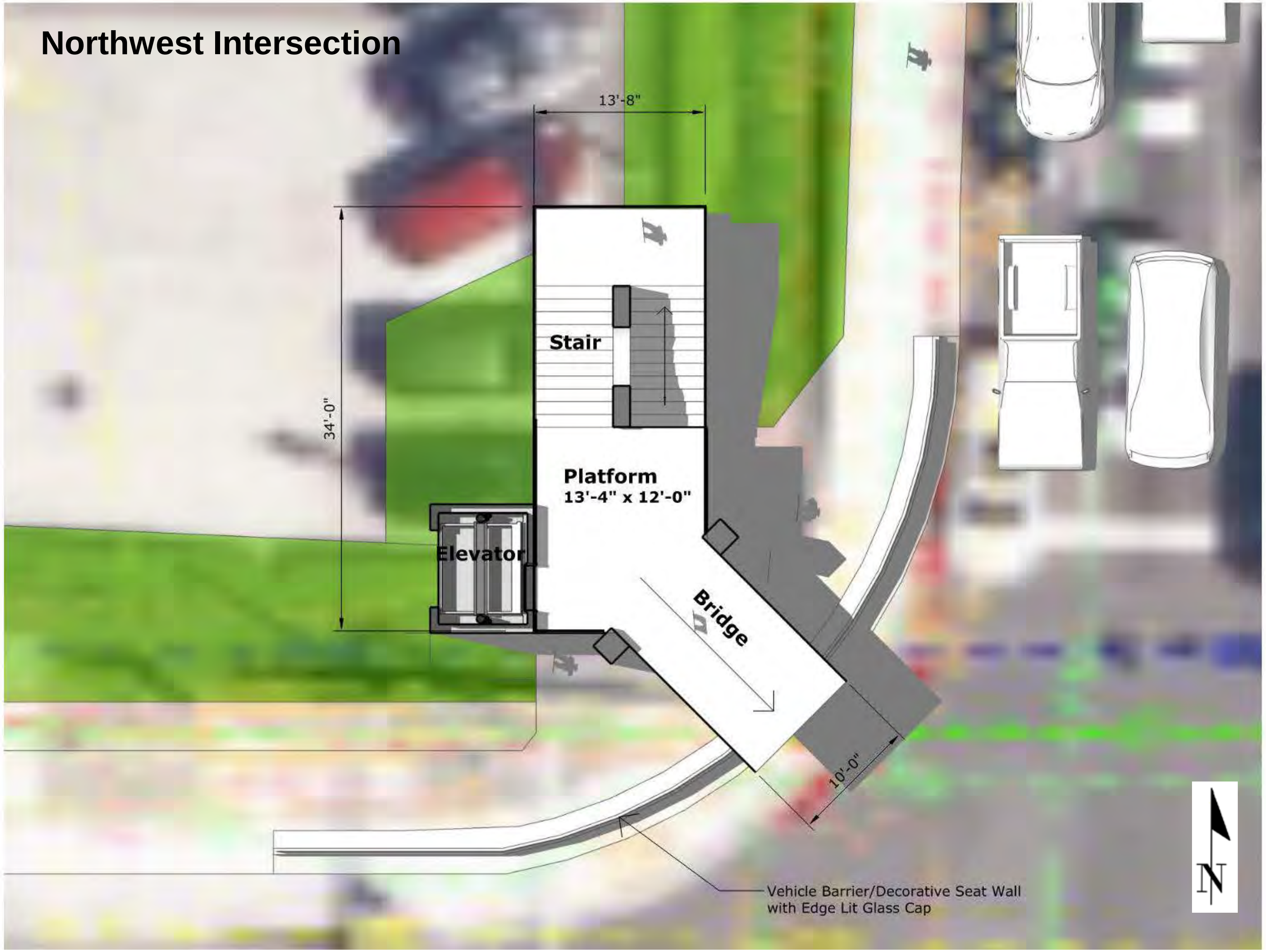


Bridge Tower Option 1

Description

A very inviting stair traversing 24'-0" in height. Each stair run is 4' rise. The treads are 12" and the risers are 6" for easy climbing.

The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 22' x 24'

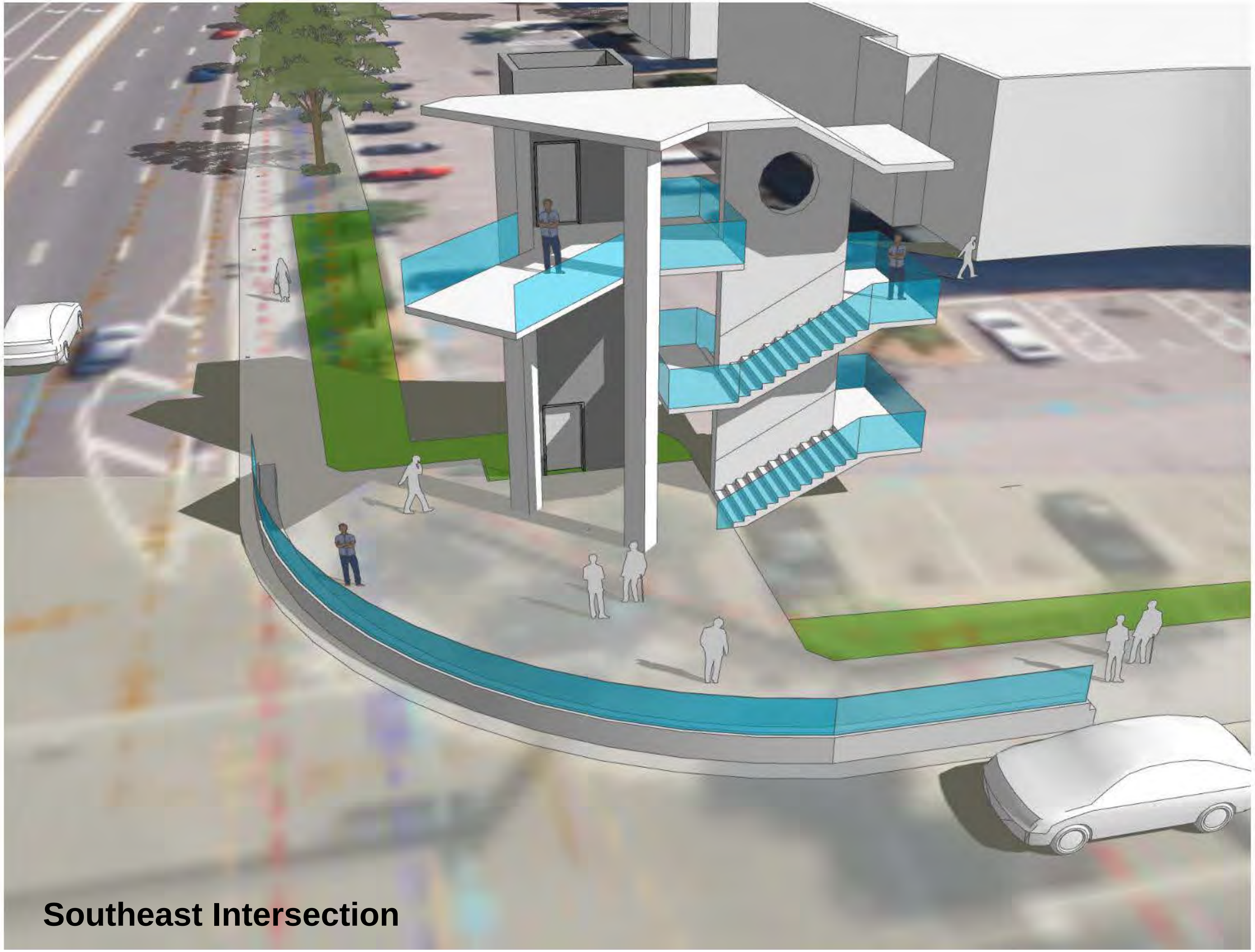
Glass Back Elevator provides additional Safety and creates a visual feature

Seat bench barrier and protective screen wall protects pedestrians and prevents on grade crossing.

Crosswalks have been removed.

Summary

Ground Floor Platform	192sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	506sf
Bridge Width	10'-0"



Bridge Tower Option 1

Description

A very inviting stair traversing 24'-0" in height. Each stair run is 6' rise. The treads are 12" and the risers are 6" for easy climbing.

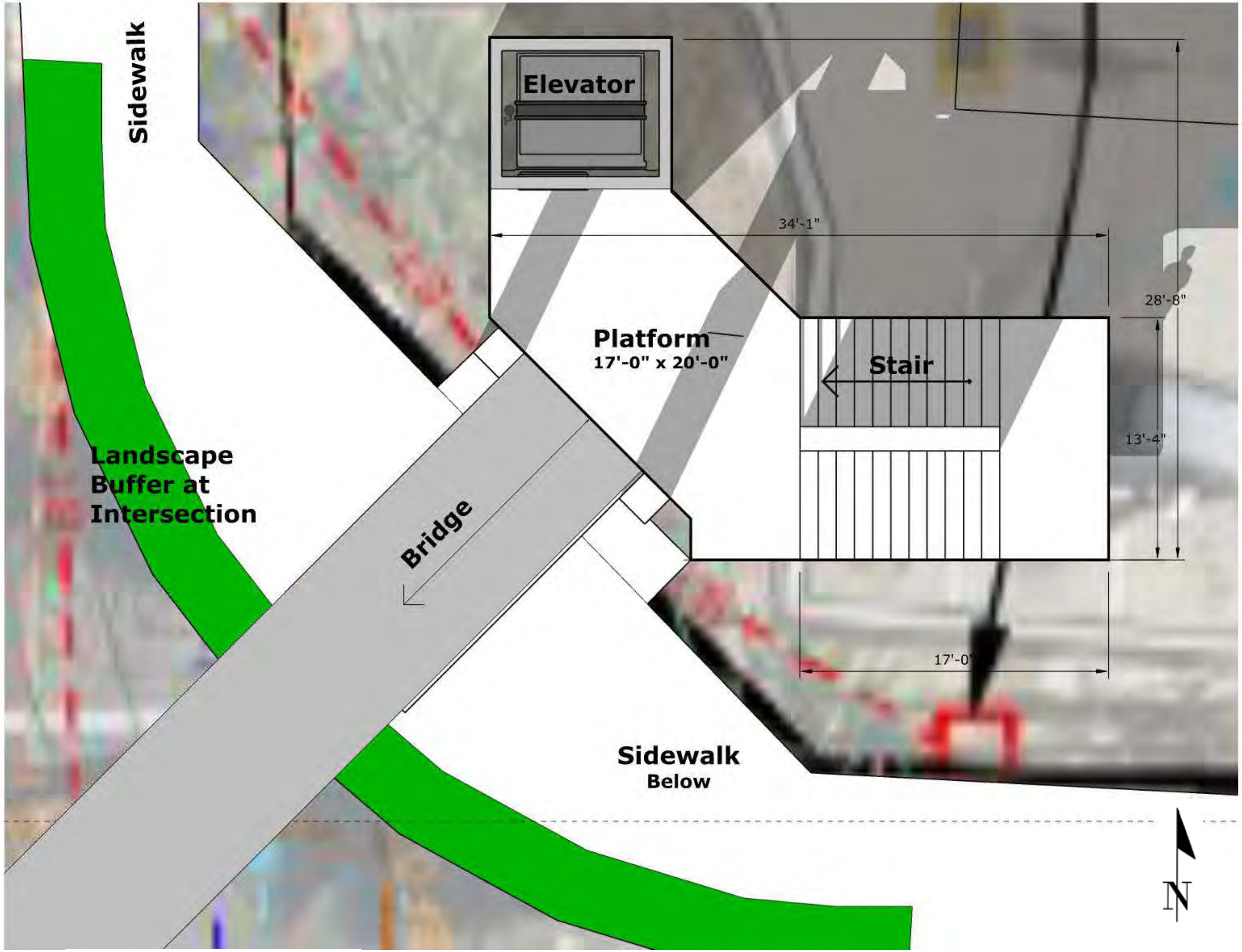
The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 35' x 28'

Crosswalks have been removed.

Summary

Ground Floor Platform	160sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	470sf



Bridge Tower Option 2

Description

A very inviting stair traversing 24'-0" in height. Each stair run is 6' rise. The treads are 12" and the risers are 6" for easy climbing.

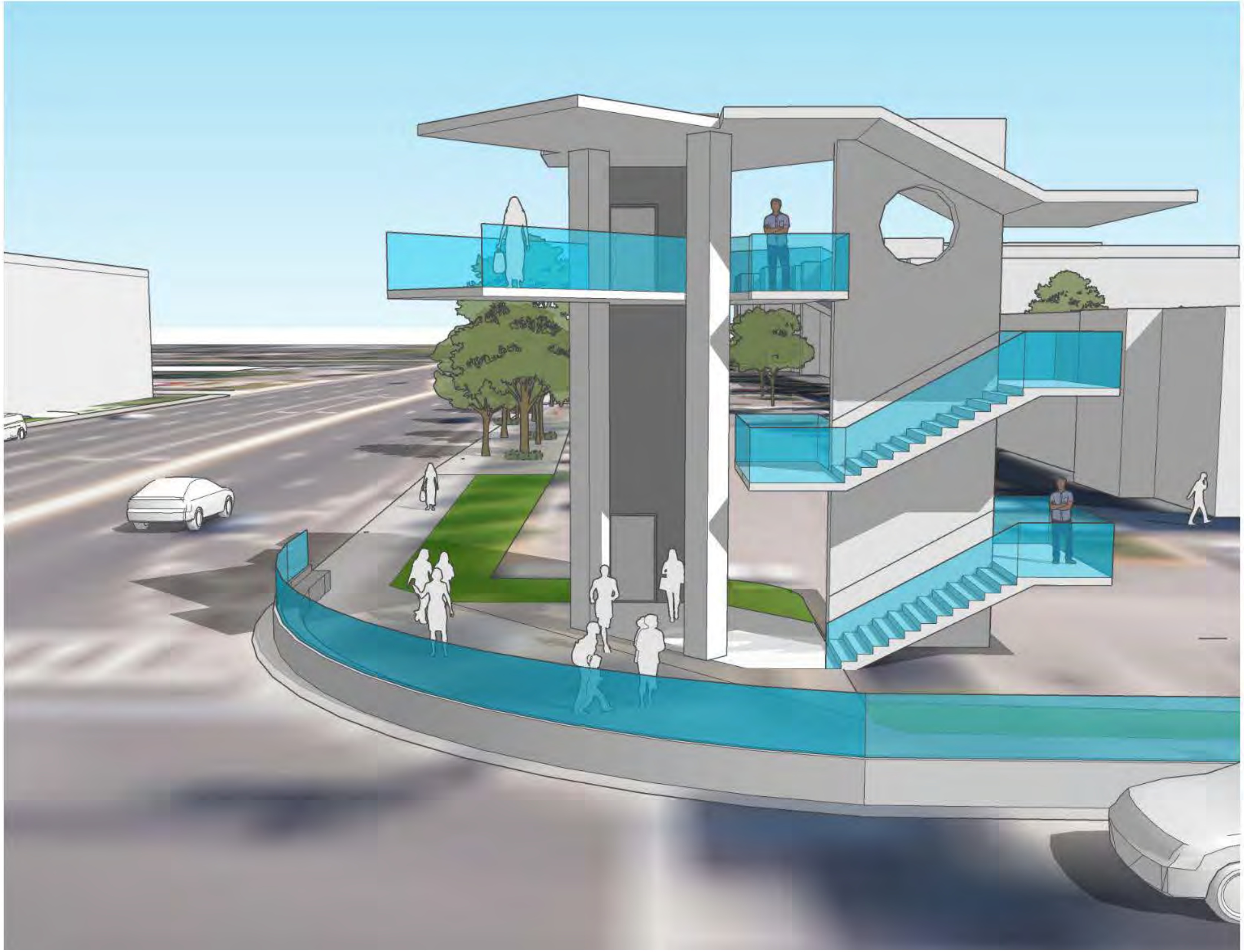
The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 35' x 40'

Crosswalks have been removed.

Summary

Ground Floor Platform	221sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	531sf
Bridge Width	10'-0"



Bridge Tower Option 2

Description

A very inviting stair traversing 24'-0" in height. Each stair run is 6' rise. The treads are 12" and the risers are 6" for easy climbing.

The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 35' x 40'

Crosswalks have been removed.

Summary

Ground Floor Platform	221sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	531sf
Bridge Width	10'-0"

Bridge Tower Option 3

Description

A very inviting stair traversing 24'-0" in height. Each stair run is 4' rise. The treads are 12" and the risers are 6" for easy climbing.

The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 22' x 24'

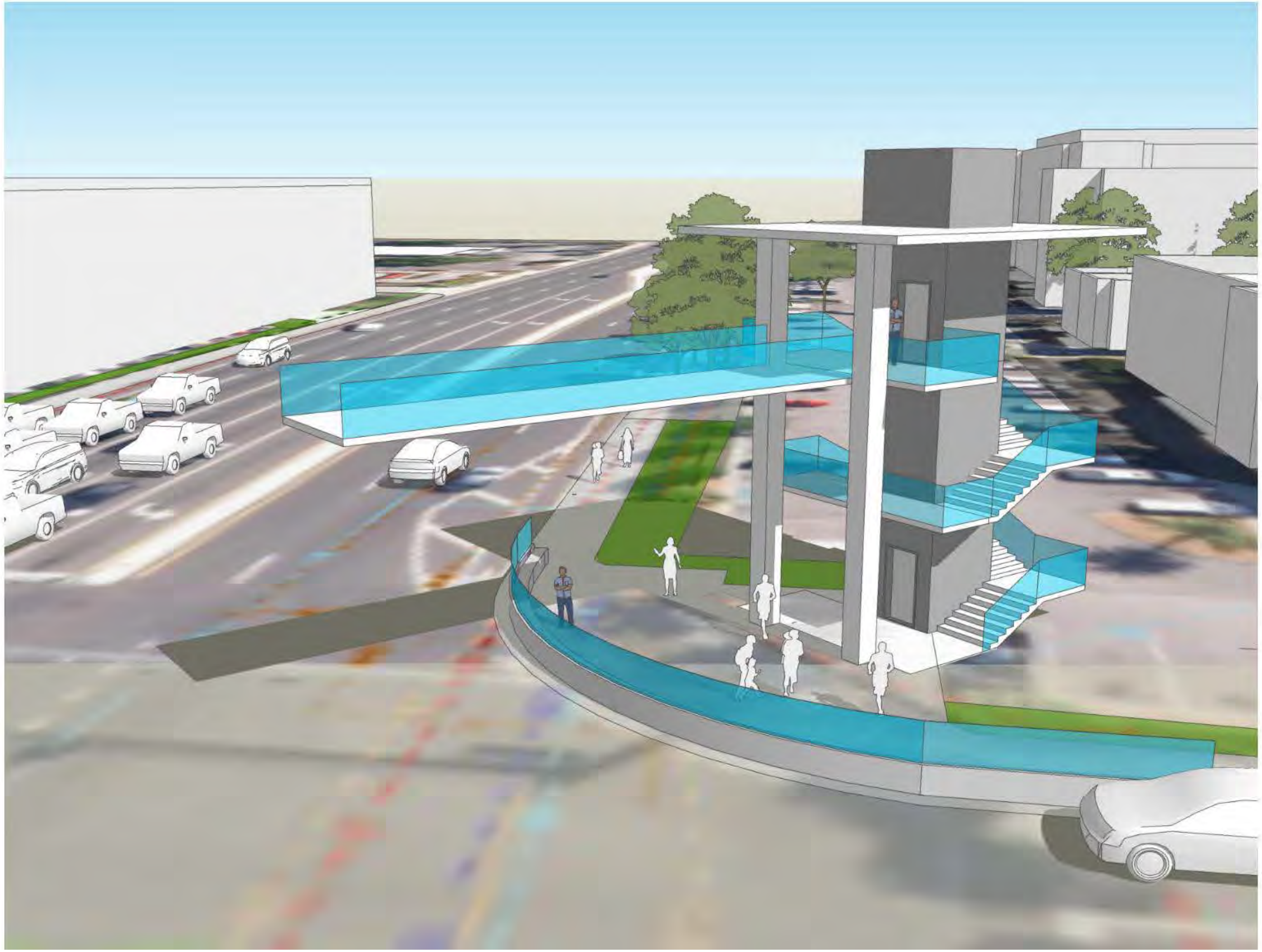
Glass Back Elevator provides additional Safety and creates a visual feature

Seat bench barrier and protective screen wall protects pedestrians and prevents on grade crossing.

Crosswalks have been removed.

Summary

Ground Floor Platform	192sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	506sf
Bridge Width	10'-0"



Bridge Tower Option 3

Description

A very inviting stair traversing 24'-0" in height. Each stair run is 4' rise. The treads are 12" and the risers are 6" for easy climbing.

The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 22' x 24'

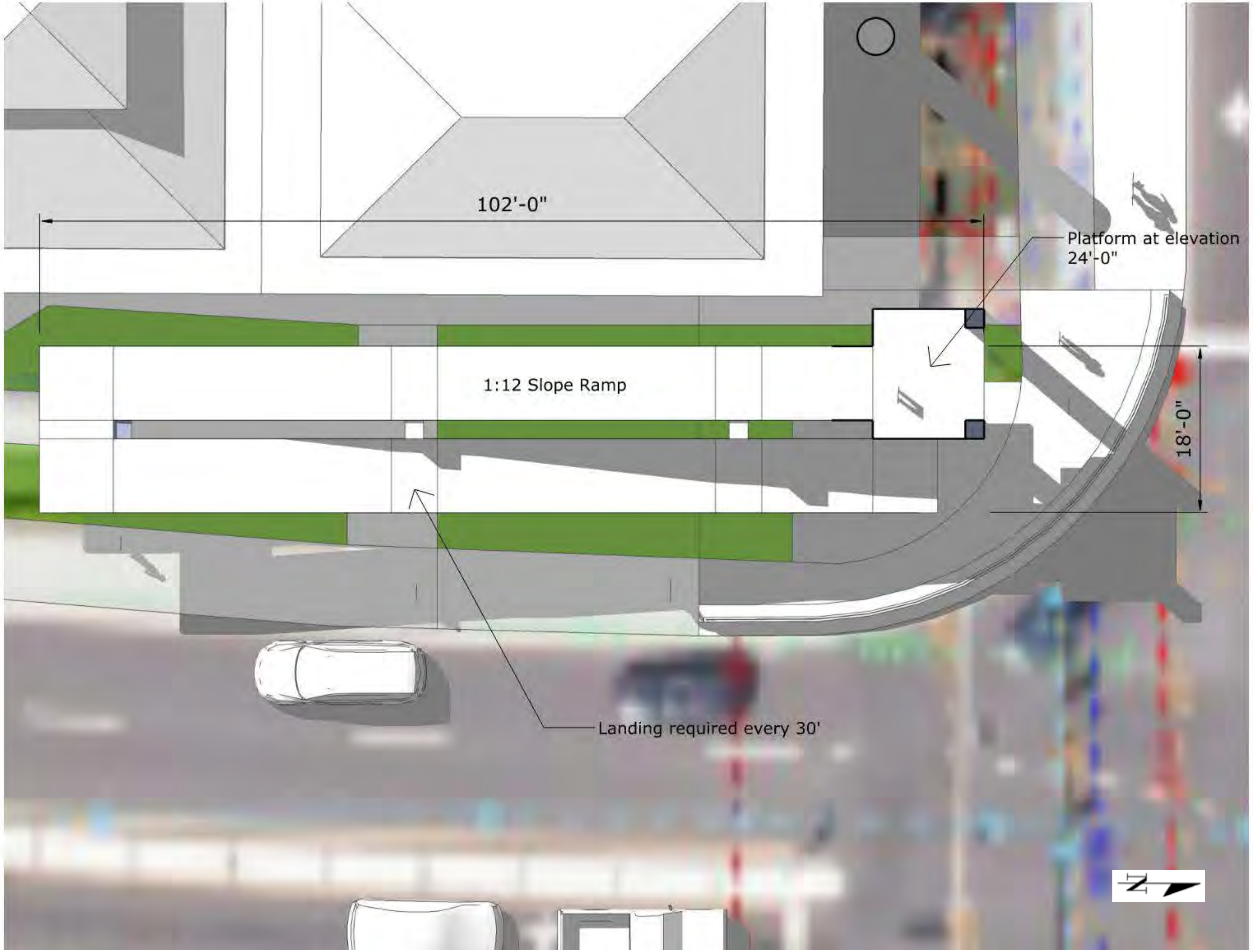
Glass Back Elevator provides additional Safety and creates a view of businesses at the associated corner.

Seat bench barrier and protective screen wall protects pedestrians and prevents on grade crossing.

Crosswalks have been removed.

Summary

Ground Floor Platform	192sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	506sf
Bridge Width	10'-0"



Ramp Option 4

Description

The Ramp option meets the needs of egress and accessibility in a single ramp component. The disadvantage to the ramp configuration is that users must climb or descend a ramp that is almost 350' long. The ramp is useable by strollers and bicycles. This option requires very little maintenance and has no power requirements or moving parts.

The biggest drawback to the ramp is its footprint size and its visual obstruction of the businesses on the 4 corners of the intersection.

The ramps are located along International Drive based on the availability or right of way and unencubered property along this roadway.

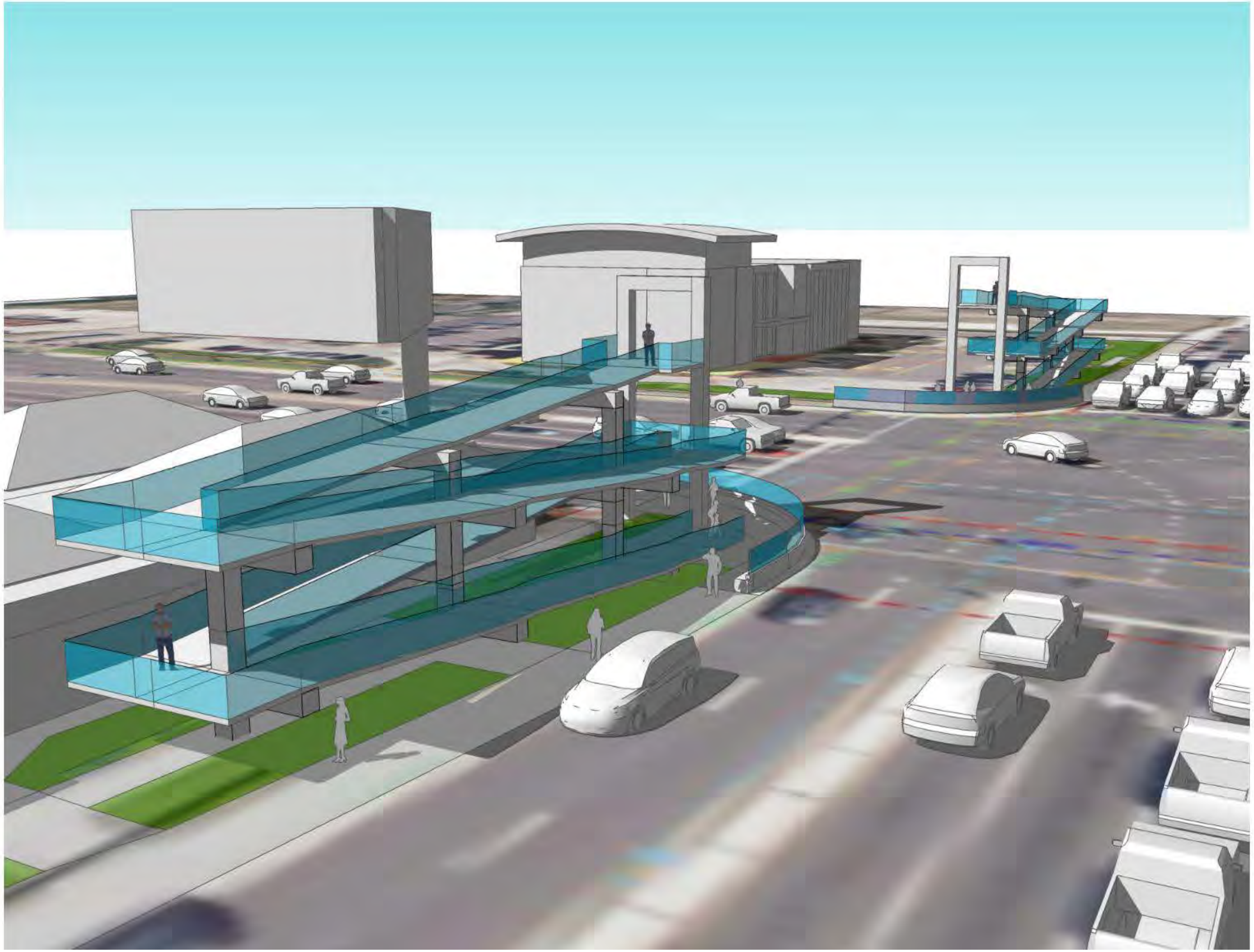
The Ramp is stretcher compliant and accessible by first responders.

The area required for this option is 18' x 100'.

Crosswalks have been removed.

Summary

Ground Floor Platform	192sf
Ramp Width	8' Wide
Total Ground Level Footprint	1728sf
Bridge Width	10'-0"



Ramp Option 4

Description

The Ramp option meets the needs of egress and accessibility in a single ramp component. The disadvantage to the ramp configuration is that users must climb or descend a ramp that is almost 350' long. The ramp is useable by strollers and bicycles. This option requires very little maintenance and has no power requirements or moving parts.

The biggest drawback to the ramp is its footprint size and its visual obstruction of the businesses on the 4 corners of the intersection.

The ramps are located along International Drive based on the availability or right of way and unencubered property along this roadway.

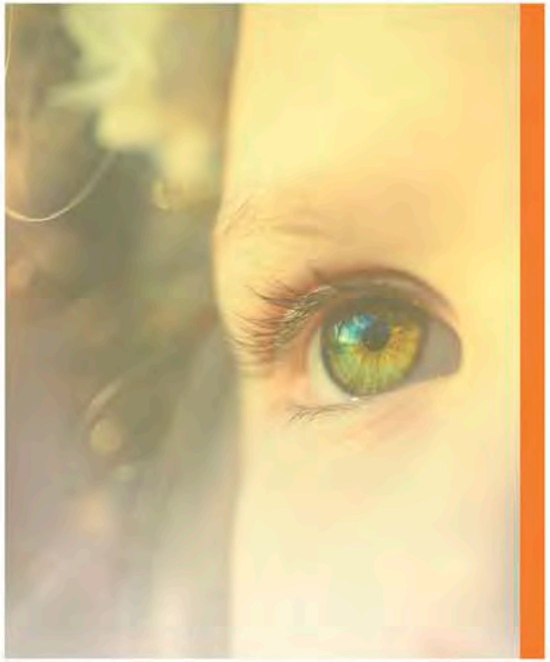
The Ramp is stretcher compliant and accessible by first responders.

The area required for this option is 18' x 96'.

Crosswalks have been removed.

Summary

Ground Floor Platform	192sf
Ramp Width	8' Wide
Total Ground Level Footprint	1728sf
Bridge Width	10'-0"



Meeting Number Three

Preliminary Bridge Concepts

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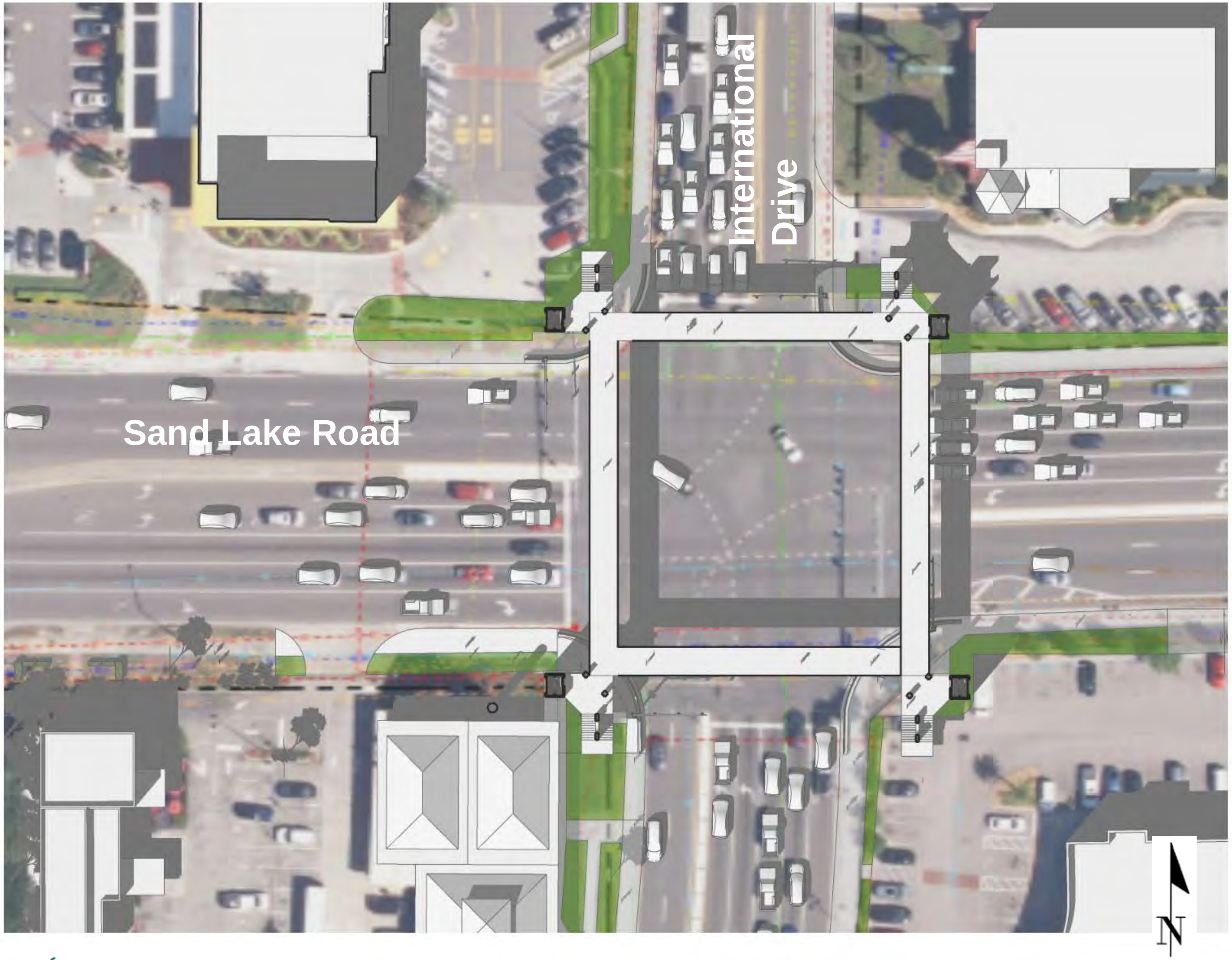
Results of PAG meeting 1 & 2

1. Include barrier at intersections to prevent on grade crossing.
2. Utilize Stair and Elevator or Ramp at each intersection (best option for each corner)
3. Minimize impact on existing utilities and on adjacent property owners.
4. Create an Iconic Gateway to the Convention and Entertainment District
5. Consider potential bridge connections to adjacent properties (both elevated and on grade).
6. Consider experience of those traveling under the bridge as well as those experiencing the bridge by crossing it.
7. Bridge design should consider pedestrians, strollers, and bicycles.
8. ADA accessibility is critical at all intersections.



Bridge Configuration Square Option

Description

The square bridge configuration is the most pragmatic of the options reviewed.

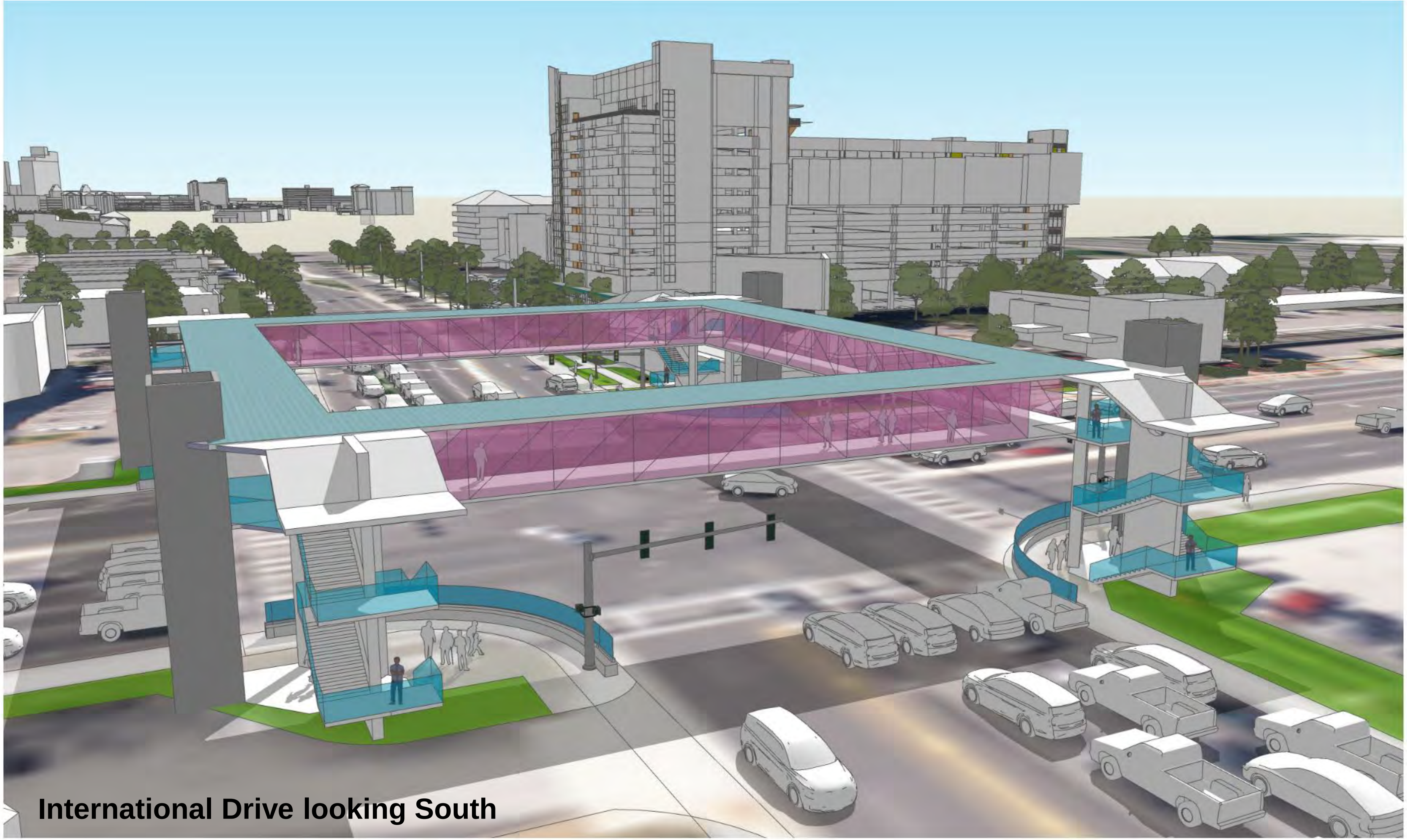
The square bridge has the simplest structural configuration with four simple bridge spans.

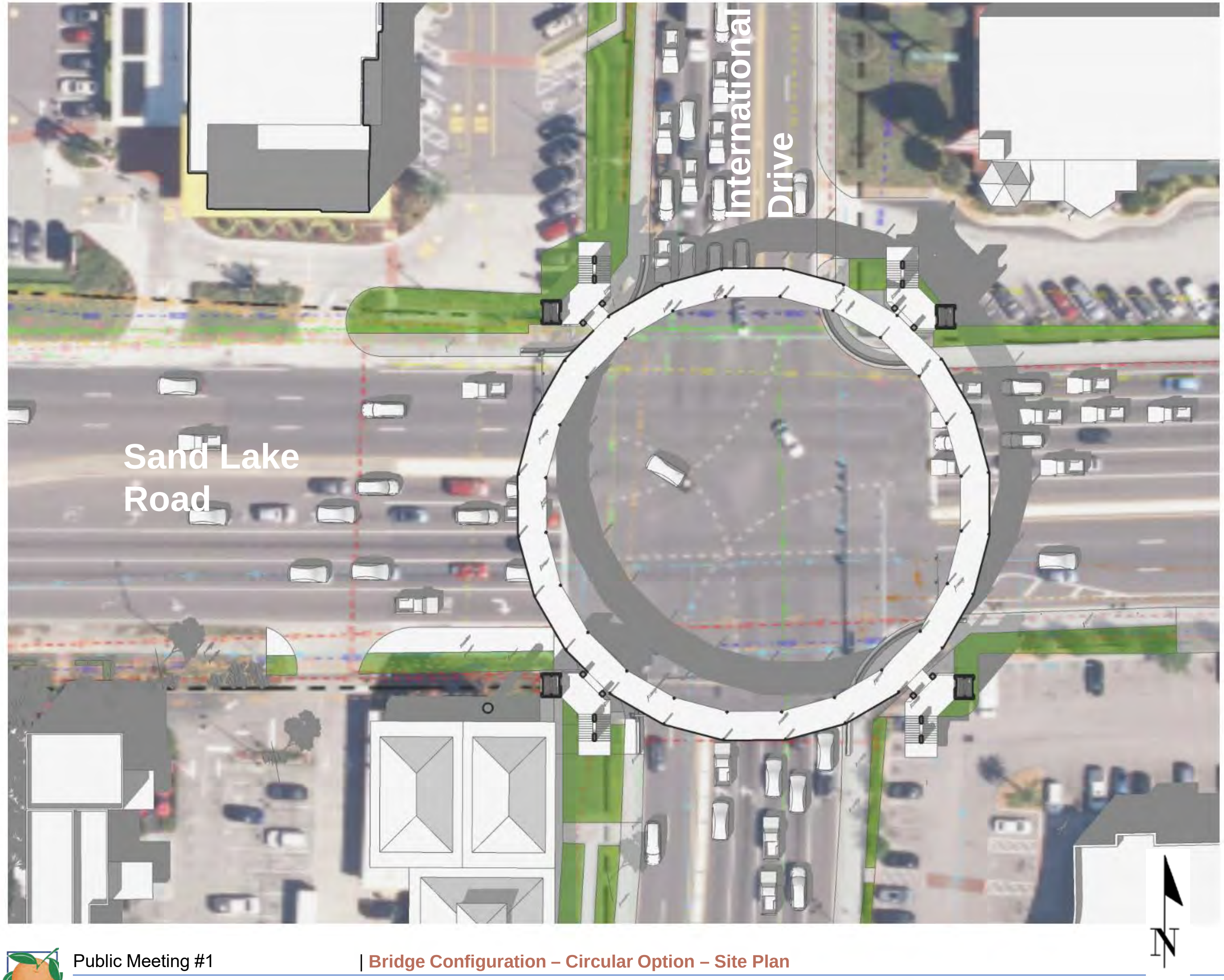
The most challenging part of this configuration is its simplistic form, and lack of dynamic quality. This option suffers from its lack of positive user experience with the focus of crossing being straight ahead with people walking with you and against you. Also the requirement to make 90 degree turns at the intersections make this the least favorable user experience.

The overall length of the bridge in the square configuration is the third longest of all options at 584' of length.

Summary

Average Travel Distance	279'
Bridge Length	584'
Bridge Width	12'-0"


International Drive looking South



Bridge Configuration Circular Option

Description

The I -Drive 2040 Vision Plan identified the importance of the I-Drive / Sand Lake Rd. intersection as a key gateway opportunity for the Convention and Entertainment District.

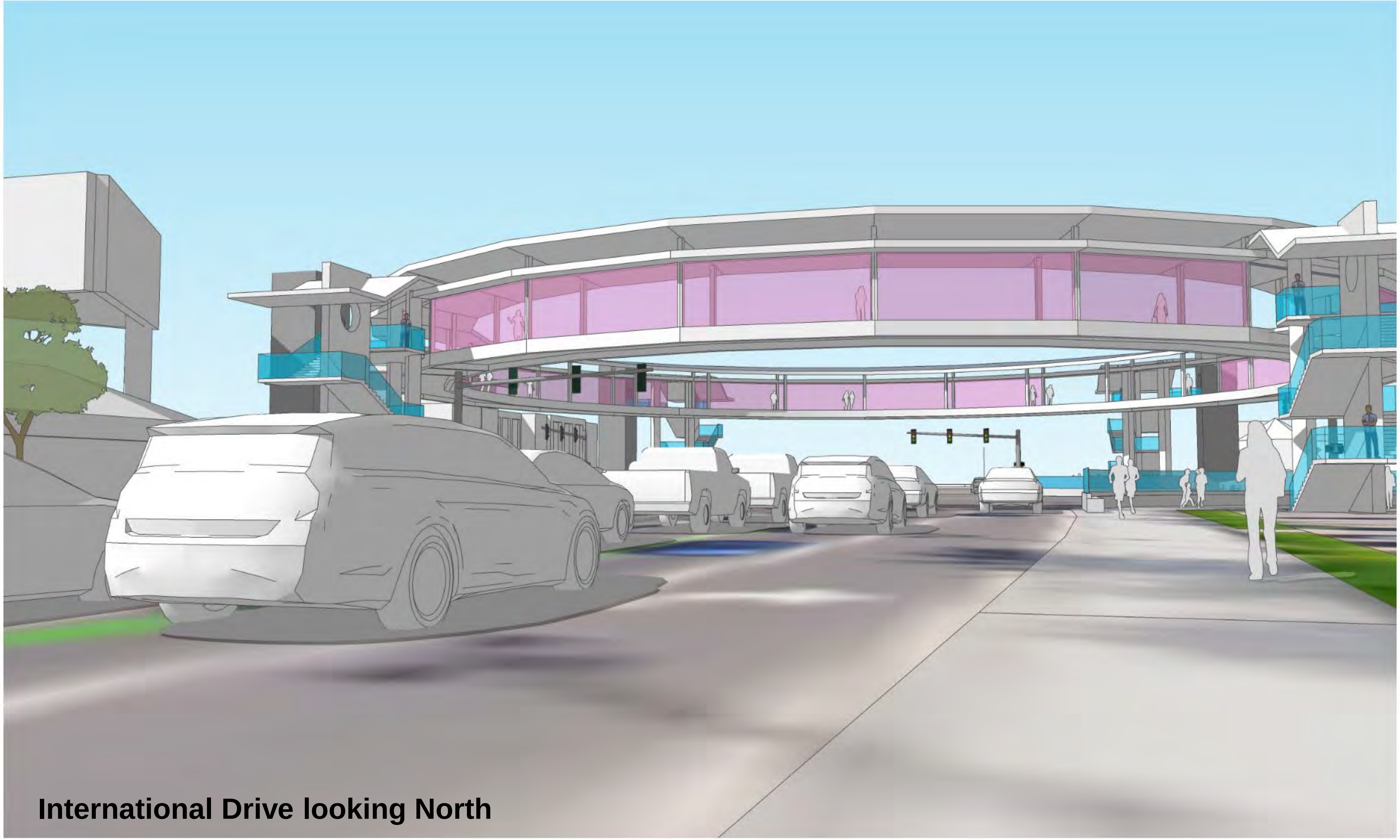
Not only does this intersection have the opportunity to create a unique gateway for visitors coming from I-4 and the International Airport, but it also can improve pedestrian safety at one of the busiest intersections in Central Florida.

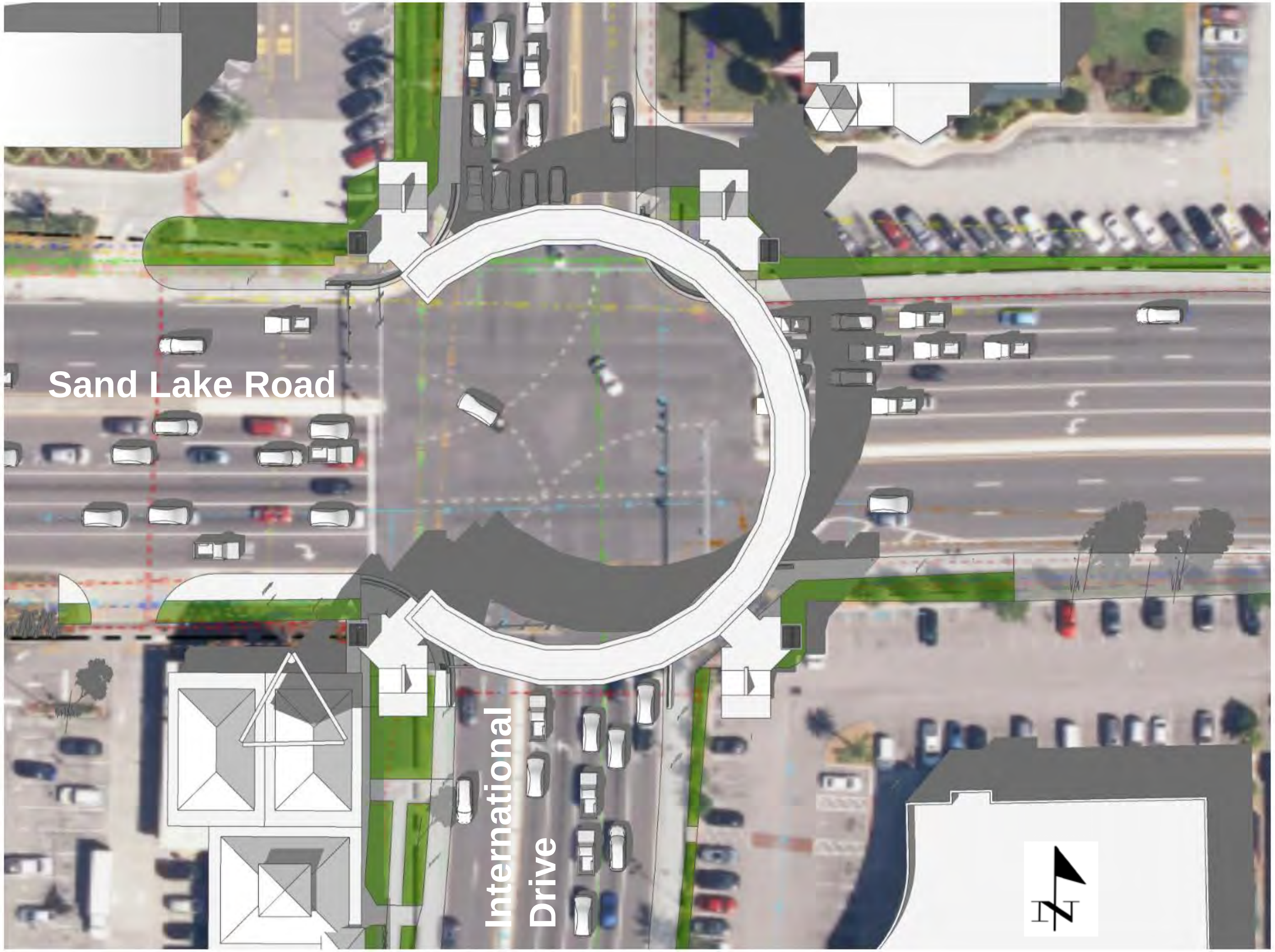
The steering group looked at multiple examples of gateways around the world and the circular option was represented in the 2040 Visioning Book.

The overall length of the bridge in the Circular configuration is the longest of all options at 816' of bridge length.

Summary

Average Travel Distance	284'
Bridge Length	816'
Bridge Width	12'-0"


International Drive looking North



Bridge Configuration "C" Option

Description

The "C" Shaped bridge configuration provides most of the benefits of the Circular bridge configuration, but reduces the overall bridge length by 237'.

The overall length of the bridge in the Circular configuration is the longest of all options at 579' of bridge length making it the fourth most efficient configuration of the bridges analyzed.

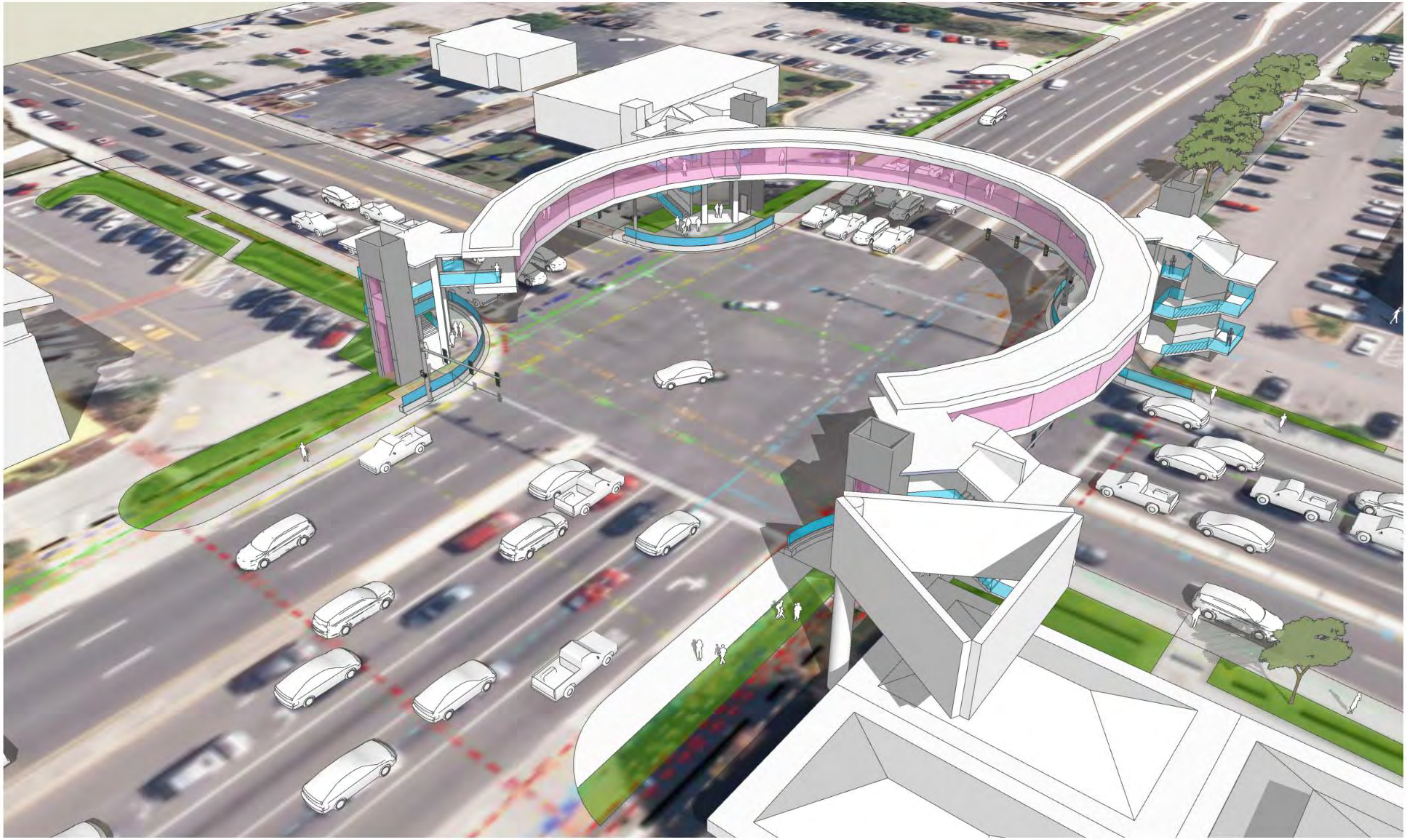
In addition the curved sections add to the crossing experience by limiting the long view across the bridge and maximizing the views to surrounding businesses while the users traverse the bridge.

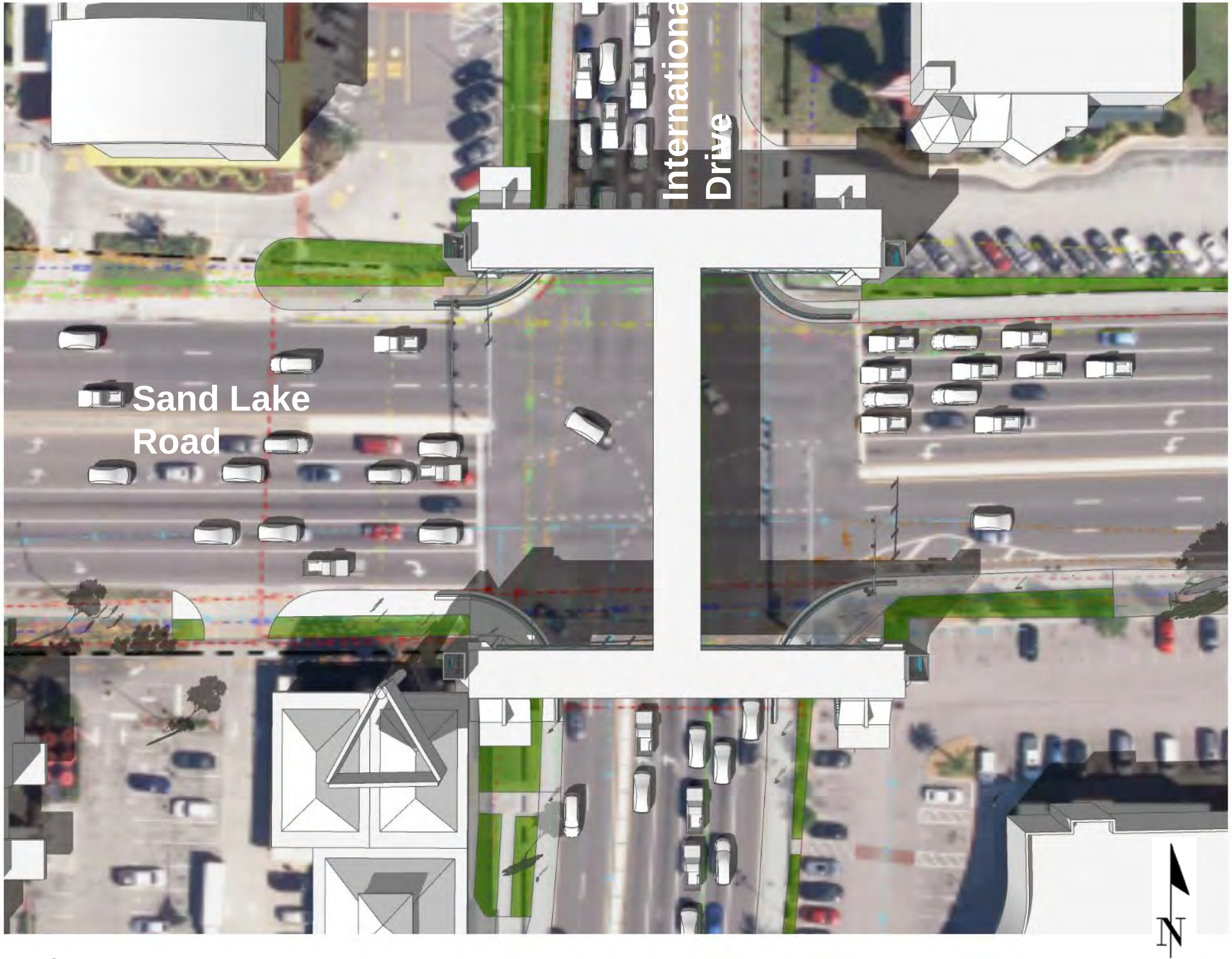
The open leg of the bridge creates a unique gateway for cars coming from I-4 traveling in any direction.

The biggest negative of this configuration is the increase in travel distance when traveling between the SW and NW intersections.

Summary

Average Travel Distance	386'
Bridge Length	579'
Bridge Width	12'-0"





Bridge Configuration "I" Option

Description

In PAG meeting #2 there was interest expressed for the "I" configuration with an obvious connection to International Drive.

We originally looked at the "I" configuration and were concerned over the 90 degree turns in the bridge and straight runs of bridge section with 2-way traffic. First thought was to start to round the intersections of the "I" to create serif's.

With the new curved serif's on the "I" it no longer seemed necessary to have the straight connector sections crossing International Drive.

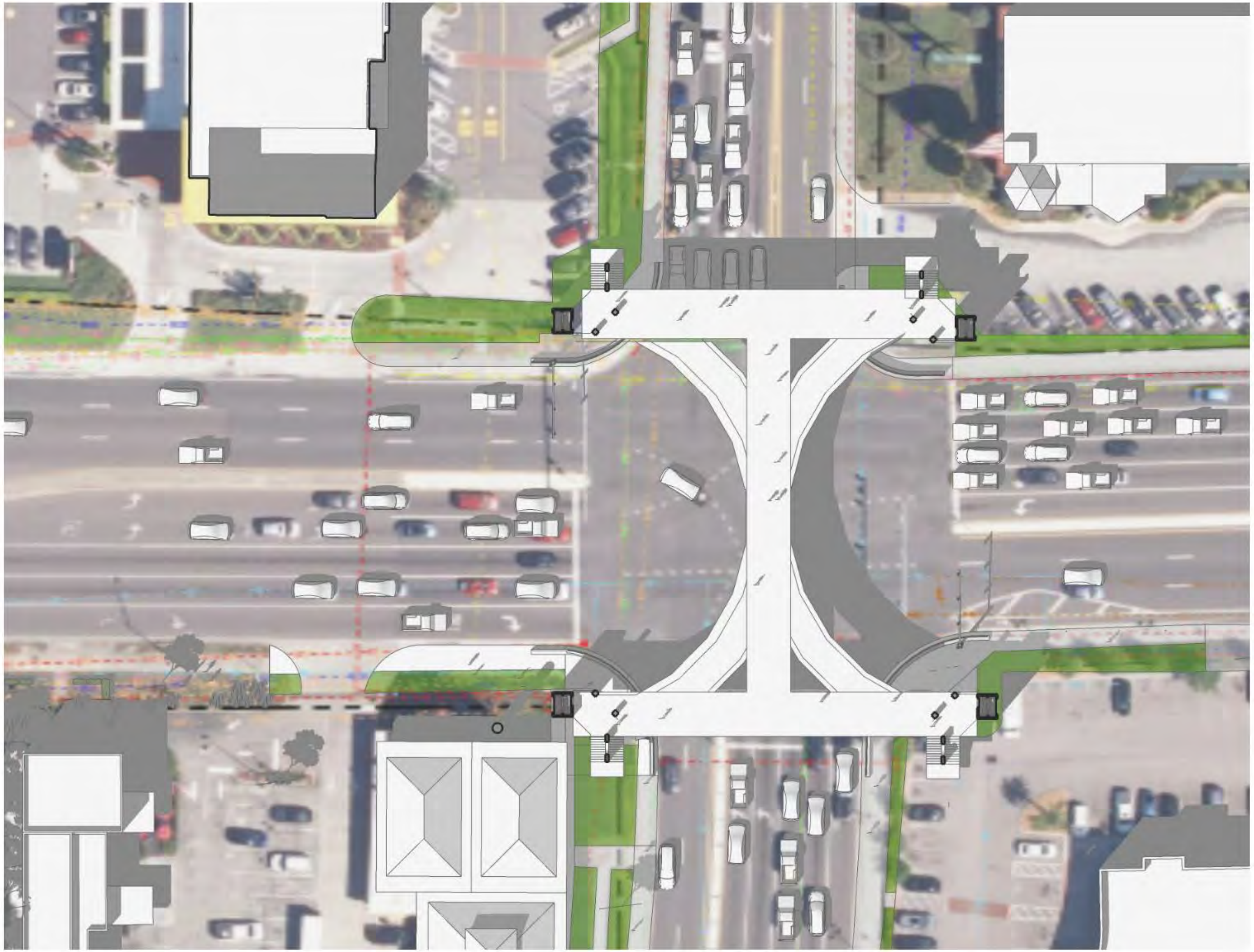
This thought process led to the evolution of the "I" configuration into the Interlocking "C" configuration.

The overall length of the bridge in the "I" configuration is the second shortest of all options at 402' of length.

Summary

Average Travel Distance	226'
Bridge Length	402'
Bridge Width	12'-0"


Sand Lake Road looking East



Bridge Configuration "I" Option - Modified

Description

In PAG meeting #2 there was interest expressed for the "I" configuration with an obvious connection to International Drive.

We originally looked at the "I" configuration and were concerned over the 90 degree turns in the bridge and straight runs of bridge section with 2-way traffic. First thought was to start to round the intersections of the "I" to create serif's.

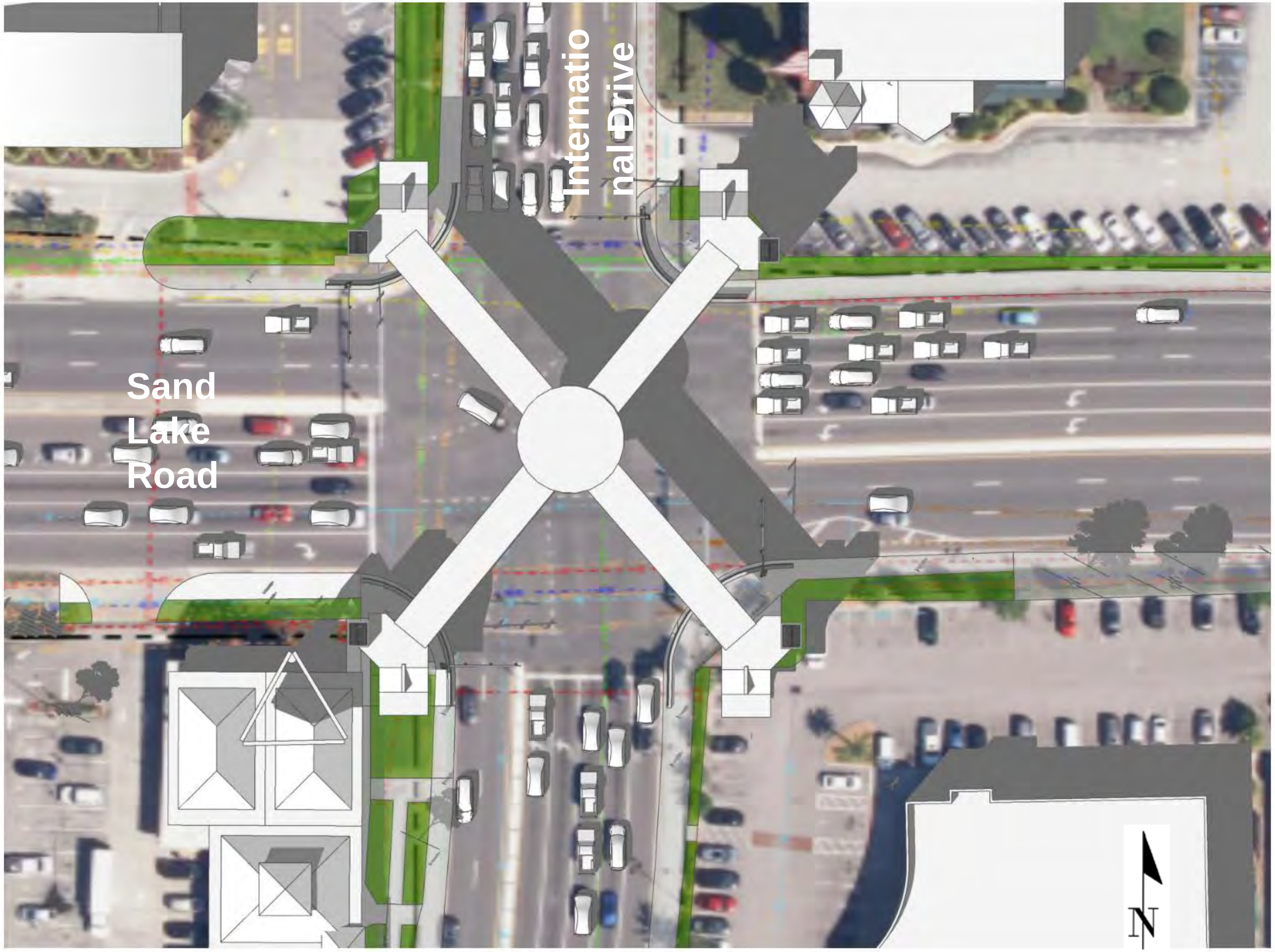
These new connectors make the bridge pedestrian experience better but create multiple paths and greatly increase the length of the bridge.

The overall length of the bridge in the modified "I" configuration becomes much longer than the "I" option at 686' of length.

Summary

Average Travel Distance	195'
Bridge Length	686'
Bridge Width	12'-0"


Sand Lake Road looking East



Bridge Configuration "X" Option

Description

The "X" configuration consists of two straight bridge runs intersecting in the middle of the intersection.

The overall length of the bridge in the "X" configuration is the third shortest of all options at 420' of length and has the third shortest average travel distances of the options considered.

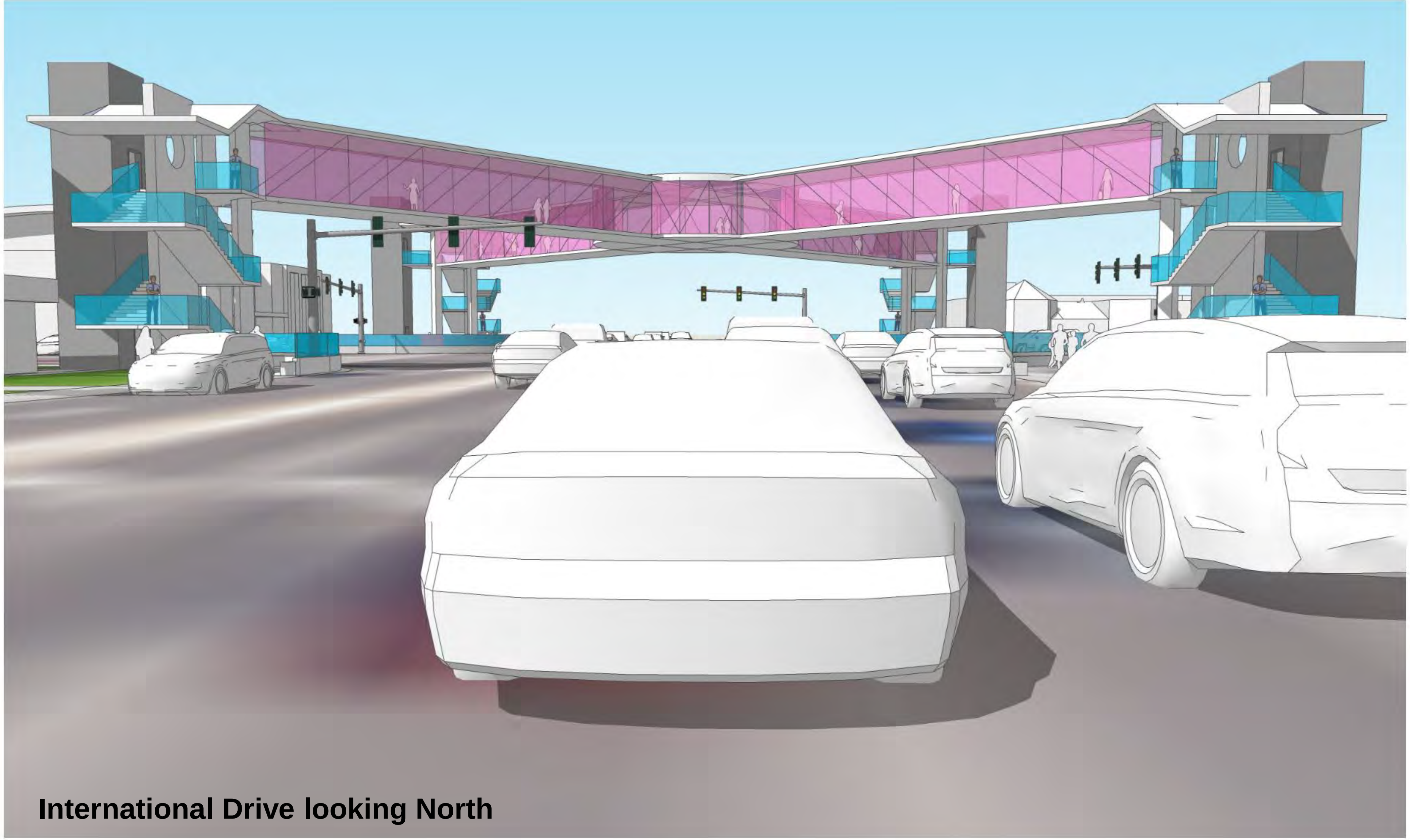
One benefit of this configuration is that the travel distance to every other intersection is exactly the same. The negative of this configuration is that the shorter distances across International drive are actually longer in this design.

There is an opportunity for a unique feature at the crossing point of the bridge which all users will experience.

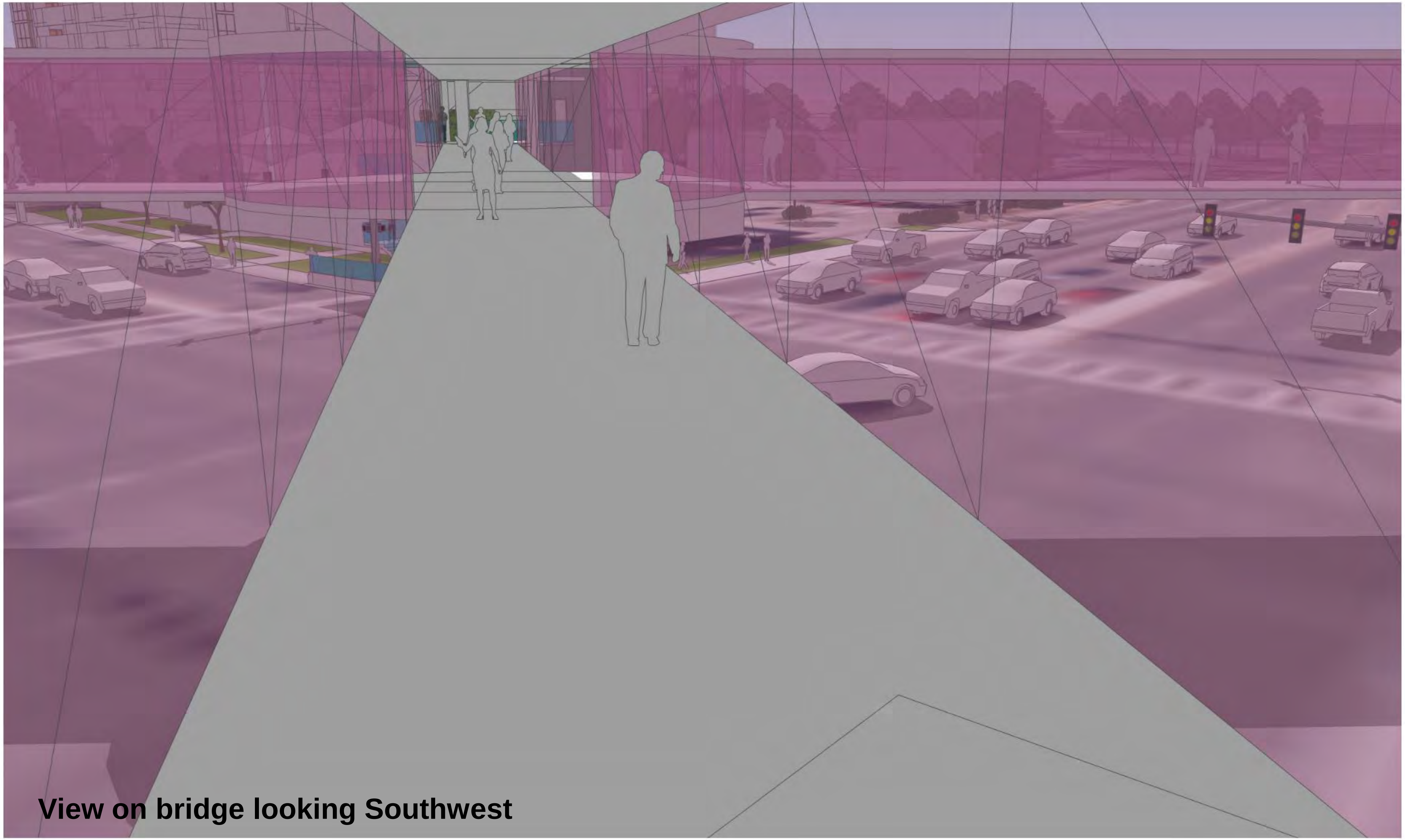
The straight bridge sections create a less desirable experience and users have to make a turn at the center section unless they are traveling diagonally across the intersection.

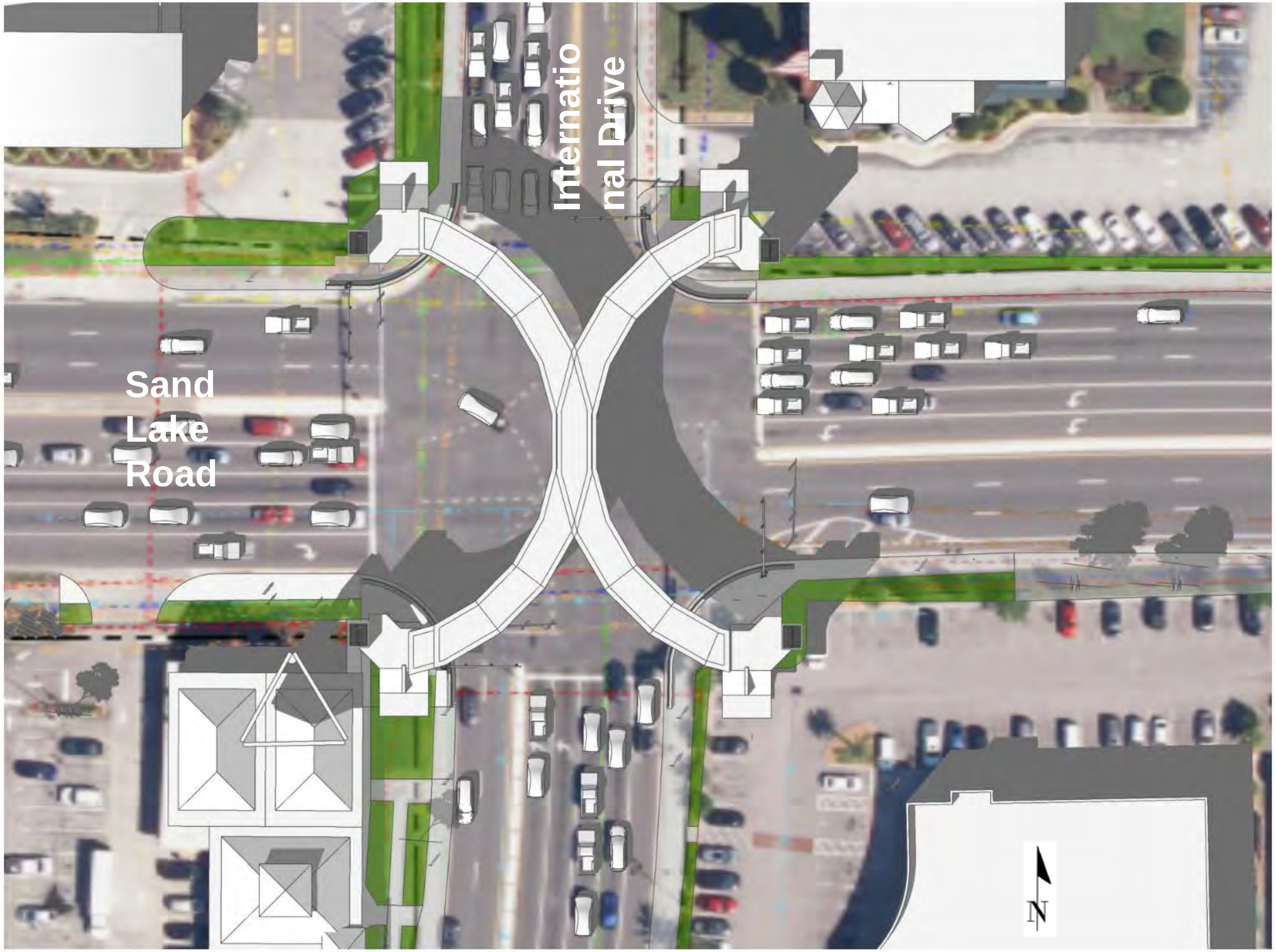
Summary

Average Travel Distance	210'
Bridge Length	420'
Bridge Width	12'-0"


International Drive looking North


International Drive looking South


View on bridge looking Southwest



Bridge Configuration Intersecting "C" Option

Description

The interlocking "C" Shaped bridge configuration evolved from the "I" configuration. This bridge configuration provides a similar travel distance to all intersections served.

The overall length of the bridge in the Interlocking "C" configuration is the shortest of all options at 395' of length and has one of the shortest average travel distances of the options considered.

In addition the curved sections add to the crossing experience by limiting the long view across the bridge and maximizing the views to surrounding businesses while the users traverse the bridge.

There is an opportunity for a unique feature at the crossing point of the bridge which all users will experience.

This configuration creates a unique gateway for automobiles from all directions. The effect is different for vehicles on International Drive and Sand Lake Rd.

Summary

Average Travel Distance	205'
Bridge Length	395'
Bridge Width	12'-0"


Sand Lake Road looking East

Public Meeting #1 | **Bridge Configuration – Interlocking "C" Option – Sand Lake Road looking East**

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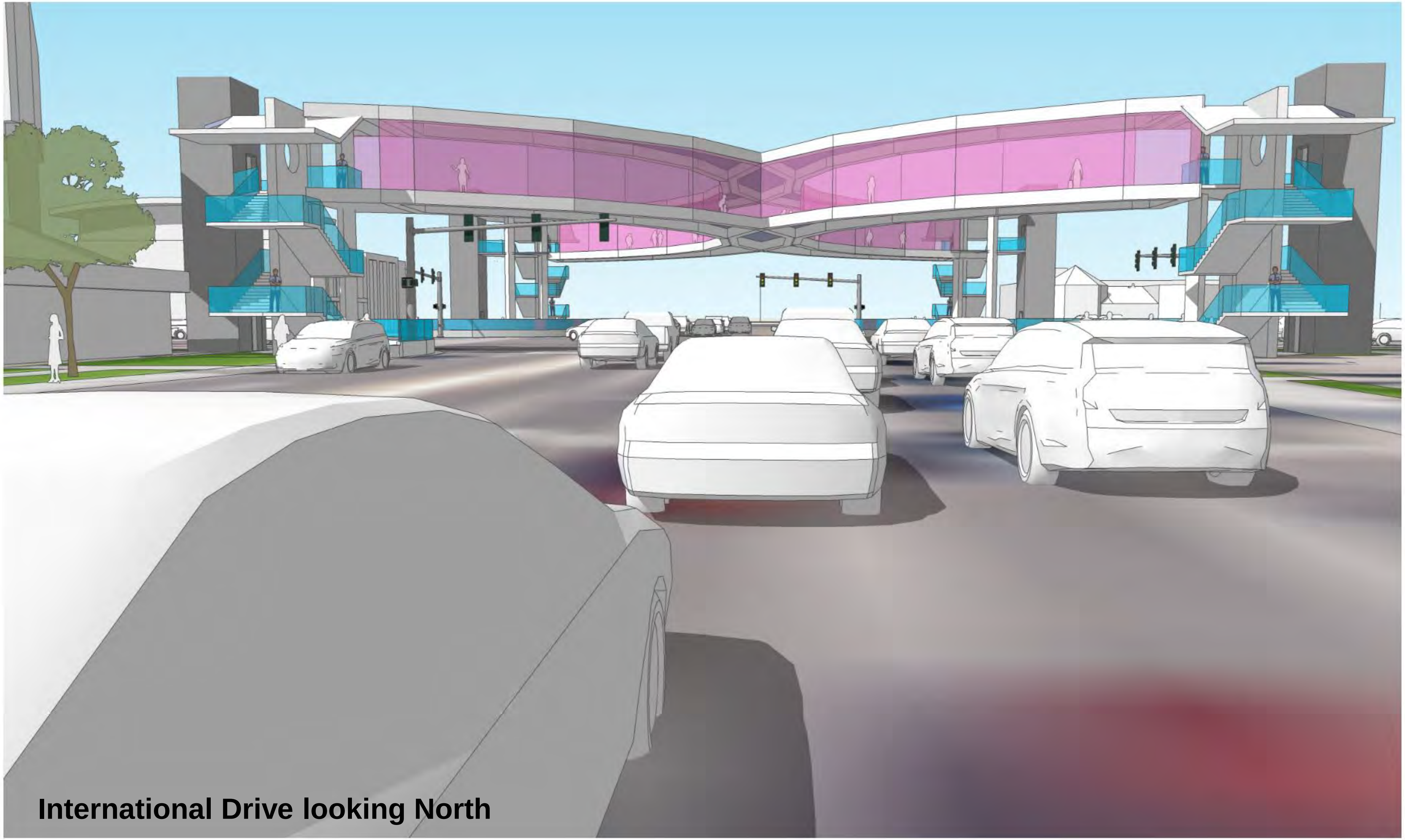
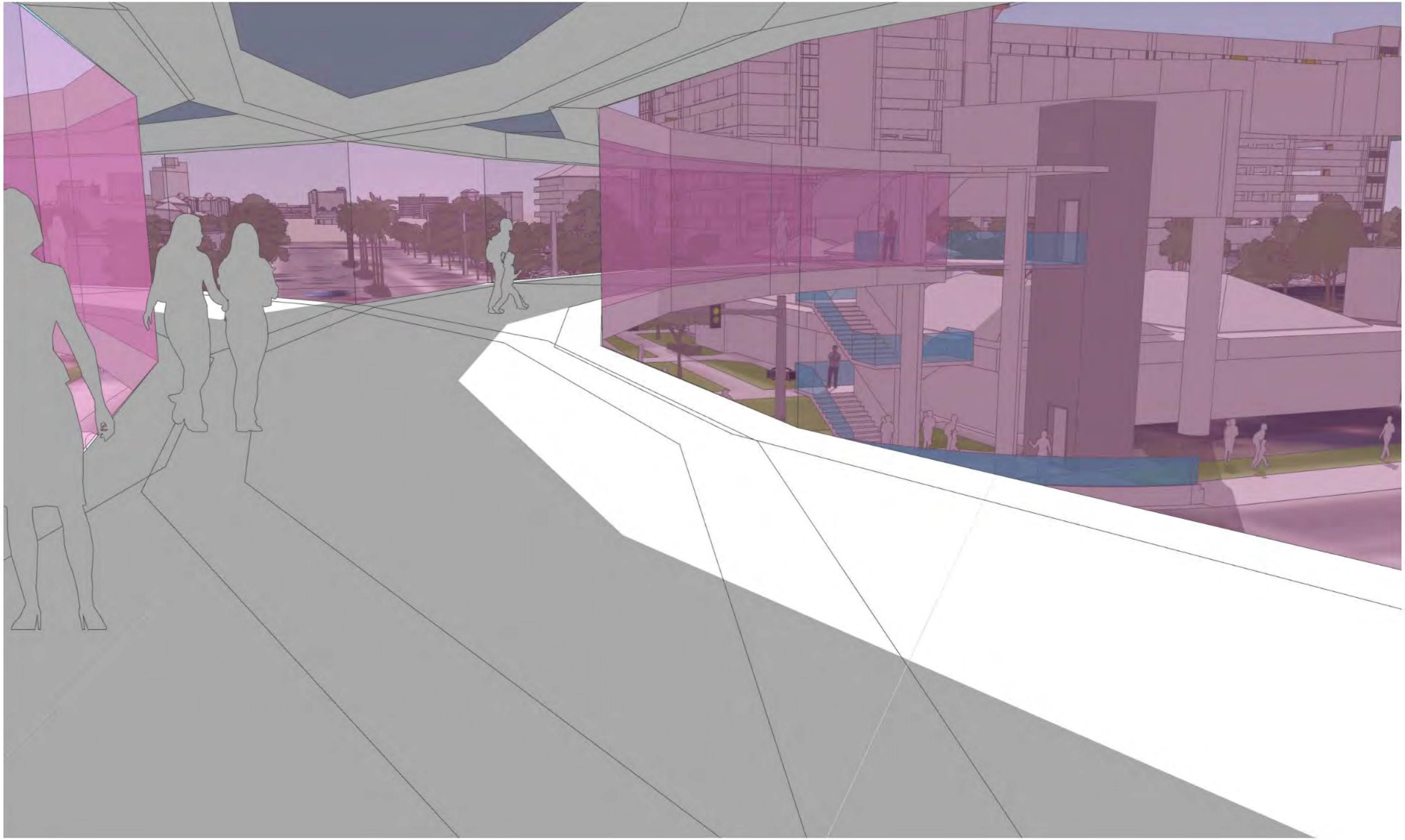
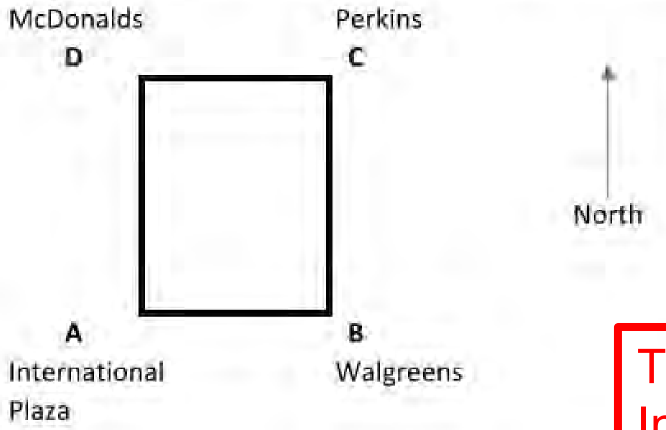

International Drive looking North



Bridge Configuration Evaluation Matrix
(lower score is higher ranking)

	Travel Dist. Int. A-B	Travel Dist. Int. A-C	Travel Dist. Int. A-D	Avg. Walk Dist.	Rank	Bridge Length	Rank	Total Score	Rank
Square Configuration	126	292	166	195	1	584	5	6	2
"X" Configuration	210	210	210	210	3	420	3	6	2
Circular Configuration	171	408	272	284	5	816	7	12	5
"C" Configuration	171	408	579	386	6	579	4	10	4
"I" Configuration	126	276	276	226	4	402	2	6	2
Modified "I" Configuration	126	229	229	195	1	686	6	7	3
Intersecting "C" Configuration	158	229	229	205	2	395	1	3	1

Exist. Crosswalk Distance	
A-B	96'
A-C	259'
A-D	132'
Avg.	162'



Note:
Distance from A-C is the same as B-D

The highest-ranking option is the Intersecting "C" configuration.
(lowest score = highest ranking)

Results of PAG meeting 3

1. Highest Ranked (preferred) Concepts included the Intersecting "C" Concept and The "X" Concept.
2. Utilize Stair and Elevator or Ramp at each intersection (best option for each corner)
3. Minimize impact on existing utilities and on adjacent property owners.
4. Create an Iconic Gateway to the Convention and Entertainment District
5. Consider potential bridge connections to adjacent properties (both elevated and on grade).
6. Consider experience of those traveling under the bridge as well as those experiencing the bridge by crossing it.
7. Bridge design should consider pedestrians, strollers, and bicycles.
8. ADA accessibility is critical at all intersections.
9. Further develop preferred alternatives. ("X" and Intersecting "C" Options)

Summary

- Curved bridge configurations create a more dynamic visual and a better experience for bridge users.
- Elimination of the crosswalks will increase pedestrian safety and reduce traffic congestion.
- Corner wrapping seat wall/barriers will be required to prevent people from attempting to cross the intersection on grade.
- Bridge configuration has little impact on space required at intersection corners.
- Bridge Configuration Evaluation Matrix shows the “Intersecting C” configuration to be the highest rated option (lowest score).
- We are seeking input on the preferred configuration to meet the operational, aesthetic, budget, and iconic gateway criteria.

Public Meeting #1

Preferred Schemes Under Development

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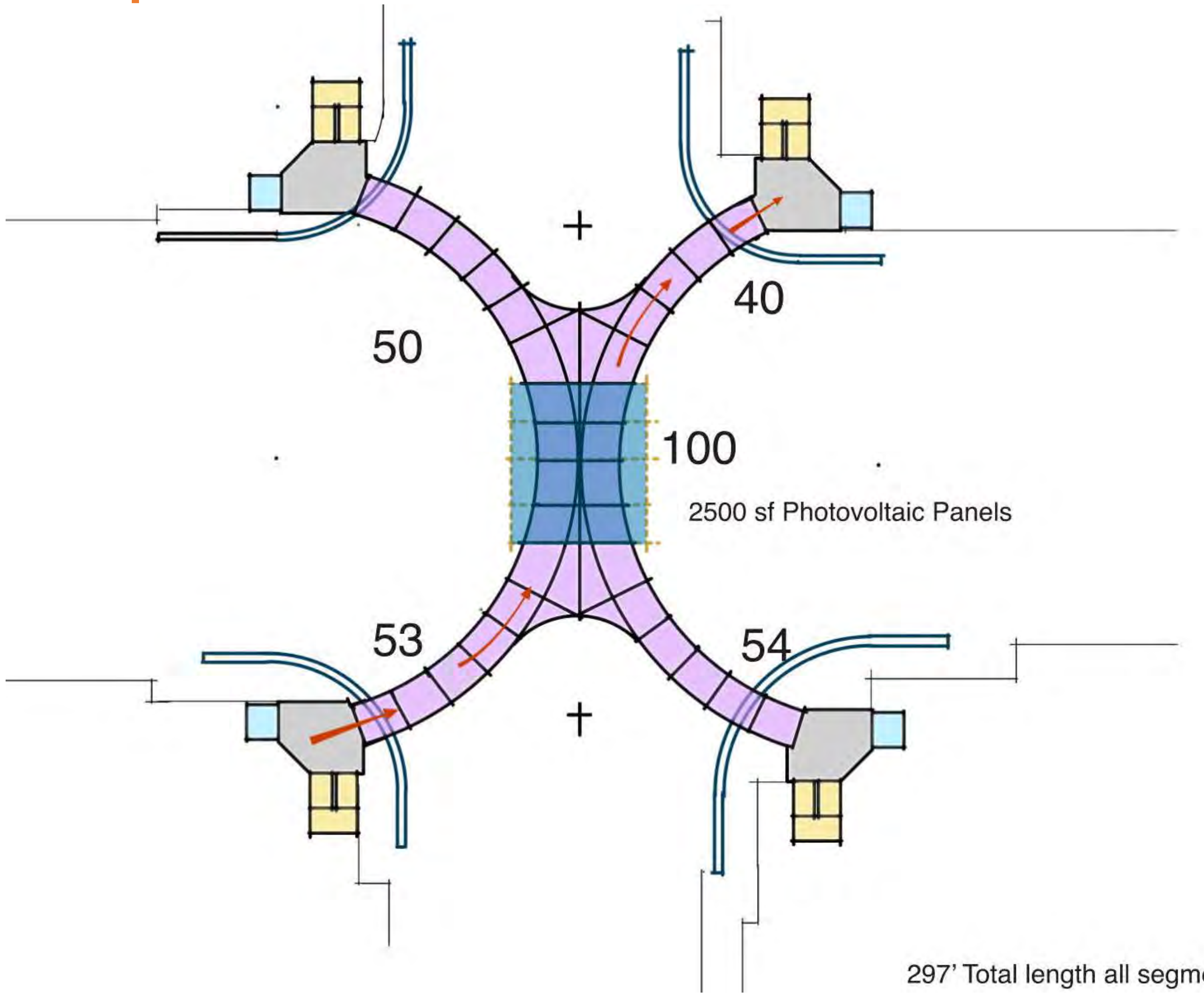
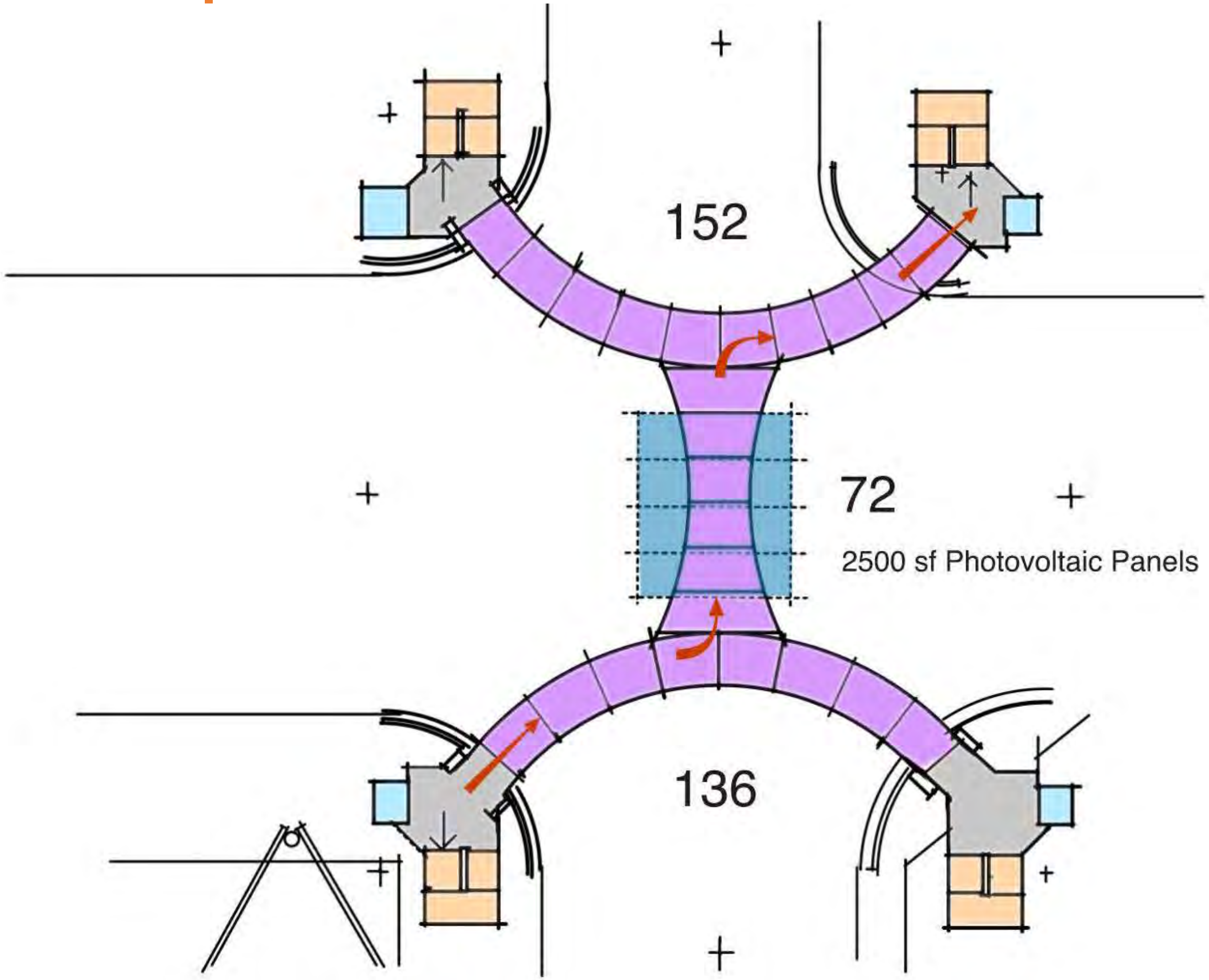
Preferred Option 1

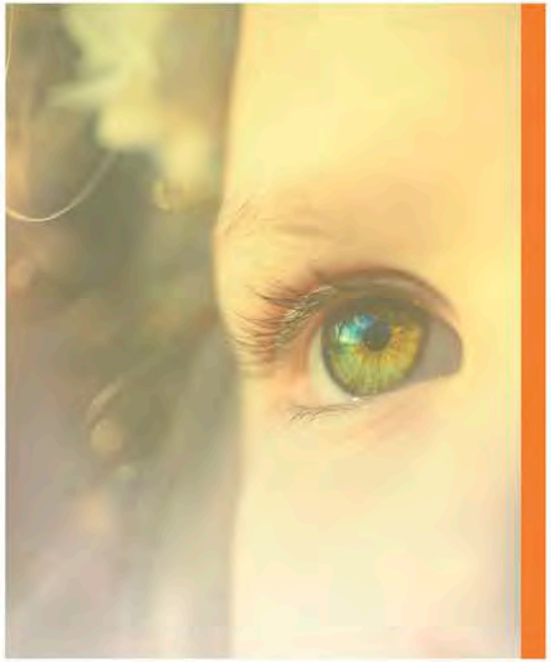


297' Total length all segments

Preferred Option 1



360’ Total length all segments



Transportation Planning Division

ORANGE COUNTY GOVERNMENT
FLORIDA

International Drive Pedestrian Overpass
Analysis and Overpass Conceptual Design Study

Public Meeting #1

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ORANGE COUNTY GOVERNMENT FLORIDA

International Drive Pedestrian Overpass Analysis and Conceptual Design Study

Public Alternatives Meeting
Wednesday, February 22, 2023
Open House - 5:30 p.m.
Presentation - 6:00 p.m.

Sign-in Sheet

Name (please print)	Organization (please print)	Mailing Address (please print)	Email Address/Phone (please print)
Brenda Hampton	McDonald's Corp.	Brenda Hampton/MCD 2178 The Woods Dr E Jacksonville FL 32246	brenda.hampton@us.mcd.com
Krista Taraszewski	OC Trans planning		Krista.Taraszewski@ocfl.net
Liam Brooks	I-Drive District	7081 Grand Ntl Dr Orlando FL 32819	LBrooks@IDriveDistrict.com
Carmen Petersen	Universal Orlando/ I-Drive CRA		Carmen.Petersen@universalorlando.com
Thuy Thach	Travelodge SB Holdings LLC	7200 International Dr. Orl. FL 32819	Thuy@Heartofidrive.com
Russ Dagon	Universal Orlando/ I Drive Advisory	1000 Univ. Blvd Orl. FL 32819	russ.dagon@universalorlando.com
Stacy Huber Brett Swango	Int'l Square	6625 Main St #103	stacy~~h~~@GardeniaRow.com

Meeting location: Lake Buena Vista High School Cafeteria, 11305 Daryl Carter Pkwy, Orlando, FL 32836
This sign-in sheet is part of the project record and is available for viewing by the public and media.

International Drive Pedestrian Overpass Analysis and Conceptual Design Study

Public Alternatives Meeting
Wednesday, February 22, 2023
Open House - 5:30 p.m.
Presentation - 6:00 p.m.

ORANGE COUNTY GOVERNMENT FLORIDA

Sign-in Sheet

Name (please print)	Organization (please print)	Mailing Address (please print)	Email Address/Phone (please print)
MICHAEL CHATHAM	HHCP ARCHITECTS	120 N. ORANGE AVE ORLANDO FL 32801	mchatham@hhcp.com
Micah Bass	7200 Wyndham	7200 -6603 International Dr	MBASS@JAMMANAGERS2.COM
Chris Atcachunas	Atcachunas Law	215 E. Livingston St	chris@usechris.com
Tabitha Moore	Int'l Square		
Carter Gresham	Orange County Planning	646 W Smith St. Apt 152 Orlando FL	carter.gresham@ocfl.net
MIKE SCOTT	OCFL		
Michelle Frank	OCFL	201. S. Rosalind	michelle.frank@ocfl.net

Meeting location: Lake Buena Vista High School Cafeteria, 11305 Daryl Carter Pkwy, Orlando, FL 32836
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ORANGE COUNTY GOVERNMENT FLORIDA

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Sign-in Sheet

Name (please print)	Organization (please print)	Mailing Address (please print)	Email Address/Phone (please print)
Deonte Moore	OCFL		deonte.moore@ocfl.net
IAN PHYARS	OCFL		
Guamay Martell	Telemundo		guamay.martell@nbcuni.com

Meeting location: Lake Buena Vista High School Cafeteria, 11305 Daryl Carter Pkwy, Orlando, FL 32836
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International Drive Pedestrian Overpass Analysis and Conceptual Design Study

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Sign-in Sheet

Name (please print)	Organization (please print)	Mailing Address (please print)	Email Address/Phone (please print)
BRIAN SANDERS	OC TRANS. PLAN.		

Meeting location: Lake Buena Vista High School Cafeteria, 11305 Daryl Carter Pkwy, Orlando, FL 32836
This sign-in sheet is part of the project record and is available for viewing by the public and media.

APPENDIX C

06-12-23 PAG Meeting #4
Meeting Minutes and Presentation

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Meeting Minutes

Date	June 29, 2023	Meeting Date	June 12, 2023
Project Name	International Drive (I-Drive) Pedestrian Bridge Overpass Intersection Analysis and Overpass Conceptual Design Study	Project #:	
Subject	Project Advisory Group (PAG) Meeting #4		
Participants	See Below		
Location	Embassy Suites 8250 Jamaican Court Orlando, FL 32819	Prepared By	Rick Baldocchi, P.E. Christine Dellert
Distribution	Meeting Participants		

- **Introduction of Participants**

Blanche Hardy, Orange County
Rick Baldocchi, AVON
Michael Chatham, HHCP
Anmber Ayub, Orange County
Marcos Bastian, Orange County
Richard Bilbao, OBJ
Loreen Bobo, FDOT District 5
Luann Brooks, I-Drive District
Fernando Ching, Rosen Hotels & Resorts
Kristen Darby, Visit Orlando
Megan Dowdy, Dowdy Realty
RJ Dowdy, Dowdy Realty
Hazem El-Assar, Orange County
Rob Herrick, Universal Orlando
Donald Huber, International Square Inc.
Tabitha Moore, International Square Inc.
Chris Mueller, Hilton Orlando
Carmen Petersen, Universal Orlando
Jeffrey Reyes, Orange County
Brian Sanders, Orange County
Craig Swygert, Clear Channel Orlando
Krista Taraszewski, Orange Co Convention Center
Alberto Vargas, Orange County
Scott Workman, Orange County Fire Rescue

The fourth Project Advisory Group (PAG) meeting provided further details on the International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study, including a presentation of the two preferred bridge concepts and discussion of refined aesthetics, as well an opportunity to solicit final comments from group members. A summary of the meeting discussion is below.

Blanche Hardy introduced the purpose of the meeting and shared a PowerPoint presentation with information on the overpass study and its work to date. The project has the support of Orange County leadership, including Mayor Demings and Commissioner Mike Scott for District 6, which the area of study is in.

Blanche introduced Michael Chatham with HHCP to provide additional background since the PAG met last. The PAG is made up of businesses representations in the surrounding area, County representatives, emergency first responders, the Convention Center, and FDOT.

1. Recap of Prior PAG Meetings
    a. Michael shared a summary of results from the first three PAG meetings, including:
        i. A decision to include a barrier at intersections to prevent on-grade crossing.
        ii. Utilize stair and elevator at each intersection (the best option for each corner).
        iii. Minimize the impact on existing utilities and on adjacent property owners.
        iv. Create an iconic gateway to the Convention and Entertainment District.
        v. Consider potential bridge connections to adjacent properties (both elevated and on grade).
        vi. Consider the experience of those traveling under the bridge, as those experiencing the bridge by crossing it.
        vii. A design that accommodates pedestrians, strollers, and bicycles.
        viii. ADA accessibility at all intersections.
        ix. Consider the Intersecting “C” option and the “X” option as the highest-ranking and preferred schemes.
    b. Michael also shared the four bridge configurations the group had previously discussed: a square configuration, an “X” configuration, a circular configuration, a “C” configuration, an Intersecting “C” confirmation, and an “I” configuration.
    c. The selected bridge configuration for each intersection is an elevator and a stair that would provide elevated or on-grade connections to the properties on the corners.
    d. Michael shared 3D studies of the two preferred schemes: the “X” configuration and the Intersecting “C” confirmation. He noted that one of the negatives of the “X” is that the travel path is longer than some of the other configurations; the Intersecting “C” has slightly shorter walking distances and a curve for a more interesting user experience.
    e. Each of the configuration options was ranked by travel distance, walking distance, and bridge length, and the “X” and Intersecting “C” configurations were among the higher-ranked options.
2. Bridge Design Concepts
    a. Michael introduced **“The Drone Concept”** as the first bridge design scheme, named because it resembles a drone. It is an offshoot of the Intersecting “C” design. It features a shallow curved canopy where the two bridge sections come together and could be used for photovoltaic arrays to power elements of the bridge. The canopy also could have a digital arch component that could be used for signage or artistic expression.
    b. Michael showed a series of daytime and evening renderings of the Drone design concept from different directions. Travelers from the east or west on Sand Lake Road would see elevator towers illuminated at night.
    c. Staircases wrap around in five-foot elevation sections to be more inviting for users.
    d. Michael shared a video of the concept to help attendees virtually experience what this bridge design would be like.

e. Michael introduced a second bridge design concept, **"The Wave Concept,"** which incorporates two "C's" that do not intersect and have a free-flowing wave form in the middle. The corners are the same in this scheme, but the roofs in this scheme cover the elevator access ways.
f. Michael showed a series of daytime and evening renderings of the Wave design concept from different directions.
g. One of the biggest differences in these schemes is the structural strategies of the bridges. An intersection in the middle of the Wave design is created that people can walk through on the bridge. Internal illumination would be featured inside the elevator shafts in the Wave design, as well.

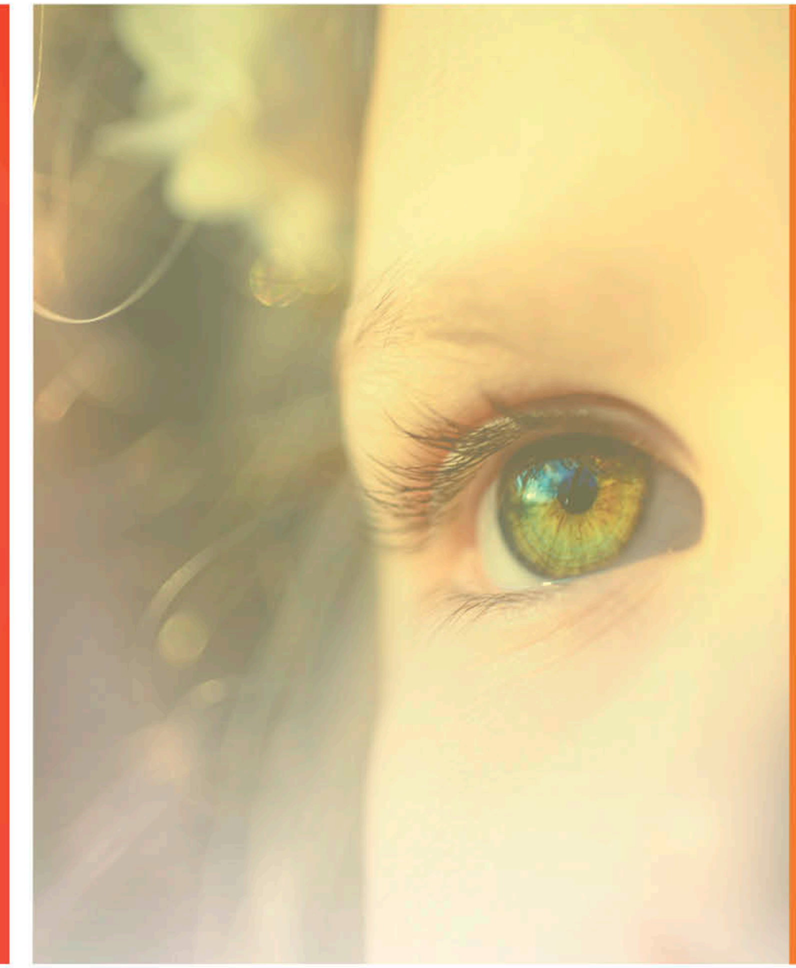
3. Bridge Aesthetics
   a. Michael introduced Alberto Vargas from Orange County to discuss bridge aesthetics with the PAG members.
   b. Alberto said the bridge would provide pedestrian and traffic safety and a memorable gateway to International Drive.
   c. The County has reviewed the technical aspects of the designs and the components of the horizontal and vertical structures and said County staff decided the Wave is their preferred option.
4. PAG Discussion and Questions
   a. **Question (RJ Dowdy):** Why was the "X" configuration not presented in today's bridge schema after we asked for it to be brought back up during the last meeting?
      i. Michael said there were very few differences between them and said the design connects all four corners with an intersection in the middle. An "X" design did not reflect the iconic bridge objective, and the curve creates a more interesting walking experience for people using the bridge.
   b. **Question (RJ Dowdy):** Isn't the "X" design cheaper because it is a simpler design?
      i. Blanche said we will not have costs on this bridge until we have design. Both the design images are very close in price. The County was tasked with providing an iconic bridge and architectural statement for the district.
   c. **Comment (Megan Dowdy):** It is frustrating for people who have taken time away from their businesses to be presented with options that do not reflect what they previously discussed. Preference is for the Drone vs. the Wave Concept because the Wave is too futuristic for the aesthetic of International Drive. Likes the $1M allowance for digital art display on the Drone concept. Does not agree with copying the design aesthetics of the Convention Center, because the district is more than the Convention Center.
   d. **Comment/Question (RJ Dowdy):** The Wave looks less durable and cheaper, and questions how security would function on the bridge. Is there an estimate on the bridge cost?
      i. Michael says the preliminary estimates are around $30 million.
   e. **Comment (Blanche Hardy):** Blanche recognizes Loreen Bobo from FDOT to recognize FDOT's work in ensuring that the project is doable and can move forward.
   f. **Question:** From the FDOT perspective, is the digital display on the Drone concept a concern for drivers?
      i. It is something FDOT will need to look at.

g. **Comment (Rob Herrick):** Preference for the Drone option; the Wave option seems like it will be more costly, and the design is not likely to be as appreciated from the exterior. Likes simplistic with the curved sides design, and the Drone lends itself well to lightning. Wish the Drone design roof structure could be altered and extended. Also questions the placement of the elevator and stairways as entry points.
    i. Michael says this was a structural consideration, and Blanche says it allows the property owners the choose to extend the walkways to their properties.
h. **Comment/Question (Fernando Ching):** Prefers the Drone but would like a commitment to 24/7 security and shares concern it could become a shelter for people. When could construction of the bridge begin?
    i. Brian Sanders said approvals of this study could take through the end of the year. Then, the design phase could take 12-16 months. This project would only be feasible with donations of right-of-way. Construction would have to take place in phases, which could take another year. A lot of the bridge would have to be prefabricated, and construction would take at least a year. There have been several construction and transportation projects in the area in recent years. The County is working closely with the designers of the other projects.
i. **Questions/Comments:** Is the $1M for digital art additive of the project or included? Why isn't the person taking on the digital signage paying for that, and what kind of revenue is there to support it? Also prefers the Drone concept and believes there are opportunities to advertise inside the bridge. Wants to ensure International Drive is emphasized over Sand Lake Road in the design. What materials are being used? And why does the entire structure need to be covered?
    i. Blanche says FDOT's allowances for advertising and signage are not determined yet for the exterior. Michael says the intention is a digital art display, not in terms of advertising. Michael says it is a lot of steel, concrete, metal roofing; on the some of the flat sections there would be TPO roofing and a plan to cover the entire structure to provide shade.
j. **Comment:** Concern that covering the entire structure would encourage homeless to shelter in the area.
k. **Question:** Can you share cost estimates at the next meeting or in the next phase, because the CRA currently does not have the funding for $30 million? Greater concern is on safety, rather than iconic nature of the bridge.
    i. Blanche says the County continues to pursue grants from the federal government for the bridge and has worked with FDOT to talk about potential grants for the project. Knows that the County has exceeded the $20M from the CRA and is looking for alternative funding sources.
l. **Question:** How would you score the safety versus the aesthetics?
    i. Blanche says the barriers that you see are on the side of the road in the design concepts are not standard barrier; have worked with FDOT to develop a barrier system to eliminate crossing at the intersection. One of the first goals was to eliminate on-street crossing. Blanche says they are required to completely cage in the bridges and have worked with the Fire Department and the Sheriff's Office to ensure structure of the bridges does not interfere with emergency response efforts.

    ii. Safety has been the priority and the team has spent the least amount of time on the aesthetics.

m. **Question:** Can you update renderings to reflect the new divergent diamond travel ways from the nearby I4 design?
n. **Question:** How is the Wave concept powered?
    i. Michael says there would be photovoltaic panels on the Wave but not as prominently.
o. **Question:** Is the photovoltaic worth doing, and is there a return on it?
    i. Michael says the team will need to do the analysis but wanted to decide upon the preferred design direction. Blanche says there will not be costs available until the designers on board.
p. **Comment/Question:** Safety is the No. 1 priority for us. Will there be cameras inside the bridge and who will monitor them?
    i. Michael says no matter which of the two designs are selected, it will greatly improve safety. There will be cameras inside monitored by OCSO.
q. **Comment:** Does not want the bridge to become a destination; wants it to be a way to move people safety across the intersection. Does not favor the digital art and wants to consider LED lighting that could utilize different colors for special events.
r. **Comment/Question:** Drone design is the most aesthetically pleasing. Who is currently negotiating right-of-way with the property owners?
    i. Blanche says the County has had initial meetings with the property owners and confirmed the footprints of the towers. In the very near future will meet again with the corner property owners. Will be going into community meetings and meetings with Clear Channel and the property owners within the next six weeks.
s. **Question:** Are there other bridges like these with available data on their success?
    i. Michael says the team initially pulled images of the most iconic bridges from around the world. The firm has done at least 9 pedestrian bridges and uses lessons learned. The team has not found another similar configuration of a pedestrian bridge anywhere else, which makes it unique and memorable. The team also considered prior projects at Disney and sees the benefit in putting all pedestrian traffic overhead and keeping vehicular traffic moving.
t. **Comment/Question:** Prefers using LED lighting color options instead of a digital screen. The PAG seems to unanimously prefer the Drone concept over the Wave. Why can't the County purchase the property needed from the landowners?
    i. That has been the County policy and approach that has been taken for the transit lanes so far. If we get to a stumbling spot, the team would go back to the County administration to discuss. The value per square foot is very high in the International Drive corridor. This is a project that would benefit the area and property owners. The County would be requesting easements but not restrict development by the property owners on that square footage.
u. **Comment:** The design team appreciates the suggestions and is taking them into account and would look at refining the Drone concept based upon the comments provided today. The intention is to use the digital art to make it iconic; safety has always been fundamental in the design.

5. Final Comments and Next Steps
    a. Blanche says another public meeting will be scheduled. Then a work session before the Local Planning Agency and a work session before the Board of County Commissioners. Comments are not accepted during work sessions.
    b. Recommendations will be taken into consideration and a public hearing will be scheduled with the Local Planning Agency, which will then make a recommendation to the Board of County Commissioners for permission to design and construct the bridge.



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F L O R I D A

International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study

Project Advisory Group Meeting #4

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Project Advisory Group
Meeting Objectives

Meeting Number Four

- Presentation of Two Preferred Bridge Concepts
- Discussion of Refined Aesthetics
- Final Comments from Group Members

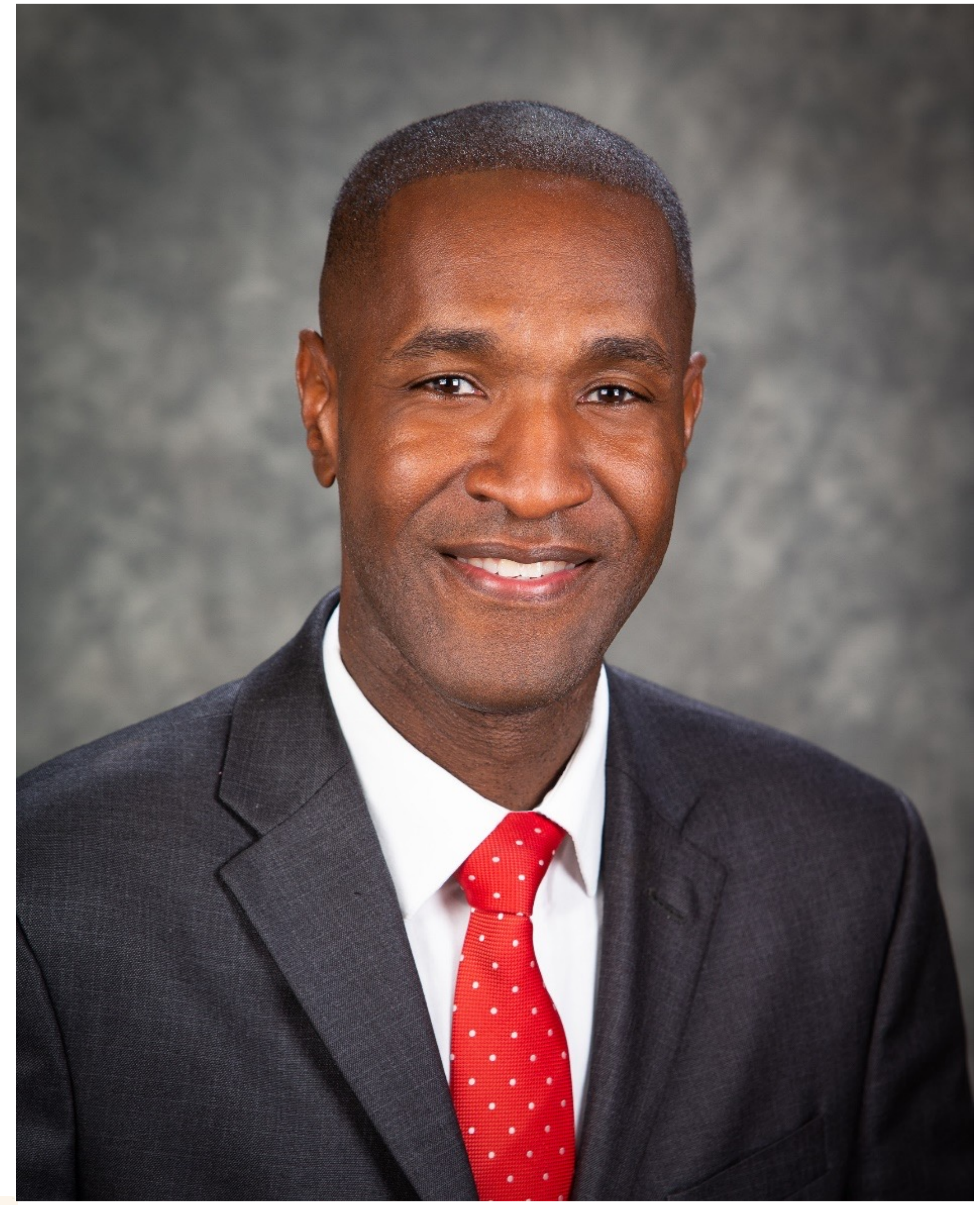
Meeting Number One
Introduction of Participants
General Overview of Project
Initial Comments from Group Members

Meeting Number Two
Presentation on Findings of Existing Conditions
Discussion of General Bridge Features; Ramps, Stairs Elevators, etc.
Discussion of Right-of-Way and Access impacts
Discussion of Utility Impacts
Comments from Group Members

Meeting Number Three
Presentation of Preliminary Bridge Concepts
Comparison of Aesthetics for Each Concept
Comments from Group Members

Meeting Number Four
Presentation of Two Preferred Bridge Concepts
Discussion of Refined Aesthetics
Final Comments from Group Members

Meeting Number Five
Presentation of Final Concept Plans
Presentation on Evaluation Method and Rankings
Discuss Rankings and Determination of Preferred Alternative

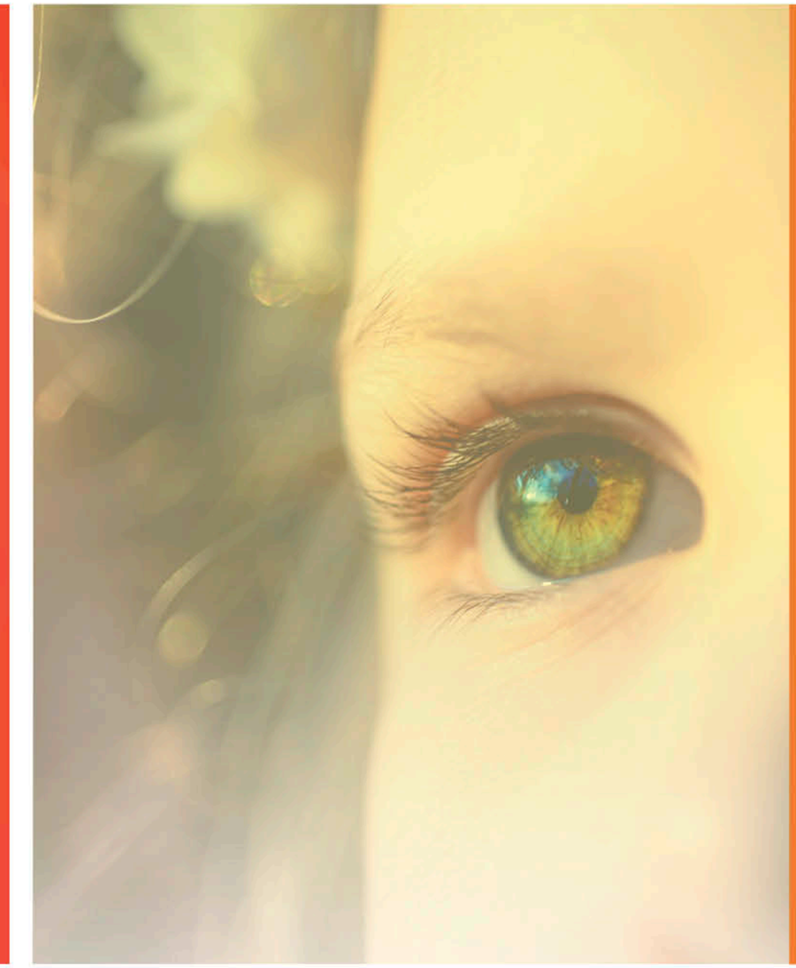


Jerry L. Demings
Orange County Mayor

Michael "Mike" Scott
District 6 Commissioner

Results of PAG meeting 1, 2 & 3

1. Include barrier at intersections to prevent on grade crossing.
2. Utilize Stair and Elevator at each intersection (best option for each corner)
3. Minimize impact on existing utilities and on adjacent property owners.
4. Create an Iconic Gateway to the Convention and Entertainment District
5. Consider potential bridge connections to adjacent properties (both elevated and on grade).
6. Consider experience of those traveling under the bridge as well as those experiencing the bridge by crossing it.
7. Bridge design should consider pedestrians, strollers, and bicycles.
8. ADA accessibility is critical at all intersections.
9. Consider the Intersecting “C” option and the “X” option as the highest ranking and preferred schemes

Meeting Number Four

Bridge Configurations Considered

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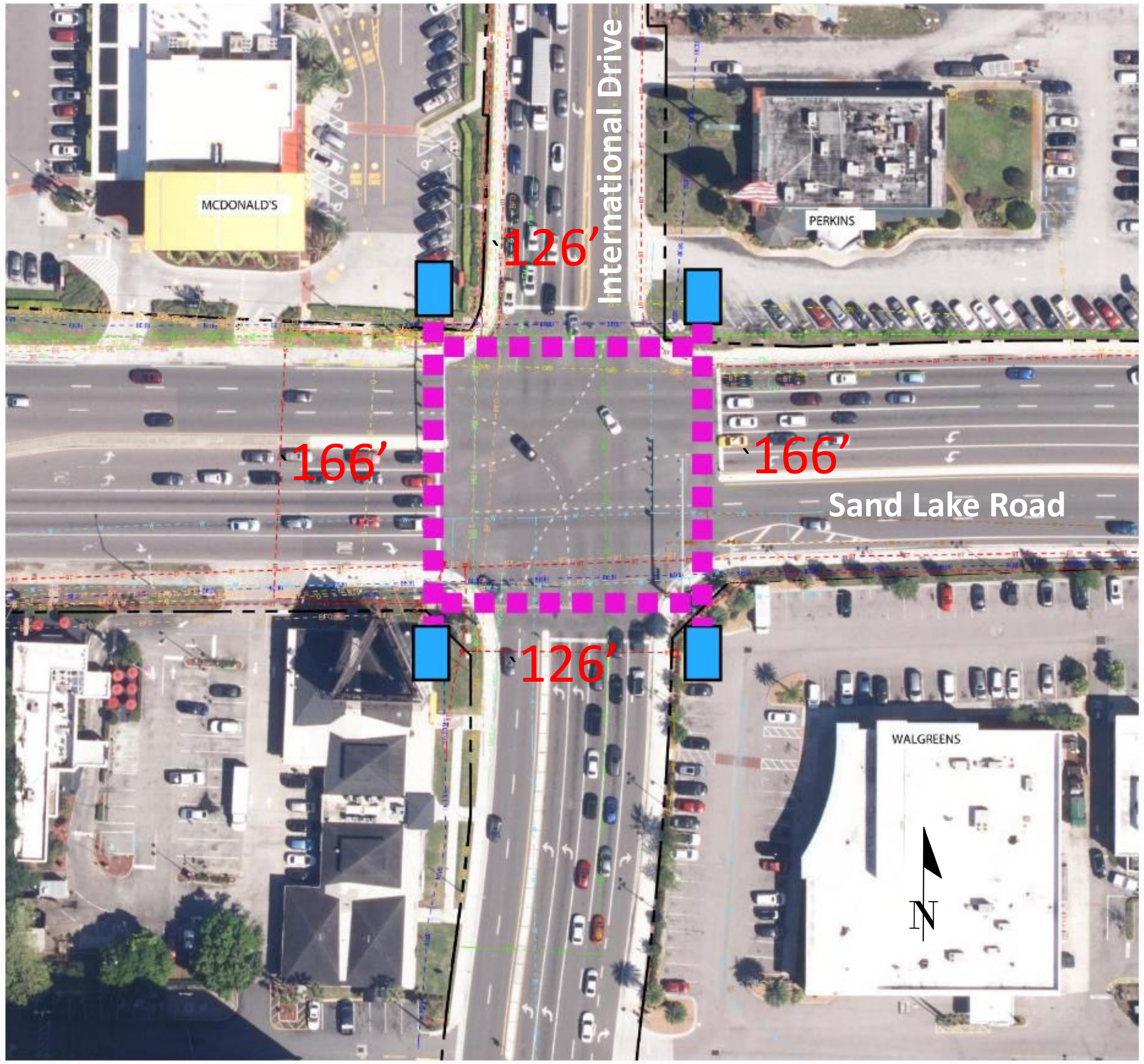
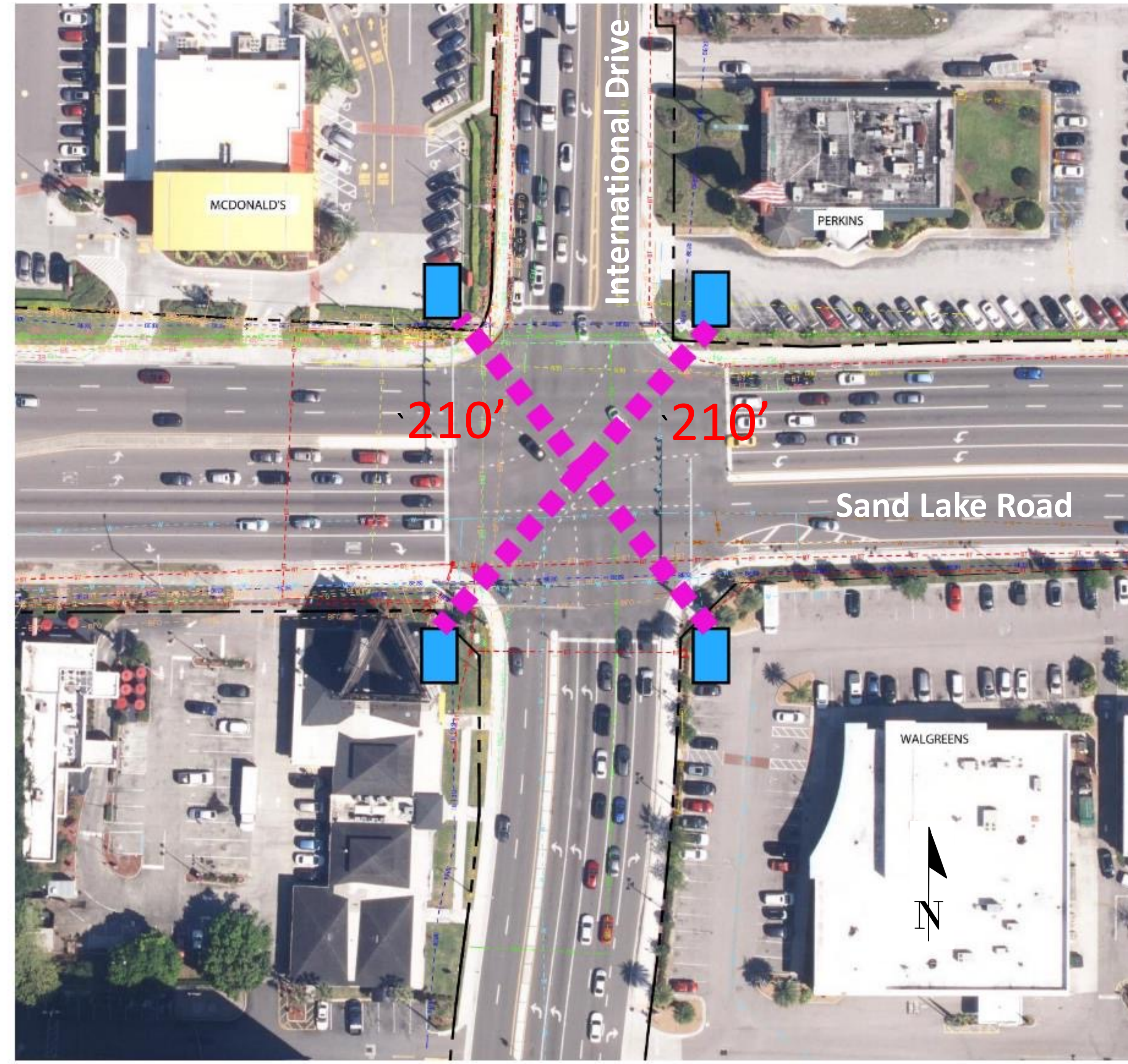
Bridge Configurations





Option 1
Square Configuration

Simple configuration utilizes straight prefabricated bridge sections. Users must travel either right or left to the final destination. If the destination is diagonal, you will have to travel two segments of the bridge.

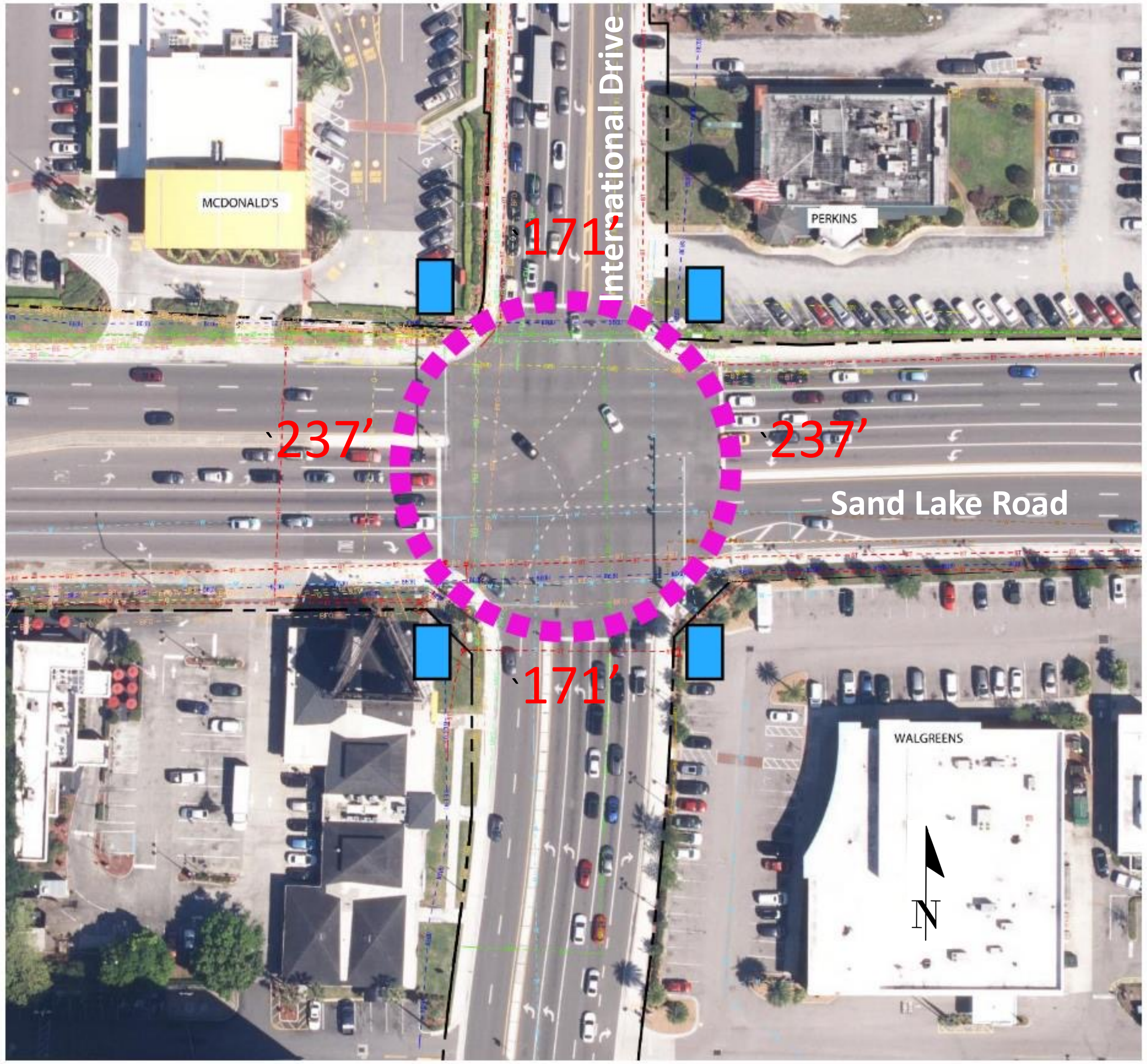
Option 2
"X" Configuration

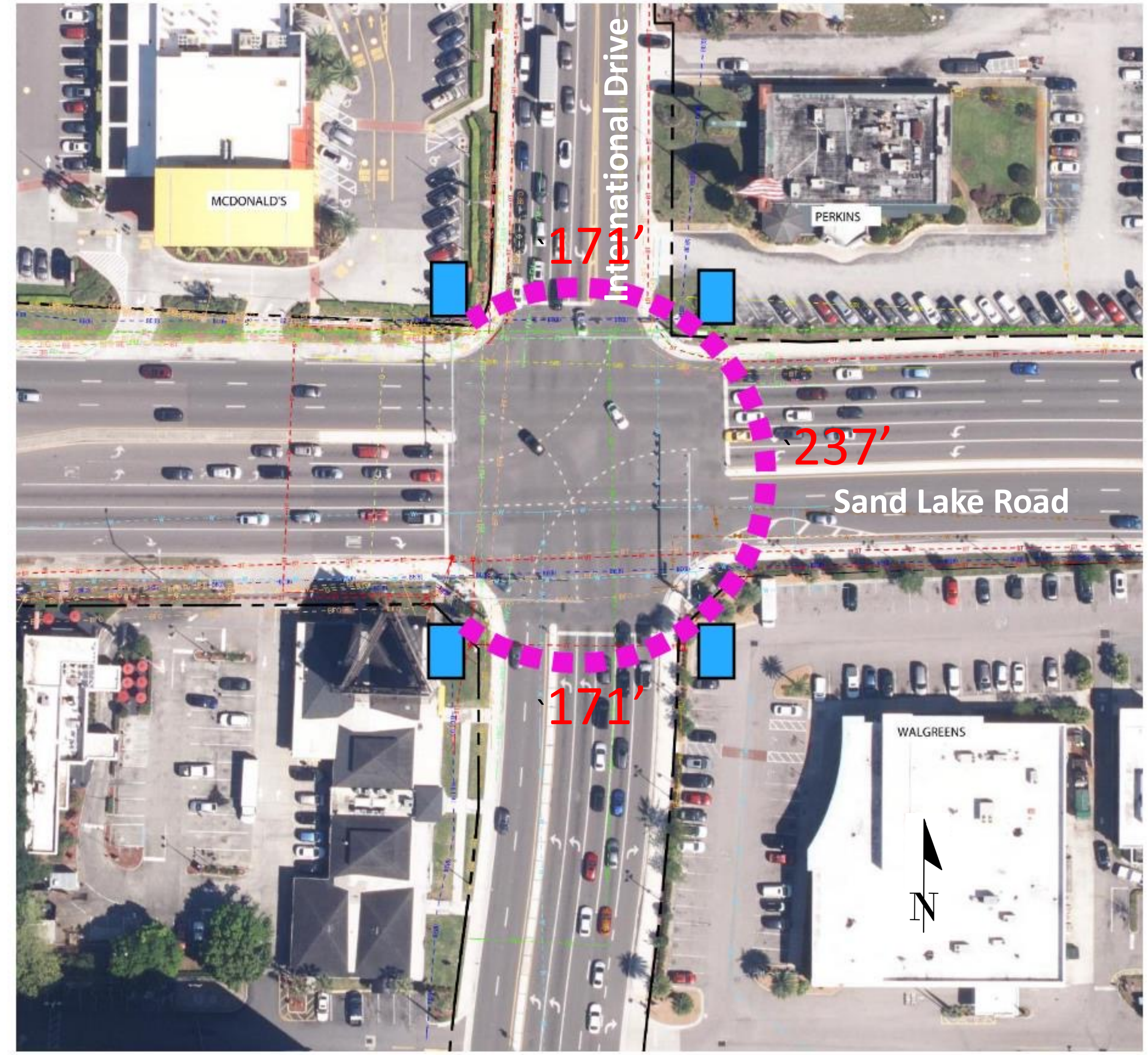
The "X" configuration utilizes prefabricated bridge sections and includes a shorter total bridge length than Option 1. Users travel approximately the same distance to any destination. That distance is slightly longer than a single span in Option 1.

Vertical Circulation Tower

Elevated Bridge

Bridge Configurations





Option 3
Circular Configuration

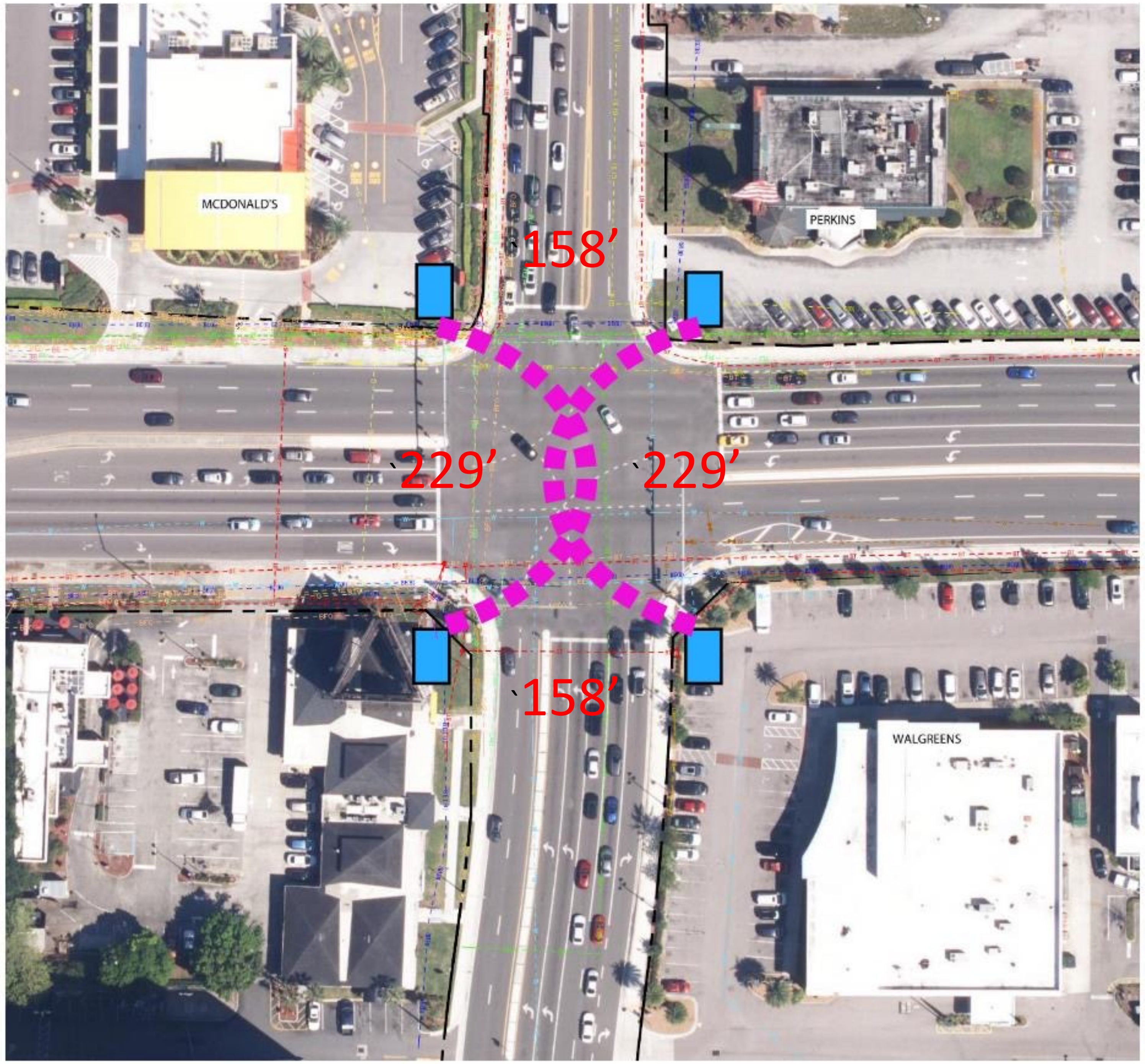
Operationally similar to the Square configuration, the Circular bridge eliminates 90 degree intersections and allows smooth flow around bridge in either direction. By walking in a continuous curve the appearance of the distance to the destination is reduced. This configuration can be assembled from Pre-fabricated bridge sections.

Option 4
"C" Configuration

The "C" configuration utilizes prefabricated bridge sections and includes a shorter total bridge length than Option 3.
This configuration only increases the travel distance between the NW and SW corners. This configuration creates a unique gateway for automobiles coming from the I-4 interchange.

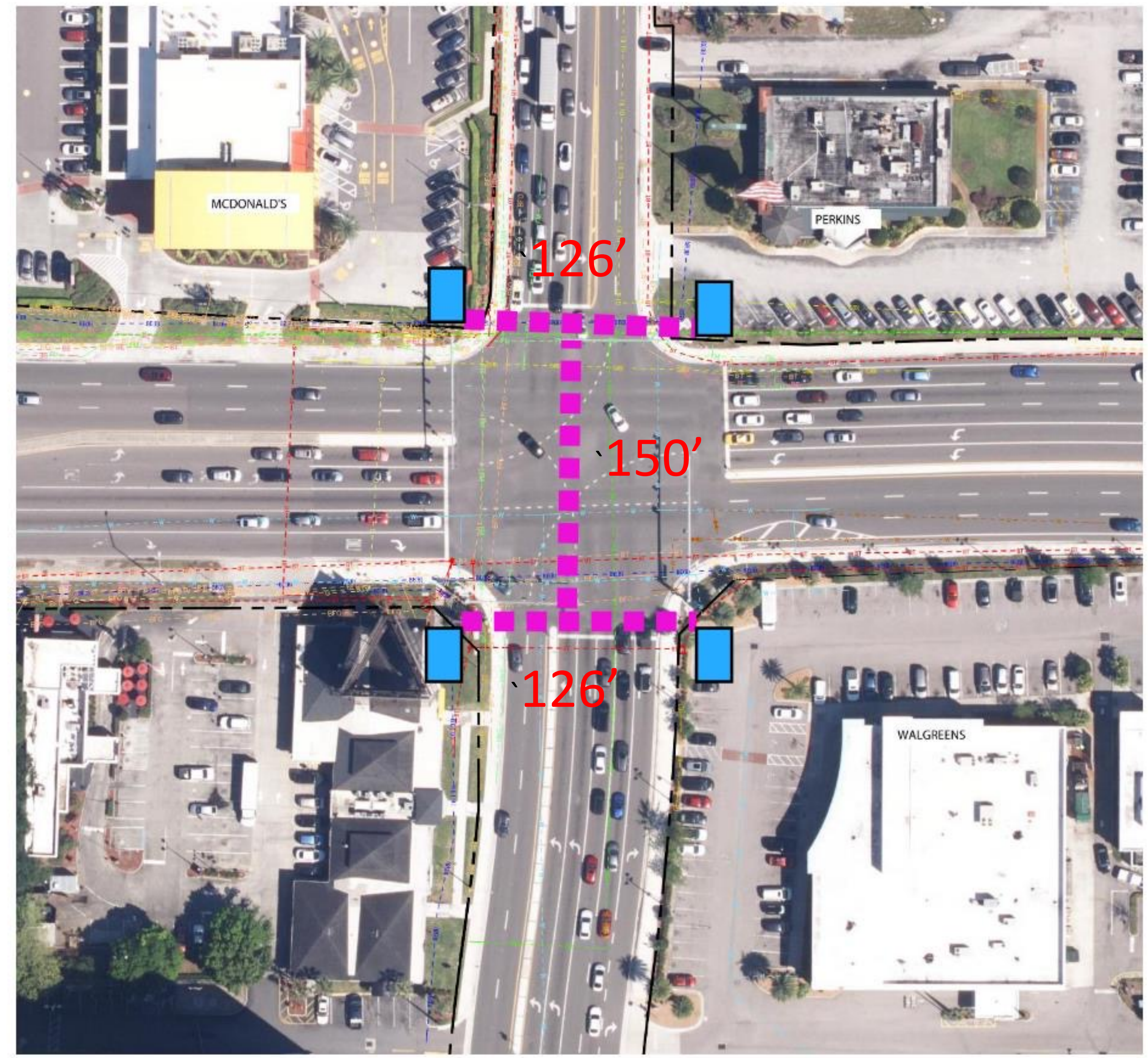
Vertical Circulation Tower

Elevated Bridge



Option 5
Chanel Logo Configuration

Operationally similar to the "X" configuration, this bridge consists of two curved bridge sections that touch and connect in the middle. More dynamic than the "X" configuration, this configuration eliminates long straight views and can accommodate a transition area in the center of the intersection. This configuration can be assembled from Pre-fabricated bridge sections.



Option 6
"I" Configuration

The "I" configuration utilizes prefabricated bridge sections and includes a shorter total bridge length than Option 3.
This configuration is made up of simple straight bridge sections and creates a unique gateway for automobiles coming from the I-4 interchange. Similar to Option 5, this configuration provides shorter travel distances crossing east and west.

Vertical Circulation Tower

Elevated Bridge

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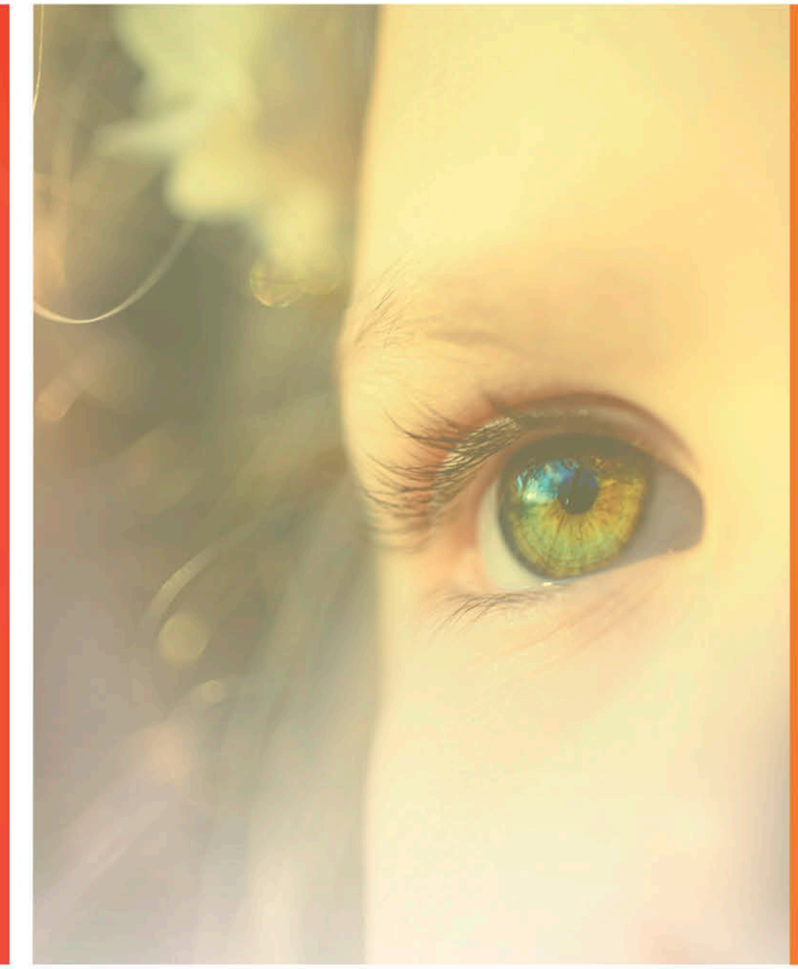

Meeting Number Four

Selected Bridge Tower Configurations

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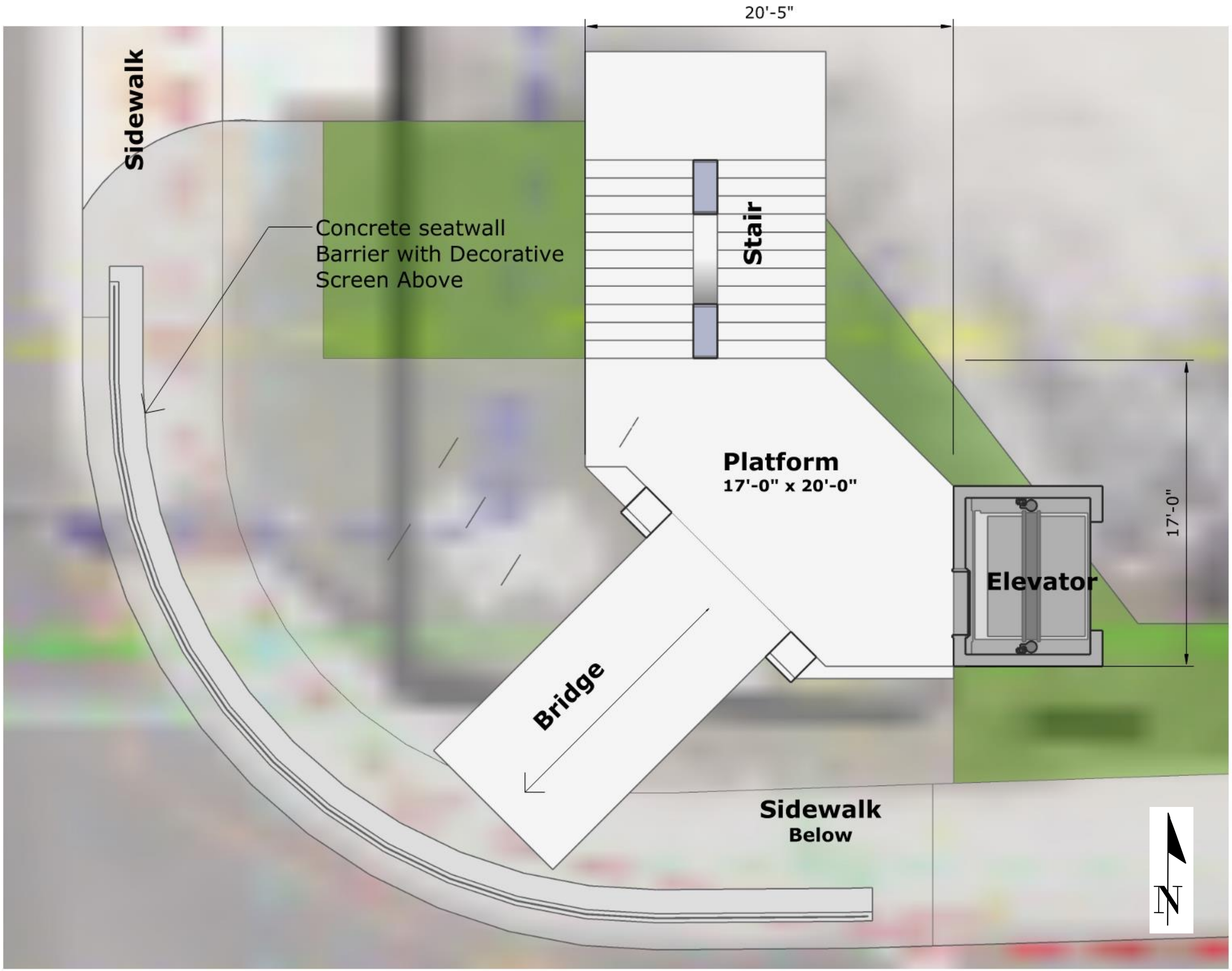


Bridge Tower Option 2

Description

A very inviting stair traversing 24'-0" in height. Each stair run is 6' rise. The treads are 12" and the risers are 6" for easy climbing.

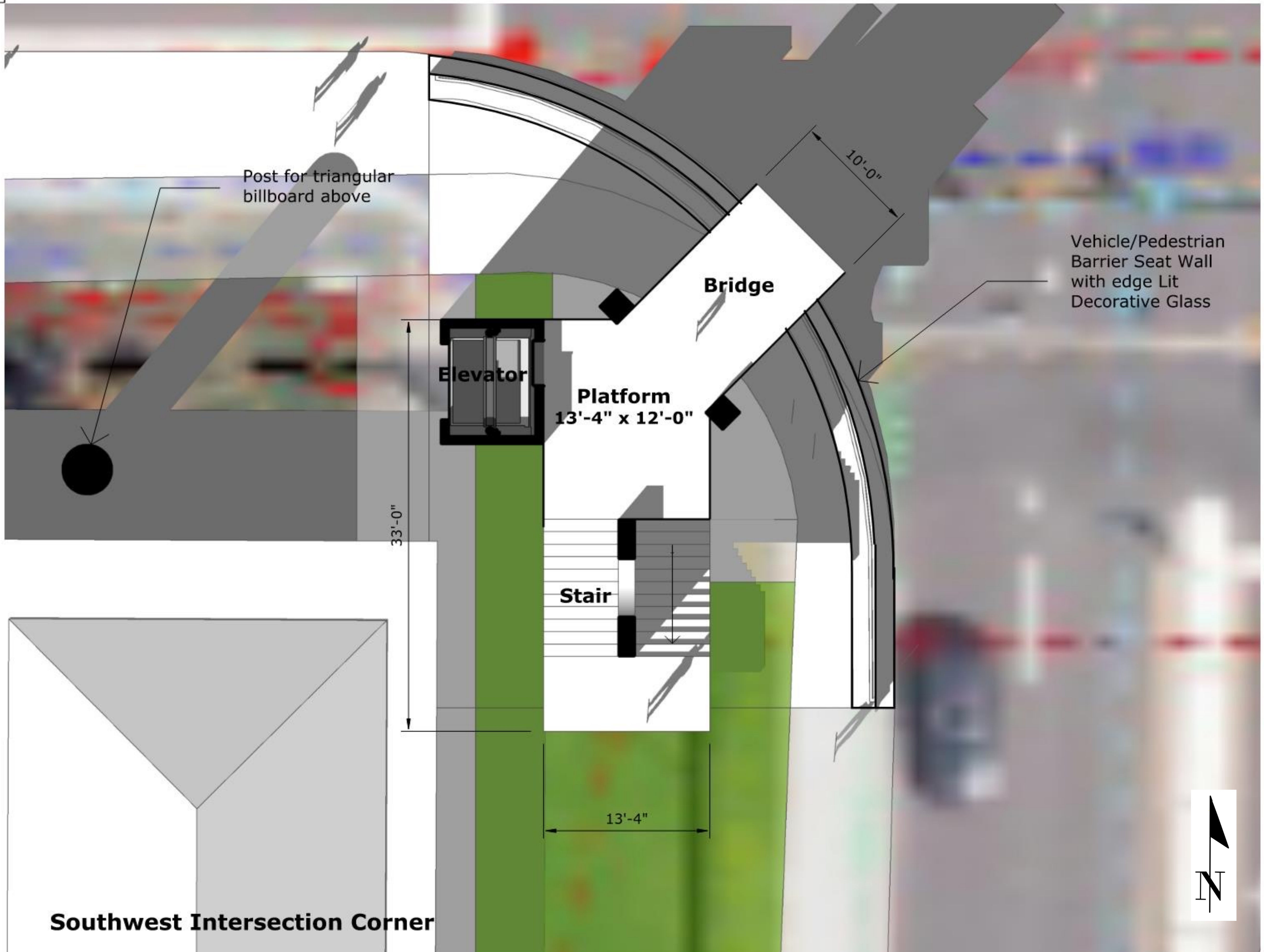
The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 35' x 40'

Crosswalks have been removed.

Summary

Ground Floor Platform	221sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	531sf
Bridge Width	10'-0"



Bridge Tower Option 1

Description

A very inviting stair traversing 24'-0" in height. Each stair run is 4' rise. The treads are 12" and the risers are 6" for easy climbing.

The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 22' x 24'

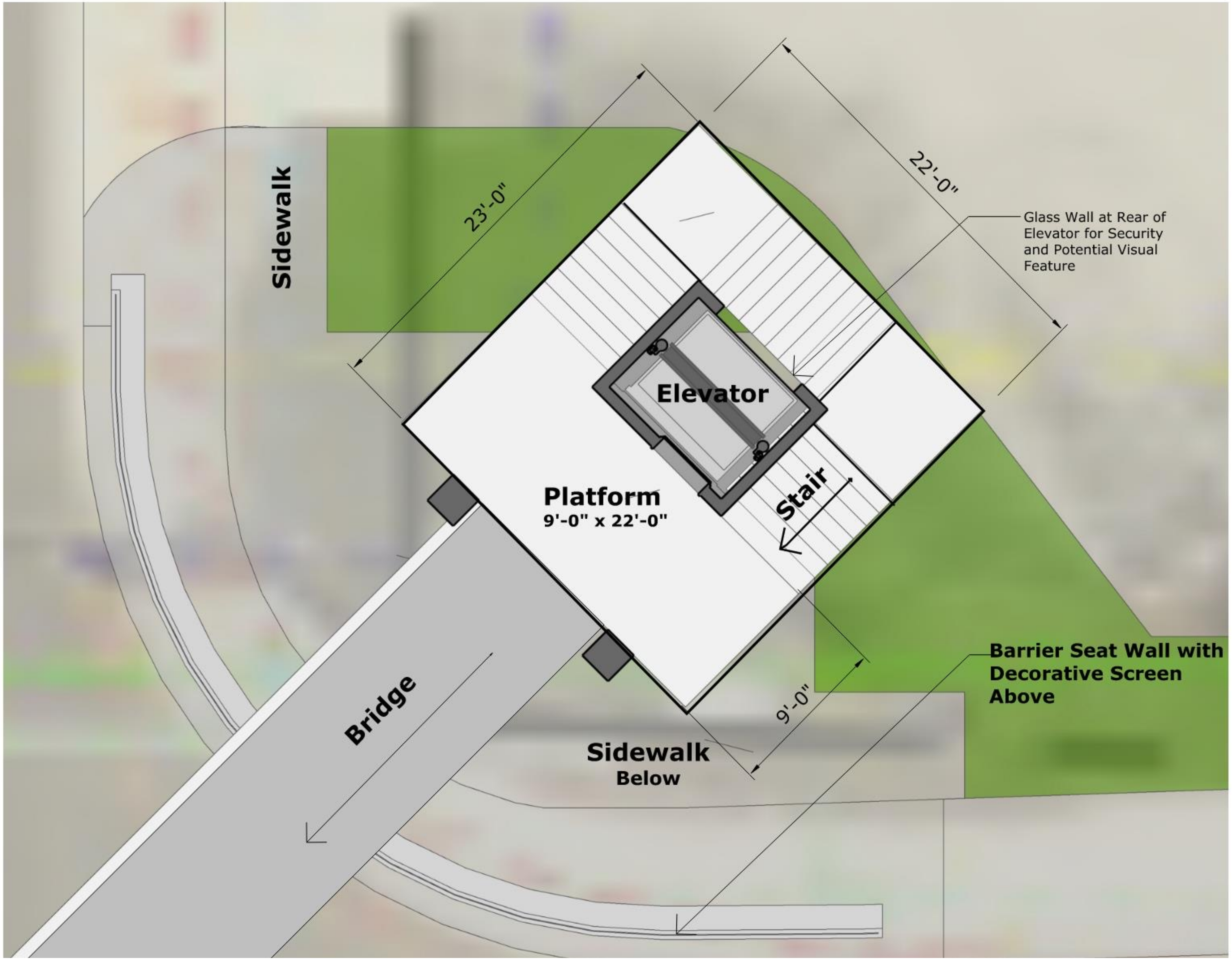
Glass Back Elevator provides additional Safety and creates a visual feature

Seat bench barrier and protective screen wall protects pedestrians and prevents on grade crossing.

Crosswalks have been removed.

Summary

Ground Floor Platform	192sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	506sf
Bridge Width	10'-0"



Bridge Tower Option 3

Description

A very inviting stair traversing 24'-0" in height. Each stair run is 4' rise. The treads are 12" and the risers are 6" for easy climbing.

The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 22' x 24'

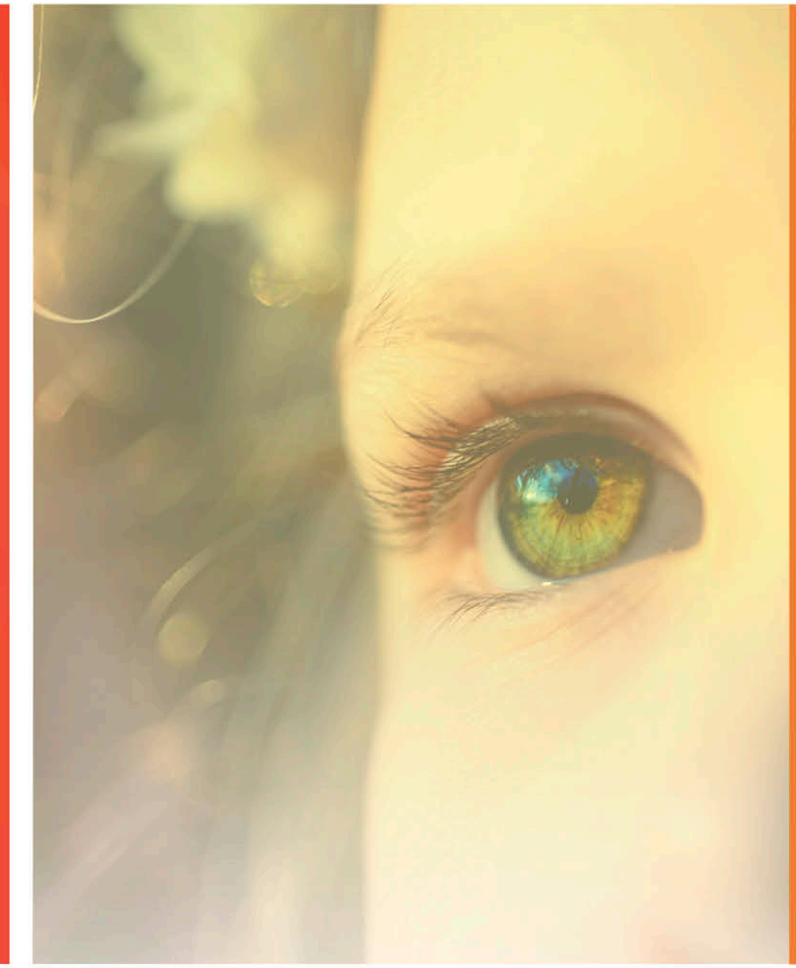
Glass Back Elevator provides additional Safety and creates a visual feature

Seat bench barrier and protective screen wall protects pedestrians and prevents on grade crossing.

Crosswalks have been removed.

Summary

Ground Floor Platform	192sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	506sf
Bridge Width	10'-0"



Meeting Number Three

Preliminary Bridge Configuration Concepts

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FLORIDA

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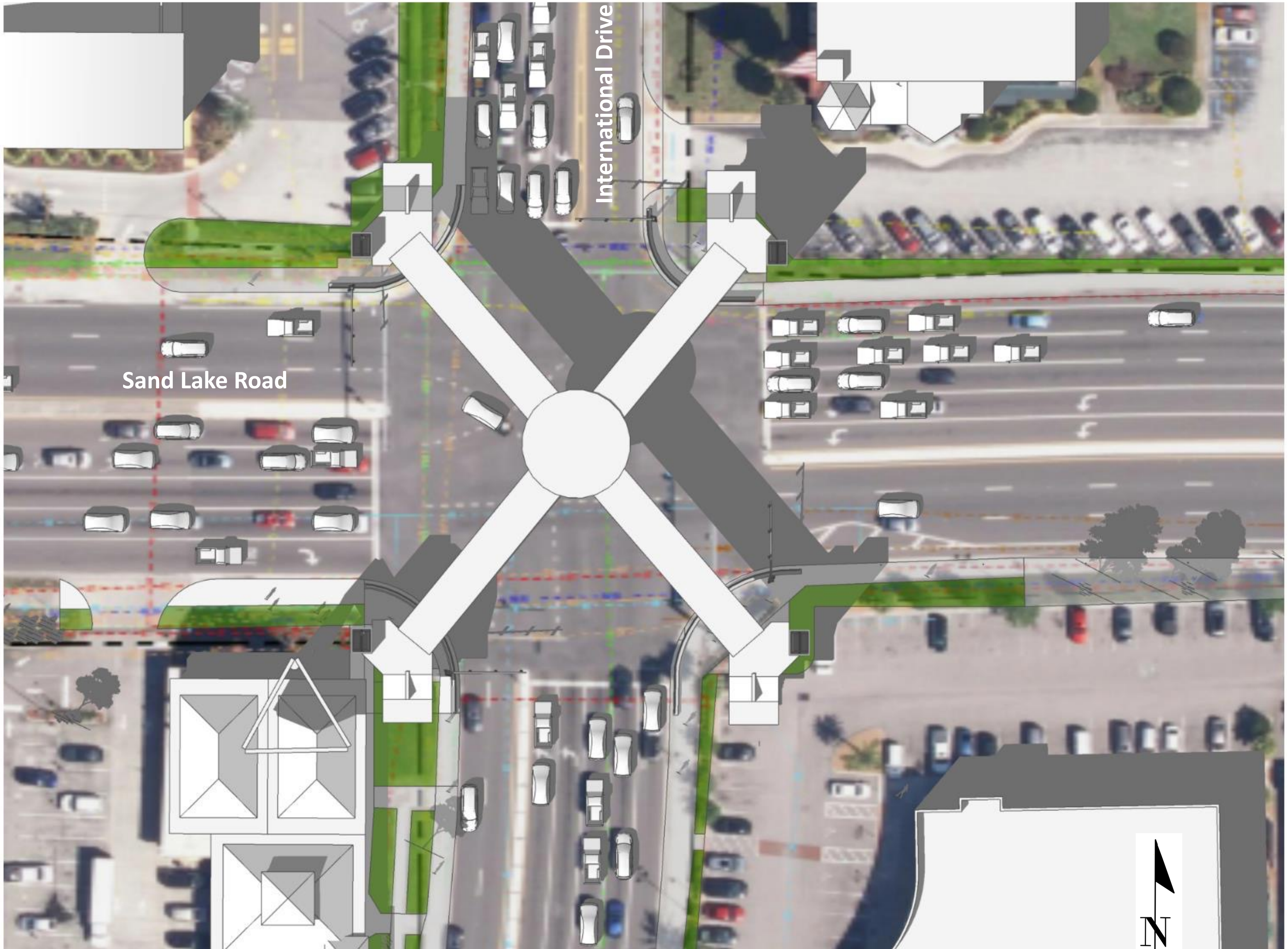


Bridge Configuration "X" Option

Description

The "X" configuration consists of two straight bridge runs intersecting in the middle of the intersection.

The overall length of the bridge in the "X" configuration is the third shortest of all options at 420' of length and has the third shortest average travel distances of the options considered.

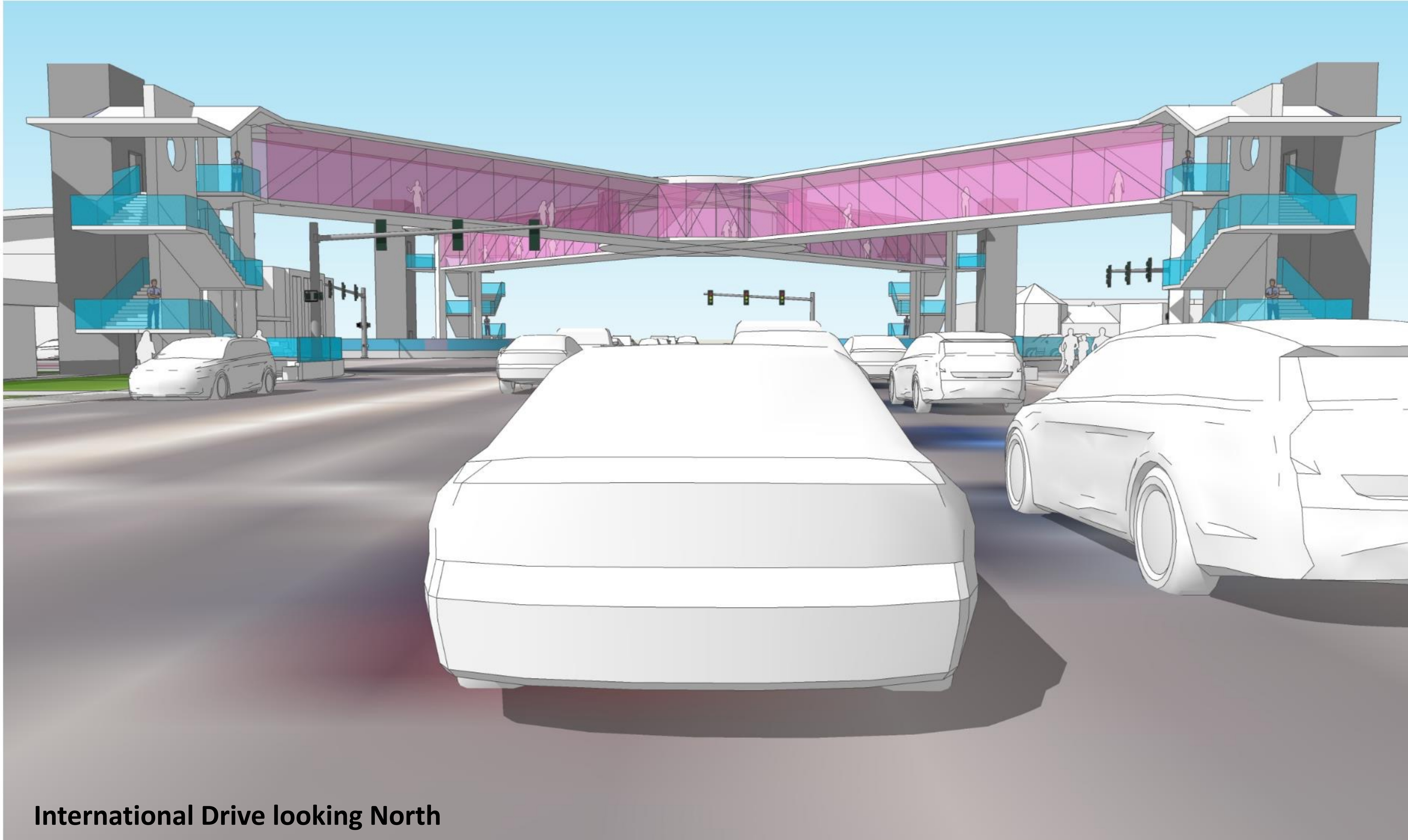
One benefit of this configuration is that the travel distance to every other intersection is exactly the same. The negative of this configuration is that the shorter distances across International drive are actually longer in this design.

There is an opportunity for a unique feature at the crossing point of the bridge which all users will experience.

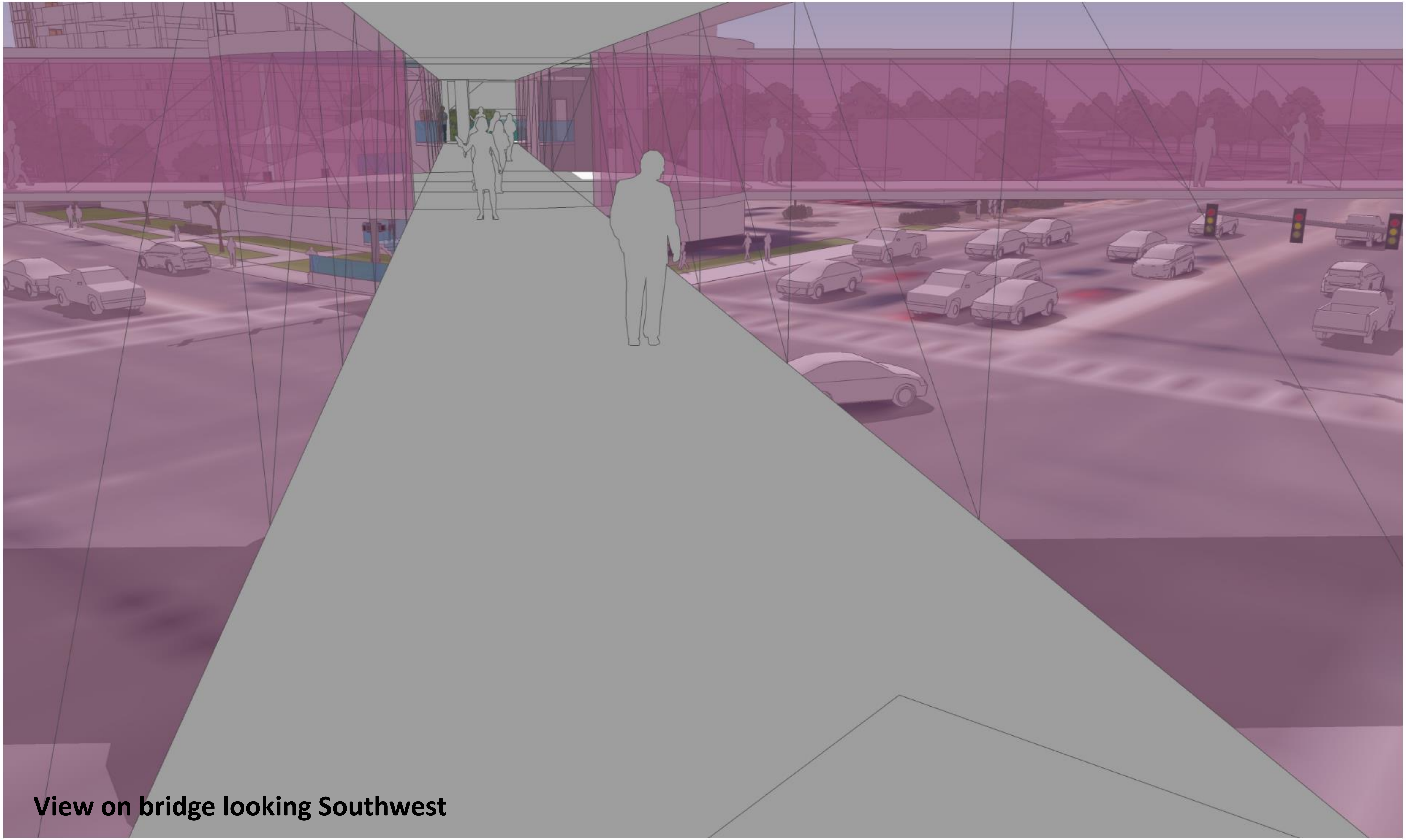
The straight bridge sections create a less desirable experience and users have to make a turn at the center section unless they are traveling diagonally across the intersection.

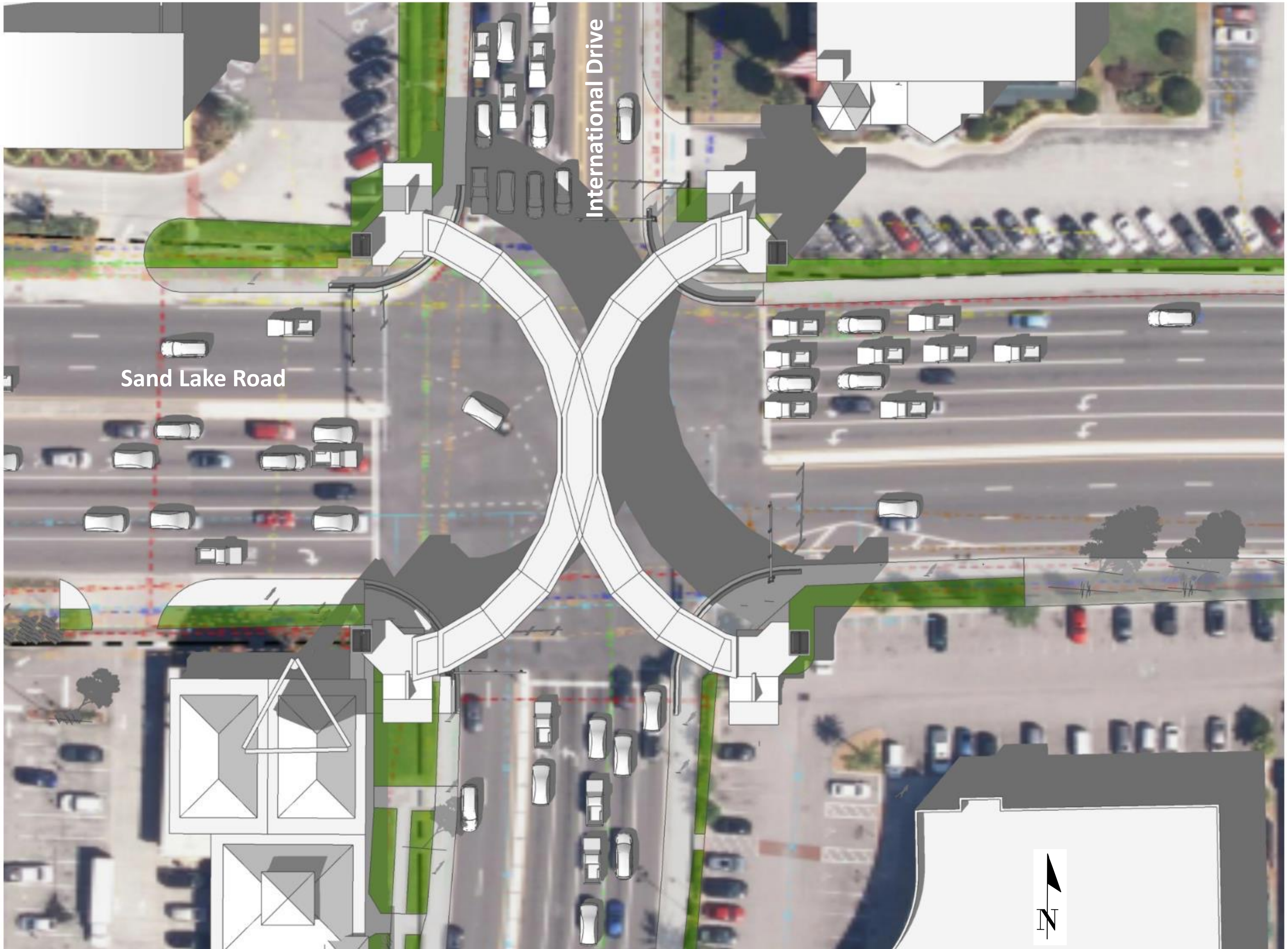
Summary

Average Travel Distance	210'
Bridge Length	420'
Bridge Width	12'-0"


International Drive looking North


International Drive looking South


View on bridge looking Southwest



Bridge Configuration Intersecting "C" Option

Description

The interlocking "C" Shaped bridge configuration evolved from the "I" configuration. This bridge configuration provides a similar travel distance to all intersections served.

The overall length of the bridge in the Interlocking "C" configuration is the shortest of all options at 395' of length and has one of the shortest average travel distances of the options considered.

In addition the curved sections add to the crossing experience by limiting the long view across the bridge and maximizing the views to surrounding businesses while the users traverse the bridge.

There is an opportunity for a unique feature at the crossing point of the bridge which all users will experience.

This configuration creates a unique gateway for automobiles from all directions. The effect is different for vehicles on International Drive and Sand Lake Rd.

Summary

Average Travel Distance	205'
Bridge Length	395'
Bridge Width	12'-0"

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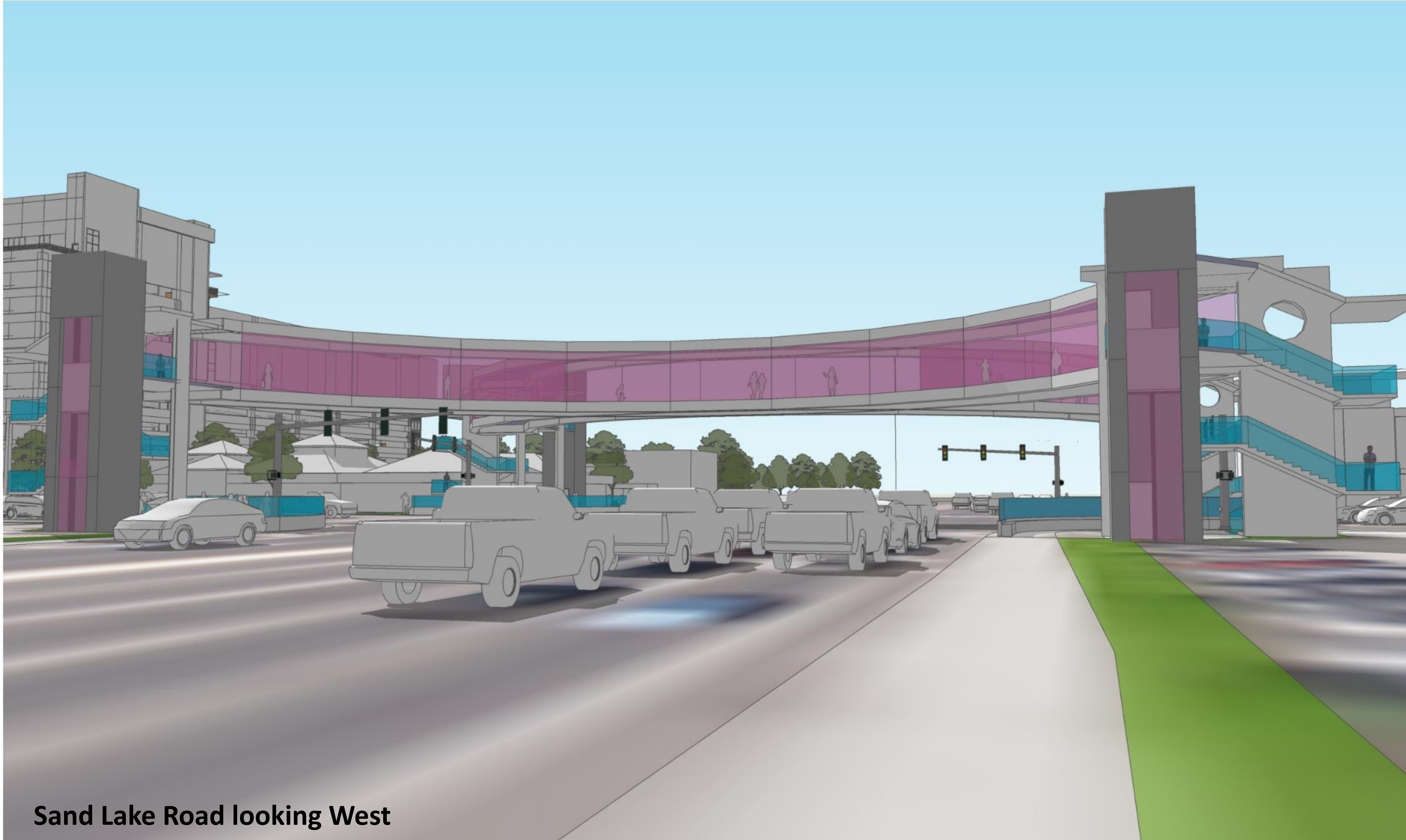
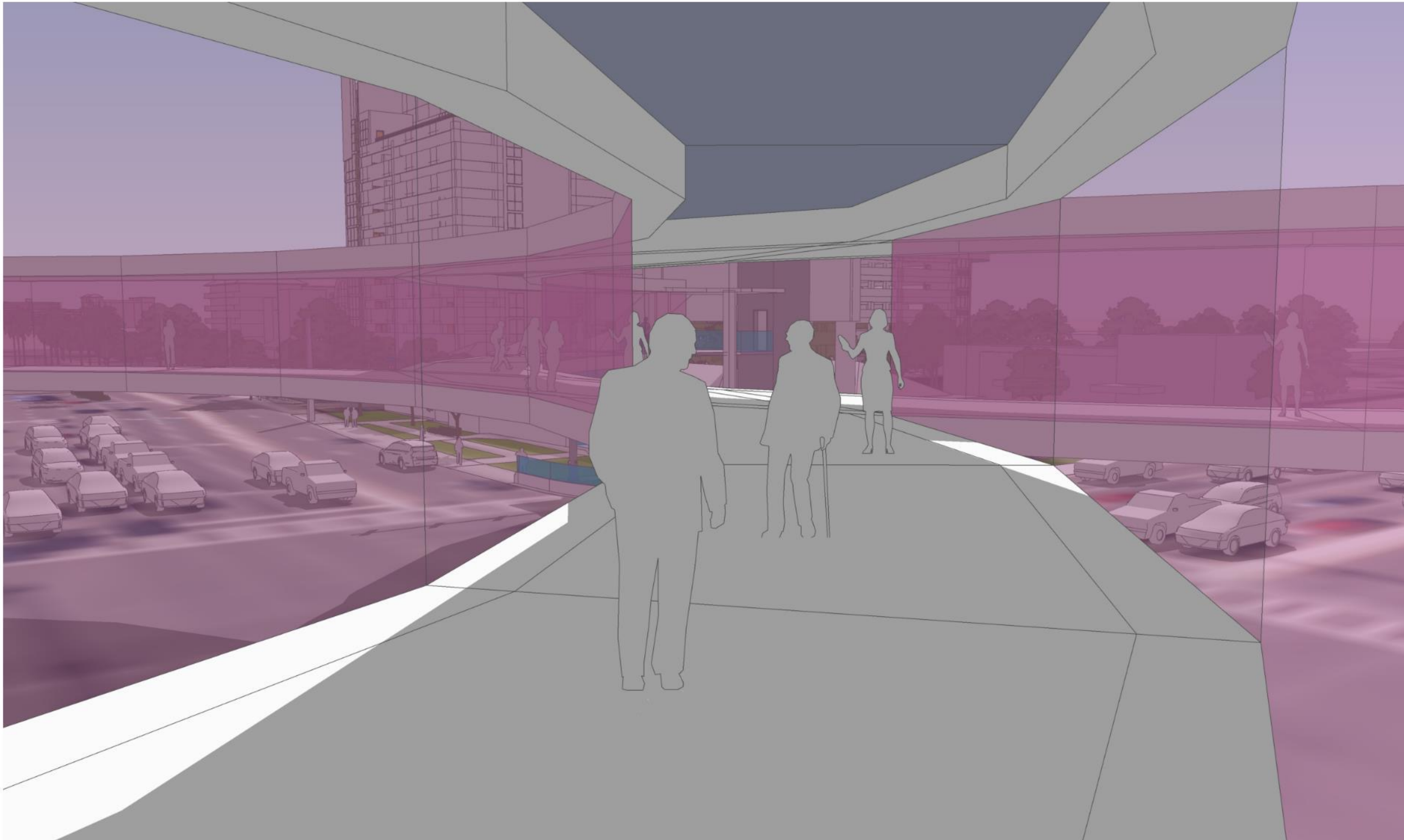
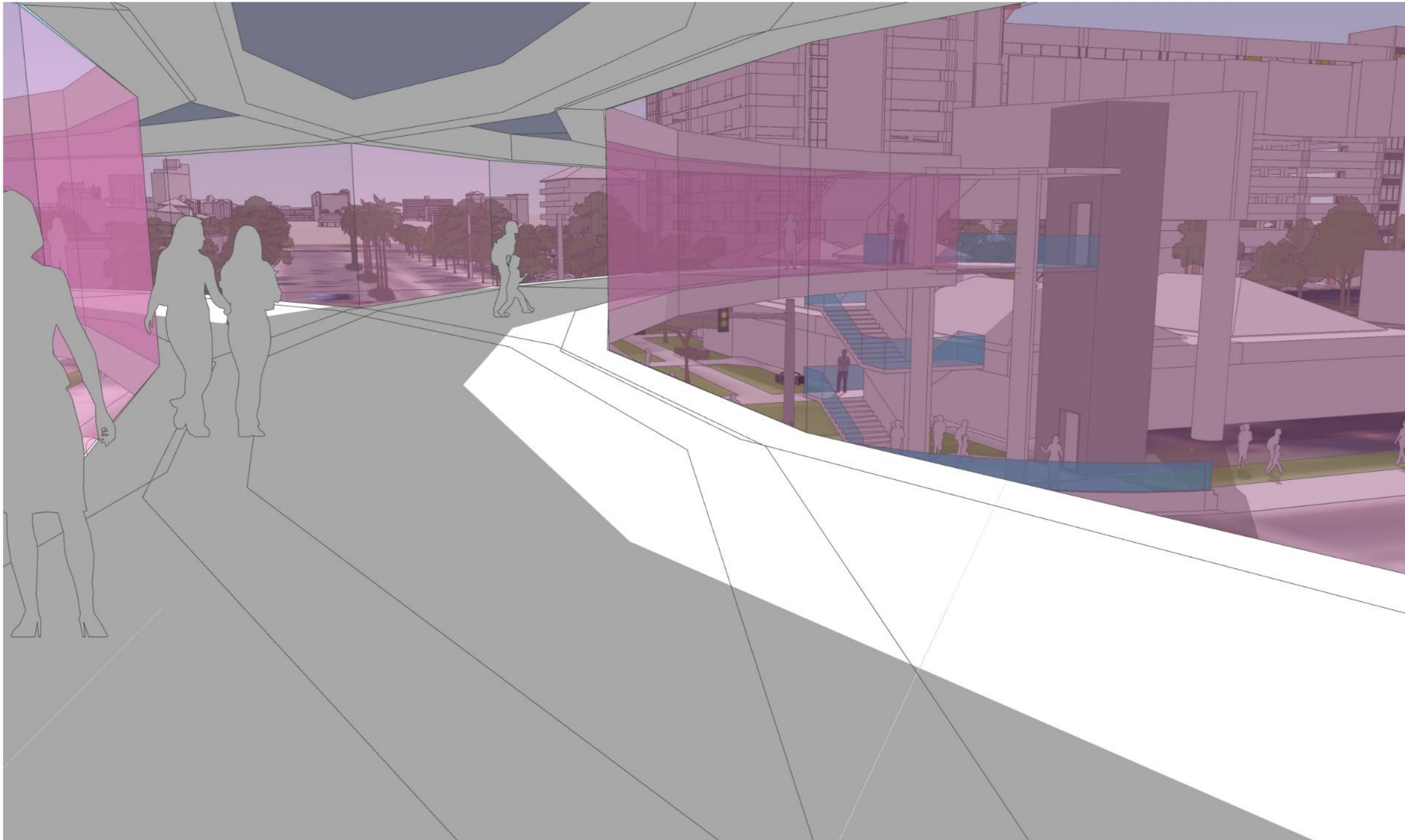
Project Advisory Group Meeting #3 | **Bridge Configuration – Interlocking "C" Option – Sand Lake Road looking East**

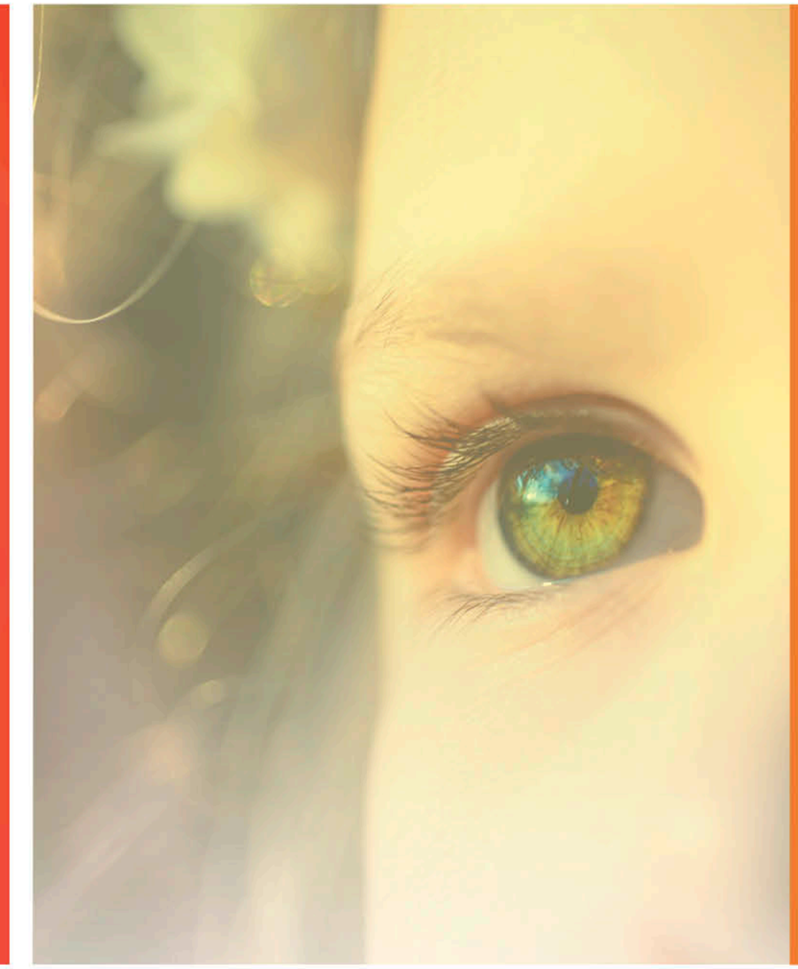

International Drive looking North


Sand Lake Road looking West



Project Advisory Group Meeting #3 | **Bridge Configuration – Interlocking "C" Option – View from Bridge**





Meeting Number Three

Summary of Findings

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FLORIDA

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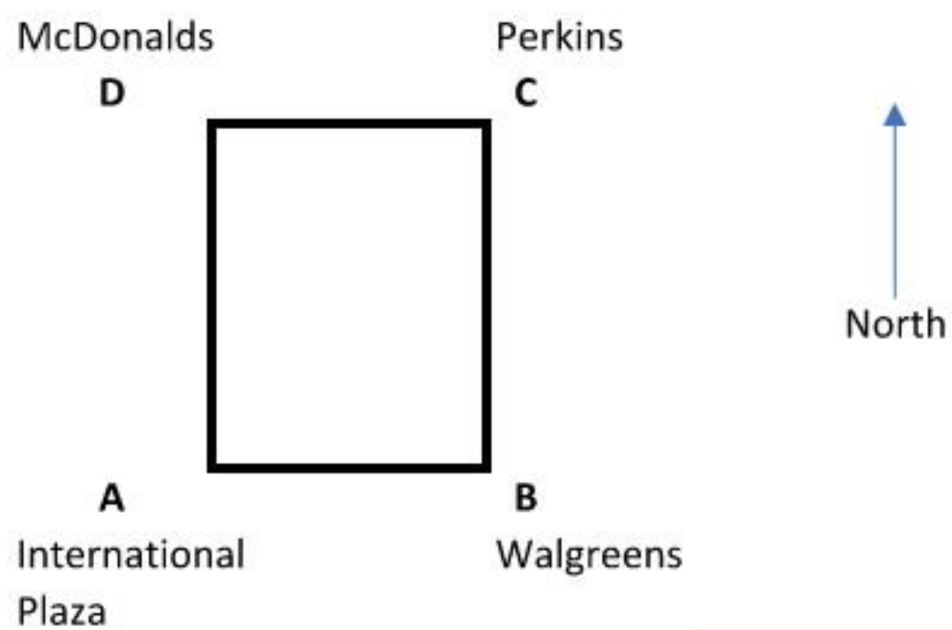
Bridge Configuration Evaluation Matrix
(lower score is higher ranking)

	Travel Dist. Int. A-B	Travel Dist. Int. A-C	Travel Dist. Int. A-D	Avg. Walk Dist.	Rank	Bridge Length	Rank	Total Score	Rank
Square Configuration	126	292	166	195	**1**	584	**5**	**6**	**2**
"X" Configuration	210	210	210	210	**3**	420	**3**	**6**	**2**
Circular Configuration	171	408	272	284	**5**	816	**7**	**12**	**5**
"C" Configuration	171	408	579	386	**6**	579	**4**	**10**	**4**
"I" Configuration	126	276	276	226	**4**	402	**2**	**6**	**2**
Modified "I" Configuration	126	229	229	195	**1**	686	**6**	**7**	**3**
Intersecting "C" Configuration	158	229	229	205	**2**	395	**1**	**3**	**1**

Exist. Crosswalk Distance	
A-B	96'
A-C	259'
A-D	132'
Avg.	162'



Note:
Distance from A-C is the same as B-D

The lowest scoring option is the Intersecting "C" configuration.

Summary

- Curved bridge configurations create a more dynamic visual and a better experience for bridge users.
- Elimination of the crosswalks will increase pedestrian safety and reduce traffic congestion.
- Corner wrapping seat wall/barriers will be required to prevent people from attempting to cross the intersection on grade.
- Bridge configuration has little impact on space required at intersection corners.
- Bridge Configuration Evaluation Matrix shows the “Intersecting C” configuration to be the highest rated option (lowest score).
- We are seeking input from the PAG on the preferred configuration to meet the operational, aesthetic, budget, and iconic gateway criteria.

Bridge Configuration Evaluation Matrix
(lower score is higher ranking)

	Bridge Length	Rank		Structural Complexity		Relative Cost		Design Icon Value		Total Score		Rank
Square Configuration	584	**5**		**1**		**3**		**7**		**11**		**4**
"X" Configuration	420	**3**		**4**		**2.5**		**6**		**12.5**		**5**
Circular Configuration	816	**7**		**2**		**4.5**		**3**		**9.5**		**3**
"C" Configuration	579	**4**		**3**		**3.5**		**2**		**8.5**		**1**
"I" Configuration	402	**2**		**5**		**3.5**		**4**		**12.5**		**5**
Modified "I" Configuration	686	**6**		**6**		**6**		**5**		**17**		**6**
Intersecting "C" Configuration	395	**1**		**5**		**3**		**1**		**9**		**2**

Bridge length not included in aggregate score, but is used to calculate relative cost.

$$\frac{\text{Relative Cost} = \text{Bridge Length Rating} + \text{Structural Complexity Rating}}{2}$$

The lowest scoring option is the "C" configuration.

The Drone Concept

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Project Advisory Group Meeting #4 | "The Drone" Concept – Looking South on International Drive

ORANGE COUNTY FLORIDA | International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study | #Y20-803-CH

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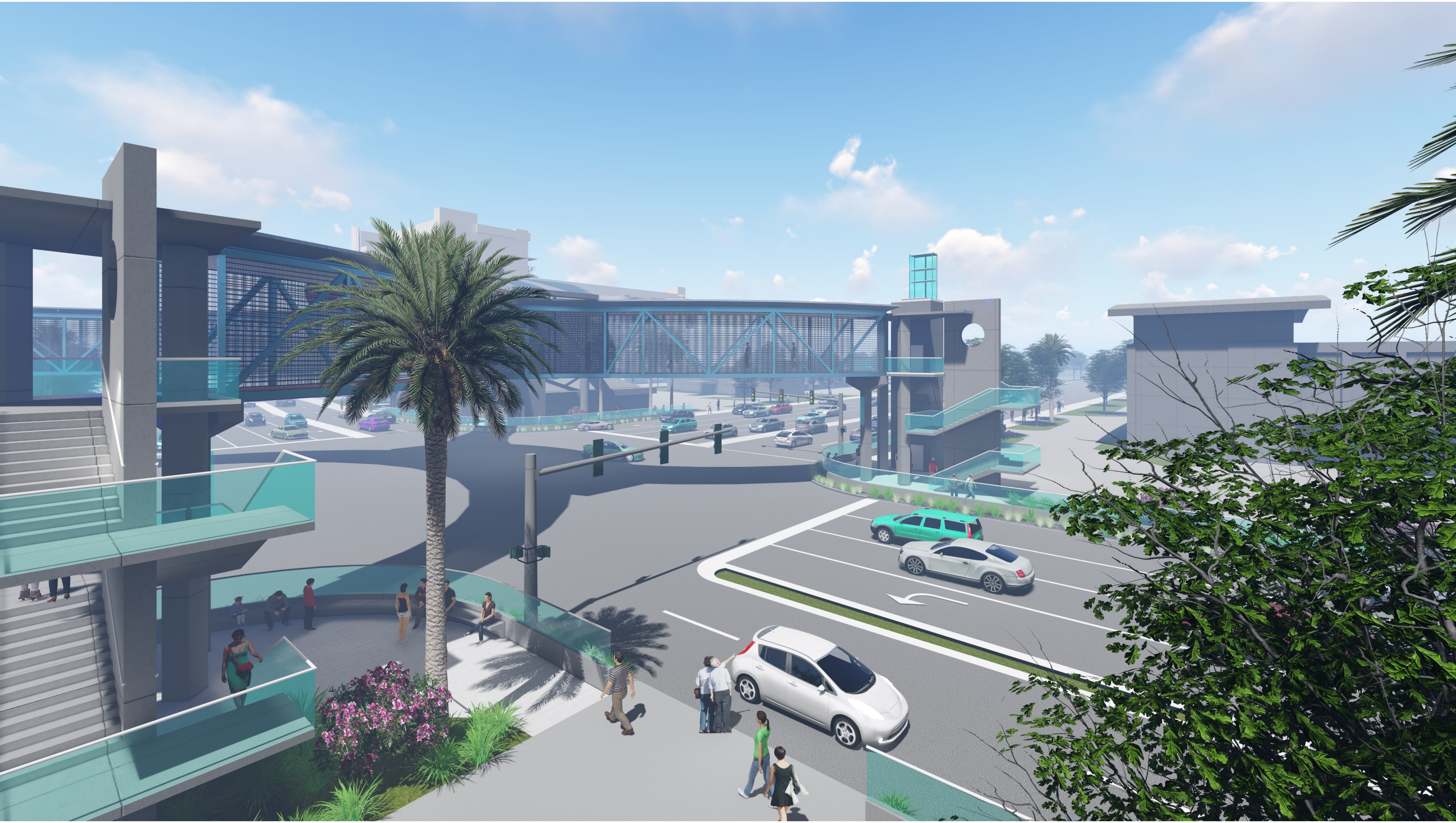

Project Advisory Group Meeting #4 | **"The Drone" Concept – View from the Northeast**

ORANGE COUNTY FLORIDA | International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study | #Y20-803-CH

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Project Advisory Group Meeting #4 | "The Drone" Concept – Looking West on Sand Lake Rd

ORANGE COUNTY FLORIDA | International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study | #Y20-803-CH

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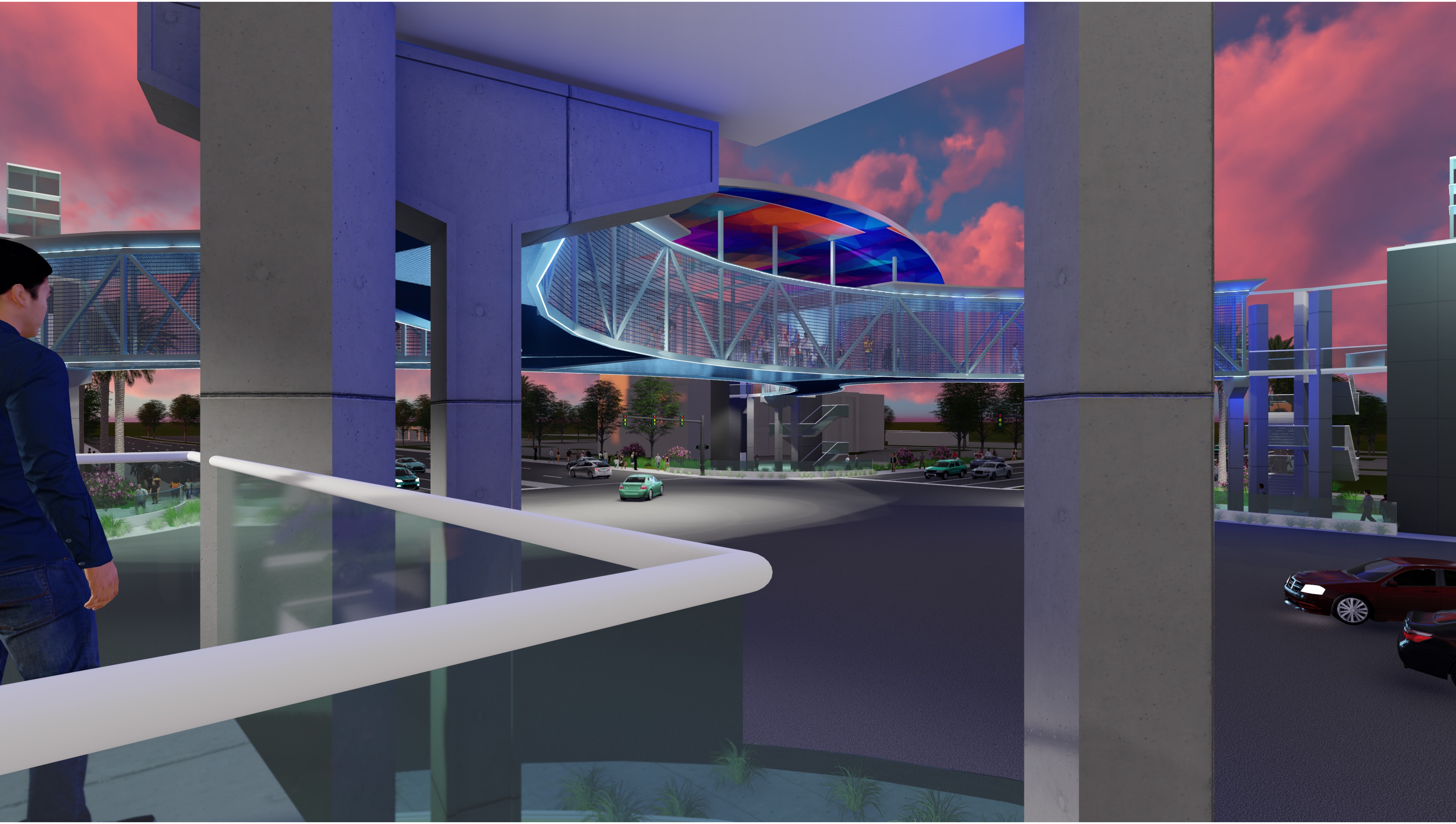

Project Advisory Group Meeting #4 | "The Drone" Concept – Looking North on International Drive

ORANGE COUNTY FLORIDA | International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study | #Y20-803-CH

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A JOINT VENTURE

Project Advisory Group Meeting #4 | **"The Drone" Concept – Looking South on International Drive**

ORANGE COUNTY FLORIDA | International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study | #Y20-803-CH

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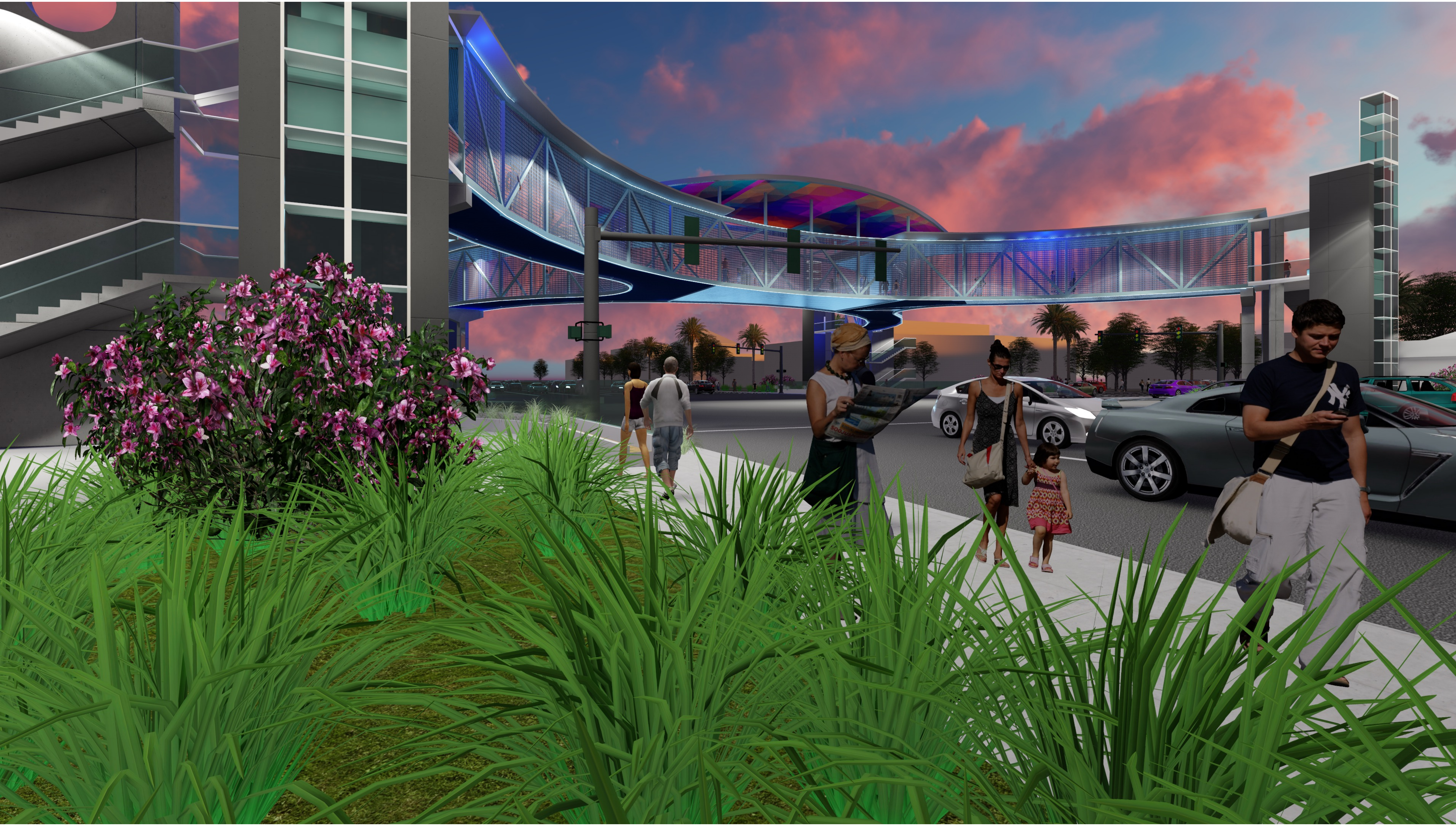

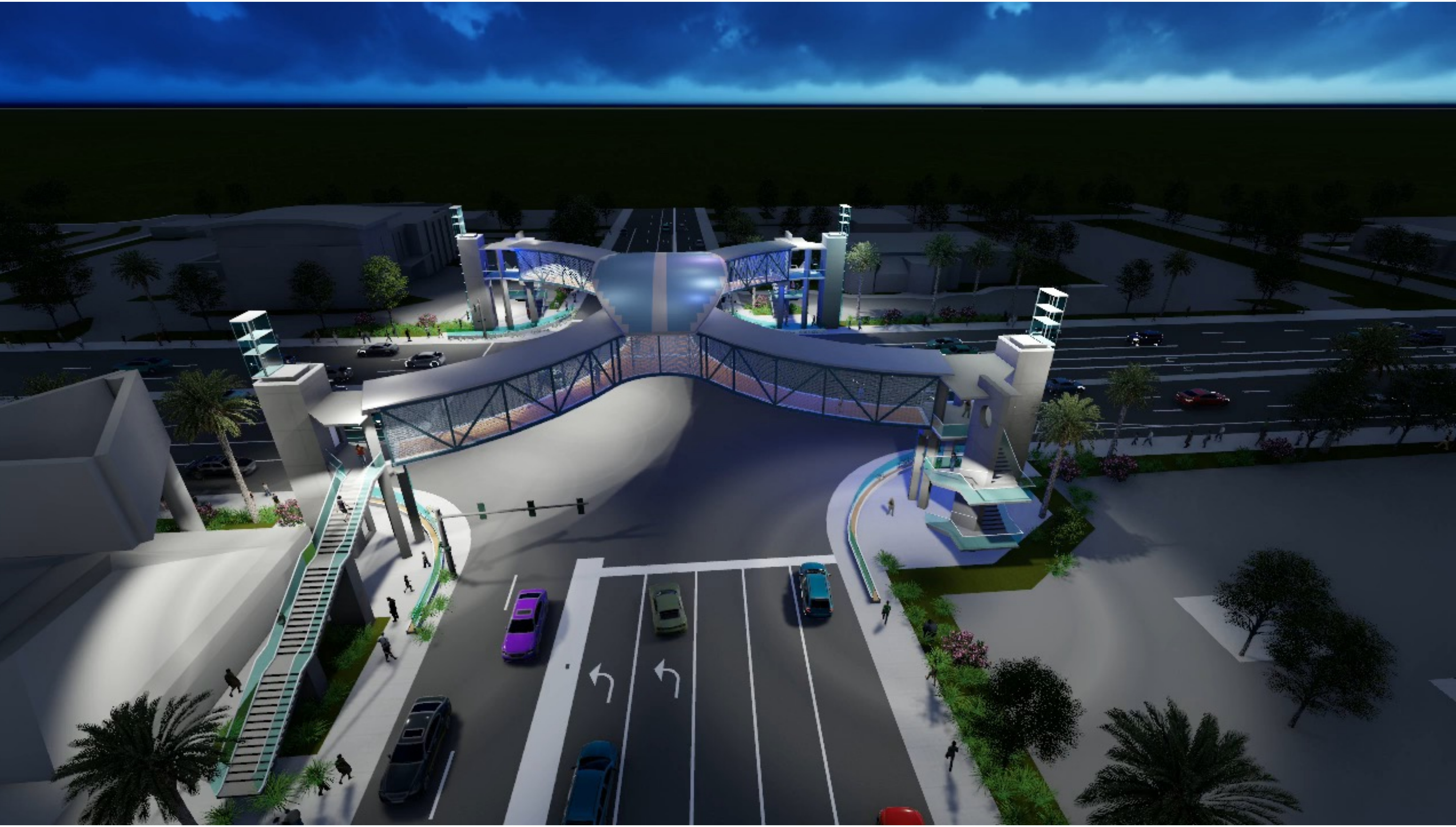

Project Advisory Group Meeting #4 | **"The Drone" Concept – Animation**

ORANGE COUNTY FLORIDA | International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study | #Y20-803-CH

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The Wave Concept

Project Advisory Group Meeting #4 | **"The Wave" Concept – Site Plan**

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Project Advisory Group Meeting #4 | **"The Wave" Concept – View looking East on Sand Lake Rd.**

ORANGE COUNTY FLORIDA | International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study | #Y20-803-CH

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Project Advisory Group Meeting #4 | "The Wave" Concept – View looking North on International Drive

ORANGE COUNTY FLORIDA | International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study | #Y20-803-CH

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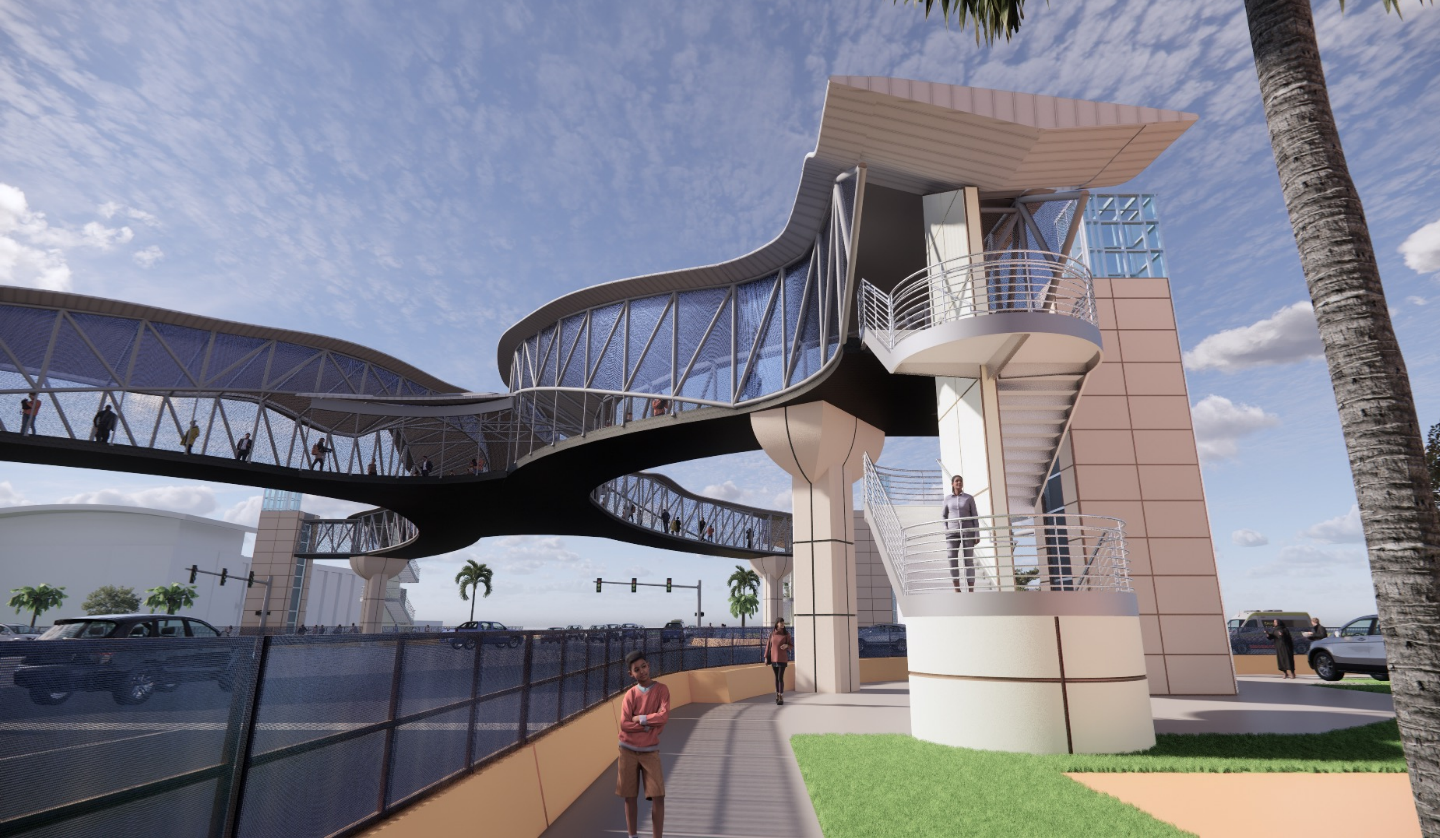

Project Advisory Group Meeting #4 | "The Wave" Concept – View looking North on International Drive

ORANGE COUNTY FLORIDA | International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study | #Y20-803-CH

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Project Advisory Group Meeting #4 | "The Wave" Concept – View looking SE from the McDonalds Corner

ORANGE COUNTY FLORIDA | International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study | #Y20-803-CH

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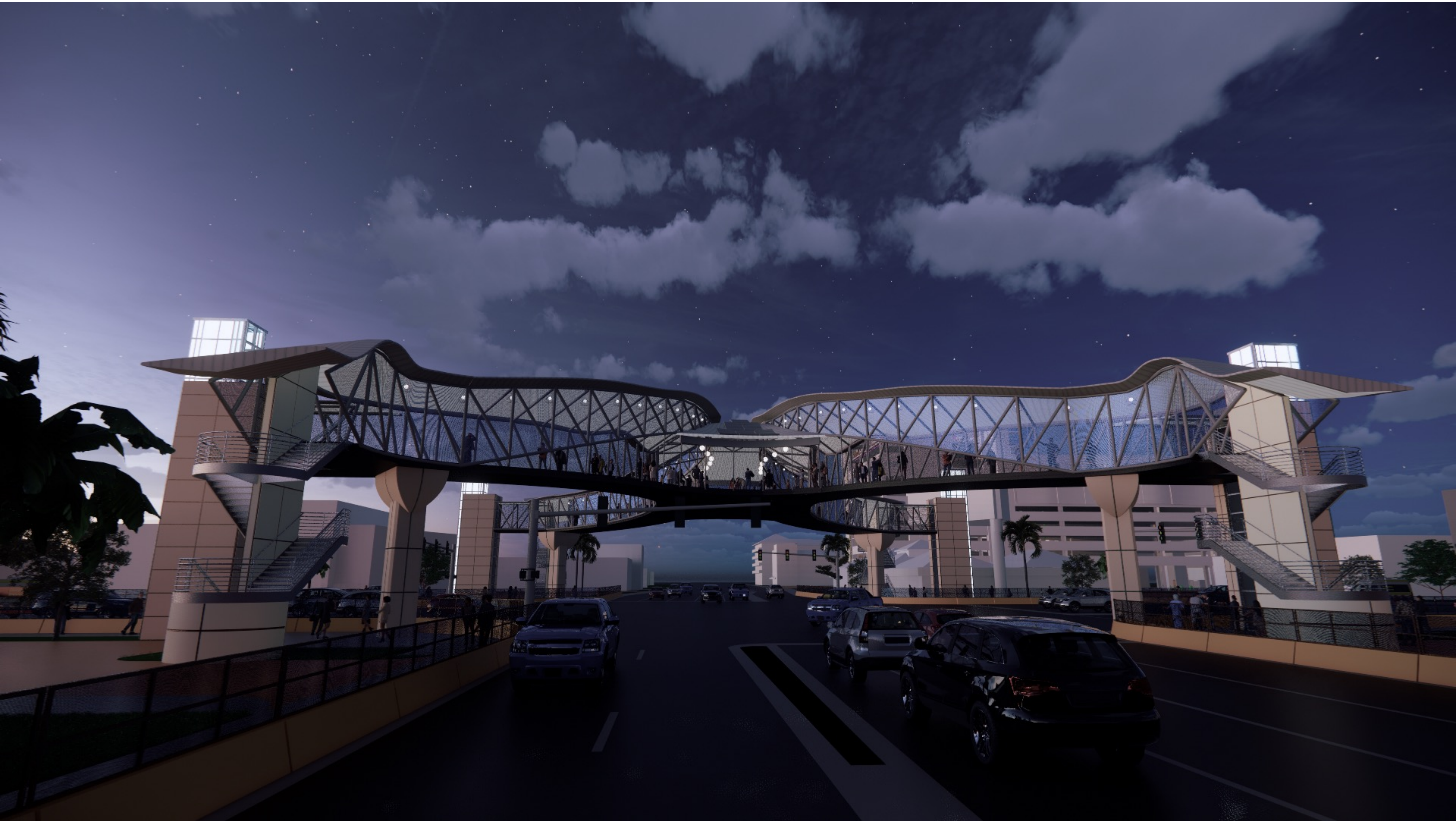

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Results of PAG meeting 3

1. Highest Ranked (preferred) Concepts included the Intersecting “C” Concept and The “X” Concept.
2. Utilize Stair and Elevator or Ramp at each intersection (best option for each corner)
3. Minimize impact on existing utilities and on adjacent property owners.
4. Create an Iconic Gateway to the Convention and Entertainment District
5. Consider potential bridge connections to adjacent properties (both elevated and on grade).
6. Consider experience of those traveling under the bridge as well as those experiencing the bridge by crossing it.
7. Bridge design should consider pedestrians, strollers, and bicycles.
8. ADA accessibility is critical at all intersections.
9. Further develop preferred alternatives. (“X” and Intersecting “C” Options)

Bridge Scheme Evaluation Matrix

Option	Structural Simplicity	Cost	Aesthetics	Iconic Value
Drone Scheme			?	?
Wave Scheme			?	?

Summary

- Based on Project Advisory Group input we have focused on schemes related to the "X" and "Intersecting C" configurations. Both concepts share similar advantages.

- Both schemes share the same vertical circulation elements as determined by analysis of the PAG.

- The resulting designs are both Iconic as they have a unique configuration in plan and unique expressions of form and structure.

- We are seeking input on the preferred configuration to meet the operational, aesthetic, budget, and iconic gateway criteria.

APPENDIX C

08-02-23 Public Meeting #2:

- Newsletter
- Public Notice
- Press Release
- Minutes
- Presentation
- Sign-In Sheet
- Public Comment Form

ORANGE COUNTY GOVERNMENT FLORIDA

UPCOMING MEETINGS

Planning & Zoning Commission Public Hearing
Board of County Commissioners Public Hearing

Fall 2023 (details to be determined)

More at idriveoverpass.com

I-DRIVE PEDESTRIAN BRIDGE UPDATE

NEXT PUBLIC MEETING:

Recommended Improvement Concept Meeting
Wednesday, August 2, 2023

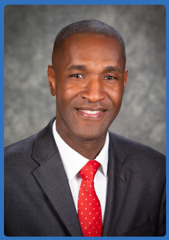
5:30 p.m. Open House | 6 p.m. Presentation
Embassy Suites
8250 Jamaican Court, Orlando, FL 32819


I-Drive Bridge Concept

INTERNATIONAL DRIVE PEDESTRIAN OVERPASS

ANALYSIS & CONCEPTUAL DESIGN STUDY

ORANGE COUNTY MAYOR
JERRY L. DEMINGS



DISTRICT 6 COMMISSIONER
MICHAEL "MIKE" SCOTT

ISSUE #2 - JULY 2023

PEDESTRIAN OVERPASS DESIGN PUBLIC MEETING SCHEDULED FOR AUG. 2

Orange County invites you to a public meeting to review the recommended concept for designing a pedestrian overpass across Sand Lake Road at International Drive with the goals of improving pedestrian safety and creating an aesthetic gateway to one of Orange County's most-heavily traveled tourism corridors. The recommended improvement concept includes an elevated pedestrian bridge over the intersection where two curved bridge sections come together under an illuminated canopy and connect the four corners at the intersection.

The meeting will be on **Wednesday, August 2, 2023, at the Embassy Suites, 8250 Jamaican Court, Orlando, FL 32819.** An open house will begin at 5:30 p.m. with a presentation at 6 p.m. Maps and displays of the project will be available for public review and comment. Members of the project team will be on site to answer questions.

PEDESTRIAN BRIDGE LOCATION

DESIGN CONCEPT FOR A PEDESTRIAN OVERPASS AT SAND LAKE ROAD AND INTERNATIONAL DRIVE

PROJECT CONTACTS

Blanche Hardy, PG, Project Manager
Transportation Planning Division
Orange County Planning, Environmental and Development Services (PEDS) Department
4200 S. John Young Parkway, Orlando, FL 32839
Email: blanche.hardy@ocfl.net
Phone: 407-836-0257

Rick Baldocchi, P.E., Project Manager
Consultant Project Manager
HHCP&AVCON, A Joint Venture
5555 E. Michigan Street, Suite 200, Orlando, FL 32822
Email: rvb@avconinc.com
Phone: 407-599-1122

Para información en español

Esther Fernandez, P.E.
Orange County Planning, Environmental and Development Services (PEDS) Department
Email: esther.fernandez@ocfl.net
Phone: 407-836-7982

Public participation is solicited without regard to race, color, national origin, age, sex, religion, income, disability, or family status. Persons who require language translation or interpretation services, which are provided at no cost, should contact Yevette Best, Orange County Title VI/Nondiscrimination coordinator at 407-836-5825 or yevette.best@ocfl.net at least seven (7) days prior to the meeting. Persons requiring special accommodations under the Americans with Disabilities Act of 1990 (ADA) may request assistance from Nicola Norton, County ADA coordinator, at 407-836-6568 or nicola.norton@ocfl.net at least seven (7) days prior to the meeting.

PROXIMOS EVENTOS

Audiencia Pública de la Comisión de Planificación y Zonificación

Audiencia Pública de la Junta de Comisionados del Condado

Otoño 2023 (detalles por determinar)

Mas en idriveoverpass.com

ORANGE COUNTY GOVERNMENT FLORIDA

PROXIMA REUNIÓN PÚBLICA

Reunión del Concepto de Mejora Recomendado

Miércoles, Agosto 2, 2023

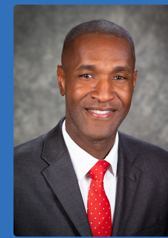
5:30 p.m. Puertas Abiertas | 6 p.m. Presentación
Embassy Suites
8250 Jamaican Court, Orlando, FL 32819

Concepto del Puente I-Drive

PUENTE PEATONAL "INTERNATIONAL DRIVE"

ANÁLISIS Y ESTUDIO DE DISEÑO CONCEPTUAL

ALCALDE DE ORANGE COUNTY
JERRY L. DEMINGS



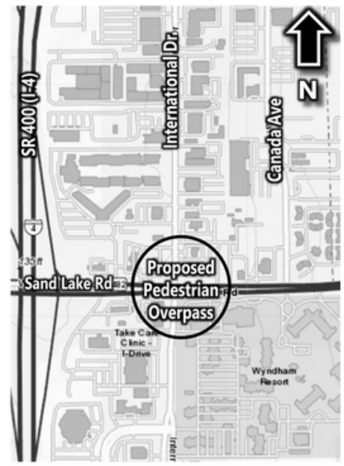
COMISIONADO DEL DISTRITO 6
MICHAEL "MIKE" SCOTT

EMICION #2 – JULIO 2023

REUNIÓN PÚBLICA SOBRE EL DISEÑO DEL PUENTE PEATONAL PROGRAMADA PARA EL 2 DE AGOST0

El Condado Orange lo invita a una reunión pública para revisar el concepto recomendado para diseñar un paso elevado para peatones a través de Sand Lake Road en International Drive, con el objetivo de mejorar la seguridad de los peatones y crear una puerta de entrada estética a uno de los corredores turísticos más transitados del Condado Orange. El concepto de mejora recomendado incluye un puente peatonal elevado sobre la intersección donde se unen dos secciones de puente curvas bajo una cubierta iluminada y conecta las cuatro esquinas en la intersección.

La reunión será **el Miércoles, 2 de Agosto de 2023, en Embassy Suites, 8250 Jamaican Court, Orlando, FL 32819**. La jornada de puertas abiertas comenzará a las 5:30 p.m. seguida de una presentación a las 6 p.m. Los mapas e ilustraciones del proyecto estarán disponibles para revisión y comentarios públicos. Los miembros del equipo del proyecto estarán en el sitio para responder preguntas.



Ubicación del Puente Peatonal

CONCEPTO DE DISEÑO PARA UN PASO ELEVADO PARA PEATONES EN SAND LAKE ROAD E INTERNATIONAL DRIVE

CONTACTOS DEL PROYECTO

Blanche Hardy, PG, Project Manager
Transportation Planning Division
Orange County Planning, Environmental and Development Services (PEDS) Department
4200 S. John Young Parkway, Orlando, FL 32839
Email: blanche.hardy@ocfl.net
Phone: 407-836-0257

Rick Baldocchi, P.E., Project Manager
Consultant Project Manager
HHCP&AVCON, A Joint Venture
5555 E. Michigan Street, Suite 200, Orlando, FL 32822
Email: rvb@avconinc.com
Phone: 407-599-1122

Para información en español

Esther Fernandez, P.E.
Orange County Planning, Environmental and Development Services (PEDS) Department
Email: esther.fernandez@ocfl.net
Phone: 407-836-7982

SE SOLICITA LA PARTICIPACIÓN PÚBLICA SIN DISTINCIÓN DE RAZA, COLOR, ORIGEN NACIONAL, EDAD, SEXO, RELIGIÓN, INGRESOS, DISCAPACIDAD O ESTADO FAMILIAR. LAS PERSONAS QUE REQUIERAN SERVICIOS DE TRADUCCIÓN O INTERPRETACIÓN DE IDIOMAS, LOS CUALES SE BRINDAN SIN COSTO, DEBEN COMUNICARSE CON YEVETTE BEST, COORDINADORA DE TÍTULO VI/NO DISCRIMINACIÓN DEL CONDADO DE ORANGE, AL 407-836-5825 O YEVETTE.BEST@OCFL.NET AL MENOS SIETE (7) DÍAS ANTES DE LA REUNIÓNLAS PERSONAS QUE REQUIERAN ADAPTACIONES BAJO LA LEY AMERICANS WITH DISABILITIES ACT OF 1990 (ADA) PUEDEN SOLICITAR ASISTENCIA DE NICOLA NORTON, COORDINADOR DE ADA DEL CONDADO, AL 407-836-6568; CORREO ELECTRÓNICO: NICOLA.NORTON@OCFL.NET AL MENOS SIETE (7) DÍAS ANTES DE LA REUNIÓN.

PUBLIC NOTICE

INTERNATIONAL DRIVE PEDESTRIAN OVERPASS

AUGUST 2, 2023

Orange County invites the community to a public meeting regarding the International Drive Pedestrian Overpass. Orange County is evaluating concepts for designing a pedestrian overpass across Sand Lake Road at International Drive. The project's goals are to improve pedestrian safety and create an aesthetic gateway to one of Orange County's most-heavily traveled tourism corridors.

The purpose of this meeting is to present a recommended improvement concept for the overpass and hear community feedback.

The public meeting will be held on **Wednesday, August 2, 2023, at Embassy Suites at 8250 Jamaican Court, Orlando, FL 32819.** The meeting will begin with an open house from 5:30 to 6:00 p.m., followed by a formal presentation at 6:00 p.m. The public will have opportunities to ask questions and provide comments to Orange County project representatives. Project information also is available on the project website at www.idriveoverpass.com or on the Orange County website at https://www.orangecountyfl.net/TrafficTransportation/TransportationProjects/InternationalDrivePedestrianOverpass.aspx.

Public participation is solicited without regard to race, color, national origin, age, sex, religion, income, disability, or family status. Persons who require language translation or interpretative services, which are provided at no cost, should contact Yevette Best, Orange County Title VI/Nondiscrimination coordinator, at 407-836-5825 or yevette.best@ocfl.net at least seven (7) days prior to the meeting.

Persons requiring accommodations under the Americans with Disabilities Act of 1990 (ADA) may request assistance from Nicola Norton, County ADA coordinator, at 407-836-6568 or nicola.norton@ocfl.net at least seven (7) days prior to the meeting.

For more information, please contact
Blanche Hardy, P.G., Orange County Planning Environmental and Development Services Department, Transportation Planning Division project manager, at 407-836-0257 or blanche.hardy@ocfl.net.

Para información en español, contactar a
Esther Fernández Cañizares, staff engineer, Orange County Public Works, Engineering Division. Teléfono: 407-836-7982; Correo Electrónico: esther.fernandez@ocfl.net.

WHAT:	Public Meeting
WHERE:	Embassy Suites on Jamaican Ct
WHEN:	Open House - 5:30 p.m.
	Presentation - 6:00 p.m.

NOTIFICACIÓN PÚBLICA

PUENTE PEATONAL “INTERNATIONAL DRIVE”
2 DE AGOSTO DEL 2023

El Condado de Orange invita a la comunidad a una reunión pública referente al puente peatonal “International Drive." El Condado Orange está evaluando conceptos para diseñar un puente peatonal a través de Sand Lake Road e International Drive. Los objetivos del proyecto son mejorar la seguridad de los peatones y crear una puerta de entrada estética a uno de los corredores turísticos más transitados del Condado Orange.

El propósito de esta reunión es presentar un concepto de mejora recomendado para el paso elevado y escuchar los comentarios de la comunidad.

La reunión pública se llevará a cabo el **Miércoles, 2 de Agosto del 2023 en el Embassy Suites ubicado en 8250 Jamaican Court, Orlando, FL, 32819.** La reunión comenzará con una jornada de puertas abiertas de 5:30 a 6 p.m., seguida de una presentación formal a las 6 p.m.

El público tendrá la oportunidad de hacer preguntas y proveer comentarios al Condado Orange y a los representantes del proyecto.

La información del proyecto también está disponible en su sitio web: www.idriveoverpass.com, o en el sition web del Condado Orange: https://www.orangecountyfl.net/TrafficTransportation/TransportationProjects/InternationalDrivePedestrianOverpass.aspx

Se solicita la participación pública sin distinción de raza, color, origen nacional, edad, sexo, religión, ingresos, discapacidad o estado familiar. Las personas que requieran servicios de interpretación o traducción de idiomas, los cuales se brindan sin costo alguno, deben comunicarse con Yevette Best, coordinadora de Título VI/No Discriminación del Condado Orange, al 407-836-5825; Correo Electrónico: yevette.best@ocfl.net al menos siete (7) días antes de la reunión.

Las personas que requieran adaptaciones bajo la ley Americans with Disabilities Act of 1990 (ADA) pueden solicitar asistencia de Nicola Norton, coordinador de ADA del Condado, al 407-836-6568; Correo Electrónico: nicola.norton@ocfl.net al menos siete (7) días antes de la reunión.

Para más información, contactar a
Blanche Hardy, P.G., gerente de proyectos del Departamento de Servicios de Desarrollo y Medio Ambiente de Planificación del Condado Orange, División de Planificación de Transporte, al 407-836-0257; Correo Electrónico: blanche.hardy@ocfl.net.

Para información en español, contactar a
Esther Fernández Cañizares, Orange County Public Works, Engineering Division.
Teléfono: 407-836-7982; Correo Electrónico: esther.fernandez@ocfl.net.

FOR IMMEDIATE RELEASE

[RELEASE DATE GOES HERE]

International Drive Pedestrian Overpass
Public Meeting on August 2, 2023

Orange County, Fla. – Orange County is continuing to evaluate concepts for designing a pedestrian overpass across Sand Lake Road at International Drive with the goals of improving pedestrian safety and creating an aesthetic gateway to one of Orange County's most-heavily traveled tourism corridors. After receiving feedback from adjacent property owners and community members on design alternatives, a recommended improvement concept is being advanced and refined.

The recommended improvement concept includes an elevated pedestrian bridge over the intersection to provide a safe, walkable alternative for foot and bike traffic at the intersection. The recommended improvement includes two curved bridge sections that come together under an illuminated canopy and connect the four corners at the intersection. The design also incorporates switchback stairways and elevators at each corner to access the overpass.

The County invites you to attend a community meeting to review the recommended improvement concept under consideration and provide input before it is shared with the Local Planning Agency and Board of County Commissioners.

Wednesday, August 2, 2023, at 5:30 p.m. | Presentation at 6 p.m.
Embassy Suites
Panther/Dolphin Meeting Rooms
8250 Jamaican Court
Orlando, FL 32819

There will be a presentation followed by a question-and-answer forum. Maps and displays depicting project information will be available for public review and comment. Project representatives will also be present to discuss the project and answer any questions.

Public participation is solicited without regard to race, color, national origin, age, sex, religion, income, disability, or family status. Persons who require language translation or interpretation services, which are provided at no cost, should contact **Yevette Best, Orange County Title VI/Nondiscrimination coordinator**, at 407-836-5825 or yevette.best@ocfl.net at least seven (7) days prior to the meeting. Persons requiring special accommodations under the Americans with Disabilities Act of 1990 (ADA) may request assistance from **Nicola Norton, County ADA**

coordinator, at 407-836-6568 or nicola.norton@ocfl.net at least seven (7) days prior to the meeting.

If you have any questions regarding the project or meeting, please visit the project website at www.idriveoverpass.com or contact Blanche Hardy, P.G., Orange County project manager, at 407-836-0257 or blanche.hardy@ocfl.net. Para información en español, llame a Esther Fernández Cañizares, P.E., Orange County Public Works, Engineering Division, 4200 S. John Young Parkway, Orlando, FL 32839. Teléfono: 407-836-7982; Correo Electrónico: esther.fernandez@ocfl.net.

###

About Orange County Government: Orange County Government strives to serve its residents and guests with integrity, honesty, fairness and professionalism. Located in Central Florida, Orange County includes 13 municipalities and is home to world-famous theme parks, one of the nation's largest convention centers and a thriving life science research park. Seven elected members make up the Board of County Commissioners, including the Mayor, who is elected countywide. For more information, please visit www.OCFL.net or go to Orange County Government's social media channels.

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Meeting Minutes

Date	August 21, 2023	Meeting Date	August 2, 2023
Project	International Drive (I-Drive) Pedestrian Bridge Overpass Intersection Analysis and Overpass Conceptual Design Study		
Subject	Recommended Improvement Concept Public Meeting		
Attendees	See Below		
Location	Embassy Suites 8250 Jamaican Court Orlando, Florida	Prepared By	Rick Baldocchi, P.E. Christine Dellert
Distribution	Public Website		

Attendees:

Blanche Hardy, Orange County
Rick Baldocchi, AVON
Michael Chatham, HHCP
Commissioner Mayra Uribe, District 3
Hatem Aguib, FDOT
Todd Alexander, FDOT
Pam Allard, Walgreens
Jaz Arsenaut, Community Member
Michael Beksinski, Herc Rentals
David Bottomley, Community Member
Luann Brooks, I-Drive District
Catalina Chacon, FDOT
Evan Collins, Fox 35
Ryan Flipse, FDOT
Frank Gilbert, Community Member
Evan Fracasso, Hilton Orlando
Nicole Griffin, Spectrum News 13
Eric Grimmer, Orlando Yimby
Kent Hipp, GrayRobinson
Seta Koroitamudu, FDOT
Chris Krul, Spectrum News 13
Deonte Moore, Orange County
Chris Mueller, Hilton Orlando
Ian Phyars, Orange County
Brian Sanders, Orange County
Craig Swygert, Clear Channel Orlando
Rick Vallier, Orange County
Alberto Vargas, Orange County

The Recommended Improvement Concept public meeting provided further details on the International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study, including a presentation of the recommended design concept and aesthetics, as well as an opportunity to solicit comments from the public. A summary of the meeting discussion is below.

Blanche Hardy introduced the purpose of the meeting and shared a PowerPoint presentation with information on the overpass study and its work to date. The project has the support of Orange County leadership, including Mayor Demings and Commissioner Mike Scott for District 6, which the area of study is in. Blanche introduced Commissioner Uribe, who was in attendance and reaffirmed the project's importance to Orange County.

Blanche shared several ways to provide feedback on the project, including comment and speaker cards, the contact information for the project manager, and the website address. She also introduced several Orange County staff members and project consultants.

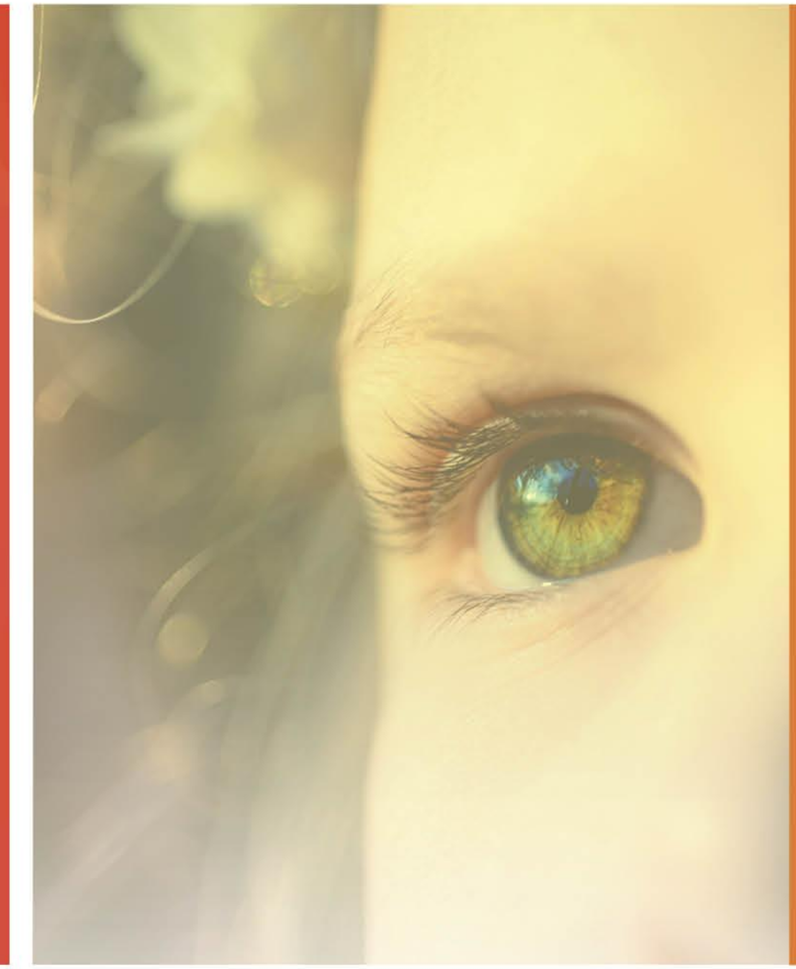
Blanche introduced Michael Chatham with HHCP to provide additional background and present the recommended improvement concept.

1. Recap of Project Work and Prior Project Advisory Group Meetings
    a. Michael shared the objectives of the four prior meetings of the Project Advisory Group (PAG), including discussing the problems at the site, collecting additional input from the public, and different design concepts, constructability, and cost for the pedestrian overpass.
    b. The team has taken the PAG's preferred scheme and designed it further to present as the recommended improvement concept for the overpass.
    c. Michael reviewed a summary of the results from the prior PAG meetings, including:
        i. A decision to include a barrier at intersections to prevent on-grade crossing.
        ii. Utilize stair and elevator at each intersection (the best option for each corner).
        iii. Minimize the impact on existing utilities and on adjacent property owners.
        iv. Create an iconic gateway to the Convention and Entertainment District.
        v. Consider potential bridge connections to adjacent properties (both elevated and on grade).
        vi. Consider the experience of those traveling under the bridge, as those experiencing the bridge by crossing it.
        vii. A design that accommodates pedestrians, strollers, and bicycles.
        viii. ADA accessibility at all intersections.
        ix. Consider the Intersecting "C" option and the "X" option as the highest-ranking and preferred schemes.
        x. Identify the "drone" scheme as the preferred option.
    d. Michael showed a map of the project location at the intersection of Sand Lake Road and International Drive with planning that would consider future design improvements to Interstate 4.
    e. Michael shared several of the early design configurations for the pedestrian bridge, including a square, an "X," a circular bridge, a "C" configuration, an intersecting "C," and an "I" configuration.
    f. Michael shared the selected tower configuration option, which includes an elevator and switchback staircase at each intersection.
    g. Michael said the "X" and Intersecting "C" design concepts scored high on the project team's criteria, which included travel distance, walking distance, and length.
    h. The curved bridge offered a more dynamic walking experience.
    i. The project would have barriers on grade to keep people from crossing and to protect pedestrians on the corner.
    j. Michael said based on budget, operational, and iconic criteria the "drone" scheme was the preferred design concept.
2. The Drone Concept
    a. Michael shared an aerial design view of the "drone" concept for the pedestrian bridge. The team has not come across another bridge in this configuration—it is unique and efficiently solves the challenges of this project.
    b. Michael shared a series of views of the bridge design from different directions because it has a different experience from each direction. The bridge is designed to be an iconic gateway from I-4 to International Drive.
    c. The project team wants to use lighting under the canopy. There will not be digital graphics or readable text. Another lighting feature will be in the elevator towers, to also function as a safety feature.

d. The barrier on the ground will be a concrete vehicular barrier. The top portion of the barrier could be metal mesh, glass, or acrylic.
e. The project team is considering a photovoltaic array on the top of the bridge to promote sustainability and help to power the bridge's lighting.
f. Michael also showed several illustrations of what the bridge experience could like from the point of view of pedestrians crossing it. The paths will be curved; the sides will be covered with a metal mesh.
g. Michael shared an animated video flyover of the design concepts and what the project would like from different angles.

3. Public Comment and Questions
    a. **Question (David Bottomley):** What happens when one or more of the elevators break and someone is in a wheelchair?
        i. Blanche says there will be four elevators installed on the bridge and it will be a very robust project. Michael says it is stable, proven technology for the elevators, which will only be traveling one floor up and down. The project team is discussing maintenance and operations plans with the County. Blanche said the team has closely worked with Orange County's emergency services and the project will be built to emergency services' criteria for evaluation with their equipment.
    b. **Question (David Bottomley):** Will the barriers be high enough to keep people from crossing at the street level? Instead of 42" high for the barrier, would you consider 48" high like in zoos?
        i. Blanche says the barriers will extend to the nearest driveway and the project team has taken considerations to make them not easily scalable. If someone does try to climb, the hope would be that security services on site would take the appropriate action; but police will not be 24/7 and you cannot stop someone if they desire to take dangerous action. Michael says they have done similar projects with similar barrier systems and have not had a problem. The goal is to make the bridge as easy to use as possible.
    c. **Question (Jaz Arsenaut):** Why is the bridge going to be in the middle of the intersection instead of being put further down the road?
        i. Michael says if you make people walk a further distance down the road, they will be less likely to use it.
    d. **Question (Jaz Arsenaut):** Could you enclose the sidewalks to help funnel people to the appropriate directions?
        i. Blanche says there are business entrances from the sidewalks that cannot be blocked. Blanche also described the dangerous conditions at the intersection where pedestrians were trying to cross the street as traffic is crossing in between them.
    e. **Question (Jaz Arsenaut):** How will the bridge withstand windy conditions?
        i. Michael says the bridge will be designed for 140 mph winds.
    f. **Question (Jaz Arsenaut):** How large will the elevators be?
        i. Michael said the elevators will be large enough to accommodate a stretcher for emergency services; 3,500-lb elevators that could hold about a dozen people. Blanche says they will be sized to hold an emergency response crew.
    g. **Question (Jaz Arsenaut):** How long will the lighting on the bridge last?
        i. Michael says all the lighting will be LED lighting. Blanche says the bridge and structures will be maintained by the County and the I-Drive District and well-cared for.

h. **Question (Jaz Arsenaut):** How will the mesh keep people from throwing things off the bridge onto the cars below?
    i. Michael says the bridge will meet the FDOT requirements, which include a cage on the bridge so that items cannot be thrown below.
i. **Question (Jaz Arsenaut):** Why not put the traffic lights underneath the bridge instead of on their own poles?
    i. Blanche says the project is following FDOT criteria for all lights and signage. Michael says the mast arms for the lights already exist.
j. **Comment (Eric Grimmer):** Against this bridge because it is not a scalable solution for pedestrian safety, and it does not address the pedestrian experience at the next intersection. This bridge is an extremely car-focused infrastructure because the pedestrians will have to walk a longer distance now so that the cars can maintain speed. The taxpayers will be paying for the project and maintenance.
k. **Question (Eric Grimmer):** How is this bridge consistent with the comprehensive plan update that focuses on building places for people, not places for cars? And how is it consistent with the County's Vision 0 pledge to achieve 0 traffic fatalities, and to build a complete street?
    i. Blanche says the project was always part of the plan; this was a part of the 2030 plan, and the vision for this project was put in place nearly 15 years ago. This bridge has always been a bicyclist and pedestrian project; it was never considered to be an enhancement for traffic. The barrier walls will prevent pedestrians from crossing; the cross walks will be removed to be a much safer situation for pedestrians and bicyclists. It was not intended to enhance the vehicle experience. The project is meant to be iconic and represent the County; to become part of complete streets and character.
l. **Comment (Eric Grimmer):** The corridor is a hostile place to pedestrians and the area should be known for more iconic places than a bridge.
m. **Comment (David Bottomley):** Has been looking at what the national parks have done with the sizes of metal mesh on barriers to avoid anything getting through.
n. **Question (Jaz Arsenaut):** What about the possibility of a light rail or elevated moving sidewalks to help with pedestrian traffic and safety?
    i. Blanche says the County has been working on transit lanes and is working with Lynx on I-Drive transit.



Transportation Planning Division

ORANGE COUNTY GOVERNMENT FLORIDA

International Drive Pedestrian Overpass
Analysis and Overpass Conceptual Design Study

Public Meeting #2

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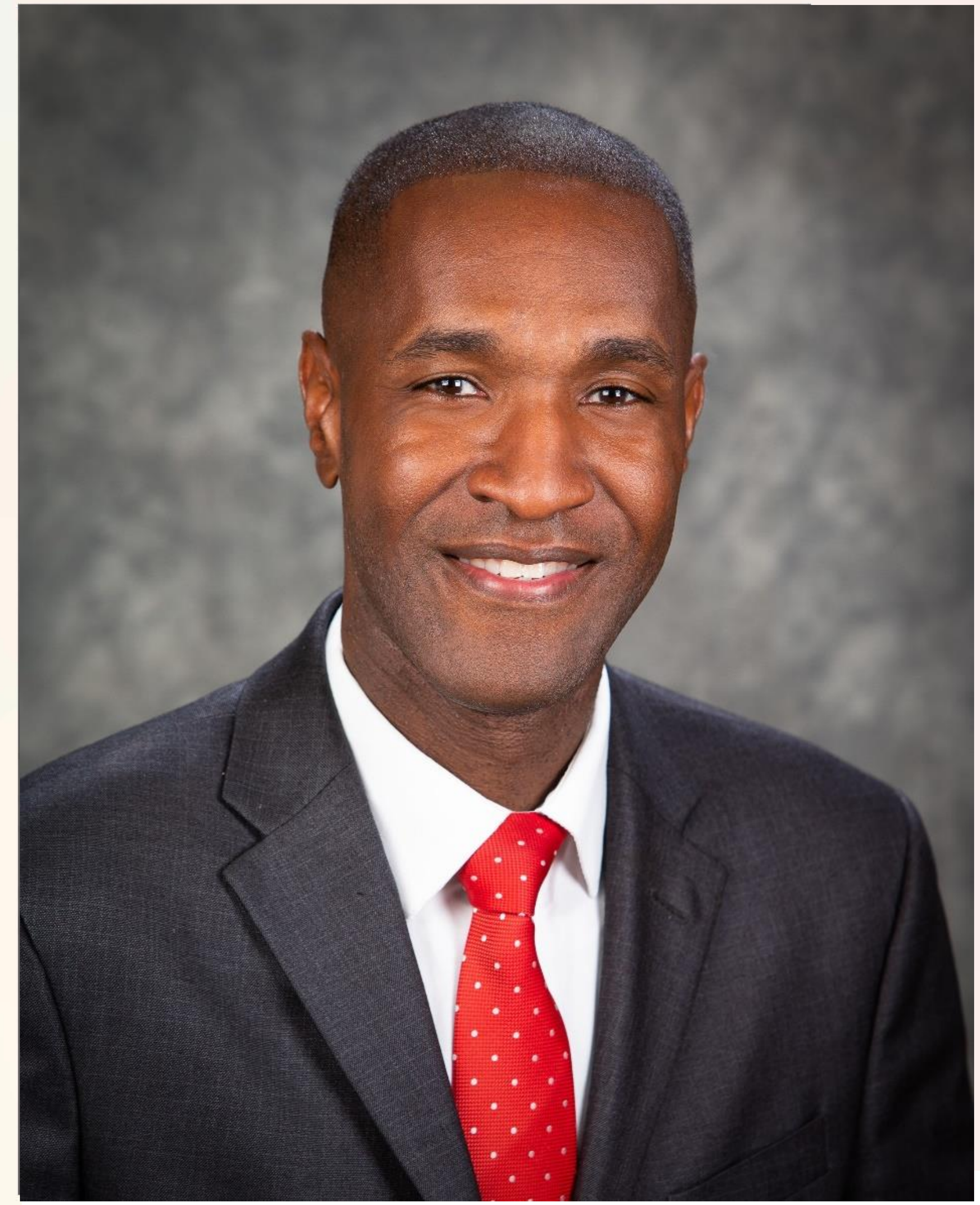
Jerry L. Demings
Orange County Mayor



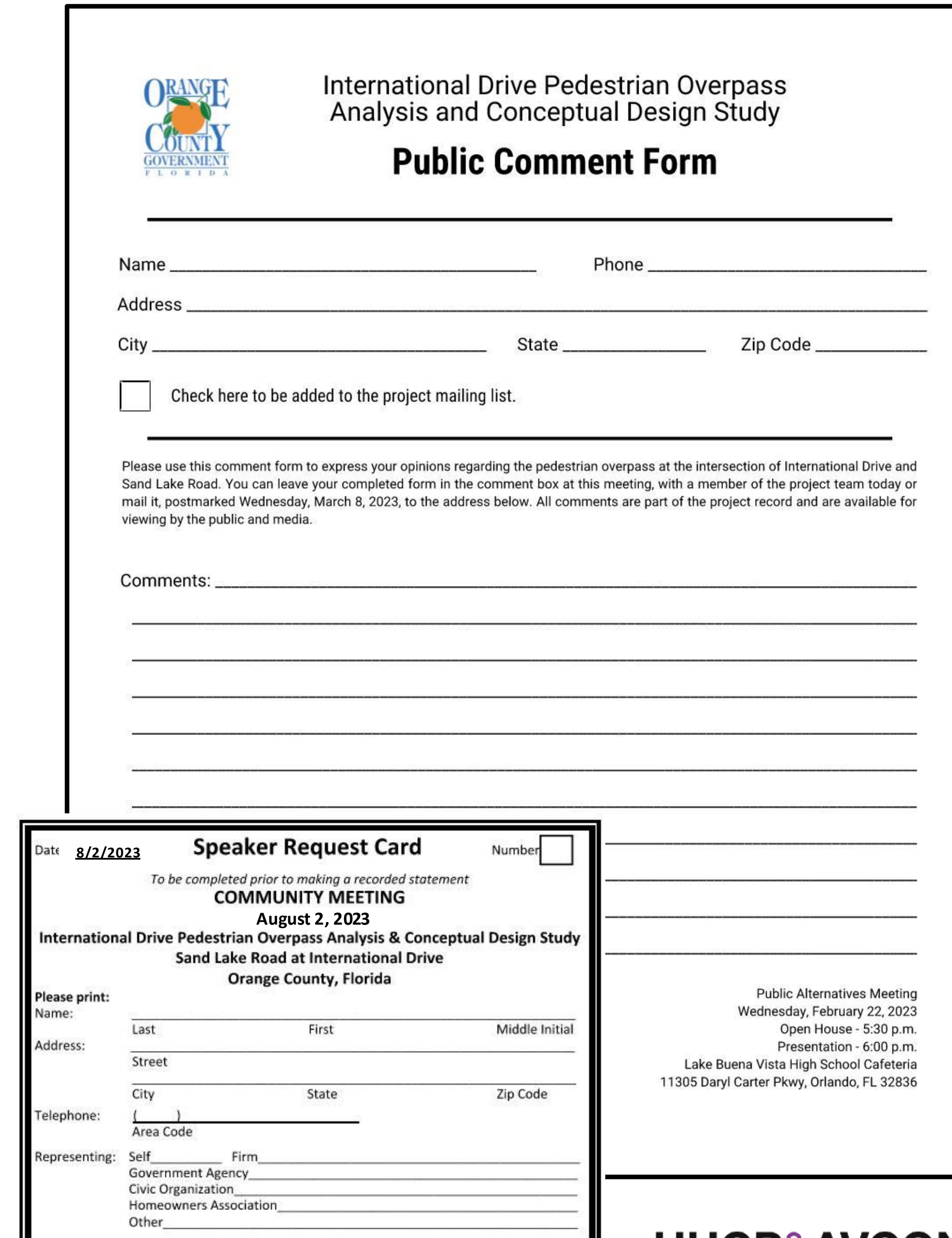
Michael "Mike" Scott
District 6 Commissioner

Ways to Provide Feedback

Orange County Project Contact:
Blanche Hardy P.G., ARM
Project Manager
Community, Environmental and Development Services
Transportation Planning Division
4200 John Young Parkway
Orlando, FL 32839
Email: blanche.hardy@ocfl.net
Phone: (407) 836-0267
Fax: (407) 836-8079

Consultant Project Contact:
Rick Baldocchi, PE
AVCON
5555 E. Michigan Street, Suite 200
Orlando, FL 32822
Email: RVB@avconinc.com
Phone: (407)-599-1122

Call or Email (website, *www.idriveoverpass.com* newsletter and this presentation)


International Drive Pedestrian Overpass
Analysis and Conceptual Design Study
Public Comment Form

Name ____________ Phone ____________

Address ____________

City ____________ State ____________ Zip Code ____________

☐ Check here to be added to the project mailing list.

Please use this comment form to express your opinions regarding the pedestrian overpass at the intersection of International Drive and Sand Lake Road. You can leave your completed form in the comment box at this meeting, with a member of the project team today or mail it, postmarked Wednesday, March 8, 2023, to the address below. All comments are part of the project record and are available for viewing by the public and media.

Comments: ____________

Public Alternatives Meeting
Wednesday, February 22, 2023
Open House - 5:30 p.m.
Presentation - 6:00 p.m.
Lake Buena Vista High School Cafeteria
11305 Daryl Carter Pkwy, Orlando, FL 32836

Date **8/2/2023** **Speaker Request Card** Number ☐

To be completed prior to making a recorded statement
COMMUNITY MEETING
August 2, 2023
International Drive Pedestrian Overpass Analysis & Conceptual Design Study
Sand Lake Road at International Drive
Orange County, Florida

Please print:
Name: ____________
Last First Middle Initial
Address: ____________
Street
____
City State Zip Code
Telephone: ( ) ____________
Area Code
Representing: Self________ Firm____________
Government Agency____________
Civic Organization____________
Homeowners Association____________
Other____________

Project Advisory Group
Meeting Objectives

Meeting Number One
Introduction of Participants
General Overview of Project
Initial Comments from Group Members

Meeting Number Two
Presentation on Findings of Existing Conditions
Discussion of General Bridge Features; Ramps, Stairs Elevators, etc.
Discussion of Right-of-Way and Access impacts
Discussion of Utility Impacts
Comments from Group Members

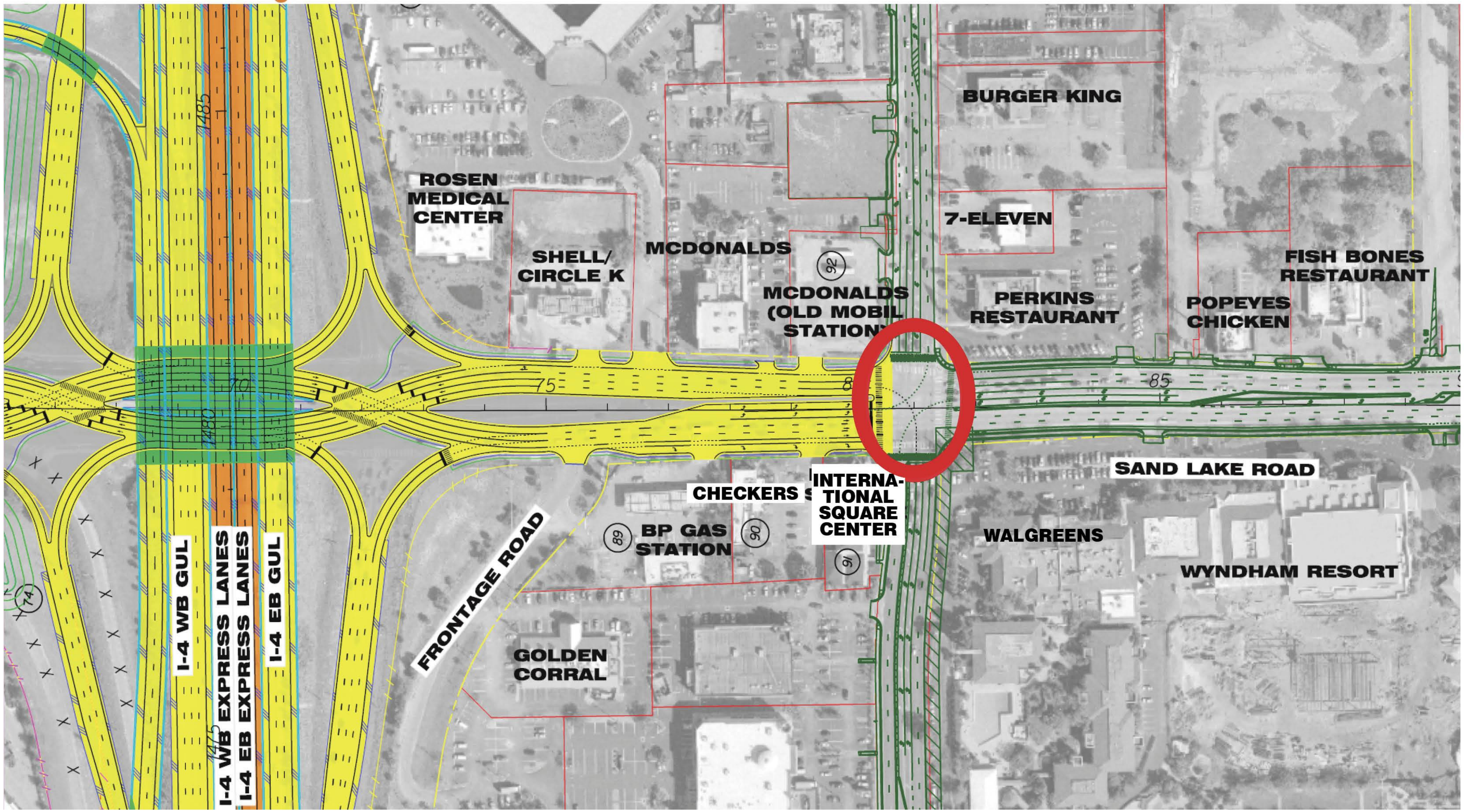
Meeting Number Three
Presentation of Preliminary Bridge Concepts
Comparison of Aesthetics for Each Concept
Comments from Group Members

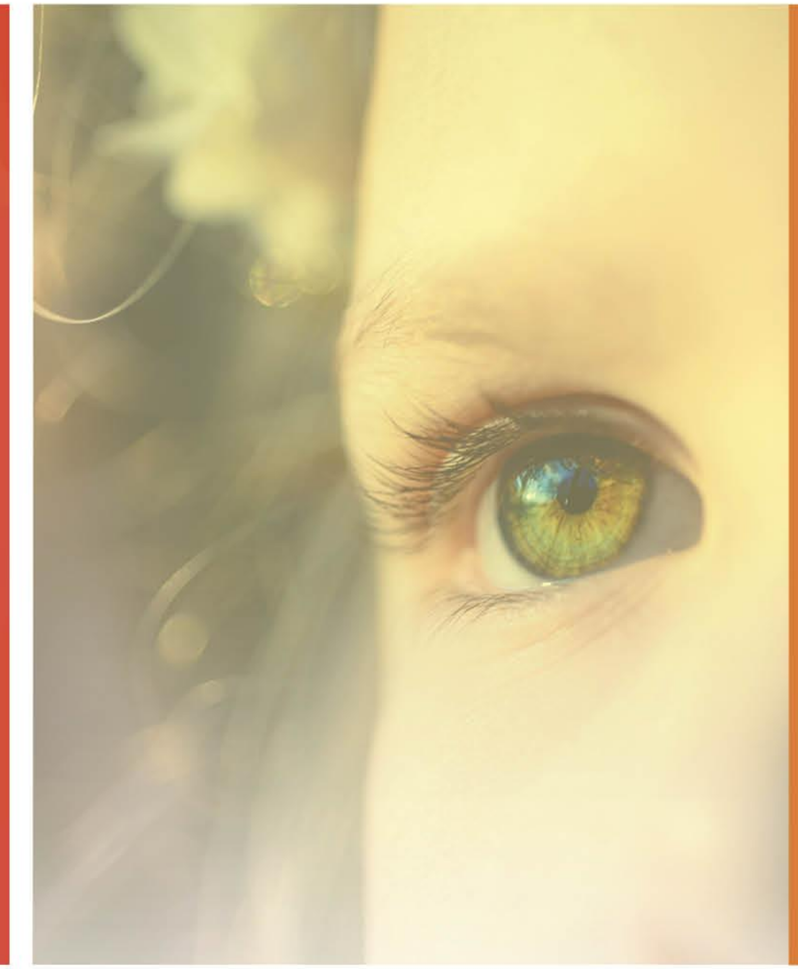
Meeting Number Four
Presentation of Two Preferred Bridge Concepts
Discussion of Refined Aesthetics
Final Comments from Group Members
Discuss Rankings and Determination of Preferred Alternative

Results of PAG meeting 1, 2, 3 & 4

1. Include barrier at intersections to prevent on grade crossing.
2. Utilize Stair and Elevator at each intersection (best option for each corner)
3. Minimize impact on existing utilities and on adjacent property owners.
4. Create an Iconic Gateway to the Convention and Entertainment District
5. Consider potential bridge connections to adjacent properties (both elevated and on grade).
6. Consider experience of those traveling under the bridge as well as those experiencing the bridge by crossing it.
7. Bridge design should consider pedestrians, strollers, and bicycles.
8. ADA accessibility is critical at all intersections.
9. Consider the Intersecting “C” option and the “X” option as the highest ranking and preferred schemes
10. PAG identifies the “Drone” scheme as the preferred option.

Pedestrian Bridge Location





Public Meeting Two

Bridge Configurations Considered

ORANGE COUNTY GOVERNMENT
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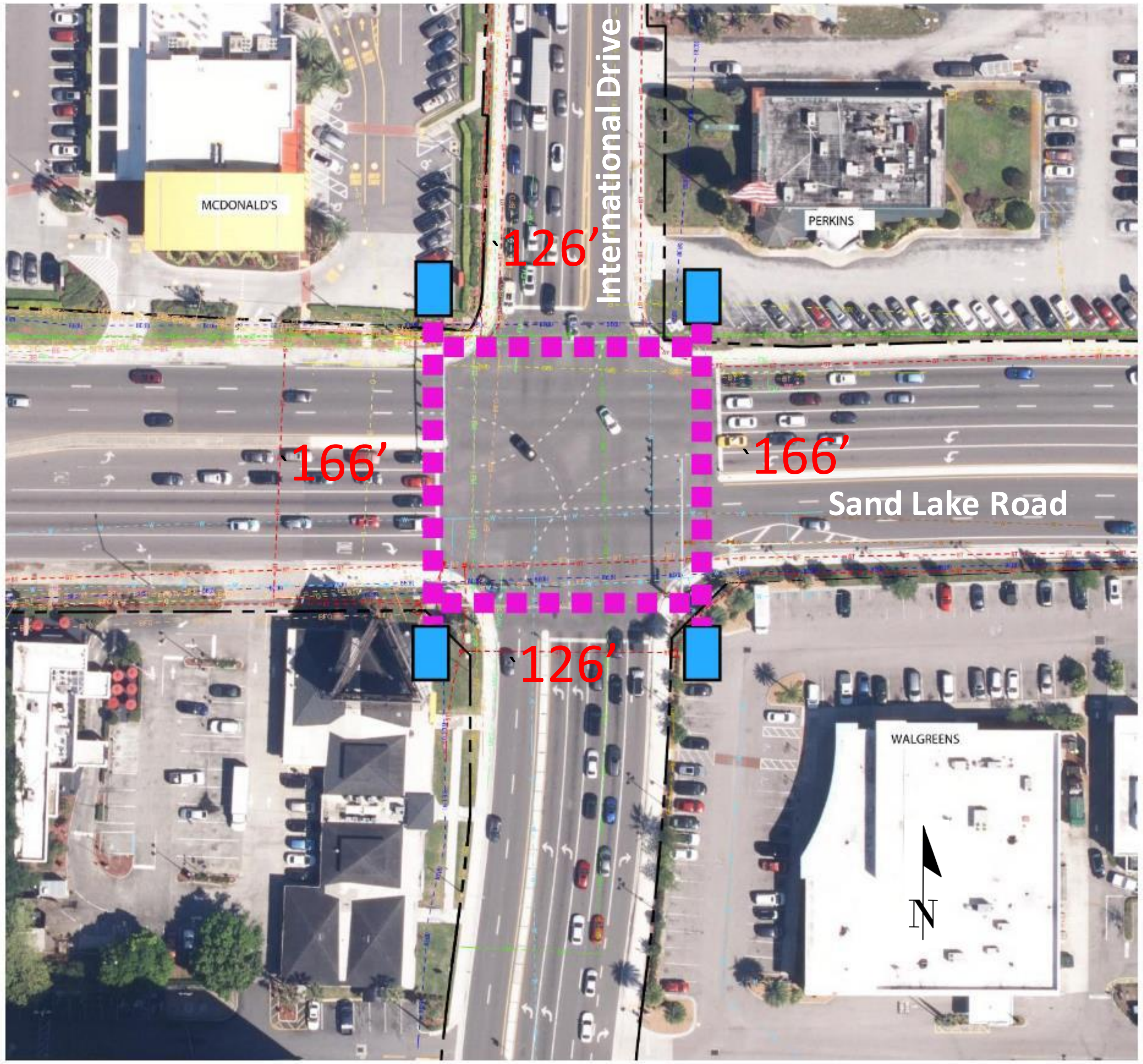
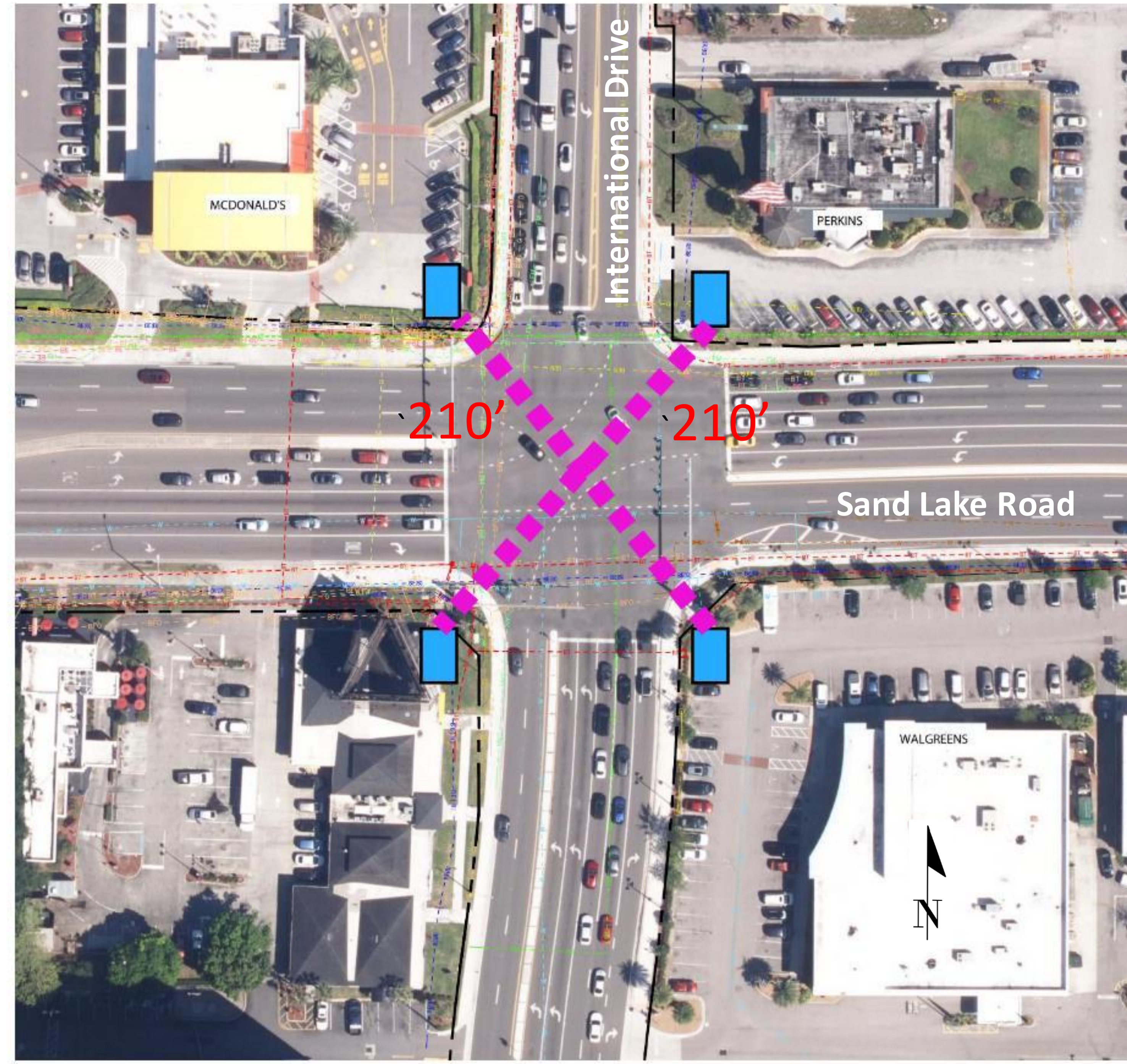
Bridge Configurations





Option 1
Square Configuration

Simple configuration utilizes straight prefabricated bridge sections. Users must travel either right or left to the final destination. If the destination is diagonal, you will have to travel two segments of the bridge.

Option 2
"X" Configuration

The "X" configuration utilizes prefabricated bridge sections and includes a shorter total bridge length than Option 1. Users travel approximately the same distance to any destination. That distance is slightly longer than a single span in Option 1.

Vertical Circulation Tower

Elevated Bridge

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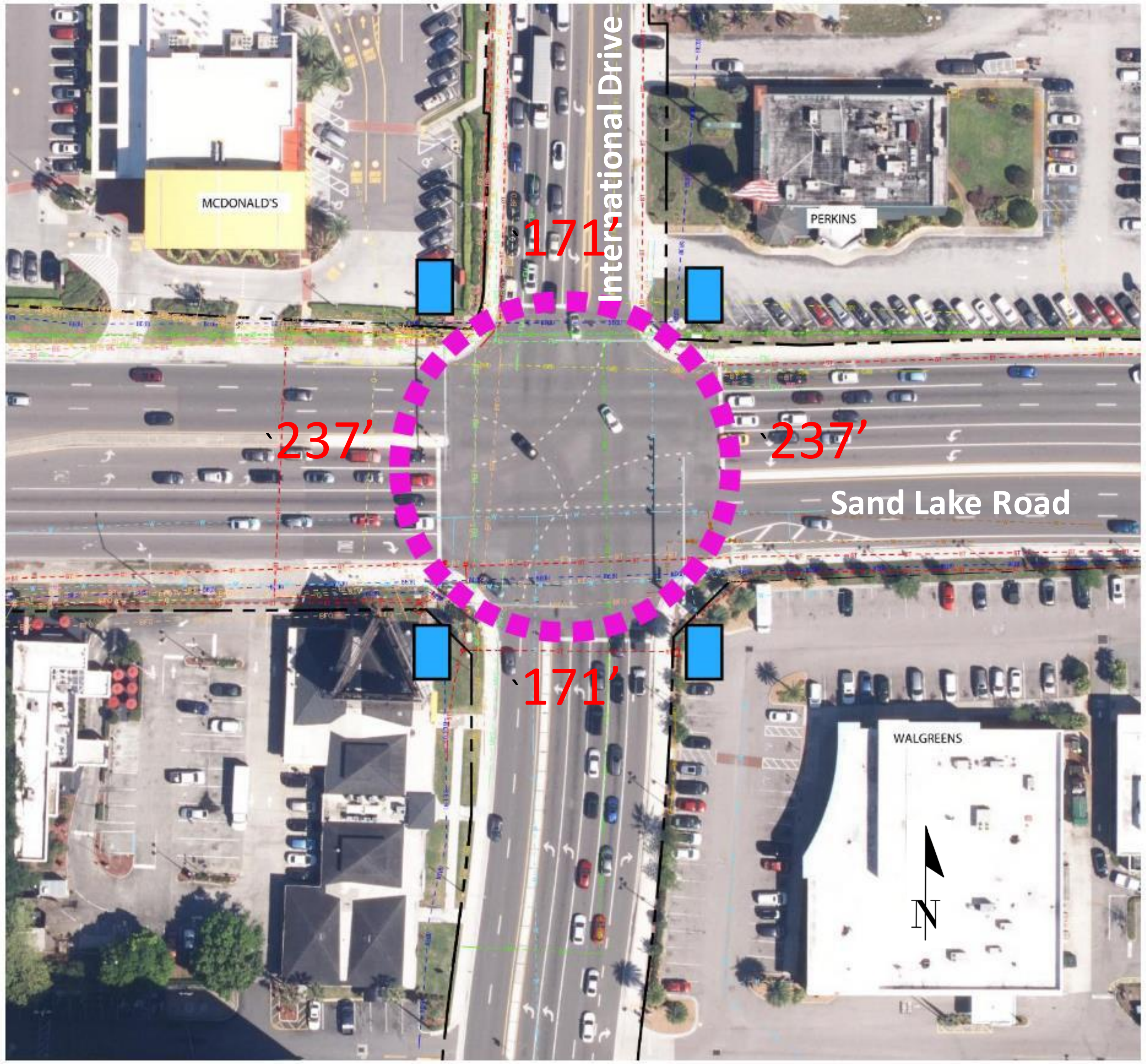
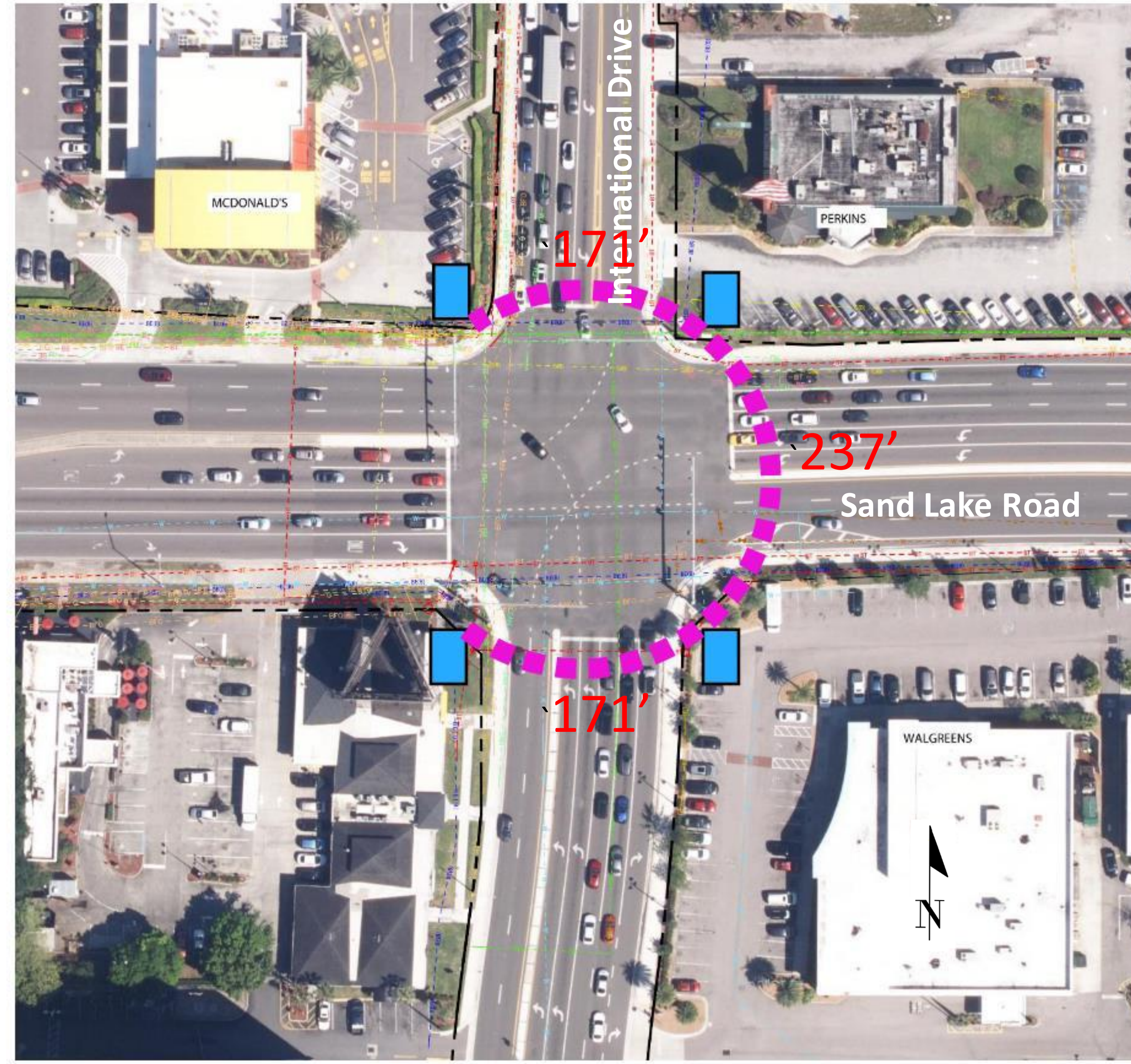
A JOINT VENTURE

Bridge Configurations





Option 3
Circular Configuration

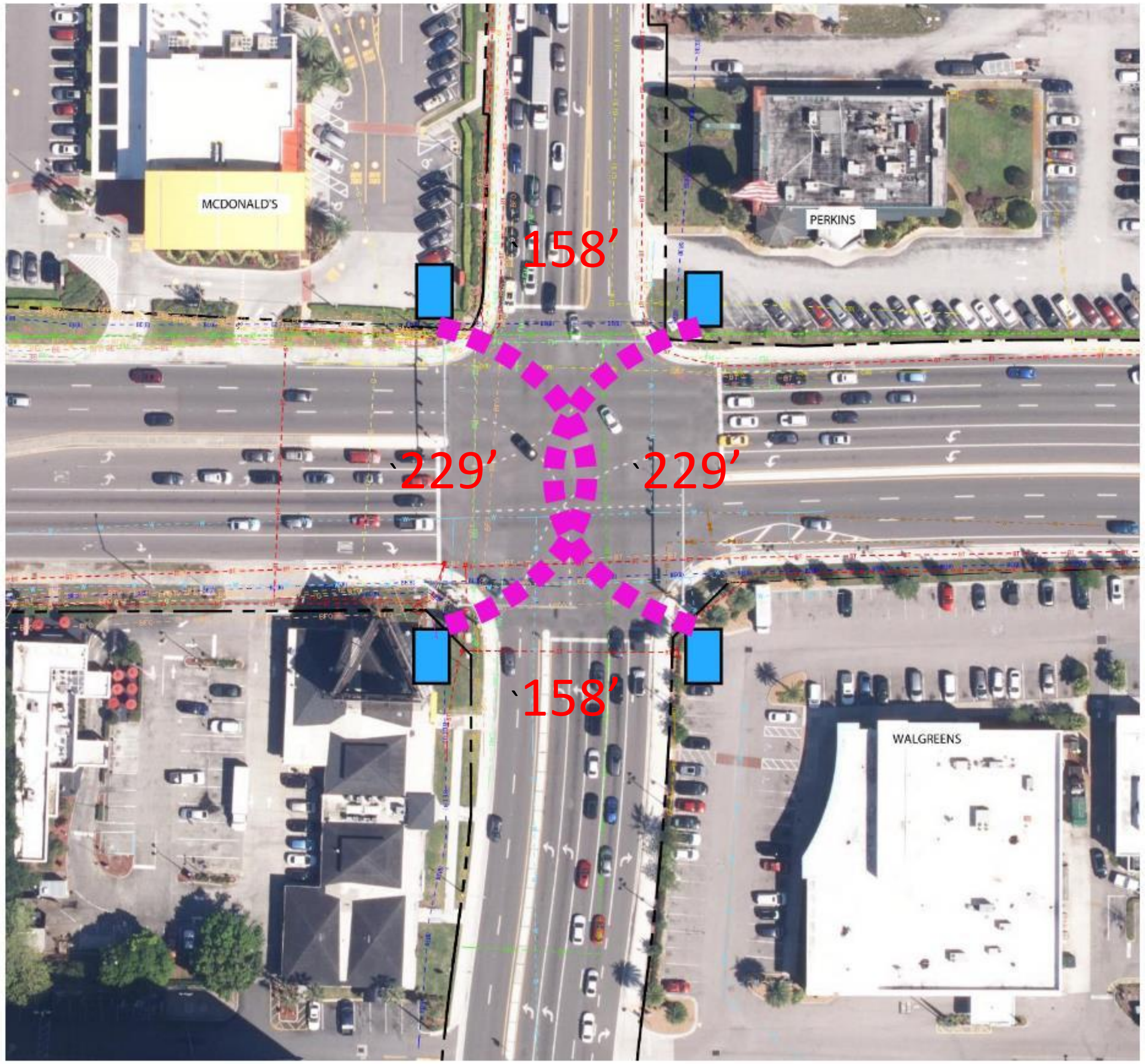
Operationally similar to the Square configuration, the Circular bridge eliminates 90 degree intersections and allows smooth flow around bridge in either direction. By walking in a continuous curve the appearance of the distance to the destination is reduced. This configuration can be assembled from Pre-fabricated bridge sections.

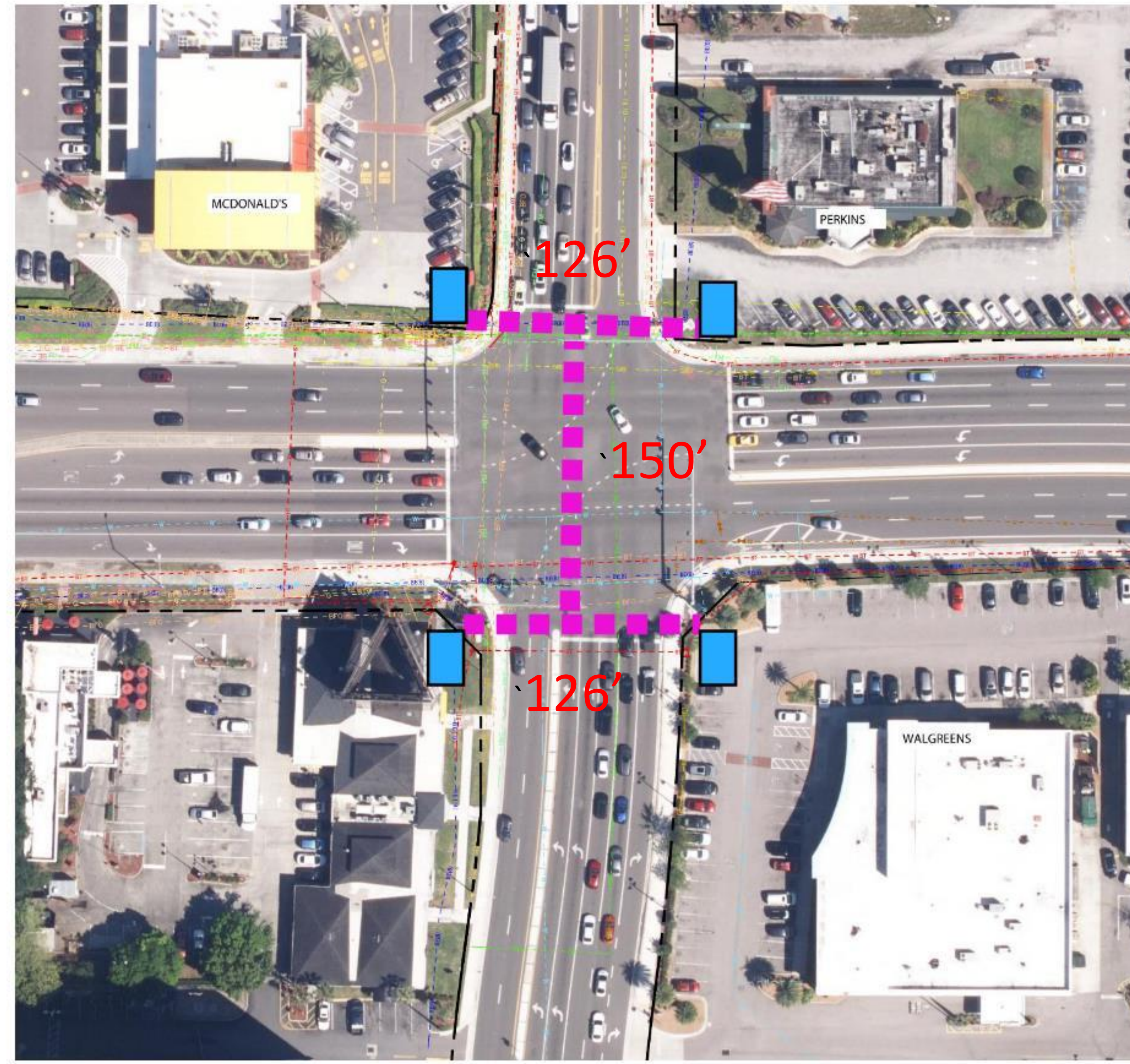
Option 4
"C" Configuration

The "C" configuration utilizes prefabricated bridge sections and includes a shorter total bridge length than Option 3.
This configuration only increases the travel distance between the NW and SW corners. This configuration creates a unique gateway for automobiles coming from the I-4 interchange.

Vertical Circulation Tower

Elevated Bridge





Option 5
Chanel Logo Configuration

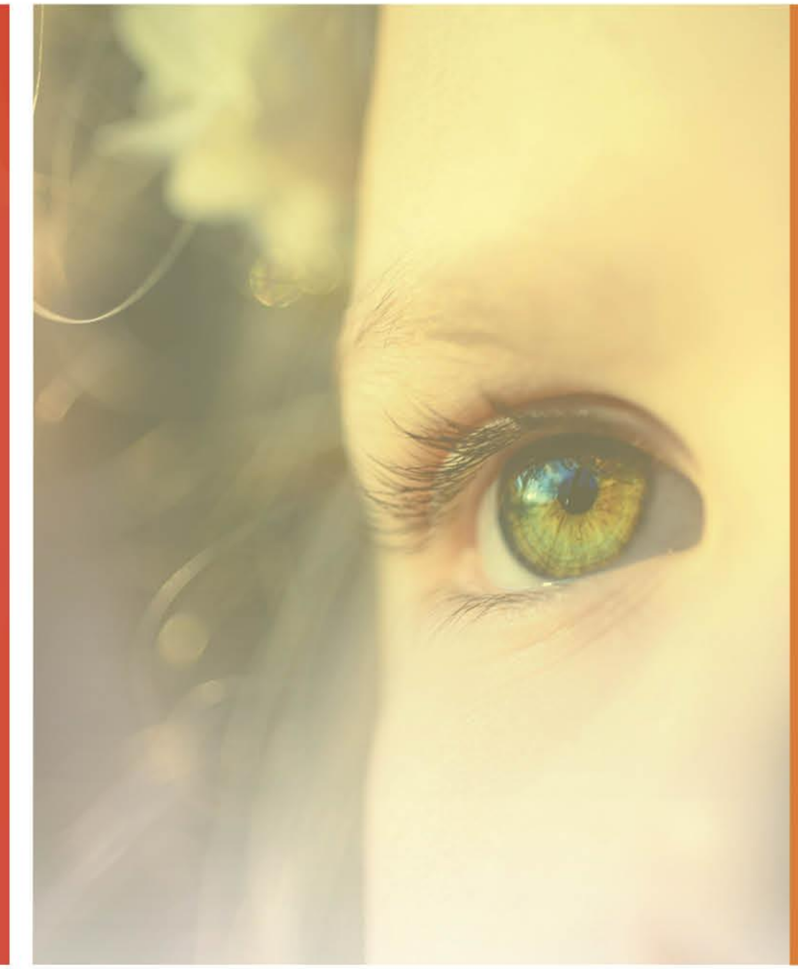
Operationally similar to the "X" configuration, this bridge consists of two curved bridge sections that touch and connect in the middle. More dynamic than the "X" configuration, this configuration eliminates long straight views and can accommodate a transition area in the center of the intersection. This configuration can be assembled from Pre-fabricated bridge sections.

Option 6
"I" Configuration

The "I" configuration utilizes prefabricated bridge sections and includes a shorter total bridge length than Option 3.
This configuration is made up of simple straight bridge sections and creates a unique gateway for automobiles coming from the I-4 interchange. Similar to Option 5, this configuration provides shorter travel distances crossing east and west.

Vertical Circulation Tower

Elevated Bridge



Public Meeting Two

Selected Bridge Tower Configuration

ORANGE COUNTY GOVERNMENT FLORIDA

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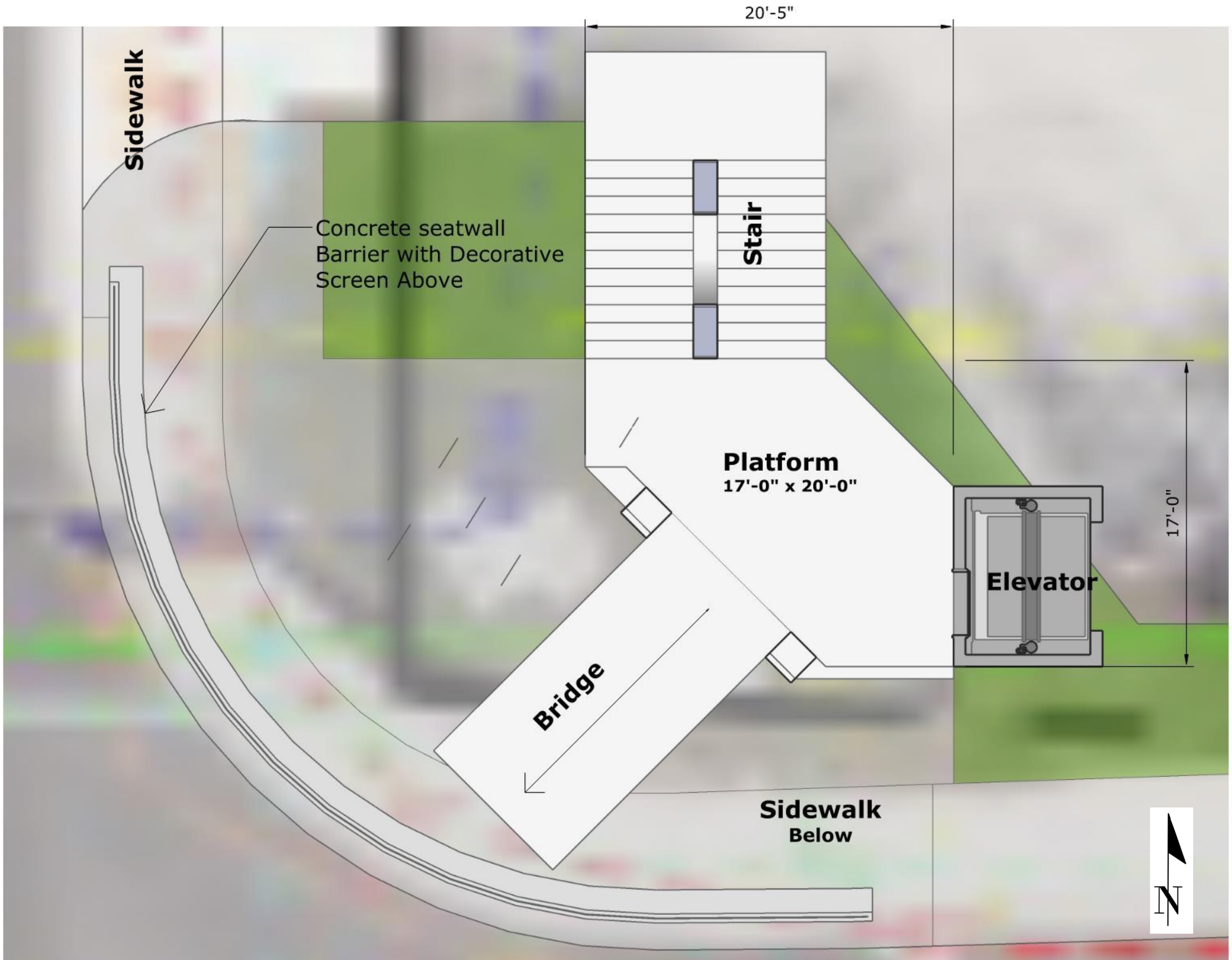


Bridge Tower Option 2

Description

A very inviting stair traversing 24'-0" in height. Each stair run is 6' rise. The treads are 12" and the risers are 6" for easy climbing.

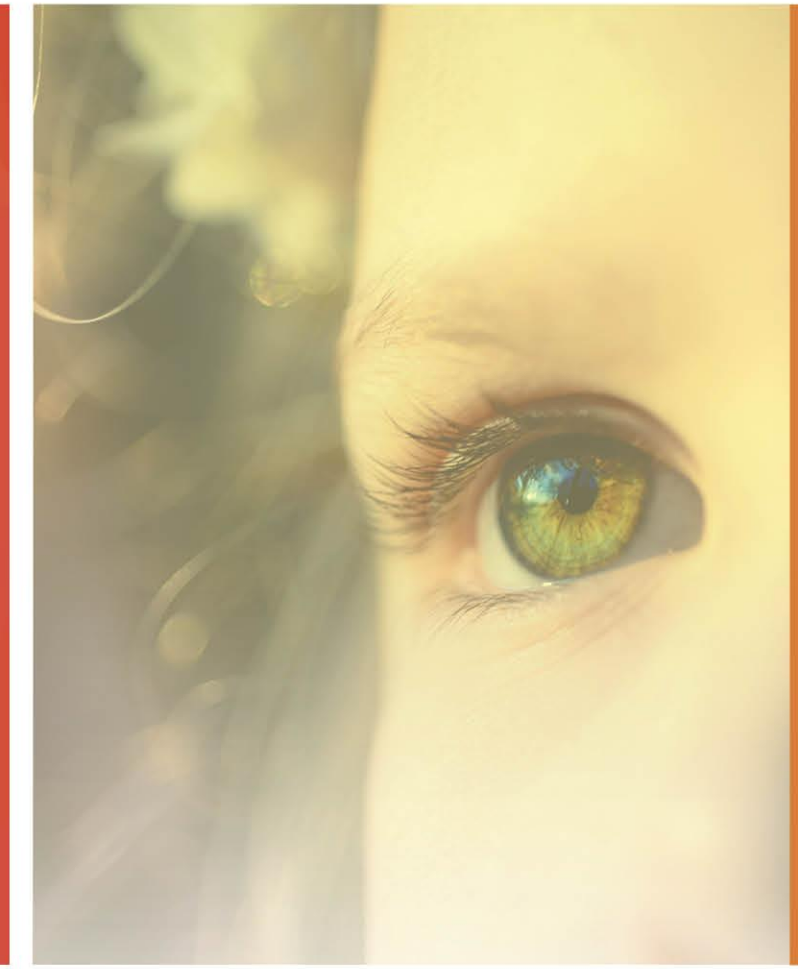
The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 35' x 40'

Crosswalks have been removed.

Summary

Ground Floor Platform	221sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	531sf
Bridge Width	10'-0"



Meeting Number Three

Preliminary Bridge Configuration Concepts

ORANGE COUNTY GOVERNMENT FLORIDA

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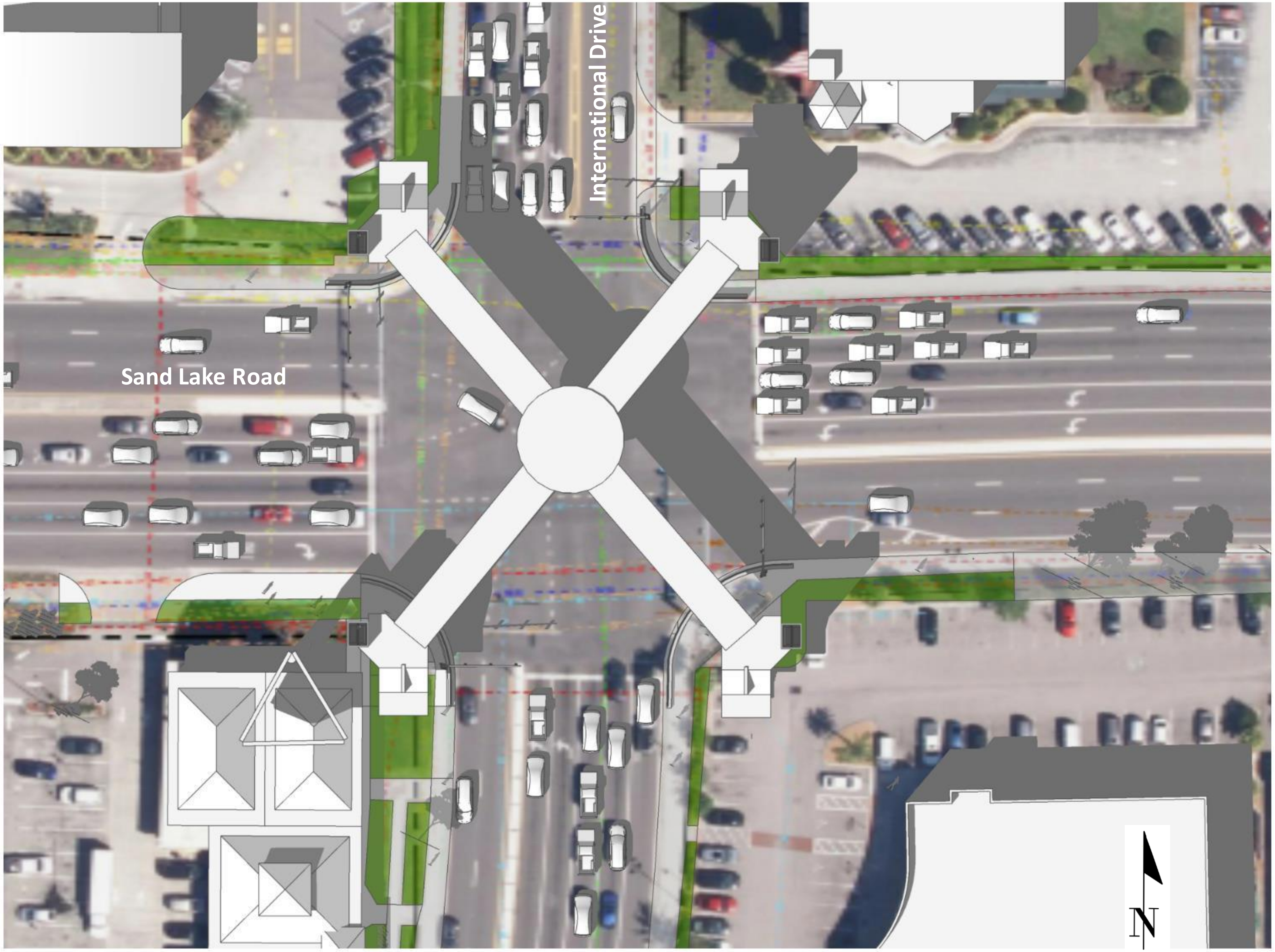


Bridge Configuration "X" Option

Description

The "X" configuration consists of two straight bridge runs intersecting in the middle of the intersection.

The overall length of the bridge in the "X" configuration is the third shortest of all options at 420' of length and has the third shortest average travel distances of the options considered.

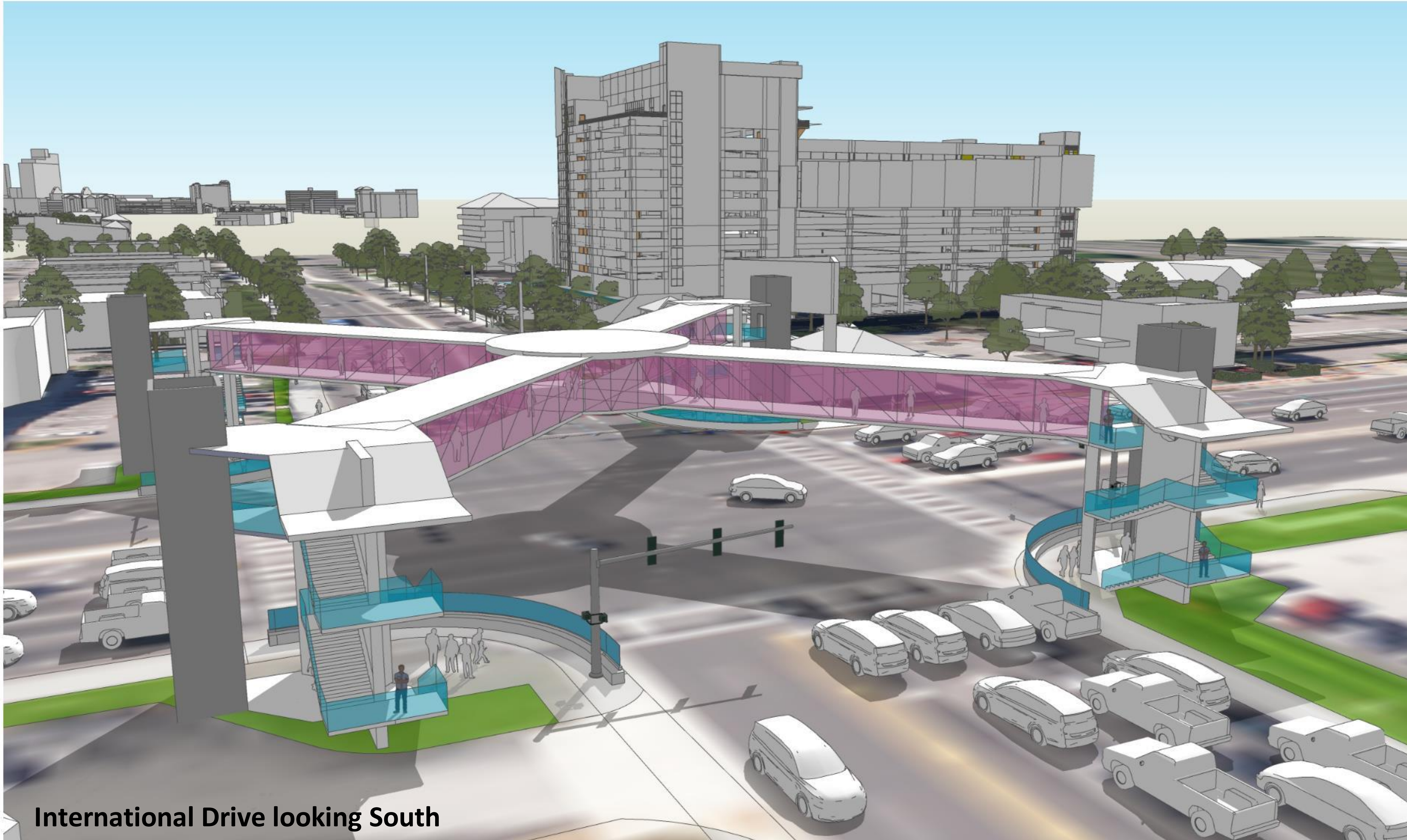
One benefit of this configuration is that the travel distance to every other intersection is exactly the same. The negative of this configuration is that the shorter distances across International drive are actually longer in this design.

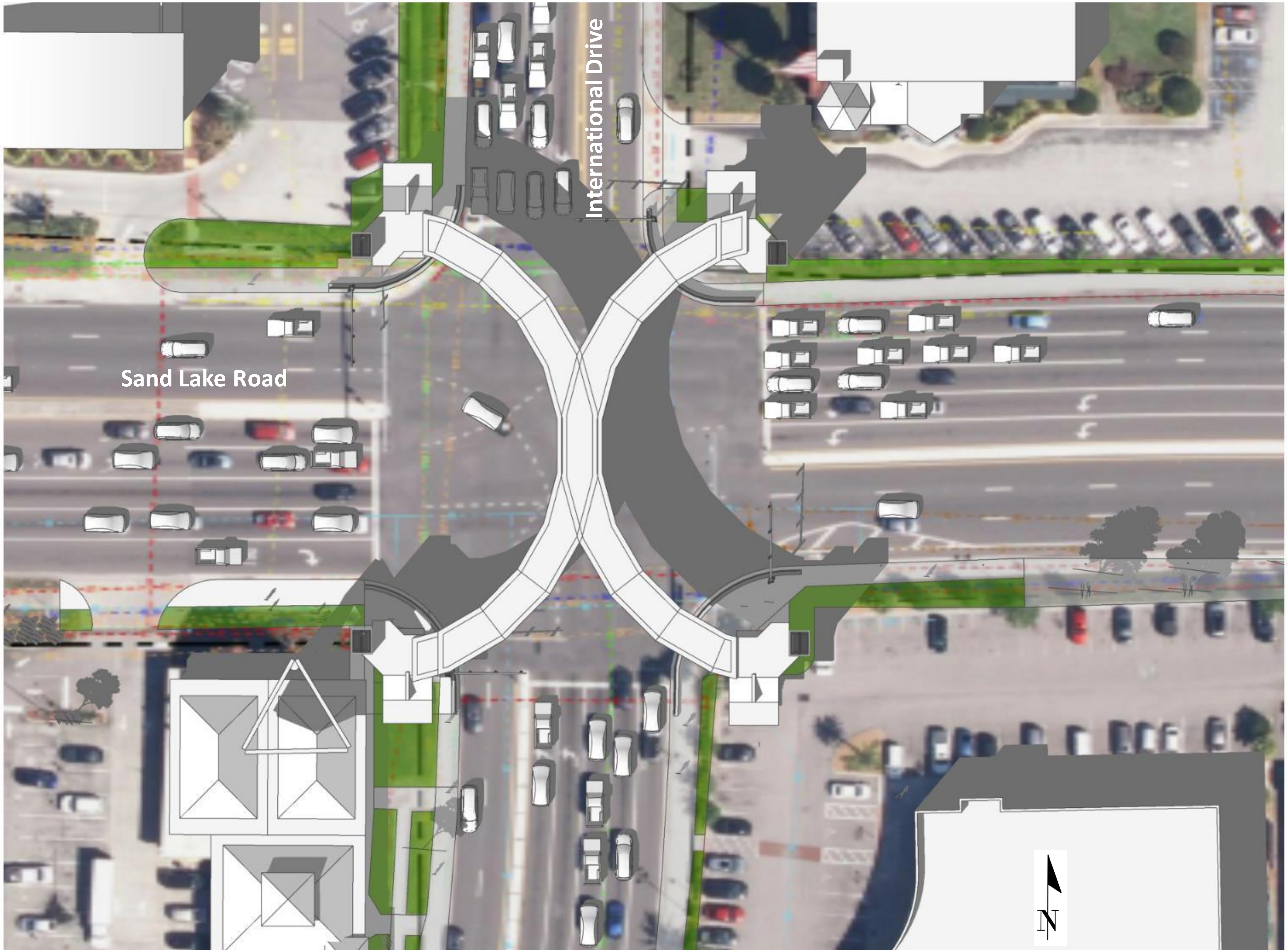
There is an opportunity for a unique feature at the crossing point of the bridge which all users will experience.

The straight bridge sections create a less desirable experience and users have to make a turn at the center section unless they are traveling diagonally across the intersection.

Summary

Average Travel Distance	210'
Bridge Length	420'
Bridge Width	12'-0"


International Drive looking South



Bridge Configuration Intersecting "C" Option

Description

The interlocking "C" Shaped bridge configuration evolved from the "I" configuration. This bridge configuration provides a similar travel distance to all intersections served.

The overall length of the bridge in the Interlocking "C" configuration is the shortest of all options at 395' of length and has one of the shortest average travel distances of the options considered.

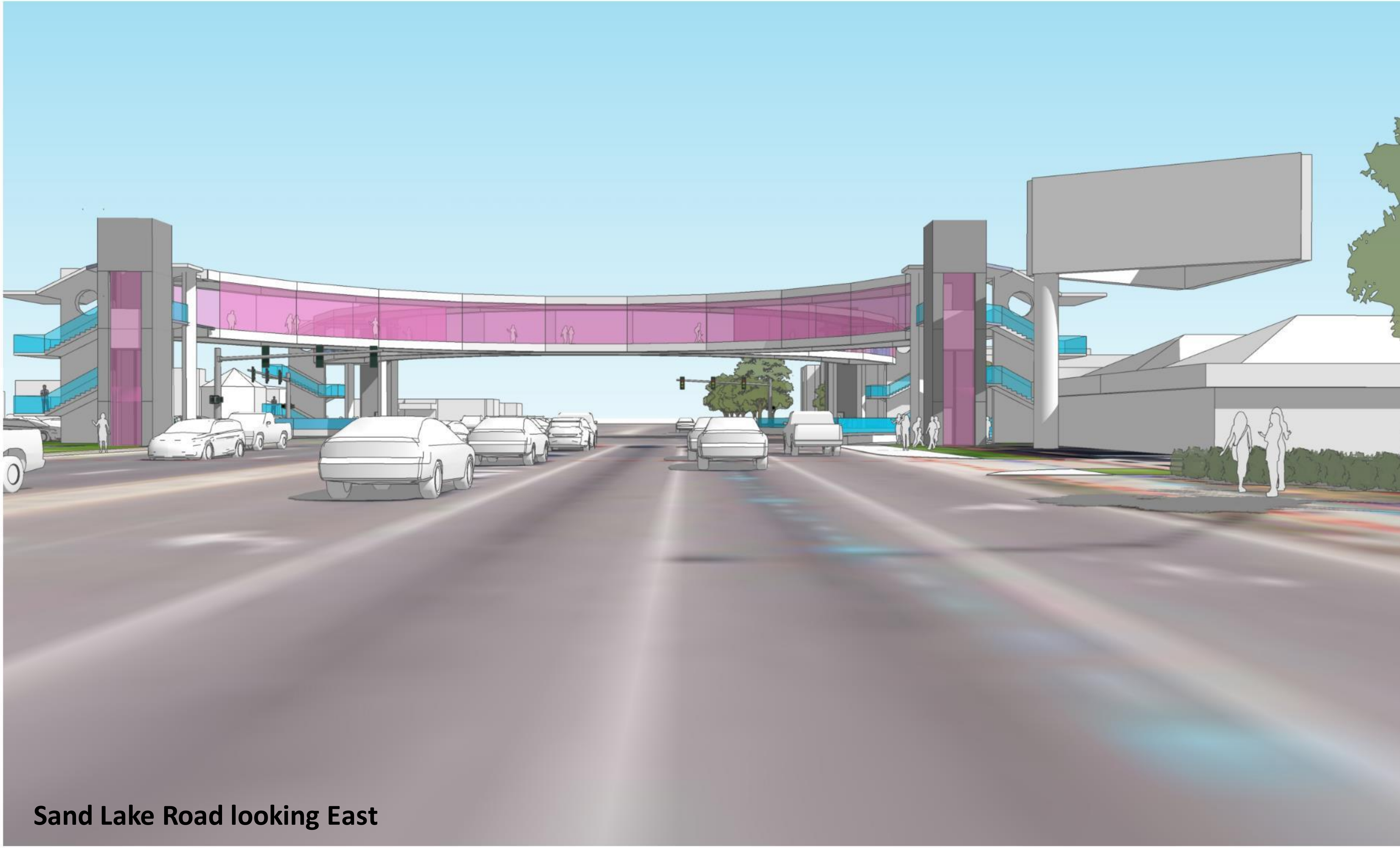
In addition the curved sections add to the crossing experience by limiting the long view across the bridge and maximizing the views to surrounding businesses while the users traverse the bridge.

There is an opportunity for a unique feature at the crossing point of the bridge which all users will experience.

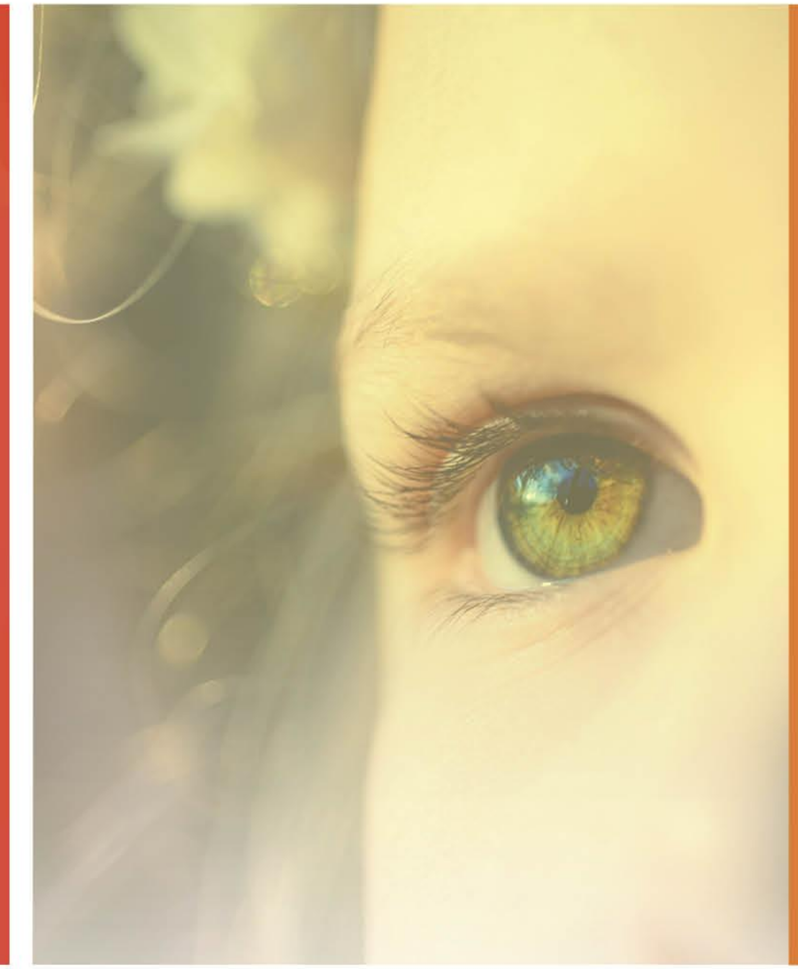
This configuration creates a unique gateway for automobiles from all directions. The effect is different for vehicles on International Drive and Sand Lake Rd.

Summary

Average Travel Distance	205'
Bridge Length	395'
Bridge Width	12'-0"


Sand Lake Road looking East

Public Meeting #2 | **Bridge Configuration – Interlocking "C" Option – Sand Lake Road looking East**



Meeting Number Three

Summary of Findings

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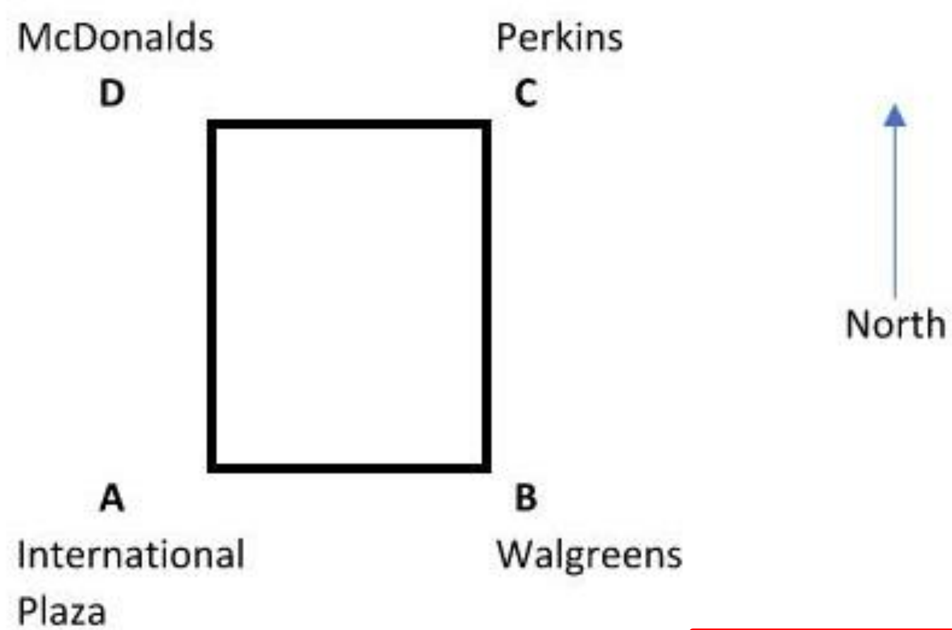
Bridge Configuration Evaluation Matrix
(lower score is higher ranking)

	Travel Dist. Int. A-B	Travel Dist. Int. A-C	Travel Dist. Int. A-D	Avg. Walk Dist.	Rank	Bridge Length	Rank	Total Score	Rank
Square Configuration	126	292	166	195	**1**	584	**5**	**6**	**2**
"X" Configuration	210	210	210	210	**3**	420	**3**	**6**	**2**
Circular Configuration	171	408	272	284	**5**	816	**7**	**12**	**5**
"C" Configuration	171	408	579	386	**6**	579	**4**	**10**	**4**
"I" Configuration	126	276	276	226	**4**	402	**2**	**6**	**2**
Modified "I" Configuration	126	229	229	195	**1**	686	**6**	**7**	**3**
Intersecting "C" Configuration	158	229	229	205	**2**	395	**1**	**3**	**1**

Exist. Crosswalk Distance	
A-B	96'
A-C	259'
A-D	132'
Avg.	162'



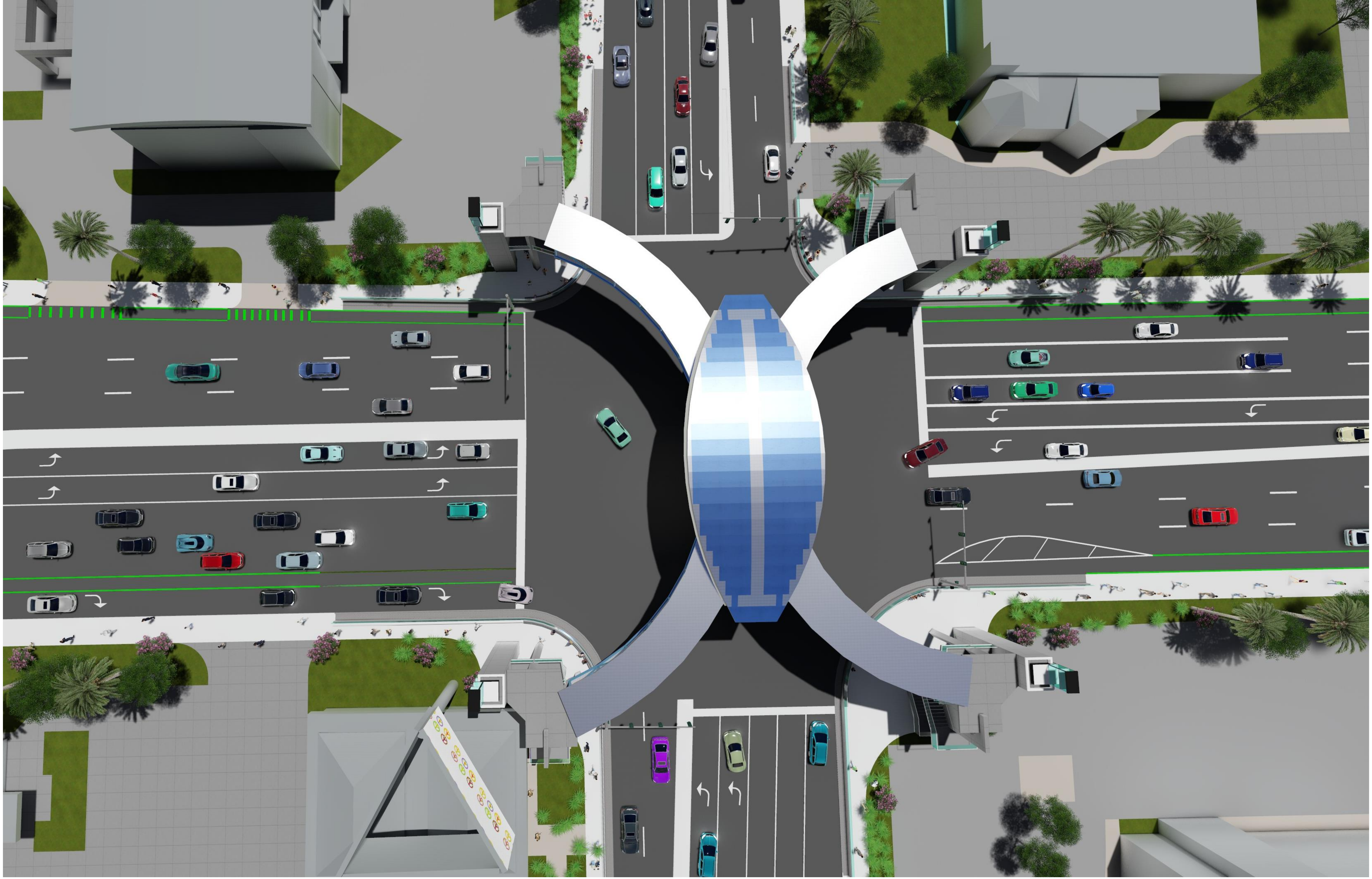
Note:
Distance from A-C is the same as B-D

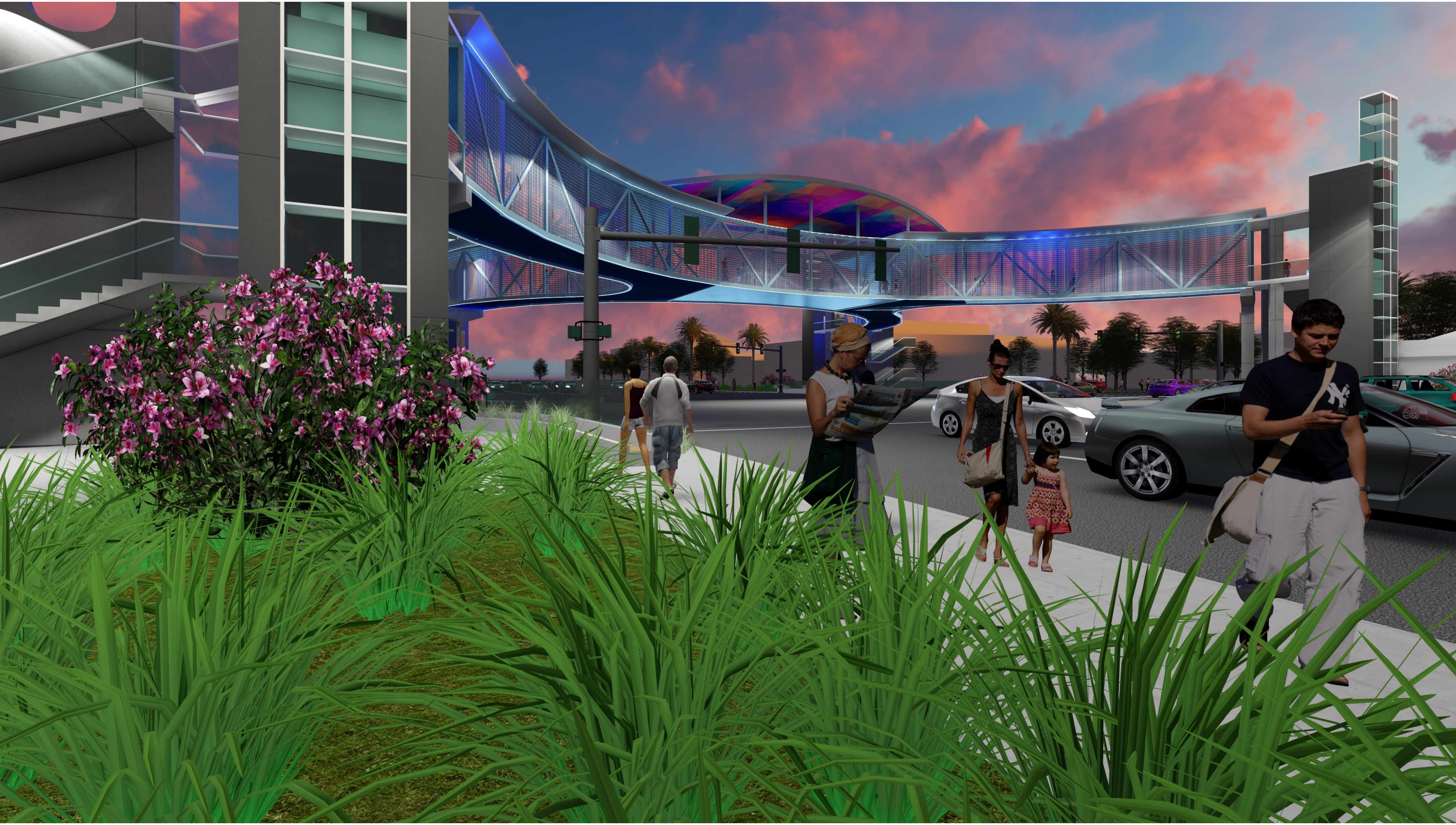
The lowest scoring option is the Intersecting "C" configuration.

Summary

- Curved bridge configurations create a more dynamic visual and a better experience for bridge users.
- Elimination of the crosswalks will increase pedestrian safety and reduce traffic congestion.
- Corner wrapping seat wall/barriers will be required to prevent people from attempting to cross the intersection on grade.
- Bridge configuration has little impact on space required at intersection corners.
- Bridge Configuration Evaluation Matrix shows the “Intersecting C” configuration to be the highest rated option (lowest score).
- We are seeking input from the PAG on the preferred configuration to meet the operational, aesthetic, budget, and iconic gateway criteria.

The Drone Concept





Public Meeting #2 | **"The Drone" Concept – Looking East on Sand Lake Rd.**

ORANGE COUNTY FLORIDA | International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study | #Y20-803-CH

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Public Meeting #2 | "The Drone" Concept – Looking East on Sand Lake Rd

ORANGE COUNTY FLORIDA | International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study | #Y20-803-CH

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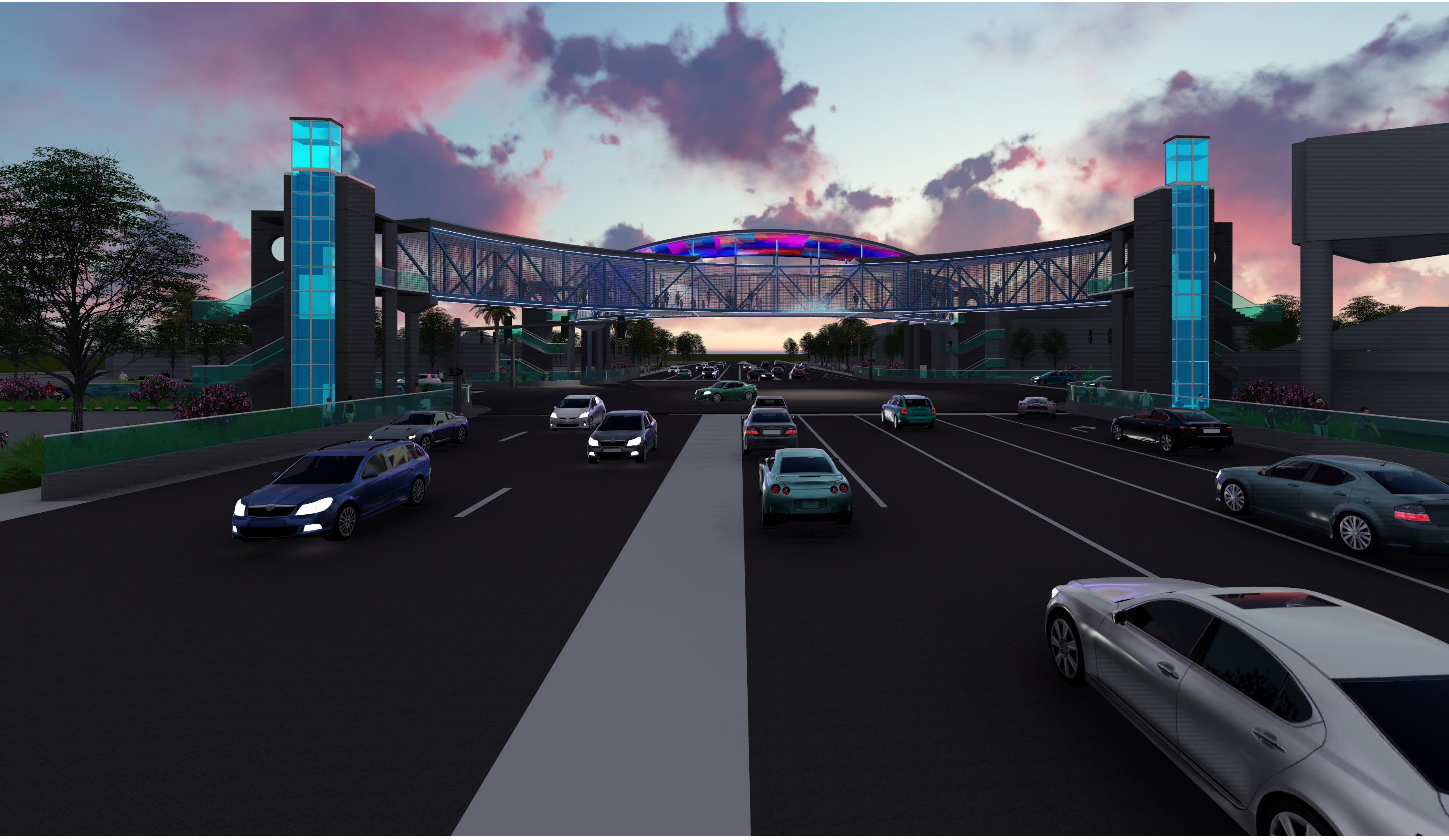

Public Meeting #2 | "The Drone" Concept – Looking East on Sand Lake Rd

ORANGE COUNTY FLORIDA | International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study | #Y20-803-CH

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Public Meeting #2 | **"The Drone" Concept – Looking West on Sand Lake Rd**

Public Meeting #2 | "The Drone" Concept – Looking West on Sand Lake Rd

Public Meeting #2 | "The Drone" Concept – Looking South on International Drive

Public Meeting #2 | "The Drone" Concept – Looking North on International Drive

ORANGE COUNTY FLORIDA | International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study | #Y20-803-CH

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Public Meeting #2 | “The Drone” Concept – Looking South on International Drive

Public Meeting #2 | "The Drone" Concept – Looking South on International Drive

ORANGE COUNTY FLORIDA | International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study | #Y20-803-CH

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Public Meeting #2 | "The Drone" Concept – View Crossing Bridge

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Public Meeting #2 | "The Drone" Concept – View Crossing Bridge

ORANGE COUNTY FLORIDA | International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study | #Y20-803-CH

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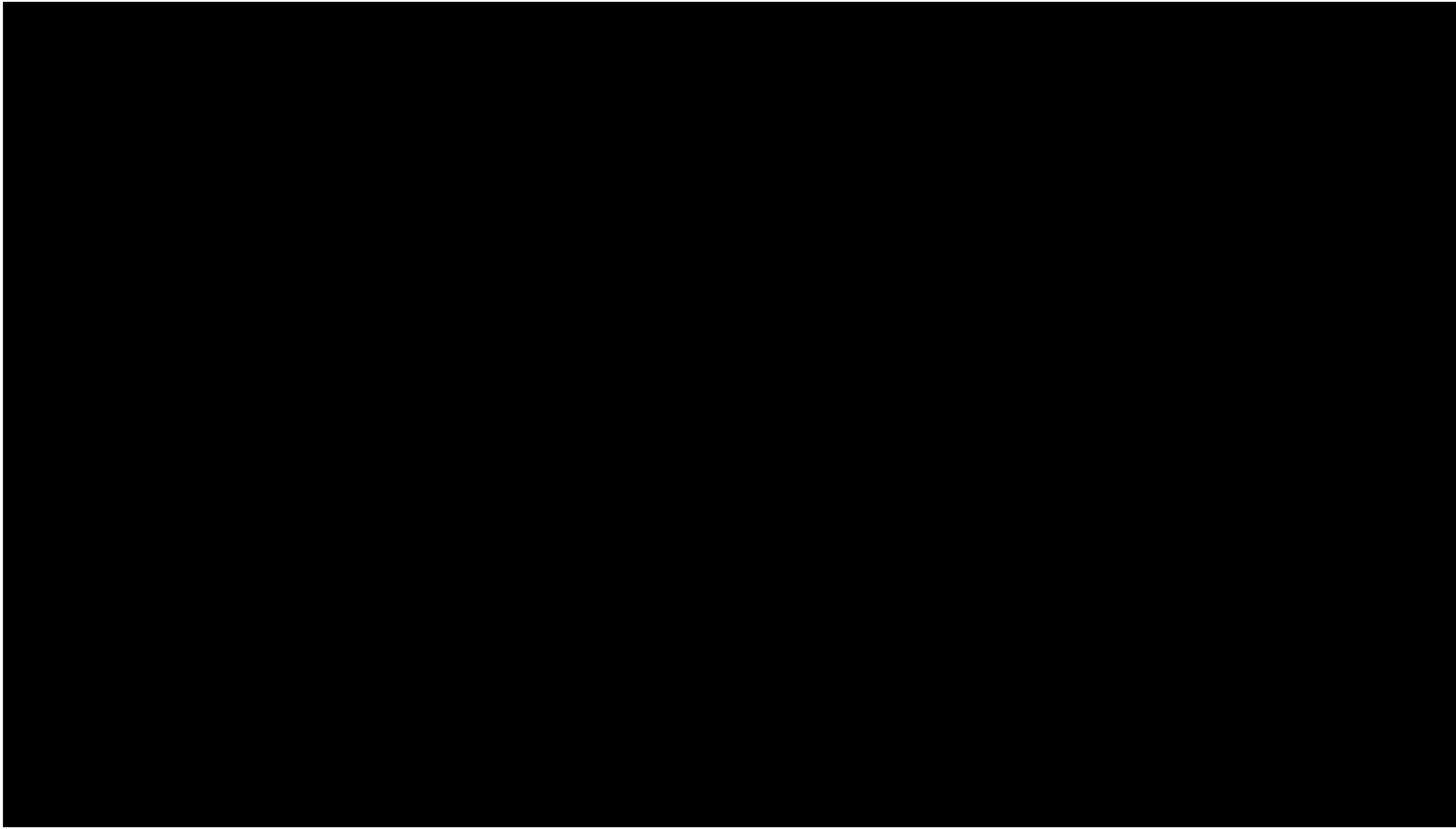


Summary

- Based on Project Advisory Group input we focused on schemes related to the "X" and "Intersecting C" configurations. Both concepts share similar advantages.
- Both schemes share the same vertical circulation elements as determined by analysis of the PAG.
- The resulting designs are both Iconic as they have a unique configuration in plan and unique expressions of form and structure.
- The Drone Scheme was identified as the approved direction to meet the operational, aesthetic, budget, and iconic gateway criteria.

Next Steps

- Finalize negotiations with impacted property owners
- Enter into agreements with adjacent property owners.
- Coordination with FDOT on items impacting bridge
- Complete International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study
- Present Bridge Concept to Orange County Board of County Commissioners for approval.

ORANGE COUNTY GOVERNMENT FLORIDA

International Drive Pedestrian Overpass Analysis and Conceptual Design Study

Recommended Improvement Concepts Meeting
Wednesday, August 2, 2023
Open House - 5:30 p.m.
Presentation - 6:00 p.m.

Sign-in Sheet

Name (please print)	Organization (please print)	Mailing Address (please print)	Email Address/Phone (please print)
Nicole Griffin	Spectrum News 13	N/A	nicole.griffin@charter.com
Michael Beksinski	Herc Rentals		mike.beksinski@hercrentals.com
BRIAN SANDERS	OC TRANS PLAN		
Jeffrey Reyes	OC RESM		
Ilan Gritzman	OC Trans Plan		
Eric Grimmer	Orlando Yimby		e.grimmer@yahoo.com
Catalina Chacon	FDOT		catalina.chacon@dot.state.fl.us

Meeting location: Embassy Suites, 8250 Jamaican Court, Orlando, FL 32819
This sign-in sheet is part of the project record and is available for viewing by the public and media.

ORANGE COUNTY GOVERNMENT FLORIDA

International Drive Pedestrian Overpass Analysis and Conceptual Design Study

Recommended Improvement Concepts Meeting
Wednesday, August 2, 2023
Open House - 5:30 p.m.
Presentation - 6:00 p.m.

Sign-in Sheet

Name (please print)	Organization (please print)	Mailing Address (please print)	Email Address/Phone (please print)
Jaz Arsenault	Self	P.O. box 150639 Altamonte Springs, FL 32715	N/A
Krista Taraszewski	OC Transportation Planning		
Frank Gilbert	Educational Psychologist	3710 Neptune Dr Orlando FL 32804	mtwicker@yahoo.com
Luann Brooks	I-Drive District	7081 Grand NH #105 Orlando 32819	LBROOKS@[illegible]
Marc Belcher	Hilton	6009 Destination Parkway	
Evan Fracasso	Hilton	6009 Destination Pkwy	
Michael Chatham	HHCP/OW	212 E Concord St Orlando FL 32801	mchatham@hhcp.com

Meeting location: Embassy Suites, 8250 Jamaican Court, Orlando, FL 32819
This sign-in sheet is part of the project record and is available for viewing by the public and media.

International Drive Pedestrian Overpass Analysis and Conceptual Design Study

Recommended Improvement Concepts Meeting
Wednesday, August 2, 2023
Open House - 5:30 p.m.
Presentation - 6:00 p.m.

Sign-in Sheet

Name (please print)	Organization (please print)	Mailing Address (please print)	Email Address/Phone (please print)
Chris Mueller	HiLtn		Chris.Mueller@HiLtn.com
[illegible]			
Kent Hipp	Gray Robinson		Kent.Hipp@gray-robinson.com
Evan Collins	Fox 35		evancollins2@fox.com
Craig Swygert	Clear Channel Outdoor		craigswygert@clearchannel.com
Pam Allard	Walgreens		Pam.Allard@walgreens.com
Greg Prieur	Special Ops		

Meeting location: Embassy Suites, 8250 Jamaican Court, Orlando, FL 32819
This sign-in sheet is part of the project record and is available for viewing by the public and media.

International Drive Pedestrian Overpass Analysis and Conceptual Design Study

Recommended Improvement Concepts Meeting
Wednesday, August 2, 2023
Open House - 5:30 p.m.
Presentation - 6:00 p.m.

Sign-in Sheet

Name (please print)	Organization (please print)	Mailing Address (please print)	Email Address/Phone (please print)
Ryan Flipse	FDOT	420 Lakehurst Rd Orlando, Fl 32839	ryan.flipse@dot.state.fl.us
SETA KOROITAMUDU	"	"	SETA.KOROITAMUDU@DOT.STATE.FL.US
Hatem Aguib	FDOT		
Heather Grimm			heather-grimm@yahoo.com
DAVID PACCOTINS	Telemundo		

Meeting location: Embassy Suites, 8250 Jamaican Court, Orlando, FL 32819
This sign-in sheet is part of the project record and is available for viewing by the public and media.

ORANGE COUNTY GOVERNMENT FLORIDA

PUENTE PEATONAL "INTERNATIONAL DRIVE"
ANÁLISIS Y ESTUDIO DE DISEÑO CONCEPTUAL

Página de Firma

Reunión de la Comunidad
Miércoles, Agosto 2, 2023
5:30 p.m. Puertas Abiertas
6 p.m. Presentación

Nombre (por favor usar letra de imprenta)	Organización (por favor usar letra de imprenta)	Dirección de Correo Postal (por favor usar letra de imprenta)	Dirección de Correo Electrónico/Teléfono (por favor usar letra de imprenta)
Chris Krul	Spectrum News 13	N/A	ckrul1@hotmail.com
IAN PAYNES	OC TransPlan		
Rick Vallier	Orange County		
Todd Alexander	FDOT		todd.alexander@dot.state.fl.us
PALADIN	ORANGE		HAVEWHEELCHAIR WILLTRAVEL @ GMAIL
Chris Mueller	Hilton		
Deonte Moore	Orange County		district6@ocfl.net

Embassy Suites, 8250 Jamaican Court, Orlando, FL 32819

Esta página de firma es parte del registro del proyecto y está disponibles para que el público y los medios lo vean.

David E Bottomley

michamocha18@yahoo.com

Exodus 15:11
Micah 6:8

Orlando Florida

International Drive Pedestrian Overpass Analysis and Conceptual Design Study

Public Comment Form

Name Eric Grimmer

Phone 856-938-6072

Address 574 Terrace Spring Dr.

City Orlando State FL Zip Code 32828

☑ Check here to be added to the project mailing list.

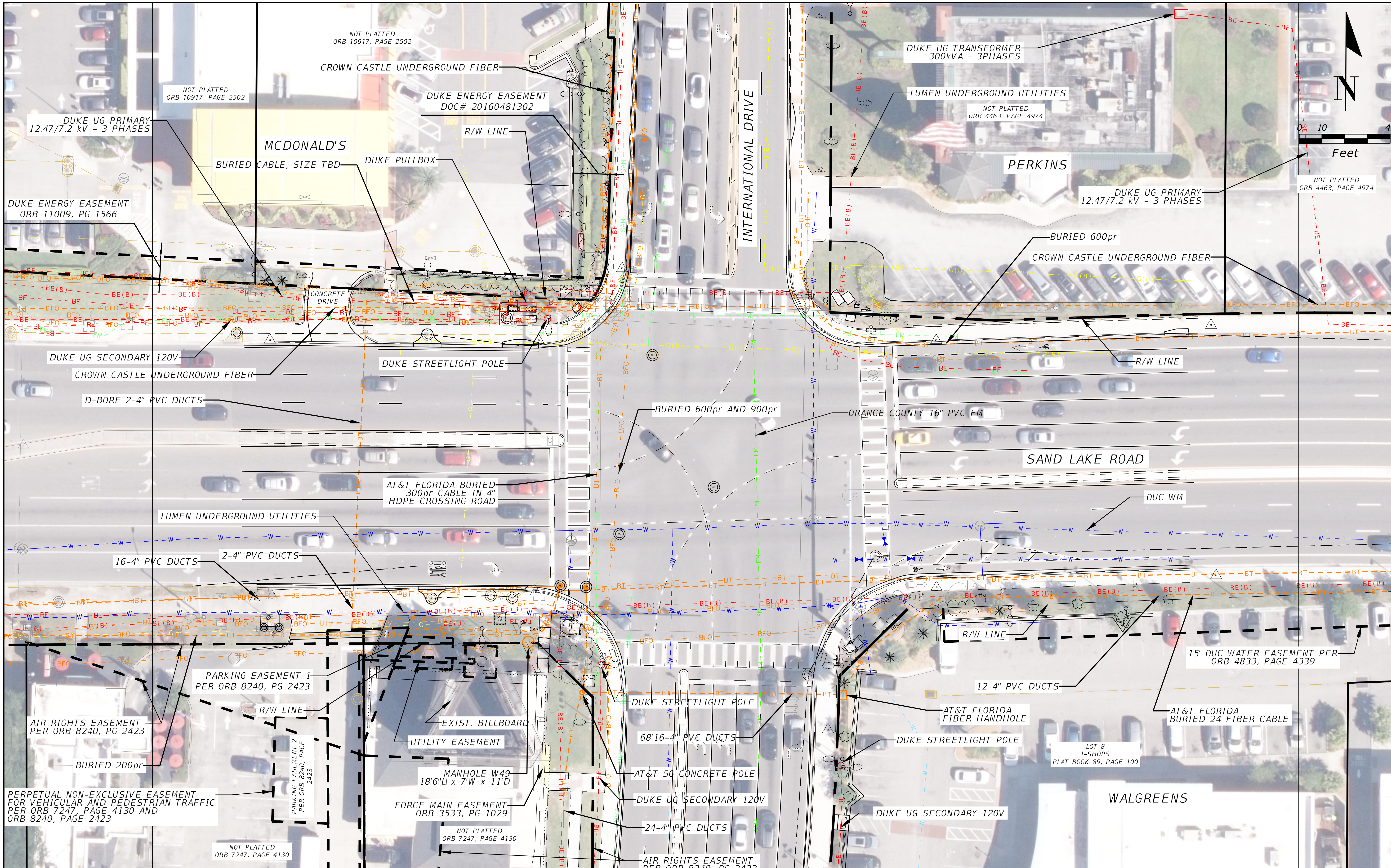
Please use this comment form to express your opinions regarding the pedestrian overpass at the intersection of International Drive and Sand Lake Road. You can leave your completed form in the comment box at this meeting, with a member of the project team today or mail it, postmarked Wednesday, August 16, 2023, to the address below. All comments are part of the project record and are available for viewing by the public and media.

Comments: Pedestrian bridges are an expensive and ineffective way to rectify the dangerous roadways in the conty, for pedostrians and drivers. Bridges are car centric infrastructure that inconveniences pedestrians in order to preserve the speed of cars. They are inconsistent with the tenants of Vision 2050, which repeatedly talks about building places for people and not cars. Pedestrian bridges are for cars. They are also inconsistent with the County's ~~[illegible]~~ Vision Zero pledge because they are meant to preserve the speed of cars which contributes to the seriousness of crashes. They are out of touch with the complete streets approach necessary to achieve vision zero goals and show that the county has not undergone the necessary mind shift to achieve Vision Zero.

Please mail comment form to:
Ms. Blanche Hardy, P.G.
Project Manager, Transportation Planning Division
Orange County Planning, Environmental & Development Services Dept.
4200 South John Young Pkwy
Orlando, FL 32839
Email: blanche.hardy@ocfl.net
Phone: 407-836-0257

Recommended Improvement Concept Meeting
Wednesday, August 2, 2023
Open House - 5:30 p.m.
Presentation - 6:00 p.m.
Embassy Suites
8250 Jamaican Court, Orlando, FL 32819

APPENDIX D
UTILITY INFORMATION
(Electronic Only)



REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

HHCP&AVCON
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ORANGE COUNTY GOVERNMENT FLORIDA

I-DRIVE PEDESTRIAN BRIDGE
UTILITIES EXHIBIT

SHEET NO.

Finney, Sue

From: Johnson, Nick
Sent: Tuesday, March 29, 2022 10:23 AM
To: REYNOLDS, ALAN; relocations@lumen.com; NationalRelo@centurylink.com; CentralFloridaRoadMoves_CTL@centurylink.com; Level3 Network Relocations; Tynes, Ronald B; Usry Jr., Marvin L; Domostoy, Tracey E; CENFLR-LAC_Construction@comcast.com; Fiber Dig Facilities; DEFDistributionGOV; DEFTransmissionGOV@Duke-Energy.com; john.mcneil@verizon.com; investigations@verizon.com; bryan.lantz@verizon.com; Christina.Crosby@ocfl.net; Development Services; David Cawley; Shawn Winsor; JDomning@tecoenergy.com; henry.klobucar@zayo.com; permit@summit-broadband.com
Cc: Pletzer, Clint_P.E.; Baldocchi, Rick_P.E.; Harper, Anthony
Subject: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments
Attachments: Initial Utility Contact Letter.pdf; EXHIBIT 01 (02.22.22).pdf

Tracking:

Recipient	Delivery
REYNOLDS, ALAN	
relocations@lumen.com	
NationalRelo@centurylink.com	
CentralFloridaRoadMoves_CTL@centurylink.com	
Level3 Network Relocations	
Tynes, Ronald B	
Usry Jr., Marvin L	
Domostoy, Tracey E	
CENFLR-LAC_Construction@comcast.com	
Fiber Dig Facilities	
DEFDistributionGOV	
DEFTransmissionGOV@Duke-Energy.com	
john.mcneil@verizon.com	
investigations@verizon.com	
bryan.lantz@verizon.com	
Christina.Crosby@ocfl.net	
Development Services	
David Cawley	
Shawn Winsor	
JDomning@tecoenergy.com	
henry.klobucar@zayo.com	
permit@summit-broadband.com	
Pletzer, Clint_P.E.	Delivered: 3/29/2022 10:23 AM
Baldocchi, Rick_P.E.	Delivered: 3/29/2022 10:23 AM
Harper, Anthony	Delivered: 3/29/2022 10:23 AM

Re: I-Drive Pedestrian Bridge Study
International Drive and Sand Lake Road

Utility Coordination and Adjustments

To Whom It May Concern:

The HHCP/AVCON Joint Venture has been retained by Orange County to perform a Conceptual Study to evaluate the potential of putting a pedestrian overpass at the intersection of International Drive and Sand Lake Road in Orlando, FL. The proposed structure will connect all four corners of the intersection for pedestrian and bicycle traffic.

The purpose of the study is to evaluate the impacts of the overpass on traffic along the roadways and through the intersection, and determine impacts on drainage, lighting, crosswalks, signage, signalization, and existing utilities.

To assist us in identifying any potential conflicts between the proposed design improvements and the existing utilities located within the project limits, please review existing intersection configuration exhibit. Please use this exhibit to identify any utilities your agency may have within the project limits so that we can coordinate any possible conflicts that may need to be adjusted or addressed by possible relocation or avoidance.

We will request that each utility provide marked plans highlighting their facilities within 500 feet of the intersection. Additionally, a utility coordination meeting will be scheduled to review preliminary design and any potential conflicts.

Your cooperation in this matter is greatly appreciated. Please feel free to contact us at your convenience if you have any questions regarding this matter.

Sincerely,

Nick Johnson, E.I.
Engineer | AVCON, INC.

AVCON

Transforming Today's Ideas into Tomorrow's Reality

Engineers & Planners
5555 E. Michigan Street, Suite 200
Orlando, Florida 32822
Office: 407.599.1122
Fax: 407.599.1133
NJohnson@avconinc.com

www.avconinc.com

AVCON, INC.
ENGINEERS & PLANNERS

5555 E. Michigan St., Suite 200
Orlando, FL 32822-2779
Phone: (407) 599-1122
Fax (407) 599-1133
www.avconinc.com

March 28, 2022

Re: I-Drive Pedestrian Bridge Study
International Drive and Sand Lake Road
Utility Coordination and Adjustments

To Whom It May Concern:

The HHCP/AVCON Joint Venture has been retained by Orange County to perform a Conceptual Study to evaluate the potential of putting a pedestrian overpass at the intersection of International Drive and Sand Lake Road in Orlando, FL. The proposed structure will connect all four corners of the intersection for pedestrian and bicycle traffic.

The purpose of the study is to evaluate the impacts of the overpass on traffic along the roadways and through the intersection, and determine impacts on drainage, lighting, crosswalks, signage, signalization and existing utilities.

In order to assist us in identifying any potential conflicts between the proposed design improvements and the existing utilities located within the project limits, please review existing intersection configuration exhibit. Please use this exhibit to identify any utilities your agency may have within the project limits so that we can coordinate any possible conflicts that may need to be adjusted or addressed by possible relocation or avoidance.

Our firm looks forward to working closely with your staff to resolve any issues that may arise relative to existing utilities, or potential planned utility upgrades your agency may be planning. Please address all correspondence in writing to AVCON to the address provided. Please contact AVCON staff regarding all project correspondence. We look forward to working with you in this endeavor.

Suitable arrangements must be made between your Agency and Orange County to coordinate the disposition of all facilities and to schedule any type of relocation or adjustment work within the right-of-way and/or easements as necessitated by the proposed construction. Also, please note that portions of this project will be constructed within the public right-of-way where relocation of your facilities may not be eligible for reimbursement.

We will request that each utility provide marked plans highlighting their facilities within 500 feet of the intersection. Additionally, a utility coordination meeting will be scheduled to review preliminary design and any potential conflicts.

Your cooperation in this matter is greatly appreciated. Please feel free to contact me at your convenience if you have any questions regarding this matter. I can be reached at 407-599-1122, or by e-mail at njohnson@avconinc.com.

Sincerely,
Nick Johnson, E.I.

AVCON, Inc

Cc: Clint Pletzer, P.E.- AVCON

Additional Attachments: (1) PDF of Preliminary Plans to be retained for your records

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HHCP&AVCON
A JOINT VENTURE

ORANGE COUNTY GOVERNMENT FLORIDA

INTERNATIONAL DRIVE AT SAND LAKE ROAD PEDESTRIAN OVERPASS EXHIBIT

SHEET NO.

Finney, Sue

From: REYNOLDS, ALAN <ar2916@att.com>
Sent: Tuesday, March 29, 2022 12:46 PM
To: Johnson, Nick
Cc: Pletzer, Clint_P.E.; Baldocchi, Rick_P.E.; Harper, Anthony
Subject: RE: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments
Attachments: SR482 RGBs - 407143-4.pdf

Nick,
Attached is a RGB markup from a recent project at this intersection. It should give you a good idea of the AT&T Florida facilities at this location.
Let me know if you have any questions.
Thanks,

Alan Reynolds
Manager OSP Plng & Eng Design
ACE- East Region, Florida Construction & Engineering

AT&T
5100 Steyr St Orlando, Fl. 32819
O: 407-351-8180
M: 352-442-1106 / ar2916@att.com

- ***All correspondence and coordination herein is with regards to BellSouth Telecommunications, LLC d/b/a AT&T Florida (ATT-D) which is not responsible for facilities owned and managed by AT&T Corp (ATT-T). Any questions with regards to ATT-T facilities should be addressed to Inquiries@pea-inc.net***

From: Johnson, Nick <njohnson@avconinc.com>
Sent: Tuesday, March 29, 2022 10:23 AM
To: REYNOLDS, ALAN <ar2916@att.com>; relocations@lumen.com; NationalRelo@centurylink.com; CentralFloridaRoadMoves_CTL@centurylink.com; Level3 Network Relocations <Relo@centurylink.com>; Tynes, Ronald B <Ronald.Tynes@charter.com>; Usry Jr., Marvin L <marvin.usryjr@charter.com>; Domostoy, Tracey E <Tracey.Domostoy@charter.com>; CENFLR-LAC_Construction@comcast.com; Fiber Dig Facilities <Fiber.dig@crowncastle.com>; DEFDistributionGOV <DEFDistributionGOV@duke-energy.com>; DEFTransmissionGOV@Duke-Energy.com; john.mcneil@verizon.com; investigations@verizon.com; bryan.lantz@verizon.com; Christina.Crosby@ocfl.net; Development Services <DevelopmentServices@ouc.com>; David Cawley <DCawley@smartcity.com>; Shawn Winsor <SWinsor@tecoenergy.com>; JDomning@tecoenergy.com; henry.klobucar@zayo.com; permit@summit-broadband.com
Cc: Pletzer, Clint_P.E. <cpletzer@avconinc.com>; Baldocchi, Rick_P.E. <rbaldocchi@avconinc.com>; Harper, Anthony <aharper@avconinc.com>
Subject: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments

Re: I-Drive Pedestrian Bridge Study

International Drive and Sand Lake Road
Utility Coordination and Adjustments

To Whom It May Concern:

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Sincerely,

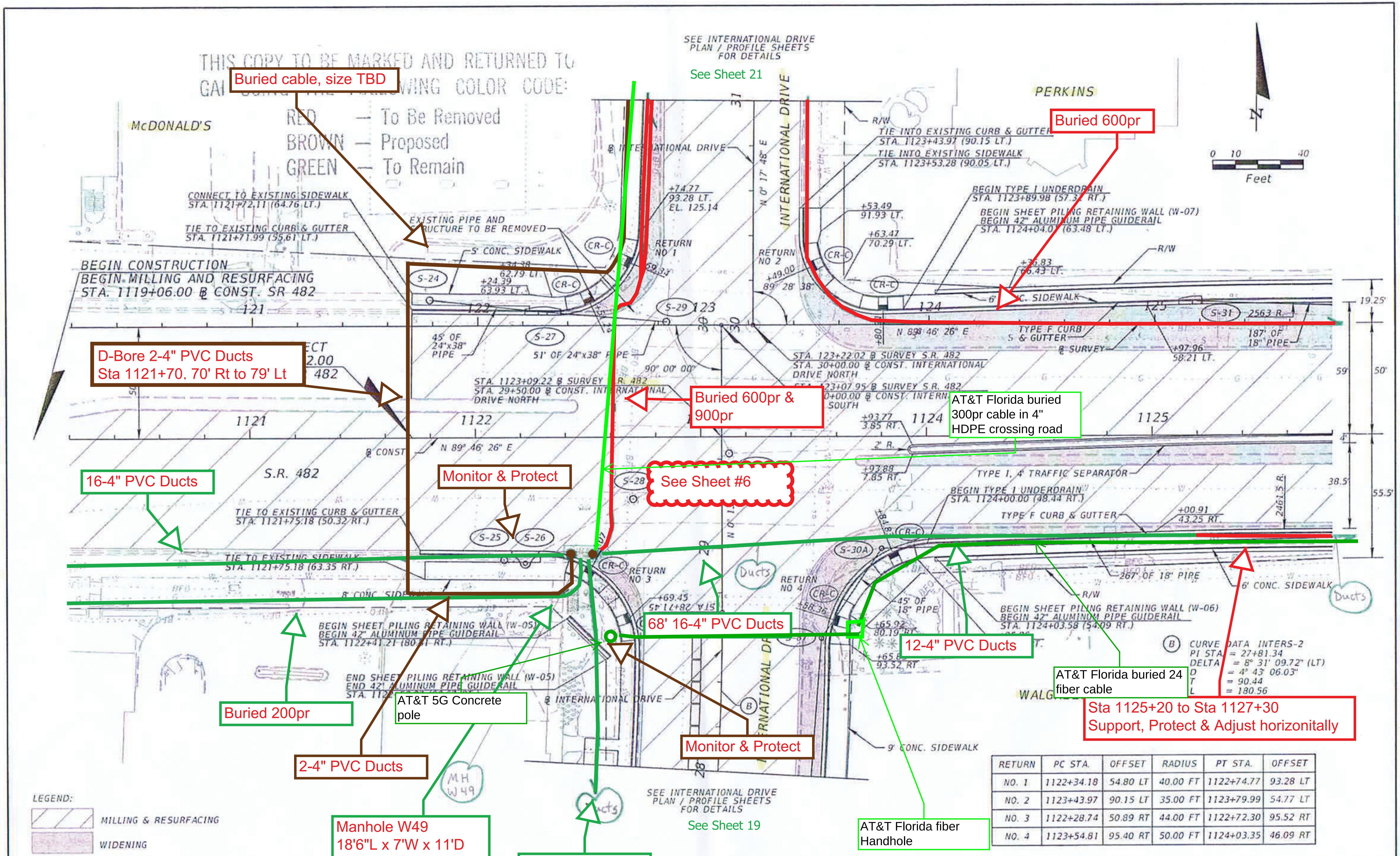
Nick Johnson, E.I.
Engineer | AVCON, INC.

AVCON

Transforming Today's Ideas into Tomorrow's Reality

Engineers & Planners
5555 E. Michigan Street, Suite 200
Orlando, Florida 32822
Office: 407.599.1122
Fax: 407.599.1133
NJohnson@avconinc.com

www.avconinc.com



RETURN	PC STA.	OFFSET	RADIUS	PT STA.	OFFSET
NO. 1	1122+34.18	54.80 LT	40.00 FT	1122+74.77	93.28 LT
NO. 2	1123+43.97	90.15 LT	35.00 FT	1123+79.99	54.77 LT
NO. 3	1122+28.74	50.89 RT	44.00 FT	1122+72.30	95.52 RT
NO. 4	1123+54.81	95.40 RT	50.00 FT	1124+03.35	46.09 RT

Phase III Plans/ UAO Designate

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

1650 Prudential Drive, Suite 400
Jacksonville, Florida 32207
T: 904 721 2991 | F: 904 861 2450
Certificate of Authorization No. 7917
Gene Howerton, PE | No. 43992

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 482	ORANGE	407143-4-52-01

PLAN
STA. 1120+20.00 TO STA. 1125+80.00

SHEET NO. 6

Finney, Sue

From: Ross, Timothy J <Timothy.Ross@charter.com>
Sent: Wednesday, June 22, 2022 1:47 PM
To: Johnson, Nick
Cc: Smith, John D; Domostoy, Tracey E; McGregor, David N
Subject: RE: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments
Attachments: SPECTRUM - GREENLINE 6-22-22.pdf

Nick,

Here is map for your use.

Tim

From: Johnson, Nick <njohnson@avconinc.com>
Sent: Wednesday, June 22, 2022 8:41 AM
To: Ross, Timothy J <Timothy.Ross@charter.com>
Subject: [EXTERNAL] I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments

Re: I-Drive Pedestrian Bridge Study
International Drive and Sand Lake Road
Utility Coordination and Adjustments

To Whom It May Concern:

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Sincerely,

Nick Johnson, E.I.
Engineer | AVCON, INC.

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5555 E. Michigan Street, Suite 200
Orlando, Florida 32822
Office: 407.599.1122
Fax: 407.599.1133
NJohnson@avconinc.com

www.avconinc.com

From: Johnson, Nick
Sent: Friday, April 22, 2022 10:37 AM
To: Domostoy, Tracey E <Tracey.Domostoy@charter.com>; Tynes, Ronald B <Ronald.Tynes@charter.com>
Subject: FW: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments

Good Morning,

Just following up on this coordination email, we've sent multiple projects out recently so this one may have been lost in the shuffle. It's also possible we missed the email response on our end. Can you please review the project limits and let us know if you have any facilities?

Also, we received a bounce back email from marvin.usryjr@charter.com saying the address was rejected, are either of you aware of an updated email/contact?

Sincerely,

Nick Johnson, E.I.
Engineer | AVCON, INC.

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Orlando, Florida 32822
Office: 407.599.1122
Fax: 407.599.1133
NJohnson@avconinc.com

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From: Johnson, Nick
Sent: Tuesday, March 29, 2022 10:23 AM
To: REYNOLDS, ALAN <ar2916@att.com>; relocations@lumen.com; NationalRelo@centurylink.com; CentralFloridaRoadMoves_CTL@centurylink.com; Level3 Network Relocations <Relo@centurylink.com>; Tynes, Ronald B <Ronald.Tynes@charter.com>; Usry Jr., Marvin L <marvin.usryjr@charter.com>; Domostoy, Tracey E <Tracey.Domostoy@charter.com>; CENFLR-LAC_Construction@comcast.com; Fiber Dig Facilities <Fiber.dig@crowncastle.com>; DEFDistributionGOV <DEFDistributionGOV@duke-energy.com>; DEFTransmissionGOV@Duke-Energy.com; john.mcneil@verizon.com; investigations@verizon.com; bryan.lantz@verizon.com; Christina.Crosby@ocfl.net; Development Services <DevelopmentServices@ouc.com>; David Cawley <DCawley@smartcity.com>; Shawn Winsor <SWinsor@tecoenergy.com>; JDomning@tecoenergy.com; henry.klobucar@zayo.com; permit@summit-broadband.com
Cc: Pletzer, Clint_P.E. <CPletzer@AVCONINC.com>; Baldocchi, Rick_P.E. <rbaldocchi@avconinc.com>; Harper, Anthony <aharper@avconinc.com>
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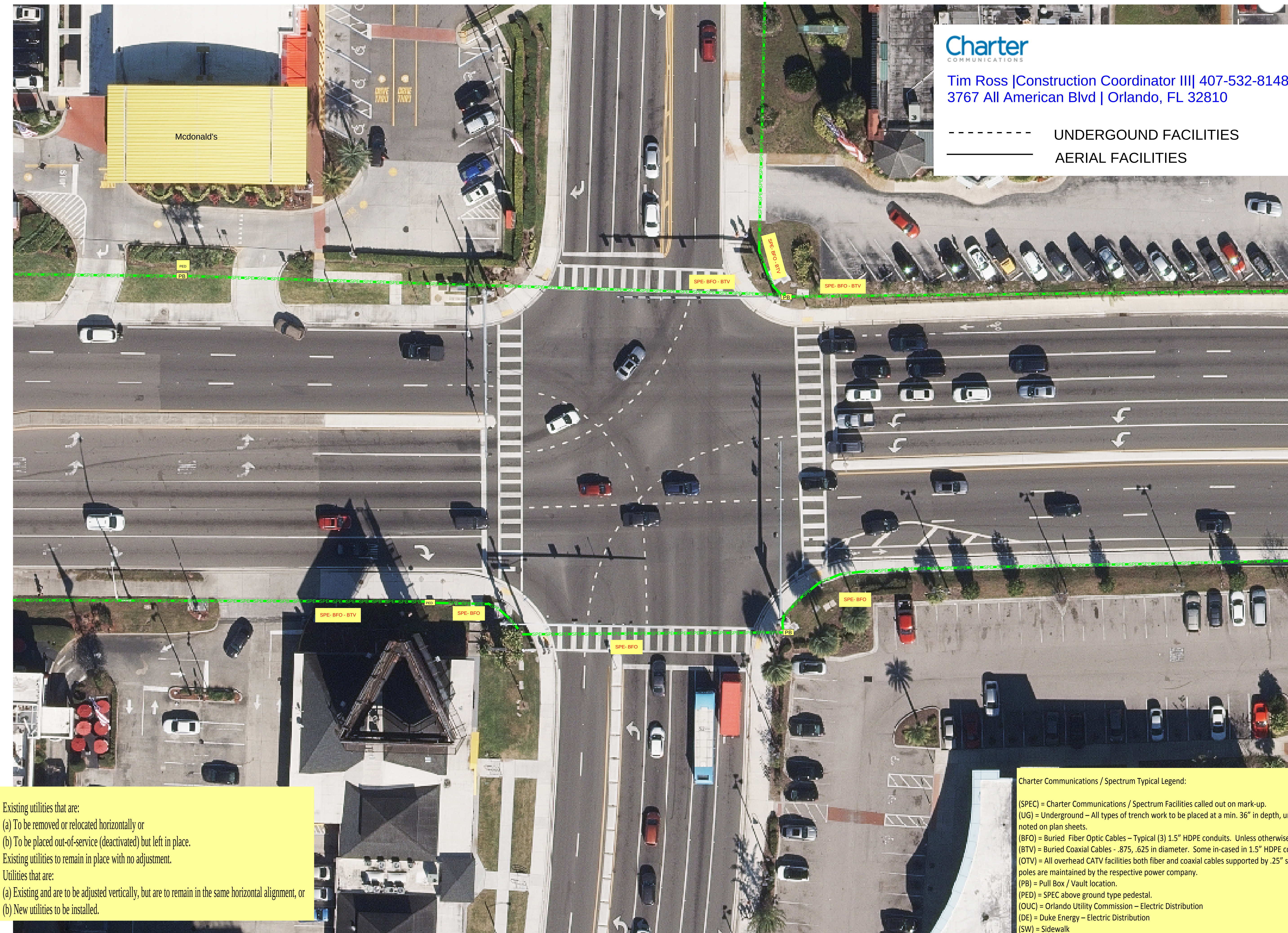

Red: Existing utilities that are:
(a) To be removed or relocated horizontally or
(b) To be placed out-of-service (deactivated) but left in place.
Green: Existing utilities to remain in place with no adjustment.
Brown: Utilities that are:
(a) Existing and are to be adjusted vertically, but are to remain in the same horizontal alignment, or
(b) New utilities to be installed.

Charter Communications / Spectrum Typical Legend:

(SPEC) = Charter Communications / Spectrum Facilities called out on mark-up.
(UG) = Underground – All types of trench work to be placed at a min. 36" in depth, unless otherwise noted on plan sheets.
(BFO) = Buried Fiber Optic Cables – Typical (3) 1.5" HDPE conduits. Unless otherwise noted on mark-up.
(BTV) = Buried Coaxial Cables - .875, .625 in diameter. Some in-cased in 1.5" HDPE conduit.
(OTV) = All overhead CATV facilities both fiber and coaxial cables supported by .25" strand. All power poles are maintained by the respective power company.
(PB) = Pull Box / Vault location.
(PED) = SPEC above ground type pedestal.
(OUC) = Orlando Utility Commission – Electric Distribution
(DE) = Duke Energy – Electric Distribution
(SW) = Sidewalk

Finney, Sue

From: Osebold, Thomas <Scott_Osebold@comcast.com>
Sent: Tuesday, June 7, 2022 10:52 AM
To: Johnson, Nick; Rivera, Cesar; Sweeny, Andrew
Subject: RE: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments
Attachments: EXHIBIT 01 (02.22.22).pdf

See attached mark up

From: Johnson, Nick <njohnson@avconinc.com>
Sent: Thursday, May 19, 2022 8:20 AM
To: Osebold, Thomas <Scott_Osebold@cable.comcast.com>; Rivera, Cesar <Cesar_Rivera@cable.comcast.com>; Sweeny, Andrew <ANDREW_SWEENEY@comcast.com>
Subject: [EXTERNAL] FW: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments

Re: I-Drive Pedestrian Bridge Study
International Drive and Sand Lake Road
Utility Coordination and Adjustments

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5555 E. Michigan Street, Suite 200
Orlando, Florida 32822
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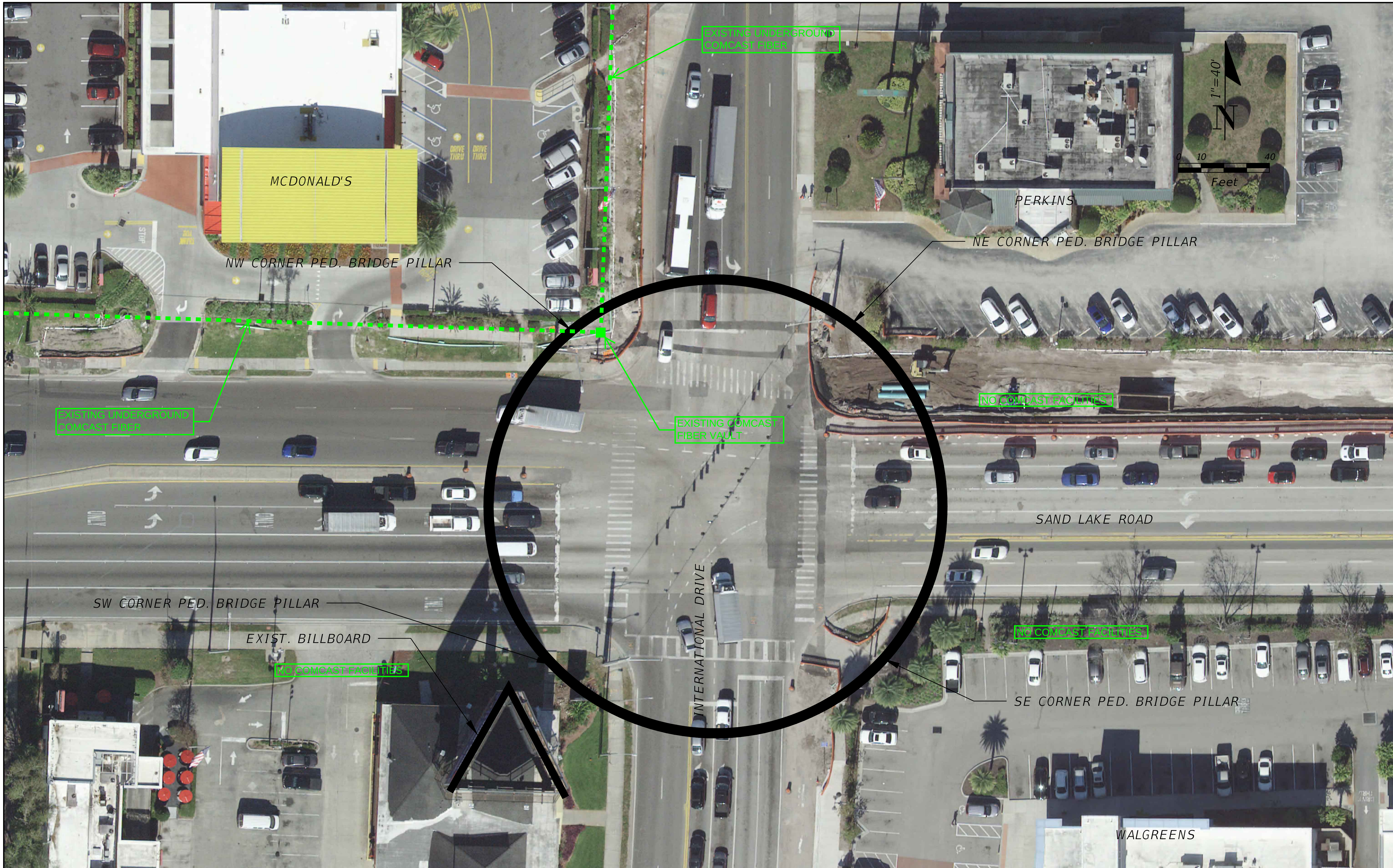
Fax: 407.599.1133
NJohnson@avconinc.com

www.avconinc.com



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HHCP&AVCON
A JOINT VENTURE

ORANGE COUNTY GOVERNMENT FLORIDA

INTERNATIONAL DRIVE AT SAND LAKE ROAD PEDESTRIAN OVERPASS EXHIBIT

SHEET NO.

Finney, Sue

From: Klinefelter, Kelly <Kelly.Klinefelter@crowncastle.com>
Sent: Friday, April 8, 2022 10:56 PM
To: Johnson, Nick
Subject: RE: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments
Attachments: 0015580-I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments.docx

Hello Nick,

With doing our review, Crown Castle's fiber facilities/equipment ARE PRESENT within this project's work area. (Please see attachment)

If there are any questions or concerns, do follow up with us.

Sincerely,

Kelly Klinefelter
Utility Coordinator Fiber Records – 811 Services
T: 724-743-6085

CROWN CASTLE
1500 Corporate Dr, Canonsburg, PA 15317
CrownCastle.com

Fiber.Dig@crowncastle.com
T: 1-800-654-3110

From: Johnson, Nick <njohnson@avconinc.com>
Sent: Tuesday, March 29, 2022 10:23 AM
To: REYNOLDS, ALAN <ar2916@att.com>; relocations@lumen.com; NationalRelo@centurylink.com; CentralFloridaRoadMoves_CTL@centurylink.com; Level3 Network Relocations <Relo@centurylink.com>; Tynes, Ronald B <Ronald.Tynes@charter.com>; Usry Jr., Marvin L <marvin.usryjr@charter.com>; Domostoy, Tracey E <Tracey.Domostoy@charter.com>; CENFLR-LAC_Construction@comcast.com; Fiber Dig Facilities <Fiber.dig@crowncastle.com>; DEFDistributionGOV <DEFDistributionGOV@duke-energy.com>; DEFTransmissionGOV@Duke-Energy.com; john.mcneil@verizon.com; investigations@verizon.com; bryan.lantz@verizon.com; Christina.Crosby@ocfl.net; Development Services <DevelopmentServices@ouc.com>; David Cawley <DCawley@smartcity.com>; Shawn Winsor <SWinsor@tecoenergy.com>; JDomning@tecoenergy.com; henry.klobucar@zayo.com; permit@summit-broadband.com
Cc: Pletzer, Clint_P.E. <cpletzer@avconinc.com>; Baldocchi, Rick_P.E. <rbaldocchi@avconinc.com>; Harper, Anthony <aharper@avconinc.com>
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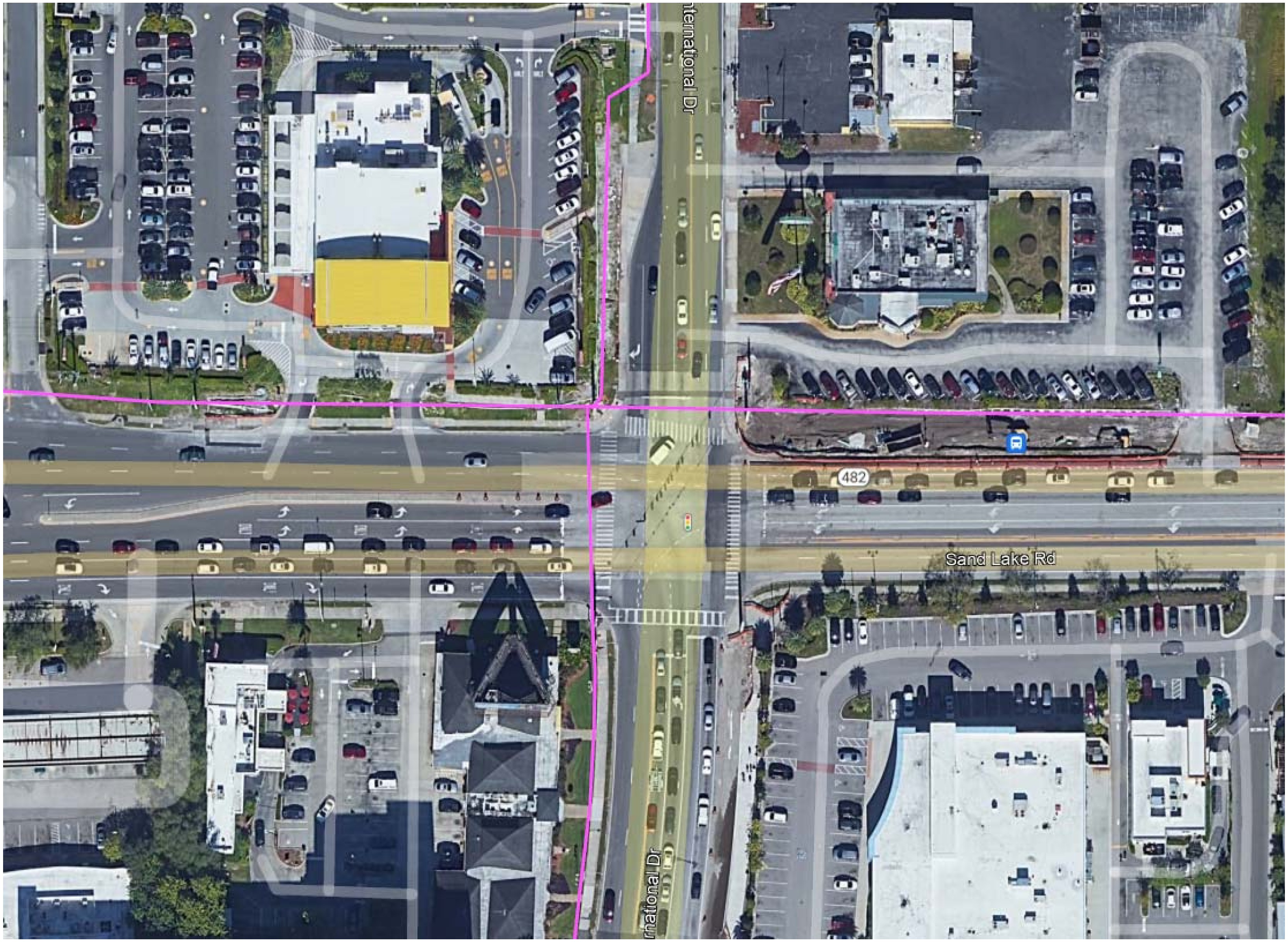
Fax: 407.599.1133
NJohnson@avconinc.com

www.avconinc.com

CROWN CASTLE UTILITY REQUEST



CONDUIT VIEW: Crown Castle Utilities ARE present at this location

Request Number: 0015580

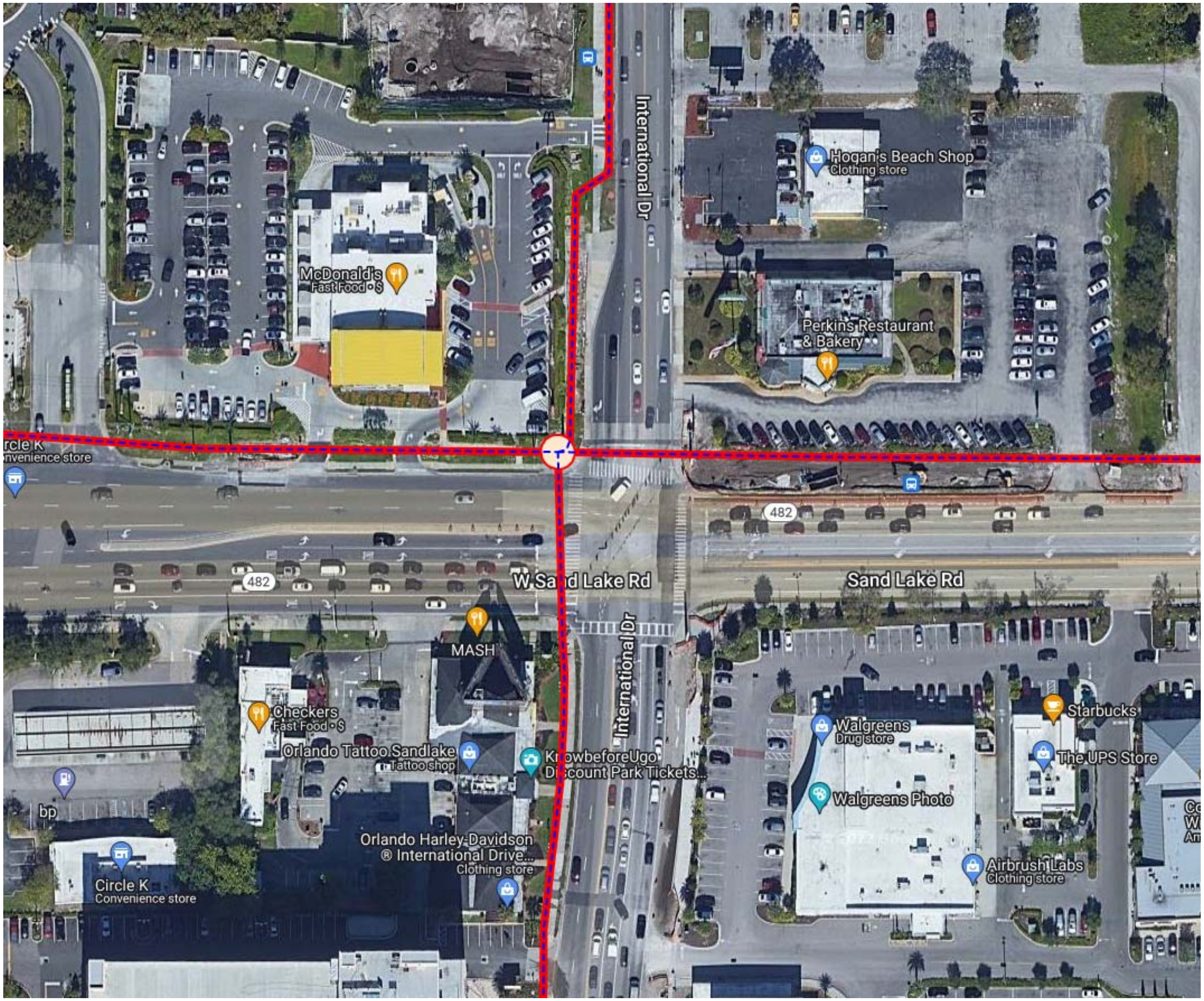
FIBER DIG SERVICES
1500 Corporate Dr., Canonsburg, PA 15317
1-800-654-3110
Fiber.dig@CrownCastle.com

CROWN CASTLE KEY

- UNDERGROUND CONDUIT
- (LINETYPE) AERIAL FIBER
- (LINETYPE) UNDERGROUND FIBER

CROWN CASTLE

CROWN CASTLE UTILITY REQUEST



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Request Number: 0015580

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1500 Corporate Dr., Canonsburg, PA 15317
1-800-654-3110
Fiber.dig@CrownCastle.com

CROWN CASTLE KEY

UNDERGROUND CONDUIT
(LINETYPE) AERIAL FIBER
(LINETYPE) UNDERGROUND FIBER

CROWN CASTLE

Finney, Sue

From:	Gonzalez, Leonardo D. <Leonardo.Gonzalez@duke-energy.com>
Sent:	Friday, April 8, 2022 11:14 AM
To:	Johnson, Nick
Cc:	DEFDistributionGOV
Subject:	FW: 44713379 RGB_DOT_ORANGE_COUNTY_PEDESTRIAN_BRIDGE_INTERNATIONAL_DR_&_SANDLAKE_RD
Attachments:	Duke Energy_Greenline Markups_EXHIBIT 01.pdf

Good morning Nick,

Please see attached Greenline markups for Duke energy Distribution facilities in the project area. Please review plans and let me know if you have any question or future inquiries for the future road plans.

Thanks,

Leonardo D. Gonzalez | Engineer II
South Central Asset Design | Duke Energy Florida
3250 Bonnet Creek Rd | Lake Buena Vista, FL 32830
Mobile: (407) 201-0601
Leonardo.Gonzalez@Duke-Energy.com

From: DEFDistributionGOV <DEFDistributionGOV@duke-energy.com>
Sent: Wednesday, April 6, 2022 2:50 PM
To: Gonzalez, Leonardo D. <Leonardo.Gonzalez@duke-energy.com>
Cc: DEFDistributionGOV <DEFDistributionGOV@duke-energy.com>
Subject: 44713379 RGB_DOT_ORANGE_COUNTY_PEDESTRIAN_BRIDGE_INTERNATIONAL_DR_&_SANDLAKE_RD

Good afternoon Leonardo

This has been logged in and assigned WO 44713379 to the project.

Thank You,

Vivian Castro-Cintron, BBA
Highway Relocation Support
Southeast Orlando Ops Center
Office: 407-319-6889

New Highway Relocation Project Submittal E-Mail address – DEFDistributionGOV@Duke-Energy.com & DEFTransmissionGOV@Duke-Energy.com

From: Johnson, Nick <njohnson@avconinc.com>
Sent: Tuesday, March 29, 2022 10:23 AM
To: REYNOLDS, ALAN <ar2916@att.com>; relocations@lumen.com; NationalRelo@centurylink.com; CentralFloridaRoadMoves_CTL@centurylink.com; Level3 Network Relocations <Relo@centurylink.com>; Tynes, Ronald B <Ronald.Tynes@charter.com>; Usry Jr., Marvin L <marvin.usryjr@charter.com>; Domostoy, Tracey E <Tracey.Domostoy@charter.com>; CENFLR-LAC_Construction@comcast.com; Fiber Dig Facilities <Fiber.dig@crowncastle.com>; DEFDistributionGOV <DEFDistributionGOV@duke-energy.com>; DEFTransmissionGOV <DEFTransmissionGOV@duke-energy.com>; john.mcneil@verizon.com; investigations@verizon.com; bryan.lantz@verizon.com; Christina.Crosby@ocfl.net; Development Services <DevelopmentServices@ouc.com>; David Cawley <DCawley@smartcity.com>; Shawn Winsor <SWinsor@tecoenergy.com>; JDomning@tecoenergy.com; henry.klobucar@zayo.com; permit@summit-broadband.com
Cc: Pletzer, Clint_P.E. <cpletzer@avconinc.com>; Baldocchi, Rick_P.E. <rbaldocchi@avconinc.com>; Harper, Anthony <aharper@avconinc.com>
Subject: [EXTERNAL] I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments

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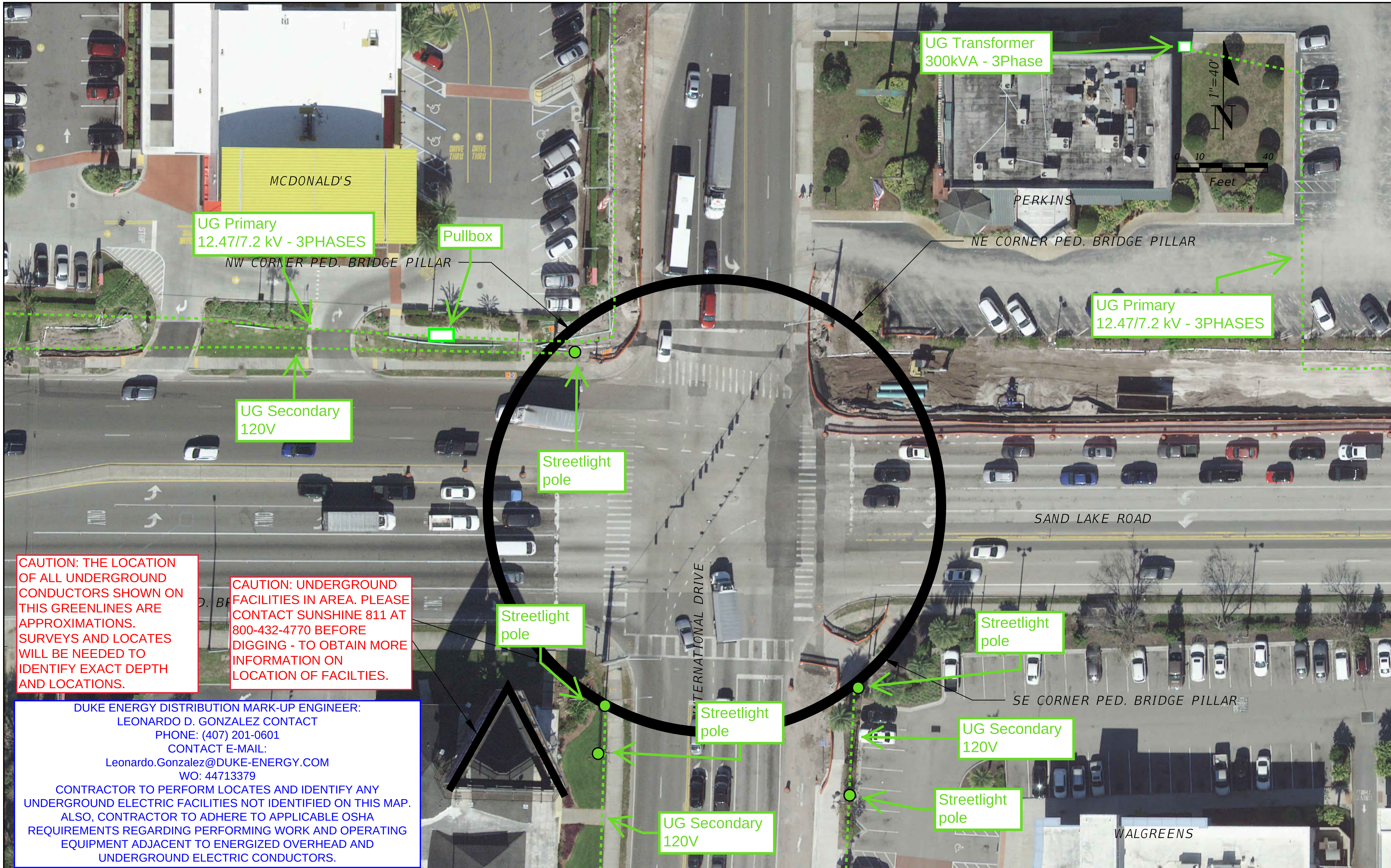

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

HHCP&AVCON
A JOINT VENTURE

ORANGE COUNTY GOVERNMENT F L O R I D A

INTERNATIONAL DRIVE AT SAND LAKE ROAD PEDESTRIAN OVERPASS EXHIBIT

SHEET NO.

Finney, Sue

From: Scott Vanvelzor <SVanvelzor@pike.com>
Sent: Tuesday, April 5, 2022 9:38 AM
To: Johnson, Nick
Subject: RE: [EXTERNAL] I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments
Attachments: EXHIBIT 01 (02.22.22).pdf

Good morning Nick,

There are no Duke Transmission on the attached pdf. Thank you

Xhtyy [fs{jqjtw
XjsntwUwtojhyR fsfljw

Unpj Jslnsjjwnsl1QQH
6:::5 Qnlmy| f{j Iw3Xznyj 6:5
Hqjfw| fyjw1KQ 88<;5
R ?<7<38873>958
X[fs{jqjtwE unpj3htr
|||3unpj3htr

From: VanVelzor, Scott <Scott.VanVelzor@duke-energy.com>
Sent: Tuesday, April 5, 2022 9:18 AM
To: Scott Vanvelzor <SVanvelzor@pike.com>
Subject: FW: [EXTERNAL] I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments

---

From: DEFTransmissionGOV <DEFTransmissionGOV@duke-energy.com>
Sent: Friday, April 1, 2022 12:25 PM
To: DEFTransmissionFDOT-GOV@duke-energy.com <DEFTransmissionFDOT-GOV?duke-energy.com@duke-energy.com>
Subject: FW: [EXTERNAL] I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments

---

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<DEFTransmissionGOV@duke-energy.com>; john.mcneil@verizon.com; investigations@verizon.com; bryan.lantz@verizon.com; Christina.Crosby@ocfl.net; Development Services <DevelopmentServices@ouc.com>; David Cawley <DCawley@smartcity.com>; Shawn Winsor <SWinsor@tecoenergy.com>; JDomning@tecoenergy.com; henry.klobucar@zayo.com; permit@summit-broadband.com
Cc: Pletzer, Clint_P.E. <cpletzer@avconinc.com>; Baldocchi, Rick_P.E. <rbaldocchi@avconinc.com>; Harper, Anthony <aharper@avconinc.com>
Subject: [EXTERNAL] I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments

***** CAUTION! EXTERNAL SENDER *** STOP. ASSESS. VERIFY!!** Were you expecting this email? Are grammar and spelling correct? Does the content make sense? Can you verify the sender? If suspicious report it, then do not click links, open attachments or enter your ID or password.

Re: I-Drive Pedestrian Bridge Study
International Drive and Sand Lake Road
Utility Coordination and Adjustments

To Whom It May Concern:

The HHCP/AVCON Joint Venture has been retained by Orange County to perform a Conceptual Study to evaluate the potential of putting a pedestrian overpass at the intersection of International Drive and Sand Lake Road in Orlando, FL. The proposed structure will connect all four corners of the intersection for pedestrian and bicycle traffic.

The purpose of the study is to evaluate the impacts of the overpass on traffic along the roadways and through the intersection, and determine impacts on drainage, lighting, crosswalks, signage, signalization, and existing utilities.

To assist us in identifying any potential conflicts between the proposed design improvements and the existing utilities located within the project limits, please review existing intersection configuration exhibit. Please use this exhibit to identify any utilities your agency may have within the project limits so that we can coordinate any possible conflicts that may need to be adjusted or addressed by possible relocation or avoidance.

We will request that each utility provide marked plans highlighting their facilities within 500 feet of the intersection. Additionally, a utility coordination meeting will be scheduled to review preliminary design and any potential conflicts.

Your cooperation in this matter is greatly appreciated. Please feel free to contact us at your convenience if you have any questions regarding this matter.

Sincerely,

Nick Johnson, E.I.
Engineer | AVCON, INC.

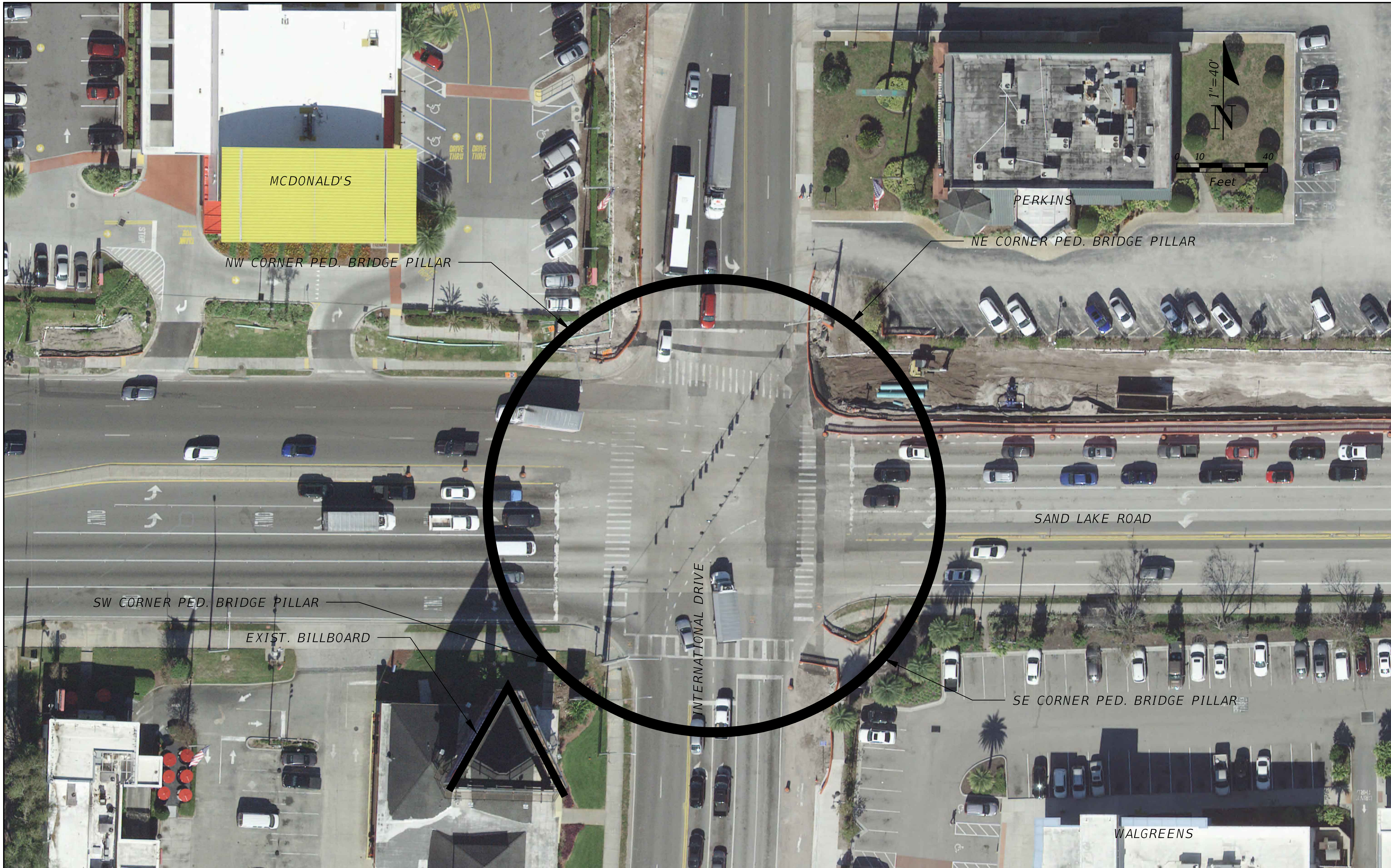
AVCON

Transforming Today's Ideas into Tomorrow's Reality

Engineers & Planners
5555 E. Michigan Street, Suite 200
Orlando, Florida 32822

Office: 407.599.1122
Fax: 407.599.1133
NJohnson@avconinc.com

www.avconinc.com



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HHCP&AVCON
A JOINT VENTURE

ORANGE COUNTY GOVERNMENT FLORIDA

INTERNATIONAL DRIVE AT SAND LAKE ROAD PEDESTRIAN OVERPASS EXHIBIT

SHEET NO.

USE GUIDELINES FOR ENCROACHMENTS INVOLVING TRANSMISSION EASEMENTS

Duke Energy has a property interest called an easement (or sometimes a right-of-way) in land that you own or are considering purchasing. This easement grants Duke Energy the right to use the easement area for purposes described in the easement document that is filed and recorded in the county's recorder office. This property interest stays with the land when it is bought and sold and generally is perpetual in duration. A series of easements often form a corridor in which the transmission facilities are located and access up and down the corridor is part of the reason Duke Energy obtains these rights.

Broadly stated, easements allow Duke Energy to use another person's property to construct, operate, maintain, repair, and replace electrical facilities for the transmission of high voltage power. The landowner may continue to use the easement area so long as the use is not inconsistent with the easement document or Duke Energy's use of the easement. Any incompatible use by the landowner is called an encroachment. Where an encroachment is under construction, Duke Energy will request that it be stopped and removed; where an encroachment is already installed, Duke Energy will request that it be removed. Where a landowner fails to cooperate, Duke Energy will seek legal recourse to remove the encroachment.

Electricity is a public service and subject to state and federal regulations with which Duke Energy must comply. Any use by the landowner that does or could create regulatory issues is an encroachment. Power lines in the transmission easement are uninsulated and electricity is a dangerous instrumentality. Any landowner use that increases the danger to the landowner, the public or Duke Energy in its use of the easement is also an encroachment.

Over years of designing, constructing, operating, repairing, upgrading and maintaining electric facilities in transmission easements, Duke Energy has developed an understanding of the types of uses by landowners that do, or potentially can, interfere with the easement's purposes and Duke Energy's ability to provide safe and reliable service. This guidance, which supersedes all prior versions, provides a brief overview of types of things that do, or can, interfere with Duke Energy's easement rights and thereby create encroachments.

This overview cannot address all possible situations and is intended to provide general guidance. Please contact the Asset Protection Specialist if you have additional questions or concerns about the use of the easements. Please discuss any proposed activity in the transmission easements with Duke Energy to avoid creating an encroachment or interference. The Asset Protection Specialist can assist and help avoid a subsequent need by the landowner to revise plans or remove obstructions from the easements. Engineering plans may be required by Duke Energy to fully understand any proposed use by the landowner.

By providing these guidelines, Duke Energy does not waive any rights it has in its easements or under the law. Duke Energy's concurrence that a proposed use does not constitute an interference with its easement rights does not mean that requirements of local, county, state or federal governments or other agencies with governing authority have been met.

The following are not permitted in Duke Energy's transmission easements as they interfere with Duke Energy's use of the easements for transmission of electricity by, among other things, interfering with full use the easement, interfering with existing facilities, interfering with access to the facilities, interfering with future expansion in the easement, increasing the danger to the public or those who may be required to work in the easement, creating regulatory violations and generally, making the transmission of electricity more dangerous, costly and/or unreliable: Examples include but are not limited to:

- Permanent or temporary structures and buildings, including for example, permanent or manufactured/mobile homes (and home additions and extensions), garages, sheds, satellite systems, intersections, cul-de-sacs, entrances, streets, swimming pools (any associated equipment and decking), playground equipment, graves, billboards, dumpsters, signs, wells, deer stands, retaining walls, septic systems or tanks (whether above or below ground).
- Mounding or stockpiling any material, such as spoils, dirt, logs, construction or building material, wrecked or disabled vehicles, (e.g. may create clearance and access issues and/or increases dangers in using the easement).
- Transformers, telephone/cable pedestals and associated equipment (unless specifically addressed in a joint use agreement), fire hydrants, manholes, water valves, water meters, backflow preventers & irrigation heads, (e.g. may increase the likelihood of safety hazards & access issues).
- Attachments to Duke Energy structures in the easement; (unless specifically addressed in a joint use agreement).
- Streets, roads, driveways, sewer/water lines, other utility lines or any underground facilities that run in parallel to the centerline in the easement or cross in one contiguous segment from outside edge of easement to opposing outside edge of easement, at any angle that is less than 30 degrees or greater than 90 degrees as measured from the centerline. No portion of such facility shall be located within 25 feet of Duke Energy's facilities (unless specifically addressed in a joint use agreement.)

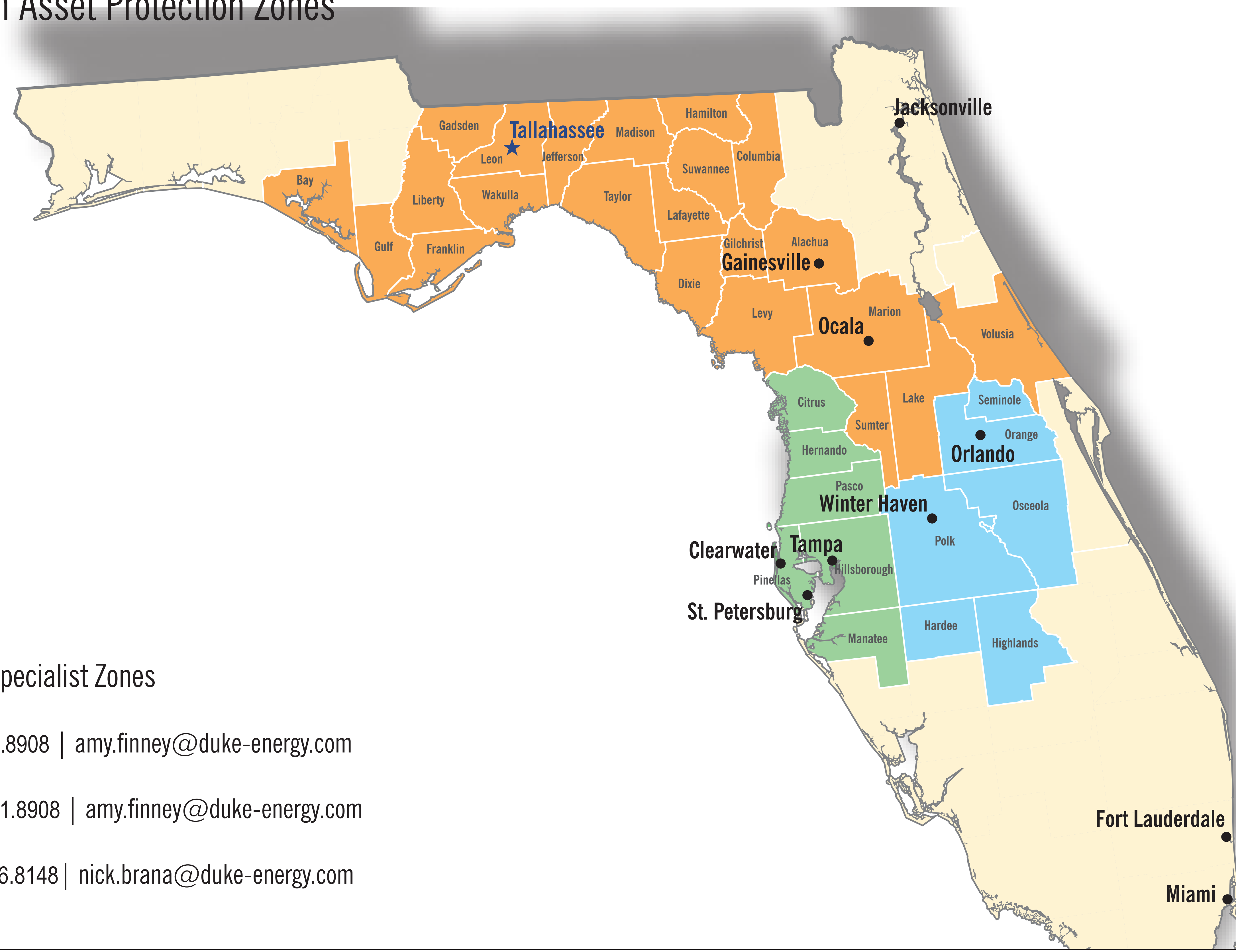
Keywords: **form; transmission asset protection**
Applies to: Transmission - All Regions

- Fences or utilities that cross the easement in multiple segments in a non-continuous alignment from outside edge of easement to opposing outside edge of easement at any angle of less than 30 degrees or greater than 90 degrees as measured from the centerline. This generally creates an interference as the ability to access and utilize the full easement and reach facilities in the easement is substantially impaired. If a fence crosses the easement at an angle greater than or equal to 30 degrees and less than or equal to 90 degrees with the centerline, a gate (16 feet wide at each crossing) shall be installed by the landowner, per Duke Energy's specifications. Duke Energy will supply a lock. The landowner is required to install the Duke Energy lock on the gate to ensure access. The lock can be interlocked with the landowner's lock. Fences and gates that exceed 10 feet in height are prohibited because they create a clearance issue and are an interference. Fences that inhibit Duke Energy's access because they lack a gate that is at least 16 feet wide, interfere with Duke Energy's easement use.
- Grading (cuts or fill) in the easement that is closer than 25 feet to transmission facilities i.e. poles, towers, guys and anchors and/or slopes greater than 4:1 no matter where located or that otherwise change clearances or topography.
- Parking or lighting facilities which affect clearances, access or Duke Energy's ability to make full use of its easement.
- Placement of combustible materials and/or the purposeful burning of anything within the easement are inconsistent with electric facilities, the transmission of power and create safety hazards and system reliability issues.
- Any water feature in the easement, such as a detention and retention pond, stream or lake. Where a structure outside the easement causes erosion or directs storm water toward the easement or the electric facilities or access to or around the electric facilities, such structure will interfere with Duke Energy's use and must be altered to eliminate that effect.
- Incompatible vegetation above ground transmission lines - Vegetation within or outside of the transmission easement that will mature to a height or size that will pose a grow-in, fall-in, or blowing-together threat to the transmission conductor (typical maximum mature height greater than 15 feet within the transmission easement depending on location and voltage).
- Incompatible vegetation underground transmission lines - Vegetation within or outside of the transmission easement that is capable of posing a threat (e.g., root systems, etc.) to the underground transmission conductor by a) causing damage to the underground pipes / cables or b) reducing the moisture in the soil, thus altering the thermal properties of the surrounding soil / backfill and thereby negatively impacting the cable ampacity rating (typical maximum mature height within the easement - greater than 3 feet depending on location and voltage).
- Incompatible vegetation for safe and reliable operation and access on all transmission lines - Vegetation that will limit or block access, limit the safe and reliable operation, emergency restoration, or maintenance of the transmission facilities, limit the full use of the transmission easement for its intended purposes or vegetation which is typically within a horizontal distance of 25 feet of any Duke Energy facilities (towers, poles, guy wires, guy anchors, manholes, dip-poles, substation equipment, etc.).

As discussed, these guidelines are not exhaustive and there may be other interferences on a case-by-case basis depending on individual circumstances. Certain conditions such as line voltage, line criticality, frequency of required access and structure type may require heightened restrictions in the easements to provide safe and reliable service.

If you have additional questions or plan any activity not mentioned above, please contact customer service and ask for your local Transmission Asset Protection Specialist.

Duke Energy Florida Transmission Asset Protection Zones



Asset Protection Right-of-Way Specialist Zones

- Coastal – Amy Finney 386.681.8908 | amy.finney@duke-energy.com
- Northern – Amy Finney 386.681.8908 | amy.finney@duke-energy.com
- Southern – Nick Brana 321.246.8148 | nick.brana@duke-energy.com

DUKE ENERGY.

BUILDING A SMARTER ENERGY FUTURE®

Finney, Sue

From: Rypkema, Xan <xan.rypkema@lumen.com>
Sent: Wednesday, March 30, 2022 11:24 AM
To: Johnson, Nick
Subject: Return to Requestor I-Drive Pedestrian Bridge Study
Attachments: Initial Utility Contact Letter.pdf; EXHIBIT 01 (02.22.22).pdf; 252413.pdf

LUMEN

Thank you for your project notification. LUMEN has reviewed your utility notice dated **3/30/2022** regarding the **P 252413** | **I-Drive Pedestrian Bridge Study** ("Project"). In response to your inquiry please find the enclosed drawings indicating the approximate location of the LUMEN facilities (the "Facilities").

LUMEN Local/National does not have facilities within your proposed construction area.

LUMEN Local/National has facilities within your proposed construction area. Please find the enclosed drawings indicating the location of the LUMEN facilities. Once you have completed your review, please respond back if LUMEN facilities appear to be in conflict. A LUMEN engineer will be assigned when engineering plans are ready for review.

LUMEN Local/National facilities are under review by our LUMEN Field Engineer(s) listed below. For questions concerning the details of this review, please contact them directly. Currently, the estimated completion date of review is.

LUMEN Local/National is leasing facilities within your proposed construction Zone, which may have potential conflicts. Please verify that you have contacted all communications providers listed on your One Call Ticket.

LUMEN Local/National - The information provided in your initial request is insufficient to determine if the location of your proposed construction will conflict with LUMEN facilities. Please provide additional detailed location maps, drawings (PDF preferred), and description for further conflict review.

LUMEN Local/National has facilities within your proposed construction zone, but it has been determined that no relocation will be necessary. However, due to the proximity of your project to our facilities, a LUMEN representative will be required on-site when construction begins.

[LUMEN National Engineer-Name | Email | PhoneNumber]/ [LUMEN Local Engineer-Name | Email | PhoneNumber]

Please contact your State One Call prior to construction service (click link for state specific requirements).

Any changes or additions to the project plans or parameters should be submitted to Network Relocations for review of potential new impacts to the LUMEN facilities. **Note**: the location(s) of facilities shown on these drawings you receive from us, are only approximate. LUMEN hereby disclaims any responsibility for the accuracy of this information. Please contact Network Relocations regarding the above mentioned project if you should have any questions. Please reference the file number **P 252413** with any future communications.

Thank you for your cooperation!
[dq#P dulh#J|snhp d#
Business Analyst
Network Relocations
xan.rypkema@Lumen.com

****We have combined!!** To better serve everyone, there is now a single email inbox for LUMEN. One team is monitoring both national and local network relocations & road moves. Please add **relocations@lumen.com** to your contacts list for inquiries, updates, and use it for all future notifications.**

LUMEN
E-mail: relocations@lumen.com

From: Johnson, Nick <njohnson@avconinc.com>
Sent: Tuesday, March 29, 2022 8:23 AM
To: REYNOLDS, ALAN <ar2916@att.com>; relocations <relocations@centurylink.com>; NationalRelo <NationalRelo@centurylink.com>; Central Florida Road Moves_CTL <CentralFloridaRoadMoves_CTL@lumen.com>; Level3 Network Relocations <Relo@centurylink.com>; Tynes, Ronald B <Ronald.Tynes@charter.com>; Usry Jr., Marvin L <marvin.usryjr@charter.com>; Domostoy, Tracey E <Tracey.Domostoy@charter.com>; CENFLR-LAC_Construction@comcast.com; Fiber Dig Facilities <Fiber.dig@crowncastle.com>; DEFDistributionGOV <DEFDistributionGOV@duke-energy.com>; DEFTransmissionGOV@Duke-Energy.com; john.mcneil@verizon.com; investigations@verizon.com; bryan.lantz@verizon.com; Christina.Crosby@ocfl.net; Development Services <DevelopmentServices@ouc.com>; David Cawley <DCawley@smartcity.com>; Shawn Winsor <SWinsor@tecoenergy.com>; JDomning@tecoenergy.com; henry.klobucar@zayo.com; permit@summit-broadband.com
Cc: Pletzer, Clint_P.E. <cpletzer@avconinc.com>; Baldocchi, Rick_P.E. <rbaldocchi@avconinc.com>; Harper, Anthony <aharper@avconinc.com>
Subject: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments

Re: I-Drive Pedestrian Bridge Study
International Drive and Sand Lake Road
Utility Coordination and Adjustments

To Whom It May Concern:

The HHCP/AVCON Joint Venture has been retained by Orange County to perform a Conceptual Study to evaluate the potential of putting a pedestrian overpass at the intersection of International Drive and Sand Lake Road in Orlando, FL. The proposed structure will connect all four corners of the intersection for pedestrian and bicycle traffic.

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Sincerely,

Nick Johnson, E.I.
Engineer | AVCON, INC.

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Engineers & Planners
5555 E. Michigan Street, Suite 200
Orlando, Florida 32822
Office: 407.599.1122
Fax: 407.599.1133
NJohnson@avconinc.com

www.avconinc.com

AVCON, INC.
ENGINEERS & PLANNERS

5555 E. Michigan St., Suite 200
Orlando, FL 32822-2779
Phone: (407) 599-1122
Fax (407) 599-1133
www.avconinc.com

March 28, 2022

Re: I-Drive Pedestrian Bridge Study
International Drive and Sand Lake Road
Utility Coordination and Adjustments

To Whom It May Concern:

The HHCP/AVCON Joint Venture has been retained by Orange County to perform a Conceptual Study to evaluate the potential of putting a pedestrian overpass at the intersection of International Drive and Sand Lake Road in Orlando, FL. The proposed structure will connect all four corners of the intersection for pedestrian and bicycle traffic.

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Our firm looks forward to working closely with your staff to resolve any issues that may arise relative to existing utilities, or potential planned utility upgrades your agency may be planning. Please address all correspondence in writing to AVCON to the address provided. Please contact AVCON staff regarding all project correspondence. We look forward to working with you in this endeavor.

Suitable arrangements must be made between your Agency and Orange County to coordinate the disposition of all facilities and to schedule any type of relocation or adjustment work within the right-of-way and/or easements as necessitated by the proposed construction. Also, please note that portions of this project will be constructed within the public right-of-way where relocation of your facilities may not be eligible for reimbursement.

We will request that each utility provide marked plans highlighting their facilities within 500 feet of the intersection. Additionally, a utility coordination meeting will be scheduled to review preliminary design and any potential conflicts.

Your cooperation in this matter is greatly appreciated. Please feel free to contact me at your convenience if you have any questions regarding this matter. I can be reached at 407-599-1122, or by e-mail at njohnson@avconinc.com.

Sincerely,
Nick Johnson, E.I.

AVCON, Inc

Cc: Clint Pletzer, P.E.- AVCON

Additional Attachments: (1) PDF of Preliminary Plans to be retained for your records

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

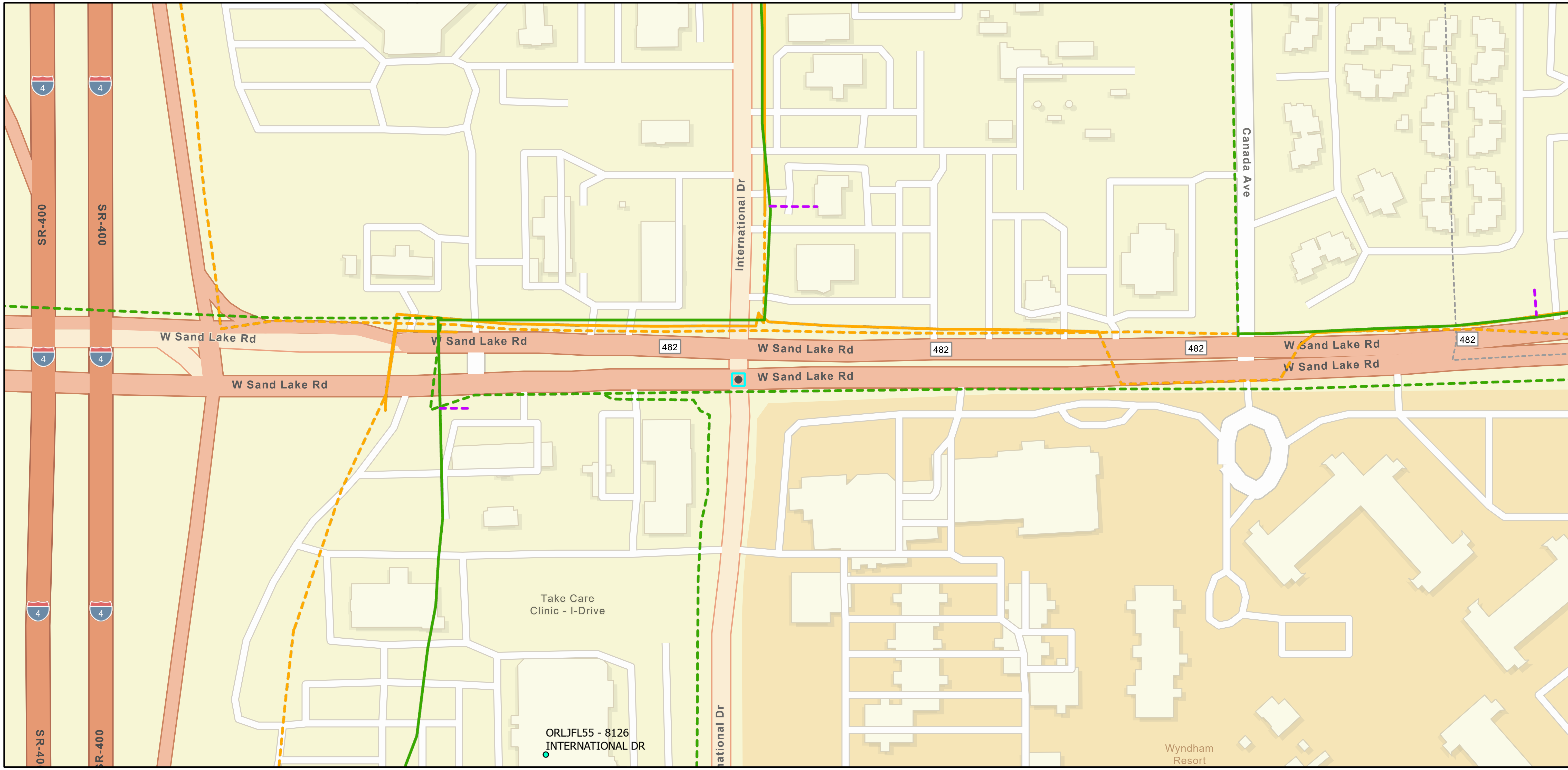
HHCP&AVCON
A JOINT VENTURE

ORANGE COUNTY GOVERNMENT FLORIDA

INTERNATIONAL DRIVE AT SAND LAKE ROAD PEDESTRIAN OVERPASS EXHIBIT

SHEET NO.

LUMEN Relocate Utility Map



3/30/2022, 9:15:40 AM

1:2,257

0 0.02 0.04 0.09 mi

0 0.04 0.07 0.15 km

Routes Leased

- METRO LATERAL,AERIAL
- METRO LATERAL,UNDERGROUND
- METRO,AERIAL
- METRO,UNDERGROUND

Routes Owned

- METRO LATERAL,UNDERGROUND
- METRO,AERIAL
- METRO,UNDERGROUND

Building

Finney, Sue

From: cl_irth_comm@irth.com
Sent: Monday, March 28, 2022 4:00 PM
To: Johnson, Nick
Subject: Seq# 1: 087205536 for L3C900
Attachments: Digsite.txt; Design Ticket Legend.v2.JPG; Capture.JPG

L3C900 01275 CALL SUNSHINE 03/28/22 13:07:23ET 087205536-000 DESIGN STREET Ticket : 087205536 Rev:000 Taken: 03/28/22 13:06ET

State: FL Cnty: ORANGE GeoPlace: ORLANDO
CallerPlace: ORLANDO
Subdivision:

Address :
Street : INTERNATIONAL DR
Cross 1 : W SAND LAKE RD
Within 1/4 mile: Y

Locat: DESIGN TICKET
:
Remarks : IN RESPONSE TO RECEIPT OF A DESIGN TICKET, SSOCOF PROVIDES THE ORIGINATOR OF THE DESIGN TICKET WITH A LIST OF SSOCOF MEMBERS IN THE VICINITY OF THE DESIGN PROJECT. SSOCOF DOES NOT NOTIFY SSOCOF MEMBERS OF THE RECEIPT BY SSOCOF OF A DESIGN TICKET. IT IS THE SOLE RESPONSIBILITY OF THE DESIGN ENGINEER TO CONTACT SSOCOF MEMBERS TO REQUEST INFORMATION ABOUT THE LOCATION OF SSOCOF MEMBERS' UNDERGROUND FACILITIES. SUBMISSION OF A DESIGN TICKET WILL NOT SATISFY THE REQUIREMENT OF CHAPTER 556, FLORIDA STATUTES, TO NOTIFY SSOCOF OF AN INTENT TO EXCAVATE OR DEMOLISH. THAT INTENT MUST BE MADE KNOWN SPECIFICALLY TO SSOCOF IN THE MANNER REQUIRED BY LAW. IN AN EFFORT TO SAVE TIME ON FUTURE CALLS, SAVE YOUR DESIGN TICKET NUMBER IF YOU INTEND TO BEGIN EXCAVATION WITHIN
90 DAYS OF YOUR DESIGN REQUEST. THE DESIGN TICKET CAN BE REFERENCED, AND THE INFORMATION ON IT CAN BE USED TO SAVE TIME WHEN YOU CALL IN THE EXCAVATION REQUEST.
*** LOOKUP BY INTERSECTION ***
:
Grids : 2826A8128C 2826A8128D 2827D8128C 2827D8128D

Work date: 03/28/22 Time: 13:03ET Hrs notc: 000 Category: 6 Duration: UNKNOWN Due Date : 03/30/22 Time: 23:59ET
Exp Date : 04/27/22 Time: 23:59ET Work type: DESIGN Boring: N White-lined: N
Ug/Oh/Both: U Machinery: N Depth: UNK Permits: N N/A Done for : DESIGN

Company : AVCON INC Type: CONT
Co addr : 5555 E MICHIGAN STREET
Co addr2: SUITE 200
City : ORLANDO State: FL Zip: 32822
Caller : NICHOLAS JOHNSON Phone: 407-599-1122
BestTime: ANYTIME BEFORE 5PM
Fax : 407-599-1133
Email : NJOHNSON@AVCONINC.COM

Submitted: 03/28/22 13:06ET Oper: NIC Chan: WEB Mbrs : BH1956 CVCFTV FLW941 FPC322 L3C900 LCA395 MCIU01 NN1882 OC1332 OC1420 Mbrs : OTC811 OUC553 PGSORL SBF02 SC1284 TC2045

Finney, Sue

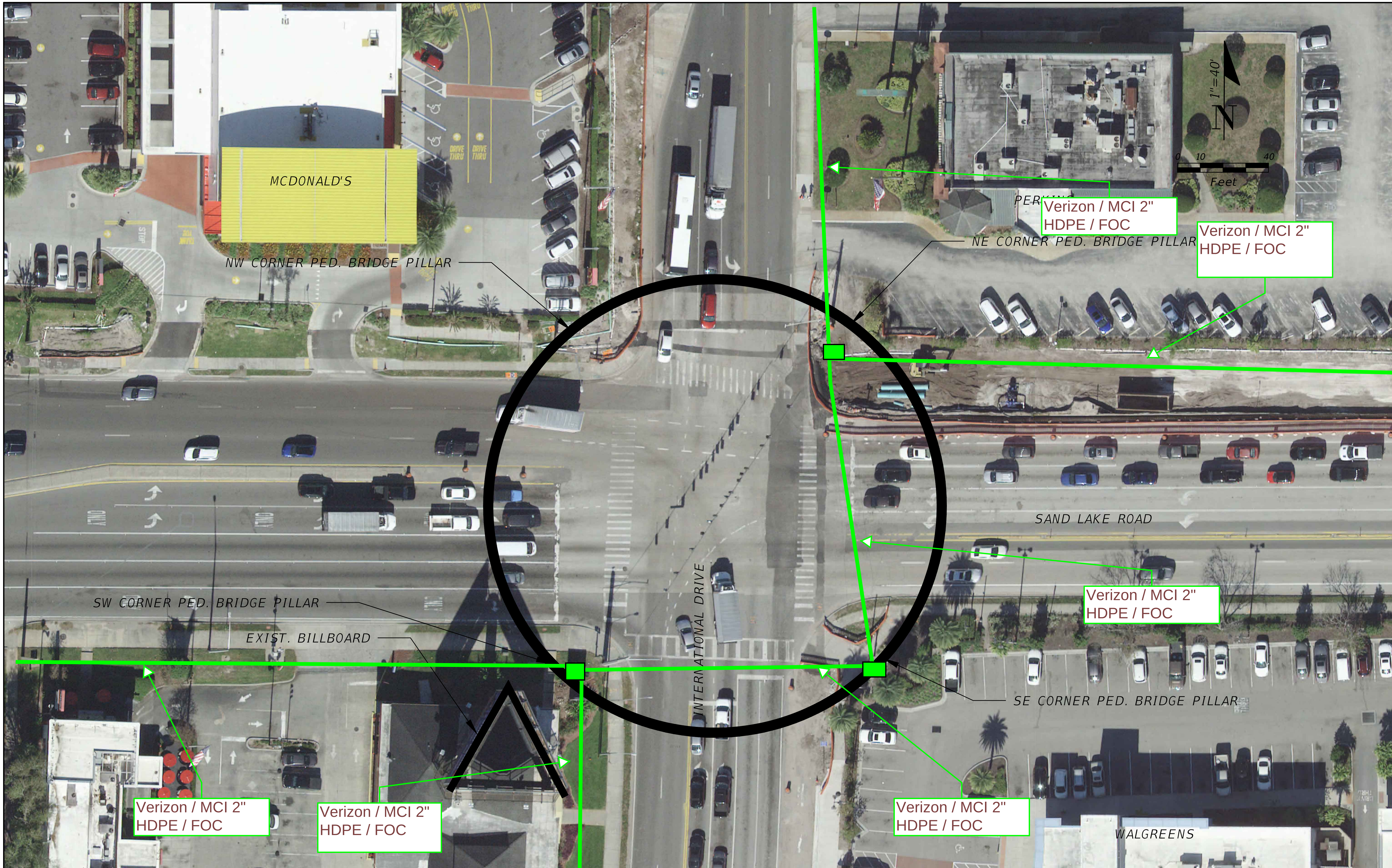
From: Cole, Timothy W <timothy.cole@verizon.com>
Sent: Tuesday, March 29, 2022 11:37 AM
To: Johnson, Nick
Subject: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments - Verizon - MCI
Attachments: Verizon MCI Existing Network .pdf

Nick

Please see attached Verizon / MCI existing facilities at International Drive and Sandlake.

Thank you

Tim Cole
Sr Engineer IV, Southeast Region (FL)
400 South Lake Destiny
Orlando, FL 32810
O 407 618 2078 | M 407 506 8635
Timothy.Cole@verizon.com



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HHCP&AVCON
A JOINT VENTURE

ORANGE COUNTY GOVERNMENT FLORIDA

INTERNATIONAL DRIVE AT SAND LAKE ROAD PEDESTRIAN OVERPASS EXHIBIT

SHEET NO.

Finney, Sue

From: Christina.Crosby@ocfl.net
Sent: Thursday, March 31, 2022 9:36 AM
To: Johnson, Nick
Subject: RE: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments
Attachments: International Drive Pedestrian Bridge Study GIS Map.pdf

Importance: High

Nick,
I have attached a GIS map showing all existing infrastructure. The light blue pipelines are abandoned and the dark grey should have been removed. Remember, this is just a graphical representation of our facilities and everything will need to be field verified. Should you require any additional information please contact me.
Thanks,

Christina Crosby
Engineer II
Orange County Utilities
Engineering Division
9150 Curry Ford Road | Orlando, FL | 32825
O: 407-254-9706
Email | Website | Social
Innovating for a Sustainable Tomorrow

From: Johnson, Nick [mailto:njohnson@avconinc.com]
Sent: March 29, 2022 10:23 AM
To: REYNOLDS, ALAN; relocations@lumen.com; NationalRelo@centurylink.com; CentralFloridaRoadMoves_CTL@centurylink.com; Level3 Network Relocations; Tynes, Ronald B; Usry Jr., Marvin L; Domostoy, Tracey E; CENFLR-LAC_Construction@comcast.com; Fiber Dig Facilities; DEFDistributionGOV; DEFTransmissionGOV@Duke-Energy.com; john.mcneil@verizon.com; investigations@verizon.com; bryan.lantz@verizon.com; Crosby, Christina; Development Services; David Cawley; Shawn Winsor; JDomning@tecoenergy.com; henry.klobucar@zayo.com; permit@summit-broadband.com
Cc: Pletzer, Clint_P.E.; Baldocchi, Rick_P.E.; Harper, Anthony
Subject: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments

Re: I-Drive Pedestrian Bridge Study
International Drive and Sand Lake Road
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Engineer | AVCON, INC.

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5555 E. Michigan Street, Suite 200
Orlando, Florida 32822
Office: 407.599.1122
Fax: 407.599.1133
NJohnson@avconinc.com

www.avconinc.com

INTERNATIONAL DRIVE PEDESTRIAN BRIDGE STUDY

Finney, Sue

From: Development Services <DevelopmentServices@ouc.com>
Sent: Thursday, March 31, 2022 8:58 AM
To: Johnson, Nick
Cc: Development Services; Pletzer, Clint_P.E.; Baldocchi, Rick_P.E.; Harper, Anthony
Subject: RE: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments

EXTERNAL EMAIL: Do not click any links or open any attachments unless you trust the sender and know the content is safe.

Good Morning Nick:

We created work order # 786647 for this project and it has been forwarded to OUC Engineering for review.

The assigned Engineers will be in contact with you regarding your request.

The average review time for projects is 6-8 weeks.

Please e-mail us back if you have any questions.

Sincerely,

Linda T. Juliao
Development Services Specialist
Orlando Utilities Commission
100 W. Anderson St
Orlando, FL 32801
407-236-9651

From: Johnson, Nick [mailto:njohnson@avconinc.com]
Sent: Tuesday, March 29, 2022 10:23 AM
To: REYNOLDS, ALAN <ar2916@att.com>; relocations@lumen.com; NationalRelo@centurylink.com; CentralFloridaRoadMoves_CTL@centurylink.com; Level3 Network Relocations <Relo@centurylink.com>; Tynes, Ronald B <Ronald.Tynes@charter.com>; Usry Jr., Marvin L <marvin.usryjr@charter.com>; Domostoy, Tracey E <Tracey.Domostoy@charter.com>; CENFLR-LAC_Construction@comcast.com; Fiber Dig Facilities <Fiber.dig@crowncastle.com>; DEFDistributionGOV <DEFDistributionGOV@duke-energy.com>; DEFTransmissionGOV@Duke-Energy.com; john.mcneil@verizon.com; investigations@verizon.com; bryan.lantz@verizon.com; Christina.Crosby@ocfl.net; Development Services <DevelopmentServices@ouc.com>; David Cawley <DCawley@smartcity.com>; Shawn Winsor <SWinsor@tecoenergy.com>; JDomning@tecoenergy.com; henry.klobucar@zayo.com; permit@summit-broadband.com
Cc: Pletzer, Clint_P.E. <cpletzer@avconinc.com>; Baldocchi, Rick_P.E. <rbaldocchi@avconinc.com>; Harper, Anthony <aharper@avconinc.com>
Subject: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments

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Re: I-Drive Pedestrian Bridge Study
International Drive and Sand Lake Road

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Your cooperation in this matter is greatly appreciated. Please feel free to contact us at your convenience if you have any questions regarding this matter.

Sincerely,

Nick Johnson, E.I.
Engineer | AVCON, INC.

AVCON

Transforming Today's Ideas into Tomorrow's Reality

Engineers & Planners
5555 E. Michigan Street, Suite 200
Orlando, Florida 32822
Office: 407.599.1122
Fax: 407.599.1133
NJohnson@avconinc.com

www.avconinc.com

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HHCP&AVCON
A JOINT VENTURE

ORANGE COUNTY GOVERNMENT FLORIDA

INTERNATIONAL DRIVE AT SAND LAKE ROAD PEDESTRIAN OVERPASS EXHIBIT

SHEET NO.

Finney, Sue

From: Grubbs, Steve <SGrubbs@ouc.com>
Sent: Tuesday, April 5, 2022 1:19 PM
To: Johnson, Nick
Cc: Pletzer, Clint_P.E.
Subject: RE: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments
Attachments: EXHIBIT 01 (02.22.22)_OUC Water_4-5-2022.pdf; -4 OUC RECORD DRAWINGS_FJB_SIGNED.PDF

Nick,

Re: OUC Project Tracking Number 786647
I-Drive Pedestrian Bridge Study

To obtain a copy of the OUC water facilities map panels for the project area, please contact Calvin Griffin with our GIS Department at 407-434-2572 or CGriffin@ouc.com and request map panel number **SW-25-L & SW-26-L**. Please note that Calvin and our GIS Department do not provide any type of project review functions.

I am attaching a copy of the record drawings for the recently completed FDOT FPID 407143-4-52-01 SR-482 Sand Lake Road Widening Project where FDOT performed water main relocation work for OUC in the intersection of International Drive and Sand Lake Road. Please note when you receive the map panels, they will not reflect the FDOT work performed for OUC yet as our GIS Department is still updating our GIS records. If you would like the record drawing AutoCAD files, please send me a link to upload them to you. Once our GIS Department has finished mapping the FDOT project and have updated the map panels, you can request the updated panels. I don't not have a timeframe on when these updates will be completed.

Please let me know if you have any questions.

My normal office hours are Monday through Thursday 7:00 am – 5:00 pm.

Thank you.

Steve Grubbs
Sr. Engineering Associate
Water Distribution Engineering
OUC - The Reliable One
6003 Pershing Ave.
Orlando, FL 32822
Direct: 407-434-2560
Fax: 407-434-4329
Email: sgrubbs@ouc.com
Web: www.ouc.com

From: Johnson, Nick [mailto:njohnson@avconinc.com]
Sent: Tuesday, March 29, 2022 10:23 AM
To: REYNOLDS, ALAN <ar2916@att.com>; relocations@lumen.com; NationalRelo@centurylink.com; CentralFloridaRoadMoves_CTL@centurylink.com; Level3 Network Relocations <Relo@centurylink.com>; Tynes, Ronald B <Ronald.Tynes@charter.com>; Usry Jr., Marvin L <marvin.usryjr@charter.com>; Domostoy, Tracey E <Tracey.Domostoy@charter.com>; CENFLR-LAC_Construction@comcast.com; Fiber Dig Facilities <Fiber.dig@crowncastle.com>; DEFDistributionGOV <DEFDistributionGOV@duke-energy.com>; DEFTransmissionGOV@Duke-Energy.com; john.mcneil@verizon.com; investigations@verizon.com; bryan.lantz@verizon.com; Christina.Crosby@ocfl.net; Development Services <DevelopmentServices@ouc.com>; David Cawley <DCawley@smartcity.com>; Shawn Winsor <SWinsor@tecoenergy.com>; JDomning@tecoenergy.com; henry.klobucar@zayo.com; permit@summit-broadband.com
Cc: Pletzer, Clint_P.E. <cpletzer@avconinc.com>; Baldocchi, Rick_P.E. <rbaldocchi@avconinc.com>; Harper, Anthony <aharper@avconinc.com>
Subject: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments

Re: I-Drive Pedestrian Bridge Study
International Drive and Sand Lake Road
Utility Coordination and Adjustments

To Whom It May Concern:

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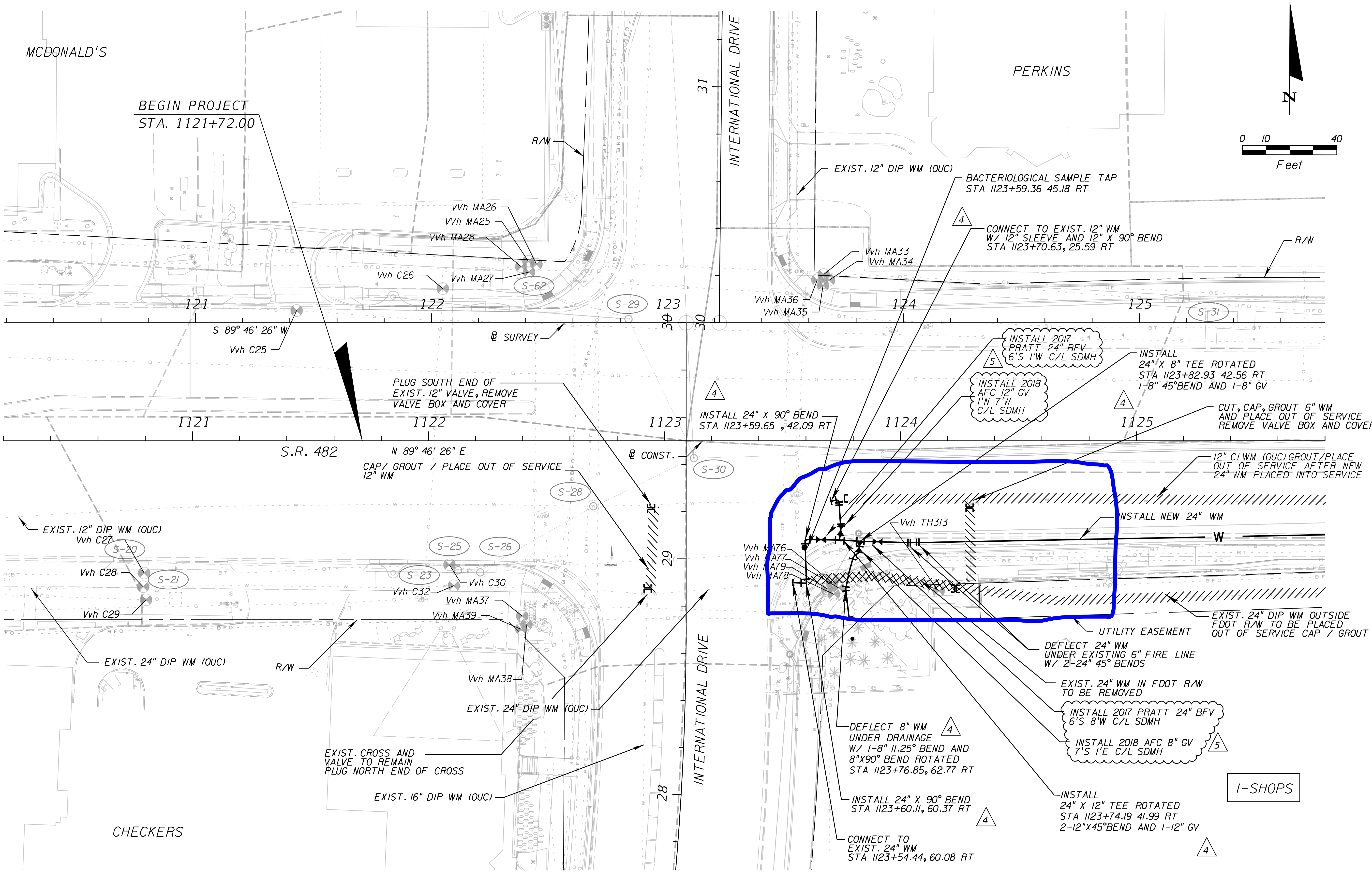

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION
7-1-21	FJB	4 UPDATED DESIGN TO AS-BUILT CONDITIONS			
1-12-22	FJB	5 ADDITIONAL AS-BUILT INFORMATION			

ARCADIS
1301 Riverplace Blvd, Suite 700
Jacksonville, Florida 32207
T: 904 721 2991 | F: 904 396 4152
Certificate of Authorization No. 7917
Freddy Betancourt, PE | No. 68072

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 482	ORANGE	407143-4-56-04

UTILITY PLAN
STA. 1120+20.00 TO STA. 1125+80.00

SHEET NO.
U-7

KAReynolds 1/14/2022 11:33:46 AM c:\pw_work\arcadispw01\kalin.reynolds\dms70650\UTADUW08.dgn

Finney, Sue

From: David Cawley <DCawley@smartcity.com>
Sent: Friday, April 1, 2022 3:20 PM
To: Johnson, Nick
Cc: Guy Bower
Subject: RE: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments
Attachments: EXHIBIT 01 (02.22.22), SCS RGB.pdf

Hi Nick,

Smart City Solutions II, LLC has a large fiber cable in a directional bored 2-inch HDPE conduit that is very deep (greater than 30-ft) under Sand Lake Rd. I included the bore logs in our RGB. Please keep us informed of your pedestrian bridge plans.

Best wishes,

David Cawley
Chief Designer
Smart City Telecom
O: 407-828-6648
C: 321-231-3475
Email: dcawley@smartcity.com
Website: smartcitytelecom.com

From: Johnson, Nick <njohnson@avconinc.com>
Sent: Tuesday, March 29, 2022 10:23 AM
To: REYNOLDS, ALAN <ar2916@att.com>; relocations@lumen.com; NationalRelo@centurylink.com; CentralFloridaRoadMoves_CTL@centurylink.com; Level3 Network Relocations <Relo@centurylink.com>; Tynes, Ronald B <Ronald.Tynes@charter.com>; Usry Jr., Marvin L <marvin.usryjr@charter.com>; Domostoy, Tracey E <Tracey.Domostoy@charter.com>; CENFLR-LAC_Construction@comcast.com; Fiber Dig Facilities <Fiber.dig@crowncastle.com>; DEFDistributionGOV <DEFDistributionGOV@duke-energy.com>; DEFTransmissionGOV@Duke-Energy.com; john.mcneil@verizon.com; investigations@verizon.com; bryan.lantz@verizon.com; Christina.Crosby@ocfl.net; Development Services <DevelopmentServices@ouc.com>; David Cawley <DCawley@smartcity.com>; Shawn Winsor <SWinsor@tecoenergy.com>; JDomning@tecoenergy.com; henry.klobucar@zayo.com; permit@summit-broadband.com
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[EXT SENDER]

Re: I-Drive Pedestrian Bridge Study
International Drive and Sand Lake Road
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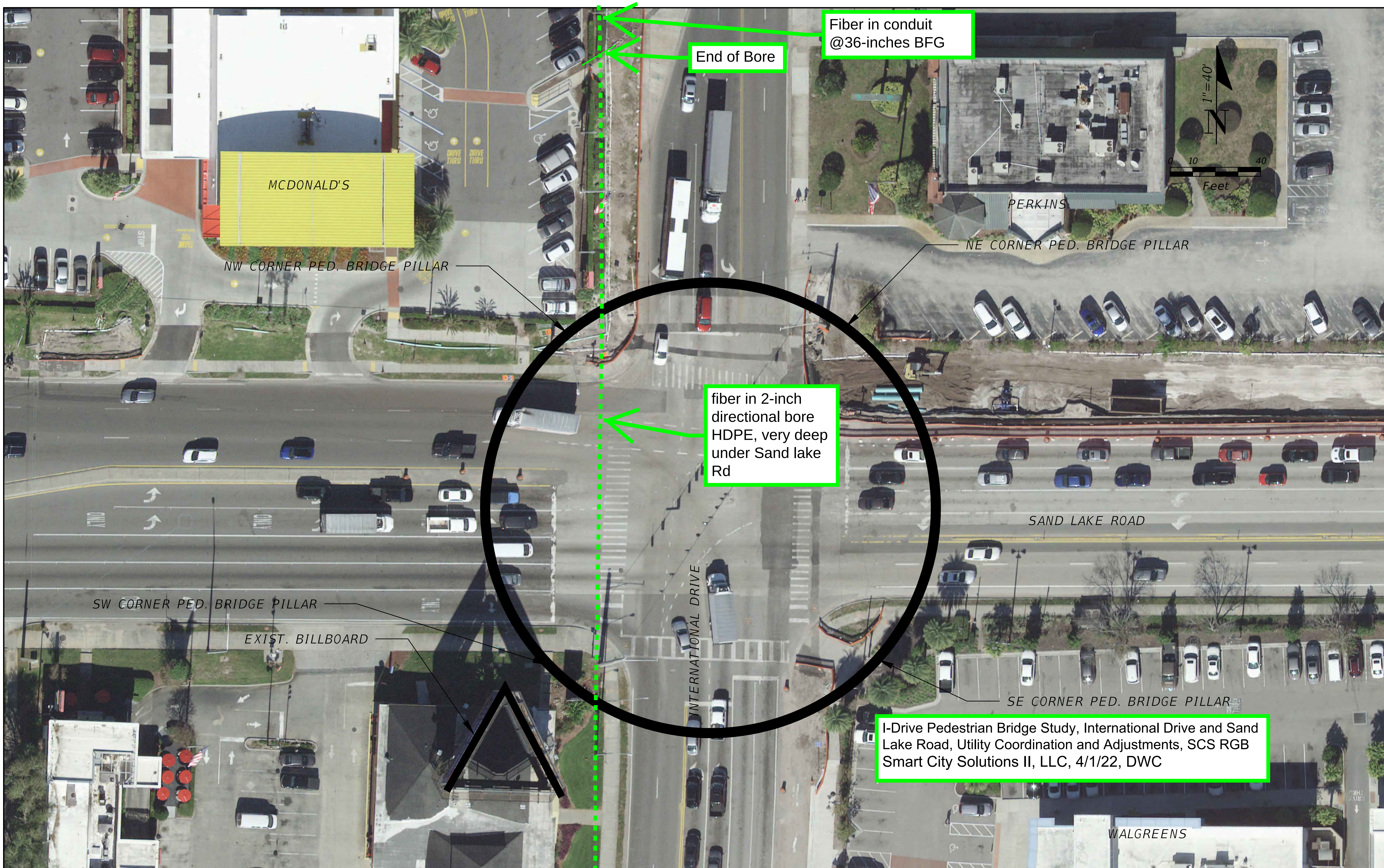


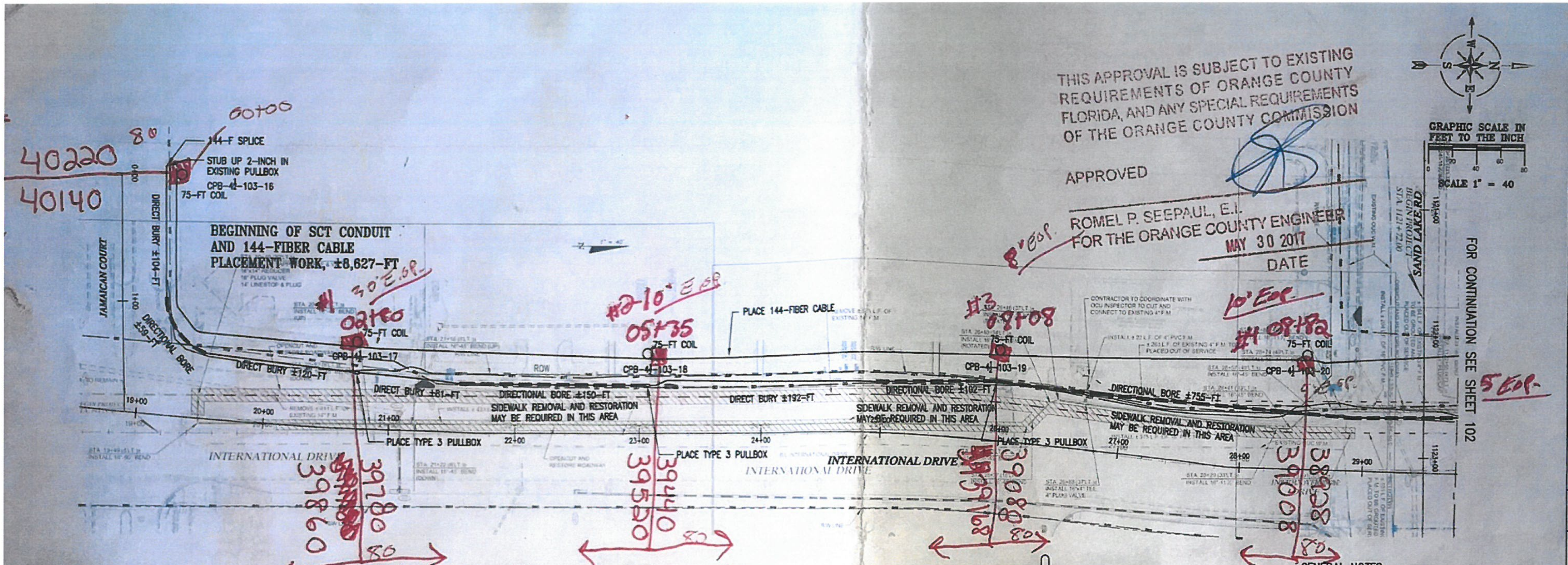
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

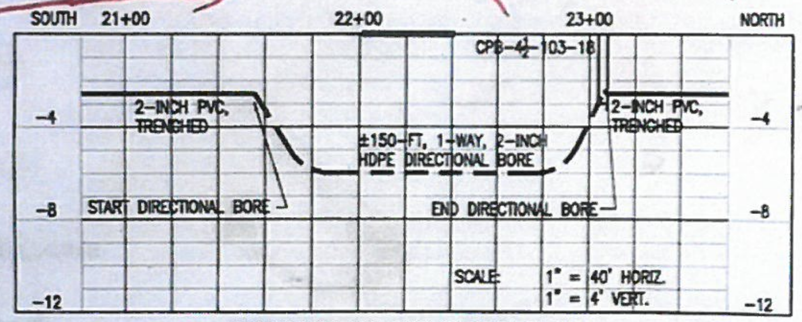
HHCP&AVCON
A JOINT VENTURE

ORANGE COUNTY GOVERNMENT FLORIDA

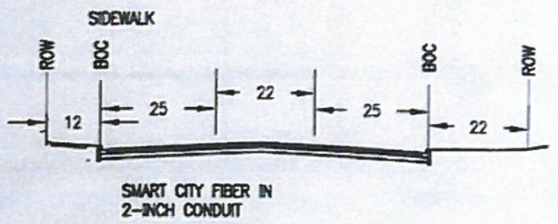
INTERNATIONAL DRIVE AT SAND LAKE ROAD PEDESTRIAN OVERPASS EXHIBIT

SHEET NO.

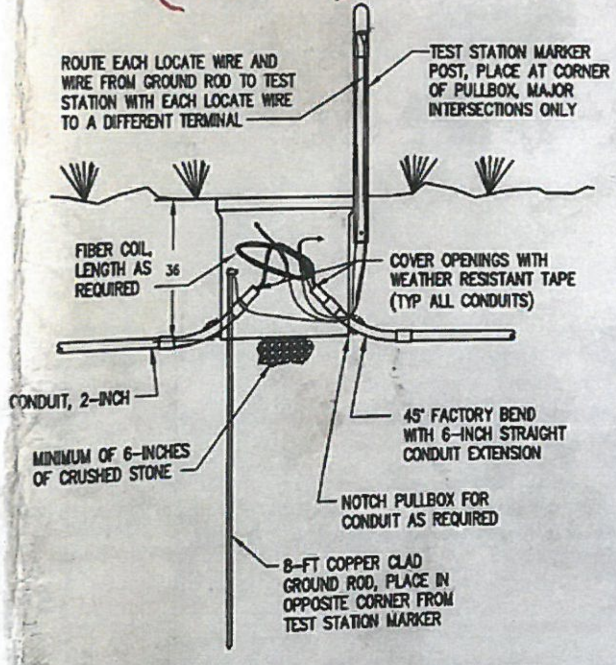




DRIVEWAY DIRECTIONAL BORE, 21+60 TO 23+10 AND TYPICAL ALL DRIVEWAY BORES



CROSS-SECTION AA, INTERNATIONAL DR AT 22+85
SCALE: 1 = 20



CONDUIT LAYOUT FOR TYPE 3 PULLBOX
SCALE: NONE

GENERAL NOTES:

1. ALL FIBER AND COPPER CABLES SHALL BE PERMANENTLY MARKED WITH WATER RESISTANT, PLASTIC CABLE LABELS.
2. CABLE LENGTHS ARE BASED ON SCALED DRAWINGS.

LEGEND:

- EXISTING BURIED COMMUNICATION OR OTHER UTILITY, SHOWN AS APPROXIMATE LOCATION, EXACT LOCATION MUST BE FIELD DETERMINED.
- 2-INCH HDPE, SDR 11, DIRECTIONAL BORE, SEE PROFILE FOR EXACT DEPTH, EXACT LOCATION TO BE FIELD DETERMINED.
- 2-INCH SCHEDULE 40 CONDUIT, MINIMUM OF 30-INCHES BELOW GRADE, EXACT LOCATION TO BE FIELD DETERMINED.
- TYPE 3 PULLBOX, OLDCASTLE, SYNTECH 2436-36-T22, 24" X 36" X 36", WITH ONE-PIECE COVER, "COMM" LOGO, OR APPROVED EQUIVALENT, BOTTOM OF PULLBOX MAY REQUIRE NOTCHING, SUPPLIED BY SMART CITY AND INSTALLED BY CONTRACTOR, STUBUP CONDUIT, USING CARLON UA7AN, 45° ELBOW, INTO BOTTOM OF BOX IN CORNER OR SIDE SHOWN, PLACE ON 6-INCHES OF GRAVEL (3/4-INCH OR SMALLER), COVER STUBBED UP CONDUIT AND PULLSTRING WITH SLIP END CAP
- OSP FIBER SPLICE
- NEW FIBER CABLE, 144-FIBER AND 24-FIBER CABLE (DIELECTRIC) PLUS LOCATE WIRE (14-GAUGE, THHN)
- (1) 24F SCAP PP F9899ID1: 143-144 A: 3-12 — FIBER PATCH BAY AND STRAND COUNT
- 75-FT — CABLE COIL LOCATION, COIL LENGTH AS SHOWN
- DRAINAGE INLET LOCATION

10					
9					
8					
7					
6					
5					
4					
3					
2	DWC	3/29/17	PERMIT		
1	DWC	2/28/17	BID ONLY		
	ISSUED BY	DATE	ISSUED FOR	APPROVED BY	DATE	DESCRIPTION

PROJECT MANAGER: LUIS DIAZ 321-436-5976
FACILITY DESIGN MANAGER: GUY BOWER 321-442-2807
PROJECT ENGINEER: DAVID CAWLEY 828-6648
CONSTRUCTION MANAGER: LUIS DIAZ 321-436-5976
DESIGN: DAVID CAWLEY
CHECKED: DWC
APPROVED: GUY BOWER
ORIGINAL WORK ORDER NUMBER: 2017

NOTICE
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UNIT NAME: EVENT PATH FIBER SERVICE SPURS 4 & 5

SHEET TITLE: SITE PLAN 144-FIBER CABLE IN CONDUIT

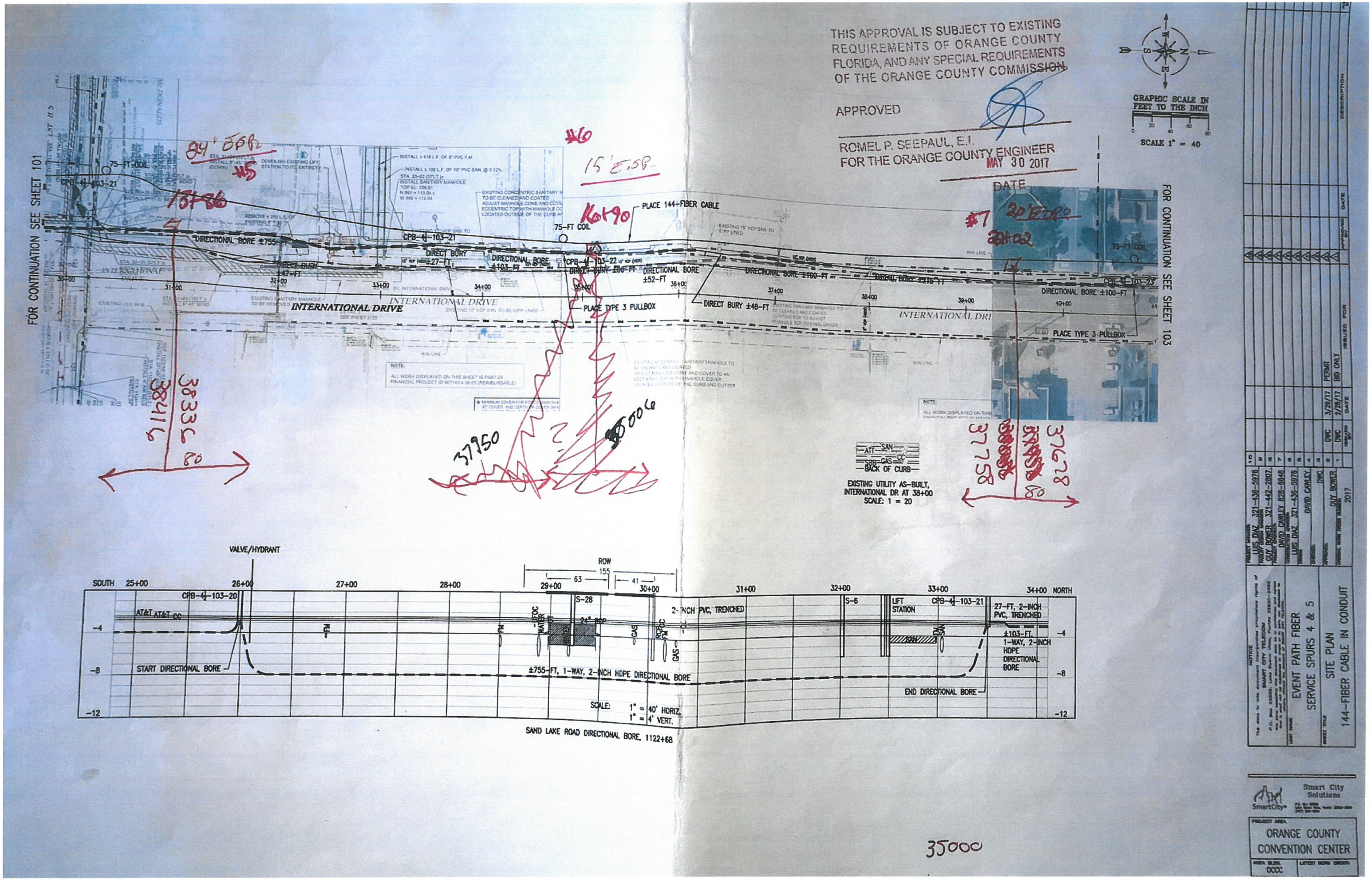
SmartCity
Smart City Solutions

PROJECT AREA: ORANGE COUNTY CONVENTION CENTER

AREA BLDG.: OCCC

LATEST WORK ORDER:

CAD DWG NAME:


THIS APPROVAL IS SUBJECT TO EXISTING REQUIREMENTS OF ORANGE COUNTY FLORIDA, AND ANY SPECIAL REQUIREMENTS OF THE ORANGE COUNTY COMMISSION
APPROVED
ROMEL P. SEEPAUL, E.I.
FOR THE ORANGE COUNTY ENGINEER
MAY 30 2017
DATE
GRAPHIC SCALE IN FEET TO THE INCH
SCALE 1" = 40
FOR CONTINUATION SEE SHEET 101
FOR CONTINUATION SEE SHEET 103
75-FT COIL
CPB-4-103-21
CPB-4-103-22
CPB-4-103-23
PLACE 144-FIBER CABLE
DIRECTIONAL BORE ±755-FT
DIRECT BURY ±27-FT
DIRECT BURY ±47-FT
DIRECTIONAL BORE ±103-FT
DIRECTIONAL BORE ±52-FT
DIRECTIONAL BORE ±100-FT
DIRECT BURY ±48-FT
PLACE TYPE 3 PULLBOX
INTERNATIONAL DRIVE
31+00
32+00
33+00
34+00
35+00
36+00
37+00
38+00
39+00
40+00
EXISTING UTILITY AS-BUILT, INTERNATIONAL DR AT 38+00
SCALE: 1 = 20
BACK OF CURB
84' ESB
#5
15' ESB
#6
16+90
#7
20' ESB
37+86
38336
38416
80
37950
35006
37758
37628
SOUTH
NORTH
VALVE/HYDRANT
ROW
155
63
41
25+00
26+00
27+00
28+00
29+00
30+00
CPB-4-103-20
AT&T
START DIRECTIONAL BORE
±755-FT, 1-WAY, 2-INCH HDPE DIRECTIONAL BORE
2-INCH PVC, TRENCHED
LIFT STATION
27-FT, 2-INCH PVC, TRENCHED
±103-FT, 1-WAY, 2-INCH HDPE DIRECTIONAL BORE
END DIRECTIONAL BORE
SCALE: 1" = 40' HORIZ. 1" = 4' VERT.
SAND LAKE ROAD DIRECTIONAL BORE, 1122+68
35000
LUIS DIAZ 321-436-5976
GUY BOWER 321-442-2807
DAVID CAWLEY 828-582-5648
DAVID CAWLEY
GUY BOWER
2017
EVENT PATH FIBER
SERVICE SPURS 4 & 5
SITE PLAN
144-FIBER CABLE IN CONDUIT
BID ONLY
PERMIT
Smart City Solutions
ORANGE COUNTY CONVENTION CENTER
OCCC

HYPOWER

DIRECTIONAL BORE

DATE:

SUBCONTRACTOR: McRae Enterprises

LOCATOR: Doug FS Falcon

DIRECTION OF BORE: South

JOB #: Smart City

STREET LOCATION: International Drive

BEGIN STATION: 13+86

END STATION: 08+82

NUMBER CONDUITS:

SIZE CONDUITS: 1-2"

504'

ROD#	LOCATION	DEPTH	DISTANCE FROM E.O.P.	ROD#	LOCATION	DEPTH	DISTANCE FROM E.O.P.	COMMENTS
1		4'		31		33'8"		
2		7'6"		32		32'4"		
3		9'3"		33		31'11"		
4		11'7"		34		31'7"		
5		13'8"		35		30'3"		
6		15'		36		29'7"		
7		16'9"		37		28'6"		
8		18'1"		38		27'11"		
9		21'3"		39		27'		
10		23'		40		26'4"		
11		25'1"		41		25'1"		
12		27'		42		24'2"		
13		28'		43		23'		
14		29'1		44		21'2"		
15		30'4		45		19'		
16		31'6"		46		17'6"		
17		32'4"		47		13'4"		
18		33'3"		48		9'		
19		34'2"		49		5'7"		
20		34'		50		3'		
21		32'10"		51				
22		33'		52				
23		33'2"		53				
24		32'9"		54				
25		32'4"		55				
26		33'		56				
27		33'3"		57				
28		33'4"		58				
29		32'9"		59				
30		33'7"		60				

SUBCONTRACTOR REPRESENTITIVE:

SIGNATURE:

PRINT:

HYPOWER REPRESENTITIVE:

SIGNATURE:

PRINT:

COMPLETED WORK

I do hereby attest the quantities are accurate this ____ day of ______Feb.____, 2017

WHITE - Management YELLOW - Foreman PINK - Subcontractor

Finney, Sue

From: Michelle Daniel <michelle.daniel@summitbb.com>
Sent: Thursday, April 7, 2022 1:18 PM
To: Johnson, Nick
Subject: RE: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments
Attachments: I-Drive Pedestrain Bridge Study (International Dr & Sandlake Rd.) EXHIBIT 01 (02.22.22) (003).pdf

Good day Nick,
Attached is the marked map you provided, showing the location of Summit Broadband's existing underground facilities within your proposed area.
Please review.

Thank you.

Michelle Daniel
Network Documentation Specialist
O 407.996.1183
summit-broadband.com

summit BROADBAND
DATA | VOICE | VIDEO

From: Johnson, Nick <njohnson@avconinc.com>
Sent: Tuesday, March 29, 2022 10:23 AM
To: REYNOLDS, ALAN <ar2916@att.com>; relocations@lumen.com; NationalRelo@centurylink.com; CentralFloridaRoadMoves_CTL@centurylink.com; Level3 Network Relocations <Relo@centurylink.com>; Tynes, Ronald B <Ronald.Tynes@charter.com>; Usry Jr., Marvin L <marvin.usryjr@charter.com>; Domostoy, Tracey E <Tracey.Domostoy@charter.com>; CENFLR-LAC_Construction@comcast.com; Fiber Dig Facilities <Fiber.dig@crowncastle.com>; DEFDistributionGOV <DEFDistributionGOV@duke-energy.com>; DEFTransmissionGOV@Duke-Energy.com; john.mcneil@verizon.com; investigations@verizon.com; bryan.lantz@verizon.com; Christina.Crosby@ocfl.net; Development Services <DevelopmentServices@ouc.com>; David Cawley <DCawley@smartcity.com>; Shawn Winsor <SWinsor@tecoenergy.com>; JDomning@tecoenergy.com; henry.klobucar@zayo.com; permit <permit@summit-broadband.com>
Cc: Pletzer, Clint_P.E. <cpletzer@avconinc.com>; Baldocchi, Rick_P.E. <rbaldocchi@avconinc.com>; Harper, Anthony <aharper@avconinc.com>
Subject: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments

International Drive and Sand Lake Road
Utility Coordination and Adjustments

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Engineer | AVCON, INC.

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Engineers & Planners
5555 E. Michigan Street, Suite 200
Orlando, Florida 32822
Office: 407.599.1122
Fax: 407.599.1133
NJohnson@avconinc.com

www.avconinc.com

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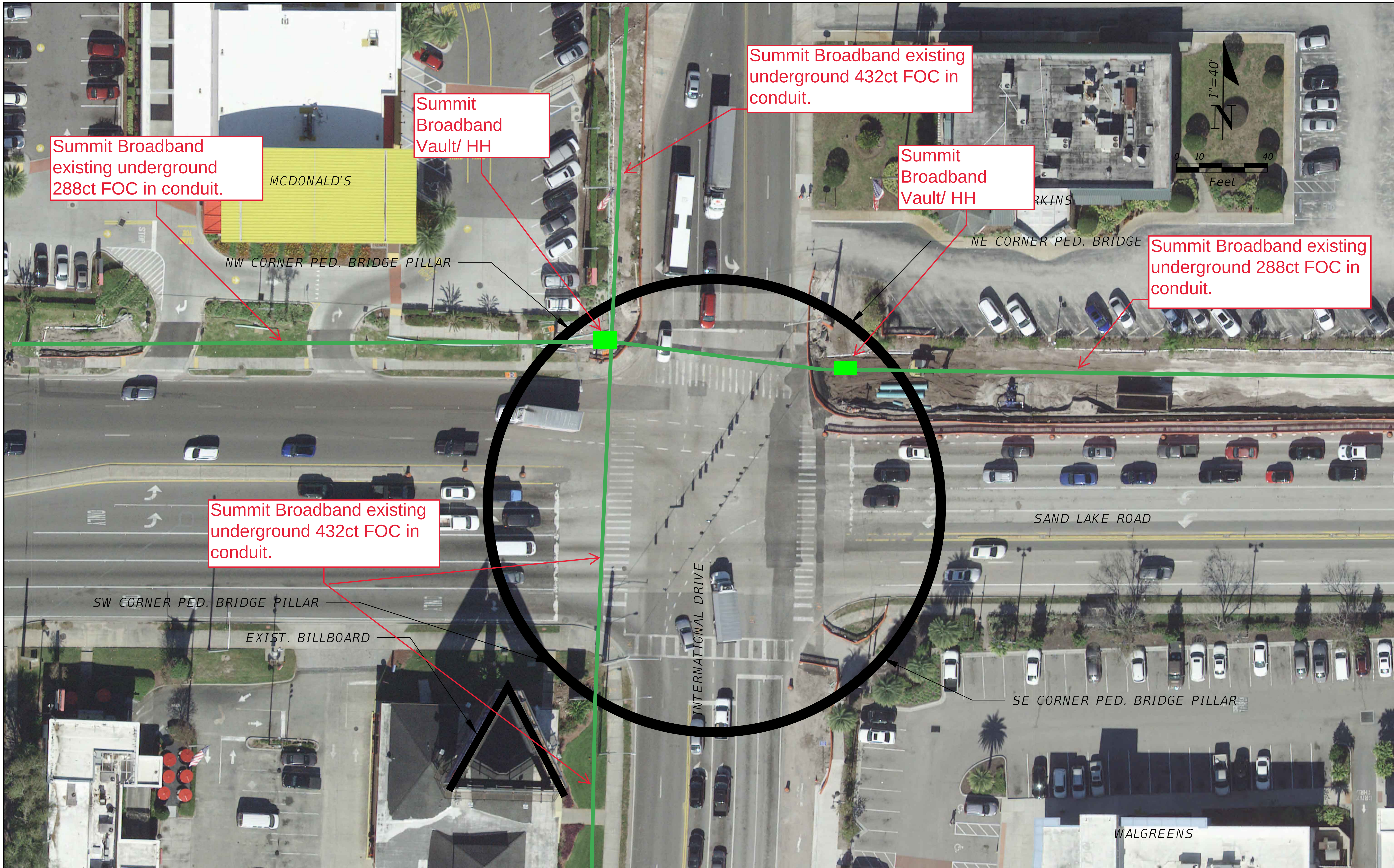

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HHCP&AVCON
A JOINT VENTURE

ORANGE COUNTY GOVERNMENT FLORIDA

INTERNATIONAL DRIVE AT SAND LAKE ROAD PEDESTRIAN OVERPASS EXHIBIT

SHEET NO.

A T & T/ DISTRIBUTION
SBF02
TELEPHONE
DINO FARRUGGIO
(561) 683-2729

CENTURYLINK
L3C900
FIBER
NETWORK RELATIONS
(877) 366-8344 x2

CHARTER COMMUNICATIONS
BH1956
CATV, FIBER, TELEPHONE
JOHN SMITH
(407) 532-8520

CHARTER COMMUNICATIONS
CVCFTV
CATV, FIBER, TELEPHONE
JOHN SMITH
(407) 532-8520

COMCAST COMMUNICATIONS/PREV LK CNTY CBLV
LCA395
CATV
ANDREW SWEENEY
(904) 738-6898

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MCIU01
COMMUNICATION LINES, FIBER
MCIU01 INVESTIGATIONS

ORANGE COUNTY PUBLIC WORKS
OC1420
FIBER, TRAFFIC SIGNALS
MATTHEW SHIPLEY
(407) 836-7814

ORANGE COUNTY UTILITIES - WASTE WATER
OC1332
WASTEWATER
MARC BROWN

(407) 836-6850

ORLANDO UTILITIES COMMISSION - WATER
OUC553
WATER
STEVEN LOCKINGTON
(407) 434-2568

SMART CITY TELECOM
SC1284
FIBER, TELEPHONE
GUY BOWER
(407) 828-6744

SUMMIT BROADBAND
OTC811
FIBER, TELEPHONE
MICHELLE DANIEL
(407) 996-1183

TECO PEOPLES GAS- ORLANDO
PGSORL
GAS
JOAN DOMNING
(813) 275-3783

TRAFFIC CONTROL DEVICES
TC2045
ELECTRIC, FIBER
PATRICIA VICKERS
(407) 869-5300 x168

ZAYO GROUP / FORMERLY LIGHTWAVE, LLC
FLW941
FIBER
HENRY KLOBUCAR
(406) 496-6510

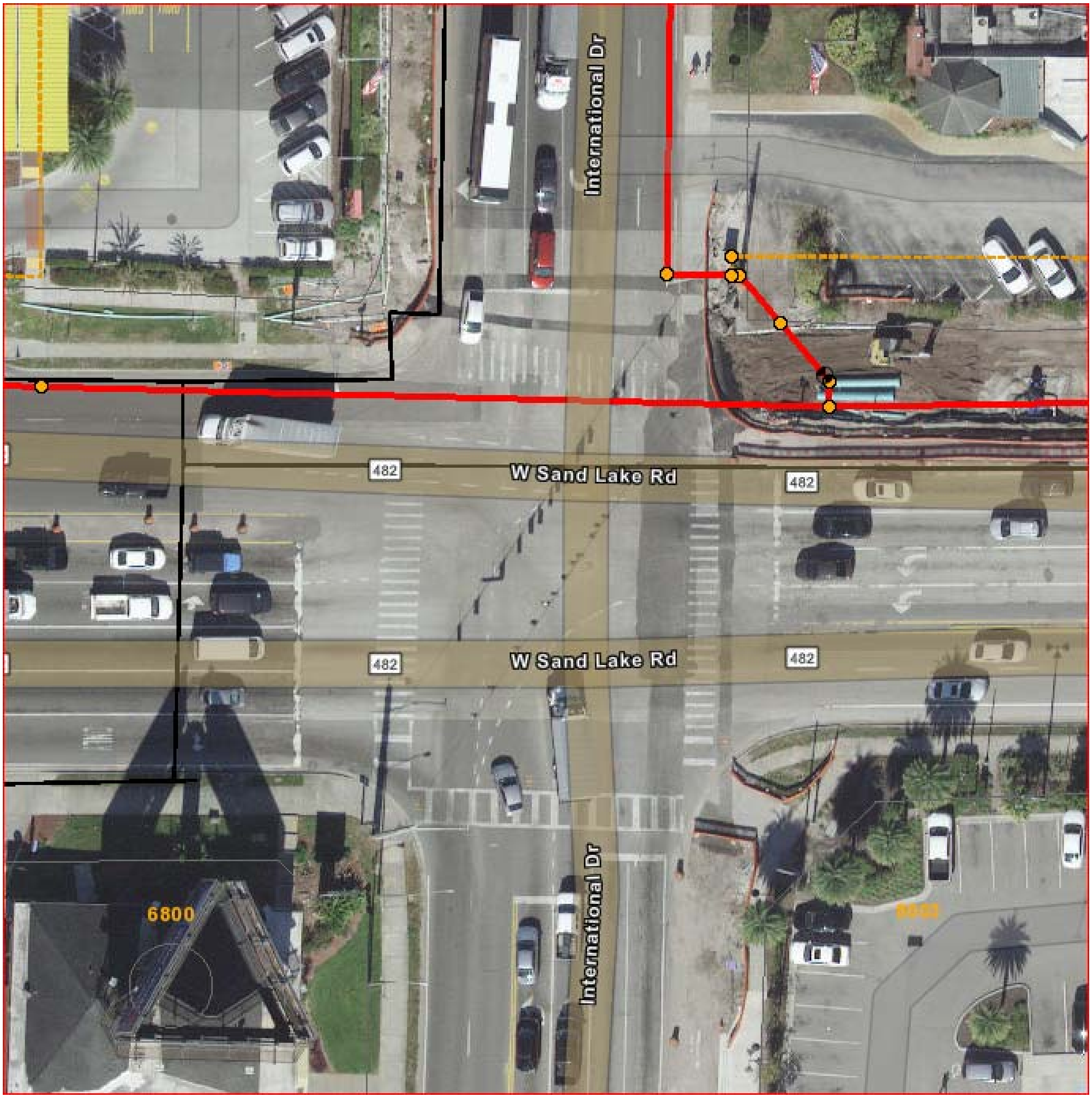
Finney, Sue

From: Domning, Joan <JDomning@tecoenergy.com>
Sent: Wednesday, March 30, 2022 9:10 AM
To: Johnson, Nick
Subject: RE: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments

Please see our GIS map below, the red line is a 6" coated steel gas distribution line.
Thank you

Joan Domning
Senior Administrative Specialist
Peoples Gas
Distribution Engineering
8416 Palm River Road
Tampa, FL 33619
Office: 813-275-3783
Ext. 53783

TECO
PEOPLES GAS
AN EMERA COMPANY



From: Johnson, Nick <njohnson@avconinc.com>
Sent: Tuesday, March 29, 2022 10:23 AM
To: REYNOLDS, ALAN <ar2916@att.com>; relocations@lumen.com; NationalRelo@centurylink.com; CentralFloridaRoadMoves_CTL@centurylink.com; Level3 Network Relocations <Relo@centurylink.com>; Tynes, Ronald B <Ronald.Tynes@charter.com>; Usry Jr., Marvin L <marvin.usryjr@charter.com>; Domostoy, Tracey E <Tracey.Domostoy@charter.com>; CENFLR-LAC_Construction@comcast.com; Fiber Dig Facilities <Fiber.dig@crowncastle.com>; DEFDistributionGOV <DEFDistributionGOV@duke-energy.com>; DEFTransmissionGOV@Duke-Energy.com; john.mcneil@verizon.com; investigations@verizon.com; bryan.lantz@verizon.com; Christina.Crosby@ocfl.net; Development Services <DevelopmentServices@ouc.com>; David Cawley <DCawley@smartcity.com>; Winsor, Shawn <SWinsor@tecoenergy.com>; Domning, Joan <JDomning@tecoenergy.com>; henry.klobucar@zayo.com; permit@summit-broadband.com
Cc: Pletzer, Clint_P.E. <cpletzer@avconinc.com>; Baldocchi, Rick_P.E. <rbaldocchi@avconinc.com>; Harper, Anthony

<aharper@avconinc.com>
Subject: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments

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Re: I-Drive Pedestrian Bridge Study
International Drive and Sand Lake Road
Utility Coordination and Adjustments

To Whom It May Concern:

The HHCP/AVCON Joint Venture has been retained by Orange County to perform a Conceptual Study to evaluate the potential of putting a pedestrian overpass at the intersection of International Drive and Sand Lake Road in Orlando, FL. The proposed structure will connect all four corners of the intersection for pedestrian and bicycle traffic.

The purpose of the study is to evaluate the impacts of the overpass on traffic along the roadways and through the intersection, and determine impacts on drainage, lighting, crosswalks, signage, signalization, and existing utilities.

To assist us in identifying any potential conflicts between the proposed design improvements and the existing utilities located within the project limits, please review existing intersection configuration exhibit. Please use this exhibit to identify any utilities your agency may have within the project limits so that we can coordinate any possible conflicts that may need to be adjusted or addressed by possible relocation or avoidance.

We will request that each utility provide marked plans highlighting their facilities within 500 feet of the intersection. Additionally, a utility coordination meeting will be scheduled to review preliminary design and any potential conflicts.

Your cooperation in this matter is greatly appreciated. Please feel free to contact us at your convenience if you have any questions regarding this matter.

Sincerely,

Nick Johnson, E.I.
Engineer | AVCON, INC.

Transforming Today’s Ideas into Tomorrow’s Reality

Engineers & Planners
5555 E. Michigan Street, Suite 200
Orlando, Florida 32822

Office: 407.599.1122
Fax: 407.599.1133
NJohnson@avconinc.com

www.avconinc.com

Finney, Sue

From: Domning, Joan <JDomning@tecoenergy.com>
Sent: Tuesday, April 5, 2022 2:09 PM
To: Johnson, Nick
Subject: Sunshine Ticket #087205536
Attachments: 04-Orlando.doc

Please see the attached document and map below.
Thank you

Joan Domning
Senior Administrative Specialist
Peoples Gas
Distribution Engineering
8416 Palm River Road
Tampa, FL 33619
Office: 813-275-3783
Ext. 53783

TECO PEOPLES GAS
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811 Know what's below. Call before you dig.
IT'S THE LAW

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provid
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purpos
and is
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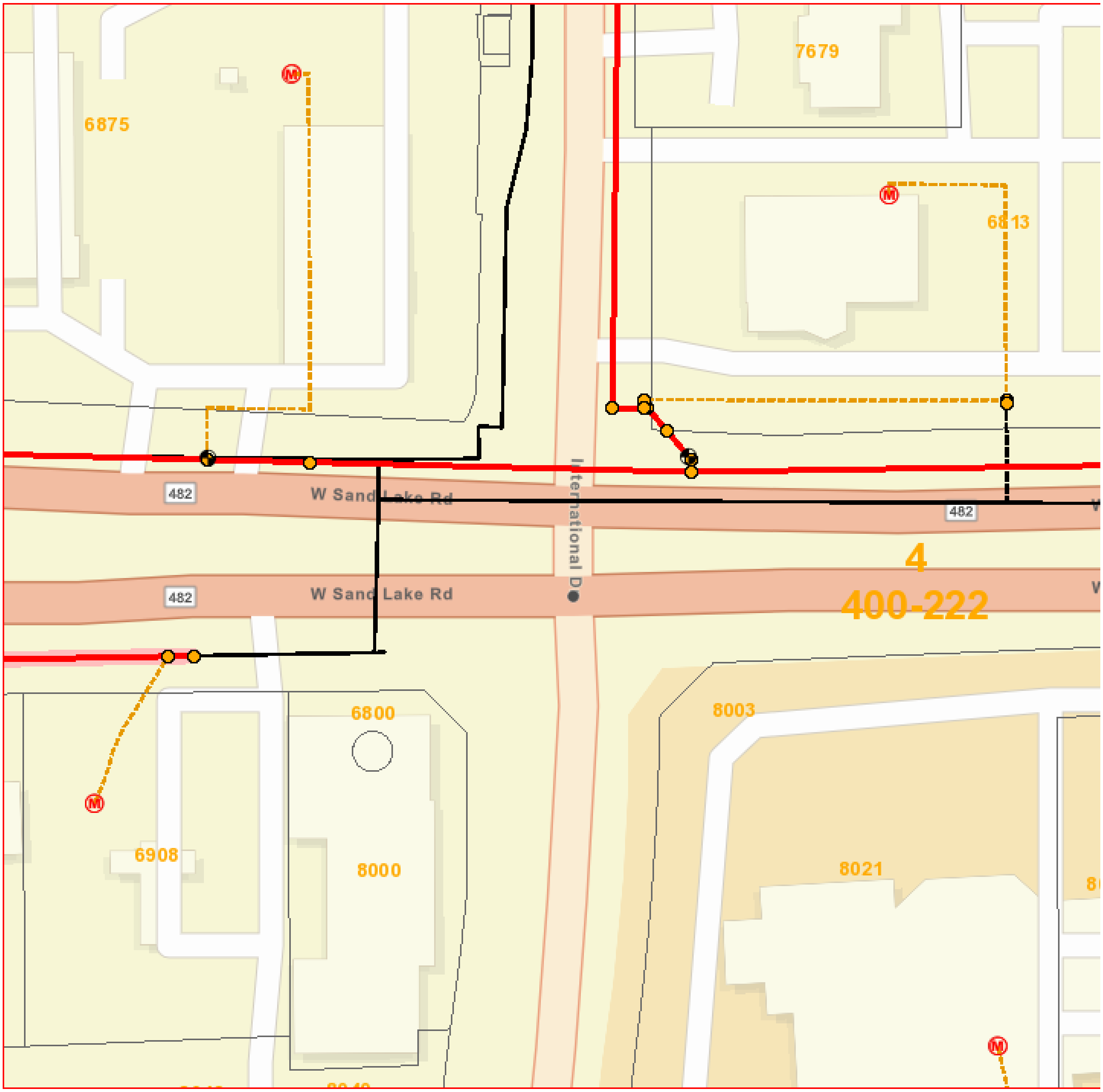

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Finney, Sue

From: Henry Klobucar <henry.klobucar@zayo.com>
Sent: Tuesday, March 29, 2022 12:03 PM
To: Johnson, Nick
Subject: RE: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments
Attachments: FL.kmz

From: Johnson, Nick <njohnson@avconinc.com>
Sent: Tuesday, March 29, 2022 8:23 AM
To: REYNOLDS, ALAN <ar2916@att.com>; relocations@lumen.com; NationalRelo@centurylink.com; CentralFloridaRoadMoves_CTL@centurylink.com; Level3 Network Relocations <Relo@centurylink.com>; Tynes, Ronald B <Ronald.Tynes@charter.com>; Usry Jr., Marvin L <marvin.usryjr@charter.com>; Domostoy, Tracey E <Tracey.Domostoy@charter.com>; CENFLR-LAC_Construction@comcast.com; Fiber Dig Facilities <Fiber.dig@crowncastle.com>; DEFDistributionGOV <DEFDistributionGOV@duke-energy.com>; DEFTransmissionGOV@Duke-Energy.com; john.mcneil@verizon.com; investigations@verizon.com; bryan.lantz@verizon.com; Christina.Crosby@ocfl.net; Development Services <DevelopmentServices@ouc.com>; David Cawley <DCawley@smartcity.com>; Shawn Winsor <SWinsor@tecoenergy.com>; JDomning@tecoenergy.com; henry.klobucar@zayo.com; permit@summit-broadband.com
Cc: Pletzer, Clint_P.E. <cpletzer@avconinc.com>; Baldocchi, Rick_P.E. <rbaldocchi@avconinc.com>; Harper, Anthony <aharper@avconinc.com>
Subject: I-Drive Pedestrian Bridge Study - Utility Coordination and Adjustments

Re: I-Drive Pedestrian Bridge Study
International Drive and Sand Lake Road
Utility Coordination and Adjustments

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Sincerely,

Nick Johnson, E.I.
Engineer | AVCON, INC.

AVCON

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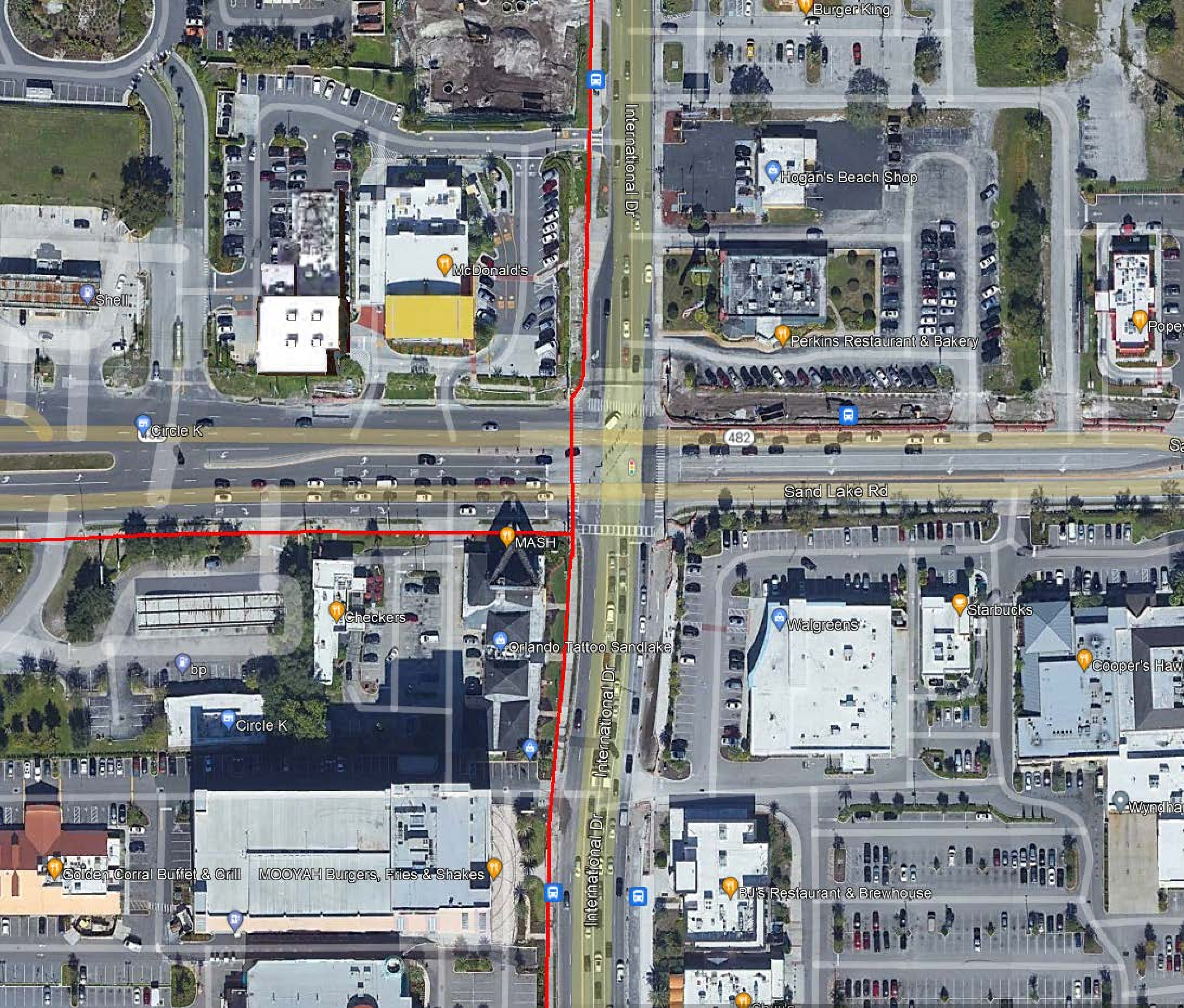
NJohnson@avconinc.com

www.avconinc.com



Burger King
International Dr
Hogan's Beach Shop
McDonald's
Shell
Perkins Restaurant & Bakery
Circle K
482
Sand Lake Rd
MASH
Checkers
Walgreens
Starbucks
Orlando Tattoo Sandlake
bp
Circle K
International Dr
Golden Corral Buffet & Grill
MOOYAH Burgers, Fries & Shakes
International Dr
BJ's Restaurant & Brewhouse

APPENDIX E

NEGATIVE LETTER
FROM THE DIVISION OF HISTORICAL RESOURCES

(Electric Only)

This record search is for informational purposes only and does NOT constitute a project review. This search only identifies resources recorded at the Florida Master Site File and does NOT provide project approval from the Division of Historical Resources. Contact the Compliance and Review Section of the Division of Historical Resources at CompliancePermits@dos.MyFlorida.com for project review information.

June 21, 2021
#
Jason Teliszczak
Construction Phased Service Rep.
AVCON, INC

In response to your request on June 21, 2021, the Florida Master Site File lists no cultural resources recorded at the intersection of Sand Lake Rd. & International Drive, Orlando, FL.

When interpreting the results of our search, please consider the following information:
#

- **This search area may contain *unrecorded* archaeological sites, historical structures or other resources even if previously surveyed for cultural resources.**
- **Because vandalism and looting are common at Florida sites, we ask that you limit the distribution of location information on archaeological sites.**
- **While many of our records document historically significant resources, the documentation of a resource at the Florida Master Site File does not necessarily mean the resource is historically significant.**
- **Federal, state and local laws require formal environmental review for most projects. This search DOES NOT constitute such a review. If your project falls under these laws, you should contact the Compliance and Review Section of the Division of Historical Resources at** CompliancePermits@dos.MyFlorida.com

Please do not hesitate to contact us if you have any questions regarding the results of this search.

Sincerely,

Eman M. Vovsi

Eman M. Vovsi, Ph.D.
Florida Master Site File
Eman.Vovsi@DOS.MyFlorida.com

APPENDIX F

PRELIMINARY GEOTECHNICAL REPORT FOR FOUNDATION EVALUATION DATED 10/11/2023

(Electric Only)

Preliminary Geotechnical Report for Foundation Evaluation
I-Drive & Sand Lake Road Pedestrian Bridge
Orlando, Florida
Nadic Project No.: PR.GEO-RD21029

Prepared for:

Avcon, Inc.
5555 East Michigan Street, Suite 200
Orlando, FL 32822

Prepared by:

Nadic Engineering Services, Inc.
601 N. Hart Blvd
Orlando, Florida 32818
407-521-4771

.

October 11, 2023

AVCON
5555 East Michigan Street, Suite 200
Orlando, Florida 32814

Attention: Mr. Rick Baldocchi, P.E.

Re: Preliminary Geotechnical Report for Foundation Evaluation
International Drive & Sand Lake Road Pedestrian Bridge
Orlando, Florida
Orange County Project No.: Y21-803-CH
NADIC Project No. PR.GEO-RD21029

Dear Mr. Baldocchi:

Nadic Engineering Services, Inc. (NADIC) is pleased to submit this Preliminary Geotechnical Report for geotechnical evaluation on the proposed pedestrian overpass structure located at the intersection of International Drive and Sand Lake Road, Orlando, Florida. The purpose of this exploration was to investigate the subsurface conditions at the location of the proposed overpass structure. This investigation was based a very limited scope as presented on our fee proposal to AVCON dated June 28, 2021.

PROJECT LOCATION AND DESCRIPTION

The project site is located within Sections 25 & 36, Township 23 South and Range 28 East in Orange County, Florida. This project involves a geotechnical evaluation of a new pedestrian overpass structure with appropriate end treatments/approaches transversely across SR 482/Sand Lake Road on International Drive located generally 400 feet north of SR 482/Sand Lake Road and extending approximately 400 feet south of the intersection. A generalized plan view of the site is included in **Figure 1** in **Appendix A**.

REVIEW OF AVAILABLE PUBLISHED DATA

USGS Topographic Map

The topographic survey map published by United States Geological Survey (USGS) entitled "Lake Jessamine, Florida" dated 2021 was reviewed for ground surface features at the project vicinity. Based on this review, the natural ground surface elevation appears to range from about

+125 feet to +130 feet North American Vertical Datum of 1988 (NAVD-88). A reproduction of the USGS map for the project area is presented on **Figure 2** in **Appendix A**.

USDA/NRCS Soil Survey

The "Soil Survey of Orange County, Florida", published by the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) was reviewed for general near-surface soil information within the general project vicinity. The primary mapping unit within the project vicinity was Urban Land (50), which consists of urban facilities such as shopping centers, parking lots, industrial buildings, houses, streets sidewalks, airports and related urban structures.

In areas mapped as Urban Land, 85% or more of the surface is covered by asphalt, concrete, buildings, and other impervious surfaces that obscure or alter the soils so that their identification is not feasible, therefore the natural soil cannot be observed.

Drainage systems have been established in most areas of Urban land. Depth to the seasonal high water table is dependent upon the functioning of the draining system.

A reproduction of the USDA/NRCS soils map for the project area is illustrated on **Figure 3** in **Appendix A**. The information contained in the NRCS Soil Survey is very general and may be outdated due to recent development in the site vicinity. These developments may have modified soil condition or surface/subsurface drainage.

Potentiometric Surface Map

Based on review of the map titled "Potentiometric Surface of the Upper Floridian Aquifer in the St. Johns River Water Management District and Vicinity, Florida, 2009," published by the USGS, the elevation of the potentiometric surface in the vicinity of the project location appears to be approximately +50 feet, National Geodetic Vertical Datum of 1929 (NGVD-29). Portions of this Potentiometric Map are presented on **Figure 4** in **Appendix A**.

Generalized Geology

The geology of the Central Florida area is characterized by sedimentary strata formed during three distinct geologic periods. The surficial stratum is composed of undifferentiated Holocene/Pleistocene/Pliocene age sands containing varying amounts of silt and clay, which extend typically to depths on the order of 40 to 60 feet below the ground surface. This upper, mostly sandy zone contains the surficial aquifer (water table). A Miocene age deposit, the Hawthorn Formation, frequently underlies the surficial sands and is typically composed of clay, clayey sands and sandy limestone sometimes containing appreciable amounts of phosphate. This stratum extends to typical depths of 80 to 120 feet beneath the existing ground surface and serves as the confining layer for the underlying Floridian Aquifer.

The Eocene age Ocala and Avon Park limestone formations are contained in the Floridian Aquifer, which is one of the most productive aquifers in the world. The extremely high productivity of this aquifer is directly related to numerous cavities and interconnected channels. The deepest formation of the Eocene age is the Avon Park limestone. The Avon Park limestone consists mostly of hard brown dolostone and tan, granular limestone. Above the Avon Park limestone is the Ocala limestone. The Ocala limestone is a loose to moderate well cemented mass of very small to large microfossils with much less dolostone than the Avon Park limestone. Typically, the Ocala limestone contains almost pure limestone with no dolostone, although the lower few feet can be partly dolomitized in some areas.

SUBSURFACE EXPLORATION

To evaluate the subsurface and surface conditions for groundwater evaluation, several field visits were conducted to establish site layout and to stake the boring location, and coordinate utility locations. The subsurface conditions of the subject overpass structure were explored by performing one (1) Standard Penetration Test (SPT) boring to a depth of 80 feet below existing grade. The boring location was staked in the field by a representative of **NADIC** with the aid of a Global Positioning System (GPS) device. The boring location was provided by AVCON.

An SPT boring was performed to a depth of 80 feet below existing grade at the northwest corner of the intersection at the base of the proposed pedestrian overpass structure and was conducted in general conformance with American Society for Testing and Materials (ASTM) test designation D-1586. The boring was advanced by the rotary wash method with bentonite-based mud as the circulating fluid to stabilize the borehole. The SPT boring was performed continuously from the ground surface to 10 feet and on 2½-foot centers thereafter. After seating the sampler six (6) inches, the number of successive blows required to drive the sampler 12 inches into the soil constitutes the test result commonly referred to as the “N” value. Adjacent to the SPT boring profile on **Sheet 1** in **Appendix B** are the “N” values. The “N” value has been empirically correlated with various soil properties and is considered indicative of the relative density of cohesionless soils and the consistency of cohesive soils. The boring was performed using Standard Drop Safety Hammer (Rope-Cathead) type as noted on the SPT boring profile sheet.

GENERAL SUBSURFACE CONDITIONS

The soil and groundwater conditions encountered in the SPT boring are shown on **Sheet 1** in **Appendix B**. The soil strata encountered, soil descriptions, USCS classifications, stationing, offset and elevations are summarized as follows:

Table 1:
Generalized Subsurface Profile

Location	Boring ID (Station & Offset)	Approx. Elevation, Feet (NAVD-88)	Soil Description	Range of N-Values (blows/foot)
International Drive & Sand Lake Road	B-1 (123+67.5, 45.95' LT)	+126.9 – +113.9	Loose to medium dense, gray fine SAND, with trace silt (SP)	HA – 18
		+113.9 – 108.9	Medium dense dark brown fine SAND, with salt and trace of organics (SP-SM)	29
		+108.9 – +103.9	Medium dense, brown silty SAND (SM)	19
		+103.9 – +98.9	Very dense, light grey fine SAND, with silt (SP-SM)	76
		+98.9 – +93.9	Medium dense, brown silty SAND (SM)	29
		+93.9 – +83.9	Loose to medium dense, light brown to grey clayey SAND (SC)	9 – 15
		+83.9 – +78.9	Medium dense, gray fine SAND, with silt (SP-SM)	22
		+78.9 – +73.9	Stiff, gray sandy CLAY (CH)	15
		+73.9 – +53.9	Loose to medium dense, gray silty SAND (SM)	4 – 26
		+53.9 – +46.9	Very stiff to hard, gray sandy SILT (ML)	27 – 37

The above subsurface condition is only general descriptions. For further details refer to the report of the boring profile on **Sheet 1** in **Appendix B**.

Soil classification and stratification shown on the report of SPT Boring are based on visual examination, interpretation of the boring log by a geotechnical engineer and on laboratory results of selected soil samples. Stratification lines represent the approximate boundaries between different soil types. However, actual transition between soils may be gradual. Included with the soil profile is the groundwater and estimated seasonal high groundwater level. Subsurface conditions, including groundwater conditions, may differ from the conditions we encountered at the boring location at other locations within the project site. In addition, subsurface conditions at the boring location can change over time.

Groundwater

Groundwater was encountered in the boring at an approximate elevation of +120 feet NAVD-88.

Groundwater conditions will vary with environmental variations and seasonal conditions. Groundwater levels will fluctuate throughout the year due to factors such as the frequency/magnitude of rainfall patterns. Man-made influences such as swales, drainage ponds, underdrains, and areas of covered soil (roadways, sidewalks, etc.) will also affect groundwater conditions.

LABORATORY TESTING

Soil samples were retained from the strata observed in the boring and returned to **NADIC**'s laboratory for visual classification and stratification. Percent passing no. 200 sieve, moisture content and Atterberg limits were performed on selected samples. The results of these tests are presented on **Table 2** in **Appendix A** and also on the Report of SPT boring in **Appendix B**.

Environmental corrosion tests (pH, resistivity, chloride content, and sulfate content) were also performed on selected sample from the SPT boring. Corrosion tests were performed in accordance with FDOT Structure Design Guidelines. The environmental classification for the substructures is presented on the Report of SPT boring in **Appendix B** and should be classified as follows:

- B-1:
  Moderately aggressive for use of Steel and slightly aggressive for use of Concrete
  (pH = 6.8)

EVALUATION AND RECOMMENDATIONS

The following sections of this report present an overview of the preliminary analyses conducted to date.

Foundation Alternatives

Based on the results of our field study, the following foundation types were evaluated for this submittal:

1. Shallow Foundations
2. Drilled Shafts
3. Steel Piles
4. Prestressed Concrete Piles (PCP)

Presented below is a brief discussion of each of the foundation alternatives:

1. Shallow Foundations

   Shallow footings are not considered a technically feasible alternative for the bridge foundations because of limited space for relatively large foundation sizes and limited working space expected adjacent to travel lane, and presence of buried utilities within proposed foundation locations. The design and construction of shallow foundations may be difficult.

   Based on the information provided above, we do not recommend shallow foundations as a viable foundation alternative to support large bridge footings in these conditions.

2. Drilled Shafts

Drilled shafts are not considered a practical foundation alternative for the project. The geology at the bridge is highly variable as indicated in the boring; such variability in significant dense bearing strata depth poses problems for drilled shafts. In addition, drilled shaft foundations are unlikely to be cost effective when compared to driven pile foundations due to the anticipated difficult construction.

3. Steel Piles

Steel pile types include pipe piles and H-sections are a feasible foundation alternative. Steel piles are well suited to conditions with high variability in anticipated penetration depths where frequent splicing is expected. Steel piles will also more easily penetrate dense layers, if necessary, to achieve a desired penetration depth. Typical sizes of pipe piles range from 14 inches to 24 inches in diameter. The steel piles do not develop as much capacity for similar penetration depths as square concrete piles. As presented in this report, subsurface conditions at the proposed bridge sites are considered moderately aggressive for steel. Due to corrosivity of steel and its impact on the environment, steel piles are not considered a viable foundation alternative. However, estimated Davisson Capacity Curves for HP 14x89-inch and 24-inch Steel Pipe Piles are presented on **Plate 1** in **Appendix C**. FB-Deep computer outputs for HP 14x89-inch and 24-inch Steel Pipe Piles are included in **Appendix D**.

4. Precast Prestressed Concrete Piles (PCP)

Driven square prestressed concrete piles are considered a feasible foundation system. PCP is readily available and generally has a lower cost per ton than other pile types. Estimated Davisson Capacity Curves for 18-inch and 24-inch PCP driven from the existing ground elevation and from 10 feet below existing ground elevation are presented on **Plates 2** and **3** in **Appendix C**. FB-Deep computer outputs for 18-inch and 24- inch PCP piles are included in **Appendix D**.

Axial Capacity for Piles

Axial pile capacity analyses were performed for both Steel Piles and PCP using the FDOT computer FB-Deep Version 3.1.0 based on FDOT Research Bulletin RB-121. The results of these analyses presented in the form of Estimated Davisson Capacity Curves are presented on **Plates 1** through **3** in **Appendix C**.

The Estimated Davisson Capacity represents the theoretical failure capacity of a driven pile based on deflection criteria generated from static load testing. The Estimated Davisson Capacity of a single pile as computed by the FB-Deep program is as follows:

Estimated Davisson Capacity = Ultimate Skin Friction + Mobilized End Bearing

Where, mobilized end bearing is 1/3 of the ultimate end bearing as defined by the RB-121 report.

The Davisson Design Capacity Curves shown on **Plates 1** through **3** in **Appendix C** can be used to find the approximate tip elevations and estimate pile lengths using the following formula:

Nominal Bearing Resistance (NBR) ≥ (Factored Design Load + Net Scour + Downdrag)/ϕ

Where ϕ is a resistance factor and if Driven Piles with ≥ 5% Dynamic Testing:

- ϕ = 0.75 for Driving Criteria based on Dynamic Testing and Analysis & Static Load Test
- ϕ = 0.65 for Driving Criteria based Dynamic Testing and its Analysis

Where ϕ is a resistance factor and if Driven Piles with 100% Dynamic Testing:

- ϕ = 0.85 for Driving Criteria based on Dynamic Testing and Analysis & Static Load Test
- ϕ = 0.75 for Driving Criteria based Dynamic Testing and its Analysis

Preliminary Pile Tip Estimates

The estimated preliminary pile tip elevations are based on review of the borings, our pile capacity analyses, engineering judgment and understanding of criteria for pile bearing requirements in accordance with the FDOT specifications. Based on the Davisson Pile Capacity Curves for Steel Piles and PCP generated, we recommend the following preliminary pile design parameters:

Table 3A
Preliminary HP 14x89 and 24-inch Steel Pipe Piles
Design Parameters

Bridge ID	Boring No.	Approx. Boring Station/ Offset (ft)	Approx. Ground Surface Elev. (ft) (NAVD-88)	Pile Type					
				HP 14x89			24-inch Steel Pipe Pile		
				NBR (Tons)	Pile Tip Elev. (ft)	Est. Pile Length (ft)*	NBR (Tons)	Pile Tip Elev. (ft)	Est. Pile Length (ft)*
I-Drive and Sand Lake Rd Pedestrian Bridge	B-1	123+68 46 LT	126.9	62	77	49.9	62	96	30.9

Table 3B
Preliminary 18- and 24-inch Precast Prestressed Concrete Piles (PCP)
Design Parameters

Bridge ID	Boring No.	Approx. Boring Station/ Offset (ft)	Approx. Ground Surface Elev. (ft) (NAVD-88)	Pile Type					
				18-inch PCP			24-inch PCP		
				NBR (Tons)	Pile Tip Elev. (ft)	Est. Pile Length (ft)*	NBR (Tons)	Pile Tip Elev. (ft)	Est. Pile Length (ft)*
I-Drive and Sand Lake Rd Pedestrian Bridge	B-1	123+68 46 LT	126.9	62	110.2	16.7	62	113	13.9

Table 3C

Preliminary 18- and 24-inch Precast Prestressed Concrete Piles (PCP) Predrilled Top 10 ft Design Parameters

Bridge ID	Boring No.	Approx. Boring Station/ Offset (ft)	Approx. Ground Surface Elev. (ft) (NAVD-88)	Pile Type					
				18-inch PCP (Predrilled Top 10 ft)			24-inch PCP (Predrilled Top 10 ft)		
				NBR (Tons)	Pile Tip Elev. (ft)	Est. Pile Length (ft)*	NBR (Tons)	Pile Tip Elev. (ft)	Est. Pile Length (ft)*
I-Drive and Sand Lake Rd Pedestrian Bridge	B-1	123+68 46 LT	126.9	62	109.5	17.4	62	112.5	14.4

*Pile length is based on the ground surface elevation at the boring location, not cutoff elevation

$$\text{NBR} = \text{Nominal Bearing Resistance} = \frac{\text{Design Load} + \text{Net Scour} + \text{Downdrag}}{\Phi}$$

Where $\Phi = 0.6$

The FB-Deep results are based on long-term axial capacity derived after dissipation of soil pore water pressures; therefore, skin friction capacity may take several days after end of pile drive to get to full capacity. Because of the type of soils encountered, it is expected that end bearing will not be a significant portion of the total axial capacity. Therefore, set-checks and/or re-drives should be anticipated during test piles and production pile installation to gain additional skin friction capacity.

Elevations and capacities recommended herein are for individual piles. No reduction of the individual pile capacities will be required if piles are spaced center-to-center at three (3) times their width or greater. We recommend a test pile program to be conducted to verify driving conditions and refine estimates of pile length. The test piles should be instrumented with the Pile Driving Analyzer (PDA) in accordance with FDOT Specification 455.

Downdrag Considerations/Embankment Settlement

The anticipated embankment fill height of the proposed Pedestrian Bridge at the beginning and the end of the bridge is estimated to be about 17 feet above the existing ground surface. The abutment piles are anticipated to be driven prior to construction of the proprietary retaining wall system. Therefore, settlement caused by the fill loads could generate downdrag loads on the piles.

The encountered near surface soil is composed primarily of loose to very dense sandy soils, placement of any embankment fill on these granular cohesionless soils will result to immediate settlement which will essentially cease as the fill placement is completed. The one boring drilled did not encounter any surficial organic muck and no buried organic muck was encountered. Based on the soil profiles and SPT N-values (relative density), significant settlement is not anticipated. We anticipate most of the settlement to be elastic settlement. As bridge loads and foundation type are finalized, we will further address possible downdrag loads, if any.

Lateral Load Consideration

It is understood that lateral analysis will be performed by the structural engineer. FL-Pier soil input parameters presented in **Table 4** in **Appendix A** has been provided to the structural engineer to aid in design.

Pile Group Action

No reduction of the individual pile capacities will be required if piles are spaced center-to-center at 3 times their width or greater. The end bent pile caps usually contribute to the overall bearing capacity of the pile group, provided they are supported on competent soil outside the outer perimeter of the group. However, we do not recommend taking credit for this additional capacity.

Environmental Classification

Corrosion tests were performed on selected samples obtained within the vicinity of the proposed bridge. Test results obtained are presented on the following table.

Table 5
Summary of Environmental Classification

Location/ Intersection	Boring No.	Approx. Station/ Offset (ft)	Sample Depth (ft)	pH	Chlorides (ppm)	Sulfate (ppm)	Resistivity (ohm-cm)	Substructure Environmental Classification	
								Steel	Concrete
I-Drive and Sand Lake Rd	B-1	123+68 46 LT	126.9	8.1	41	410	3300	Moderately Aggressive	Slightly Aggressive

Based on FDOT criteria contained in the Structures Design Guidelines, the environmental classification for the proposed bridge replacement site is slightly aggressive and moderately aggressive for concrete substructure and steel substructure, respectively.

Excavations

All earthworks should be carried out in accordance with current OSHA criteria and regulations. Excavations should be cut back at appropriate slopes and/or shored as necessary. Excavated materials should not be stockpiled at the top of the slope within a horizontal distance equal to the excavation depth. Some temporary dewatering may be required to facilitate excavation work. The discharge from dewatering systems should be handled in accordance with current St. Johns Water Management District regulatory procedures.

FHWA REPORT CHECKLIST

As referenced in the Structures Design Guidelines, conformance to the FHWA Report "Checklist and Guidelines for Review of Geotechnical Reports and Preliminary Plans and Specifications" prepared by the Geotechnical and Materials Branch, FHWA, Washington, D.C., dated October 1985, is required when preparing geotechnical reports. The FHWA checklist for this report is enclosed in Appendix E of this report.

REPORT LIMITATIONS

The data provided above is based on one (1) boring only. This report does not reflect variations in soil conditions away from the boring location. Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. NADIC is not responsible for the conclusions, opinions or recommendations made by others based on these data.

The scope of the exploration was intended to evaluate subsurface conditions within a limited area up to a depth of 80 feet below existing grade. The analyses and recommendations submitted in this report are based upon the anticipated location and type of construction and the data obtained from the soil boring performed at the location indicated. If any variations become evident during the course of construction, a re-evaluation of the recommendations contained in this report will be necessary after we have had an opportunity to observe the characteristics of the conditions encountered.

The scope of our services does not include any environmental assessment or investigation for the presence or absence of hazardous or toxic materials in the soil, groundwater, or surface water within or beyond the site studied. Any statements in this report regarding odors, staining of soils, or other unusual conditions observed are strictly for information of our client,

NADIC appreciates the opportunity to have provided our services on this project and trusts the information presented is sufficient for your immediate needs. If you have any questions concerning the contents of this report or if we may be of further service, please contact us at your convenience.

Sincerely,

NADIC ENGINEERING SERVICES, INC.
Engineering Business No. 8214

Oliver D. Rosen, E.I.
Engineer

Maria Bridges, M.S., E.I.
Engineer

Godwin N. Nnadi, Ph.D., P.E.
Principal Engineer
FL Registration No. 50637

New Z Drive\Engineering\Geotechnical\Orlando\Roadway (RD)\2021\PR.GEO-RD21029-I-Drive and Sand Lake Road Bridge

ATTACHMENTS

APPENDIX A

Figure 1	Vicinity Map
Figure 2	USGS Topographic Map
Figure 3	USDA/NRCS Soil Map
Figure 4	Potentiometric Surface Map
Table 2	Summary of Laboratory Test Results
Table 4	FL-Pier Soil Parameters

APPENDIX B

Sheet 1	Report of SPT Boring

APPENDIX C

Plate 1	Axial Capacity Design Curves – Steel Piles
Plates 2 and 3	Axial Capacity Design Curves - Precast Prestressed Concrete Piles

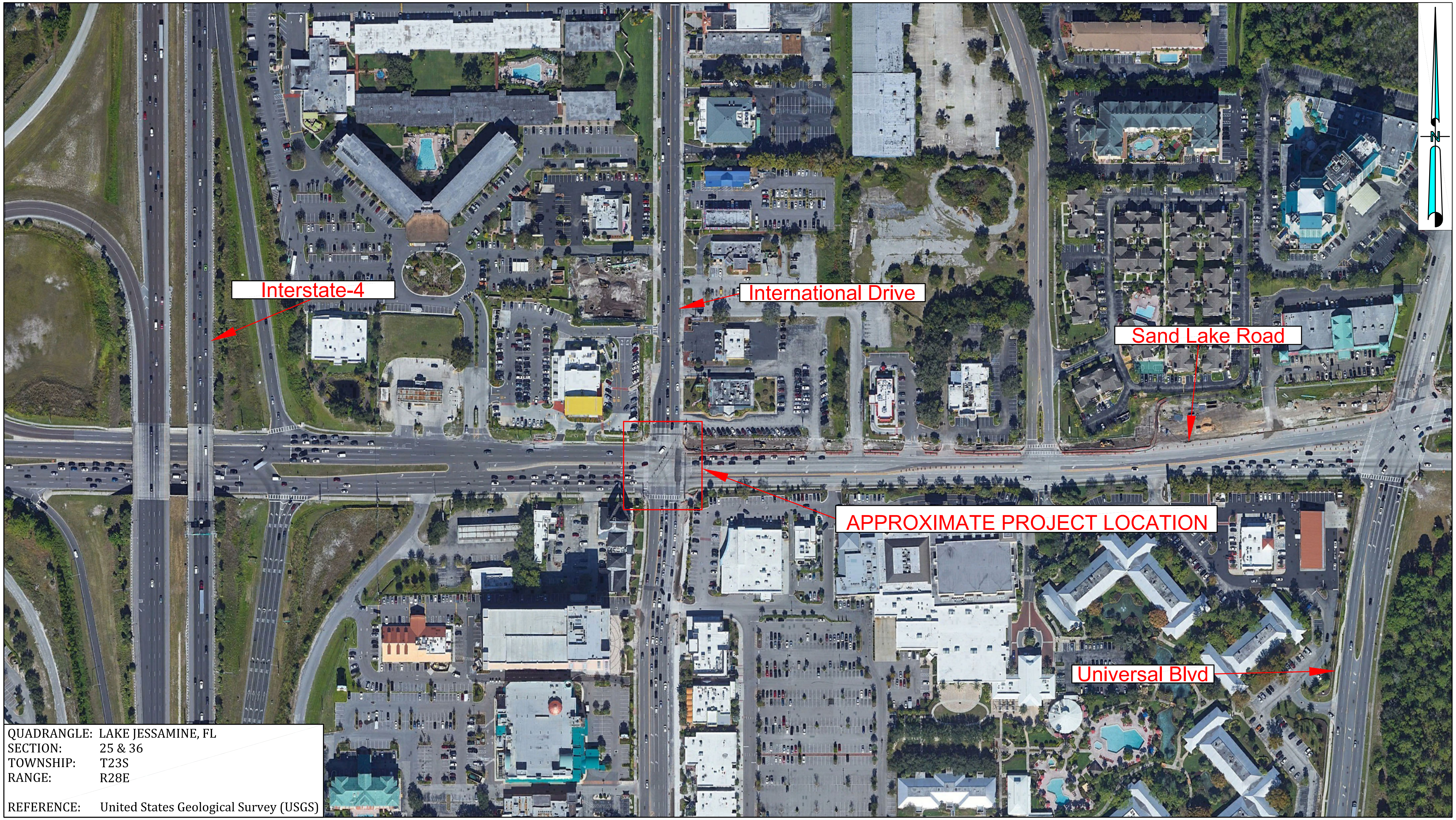
APPENDIX D

FB-Deep Output Files

APPENDIX E

FHWA Checklist

APPENDIX A



NOT TO SCALE

REVISIONS				NAMES	DATES
DATES	BY	DESCRIPTION	DRAWN BY:	ODR	03-09-2023
			CHECKED BY:	GNN	03-09-2023
			DESIGNED BY:	N/A	N/A
			CHECKED BY:	N/A	N/A
			APPROVED BY:		

NADIC ENGINEERING

GODWIN N. NNADI, Ph.D., P.E.
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CERTIFICATE OF AUTHORIZATION NO. 8214

ORANGE COUNTY FLORIDA

ORANGE COUNTY, FLORIDA

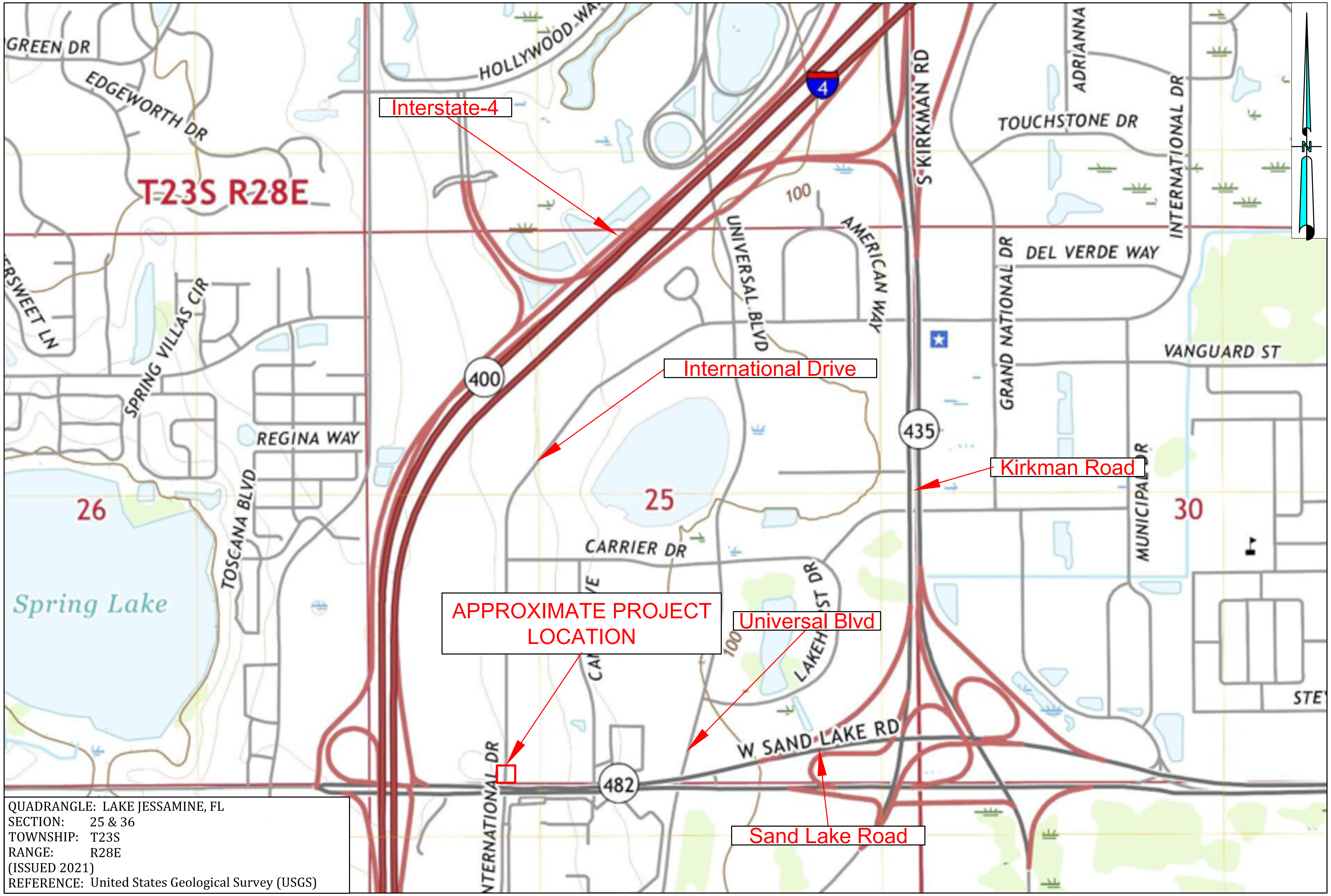
COUNTY	PROJECT No.
ORANGE	Y21-803-CH

FIGURE 1

VICINITY MAP

PROJECT NAME:
I-Drive and Sand Lake Road Pedestrian Bridge

NADIC PROJECT NO.: PR.GEO-RD21029



QUADRANGLE: LAKE JESSAMINE, FL
SECTION: 25 & 36
TOWNSHIP: T23S
RANGE: R28E
(ISSUED 2021)
REFERENCE: United States Geological Survey (USGS)

NOT TO SCALE

REVISIONS				NAMES	DATES
DATES	BY	DESCRIPTION	DRAWN BY:	ODR	03-27-2023
			CHECKED BY:	GNN	03-27-2023
			DESIGNED BY:	N/A	N/A
			CHECKED BY:	N/A	N/A
			APPROVED BY:		

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ORANGE COUNTY FLORIDA

ORANGE COUNTY, FLORIDA

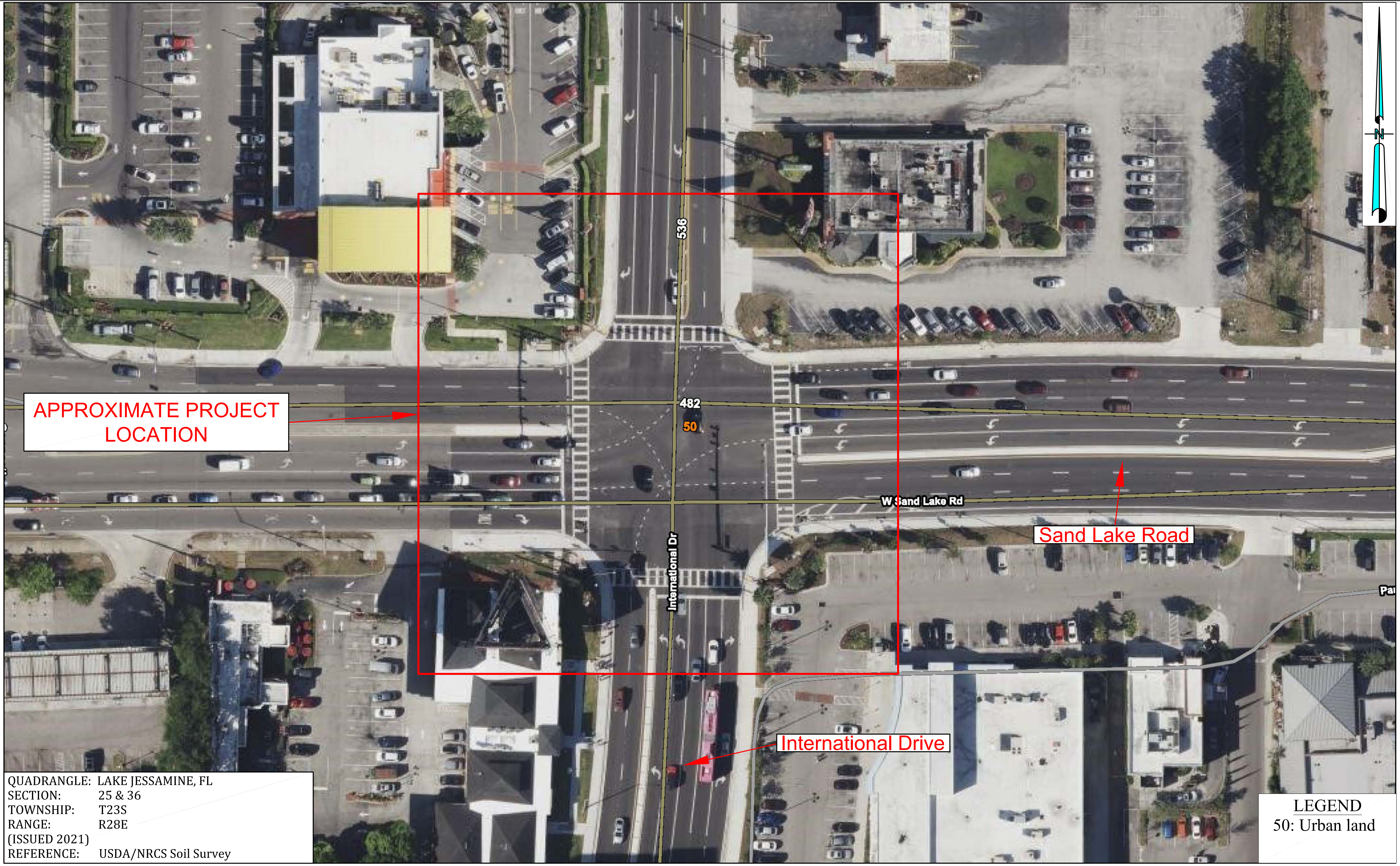
COUNTY	CONTRACT No.
ORANGE	Y21-803-CH

FIGURE 2

TOPOGRAPHIC MAP

PROJECT NAME:
I-Drive and Sand Lake Road Pedestrian Bridge

NADIC PROJECT NO.: PR.GEO.RD21029



QUADRANGLE: LAKE JESSAMINE, FL
SECTION: 25 & 36
TOWNSHIP: T23S
RANGE: R28E
(ISSUED 2021)
REFERENCE: USDA/NRCS Soil Survey

LEGEND
50: Urban land

NOT TO SCALE

REVISIONS				NAMES	DATES
DATES	BY	DESCRIPTION	DRAWN BY:	ODR	04-06-2023
			CHECKED BY:	GNN	04-06-2023
			DESIGNED BY:	N/A	N/A
			CHECKED BY:	N/A	N/A
			APPROVED BY:		

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ORANGE COUNTY FLORIDA

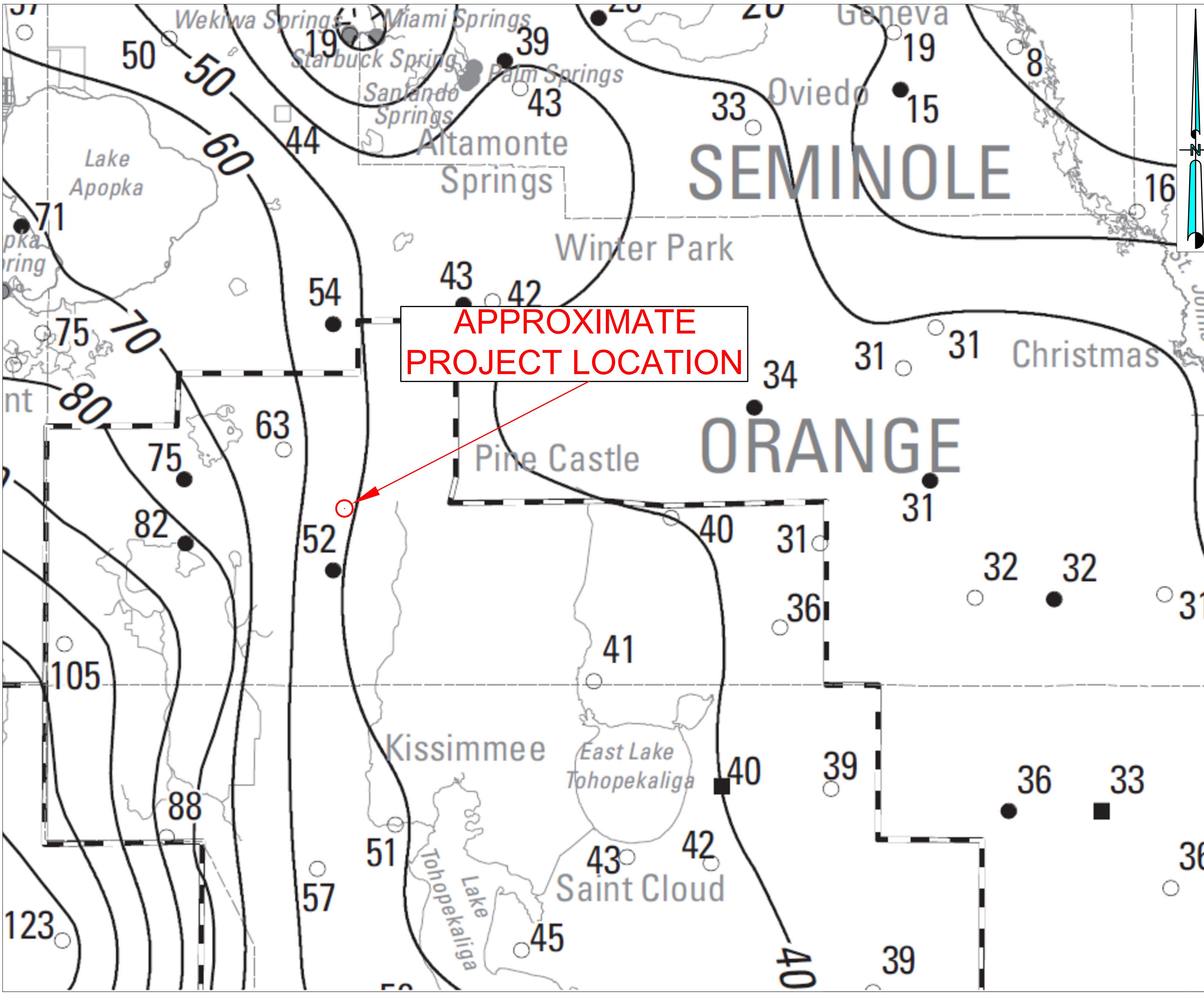
ORANGE COUNTY, FLORIDA

COUNTY	CONTRACT No.
ORANGE	Y21-803-CH

FIGURE 3
SOIL SURVEY MAP

PROJECT NAME:
I-Drive and Sand Lake Road Pedestrian Bridge

NADIC PROJECT NO.: PR.GEO.RD21029



REFERENCE: "Potentiometric Surface of the Upper Floridan Aquifer in the St. Johns River Water Management District and Vicinity, Florida, 2009," published by the United States Geological Survey (USGS).

QUAD: LAKE JESSAMINE, FL (ISSUED 2021)

SECTION:	25	36
TOWNSHIPS:	23 SOUTH	23 SOUTH
RANGES:	28 EAST	28 EAST

LEGEND

— 40 — POTENTIOMETRIC CONTOUR-Shows altitude at which water level would have stood in tightly cased wells. Contour interval is 10 feet.

Note: Elevations shown on map are in feet, National Geodetic Vertical Datum of 1929 (NGVD-29)

POTENTIOMETRIC SURFACE MAP

I-DRIVE AND SAND LAKE ROAD PEDESTRIAN BRIDGE

NADIC ENGINEERING

Civil
Geotechnical
Environmental
Consulting Engineering

DRAWN: ODR	SCALE: N.T.S.	PROJECT NO. PR.GEO-RD21029
CHECKED: GNN	DATE: 03-30-2023	FIGURE 4

TABLE 2
SUMMARY OF LABORATORY TEST RESULTS

Boring No.	Approximate Station & Offset	Sample Depth (ft)	Moisture Content (%)	Organic Content (%)	Percent Passing #200 (%)	Atterberg Limits (%)		USCS Classification
						Liquid Limit	Plasticity Index	
B-1	123+67.5	13	17	5	8	-	-	SP-SM
		18	26	-	18	-	-	SC
		33	27	-	31	-	-	SC
		48	39	-	71	52	31	CH
		63	43	-	26	NP	NP	SM

USCS: Unified Soil Classification System

TABLE 4 - SOIL INFORMATION FOR FL - PIER INPUT

Project Name: International Drive & Sand Lake Road Pedestrian Bridge
County, State: Orange, Florida
Orange County Contract No: Y21- 803-CH
NADIC Project No.: PR.GEO-RD21029

Bridge No.: -
Bent No.: -
Boring Reference: B-1
Approximate Station & Offset: 123+68, 46' LT

Elevation Datum: NAVD-88
Groundwater Elevation (feet): +119.9
Pile Tip Elevation (feet): -

	Layer No.	1		2		3		4	
	Soil Description	Sand		Clayey Sand		Silty Sand		Sandy Silt	
	Average SPT-N	21		15		10		32	
	Corrected N (N_{60})	-		-		-		-	
	Elevation (feet, NAVD-88)	+126.9 to +93.9		+93.9 to +73.9		+73.9 to +53.9		+53.9 to +46.9	
	Soil (Type)	Sand (Reese)		Clayey Sand (Reese)		Sand (Reese)		Sandy Silt (Reese)	
LATERAL		Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
	Friction Angle, PHI (degree)	33	33	23	23	30	30	36	36
	Soil Modulus, RK (kips/in^3)	0.09	0.09	0.06	0.06	0.02	0.02	0.125	0.125
	Effective Unit weight, Gamma (kips/in^{3}x10^{-5})	7.0	7.0	6.7	6.7	6.7	6.7	6.5	6.5
	Undrained Shear Strength C (ksi x 10^{-3})	--	--	--	--	--	--	--	--
	Major Principal Strain at 50% (E 50)	--	--	--	--	--	--	--	--
	Major Principal Strain at 100% (E 100)	--	--	--	--	--	--	--	--
	Average Undrained Shear Strength C avg (ksi x 10^{-3})	--	--	--	--	--	--	--	--
AXIAL	Shear Modulus G (ksi)	10.5	10.5	7.5	7.5	5.0	5.0	16	16
	Poisson's Ratio NU	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	Pile Tip Shear Modulus, QZ1 (G ksi)	10.5	10.5	7.5	7.5	5.0	5.0	16	16
	Pile Tip Poisson's Ratio, QZ2 (NU)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	Ultimate Pile Tip Resistance QZ3 (ksi) 1	0.93324	0.93324	0.3333	0.3333	0.2222	0.2222	0.71104	0.71104
	Ultimate Pile Tip Resistance QZ3 (ksi) 2	0.14364	0.14364	0.075	0.075	0.05	0.05	0.16	0.16
	Ultimate Pile Tip Resistance QZ3 (ksi) 3	0.93324	0.93324	0.3333	0.3333	0.2222	0.2222	0.71104	0.71104
TORSIONAL	Shaft_Torsional (Vertical Failure) Shear Stress, TAUF 1 = Ultimate Unit Skin Friction (ksi)	0.00554	0.00554	0.0086	0.0086	0.0061	0.0061	0.0151	0.0151
	Shaft_Torsional (Vertical Failure) Shear Stress, TAUF 2 = Ultimate Unit Skin Friction (ksi)	0.00723	0.00723	0.0089	0.0089	0.0081	0.0081	0.0105	0.0105
	Shaft_Torsional (Vertical Failure) Shear Stress, TAUF 3 = Ultimate Unit Skin Friction (ksi)	0.00034	0.00034	0.0052	0.0052	0.0037	0.0037	0.0089	0.0089

Note: 1– Concrete Piles (14-inch, 18-inch and 24-inch Square PPC Pile) 2– Closed End Steel Pipe Piles (24-inch Steel Pipe Pile) 3– Steel H-Piles (14x117 Steel H-Pile)

APPENDIX B

Sheet 1 **Report of SPT Boring**

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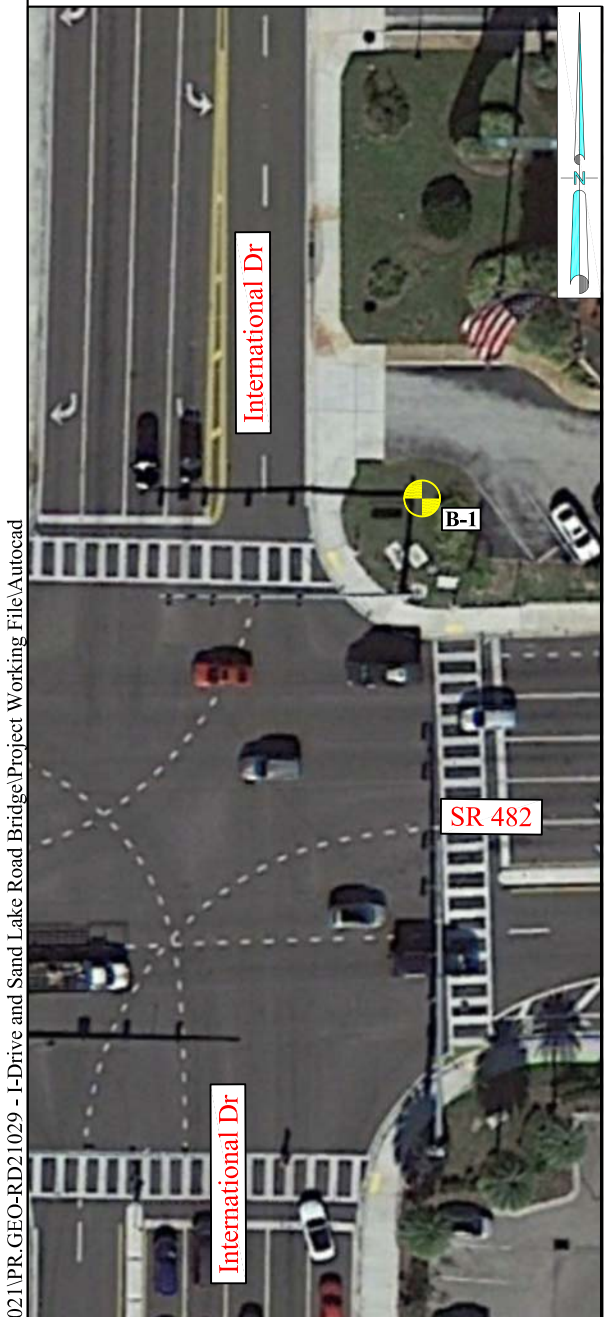
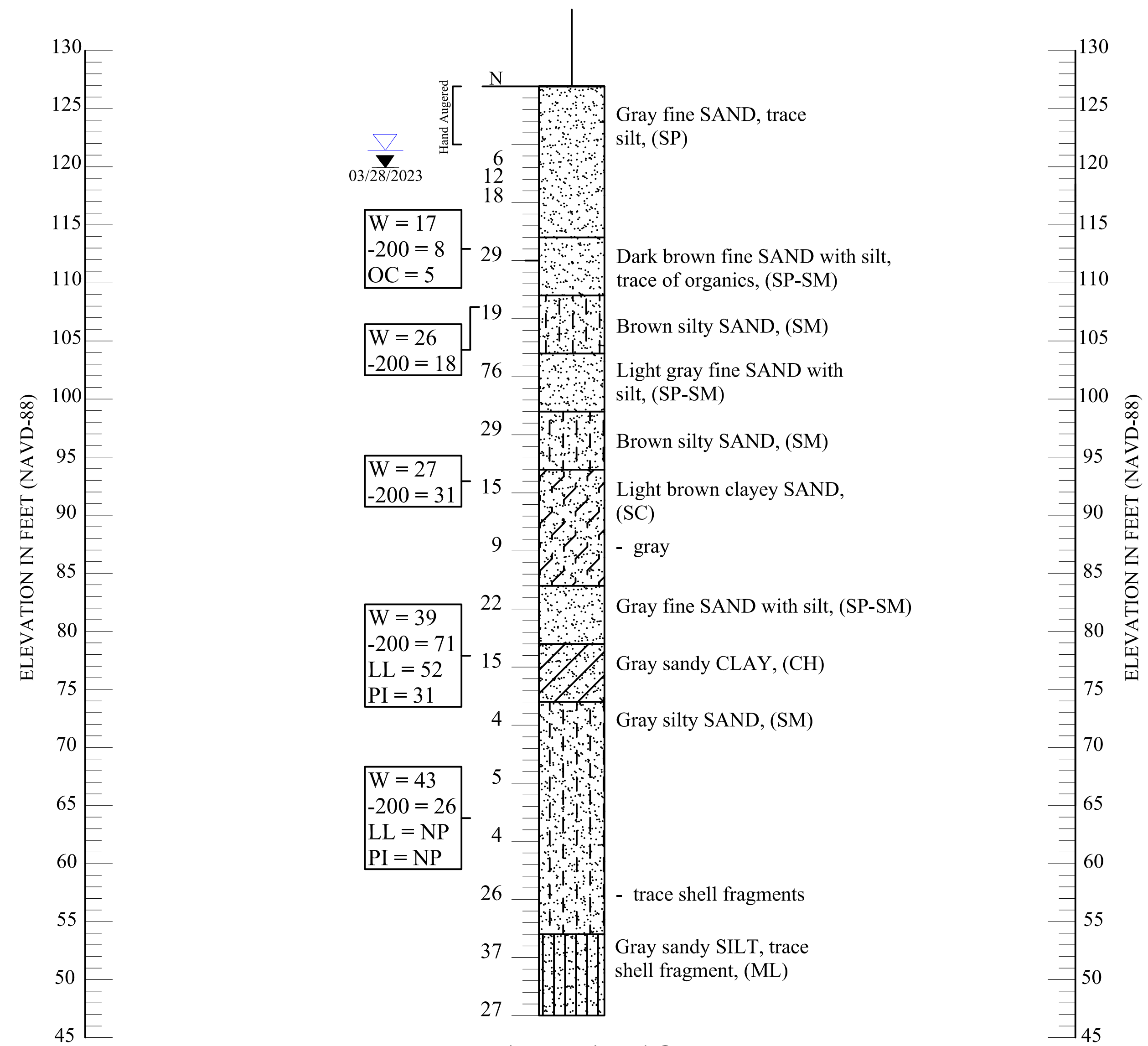


NOT TO SCALE

QUADRANGLE: LAKE JESSAMINE, FL
SECTIONS: 25, 36
TOWNSHIP: 23 SOUTH
RANGE: 28 EAST
Photo Issue 2021

Boring No.:	**B-1**
Approximate Station:	123+67.5
Approximate Offset:	45.95 LT
Approximate Elevation:	126.90
Date Drilled:	03/28/2023



Boring Terminated @
Elevation 46.90

ASTM Standard Drop Safety Hammer

LEGEND

SANDY CLAY | SANDY SILT | SAND | SILTY SAND | CLAYEY SAND

(SP) Unified soil classification group symbol

W = Natural Moisture Content (%) (FM 1-T265)
-200 = Percent passing no. 200 U.S. standard sieve (FM 1-T088)
LL = Liquid Limit (%) (FM1-T089)
PI = Plasticity Index (%) (FM1-T090)

03/28/2023 Groundwater level encountered on date shown

Estimated seasonal high groundwater level

B-1 Approximate SPT boring location

Standard Penetration Test Data

N Standard penetration resistance in blows per foot (18" spoon ASTM D-1586)

Spoon Inside Diameter	1 3/8 in.
Spoon Outside Diameter	2 in.
ASTM Standard Drop Safety Hammer (Rope-Cathead)	
Average Hammer Drop	30 in.
Hammer Weight	140 lbs.

NOTES

1. Standard Penetration Test borings were performed in accordance with ASTM D-1586. Standard Penetration Resistance are shown on the borings at the test depths in blows per foot unless otherwise noticed
2. Subsurface conditions shown on the boring do not represent conditions between boring locations. Actual conditions between the borings may vary from those shown.
3. Unified Soil Classifications shown on the boring are based on visual examination and limited laboratory testing

GRANULAR MATERIALS

RELATIVE DENSITY	Drop Safety Hammer SPT (BLOWS/FT.)	Automatic Hammer SPT (BLOWS/FT.)
Very loose	Less than 4	Less than 3
Loose	4-10	3-7
Medium Dense	10-30	7-21
Dense	30-50	21-35
Very Dense	Greater than 50	Greater than 35

SILTS AND CLAYS

CONSISTENCY	Drop Safety Hammer SPT (BLOWS/FT.)	Automatic Hammer SPT (BLOWS/FT.)
Very soft	Less than 2	Less than 1
Soft	2-4	1-3
Firm	4-8	3-6
Stiff	8-15	6-11
Very Stiff	15-30	11-21
Hard	Greater than 30	Greater than 21

ENVIRONMENTAL CLASSIFICATION

B-1	SUBSTRUCTURE
STEEL:	Moderately Aggressive
CONCRETE:	Slightly Aggressive

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
Drawn by:	ODR	04-06-2023
Checked by:	GNN	04-06-2023
Modified by:	MB	10-11-2023
Checked by:	GNN	10-11-2023
Approved by:	GNN	

ENGINEER OF RECORD:
NADIC ENGINEERING SERVICES, INC.
601 N. HART BOULEVARD
ORLANDO FL, 32818
GODWIN N. NNADI, P.E. NO. 50637

ORANGE COUNTY FLORIDA

ORANGE COUNTY, FLORIDA

COUNTY	PROJECT NO.
ORANGE	Y21-803-CH

SHEET TITLE:
REPORT OF SPT BORING

PROJECT NAME:
I-DRIVE SAND LAKE ROAD PEDESTRIAN BRIDGE

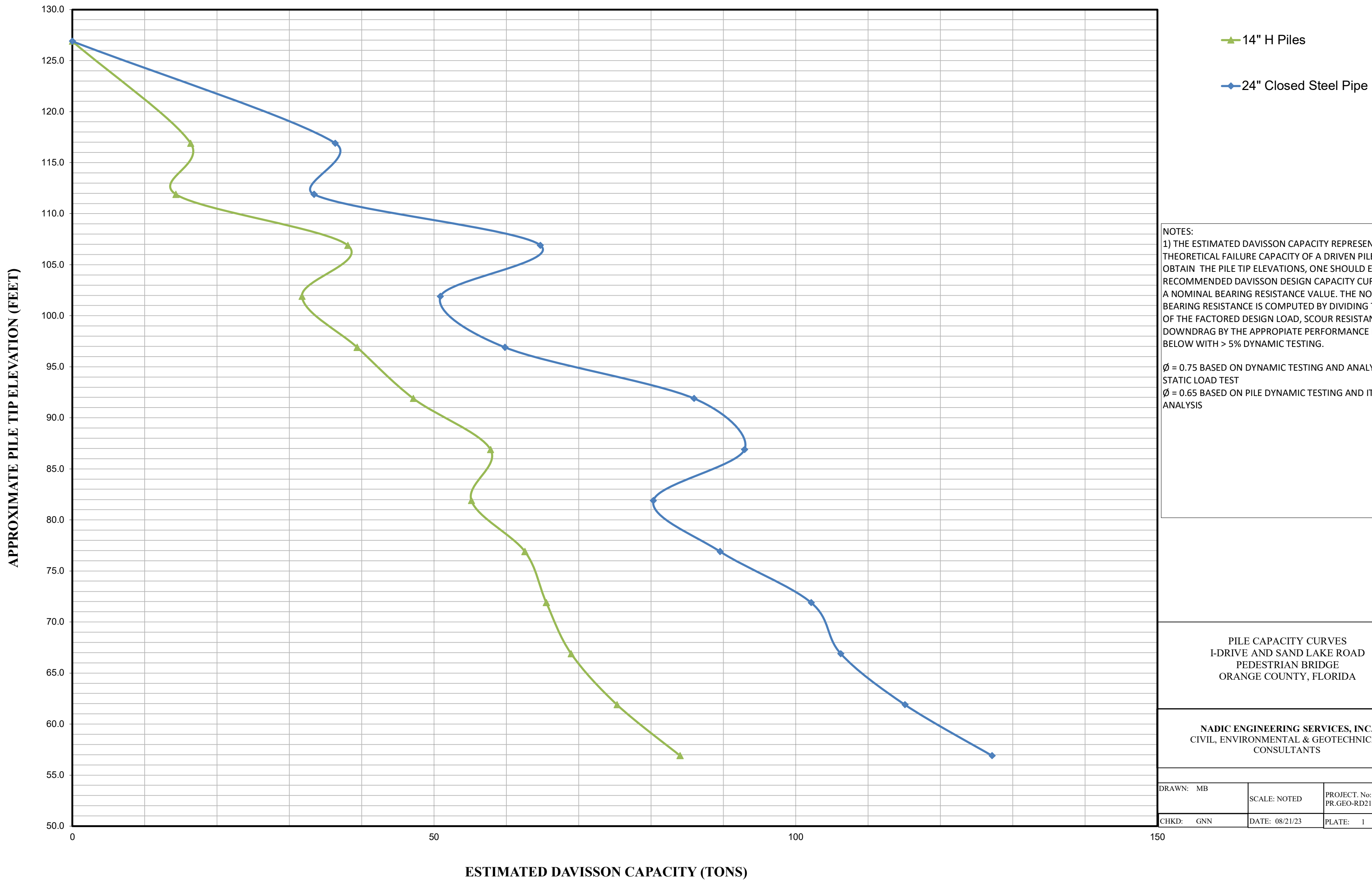
SHEET NO.

NADIC SHEET NO. 1

APPENDIX C

Plate 1	**Axial Capacity Design Curves – Steel Piles**
Plates 2 and 3	**Axial Capacity Design Curves – Precast Prestressed Concrete Piles**

AXIAL CAPACITY DESIGN CURVE
I-DRIVE AND SAND LAKE ROAD PEDESTRIAN BRIDGE
B-1 STEEL PILES



NOTES:
1) THE ESTIMATED DAVISSON CAPACITY REPRESENTS THE THEORETICAL FAILURE CAPACITY OF A DRIVEN PILE. TO OBTAIN THE PILE TIP ELEVATIONS, ONE SHOULD ENTER THE RECOMMENDED DAVISSON DESIGN CAPACITY CURVE USING A NOMINAL BEARING RESISTANCE VALUE. THE NOMINAL BEARING RESISTANCE IS COMPUTED BY DIVIDING THE SUM OF THE FACTORED DESIGN LOAD, SCOUR RESISTANCE, AND DOWNDRAG BY THE APPROPIATE PERFORMANCE FACTOR Ø BELOW WITH > 5% DYNAMIC TESTING.

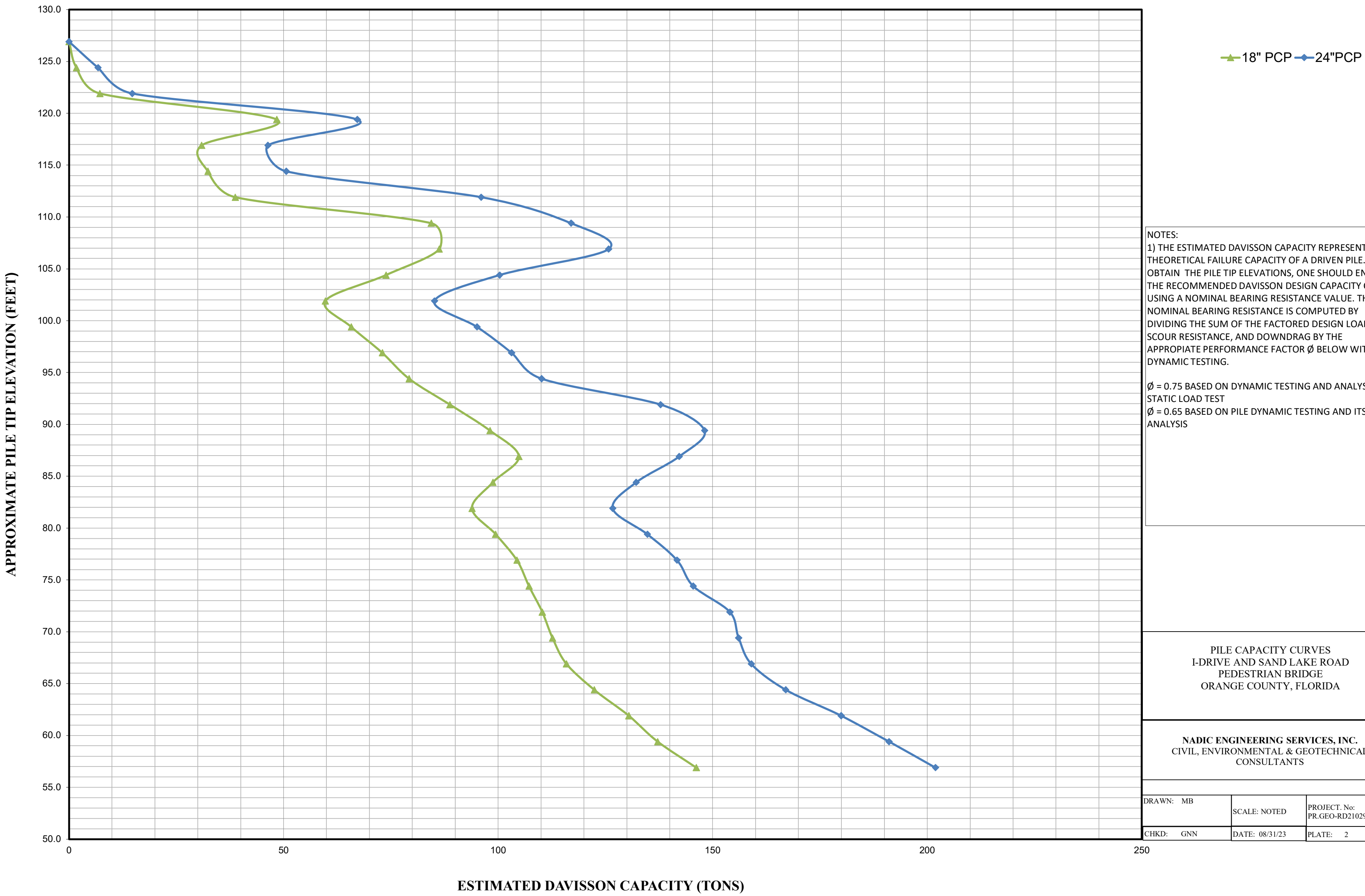
Ø = 0.75 BASED ON DYNAMIC TESTING AND ANALYSIS & STATIC LOAD TEST
Ø = 0.65 BASED ON PILE DYNAMIC TESTING AND ITS ANALYSIS

PILE CAPACITY CURVES
I-DRIVE AND SAND LAKE ROAD
PEDESTRIAN BRIDGE
ORANGE COUNTY, FLORIDA

NADIC ENGINEERING SERVICES, INC.
CIVIL, ENVIRONMENTAL & GEOTECHNICAL CONSULTANTS

DRAWN: MB	SCALE: NOTED	PROJECT. No: PR.GEO-RD21029
CHKD: GNN	DATE: 08/21/23	PLATE: 1

AXIAL CAPACITY DESIGN CURVE
I-DRIVE AND SAND LAKE ROAD PEDESTRIAN BRIDGE
B-1 PRECAST PRESTRESSED CONCRETE PILES (PCP)



NOTES:
1) THE ESTIMATED DAVISSON CAPACITY REPRESENTS THE THEORETICAL FAILURE CAPACITY OF A DRIVEN PILE. TO OBTAIN THE PILE TIP ELEVATIONS, ONE SHOULD ENTER THE RECOMMENDED DAVISSON DESIGN CAPACITY CURVE USING A NOMINAL BEARING RESISTANCE VALUE. THE NOMINAL BEARING RESISTANCE IS COMPUTED BY DIVIDING THE SUM OF THE FACTORED DESIGN LOAD, SCOUR RESISTANCE, AND DOWNDRAG BY THE APPROPIATE PERFORMANCE FACTOR Ø BELOW WITH > 5% DYNAMIC TESTING.

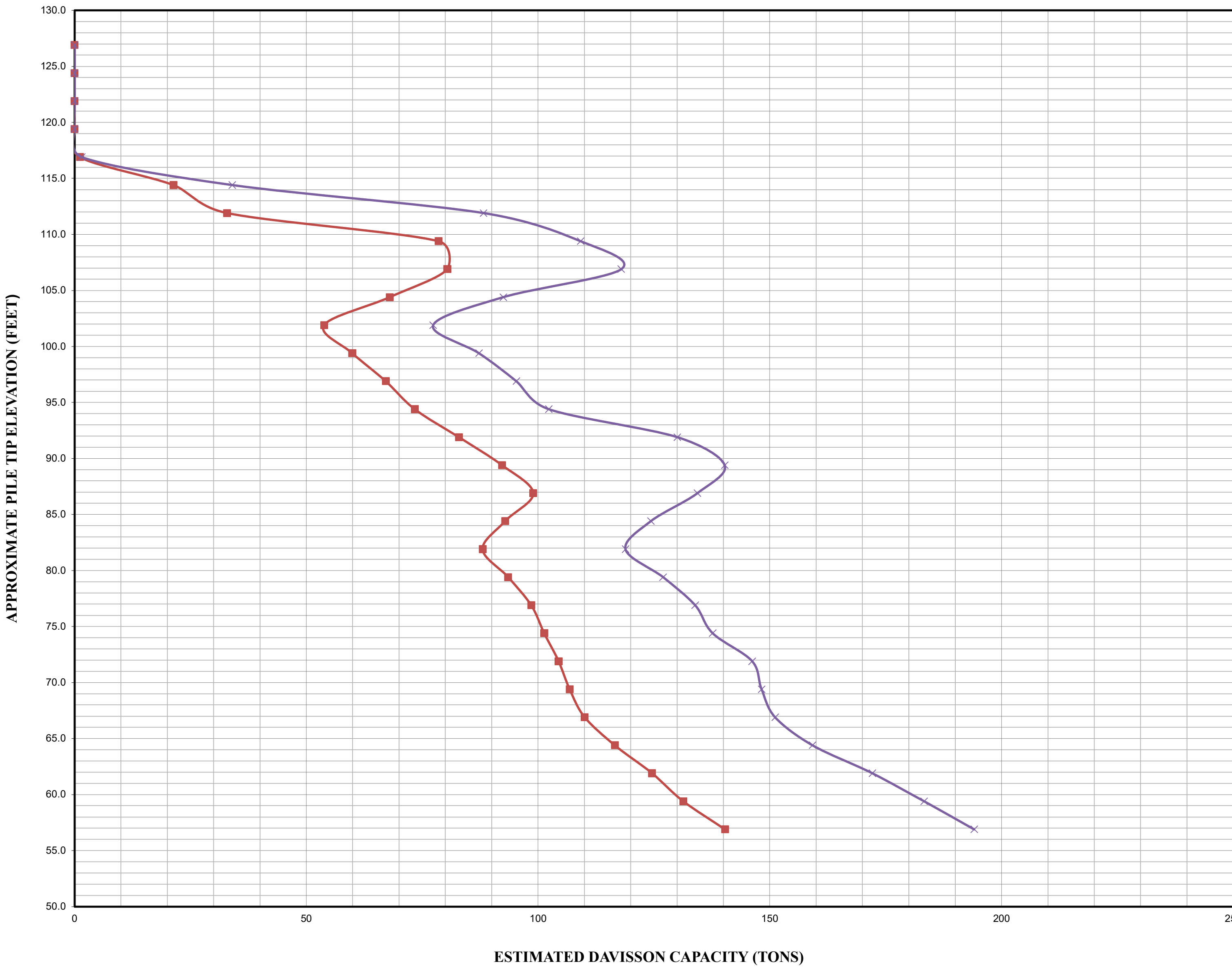
Ø = 0.75 BASED ON DYNAMIC TESTING AND ANALYSIS & STATIC LOAD TEST
Ø = 0.65 BASED ON PILE DYNAMIC TESTING AND ITS ANALYSIS

PILE CAPACITY CURVES
I-DRIVE AND SAND LAKE ROAD
PEDESTRIAN BRIDGE
ORANGE COUNTY, FLORIDA

NADIC ENGINEERING SERVICES, INC.
CIVIL, ENVIRONMENTAL & GEOTECHNICAL
CONSULTANTS

DRAWN: MB	SCALE: NOTED	PROJECT. No: PR.GEO-RD21029
CHKD: GNN	DATE: 08/31/23	PLATE: 2

AXIAL CAPACITY DESIGN CURVE
I-DRIVE AND SAND LAKE ROAD PEDESTRIAN BRIDGE
B-1 PRECAST PRESTRESSED CONCRETE PILES (PCP) - PREDRILLED TOP 10 FT



LEGEND

18"PCP Predrilled

24"PCP Predrilled

NOTES:
1) THE ESTIMATED DAVISSON CAPACITY REPRESENTS THE THEORETICAL FAILURE CAPACITY OF A DRIVEN PILE. TO OBTAIN THE PILE TIP ELEVATIONS, ONE SHOULD ENTER THE RECOMMENDED DAVISSON DESIGN CAPACITY CURVE USING A NOMINAL BEARING RESISTANCE VALUE. THE NOMINAL BEARING RESISTANCE IS COMPUTED BY DIVIDING THE SUM OF THE FACTORED DESIGN LOAD, SCOUR RESISTANCE, AND DOWNDRAG BY THE APPROPIATE PERFORMANCE FACTOR Ø BELOW WITH > 5% DYNAMIC TESTING.

Ø = 0.75 BASED ON DYNAMIC TESTING AND ANALYSIS & STATIC LOAD TEST
Ø = 0.65 BASED ON PILE DYNAMIC TESTING AND ITS ANALYSIS

PILE CAPACITY CURVES
I-DRIVE AND SAND LAKE ROAD
PEDESTRIAN BRIDGE
ORANGE COUNTY, FLORIDA

NADIC ENGINEERING SERVICES, INC.
CIVIL, ENVIRONMENTAL & GEOTECHNICAL
CONSULTANTS

DRAWN: MB	SCALE: NOTED	PROJECT. No: PR.GEO-RD21029
CHKD: GNN	DATE: 09/08/23	PLATE: 3

APPENDIX D

FB-Deep Output Files

General Information:

Input file: ..... File\Analysis\Pile Analyses_8.21.23\14-inch HP_I-Drive_B-1.in
Project number: PR.GEO-RD21029
Job name: I-Drive & Sand Lake Road Pedestrian Bridge
Engineer: MB
Units: English

Analysis Information:

Analysis Type: SPT

Soil Information:

Boring date: 3/28/2023, Boring Number: B-1
Station number: 123+67.5 Offset: -45.95

Ground Elevation: 126.900(ft)

Hammer type: Safety Hammer

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	2.00	3- Clean sand
2	2.00	2.00	3- Clean sand
3	4.00	2.00	3- Clean sand
4	6.00	6.00	3- Clean sand
5	6.10	0.00	4- Lime Stone/Very shelly sand
6	8.00	12.00	3- Clean sand
7	10.00	18.00	3- Clean sand
8	13.50	29.00	3- Clean sand
9	13.60	0.00	4- Lime Stone/Very shelly sand
10	18.50	19.00	2- Clay and silty sand
11	18.60	0.00	4- Lime Stone/Very shelly sand
12	23.50	76.00	3- Clean sand
13	23.60	0.00	4- Lime Stone/Very shelly sand
14	28.50	29.00	2- Clay and silty sand
15	28.60	0.00	4- Lime Stone/Very shelly sand
16	33.50	15.00	2- Clay and silty sand
17	38.50	9.00	2- Clay and silty sand
18	38.60	0.00	4- Lime Stone/Very shelly sand
19	43.50	22.00	3- Clean sand

20	43.60	0.00	4- Lime Stone/Very shelly sand
21	48.50	15.00	1- Plastic Clay
22	48.60	0.00	4- Lime Stone/Very shelly sand
23	53.50	4.00	2- Clay and silty sand
24	58.50	5.00	2- Clay and silty sand
25	63.50	4.00	2- Clay and silty sand
26	63.60	0.00	4- Lime Stone/Very shelly sand
27	68.50	26.00	2- Clay and silty sand
28	68.60	0.00	4- Lime Stone/Very shelly sand
29	73.50	37.00	1- Plastic Clay
30	78.50	27.00	1- Plastic Clay

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	126.90	120.80	6.10	2.07	3-Clean Sand
2	120.80	118.90	1.90	0.00	4-Limestone, Very Shelly Sand
3	118.90	113.30	5.60	16.05	3-Clean Sand
4	113.30	108.40	4.90	0.00	4-Limestone, Very Shelly Sand
5	108.40	108.30	0.10	19.00	2-Clay and Silty Sand
6	108.30	103.40	4.90	0.00	4-Limestone, Very Shelly Sand
7	103.40	103.30	0.10	76.00	3-Clean Sand
8	103.30	98.40	4.90	0.00	4-Limestone, Very Shelly Sand
9	98.40	98.30	0.10	29.00	2-Clay and Silty Sand
10	98.30	93.40	4.90	0.00	4-Limestone, Very Shelly Sand
11	93.40	88.30	5.10	14.88	2-Clay and Silty Sand
12	88.30	83.40	4.90	0.00	4-Limestone, Very Shelly Sand
13	83.40	83.30	0.10	22.00	3-Clean Sand
14	83.30	78.40	4.90	0.00	4-Limestone, Very Shelly Sand
15	78.40	78.30	0.10	15.00	1-Plastic Clay
16	78.30	73.40	4.90	0.00	4-Limestone, Very Shelly Sand
17	73.40	63.30	10.10	4.50	2-Clay and Silty Sand
18	63.30	58.40	4.90	0.00	4-Limestone, Very Shelly Sand
19	58.40	58.30	0.10	26.00	2-Clay and Silty Sand

20	58.30	53.40	4.90	0.00	4-Limestone, Very Shelly Sand
21	53.40	48.40	5.00	37.00	1-Plastic Clay

Driven Pile Data:
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Pile unit weight = 490.00(pcf), Section Type: H-Section

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)	Depth (in)	End Area (in^2)
14.69	10.00	116.90	13.86	101.80
14.69	15.00	111.90	13.86	101.80
14.69	20.00	106.90	13.86	101.80
14.69	25.00	101.90	13.86	101.80
14.69	30.00	96.90	13.86	101.80
14.69	35.00	91.90	13.86	101.80
14.69	40.00	86.90	13.86	101.80
14.69	45.00	81.90	13.86	101.80
14.69	50.00	76.90	13.86	101.80
14.69	55.00	71.90	13.86	101.80
14.69	60.00	66.90	13.86	101.80
14.69	65.00	61.90	13.86	101.80
14.69	70.00	56.90	13.86	101.80

Driven Pile Capacity:
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Section Type: H
Pile Width: 14.69 (in)
Sect. Depth: 13.86 (in)
End Area: 101.80 (in^2)

Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
10.00	14.7	3.20	13.14	16.34	8.17	29.48
15.00	14.7	9.35	4.95	14.30	7.15	19.25
20.00	14.7	16.43	21.64	38.06	19.03	59.70
25.00	14.7	26.40	5.33	31.74	15.87	37.07

30.00	14.7	35.24	4.12	39.37	19.68	43.49
35.00	14.7	43.53	3.61	47.14	23.57	54.35
40.00	14.7	49.92	7.88	57.80	28.90	65.68
45.00	14.7	53.95	1.22	55.16	27.58	56.38
50.00	14.7	61.42	1.14	62.56	31.28	63.69
55.00	14.7	63.75	1.78	65.52	32.76	69.08
60.00	14.7	67.42	1.53	68.95	34.48	72.01
65.00	14.7	70.48	4.82	75.30	37.65	80.12
70.00	14.7	79.53	4.48	84.01	42.00	88.49

NOTES
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1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

General Information:

Input file: .....\Pile Analyses_8.21.23\24-inch Closed End Steel_I-Drive_B-1.in
Project number: PR.GEO-RD21029
Job name: I-Drive & Sand Lake Road Pedestrian Bridge
Engineer: MB
Units: English

Analysis Information:

Analysis Type: SPT

Soil Information:

Boring date: 3/28/2023, Boring Number: B-1
Station number: 123+67.5 Offset: -45.95

Ground Elevation: 126.900(ft)

Hammer type: Safety Hammer

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	2.00	3- Clean sand
2	2.00	2.00	3- Clean sand
3	4.00	2.00	3- Clean sand
4	6.00	6.00	3- Clean sand
5	6.10	0.00	4- Lime Stone/Very shelly sand
6	8.00	12.00	3- Clean sand
7	10.00	18.00	3- Clean sand
8	13.50	29.00	3- Clean sand
9	13.60	0.00	4- Lime Stone/Very shelly sand
10	18.50	19.00	2- Clay and silty sand
11	18.60	0.00	4- Lime Stone/Very shelly sand
12	23.50	76.00	3- Clean sand
13	23.60	0.00	4- Lime Stone/Very shelly sand
14	28.50	29.00	2- Clay and silty sand
15	28.60	0.00	4- Lime Stone/Very shelly sand
16	33.50	15.00	2- Clay and silty sand
17	38.50	9.00	2- Clay and silty sand
18	38.60	0.00	4- Lime Stone/Very shelly sand
19	43.50	22.00	3- Clean sand

20	43.60	0.00	4- Lime Stone/Very shelly sand
21	48.50	15.00	1- Plastic Clay
22	48.60	0.00	4- Lime Stone/Very shelly sand
23	53.50	4.00	2- Clay and silty sand
24	58.50	5.00	2- Clay and silty sand
25	63.50	4.00	2- Clay and silty sand
26	63.60	0.00	4- Lime Stone/Very shelly sand
27	68.50	26.00	2- Clay and silty sand
28	68.60	0.00	4- Lime Stone/Very shelly sand
29	73.50	37.00	1- Plastic Clay
30	78.50	27.00	1- Plastic Clay

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	126.90	120.80	6.10	2.07	3-Clean Sand
2	120.80	118.90	1.90	0.00	4-Limestone, Very Shelly Sand
3	118.90	113.30	5.60	16.05	3-Clean Sand
4	113.30	108.40	4.90	0.00	4-Limestone, Very Shelly Sand
5	108.40	108.30	0.10	19.00	2-Clay and Silty Sand
6	108.30	103.40	4.90	0.00	4-Limestone, Very Shelly Sand
7	103.40	103.30	0.10	76.00	3-Clean Sand
8	103.30	98.40	4.90	0.00	4-Limestone, Very Shelly Sand
9	98.40	98.30	0.10	29.00	2-Clay and Silty Sand
10	98.30	93.40	4.90	0.00	4-Limestone, Very Shelly Sand
11	93.40	88.30	5.10	14.88	2-Clay and Silty Sand
12	88.30	83.40	4.90	0.00	4-Limestone, Very Shelly Sand
13	83.40	83.30	0.10	22.00	3-Clean Sand
14	83.30	78.40	4.90	0.00	4-Limestone, Very Shelly Sand
15	78.40	78.30	0.10	15.00	1-Plastic Clay
16	78.30	73.40	4.90	0.00	4-Limestone, Very Shelly Sand
17	73.40	63.30	10.10	4.50	2-Clay and Silty Sand
18	63.30	58.40	4.90	0.00	4-Limestone, Very Shelly Sand
19	58.40	58.30	0.10	26.00	2-Clay and Silty Sand

20	58.30	53.40	4.90	0.00	4-Limestone, Very Shelly Sand
21	53.40	48.40	5.00	37.00	1-Plastic Clay

Driven Pile Data:
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Pile unit weight = 490.00(pcf), Section Type: Pipe

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)	Thickness (in)	Pile End	Plug Condition
24.00	10.00	116.90	0.38	CLOSED	PLUGGED
24.00	15.00	111.90	0.38	CLOSED	PLUGGED
24.00	20.00	106.90	0.38	CLOSED	PLUGGED
24.00	25.00	101.90	0.38	CLOSED	PLUGGED
24.00	30.00	96.90	0.38	CLOSED	PLUGGED
24.00	35.00	91.90	0.38	CLOSED	PLUGGED
24.00	40.00	86.90	0.38	CLOSED	PLUGGED
24.00	45.00	81.90	0.38	CLOSED	PLUGGED
24.00	50.00	76.90	0.38	CLOSED	PLUGGED
24.00	55.00	71.90	0.38	CLOSED	PLUGGED
24.00	60.00	66.90	0.38	CLOSED	PLUGGED
24.00	65.00	61.90	0.38	CLOSED	PLUGGED
24.00	70.00	56.90	0.38	CLOSED	PLUGGED

Driven Pile Capacity:
=====================

Section Type: Pipe
Pile Width: 24.00 (in)
Thickness: 0.38 (in)
End Type: closed end

Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
10.00	24.0	5.62	30.71	36.33	18.17	97.75
15.00	24.0	15.80	17.60	33.40	16.70	68.59
20.00	24.0	25.43	39.26	64.69	32.34	143.20
25.00	24.0	37.31	13.57	50.88	25.44	78.02

30.00	24.0	48.58	11.24	59.81	29.91	82.29
35.00	24.0	60.40	25.54	85.94	42.97	137.02
40.00	24.0	70.57	22.36	92.93	46.46	137.65
45.00	24.0	77.16	3.16	80.32	40.16	86.63
50.00	24.0	86.18	3.38	89.55	44.78	96.31
55.00	24.0	90.82	11.32	102.14	51.07	124.77
60.00	24.0	97.78	8.44	106.23	53.11	123.11
65.00	24.0	103.25	11.85	115.10	57.55	138.79
70.00	24.0	114.72	12.44	127.16	63.58	152.03

NOTES
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1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

General Information:

Input file: .....File\Analysis\Pile Analyses_8.21.23\18-inch PCP_I-Drive_B-1.in
Project number: PR.GEO-RD21029
Job name: I-Drive & Sand Lake Road Pedestrian Bridge
Engineer: MB
Units: English

Analysis Information:

Analysis Type: SPT

Soil Information:

Boring date: 3/28/2023,   Boring Number: B-1
Station number: 123+67.5 Offset: -45.95

Ground Elevation: 126.900(ft)

Hammer type: Safety Hammer

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	2.00	3- Clean sand
2	2.00	2.00	3- Clean sand
3	4.00	2.00	3- Clean sand
4	6.00	6.00	3- Clean sand
5	6.10	0.00	4- Lime Stone/Very shelly sand
6	8.00	12.00	3- Clean sand
7	10.00	18.00	3- Clean sand
8	13.50	29.00	3- Clean sand
9	13.60	0.00	4- Lime Stone/Very shelly sand
10	18.50	19.00	2- Clay and silty sand
11	18.60	0.00	4- Lime Stone/Very shelly sand
12	23.50	76.00	3- Clean sand
13	23.60	0.00	4- Lime Stone/Very shelly sand
14	28.50	29.00	2- Clay and silty sand
15	28.60	0.00	4- Lime Stone/Very shelly sand
16	33.50	15.00	2- Clay and silty sand
17	38.50	9.00	2- Clay and silty sand
18	38.60	0.00	4- Lime Stone/Very shelly sand
19	43.50	22.00	3- Clean sand

20	43.60	0.00	4- Lime Stone/Very shelly sand
21	48.50	15.00	1- Plastic Clay
22	48.60	0.00	4- Lime Stone/Very shelly sand
23	53.50	4.00	2- Clay and silty sand
24	58.50	5.00	2- Clay and silty sand
25	63.50	4.00	2- Clay and silty sand
26	63.60	0.00	4- Lime Stone/Very shelly sand
27	68.50	26.00	2- Clay and silty sand
28	68.60	0.00	4- Lime Stone/Very shelly sand
29	73.50	37.00	1- Plastic Clay
30	78.50	27.00	1- Plastic Clay

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	126.90	120.80	6.10	2.07	3-Clean Sand
2	120.80	118.90	1.90	0.00	4-Limestone, Very Shelly Sand
3	118.90	113.30	5.60	16.05	3-Clean Sand
4	113.30	108.40	4.90	0.00	4-Limestone, Very Shelly Sand
5	108.40	108.30	0.10	19.00	2-Clay and Silty Sand
6	108.30	103.40	4.90	0.00	4-Limestone, Very Shelly Sand
7	103.40	103.30	0.10	76.00	3-Clean Sand
8	103.30	98.40	4.90	0.00	4-Limestone, Very Shelly Sand
9	98.40	98.30	0.10	29.00	2-Clay and Silty Sand
10	98.30	93.40	4.90	0.00	4-Limestone, Very Shelly Sand
11	93.40	88.30	5.10	14.88	2-Clay and Silty Sand
12	88.30	83.40	4.90	0.00	4-Limestone, Very Shelly Sand
13	83.40	83.30	0.10	22.00	3-Clean Sand
14	83.30	78.40	4.90	0.00	4-Limestone, Very Shelly Sand
15	78.40	78.30	0.10	15.00	1-Plastic Clay
16	78.30	73.40	4.90	0.00	4-Limestone, Very Shelly Sand
17	73.40	63.30	10.10	4.50	2-Clay and Silty Sand
18	63.30	58.40	4.90	0.00	4-Limestone, Very Shelly Sand
19	58.40	58.30	0.10	26.00	2-Clay and Silty Sand

20	58.30	53.40	4.90	0.00	4-Limestone, Very Shelly Sand
21	53.40	48.40	5.00	37.00	1-Plastic Clay

Driven Pile Data:
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Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
18.00	2.50	124.40
18.00	5.00	121.90
18.00	7.50	119.40
18.00	10.00	116.90
18.00	12.50	114.40
18.00	15.00	111.90
18.00	17.50	109.40
18.00	20.00	106.90
18.00	22.50	104.40
18.00	25.00	101.90
18.00	27.50	99.40
18.00	30.00	96.90
18.00	32.50	94.40
18.00	35.00	91.90
18.00	37.50	89.40
18.00	40.00	86.90
18.00	42.50	84.40
18.00	45.00	81.90
18.00	47.50	79.40
18.00	50.00	76.90
18.00	52.50	74.40
18.00	55.00	71.90
18.00	57.50	69.40
18.00	60.00	66.90
18.00	62.50	64.40
18.00	65.00	61.90
18.00	67.50	59.40
18.00	70.00	56.90

Driven Pile Capacity:
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Section Type: Square
Pile Width: 18.00 (in)

Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
2.50	18.0	0.00	1.72	1.72	0.86	5.16
5.00	18.0	0.06	7.13	7.19	3.59	21.44
7.50	18.0	1.42	46.98	48.41	24.20	142.38
10.00	18.0	5.44	25.46	30.90	15.45	81.81
12.50	18.0	11.69	20.67	32.36	16.18	73.69
15.00	18.0	15.88	22.85	38.73	19.37	84.42
17.50	18.0	22.01	62.40	84.41	42.20	209.21
20.00	18.0	27.66	58.61	86.27	43.14	203.49
22.50	18.0	36.91	36.96	73.87	36.94	147.80
25.00	18.0	44.63	15.10	59.73	29.87	89.94
27.50	18.0	52.94	12.85	65.79	32.90	91.49
30.00	18.0	59.52	13.50	73.02	36.51	100.02
32.50	18.0	64.56	14.69	79.26	39.63	108.64
35.00	18.0	73.21	15.56	88.76	44.38	119.87
37.50	18.0	80.68	17.43	98.11	49.05	132.98
40.00	18.0	83.81	21.01	104.82	52.41	146.85
42.50	18.0	87.20	11.56	98.76	49.38	121.87
45.00	18.0	90.43	3.49	93.92	46.96	100.90
47.50	18.0	96.20	3.20	99.41	49.70	105.82
50.00	18.0	100.47	3.93	104.40	52.20	112.25
52.50	18.0	101.97	5.22	107.19	53.60	117.63
55.00	18.0	104.69	5.60	110.29	55.15	121.49
57.50	18.0	107.83	4.85	112.68	56.34	122.39
60.00	18.0	111.18	4.74	115.92	57.96	125.40
62.50	18.0	114.26	8.17	122.43	61.22	138.78
65.00	18.0	116.59	13.86	130.45	65.23	158.18
67.50	18.0	124.32	12.86	137.18	68.59	162.91
70.00	18.0	131.36	14.83	146.19	73.10	175.85

NOTES

1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.

EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

General Information:

Input file: .....File\Analysis\Pile Analyses_8.21.23\24-inch PCP_I-Drive_B-1.in
Project number: PR.GEO-RD21029
Job name: I-Drive & Sand Lake Road Pedestrian Bridge
Engineer: MB
Units: English

Analysis Information:

Analysis Type: SPT

Soil Information:

Boring date: 3/28/2023, Boring Number: B-1
Station number: 123+67.5 Offset: -45.95

Ground Elevation: 126.900(ft)

Hammer type: Safety Hammer

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	2.00	3- Clean sand
2	2.00	2.00	3- Clean sand
3	4.00	2.00	3- Clean sand
4	6.00	6.00	3- Clean sand
5	6.10	0.00	4- Lime Stone/Very shelly sand
6	8.00	12.00	3- Clean sand
7	10.00	18.00	3- Clean sand
8	13.50	29.00	3- Clean sand
9	13.60	0.00	4- Lime Stone/Very shelly sand
10	18.50	19.00	2- Clay and silty sand
11	18.60	0.00	4- Lime Stone/Very shelly sand
12	23.50	76.00	3- Clean sand
13	23.60	0.00	4- Lime Stone/Very shelly sand
14	28.50	29.00	2- Clay and silty sand
15	28.60	0.00	4- Lime Stone/Very shelly sand
16	33.50	15.00	2- Clay and silty sand
17	38.50	9.00	2- Clay and silty sand
18	38.60	0.00	4- Lime Stone/Very shelly sand
19	43.50	22.00	3- Clean sand

20	43.60	0.00	4- Lime Stone/Very shelly sand
21	48.50	15.00	1- Plastic Clay
22	48.60	0.00	4- Lime Stone/Very shelly sand
23	53.50	4.00	2- Clay and silty sand
24	58.50	5.00	2- Clay and silty sand
25	63.50	4.00	2- Clay and silty sand
26	63.60	0.00	4- Lime Stone/Very shelly sand
27	68.50	26.00	2- Clay and silty sand
28	68.60	0.00	4- Lime Stone/Very shelly sand
29	73.50	37.00	1- Plastic Clay
30	78.50	27.00	1- Plastic Clay

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	126.90	120.80	6.10	2.07	3-Clean Sand
2	120.80	118.90	1.90	0.00	4-Limestone, Very Shelly Sand
3	118.90	113.30	5.60	16.05	3-Clean Sand
4	113.30	108.40	4.90	0.00	4-Limestone, Very Shelly Sand
5	108.40	108.30	0.10	19.00	2-Clay and Silty Sand
6	108.30	103.40	4.90	0.00	4-Limestone, Very Shelly Sand
7	103.40	103.30	0.10	76.00	3-Clean Sand
8	103.30	98.40	4.90	0.00	4-Limestone, Very Shelly Sand
9	98.40	98.30	0.10	29.00	2-Clay and Silty Sand
10	98.30	93.40	4.90	0.00	4-Limestone, Very Shelly Sand
11	93.40	88.30	5.10	14.88	2-Clay and Silty Sand
12	88.30	83.40	4.90	0.00	4-Limestone, Very Shelly Sand
13	83.40	83.30	0.10	22.00	3-Clean Sand
14	83.30	78.40	4.90	0.00	4-Limestone, Very Shelly Sand
15	78.40	78.30	0.10	15.00	1-Plastic Clay
16	78.30	73.40	4.90	0.00	4-Limestone, Very Shelly Sand
17	73.40	63.30	10.10	4.50	2-Clay and Silty Sand
18	63.30	58.40	4.90	0.00	4-Limestone, Very Shelly Sand
19	58.40	58.30	0.10	26.00	2-Clay and Silty Sand

20	58.30	53.40	4.90	0.00	4-Limestone, Very Shelly Sand
21	53.40	48.40	5.00	37.00	1-Plastic Clay

Driven Pile Data:
=================

Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
24.00	2.50	124.40
24.00	5.00	121.90
24.00	7.50	119.40
24.00	10.00	116.90
24.00	12.50	114.40
24.00	15.00	111.90
24.00	17.50	109.40
24.00	20.00	106.90
24.00	22.50	104.40
24.00	25.00	101.90
24.00	27.50	99.40
24.00	30.00	96.90
24.00	32.50	94.40
24.00	35.00	91.90
24.00	37.50	89.40
24.00	40.00	86.90
24.00	42.50	84.40
24.00	45.00	81.90
24.00	47.50	79.40
24.00	50.00	76.90
24.00	52.50	74.40
24.00	55.00	71.90
24.00	57.50	69.40
24.00	60.00	66.90
24.00	62.50	64.40
24.00	65.00	61.90
24.00	67.50	59.40
24.00	70.00	56.90

Driven Pile Capacity:
=====================

Section Type: Square
Pile Width: 24.00 (in)

Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
2.50	24.0	0.00	6.76	6.76	3.38	20.27
5.00	24.0	0.08	14.65	14.74	7.37	44.04
7.50	24.0	1.90	65.29	67.18	33.59	197.75
10.00	24.0	7.25	39.10	46.35	23.18	124.55
12.50	24.0	15.58	35.05	50.63	25.32	120.73
15.00	24.0	21.18	74.87	96.05	48.02	245.79
17.50	24.0	29.34	87.65	116.99	58.50	292.30
20.00	24.0	36.89	88.88	125.76	62.88	303.52
22.50	24.0	49.22	51.14	100.36	50.18	202.64
25.00	24.0	59.50	25.69	85.19	42.60	136.57
27.50	24.0	70.59	24.49	95.08	47.54	144.06
30.00	24.0	79.36	23.76	103.12	51.56	150.64
32.50	24.0	86.08	24.03	110.12	55.06	158.19
35.00	24.0	97.26	40.60	137.86	68.93	219.05
37.50	24.0	106.96	41.16	148.12	74.06	230.44
40.00	24.0	111.75	30.44	142.19	71.10	203.08
42.50	24.0	116.27	15.89	132.16	66.08	163.94
45.00	24.0	120.58	6.13	126.71	63.35	138.97
47.50	24.0	128.27	6.51	134.78	67.39	147.81
50.00	24.0	133.96	7.74	141.70	70.85	157.18
52.50	24.0	135.96	9.52	145.48	72.74	164.52
55.00	24.0	139.59	14.41	154.00	77.00	182.81
57.50	24.0	143.78	12.27	156.05	78.02	180.59
60.00	24.0	148.24	10.75	158.99	79.50	180.49
62.50	24.0	152.16	14.86	167.02	83.51	196.75
65.00	24.0	155.46	24.47	179.93	89.96	228.88
67.50	24.0	165.76	25.32	191.08	95.54	241.71
70.00	24.0	175.15	26.78	201.92	100.96	255.47

NOTES

1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.

EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

General Information:
====================

Input file: .....nalyses_8.21.23\18-inch PCP (Predrilled)_I-Drive_B-1_9.8.23.in
Project number: PR.GEO-RD21029
Job name: I-Drive & Sand Lake Road Pedestrian Bridge
Engineer: MB
Units: English

Analysis Information:
=====================

Analysis Type: SPT

Soil Information:
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Boring date: 3/28/2023, Boring Number: B-1
Station number: 123+67.5 Offset: -45.95

Ground Elevation: 126.900(ft)

Hammer type: Safety Hammer

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	5- Cavity layer
2	2.00	0.00	5- Cavity layer
3	4.00	0.00	5- Cavity layer
4	6.00	0.00	5- Cavity layer
5	8.00	0.00	5- Cavity layer
6	11.50	18.00	3- Clean sand
7	13.50	29.00	3- Clean sand
8	13.60	0.00	4- Lime Stone/Very shelly sand
9	18.50	19.00	2- Clay and silty sand
10	18.60	0.00	4- Lime Stone/Very shelly sand
11	23.50	76.00	3- Clean sand
12	23.60	0.00	4- Lime Stone/Very shelly sand
13	28.50	29.00	2- Clay and silty sand
14	28.60	0.00	4- Lime Stone/Very shelly sand
15	33.50	15.00	2- Clay and silty sand
16	38.50	9.00	2- Clay and silty sand
17	38.60	0.00	4- Lime Stone/Very shelly sand
18	43.50	22.00	3- Clean sand
19	43.60	0.00	4- Lime Stone/Very shelly sand

20	48.50	15.00	1- Plastic Clay
21	48.60	0.00	4- Lime Stone/Very shelly sand
22	53.50	4.00	2- Clay and silty sand
23	58.50	5.00	2- Clay and silty sand
24	63.50	4.00	2- Clay and silty sand
25	63.60	0.00	4- Lime Stone/Very shelly sand
26	68.50	26.00	2- Clay and silty sand
27	68.60	0.00	4- Lime Stone/Very shelly sand
28	73.50	37.00	1- Plastic Clay
29	78.50	27.00	1- Plastic Clay

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	126.90	115.40	11.50	0.00	5-Void
2	115.40	113.30	2.10	18.52	3-Clean Sand
3	113.30	108.40	4.90	0.00	4-Limestone, Very Shelly Sand
4	108.40	108.30	0.10	19.00	2-Clay and Silty Sand
5	108.30	103.40	4.90	0.00	4-Limestone, Very Shelly Sand
6	103.40	103.30	0.10	76.00	3-Clean Sand
7	103.30	98.40	4.90	0.00	4-Limestone, Very Shelly Sand
8	98.40	98.30	0.10	29.00	2-Clay and Silty Sand
9	98.30	93.40	4.90	0.00	4-Limestone, Very Shelly Sand
10	93.40	88.30	5.10	14.88	2-Clay and Silty Sand
11	88.30	83.40	4.90	0.00	4-Limestone, Very Shelly Sand
12	83.40	83.30	0.10	22.00	3-Clean Sand
13	83.30	78.40	4.90	0.00	4-Limestone, Very Shelly Sand
14	78.40	78.30	0.10	15.00	1-Plastic Clay
15	78.30	73.40	4.90	0.00	4-Limestone, Very Shelly Sand
16	73.40	63.30	10.10	4.50	2-Clay and Silty Sand
17	63.30	58.40	4.90	0.00	4-Limestone, Very Shelly Sand
18	58.40	58.30	0.10	26.00	2-Clay and Silty Sand
19	58.30	53.40	4.90	0.00	4-Limestone, Very Shelly Sand
20	53.40	48.40	5.00	37.00	1-Plastic Clay

Driven Pile Data:
=================

Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
18.00	2.50	124.40
18.00	5.00	121.90
18.00	7.50	119.40
18.00	10.00	116.90
18.00	12.50	114.40
18.00	15.00	111.90
18.00	17.50	109.40
18.00	20.00	106.90
18.00	22.50	104.40
18.00	25.00	101.90
18.00	27.50	99.40
18.00	30.00	96.90
18.00	32.50	94.40
18.00	35.00	91.90
18.00	37.50	89.40
18.00	40.00	86.90
18.00	42.50	84.40
18.00	45.00	81.90
18.00	47.50	79.40
18.00	50.00	76.90
18.00	52.50	74.40
18.00	55.00	71.90
18.00	57.50	69.40
18.00	60.00	66.90
18.00	62.50	64.40
18.00	65.00	61.90
18.00	67.50	59.40
18.00	70.00	56.90

Driven Pile Capacity:
=====================

Section Type: Square
Pile Width: 18.00 (in)

Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
2.50	18.0	0.00	0.00	0.00	0.00	0.00
5.00	18.0	0.00	0.00	0.00	0.00	0.00
7.50	18.0	0.00	0.00	0.00	0.00	0.00
10.00	18.0	1.17	0.00	1.17	0.59	1.17
12.50	18.0	5.96	15.37	21.33	10.66	52.07
15.00	18.0	10.02	22.85	32.87	16.43	78.56
17.50	18.0	16.14	62.40	78.54	39.27	203.35
20.00	18.0	21.80	58.61	80.41	40.20	197.63
22.50	18.0	31.05	36.96	68.01	34.00	141.93
25.00	18.0	38.76	15.10	53.86	26.93	84.07
27.50	18.0	47.08	12.85	59.92	29.96	85.62
30.00	18.0	53.65	13.50	67.15	33.58	94.15
32.50	18.0	58.70	14.69	73.39	36.70	102.78
35.00	18.0	67.34	15.56	82.90	41.45	114.01
37.50	18.0	74.81	17.43	92.24	46.12	127.11
40.00	18.0	77.95	21.01	98.96	49.48	140.98
42.50	18.0	81.34	11.56	92.89	46.45	116.01
45.00	18.0	84.57	3.49	88.06	44.03	95.03
47.50	18.0	90.34	3.20	93.54	46.77	99.95
50.00	18.0	94.61	3.93	98.53	49.27	106.38
52.50	18.0	96.11	5.22	101.33	50.66	111.76
55.00	18.0	98.83	5.60	104.43	52.21	115.63
57.50	18.0	101.97	4.85	106.82	53.41	116.52
60.00	18.0	105.32	4.74	110.06	55.03	119.54
62.50	18.0	108.39	8.17	116.57	58.28	132.91
65.00	18.0	110.73	13.86	124.59	62.29	152.31
67.50	18.0	118.46	12.86	131.32	65.66	157.04
70.00	18.0	125.50	14.83	140.33	70.16	169.99

NOTES

1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

General Information:

Input file: .....nalyses_8.21.23\24-inch PCP (Predrilled)_I-Drive_B-1_9.8.23.in
Project number: PR.GEO-RD21029
Job name: I-Drive & Sand Lake Road Pedestrian Bridge
Engineer: MB
Units: English

Analysis Information:

Analysis Type: SPT

Soil Information:

Boring date: 3/28/2023, Boring Number: B-1
Station number: 123+67.5 Offset: -45.95

Ground Elevation: 126.900(ft)

Hammer type: Safety Hammer

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	5- Cavity layer
2	2.00	0.00	5- Cavity layer
3	4.00	0.00	5- Cavity layer
4	6.00	0.00	5- Cavity layer
5	8.00	0.00	5- Cavity layer
6	11.50	18.00	3- Clean sand
7	13.50	29.00	3- Clean sand
8	13.60	0.00	4- Lime Stone/Very shelly sand
9	18.50	19.00	2- Clay and silty sand
10	18.60	0.00	4- Lime Stone/Very shelly sand
11	23.50	76.00	3- Clean sand
12	23.60	0.00	4- Lime Stone/Very shelly sand
13	28.50	29.00	2- Clay and silty sand
14	28.60	0.00	4- Lime Stone/Very shelly sand
15	33.50	15.00	2- Clay and silty sand
16	38.50	9.00	2- Clay and silty sand
17	38.60	0.00	4- Lime Stone/Very shelly sand
18	43.50	22.00	3- Clean sand
19	43.60	0.00	4- Lime Stone/Very shelly sand

20	48.50	15.00	1- Plastic Clay
21	48.60	0.00	4- Lime Stone/Very shelly sand
22	53.50	4.00	2- Clay and silty sand
23	58.50	5.00	2- Clay and silty sand
24	63.50	4.00	2- Clay and silty sand
25	63.60	0.00	4- Lime Stone/Very shelly sand
26	68.50	26.00	2- Clay and silty sand
27	68.60	0.00	4- Lime Stone/Very shelly sand
28	73.50	37.00	1- Plastic Clay
29	78.50	27.00	1- Plastic Clay

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	126.90	115.40	11.50	0.00	5-Void
2	115.40	113.30	2.10	18.52	3-Clean Sand
3	113.30	108.40	4.90	0.00	4-Limestone, Very Shelly Sand
4	108.40	108.30	0.10	19.00	2-Clay and Silty Sand
5	108.30	103.40	4.90	0.00	4-Limestone, Very Shelly Sand
6	103.40	103.30	0.10	76.00	3-Clean Sand
7	103.30	98.40	4.90	0.00	4-Limestone, Very Shelly Sand
8	98.40	98.30	0.10	29.00	2-Clay and Silty Sand
9	98.30	93.40	4.90	0.00	4-Limestone, Very Shelly Sand
10	93.40	88.30	5.10	14.88	2-Clay and Silty Sand
11	88.30	83.40	4.90	0.00	4-Limestone, Very Shelly Sand
12	83.40	83.30	0.10	22.00	3-Clean Sand
13	83.30	78.40	4.90	0.00	4-Limestone, Very Shelly Sand
14	78.40	78.30	0.10	15.00	1-Plastic Clay
15	78.30	73.40	4.90	0.00	4-Limestone, Very Shelly Sand
16	73.40	63.30	10.10	4.50	2-Clay and Silty Sand
17	63.30	58.40	4.90	0.00	4-Limestone, Very Shelly Sand
18	58.40	58.30	0.10	26.00	2-Clay and Silty Sand
19	58.30	53.40	4.90	0.00	4-Limestone, Very Shelly Sand
20	53.40	48.40	5.00	37.00	1-Plastic Clay

Driven Pile Data:
=================

Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
24.00	2.50	124.40
24.00	5.00	121.90
24.00	7.50	119.40
24.00	10.00	116.90
24.00	12.50	114.40
24.00	15.00	111.90
24.00	17.50	109.40
24.00	20.00	106.90
24.00	22.50	104.40
24.00	25.00	101.90
24.00	27.50	99.40
24.00	30.00	96.90
24.00	32.50	94.40
24.00	35.00	91.90
24.00	37.50	89.40
24.00	40.00	86.90
24.00	42.50	84.40
24.00	45.00	81.90
24.00	47.50	79.40
24.00	50.00	76.90
24.00	52.50	74.40
24.00	55.00	71.90
24.00	57.50	69.40
24.00	60.00	66.90
24.00	62.50	64.40
24.00	65.00	61.90
24.00	67.50	59.40
24.00	70.00	56.90

Driven Pile Capacity:
=====================

Section Type: Square
Pile Width: 24.00 (in)

Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
2.50	24.0	0.00	0.00	0.00	0.00	0.00
5.00	24.0	0.00	0.00	0.00	0.00	0.00
7.50	24.0	0.00	0.00	0.00	0.00	0.00
10.00	24.0	1.56	0.00	1.56	0.78	1.56
12.50	24.0	7.94	26.11	34.05	17.03	86.27
15.00	24.0	13.36	74.87	88.23	44.11	237.97
17.50	24.0	21.52	87.65	109.17	54.59	284.48
20.00	24.0	29.07	88.88	117.94	58.97	295.70
22.50	24.0	41.40	51.14	92.54	46.27	194.82
25.00	24.0	51.68	25.69	77.37	38.69	128.75
27.50	24.0	62.77	24.49	87.26	43.63	136.24
30.00	24.0	71.54	23.76	95.30	47.65	142.82
32.50	24.0	78.26	24.03	102.30	51.15	150.37
35.00	24.0	89.44	40.60	130.04	65.02	211.23
37.50	24.0	99.14	41.16	140.30	70.15	222.62
40.00	24.0	103.93	30.44	134.37	67.19	195.26
42.50	24.0	108.45	15.89	124.34	62.17	156.12
45.00	24.0	112.76	6.13	118.89	59.44	131.15
47.50	24.0	120.45	6.51	126.96	63.48	139.99
50.00	24.0	126.14	7.74	133.88	66.94	149.36
52.50	24.0	128.14	9.52	137.66	68.83	156.70
55.00	24.0	131.77	14.41	146.18	73.09	174.99
57.50	24.0	135.96	12.27	148.23	74.11	172.77
60.00	24.0	140.42	10.75	151.17	75.59	172.67
62.50	24.0	144.34	14.86	159.20	79.60	188.93
65.00	24.0	147.63	24.47	172.11	86.05	221.06
67.50	24.0	157.94	25.32	183.26	91.63	233.89
70.00	24.0	167.33	26.78	194.10	97.05	247.65

NOTES

1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

APPENDIX E

FHWA Checklist

TABLE OF CONTENTS

"GEOTECHNICAL REPORT REVIEW CHECKLISTS"

The following checklists cover the major information and recommendations which should be addressed in project geotechnical reports.

Section A covers site investigation information which will be common to all geotechnical reports for any type of geotechnical feature.

Sections B through H cover the basic information and recommendations which should be presented in geotechnical reports for specific geotechnical features: centerline cuts and embankments, embankments over soft ground, landslides, retaining walls, structure foundations and material sites.

In most sections and subsections the user has been provided supplemental page references to the Soils and Foundations Workshop Manual. These page numbers appear in parentheses ( ) immediately adjacent to the section or subsection topic. Generalist engineers are particularly encouraged to read these references. Additional reference information on these topics is available in the Geotechnical Notebook, a copy of which is kept in all Division Offices by either the Bridge Engineer or the engineer with the soils responsibility.

Certain checklist items are of vital importance to have been included in the geotechnical report. These checklist items have been marked with an asterisk (*). A negative response to any of these asterisked items is cause to contact the geotechnical engineer for clarification of this omission.

"GTR REVIEW CHECKLIST" (SITE INVESTIGATION)

A. Site Investigation Information

Since the most important step in the geotechnical design process is the conduct of an adequate site investigation, presentation of the subsurface information in the geotechnical report and on the plans deserves careful attention.

Geotechnical Report Text (Introduction) (Pages 322-325)	Yes	No	Unknown or N/A
1. Is the general location of the investigation described an/or a vicinity map included?	X		
2. Is scope and purpose of the investigation summarized?	X		
3. Is concise description given of geologic setting and topography of area?	X		
4. Are the field explorations and laboratory tests on which the report is based listed?	X		
5. Is general description of subsurface soil, rock, and groundwater conditions given?	X		
*6. Is the following information included with the geotechnical report (typically included in report appendices):			
a. Test hole logs? (Pages 25-33)	X		
b. Field test data?	X		
c. Laboratory test data? (Pages 74-75)	X		
d. Photographs (if pertinent)?			X
Plan and Subsurface Profile (Pages 24, 47-49, 335)			
*7. Is a plan and subsurface profile of the investigation site provided?	X		
8. Are the field explorations located on the plan view?	X		
*9. Does the conducted site investigation meet minimum criteria outlined in Table 2?			X
10. Are the explorations plotted and correctly numbered on the profile at their true elevation and location?	X		
11. Does the subsurface profile contain a word description and/or graphic depiction of soil and rock types?	X		

A. Site Investigation Information (Cont.)

		Yes	No	Unknown or N/A
12.	Are groundwater levels and date measured shown on the subsurface profile?	X		
Subsurface Profile or Field Boring Log (Pages 16-17, 25-29)				
13.	Are sample types and depths noted?	X		
*14.	Are SPT blow counts, percent core recovery, and RQD values shown?	X		
15.	If cone penetration tests were made, are plots of cone resistance and friction ratio shown with depth?			X
Laboratory Test Data (Pages 60, 74-75)				
*16.	Were lab soil classification tests such as natural moisture content, gradation, Atterberg limits, performed on selected representative samples to verify field visual soil identifications?	X		
17.	Are laboratory test results such as shear strength (Page 62), consolidation (Page 68), etc., included and/or summarized?		X	

*A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

"GTR REVIEW CHECKLIST" (CENTERLINE CUTS AND EMBANKMENTS)

B. Centerline Cuts and Embankments (Pages 6-9)

In addition to the basic information listed in Section A, is the following information provided in the project geotechnical report?

Are station to station descriptions included for:		Yes	No	Unknown or N/A
1.	Existing surface and subsurface drainage?			X
2.	Evidence of springs and excessively wet areas?			X
3.	Slides, slumps, and faults noted along the alignment?			X
Are station to station recommendations included for the following:				
General Soil Cut or Fill				
4.	Specific surface/subsurface drainage recommendations.			X
5.	Excavation limits of unsuitable materials?			X
*6.	Erosion protection measures for backslopes, side slopes, and ditches, including riprap recommendations or special slope treatments?			X
Soil Cuts (Pages 101-102)				
*7.	Recommended cut slope design?			X
8.	Are clay cut slopes designed for minimum F.S. = 1.50?			X
9.	Special usage of excavated soils?			X
10.	Estimated shrink-swell factors for excavated materials?			X
11.	If answer to 3 is yes, are recommendations provided for design treatments?			X
Fills (Pages 77-79)				
12.	Recommended fill slope design?			X
13.	Will fill slope design provide minimum F.S. = 1.25?			X
Rock Slopes				
*14.	Are recommended slope designs and blasting specifications provided?			X

*A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

B. Centerline Cuts and Embankments (Cont.)	Yes	No	Unknown or N/A
*15. Is the need for special rock slope stabilization measures, e.g., rockfall catch ditch, wire mesh slope protection, shotcrete, rock bolts, addressed?			X
16. Has the use of "template" designs been avoided (such as designing all rock slopes on ¼ to 1 rather than designing based on orientation of major rock jointing)?			X
*17. Have effects of blast induced vibrations on adjacent structures been evaluated?			X

*A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

"GTR REVIEW CHECKLIST" (EMBANKMENTS OVER SOFT GROUND)

C. Embankments Over Soft Ground

Where embankments must be built over soft ground (such as soft clays, organic silts, or peat), stability and settlement of the fill should be carefully evaluated. In addition to the basic information listed in Section A, is the following information provided in the project geotechnical report?

Embankment Stability (Pages 77-79, 95-97)	Yes	No	Unknown or N/A
*1. Has the stability of the embankment been evaluated for minimum safety factors of 1.25 for side slope stability and 1.30 for end slope stability of bridge approach embankments?		X	
*2. Has the shear strength of the foundation soil been determined from lab testing and/or field vane shear or static cone penetrometer tests?			X
*3. If the proposed embankment does not provide minimum factors or safety given above, are recommendations given for feasible treatment alternates which will increase factor of safety to minimum acceptable (such as change alignment, lower grade, use stabilizing counterberms, excavate and replace weak subsoil, fill stage construction, lightweight fill, geotextile fabric reinforcement, etc.)?			X
*4. Are cost comparisons of treatment alternates given and a specific alternate recommended?			X
Settlement of Subsoil (Pages 146-160)			
5. Have consolidation properties of fine grained soils been determined from laboratory consolidation tests?		X	
*6. Have settlement amount and settlement time been estimated?		X	
7. For bridge approach embankments, are recommendations made to get the settlement out before the bridge abutment is constructed (waiting period, surcharge, or wick drains)?			X
8. If geotechnical instrumentation is proposed to monitor fill stability and settlement, are detailed recommendations provided on the number, type, and specific locations of the proposed instruments?			X

*A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

		Yes	No	Unknown or N/A
C.	Embankments Over Soft Ground (Cont.)			
9.	Construction Considerations: (Pages 183, 331-334)			
a.	If excavation and replacement of unsuitable shallow surface deposits (peat, muck, topsoil) is recommended - are vertical and lateral limits of recommended excavation provided?		X	
b.	Where a surcharge treatment is recommended, are plan and cross-section of surcharge treatment provided in geotechnical report for benefit of the roadway designer?			X
c.	Are instructions or specifications provided concerning instrumentation, fill placement rates and estimated delay times for the contractor?			X
d.	Are recommendations provided for disposal of surcharge material after the settlement period is complete?			X

*A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

"GTR REVIEW CHECKLIST" (RETAINING WALLS)

E. Retaining Walls (See Section 5 of "Geotechnical Engineering Notebook")

In addition to the basic information listed in Section A, is the following information provided in the project geotechnical report?

		Yes	No	Unknown or N/A
*1.	Does the geotechnical report include recommended soil strength parameters and groundwater elevation for use in computing wall design lateral earth pressures and factor of safety for overturning, sliding, and external slope stability?			X
2.	Is it proposed to bid alternate wall designs?			X
*3.	Are acceptable reasons given for the choice and/or exclusion of certain wall types (gravity, reinforced soil, tieback, cantilever, etc.)?			X
*4.	Is an analysis of the wall stability included with minimum acceptable factors of safety against overturning (F.S. = 2.0), sliding (F.S. = 1.5), and external slope stability (F.S. = 1.5)?			X
5.	If wall will be placed on compressible foundation soils, is estimated total settlement, differential settlement, and time rate of settlement given?			X
6.	Will wall types selected for compressible foundation soils allow differential movement without distress?			X
7.	Are wall drainage details including materials and compaction provided?			X
8.	Construction Considerations:			
	a. Are excavation requirements covered - safe slopes for open excavations, need for sheeting or shoring?			X
	b. Fluctuation of groundwater table?			X

*A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

"GTR REVIEW CHECKLIST" (SPREAD FOOTINGS)

F. Structure Foundations - Spread Footings (Pages 191-205)

In addition to the basic information listed in Section A, is the following information provided in the project foundation report?

		Yes	No	Unknown or N/A
*1.	Are spread footings recommended for foundations support? If not, are reasons for not using them discussed?			X
	If spread footing supports are recommended, are conclusions/recommendations given for the following:			
*2.	Is recommended bottom of footing elevation and reason for recommendation (e.g., based on frost depth, estimated scour depth, or depth to competent bearing material) given?			X
*3.	Is recommended allowable soil or rock bearing pressure given?			X
*4.	Is estimated footing settlement and time given?			X
*5.	Where spread footings are recommended to support abutments placed in the bridge end fills, are special gradation and compaction requirements provided for select end fill and backwall drainage material? (Pages 137-141)			X
6.	Construction Considerations:			
	a. Have the materials been adequately described on which the footing is to be placed so the project inspector can verify that material is as expected?			X
	b. Have excavation requirements been included for safe slopes in open excavations, need for sheeting or shoring, etc?			X
	c. Has fluctuation of the groundwater table been addressed?			X

*A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

"GTR REVIEW CHECKLIST" (PILE FOUNDATIONS)

G. Structure Foundations - Piles (Pages 224-311)

In addition to the basic information listed in Section A, if pile support is recommended or given as an alternate, conclusions/recommendations should be provided in the project geotechnical report for the following:

		Yes	No	Unknown or N/A
*1.	Is the recommended pile type given (displacement, nondisplacement, pipe pile, concrete pile, H-pile, etc.) with valid reasons given for choice and/or exclusion? (Pages 224-226)	X		
2.	Do you consider the recommended pile type(s) to be the most suitable and economical?	X		
*3.	Are estimated pile lengths and estimated tip elevations given for the recommended allowable pile design loads?		X	
4.	Do you consider the recommended design loads to be reasonable?			X
5.	Has pile group settlement been estimated (only of practical significance for friction pile groups ending in cohesive soil)? (Pages 245-247)			X
6.	If a specified or minimum pile tip elevation is recommended, is a clear reason given for the required tip elevation, such as underlying soft layers, scour, downdrag, piles uneconomically long, etc.?			X
*7.	Has design analysis (wave equation analysis) verified that the recommended pile section can be driven to the estimated or specified tip elevation without damage (especially applicable where dense gravel-cobble-boulder layers or other obstructions have to be penetrated)?			X
8.	Where scour piles are required, have pile design and driving criteria been established based on mobilizing the full pile design capacity below the scour zone?			X

*A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

G. Structure Foundations - Piles (Cont.)	Yes	No	Unknown or N/A
9. Where lateral load capacity of large diameter piles is an important design consideration, are p-y curves (load vs. deflection) or soil parameters given in the geotechnical report to allow the structural engineer to evaluate lateral load capacity of all piles?			X
*10. For pile supported bridge abutments over soft ground:			
a. Has abutment pile downdrag load been estimated and solutions such as bitumen coating considered in design? Not generally required if surcharging of the fill is being performed. (Pages 248-251)			X
b. Is bridge approach slab recommended to moderate differential settlement between bridge ends and fill?			X
c. If the majority of subsoil settlement will not be removed prior to abutment construction (by surcharging), has estimate been made of the amount of abutment rotation that can occur due to lateral squeeze of soft subsoil? (Pages 114-115)			X
d. Does the geotechnical report specifically alert the structural designer to the estimated horizontal abutment movement?			X
11. If bridge project is large, has pile load test program been recommended? (Pages 299-302)			X
12. For a major structure in high seismic risk area, has assessment been made of liquefaction potential of foundation soil during design earthquake (note: only loose saturated sands and silts are "susceptible" to liquefaction)?			X
13. Construction Considerations: (Pages 279-311)			
Have the following important construction considerations been adequately addressed?	X		

*A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

G. Structure Foundations - Piles - (Cont.)	Yes	No	Unknown or N/A
a. Pile driving details such as: boulders or obstructions which may be encountered during driving - need for preaugering, jetting, spudding, need for pile tip reinforcement, driving shoes, etc.?			X
b. Excavation requirements - safe slope for open excavations, need for sheeting or shoring? Fluctuation of groundwater table?			X
c. Have effects of pile driving operation on adjacent structures been evaluated - such as protection against damage caused by footing excavations or pile driving vibrations?			X
d. Is preconstruction condition survey to be made of adjacent structures to prevent unwarranted damage claims?			X
e. On large pile driving projects have other methods of pile driving control been considered such as dynamic testing or wave equation analysis?	X		

*A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

"GTR REVIEW CHECKLIST" (DRILLED SHAFTS)

H. Structure Foundations - Drilled Shafts (Pages 252-260)

In addition to the basic information listed in Section A, if drilled shaft support is recommended or given as an alternate, are conclusions/recommendations provided in the project foundation report for the following:

		Yes	No	Unknown or N/A
*1.	Are recommended shaft diameter(s) and length(s) for allowable design loads based on an analysis using soil parameters for side friction and end bearing?			X
*2.	Settlement estimated for recommended design load?			X
*3.	Where lateral load capacity of shaft is an important design consideration, are P-Y (load vs. deflection) curves or soils data provided in geotechnical report which will allow structural engineer to evaluate lateral load capacity of shaft?			X
4.	Is static load test (to plunging failure) recommended?			X
5.	Construction Considerations:			
	a. Have construction methods been evaluated, i.e., can less expensive dry method or slurry method be used or will casing be required?			X
	b. If casing will be required, can casing be pulled as shaft is concreted (this can result in significant cost savings on very large diameter shafts)?			X
	c. If artesian water was encountered in explorations, have design provisions been included to handle it (such as by requiring casing and tremie seal)?			X
	d. Will boulders be encountered? (Note: If boulders will be encountered, then the use of shafts should be seriously questioned due to construction installation difficulties and resultant higher cost the boulders can cause.)			X

*A response other than (yes) or (N/A) for any of these checklist questions is cause to contact the appropriate geotechnical engineer for a clarification and/or to discuss the project.

APPENDIX G

TRAFFIC INFORMATION SYNCHRO ANALYSIS / FDOT MEMO

(Electric Only)

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cpletzer@avconinc.com

MEMORANDUM

Date: June 6th, 2023

To: Catalina Chacon, P.E.

From: Clint Pletzer, P.E.

Re: International Drive Pedestrian Bridge 2021.0099.48
Index 521-001 Concrete Barrier

Introduction

Orange County is considering the construction of an Iconic Pedestrian Overpass at the International Drive and Sand Lake Road Intersection. In doing so, this memorandum recommends utilizing FDOT standard index 521-001 for Concrete Barrier Wall along the approaches to deter pedestrians from entering and crossing the intersection at-grade, as well as protect the four bridge piers, one at each of the corners.

Discussion

The purpose of installing a pedestrian overpass over the International Drive and Sand Lake Road Intersection is pedestrian safety, better flow of traffic and to provide an Iconic structure, among many. The International Drive and Sand Lake Road intersection is one of the busiest intersections in Orange County, and minimizing the number of motorist-pedestrian conflicts will prove beneficial. The International Drive corridor is an epicenter for tourism in Orlando, and includes many retail shops, restaurants, businesses, and hotels. The result of this tourism produces many pedestrians, most that are not familiar with the area.

Along with pedestrian safety, the intent of the barrier wall is to protect the bridge piers from vehicle impacts. This will ensure that the overpass will remain structurally sufficient, as well as protect pedestrians at the four corners of the intersection. There will be a bridge pier at each of the four corners of the intersection. The areas that will accommodate the piers outside of the right-of-way will be established easements dedicated to Orange County from each of the four private properties on the corners of the intersection.

Throughout initial and conceptual design, it has been determined that additional Right-of-Way or easements will be needed to accommodate each of the 4 legs/corners of the bridge. Discussions with those owners are being made now, along with utility coordination.

As for the approaches to the intersection, two potential options were taken into consideration regarding barrier wall. One is a 1’3” concrete barrier wall, offset 4’ from face of curb, running from the first driveway of each approach to the intersection. The second option is a 1’3” concrete barrier wall offset 1’4” from the edge of pavement, utilizing FDOT standard index 521-001. The first option provided inadequate sidewalk width given the offset from face of curb and the Right-of-Way line along each of the approaches. Some spots show only having 3’ of width. Using option two, and utilizing FDOT standard index 521-001, specifically the detailed Curb and Gutter Barrier shown on sheet 20 of 26, will provide adequate sidewalk width along the approach to the intersection. Standard Index 521-001 will provide superior pedestrian accommodation, including PROWAG viable access.

The additional right-of-way required to maintain a 7’ sidewalk on the east approach of the Northeast corner will require re-grading of the Perkins parking lot with option 1. With FDOT Standard Index 521-001, there will be the appropriate 7’ offset to accommodate the sidewalk without need for additional right-of-way.

Another benefit to using the barrier wall from FDOT standard index 521-001 is discouraging pedestrians from crossing over the wall and using the intersection at-grade. With there only being 1’4” from face of barrier wall to edge of pavement, pedestrians should have a better understanding of using the right side of the sidewalk at each of the approaches. With option 1, and a 4’ offset, pedestrians may get confused and use that 4’ buffer as a walking space, and not use the proposed intersection bridge as intended.

Conclusion

Based on the FDOT Standard Index 521-001 for Concrete Barrier Wall, it is recommended that these details are utilized to provide adequate sidewalk widths, given the Right-of-Way restraints along the approaches, and to promote using the proposed pedestrian overpass as intended and deter pedestrians from crossing the intersection at-grade.

END MEMORANDUM

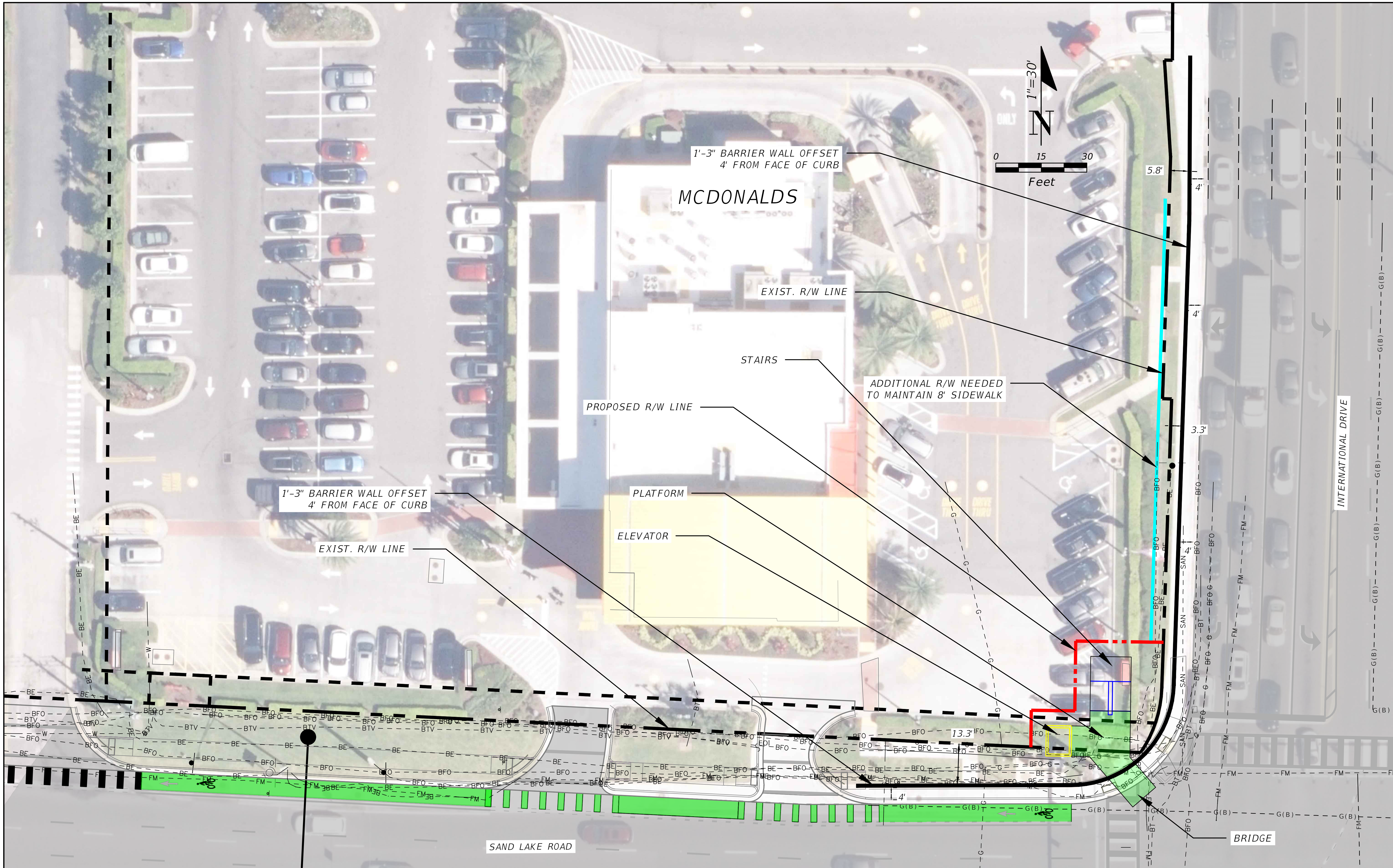
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HHCP&AVCON
A JOINT VENTURE

ORANGE COUNTY GOVERNMENT
F L O R I D A

INTERNATIONAL DRIVE AT SAND LAKE ROAD
NE CORNER EXHIBIT - STANDARD BARRIER WALL OFFSET

SHEET NO.



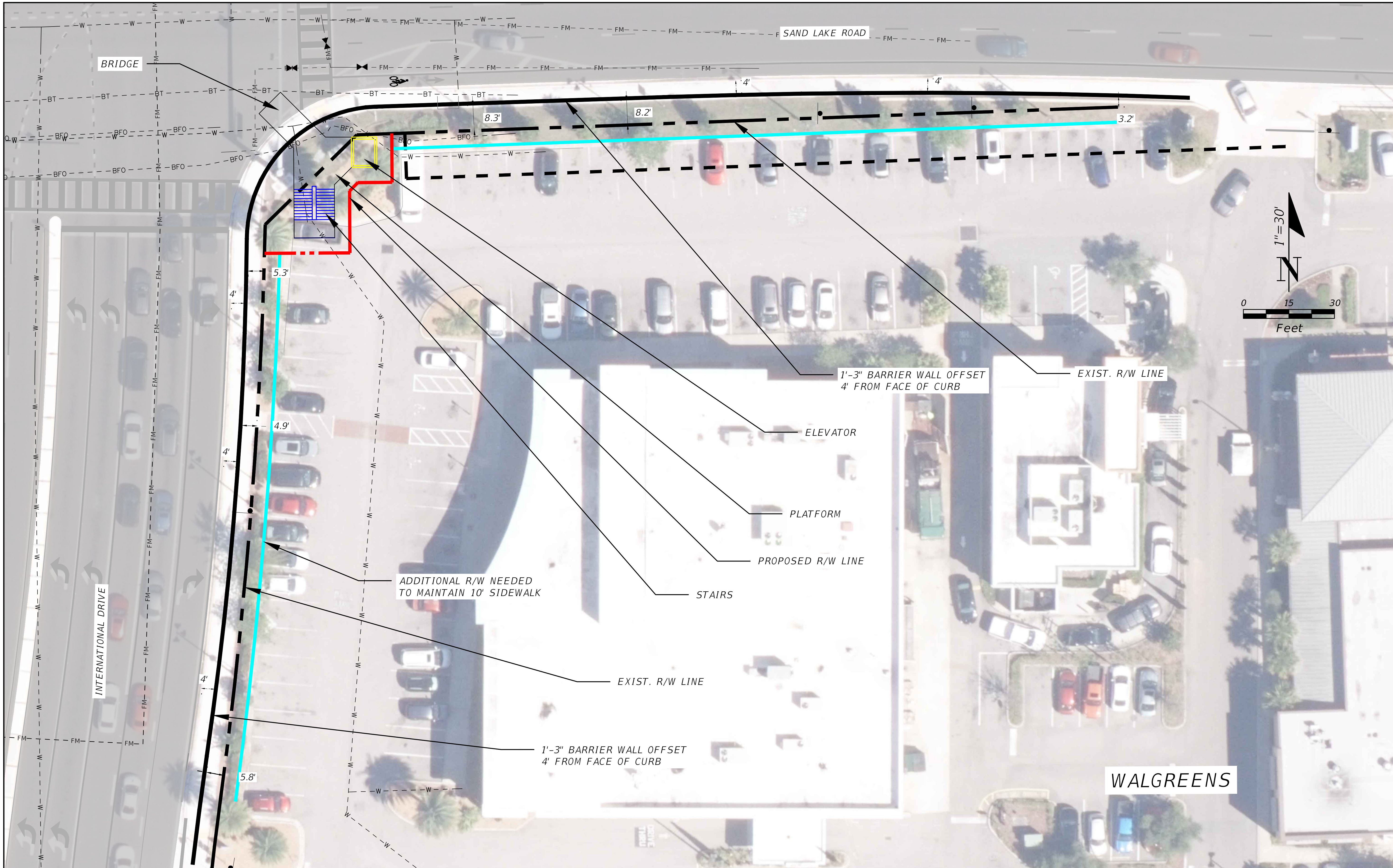
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HHCP&AVCON
A JOINT VENTURE

ORANGE COUNTY GOVERNMENT FLORIDA

INTERNATIONAL DRIVE AT SAND LAKE ROAD
NW CORNER EXHIBIT - STANDARD BARRIER WALL OFFSET

SHEET NO.



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HHCP&AVCON
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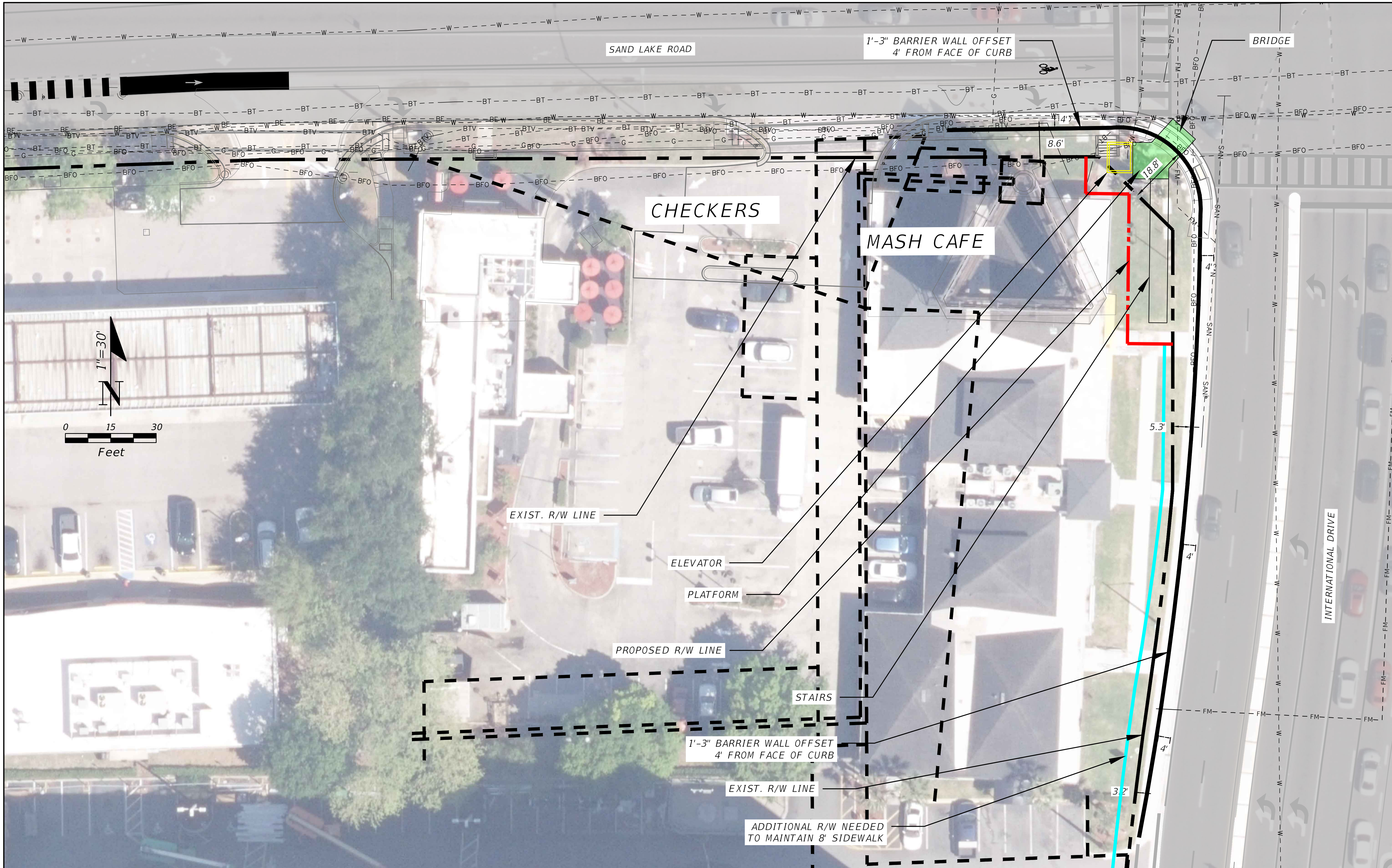
ORANGE COUNTY GOVERNMENT FLORIDA

INTERNATIONAL DRIVE AT SAND LAKE ROAD
SE CORNER EXHIBIT - STANDARD BARRIER WALL OFFSET

SHEET NO.



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HHCP&AVCON
A JOINT VENTURE

ORANGE COUNTY GOVERNMENT FLORIDA

INTERNATIONAL DRIVE AT SAND LAKE ROAD
SW CORNER EXHIBIT - STANDARD BARRIER WALL OFFSET

SHEET NO.

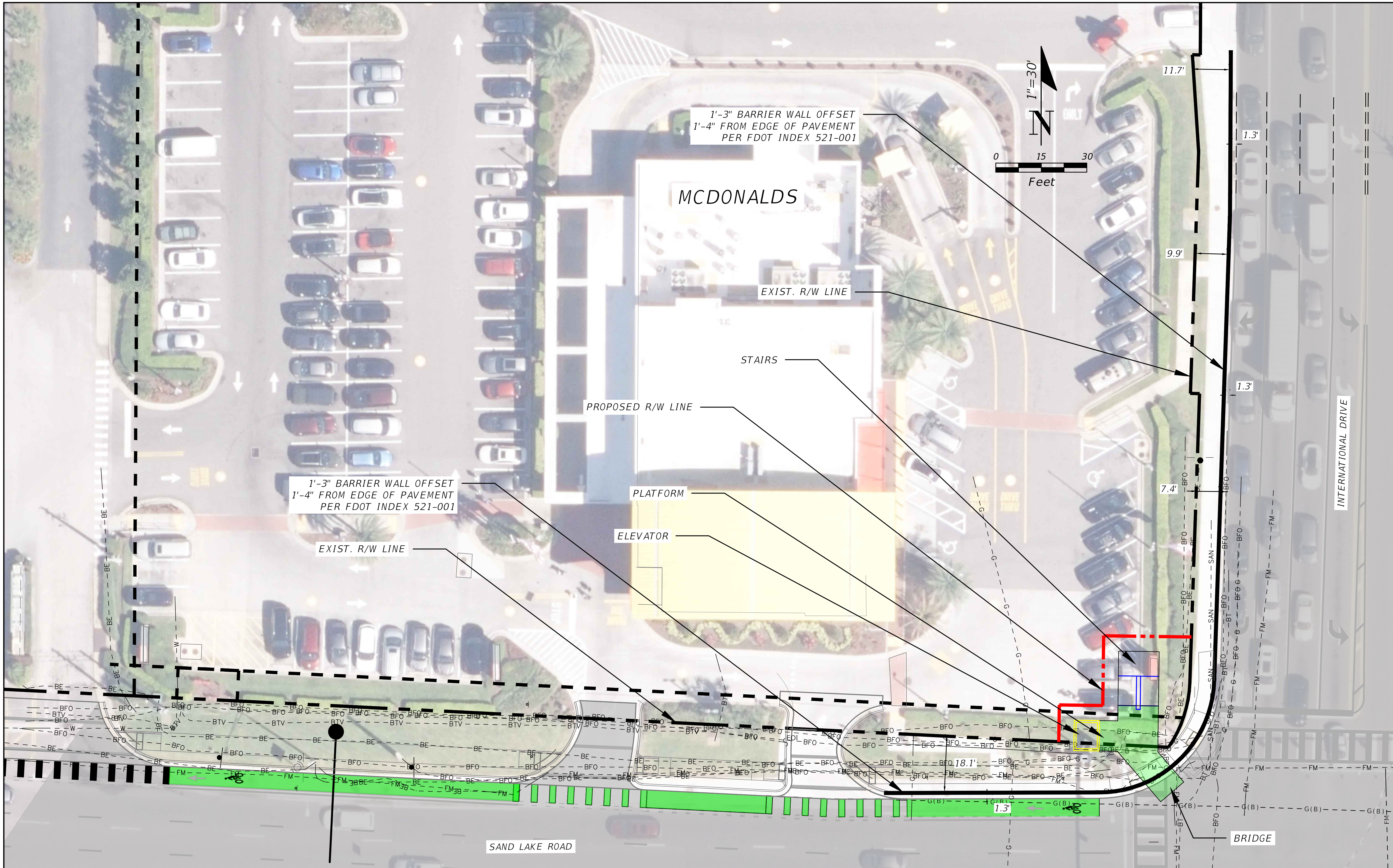
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HHCP&AVCON
A JOINT VENTURE

ORANGE COUNTY GOVERNMENT FLORIDA

INTERNATIONAL DRIVE AT SAND LAKE ROAD
NE CORNER EXHIBIT - FDOT STANDARD INDEX 521-001

SHEET NO.



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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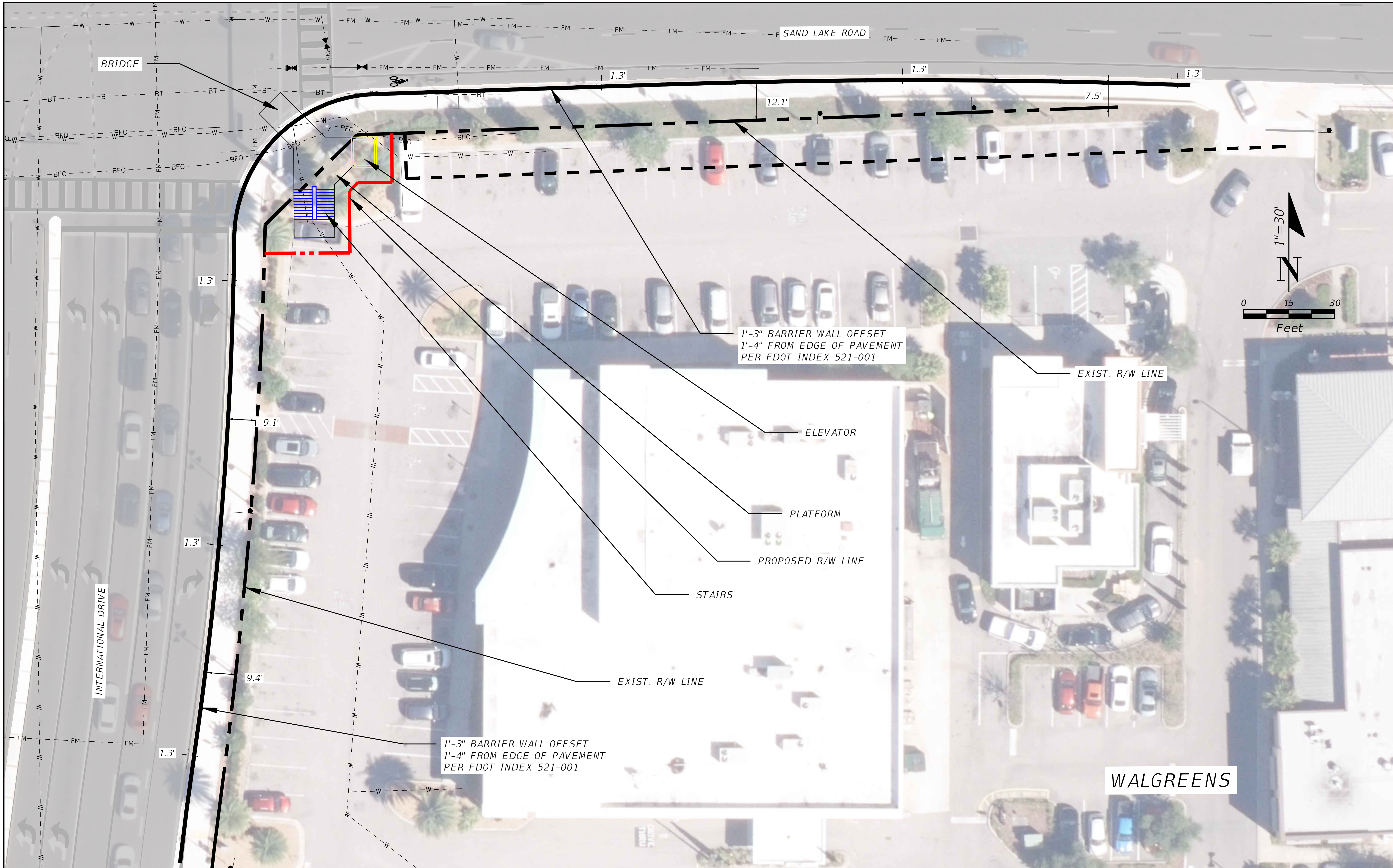
ORANGE COUNTY GOVERNMENT FLORIDA

INTERNATIONAL DRIVE AT SAND LAKE ROAD
NW CORNER EXHIBIT - FDOT STANDARD INDEX 521-001

SHEET NO.



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HHCP&AVCON
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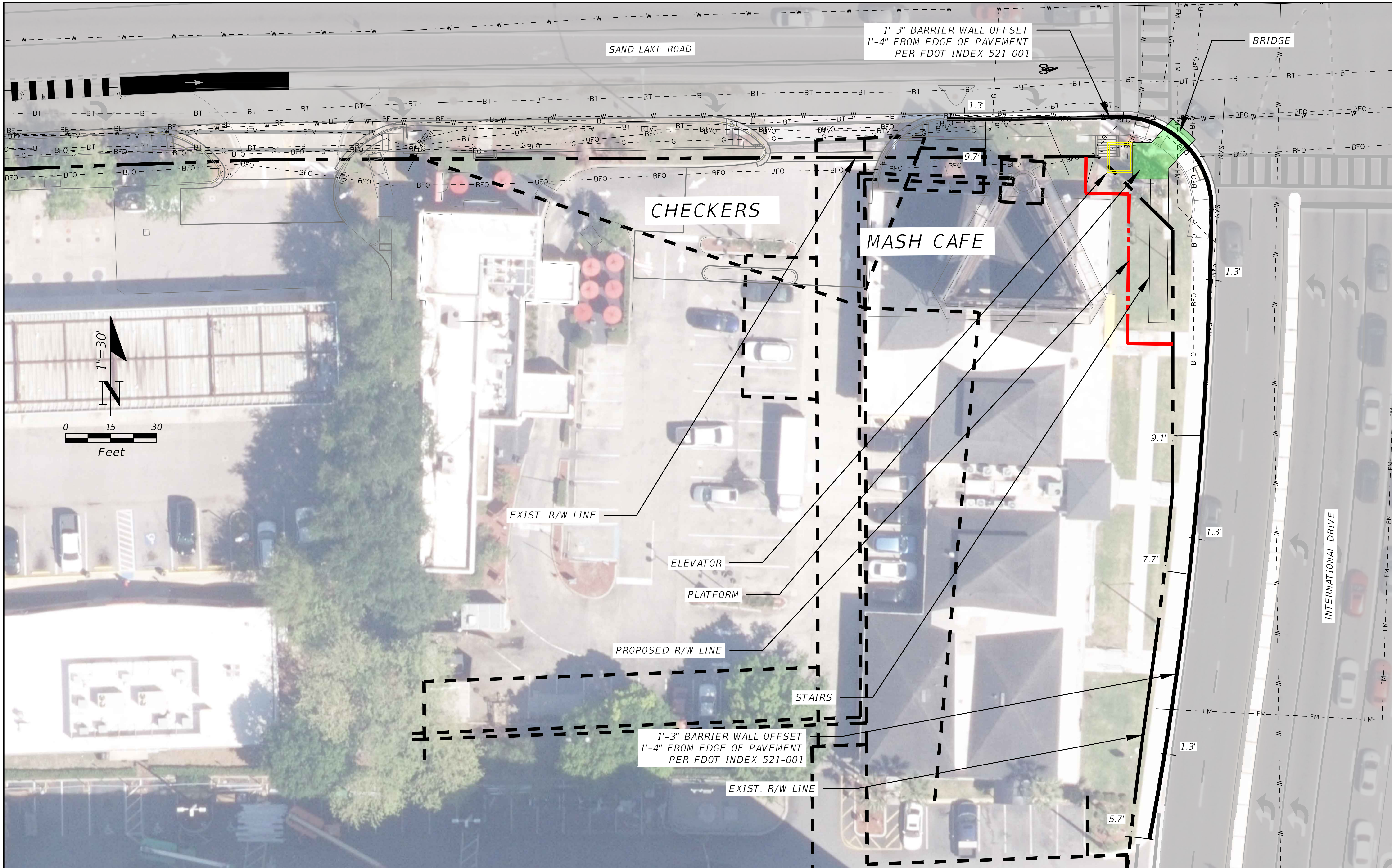
ORANGE COUNTY GOVERNMENT FLORIDA

INTERNATIONAL DRIVE AT SAND LAKE ROAD
SE CORNER EXHIBIT - FDOT STANDARD INDEX 521-001

SHEET NO.



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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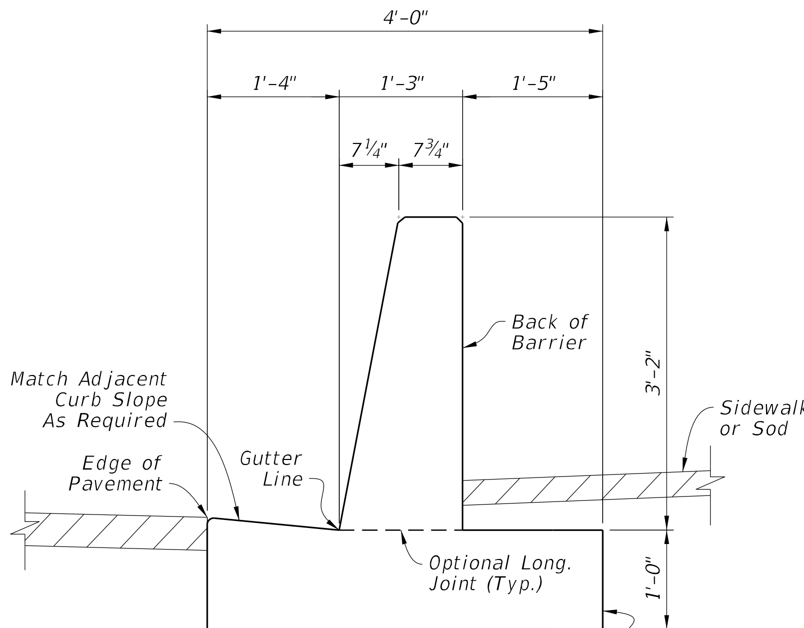
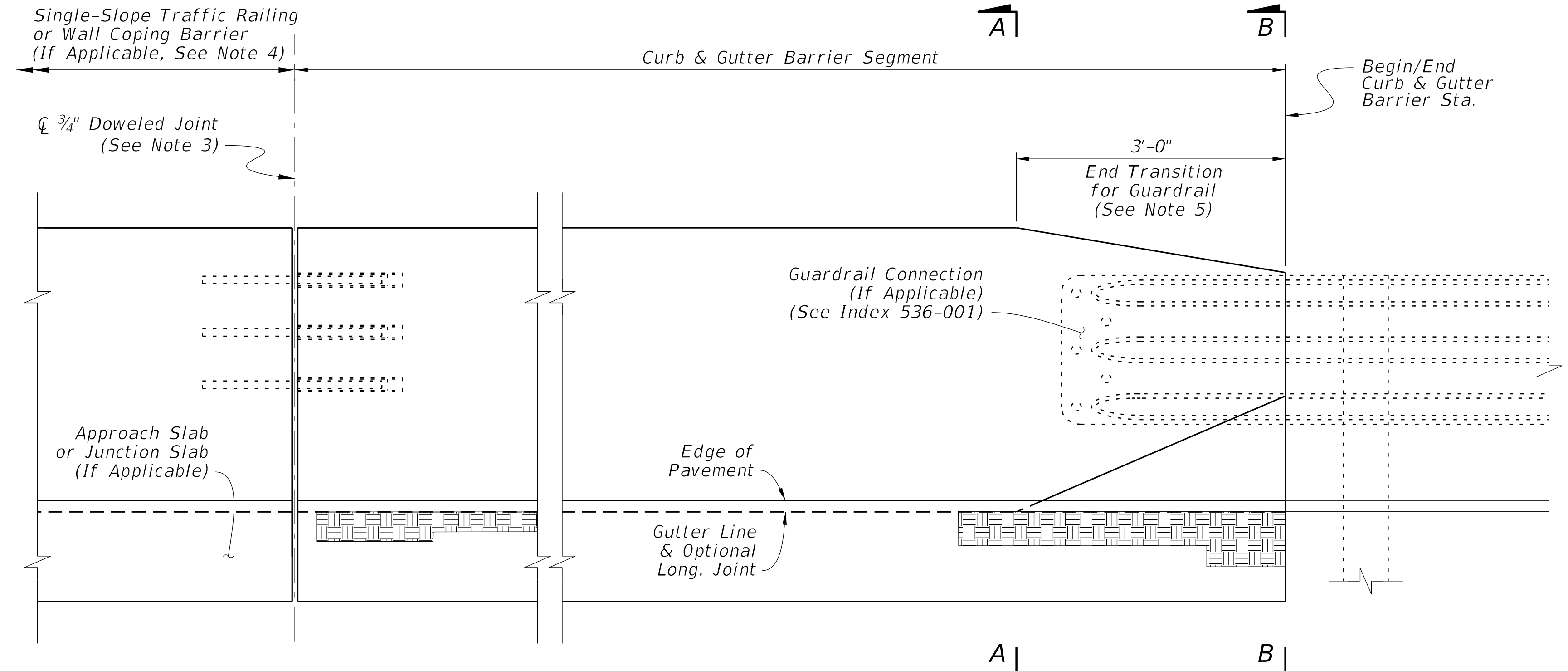
ORANGE COUNTY GOVERNMENT
FLORIDA

INTERNATIONAL DRIVE AT SAND LAKE ROAD
SW CORNER EXHIBIT - FDOT STANDARD INDEX 521-001

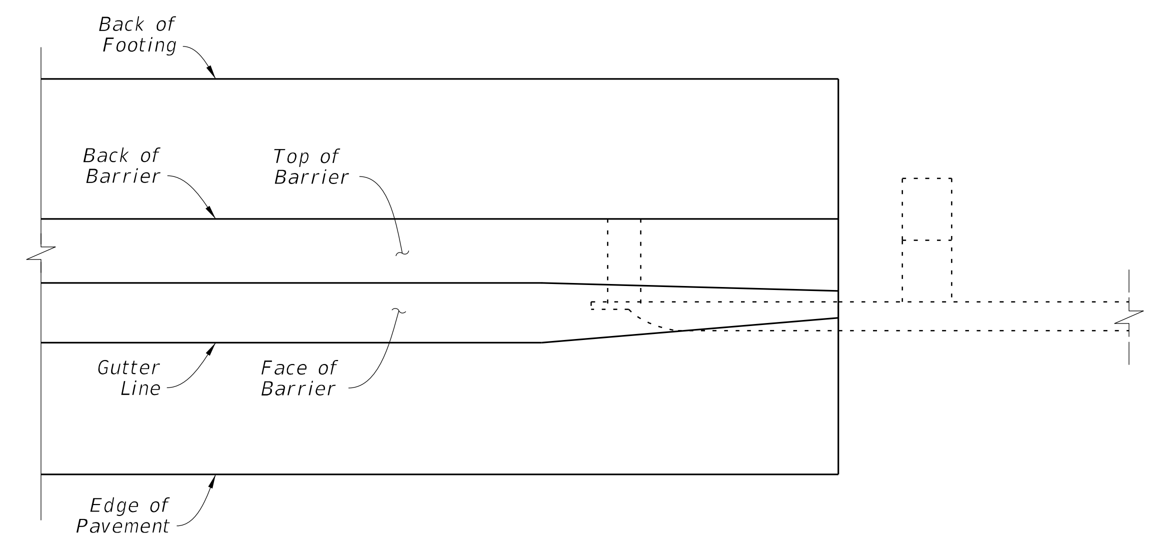
SHEET NO.



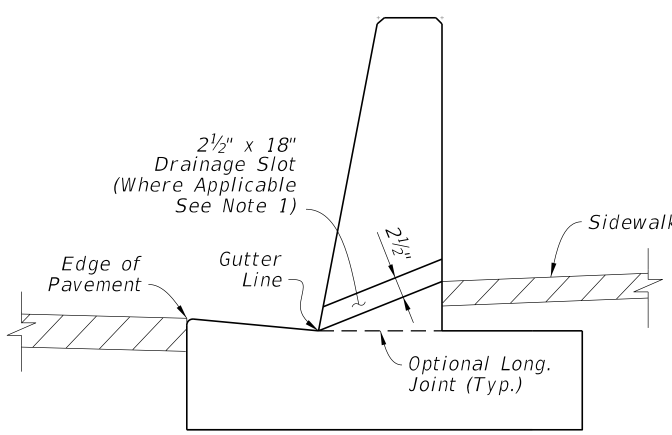
SECTION A-A
CURB & GUTTER
BARRIER



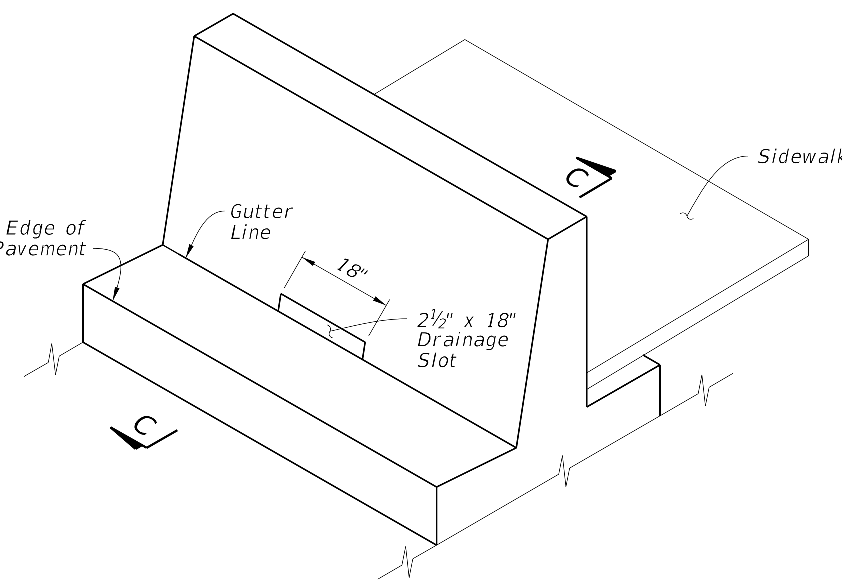
ELEVATION



PLAN



SECTION C-C
CURB & GUTTER
BARRIER WITH
DRAINAGE SLOT



ISOMETRIC VIEW
CURB GUTTER BARRIER
WITH DRAINAGE SLOT

DRAINAGE SLOT DETAILS

DRAINAGE SLOT NOTES:

1. GENERAL: Place 2½" x 18" Drainage Slots at locations and/or spacing called for in the Plans. The minimum spacing is 20 feet.

2. STEEL REINFORCEMENT CONFLICT: When the Drainage Slot encounters a conflict with reinforcing steel, shift or cut the reinforcing steel to provide 2½"(± ½") of concrete cover for the reinforcing around the Drainage Slot. If cutting the vertical bars, maintain 8" bar spacing. If shifting the vertical bars, move the bars from the standard 8" spacing location to the closest end of the drainage slot (distributing additional vertical reinforcement evenly on each side of the Drainage Slot).

CURB AND GUTTER BARRIER NOTES:

1. SECTION VIEWS: For additional Views A-A and B-B, see Sheet 21.

2. EXPANSION JOINTS: Place ½" width transverse expansion joints through the barrier and footing spaced at 100-foot maximum intervals. On both sides of each joint, use the Free End Reinforcing bar spacing per Sheet 21.

3. DOWELED JOINTS: See the General Notes on Sheet 1 for usage of joint types. Where required, install ¾" Doweled Joints as defined on Sheet 13.

4. TRAFFIC RAILING CONNECTIONS: Align the barrier and Traffic Railing faces and connect with the ¾" Doweled Joint per Sheet 13.

5. GUARDRAIL CONNECTIONS: Connect Guardrail using the Transition Connections to Rigid Barrier per Index 536-001 in conjunction with 3'-0" End Transition for Guardrail as shown herein.

6. FREE ENDS: When the barrier end does not terminate with a Traffic Railing connection or Guardrail connection as called for in the Plans, terminate the barrier in accordance with the Free End Reinforcing Note on Sheet 21.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	269	913	381	103	866	52	393	241	72	62	301	378
Future Volume (vph)	269	913	381	103	866	52	393	241	72	62	301	378
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	250		150	100		0	100		100
Storage Lanes	1		1	2		0	2		0	1		1
Taper Length (ft)	50			50			50			50		
Satd. Flow (prot)	3433	3539	1583	3433	4994	0	3433	3328	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3261	3539	1439	3285	4994	0	3268	3328	0	1596	3539	1334
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			405		8			34				173
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1000			1000			1000	
Travel Time (s)		22.7			22.7			22.7			22.7	
Confl. Peds. (#/hr)	66		36	56		75	36		45	75		66
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
Growth Factor	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	336	1141	476	129	1148	0	491	391	0	78	376	473
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									4
Detector Phase	5	2	2	1	6		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	10.0	21.5	21.5	10.0	21.5		10.0	21.5		10.0	21.5	21.5
Total Split (s)	19.0	48.0	48.0	11.0	40.0		23.0	44.0		17.0	38.0	38.0
Total Split (%)	15.8%	40.0%	40.0%	9.2%	33.3%		19.2%	36.7%		14.2%	31.7%	31.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		5.5	5.5		5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None		None	None	None
Act Effct Green (s)	13.5	42.5	42.5	5.5	34.5		17.5	42.6		9.8	32.5	32.5
Actuated g/C Ratio	0.11	0.35	0.35	0.05	0.29		0.15	0.36		0.08	0.27	0.27
v/c Ratio	0.87	0.91	0.62	0.82	0.80		0.98	0.33		0.54	0.39	0.97
Control Delay	75.3	48.8	9.2	93.4	44.2		87.4	27.7		66.5	37.2	62.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	75.3	48.8	9.2	93.4	44.2		87.4	27.7		66.5	37.2	62.4
LOS	E	D	A	F	D		F	C		E	D	E
Approach Delay		43.7			49.1			60.9			52.5	
Approach LOS		D			D			E			D	
Queue Length 50th (ft)	134	440	37	52	299		197	109		59	125	252
Queue Length 95th (ft)	#214	#572	143	#107	356		#308	155		110	171	#476
Internal Link Dist (ft)		920			920			920			920	
Turn Bay Length (ft)	250			250			100			100		100

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	386	1253	771	157	1441		500	1202		169	958	487
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.87	0.91	0.62	0.82	0.80		0.98	0.33		0.46	0.39	0.97

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.98

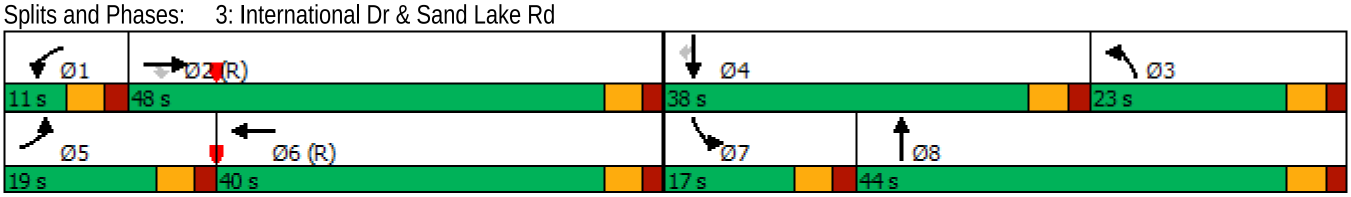
Intersection Signal Delay: 49.7 Intersection LOS: D

Intersection Capacity Utilization 79.2% ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 3: International Dr & Sand Lake Rd



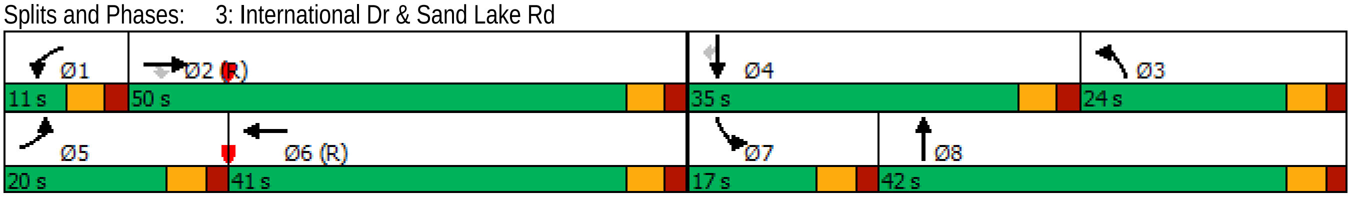
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	269	913	381	103	866	52	393	241	72	62	301	378
Future Volume (vph)	269	913	381	103	866	52	393	241	72	62	301	378
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	250		150	100		0	100		100
Storage Lanes	1		1	2		0	2		0	1		1
Taper Length (ft)	50			50			50			50		
Satd. Flow (prot)	3433	3539	1583	3433	5045	0	3433	3415	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	5045	0	3433	3415	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			415		8			33				173
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1000			1000			1000	
Travel Time (s)		22.7			22.7			22.7			22.7	
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
Growth Factor	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	336	1141	476	129	1148	0	491	391	0	78	376	473
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									4
Detector Phase	5	2	2	1	6		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	10.0	21.5	21.5	10.0	21.5		10.0	21.5		10.0	21.5	21.5
Total Split (s)	20.0	50.0	50.0	11.0	41.0		24.0	42.0		17.0	35.0	35.0
Total Split (%)	16.7%	41.7%	41.7%	9.2%	34.2%		20.0%	35.0%		14.2%	29.2%	29.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		5.5	5.5		5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None		None	None	None
Act Effct Green (s)	14.2	45.1	45.1	6.0	36.9		18.5	39.5		9.8	28.4	28.4
Actuated g/C Ratio	0.12	0.38	0.38	0.05	0.31		0.15	0.33		0.08	0.24	0.24
v/c Ratio	0.83	0.86	0.56	0.76	0.74		0.93	0.34		0.54	0.45	0.93
Control Delay	69.5	42.4	7.3	83.5	40.8		74.9	29.5		66.5	40.8	55.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	69.5	42.4	7.3	83.5	40.8		74.9	29.5		66.5	40.8	55.4
LOS	E	D	A	F	D		E	C		E	D	E
Approach Delay		38.5			45.1			54.8			50.4	
Approach LOS		D			D			D			D	
Queue Length 50th (ft)	132	427	31	52	294		195	112		59	130	241
Queue Length 95th (ft)	#202	522	121	#107	350		#296	158		110	177	#445
Internal Link Dist (ft)		920			920			920			920	
Turn Bay Length (ft)	250			250			100			100		100
Base Capacity (vph)	414	1330	854	170	1556		530	1146		169	870	519

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.81	0.86	0.56	0.76	0.74		0.93	0.34		0.46	0.43	0.91

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 45.2 Intersection LOS: D
Intersection Capacity Utilization 74.1% ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: International Dr & Sand Lake Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	397	925	570	110	942	78	609	352	100	78	393	510
Future Volume (vph)	397	925	570	110	942	78	609	352	100	78	393	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	250		150	100		0	100		100
Storage Lanes	1		1	2		0	2		0	1		1
Taper Length (ft)	50			50			50			50		
Satd. Flow (prot)	3433	3539	1583	3433	4941	0	3433	3315	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3232	3539	1397	3275	4941	0	3246	3315	0	1601	3539	1278
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			442		11			34				173
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1000			1000			1000	
Travel Time (s)		22.7			22.7			22.7			22.7	
Confl. Peds. (#/hr)	92		48	61		93	48		59	93		82
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
Growth Factor	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	496	1156	713	138	1276	0	761	565	0	98	491	638
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									4
Detector Phase	5	2	2	1	6		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	10.0	21.5	21.5	10.0	21.5		10.0	21.5		10.0	21.5	21.5
Total Split (s)	19.0	44.0	44.0	10.0	35.0		26.0	48.0		18.0	40.0	40.0
Total Split (%)	15.8%	36.7%	36.7%	8.3%	29.2%		21.7%	40.0%		15.0%	33.3%	33.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		5.5	5.5		5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None		None	None	None
Act Effct Green (s)	13.5	38.5	38.5	4.5	29.5		20.5	44.1		10.9	34.5	34.5
Actuated g/C Ratio	0.11	0.32	0.32	0.04	0.25		0.17	0.37		0.09	0.29	0.29
v/c Ratio	1.28	1.02	0.95	1.08	1.04		1.30	0.46		0.61	0.48	1.30
Control Delay	189.2	72.0	39.1	155.9	81.7		186.7	28.7		68.8	37.3	177.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	189.2	72.0	39.1	155.9	81.7		186.7	28.7		68.8	37.3	177.2
LOS	F	E	D	F	F		F	C		E	D	F
Approach Delay		86.6			88.9			119.4			112.6	
Approach LOS		F			F			F			F	
Queue Length 50th (ft)	~251	~498	253	~61	~390		~388	165		74	165	~534
Queue Length 95th (ft)	#360	#634	#534	#129	#487		#511	220		131	219	#765
Internal Link Dist (ft)		920			920			920			920	
Turn Bay Length (ft)	250			250			100			100		100

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	386	1135	748	128	1222		586	1241		184	1017	490
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	1.28	1.02	0.95	1.08	1.04		1.30	0.46		0.53	0.48	1.30

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.30

Intersection Signal Delay: 99.0 Intersection LOS: F

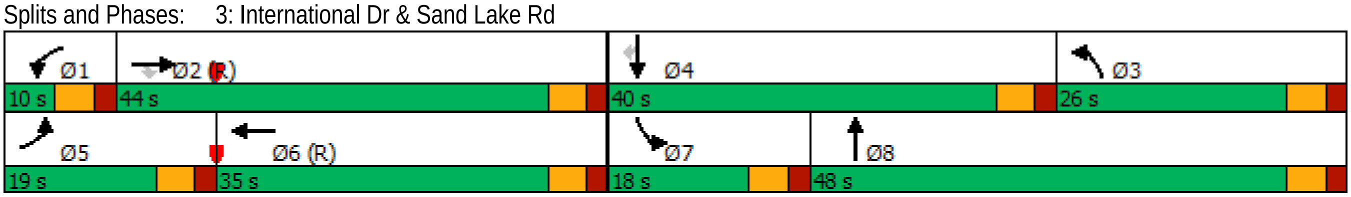
Intersection Capacity Utilization 98.8% ICU Level of Service F

Analysis Period (min) 15

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

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

Splits and Phases: 3: International Dr & Sand Lake Rd



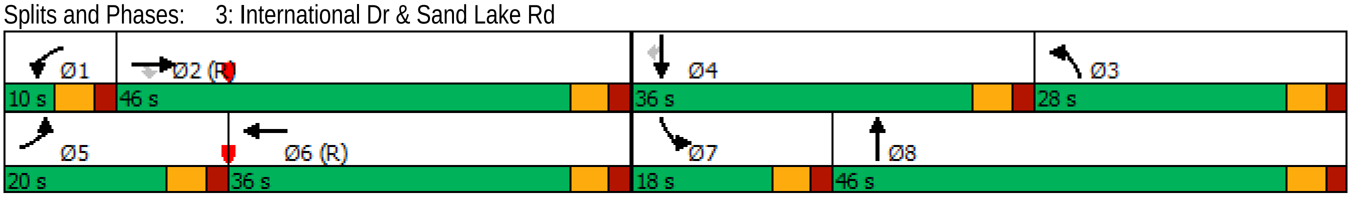
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	397	925	570	110	942	78	609	352	100	78	393	510
Future Volume (vph)	397	925	570	110	942	78	609	352	100	78	393	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	250		150	100		0	100		100
Storage Lanes	1		1	2		0	2		0	1		1
Taper Length (ft)	50			50			50			50		
Satd. Flow (prot)	3433	3539	1583	3433	5024	0	3433	3422	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	5024	0	3433	3422	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			513		11			33				173
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1000			1000			1000	
Travel Time (s)		22.7			22.7			22.7			22.7	
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
Growth Factor	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	496	1156	713	138	1276	0	761	565	0	98	491	638
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									4
Detector Phase	5	2	2	1	6		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	10.0	21.5	21.5	10.0	21.5		10.0	21.5		10.0	21.5	21.5
Total Split (s)	20.0	46.0	46.0	10.0	36.0		28.0	46.0		18.0	36.0	36.0
Total Split (%)	16.7%	38.3%	38.3%	8.3%	30.0%		23.3%	38.3%		15.0%	30.0%	30.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		5.5	5.5		5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None		None	None	None
Act Effct Green (s)	14.5	40.5	40.5	4.5	30.5		22.5	42.1		10.9	30.5	30.5
Actuated g/C Ratio	0.12	0.34	0.34	0.04	0.25		0.19	0.35		0.09	0.25	0.25
v/c Ratio	1.20	0.97	0.82	1.08	0.99		1.18	0.46		0.61	0.55	1.20
Control Delay	155.4	58.9	18.4	155.9	67.9		140.5	30.1		68.8	41.5	137.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	155.4	58.9	18.4	155.9	67.9		140.5	30.1		68.8	41.5	137.0
LOS	F	E	B	F	E		F	C		E	D	F
Approach Delay		66.9			76.5			93.4			93.3	
Approach LOS		E			E			F			F	
Queue Length 50th (ft)	~239	461	147	~61	360		~364	168		74	174	~495
Queue Length 95th (ft)	#348	#610	339	#129	#468		#487	224		131	230	#727
Internal Link Dist (ft)		920			920			920			920	
Turn Bay Length (ft)	250			250			100			100		100
Base Capacity (vph)	414	1194	874	128	1285		643	1222		184	899	531

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	1.20	0.97	0.82	1.08	0.99		1.18	0.46		0.53	0.55	1.20

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.20	
Intersection Signal Delay: 79.7	Intersection LOS: E
Intersection Capacity Utilization 93.0%	ICU Level of Service F
Analysis Period (min) 15	

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

Splits and Phases: 3: International Dr & Sand Lake Rd



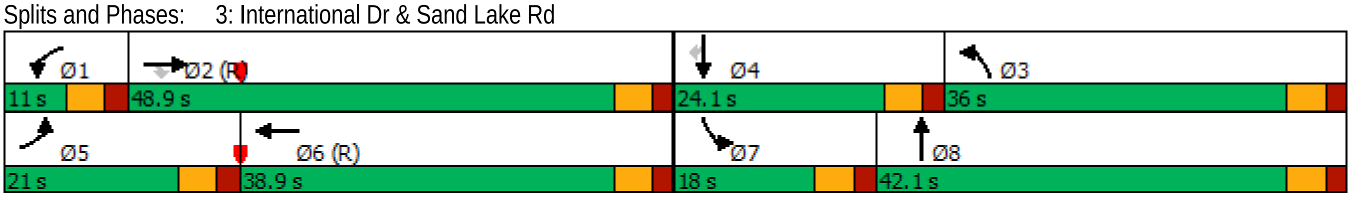
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	331	938	542	116	935	44	688	334	99	70	416	70
Future Volume (vph)	331	938	542	116	935	44	688	334	99	70	416	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	250		150	100		0	100		100
Storage Lanes	1		1	2		0	2		0	1		1
Taper Length (ft)	50			50			50			50		
Satd. Flow (prot)	3433	3539	1583	3433	4981	0	3433	3206	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3117	3539	1128	3135	4981	0	2964	3206	0	1522	3539	1095
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			568		6			33				173
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1000			1000			1000	
Travel Time (s)		22.7			22.7			22.7			22.7	
Confl. Peds. (#/hr)	139		125	118		131	125		118	132		139
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
Growth Factor	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	414	1173	678	145	1224	0	860	542	0	88	520	88
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									4
Detector Phase	5	2	2	1	6		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	10.0	21.5	21.5	10.0	21.5		10.0	21.5		10.0	21.5	21.5
Total Split (s)	21.0	48.9	48.9	11.0	38.9		36.0	42.1		18.0	24.1	24.1
Total Split (%)	17.5%	40.8%	40.8%	9.2%	32.4%		30.0%	35.1%		15.0%	20.1%	20.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		5.5	5.5		5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None		None	None	None
Act Effct Green (s)	15.5	43.4	43.4	5.5	33.4		30.5	38.6		10.5	18.6	18.6
Actuated g/C Ratio	0.13	0.36	0.36	0.05	0.28		0.25	0.32		0.09	0.16	0.16
v/c Ratio	0.93	0.92	0.88	0.92	0.88		0.99	0.52		0.57	0.95	0.28
Control Delay	81.2	48.8	20.9	111.2	49.7		72.1	33.5		66.5	78.2	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	81.2	48.8	20.9	111.2	49.7		72.1	33.5		66.5	78.2	2.2
LOS	F	D	C	F	D		E	C		E	E	A
Approach Delay		46.4			56.3			57.2			67.1	
Approach LOS		D			E			E			E	
Queue Length 50th (ft)	165	453	77	58	331		343	170		66	212	0
Queue Length 95th (ft)	#261	#588	#403	#124	391		#478	230		121	#321	0
Internal Link Dist (ft)		920			920			920			920	
Turn Bay Length (ft)	250			250			100			100		100

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Base Capacity (vph)	443	1279	770	157	1390		872	1052		184	548	315
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.93	0.92	0.88	0.92	0.88		0.99	0.52		0.48	0.95	0.28

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 53.9	Intersection LOS: D
Intersection Capacity Utilization 87.9%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 3: International Dr & Sand Lake Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	331	938	542	116	935	44	688	334	99	70	416	70
Future Volume (vph)	331	938	542	116	935	44	688	334	99	70	416	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	250		150	100		0	100		100
Storage Lanes	1		1	2		0	2		0	1		1
Taper Length (ft)	50			50			50			50		
Satd. Flow (prot)	3433	3539	1583	3433	5050	0	3433	3419	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	5050	0	3433	3419	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			568		6			33				173
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1000			1000			1000	
Travel Time (s)		22.7			22.7			22.7			22.7	
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
Growth Factor	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	414	1173	678	145	1224	0	860	542	0	88	520	88
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									4
Detector Phase	5	2	2	1	6		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	10.0	21.5	21.5	10.0	21.5		10.0	21.5		10.0	21.5	21.5
Total Split (s)	21.0	48.9	48.9	11.0	38.9		36.0	42.1		18.0	24.1	24.1
Total Split (%)	17.5%	40.8%	40.8%	9.2%	32.4%		30.0%	35.1%		15.0%	20.1%	20.1%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		5.5	5.5		5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None		None	None	None
Act Effct Green (s)	15.5	43.4	43.4	5.5	33.4		30.5	38.6		10.5	18.6	18.6
Actuated g/C Ratio	0.13	0.36	0.36	0.05	0.28		0.25	0.32		0.09	0.16	0.16
v/c Ratio	0.93	0.92	0.73	0.92	0.87		0.99	0.48		0.57	0.95	0.23
Control Delay	81.2	48.8	10.6	111.2	48.8		72.1	32.7		66.5	78.2	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	81.2	48.8	10.6	111.2	48.8		72.1	32.7		66.5	78.2	1.3
LOS	F	D	B	F	D		E	C		E	E	A
Approach Delay		43.3			55.4			56.9			67.0	
Approach LOS		D			E			E			E	
Queue Length 50th (ft)	165	453	58	58	329		343	167		66	212	0
Queue Length 95th (ft)	#261	#588	210	#124	389		#478	226		121	#321	0
Internal Link Dist (ft)		920			920			920			920	
Turn Bay Length (ft)	250			250			100			100		100
Base Capacity (vph)	443	1279	935	157	1409		872	1120		184	548	391

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	0.93	0.92	0.73	0.92	0.87		0.99	0.48		0.48	0.95	0.23

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

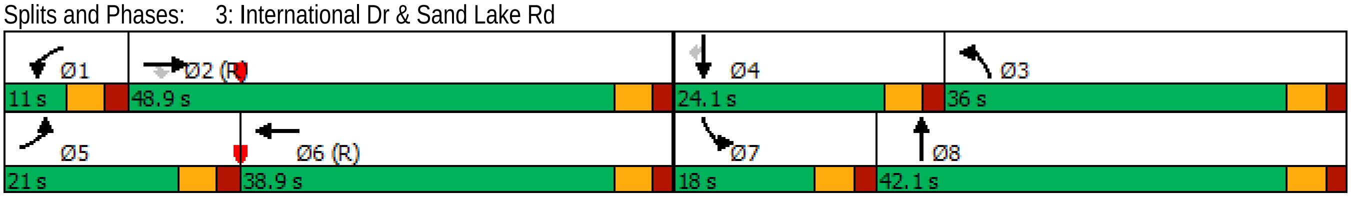
Intersection Signal Delay: 52.4 Intersection LOS: D

Intersection Capacity Utilization 87.8% ICU Level of Service E

Analysis Period (min) 15

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

Splits and Phases: 3: International Dr & Sand Lake Rd

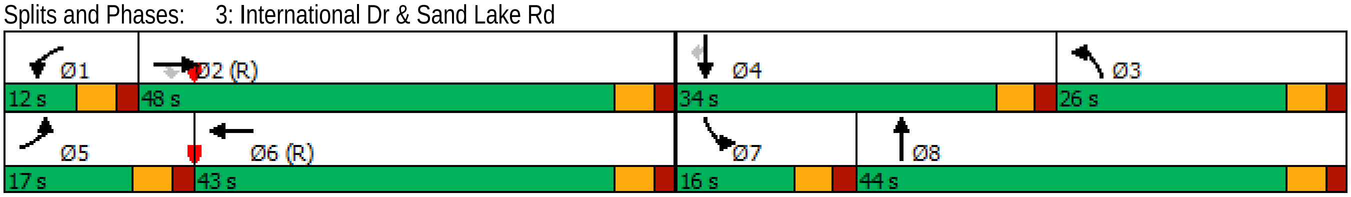


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	456	993	912	209	1054	86	865	462	147	89	549	519
Future Volume (vph)	456	993	912	209	1054	86	865	462	147	89	549	519
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	250		150	100		0	100		100
Storage Lanes	1		1	2		0	2		0	1		1
Taper Length (ft)	50			50			50			50		
Satd. Flow (prot)	3433	3539	1583	3433	4962	0	3433	3193	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3334	3539	1268	3169	4962	0	3180	3193	0	1651	3539	1233
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			450		11			37				123
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1000			1000			1000	
Travel Time (s)		22.7			22.7			22.7			22.7	
Confl. Peds. (#/hr)	56		85	115		75	85		115	86		95
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
Growth Factor	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	570	1241	1140	261	1426	0	1081	762	0	111	686	649
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									4
Detector Phase	5	2	2	1	6		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	10.0	21.5	21.5	10.0	21.5		10.0	21.5		10.0	21.5	21.5
Total Split (s)	17.0	48.0	48.0	12.0	43.0		26.0	44.0		16.0	34.0	34.0
Total Split (%)	14.2%	40.0%	40.0%	10.0%	35.8%		21.7%	36.7%		13.3%	28.3%	28.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		5.5	5.5		5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None		None	None	None
Act Effct Green (s)	11.5	42.5	42.5	6.5	37.5		20.5	38.9		10.1	28.5	28.5
Actuated g/C Ratio	0.10	0.35	0.35	0.05	0.31		0.17	0.32		0.08	0.24	0.24
v/c Ratio	1.74	0.99	1.54	1.41	0.92		1.84	0.72		0.75	0.82	1.68
Control Delay	377.1	62.1	271.0	254.7	49.6		416.2	38.6		83.3	52.3	343.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	377.1	62.1	271.0	254.7	49.6		416.2	38.6		83.3	52.3	343.2
LOS	F	E	F	F	D		F	D		F	D	F
Approach Delay		203.6			81.3			260.1			185.2	
Approach LOS		F			F			F			F	
Stops (vph)	362	1023	474	178	1191		672	579		93	579	328
Fuel Used(gal)	46	29	69	15	30		96	14		3	15	48
CO Emissions (g/hr)	3237	2026	4800	1069	2101		6695	991		212	1037	3368
NOx Emissions (g/hr)	630	394	934	208	409		1303	193		41	202	655

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
VOC Emissions (g/hr)	750	470	1112	248	487		1552	230		49	240	780
Dilemma Vehicles (#)	0	0	0	0	0		0	0		0	0	0

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.84	
Intersection Signal Delay: 187.4	Intersection LOS: F
Intersection Capacity Utilization 110.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 3: International Dr & Sand Lake Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	456	993	912	209	1054	86	865	462	147	89	549	519
Future Volume (vph)	456	993	912	209	1054	86	865	462	147	89	549	519
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	250		150	100		0	100		100
Storage Lanes	1		1	2		0	2		0	1		1
Taper Length (ft)	50			50			50			50		
Satd. Flow (prot)	3433	3539	1583	3433	5029	0	3433	3412	0	1770	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	5029	0	3433	3412	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			520		11			37				173
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1000			1000			1000	
Travel Time (s)		22.7			22.7			22.7			22.7	
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
Growth Factor	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	570	1241	1140	261	1426	0	1081	762	0	111	686	649
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2									4
Detector Phase	5	2	2	1	6		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Minimum Split (s)	10.0	21.5	21.5	10.0	21.5		10.0	21.5		10.0	21.5	21.5
Total Split (s)	19.0	46.0	46.0	12.0	39.0		30.0	42.0		20.0	32.0	32.0
Total Split (%)	15.8%	38.3%	38.3%	10.0%	32.5%		25.0%	35.0%		16.7%	26.7%	26.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.5		5.5	5.5		5.5	5.5	5.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lag	Lag		Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	None	C-Max		None	None		None	None	None
Act Effct Green (s)	13.5	40.5	40.5	6.5	33.5		24.5	38.9		12.1	26.5	26.5
Actuated g/C Ratio	0.11	0.34	0.34	0.05	0.28		0.20	0.32		0.10	0.22	0.22
v/c Ratio	1.48	1.04	1.30	1.41	1.01		1.54	0.67		0.62	0.88	1.34
Control Delay	265.6	76.0	162.9	254.7	69.4		285.7	37.3		66.8	58.9	194.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	265.6	76.0	162.9	254.7	69.4		285.7	37.3		66.8	58.9	194.9
LOS	F	E	F	F	E		F	D		E	E	F
Approach Delay		146.2			98.0			183.0			120.6	
Approach LOS		F			F			F			F	
Queue Length 50th (ft)	~313	~546	~849	~139	~410		~607	257		83	272	~548
Queue Length 95th (ft)	#426	#682	#1112	#226	#520		#738	336		143	#372	#781
Internal Link Dist (ft)		920			920			920			920	
Turn Bay Length (ft)	250			250			100			100		100
Base Capacity (vph)	386	1194	878	185	1411		700	1131		213	781	484

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	0
Reduced v/c Ratio	1.48	1.04	1.30	1.41	1.01		1.54	0.67		0.52	0.88	1.34

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.54

Intersection Signal Delay: 139.8 Intersection LOS: F

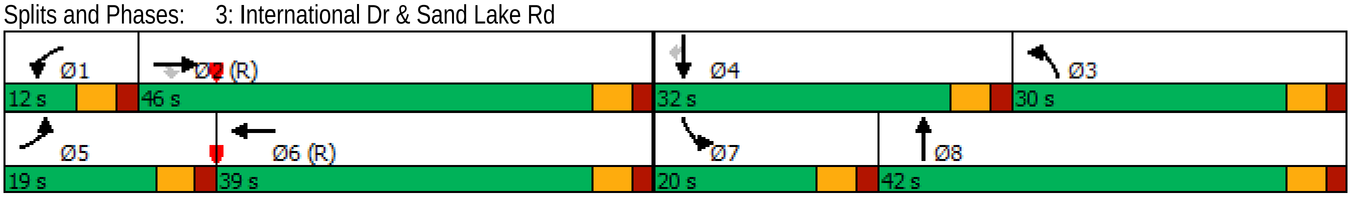
Intersection Capacity Utilization 104.7% ICU Level of Service G

Analysis Period (min) 15

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

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

Splits and Phases: 3: International Dr & Sand Lake Rd



APPENDIX H

STRUCTURAL CALCULATIONS

(Electric Only)

Job Information

	Engineer	Checked	Approved
Name:	ANM	DF	
Date:	17-Jul-23		

Comments:	Structural Analysis Model for Drone Concept based on Architectural Sketch up Model. Bridge is 12 ft wide, 21 ft tall. Strength I and Service I combinations have been evaluated using AASHTO LRFD Bridge Design Specifications 9th edition and AASHTO LRFD Design Specifications for Pedestrian Bridge Design, as well as FDOT SDG Vol 1 overrides.
Structure Type:	SPACE FRAME

Geometry

Entity Type	Count	Highest
Nodes	261	275
Analytical Members	592	626

Load Cases

Load Case Type	Count
Primary	3
Combination	7

Included in this printout are data for:

All	The Whole Structure

Load Case Table

Included in this printout are results for load cases:

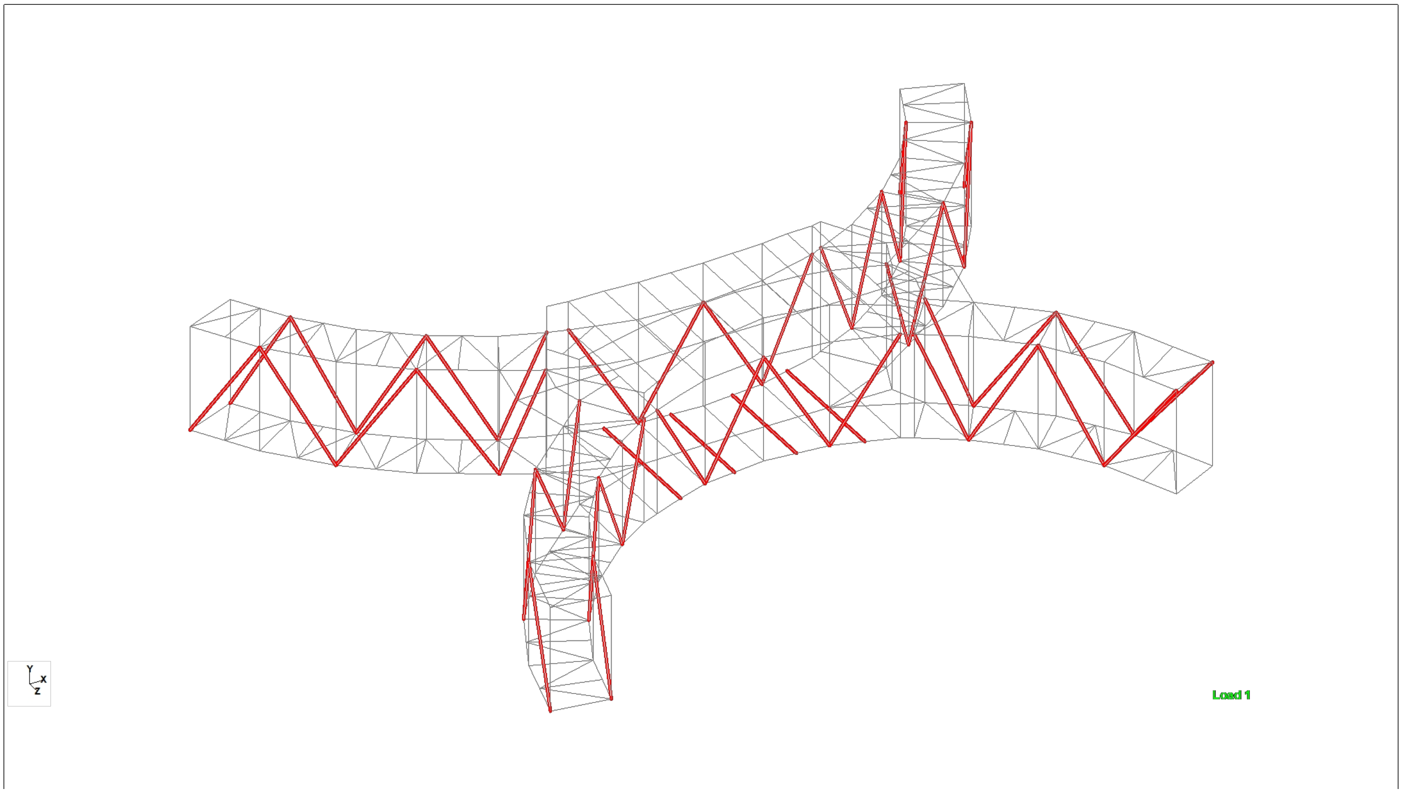
L/C	Type	Name
1	Primary	DC
2	Primary	DW
3	Primary	PL
4	Combination	STRENGTH I
5	Combination	STRENGTH IV
6	Combination	SERVICE I
7	Combination	STRENGTH I - TRUSS
8	Combination	STRENGTH I - SUBSTRUCTURE
9	Combination	STRENGTH I - FOUNDATION
10	Combination	STRENGTH IV - TRUSS

Sections

Prop	Name	Area (in2)	I_{yy} (in4)	I_{zz} (in4)	J (in4)	Material	Source
1	HSS20X12X.500	28.300	705.000	1,550.000	1,540.000	STEEL	Standard
2	HSS20X20X.875	60.800	3,670.000	3,670.000	5,870.000	STEEL	Standard
3	HSS20X20X.750	52.600	3,230.000	3,230.000	5,110.000	STEEL	Standard
4	HSS22X22X.875	67.300	4,970.000	4,970.000	7,890.000	STEEL	Standard
5	HSS20X8X.500	24.600	283.000	1,190.000	757.000	STEEL	Standard

Quantities By Material

Ref	Material	Weight (Mton)
1	STEEL	1,018.770



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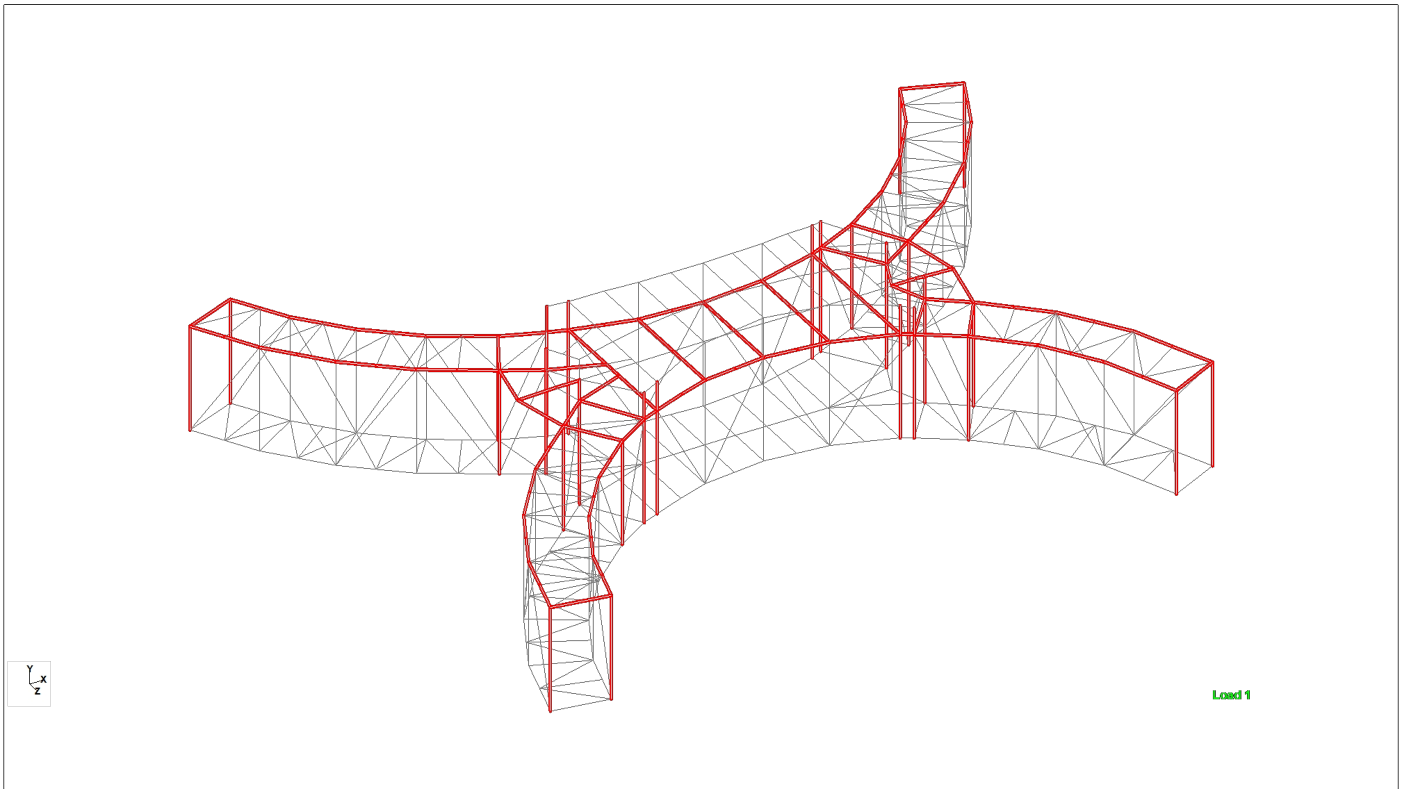

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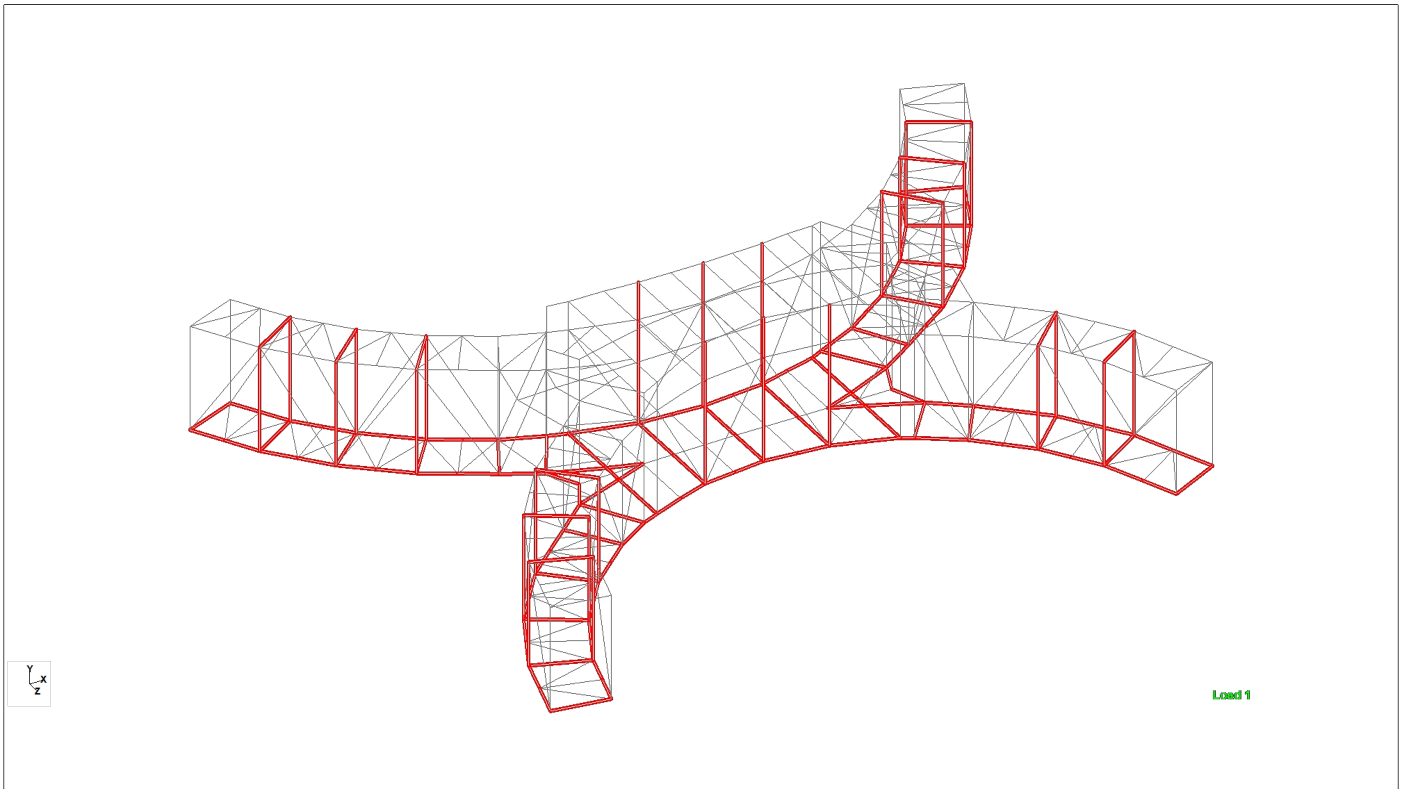
Software licensed to Avcon Inc Connected User: Analiese Majetich	Job No. 2021.0099.48	Sheet No. **5**	Rev
Job Title I-Drive Pedestrian Bridge	Part	Ref	
Client Orange County	By ANM	Date 17-Jul-23	Chd DF
File I Drive Pedestrian Bridge - Drone Concept.STD	Date Time 08-Aug-2023 09:07		



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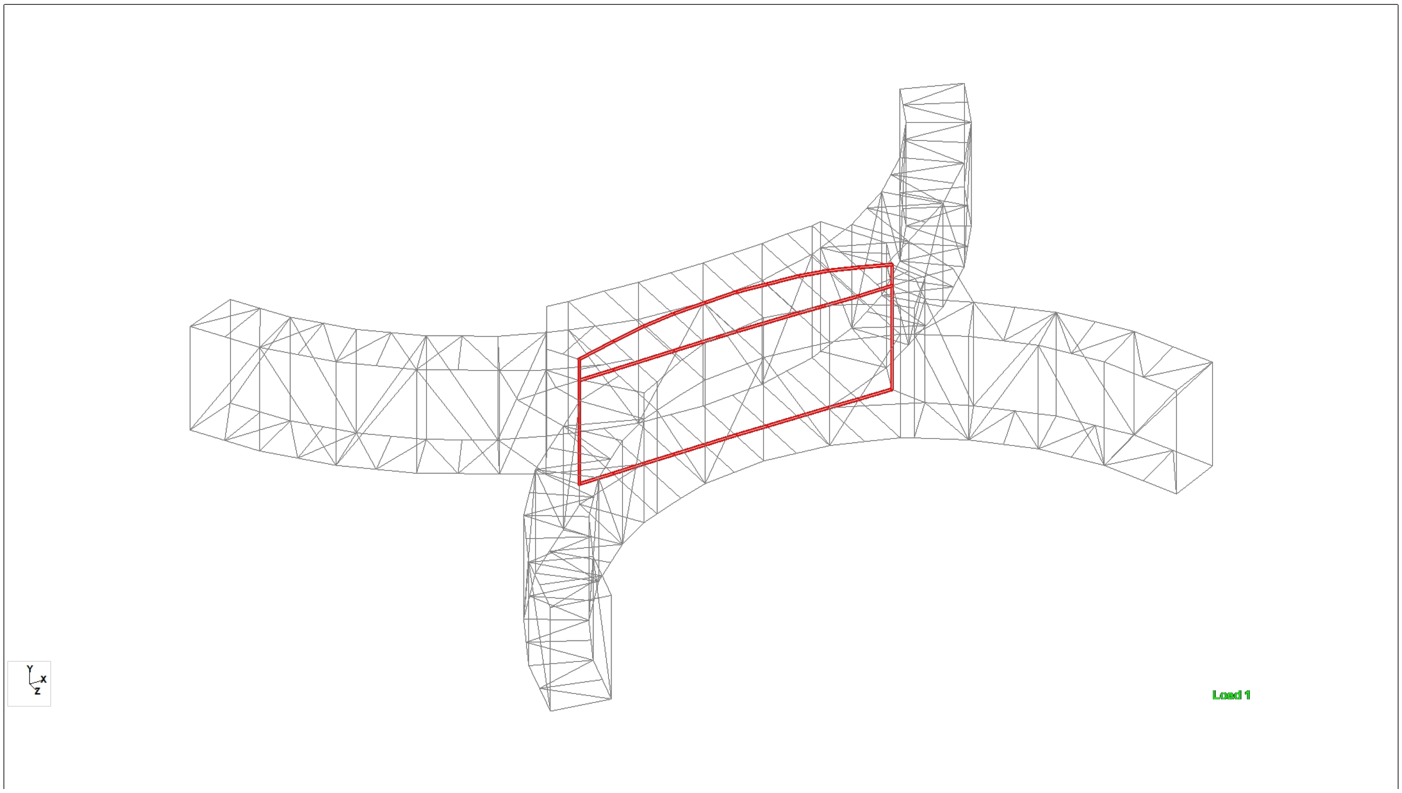

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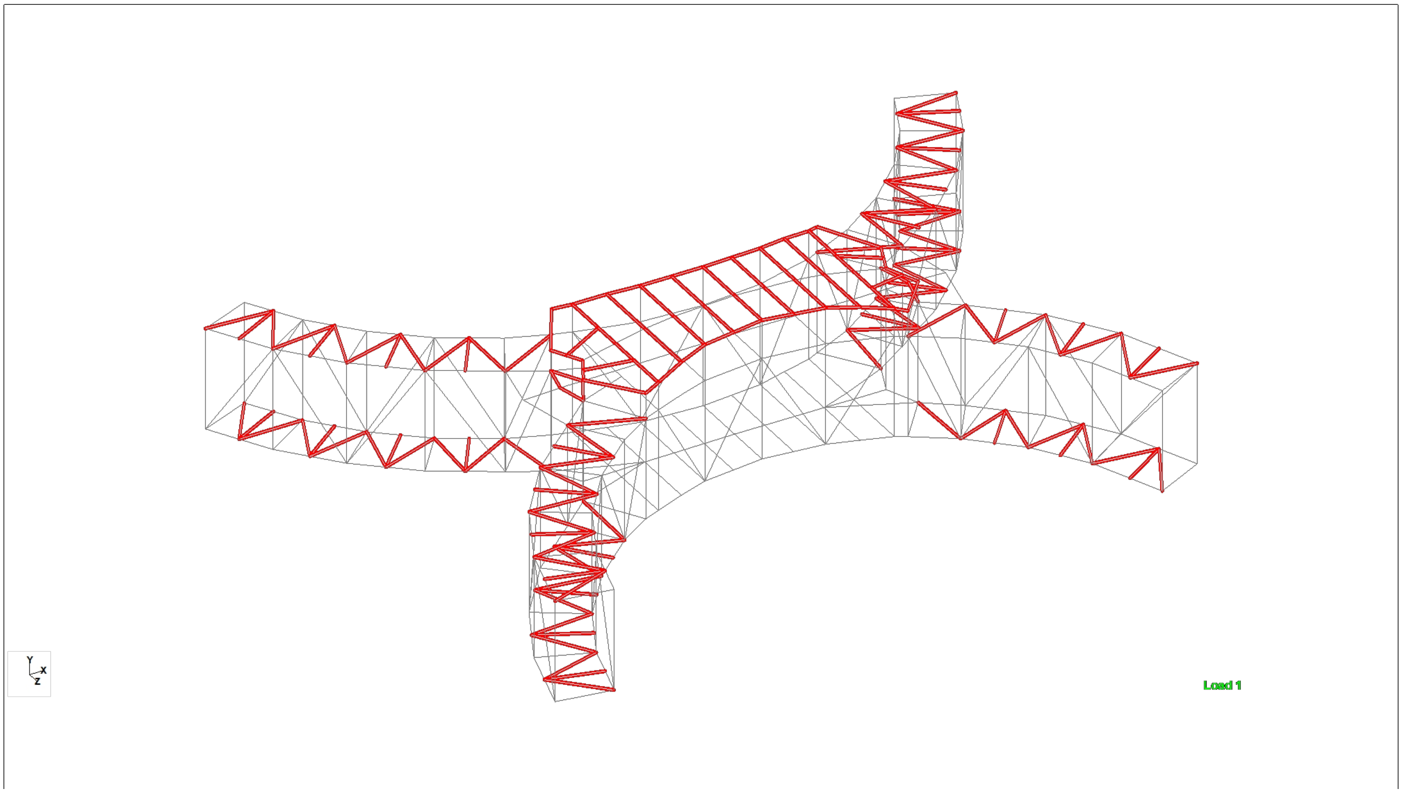

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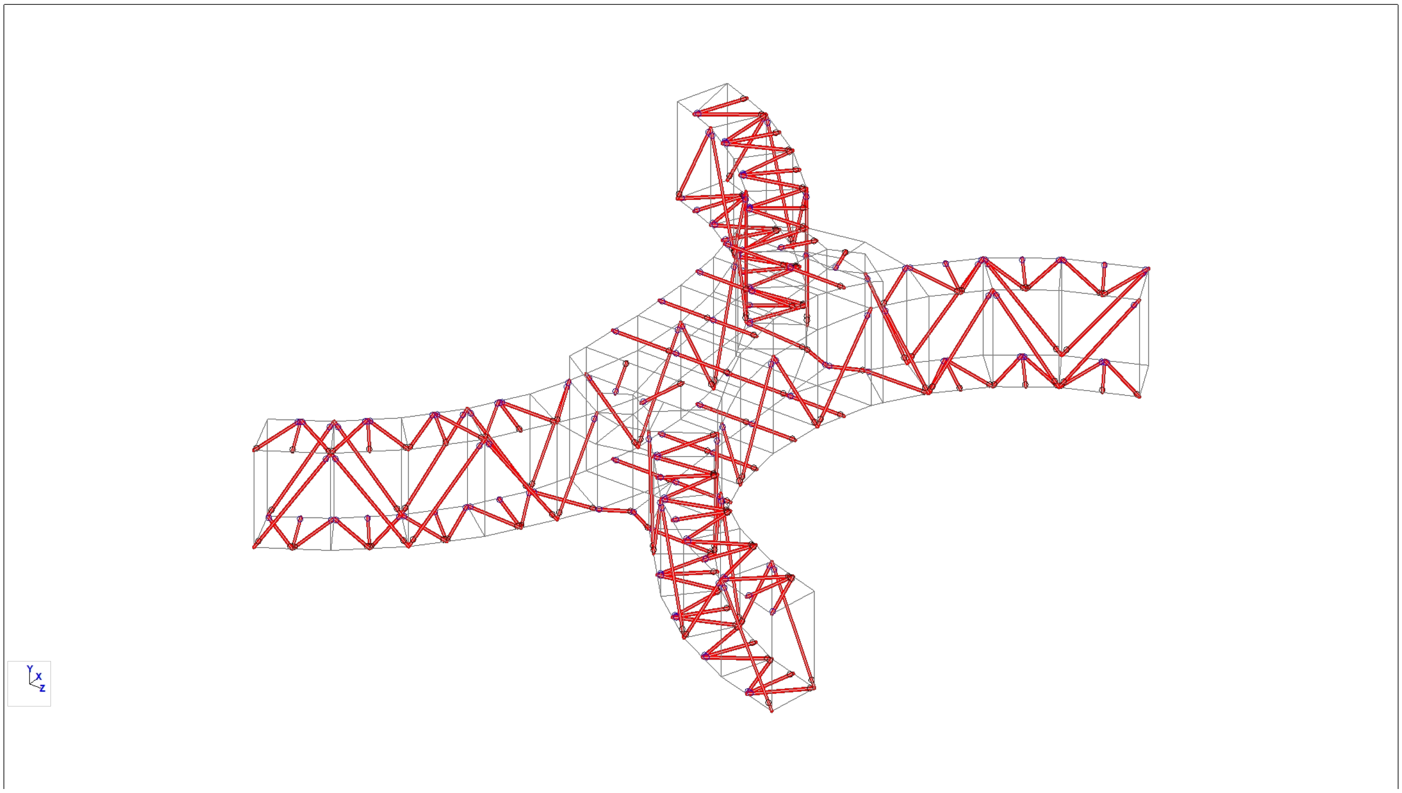


Members with Moment Releases (Braces)

Supports

Node	X (kip/in)	Y (kip/in)	Z (kip/in)	rX (kip-ft/deg)	rY (kip-ft/deg)	rZ (kip-ft/deg)
1	101	112552.500	100.750	4778.000	-	9792.000
7	101	112552.500	100.750	4778.000	-	9792.000
11	101	112552.500	100.750	4778.000	-	9792.000
27	101	112552.500	100.750	4778.000	-	9792.000
241	101	112552.500	100.750	4778.000	-	9792.000
253	101	112552.500	100.750	4778.000	-	9792.000
257	101	112552.500	100.750	4778.000	-	9792.000
263	101	112552.500	100.750	4778.000	-	9792.000

Basic Load Cases

Primary Load Cases

Number	Name	Type
1	DC	Dead
2	DW	Dead
3	PL	Live

SelfWeights

L/C	Direction	Factor	Assigned Geometry
1	Y	-1.000	ALL

One-Way Floor Loads

L/C	Direction	Load (psf)	Min X (ft)	Max X (ft)	Min Y (ft)	Max Y (ft)	Min Z (ft)	Max Z (ft)
2	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000

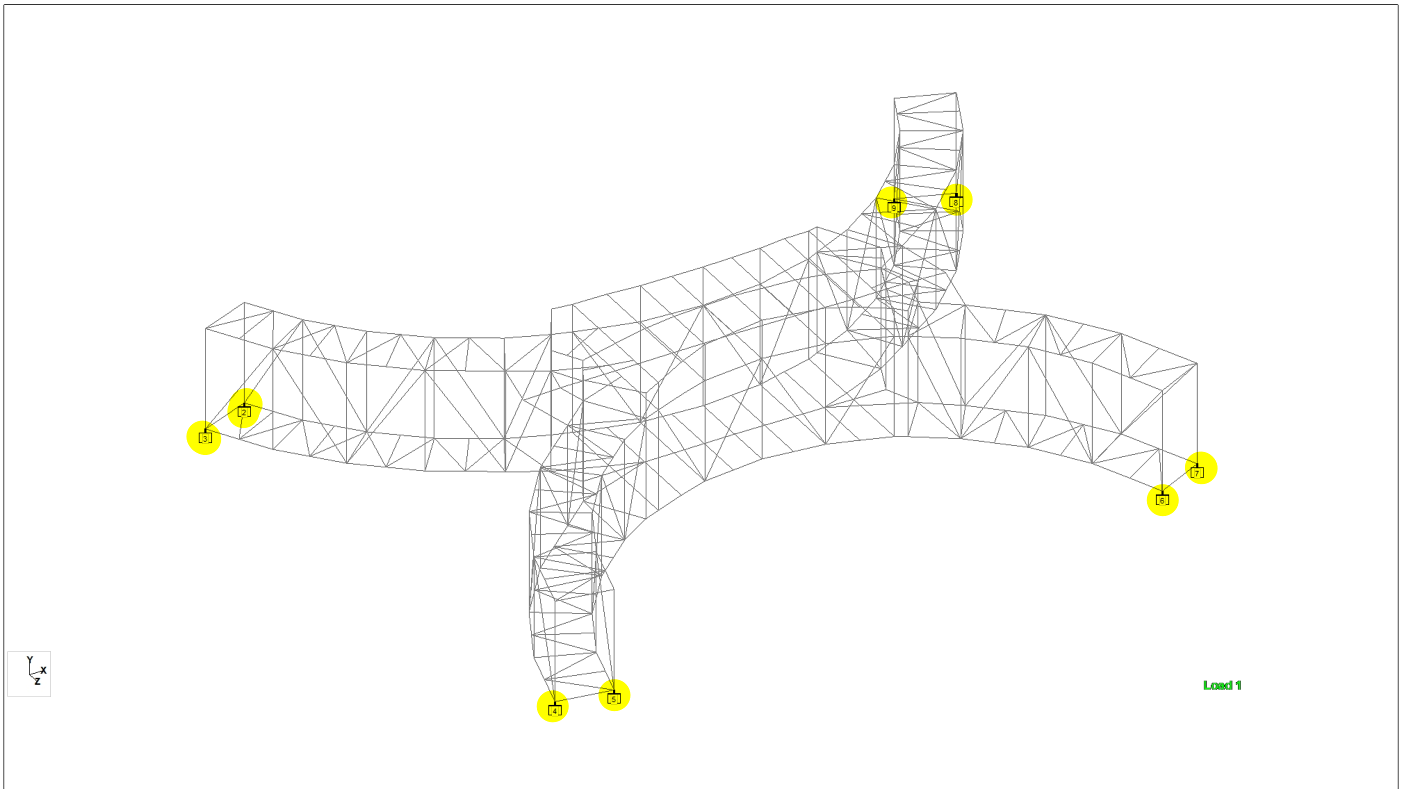
L/C	Direction	Load (psf)	Min X (ft)	Max X (ft)	Min Y (ft)	Max Y (ft)	Min Z (ft)	Max Z (ft)
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
2	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-80.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
3	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000

L/C	Direction	Load (psf)	Min X (ft)	Max X (ft)	Min Y (ft)	Max Y (ft)	Min Z (ft)	Max Z (ft)
3	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000

L/C	Direction	Load (psf)	Min X (ft)	Max X (ft)	Min Y (ft)	Max Y (ft)	Min Z (ft)	Max Z (ft)
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
3	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000
	GY	-90.000	0.000	0.000	0.000	0.000	0.000	0.000

Combination Load Cases

Comb.	Combination L/C Name	Primary	Primary L/C Name	Factor
4	STRENGTH I	1	DC	1.250
		2	DW	1.500
		3	PL	1.750
5	STRENGTH IV	1	DC	1.500
		2	DW	1.500
6	SERVICE I	1	DC	1.000
		2	DW	1.000
		3	PL	1.000



SUPPORT NODES

Reactions

		Horizontal	Vertical	Horizontal	Moment		
Node	L/C	FX (kip)	FY (kip)	FZ (kip)	MX (kip-ft)	MY (kip-ft)	MZ (kip-ft)
1	1	2.318	140.744	14.393	-237.515	-1.653	70.840
	2	0.967	52.005	5.502	-92.668	-0.541	30.748
	3	1.088	58.505	6.190	-104.251	-0.608	34.591
	4	6.253	356.321	37.077	-618.334	-3.942	195.206
	5	4.928	289.123	29.843	-495.274	-3.290	152.382
	6	4.373	251.254	26.085	-434.434	-2.802	136.179
	7	7.503	427.586	44.492	-742.001	-4.730	234.247
	8	6.878	391.953	40.784	-680.168	-4.336	214.727
	9	6.253	356.321	37.077	-618.334	-3.942	195.206
	10	5.914	346.948	35.812	-594.328	-3.949	182.858
7	1	-1.617	137.004	-13.194	265.849	1.944	17.104
	2	-0.514	50.673	-5.062	104.698	0.652	9.894
	3	-0.578	57.007	-5.695	117.786	0.733	11.131
	4	-3.802	347.027	-34.053	695.484	4.690	55.700
	5	-3.196	281.515	-27.385	555.822	3.894	40.497
	6	-2.708	244.684	-23.952	488.334	3.329	38.129
	7	-4.563	416.433	-40.863	834.581	5.628	66.840
	8	-4.183	381.730	-37.458	765.033	5.159	61.270
	9	-3.802	347.027	-34.053	695.484	4.690	55.700
	10	-3.835	337.818	-32.862	666.986	4.672	48.596
11	1	2.399	126.136	14.896	-238.883	-2.011	69.364
	2	0.979	47.890	5.657	-95.043	-0.832	26.788
	3	1.102	53.877	6.364	-106.924	-0.935	30.137
	4	6.397	323.789	38.244	-628.286	-5.399	179.627
	5	5.068	261.039	30.830	-500.890	-4.264	144.228
	6	4.481	227.902	26.918	-440.851	-3.778	126.289
	7	7.676	388.546	45.892	-753.943	-6.478	215.552
	8	7.036	356.168	42.068	-691.115	-5.938	197.589
	9	6.397	323.789	38.244	-628.286	-5.399	179.627
	10	6.082	313.246	36.996	-601.068	-5.117	173.074

		Horizontal	Vertical	Horizontal	Moment		
Node	L/C	FX (kip)	FY (kip)	FZ (kip)	MX (kip-ft)	MY (kip-ft)	MZ (kip-ft)
27	1	-1.572	111.770	-14.087	267.653	2.422	15.547
	2	-0.510	42.860	-5.356	106.534	0.988	5.618
	3	-0.573	48.217	-6.026	119.851	1.112	6.320
	4	-3.732	288.383	-36.187	704.107	6.456	38.920
	5	-3.122	231.945	-29.164	561.281	5.116	31.747
	6	-2.654	202.847	-25.468	494.039	4.522	27.485
	7	-4.478	346.060	-43.425	844.929	7.747	46.704
	8	-4.105	317.221	-39.806	774.518	7.102	42.812
	9	-3.732	288.383	-36.187	704.107	6.456	38.920
	10	-3.746	278.334	-34.997	673.537	6.139	38.097
241	1	0.515	129.391	-9.612	196.979	-1.045	-69.582
	2	0.127	50.337	-3.770	82.155	-0.482	-27.837
	3	0.143	56.629	-4.242	92.425	-0.542	-31.317
	4	1.086	336.346	-25.093	531.200	-2.979	-183.536
	5	0.964	269.592	-20.073	418.701	-2.291	-146.128
	6	0.786	236.357	-17.624	371.559	-2.070	-128.735
	7	1.303	403.615	-30.112	637.440	-3.575	-220.244
	8	1.195	369.980	-27.603	584.320	-3.277	-201.890
	9	1.086	336.346	-25.093	531.200	-2.979	-183.536
	10	1.157	323.510	-24.088	502.442	-2.749	-175.353
253	1	-0.568	125.260	8.947	-224.783	3.238	-64.055
	2	-0.293	48.103	3.528	-91.664	1.417	-24.896
	3	-0.330	54.115	3.969	-103.122	1.594	-28.008
	4	-1.726	323.430	23.421	-598.939	8.962	-166.426
	5	-1.291	260.043	18.713	-474.671	6.982	-133.426
	6	-1.191	227.477	16.444	-419.570	6.249	-116.959
	7	-2.071	388.116	28.105	-718.727	10.755	-199.711
	8	-1.899	355.773	25.763	-658.833	9.859	-183.069
	9	-1.726	323.430	23.421	-598.939	8.962	-166.426
	10	-1.550	312.052	22.455	-569.605	8.379	-160.112
257	1	-0.346	124.957	-11.214	195.468	-0.812	-71.476
	2	-0.224	47.386	-4.429	78.978	-0.223	-32.076

		Horizontal	Vertical	Horizontal	Moment		
Node	**L/C**	**FX** (kip)	**FY** (kip)	**FZ** (kip)	**MX** (kip-ft)	**MY** (kip-ft)	**MZ** (kip-ft)
257	3	-0.252	53.309	-4.983	88.850	-0.251	-36.085
	4	-1.210	320.565	-29.380	518.288	-1.790	-200.606
	5	-0.855	258.514	-23.464	411.668	-1.554	-155.327
	6	-0.822	225.651	-20.625	363.295	-1.287	-139.636
	7	-1.452	384.678	-35.257	621.946	-2.148	-240.728
	8	-1.331	352.621	-32.318	570.117	-1.969	-220.667
	9	-1.210	320.565	-29.380	518.288	-1.790	-200.606
	10	-1.026	310.217	-28.157	494.002	-1.864	-186.392
263	1	-1.131	123.509	9.869	-217.411	2.694	-61.940
	2	-0.534	46.550	3.931	-87.160	0.891	-27.610
	3	-0.600	52.369	4.423	-98.055	1.002	-31.061
	4	-3.265	315.858	25.973	-574.100	6.457	-173.196
	5	-2.497	255.089	20.700	-456.857	5.377	-134.324
	6	-2.265	222.429	18.223	-402.626	4.587	-120.610
	7	-3.918	379.030	31.167	-688.920	7.749	-207.835
	8	-3.591	347.444	28.570	-631.510	7.103	-190.516
	9	-3.265	315.858	25.973	-574.100	6.457	-173.196
	10	-2.997	306.107	24.841	-548.228	6.452	-161.189

Static Check

L/C		FX (kip)	FY (kip)	FZ (kip)	MX (kip-ft)	MY (kip-ft)	MZ (kip-ft)
1	Loads	0.000	-1,018.770	0.000	-847,334.250	0.000	-1,196,888.875
	Reactions	0.000	1,018.770	0.000	847,334.250	0.000	1,196,888.875
	Difference	0.000	0.000	0.000	0.000	0.000	0.000
2	Loads	0.000	-385.804	0.000	-320,814.031	0.001	-453,526.844
	Reactions	0.000	385.804	0.000	320,814.031	-0.001	453,526.844
	Difference	0.000	0.000	0.000	0.000	0.000	0.000
3	Loads	0.000	-434.029	0.000	-360,915.781	0.001	-510,217.719
	Reactions	0.000	434.029	0.000	360,915.781	-0.001	510,217.719
	Difference	0.000	0.000	0.000	0.000	0.000	0.000

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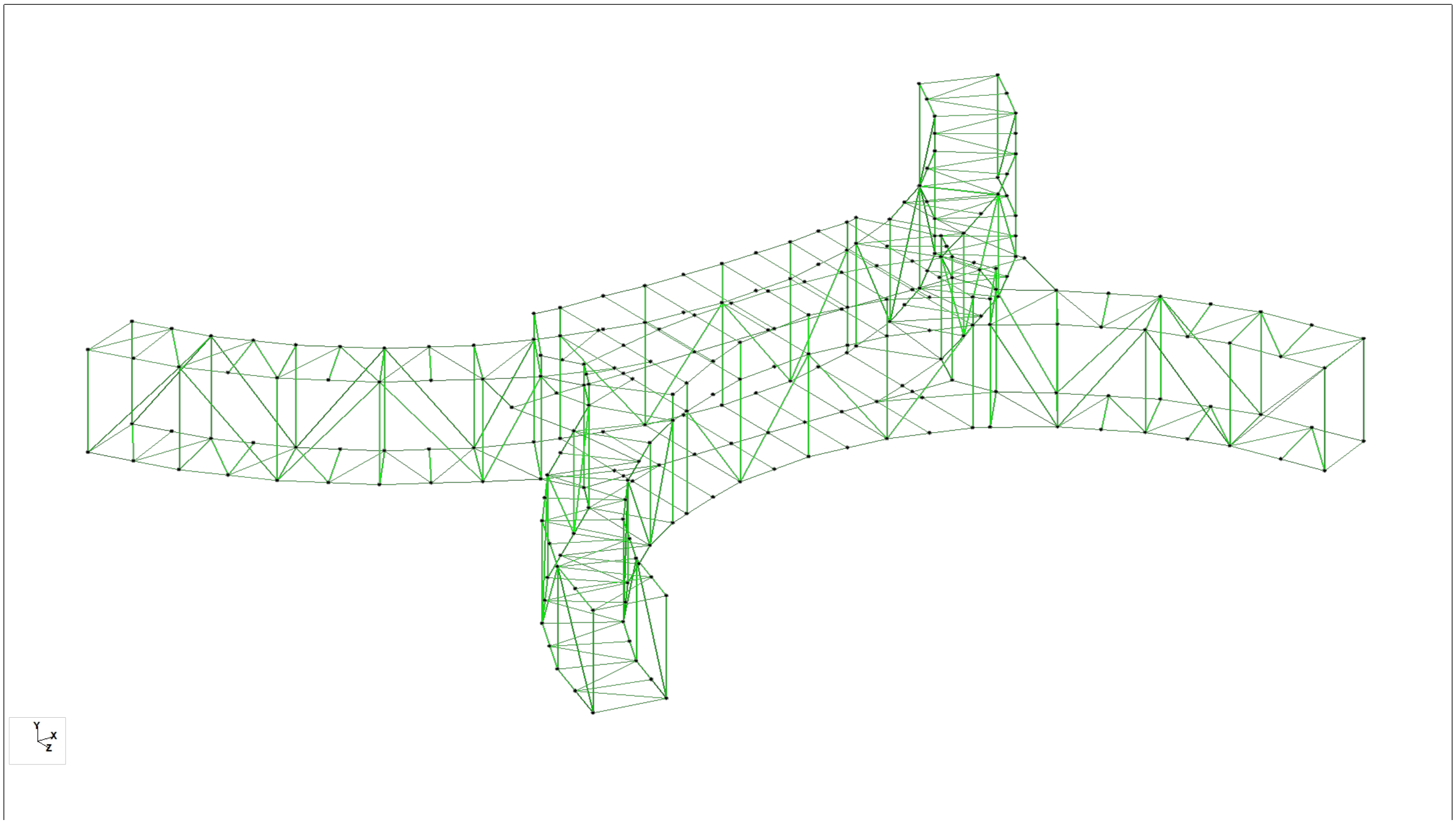
Job Title I-Drive Pedestrian Bridge	Part	Ref	
Client Orange County	By ANM	Date 17-Jul-23	Chd DF
File I Drive Pedestrian Bridge - Drone Concept.STD	Date Time 08-Aug-2023 09:07		



Beam Utilization Ratio

Utilization Ratio

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
1	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.354	1.000	0.354	360-16 L	DG9:Eq : 4.1	7
2	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.556	1.000	0.556	360-16 L	DG9:Eq : 4.1	7
3	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.048	1.000	0.048	360-16 L	DG9:Eq : 4.1	7
4	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.473	1.000	0.473	360-16 L	DG9:Eq : 4.1	7
5	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.207	1.000	0.207	360-16 L	DG9:Eq : 4.1	7
6	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.082	1.000	0.082	360-16 L	DG9:Eq : 4.1	7
7	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.165	1.000	0.165	360-16 L	DG9:Eq : 4.1	7
8	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.145	1.000	0.145	360-16 L	DG9:Eq : 4.1	7
9	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.280	1.000	0.280	360-16 L	DG9:Eq : 4.1	7
10	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.062	1.000	0.062	360-16 L	DG9:Eq : 4.1	7
11	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.085	1.000	0.085	360-16 L	DG9:Eq : 4.1	7
12	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.405	1.000	0.405	360-16 L	DG9:Eq : 4.1	7
13	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.104	1.000	0.104	360-16 L	DG9:Eq : 4.1	7
14	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.006	1.000	0.006	360-16 L	DG9:Eq : 4.1	10
15	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.054	1.000	0.054	360-16 L	DG9:Eq : 4.1	7
16	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.570	1.000	0.570	360-16 L	DG9:Eq : 4.1	7
17	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.205	1.000	0.205	360-16 L	DG9:Eq : 4.1	7
18	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.128	1.000	0.128	360-16 L	DG9:Eq : 4.1	7
19	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.446	1.000	0.446	360-16 L	DG9:Eq : 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
20	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.089	1.000	0.089	360-16 L	DG9:Eq : 4.1	7
21	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.047	1.000	0.047	360-16 L	DG9:Eq : 4.1	7
22	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.308	1.000	0.308	360-16 L	DG9:Eq : 4.1	7
23	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.082	1.000	0.082	360-16 L	DG9:Eq : 4.1	7
24	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.204	1.000	0.204	360-16 L	DG9:Eq : 4.1	7
25	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.278	1.000	0.278	360-16 L	DG9:Eq : 4.1	7
26	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.132	1.000	0.132	360-16 L	DG9:Eq : 4.1	7
27	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.162	1.000	0.162	360-16 L	DG9:Eq : 4.1	7
28	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.295	1.000	0.295	360-16 L	DG9:Eq : 4.1	7
29	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.037	1.000	0.037	360-16 L	DG9:Eq : 4.1	7
30	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.624	1.000	0.624	360-16 L	DG9:Eq : 4.1	7
31	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.225	1.000	0.225	360-16 L	DG9:Eq : 4.1	7
32	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.108	1.000	0.108	360-16 L	DG9:Eq : 4.1	7
33	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.183	1.000	0.183	360-16 L	DG9:Eq : 4.1	7
34	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.121	1.000	0.121	360-16 L	DG9:Eq : 4.1	7
35	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.033	1.000	0.033	360-16 L	DG9:Eq : 4.1	7
36	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.190	1.000	0.190	360-16 L	DG9:Eq : 4.1	7
37	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.163	1.000	0.163	360-16 L	DG9:Eq : 4.1	7
38	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.516	1.000	0.516	360-16 L	DG9:Eq : 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
39	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.052	1.000	0.052	360-16 L	DG9:Eq : 4.1	7
40	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.071	1.000	0.071	360-16 L	DG9:Eq : 4.1	7
41	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.097	1.000	0.097	360-16 L	DG9:Eq : 4.1	7
42	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.250	1.000	0.250	360-16 L	DG9:Eq : 4.1	7
43	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.114	1.000	0.114	360-16 L	DG9:Eq : 4.1	7
44	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.291	1.000	0.291	360-16 L	DG9:Eq : 4.1	7
45	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.006	1.000	0.006	360-16 L	DG9:Eq : 4.1	10
46	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.103	1.000	0.103	360-16 L	DG9:Eq : 4.1	7
47	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.186	1.000	0.186	360-16 L	DG9:Eq : 4.1	7
48	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.018	1.000	0.018	360-16 L	DG9:Eq : 4.1	7
49	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.102	1.000	0.102	360-16 L	DG9:Eq : 4.1	7
50	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.098	1.000	0.098	360-16 L	DG9:Eq : 4.1	7
51	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.055	1.000	0.055	360-16 L	DG9:Eq : 4.1	7
52	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.304	1.000	0.304	360-16 L	DG9:Eq : 4.1	7
53	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.205	1.000	0.205	360-16 L	DG9:Eq : 4.1	7
54	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.098	1.000	0.098	360-16 L	DG9:Eq : 4.1	7
55	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.155	1.000	0.155	360-16 L	DG9:Eq : 4.1	7
56	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.184	1.000	0.184	360-16 L	DG9:Eq : 4.1	7
57	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.052	1.000	0.052	360-16 L	DG9:Eq : 4.1	7
58	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.052	1.000	0.052	360-16 L	DG9:Eq : 4.1	7
59	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.244	1.000	0.244	360-16 L	DG9:Eq : 4.1	7
60	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.249	1.000	0.249	360-16 L	DG9:Eq : 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
61	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.200	1.000	0.200	360-16 L	DG9:Eq : 4.1	7
62	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.318	1.000	0.318	360-16 L	DG9:Eq : 4.1	7
63	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.228	1.000	0.228	360-16 L	DG9:Eq : 4.1	7
64	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.042	1.000	0.042	360-16 L	DG9:Eq : 4.1	7
65	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.066	1.000	0.066	360-16 L	DG9:Eq : 4.1	7
66	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.363	1.000	0.363	360-16 L	DG9:Eq : 4.1	7
67	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.143	1.000	0.143	360-16 L	DG9:Eq : 4.1	7
68	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.127	1.000	0.127	360-16 L	DG9:Eq : 4.1	7
69	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.043	1.000	0.043	360-16 L	DG9:Eq : 4.1	7
70	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.635	1.000	0.635	360-16 L	DG9:Eq : 4.1	7
71	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.017	1.000	0.017	360-16 L	DG9:Eq : 4.1	7
72	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.100	1.000	0.100	360-16 L	DG9:Eq : 4.1	7
73	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.432	1.000	0.432	360-16 L	DG9:Eq : 4.1	7
74	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.228	1.000	0.228	360-16 L	DG9:Eq : 4.1	7
75	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.211	1.000	0.211	360-16 L	DG9:Eq : 4.1	7
76	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.230	1.000	0.230	360-16 L	DG9:Eq : 4.1	7
77	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.462	1.000	0.462	360-16 L	DG9:Eq : 4.1	7
78	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.062	1.000	0.062	360-16 L	DG9:Eq : 4.1	7
79	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.111	1.000	0.111	360-16 L	DG9:Eq : 4.1	7
80	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.286	1.000	0.286	360-16 L	DG9:Eq : 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
81	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.042	1.000	0.042	360-16 L	DG9:Eq : 4.1	7
82	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.110	1.000	0.110	360-16 L	DG9:Eq : 4.1	7
83	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.347	1.000	0.347	360-16 L	DG9:Eq : 4.1	7
84	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.228	1.000	0.228	360-16 L	DG9:Eq : 4.1	7
85	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.097	1.000	0.097	360-16 L	DG9:Eq : 4.1	7
86	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.319	1.000	0.319	360-16 L	DG9:Eq : 4.1	7
87	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.179	1.000	0.179	360-16 L	DG9:Eq : 4.1	7
88	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.165	1.000	0.165	360-16 L	DG9:Eq : 4.1	7
89	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.149	1.000	0.149	360-16 L	DG9:Eq : 4.1	7
90	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.218	1.000	0.218	360-16 L	DG9:Eq : 4.1	7
91	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.288	1.000	0.288	360-16 L	DG9:Eq : 4.1	7
92	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.296	1.000	0.296	360-16 L	DG9:Eq : 4.1	7
93	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.227	1.000	0.227	360-16 L	DG9:Eq : 4.1	7
94	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.243	1.000	0.243	360-16 L	DG9:Eq : 4.1	7
95	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.022	1.000	0.022	360-16 L	DG9:Eq : 4.1	7
96	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.109	1.000	0.109	360-16 L	DG9:Eq : 4.1	7
97	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.108	1.000	0.108	360-16 L	DG9:Eq : 4.1	7
98	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.192	1.000	0.192	360-16 L	DG9:Eq : 4.1	7
99	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.246	1.000	0.246	360-16 L	DG9:Eq : 4.1	7
100	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.403	1.000	0.403	360-16 L	DG9:Eq : 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
101	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.088	1.000	0.088	360-16L	DG9:Eq: 4.1	7
102	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.117	1.000	0.117	360-16L	DG9:Eq: 4.1	7
103	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.376	1.000	0.376	360-16L	DG9:Eq: 4.1	7
104	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.541	1.000	0.541	360-16L	DG9:Eq: 4.1	7
105	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.335	1.000	0.335	360-16L	DG9:Eq: 4.1	7
106	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.227	1.000	0.227	360-16L	DG9:Eq: 4.1	7
107	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.085	1.000	0.085	360-16L	DG9:Eq: 4.1	7
108	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.236	1.000	0.236	360-16L	DG9:Eq: 4.1	7
109	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.021	1.000	0.021	360-16L	DG9:Eq: 4.1	7
110	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.108	1.000	0.108	360-16L	DG9:Eq: 4.1	7
111	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.133	1.000	0.133	360-16L	DG9:Eq: 4.1	7
112	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.260	1.000	0.260	360-16L	DG9:Eq: 4.1	7
113	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.541	1.000	0.541	360-16L	DG9:Eq: 4.1	7
114	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.490	1.000	0.490	360-16L	DG9:Eq: 4.1	7
115	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.311	1.000	0.311	360-16L	DG9:Eq: 4.1	7
116	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.079	1.000	0.079	360-16L	DG9:Eq: 4.1	7
117	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.232	1.000	0.232	360-16L	DG9:Eq: 4.1	7
118	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.177	1.000	0.177	360-16L	DG9:Eq: 4.1	7
119	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.146	1.000	0.146	360-16L	DG9:Eq: 4.1	7
120	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.363	1.000	0.363	360-16L	DG9:Eq: 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
121	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.526	1.000	0.526	360-16 L	DG9:Eq : 4.1	7
122	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.446	1.000	0.446	360-16 L	DG9:Eq : 4.1	7
123	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.262	1.000	0.262	360-16 L	DG9:Eq : 4.1	7
124	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.294	1.000	0.294	360-16 L	DG9:Eq : 4.1	7
125	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.516	1.000	0.516	360-16 L	DG9:Eq : 4.1	7
126	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.208	1.000	0.208	360-16 L	DG9:Eq : 4.1	7
127	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.164	1.000	0.164	360-16 L	DG9:Eq : 4.1	7
128	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.514	1.000	0.514	360-16 L	DG9:Eq : 4.1	7
129	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.097	1.000	0.097	360-16 L	DG9:Eq : 4.1	7
130	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.305	1.000	0.305	360-16 L	DG9:Eq : 4.1	7
131	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.292	1.000	0.292	360-16 L	DG9:Eq : 4.1	7
132	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.047	1.000	0.047	360-16 L	DG9:Eq : 4.1	7
133	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.182	1.000	0.182	360-16 L	DG9:Eq : 4.1	7
134	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.282	1.000	0.282	360-16 L	DG9:Eq : 4.1	7
135	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.484	1.000	0.484	360-16 L	DG9:Eq : 4.1	7
136	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.309	1.000	0.309	360-16 L	DG9:Eq : 4.1	7
137	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.287	1.000	0.287	360-16 L	DG9:Eq : 4.1	7
138	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.556	1.000	0.556	360-16 L	DG9:Eq : 4.1	7
139	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.441	1.000	0.441	360-16 L	DG9:Eq : 4.1	7
140	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.006	1.000	0.006	360-16 L	DG9:Eq : 4.1	10

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
141	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.113	1.000	0.113	360-16 L	DG9:Eq : 4.1	7
142	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.201	1.000	0.201	360-16 L	DG9:Eq : 4.1	7
143	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.546	1.000	0.546	360-16 L	DG9:Eq : 4.1	7
144	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.447	1.000	0.447	360-16 L	DG9:Eq : 4.1	7
145	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.489	1.000	0.489	360-16 L	DG9:Eq : 4.1	7
146	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.397	1.000	0.397	360-16 L	DG9:Eq : 4.1	7
147	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.008	1.000	0.008	360-16 L	DG9:Eq : 4.1	10
148	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.110	1.000	0.110	360-16 L	DG9:Eq : 4.1	7
149	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.496	1.000	0.496	360-16 L	DG9:Eq : 4.1	7
150	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.456	1.000	0.456	360-16 L	DG9:Eq : 4.1	7
151	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.324	1.000	0.324	360-16 L	DG9:Eq : 4.1	7
152	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.525	1.000	0.525	360-16 L	DG9:Eq : 4.1	7
153	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.441	1.000	0.441	360-16 L	DG9:Eq : 4.1	7
154	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.116	1.000	0.116	360-16 L	DG9:Eq : 4.1	7
155	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.452	1.000	0.452	360-16 L	DG9:Eq : 4.1	7
156	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.382	1.000	0.382	360-16 L	DG9:Eq : 4.1	7
157	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.050	1.000	0.050	360-16 L	DG9:Eq : 4.1	7
158	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.321	1.000	0.321	360-16 L	DG9:Eq : 4.1	7
159	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.452	1.000	0.452	360-16 L	DG9:Eq : 4.1	7
160	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.157	1.000	0.157	360-16 L	DG9:Eq : 4.1	7

Software licensed to Avcon Inc Connected User: Analiese Majetich	Job No. 2021.0099.48	Sheet No. 31	Rev
Job Title I-Drive Pedestrian Bridge	Part	Ref	
Client Orange County	By ANM	Date 17-Jul-23	Chd DF
File I Drive Pedestrian Bridge - Drone Concept.STD	Date Time 08-Aug-2023 09:07		

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
161	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.373	1.000	0.373	360-16 L	DG9:Eq : 4.1	7
162	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.169	1.000	0.169	360-16 L	DG9:Eq : 4.1	7
163	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.250	1.000	0.250	360-16 L	DG9:Eq : 4.1	7
164	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.360	1.000	0.360	360-16 L	DG9:Eq : 4.1	7
165	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.473	1.000	0.473	360-16 L	DG9:Eq : 4.1	7
166	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.530	1.000	0.530	360-16 L	DG9:Eq : 4.1	7
167	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.038	1.000	0.038	360-16 L	DG9:Eq : 4.1	7
168	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.552	1.000	0.552	360-16 L	DG9:Eq : 4.1	7
169	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.149	1.000	0.149	360-16 L	DG9:Eq : 4.1	7
170	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.213	1.000	0.213	360-16 L	DG9:Eq : 4.1	7
171	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.448	1.000	0.448	360-16 L	DG9:Eq : 4.1	7
172	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.030	1.000	0.030	360-16 L	DG9:Eq : 4.1	7
173	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.442	1.000	0.442	360-16 L	DG9:Eq : 4.1	7
174	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.353	1.000	0.353	360-16 L	DG9:Eq : 4.1	7
175	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.445	1.000	0.445	360-16 L	DG9:Eq : 4.1	7
176	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.217	1.000	0.217	360-16 L	DG9:Eq : 4.1	7
177	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.434	1.000	0.434	360-16 L	DG9:Eq : 4.1	7
178	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.236	1.000	0.236	360-16 L	DG9:Eq : 4.1	7
179	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.204	1.000	0.204	360-16 L	Eq.H1-1b	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
180	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.117	1.000	0.117	360-16 L	DG9:Eq : 4.1	7
181	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.188	1.000	0.188	360-16 L	DG9:Eq : 4.1	7
182	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.400	1.000	0.400	360-16 L	DG9:Eq : 4.1	7
183	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.305	1.000	0.305	360-16 L	DG9:Eq : 4.1	7
184	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.180	1.000	0.180	360-16 L	DG9:Eq : 4.1	7
185	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.337	1.000	0.337	360-16 L	DG9:Eq : 4.1	7
186	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.174	1.000	0.174	360-16 L	DG9:Eq : 4.1	7
187	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.105	1.000	0.105	360-16 L	DG9:Eq : 4.1	7
188	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.478	1.000	0.478	360-16 L	DG9:Eq : 4.1	7
189	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.314	1.000	0.314	360-16 L	DG9:Eq : 4.1	7
190	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.503	1.000	0.503	360-16 L	DG9:Eq : 4.1	7
192	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.144	1.000	0.144	360-16 L	DG9:Eq : 4.1	7
193	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.245	1.000	0.245	360-16 L	DG9:Eq : 4.1	7
195	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.137	1.000	0.137	360-16 L	DG9:Eq : 4.1	7
198	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.201	1.000	0.201	360-16 L	DG9:Eq : 4.1	7
200	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.418	1.000	0.418	360-16 L	DG9:Eq : 4.1	7
201	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.244	1.000	0.244	360-16 L	DG9:Eq : 4.1	7
202	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.290	1.000	0.290	360-16 L	DG9:Eq : 4.1	7
203	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.449	1.000	0.449	360-16 L	DG9:Eq : 4.1	7
204	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.438	1.000	0.438	360-16 L	DG9:Eq : 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
205	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.283	1.000	0.283	360-16 L	DG9:Eq : 4.1	7
207	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.204	1.000	0.204	360-16 L	DG9:Eq : 4.1	7
208	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.169	1.000	0.169	360-16 L	DG9:Eq : 4.1	7
209	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.154	1.000	0.154	360-16 L	DG9:Eq : 4.1	7
210	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.388	1.000	0.388	360-16 L	DG9:Eq : 4.1	7
211	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.277	1.000	0.277	360-16 L	DG9:Eq : 4.1	7
212	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.172	1.000	0.172	360-16 L	DG9:Eq : 4.1	7
214	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.111	1.000	0.111	360-16 L	DG9:Eq : 4.1	7
215	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.142	1.000	0.142	360-16 L	DG9:Eq : 4.1	7
216	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.137	1.000	0.137	360-16 L	DG9:Eq : 4.1	7
217	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.187	1.000	0.187	360-16 L	DG9:Eq : 4.1	7
222	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.005	1.000	0.005	360-16 L	DG9:Eq : 4.1	10
223	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.009	1.000	0.009	360-16 L	DG9:Eq : 4.1	7
225	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.072	1.000	0.072	360-16 L	DG9:Eq : 4.1	7
226	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.121	1.000	0.121	360-16 L	DG9:Eq : 4.1	7
227	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.495	1.000	0.495	360-16 L	DG9:Eq : 4.1	7
229	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.172	1.000	0.172	360-16 L	DG9:Eq : 4.1	7
230	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.159	1.000	0.159	360-16 L	DG9:Eq : 4.1	7
231	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.456	1.000	0.456	360-16 L	DG9:Eq : 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
232	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.401	1.000	0.401	360-16 L	DG9:Eq : 4.1	7
233	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.379	1.000	0.379	360-16 L	DG9:Eq : 4.1	7
234	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.466	1.000	0.466	360-16 L	DG9:Eq : 4.1	7
235	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.252	1.000	0.252	360-16 L	DG9:Eq : 4.1	7
236	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.154	1.000	0.154	360-16 L	DG9:Eq : 4.1	7
237	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.207	1.000	0.207	360-16 L	DG9:Eq : 4.1	7
238	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.070	1.000	0.070	360-16 L	DG9:Eq : 4.1	7
239	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.186	1.000	0.186	360-16 L	DG9:Eq : 4.1	7
241	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.124	1.000	0.124	360-16 L	DG9:Eq : 4.1	7
242	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.303	1.000	0.303	360-16 L	DG9:Eq : 4.1	7
243	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.352	1.000	0.352	360-16 L	DG9:Eq : 4.1	7
244	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.068	1.000	0.068	360-16 L	DG9:Eq : 4.1	7
245	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.276	1.000	0.276	360-16 L	DG9:Eq : 4.1	7
246	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.306	1.000	0.306	360-16 L	DG9:Eq : 4.1	7
247	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.079	1.000	0.079	360-16 L	DG9:Eq : 4.1	7
249	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.235	1.000	0.235	360-16 L	DG9:Eq : 4.1	7
250	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.176	1.000	0.176	360-16 L	DG9:Eq : 4.1	7
251	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.334	1.000	0.334	360-16 L	DG9:Eq : 4.1	7
252	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.284	1.000	0.284	360-16 L	DG9:Eq : 4.1	7
253	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.400	1.000	0.400	360-16 L	DG9:Eq : 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
254	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.126	1.000	0.126	360-16 L	DG9:Eq : 4.1	7
255	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.315	1.000	0.315	360-16 L	DG9:Eq : 4.1	7
256	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.288	1.000	0.288	360-16 L	DG9:Eq : 4.1	7
257	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.302	1.000	0.302	360-16 L	DG9:Eq : 4.1	7
258	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.335	1.000	0.335	360-16 L	DG9:Eq : 4.1	7
259	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.091	1.000	0.091	360-16 L	DG9:Eq : 4.1	7
260	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.099	1.000	0.099	360-16 L	DG9:Eq : 4.1	7
261	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.019	1.000	0.019	360-16 L	DG9:Eq : 4.1	7
262	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.058	1.000	0.058	360-16 L	DG9:Eq : 4.1	7
263	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.017	1.000	0.017	360-16 L	DG9:Eq : 4.1	7
264	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.111	1.000	0.111	360-16 L	DG9:Eq : 4.1	7
265	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.384	1.000	0.384	360-16 L	DG9:Eq : 4.1	7
266	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.317	1.000	0.317	360-16 L	DG9:Eq : 4.1	7
267	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.331	1.000	0.331	360-16 L	DG9:Eq : 4.1	7
268	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.126	1.000	0.126	360-16 L	DG9:Eq : 4.1	7
269	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.624	1.000	0.624	360-16 L	DG9:Eq : 4.1	7
270	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.372	1.000	0.372	360-16 L	DG9:Eq : 4.1	7
271	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.293	1.000	0.293	360-16 L	DG9:Eq : 4.1	7
272	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.305	1.000	0.305	360-16 L	DG9:Eq : 4.1	7
273	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.109	1.000	0.109	360-16 L	DG9:Eq : 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
274	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.147	1.000	0.147	360-16 L	DG9:Eq : 4.1	7
275	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.161	1.000	0.161	360-16 L	DG9:Eq : 4.1	7
276	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.307	1.000	0.307	360-16 L	DG9:Eq : 4.1	7
277	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.092	1.000	0.092	360-16 L	DG9:Eq : 4.1	7
278	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.159	1.000	0.159	360-16 L	DG9:Eq : 4.1	7
279	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.361	1.000	0.361	360-16 L	DG9:Eq : 4.1	7
280	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.113	1.000	0.113	360-16 L	DG9:Eq : 4.1	7
281	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.162	1.000	0.162	360-16 L	DG9:Eq : 4.1	7
282	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.306	1.000	0.306	360-16 L	DG9:Eq : 4.1	7
283	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.222	1.000	0.222	360-16 L	DG9:Eq : 4.1	7
284	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.311	1.000	0.311	360-16 L	DG9:Eq : 4.1	7
285	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.100	1.000	0.100	360-16 L	DG9:Eq : 4.1	7
286	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.478	1.000	0.478	360-16 L	DG9:Eq : 4.1	7
287	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.261	1.000	0.261	360-16 L	DG9:Eq : 4.1	7
288	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.227	1.000	0.227	360-16 L	DG9:Eq : 4.1	7
289	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.274	1.000	0.274	360-16 L	DG9:Eq : 4.1	7
290	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.008	1.000	0.008	360-16 L	DG9:Eq : 4.1	10
291	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.088	1.000	0.088	360-16 L	DG9:Eq : 4.1	7
292	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.007	1.000	0.007	360-16 L	DG9:Eq : 4.1	10
293	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.073	1.000	0.073	360-16 L	DG9:Eq : 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
294	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.034	1.000	0.034	360-16 L	DG9:Eq : 4.1	7
295	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.028	1.000	0.028	360-16 L	DG9:Eq : 4.1	7
296	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.247	1.000	0.247	360-16 L	DG9:Eq : 4.1	7
297	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.310	1.000	0.310	360-16 L	DG9:Eq : 4.1	7
298	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.286	1.000	0.286	360-16 L	DG9:Eq : 4.1	7
299	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.119	1.000	0.119	360-16 L	DG9:Eq : 4.1	7
300	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.480	1.000	0.480	360-16 L	DG9:Eq : 4.1	7
301	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.296	1.000	0.296	360-16 L	DG9:Eq : 4.1	7
302	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.256	1.000	0.256	360-16 L	DG9:Eq : 4.1	7
303	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.273	1.000	0.273	360-16 L	DG9:Eq : 4.1	7
304	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.160	1.000	0.160	360-16 L	DG9:Eq : 4.1	7
305	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.058	1.000	0.058	360-16 L	DG9:Eq : 4.1	7
306	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.272	1.000	0.272	360-16 L	DG9:Eq : 4.1	7
307	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.180	1.000	0.180	360-16 L	DG9:Eq : 4.1	7
308	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.066	1.000	0.066	360-16 L	DG9:Eq : 4.1	7
309	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.216	1.000	0.216	360-16 L	DG9:Eq : 4.1	7
310	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.318	1.000	0.318	360-16 L	DG9:Eq : 4.1	7
311	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.058	1.000	0.058	360-16 L	DG9:Eq : 4.1	7
312	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.183	1.000	0.183	360-16 L	DG9:Eq : 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
313	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.239	1.000	0.239	360-16 L	DG9:Eq : 4.1	7
314	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.308	1.000	0.308	360-16 L	DG9:Eq : 4.1	7
315	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.317	1.000	0.317	360-16 L	DG9:Eq : 4.1	7
316	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.481	1.000	0.481	360-16 L	DG9:Eq : 4.1	7
317	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.107	1.000	0.107	360-16 L	DG9:Eq : 4.1	7
318	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.281	1.000	0.281	360-16 L	DG9:Eq : 4.1	7
319	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.253	1.000	0.253	360-16 L	DG9:Eq : 4.1	7
320	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.276	1.000	0.276	360-16 L	DG9:Eq : 4.1	7
321	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.090	1.000	0.090	360-16 L	DG9:Eq : 4.1	7
322	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.008	1.000	0.008	360-16 L	DG9:Eq : 4.1	10
323	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.072	1.000	0.072	360-16 L	DG9:Eq : 4.1	7
324	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.006	1.000	0.006	360-16 L	DG9:Eq : 4.1	10
325	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.050	1.000	0.050	360-16 L	DG9:Eq : 4.1	7
326	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.067	1.000	0.067	360-16 L	DG9:Eq : 4.1	7
327	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.298	1.000	0.298	360-16 L	DG9:Eq : 4.1	7
328	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.220	1.000	0.220	360-16 L	DG9:Eq : 4.1	7
329	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.308	1.000	0.308	360-16 L	DG9:Eq : 4.1	7
330	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.481	1.000	0.481	360-16 L	DG9:Eq : 4.1	7
331	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.103	1.000	0.103	360-16 L	DG9:Eq : 4.1	7
332	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.301	1.000	0.301	360-16 L	DG9:Eq : 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
333	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.237	1.000	0.237	360-16 L	DG9:Eq : 4.1	7
334	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.280	1.000	0.280	360-16 L	DG9:Eq : 4.1	7
335	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.143	1.000	0.143	360-16 L	DG9:Eq : 4.1	7
336	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.149	1.000	0.149	360-16 L	DG9:Eq : 4.1	7
337	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.126	1.000	0.126	360-16 L	DG9:Eq : 4.1	7
338	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.314	1.000	0.314	360-16 L	DG9:Eq : 4.1	7
339	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.069	1.000	0.069	360-16 L	DG9:Eq : 4.1	7
340	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.184	1.000	0.184	360-16 L	DG9:Eq : 4.1	7
341	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.279	1.000	0.279	360-16 L	DG9:Eq : 4.1	7
342	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.132	1.000	0.132	360-16 L	DG9:Eq : 4.1	7
343	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.176	1.000	0.176	360-16 L	DG9:Eq : 4.1	7
344	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.314	1.000	0.314	360-16 L	DG9:Eq : 4.1	7
345	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.330	1.000	0.330	360-16 L	DG9:Eq : 4.1	7
346	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.395	1.000	0.395	360-16 L	DG9:Eq : 4.1	7
347	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.121	1.000	0.121	360-16 L	DG9:Eq : 4.1	7
348	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.585	1.000	0.585	360-16 L	DG9:Eq : 4.1	7
349	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.364	1.000	0.364	360-16 L	DG9:Eq : 4.1	7
350	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.306	1.000	0.306	360-16 L	DG9:Eq : 4.1	7
351	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.268	1.000	0.268	360-16 L	DG9:Eq : 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
352	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.117	1.000	0.117	360-16 L	DG9:Eq : 4.1	7
353	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.012	1.000	0.012	360-16 L	DG9:Eq : 4.1	10
354	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.010	1.000	0.010	360-16 L	DG9:Eq : 4.1	10
355	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.097	1.000	0.097	360-16 L	DG9:Eq : 4.1	7
356	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.101	1.000	0.101	360-16 L	DG9:Eq : 4.1	7
357	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.123	1.000	0.123	360-16 L	DG9:Eq : 4.1	7
358	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.329	1.000	0.329	360-16 L	DG9:Eq : 4.1	7
359	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.300	1.000	0.300	360-16 L	DG9:Eq : 4.1	7
360	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.370	1.000	0.370	360-16 L	DG9:Eq : 4.1	7
361	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.121	1.000	0.121	360-16 L	DG9:Eq : 4.1	7
362	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.254	1.000	0.254	360-16 L	DG9:Eq : 4.1	7
363	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.322	1.000	0.322	360-16 L	DG9:Eq : 4.1	7
364	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.254	1.000	0.254	360-16 L	DG9:Eq : 4.1	7
365	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.364	1.000	0.364	360-16 L	DG9:Eq : 4.1	7
366	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.257	1.000	0.257	360-16 L	DG9:Eq : 4.1	7
367	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.147	1.000	0.147	360-16 L	DG9:Eq : 4.1	7
368	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.190	1.000	0.190	360-16 L	DG9:Eq : 4.1	7
369	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.068	1.000	0.068	360-16 L	DG9:Eq : 4.1	7
370	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.080	1.000	0.080	360-16 L	DG9:Eq : 4.1	7
372	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.091	1.000	0.091	360-16 L	DG9:Eq : 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
373	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.173	1.000	0.173	360-16 L	DG9:Eq : 4.1	7
374	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.202	1.000	0.202	360-16 L	DG9:Eq : 4.1	7
375	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.094	1.000	0.094	360-16 L	Eq.H1-1b	7
376	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.200	1.000	0.200	360-16 L	DG9:Eq : 4.1	7
377	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.078	1.000	0.078	360-16 L	DG9:Eq : 4.1	7
378	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.055	1.000	0.055	360-16 L	DG9:Eq : 4.1	10
380	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.175	1.000	0.175	360-16 L	DG9:Eq : 4.1	7
381	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.261	1.000	0.261	360-16 L	DG9:Eq : 4.1	7
382	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.440	1.000	0.440	360-16 L	DG9:Eq : 4.1	7
383	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.273	1.000	0.273	360-16 L	DG9:Eq : 4.1	7
384	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.484	1.000	0.484	360-16 L	DG9:Eq : 4.1	7
385	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.347	1.000	0.347	360-16 L	DG9:Eq : 4.1	7
386	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.159	1.000	0.159	360-16 L	DG9:Eq : 4.1	7
387	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.135	1.000	0.135	360-16 L	DG9:Eq : 4.1	7
390	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.113	1.000	0.113	360-16 L	DG9:Eq : 4.1	7
391	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.316	1.000	0.316	360-16 L	DG9:Eq : 4.1	7
392	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.430	1.000	0.430	360-16 L	DG9:Eq : 4.1	7
393	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.010	1.000	0.010	360-16 L	DG9:Eq : 4.1	7
394	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.010	1.000	0.010	360-16 L	DG9:Eq : 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
395	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.175	1.000	0.175	360-16 L	DG9:Eq : 4.1	7
396	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.439	1.000	0.439	360-16 L	DG9:Eq : 4.1	7
397	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.157	1.000	0.157	360-16 L	DG9:Eq : 4.1	7
398	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.482	1.000	0.482	360-16 L	DG9:Eq : 4.1	7
399	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.162	1.000	0.162	360-16 L	DG9:Eq : 4.1	7
400	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.222	1.000	0.222	360-16 L	DG9:Eq : 4.1	7
401	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.205	1.000	0.205	360-16 L	DG9:Eq : 4.1	7
402	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.100	1.000	0.100	360-16 L	DG9:Eq : 4.1	7
403	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.185	1.000	0.185	360-16 L	DG9:Eq : 4.1	7
404	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.230	1.000	0.230	360-16 L	DG9:Eq : 4.1	7
406	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.436	1.000	0.436	360-16 L	DG9:Eq : 4.1	7
407	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.317	1.000	0.317	360-16 L	DG9:Eq : 4.1	7
409	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.483	1.000	0.483	360-16 L	DG9:Eq : 4.1	7
410	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.306	1.000	0.306	360-16 L	DG9:Eq : 4.1	7
411	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.220	1.000	0.220	360-16 L	DG9:Eq : 4.1	7
412	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.135	1.000	0.135	360-16 L	DG9:Eq : 4.1	7
413	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.329	1.000	0.329	360-16 L	DG9:Eq : 4.1	7
414	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.442	1.000	0.442	360-16 L	DG9:Eq : 4.1	7
418	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.481	1.000	0.481	360-16 L	DG9:Eq : 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
419	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.380	1.000	0.380	360-16 L	DG9:Eq : 4.1	7
421	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.537	1.000	0.537	360-16 L	DG9:Eq : 4.1	7
422	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.376	1.000	0.376	360-16 L	DG9:Eq : 4.1	7
425	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.386	1.000	0.386	360-16 L	DG9:Eq : 4.1	7
426	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.491	1.000	0.491	360-16 L	DG9:Eq : 4.1	7
428	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.083	1.000	0.083	360-16 L	DG9:Eq : 4.1	7
429	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.042	1.000	0.042	360-16 L	DG9:Eq : 4.1	7
430	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.418	1.000	0.418	360-16 L	DG9:Eq : 4.1	7
431	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.175	1.000	0.175	360-16 L	DG9:Eq : 4.1	7
432	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.284	1.000	0.284	360-16 L	DG9:Eq : 4.1	7
433	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.135	1.000	0.135	360-16 L	DG9:Eq : 4.1	7
434	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.067	1.000	0.067	360-16 L	DG9:Eq : 4.1	7
435	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.412	1.000	0.412	360-16 L	DG9:Eq : 4.1	7
436	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.415	1.000	0.415	360-16 L	DG9:Eq : 4.1	7
437	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.188	1.000	0.188	360-16 L	DG9:Eq : 4.1	7
438	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.374	1.000	0.374	360-16 L	DG9:Eq : 4.1	7
439	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.356	1.000	0.356	360-16 L	DG9:Eq : 4.1	7
440	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.181	1.000	0.181	360-16 L	DG9:Eq : 4.1	7
441	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.289	1.000	0.289	360-16 L	DG9:Eq : 4.1	7
442	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.360	1.000	0.360	360-16 L	DG9:Eq : 4.1	7
443	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.605	1.000	0.605	360-16 L	DG9:Eq : 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
444	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.030	1.000	0.030	360-16 L	DG9:Eq : 4.1	7
445	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.483	1.000	0.483	360-16 L	DG9:Eq : 4.1	7
446	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.507	1.000	0.507	360-16 L	DG9:Eq : 4.1	7
447	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.111	1.000	0.111	360-16 L	DG9:Eq : 4.1	7
448	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.519	1.000	0.519	360-16 L	DG9:Eq : 4.1	7
449	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.341	1.000	0.341	360-16 L	DG9:Eq : 4.1	7
450	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.454	1.000	0.454	360-16 L	DG9:Eq : 4.1	7
451	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.139	1.000	0.139	360-16 L	DG9:Eq : 4.1	7
452	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.209	1.000	0.209	360-16 L	DG9:Eq : 4.1	7
453	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.153	1.000	0.153	360-16 L	DG9:Eq : 4.1	7
454	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.203	1.000	0.203	360-16 L	DG9:Eq : 4.1	7
455	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.371	1.000	0.371	360-16 L	DG9:Eq : 4.1	7
456	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.109	1.000	0.109	360-16 L	DG9:Eq : 4.1	7
457	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.336	1.000	0.336	360-16 L	DG9:Eq : 4.1	7
458	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.377	1.000	0.377	360-16 L	DG9:Eq : 4.1	7
459	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.232	1.000	0.232	360-16 L	DG9:Eq : 4.1	7
460	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.418	1.000	0.418	360-16 L	DG9:Eq : 4.1	7
461	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.041	1.000	0.041	360-16 L	DG9:Eq : 4.1	7
462	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.114	1.000	0.114	360-16 L	DG9:Eq : 4.1	7

		Job No.	Sheet No.	Rev
Software licensed to Avcon Inc Connected User: Analiese Majetich	AVCON	2021.0099.48	45	
Job Title I-Drive Pedestrian Bridge		Part	Ref	
Client Orange County		By ANM	Date 17-Jul-23	Chd DF
File I Drive Pedestrian Bridge - Drone Concept.STD		Date Time 08-Aug-2023 09:07		

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
463	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.313	1.000	0.313	360-16 L	DG9:Eq : 4.1	7
464	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.450	1.000	0.450	360-16 L	DG9:Eq : 4.1	7
465	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.361	1.000	0.361	360-16 L	DG9:Eq : 4.1	7
466	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.458	1.000	0.458	360-16 L	DG9:Eq : 4.1	7
467	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.415	1.000	0.415	360-16 L	DG9:Eq : 4.1	7
468	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.529	1.000	0.529	360-16 L	DG9:Eq : 4.1	7
469	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.421	1.000	0.421	360-16 L	DG9:Eq : 4.1	7
470	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.011	1.000	0.011	360-16 L	DG9:Eq : 4.1	7
471	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.108	1.000	0.108	360-16 L	DG9:Eq : 4.1	7
472	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.009	1.000	0.009	360-16 L	DG9:Eq : 4.1	10
473	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.112	1.000	0.112	360-16 L	DG9:Eq : 4.1	7
474	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.407	1.000	0.407	360-16 L	DG9:Eq : 4.1	7
475	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.306	1.000	0.306	360-16 L	DG9:Eq : 4.1	7
476	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.451	1.000	0.451	360-16 L	DG9:Eq : 4.1	7
477	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.416	1.000	0.416	360-16 L	DG9:Eq : 4.1	7
478	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.188	1.000	0.188	360-16 L	DG9:Eq : 4.1	7
479	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.201	1.000	0.201	360-16 L	DG9:Eq : 4.1	7
480	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.195	1.000	0.195	360-16 L	DG9:Eq : 4.1	7
481	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.208	1.000	0.208	360-16 L	DG9:Eq : 4.1	7
482	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.245	1.000	0.245	360-16 L	DG9:Eq : 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
483	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.394	1.000	0.394	360-16 L	DG9:Eq : 4.1	7
484	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.283	1.000	0.283	360-16 L	DG9:Eq : 4.1	7
485	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.276	1.000	0.276	360-16 L	DG9:Eq : 4.1	7
486	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.178	1.000	0.178	360-16 L	DG9:Eq : 4.1	7
487	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.050	1.000	0.050	360-16 L	DG9:Eq : 4.1	7
488	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.284	1.000	0.284	360-16 L	DG9:Eq : 4.1	7
489	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.493	1.000	0.493	360-16 L	DG9:Eq : 4.1	7
490	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.539	1.000	0.539	360-16 L	DG9:Eq : 4.1	7
491	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.139	1.000	0.139	360-16 L	DG9:Eq : 4.1	7
492	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.113	1.000	0.113	360-16 L	DG9:Eq : 4.1	7
493	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.182	1.000	0.182	360-16 L	DG9:Eq : 4.1	7
494	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.159	1.000	0.159	360-16 L	DG9:Eq : 4.1	7
495	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.371	1.000	0.371	360-16 L	DG9:Eq : 4.1	7
496	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.256	1.000	0.256	360-16 L	DG9:Eq : 4.1	7
497	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.273	1.000	0.273	360-16 L	DG9:Eq : 4.1	7
498	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.394	1.000	0.394	360-16 L	DG9:Eq : 4.1	7
499	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.427	1.000	0.427	360-16 L	DG9:Eq : 4.1	7
500	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.283	1.000	0.283	360-16 L	DG9:Eq : 4.1	7
501	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.528	1.000	0.528	360-16 L	DG9:Eq : 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
502	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.128	1.000	0.128	360-16 L	DG9:Eq : 4.1	7
503	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.019	1.000	0.019	360-16 L	DG9:Eq : 4.1	7
504	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.218	1.000	0.218	360-16 L	DG9:Eq : 4.1	7
505	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.097	1.000	0.097	360-16 L	DG9:Eq : 4.1	7
506	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.260	1.000	0.260	360-16 L	DG9:Eq : 4.1	7
507	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.359	1.000	0.359	360-16 L	DG9:Eq : 4.1	7
508	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.519	1.000	0.519	360-16 L	DG9:Eq : 4.1	7
509	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.139	1.000	0.139	360-16 L	DG9:Eq : 4.1	7
510	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.016	1.000	0.016	360-16 L	DG9:Eq : 4.1	7
511	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.107	1.000	0.107	360-16 L	DG9:Eq : 4.1	7
512	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.121	1.000	0.121	360-16 L	DG9:Eq : 4.1	7
513	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.227	1.000	0.227	360-16 L	DG9:Eq : 4.1	7
514	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.179	1.000	0.179	360-16 L	DG9:Eq : 4.1	7
515	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.021	1.000	0.021	360-16 L	DG9:Eq : 4.1	7
516	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.109	1.000	0.109	360-16 L	DG9:Eq : 4.1	7
517	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.036	1.000	0.036	360-16 L	DG9:Eq : 4.1	7
518	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.241	1.000	0.241	360-16 L	DG9:Eq : 4.1	7
519	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.158	1.000	0.158	360-16 L	DG9:Eq : 4.1	7
520	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.249	1.000	0.249	360-16 L	DG9:Eq : 4.1	7
521	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.046	1.000	0.046	360-16 L	DG9:Eq : 4.1	7
522	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.428	1.000	0.428	360-16 L	DG9:Eq : 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
523	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.191	1.000	0.191	360-16 L	DG9:Eq : 4.1	7
524	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.272	1.000	0.272	360-16 L	DG9:Eq : 4.1	7
525	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.336	1.000	0.336	360-16 L	DG9:Eq : 4.1	7
526	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.220	1.000	0.220	360-16 L	DG9:Eq : 4.1	7
527	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.106	1.000	0.106	360-16 L	DG9:Eq : 4.1	7
528	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.102	1.000	0.102	360-16 L	DG9:Eq : 4.1	7
529	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.097	1.000	0.097	360-16 L	DG9:Eq : 4.1	7
530	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.131	1.000	0.131	360-16 L	DG9:Eq : 4.1	7
531	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.351	1.000	0.351	360-16 L	DG9:Eq : 4.1	7
532	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.153	1.000	0.153	360-16 L	DG9:Eq : 4.1	7
533	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.443	1.000	0.443	360-16 L	DG9:Eq : 4.1	7
534	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.421	1.000	0.421	360-16 L	DG9:Eq : 4.1	7
535	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.172	1.000	0.172	360-16 L	DG9:Eq : 4.1	7
536	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.070	1.000	0.070	360-16 L	DG9:Eq : 4.1	7
537	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.021	1.000	0.021	360-16 L	DG9:Eq : 4.1	7
538	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.383	1.000	0.383	360-16 L	DG9:Eq : 4.1	7
539	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.143	1.000	0.143	360-16 L	DG9:Eq : 4.1	7
540	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.123	1.000	0.123	360-16 L	DG9:Eq : 4.1	7
541	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.169	1.000	0.169	360-16 L	DG9:Eq : 4.1	7

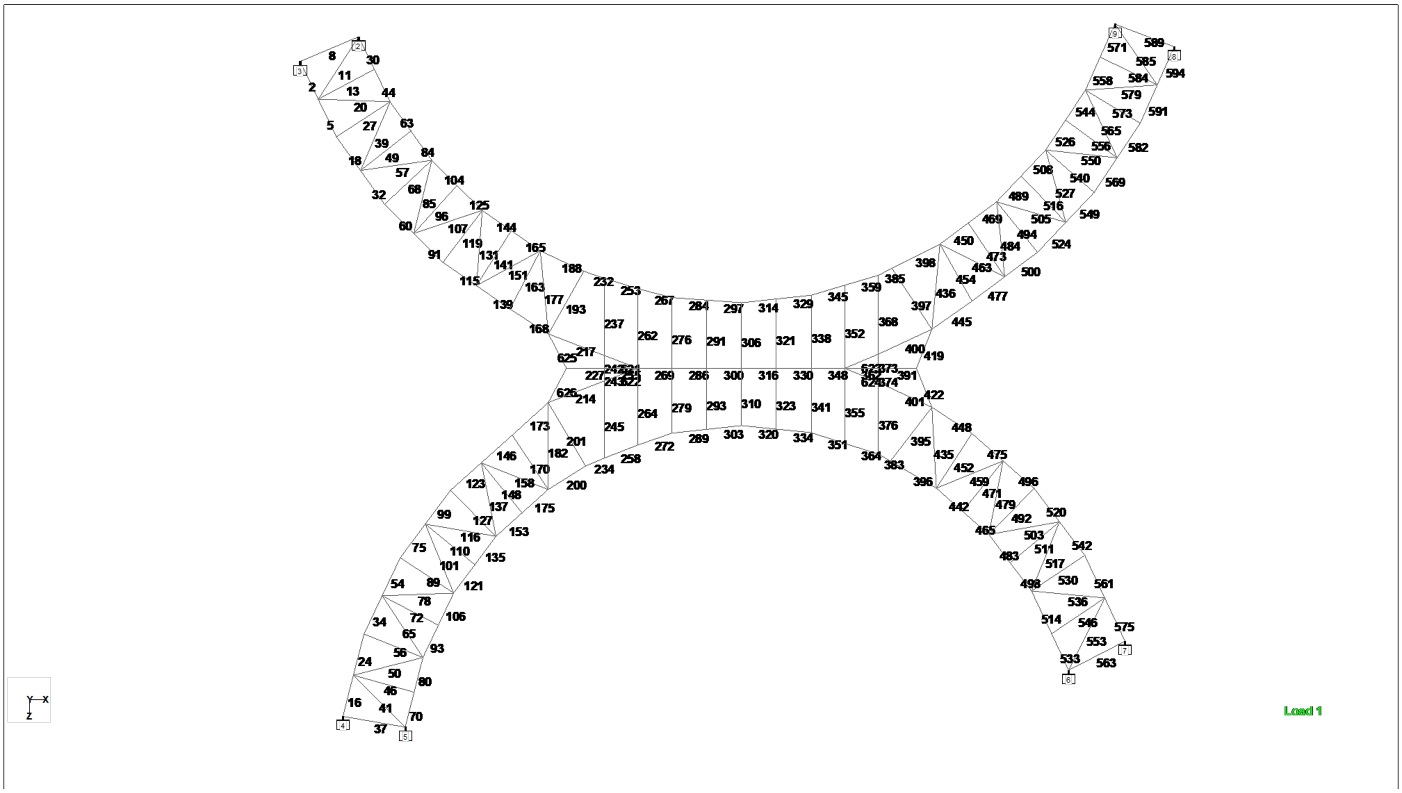
Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
542	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.238	1.000	0.238	360-16 L	DG9:Eq : 4.1	7
543	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.302	1.000	0.302	360-16 L	DG9:Eq : 4.1	7
544	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.220	1.000	0.220	360-16 L	DG9:Eq : 4.1	7
545	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.013	1.000	0.013	360-16 L	DG9:Eq : 4.1	7
546	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.118	1.000	0.118	360-16 L	DG9:Eq : 4.1	7
547	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.052	1.000	0.052	360-16 L	DG9:Eq : 4.1	7
548	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.224	1.000	0.224	360-16 L	DG9:Eq : 4.1	7
549	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.229	1.000	0.229	360-16 L	DG9:Eq : 4.1	7
550	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.036	1.000	0.036	360-16 L	DG9:Eq : 4.1	7
551	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.247	1.000	0.247	360-16 L	DG9:Eq : 4.1	7
552	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.285	1.000	0.285	360-16 L	DG9:Eq : 4.1	7
553	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.086	1.000	0.086	360-16 L	DG9:Eq : 4.1	7
554	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.059	1.000	0.059	360-16 L	DG9:Eq : 4.1	7
555	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.017	1.000	0.017	360-16 L	DG9:Eq : 4.1	7
556	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.102	1.000	0.102	360-16 L	DG9:Eq : 4.1	7
557	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.116	1.000	0.116	360-16 L	DG9:Eq : 4.1	7
558	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.279	1.000	0.279	360-16 L	DG9:Eq : 4.1	7
559	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.178	1.000	0.178	360-16 L	DG9:Eq : 4.1	7
560	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.159	1.000	0.159	360-16 L	DG9:Eq : 4.1	7
561	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.205	1.000	0.205	360-16 L	DG9:Eq : 4.1	7
562	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.112	1.000	0.112	360-16 L	DG9:Eq : 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
563	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.108	1.000	0.108	360-16 L	DG9:Eq : 4.1	7
564	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.512	1.000	0.512	360-16 L	DG9:Eq : 4.1	7
565	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.032	1.000	0.032	360-16 L	DG9:Eq : 4.1	7
566	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.028	1.000	0.028	360-16 L	DG9:Eq : 4.1	7
567	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.342	1.000	0.342	360-16 L	DG9:Eq : 4.1	7
568	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.198	1.000	0.198	360-16 L	DG9:Eq : 4.1	7
569	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.115	1.000	0.115	360-16 L	DG9:Eq : 4.1	7
570	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.036	1.000	0.036	360-16 L	DG9:Eq : 4.1	7
571	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.615	1.000	0.615	360-16 L	DG9:Eq : 4.1	7
572	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.122	1.000	0.122	360-16 L	DG9:Eq : 4.1	7
573	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.147	1.000	0.147	360-16 L	DG9:Eq : 4.1	7
574	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.121	1.000	0.121	360-16 L	DG9:Eq : 4.1	7
575	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.430	1.000	0.430	360-16 L	DG9:Eq : 4.1	7
576	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.265	1.000	0.265	360-16 L	DG9:Eq : 4.1	7
577	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.237	1.000	0.237	360-16 L	DG9:Eq : 4.1	7
578	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.040	1.000	0.040	360-16 L	DG9:Eq : 4.1	7
579	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.073	1.000	0.073	360-16 L	DG9:Eq : 4.1	7
580	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.393	1.000	0.393	360-16 L	DG9:Eq : 4.1	7
581	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.178	1.000	0.178	360-16 L	DG9:Eq : 4.1	7

Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
582	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.127	1.000	0.127	360-16 L	DG9:Eq : 4.1	7
583	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.006	1.000	0.006	360-16 L	DG9:Eq : 4.1	10
584	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.104	1.000	0.104	360-16 L	DG9:Eq : 4.1	7
585	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.066	1.000	0.066	360-16 L	DG9:Eq : 4.1	7
586	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.119	1.000	0.119	360-16 L	DG9:Eq : 4.1	7
587	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.246	1.000	0.246	360-16 L	DG9:Eq : 4.1	7
588	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.127	1.000	0.127	360-16 L	DG9:Eq : 4.1	7
589	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.124	1.000	0.124	360-16 L	DG9:Eq : 4.1	7
590	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.070	1.000	0.070	360-16 L	DG9:Eq : 4.1	7
591	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.186	1.000	0.186	360-16 L	DG9:Eq : 4.1	7
592	Parameter 1	HSS20X12X.500	HSS20X12X.500	PASS	0.420	1.000	0.420	360-16 L	DG9:Eq : 4.1	7
593	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.047	1.000	0.047	360-16 L	DG9:Eq : 4.1	7
594	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.514	1.000	0.514	360-16 L	DG9:Eq : 4.1	7
595	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.290	1.000	0.290	360-16 L	DG9:Eq : 4.1	7
599	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.146	1.000	0.146	360-16 L	DG9:Eq : 4.1	7
600	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.426	1.000	0.426	360-16 L	DG9:Eq : 4.1	7
601	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.344	1.000	0.344	360-16 L	DG9:Eq : 4.1	7
602	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.555	1.000	0.555	360-16 L	DG9:Eq : 4.1	7
603	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.331	1.000	0.331	360-16 L	DG9:Eq : 4.1	7
604	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.511	1.000	0.511	360-16 L	DG9:Eq : 4.1	7

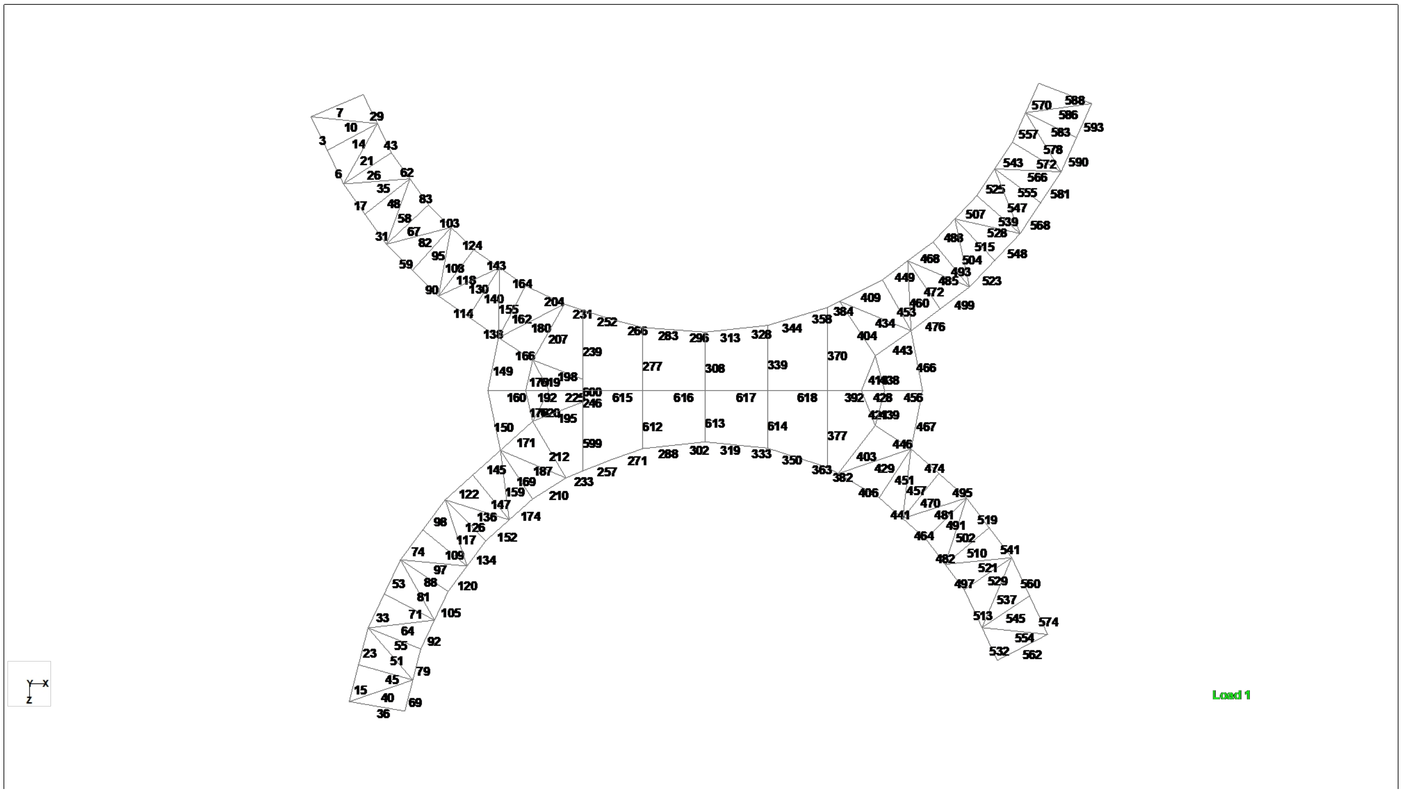
Beam	Parameter	Analysis Property	Design Property	Status	Actual Ratio	Allowable Ratio	Normalized Ratio (Actual/Allowable)	Code	Clause	L/C
605	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.301	1.000	0.301	360-16 L	DG9:Eq : 4.1	7
606	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.363	1.000	0.363	360-16 L	DG9:Eq : 4.1	7
607	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.574	1.000	0.574	360-16 L	DG9:Eq : 4.1	7
608	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.531	1.000	0.531	360-16 L	DG9:Eq : 4.1	7
612	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.156	1.000	0.156	360-16 L	DG9:Eq : 4.1	7
613	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.150	1.000	0.150	360-16 L	DG9:Eq : 4.1	7
614	Parameter 1	HSS20X20X.875	HSS20X20X.875	PASS	0.126	1.000	0.126	360-16 L	DG9:Eq : 4.1	7
615	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.487	1.000	0.487	360-16 L	DG9:Eq : 4.1	7
616	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.453	1.000	0.453	360-16 L	DG9:Eq : 4.1	7
617	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.420	1.000	0.420	360-16 L	DG9:Eq : 4.1	7
618	Parameter 1	HSS22X22X.875	HSS22X22X.875	PASS	0.393	1.000	0.393	360-16 L	DG9:Eq : 4.1	7
619	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.520	1.000	0.520	360-16 L	DG9:Eq : 4.1	7
620	Parameter 1	HSS20X8X.500	HSS20X8X.500	PASS	0.366	1.000	0.366	360-16 L	DG9:Eq : 4.1	7
621	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.261	1.000	0.261	360-16 L	DG9:Eq : 4.1	7
622	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.162	1.000	0.162	360-16 L	DG9:Eq : 4.1	7
623	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.233	1.000	0.233	360-16 L	DG9:Eq : 4.1	7
624	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.236	1.000	0.236	360-16 L	DG9:Eq : 4.1	7
625	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.450	1.000	0.450	360-16 L	DG9:Eq : 4.1	7
626	Parameter 1	HSS20X20X.750	HSS20X20X.750	PASS	0.459	1.000	0.459	360-16 L	DG9:Eq : 4.1	7

Software licensed to Avcon Inc Connected User: Analiese Majetich	Job No. 2021.0099.48	Sheet No. **53**	Rev
Job Title I-Drive Pedestrian Bridge	Part	Ref	
Client Orange County	By ANM	Date 17-Jul-23	Chd DF
File I Drive Pedestrian Bridge - Drone Concept.STD	Date Time 08-Aug-2023 09:07		



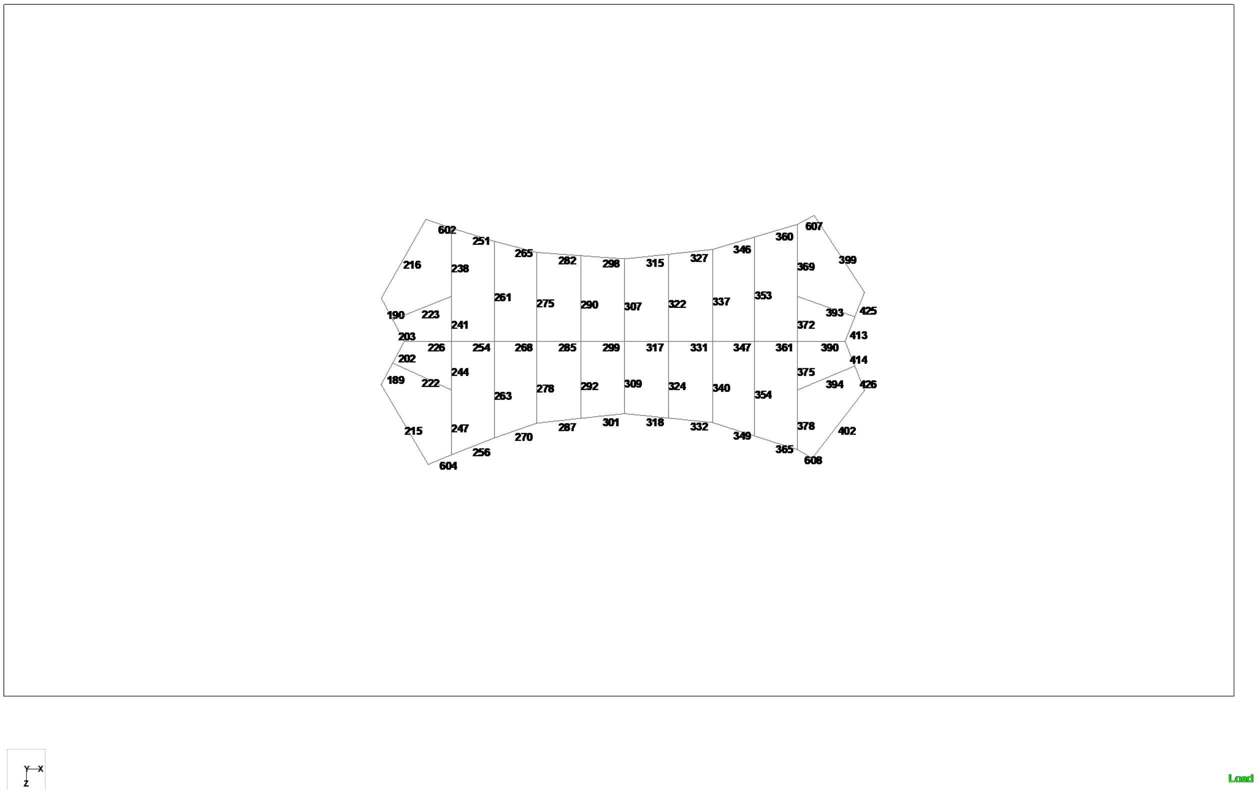
Deck Beam Numbers

Software licensed to Avcon Inc Connected User: Analiese Majetich	Job No. 2021.0099.48	Sheet No. **54**	Rev
Job Title I-Drive Pedestrian Bridge	Part	Ref	
Client Orange County	By ANM	Date 17-Jul-23	Chd DF
File I Drive Pedestrian Bridge - Drone Concept.STD	Date Time 08-Aug-2023 09:07		



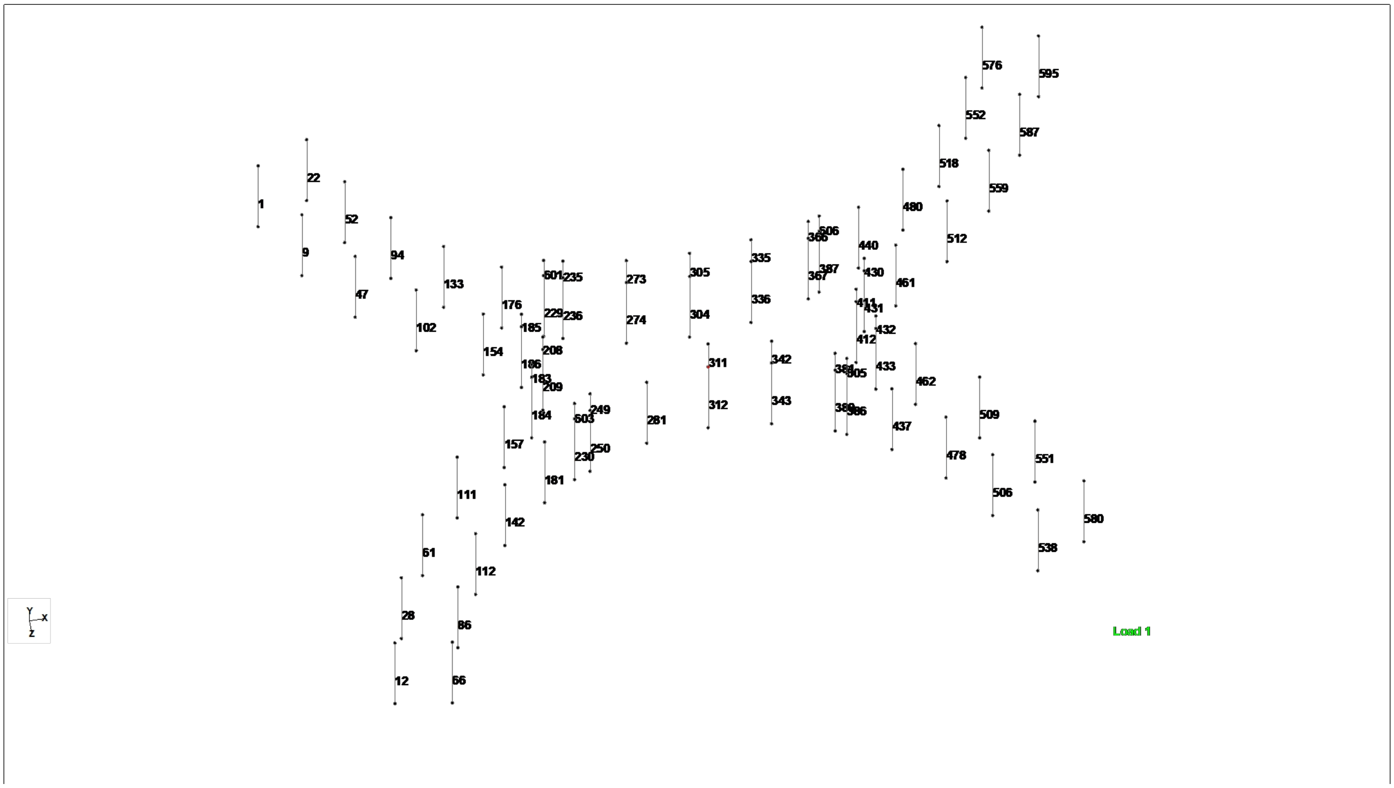
Top of Truss Beam Numbers

Software licensed to Avcon Inc Connected User: Analiese Majetich	Job No. 2021.0099.48	Sheet No. **55**	Rev
Job Title I-Drive Pedestrian Bridge	Part	Ref	
Client Orange County	By ANM	Date 17-Jul-23	Chd DF
File I Drive Pedestrian Bridge - Drone Concept.STD	Date Time 08-Aug-2023 09:07		

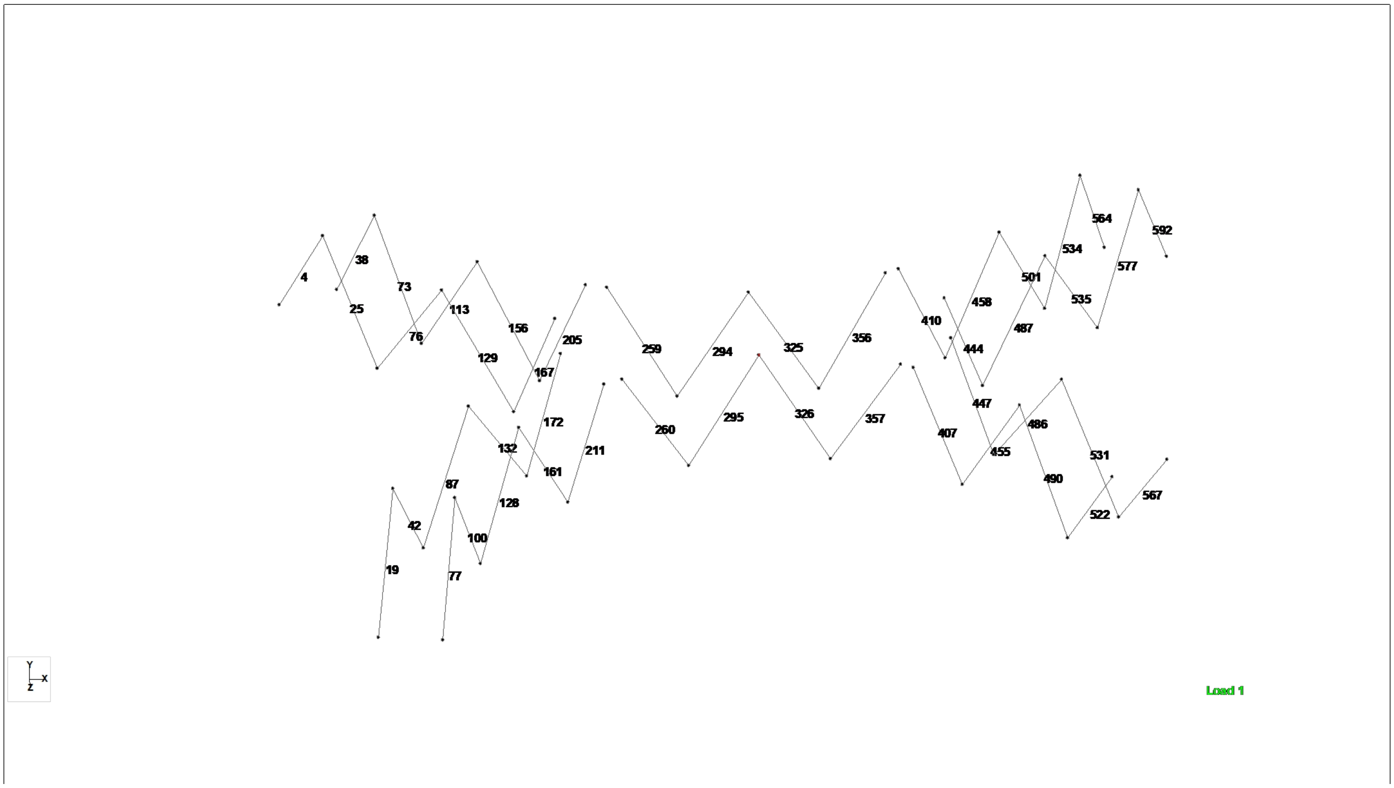


Roof Beam Numbers

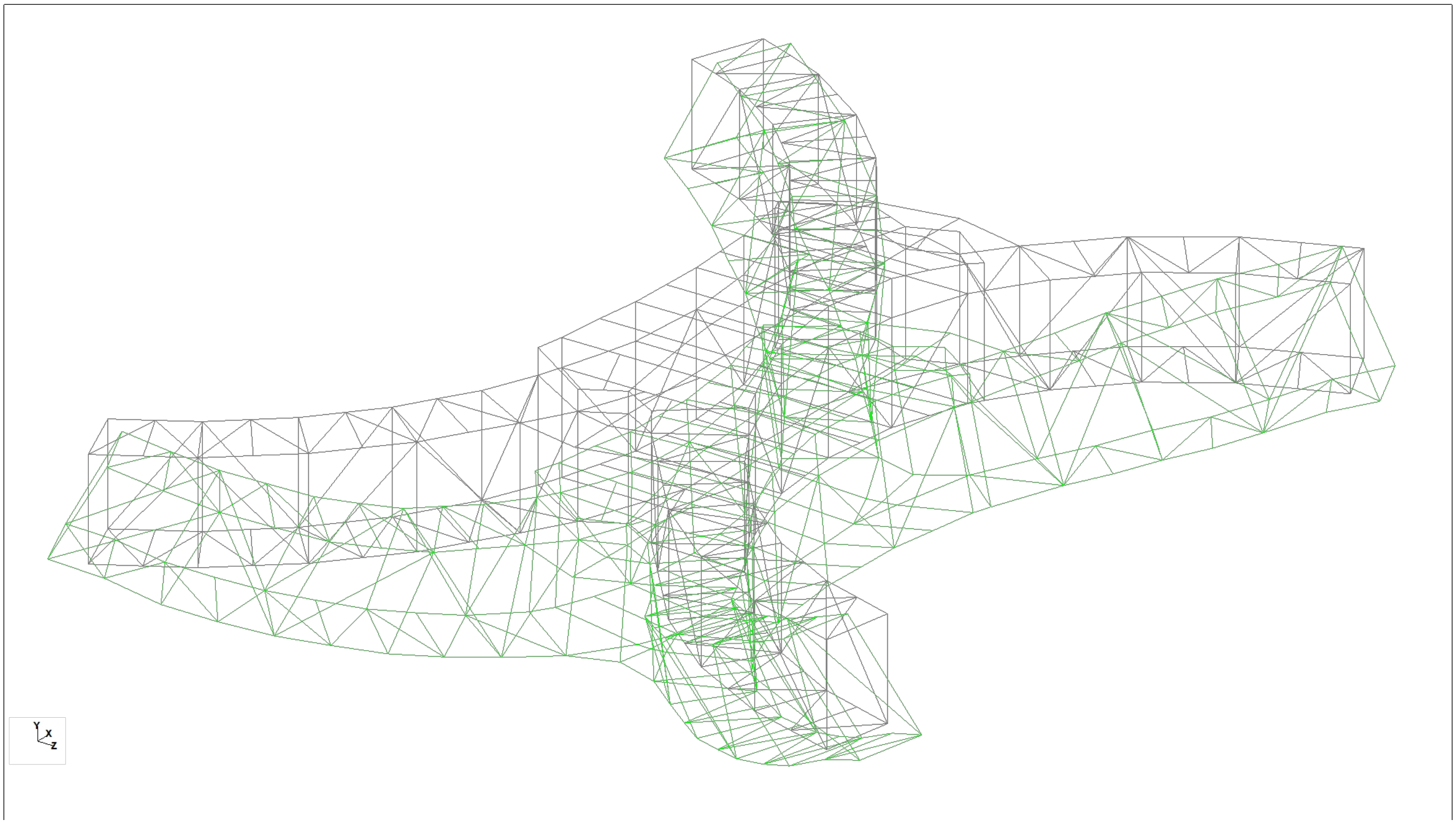
Software licensed to Avcon Inc Connected User: Analiese Majetich	Job No. 2021.0099.48	Sheet No. **56**	Rev
Job Title I-Drive Pedestrian Bridge	Part	Ref	
Client Orange County	By ANM	Date 17-Jul-23	Chd DF
File I Drive Pedestrian Bridge - Drone Concept.STD	Date Time 08-Aug-2023 09:07		



Column Beam Numbers



Diagonal Beam Numbers



Scaled Deflection Service I (0.1 in per 12 in)

Node Displacements

Node	L/C	X (in)	Y (in)	Z (in)	Resultant (in)	rX (rad)	rY (rad)	rZ (rad)
1	6	-0.085	-0.015	-0.342	0.353	0.001	0.000	0.000
2	6	-0.094	-0.019	0.252	0.270	0.003	0.000	-0.001
3	6	-0.061	-0.221	-0.340	0.410	0.003	0.000	-0.001
4	6	-0.075	-0.273	0.254	0.380	0.003	0.000	-0.001
5	6	-0.041	-0.504	-0.335	0.606	0.003	0.000	-0.001
6	6	-0.054	-0.503	0.254	0.566	0.002	0.000	-0.001
7	6	0.004	-0.014	0.325	0.325	-0.001	0.000	0.000
8	6	-0.160	-0.018	-0.315	0.353	-0.003	0.000	0.000
9	6	0.029	-0.234	0.318	0.396	-0.003	0.000	0.000
10	6	-0.143	-0.292	-0.322	0.457	-0.003	0.000	0.000
11	6	-0.089	-0.017	-0.354	0.365	0.001	0.000	0.000
12	6	-0.108	-0.016	0.216	0.242	0.003	0.000	-0.001
13	6	-0.026	-0.728	-0.331	0.801	0.002	0.000	-0.001
14	6	-0.033	-0.713	0.236	0.752	0.002	0.000	-0.001
15	6	0.049	-0.539	0.310	0.623	-0.003	0.000	0.000
16	6	-0.123	-0.537	-0.327	0.641	-0.003	0.000	0.000
17	6	-0.066	-0.191	-0.350	0.404	0.003	0.000	-0.001
18	6	-0.092	-0.237	0.219	0.335	0.003	0.000	-0.001
19	6	0.065	-0.774	0.305	0.834	-0.003	0.000	0.000
20	6	-0.101	-0.758	-0.315	0.827	-0.003	0.000	0.000
21	6	-0.020	-0.911	-0.326	0.968	0.002	0.000	-0.001
22	6	-0.013	-0.913	0.217	0.939	0.002	0.000	-0.001
23	6	-0.046	-0.434	-0.342	0.554	0.003	0.000	-0.001
24	6	-0.076	-0.438	0.219	0.496	0.002	0.000	-0.001
25	6	0.071	-0.964	0.299	1.012	-0.002	0.000	0.000
26	6	-0.078	-0.967	-0.302	1.016	-0.002	0.000	0.000
27	6	0.003	-0.016	0.338	0.339	-0.001	0.000	0.000
28	6	-0.165	-0.014	-0.277	0.323	-0.003	0.000	0.000
29	6	-0.028	-0.634	-0.333	0.717	0.002	0.000	-0.001
30	6	-0.058	-0.625	0.199	0.659	0.002	0.000	-0.001
31	6	-0.017	-1.078	-0.305	1.120	0.002	0.000	-0.001

Node	L/C	X (in)	Y (in)	Z (in)	Resultant (in)	rX (rad)	rY (rad)	rZ (rad)
32	6	0.017	-1.076	0.175	1.090	0.002	0.001	-0.001
33	6	0.025	-0.195	0.330	0.385	-0.003	0.000	0.000
34	6	-0.153	-0.244	-0.285	0.405	-0.003	0.000	0.000
35	6	0.046	-0.448	0.319	0.551	-0.003	0.000	0.000
36	6	-0.139	-0.453	-0.289	0.555	-0.003	0.000	0.000
37	6	0.068	-1.130	0.280	1.166	-0.002	0.000	0.000
38	6	-0.042	-1.128	-0.267	1.160	-0.002	-0.001	0.000
39	6	-0.017	-0.806	-0.321	0.868	0.002	0.000	0.000
40	6	-0.046	-0.805	0.182	0.827	0.002	0.000	-0.001
41	6	0.063	-0.653	0.307	0.724	-0.003	0.000	0.000
42	6	-0.119	-0.643	-0.275	0.710	-0.003	0.000	0.000
43	6	-0.026	-1.221	-0.269	1.250	0.001	0.000	-0.001
44	6	0.046	-1.216	0.132	1.224	0.002	0.001	0.000
45	6	0.051	-1.271	0.247	1.296	-0.002	0.000	0.000
46	6	-0.006	-1.266	-0.229	1.287	-0.002	-0.001	0.000
47	6	0.073	-0.828	0.294	0.882	-0.002	0.000	0.000
48	6	-0.105	-0.827	-0.263	0.874	-0.002	0.000	0.000
49	6	-0.006	-0.966	-0.292	1.010	0.002	0.000	-0.001
50	6	-0.017	-0.965	0.140	0.975	0.002	0.001	-0.001
51	6	0.078	-0.985	0.264	1.023	-0.002	0.000	0.000
52	6	-0.071	-0.984	-0.227	1.012	-0.002	-0.001	0.000
53	6	0.077	-1.325	0.048	1.328	0.001	0.001	-0.001
54	6	-0.042	-1.337	-0.213	1.355	0.001	-0.001	-0.001
55	6	0.025	-1.377	0.193	1.391	-0.001	0.001	0.000
56	6	0.037	-1.364	-0.152	1.373	-0.001	-0.001	0.000
57	6	-0.008	-1.109	-0.250	1.137	0.002	0.000	-0.001
58	6	0.010	-1.107	0.104	1.112	0.002	0.001	-0.001
59	6	0.070	-1.126	0.224	1.150	-0.002	0.000	0.000
60	6	-0.039	-1.124	-0.197	1.142	-0.002	-0.001	0.000
61	6	0.043	-1.493	-0.054	1.495	0.000	0.000	0.000
62	6	-0.058	-1.417	-0.144	1.426	0.001	-0.001	0.000
63	6	0.095	-1.420	-0.019	1.423	0.001	0.000	-0.001

Node	L/C	X (in)	Y (in)	Z (in)	Resultant (in)	rX (rad)	rY (rad)	rZ (rad)
64	6	-0.019	-1.224	-0.195	1.239	0.001	-0.001	-0.001
65	6	0.042	-1.218	0.025	1.219	0.001	0.001	-0.001
66	6	-0.004	-1.446	0.125	1.452	-0.001	0.001	0.000
67	6	0.067	-1.448	-0.087	1.453	-0.001	0.000	0.000
68	6	0.050	-1.232	0.170	1.245	-0.002	0.001	0.000
69	6	0.003	-1.227	-0.123	1.233	-0.002	-0.001	0.000
70	6	-0.037	-1.314	-0.132	1.321	0.001	-0.001	-0.001
71	6	0.067	-1.319	-0.029	1.321	0.001	0.000	-0.001
72	6	0.048	-1.515	-0.055	1.516	0.000	0.000	0.000
73	6	0.022	-1.315	0.109	1.320	-0.001	0.001	0.000
74	6	0.037	-1.320	-0.071	1.322	-0.001	0.000	0.000
75	6	0.064	-1.515	-0.061	1.518	0.000	0.000	0.000
76	6	0.027	-1.516	-0.055	1.517	0.000	0.000	0.001
77	6	-0.034	-1.518	0.049	1.519	-0.001	0.000	0.000
78	6	-0.069	-1.496	-0.066	1.499	0.000	0.000	-0.001
79	6	0.086	-1.493	-0.046	1.496	0.000	0.000	0.000
80	6	0.059	-1.493	-0.054	1.495	0.000	0.000	0.001
81	6	0.027	-1.513	-0.050	1.514	0.000	0.000	0.000
82	6	0.040	-1.502	-0.049	1.503	0.000	0.000	0.000
85	6	-0.095	-1.513	-0.018	1.517	0.000	0.000	-0.001
86	6	0.051	-1.512	-0.049	1.513	0.000	0.000	0.000
87	6	0.025	-1.511	-0.046	1.512	0.000	0.000	0.000
90	6	-0.046	-1.417	-0.056	1.419	0.001	0.000	0.000
91	6	0.063	-1.416	-0.056	1.418	0.000	0.000	0.000
92	6	-0.002	-1.401	0.030	1.401	-0.001	0.001	0.000
93	6	0.038	-1.399	-0.047	1.401	0.000	0.000	0.000
94	6	-0.045	-1.444	-0.031	1.445	0.001	0.000	0.000
95	6	0.052	-1.441	-0.049	1.442	0.000	0.000	0.000
96	6	0.038	-1.439	-0.053	1.441	0.000	0.000	0.000
98	6	0.031	-1.464	-0.054	1.465	0.000	0.000	0.000
99	6	-0.071	-1.571	-0.025	1.573	0.000	0.000	0.000
100	6	0.050	-1.496	-0.047	1.498	0.000	0.000	0.000

Node	L/C	X (in)	Y (in)	Z (in)	Resultant (in)	rX (rad)	rY (rad)	rZ (rad)
101	6	-0.073	-1.574	-0.023	1.576	0.000	0.000	0.000
102	6	0.012	-1.474	-0.054	1.475	0.000	0.000	0.000
103	6	-0.058	-1.571	-0.022	1.572	0.000	0.000	0.000
104	6	0.019	-1.456	-0.055	1.458	0.000	0.000	0.000
106	6	-0.011	-1.423	-0.012	1.423	-0.001	0.001	0.000
107	6	0.031	-1.419	-0.048	1.420	0.000	0.000	0.000
108	6	0.009	-1.417	-0.056	1.418	0.000	0.000	0.000
109	6	0.031	-1.462	-0.064	1.463	0.000	0.000	0.000
110	6	-0.028	-1.480	-0.037	1.481	0.001	0.000	0.000
111	6	0.037	-1.471	-0.047	1.472	0.000	0.000	0.000
112	6	-0.057	-1.600	-0.036	1.602	0.000	0.000	0.000
113	6	0.002	-1.451	-0.065	1.452	0.000	0.000	0.000
114	6	-0.006	-1.451	-0.034	1.452	-0.001	0.000	0.000
115	6	0.013	-1.441	-0.063	1.442	0.000	0.000	0.000
116	6	-0.005	-1.433	-0.066	1.434	0.000	0.000	0.000
117	6	-0.012	-1.499	-0.044	1.500	0.001	0.000	0.000
118	6	0.026	-1.497	-0.058	1.498	0.000	0.000	0.000
119	6	0.024	-1.496	-0.074	1.498	0.000	0.000	0.000
120	6	-0.032	-1.602	-0.039	1.603	0.000	0.000	0.000
121	6	-0.003	-1.445	-0.078	1.447	0.000	0.000	0.000
122	6	-0.020	-1.457	-0.081	1.459	0.000	0.000	0.000
123	6	0.006	-1.459	-0.035	1.460	-0.001	0.000	0.000
124	6	-0.002	-1.457	-0.069	1.459	0.000	0.000	0.000
125	6	0.003	-1.515	-0.037	1.515	0.001	0.000	0.000
126	6	0.015	-1.509	-0.067	1.510	0.000	0.000	0.000
127	6	0.012	-1.506	-0.089	1.509	0.000	0.000	0.000
128	6	-0.006	-1.602	-0.036	1.602	0.000	0.000	0.000
129	6	-0.008	-1.443	-0.090	1.446	0.000	0.000	0.000
130	6	0.019	-1.461	-0.035	1.461	-0.001	0.000	0.000
131	6	-0.014	-1.456	-0.077	1.458	0.000	0.000	0.000
132	6	-0.033	-1.454	-0.090	1.457	0.000	0.000	0.000
133	6	0.018	-1.517	-0.036	1.517	0.001	0.000	0.000

Node	L/C	X (in)	Y (in)	Z (in)	Resultant (in)	rX (rad)	rY (rad)	rZ (rad)
134	6	0.003	-1.510	-0.074	1.512	0.000	0.000	0.000
135	6	-0.002	-1.509	-0.097	1.512	0.000	0.000	0.000
136	6	0.019	-1.588	-0.031	1.588	0.000	0.000	0.000
137	6	-0.014	-1.435	-0.100	1.438	0.000	0.000	0.000
138	6	0.033	-1.452	-0.028	1.453	-0.001	0.000	0.000
139	6	-0.025	-1.445	-0.083	1.448	0.000	0.000	0.000
140	6	-0.048	-1.444	-0.103	1.449	0.000	0.000	0.000
141	6	0.034	-1.503	-0.028	1.504	0.001	0.000	0.000
142	6	-0.010	-1.497	-0.077	1.499	0.000	0.000	0.000
143	6	-0.016	-1.495	-0.106	1.499	0.000	0.000	0.000
144	6	0.044	-1.577	-0.026	1.578	0.000	0.000	0.000
145	6	-0.018	-1.414	-0.106	1.418	0.000	0.000	0.000
146	6	0.046	-1.420	-0.025	1.421	-0.001	0.000	0.000
147	6	-0.036	-1.415	-0.087	1.418	0.000	0.000	0.000
148	6	-0.058	-1.413	-0.106	1.418	0.000	0.000	0.000
149	6	0.050	-1.476	-0.025	1.477	0.000	0.000	0.000
150	6	-0.022	-1.474	-0.078	1.476	0.000	0.000	0.000
151	6	-0.029	-1.473	-0.106	1.477	0.000	0.000	0.000
152	6	0.070	-1.550	-0.020	1.552	0.000	0.000	0.000
153	6	-0.022	-1.384	-0.110	1.388	0.000	0.000	0.000
154	6	0.059	-1.377	-0.016	1.378	-0.001	0.000	0.000
155	6	-0.047	-1.375	-0.089	1.378	0.000	0.000	0.000
156	6	-0.069	-1.374	-0.113	1.380	0.000	0.000	0.000
157	6	0.066	-1.451	-0.017	1.452	0.000	0.000	0.000
158	6	-0.036	-1.438	-0.076	1.440	0.000	0.000	0.001
159	6	-0.037	-1.430	-0.108	1.434	0.000	0.000	0.001
160	6	-0.024	-1.358	-0.108	1.362	0.000	0.000	0.000
161	6	0.095	-1.517	-0.016	1.520	0.000	0.000	0.001
162	6	0.071	-1.326	-0.015	1.328	-0.001	0.000	0.000
163	6	-0.060	-1.315	-0.088	1.319	0.000	0.000	0.001
164	6	-0.075	-1.307	-0.108	1.313	0.000	0.000	0.001
165	6	0.080	-1.407	-0.019	1.409	0.000	0.000	0.001

Node	L/C	X (in)	Y (in)	Z (in)	Resultant (in)	rX (rad)	rY (rad)	rZ (rad)
166	6	-0.050	-1.401	-0.079	1.404	0.000	0.000	0.000
167	6	-0.043	-1.399	-0.101	1.404	0.000	0.000	0.000
169	6	-0.047	-1.373	-0.103	1.378	0.000	0.000	0.000
170	6	0.107	-1.466	-0.013	1.470	0.000	0.000	0.001
171	6	-0.027	-1.347	-0.103	1.351	0.000	0.000	0.000
172	6	0.108	-1.453	-0.011	1.457	0.000	0.000	0.001
173	6	-0.036	-1.373	-0.078	1.376	0.000	0.000	0.000
174	6	0.104	-1.435	-0.010	1.439	-0.001	0.000	0.001
175	6	-0.058	-1.306	-0.104	1.311	-0.001	0.000	0.000
177	6	0.080	-1.259	-0.003	1.261	-0.001	0.000	0.001
178	6	-0.075	-1.254	-0.080	1.258	0.000	0.000	0.000
179	6	-0.078	-1.252	-0.104	1.259	0.000	0.000	0.000
180	6	0.080	-1.228	0.007	1.231	-0.001	0.000	0.001
181	6	-0.085	-1.227	-0.071	1.232	-0.001	0.000	0.000
182	6	0.083	-1.386	-0.028	1.389	0.000	0.000	0.001
183	6	-0.060	-1.386	-0.085	1.390	0.000	0.000	0.000
188	6	0.123	-1.357	-0.011	1.363	0.000	0.000	0.001
189	6	-0.048	-1.354	-0.069	1.357	-0.001	0.000	0.000
190	6	-0.034	-1.354	-0.095	1.358	-0.001	0.000	0.000
191	6	-0.049	-1.370	-0.097	1.374	0.000	0.001	0.000
192	6	-0.056	-1.316	-0.091	1.321	-0.001	-0.001	0.000
193	6	0.109	-1.388	-0.044	1.393	0.000	0.000	0.001
194	6	-0.091	-1.387	-0.069	1.391	0.000	0.000	0.000
195	6	-0.074	-1.387	-0.102	1.393	-0.001	0.000	0.000
196	6	0.105	-1.284	0.025	1.289	-0.001	0.000	0.001
197	6	-0.091	-1.280	-0.069	1.285	-0.001	0.000	0.000
198	6	-0.089	-1.280	-0.082	1.286	0.000	0.000	0.000
199	6	0.065	-1.072	0.089	1.078	-0.001	-0.001	0.001
200	6	-0.087	-1.077	-0.089	1.084	-0.001	0.000	0.001
201	6	0.070	-1.271	-0.107	1.277	0.001	0.001	0.001
202	6	-0.059	-1.275	-0.042	1.277	0.001	0.000	0.001
203	6	-0.048	-1.337	-0.068	1.339	-0.001	0.000	0.000

Node	L/C	X (in)	Y (in)	Z (in)	Resultant (in)	rX (rad)	rY (rad)	rZ (rad)
204	6	0.044	-0.956	0.141	0.967	-0.002	-0.001	0.001
205	6	-0.071	-0.955	-0.118	0.965	-0.001	0.001	0.001
206	6	0.049	-1.181	-0.167	1.194	0.001	0.001	0.001
207	6	-0.034	-1.176	0.011	1.176	0.001	-0.001	0.001
208	6	0.093	-1.313	-0.121	1.322	0.000	0.001	0.001
209	6	-0.089	-1.314	-0.028	1.318	0.000	0.000	0.001
210	6	0.090	-1.157	0.110	1.166	-0.001	-0.001	0.001
211	6	-0.093	-1.162	-0.089	1.169	-0.001	0.000	0.001
212	6	-0.043	-1.282	-0.059	1.285	-0.001	0.000	0.001
213	6	0.029	-0.823	0.186	0.845	-0.002	0.000	0.001
214	6	-0.047	-0.820	-0.165	0.838	-0.002	0.000	0.001
215	6	0.035	-1.068	-0.220	1.091	0.001	0.000	0.001
216	6	-0.003	-1.066	0.085	1.069	0.001	-0.001	0.001
217	6	0.071	-1.037	0.166	1.053	-0.001	-0.001	0.001
218	6	-0.081	-1.032	-0.127	1.042	-0.001	0.001	0.001
219	6	0.074	-1.240	-0.187	1.256	0.001	0.001	0.001
220	6	-0.067	-1.228	0.035	1.230	0.001	-0.001	0.001
221	6	0.023	-0.672	0.220	0.707	-0.002	0.000	0.001
222	6	-0.033	-0.659	-0.175	0.682	-0.002	0.000	0.001
223	6	0.030	-0.931	-0.262	0.968	0.002	0.000	0.001
224	6	0.023	-0.930	0.118	0.937	0.002	-0.001	0.001
225	6	0.029	-0.489	0.248	0.549	-0.002	0.000	0.001
226	6	-0.017	-0.490	-0.187	0.525	-0.002	0.000	0.001
227	6	0.051	-0.890	0.213	0.917	-0.001	0.000	0.001
228	6	-0.060	-0.885	-0.175	0.904	-0.002	0.000	0.001
229	6	0.055	-1.132	-0.241	1.158	0.001	0.000	0.001
230	6	-0.035	-1.127	0.111	1.133	0.001	-0.001	0.001
231	6	0.037	-0.777	-0.292	0.831	0.002	0.000	0.001
232	6	0.050	-0.777	0.156	0.794	0.002	0.000	0.001
233	6	0.032	-0.193	0.259	0.325	-0.003	0.000	0.001
234	6	-0.019	-0.257	-0.188	0.319	-0.002	0.000	0.001
235	6	0.040	-0.726	0.243	0.767	-0.002	0.000	0.001

Node	L/C	X (in)	Y (in)	Z (in)	Resultant (in)	rX (rad)	rY (rad)	rZ (rad)
236	6	-0.043	-0.709	-0.189	0.735	-0.002	0.000	0.001
237	6	0.043	-0.615	-0.305	0.688	0.002	0.000	0.001
238	6	0.061	-0.606	0.172	0.633	0.002	0.000	0.001
239	6	0.042	-1.001	-0.277	1.040	0.002	0.000	0.001
240	6	-0.006	-0.999	0.150	1.010	0.002	-0.001	0.001
241	6	0.037	-0.013	0.266	0.269	-0.001	0.000	0.000
242	6	-0.014	-0.042	-0.189	0.194	-0.002	0.000	0.001
243	6	0.040	-0.519	0.266	0.585	-0.002	0.000	0.001
244	6	-0.027	-0.522	-0.200	0.560	-0.002	0.000	0.001
245	6	0.057	-0.426	-0.315	0.533	0.002	0.000	0.001
246	6	0.077	-0.429	0.190	0.475	0.002	0.000	0.001
247	6	0.041	-0.847	-0.299	0.899	0.002	0.000	0.001
248	6	0.022	-0.849	0.187	0.870	0.002	0.000	0.001
249	6	0.073	-0.199	-0.325	0.388	0.003	0.000	0.001
250	6	0.091	-0.237	0.188	0.316	0.002	0.000	0.001
251	6	0.041	-0.231	0.273	0.360	-0.003	0.000	0.001
252	6	-0.025	-0.294	-0.199	0.356	-0.002	0.000	0.001
253	6	0.094	-0.032	-0.338	0.353	0.001	0.000	0.000
254	6	0.107	-0.031	0.176	0.208	0.003	0.000	0.001
255	6	0.044	-0.681	-0.306	0.748	0.002	0.000	0.001
256	6	0.041	-0.666	0.204	0.698	0.002	0.000	0.001
257	6	0.044	-0.012	0.278	0.282	-0.001	0.000	0.000
258	6	-0.018	-0.038	-0.199	0.204	-0.002	0.000	0.001
259	6	0.054	-0.475	-0.312	0.571	0.002	0.000	0.001
260	6	0.059	-0.474	0.219	0.525	0.002	0.000	0.001
261	6	0.069	-0.218	-0.319	0.392	0.003	0.000	0.001
262	6	0.077	-0.265	0.218	0.351	0.002	0.000	0.001
263	6	0.092	-0.027	-0.329	0.343	0.001	0.000	0.000
264	6	0.096	-0.031	0.207	0.230	0.003	0.000	0.001
267	6	0.059	-1.493	-0.048	1.495	0.000	0.000	0.000
268	6	0.070	-1.494	-0.046	1.496	0.000	0.000	0.000
269	6	0.041	-1.418	-0.055	1.420	0.000	0.000	0.000

Node	L/C	X (in)	Y (in)	Z (in)	Resultant (in)	rX (rad)	rY (rad)	rZ (rad)
270	6	0.011	-1.402	-0.059	1.403	0.000	0.000	0.000
271	6	-0.086	-1.230	-0.088	1.236	0.000	0.000	0.000
272	6	-0.051	-1.389	-0.112	1.394	0.000	0.000	0.000
273	6	0.027	-1.483	-0.064	1.485	0.000	0.000	0.000
274	6	0.004	-1.470	-0.079	1.472	0.000	0.000	0.000
275	6	-0.017	-1.424	-0.084	1.427	0.000	0.000	0.000

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STAAD SPACE DXF IMPORT OF BRIDGE LAYOUT-ATTEMPT 2.DXF
START JOB INFORMATION
ENGINEER DATE 17-Jul-23
JOB NAME I-Drive Pedestrian Bridge
JOB CLIENT Orange County
JOB NO 2021.0099.48
JOB COMMENT Structural Analysis Model for Drone Concept based on -
Architectural Sketch up Model. Bridge is 12 ft wide, 21 ft tall. Strength I -
and Service I combinations have been evaluated using AASHTO LRFD Bridge -
Design Specifications 9th edition and AASHTO LRFD Design Specifications for -
Pedestrian Bridge Design, as well as FDOT SDG Vol 1 overrides.
ENGINEER NAME ANM
CHECKER NAME DF
END JOB INFORMATION
INPUT WIDTH 79
UNIT INCHES KIP
SET FLOOR LOAD TOLERANCE 0.083
JOINT COORDINATES
1 13119.5 0 -10633; 2 13119.5 252 -10633; 3 13160.9 3.44 -10551.2;
4 13161.3 255.444 -10551.2; 5 13202.5 6.8933 -10469.4;
6 13202.5 258.893 -10469.4; 7 13217.2 0 -9209; 8 13217.2 252 -9209;
9 13241.1 3.4678 -9298.6; 10 13241.1 255.468 -9298.6; 11 13253 0 -10686.9;
12 13253 252 -10686.9; 13 13257.3 10.34 -10395.9; 14 13257.3 262.348 -10395.9;
15 13265.3 6.9355 -9388.16; 16 13265.3 258.935 -9388.16;
17 13289 3.44 -10616.1; 18 13289 255.444 -10616.1; 19 13306.6 10.4033 -9471.17;
20 13306.6 262.403 -9471.17; 21 13312.2 13.632 -10322.4;
22 13312.2 265.632 -10322.4; 23 13324.8 6.8933 -10545.3;
24 13324.8 258.893 -10545.3; 25 13348.1 13.7094 -9554.14;
26 13348.1 265.709 -9554.14; 27 13359.3 0 -9185.84; 28 13359.3 252 -9185.84;
29 13372.3 10.34 -10481.8; 30 13372.3 262.344 -10481.8;
31 13378.9 16.2728 -10259.4; 32 13378.9 268.273 -10259.4;
33 13379.7 3.4678 -9261.46; 34 13379.7 255.468 -9261.46;
35 13399.9 6.9355 -9337.12; 36 13399.9 258.935 -9337.12;
37 13405.1 16.4255 -9627.24; 38 13405.1 268.426 -9627.24;
39 13419.8 13.632 -10418.2; 40 13419.8 265.632 -10418.2;
41 13434.9 10.4033 -9407.17; 42 13434.9 262.403 -9407.17;
43 13445.4 18.9136 -10196.4; 44 13445.4 270.914 -10196.4;
45 13462.3 19.1417 -9700.26; 46 13462.3 271.142 -9700.26;
47 13469.8 13.7094 -9477.25; 48 13469.8 265.709 -9477.25;
49 13477.4 16.2728 -10363.6; 50 13477.4 268.273 -10363.6;
51 13518.1 16.4255 -9538.91; 52 13518.1 268.426 -9538.91;
53 13521.9 273.552 -10145.7; 54 13521.9 21.5544 -10145.6;
55 13532.8 21.8579 -9760.5; 56 13532.8 273.858 -9760.5;
57 13535.1 18.9136 -10309.1; 58 13535.1 270.914 -10309.1;
59 13566.3 19.1417 -9600.64; 60 13566.3 271.142 -9600.64;
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64 13601.2 21.5544 -10265.3; 65 13601.2 273.552 -10265.3;
66 13603.5 23.8462 -9820.66; 67 13603.5 275.846 -9820.66;
68 13625.9 21.8579 -9651.41; 69 13625.9 273.858 -9651.41;
70 13667.4 23.5723 -10221.3; 71 13667.4 275.568 -10221.3;
72 13668 278.568 -9966; 73 13685.4 23.8462 -9702.28;
74 13685.4 275.846 -9702.28; 75 13685.6 278.568 -9891.37;
76 13685.6 330 -9891.37; 77 13685.6 26.568 -9891.37;
78 13685.9 26.568 -10040.6; 79 13685.9 278.568 -10040.6;
80 13685.9 330 -10040.6; 81 13706.4 330 -9928.68; 82 13706.6 330 -10003.3;
85 13727.2 26.568 -9966; 86 13727.2 278.568 -9966; 87 13727.2 330 -9966;
90 13766.6 26.568 -10176.9; 91 13766.6 278.568 -10176.9;
92 13770.7 26.5666 -9753.44; 93 13770.7 278.567 -9753.44;
94 13813.1 27.024 -10161.7; 95 13813.1 279.024 -10161.7;
96 13813.1 348 -10161.7; 98 13813.1 348 -10044; 99 13813.1 27.024 -9993.9;
100 13813.1 279.024 -9966; 101 13813.1 27.144 -9966; 102 13813.1 348 -9966;
103 13813.1 27.024 -9938.15; 104 13813.1 348 -9882;
106 13813.1 27.024 -9770.33; 107 13813.1 279.024 -9770.33;
108 13813.1 348 -9770.33; 109 13890.3 362.532 -10139;
110 13890.3 28.38 -10138.9; 111 13890.3 280.38 -10138.9;
112 13890.3 28.38 -9966; 113 13890.3 362.536 -9966; 114 13890.3 28.38 -9799.2;
115 13890.3 280.38 -9799.2; 116 13890.3 362.532 -9799.2;
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124 13967.2 280.86 -9824.84; 125 14046.8 29.424 -10114.1;
126 14046.8 281.428 -10114.1; 127 14046.8 374.595 -10114.1;
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130 14046.8 29.424 -9833.09; 131 14046.8 281.424 -9833.09;
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134 14126.4 282 -10108.5; 135 14126.4 378 -10108.5; 136 14126.4 30 -9966;
137 14126.4 378 -9966; 138 14126.4 30 -9841.33; 139 14126.4 282 -9841.33;
140 14126.4 378 -9841.33; 141 14205.6 29.424 -10116.6;
142 14205.6 281.426 -10116.6; 143 14205.6 374.442 -10116.6;
144 14205.6 29.424 -9966; 145 14205.6 374.442 -9966;
146 14205.6 29.424 -9833.63; 147 14205.6 281.424 -9833.63;
148 14205.6 374.436 -9833.63; 149 14285.6 28.86 -10124.8;
150 14285.6 280.86 -10124.8; 151 14285.6 370.884 -10124.8;
152 14285.6 28.86 -9966; 153 14285.6 370.884 -9966; 154 14285.6 28.86 -9825.92;
155 14285.6 280.86 -9825.92; 156 14285.6 370.884 -9825.92;
157 14361.9 28.38 -10146.6; 158 14361.9 280.38 -10146.6;
159 14361.9 362.064 -10146.5; 160 14361.9 362.124 -9966;
161 14361.9 28.38 -9966; 162 14361.9 28.38 -9802.58;
163 14361.9 280.38 -9802.58; 164 14361.9 362.069 -9802.58;
165 14439 27.024 -10168.3; 166 14439 279.024 -10168.3; 167 14439 348 -10168.3;
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179 14439 348 -9779.26; 180 14466 26.568 -9764.11; 181 14466 278.568 -9764.11;
182 14469.5 26.568 -10183.5; 183 14469.5 278.568 -10183.5;
188 14525.5 26.568 -9966; 189 14525.5 278.568 -9966; 190 14525.5 330 -9966;
191 14543.1 330 -10008.5; 192 14543.1 330 -9923.58;
193 14560.7 26.568 -10050.9; 194 14560.7 278.568 -10050.9;
195 14560.7 330 -10050.9; 196 14560.7 26.568 -9881.15;
197 14560.7 278.568 -9881.15; 198 14560.7 330 -9881.15;
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201 14579 25.2359 -10235.9; 202 14579 277.236 -10235.9;
203 14584.7 278.568 -9966.04; 204 14630.7 17.8048 -9654.82;
205 14630.7 269.805 -9654.82; 206 14643.7 23.5659 -10282;
207 14643.7 275.566 -10282; 208 14652 25.2359 -10111.9;
209 14652 277.236 -10111.9; 210 14652 20.7649 -9824.2;
211 14652 272.765 -9824.2; 212 14681.6 275 -9966; 213 14690.6 14.8447 -9604.44;
214 14690.6 266.845 -9604.44; 215 14708.3 21.5452 -10327.9;
216 14708.3 273.545 -10327.9; 217 14723 17.8048 -9764.53;
218 14723 269.805 -9764.53; 219 14726.7 23.5659 -10164.9;
220 14726.7 275.566 -10164.9; 221 14739.2 11.5164 -9543.05;
222 14739.2 263.516 -9543.05; 223 14764.2 18.9055 -10384.2;
224 14764.2 270.905 -10384.2; 225 14787.9 7.6776 -9481.73;
226 14787.9 259.678 -9481.73; 227 14793.9 14.8447 -9704.77;
228 14793.9 266.845 -9704.77; 229 14801.6 21.5452 -10218.2;
230 14801.6 273.545 -10218.2; 231 14820.1 16.2659 -10440.6;
232 14820.1 268.266 -10440.6; 233 14833.6 3.8388 -9388.83;
234 14833.6 255.839 -9388.83; 235 14851.6 11.5164 -9632.13;
236 14851.6 263.516 -9632.13; 237 14865.5 13.6263 -10505.8;
238 14865.5 265.626 -10505.8; 239 14866.1 18.9055 -10283.3;
240 14866.1 270.905 -10283.3; 241 14872.5 0 -9309.35; 242 14872.5 252 -9309.35;
243 14909.2 7.6776 -9559.42; 244 14909.2 259.678 -9559.42;
245 14910.9 10.3344 -10570.8; 246 14910.9 262.334 -10570.8;
247 14930.7 16.2659 -10348.4; 248 14930.7 268.266 -10348.4;
249 14944.5 6.8896 -10642.7; 250 14944.5 258.89 -10642.7;
251 14954.8 3.8388 -9466.55; 252 14954.8 255.839 -9466.55;
253 14978.1 0 -10714.5; 254 14978.1 252 -10714.5; 255 14983.2 13.6263 -10423.5;
256 14983.2 265.626 -10423.5; 257 15001.1 0 -9372.48; 258 15001.1 252 -9372.48;
259 15035.7 10.3344 -10498.8; 260 15035.7 262.334 -10498.8;
261 15074.6 6.8896 -10581.9; 262 15074.6 258.89 -10581.9; 263 15113.4 0 -10665;
264 15113.4 252 -10665; 267 13813.1 279.024 -9938.15;
268 13813.1 279.024 -9993.9; 269 13766.6 342 -10176.9;
270 13770.7 342 -9753.44; 271 14466 342 -9764.11; 272 14469.5 342 -10183.5;
273 13967.2 280.857 -9966; 274 14126.4 282 -9966; 275 14285.6 280.86 -9966;
MEMBER INCIDENCES
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1 2 1; 2 1 3; 3 2 4; 4 6 1; 5 3 5; 6 4 6; 7 12 2; 8 11 1; 9 6 5; 10 18 2;
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20 23 3; 21 18 6; 22 12 11; 23 10 16; 24 9 15; 25 6 21; 26 24 6; 27 23 5;
28 16 15; 29 12 18; 30 11 17; 31 14 22; 32 13 21; 33 16 20; 34 15 19; 35 30 6;
36 8 28; 37 7 27; 38 24 11; 39 23 13; 40 8 34; 41 9 27; 42 16 25; 43 18 24;
44 17 23; 45 10 34; 46 9 33; 47 22 21; 48 30 14; 49 29 13; 50 9 35; 51 16 34;
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60 21 31; 61 26 25; 62 24 30; 63 23 29; 64 16 42; 65 19 35; 66 28 27; 67 40 22;
68 39 21; 69 28 34; 70 27 33; 71 20 42; 72 19 41; 73 24 39; 74 26 38; 75 25 37;
76 44 21; 77 36 27; 78 19 47; 79 34 36; 80 33 35; 81 26 42; 82 50 22; 83 30 40;
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184 75 77; 185 80 79; 186 79 78; 187 67 93; 188 90 70; 189 81 76; 190 80 82;
192 72 86; 193 90 78; 195 267 75; 198 79 268; 200 92 73; 201 92 77; 202 87 81;
203 82 87; 204 71 91; 205 91 70; 207 91 79; 208 87 86; 209 86 85; 210 74 93;
211 93 73; 212 75 93; 214 77 103; 215 76 270; 216 80 269; 217 78 99;
222 81 104; 223 82 98; 225 86 100; 226 87 102; 227 85 101; 229 91 90;
230 93 92; 231 91 95; 232 90 94; 233 93 107; 234 92 106; 235 96 95; 236 95 94;
237 94 99; 238 96 98; 239 95 268; 241 98 102; 242 99 101; 243 101 103;
244 102 104; 245 103 106; 246 100 267; 247 104 108; 249 108 107; 250 107 106;
251 96 109; 252 95 111; 253 94 110; 254 102 113; 255 101 112; 256 108 116;
257 107 115; 258 106 114; 259 95 117; 260 107 123; 261 109 113; 262 110 112;
263 113 116; 264 112 114; 265 109 119; 266 111 118; 267 110 117; 268 113 121;
269 112 120; 270 116 122; 271 115 124; 272 114 123; 273 119 118; 274 118 117;
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385 165 182; 386 181 180; 387 183 182; 390 171 190; 391 172 188; 392 173 189;
393 169 191; 394 175 192; 395 196 180; 396 199 180; 397 193 182; 398 201 182;
399 272 195; 400 170 193; 401 174 196; 402 271 198; 403 181 197; 404 183 194;
406 200 181; 407 181 199; 409 202 183; 410 183 201; 411 190 189; 412 189 188;
413 191 190; 414 192 190; 418 189 194; 419 188 193; 421 189 197; 422 188 196;
425 195 191; 426 198 192; 428 189 203; 429 211 181; 430 195 194; 431 194 193;
432 198 197; 433 197 196; 434 183 209; 435 196 199; 436 201 193; 437 200 199;
438 194 203; 439 203 197; 440 202 201; 441 200 205; 442 199 204; 443 194 209;
444 194 208; 445 193 208; 446 197 211; 447 197 210; 448 196 210; 449 202 207;
450 201 206; 451 211 200; 452 210 199; 453 202 209; 454 201 208; 455 214 199;
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462 211 210; 463 201 219; 464 205 214; 465 204 213; 466 209 212; 467 212 211;
468 207 216; 469 206 215; 470 218 205; 471 217 204; 472 207 220; 473 206 219;
474 211 218; 475 210 217; 476 209 220; 477 208 219; 478 214 213; 479 217 213;
480 216 215; 481 228 205; 482 214 222; 483 213 221; 484 215 219; 485 207 230;
486 228 210; 487 230 208; 488 216 224; 489 215 223; 490 214 225; 491 228 214;
492 227 213; 493 216 230; 494 215 229; 495 218 228; 496 217 227; 497 222 226;
498 221 225; 499 220 230; 500 219 229; 501 216 231; 502 228 222; 503 235 213;
504 224 230; 505 215 239; 506 226 225; 507 224 232; 508 223 231; 509 228 227;
510 236 222; 511 235 221; 512 230 229; 513 226 234; 514 225 233; 515 224 240;
516 223 239; 517 235 225; 518 232 231; 519 228 236; 520 227 235; 521 244 222;
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603 270 93; 604 270 108; 605 271 181; 606 272 183; 607 167 272; 608 179 271;
612 273 124; 613 274 139; 614 275 155; 615 100 273; 616 273 274; 617 274 275;
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618 275 173; 619 79 86; 620 75 86; 621 99 112; 622 103 112; 623 161 170;
624 161 174; 625 78 85; 626 85 77;
START GROUP DEFINITION
MEMBER
_MOMENT_FRAME 149 150 160 166 168 171 173 178 179 183 TO 185 188 TO 190 192 -
193 195 198 200 TO 204 207 TO 210 212 215 TO 217 225 TO 227 229 TO 239 241 -
242 TO 247 249 TO 258 265 TO 289 296 TO 320 327 TO 351 358 TO 370 372 373 -
375 377 378 380 TO 387 390 TO 392 395 TO 404 406 409 411 TO 414 418 419 421 -
422 425 426 428 430 TO 433 438 439 443 445 446 448 456 466 467 599 600 612 -
613 TO 614
_MOMENT_BRACES 167 172 177 180 182 186 187 205 211 222 223 259 TO 264 290 -
291 TO 295 321 TO 326 352 TO 357 393 394 407 410 429 434 TO 436 444 447
_TRUSS_CHORDS 2 3 5 6 15 TO 18 23 24 29 TO 34 43 44 53 54 59 60 62 63 69 70 -
74 75 79 80 83 84 90 TO 93 98 99 103 TO 106 114 115 120 TO 125 134 135 138 -
139 143 TO 146 152 153 164 165 174 175 441 442 449 450 464 465 468 469 474 -
475 TO 477 482 483 488 489 495 TO 500 507 508 513 514 519 520 523 TO 526 532 -
533 541 TO 544 548 549 557 558 560 561 568 TO 571 574 575 581 582 590 591 -
594
_TRUSS_BRACES 4 10 11 13 14 19 TO 21 25 35 38 TO 42 45 46 48 TO 51 57 58 64 -
65 71 TO 73 76 TO 78 81 82 85 87 95 TO 97 100 101 107 TO 110 113 116 117 -
128 TO 132 136 137 140 141 147 148 151 155 156 158 159 161 455 457 TO 460 -
463 470 TO 473 479 481 484 TO 487 490 501 TO 505 510 511 515 TO 517 521 522 -
527 528 531 534 TO 537 545 TO 547 550 553 TO 556 564 TO 567 577 TO 579 583 -
584 TO 585 592
_TRUSS_FRAME 1 7 TO 9 12 22 26 TO 28 36 37 47 52 55 56 61 66 TO 68 86 88 89 -
94 102 111 112 118 119 126 127 133 142 154 157 162 163 169 170 176 181 437 -
440 451 TO 454 461 462 478 480 491 TO 494 506 509 512 518 529 530 -
538 TO 540 551 552 559 562 563 572 573 576 580 587 589
_TRUSSTC 3 6 15 17 23 29 31 33 43 53 59 62 69 74 79 83 90 92 98 103 105 114 -
120 122 124 134 138 143 145 152 164 174 441 449 464 468 474 476 482 488 495 -
497 499 507 513 519 523 525 532 541 543 548 557 560 568 570 574 581 590
_TRUSSBC 2 5 16 18 24 30 32 34 44 54 60 63 70 75 80 84 91 93 99 104 106 115 -
121 123 125 135 139 144 146 153 165 175 442 450 465 469 475 477 483 489 496 -
498 500 508 514 520 524 526 533 542 544 549 558 561 569 571 575 582 591 594
FLOOR
_DECK_1 2 8 13 30
_DECK_2 5 13 27 44
_DECK_3 18 27 49 63
_DECK_4 32 49 68 84
_DECK_5 60 68 96 104
_DECK_6 91 96 119 125
_DECK_7 115 119 141 144
_DECK_8 139 141 163 165
_DECK_9 163 168 188 193
_DECK_10 193 217 232 237
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_DECK_12 217 227 242 625
_DECK_13 237 242 253 255 262
_DECK_14 262 267 269 276
_DECK_15 276 284 286 291
_DECK_16 291 297 300 306
_DECK_17 306 314 316 321
_DECK_18 321 329 330 338
_DECK_19 338 345 348 352
_DECK_20 352 359 362 368 373
_DECK_21 368 385 397 400
_DECK_23 373 391 400 419
_DECK_24 397 398 445 454
_DECK_25 450 454 473 477
_DECK_26 469 473 494 500
_DECK_27 489 494 516 524
_DECK_28 508 516 540 549
_DECK_29 526 540 556 569
_DECK_30 544 556 573 582
_DECK_31 558 573 584 591
_DECK_32 571 584 589 594
_DECK_33 16 37 46 70
_DECK_34 24 46 56 80
_DECK_35 34 56 72 93
_DECK_36 54 72 89 106
_DECK_37 75 89 110 121
_DECK_38 99 110 127 135
_DECK_39 123 127 148 153
_DECK_40 146 148 170 175
_DECK_41 170 173 200 201
_DECK_42 214 227 243 626
_DECK_43 201 214 234 245
_DECK_45 243 245 255 258 264
_DECK_46 264 269 272 279
_DECK_47 279 286 289 293
_DECK_48 293 300 303 310
_DECK_49 310 316 320 323
_DECK_50 323 330 334 341
_DECK_51 341 348 351 355
_DECK_52 355 362 364 374 376
_DECK_53 374 391 401 422
_DECK_54 376 383 395 401
_DECK_56 395 396 448 452
_DECK_57 442 452 471 475
_DECK_58 465 471 492 496
_DECK_59 483 492 511 520
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_DECK_60 498 511 530 542
_DECK_61 514 530 546 561
_DECK_62 533 546 563 575
END GROUP DEFINITION
DEFINE MATERIAL START
ISOTROPIC STEEL_50_KSI
E 29000
POISSON 0.3
DENSITY 0.000283
ALPHA 6.5e-06
DAMP 0.03
TYPE STEEL
STRENGTH FY 50 FU 62 RY 1.5 RT 1.2
ISOTROPIC STEEL_N
E 29000
POISSON 0.3
DENSITY 0.000283
ALPHA 6.5e-06
DAMP 0.03
G 11153.8
TYPE STEEL
STRENGTH FY 150 FU 185 RY 1.5 RT 1.2
ISOTROPIC STEEL
E 29000
POISSON 0.3
DENSITY 0.000283
ALPHA 6.5e-06
DAMP 0.03
TYPE STEEL
STRENGTH RY 1.5 RT 1.2
END DEFINE MATERIAL
UNIT FEET POUND
MEMBER PROPERTY 'US (AISC 2023).DB3'
4 19 25 38 42 73 76 77 87 100 113 128 129 132 156 161 167 172 205 211 259 -
260 262 264 291 293 TO 295 321 323 325 326 352 355 TO 357 407 410 444 447 -
455 458 486 487 490 501 522 531 534 535 564 567 577 -
592 TABLE 'HSS RECTANGLE' ST 'HSS20X12X.500'
1 3 6 7 12 15 17 22 23 29 31 33 36 43 53 59 62 66 69 74 79 83 90 92 98 103 -
105 114 120 122 124 134 138 143 145 149 150 152 154 157 160 162 164 166 169 -
171 174 176 181 183 TO 186 192 195 198 204 207 210 212 229 TO 231 233 235 -
236 239 246 249 250 252 257 266 271 277 283 288 296 302 308 313 319 328 333 -
339 344 350 358 363 366 367 370 377 380 TO 382 384 386 387 403 404 406 409 -
418 421 428 430 TO 433 437 440 441 443 446 449 451 453 456 461 462 464 466 -
467 TO 468 474 476 482 488 495 497 499 507 513 519 523 525 532 538 541 543 -
548 557 560 562 568 570 574 576 580 581 588 590 593 595 599 TO 601 603 605 -
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606 612 TO 614 TABLE 'HSS RECTANGLE' ST 'HSS20X20X.875'
2 5 8 9 16 18 24 26 TO 28 30 32 34 37 44 47 52 54 TO 56 60 61 63 67 68 70 -
75 80 84 86 88 89 91 93 94 99 102 104 106 111 112 115 118 119 121 123 125 -
126 TO 127 133 135 139 142 144 146 153 163 165 168 170 173 175 188 193 200 -
201 214 217 232 234 237 242 243 245 253 258 267 272 TO 274 276 279 TO 281 -
284 289 297 303 TO 306 310 TO 312 314 320 329 334 TO 336 338 341 TO 343 345 -
351 359 364 368 373 374 376 383 385 395 TO 398 400 401 419 422 442 445 448 -
450 452 454 465 469 475 477 478 480 483 489 491 TO 494 496 498 500 506 508 -
509 512 514 518 520 524 526 529 530 533 539 540 542 544 549 551 552 558 559 -
561 563 569 571 TO 573 575 582 587 589 591 594 621 TO 625 -
626 TABLE 'HSS RECTANGLE' ST 'HSS20X20X.750'
208 209 225 TO 227 254 255 268 269 285 286 299 300 316 317 330 331 347 348 -
361 362 390 TO 392 411 412 615 TO 617 -
618 TABLE 'HSS RECTANGLE' ST 'HSS22X22X.875'
10 11 13 14 20 21 35 39 TO 41 45 46 48 TO 51 57 58 64 65 71 72 78 81 82 85 -
95 TO 97 101 107 TO 110 116 117 130 131 136 137 140 141 147 148 151 155 158 -
159 177 TO 180 182 187 189 190 202 203 215 216 222 223 238 241 244 247 251 -
256 261 263 265 270 275 278 282 287 290 292 298 301 307 309 315 318 322 324 -
327 332 337 340 346 349 353 354 360 365 369 372 375 378 393 394 399 402 413 -
414 425 426 429 434 TO 436 438 439 457 459 460 463 470 TO 473 479 481 484 -
485 502 TO 505 510 511 515 TO 517 521 527 528 536 537 545 TO 547 550 553 -
554 TO 556 565 566 578 579 583 TO 586 602 604 607 608 619 -
620 TABLE 'HSS RECTANGLE' ST 'HSS20X8X.500'
UNIT INCHES KIP
CONSTANTS
BETA 15.0222 MEMB 66
BETA 20.766 MEMB 86
BETA 15.028 MEMB 12
BETA 20.77 MEMB 28
BETA 32.27 MEMB 112
BETA 32.26 MEMB 61
BETA 43.779 MEMB 111
BETA 43.774 MEMB 142
BETA 53.782 MEMB 181
BETA 49.442 MEMB 157
BETA 59.056 MEMB 230 603
BETA 40.401 MEMB 183 184
BETA 66.656 MEMB 249 250
BETA 77.497 MEMB 280 281
BETA 101.313 MEMB 342 343
BETA 112.95 MEMB 380 381
BETA 119.1 MEMB 386 605
BETA 124.674 MEMB 437
BETA 135.839 MEMB 478
BETA 148.349 MEMB 506
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BETA 153.859 MEMB 538
BETA 138.264 MEMB 432 433
BETA 127.102 MEMB 462
BETA 135.832 MEMB 509
BETA 148.054 MEMB 551
BETA 153.821 MEMB 580
BETA 153.1 MEMB 1
BETA 153.112 MEMB 22
BETA 148.184 MEMB 9
BETA 138.339 MEMB 47
BETA 128.479 MEMB 102
BETA 148.169 MEMB 52
BETA 138.32 MEMB 94
BETA 128.493 MEMB 133
BETA 114.105 MEMB 229 601
BETA 122.936 MEMB 154
BETA 119.16 MEMB 176
BETA 135.022 MEMB 185 186
BETA 108.856 MEMB 235
BETA 99.625 MEMB 273 274
BETA 79.241 MEMB 335 336
BETA 69.286 MEMB 366 367
BETA 64.065 MEMB 387 606
BETA 40.926 MEMB 431
BETA 55.521 MEMB 461
BETA 49.683 MEMB 512
BETA 39.838 MEMB 559
BETA 47.479 MEMB 587
BETA 59.523 MEMB 440
BETA 49.668 MEMB 480
BETA 39.831 MEMB 518
BETA 29.979 MEMB 552
BETA 25.063 MEMB 576
BETA 90 MEMB 4 19 25 38 42 73 76 77 87 100 113 128 129 132 156 161 167 172 -
205 211 259 260 294 295 325 326 356 357 407 410 444 447 455 458 486 487 490 -
501 522 531 534 535 564 567 577 592
MATERIAL STEEL ALL
UNIT FEET POUND
MEMBER RELEASE
4 10 11 13 14 19 TO 21 25 35 38 TO 42 45 46 48 TO 51 57 58 64 65 71 TO 73 -
76 TO 78 81 82 85 87 95 TO 97 100 101 107 TO 110 113 116 117 128 TO 132 136 -
137 140 141 147 148 151 155 156 158 159 161 167 172 177 180 182 187 205 211 -
222 223 259 TO 264 290 TO 295 321 TO 326 352 TO 357 393 394 407 410 419 422 -
429 434 TO 436 444 447 455 457 TO 460 463 470 TO 473 479 481 484 TO 487 490 -
501 TO 505 510 511 515 TO 517 521 522 527 528 531 534 TO 537 545 TO 547 550 -
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553 TO 556 564 TO 567 577 TO 579 583 TO 585 592 625 626 START MP 0.98
4 10 11 13 14 19 TO 21 25 35 38 TO 42 45 46 48 TO 51 57 58 64 65 71 TO 73 -
76 TO 78 81 82 85 87 95 TO 97 100 101 107 TO 110 113 116 117 128 TO 132 136 -
137 140 141 147 148 151 155 156 158 159 161 167 172 177 180 182 187 205 211 -
222 223 259 TO 264 290 TO 295 321 TO 326 352 TO 357 393 394 407 410 419 422 -
429 434 TO 436 444 447 455 457 TO 460 463 470 TO 473 479 481 484 TO 487 490 -
501 TO 505 510 511 515 TO 517 521 522 527 528 531 534 TO 537 545 TO 547 550 -
553 TO 556 564 TO 567 577 TO 579 583 TO 585 592 625 626 END MP 0.98
UNIT FEET KIP
SUPPORTS
11 INC REFJT 17 FIXED BUT MY KFX 1209 KFY 1.35063e+06 KFZ 1209 KMX -
4778 KMZ 9792
1 INC REFJT 3 FIXED BUT MY KFX 1209 KFY 1.35063e+06 KFZ 1209 KMX 4778 KMZ 9792
7 INC REFJT 9 FIXED BUT MY KFX 1209 KFY 1.35063e+06 KFZ 1209 KMX 4778 KMZ 9792
27 INC REFJT 33 FIXED BUT MY KFX 1209 KFY 1.35063e+06 KFZ 1209 KMX -
4778 KMZ 9792
241 INC REFJT 233 FIXED BUT MY KFX 1209 KFY 1.35063e+06 KFZ 1209 KMX -
4778 KMZ 9792
257 INC REFJT 251 FIXED BUT MY KFX 1209 KFY 1.35063e+06 KFZ 1209 KMX -
4778 KMZ 9792
263 INC REFJT 261 FIXED BUT MY KFX 1209 KFY 1.35063e+06 KFZ 1209 KMX -
4778 KMZ 9792
253 INC REFJT 249 FIXED BUT MY KFX 1209 KFY 1.35063e+06 KFZ 1209 KMX -
4778 KMZ 9792
*MEMBER OFFSET
*1 7 TO 9 12 TO 14 22 26 TO 28 36 37 45 TO 49 52 55 56 61 66 TO 68 71 72 86 -
*88 89 94 TO 96 102 109 TO 112 118 119 126 127 133 140 TO 142 147 TO 150 154 -
*157 162 163 169 170 176 178 179 181 190 194 195 197 198 201 206 207 212 213 -
*215 TO 217 219 222 TO 224 226 228 TO 230 237 TO 239 243 244 251 TO 253 256 -
*257 TO 258 261 TO 264 275 TO 279 282 TO 284 287 TO 293 306 TO 310 313 TO 315 -
*318 TO 324 337 TO 341 344 TO 346 349 TO 355 368 TO 370 374 375 388 389 392 -
*393 TO 394 397 399 402 TO 405 408 415 417 418 420 421 425 426 437 TO 440 451 -
*452 TO 454 461 462 466 467 470 TO 473 478 480 491 TO 494 506 509 TO 512 515 -
*516 518 529 530 538 TO 540 545 546 551 552 555 556 559 562 563 572 573 576 -
*580 583 584 587 589 START LOCAL 0.83333 0 0
*1 7 TO 9 12 TO 14 22 26 TO 28 36 37 45 TO 49 52 55 56 61 66 TO 68 71 72 86 -
*88 89 94 TO 96 102 109 TO 112 118 119 126 127 133 140 TO 142 147 TO 150 154 -
*157 162 163 169 170 176 178 179 181 184 186 189 193 194 197 206 207 212 213 -
*215 216 221 TO 224 228 TO 230 241 242 246 TO 248 261 TO 267 270 TO 272 275 -
*276 TO 279 290 TO 293 296 TO 298 301 TO 303 306 TO 310 321 TO 324 327 TO 329 -
*332 TO 334 337 TO 341 352 TO 355 358 TO 360 363 TO 365 372 373 377 TO 379 -
*388 TO 390 392 TO 395 399 402 TO 405 408 416 417 420 437 TO 440 451 TO 454 -
*461 462 466 467 470 TO 473 478 480 491 TO 494 506 509 TO 512 515 516 518 -
*529 530 538 TO 540 545 546 551 552 555 556 559 562 563 572 573 576 580 583 -
*584 589 END LOCAL -0.8333 0 0
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*2 3 15 16 29 30 69 70 160 183 185 235 249 273 280 305 311 335 342 366 381 -
*430 432 START LOCAL -0.8333 0 0
*236 250 274 281 304 312 336 343 367 380 456 532 533 570 571 574 575 -
*594 END LOCAL 0.8333 0 0
**4 19 25 38 42 73 76 77 87 100 113 128 129 132 156 161 167 172 205 211 260 -
**261 291 296 322 327 354 358 409 412 446 447 456 459 487 488 491 502 523 532 -
**535 536 565 568 578 593 START LOCAL 1.25 1.25 0
**4 19 25 38 42 73 76 77 87 100 113 128 129 132 156 161 167 172 205 211 260 -
**261 291 296 322 327 354 358 409 412 446 447 456 459 487 488 491 502 523 532 -
**535 536 565 568 578 593 END LOCAL -1.25 -1.25 0
**10 35 82 130 180 461 505 548 579 START LOCAL 1.25 0 0.6666
**21 58 108 155 435 486 529 567 587 START LOCAL 1.25 0 -0.6666
**40 64 97 136 187 458 503 538 END LOCAL -1.25 0 0.6666
**51 81 117 159 430 482 522 555 END LOCAL -1.25 0 -0.6666
**51 81 117 159 430 482 522 555 START LOCAL 1.25 0 1
**40 64 97 136 187 458 503 538 START LOCAL 1.25 0 -1
**21 58 108 155 435 486 529 567 587 END LOCAL -1.25 0 1
**10 35 82 130 180 461 505 548 579 END LOCAL -1.25 0 -1
UNIT FEET POUND
LOAD 1 LOADTYPE Dead  TITLE DC
SELFWEIGHT Y -1
LOAD 2 LOADTYPE Dead  TITLE DW
ONEWAY LOAD
_DECK_1 ONE -80 GY INCLINED
_DECK_2 ONE -80 GY INCLINED
_DECK_3 ONE -80 GY INCLINED
_DECK_4 ONE -80 GY INCLINED
_DECK_5 ONE -80 GY INCLINED
_DECK_6 ONE -80 GY INCLINED
_DECK_7 ONE -80 GY INCLINED
_DECK_8 ONE -80 GY INCLINED
_DECK_9 ONE -80 GY INCLINED
_DECK_10 ONE -80 GY INCLINED
_DECK_12 ONE -80 GY INCLINED TOWARDS 242
_DECK_13 ONE -80 GY INCLINED
_DECK_14 ONE -80 GY INCLINED
_DECK_15 ONE -80 GY INCLINED
_DECK_16 ONE -80 GY INCLINED
_DECK_17 ONE -80 GY INCLINED
_DECK_18 ONE -80 GY INCLINED
_DECK_19 ONE -80 GY INCLINED
_DECK_20 ONE -80 GY INCLINED
_DECK_21 ONE -80 GY INCLINED
_DECK_23 ONE -80 GY INCLINED
_DECK_24 ONE -80 GY INCLINED
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_DECK_25 ONE -80 GY INCLINED
_DECK_26 ONE -80 GY INCLINED
_DECK_27 ONE -80 GY INCLINED
_DECK_28 ONE -80 GY INCLINED
_DECK_29 ONE -80 GY INCLINED
_DECK_30 ONE -80 GY INCLINED
_DECK_31 ONE -80 GY INCLINED
_DECK_32 ONE -80 GY INCLINED
_DECK_33 ONE -80 GY INCLINED
_DECK_34 ONE -80 GY INCLINED
_DECK_35 ONE -80 GY INCLINED
_DECK_36 ONE -80 GY INCLINED
_DECK_37 ONE -80 GY INCLINED
_DECK_38 ONE -80 GY INCLINED
_DECK_39 ONE -80 GY INCLINED
_DECK_40 ONE -80 GY INCLINED
_DECK_41 ONE -80 GY INCLINED
_DECK_42 ONE -80 GY INCLINED
_DECK_43 ONE -80 GY INCLINED
_DECK_45 ONE -80 GY INCLINED
_DECK_46 ONE -80 GY INCLINED
_DECK_47 ONE -80 GY INCLINED
_DECK_48 ONE -80 GY INCLINED
_DECK_49 ONE -80 GY INCLINED
_DECK_50 ONE -80 GY INCLINED
_DECK_51 ONE -80 GY INCLINED
_DECK_52 ONE -80 GY INCLINED
_DECK_53 ONE -80 GY INCLINED
_DECK_54 ONE -80 GY INCLINED
_DECK_56 ONE -80 GY INCLINED
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_DECK_59 ONE -80 GY INCLINED
_DECK_60 ONE -80 GY INCLINED
_DECK_61 ONE -80 GY INCLINED
_DECK_62 ONE -80 GY INCLINED
LOAD 3 LOADTYPE Live  TITLE PL
ONEWAY LOAD
_DECK_1 ONE -90 GY INCLINED
_DECK_2 ONE -90 GY INCLINED
_DECK_3 ONE -90 GY INCLINED
_DECK_4 ONE -90 GY INCLINED
_DECK_5 ONE -90 GY INCLINED
_DECK_6 ONE -90 GY INCLINED
_DECK_7 ONE -90 GY INCLINED
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_DECK_8 ONE -90 GY INCLINED
_DECK_9 ONE -90 GY INCLINED
_DECK_10 ONE -90 GY INCLINED
_DECK_12 ONE -90 GY INCLINED
_DECK_13 ONE -90 GY INCLINED
_DECK_14 ONE -90 GY INCLINED
_DECK_15 ONE -90 GY INCLINED
_DECK_16 ONE -90 GY INCLINED
_DECK_17 ONE -90 GY INCLINED
_DECK_18 ONE -90 GY INCLINED
_DECK_19 ONE -90 GY INCLINED
_DECK_20 ONE -90 GY INCLINED
_DECK_21 ONE -90 GY INCLINED
_DECK_23 ONE -90 GY INCLINED
_DECK_24 ONE -90 GY INCLINED
_DECK_25 ONE -90 GY INCLINED
_DECK_26 ONE -90 GY INCLINED
_DECK_27 ONE -90 GY INCLINED
_DECK_28 ONE -90 GY INCLINED
_DECK_29 ONE -90 GY INCLINED
_DECK_30 ONE -90 GY INCLINED
_DECK_31 ONE -90 GY INCLINED
_DECK_32 ONE -90 GY INCLINED
_DECK_33 ONE -90 GY INCLINED
_DECK_34 ONE -90 GY INCLINED
_DECK_35 ONE -90 GY INCLINED
_DECK_36 ONE -90 GY INCLINED
_DECK_37 ONE -90 GY INCLINED
_DECK_38 ONE -90 GY INCLINED
_DECK_39 ONE -90 GY INCLINED
_DECK_40 ONE -90 GY INCLINED
_DECK_41 ONE -90 GY INCLINED
_DECK_42 ONE -90 GY INCLINED
_DECK_43 ONE -90 GY INCLINED
_DECK_45 ONE -90 GY INCLINED
_DECK_46 ONE -90 GY INCLINED
_DECK_47 ONE -90 GY INCLINED
_DECK_48 ONE -90 GY INCLINED
_DECK_49 ONE -90 GY INCLINED
_DECK_50 ONE -90 GY INCLINED
_DECK_51 ONE -90 GY INCLINED
_DECK_52 ONE -90 GY INCLINED
_DECK_53 ONE -90 GY INCLINED
_DECK_54 ONE -90 GY INCLINED
_DECK_56 ONE -90 GY INCLINED
```

```
_DECK_57 ONE -90 GY INCLINED
_DECK_58 ONE -90 GY INCLINED
_DECK_59 ONE -90 GY INCLINED
_DECK_60 ONE -90 GY INCLINED
_DECK_61 ONE -90 GY INCLINED
_DECK_62 ONE -90 GY INCLINED
LOAD COMB 4 STRENGTH I
1 1.25 2 1.5 3 1.75
LOAD COMB 5 STRENGTH IV
1 1.5 2 1.5
LOAD COMB 6 SERVICE I
1 1.0 2 1.0 3 1.0
LOAD COMB 7 STRENGTH I - TRUSS
4 1.2
LOAD COMB 8 STRENGTH I - SUBSTRUCTURE
4 1.1
LOAD COMB 9 STRENGTH I - FOUNDATION
4 1.0
LOAD COMB 10 STRENGTH IV - TRUSS
5 1.2
PERFORM ANALYSIS PRINT STATICS CHECK
DEFINE ENVELOPE
7 10 ENVELOPE 1 TYPE STRENGTH
6 ENVELOPE 2 TYPE SERVICEABILITY
8 ENVELOPE 3 TYPE COLUMN
9 ENVELOPE 4 TYPE CONNECTION
END DEFINE ENVELOPE
PARAMETER 1
CODE AISC UNIFIED 2016
METHOD LRFD
SGR 5 ALL
UNB 72 MEMB 225 392 615 TO 618
UNT 72 MEMB 225 392 615 TO 618
LZ 72 MEMB 225 392 615 TO 618
RATIO 1 ALL
TBRC 0 ALL
TORSION 1 ALL
TRACK 1 ALL
CHECK CODE ALL
*METHOD LRFD
*RATIO 1 ALL
*TBRC 0 ALL
*TORSION 1 ALL
*TRACK 1 ALL
*CHECK CODE ALL
```

FINISH

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Tower Foundation Conceptual Design Summary

The following calculations are based on the Intersecting “C” bridge option presented by HHCP in the International Drive Pedestrian Overpass Analysis and Overpass Conceptual Design Study #Y20-803-CH. This report identifies a preliminary structure footprint.

The most appropriate foundation system will need to be determined based on the site conditions, proximity to neighboring structures, constructability dealing with a heavily travelled roadway with very restricted traffic control requirements (i.e. Minimum disruption), and noise restrictions. AVCON anticipates that the foundations to support the bridge, elevator, and stairs will be a deep foundation system. The Geotechnical Engineer will need to evaluate the following options:

- Driven Precast Prestressed Concrete (PPC) Piles
- Steel “H” Piles
- Auger Cast Displacement Piles
- Drilled Shafts

For Stair Tower #1

Results				
Load Combination -	Axial k	Mx k-ft	My k-ft	Pile Load* k
Strength I	1964	1235.1	-1846.6	58.6
Strength III - North	1436	590.2	-6119.9	47.6
Strength III - West	1436	4735.2	-1992.6	49.7
Strength V - North	1706	1009.5	-2998.8	52.3
Strength V - West	1706	2177.9	-1753.4	52.8

*Assumed Number of Piles = 36

For Stair Tower #2

Results				
Load Combination -	Axial k	Mx k-ft	My k-ft	Pile Load* k
Strength I	1775	-3470.6	-6289.7	72.1
Strength III - North	1247	-1701.1	-7702.9	56.8
Strength III - West	1247	-5812.7	-3227.3	49.2
Strength V - North	1530	-2818.5	-6427.4	64.1
Strength V - West	1530	-3962.1	-5157.9	61.9

*Assumed Number of Piles = 30

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For Stair Tower #3

Results				
Load Combination	Axial	Mx	My	Pile Load*
-	k	k-ft	k-ft	k
Strength I	1407	0.0	-6452.1	76.8
Strength III - North	949.0	0.0	-7833.8	62.8
Strength III - East	975.8	4082.7	-3856.9	65.5
Strength V - North	1204	0.0	-6527.5	68.9
Strength V - East	1217.4	1120.2	-5507.3	70.1

*Assumed Number of Piles = 25

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Pile Load Calculation

Standards/References

- Florida Department of Transportation - Structures Manual, January 2023 Edition (FDOT SDG)
- American Association of Safety Highway Transportation Officials – LRFD Bridge Design Specifications, 9th Edition (AASHTO LRFD)
- Florida Department of Transportation – Design Manual, January 2023 (FDM)
- AASHTO LRFD Guide Specifications for the Design of Pedestrian Bridges – December 2009 with 2015 Interims (AASHTO Pedestrian)
- Florida Building Code 2020

Design Assumptions

- Pedestrian Bridge
  - Intersecting 'C' configuration controls design of substructure (surface area = 5352 sf)
  - Height = 0.1000 x Length = 21 ft (AASHTO LRFD T 2.5.2.6.3-1)
  - Width = 12 ft (AASHTO Pedestrian §10.4.c)
  - Length = 210 ft (each direction)
  - Pedestrian Bridge has bearing at 24 ft above finished grade.
  - 6" Concrete Fill on Metal Deck
- Stair Tower Options
  - 3 Options available
  - Reference Appendix A for Stair Tower Options and pertinent geometry in plan
  - Reference Appendix B for Stair Tower Elevations for Wind Tributary Areas
- Foundations
  - Reference Appendix C for Pile Cap and Pile Configurations
  - Rigid Pile Cap assumption

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  - 18" Concrete Piles
  - Spaced 4 to 5 ft on center.

- Applicable Loads for Pile Design
  - DC – Dead Load of Structural Components and Nonstructural Attachments
  - PL_b – Pedestrian Loads = 90 PSF for bridge (AASHTO Pedestrian §3.1)
  - PL_s – Pedestrian Loads = 100 PSF for Stair Structure (FBC 2020 T 1607.1)
  - WS – Wind Load on Structures
- Applicable Load Combinations are from AASHTO LRFD 3.4.1

Stair Tower & Pedestrian Bridge Assumptions

- The steel truss superstructure member sizes have been assumed for preliminary dead load calculations.
- The stair tower glass visual barriers are assumed to be 40 plf.
- The elevator machinery for each stair tower is assumed to be from the same design basis with a 4 kip dead load and live load capacity of 4 kip.
- The elevator shafts do not extend below grade.
- The top of the pile cap is at finished grade.
- No signs have been attached to the bridge superstructure or substructure.
- Wind uplift on the bridge superstructure has not been evaluated as it will not control the design.
- The bridge and stair tower are assumed to be fully loaded with pedestrian live load on all walking surfaces.

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Design Loads per Stair Tower

Pedestrian Bridge (same for each stair tower)

- DC - Dead Load
  - The following calculations account for the dead load on the piles due to weight of steel truss superstructure. Refer to Appendix C for the assumed location of the superstructure reactions on the substructure.
  - Steel weight taken from AISC 360-16 Table 1-12
  - Surface Area of Bridge = 5352 SF
    - Tributary Area PER Stair Tower = Surface Area / 4 = 1338 SF

Pedestrian Bridge

Area of Bridge in Plan (sf): 5352 *C Bridge Alternative Controls

Weight per Segment (12 ft wide x 21 ft tall x 42 ft long)

Truss Member -	Assumed Member Size Square HSS Members	Unit Weight plf	Length ft	Quantity #	Resultant lb
Top and Bottom Chords	16x16	103	42	4	17304
Diagonal Struts	12x12	76	30	4	9120
Vertical Struts	12x12	76	18	6	8208
Stringers	12x12	76	9	3	2052
Composite Metal Deck	6"	768	42	1	32256
handrails		5	42	2	420
				TOTAL (lb)	69,360
			* psf per segment	TOTAL (psf)	138
				Reaction per Tower (kip)	184

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- PL_b - Pedestrian Live Load
  - The following calculations account for the pedestrian load on the superstructure that will transfer to the piles. Refer to Appendix C for the assumed location of the superstructure reactions on the substructure.
  - Magnitude = 0.090 ksf (AASHTO Pedestrian §3.1)
  - Surface Area of Bridge = 5352 SF
    - Tributary Area PER Stair Tower = Surface Area / 4 = 1338 SF
  - Total Bridge Reaction per Stair Tower, PL_b = **120 kip**

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- WS – Wind Load on Superstructure
  - Wind loads will be transferred to the substructure using skew coefficients from AASHTO T 3.8.1.2.3a-1. Refer to Appendix C for the assumed location of the superstructure reactions on the substructure.
  - $P_z = 2.56x10^{-6}V^2K_zGC_D(psf)$ (AASHTO LRFD Eq. 3.8.1.2.1-1)
  - Design Wind Speed, V
    - 150 mph (Strength III) (FDOT SDG T 2.4.1-1)
    - 80 mph (Strength V) (AASHTO LRFD T. 3.8.1.12-1)
  - $K_z =$ 1.08 (AASHTO LRFD T. 3.8.1.2.1-1)
    - Exposure Category = C (FDOT SDG § 2.1.4.B)
    - Z = 24 ft + 21 ft = 45 ft (bridge bearing + height to top of truss)
  - $G = 0.85$ (Strength III, 1.0 Otherwise) (FDOT SDG § 2.4.1.C)
  - $C_D =$ 2.0/1.0 *(Windward/Leeward)* (AASHTO LRFD T. 3.8.1.2.1-2)

Lateral Wind Surface Area per Segment (12 ft x 21 ft x 42 ft) (Bridge Elevation)				
Member	Length	Depth	Quantity	Surface Area
-	ft	In	#	ft^2
Top Chord	42	16	1	56
Bottom Chord	42	16	1	56
Vertical Strut	18	12	3	54
Diagonal Strut	30	12	2	60

Total Surface Area of Bridge (elevation) = **226 sf per segment**

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Lateral Design Wind Pressure for Superstructure							
Load Case	Kz	G	V	C_D		P_z (ksf)	
-	-	-	Mph	Windward	Leeward	Windward	Leeward
Strength III	1.08	0.85	150	2.0	1.0	0.106	0.053
Strength V	1.00	1.0	80	2.0	1.0	0.033	0.016

Load Case	P_z (ksf) from AASHTO LRFD 3.8.2	
-	Downward	Uplift
Strength III	0.020	0.020
Strength V	0.010	0.010

Total Surface Area of Bridge (plan) = **1338 sf per tower**

Reactions from Superstructure on to Substructure due to WS				
Load Case	Force per Segment (kip)		Force per Stair Tower (kip)	
-	Windward	Leeward	Lateral (Windward + Leeward)	Vertical (+/-)
Strength III	24.0	12.0	90	26.8
Strength V	6.3	3.2	23.8	13.4

Note the resultant Force Per Stair Tower is considered to act at 34.5 ft above the top of the pile cap (24 ft + 21 ft /2).

The wind force on the superstructure is applied transverse to the bridge's longitudinal axis in elevation.

AASHTO indicates that the wind force from the superstructure applied to the substructure shall be adjusted for the attack angle/skew angle of the wind. For Stair Tower Options #1 and #2 the bridge longitudinal axis is 45 degrees to the assumed pile y axis and the wind loads will be adjusted using the AASHTO skew coefficients and will not include the vertical wind load. For Stair Tower Option #3 the bridge's longitudinal axis is parallel to the y axis of the pile group and will include the vertical downward wind loads when the wind comes from either the East or West.

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A derivation of the applied loads, pile configuration, and resulting pile loads from the AASHTO LRFD Combinations for Stair Tower Option #1 is included below. Note that the derivation is similar for Stair Tower Options #2 and #3 but has not been included, however, the abbreviated excel calculations for each Stair Tower Options can be found in Appendix D.

Stair Tower Option #1

- DC - Dead Loads
    - Dead loads on the pile group will be due to weight of the concrete stair tower, pile cap, and attached architectural features. The loads are assumed to act in the vertical direction. Refer to the tables below for calculations of the weight for each component and the location of the resultant used to calculate the moments induced on the pile group due to eccentric loading.

Architectural Features

Architectural Component	Weight	Unit	Quantity	Unit	Weight kip
Glass Visual Barriers	40	plf	163	LF	6.5

DC for Pile Cap

Pile Cap Shape	Pile Cap Area	Pile Cap Thickness	Density	Weight
-	ft^2	ft	kcf	kip
Custom	841	4	0.15	504.6

DC for Pile Cap

x	y
ft	ft
-8.57	-19.83

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DC for Stair Tower						DC for Stair Tower			
Stair Tower Component	Dimensions of Component			Quantity	Volume	Distance to Center of Stair Tower Component		Product of Distance and Volume	
	Thickness	Width	Length			x	y	Vx	Vy
-	ft	ft	ft	#	ft^3	ft	ft	ft^4	ft^4
Riser Supports	0.50	6.00	13.42	6	241	6.75	12.25	1630	2958
Riser Treads	0.50	6.00	1.00	48	72	6.75	12.25	486	882
Landings	0.50	13.67	6.33	6	260	6.83	12.25	1774	3181
Stair Pier	2.00	12.00	38.00	1	912	6.75	12.25	6156	11172
Platform	0.50	13.33	12.00	2	160	6.67	29.25	1067	4680
Columns	3.00	3.00	36.00	2	648	4	33	2592	21384
*Elevator Shaft	10.00	8.33	42.00	1	728	17.8	29	12983	21112
*Assumed elevator shaft does not go below grade				Total Volume (ft^3)	3021	TOTAL (ft^3)		$\Sigma Vx =$ 26,688	$\Sigma Vy =$ 65,369
				*Concrete density Unit Weight (pcf)	150				
				Weight (kip)	453	Center of mass (ft)		$\bar{x} =$ 8.8	$\bar{y} =$ 21.6

Notes for Center of Mass:

Refer to Appendix A for reference point. The center of the pile cap mass was obtained from Autocad's geometric center snap point. The center of mass for the stair tower was calculated as follows:

$$V_{total} = 2608\,ft^3, \quad \bar{x} = \frac{\Sigma Vx}{V_{total}}, \quad \bar{y} = \frac{\Sigma Vy}{V_{total}}$$

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- PL_S – Pedestrian Live Load for Stair Tower
  - The following calculations account for the pedestrian load on the stair tower platforms and landing that will transfer to the piles. Refer to Appendix C for the assumed line of action for the stair tower live load and reference point.

Stair Tower (PL_s)

Component	Tributary Area Dimensions: Width of Area	Tributary Area Dimensions: Length of Area	Quantity of Surface Areas	Resultant
-	ft	ft	#	ft^2
Riser Treads	6.00	1.00	48	288.0
Landings	13.67	6.33	4	346.2
Platform	13.33	12.00	1	160.0
			TOTAL (ft^2)	794
			PL_s (psf)	100
			PL_s (kip)	79

Resultant Location for PL_s Stair Load

Distance to Center of Stair Tower Component: x	y	Product of Distance and Area: Ax	Ay
ft	ft	ft^3	ft^3
6.75	12.25	1944	3528
6.83	12.25	2366	4241
6.67	29.25	1067	4680
TOTAL		$\Sigma Ax =$ 5,377	$\Sigma Ay =$ 12,449
PL_s Line of Action (ft)		$\bar{x} =$ 6.8	$\bar{y} =$ 15.7

Note for Center of Action for PL_S:

Refer to Appendix C for reference point.

$$A_{total} = 794\ ft^3, \qquad \bar{x} = \frac{\Sigma Ax}{A_{total}}, \qquad \bar{y} = \frac{\Sigma Ay}{V_{total}}$$

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- WS – Wind on Stair Tower directly applied and from Superstructure.
  - $P_z = 2.56x10^{-6}V^2K_zGC_D(psf)$ (AASHTO LRFD Eq. 3.8.1.2.1-1)
  - Design Wind Speed, V
    - 150 mph (Strength III) (FDOT SDG T 2.4.1-1)
    - 80 mph (Strength V) (AASHTO LRFD T. 3.8.1.12-1)
  - $K_z =$ 1.08 (Strength III, 1.0 Otherwise) (AASHTO LRFD T. 3.8.1.2.1-1)
    - Exposure Category = C (FDOT SDG § 2.1.4.B)
    - Z = 45 ft (from previous section)
  - $G = 0.85$ (FDOT SDG § 2.4.1.C)
  - $C_D =$ 1.6 *(Substructure)* (AASHTO LRFD T. 3.8.1.2.1-2)

Lateral Design Wind Pressure for Superstructure					
Load Case	Kz	G	V	C_D	P_z (ksf)
-	-	-	Mph	Windward	Windward
Strength III	1.08	0.85	150	1.6	0.085
Strength V	1.00	1.0	80	1.6	0.026

From Appendix B the wind tributary areas for each direction are as follows:

North Wind Surface Area = 842 sf with resultant 19.2 ft above the top of pile cap
West Wind Surface Area = 1068 sf with resultant 19.2 ft above the top of pile cap

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Wind Load (WS) directly applied to Substructure (Stair Tower) - Nominal (kip)			Components Stair North		Components Stair West	
Load Combination	WS					
	Stair North	Stair West	Fx	Fy	Fx	Fy
Strength I	0	0	0	0	0	0
Strength III	71.6	90.8	0	-71.6	90.8	0
Strength V	26.9	27.8	0	-26.9	27.8	0

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The wind loads below were derived in the Pedestrian Bridge Section of this report and have been adjusted into components along the bridge axes using skew coefficients from AASHTO T 3.8.1.2.3a-1. For Stair Tower #1 the bridge's longitudinal axis is at an angle of 45 degrees to the y axis for the pile group. After the wind has been resolved into components along the bridge axes, the components need to be transformed to the pile group axes. These wind loads act at mid-depth of the superstructure, a distance of 34.5 ft above the pile cap .

From AASHTO T3.8.1.2.3a-1		
Skew Angle (degree)	Transverse Skew Coefficient	Longitudinal Skew Coefficient
0	1	0
15	0.9333	0.16
30	0.867	0.373
45	0.627	0.547
60	0.32	0.667

Wind Load (WS) from Superstructure applied to Subtructure - Nominal							Transformation of Force Components to Pile Group Axes per Wind Direction			
Load Combination	Force Transverse to Pedestrian Bridge Longitudinal Axis (kip)	Skew Angle (°)	Skew Coefficients (AASHTO T3.8.1.2.3a-1)		Force Components along Bridge Axes		Wind From North		Wind From West	
			Transverse	Longitudinal	$F_{Transverse}$	$F_{Longitudinal}$	F_X	F_Y	F_X	F_Y
			-	-	kip	kip	kip	kip	kip	kip
Strength I	0	0	0	0	0	0	0.00	0.00	0.00	0.00
Strength III	90	45	0.627	0.547	56.4	49.2	5.09	-74.71	74.71	5.09
Strength V	23.8	45	0.627	0.547	14.9	13.0	1.35	-19.76	19.76	1.35

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Pile Group Configuration

A pile group configuration has been assumed using 18" concrete piles spaced at 4 ft to 5 ft on center. Refer to Appendix C for a plan view of the pile cap, pile arrangement, and reference point.

Center of Pile Group

Pile Group Centroid

COLUMN	n	x_i	nx_i	$\bar{x}_i$	ROW	n	y_i	ny_i	$\bar{y}_i$
-	-	ft	ft	ft	-	-	ft	ft	ft
i	7	1.5	10.5	9.7	A	4	1.5	6	18.7
ii	7	6	42	5.2	B	4	7.2	28.8	13.0
iii	7	10.7	74.9	0.5	C	5	12.8	64	7.4
iv	7	15.2	106.4	-4.0	D	5	18.5	92.5	1.7
v	5	19.7	98.5	-8.5	E	6	24.2	145.2	-4.0
vi	3	24.2	72.6	-13.0	F	6	29.8	178.8	-9.6
					G	6	35.5	213	-15.3

n	36	$\sum nx_i =$ 405	n	36	$\sum ny_i =$ 728.3
		$\bar{x} =$ 11			$\bar{y} =$ 20.2
		$\sum n\bar{x}_i^2 =$ 6016			$\sum n\bar{y}_i^2 =$ 13898

Notes for Center of Pile Group:

- Refer to Appendix C for reference point.
- Total number of piles, $n = 36$
- Distance from reference point along x axis, $\bar{x} = \frac{\Sigma n x_i}{n}$
- Distance from reference point along y axis, $\bar{y} = \frac{\Sigma n y_i}{n}$
- Moment of Inertia of Pile Group about y axis, $J_x = \Sigma n\bar{x}_i^2$
- Moment of Inertia of Pile Group about x axis, $J_y = \Sigma n\bar{y}_i^2$

Project:	I Drive Pedestrian Bridge
Job Number:	2021.0099.48
Calculated By:	ANM
Date:	5/1/2023
Checked By:	DF
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Summary of Nominal Loads and Eccentricities

Below is a table from the excel sheets in Appendix D that summarizes the previous load derivation and shows the eccentricity of the various loads. Refer to Appendix C for the eccentricities for each load.

The vertical loads produce both a compressive axial force and moment on the pile group due to eccentricity of the load from the pile group centroid. The eccentricity of the vertical loads is measured along both the x and y axis of the pile group centroid that is evaluated in each direction individually and algebraically summed.

The lateral load produces a shear load and moment on the pile group. The eccentricity of the lateral loads is measured from the top of the pile cap.

Summary of Nominal Loads and Eccentricities from Pile Group Centroid

Nominal Load	Load Type	Magnitude	Unit	From Pile Group Centroid e_x	e_y	e_z	Angle from X axis
-	-	#	-	ft	ft	ft	°
DC Stair Tower	Vertical	460	kip	-1.00	0.30	0	-
DC Pedestrian Bridge	Vertical	184	kip	5.40	-11.00	0	-
DC Pile Cap	Vertical	505	kip	-0.40	0.30	0	-
PL_s Stair Tower	Vertical	79	kip	-3.10	20.20	0	-
PL_b Pedestrian Bridge	Vertical	120	kip	5.40	-11.00	0	-
WS Stair Tower (North)	Lateral	Wind Load Tables	kip	0	0	19.20	270
WS Stair Tower (West)	Lateral	Wind Load Tables	kip	0	0	19.20	0
WS Pedestrian Bridge	Lateral	Wind Load Tables	kip	0	0	34.50	varies

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Load Combination Results

- Reference Appendix D for excel print outs of results for each stair tower option:
- Strength I
  - $\gamma_p DC + 1.75PL$
- Strength III
  - $\gamma_p DC + 1.0WS$
  - V = 150 mph (FDOT SDG T2.4.1-1)
- Strength IV
  - $\gamma_p DC + 1.35PL + 1.0WS$
  - V = 80 mph (AASHTO LRFD T. 3.8.1.12-1)

Force Effects calculated per AASHTO LRFD Eq. 3.4.1-4 $Q = \sum \eta_i \gamma_i Q_i$

- Where Q_i is the force due to DC, PL, or WS

Limit States AASHTO LRFD 1.3.2 $\eta_i = \eta_D \eta_R \eta_I$ (max for each lad effect)

Load Combination	AASHTO LOAD FACTORS					
	η_D	η_R	η_I	γ_{DC}	γ_{PL}	γ_{WS}
Strength I	1	1.1	1	1.25	1.75	0
Strength III	1	1	1	1.25	0	1
Strength V	1	1	1	1.25	1.35	1

The following is a summary of the axial and moments induced on the pile cap for each load combination and wind load direction. The worst case pile was evaluated and a summary table of the compression due to each load combination/load case is shown.

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Strength I Combination

Load	Axial	Mx	My
-	k	k-ft	k-ft
DC Stair Tower	632	-632.0	190
DC Pedestrian Bridge	253	1366.2	-2783.0
DC Pile Cap	694	-277.6	208.2
PL_s Stair Tower	153	-474.3	3090.6
PL_b Pedestrian Bridge	232	1252.8	-2552.0
TOTAL	1964	1235.1	-1846.6

Strength III Combination - Wind From North

Load	Axial	Mx	My
-	k	k-ft	k-ft
DC Stair Tower	575	-575.0	172.5
DC Pedestrian Bridge	230	1242.0	-2530.0
DC Pile Cap	631	-252.4	189.3
PL_s Stair Tower	0	0	0
PL_b Pedestrian Bridge	0	0	0
WS Stair Tower	0	0.0	-1374.1
WS Pedestrian Bridge	0	175.6	-2577.6
TOTAL	1436	590.2	-6119.9

Strength III Combination - Wind From West

Load	Axial	Mx	My
-	k	k-ft	k-ft
DC Stair Tower	575	-575.0	173
DC Pedestrian Bridge	230	1242.0	-2530.0
DC Pile Cap	631	-252.4	189.3
PL_s Stair Tower	0	0	0
PL_b Pedestrian Bridge	0	0	0
WS Stair Tower	0	1743.0	0
WS Pedestrian Bridge	0	2577.6	175.6
TOTAL	1436	4735.2	-1992.6

Project: I Drive Pedestrian Bridge
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Strength V Combination - Wind From North

Load	Axial	Mx	My
-	k	k-ft	k-ft
DC Stair Tower	575	-575.0	173
DC Pedestrian Bridge	230	1242.0	-2530.0
DC Pile Cap	631	-252.4	189.3
PL_s Stair Tower	107	-331.7	2161.4
PL_b Pedestrian Bridge	163	880.2	-1793.0
WS Stair Tower	0	0	-517.3
WS Pedestrian Bridge	0	46.4	-681.6
TOTAL	1706	1009.5	-2998.8

Strength V Combination - Wind From West

Load	Axial	Mx	My
-	k	k-ft	k-ft
DC Stair Tower	575	-575.00	172.50
DC Pedestrian Bridge	230	1242.00	-2530.00
DC Pile Cap	631	-252.40	189.30
PL_s Stair Tower	107	-332	2161
PL_b Pedestrian Bridge	163	880	-1793
WS Stair Tower	0	533.15	0.00
WS Pedestrian Bridge	0	681.63	46.45
TOTAL	1706	2177.9	-1753.4

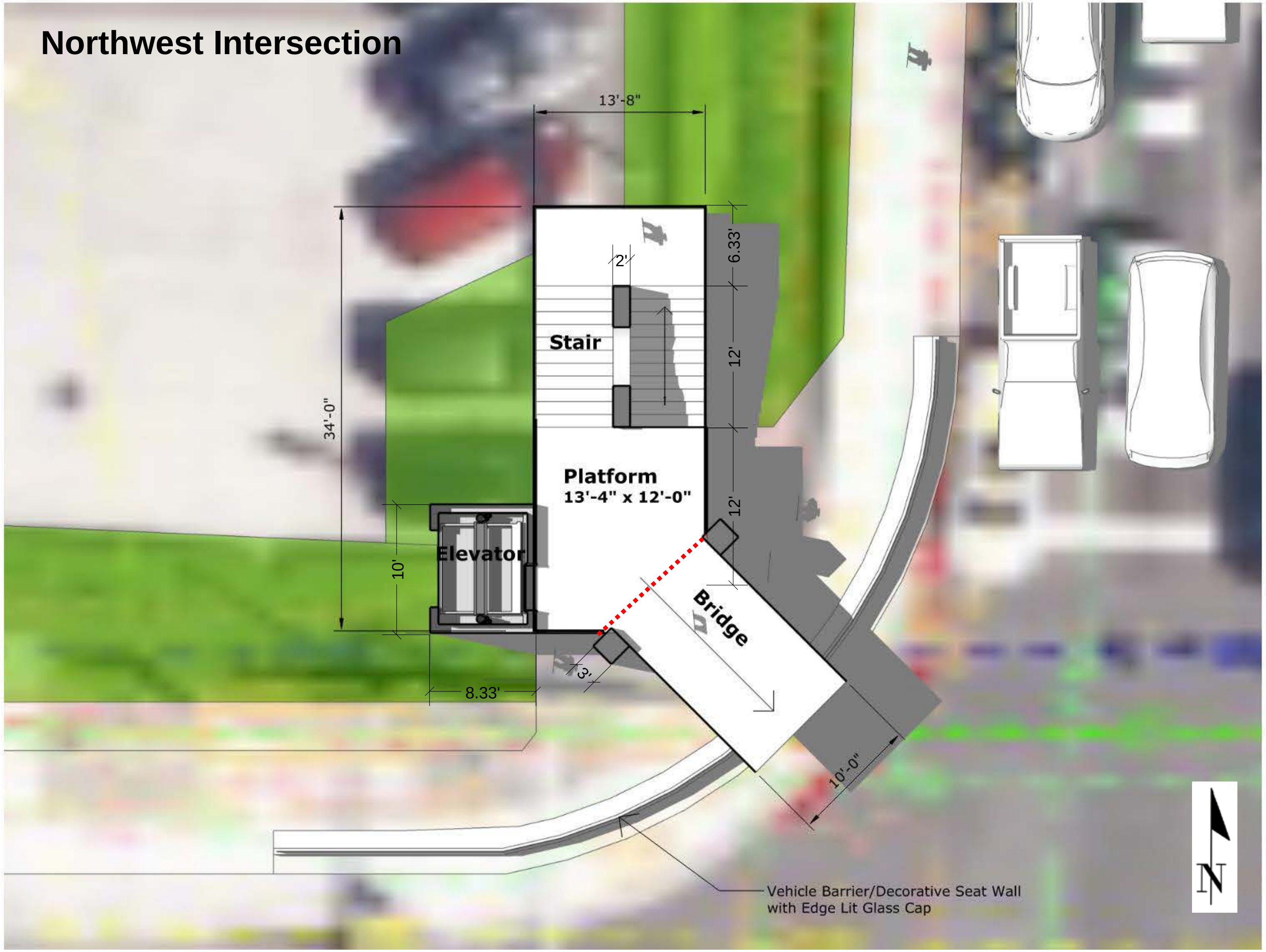
	COLUMN	ROW
Pile	i	G
Coordinate from Center	$\bar{x}$ = 9.7	$\bar{y}$ = -15.3

Results

Load Combination	Axial	Mx	My	Pile Load*
-	k	k-ft	k-ft	k
Strength I	1964	1235.1	-1846.6	58.6
Strength III - North	1436	590.2	-6119.9	47.6
Strength III - West	1436	4735.2	-1992.6	49.7
Strength V - North	1706	1009.5	-2998.8	52.3
Strength V - West	1706	2177.9	-1753.4	52.8

*Assumed Number of Piles: 36

APPENDIX A



Bridge Tower Option 1

Description

A very inviting stair traversing 24'-0" in height. Each stair run is 4' rise. The treads are 12" and the risers are 6" for easy climbing.

The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 22' x 24'

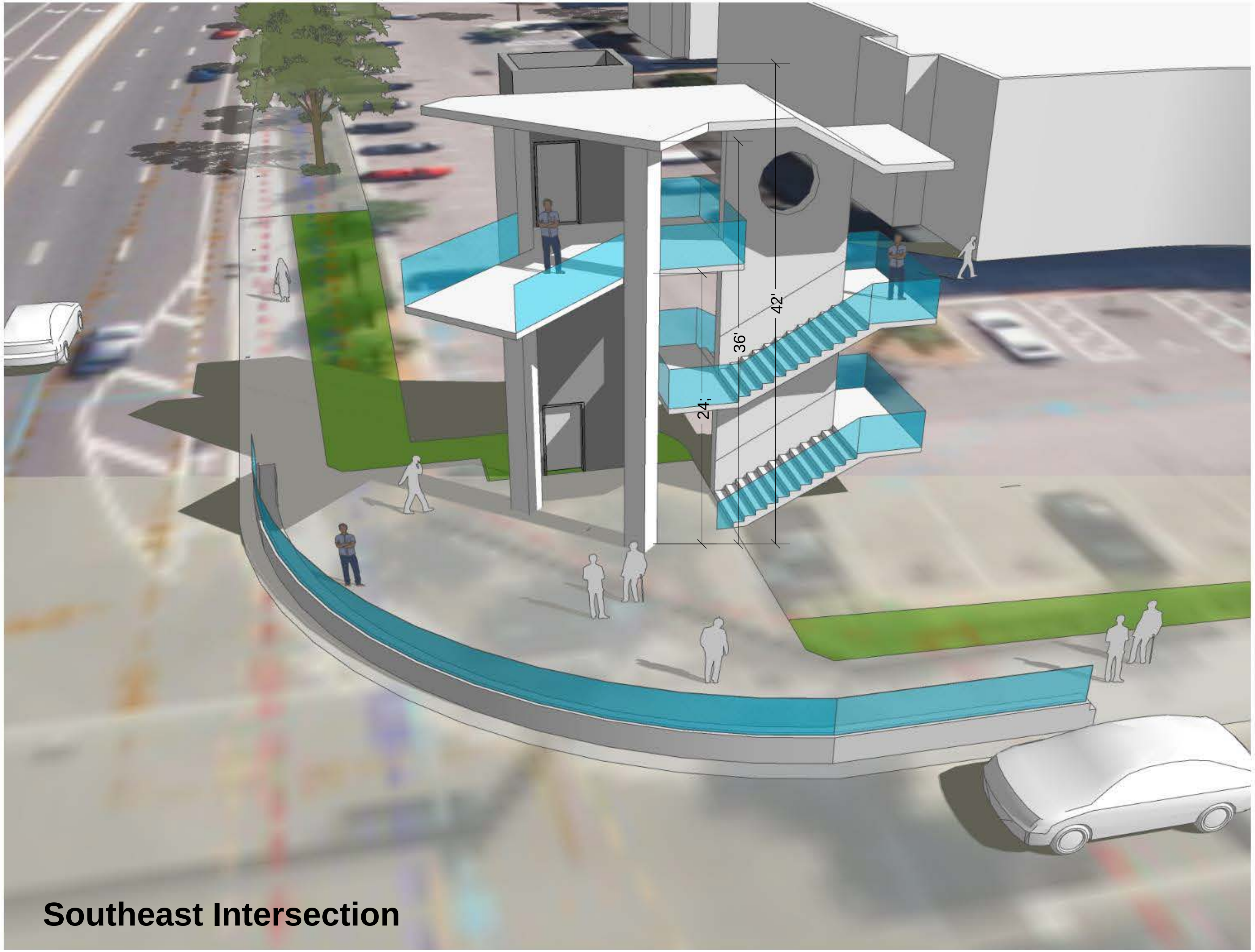
Glass Back Elevator provides additional Safety and creates a visual feature

Seat bench barrier and protective screen wall protects pedestrians and prevents on grade crossing.

Crosswalks have been removed.

Summary

Ground Floor Platform	192sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	506sf
Bridge Width	10'-0"



Bridge Tower Option 1

Description

A very inviting stair traversing 24'-0" in height. Each stair run is 6' rise. The treads are 12" and the risers are 6" for easy climbing.

The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 35' x 28'

Crosswalks have been removed.

Summary

Ground Floor Platform	160sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	470sf

Bridge Tower Option 2

Description

A very inviting stair traversing 24'-0" in height. Each stair run is 6' rise. The treads are 12" and the risers are 6" for easy climbing.

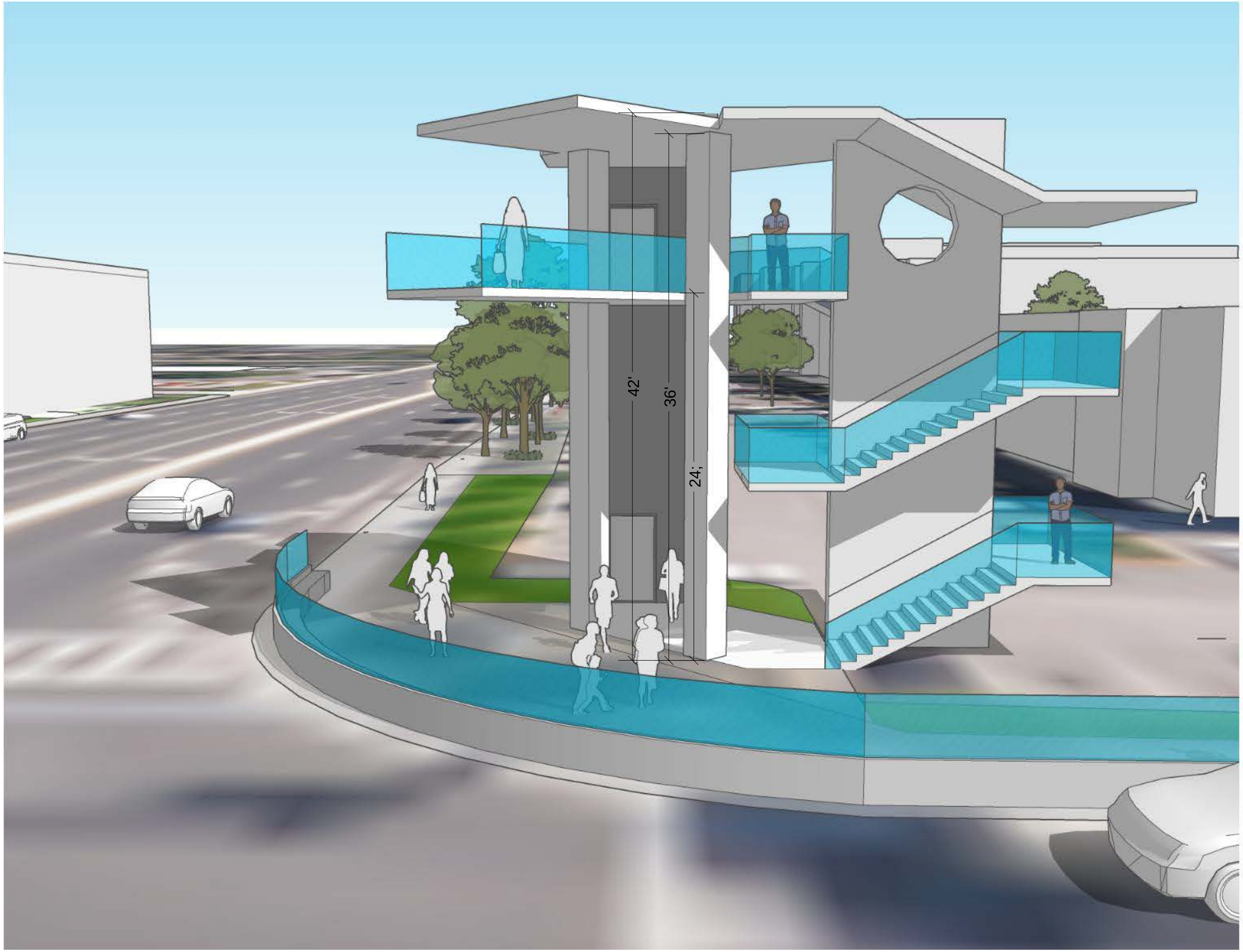
The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 35' x 40'

Crosswalks have been removed.

Summary

Ground Floor Platform	221sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	531sf
Bridge Width	10'-0"



Bridge Tower Option 2

Description

A very inviting stair traversing 24'-0" in height. Each stair run is 6' rise. The treads are 12" and the risers are 6" for easy climbing.

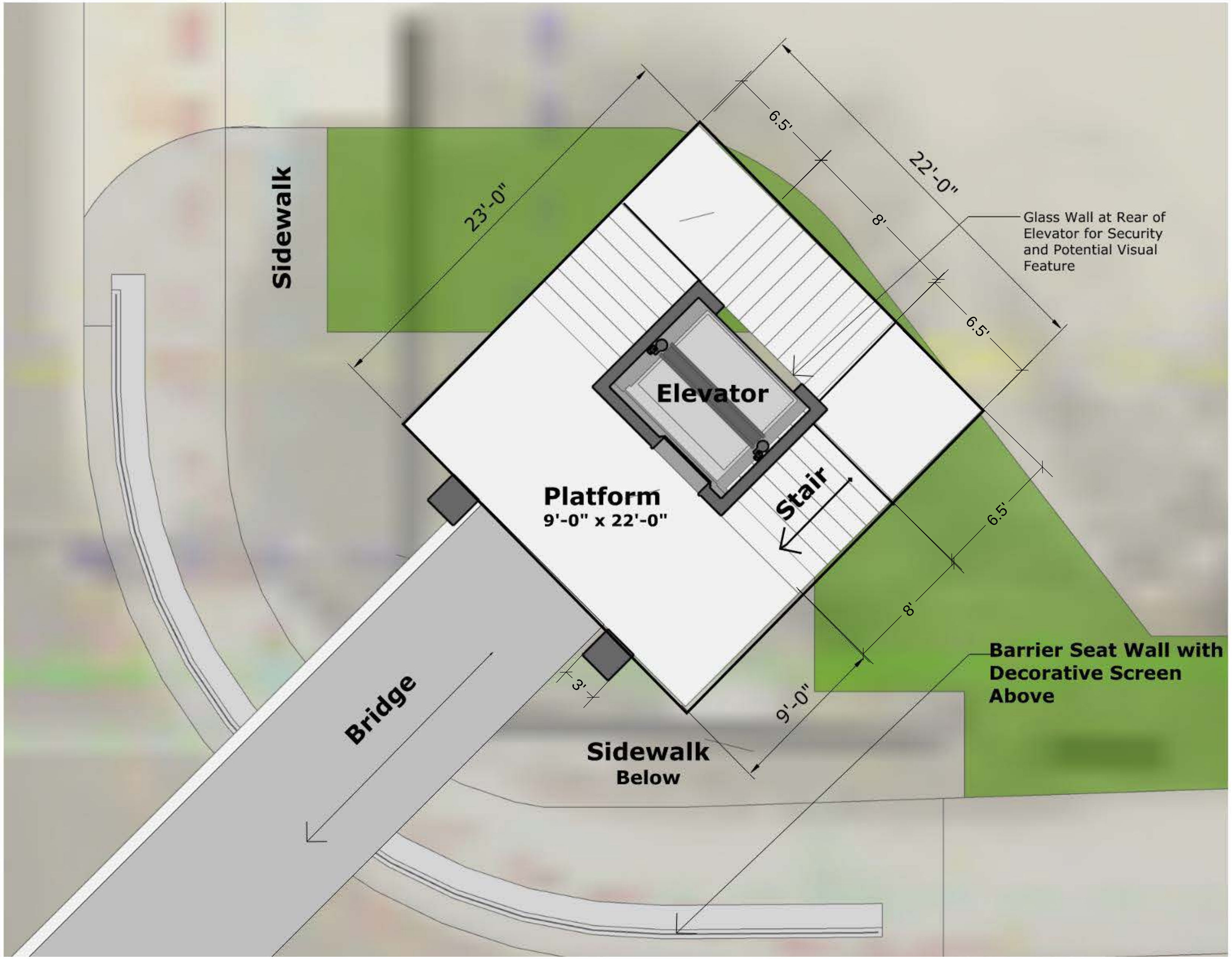
The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 35' x 40'

Crosswalks have been removed.

Summary

Ground Floor Platform	221sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	531sf
Bridge Width	10'-0"



Bridge Tower Option 3

Description

A very inviting stair traversing 24'-0" in height. Each stair run is 4' rise. The treads are 12" and the risers are 6" for easy climbing.

The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 22' x 24'

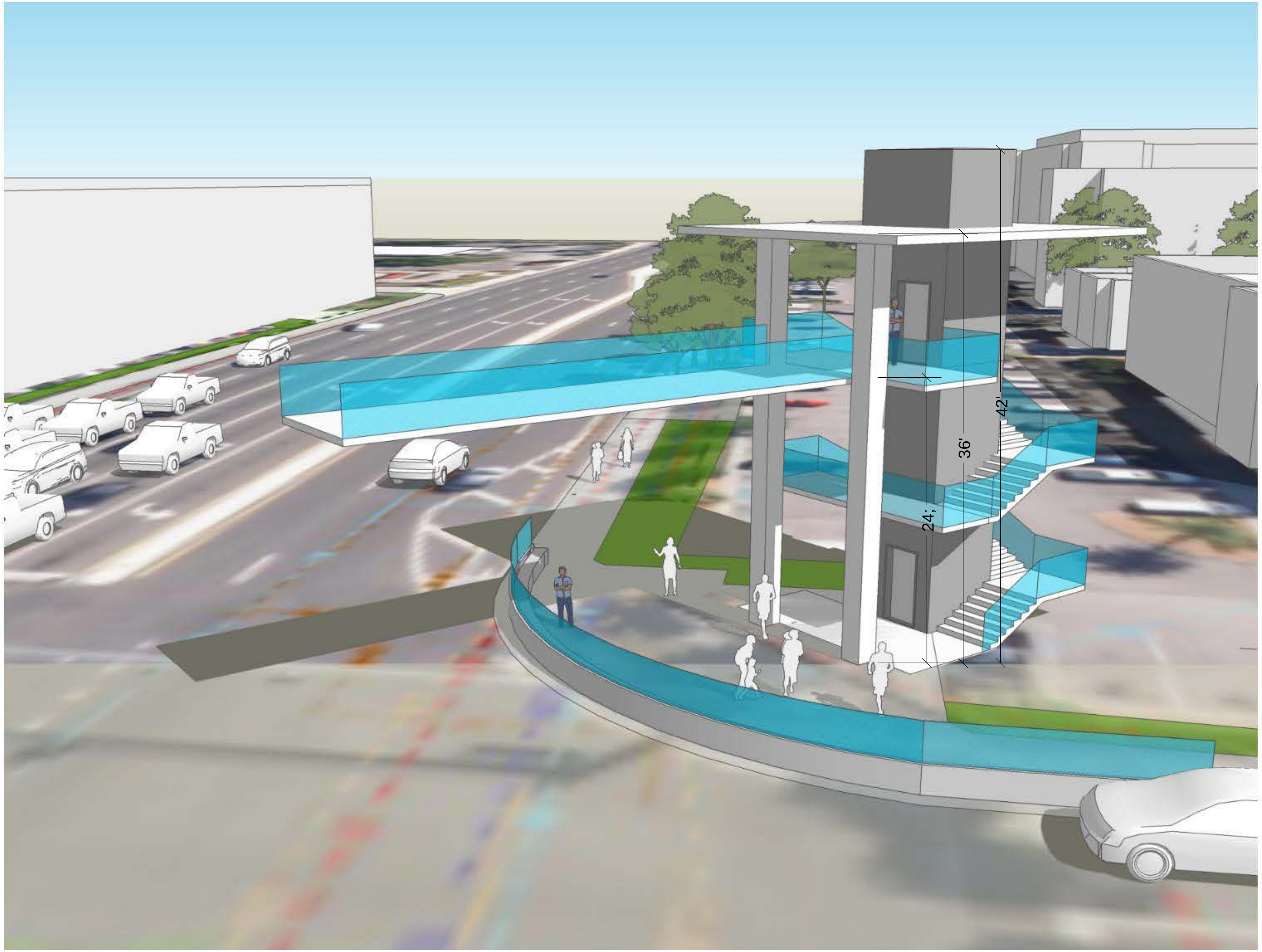
Glass Back Elevator provides additional Safety and creates a visual feature

Seat bench barrier and protective screen wall protects pedestrians and prevents on grade crossing.

Crosswalks have been removed.

Summary

Ground Floor Platform	192sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	506sf
Bridge Width	10'-0"



Bridge Tower Option 3

Description

A very inviting stair traversing 24'-0" in height. Each stair run is 4' rise. The treads are 12" and the risers are 6" for easy climbing.

The Elevator is 3500# capacity and is stretcher compliant

The overall site area required for this configuration is 22' x 24'

Glass Back Elevator provides additional Safety and creates a view of businesses at the associated corner.

Seat bench barrier and protective screen wall protects pedestrians and prevents on grade crossing.

Crosswalks have been removed.

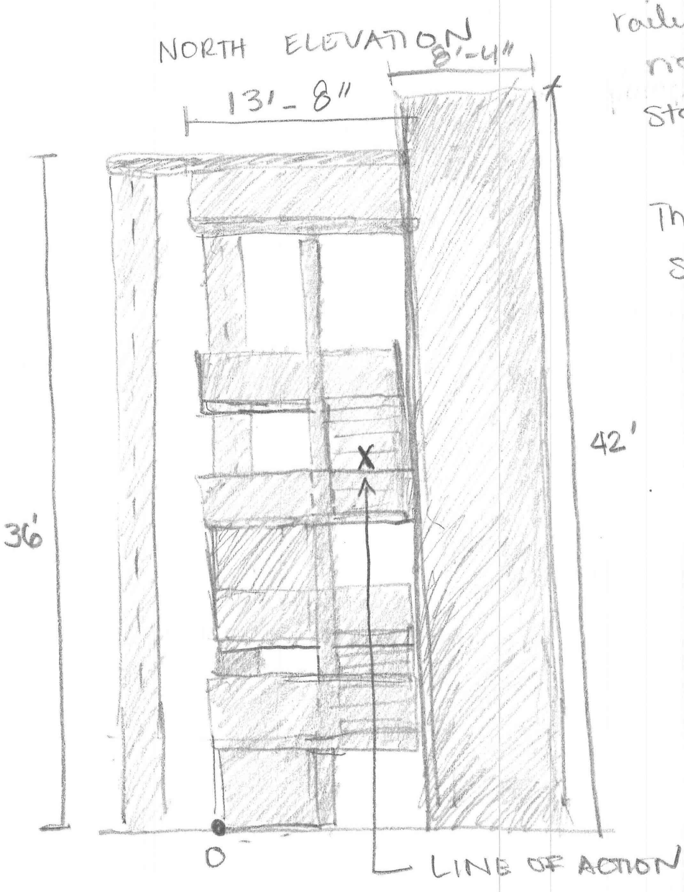
Summary

Ground Floor Platform	192sf
Stair Width	6' Wide
Elevator Shaft	10' x 8'-4"
Elevator Cab Size	6'-8" x 5'-5"
Total Ground Level Footprint	506sf
Bridge Width	10'-0"

APPENDIX B

Stair Tower Option # 1

Wind Areas for North & West Elevations



railings will be treated as solid walls, elevated risers as well, no opening accounted for in stair tower, projected area of columns

This will be an overestimate on wind force & somewhat inaccurate for location of horizontal vertical line of action but conservative

$A_1 = 492$ $A_2 = 350$

$(13.66 \text{ ft})(36 \text{ ft}) + (8.33 \text{ ft})(42 \text{ ft})$

$= 842 \text{ SF}$

From O, line of action

$$x = \frac{A_1(13.66 \text{ ft})/2 + A_2\left(13.66 \text{ ft} + \frac{8.33 \text{ ft}}{2}\right)}{A_1 + A_2}$$

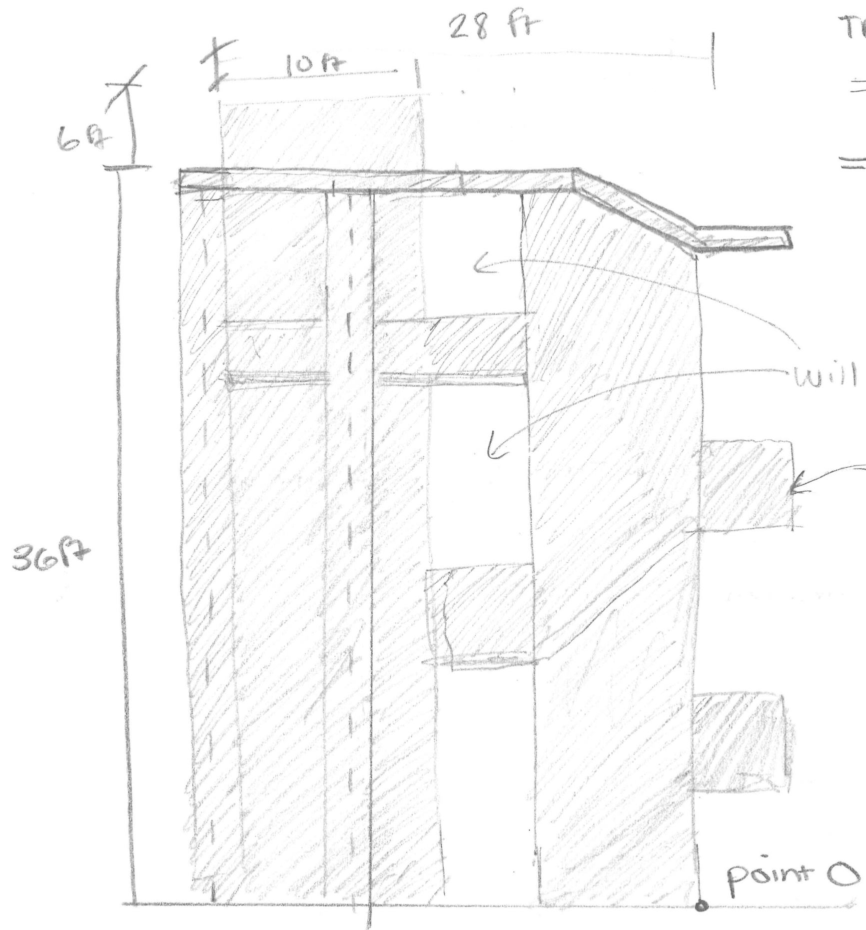
$x = 11.4 \text{ ft}$

NORTH ELEVATION CONT'D...

$$y = \frac{A_1 (36\text{ ft})/2 + A_2 (42\text{ ft})/2}{A_1 + A_2} = 19.2\text{ ft}$$

$$\boxed{\begin{aligned} A_T &= 842\text{ ft}^2 \\ \bar{x} &= 11.4\text{ ft from O} \\ \bar{y} &= 19.2\text{ ft from O} \end{aligned}}$$

WEST ELEVATION



will treat this as solid

ignoring these

TRIB AREA

$$= \overset{A_1}{(36\text{ ft})(28\text{ ft})} + \overset{A_2}{(10\text{ ft})(6\text{ ft})}$$

$$= \boxed{1068\text{ ft}^2 = A_T}$$

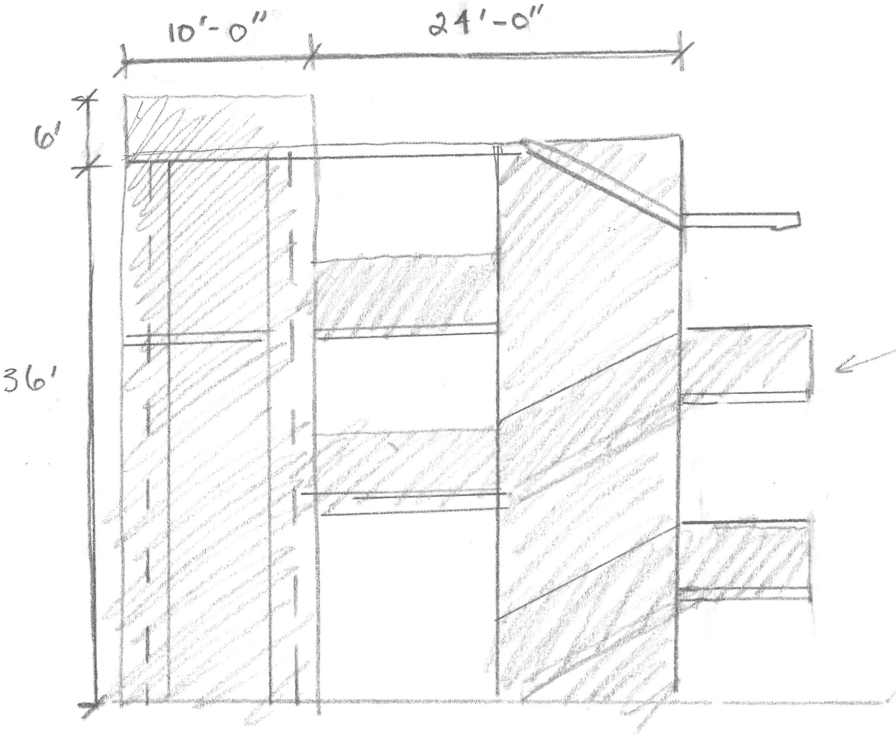
$$\bar{X} = \frac{A_1 (28\text{ ft})/2 + A_2 (28\text{ ft} - 5\text{ ft})}{A_1 + A_2}$$

$$\boxed{\bar{X} = 14.5\text{ ft}}$$

$$\bar{y} = \frac{A_1 \left(\frac{36\text{ ft}}{2}\right) + A_2 (39\text{ ft})}{A_1 + A_2}$$

$$\boxed{\bar{y} = 19.2\text{ ft from O}}$$

Stair Tower Option #2



Wind from EAST

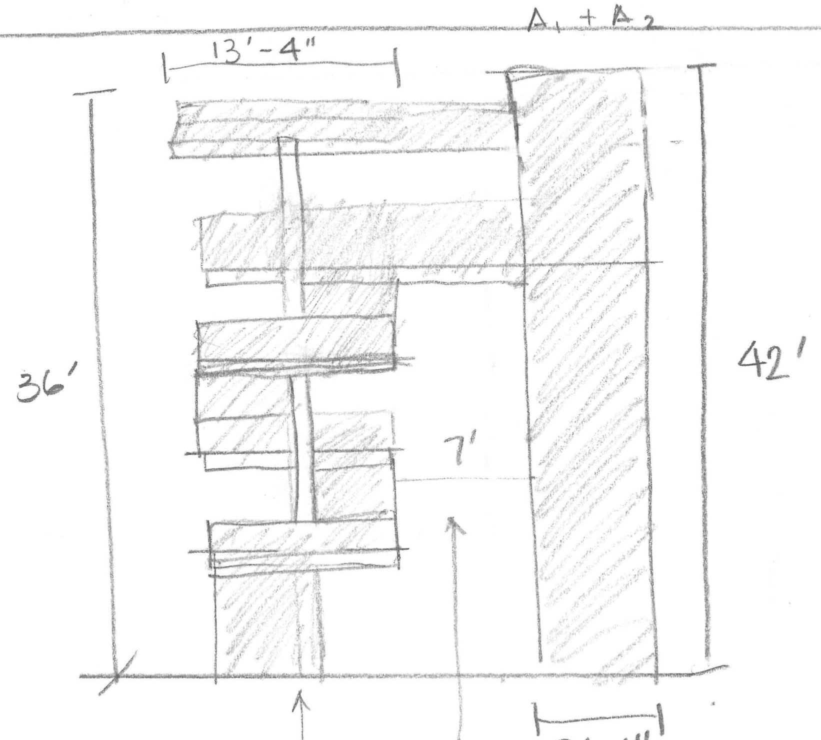
assume interior is solid & ignore balconies

$$A_1 = (34')(36') = 1224\ ft^2$$

$$A_2 = 6' \times 10' = 60\ ft^2$$

$$\boxed{A_T = A_1 + A_2 = 1284\ ft^2}$$

$$\bar{y} = \frac{(A_1)(36ft/2) + A_2(36\ ft + 6\ ft/2)}{A_1 + A_2} = \boxed{19.0\ ft}$$



treat this as solid

treat this space as empty

WIND FROM NORTH

$$A_1 = (36\ ft) \times (13'\text{-}4")$$

$$A_1 = 478\ ft^2$$

$$A_2 = (42\ ft)(8\ ft + 4/12)$$

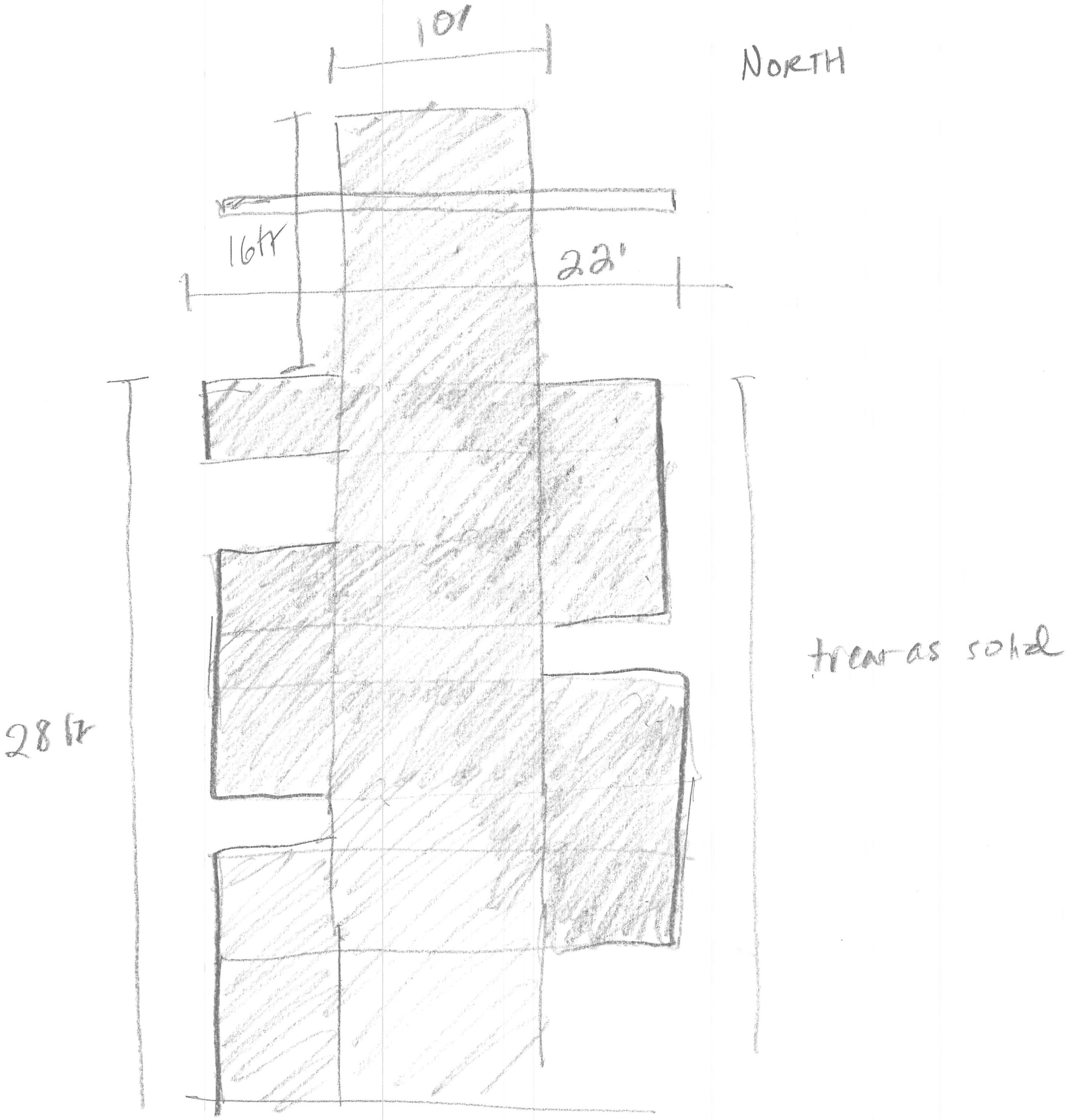
$$A_2 = 350\ ft^2$$

$$\boxed{A_T = 828\ ft^2}$$

$$\bar{y} = \frac{A_1(36/2) + A_2(42/2)}{A_T}$$

$$\boxed{\bar{y} = 19.3\ ft}$$

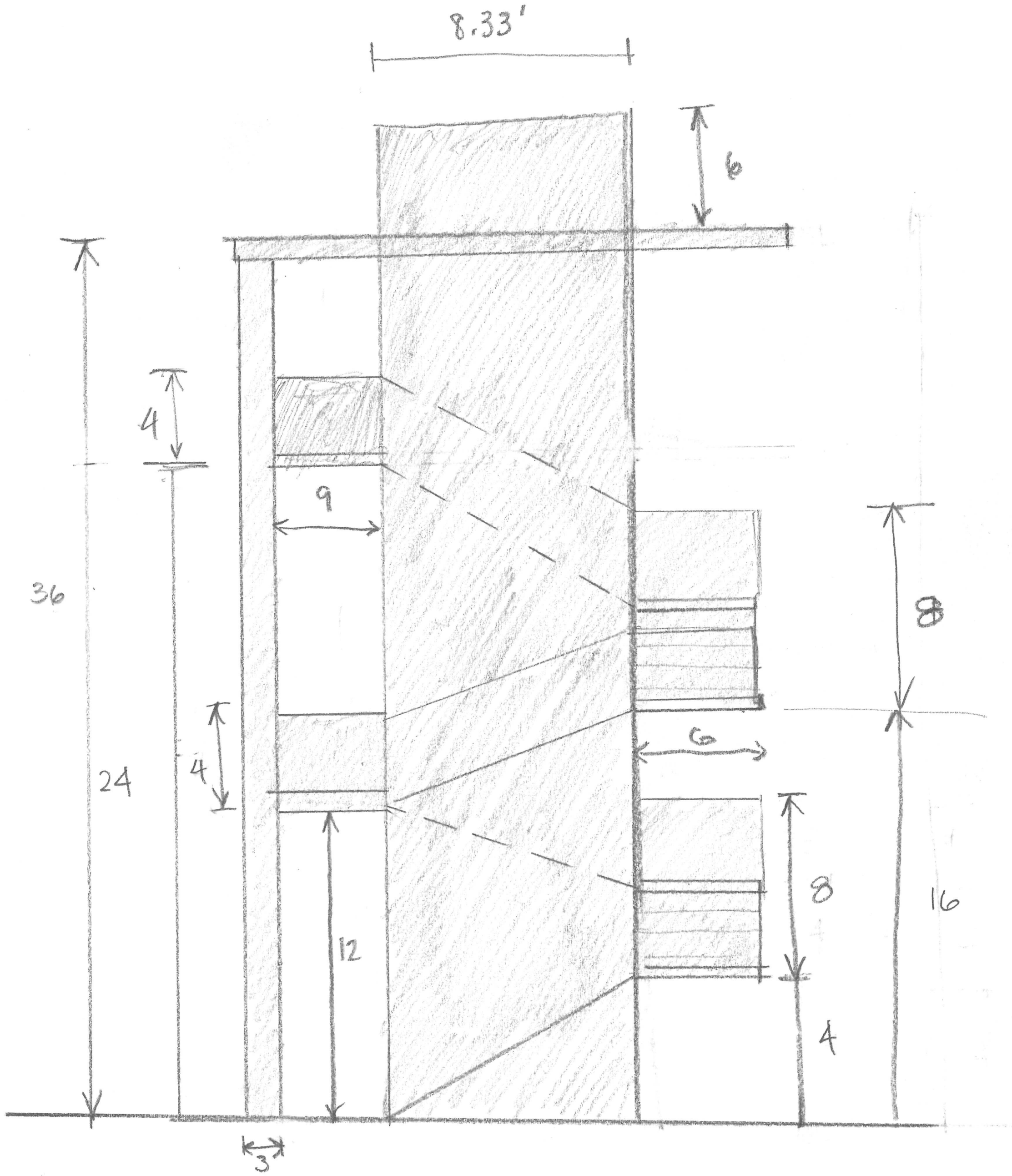
Stair Tower Option #3



$A_T = 616\ ft^2 + 160\ ft^2 \rightarrow 776\ ft^2$

$\bar{y} = 18.5\ ft$

Stair Tower Option #3



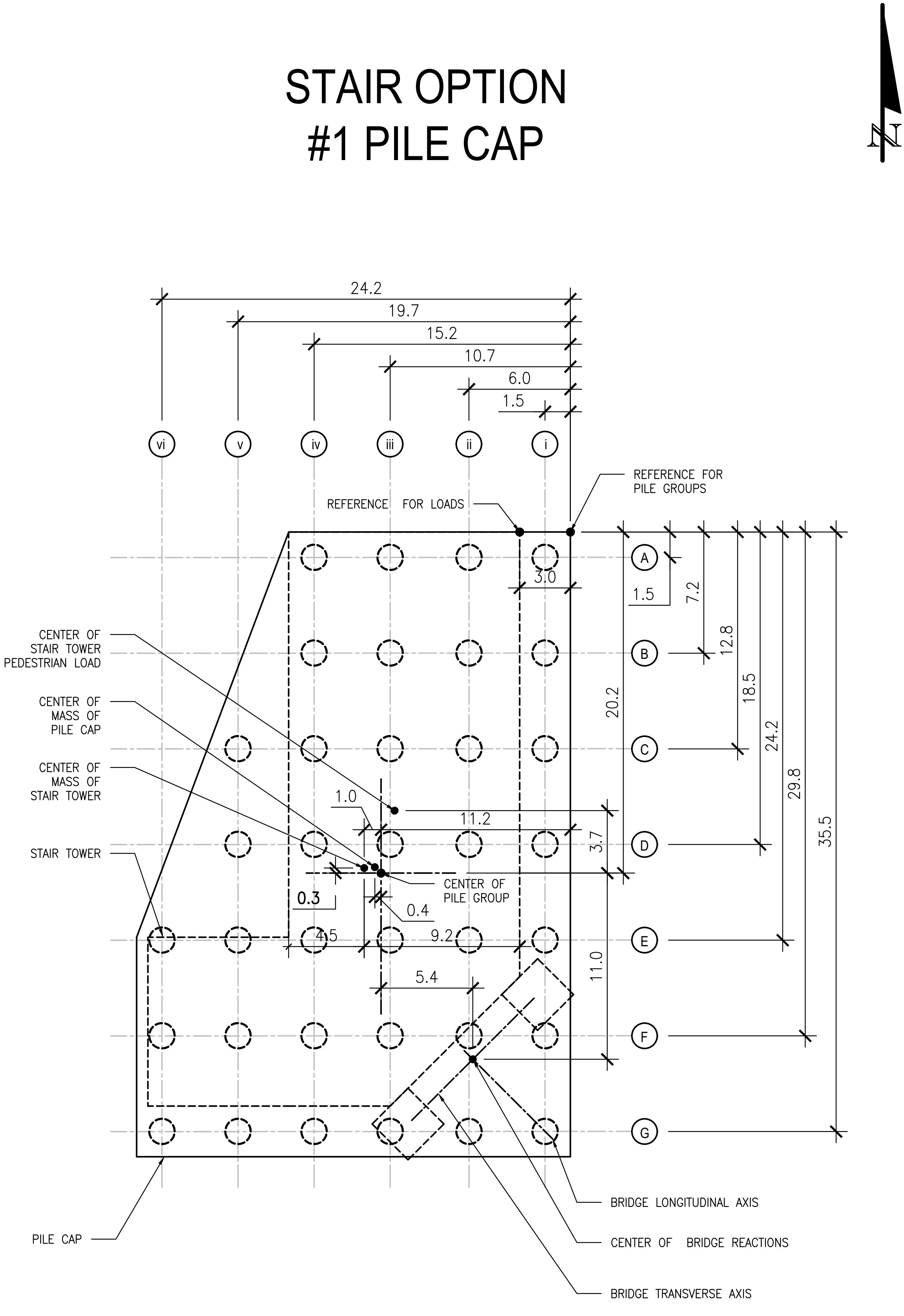
$A_T = (3)(36) + (42)(8.33) + 2\times(6)(8) + 2(4)(9) = 626\ ft^2$

$$\bar{y} = \frac{(108\ ft^2)(18\ ft) + (350\ ft^2)(21\ ft) + (48\ ft^2)(8\ ft) + (36\ ft^2)(14\ ft) + (48\ ft^2)(20\ ft) + (36\ ft^2)(26\ ft)}{626\ ft^2}$$

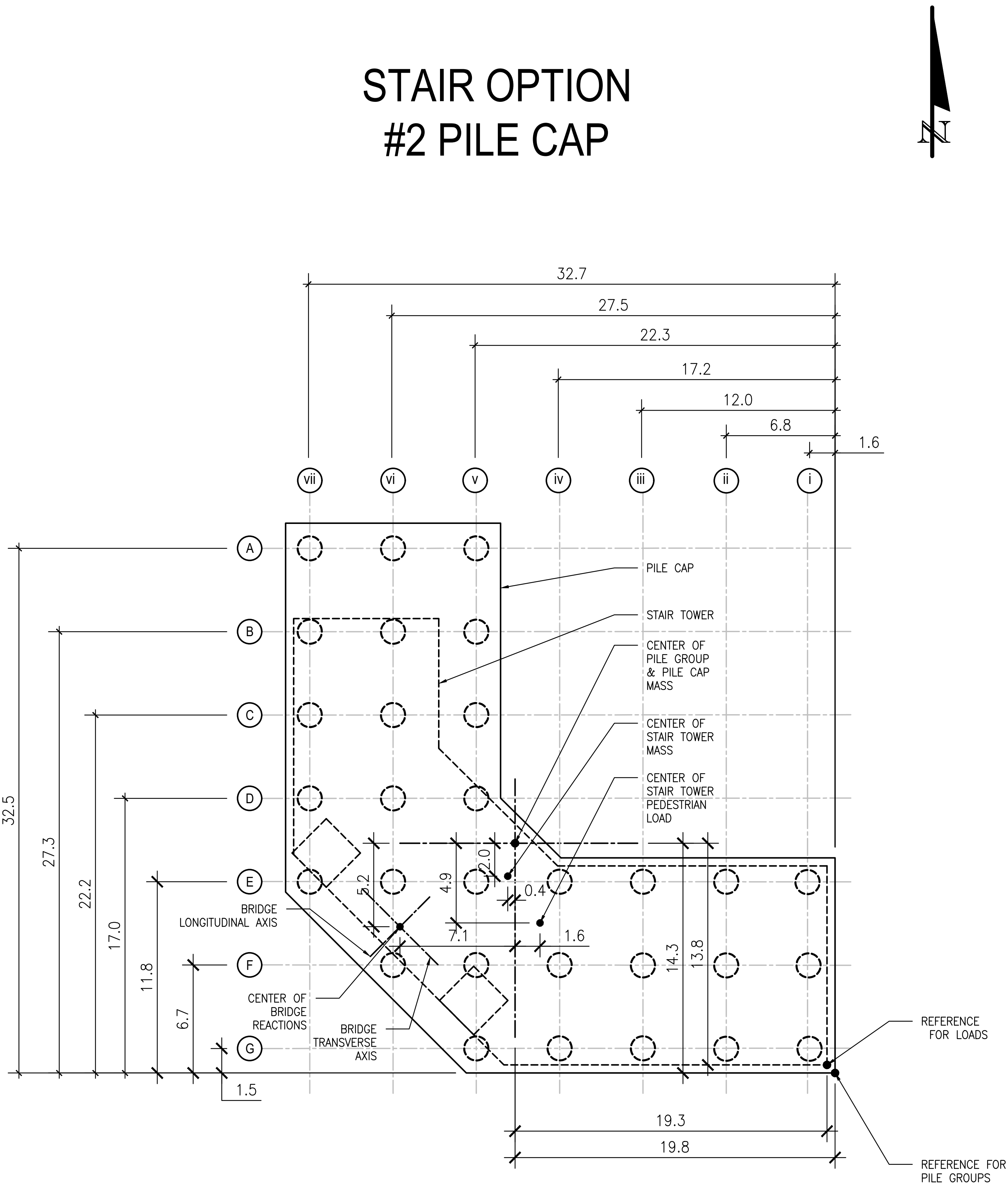
$\bar{y} = 19.3\ ft$

APPENDIX C

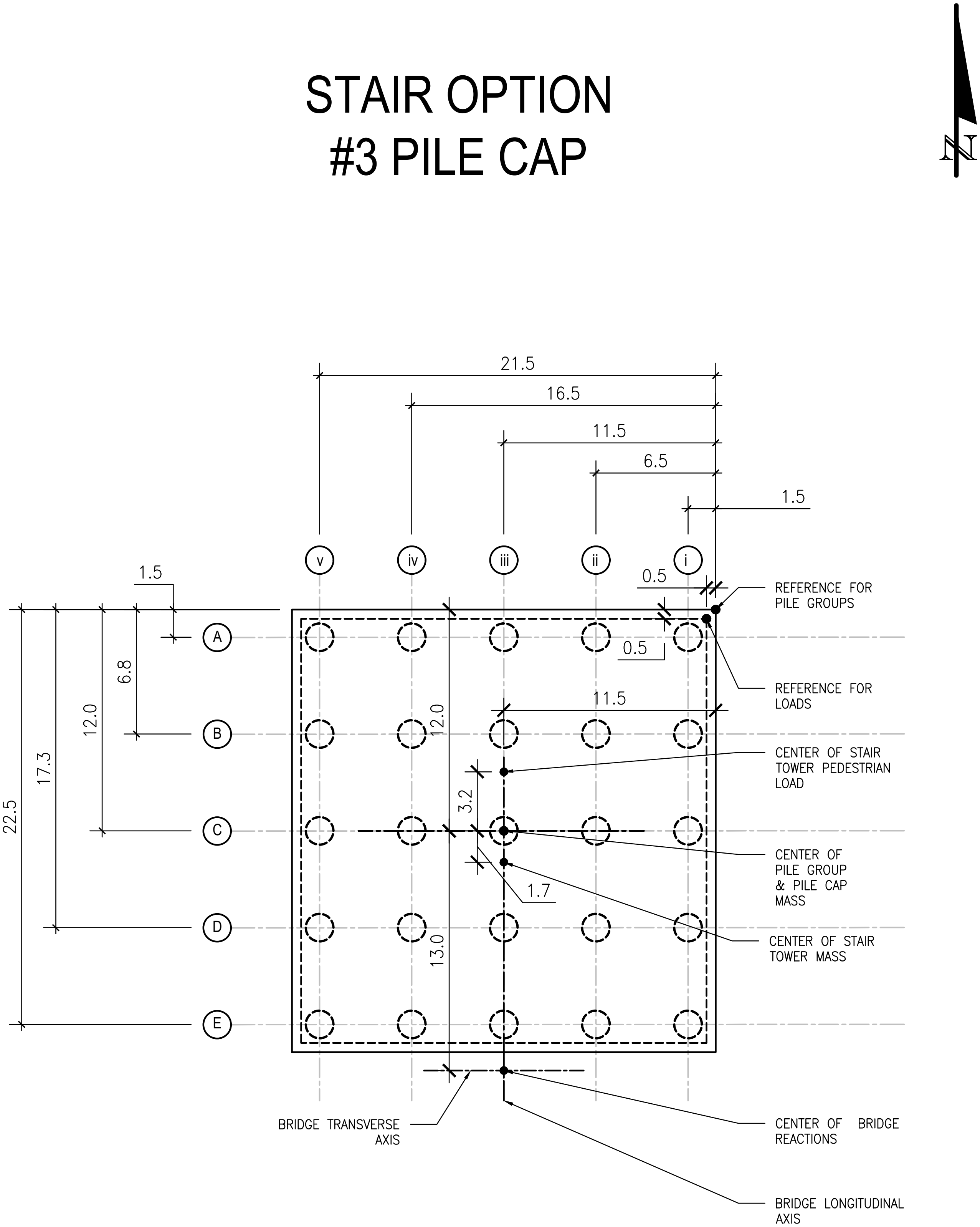
STAIR OPTION #1 PILE CAP



STAIR OPTION
#2 PILE CAP



STAIR OPTION
#3 PILE CAP



APPENDIX D

Stair Tower Option	1

DC Load Calculations

DC for Stair Tower

Stair Tower Component	Thickness	Width	Length	Quantity	Volume
	Dimensions of Component				
-	ft	ft	ft	#	ft^3
Riser Supports	0.50	6.00	13.42	6	241
Riser Treads	0.50	6.00	1.00	48	72
Landings	0.50	13.67	6.33	6	260
Stair Pier	2.00	12.00	38.00	1	912
Platform	0.50	13.33	12.00	2	160
Columns	3.00	3.00	36.00	2	648
*Elevator Shaft	10.00	8.33	42.00	1	728

*Assumed elevator shaft does not go below grade

	Total Volume (ft^3)	3021
*Concrete density	Unit Weight (pcf)	150
	Weight (kip)	453

Architectural Features

Architectural Component	Weight	Unit	Quantity	Unit	Weight kip
Glass Visual Barriers	40	plf	163	LF	6.5

Pedestrian Bridge

Area of Bridge in Plan (sf): 5352 *C Bridge Alternative Controls

Weight per Segment (12 ft wide x 21 ft tall x 42 ft long)

Truss Member	Assumed Member Size	Unit Weight	Length	Quantity	Resultant
-	Square HSS Members	plf	ft	#	lb
Top and Bottom Chords	16x16	103	42	4	17304
Diagonal Struts	12x12	76	30	4	9120
Vertical Struts	12x12	76	18	6	8208
Stringers	12x12	76	9	3	2052
Composite Metal Deck	6"	768	42	1	32256
handrails		5	42	2	420

	TOTAL (lb)	69,360
* psf per segment	TOTAL (psf)	138
	Reaction per Tower (kip)	184

Location of Force Resultant from Reference

DC for Stair Tower

x	y	Vx	Vy
Distance to Center of Stair Tower Component		Product of Distance and Volume	
ft	ft	ft^4	ft^4
6.75	12.25	1630	2958
6.75	12.25	486	882
6.83	12.25	1774	3181
6.75	12.25	6156	11172
6.67	29.25	1067	4680
4	33	2592	21384
17.8	29	12983	21112

TOTAL (ft^3) $\sum Vx =$ 26,688 $\sum Vy =$ 65,369

Center of mass (ft) $\bar{x} =$ 8.8 $\bar{y} =$ 21.6

DC for Architectural Features

See above

Pedestrian Bridge refer to Appendix C

DC Load Calculations Continued...

DC for Pile Cap

Pile Cap Shape	Pile Cap Area	Pile Cap Thickness	Density	Weight
-	ft^2	ft	kcf	kip
Custom	841	4	0.15	504.6

Location of Force Resultant from Reference

DC for Pile Cap

x	y
ft	ft
-8.57	-19.83

Pedestrian Live Load Quantities

Stair Tower (PL_s)

Component	Tributary Area Dimensions: Width of Area	Tributary Area Dimensions: Length of Area	Quantity of Surface Areas	Resultant
-	ft	ft	#	ft^2
Riser Treads	6.00	1.00	48	288.0
Landings	13.67	6.33	4	346.2
Platform	13.33	12.00	1	160.0

TOTAL (ft^2) 794

PL_s (psf) 100

PL_s (kip) 79

Location of Force Resultant from Reference

Resultant Location for PL_s Stair Load

Distance to Center of Stair Tower Component: x	y	Product of Distance and Area: Ax	Ay
ft	ft	ft^3	ft^3
6.75	12.25	1944	3528
6.83	12.25	2366	4241
6.67	29.25	1067	4680

TOTAL $\sum Ax =$ 5,377 $\sum Ay =$ 12,449

PL_s Line of Action (ft) $\bar{x} =$ 6.8 $\bar{y} =$ 15.7

Pedestrian Bridge (PL_b)

Area of Bridge in Plan (sf) 5352

Tributary Area per Stair Tower (sf) 1338

Pedestrian Live Load (PL_b) (psf) 90

Bridge Reaction (PL_b) (kip) 120

Nominal Load Results

Component	Load Type	Magnitude	Unit
Stair Tower	DC	460	kip
Pedestrian Bridge	DC	184	kip
Elevator Machinery	DC	4	kip
Pile Cap	DC	505	kip
Stair Tower	PL_s	79	kip
Pedestrian Bridge	PL_b	120	kip

Pile Group Centroid

COLUMN	n	x_i	nx_i	$\bar{x}_i$	ROW	n	y_i	ny_i	$\bar{y}_i$
-	-	ft	ft	ft	-	-	ft	ft	ft
i	7	1.5	10.5	9.7	A	4	1.5	6	18.7
ii	7	6	42	5.2	B	4	7.2	28.8	13.0
iii	7	10.7	74.9	0.5	C	5	12.8	64	7.4
iv	7	15.2	106.4	-4.0	D	5	18.5	92.5	1.7
v	5	19.7	98.5	-8.5	E	6	24.2	145.2	-4.0
vi	3	24.2	72.6	-13.0	F	6	29.8	178.8	-9.6
					G	6	35.5	213	-15.3
n	36		$\sum nx_i =$ 405		n	36		$\sum ny_i =$ 728.3	
			$\bar{x} =$ 11					$\bar{y} =$ 20.2	
			$\sum n\bar{x}_i^2 =$ 6016					$\sum n\bar{y}_i^2 =$ 13898	

Summary of Nominal Loads and Eccentricities from Pile Group Centroid

Nominal Load	Load Type	Magnitude	Unit	From Pile Group Centroid e_x	e_y	e_z	Angle from X axis
-	-	#	-	ft	ft	ft	°
DC Stair Tower	Vertical	460	kip	-1.00	0.30	0	-
DC Pedestrian Bridge	Vertical	184	kip	5.40	-11.00	0	-
DC Pile Cap	Vertical	505	kip	-0.40	0.30	0	-
PL_s Stair Tower	Vertical	79	kip	-3.10	20.20	0	-
PL_b Pedestrian Bridge	Vertical	120	kip	5.40	-11.00	0	-
WS Stair Tower (North)	Lateral	Wind Load Tables	kip	0	0	19.20	270
WS Stair Tower (West)	Lateral	Wind Load Tables	kip	0	0	19.20	0
WS Pedestrian Bridge	Lateral	Wind Load Tables	kip	0	0	34.50	varies

Wind Load (WS) directly applied to Substructure (Stair Tower) - Nominal (kip)

Load Combination	WS Stair North	WS Stair West	Components Stair North Fx	Components Stair North Fy	Components Stair West Fx	Components Stair West Fy
Strength I	0	0	0	0	0	0
Strength III	71.6	90.8	0	-71.6	90.8	0
Strength V	26.9	27.8	0	-26.9	27.8	0

Skew Coefficient From AASHTO T3.8.1.2.3a-1

Skew Angle (°)	Transverse	Longitudinal
0	1	0
15	0.9333	0.16
30	0.867	0.373
45	0.627	0.547
60	0.32	0.667

Wind Load (WS) from Superstructure applied to Subtructure - Nominal

Transformation of Force Components to Pile Group Axes per Wind Direction

Load Combination	Force Transverse to Pedestrian Bridge Longitudinal Axis (kip)	Skew Angle (°)	Skew Coefficients (AASHTO T3.8.1.2.3a-1) Transverse	Skew Coefficients Longitudinal	Force Components along $F_{Transverse}$	$F_{Longitudinal}$	Wind From North F_X	Wind From North F_Y	Wind From West F_X	Wind From West F_Y
			-	-	kip	kip	kip	kip	kip	kip
Strength I	0	0	0	0	0	0	0.00	0.00	0.00	0.00
Strength III	90	45	0.627	0.547	56.4	49.2	5.09	-74.71	74.71	5.09
Strength V	23.8	45	0.627	0.547	14.9	13.0	1.35	-19.76	19.76	1.35

Load Combination	AASHTO LOAD FACTORS					
	η_D	η_R	η_I	γ_{DC}	γ_{PL}	γ_{WS}
Strength I	1	1.1	1	1.25	1.75	0
Strength III	1	1	1	1.25	0	1
Strength V	1	1	1	1.25	1.35	1

Strength I Combination

Load	Axial	Mx	My
-	k	k-ft	k-ft
DC Stair Tower	632	-632.0	190
DC Pedestrian Bridge	253	1366.2	-2783.0
DC Pile Cap	694	-277.6	208.2
PL_s Stair Tower	153	-474.3	3090.6
PL_b Pedestrian Bridge	232	1252.8	-2552.0
TOTAL	1964	1235.1	-1846.6

Strength III Combination - Wind From North

Load	Axial	Mx	My
-	k	k-ft	k-ft
DC Stair Tower	575	-575.0	172.5
DC Pedestrian Bridge	230	1242.0	-2530.0
DC Pile Cap	631	-252.4	189.3
PL_s Stair Tower	0	0	0
PL_b Pedestrian Bridge	0	0	0
WS Stair Tower	0	0.0	-1374.1
WS Pedestrian Bridge	0	175.6	-2577.6
TOTAL	1436	590.2	-6119.9

Strength III Combination - Wind From West

Load	Axial	Mx	My
-	k	k-ft	k-ft
DC Stair Tower	575	-575.0	173
DC Pedestrian Bridge	230	1242.0	-2530.0
DC Pile Cap	631	-252.4	189.3
PL_s Stair Tower	0	0	0
PL_b Pedestrian Bridge	0	0	0
WS Stair Tower	0	1743.0	0
WS Pedestrian Bridge	0	2577.6	175.6
TOTAL	1436	4735.2	-1992.6

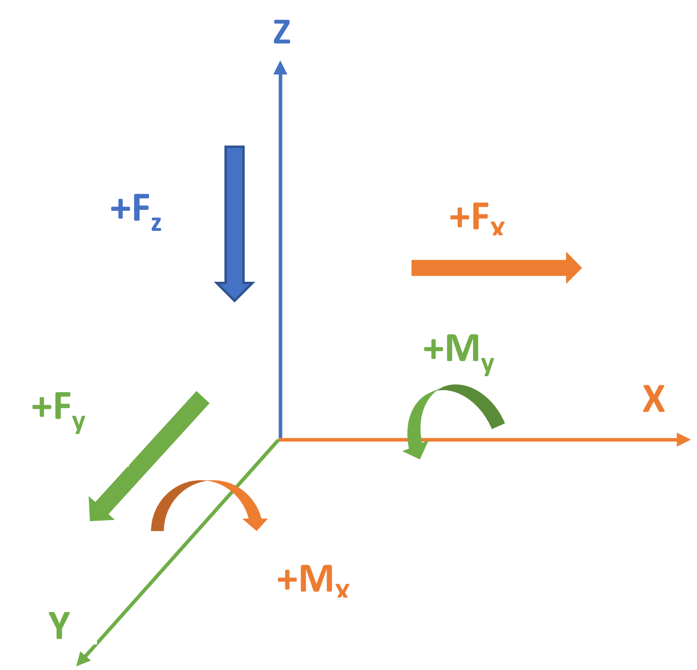
<u>Orientation Notes</u>

$+e_x$ for offset indicates distance to the East of the pile group center

$+e_y$ for offset indicates distance to the North of the pile group center

$+e_z$ for offset indicates distance above the finished grade

For force orientations, see below



Strength V Combination - Wind From North			
Load	Axial	Mx	My
-	k	k-ft	k-ft
DC Stair Tower	575	-575.0	173
DC Pedestrian Bridge	230	1242.0	-2530.0
DC Pile Cap	631	-252.4	189.3
PL_s Stair Tower	107	-331.7	2161.4
PL_b Pedestrian Bridge	163	880.2	-1793.0
WS Stair Tower	0	0	-517.3
WS Pedestrian Bridge	0	46.4	-681.6
TOTAL	1706	1009.5	-2998.8

Strength V Combination - Wind From West			
Load	Axial	Mx	My
-	k	k-ft	k-ft
DC Stair Tower	575	-575.00	172.50
DC Pedestrian Bridge	230	1242.00	-2530.00
DC Pile Cap	631	-252.40	189.30
PL_s Stair Tower	107	-332	2161
PL_b Pedestrian Bridge	163	880	-1793
WS Stair Tower	0	533.15	0.00
WS Pedestrian Bridge	0	681.63	46.45
TOTAL	1706	2177.9	-1753.4

	COLUMN	ROW
Pile	i	G
Coordinate from Center	$\bar{x}_i =$ 9.7	$\bar{y}_i =$ -15.3

Results				
Load Combination	Axial	Mx	My	Pile Load*
-	k	k-ft	k-ft	k
Strength I	1964	1235.1	-1846.6	58.6
Strength III - North	1436	590.2	-6119.9	47.6
Strength III - West	1436	4735.2	-1992.6	49.7
Strength V - North	1706	1009.5	-2998.8	52.3
Strength V - West	1706	2177.9	-1753.4	52.8

*Assumed Number of Piles 36

Stair Tower Option	2

DC Load Calculations

DC for Stair Tower

Stair Tower Component	Thickness (Dimensions of Component)	Width	Length	Quantity	Volume
-	ft	ft	ft	#	ft^3
Riser Supports	0.50	6.00	12.65	6	228
Riser Treads	0.50	6.00	1.00	48	72
Landings	0.50	13.33	6.00	4	160
Stair Pier	2.00	12.00	38.00	1	912
Platform	0.50	20.00	17.00	2	340
Columns	2.00	2.00	38.00	2	304
*Elevator Shaft	10.00	8.33	38.00	1	659

*Assumed elevator shaft does not go below grade

Total Volume (ft^3) 2674

*Concrete density Unit Weight (pcf) 150

Weight (kip) 401

Architectural Features

Architectural Component	Weight	Unit	Quantity	Unit	Weight kip
Glass Visual Barriers	40	plf	167	LF	6.7

Pedestrian Bridge

Area of Bridge in Plan (sf) 5352 *C Bridge Alternative Controls

Weight per Segment (12 ft wide x 21 ft tall x 42 ft long)

Truss Member	Assumed Member Size	Unit Weight	Length	Quantity	Resultant
-	Square HSS Members	plf	ft	#	lb
Top and Bottom Chords	16x16	103	42	4	17304
Diagonal Struts	12x12	76	30	4	9120
Vertical Struts	12x12	76	18	6	8208
Stringers	12x12	76	9	3	2052
Composite Metal Deck	6"	768	42	1	32256
handrails		5	42	2	420

TOTAL (lb) 69,360

* psf per segment TOTAL (psf) 138

Reaction per Tower (kip) 184

Location of Force Resultant from Reference

DC for Stair Tower

Component	x (Distance to Center of Stair Tower)	y	Vx (Product of Distance and Volume)	Vy
	ft	ft	ft^4	ft^4
Riser Supports	12.00	6.67	2732	1518
Riser Treads	12.00	6.67	864	480
Landings	10.50	6.63	1680	1060
Stair Pier	12.00	6.17	10944	5624
Platform	26.50	10.00	9010	3400
Columns	28.50	9.67	8664	2939
*Elevator Shaft	29.00	24.50	19101	16137

TOTAL (ft^3) $\sum Vx =$ 52,995 $\sum Vy =$ 31,158

Center of mass (ft) $\bar{x} =$ 19.8 $\bar{y} =$ 11.7

DC for Architectural Features

See above

Pedestrian Bridge refer to Appendix C

DC Load Calculations Continued...

DC for Pile Cap

Pile Cap Shape	Pile Cap Area	Pile Cap Thickness	Density	Weight
-	ft^2	ft	kcf	kip
Custom	676	4	0.15	405.6

Location of Force Resultant from Reference

DC for Pile Cap

x	y
ft	ft
-8.57	-19.83

Pedestrian Live Load Quantities

Stair Tower (PL_s)

Component	Tributary Area Dimensions: Width of Area	Tributary Area Dimensions: Length of Area	Quantity of Surface Areas	Resultant
-	ft	ft	#	ft^2
Riser Treads	6.00	1.00	48	288.0
Landings	13.67	6.33	3	259.7
Platform	20.00	17.00	1	340.0

TOTAL (ft^2) 888

PL_s (psf) 100

PL_s (kip) 89

Location of Force Resultant from Reference

Resultant Location for PL_s Stair Load

Distance to Center of Stair Tower Component: x	y	Product of Distance and Area: Ax	Ay
ft	ft	ft^3	ft^3
12.00	6.67	3456	1920
10.50	6.63	2727	1720
26.50	10.00	9010	3400

TOTAL $\sum Ax =$ 15,193 $\sum Ay =$ 7,040

PL_s Line of Action (ft) $\bar{x} =$ 17.1 $\bar{y} =$ 7.9

Pedestrian Bridge (PL_b)

Area of Bridge in Plan (sf)	5352
Tributary Area per Stair Tower (sf)	1338
Pedestrian Live Load (PL_b) (psf)	90
Bridge Reaction (PL_b) (kip)	120

Nominal Load Results

Component	Load Type	Magnitude	Unit
Stair Tower	DC	408	kip
Pedestrian Bridge	DC	184	kip
Elevator Machinery	DC	4	kip
Pile Cap	DC	406	kip
Stair Tower	PL_s	89	kip
Pedestrian Bridge	PL_b	120	kip

Pile Group Centroid

COLUMN	n	x_i	nx_i	$\bar{x}_i$	ROW	n	y_i	ny_i	$\bar{y}_i$
-	-	ft	ft	ft	-	-	ft	ft	ft
i	3	1.7	5	18.2	A	5	32.5	162.5	12.7
ii	3	6.8	20.25	13.1	B	6	27.3	164.0	7.6
ii	3	11.9	35.75	7.9	C	7	22.2	155.2	2.4
iv	3	17.1	51.25	2.8	D	3	17.0	51.0	-2.8
v	7	22.3	155.75	-2.4	E	3	11.8	35.5	-7.9
vi	6	27.4	164.5	-7.6	F	3	6.7	20.0	-13.1
vii	5	32.6	162.92	-12.7	G	3	1.5	4.5	-18.3
n	30		$\sum nx_i =$ 595		n	30		$\sum ny_i =$ 592.7	
			$\bar{x} =$ 19.8					$\bar{y} =$ 19.8	
			$\sum n\bar{x}_i^2 =$ 9573.38					$\sum n\bar{y}_i^2 =$ 9490.9	

Summary of Nominal Loads and Eccentricities from Pile Group Centroid

Nominal Load	Load Type	Magnitude	Unit	e_x (From Pile Group Centroid)	e_y	e_z	Angle from X axis
-	-	#	-	ft	ft	ft	°
DC Stair Tower	Vertical	408	kip	-0.45	-2	0	-
DC Pedestrian Bridge	Vertical	184	kip	-7.17	-8.83	0	-
DC Pile Cap	Vertical	406	kip	0.00	0.00	0	-
PL_s Stair Tower	Vertical	89	kip	1.50	-5.17	0	-
PL_b Pedestrian Bridge	Vertical	120	kip	-7.17	-8.83	0	-
WS Stair Tower (North)	Lateral	Wind Load Tables	kip	0	0	19.00	270
WS Stair Tower (West)	Lateral	Wind Load Tables	kip	0	0	19.30	180
WS Pedestrian Bridge	Lateral	Wind Load Tables	kip	0	0	34.50	varies

Wind Load (WS) directly applied to Substructure (Stair Tower) - Nominal (kip)

Load Combination	WS Stair North	WS Stair West	Components Stair North Fx	Components Stair North Fy	Components Stair West Fx	Components Stair West Fy
Strength I	0	0	0	0	0	0
Strength III	109.1	70.4	0	-109.1	-70.4	0
Strength V	33.4	21.5	0	-33.4	-21.5	0

Skew Coefficient From AASHTO T3.8.1.2.3a-1

Skew Angle (°)	Transverse	Longitudinal
0	1	0
15	0.9333	0.16
30	0.867	0.373
45	0.627	0.547
60	0.32	0.667

Wind Load (WS) from Superstructure applied to Subtructure - Nominal — **Transformation of Force Components to Pile Group Axes per Wind Direction**

Load Combination	Force Transverse to Pedestrian Bridge Longitudinal Axis (kip)	Skew Angle (°)	Skew Coefficients (AASHTO T3.8.1.2.3a-1) Transverse	Skew Coefficients Longitudinal	Force Components along $F_{Transverse}$	Force Components along $F_{Longitudinal}$	Wind From North F_X	Wind From North F_Y	Wind From West F_X	Wind From West F_Y
			-	-	kip	kip	kip	kip	kip	kip
Strength I	0	0	0	0	0	0	0.00	0.00	0.00	0.00
Strength III	90	45	0.627	0.547	56.4	49.2	5.09	-74.71	-74.71	-5.09
Strength V	23.8	45	0.627	0.547	14.9	13.0	1.35	-19.76	-19.76	-1.35

Load Combination	AASHTO LOAD FACTORS					
	η_D	η_R	η_I	γ_{DC}	γ_{PL}	γ_{WS}
Strength I	1	1.1	1	1.25	1.75	0
Strength III	1	1	1	1.25	0	1
Strength V	1	1	1	1.25	1.35	1

Strength I Combination

Load	Axial	Mx	My
-	k	k-ft	k-ft
DC Stair Tower	561	-251.3	-1122
DC Pedestrian Bridge	253	-1813.2	-2234.8
DC Pile Cap	558	0.0	0.0
PL_s Stair Tower	171	256.5	-883.5
PL_b Pedestrian Bridge	232	-1662.7	-2049.3
TOTAL	1775	-3470.6	-6289.7

Strength III Combination - Wind From North

Load	Axial	Mx	My
-	k	k-ft	k-ft
DC Stair Tower	510	-228.4	-1020.0
DC Pedestrian Bridge	230	-1648.3	-2031.7
DC Pile Cap	507	0	0
PL_s Stair Tower	0	0	0
PL_b Pedestrian Bridge	0	0	0
WS Stair Tower	0	0.0	-2073.7
WS Pedestrian Bridge	0	175.6	-2577.6
TOTAL	1247	-1701.1	-7702.9

Strength III Combination - Wind From West

Load	Axial	Mx	My
-	k	k-ft	k-ft
DC Stair Tower	510	-228.4	-1020
DC Pedestrian Bridge	230	-1648.3	-2031.7
DC Pile Cap	507	0	0
PL_s Stair Tower	0	0	0
PL_b Pedestrian Bridge	0	0	0
WS Stair Tower	0	-1358.3	0
WS Pedestrian Bridge	0	-2577.6	-175.6
TOTAL	1247	-5812.7	-3227.3

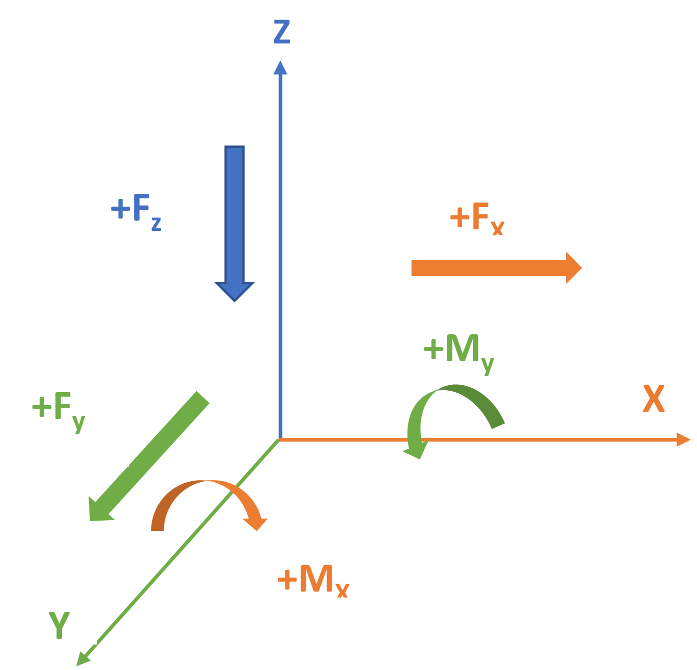
Orientation Notes

$+e_x$ for offset indicates distance to the East of the pile group center

$+e_y$ for offset indicates distance to the North of the pile group center

$+e_z$ for offset indicates distance above the finished grade

For force orientations, see below



Strength V Combination - Wind From North			
Load	Axial	Mx	My
-	k	k-ft	k-ft
DC Stair Tower	510	-228.4	-1020
DC Pedestrian Bridge	230	-1648.3	-2031.7
DC Pile Cap	507	0	0
PL_s Stair Tower	120	180.0	-620.0
PL_b Pedestrian Bridge	163	-1168.2	-1439.8
WS Stair Tower	0	0	-634.3
WS Pedestrian Bridge	0	46.4	-681.6
TOTAL	1530	-2818.5	-6427.4

Strength V Combination - Wind From West			
Load	Axial	Mx	My
-	k	k-ft	k-ft
DC Stair Tower	510	-228.44	-1020.00
DC Pedestrian Bridge	230	-1648.33	-2031.67
DC Pile Cap	507	0	0
PL_s Stair Tower	120	180	-620
PL_b Pedestrian Bridge	163	-1168	-1440
WS Stair Tower	0	-415.49	0.00
WS Pedestrian Bridge	0	-681.63	-46.45
TOTAL	1530	-3962.1	-5157.9

	COLUMN	ROW
Pile	v	G
Coordinate from Center	$\bar{x}_i =$ -2.4	$\bar{y}_i =$ -18.3

Results				
Load Combination	Axial	Mx	My	Pile Load*
-	k	k-ft	k-ft	k
Strength I	1775	-3470.6	-6289.7	72.1
Strength III - North	1247	-1701.1	-7702.9	56.8
Strength III - West	1247	-5812.7	-3227.3	49.2
Strength V - North	1530	-2818.5	-6427.4	64.1
Strength V - West	1530	-3962.1	-5157.9	61.9

*Assumed Number of Piles 30

Stair Tower Option	3

DC Load Calculations

DC for Stair Tower

Stair Tower Component	Thickness (Dimensions of Component)	Width	Length	Quantity	Volume
-	ft	ft	ft	#	ft^3
Riser Supports (N)	0.50	6.00	8.94	3	80
Small Landings	0.50	6.50	6.50	6	127
Riser Supports (E&W)	0.50	6.00	8.94	6	161
Riser Treads	0.50	6.00	1.00	48	72
Lower Platform	0.50	22.00	6.50	1	72
Upper Platform	0.50	22.00	9.00	2	198
Columns	2.00	2.00	38.00	2	304
*Elevator Shaft	10.00	8.33	46.00	1	797

*Assumed elevator shaft does not go below grade

Total Volume (ft^3)	1604
*Concrete density — Unit Weight (pcf)	150
Weight (kip)	241

Architectural Features

Architectural Component	Weight	Unit	Quantity	Unit	Weight (kip)
Glass Visual Barriers	40	plf	79	LF	3.2

Pedestrian Bridge

Area of Bridge in Plan (sf): 5352 *C Bridge Alternative Controls

Weight per Segment (12 ft wide x 21 ft tall x 42 ft long)

Truss Member	Assumed Member Size (Square HSS Members)	Unit Weight	Length	Quantity	Resultant
-		plf	ft	#	lb
Top and Bottom Chords	16x16	103	42	4	17304
Diagonal Struts	12x12	76	30	4	9120
Vertical Struts	12x12	76	18	6	8208
Stringers	12x12	76	9	3	2052
Composite Metal Deck	6"	768	42	1	32256
handrails		5	42	2	420

TOTAL (lb)	69,360
* psf per segment — TOTAL (psf)	138
Reaction per Tower (kip)	184

Location of Force Resultant from Reference

DC for Stair Tower

Distance to Center of Stair Tower Component: x	y	Product of Distance and Volume: Vx	Vy
ft	ft	ft^4	ft^4
11.00	3.25	885	262
11.00	3.25	1394	412
11.00	10.50	1771	1690
11.00	8.08	792	582
11.00	17.75	787	1269
11.00	19.00	2178	3762
11.00	24.50	3344	7448
11.00	10.67	8771	8505

TOTAL (ft^3): $\sum Vx =$ 17,643 $\sum Vy =$ 23,256

Center of mass (ft): $\bar{x} =$ 11.0 $\bar{y} =$ 14.5

DC for Architectural Features

See above

Pedestrian Bridge refer to Appendix C

DC Load Calculations Continued...

DC for Pile Cap

Pile Cap Shape	Pile Cap Area	Pile Cap Thickness	Density	Weight
-	ft^2	ft	kcf	kip
Custom	552	4	0.15	331.2

Location of Force Resultant from Reference

DC for Pile Cap

x	y
ft	ft
-8.57	-19.83

Pedestrian Live Load Quantities

Stair Tower (PL_s)

Component	Tributary Area Dimensions: Width of Area	Tributary Area Dimensions: Length of Area	Quantity of Surface Areas	Resultant
-	ft	ft	#	ft^2
Riser Treads	6.00	1.00	48	288.0
Landings	6.50	6.50	6	253.5
Lower Platform	22.00	6.50	1	143.0
Upper Platform	22.00	9.00	1	
			TOTAL (ft^2)	685
			PL_s (psf)	100
			PL_s (kip)	68

Location of Force Resultant from Reference

Resultant Location for PL_s Stair Load

Distance to Center of Stair Tower Component: x	y	Product of Distance and Area: Ax	Ay
ft	ft	ft^3	ft^3
11.00	8.08	3168	2328
11.00	3.25	2789	824
11.00	17.75	1573	2538
11.00	19.00		
	TOTAL	$\sum Ax =$ 7,530	$\sum Ay =$ 5,690
	PL_s Line of Action (ft)	$\bar{x} =$ 11.0	$\bar{y} =$ 8.3

Pedestrian Bridge (PL_b)

Area of Bridge in Plan (sf)	5352
Tributary Area per Stair Tower (sf)	1338
Pedestrian Live Load (PL_b) (psf)	90
Bridge Reaction (PL_b) (kip)	120

Nominal Load Results

Component	Load Type	Magnitude	Unit
Stair Tower	DC	244	kip
Pedestrian Bridge	DC	184	kip
Elevator Machinery	DC	4	kip
Pile Cap	DC	331	kip
Stair Tower	PL_s	68	kip
Pedestrian Bridge	PL_b	120	kip

Pile Group Centroid

COLUMN	n	x_i	nx_i	$\bar{x}_i$	ROW	n	y_i	ny_i	$\bar{y}_i$
-	-	ft	ft	ft	-	-	ft	ft	ft
i	5	1.50	7.5	10.0	A	5	1.50	7.5	10.5
ii	5	6.50	32.5	5.0	B	5	6.75	33.75	5.3
iii	5	11.50	57.5	0.0	C	5	12.00	60	0.0
iv	5	16.50	82.5	-5.0	D	5	17.25	86.25	-5.3
v	5	21.50	107.5	-10.0	E	5	22.50	112.5	-10.5
n	25		$\sum nx_i = 288$		n	25		$\sum ny_i = 300$	
			$\bar{x} = 11.5$					$\bar{y} = 12.0$	
			$\sum n\bar{x}_i^2 = 2875$					$\sum n\bar{y}_i^2 = 3308$	

Summary of Nominal Loads and Eccentricities from Pile Group Centroid

Nominal Load	Load Type	Magnitude	Unit	Comment	e_x (From Pile Group Centroid)	e_y	e_z	Angle from X axis
-	-	#	-	-	ft	ft	ft	°
DC Stair Tower	Vertical	244	kip		0	-1.70	0	-
DC Pedestrian Bridge	Vertical	184	kip		0	-13.00	0	-
DC Pile Cap	Vertical	331	kip		0	0	0	-
PL_s Stair Tower	Vertical	68	kip		0	3.20	0	-
PL_b Pedestrian Bridge	Vertical	120	kip		0	-13.00	0	-
WS Stair Tower (North)	Lateral	Wind Load Tables	kip		0	0	18.50	270
WS Stair Tower (East)	Lateral	Wind Load Tables	kip		0	0	19.30	0
WS Pedestrian Bridge	Vertical & Lateral	26.8	kip	East Only, Strength III	0	-13	34.50	varies

Wind Load (WS) directly applied to Substructure (Stair Tower) - Nominal (kip)

Load Combination	WS Stair North	WS Stair East	Components Stair North Fx	Components Stair North Fy	Components Stair East Fx	Components Stair East Fy
Strength I	0	0	0	0	0	0
Strength III	66.0	50.7	0	-66.0	50.7	0
Strength V	20.2	15.5	0	-20.2	15.5	0

Skew Coefficient From AASHTO T3.8.1.2.3a-1

Skew Angle (°)	Transverse	Longitudinal
0	1	0
15	0.9333	0.16
30	0.867	0.373
45	0.627	0.547
60	0.32	0.667

Wind Load (WS) from Superstructure applied to Subtructure - Nominal | Transformation of Force Components to Pile Group Axes per Wind Direction

Load Combination	Force Transverse to Pedestrian Bridge Longitudinal Axis (kip)	Skew Angle (°)	Skew Coefficients (AASHTO T3.8.1.2.3a-1) Transverse	Skew Coefficients Longitudinal	Force Components along $F_{Transverse}$	Force Components along $F_{Longitudinal}$	Wind From North F_X	Wind From North F_Y	Wind From East F_X	Wind From East F_Y
			-	-	kip	kip	kip	kip	kip	kip
Strength I	0	0	0	0	0	0	0	0	0	0
Strength III	90	0	1	0	90.0	0	0	-90.00	90.00	0
Strength V	23.8	0	1	0	23.8	0	0	-23.80	23.80	0

Load Combination	AASHTO LOAD FACTORS					
	η_D	η_R	η_I	γ_{DC}	γ_{PL}	γ_{WS}
Strength I	1	1.1	1	1.25	1.75	0
Strength III	1	1	1	1.25	0	1
Strength V	1	1	1	1.25	1.35	1

Strength I Combination

Load	Axial	Mx	My
-	k	k-ft	k-ft
DC Stair Tower	335	0	-570
DC Pedestrian Bridge	253	0	-3289
DC Pile Cap	455	0	0
PL_s Stair Tower	132	0	422
PL_b Pedestrian Bridge	232	0	-3016
TOTAL	1407	0	-6452

Strength III Combination - Wind From North

Load	Axial	Mx	My
-	k	k-ft	k-ft
DC Stair Tower	305	0	-519
DC Pedestrian Bridge	230	0	-2990
DC Pile Cap	414	0	0
PL_s Stair Tower	0	0	0
PL_b Pedestrian Bridge	0	0	0
WS Stair Tower	0	0	-1220
WS Pedestrian Bridge	0	0	-3105
TOTAL	949	0	-7834

Strength III Combination - Wind From East

Load	Axial	Mx	My
-	k	k-ft	k-ft
DC Stair Tower	305	0	-519
DC Pedestrian Bridge	230	0	-2990
DC Pile Cap	414	0	0
PL_s Stair Tower	0	0	0
PL_b Pedestrian Bridge	0	0	0
WS Stair Tower	0	978	0
WS Pedestrian Bridge	26.8	3105	-348
TOTAL	975.8	4083	-3857

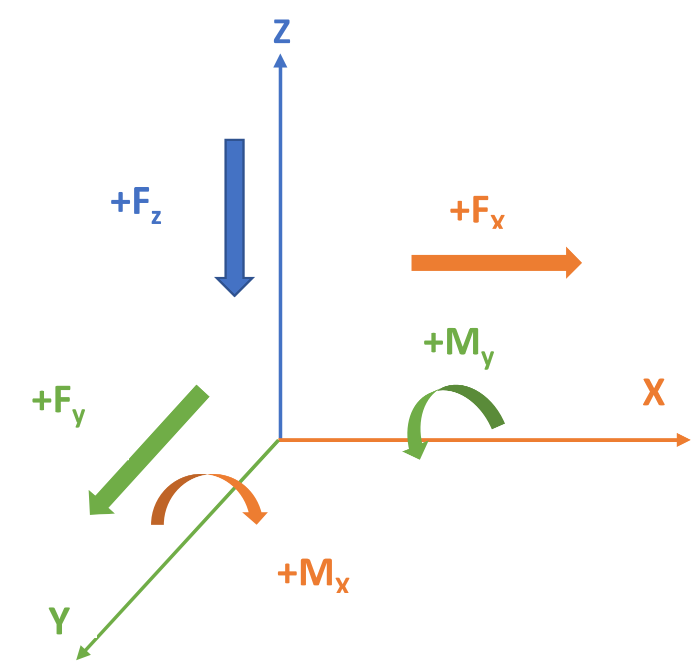
Orientation Notes

$+e_x$ for offset indicates distance to the East of the pile group center

$+e_y$ for offset indicates distance to the North of the pile group center

$+e_z$ for offset indicates distance above the finished grade

For force orientations, see below



Strength V Combination - Wind From North			
Load	Axial	Mx	My
-	k	k-ft	k-ft
DC Stair Tower	305	0	-519
DC Pedestrian Bridge	230	0	-2990
DC Pile Cap	414	0	0
PL_s Stair Tower	92	0	294
PL_b Pedestrian Bridge	163	0	-2119
WS Stair Tower	0	0	-373
WS Pedestrian Bridge	0	0	-821
TOTAL	1204	0	-6527

Strength V Combination - Wind From East			
Load	Axial	Mx	My
-	k	k-ft	k-ft
DC Stair Tower	305	0	-519
DC Pedestrian Bridge	230	0	-2990
DC Pile Cap	414	0	0
PL_s Stair Tower	92	0	294
PL_b Pedestrian Bridge	163	0	-2119
WS Stair Tower	0	299	0
WS Pedestrian Bridge	13.4	821	-174
TOTAL	1217.4	1120	-5507

	COLUMN	ROW
Pile	i	E
Coordinate from Center	$\bar{x}_i$= 10.0	$\bar{y}_i$= -10.5

Results				
Load Combination	Axial	Mx	My	Pile Load*
-	k	k-ft	k-ft	k
Strength I	1407	0.0	-6452.1	76.8
Strength III - North	949	0.0	-7833.8	62.8
Strength III - East	975.8	4082.7	-3856.9	65.5
Strength V - North	1204	0.0	-6527.5	68.9
Strength V - East	1217.4	1120.2	-5507.3	70.1

*Assumed Number of Piles 25

APPENDIX I

STAKEHOLER COMMUNICATION

(Electric Only)

International Drive/ Sand Lake Road Pedestrian Overpass Analysis and Overpass Conceptual Design Study

#Y20-803-CH
Meeting with FDOT
January 24, 2023

Meeting Agenda

---

1. **Introduction & Attendees**
    a. **Orange County Public Works**
    b. **FDOT**
    c. **HHCP**
    d. **AVCON**

2. **Project Overview**
    a. **Perform a Study to develop and evaluate alternatives of a pedestrian access bridge to connect the four intersection corners at the intersection of International Drive and Sand Lake Road.**
    b. **The County is using their Roadway Conceptual Analysis (RCA) method to perform the Study. This format will follow the NEPA process. The County is using this format to remain eligible for Federal Funding of design and/or construction should it become available. Format follows the FDOT PD&E process.**
    c. **The County is looking for an iconic structural that will serve as a functional pedestrian overpass and provide a gateway signature into the International Drive Tourist Area, in addition to the safety improvements being provided at the intersection.**
    d. **Additional property will be required at each corner to allow the construction of the bridge piers. The County is proposing to provide these additional areas through easements dedicated by the property owners.**
    e. **Future FDOT Widening / Interchange Project has been accounted for in the current conceptual designs.**

3. **Review of Various Geometric Alternatives**
    a. **Slideshow Exhibits from Project Advisory Group Meeting #3 - HHCP**
    b. **Easements configurations have been determined and defined legally. County Real Estate Department is researching requirements to obtain easements.**
    c. **Current Alternatives include stairs and an elevator at each location to provide egress and ADA requirements.**

4. **Project Issues for Discussion**
    a. **Roadside Treatment / Clear Zone**
    b. **Elimination of Sidewalks – Stairs and Elevators**
    c. **Pedestrian Barriers for channelization**

i. **Development Spec for railing**
ii. **Barrier Type of Knee-wall**
iii. **Clear Zone Issues**

d. **Lighting Options for Bridge**
   i. **Safety Lighting (deck and below)**
   ii. **Aesthetic Lighting (on-deck and ground views)**
   iii. **FDOT Approval Process**

e. **Location of Traffic Signals**
   i. **Separate Structures**
   ii. **Attached to Bridge Piers/Spans**
   iii. **Special Visibility Requirements**

f. **Bridge Safety Requirements**
   i. **What are cage requirements over state roadway?**
   ii. **Additional safety measures required, requested?**
      1. **Cameras**
      2. **Blue phones**

g. **Signage**
   i. **What are the regulations for signage on bridge?**
   ii. **What types of messages are allowed?**

h. **Billboard**
   i. **Any legal issues related to FDOT regarding the existing billboard, such as guaranteed sight distances.**

i. **Structure**
   i. **Any restrictions on building materials?**
   ii. **Are Piers located in easements dedicated to the County acceptable to FDOT?**

j. **Maintenance of Traffic**
   i. **Is there option to fully close the roadway during limited phases of bridge construction?**
      1. **Overnight?**
      2. **Longer period?**

k. **FDOT Review Process**
   i. **What is the mechanism for formal review?**
   ii. **What approvals are required?**

l. **Any additional items**
   i. **Maintenance agreements**
   ii. **Load Rating**
   iii. **Others**

RECORD OF TELEPHONE CONVERSATION

HHCP&AVCON
A JOINT VENTURE

DATE: 02/25/2022 **TIME:** 11:20am **JOB NO:**

PERSON CALLED: Alex Best
Cullen Abernethy
PHONE NO: 412-992-6840

ORGANIZATION: Duke Energy

NAME OF CALLER: Anthony Harper **PHONE NO:** 407-599-1122 x266

ORGANIZATION: AVCON Inc.

DETAILS OF CONVERSATION:

Left message to Cullen and explained that AVCON is in beginning steps of study for a future pedestrian overpass at International Drive and Sand Lake Road Intersection. Would like to gather input and get the ball rolling for future coordination. Initial call to Alex, but he directed me to Cullen for best person to talk to for this project.

REPLIES:

DISTRIBUTION:

Anthony Harper	**Transportation E.I.**
PRINTED NAME	**TITLE**
Anthony Harper	2/25/2022
SIGNATURE	**DATE**

RECORD OF TELEPHONE CONVERSATION

HHCP&AVCON
A JOINT VENTURE

DATE: 02/25/2022 **TIME:** 9:15am **JOB NO:**

PERSON CALLED: Katrina Kasemir **PHONE NO:** 407-897-4119 (katrina.kasemir@floridadep.gov)

ORGANIZATION: FDEP – Budgeting and Planning

NAME OF CALLER: Anthony Harper **PHONE NO:** 407-599-1122 x266

ORGANIZATION: AVCON Inc.

DETAILS OF CONVERSATION:

Explained that AVCON is in beginning steps of study for a future pedestrian overpass at International Drive and Sand Lake Road Intersection. Would like to gather input and get the ball rolling for future coordination.

REPLIES:

Will help with permitting process, compliances, and utilities.

DISTRIBUTION:

Anthony Harper	**Transportation E.I.**
PRINTED NAME	**TITLE**
Anthony Harper	2/25/2022
SIGNATURE	**DATE**

From:	Prather, Lisa
To:	Harper, Anthony
Cc:	Parker, Judith
Subject:	FW: You've received an email from the SFWMD Employee Directory on our website
Date:	Friday, February 25, 2022 2:49:29 PM
Importance:	High

Mr. Harper - The Orlando Service Center would be the appropriate office to work with on any permitting questions regarding the construction of the bridge. You can contact me or Richard Lott the engineering Section Leader with any questions.

Regards,

Lisa Prather
Section Leader – Natural Resource Management
Orlando Regulatory Division
South Florida Water Management District
1707 Orlando Central Parkway, Suite 200
Orlando, FL 32809
lprather@sfwmd.gov
(407) 858-6100 ext 3818

NOTE:
While the District supports that it is commonplace and convenient to collaborate via email during the pre-application/application process, Permit Applications and Responses to a Request for Additional Information (RAI) submitted via email are not an official submittal (Section 4.4 of Environmental Resource Permit Applicant's Handbook Volume I) and (Section 40E-2.101, F.A.C. for Water Use Permits). For timely and efficient processing of permit applications and RAI responses, please submit online using ePermitting (link above).

-----Original Message-----
From: no-reply <no-reply@sfwmd.gov>
Sent: Friday, February 25, 2022 10:16 AM
To: Tatum, Jane <jtatum@sfwmd.gov>
Subject: You've received an email from the SFWMD Employee Directory on our website

Name: Anthony Harper
Phone: 407-599-1122
Email Address: aharper@avconinc.com
Subject: Future Pedestrian Overpass in Orange County - International Drive and Sand Lake Road intersection

Message:

Hi Jane, we're conducting study for this coming project and would like to have your input and confirm you are the appropriate contact moving forward. We have an exhibit to send via email and if you would like to be included on future updates and/or meetings please let me know. Thanks!

RECORD OF TELEPHONE CONVERSATION

HHCP&AVCON
A JOINT VENTURE

DATE: 02/25/2022 **TIME:** 10:35am **JOB NO:**

PERSON CALLED: Mary Ann White (Section Leader) **PHONE NO:** 407-317-3370 (research@ocps.net)

ORGANIZATION: OCPS

NAME OF CALLER: Anthony Harper **PHONE NO:** 407-599-1122 x266

ORGANIZATION: AVCON Inc.

DETAILS OF CONVERSATION:

Explained that AVCON is in beginning steps of study for a future pedestrian overpass at International Drive and Sand Lake Road Intersection. Would like to gather input and get the ball rolling for future coordination

REPLIES:

Mary Ann is with Research + Evaluation, asked if a grant will be involved and who we want to survey. Would OCPS get any money from grant. Needs more information when we get it.

DISTRIBUTION:

Anthony Harper	**Transportation E.I.**
PRINTED NAME	**TITLE**
Anthony Harper	2/25/2022
SIGNATURE	**DATE**

RECORD OF TELEPHONE CONVERSATION

HHCP&AVCON
A JOINT VENTURE

DATE: 02/25/2022 **TIME:** 10:30am **JOB NO:**

PERSON CALLED: Christina Crosby **PHONE NO:** 407-254-9706 (Christina.Crosby@ocfl.net)

ORGANIZATION: Orange County Utilities

NAME OF CALLER: Anthony Harper **PHONE NO:** 407-599-1122 x266

ORGANIZATION: AVCON Inc.

DETAILS OF CONVERSATION:

Made call and no answer. Left message and received call back. Sent email of exhibit as well.

REPLIES:

DISTRIBUTION:

Anthony Harper	**Transportation E.I.**
PRINTED NAME	**TITLE**
Anthony Harper	2/25/2022
SIGNATURE	**DATE**

RECORD OF TELEPHONE CONVERSATION

HHCP&AVCON
A JOINT VENTURE

DATE: 02/25/2022 **TIME:** 10:45am **JOB NO:**

PERSON CALLED: Fredy Pardo **PHONE NO:** 407-434-2111

ORGANIZATION: OUC – Electric

NAME OF CALLER: Anthony Harper **PHONE NO:** 407-599-1122 x266

ORGANIZATION: AVCON Inc.

DETAILS OF CONVERSATION:

Didn't answer call, left message explaining I-Drive Ped overpass and will be contact moving forward for coordination.

REPLIES:

DISTRIBUTION:

Anthony Harper	**Transportation E.I.**
PRINTED NAME	**TITLE**
Anthony Harper	**2/25/2022**
SIGNATURE	**DATE**

RECORD OF TELEPHONE CONVERSATION

HHCP&AVCON
A JOINT VENTURE

DATE: 02/25/2022 **TIME:** 10:05am **JOB NO:**

PERSON CALLED: Lisa Prather
Richard Lott

PHONE NO: (407)858-6100 ext 3818
(lprather@sfwmd.gov)

ORGANIZATION: SFWMD

NAME OF CALLER: Anthony Harper **PHONE NO:** 407-599-1122 x266

ORGANIZATION: AVCON Inc.

DETAILS OF CONVERSATION:

Did not pick up phone, emailed and explained that AVCON is in beginning steps of study for a future pedestrian overpass at International Drive and Sand Lake Road Intersection. Would like to gather input and get the ball rolling for future coordination.

REPLIES:

Email replied saying either Lisa or Richard will be best contacts in the engineering section for further coordination.

DISTRIBUTION:

Anthony Harper	**Transportation E.I.**
PRINTED NAME	**TITLE**
Anthony Harper	2/25/2022
SIGNATURE	**DATE**

I-Drive Pedestrian Bridge RCA – Orange County
FDOT Coordination Meeting
March 9, 2022

1. **Introduction**
    a. **Orange County Public Works**
    b. **FDOT**
    c. **HHCP**
    d. **AVCON**

2. **Project Overview**
    a. **Perform a Study to develop and evaluate alternatives of a pedestrian access bridge to connect the four intersection corners at the intersection of International Drive and Sand Lake Road.**
    b. **The County is using their Roadway Conceptual Analysis method to perform the Study. This format meets the needs of the NEPA process. The County is using this format to remain eligible for Federal Funding of design and/or construction should it become available. Format is also similar to the FDOT PD&E process which is detailed in the PD&E Manual.**
    c. **The County is looking for an iconic structural that will serve as a functional pedestrian overpass and provide a gateway signature into the International Drive Tourist Area.**
    d. **Right of way will most likely be required at each corner to allow the construction of the bridge piers and/or access ramps. Some of the property owners are willing participants in the project and others may not be interested in losing existing.**

3. **Project Impacts**
    a. **Sand Lake Road is a State Highway (SR 482).**
    b. **Latest version of the FDOT Standard Plans and Specifications shall govern design.**
    c. **Will work at Sand Lake Road / I-4 Interchange affect pedestrian bridge?**
        i. **What is the updated schedule for the interchange?**
        ii. **Design team requests all latest CAD files, including survey, roadway, signalization, signing and marking, existing and proposed utilities, and verified.**
    d. **Safety Issues:**
        i. **Opportunity to consider removing at grade pedestrian crossing**
            1. **Eliminates pedestrian / vehicular conflict points**
            2. **Increases vehicular capacity of intersection by removing pedestrian phases.**
        ii. **Can pedicabs use bridge or would they be directed to use travel lanes?**
        iii. **What are cage requirements over state roadway?**
        iv. **Additional safety measures required, requested?**
            1. **Cameras**
            2. **Blue phones**

e. Vertical Circulation
  - **i. Elevators**
  - **ii. Ramps**
  - **iii. Stairs**
  - **iv. Accessibility**
  - **v. Bicycles**
  - **vi. Strollers**
  - **vii. Pedicabs**

f. Signage / Signalization
  - **i. Visibility of Signalization**
    - **1. Can signals be mounted to bridge?**
  - **ii. What are the regulations for signage on bridge?**

g. Billboard
  - **i. What are the FDOT Regulations / History regarding the 3 sided Clear Channel billboard?**
  - **ii. Are visibility rights from roadway protected or compensable?**

h. Structure
  - **i. Is there potential for intermediate columns in the intersection, or must structure span entire roadway?**
  - **ii. Assume all columns, bridge features, etc. must be within final right-of-way.**
  - **iii. Is there a preference for concrete or steel structural components?**

i. Maintenance of Traffic
  - **i. Is there option to fully close the roadway during limited phases of bridge construction?**
    - **1. Overnight?**
    - **2. Longer period?**

j. Right-of-Way
  - **i. Will FDOT be involved in the right-of-way acquisition process?**

k. Bridge Connectivity
  - **i. Is it required to have bridge connect all four corners?**
      - **a. Hybrid solution could consider 2 by bridge & 2 at grade.**

l. Lighting
  - **i. What is coordination process with FDOT?**
  - **ii. What are lighting requirements.**
    - **1. Are lighting requirements altered if at grade pedestrian crossings are removed?**
    - **2. Is under bridge lighting required?**

m. FDOT Review Process
  - **i. What is the mechanism for formal review?**
  - **ii. What submittal schedule is required?**
  - **iii. How will formal approval be obtained?**

International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study

#Y20-803-CH
Meeting with FDOT
March 9, 2022

Meeting Minutes

---

1. **Introduction & Attendees**
    a. **Orange County Public Works**
        i. **Blanche Hardy, Renzo Nastasi, Alberto Vargas, Brian Sanders, Marcos Bastian, Cathy Evangelo, Eric Haertjens**
    b. **FDOT**
        i. **Catalina Chacon, Hatem Aguib, Luis Diaz (Stantec), Desai Abhijeet**
    c. **HHCP**
        i. **Mike Chatham, Eric Houston**
    d. **AVCON**
        i. **Clint Pletzer, Rick Baldocchi**

For the items highlighted the design Team requests that FDOT provide further direction or clarification. Additional notes are provided in red.

2. **Project Overview**
    a. **Perform a Study to develop and evaluate alternatives of a pedestrian access bridge to connect the four intersection corners at the intersection of International Drive and Sand Lake Road.**
    b. **The County is using their Roadway Conceptual Analysis method to perform the Study. This format meets the needs of the NEPA process. The County is using this format to remain eligible for Federal Funding of design and/or construction should it become available. Format is also similar to the FDOT PD&E process which is detailed in the PD&E Manual.**
    c. **The County is looking for an iconic structural that will serve as a functional pedestrian overpass and provide a gateway signature into the International Drive Tourist Area.**
    d. **Right of way will most likely be required at each corner to allow the construction of the bridge piers and/or access ramps. Some of the property owners are willing participants in the project and others may not be interested in losing existing.**

3. **Project Impacts**
    a. **Sand Lake Road is a State Highway (SR 482).**
    b. **Latest version of the FDOT Standard Plans and Specifications shall govern design.**
    c. **Will work at Sand Lake Road / I-4 Interchange affect pedestrian bridge?**
        i. **What is the updated schedule for the interchange?**

1. FDOT indicated that procurement is currently paused.

ii. Design team requests all latest CAD files, including survey, roadway, signalization, signing and marking, existing and proposed utilities, and verified.

d. Safety Issues:
   i. Opportunity to consider removing at grade pedestrian crossing
      1. Eliminates pedestrian / vehicular conflict points
      2. Increases vehicular capacity of intersection by removing pedestrian phases.
      3. Sergeant Gerald McDaniels with the Orange County Sheriff's Office, stated that if pedestrians were not required to use pedestrian bridge, that many would likely not use it due to extra time it would take. He specifically referenced Las Vegas set up where barriers stop pedestrians from crossing the roadway and require them to use pedestrian bridges.
   ii. Can pedicabs use bridge or would they be directed to use travel lanes?
      1. Sergeant Gerald McDaniels indicated that pedicab traffic is light in this intersection, and that due to expedience, pedicab would not likely use pedestrian bridge and could utilize standard roadway travel lanes.
   iii. What are cage requirements over state roadway?
   iv. Additional safety measures required, requested?
      1. Cameras
      2. Blue phones
      3. Sergeant Gerald McDaniels noted that cameras would be recommended, but blue phone would not, as most people have cell phones and blue phone would be something to vandalize.

e. Vertical Circulation
   i. Elevators
   ii. Ramps
   iii. Stairs
   iv. Accessibility
   v. Bicycles
   vi. Strollers
   vii. Pedicabs
   viii. Are there specific FDOT requirements for the above uses?

f. Signage / Signalization
   i. Visibility of Signalization
      1. Can signals be mounted to bridge?
   ii. What are the regulations for signage on bridge?

g. Billboard
   i. What are the FDOT Regulations / History regarding the 3 sided Clear Channel billboard?
   ii. Are visibility rights from roadway protected or compensable?

- iii. Does FDOT or Clear Channel have "air rights" or "site line" rights over Sand Lake Road or Sand Lake Road, and if so how might that affect pedestrian bridge?
- iv. Can FDOT provide any information on permitting of the billboard?
- v. If FDOT has judgement on billboard rights, please provide.
- vi. Alberto Vargas asked if advertisements, copy could be placed on bridge to replace loss of site lines.

h. Structure
- i. Is there potential for intermediate columns in the intersection, or must structure span entire roadway?
- ii. Assume all columns, bridge features, etc. must be within final right-of-way.
- iii. Is there a preference for concrete or steel structural components?

i. Maintenance of Traffic
- i. Is there option to fully close the roadway during limited phases of bridge construction?
  1. Overnight?
  2. Longer period?

j. Right-of-Way
- i. Will FDOT be involved in the right-of-way acquisition process?

k. Bridge Connectivity
- i. Is it required to have bridge connect all four corners?
  - ~~a. Hybrid solution could consider 2 by bridge & 2 at grade.~~
  - b. Orange County PM Blanche Hardy indicated that scope requires overpass to connect to all 4 corners.

l. Lighting
- i. What is coordination process with FDOT?
- ii. What are lighting requirements.
  1. Are lighting requirements altered if at grade pedestrian crossings are removed?
  2. Is under bridge lighting required?

m. FDOT Review Process
- i. What is the mechanism for formal review?
- ii. What submittal schedule is required?
- iii. How will formal approval be obtained?
- iv. Will it follow ERC process?

4. Additional notes
   a. Design team understands Todd Helton has moved on from FDOT and that Hatem Aguib will be the new project manager.
   b. Blanche Hardy noted that schedule for RCA is 1 year.
   c. Brian Sandars stated that there will be a Project Advisory Group. The RCA will develop concept through that group and will also be meeting with the public. He noted that FDOT is part of the PAG and integral to the project.
   d. Brian also noted that this project is a re-start, there have been some PAG meetings in the past, but this is a new project. PAG meetings still need to be set.

e. **Blanche Hardy noted that we just need initial feedback and needs at this time. Design team will also meet with the Sheriff's Office to get their input and then develop concepts that meet the needs of the agencies. (*Update- meeting with OC Sheriff's Office held 3/24/22, with some of their notes included above*.)**

HHCP&AVCON
A JOINT VENTURE

International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study

#Y20-803-CH

Meeting with Sheriff's Office

March 24, 2022

AGENDA

1. Introduction & Attendees

A. **Orange County** – Blanche Hardy, Brian Sanders, Renzo Nastasi, Alberto Vargas, Marcos Bastian, Cathy Evangelo, Eric Haertjens

B. **HHCP** – Project Management and Architecture, Public Involvement (Imaging) Mike Chatham, Eric Houston

C. **AVCON** – Project Management, Traffic, Structural, Mechanical Engineering - Rick Baldocchi, Clint Pletzer, Sue Finney

2. Project Overview

A. Perform a Study to develop and evaluate alternatives for a pedestrian access bridge to connect the four intersection corners at the intersection of International Drive and Sand Lake Road.

B. The County is looking for an iconic structure that will serve as a functional pedestrian overpass and provide a signature gateway into the International Drive Tourist Area.

C. There are numerous stakeholders that will be part of the project process and alternative analysis. Primarily the business community in the vicinity.

D. Right of way acquisition will likely be required at each corner to allow the construction of the bridge piers and/or access ramps. Some of the property owners are willing participants in the project and others may not be interested in losing existing property. (Clear Channel Billboard)

3. Study Goals

A. Obtain consensus from stakeholders on the look and feel of the overpass.

B. Document the impacts to physical, natural, and cultural assets.

C. Determine the required right-of-way to construct the recommended alternative overpass.

D. Develop a program cost estimate to cover construction costs and associated soft costs (Design and CEI).

E. Maintain eligibility for Federal Funding.

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4. Public Safety Questions/Issues for Discussion

A. Are there specific issues with the current intersection that have been problematic for the Sheriff's office?

- Accidents with Automobiles, Pedestrians, Pedicabs, etc.
- Problems with thefts or assaults in the area.

B. Is there currently video surveillance at the intersection and who is receiving this video?

C. Is this intersection a part of a standard patrol responsibility?

D. How is patrol of this area handled? By automobile, on foot, bicycle? Intervals?

E. Once the bridge is in place, if there is video surveillance on the bridge, would the OC Sheriff's office monitor it?

F. Does the Sheriff's Office have a requirement for stairs or ramps in addition to elevators?

G. If we utilize elevators at the intersections, we will likely use glass doors on the elevators. Are there other security recommendations for elevators?

H. Would it be beneficial to move vertical circulation back from the intersection?

I. Are there security problems with forcing all intersection crossing traffic to the pedestrian Bridge? (Fencing on grade crossing at the intersection)

J. Is there a benefit to including Blue Phones on the bridge?

K. Is it important to have visual sight lines to the bridge deck, if so, from where?

L. If pedicabs are encouraged (required) to use the bridge, will it cause conflicts with pedestrians on the bridge? Are there currently conflict problems on sidewalks?

M. Are there any current rules for pedicabs in the area?

N. Are there other security issues we should be considering in the planning of the bridge?

Rick V. Baldocchi, P.E.
Project Manager
HHCP and AVCON, A Joint Venture

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International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study
#Y20-803-CH
Meeting with Sheriff's Office
March 24, 2022

Meeting Minutes

1. Introduction & Attendees

A. **Orange County** – Blanche Hardy, Brian Sanders, Renzo Nastasi, Alberto Vargas, Marcos Bastian, Cathy Evangelo, Eric Haertjens

B. **HHCP** – Project Management and Architecture, Public Involvement (Imaging) Mike Chatham, Eric Houston

C. **AVCON** – Project Management, Traffic, Structural, Mechanical Engineering - Rick Baldocchi, Clint Pletzer, Sue Finney

Orange County Sheriff's Office: Sergeant Gerald (David) McDaniels, Jr. Items in red not referencing another person are comments by the Sergeant.

2. Project Overview

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C. There are numerous stakeholders that will be part of the project process and alternative analysis. Primarily the business community in the vicinity.

D. Right of way acquisition will likely be required at each corner to allow the construction of the bridge piers and/or access ramps. Some of the property owners are willing participants in the project and others may not be interested in losing existing property. (Clear Channel Billboard)

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A. Obtain consensus from stakeholders on the look and feel of the overpass.

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E. Maintain eligibility for Federal Funding.

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A JOINT VENTURE

4. Public Safety Questions/Issues for Discussion

A. Are there specific issues with the current intersection that have been problematic for the Sheriff's office?

- Accidents with Automobiles, Pedestrians, Pedicabs, etc.
- Problems with thefts or assaults in the area.

Primary issue is Traffic and Accidents. Intersection is very close to I-4. Sergeant McDaniels noted his concern that pedestrians would not use the bridge.

B. Is there currently video surveillance at the intersection and who is receiving this video?

Sergeant McDaniels will research and provide answer.

C. Is this intersection a part of a standard patrol responsibility?

Yes, standard patrol as part of Sector Five. Patrolled by vehicle unless there is an event such as the Florida Classic Car Show. Then emergency response vehicles are added and some bicycle patrol.

D. How is patrol of this area handled? By automobile, on foot, bicycle? Intervals?

E. Once the bridge is in place, if there is video surveillance on the bridge, would the OC Sheriff's office monitor it?

Video cameras would be a good idea and could be tied into the Sheriff's System.

F. Does the Sheriff's Office have a requirement for stairs or ramps in addition to elevators?

No particular requirement or preference, mostly concerned about how to enforce pedestrians to use the overpass. Prefers closing at grade crossings and providing barriers to channel pedestrians to the bridge.

G. If we utilize elevators at the intersections, we will likely use glass doors on the elevators. Are there other security recommendations for elevators?

Visibility is a good thing with glass doors and video cameras inside the elevator. Avoid "nooks can crannies" where people can hide or homeless can sleep.

H. Would it be beneficial to move vertical circulation back from the intersection?

Moving away from intersection would be good for safety, but might discourage use of the overpass.

I. Are there security problems with forcing all intersection crossing traffic to the pedestrian Bridge? (Fencing on grade crossing at the intersection)

The Sergeant prefers some sort of channelization to bring pedestrians to the overpass.

J. Is there a benefit to including Blue Phones on the bridge?

Might be beneficial, but there is no control of people misusing it and most people now use cell phones to call 911.

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K. Is it important to have visual sight lines to the bridge deck, if so, from where?

   Visibility is good, but no specific requirements.

L. If pedicabs are encouraged (required) to use the bridge, will it cause conflicts with pedestrians on the bridge? Are there currently conflict problems on sidewalks?

   The Sergeant does not think the pedicabs will use an elevator. There are not that many in this area; most are to the south.

M. Are there any current rules for pedicabs in the area?

   There are ordinances that govern where they should operate (road vs. sidewalk).

N. Are there other security issues we should be considering in the planning of the bridge?

   There is a concern of people climbing over the rail/fence and jumping off the bridge or throwing items over onto the roadway.

   If there are performances on the bridge, it might create an opportunity for crime, but is not necessarily a bad thing.

   They will not have the ability to force people to leave the bridge for trespassing due to it being a public bridge.

   Brian asked about times when Law Enforcement take over operation of the intersection traffic signal. Sergeant McDaniels noted they would control the panel from within 100 feet of the cabinet.

Rick V. Baldocchi, P.E.
Project Manager
HHCP and AVCON, A Joint Venture

International Drive/ Sand Lake Road Pedestrian Overpass

Analysis and Overpass Conceptual Design Study

#Y20-803-CH
Meeting with FDOT
March 29, 2023

Meeting Agenda

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1. **Introduction & Attendees**
    a. **Orange County Public Works**
    b. **FDOT**
    c. **HHCP**
    d. **AVCON**

2. **Project Issues for Discussion – Re-visit from previous meeting on January 24, 2023**

    a. **Elimination of Crosswalks – Stairs and Elevators**
        i. **Confirm this is still acceptable per previous discussions.**

    b. **Pedestrian Barriers for channelization**
        i. **Development Spec for railing**
        ii. **Barrier Type**

    c. **Lighting Options for Bridge**
        i. **Will work with Ayman at FDOT – trying to schedule.**

    d. **Location of Traffic Signals**
        i. **Confirm attached to bridge superstructure is acceptable.**

    e. **Roadside Treatment / Clear Zone**
        i. **FDOT requested 4'-0" from Face of curb.**
        ii. **Would like to discuss options as space is limited at corner.**

    f. **Bridge Safety Requirements**
        i. **Bridge will have roof or cage on top as requested by FDOT.**

    g. **Billboard**
        i. **Need Contact for outdoor advertising group within FDOT.**

    h. **ROW/Easements**
        i. **Confirm bridge abutments to be in <u>easement</u>s granted to Orange County**

i. **Maintenance of Traffic**
    i. **Partial closure may be acceptable. We will propose concept once final bridge selection is made.**

j. **Additional Items, if any.**

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International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study

Meeting with Clear Channel
May 9, 2022

AGENDA

1. Introduction & Attendees

A. **Orange County –** Blanche Hardy, Brian Sanders, Renzo Nastasi

B. **HHCP** – Project Management and Architecture, Public Involvement (Imaging) Mike Chatham, Eric Houston

C. **AVCON** – Project Management, Traffic, Structural, Mechanical Engineering - Rick Baldocchi, Clint Pletzer, Sue Finney

D. **Clear Channel** – Craig Swygert

2. Project Overview

A. Perform a Study to develop and evaluate alternatives for a pedestrian access bridge to connect the four intersection corners at the intersection of International Drive and Sand Lake Road.

B. The County is looking for an iconic structure that will serve as a functional pedestrian overpass and provide a signature gateway into the International Drive Tourist Area.

C. There are numerous stakeholders that will be part of the project process and alternative analysis. Primarily the business community in the vicinity.

D. Right of way acquisition will likely be required at each corner to allow the construction of the bridge piers and/or access ramps.

E. Meeting with Owners prior to Project Advisory Meeting (PAG). Will follow up after PAG.

3. Study Goals

A. Obtain consensus from stakeholders on the look and feel of the overpass.

B. Document the impacts to physical, natural, and cultural assets.

C. Determine the required right-of-way to construct the recommended alternative overpass.

D. Develop a program cost estimate to cover construction costs and associated soft costs (Design and CEI).

E. Maintain eligibility for Federal Funding.

4. Clear Channel Discussion

A. Physical Location of Billboard
B. Visual Sight Lines

HHCP&AVCON
A JOINT VENTURE

International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study

Meeting with Clear Channel
May 9, 2022
Meeting Agenda and Minutes

1. Introduction & Attendees

A. **Orange County –** Blanche Hardy, Brian Sanders, Renzo Nastasi

B. **HHCP** – Project Management and Architecture, Public Involvement (Imaging) Mike Chatham, Eric Houston

C. **AVCON** – Project Management, Traffic, Structural, Mechanical Engineering - Rick Baldocchi, Clint Pletzer, Sue Finney

D. **Clear Channel** – Craig Swygert

2. Project Overview

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4. Clear Channel Discussion

A. Physical Location of Billboard
B. Visual Sight Lines

5. Input from Clear Channel Representative Craig Swygert

A. Craig explained that the billboard is a high producer and that they were willing to work with the County as a Community Partner, but need to protect their financial interests.

B. Craig noted that Clear Channel has an easement including air rights over the International Square Property. He offered that a full taking would be very expensive.

C. Craig noted that previous discussion had ensued regarding land swaps with the County, but that sites being offered did not have comparable traffic counts. They are open to a swap, but it needs to be a comparable site somewhere in the I-Drive Corridor. The County does not seem to be open to new billboards. He mentioned the side of the Convention Center facing SR 528.

D. Craig expressed concern about the billboard proximity to pedestrian bridge structure and how that would play into the aesthetics. He mentioned this several times.

E. Craig said he had talked to FDOT about putting advertising on the bridge and they said no, emphatically.

F. He offered an option of a semi-large format sign on each of the four corners, but ratio of space size is critical. Standard billboards are 14'x48'.

G. Mike asked if he could keep 2 of the 3 faces and get compensation for one face. Craig said maybe, but it might not look good for the bridge.

H. The Billboard currently sells 9 spaces of advertising space (3 per face).

I. Brian asked if Clear Channel owned a view shed from FDOT. Craig noted that State Statute Chapter 479 gave them a 500-foot view shed in either direction to be free from beautification projects.

J. Rick asked if the sign could be raised higher. Josh indicated that State max height for signs is 85-feet and County max height is 65-feet.

   a. Brian Sanders stated that exceptions may be possible to criteria.

K. Clear Channel expressed interest in finding a mutually beneficial solution to the project challenges as it relates to the billboard.

HHCP&AVCON
A JOINT VENTURE

International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study

Meeting with Skyplex

May 9, 2022

AGENDA

1. Introduction & Attendees

A. **Orange County –** Blanche Hardy, Brian Sanders, Renzo Nastasi

B. **HHCP** – Project Management and Architecture, Public Involvement (Imaging) Mike Chatham, Eric Houston

C. **AVCON** – Project Management, Traffic, Structural, Mechanical Engineering - Rick Baldocchi, Clint Pletzer, Sue Finney

D. **Skyplex** – Josh Wallack

2. Project Overview

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D. Right of way acquisition will likely be required at each corner to allow the construction of the bridge piers and/or access ramps.

E. Meeting with owners Prior to Project Advisory Group (PAG). Will follow up with Owners.

3. Study Goals

A. Obtain consensus from stakeholders on the look and feel of the overpass.

B. Document the impacts to physical, natural, and cultural assets.

C. Determine the required right-of-way to construct the recommended alternative overpass.

D. Develop a program cost estimate to cover construction costs and associated soft costs (Design and CEI).

E. Maintain eligibility for Federal Funding.

4. Skyplex Discussion

A. Current Site Requirements

B. Future Site Requirements

C. Potential Connection to Development

HHCP and AVCON, A Joint Venture
120 N. Orange Avenue, Orlando, FL 32801 ♦ (407) 644-2656 F (407) 628-3269

International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study

Meeting with Skyplex

May 9, 2022

AGENDA and Meeting Minutes

1. Introduction & Attendees

A. **Orange County –** Blanche Hardy, Brian Sanders, Renzo Nastasi

B. **HHCP** – Project Management and Architecture, Public Involvement (Imaging) Mike Chatham, Eric Houston

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HHCP&AVCON
A JOINT VENTURE

4. Skyplex Discussion

A. Current Site Requirements
B. Future Site Requirements
C. Potential Connection to Development

5. Input from Skyplex (Perkins) Representative Joshua Wallack

A. Property owner and representatives are excited about the project and ready to work with Orange County.

B. Josh shared his knowledge of each corner and the opportunities and challenges of each. Noted that east side has flexibility, and the west side would be more difficult; especially the southwest corner.

C. Josh felt the bridge would be a “game changer” for development of the entire area, including north of Sand Lake Road. He noted he had seen many designs, including some very basic and some grandiose. He likes the idea of an iconic structure.

D. Josh explained that Walgreens leases their site and Unicorp handles the leasing of the entire development. Wyndham has plans for redevelopment of the property.

E. Josh is open to eliminating the existing driveway closest to the intersection on I-Drive. It is not reflected in the current Planned Development (PD) documents.

F. Josh is open to connecting future infrastructure directly to the pedestrian bridge. The future development may not be what is approved in the current Planned Development. Depends on market and economy.

G. Josh noted that plans for development of the Perkins site are fluid.

H. Brian noted that we want to understand what we can and cannot do prior to developing concepts.

I. Blanche noted that a grant had been submitted for potential funding.

J. Josh noted the provided information is helpful and the issues remain the same as in past discussions. He is available to help.

K. Josh noted he was open to all options including ramps, but wanted to give up as little property as possible.

L. Josh opined that an issue with McDonalds would be visibility of the “M” sign.

International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study

Meeting with Fire Rescue

May 11, 2022

AGENDA

1. Introduction & Attendees

A. **Orange County** – Blanche Hardy, Brian Sanders, Renzo Nastasi,

B. **HHCP** –Mike Chatham, Eric Houston

C. **AVCON** – Rick Baldocchi, Clint Pletzer

D. **Orange County Fire Rescue**: Chief Michael Wajda, Elizabeth Stone

2. Project Overview

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C. Determine the required right-of-way to construct the recommended alternative overpass.

D. Develop a program cost estimate to cover construction costs and associated soft costs (Design and CEI).

E. Maintain eligibility for Federal Funding.

4. Fire Rescue Issues for Discussion

A. Specific Needs for Access for Emergency Medical Teams
B. Specific Needs for Fire Fighting Teams
C. Any Additional Consideration

HHCP and AVCON, A Joint Venture
120 N. Orange Avenue, Orlando, FL 32801 ♦ (407) 644-2656 F (407) 628-3269

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International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study

Meeting with Orange County Fire Rescue

May 11, 2022

Meeting Agenda and Minutes

1. Introduction & Attendees

A. **Orange County –** Blanche Hardy, Brian Sanders, Renzo Nastasi,

B. **HHCP** – Mike Chatham, Eric Houston

C. **AVCON** – Rick Baldocchi, Clint Pletzer

D. **Orange County Fire Rescue** – Chief Michael Wajda, Elizabeth Stone

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E. Maintain eligibility for Federal Funding.

4. Fire Rescue Issues for Discussion

A. Specific Needs for Access for Emergency Medical Teams
B. Specific Needs for Fire Fighting Teams
C. Any Additional Consideration

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5. Input from Orange County Fire Rescue Representative Chief Michael Wajda

A. Chief noted that, from an EMS standpoint, it is all about access with equipment. Largest item is stretchers. EMS can provide the size, but they fit in a standard office elevator.

B. From a fire access point of view, access for ladder trucks is critical in the event of a jumper or other issue on the bridge. We discussed that FDOT might require a cage. The Chief was open to that configuration.

C. Mike asked if they would take a lane to set up for response. The Chief responded that it would depend on what the issue is. EMS would typically use a parking area for access to elevator or stairs. If it was a bridge issue, then they might take a lane in the roadway.

D. Rick asked about fire water needs and the Chief noted that the Fire Marshall's office would need to make that determination. However, if there was the opportunity for events on the bridge deck, a standpipe would likely be desired or required.

E. The Chief noted that consideration for firefighter access and hose layouts should be considered. At times, this intersection has seen protests with several hundred people in attendance. It is not often, but should be considered to ensure protesters do not take advantage of the structure.

F. Mike noted that one option would be to eliminate the crosswalks and provide barriers between sidewalks and the roadway. The Chief is open to eliminating on-grade pedestrian crossings; just need to make sure access to buildings are not blocked.

G. Rick asked if Bicycle Patrols would use roadway or stairs/elevators. Chief responded that it would depend on the specific situation.

H. There are four stations that serve this site: Fire Station No's. 31, 52, 54, and 57. No's. 31 and 54 have ladder trucks; North of Sand Lake Road is the City of Orlando service area.

   a. FS #31 – Bay Hill

   b. FS #52 – Sand Lake Treatment Plant

   c. FS #54 – Behind SeaWorld

   d. FS #57 – Orange County Convention Center

I. Additional contact in Fire Marshall's office is David Kilbury.

   a. Mr. Kilbury will be invited to the upcoming PAG meeting.

J. Rick asked about any requirement to the billboard and the Chief noted that the parking lot access is acceptable.

K. Brian asked about potential access directly to the developments at each corner. The Chief noted that would be fine as long as all vertical, horizontal, and turning radii are maintained for fire access.

HHCP&AVCON
A JOINT VENTURE

International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study
Meeting with International Square
May 23, 2022
AGENDA

1. Introduction & Attendees

A. **Orange County** – Blanche Hardy, Brian Sanders, Renzo Nastasi

B. **HHCP** – Mike Chatham, Eric Houston

C. **AVCON** – Rick Baldocchi, Clint Pletzer

D. **International Square –** Tabitha Moore, Stacy Huber

2. Project Overview

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C. There are numerous stakeholders that will be part of the project process and alternative analysis. Primarily the business community in the vicinity.

D. Right of way acquisition will likely be required at each corner to allow the construction of the bridge piers and/or access ramps.

E. Meeting with owners Prior to Project Advisory Group (PAG). Will follow up with Owners.

3. Study Goals

A. Obtain consensus from stakeholders on the look and feel of the overpass.

B. Document the impacts to physical, natural, and cultural assets.

C. Determine the required right-of-way to construct the recommended alternative overpass.

D. Develop a program cost estimate to cover construction costs and associated soft costs (Design and CEI).

E. Maintain eligibility for Federal Funding.

4. International Square Discussion

A. Current Site Requirements

B. Possible Access Options

C. Billboard Impacts

International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study
Meeting with International Square
May 23, 2022
AGENDA & MINUTES

1. Introduction & Attendees

A. **Orange County** – Blanche Hardy, Brian Sanders, Renzo Nastasi

B. **HHCP** – Mike Chatham, Eric Houston

C. **AVCON** – Rick Baldocchi, Clint Pletzer

D. **International Square** – Tabitha Moore, Stacy Huber, and Donald Huber

2. Project Overview

A. Perform a Study to develop and evaluate alternatives for a pedestrian access bridge to connect the four intersection corners at the intersection of International Drive and Sand Lake Road.

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C. There are numerous stakeholders that will be part of the project process and alternative analysis. Primarily the business community in the vicinity.

D. Right of way acquisition will likely be required at each corner to allow the construction of the bridge piers and/or access ramps.

E. Meeting with owners Prior to Project Advisory Group (PAG). Will follow up with Owners. It was discussed that we had met with 2 other property owners plus Clear Channel. Stacy confirmed that Clear Channel had a least for the air rights over their property on the corner.

3. Study Goals

A. Obtain consensus from stakeholders on the look and feel of the overpass.

B. Document the impacts to physical, natural, and cultural assets.

C. Determine the required right-of-way to construct the recommended alternative overpass.

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4. International Square Discussion

A. Current Site Requirements

B. Possible Access Options

C. Billboard Impacts

5. Input from International Square Representatives Tabitha Moore, Stacey Huber, & Donald Huber

A. Stacy Huber asked if County was intending to utilize imminent domain process for potential right-of-way acquisition.

   a. Brian Sanders stated that no acquisition process has been determined and a friendly acquisition, negotiation could be utilized.

B. Stacy noted that maintaining access is very important.

C. Stacy noted that limiting disruption to tenants is important.

D. Tabitha noted that FDOT interchange widening project is already proposing to impact southwest corner of the intersection.

   a. Brian Sanders confirmed that an additional lane is proposed to be widened to the south for eastbound Sand Lake Road at intersection with International Drive.

   b. Rick noted that the right-of-way line from the survey matches the one shown on the FDOT plans. There is no evidence of additional right of way being required by FDOT.

E. Stacy asked about the timing of the project and Blanche explained the project timeline and that construction is not scheduled and would be out at least 4-5 years.

F. Brian explained some of the overall ideas for the site including an architectural theme that tied into the I=4 towers and upgraded lighting that are different than other I-4 interchanges. An upgraded landscape package is also being considered.

G. Stacy asked if the first PAG meeting was scheduled, and Rick responded it was not.

H. Stacy asked for contact information and Rick noted he would send the agenda.

HHCP&AVCON
A JOINT VENTURE

International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study

Meeting with McDonald's
May 23, 2022

AGENDA

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1. Introduction & Attendees

A. **Orange County** – Blanche Hardy, Brian Sanders, Renzo Nastasi

B. **HHCP** – Mike Chatham, Eric Houston

C. **AVCON** – Rick Baldocchi, Clint Pletzer, Sue Finney

D. **McDonald's (Oerther Foods Second Generation)** – Georgette LeMieux

2. Project Overview

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B. Document the impacts to physical, natural, and cultural assets.

C. Determine the required right-of-way to construct the recommended alternative overpass.

D. Develop a program cost estimate to cover construction costs and associated soft costs (Design and CEI).

E. Maintain eligibility for Federal Funding.

4. McDonald's Discussion

A. Current Site Requirements

B. Possible Access Options

HHCP and AVCON, A Joint Venture
120 N. Orange Avenue, Orlando, FL 32801 ♦ (407) 644-2656 F (407) 628-3269

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A JOINT VENTURE

International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study

Meeting with McDonald's

May 23, 2022

Meeting Agenda and Minutes

1. Introduction & Attendees

A. **Orange County** – Blanche Hardy, Brian Sanders, Renzo Nastasi

B. **HHCP** – Mike Chatham, Eric Houston

C. **AVCON** – Rick Baldocchi, Clint Pletzer, Sue Finney

D. **McDonald's (Oerther Foods Second Generation)** – Georgette LeMieux, Greg Oerther

2. Project Overview

A. Perform a Study to develop and evaluate alternatives for a pedestrian access bridge to connect the four intersection corners at the intersection of International Drive and Sand Lake Road.

B. The County is looking for an iconic structure that will serve as a functional pedestrian overpass and provide a signature gateway into the International Drive Tourist Area.

C. There are numerous stakeholders that will be part of the project process and alternative analysis. Primarily the business community in the vicinity.

D. Right of way acquisition will likely be required at each corner to allow the construction of the bridge piers and/or access ramps.

E. Meeting with owners Prior to Project Advisory Group (PAG). Will follow up with Owners.

3. Study Goals

A. Obtain consensus from stakeholders on the look and feel of the overpass.

B. Document the impacts to physical, natural, and cultural assets.

C. Determine the required right-of-way to construct the recommended alternative overpass.

D. Develop a program cost estimate to cover construction costs and associated soft costs (Design and CEI).

E. Maintain eligibility for Federal Funding.

4. McDonald's Discussion

A. Current Site Requirements

B. Possible Access Options

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5. Input from McDonalds Representatives Georgette LeMieux & Greg Oerther

A. Georgette Lemieux noted previous studies has proposed to take 3-4 parking spaces and to potentially take their exit driveway on Sand Lake Road and relocate the entrance driveway further to the west away from the corner.

B. She pointed out that parking and access to the site were paramount. Parking spaces are coveted, but access to Sand Lake Road if of primary importance.

C. Georgette noted that previous discussions did include a direct access to the store from the bridge. They are not sure what that would look like but would like to keep that option open.

D. Greg Oerther noted that McDonalds sign is important. He also noted this site may be the busiest McDonald's in the world.

E. Brian Sanders stated that no specific decisions on parking spaces or access driveways have been made. Ignore past discussions, we are starting fresh.

F. Greg noted that McDonalds own the property, but the franchisee (Oerther Foods Second Generation) owns the building.

   a. Both will be a party to all discussions. Georgette noted they would send contact information for McDonald's.

G. Greg and Georgette were both agreeable to potentially adding a 2^{nd} level access to McDonalds from the pedestrian bridge.

H. Georgette noted that the site accommodated about 15 buses per day, so accommodations and access for buses is important.

I. Brian asked how much foot traffic they received, and Georgette noted that at night that business was about 20% foot-traffic, mostly from the east. Some pedestrians came from the west from the Rosen.

J. Blanche noted it sounded like they would prefer to leave the access points as close as possible to the existing locations.

K. Brian noted there may be ways that the business could be enhanced rather than impacted.

L. Greg noted the project would be a great uplift to the intersection and greatly needed.

International Drive Pedestrian Overpass Intersection Analysis and Overpass Conceptual Design Study

Meeting with Walgreens
June 3, 2022

AGENDA

---

1. Introduction & Attendees

A. **Orange County –** Blanche Hardy, Brian Sanders, Renzo Nastasi

B. **HHCP** – Mike Chatham, Eric Houston

C. **AVCON** – Rick Baldocchi, Clint Pletzer, Sue Finney

D. **Walgreens – Pam Allard**

2. Project Overview

A. Perform a Study to develop and evaluate alternatives for a pedestrian access bridge to connect the four intersection corners at the intersection of International Drive and Sand Lake Road.

B. The County is looking for an iconic structure that will serve as a functional pedestrian overpass and provide a signature gateway into the International Drive Tourist Area.

C. There are numerous stakeholders that will be part of the project process and alternative analysis. Primarily the business community in the vicinity.

D. Right of way acquisition will likely be required at each corner to allow the construction of the bridge piers and/or access ramps.

E. Meeting with owners Prior to Project Advisory Group (PAG). Will follow up with Owners.

3. Study Goals

A. Obtain consensus from stakeholders on the look and feel of the overpass.

B. Document the impacts to physical, natural, and cultural assets.

C. Determine the required right-of-way to construct the recommended alternative overpass.

D. Develop a program cost estimate to cover construction costs and associated soft costs (Design and CEI).

E. Maintain eligibility for Federal Funding.

4. Walgreen Discussion

A. Current Site Requirements
B. Future Site Requirements
C. Potential Connection to Development

AVCON, INC.
ENGINEERS & PLANNERS

5555 E. Michigan St., Suite 200
Orlando, FL 32822-2779
Phone: (407) 599-1122
Fax (407) 599-1133
cpletzer@avconinc.com

MEMORANDUM

Date: June 6th, 2023

To: Catalina Chacon, P.E.

From: Clint Pletzer, P.E.

Re: International Drive Pedestrian Bridge 2021.0099.48
Index 521-001 Concrete Barrier

Introduction

Orange County is considering the construction of an Iconic Pedestrian Overpass at the International Drive and Sand Lake Road Intersection. In doing so, this memorandum recommends utilizing FDOT standard index 521-001 for Concrete Barrier Wall along the approaches to deter pedestrians from entering and crossing the intersection at-grade, as well as protect the four bridge piers, one at each of the corners.

Discussion

The purpose of installing a pedestrian overpass over the International Drive and Sand Lake Road Intersection is pedestrian safety, better flow of traffic and to provide an Iconic structure, among many. The International Drive and Sand Lake Road intersection is one of the busiest intersections in Orange County, and minimizing the number of motorist-pedestrian conflicts will prove beneficial. The International Drive corridor is an epicenter for tourism in Orlando, and includes many retail shops, restaurants, businesses, and hotels. The result of this tourism produces many pedestrians, most that are not familiar with the area.

Along with pedestrian safety, the intent of the barrier wall is to protect the bridge piers from vehicle impacts. This will ensure that the overpass will remain structurally sufficient, as well as protect pedestrians at the four corners of the intersection. There will be a bridge pier at each of the four corners of the intersection. The areas that will accommodate the piers outside of the right-of-way will be established easements dedicated to Orange County from each of the four private properties on the corners of the intersection.

Throughout initial and conceptual design, it has been determined that additional Right-of-Way or easements will be needed to accommodate each of the 4 legs/corners of the bridge. Discussions with those owners are being made now, along with utility coordination.

As for the approaches to the intersection, two potential options were taken into consideration regarding barrier wall. One is a 1’3” concrete barrier wall, offset 4’ from face of curb, running from the first driveway of each approach to the intersection. The second option is a 1’3” concrete barrier wall offset 1’4” from the edge of pavement, utilizing FDOT standard index 521-001. The first option provided inadequate sidewalk width given the offset from face of curb and the Right-of-Way line along each of the approaches. Some spots show only having 3’ of width. Using option two, and utilizing FDOT standard index 521-001, specifically the detailed Curb and Gutter Barrier shown on sheet 20 of 26, will provide adequate sidewalk width along the approach to the intersection. Standard Index 521-001 will provide superior pedestrian accommodation, including PROWAG viable access.

The additional right-of-way required to maintain a 7’ sidewalk on the east approach of the Northeast corner will require re-grading of the Perkins parking lot with option 1. With FDOT Standard Index 521-001, there will be the appropriate 7’ offset to accommodate the sidewalk without need for additional right-of-way.

Another benefit to using the barrier wall from FDOT standard index 521-001 is discouraging pedestrians from crossing over the wall and using the intersection at-grade. With there only being 1’4” from face of barrier wall to edge of pavement, pedestrians should have a better understanding of using the right side of the sidewalk at each of the approaches. With option 1, and a 4’ offset, pedestrians may get confused and use that 4’ buffer as a walking space, and not use the proposed intersection bridge as intended.

Conclusion

Based on the FDOT Standard Index 521-001 for Concrete Barrier Wall, it is recommended that these details are utilized to provide adequate sidewalk widths, given the Right-of-Way restraints along the approaches, and to promote using the proposed pedestrian overpass as intended and deter pedestrians from crossing the intersection at-grade.

END MEMORANDUM

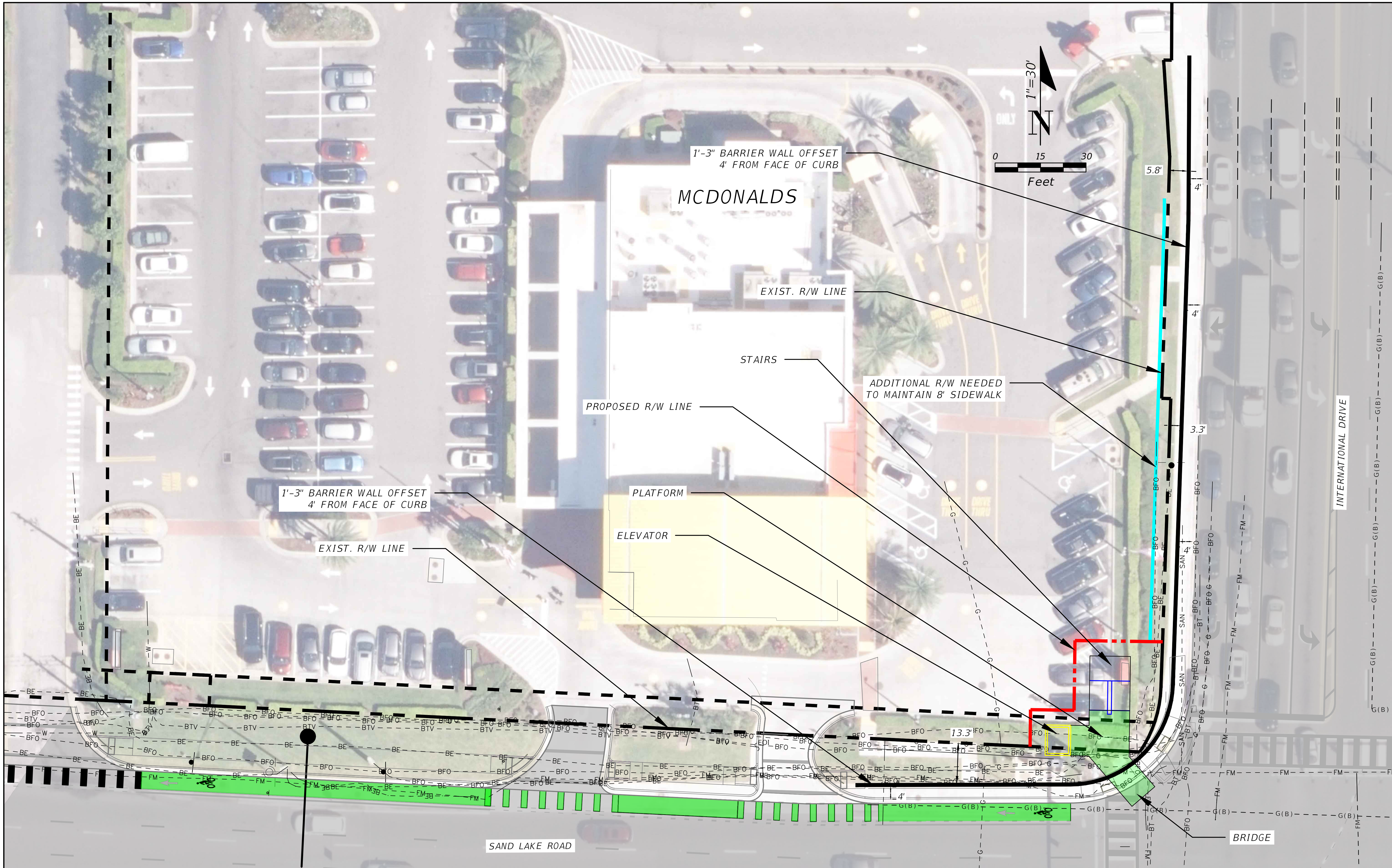
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HHCP&AVCON
A JOINT VENTURE

ORANGE COUNTY GOVERNMENT FLORIDA

INTERNATIONAL DRIVE AT SAND LAKE ROAD
NE CORNER EXHIBIT - STANDARD BARRIER WALL OFFSET

SHEET NO.



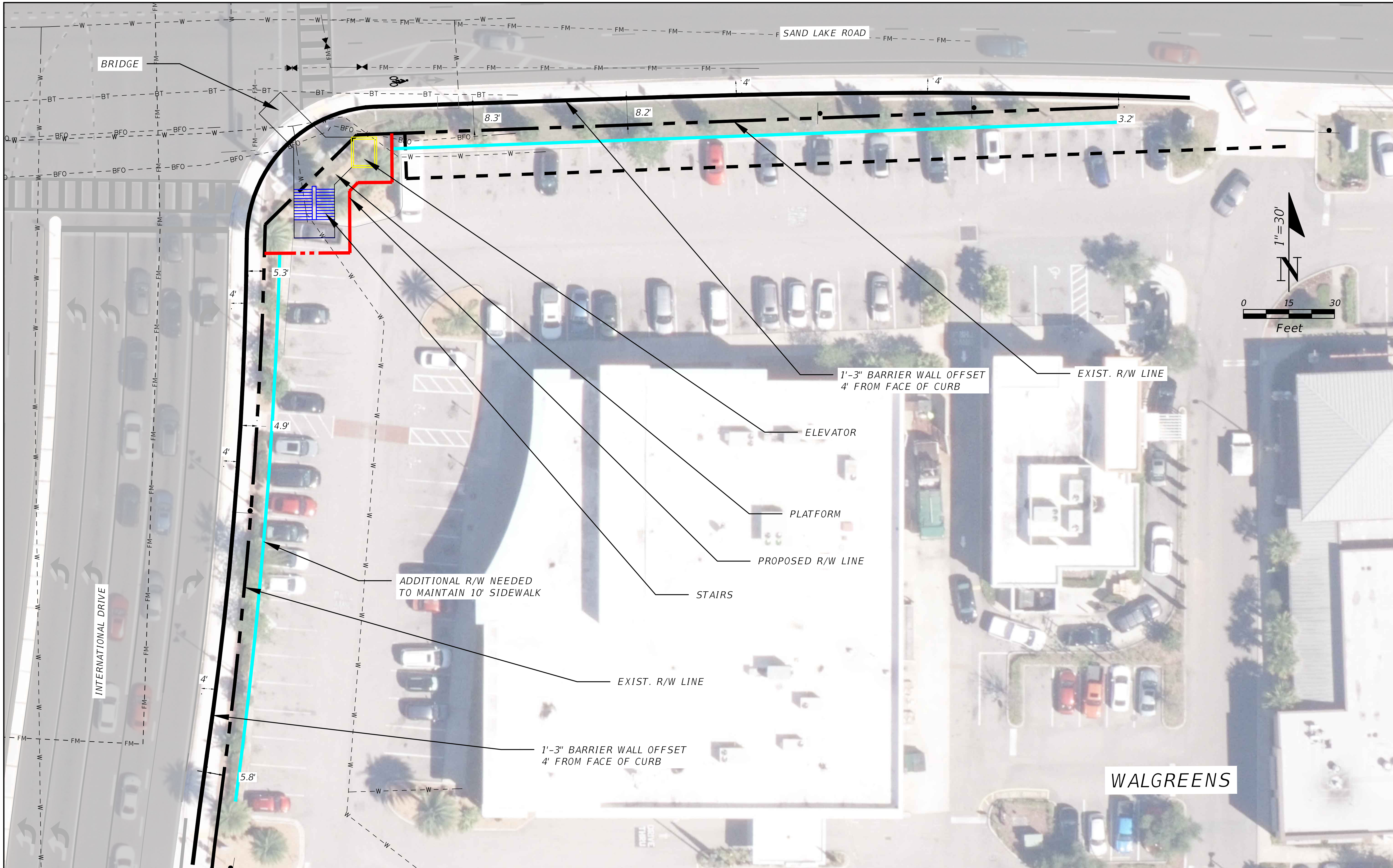
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HHCP&AVCON
A JOINT VENTURE

ORANGE COUNTY GOVERNMENT FLORIDA

INTERNATIONAL DRIVE AT SAND LAKE ROAD
NW CORNER EXHIBIT - STANDARD BARRIER WALL OFFSET

SHEET NO.



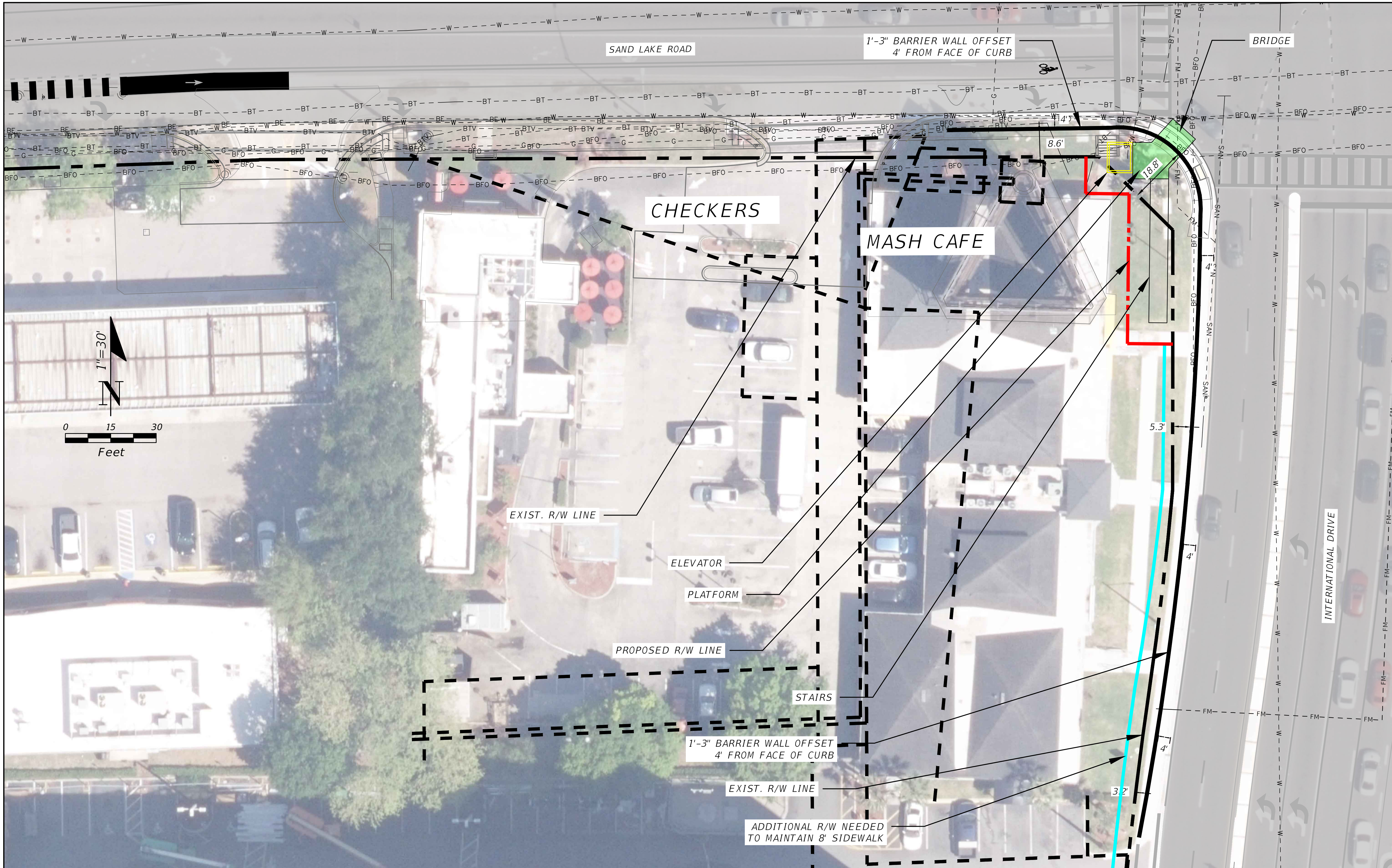
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HHCP&AVCON
A JOINT VENTURE

ORANGE COUNTY GOVERNMENT FLORIDA

INTERNATIONAL DRIVE AT SAND LAKE ROAD
SE CORNER EXHIBIT - STANDARD BARRIER WALL OFFSET

SHEET NO.



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HHCP&AVCON
A JOINT VENTURE

ORANGE COUNTY GOVERNMENT FLORIDA

INTERNATIONAL DRIVE AT SAND LAKE ROAD
SW CORNER EXHIBIT - STANDARD BARRIER WALL OFFSET

SHEET NO.

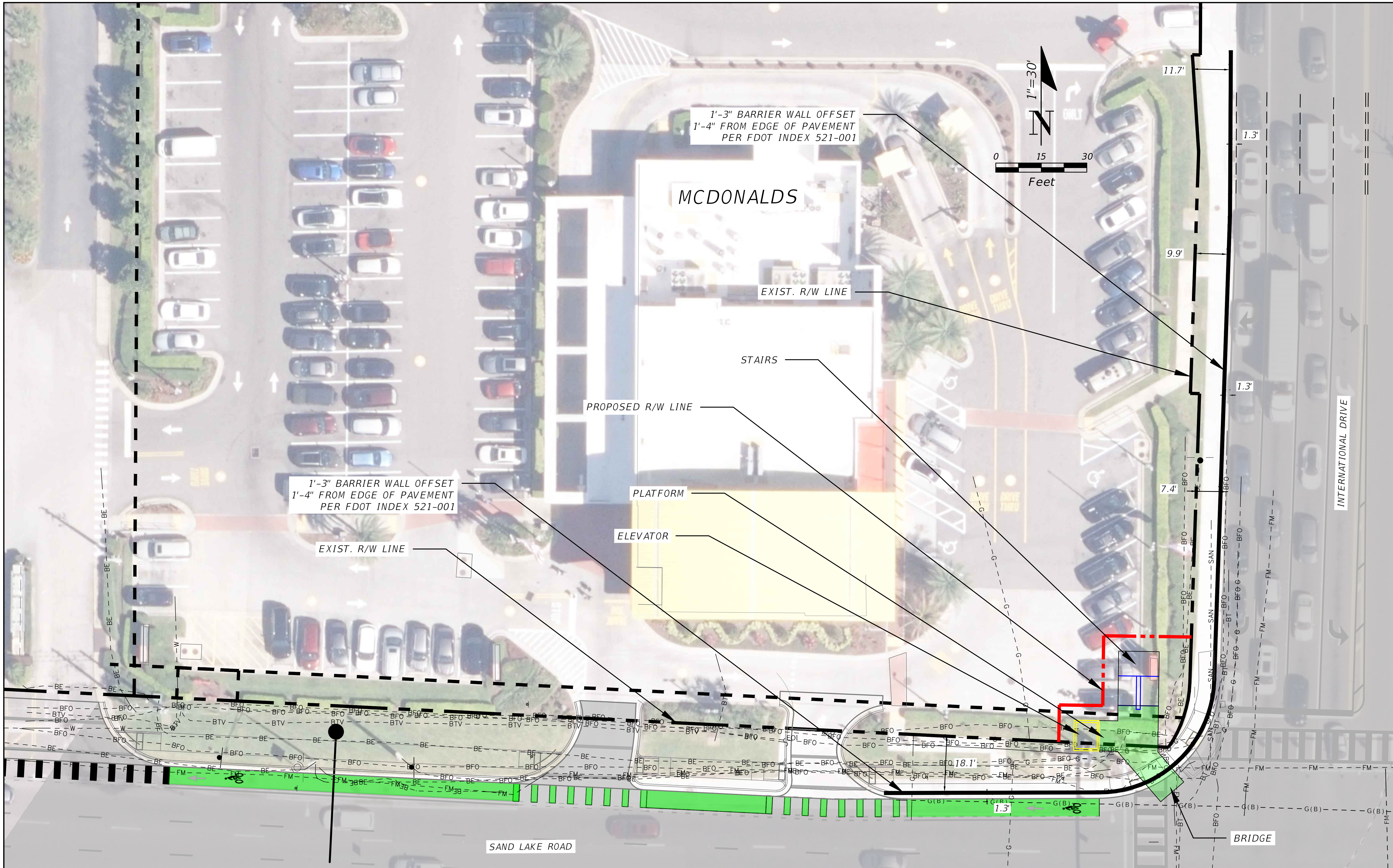
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HHCP&AVCON
A JOINT VENTURE

ORANGE COUNTY GOVERNMENT FLORIDA

INTERNATIONAL DRIVE AT SAND LAKE ROAD
NE CORNER EXHIBIT - FDOT STANDARD INDEX 521-001

SHEET NO.



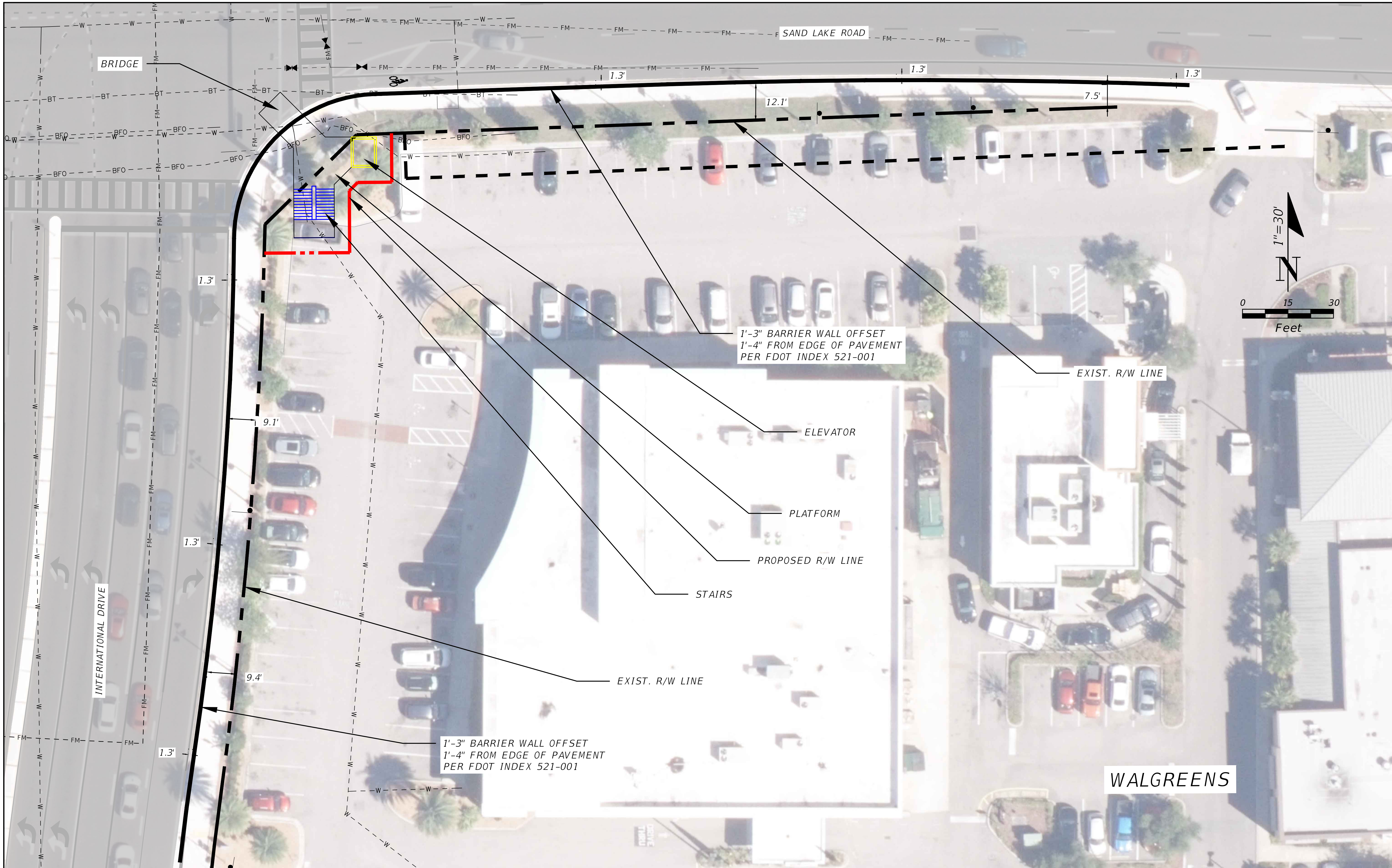
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HHCP&AVCON
A JOINT VENTURE

ORANGE COUNTY GOVERNMENT
FLORIDA

INTERNATIONAL DRIVE AT SAND LAKE ROAD
NW CORNER EXHIBIT - FDOT STANDARD INDEX 521-001

SHEET NO.



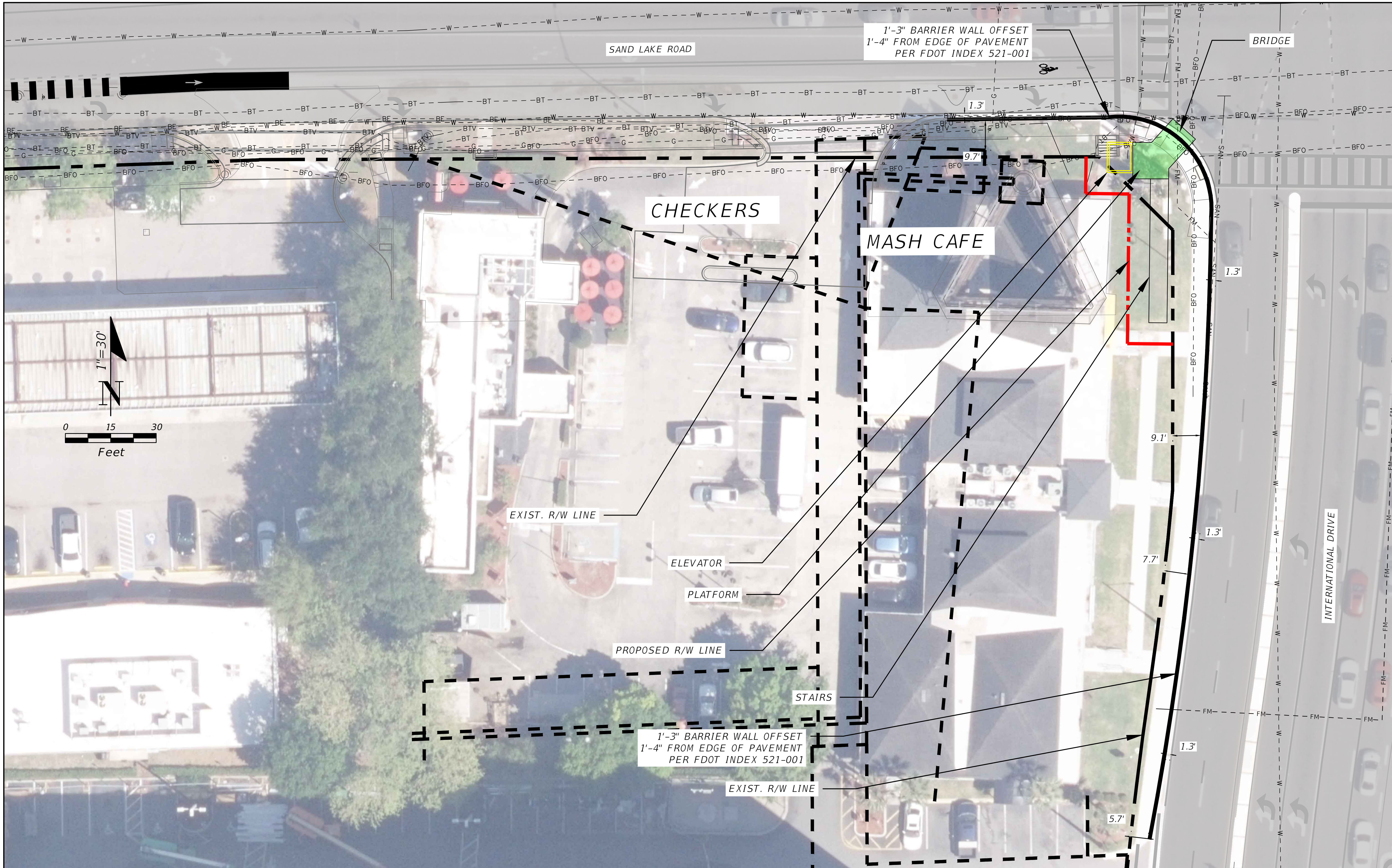
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HHCP&AVCON
A JOINT VENTURE

ORANGE COUNTY GOVERNMENT
FLORIDA

INTERNATIONAL DRIVE AT SAND LAKE ROAD
SE CORNER EXHIBIT - FDOT STANDARD INDEX 521-001

SHEET NO.



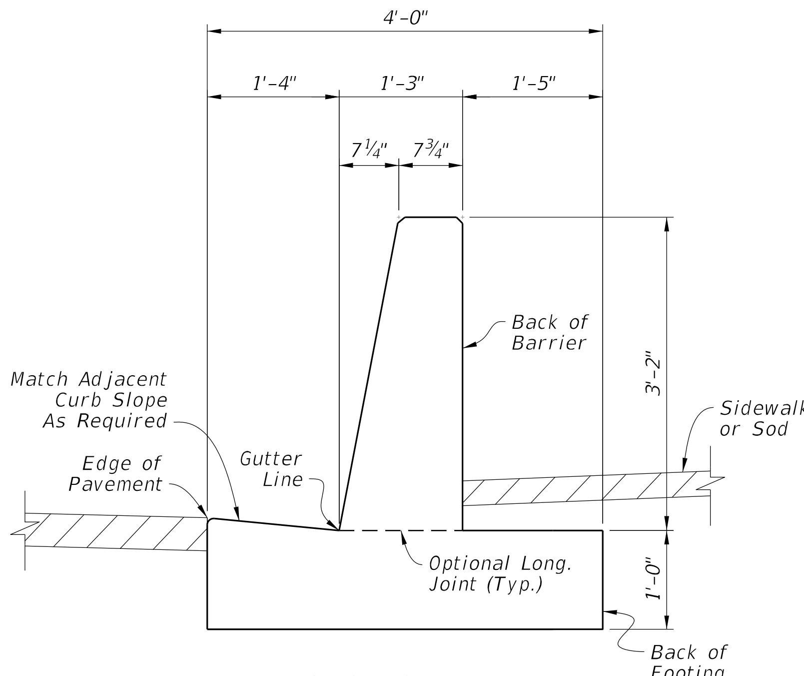
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

HHCP&AVCON
A JOINT VENTURE

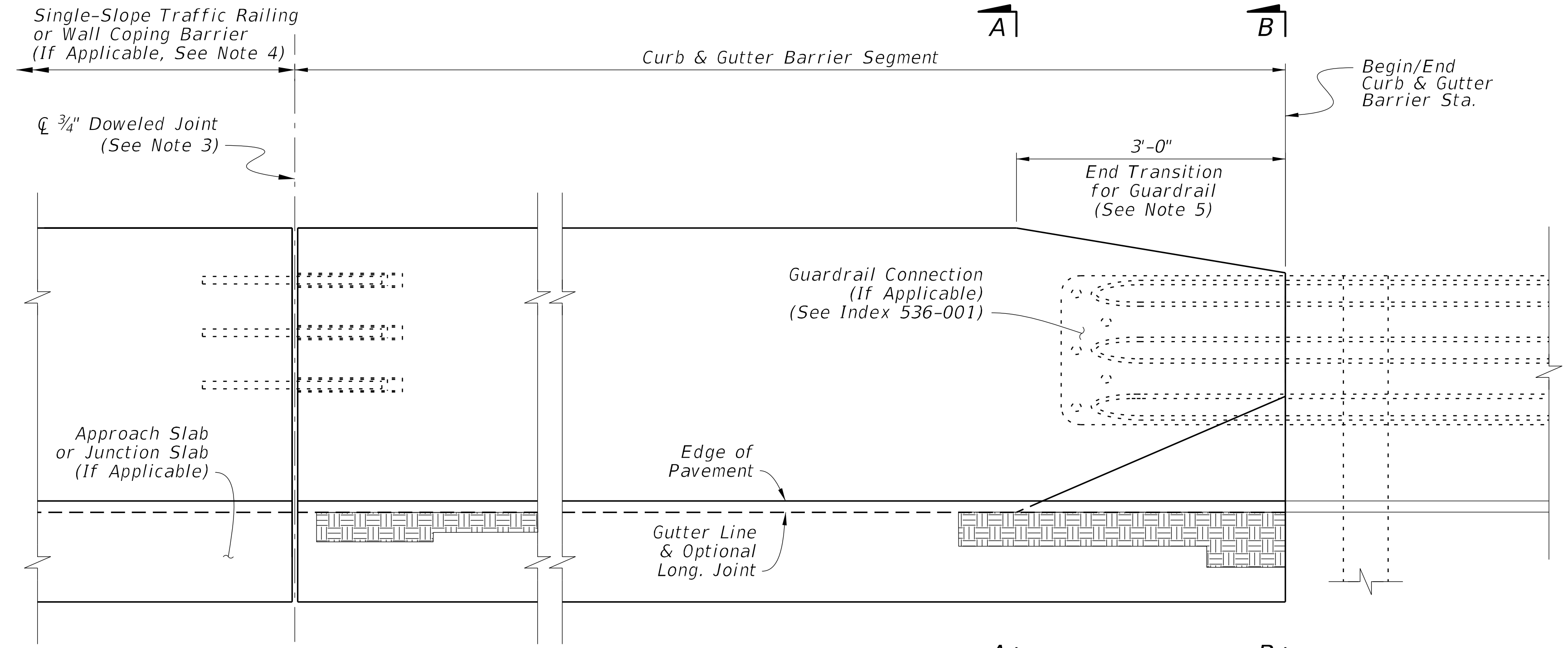
ORANGE COUNTY GOVERNMENT FLORIDA

INTERNATIONAL DRIVE AT SAND LAKE ROAD
SW CORNER EXHIBIT - FDOT STANDARD INDEX 521-001

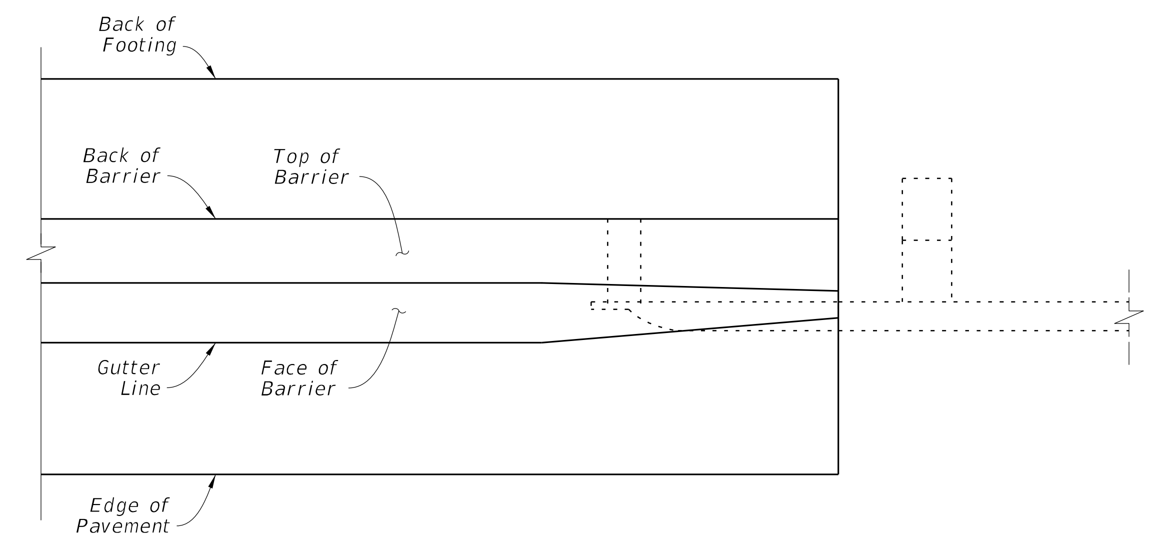
SHEET NO.



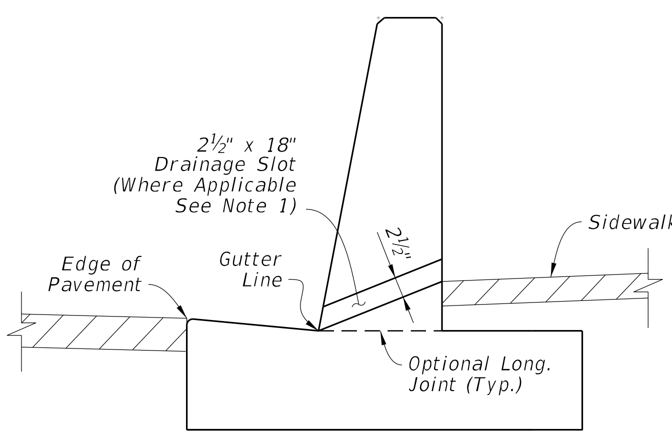
SECTION A-A
CURB & GUTTER
BARRIER



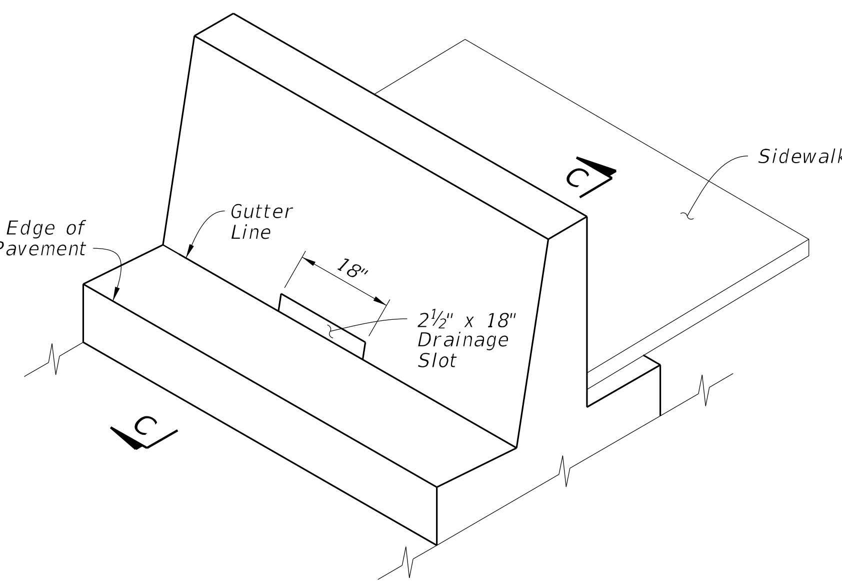
ELEVATION



PLAN



SECTION C-C
CURB & GUTTER
BARRIER WITH
DRAINAGE SLOT



ISOMETRIC VIEW
CURB GUTTER BARRIER
WITH DRAINAGE SLOT

DRAINAGE SLOT DETAILS

DRAINAGE SLOT NOTES:

1. GENERAL: Place 2½" x 18" Drainage Slots at locations and/or spacing called for in the Plans. The minimum spacing is 20 feet.
2. STEEL REINFORCEMENT CONFLICT: When the Drainage Slot encounters a conflict with reinforcing steel, shift or cut the reinforcing steel to provide 2½"(± ½") of concrete cover for the reinforcing around the Drainage Slot. If cutting the vertical bars, maintain 8" bar spacing. If shifting the vertical bars, move the bars from the standard 8" spacing location to the closest end of the drainage slot (distributing additional vertical reinforcement evenly on each side of the Drainage Slot).

CURB AND GUTTER BARRIER NOTES:

1. SECTION VIEWS: For additional Views A-A and B-B, see Sheet 21.
2. EXPANSION JOINTS: Place ½" width transverse expansion joints through the barrier and footing spaced at 100-foot maximum intervals. On both sides of each joint, use the Free End Reinforcing bar spacing per Sheet 21.
3. DOWELED JOINTS: See the General Notes on Sheet 1 for usage of joint types. Where required, install ¾" Doweled Joints as defined on Sheet 13.
4. TRAFFIC RAILING CONNECTIONS: Align the barrier and Traffic Railing faces and connect with the ¾" Doweled Joint per Sheet 13.
5. GUARDRAIL CONNECTIONS: Connect Guardrail using the Transition Connections to Rigid Barrier per Index 536-001 in conjunction with 3'-0" End Transition for Guardrail as shown herein.
6. FREE ENDS: When the barrier end does not terminate with a Traffic Railing connection or Guardrail connection as called for in the Plans, terminate the barrier in accordance with the Free End Reinforcing Note on Sheet 21.

CURB AND GUTTER BARRIER

APPENDIX J

CONSTRUCTION COST BACKUP

(Electric Only)

8/31/2023

Blue Cord Design Construction, LLC
dba Blue Cord Professional Services
835 Bennett Road, Suite 100
Orlando, FL 32803
(407) 425-1390

Project: **International Drive Pedestrian Overpass - D**

Date: 8/31/2023
Bid
Project Number: Y21-803

Coordinator: AVCON/HHCP
Estimator: John Hoibraten

UNIT COST

DIVISION	ITEM		ESTIMATE	SUBCONTRACTOR	BUILDING	SITEWORK
01-013-01	PROJECT SUPERVISON		752,946		$0.00	$0.00
01-000-01	GENERAL CONDITIONS		246,921		$0.00	$0.00
01-400-00	TESTING		6,659	0	$0.00	$0.00
	CONSULTING - DESIGN		0	0	$0.00	$0.00
02-026-00	ABATEMENT		0	0	$0.00	$0.00
02-041-00	DEMOLITION		0	0	$0.00	$0.00
03-000-00	CONCRETE		10,773,459	0	$0.00	$0.00
04-000-00	MASONRY		0	0	$0.00	$0.00
05-010-00	METALS		3,304,104	0	$0.00	$0.00
06-000-00	CABINETS		0	0	$0.00	$0.00
06-010-00	ROUGH CARPETRY		0	0	$0.00	$0.00
07-000-00	FIRESTOP		0	0	$0.00	$0.00
07-010-00	FIREPROOF		0	0	$0.00	$0.00
07-050-00	ROOFING		558,127	0	$0.00	$0.00
08-081-00	GLASS & GLAZING		525,014	0	$0.00	$0.00
08-110-00.	DOORS AND HARDWARE		24,380	0	$0.00	$0.00
09-010-00	STUCCO		0	0	$0.00	$0.00
09-020-00	METAL STUDS, DRYWALL		0	0	$0.00	$0.00
09-030-00	FLOORING		96,600	0	$0.00	$0.00
09-053-00	ACOUSTICS		0	0	$0.00	$0.00
09-091-00	PAINTING		48,305	0	$0.00	$0.00
10-000-00	SIGNAGE		34,000	0	$0.00	$0.00
10-010-00	SPECIALTY		0	0	$0.00	$0.00
10-020-00	TOILET ACCESSORIES		0	0	$0.00	$0.00
14-000-00	ELEVATOR		1,740,000	0	$0.00	$0.00
21-000-00	FIRE PROTECTION		0	0	$0.00	$0.00
22-000-00	PLUMBING		61,880	0	$0.00	$0.00
23-000-00	HVAC		0	0	$0.00	$0.00
26-000-00	ELECTRICAL		1,248,125	0	$0.00	$0.00
28-000-00	LOW-VOLTAGE		77,500	0	$0.00	$0.00
32-000-00	EXTERIOR IMPROVEMENTS		2,081,138	0	$0.00	$0.00
33-011-00	UTILITIES		1,200,000	0	$0.00	$0.00
00--61--00	SUB BOND (SUBCONTRACT ONLY)	1.30%	283,044		$0.00	$0.00
	SUBTOTAL		23,062,201		$0.00	$0.00
50--00--00	DESIGN CONTINGENCIES	15.00%	3,459,330		$0.00	$0.00
	SUBTOTAL		26,521,531		$0.00	$0.00
51--00--00	CONTRACTOR'S PROFIT & OVERHEAD	4.25%	1,127,165		$0.00	$0.00
	CONSTRUCTION COST		27,648,696		$0.00	$0.00
00--61--00	PERFORMANCE/PAYMENT BOND	0.64%	176,451		$0.00	
	BUILDERS RISK	0.17%	47,003		$0.00	
	TOTAL CONSTRUCTION COST		**27,872,150**		**$0.00**	
00--02--00	CIVIL PERMIT	0.79%	220,190		$0.00	
01--41--26	BUILDING PERMIT	0.92%	256,424		$0.00	
	CONSTRUCTION CONTINGENCY	5.00%	1,393,608		$0.00	
	IMPACT FEES	0.79%	220,190		$0.00	
			29,962,562		**$0.00**	

BUILDING AREA 0 SQ. FT.
SITE AREA 0 ACRES

UNIT COST

8/31/2023

Blue Cord Design Construction, LLC
dba Blue Cord Professional Services
835 Bennett Road, Suite 100
Orlando, FL 32803
(407) 425-1390

SUB BID EVALUATION

PROJECT: International Drive Pedestrian Overpass - Drone **JOB #** Y21-803

TRADE: Concrete

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	BUDGET					
CONCRETE									
TOTAL BASE BID					$ 10,773,459				
Strip Foundations	780	lf	$21.00	$ 16,380					
Isolated Foundations	48	each	$1,150.00	$ 55,200					
Slab on Grade	0	sf	$2.50	$ -					
Walks	12856	sf	$2.85	$ 36,640					
Thickened Edge Foundations		lf	$4.00	$ -					
Detectable Warning Strips		sf	$3.00	$ -					
Rectangular Columns	0	sfcs	$8.00	$ -					
Round Columns	0	lf	$12.00	$ -					
Beams	0	sfcs	$8.00	$ -					
Beam Bottoms	0	sfcs	$8.00	$ -					
Site Walls	3800	sfcs	$34.00	$ 129,200					
Lintel Beams	0	lf	$14.00	$ -					
Filled Masonry Cells	0	lf	$2.50	$ -					
Formed elevated Slab	0	sf	$12.00	$ -					
Concrete Paving	0	sf	$1.50	$ -					
Seal Concrete drive	0	sf	$1.25	$ -					
3000 psi Reg. Concrete	176	cy	$145.00	$ 25,520					
3000 Psi Pump Mix	98	cy	$153.00	$ 15,036					
3000 PSI Fiber Mix	374	cy	$161.00	$ 60,284					
4000 psi Pump Mix Concrete	0	cy	$185.00	$ -					
Environmental & fuel Surcharge	66	each	$58.00	$ 3,821					
Reinforcing Steel	25	ton	$2,000.00	$ 49,314					
Steel Accessories, chairs, ties etc.	49	each	$600.00	$ 29,588					
Visqueen 15 Mil	0	roll	$150.00	$ -					
Visqueen tape	0	roll	$10.00	$ -					
Welded Wire Fabric (Mesh)	0	each	$120.00	$ -					
Tilt wall elevator/stairwells	19734	sf	$34.75	$ 685,757					
Stair structure	216	each	$1,750.00	$ 378,000					
Platform Floor structure	6840	sf	$1,358.00	$ 9,288,720					
TOTAL BASE BID				**$ 10,773,459**	**$ 10,773,459**	$ -	$ -	$ -	
LABOR					**$ 7,218,217**				
MATERIALS					**$ 3,555,241**				
				$ -					
TOTAL				**$ 10,773,459**	**$ 10,773,459**				

Blue Cord Design Construction, LLC
dba Blue Cord Professional Services
835 Bennett Road, Suite 100
Orlando, FL 32803
(407) 425-1390

SUB BID EVALUATION

PROJECT: International Drive Pedestrian Overpass - Drone **JOB #** Y21-803

TRADE: MISC METALS

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	BUDGET					
MISC METALS									
TOTAL BASE BID					**$ 3,304,104**				
				$ -					
				$ -					
				$ -					
				$ -					
Pipe Bollards	0	each	$390.00	$ -					
Steel deck	0	sf	$2.54	$ -					
Structural Steel - walkway & roof	6840	sf	$155.85	$ 1,066,014					
Structural Steel - stair & elevator	4	each	$285,000	$ 1,140,000					
Walkway screening	6234	sf	$135	$ 841,590					
Barrier wall screening	1900	sf	$135	$ 256,500					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
TOTAL BASE BID				**$ 3,304,104**	**$ 3,304,104**	**$ -**	**$ -**		
				$ -					
LABOR				$ -	**$ 1,982,462**				
				$ -					
MATERIALS				$ -	**$ 1,321,642**				
				$ -					
TOTAL				**$ 3,304,104**	**$ 3,304,104**				

8/31/2023

Blue Cord Design Construction, LLC
dba Blue Cord Professional Services
835 Bennett Road, Suite 100
Orlando, FL 32803
(407) 425-1390

SUB BID EVALUATION

PROJECT: International Drive Pedestrian Overpass - Drone **JOB #** Y21-803

TRADE: ROOFING

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	BUDGET					
ROOFING									
TOTAL BASE BID					**$ 558,127**				
				$ -					
Roof	41.31	square	$3,150.00	$ 130,127					
Solar Panel	3424	sf	$125.00	$ 428,000					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
TOTAL BASE BID				**$ 558,127**	**$ 558,127**				
LABOR				$ -	**$ 362,782**				
				$ -					
MATERIALS				$ -	**$ 195,344**				
				$ -					
				$ -					
TOTAL				**$ 558,127**	**$ 558,127**	**$ -**	**$ -**	**$ -**	**$ -**

8/31/2023

Blue Cord Design Construction, LLC
dba Blue Cord Professional Services
835 Bennett Road, Suite 100
Orlando, FL 32803
(407) 425-1390

SUB BID EVALUATION

PROJECT: International Drive Pedestrian Overpass - Drone **JOB #** Y21-803

TRADE: HOLLOW METAL, DOORS, HARDWARE

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	BUDGET					
HOLLOW METAL, DOORS, HARDWARE									
TOTAL BASE BID					**$ 24,380**				
Hollow Metal Doors	8	each	$ 1,435.00	$ 11,480					
Hollow Metal Frames	4	each	$ 765.00	$ 3,060					
Hollow Metal View Windows	0	each	$ 175.00	$ -					
Wood Doors	0	each	$ 1,100.00	$ -					
install doors	8	leaves	$ 245.00	$ 1,960					
Overhead Doors	0	each	$ 8,545.00	$ -					
Storefront Doors - Automatic door	0	each	$ 4,500.00	$ -					
Mirrors	0	sf	$ 15.00	$ -					
Access Doors	0	each	$ 100.00	$ -					
Finish Hardware	8	leaves	$ 985.00	$ 7,880					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
TOTAL BASE BID				**$ 24,380**	**$ 24,380**				
				$ 24,380					
LABOR				$ -	**$ 18,285**				
				$ -					
MATERIALS				$ -	**$ 6,095**				
				$ -					
TOTAL				**$ 48,760**	**$ 24,380**		**$ -**	**$ -**	**$ -**

8/31/2023

Blue Cord Design Construction, LLC
dba Blue Cord Professional Services
835 Bennett Road, Suite 100
Orlando, FL 32803
(407) 425-1390

SUB BID EVALUATION

PROJECT: International Drive Pedestrian Overpass - Drone **JOB #** Y21-803

TRADE: GLASS & GLAZING

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	BUDGET					
GLASS & GLAZING									
TOTAL BASE BID					**$ 525,014**				
				$ -					
Windows and Storefront	0	sf	$ 145.55	$ -					
Curtain Wall - ELEVATOR	1608	sf	$ 206.75	$ 332,454					
Stair Glazing	1328	sf	$145.00	$ 192,560					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
TOTAL BASE BID				**$ 525,014**	**$ 525,014**	**$ -**			
				$ -					
LABOR				$ -	**$ 315,008**				
				$ -					
MATERIALS				$ -	**$ 210,006**				
				$ -					
TOTAL				**$ 525,014**	**$ 525,014**				

8/31/2023

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SUB BID EVALUATION

PROJECT: International Drive Pedestrian Overpass - Drone **JOB #** Y21-803

TRADE: PAINTING

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	BUDGET					
PAINTING									
TOTAL BASE BID					$ 48,305				
Paint - Drywall	0	sf	$ 1.55	$ -					
Paint - exterior	26,574	sf	$ 1.75	$ 46,505					
Paint - doors	8	each	$ 225.00	$ 1,800					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
TOTAL BASE BID				**$ 48,305**	**$ 48,305**	**$ -**	**$ -**		
				$ -					
LABOR				$ -	**$ 38,644**				
				$ -					
MATERIALS				$ -	**$ 9,661**				
				$ -					
TOTAL				**$ 48,305**	**$ 48,305**	**$ -**	**$ -**	**$ -**	**$ -**

8/31/2023

BLUE CORD
PROFESSIONAL SERVICES

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SUB BID EVALUATION

PROJECT: International Drive Pedestrian Overpass - Drone **JOB #** Y21-803

TRADE: SIGNAGE

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	BUDGET					
SIGNAGE									
TOTAL BASE BID					**$ 34,000**				
				$ -					
Room signage	0	ls	$2,500.00	$ -					
Site signage	4	each	$8,500.00	$ 34,000					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
TOTAL BASE BID				**$ 34,000**	**$ 34,000**				
LABOR					**$ 8,500**				
MATERIALS					**$ 25,500**				
				$ -					
TOTAL				**$ 34,000**	**$ 34,000**				

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SUB BID EVALUATION

PROJECT: International Drive Pedestrian Overpass - Drone **JOB #** Y21-803

TRADE: ELEVATOR

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	BUDGET					
SPECIALTIES									
TOTAL BASE BID					**$ 1,740,000**				
				$ -					
Elevator	4	each	$435,000.00	$ 1,740,000					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
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				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
TOTAL BASE BID				**$ 1,740,000**	**$ 1,740,000**	**$ -**	**$ -**	**$ -**	**$ -**
				$ -					
LABOR				$ -	**$ 87,000**				
				$ -					
MATERIALS				$ -	**$ 1,653,000**				
				$ -					
TOTAL				**$ 1,740,000**	**$ 1,740,000**	**$ -**	**$ -**	**$ -**	**$ -**

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SUB BID EVALUATION

PROJECT: International Drive Pedestrian Overpass - Drone **JOB #** Y21-803

TRADE: ELECTRICAL

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	BUDGET					
ELECTRICAL									
TOTAL BASE BID					**$ 1,248,125**				
				$ -					
Power, elevator, lighting, solar	9985	sf	$ 125.00	$ 1,248,125					
				$ -					
				$ -					
Electrical from takeoff	1	ls	$ -	$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -		**$ -**			
				$ -					
TOTAL BASE BID				$ 1,248,125	**$ 1,248,125**	**$ -**			
				$ -					
LABOR				$ -	**$ 811,281**				
				$ -					
MATERIALS				$ -	**$ 436,844**				
				$ -					
				$ -					
TOTAL				**$ 1,248,125**	**$ 1,248,125**	**$ -**	**$ -**	**$ -**	**$ -**

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SUB BID EVALUATION

PROJECT: International Drive Pedestrian Overpass - Drone **JOB #** Y21-803

TRADE: LOW VOLTAGE

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	BUDGET					
LOW VOLTAGE									
TOTAL BASE BID					**$ 77,500**				
				$ -					
Data	0	sf	$ 1.50	$ -					
Fire Alarm	1	ls	$ 35,000.00	$ 35,000					
				$ -					
Lightning Protection	10,000	sf	$ 4.25	$ 42,500					
				$ -					
Access controls	**0**	ls	$ 28,420.00	$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
TOTAL BASE BID				**$ 77,500**	**$ 77,500**				
				$ -					
LABOR				$ -	**$ 50,375**				
				$ -					
MATERIALS				$ -	**$ 27,125**				
				$ -					
				$ -					
TOTAL				**$ 77,500**	**$ 77,500**	**$ -**	**$ -**	**$ -**	**$ -**

8/31/2023

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SUB BID EVALUATION

PROJECT: International Drive Pedestrian Overpass - Drone **JOB #** Y21-803

TRADE: EXTERIOR IMPROVEMENTS

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	BUDGET					
EXTERIOR IMPROVEMENTS									
TOTAL BASE BID					$ 2,081,138				
Clearing	0.92	Acres	$ 4,500	$ 4,132					
Stripping	0	sy	$ 1.75	$ -					
Silt Fence	500	lf	$ 1.75	$ 875					
Silt Fence Maintenance	500	lf	$ 0.50	$ 250					
SWIPP Weekly Reports	52	wk	$ 145.00	$ 7,540					
Mobilization	1	ls	$ 9,875.00	$ 9,875					
Maintenance of Traffic	52	wk	$ 12,000.00	$ 624,000					
Construction Entrance	0	each	$ 3,200.00	$ -					
Fill	0	cy	$ 22.50	$ -					
Compaction and Earthwork	0	cy	$ 2.25	$ -					
Onsite Paving Sub Base	0	sy	$ 18.45	$ -					
Onsite Paving Base	0	sy	$ 22.00	$ -					
Onsite Paving Prime	0	sy	$ 1.25	$ -					
Onsite Paving Type S-1 Ashpalt	0	sy	$ 29.25	$ -					
Handicap Signs and Markings	0	each	$ 225.00	$ -					
Striping	0	lf	$ 0.75	$ -					
Mill & Asphalt	33000	sf	$ 18.75	$ 618,750					
Thermoplastic stripes	1	ls	$ -	$ -					
Concrete Curbs Type "D" Header Curb	0	lf	$ 21.00	$ -					
Concrete Curbs Type "F"	0	lf	$ 29.00	$ -					
Concrete Curbs Valley	0	lf	$ 23.50	$ -					
Landscaping	1	ls	$ 36,400.37	$ 36,400					
Sod - Floratam	27144	sf	$ 0.33	$ 8,958					
Irrigation	27144	sf	$ 0.75	$ 20,358					
Signalization	1	ls	$ 750,000.00	$ 750,000					
TOTAL BASE BID				**$ 2,081,138**	**$ 2,081,138**				
				$ -					
LABOR				$ -	**$ 1,352,740**				
				$ -					
MATERIALS				$ -	**$ 728,398**				
				$ -					
				$ -					
TOTAL				**$ 2,081,138**	**$ 2,081,138**	**$ -**	**$ -**	**$ -**	**$ -**

8/31/2023

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SUB BID EVALUATION

PROJECT: International Drive Pedestrian Overpass - Drone **JOB #** Y21-803

TRADE: UTILITIES

DESCRIPTION	QUANTITY	UNITS	UNIT PRICE	BUDGET					
UTILITIES									
TOTAL BASE BID					**$ 1,200,000**				
				$ -					
Drainage	1	ls	$ -	$ -					
Sanitary Sewer	1	ls	$ -	$ -					
Water	1	ls	$ -	$ -					
Fire line	1	ls	$ -	$ -					
				$ -					
Relocate of existing	**1**	ls	$1,200,000.00	$ 1,200,000					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
				$ -					
TOTAL BASE BID				**$ 1,200,000**	**$ 1,200,000**				
				$ -					
LABOR				$ -	**$ 780,000**				
				$ -					
MATERIALS				$ -	**$ 420,000**				
				$ -					
				$ -					
TOTAL				**$ 1,200,000**	**$ 1,200,000**	**$ -**	**$ -**	**$ -**	**$ -**

APPENDIX K

ADJACENT PLANNED DEVELOPMENTS

APPROVED - APPROVED - APPROVED - APPROVED

December 7, 2016
DRC DATE:
ORANGE COUNTY GOVERNMENT FLORIDA
BCC DATE:

SKYPLEX ORLANDO PD

NOVEMBER 21, 2016

LOCATED AT:

7667 INTERNATIONAL DRIVE
ORLANDO FLORIDA

PARCEL ID: 25-23-28-0000-00-008, 25-23-28-0000-00-021,
25-23-28-0000-00-035, 25-23-28-0000-00-056,
25-23-28-3853-00-060, 25-23-28-3853-00-131

DEVELOPMENT INFORMATION

OWNER/DEVELOPER:
WF COASTER ENTERTAINMENT, LLC,
SKYPLEX OWNERSHIP COMPANY, LLC,
WF PP REALTY, LLC
770 LEXINGTON AVENUE
NEW YORK, NY 10065
(786)246-2621
CONTACT: JOSHUA WALLACK

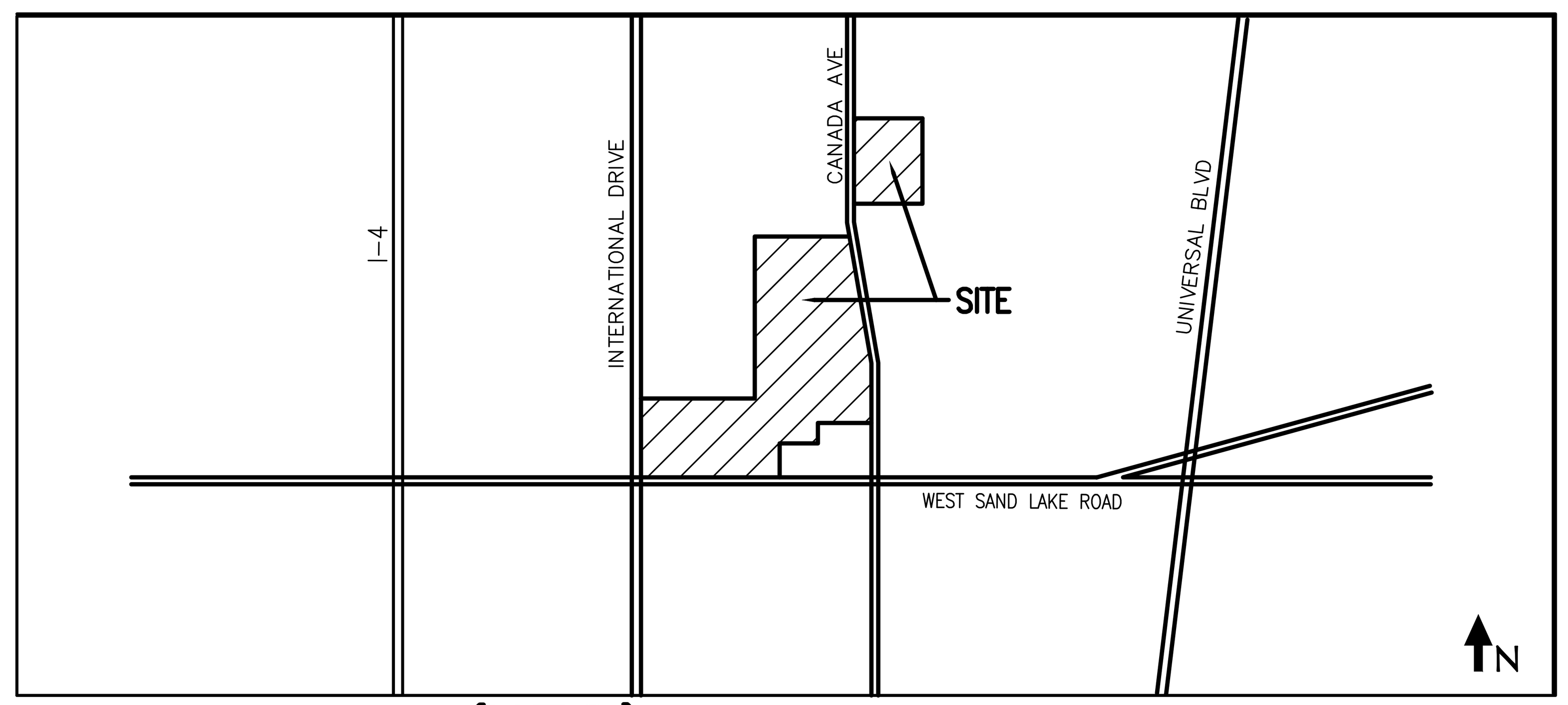
ARCHITECT:
HELMAN HURLEY CHARVAT
PEACOCK / ARCHITECTS, INC
120 N. ORANGE AVE
ORLANDO, FLORIDA
(407)644-2656
CONTACT: MIKE CHATHAM

ENGINEERING/PLANNING TRANSPORTATION:
LITTLEJOHN ENGINEERING ASSOCIATES, INC
1615 EDGEWATER DRIVE, SUITE 180
ORLANDO, FL 32804
(407)975-1273
CONTACT: LENNIE ARNOLD,
GEORGE KRAMER

SURVEYOR:
PEC SURVEYING AND MAPPING, LLC
2100 ALAFAYA TRAIL, SUITE 203
OVIEDO, FL 32765
(407)542-4967

CONSTRUCTION MANAGEMENT:
EUFORRIA
221 CIRCLE DRIVE
MAITLAND, FL 32751
(407)998-2033
CONTACT: JOHN MCNARY

LEGAL:
LOWNDES, DROSDICK, DOSTER,
KANTOR & REED, P.A.
215 NORTH EOLA DRIVE
ORLANDO, FL 32801
(407)418-6326
CONTACT: HAL KANTOR, JONATHAN HUELS



LOCATION MAP (N.T.S.)

NOVEMBER 21, 2016

RECEIVED
By 112982 at 4:18 pm, Nov 21, 2016

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Littlejohn
1615 Edgewater Drive, Suite 180, ORLANDO, FLORIDA 32804
T 407.975.1273 F 407.975.1278 www.leainc.com
Nashville | Chattanooga | Decatur | Huntsville | Knoxville | Orlando | Phoenix | Tri-Cities
Leonard E. Arnold, Jr. P.E. 55241
Benjamin B. Ellis P.E. 72469
Florida Firm Registration No. 28050

SKYPLEX ORLANDO PD
SKYSCRAPER ENTERTAINMENT COMPLEX
7667 INTERNATIONAL DRIVE
ORLANDO, FL 32819

WF COASTER ENTERTAINMENT LLC
770 LEXINGTON AVENUE
NEW YORK, NY 10065
(305) 777-1720

DATE	REVISIONS
8/10/16	LUP AMENDMENT

11/21/16 20140395

C0.0
COVER

EXISTING SITE DATA

TOTAL SITE AREA: 12.96 ACRES

EXISTING LAND USE: COMMERCIAL
EXISTING ZONING: PD, PLANNED DEVELOPMENT

SURROUNDING LAND USE
NORTH: COMMERCIAL
EAST: COMMERCIAL
SOUTH: COMMERCIAL
WEST: COMMERCIAL

SURROUNDING ZONING
NORTH: C-2
EAST: C-2
SOUTH: C-2, IND-2, IND-3
WEST: C-2

FUTURE LAND USE DESIGNATION: COMMERCIAL

EXISTING DRAINAGE PATTERN:

THE SITE IS RELATIVELY FLAT, AND IS SPLIT INTO THREE GENERAL DRAINAGE BASINS. THE WESTERN HALF OF THE SITE DRAINS TO A DITCH IN THE MIDDLE OF THE SITE. THE NORTHEAST PORTION OF THE SITE DRAINS TO A STORMWATER SYSTEM THAT IS THEN PIPED TO A REGIONAL DETENTION LAKE TO THE NORTHEAST. THE SOUTHEAST PORTION DRAINS TO AN ON-SITE DETENTION POND.

SOILS:

PER SCS SOIL SURVEY OF ORANGE COUNTY:
20 – IMMOKALEE FINE SAND
37 – ST. JOHNS FINE SAND
50 – URBAN LAND

DEVELOPMENT PROGRAM

PROPOSED DEVELOPMENT PROGRAM:

- RESTAURANT: 39,823 SF
- ENTERTAINMENT RETAIL: 384,511 SF
- GENERAL RETAIL: 79,441 SF
- HOTEL: 450 ROOMS

THE EQUIVALENCY MATRIX MAY BE UTILIZED TO PROVIDE FOR NON-SUBSTANTIAL CHANGES IN THE DEVELOPMENT PROGRAM ABOVE AND ALLOW OTHER TOURIST COMMERCIAL USES; THE TOTAL DEVELOPMENT ON-SITE SHALL NOT EXCEED A 3.0 FAR OF TOURIST COMMERCIAL OR A TOTAL OF 1,536 PM PEAK HOUR TRIPS.

PERMITTED USES: CPD OVERLAY USES

ZONING: PLANNED DEVELOPMENT (PD) – TOURIST COMMERCIAL

MAX ALLOWED FLOOR AREA RATIO: 3.00

SETBACKS (CPD OVERLAY SETBACKS):
FRONT: 0'
SIDE: 0'
REAR: 0'

MINIMUM REQUIRED PARKING:
2,200 SPACES PER CONDITIONS OF APPROVAL

UTILITIES:

UTILITY PROVIDER:

WATER: ORLANDO UTILITIES COMMISSION
WASTEWATER: ORANGE COUNTY UTILITIES

MAXIMUM BUILDING HEIGHT: 600'

WILDLIFE AND CONSERVATION:

THE PROPERTY IS CURRENTLY USED AS A COMMERCIAL SITE. THE VAST MAJORITY OF THE SITE IS IMPERVIOUS AREA. THE SUBJECT SITE IS NOT A POTENTIAL HABITAT FOR THREATENED, ENDANGERED, OR SPECIES OF SPECIAL CONCERN. JURISDICTIONAL WETLANDS DO NOT EXIST ON SITE.

NOISE POLLUTION:

MAXIMUM PERMISSIBLE SOUND LEVELS – ORANGE COUNTY CODE CHAPTER 15 ENVIRONMENTAL CONTROL, ARTICLE V NOISE POLLUTION CONTROL, SECTION 15-184 PROHIBITED ACTS: NO PERSON SHALL PRODUCE, CAUSE TO BE PRODUCED, BY ANY MEANS, ANY SOUND WITHIN ANY PRIVATE OR PUBLIC PROPERTY, INCLUDING A RIGHT-OF-WAY, WHICH SOUND, WHEN MEASURED PURSUANT TO ORANGE COUNTY CODE CHAPTER 15 ENVIRONMENTAL CONTROL, ARTICLE V NOISE POLLUTION CONTROL, SECTION 15-183, EXCEEDS THE APPLICABLE SOUND LEVEL LIMITS IN ORANGE COUNTY CODE CHAPTER 15-182 MAXIMUM PERMISSIBLE SOUND LEVELS.

STORMWATER MANAGEMENT

STORMWATER MANAGEMENT SHALL BE PROVIDED IN COMPLIANCE WITH THE ORANGE COUNTY CODE AND THE REQUIREMENTS OF THE LOCAL WATER MANAGEMENT DISTRICT.

THE STORMWATER MANAGEMENT CONCEPT SHALL COMPLY WITH ORANGE COUNTY CODE AND ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT STANDARDS. IT WILL BE COMPRISED OF THE USE OF A PROPOSED DETENTION POND, AND UNDERGROUND DETENTION. PER THE BCC CONDITIONS OF APPROVAL, NO STORMWATER MAY DISCHARGE TO SANDY LAKE.

APPROVED WAIVERS FROM ORANGE COUNTY CODE REQUIREMENTS:

1) A WAIVER FROM THE ORANGE COUNTY CODE WAS APPROVED DECEMBER 1, 2015 TO USE THE CONVENTION PLAZA DISTRICT OVERLAY STANDARDS IN SEC. 38-865, IN LIEU OF THE PD TOURIST COMMERCIAL STANDARDS FOUND IN SEC. 38-1287, SEC. 38-1290, SEC. 38-1291, AND SEC. 38-1300 OF THE ORANGE COUNTY CODE.

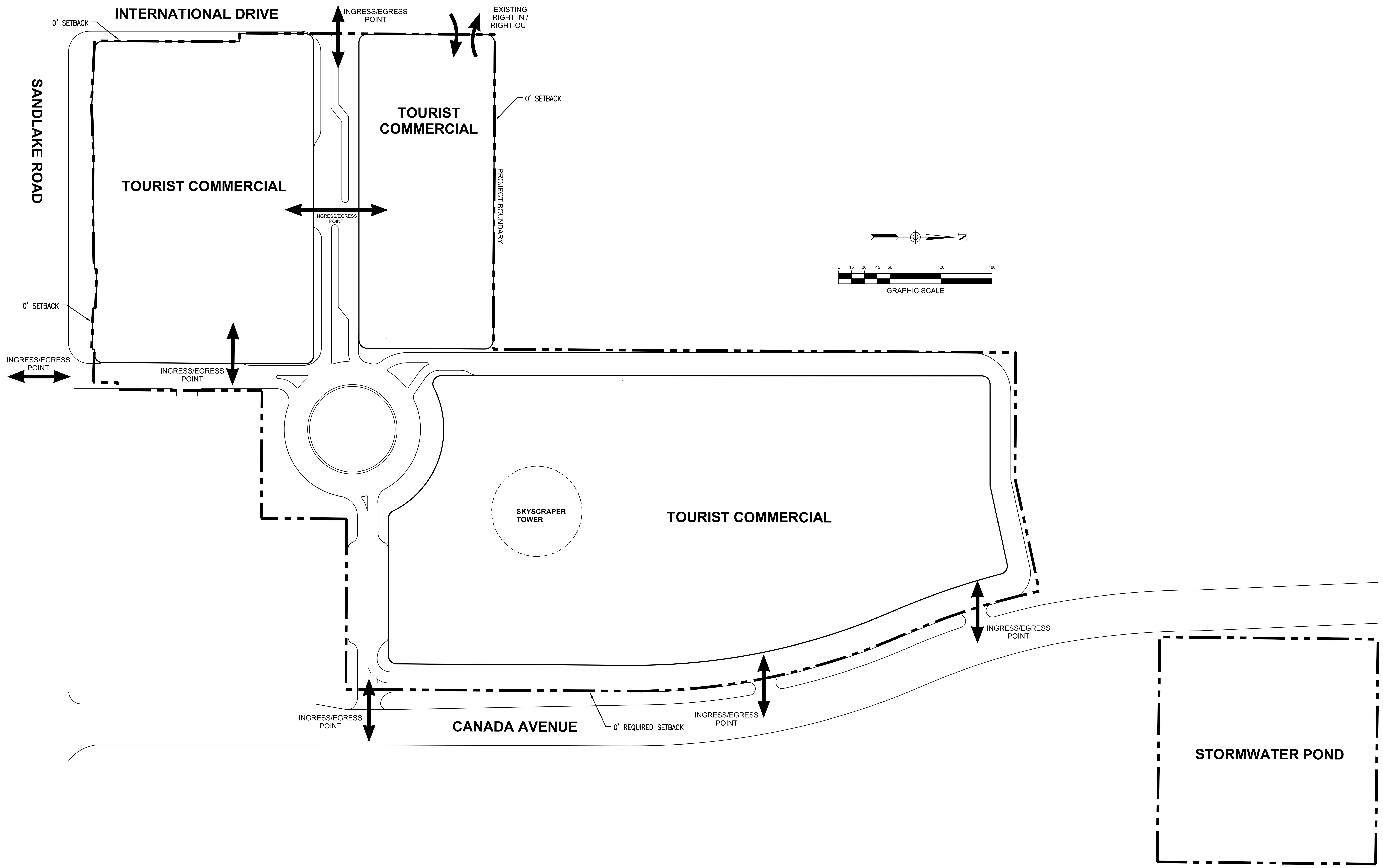
2) WAIVERS FROM THE ORANGE COUNTY CODE WERE APPROVED DECEMBER 1, 2015 FROM SEC. 38-1289 AND SEC. 38-1476 TO ALLOW FOR A MINIMUM PARKING REQUIREMENT OF 2,200 SPACES, IN LIEU OF 2,708 PARKING SPACES (A REDUCTION OF 508 PARKING SPACES).

PHASING

THIS PROJECT MAY BE CONSTRUCTED IN MULTIPLE PHASES, AS DETERMINED BY THE PD DEVELOPMENT PLAN.

NOTE

IN ACCORDANCE WITH SECTION 38-1227, ANY VARIATION FROM COUNTY CODE MINIMUM STANDARDS REPRESENTED ON THIS PLAN THAT HAVE NOT BEEN EXPRESSLY APPROVED BY THE BCC ARE INVALID.



Equivalency Matrix - Skyplex

PM Rate	From / to	Entertainment Venue (guest)	Hotel (Rooms)	Quality Rest. (KSF)	High-Turnover Rest. (KSF)	Fast Food Rest. (KSF)	Office (<50 KSF)	Office (50-100 KSF)	Office (>100 KSF)	Retail (<50 KSF)	Retail (50-100 KSF)	Retail (>100 KSF)
0.06	Entertainment Venue (guest)		10.47	130.72	171.90	569.81	46.93	33.24	26.39	165.21	114.97	97.14
0.60	Hotel (Rooms)	0.096		12.48	16.42	54.42	4.48	3.17	2.52	15.78	10.98	9.28
7.49	Quality Rest. (KSF)	0.008	0.08		1.32	4.36	0.36	0.25	0.20	1.26	0.88	0.74
9.85	High-Turnover Rest. (KSF)	0.006	0.06	0.76		3.31	0.27	0.19	0.15	0.96	0.67	0.57
32.65	Fast Food Rest. (KSF)	0.002	0.02	0.23	0.30		0.08	0.06	0.05	0.29	0.20	0.17
2.69	Office (<50 KSF)	0.021	0.22	2.79	3.66	12.14		0.71	0.56	3.52	2.45	2.07
1.90	Office (50-100 KSF)	0.030	0.32	3.93	5.17	17.14	1.41		0.79	4.97	3.46	2.92
1.51	Office (>100 KSF)	0.038	0.40	4.95	6.51	21.59	1.78	1.26		6.26	4.36	3.68
9.47	Retail (<50 KSF)	0.006	0.06	0.79	1.04	3.45	0.28	0.20	0.16		0.70	0.59
6.59	Retail (50-100 KSF)	0.009	0.09	1.14	1.50	4.96	0.41	0.29	0.23	1.44		0.84
5.57	Retail (>100 KSF)	0.010	0.11	1.35	1.77	5.87	0.48	0.34	0.27	1.70	1.18	

Multiply intensity of 'from' land use by rate shown to determine allowable intensity of 'to' land use.

NOTE: LAND USE CONVERSIONS UTILIZING THIS TABLE, WHICH DO NOT YIELD AN INCREASE TO THE APPROVED TOTAL 1,536 PM PEAK HOUR TRIPS, SHALL BE CONSIDERED A NON-SUBSTANTIAL CHANGE.

Trip Generation by Land Use - Skyplex

Land Use	ITE Code	Intensity		Daily Trip Ends	PM Peak Trips	In		Out	
						%	Trips	%	Trips
Existing Uses									
Burger King	934	5.5	KSF	2,707	178	52%	93	48%	85
Total Existing Trips				**2,707**	**178**		**93**		**85**
Proposed Uses									
Entertainment	n/a	9,000	guests/day	5,143	516	45%	232	55%	284
Restaurant	931	34.5	KSF	3,103	258	67%	173	33%	85
Hotel	310	450	RM	3,654	270	51%	138	49%	132
Shopping Center	820	79.4	KSF	3,392	492	48%	246	52%	246
Total Proposed Trips				**15,293**	**1,536**		**789**		**747**

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DATE	REVISIONS
8/10/16	LUP AMENDMENT

11/21/16 20140395

CP-1

LAND USE PLAN

CORRECTED DECISION OF THE BOARD OF COUNTY COMMISSIONERS
ORANGE COUNTY, FLORIDA

ON DECEMBER 1, 2015, THE BOARD OF COUNTY COMMISSIONERS CONSIDERED THE FOLLOWING APPLICANT'S REQUEST:

APPLICANT: GEORGE M. KRAMER, LITTLE JOHN ENGINEERING ASSOCIATES, SKYPLEX ORLANDO PD/LUP, CASE # LUP-15-03-067

CONSIDERATION: A REQUEST TO REZONE FIVE (5) PARCELS CONTAINING 11.46 ACRES FROM C-2 (GENERAL COMMERCIAL DISTRICT) TO PD (PLANNED DEVELOPMENT DISTRICT) WITH A DEVELOPMENT PROGRAM CONSISTING OF UP TO 39,823 SQUARE FEET OF RESTAURANT USES; 333,423 SQUARE FEET OF ENTERTAINMENT RETAIL USES; 95,371 SQUARE FEET OF GENERAL RETAIL USES; AND 350 HOTEL ROOMS, INCLUDING A MAXIMUM 700-FOOT HIGH TOWER STRUCTURE WITH ROLLER COASTER-TYPE ATTRACTION. IN ADDITION, THE FOLLOWING TWO (2) WAIVERS FROM ORANGE COUNTY CODE HAVE BEEN REQUESTED:

1. A WAIVER TO USE CONVENTION PLAZA DISTRICT OVERLAY STANDARDS IN ORANGE COUNTY CODE SECTION 38-865, IN LIEU OF THE PD TOURIST COMMERCIAL STANDARDS FOUND IN ORANGE COUNTY CODE SECTIONS 38-1287, 38-1290, 38-1291, AND 38-1300; AND
2. WAIVERS FROM ORANGE COUNTY CODE SECTION 38-1289 AND SECTION 38-1476 TO ALLOW FOR A MINIMUM PARKING REQUIREMENT OF 2,200 PARKING SPACES, IN LIEU OF 2,708 PARKING SPACES (A REDUCTION OF 508 PARKING SPACES); PURSUANT TO ORANGE COUNTY CODE, CHAPTER 30.

LOCATION: DISTRICT 6; PROPERTY GENERALLY LOCATED NORTH OF SAND LAKE ROAD, EAST OF INTERNATIONAL DRIVE, AND WEST OF CANADA AVENUE; ORANGE COUNTY, FLORIDA (LEGAL PROPERTY DESCRIPTION ON FILE)

COURT REPORTERS: SHELLEY TROISE, BARBARA PERRY AND COMPANY ANDREA C. RIVERA, 1ST FIRST CHOICE REPORTING AND VIDEO SERVICES

UPON A MOTION, THE BOARD OF COUNTY COMMISSIONERS MADE A FINDING OF CONSISTENCY WITH THE COMPREHENSIVE PLAN; FURTHER, APPROVED THE REQUEST BY GEORGE M. KRAMER, LITTLE JOHN ENGINEERING ASSOCIATES, SKYPLEX ORLANDO PD/LUP, CASE # LUP-15-03-067 TO REZONE FIVE (5) PARCELS

LITTLEJOHN ENGINEERING ASSOCIATES
DEC 14 2015
RECEIVED

CONTAINING 11.46 ACRES FROM C-2 (GENERAL COMMERCIAL DISTRICT) TO PD (PLANNED DEVELOPMENT DISTRICT) WITH A DEVELOPMENT PROGRAM CONSISTING OF UP TO 39,823 SQUARE FEET OF RESTAURANT USES; 333,423 SQUARE FEET OF ENTERTAINMENT RETAIL USES; 95,371 SQUARE FEET OF GENERAL RETAIL USES; AND 350 HOTEL ROOMS, INCLUDING A MAXIMUM 700-FOOT HIGH TOWER STRUCTURE WITH ROLLER COASTER-TYPE ATTRACTION; AND FURTHER, THE FOLLOWING TWO (2) WAIVERS FROM ORANGE COUNTY CODE HAVE BEEN REQUESTED:

1. A WAIVER TO USE CONVENTION PLAZA DISTRICT OVERLAY STANDARDS IN ORANGE COUNTY CODE SECTION 38-865, IN LIEU OF THE PD TOURIST COMMERCIAL STANDARDS FOUND IN ORANGE COUNTY CODE SECTIONS 38-1287, 38-1290, 38-1291, AND 38-1300; AND
2. WAIVERS FROM ORANGE COUNTY CODE SECTION 38-1289 AND SECTION 38-1476 TO ALLOW FOR A MINIMUM PARKING REQUIREMENT OF 2,200 PARKING SPACES, IN LIEU OF 2,708 PARKING SPACES (A REDUCTION OF 508 PARKING SPACES),

ON THE DESCRIBED PROPERTY; SUBJECT TO THE FOLLOWING CONDITIONS:

1. DEVELOPMENT SHALL CONFORM TO THE SKYPLEX ORLANDO PLANNED DEVELOPMENT / LAND USE PLAN (PD/LUP) DATED "RECEIVED APRIL 29, 2015" AND SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND COUNTY LAWS, ORDINANCES, AND REGULATIONS, EXCEPT TO THE EXTENT THAT ANY APPLICABLE COUNTY LAWS, ORDINANCES, OR REGULATIONS ARE EXPRESSLY WAIVED OR MODIFIED BY ANY OF THESE CONDITIONS. ACCORDINGLY, THE PD MAY BE DEVELOPED IN ACCORDANCE WITH THE USES, DENSITIES, AND INTENSITIES DESCRIBED IN SUCH LAND USE PLAN, SUBJECT TO THOSE USES, DENSITIES, AND INTENSITIES CONFORMING WITH THE RESTRICTIONS AND REQUIREMENTS FOUND IN THE CONDITIONS OF APPROVAL AND COMPLYING WITH ALL APPLICABLE FEDERAL, STATE, AND COUNTY LAWS, ORDINANCES, AND REGULATIONS, EXCEPT TO THE EXTENT THAT ANY APPLICABLE COUNTY LAWS, ORDINANCES, OR REGULATIONS ARE EXPRESSLY WAIVED OR MODIFIED BY ANY OF THESE CONDITIONS. IF THE DEVELOPMENT IS UNABLE TO ACHIEVE OR OBTAIN DESIRED USES, DENSITIES, OR INTENSITIES, THE COUNTY IS NOT UNDER ANY OBLIGATION TO GRANT ANY WAIVERS OR MODIFICATIONS TO ENABLE THE DEVELOPER TO ACHIEVE OR OBTAIN THOSE DESIRED USES, DENSITIES, OR INTENSITIES. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN A CONDITION OF APPROVAL OF THIS LAND USE PLAN AND THE LAND USE PLAN DATED "RECEIVED APRIL 29, 2015," THE CONDITION OF APPROVAL SHALL CONTROL TO THE EXTENT OF SUCH CONFLICT OR INCONSISTENCY.

2. THIS PROJECT SHALL COMPLY WITH, ADHERE TO, AND NOT DEVIATE FROM OR OTHERWISE CONFLICT WITH ANY VERBAL OR WRITTEN PROMISE OR REPRESENTATION MADE BY THE APPLICANT (OR AUTHORIZED AGENT) TO THE BOARD OF COUNTY COMMISSIONERS AT THE PUBLIC HEARING WHERE THIS DEVELOPMENT WAS APPROVED, WHERE SUCH PROMISE OR REPRESENTATION, WHETHER ORAL OR WRITTEN, WAS RELIED UPON BY THE BOARD IN APPROVING THE DEVELOPMENT, COULD HAVE REASONABLY BEEN EXPECTED TO HAVE BEEN RELIED UPON BY THE BOARD IN APPROVING THE DEVELOPMENT, OR COULD HAVE REASONABLY INDUCED OR OTHERWISE INFLUENCED THE BOARD TO APPROVE THE DEVELOPMENT. FOR PURPOSES OF THIS CONDITION, A "PROMISE" OR "REPRESENTATION" SHALL BE DEEMED TO HAVE BEEN MADE TO THE BOARD BY THE APPLICANT (OR AUTHORIZED AGENT) IF IT WAS EXPRESSLY MADE TO THE BOARD AT A PUBLIC HEARING WHERE THE DEVELOPMENT WAS CONSIDERED OR APPROVED.

3. PURSUANT TO SECTION 125.022, FLORIDA STATUTES, ISSUANCE OF THIS DEVELOPMENT PERMIT BY THE COUNTY DOES NOT IN ANY WAY CREATE ANY RIGHTS ON THE PART OF THE APPLICANT TO OBTAIN A PERMIT FROM A STATE OR FEDERAL AGENCY AND DOES NOT CREATE ANY LIABILITY ON THE PART OF THE COUNTY FOR ISSUANCE OF THE PERMIT IF THE APPLICANT FAILS TO OBTAIN REQUISITE APPROVALS OR FULFILL THE OBLIGATIONS IMPOSED BY A STATE OR FEDERAL AGENCY OR UNDERTAKES ACTIONS THAT RESULT IN A VIOLATION OF STATE OR FEDERAL LAW. PURSUANT TO SECTION 125.022, THE APPLICANT SHALL OBTAIN ALL OTHER APPLICABLE STATE OR FEDERAL PERMITS BEFORE COMMENCEMENT OF DEVELOPMENT.

4. BILLBOARDS AND POLE SIGNS SHALL BE PROHIBITED. GROUND AND FASCIA SIGNS SHALL COMPLY WITH CHAPTER 31.5 TOURIST COMMERCIAL STANDARDS.

5. UNLESS THE PROPERTY IS OTHERWISE VESTED OR EXEMPT, THE APPLICANT MUST APPLY FOR AND OBTAIN A CAPACITY ENCUMBRANCE LETTER (CEL) PRIOR TO CONSTRUCTION PLAN SUBMITTAL AND MUST APPLY FOR AND OBTAIN A CAPACITY RESERVATION CERTIFICATE (CRC) PRIOR TO APPROVAL OF THE PLAT. NOTHING IN THIS CONDITION, AND NOTHING IN THE DECISION TO APPROVE THIS LAND USE PLAN, SHALL BE CONSTRUED AS A GUARANTEE THAT THE APPLICANT WILL BE ABLE TO SATISFY THE REQUIREMENTS FOR OBTAINING A CEL OR A CRC.

6. THE DEVELOPER SHALL OBTAIN WASTEWATER SERVICE FROM ORANGE COUNTY UTILITIES.

7. PRIOR TO CONSTRUCTION PLAN APPROVAL, HYDRAULIC CALCULATIONS SHALL BE SUBMITTED TO ORANGE COUNTY UTILITIES DEMONSTRATING THAT PROPOSED AND EXISTING WASTEWATER SYSTEMS HAVE BEEN DESIGNED TO SUPPORT ALL DEVELOPMENT WITHIN THE PD.

8. A WAIVER IS GRANTED TO USE THE CONVENTION PLAZA DISTRICT OVERLAY STANDARDS IN ORANGE COUNTY CODE SECTION 38-865, IN LIEU OF THE PD TOURIST COMMERCIAL STANDARDS FOUND IN ORANGE COUNTY CODE SECTIONS 38-1287, 38-1290, 38-1291, AND 38-1300.

9. WAIVERS FROM ORANGE COUNTY CODE SECTION 38-1289 AND SECTION 38-1476 ARE GRANTED TO ALLOW FOR A MINIMUM PARKING REQUIREMENT OF 2,200 PARKING SPACES, IN LIEU OF 2,708 PARKING SPACES *(A REDUCTION OF 508 PARKING SPACES)*.

10. STORMWATER CONDITION: STORMWATER DISCHARGE FROM THE SKYPLEX PD SHALL NOT BE PERMITTED TO DRAIN FROM SURFICIAL WATERS TO ANY SYSTEMS DISCHARGING INTO SANDY LAKE.

11. HEIGHT CONDITION: THE HEIGHT OF THE PROJECT SHALL NOT EXCEED 600 FEET ABOVE GROUND LEVEL

12. LIGHTING CONDITION:

    (A) FLASHING LIGHTING: STROBE OR OTHER EXTERIOR LIGHTING WHICH FLASHES OR BLINKS, ON ANY EXTERIOR PORTION OF THE PLANNED DEVELOPMENT, INCLUDING THE ROLLER COASTER, ARE PROHIBITED.

    (B) KELVIN RATING (WHITE LIGHT INTENSITY): ALL PROJECT EXTERIOR WHITE COLORED LIGHTING, LOCATED MORE THAN 40 FEET ABOVE FINISHED GRADE, SHALL BE 3,000K OR LESS.

    (C) TIMING BETWEEN LIT STATES (COLOR CHANGING): THE PROJECT SHALL INCORPORATE EXTERIOR LIGHTING CONTROL SYSTEMS WHICH SHALL ENSURE THAT:

I) COLOR CHANGING OF ANY LIGHTING INSTALLED MORE THAN 40 FEET ABOVE FINISHED GRADE (INCLUDING ON THE SKYPLEX TOWER) SHALL OCCUR THROUGH A TRANSITION, OR GRADUAL FADING, BY MEANS OF GRANULAR LIGHTING CONTROL SYSTEMS.

II) LIGHT COLOR CHANGE TRANSITIONS ON ALL SURFACES OF THE SKYPLEX [ROLLER COASTER] TOWER (INCLUDING THE TRACKS, SUPPORTING STRUCTURES AND INDIVIDUALS 'CARS') MAY ONLY BE INITIATED AT A MINIMUM OF 8 SECOND INTERVALS.

(D) LIGHTING POWER SHUT DOWN: EXCEPT FOR ANY FAA-REQUIRED LIGHTING, POWER TO ALL WHITE-COLORED LIGHTING ON THE SKYPLEX [ROLLER COASTER] TOWER SHALL BE SHUT OFF BY 2 AM. ALL OTHER NON-WHITE COLORED LIGHTING SHALL BE DIMMED.

(E) SPECIAL EVENTS: REQUESTS FOR SPECIAL EVENT LIGHTING- WHICH DEVIATES FROM THE EXTERIOR LIGHTING PARAMETERS DESCRIBED ABOVE - SHALL BE SUBJECT TO APPROVAL BY THE ZONING MANAGER.

NOTE: EXCEPT FOR THE CONDITIONS OF APPROVAL DESCRIBED ABOVE, ALL PROJECT EXTERIOR LIGHTING SHALL COMPLY WITH THE ORANGE COUNTY EXTERIOR LIGHTING ORDINANCE, AS IT MAY BE AMENDED FROM TIME TO TIME.

BOARD OF COUNTY COMMISSIONERS · ORANGE COUNTY FLORIDA

THE FOREGOING DECISION HAS BEEN FILED WITH ME THIS EIGHTH DAY OF DECEMBER 2015.

DEPUTY CLERK
BOARD OF COUNTY COMMISSIONERS
ORANGE COUNTY, FLORIDA

Note: this document constitutes the final decision of the board of county commissioners on this matter. If, upon the board's subsequent review and approval of its minutes, an error affecting this final decision is discovered, a corrected final decision will be prepared, filed, and distributed.
np

Littlejohn
1615 Edgewater Drive, Suite 180, ORLANDO, FLORIDA 32804
T 407.975.1273 F 407.975.1278 www.leainc.com
Nashville | Chattanooga | Decatur | Huntsville | Knoxville | Orlando | Phoenix | Tri-Cities
Leonard E. Arnold, Jr. P.E. 55241
Benjamin B. Ellis P.E. 72469
Florida Firm Registration No. 28050

SKYPLEX ORLANDO PD
SKYSCRAPER ENTERTAINMENT COMPLEX
7667 INTERNATIONAL DRIVE
ORLANDO, FL 32819

WF COASTER ENTERTAINMENT LLC
770 LEXINGTON AVENUE
NEW YORK, NY 10065
(305) 777-1720

DATE	REVISIONS
8/10/16	LUP AMENDMENT

11/21/16 20140395

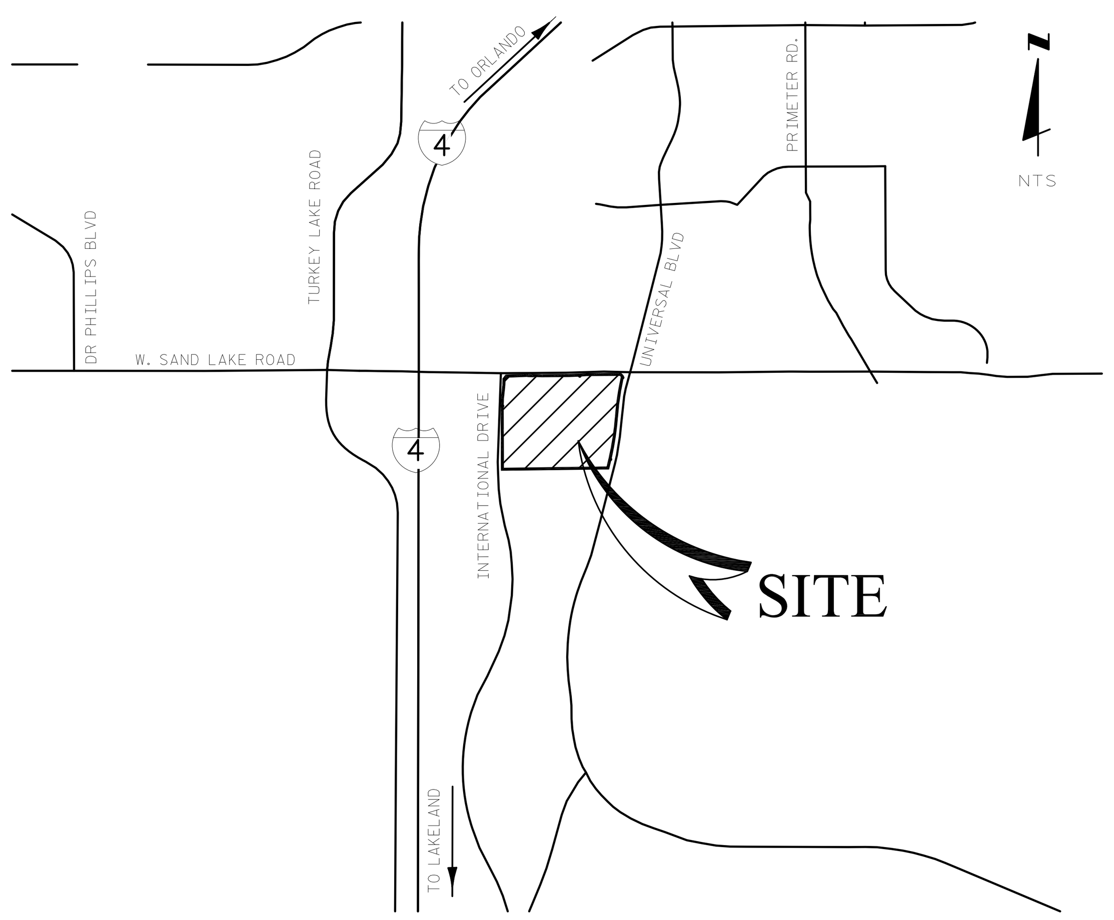
CP-3
LAND USE PLAN

C:\Projects\2014\20140395\dwg\PUD\20140395_PUD v8.dwg–PD-3 Nov 18, 2016 - 4:56pm rghizoni

WYNDHAM ORLANDO RESORTS & SHOPS PD
LAND USE PLAN

PARCEL ID: 36-23-28-0000-00-017

LOCATION MAP



SECTION 36, TOWNSHIP 23 SOUTH, RANGE 28 EAST

REQUESTED WAIVER

THE FOLLOWING WAIVER FROM ORANGE COUNTY CODE IS APPLICABLE:

1. THIS PROJECT SHALL COMPLY WITH THE CONVENTION PLAZA DISTRICT PERFORMANCE STANDARDS.

THIS WAIVER WOULD ALLOW THE DEVELOPMENT, WHICH CONTAINS CONVENTION CENTER SPACE, TO FOLLOW THE CONVENTION PLAZA DISTRICT STANDARDS. THIS DEVELOPMENT AND THESE STANDARDS WILL BE PART OF THE OVERALL EFFORTS TO PROMOTE AND ATTRACT CONVENTIONS TO ORANGE COUNTY, INCREASING GUEST FOR THE LOCAL ECONOMY.

PREPARED FOR:

UNICORP
NATIONAL DEVELOPMENTS, INC.
7940 VIA DELLAGIO WAY
SUITE 200
ORLANDO, FL 23819
TEL. 407.999.9985
FAX. 407.999.9961
www.unicorpusa.com

LEGAL DESCRIPTION

DESCRIPTION (Prepared by Donald W. McIntosh Associates, Inc.):

That part of Section 36, Township 23 South, Range 28 East, Orange County, Florida, described as follows:

BEGIN at the Northwest corner of Block "B", PLAZA INTERNATIONAL UNIT EIGHT, according to the plat thereof as recorded in Plat Book 14, Page 138, of the Public Records of Orange County, Florida; thence N00°13'45"W along the East right-of-way line of International Drive, PLAZA INTERNATIONAL UNIT ONE, according to the plat thereof as recorded in Plat Book 8, Pages 148 and 149, of said Public Records, 466.67 feet to the Northeast corner of said PLAZA INTERNATIONAL UNIT ONE; thence N00°11'48"W along the East right-of-way line of International Drive as described in Official Records Book 2746, Page 165, of said Public Records, 376.03 feet to the point of curvature of a curve concave Easterly having a radius of 1243.82 feet and a chord bearing of N03°56'25"E; thence Northerly along the East right-of-way line of International Drive as described in Official Records Book 3281, Page 929, of said Public Records and the arc of said curve through a central angle of 08°16'27" for a distance of 179.62 feet to the point of reverse curvature of a curve concave Westerly having a radius of 1253.82 feet and a chord bearing of N04°19'35"E; thence Northerly along said East right-of-way line and the arc of said curve through a central angle of 07°30'08" for a distance of 164.17 feet to a non-tangent line; thence N36°15'24"E along the South right-of-way line of State Road 482 (Sand Lake Road) as described in Official Records Book 10237, Page 2621, of said Public Records, 48.25 feet; thence N87°41'36"E along the South right-of-way line of State Road 482 (Sand Lake Road) as described in Official Records Book 580, Page 315, of said Public Records, 270.31 feet; thence run along the South right-of-way line of State Road 482 (Sand Lake Road) as described in Official Records Book 10237, Page 2621, of said Public Records the following eight (8) courses: S88°26'48"E, 25.31 feet; thence S01°33'12"W, 3.00 feet; thence S88°26'48"E, 48.88 feet; thence N01°33'12"E, 3.00 feet; thence S88°26'48"E, 128.93 feet; thence N89°33'29"E, 350.41 feet to a point on a non-tangent curve concave Northerly having a radius of 3863.00 feet and a chord bearing of N87°25'25"E; thence Easterly along the arc of said curve through a central angle of 02°03'08" for a distance of 138.37 feet to a non-tangent line; thence N86°07'48"E, 87.76 feet; thence N89°33'29"E along the South right-of-way line of State Road 482 (Sand Lake Road) as described in Official Records Book 186, Page 578, of said Public Records, 218.06 feet; thence N89°40'15"E along said South right-of-way line, 233.45 feet; thence S44°57'34"E along the South right-of-way line of State Road 482 (Sand Lake Road) as described in Official Records Book 10237, Page 2621, of said Public Records, 33.05 feet; thence S06°53'57"E along said South right-of-way line, 8.44 feet to a point on a non-tangent curve concave Easterly having a radius of 3763.34 feet and a chord bearing of S08°19'11"W; thence run along the West Right-of-way line of Universal Boulevard (formerly known as Republic Drive) as described in Official Records Book 2898, Page 171, of said Public Records the following three (3) courses: Southerly along the arc of said curve through a central angle of 08°09'36" for a distance of 535.97 feet to the point of reverse curvature of a curve concave Westerly having a radius of 3558.27 feet and a chord bearing of S08°40'42"W; thence Southerly along the arc of said curve through a central angle of 08°52'38" for a distance of 551.31 feet to the point of tangency; thence S13°07'01"W, 128.15 feet; thence S89°22'25"W along the North line of Block "B" of aforesaid PLAZA INTERNATIONAL UNIT EIGHT, 64.29 feet to the East line of the Northwest 1/4 of said Section 36; thence S89°18'44"W along the North line of said Block "B", 1321.40 feet to the POINT OF BEGINNING.

Containing 41.842 acres more or less and being subject to any restrictions, rights-of-way and easements of record.

PREPARED BY:

ATKINS
PLAN DESIGN ENABLE
482 SOUTH KELLER RD
ORLANDO, FL 32810
TEL. 407.647.7275
FAX. 407.806.4500
www.atkinsglobal.com

DEVELOPMENT TEAM

CIVIL ENGINEERS:
ATKINS
PLAN DESIGN ENABLE
482 SOUTH KELLER RD
ORLANDO, FL 32810
TEL. 407.647.7275
FAX. 407.806.4500

SURVEYOR:
DONALD W. MCINTOSH ASSOCIATES, INC.
2200 PARK AVE NORTH
WINTER PARK, FL 32789
TEL. 407.644.8318

ARCHITECT:
ANTUNOVICH ASSOCIATES
224 WEST HURON ST, SUITE 7E
CHICAGO, ILLINOIS 60654
TEL. 312.266.1126

MECHANICAL, ELECTRICAL, PLUMBING ENGINEER:
INGENUITY ENGINEERS, INC.
4798 NEW BROAD ST, SUITE 300
ORLANDO, FL 32814
TEL. .407.398.6007

LANDSCAPE ARCHITECT:
DALY & COMPANY
651 NORTH MILLS AVE
ORLANDO, FL 32803
TEL. 407.894.1317

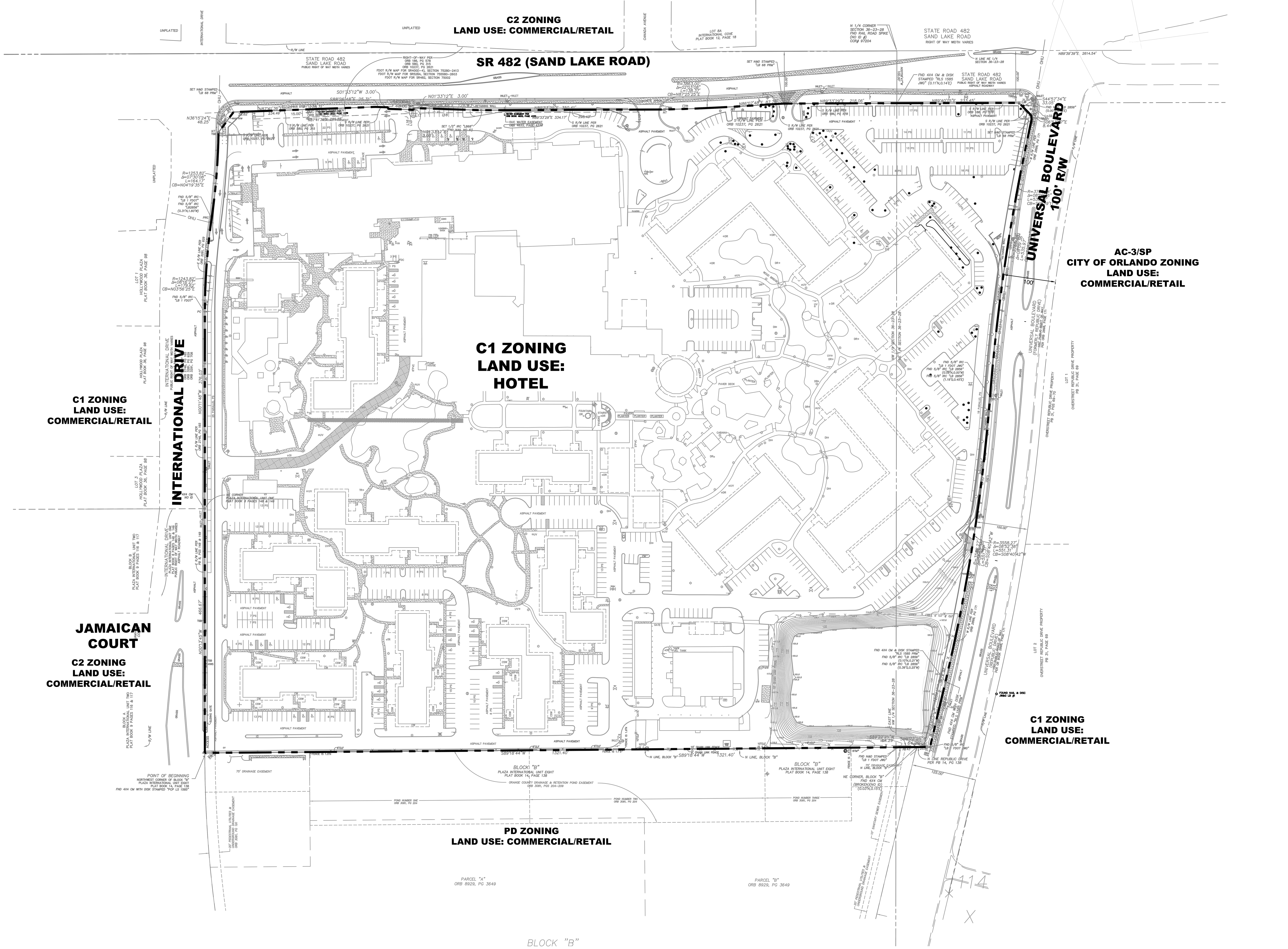
INDEX OF DRAWINGS

SHEET NO.	DRAWING TITLE
C000	COVER SHEET
C100	EXISTING CONDITIONS PLAN
C200	LAND USE PLAN

SEPTEMBER 5, 2014

RECEIVED
By 112982 at 2:21 pm, Sep 05, 2014

SEPTEMBER 2, 2014



DESCRIPTION	DATE	REV

ISSUED FOR

DATE

KATHLEEN S. LEO, P.E.
FLORIDA REG. NO. 51419

DATE:

NOTICE

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CLIENT:
UNICORP NATIONAL DEVELOPMENTS, INC.

PROJECT:
WYNDHAM ORLANDO RESORT & SHOPS PD
ORANGE COUNTY, FLORIDA

SHEET TITLE:
EXISTING CONDITIONS PLAN

ATKINS

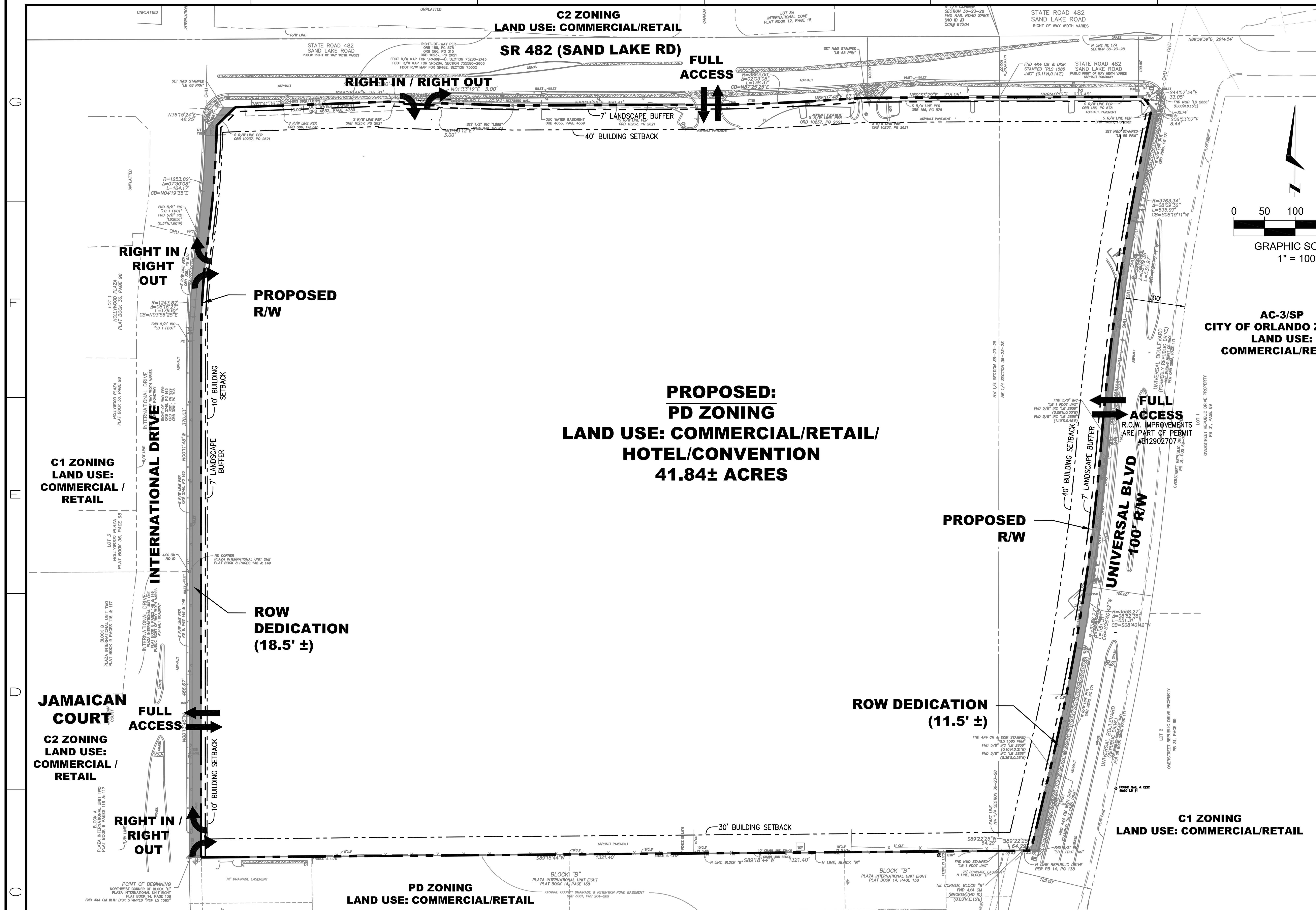
CORPORATE OFFICE:
4030 W. BOY SCOUT BOULEVARD
TAMPA, FLORIDA 33607
FBPR CERTIFICATE OF
AUTHORIZATION NO.24

LOCAL OFFICE:
482 SOUTH KELLER ROAD
ORLANDO, FL 32810
TEL 407.647.7275
FAX 407.806.4500

www.atkinsglobal.com

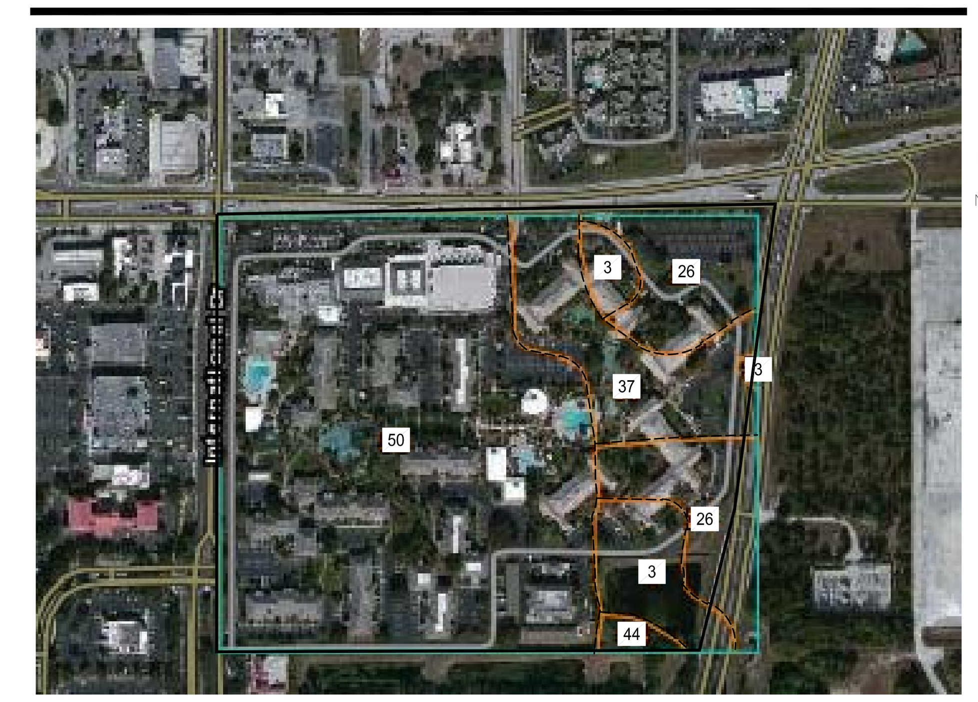
JOB NO.:	100028112
PROJECT ENG:	JMR
DRAWN:	JMR
CHECKED:	JPW
APPROVED:	KSL
SHEET NO.	C100

PLOT DATE: Sep 03, 2014 – 9:51am
FILE NAME: N:\Unicorp\Shops\Land Use Plan\SHC-LUP-EXIST.dwg



LOCATION MAP

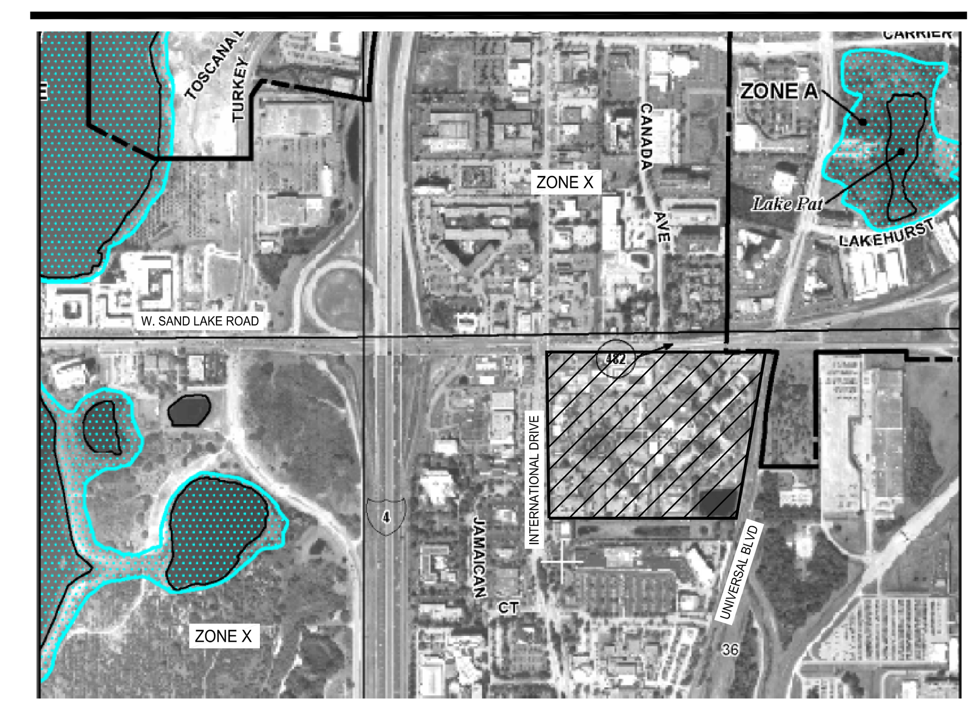
SOIL SURVEY MAP



SOIL LEGEND

- 3 - BASINGER FINE SAND, DEPRESSIONAL
- 26 - ONA FINE SAND
- 37 - ST. JOHNS FINE SAND
- 44 - SMYRNA FINE SAND
- 50 - URBAN LAND

FLOOD AREAS



PROPERTY OWNER:

I SHOPS, LLC
7940 VIA DELLAGIO WAY, SUITE 200
ORLANDO, FL 32819

PROJECT INTENT:

THE INTENT OF THIS PROJECT IS TO CONSTRUCT A MULTI USE DEVELOPMENT WITH 138,000 SF OF COMMERCIAL SPACE, 1,613 HOTEL ROOMS AND 110,310 SF OF CONVENTION CENTER SPACE IN MULTIPLE PHASES.

LAND USE SUMMARY:

EXISTING ZONING: C1 (RETAIL COMMERCIAL)
PROPOSED ZONING: PD (PLANNED DEVELOPMENT)
EXISTING LAND USE: HOTEL, CONVENETION CENTER
PROPOSED LAND USE: COMMERCIAL, RETAIL, GAS STATION, HOTEL AND ALL USES IN ZONING C1

COMMERCIAL BUILDING HEIGHT: 60'
HOTEL BUILDING HEIGHT: 600' (40 - STORIES)

FLOOD ZONE:

THIS PROPERTY LIES IN FLOOD ZONE "X", AS PER FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP; COMMUNITY PANEL No. 12095C0405 F, DATED SEPTEMBER 25, 2009.

SCHOOL AGE POPULATION

N/A

BUILDING SETBACK REQUIREMENTS:

	REQUIRED	PROPOSED*
FRONT:		
SAND LAKE RD:	60'	0'
UNIVERSAL BLVD:	60'	0'
INTERNATIONAL DR:	25'	0'
REAR	30'	0'
SIDE (LOT LINE)	30'	0'
SIDE:		

* WAIVER REQUESTED FOR CPD STANDARDS

PD SETBACK REQUIREMENTS:

	REQUIRED	PROPOSED
PD SETBACK	25'	0'

* WAIVER REQUESTED FOR CPD STANDARDS

WATER/WASTEWATER SERVICE (TOTAL SITE)

WATER: ORLANDO UTILITY COMMISSION (OUC)
FIRE DEMAND=2,000 GPM FOR 2 HOURS @ 20 TO 70 PSI
WASTEWATER: ORANGE COUNTY UTILITIES

PRODUCT DATA:

	EXISTING/ PERMITTED	PROPOSED FUTURE	OVERALL
COMMERCIAL / RETAIL	102,378 S.F.	35,622 S.F.	138,000 S.F.
HOTEL ROOMS	613 ROOMS	1,000 ROOMS	1,613 ROOMS
CONVENTION CENTER	110,310 S.F.	0 S.F.	110,310 S.F.

SITE DATA:

	PROVIDED
TOTAL AREA	= 41.84 ACRES
SITE ACREAGE ZONED	= 41.84 ACRES
NET DEVELOPABLE	= 41.84 ACRES

OPEN AREA:

OPEN SPACE REQUIRED: 25% (41.84 AC) = 10.385 AC
OPEN SPACE ALLOWED: 0% (per CPD STANDARDS)

FLOOR AREA RATIO (FAR):

MAXIMUM FLOOR AREA RATIO (FAR) = 3.0

LOT COVERAGE CALCULATIONS:

REQUIRED MAXIMUM IMPERVIOUS AREA: 70%
ALLOWED MAXIMUM IMPERVIOUS AREA: 100% (PER CPD STANDARDS)

LANDSCAPING, BUFFERS, TREES AND CONSERVATION:

FINAL LANDSCAPE DESIGN TO MEET OR EXCEED LANDSCAPE BUFFERING REQUIREMENTS OF ORANGE COUNTY CODE, EXCEPT FOR THE REQUESTED WAIVERS HEREIN.

LANDSCAPE BUFFER REQUIREMENTS:

	REQUIRED	PROVIDED*
STREET ROW:	7'	0'
SOUTH PROPERTY LINE:	0'	0'
INTERNAL PD LOT LINES:	0'	0'

* WAIVER REQUESTED FOR CPD STANDARDS

PARKS/RECREATION

N/A

TRAFFIC RATE:

				Trip Generation Rates									Trips Generated					
		Base			A.M. Peak Hour				P.M. Peak Hour					A.M. Peak Hour			P.M. Peak Hour		
Land Use	ITE.Code	Units	Size	Daily	Total	InB	OutB	Type	Total	InB	OutB	Type	Daily	Total	InB	OutB	Total	InB	OutB
Hotel	310	1	1073 Occ Room	8.92	0.67	0.39	0.28	Adj	0.70	0.34	0.36	Adj	9,571	718	418	300	751	365	386
Hotel	310	1	613 Occ Room	8.92	0.67	0.39	0.28	Adj	0.70	0.34	0.36	Adj	5,468	411	239	172	429	208	221
																Demolished Rooms:	322	157	165
Shopping (	820	1	138 1000 Sq Ft	60.67	1.16	0.71	0.45	Adj	5.06	2.48	2.58	Adj	8,372	160	98	62	698	342	356
									Percent New Trips:				55%	Percent New Trips:		55%	383	188	195
Hotel	310	1	1613 Occ Room	8.92	0.67	0.39	0.28	Adj	0.70	0.34	0.36	Adj	14,388	1,081	629	452	1,129	548	581
											New Development:					New Development:	1,512	736	776
											460 Demolished Rooms (Credit):					460 Demolished Rooms (Credit):	322	157	165
											613 Remaining Existing Rooms (Credit):					613 Remaining Existing Rooms (Credit):	429	208	221
											Net New Trips:					Total New Trips:	761	371	390

TRANSPORTATION/ACCESS

STREETS:

SAND LAKE ROAD: ROADWAY IMPROVEMENTS ARE TO WIDEN TO SIX LANE SAND LAKE ROAD FROM TURKEY LAKE ROAD TO PRESIDENTS DRIVE.

INTERNATIONAL DRIVE: ROADWAY IMPROVEMENTS ARE TO ADD A BUS LANE ALONG THE EAST SIDE OF THE ROAD.

UNIVERSAL BLVD: NO IMPROVEMENTS.

Num	From	To	Lgth	Maint Agency	Ln	PmPk	PkDir	Min LOS	Total Cap	Comm Trips	Avail Cap	LOS	Project Distrib	Project NB/EB	Project SB/WB	Total PM Pk	Avail Cap	Total LOS	Prop Share
International Dr																			
196.5	Pointe Plaza Ave	Sand Lake Rd	1.4	Cnty	4	974	NB	E	1,870	387	509	D	12.8%	47	50	1,408	462	D	
197	Sand Lake Rd	Kirkman Rd	1.39	Orlando	4	690	SB	E	1,700	184	826	D	6.2%	24	23	897	803	D	
197.1	Kirkman Rd	Oak Ridge Rd	1.11	Orlando	4	787	NB	E	1,870	12	1,071	C	8.1%	32	30	831	1,039	C	
Kirkman Rd																			
217	Sand Lake Rd	International Dr	0.89	ST	6	1,782	NB	E	2,830	11	1,037	C	21.9%	85	81	1,878	952	C	
218	International Dr	Major Blvd	1.07	ST	6	2,226	NB	E	2,940	23	691	B	4.7%	18	17	2,267	673	B	
Pointe Plaza Ave																			
359.1	International Dr	Universal Blvd	0.43	Cnty	4	290	NB	E	1,700	30	1,380	C	3.2%	12	12	332	1,368	C	
Sand Lake Rd																			
394	Dr. Phillips Blvd	Turkey Lake Rd	0.58	Cnty	4	2,028	WB	E	2,480	511	0	F	4.6%	17	18	2,557	0	F	$56,792
394.5	Turkey Lake Rd	International Dr	0.43	Cnty	8	2,299	WB	E	3,450	517	634	D	22.8%	85	89	2,905	545	D	
395	International Dr	Site	0.16	ST	6	1,586	WB	E	2,940	428	926	B	28.8%	107	112	2,126	814	B	
395	Site	Universal Blvd	0.16	ST	6	1,586	WB	E	2,940	428	926	B	44.3%	164	173	2,187	753	B	
395	Universal Blvd	Kirkman Rd	0.59	ST	4	1,586	WB	E	1,960	428	0	F	22.7%	84	89	2,103	0	F	$543,618
396	Kirkman Rd	John Young Pkwy	1.72	ST	4	1,959	WB	E	1,870	93	0	F	7.1%	28	26	2,078	0	F	$462,971
Turkey Lake Rd																			
438	Sand Lake Rd	Wallace Rd	0.92	Cnty	4	1,211	NB	E	1,960	362	387	C	1.8%	7	7	1,580	380	C	
439	Wallace Rd	Vineland Rd	1.23	Cnty	4	1,623	SB	E	1,870	96	151	D	0.1%	0	0	1,719	151	D	
Universal Blvd																			
490	Interstate 4	Sand Lake Rd	1.06	Cnty	4	613	SB	E	1,870	117	1,140	C	21.6%	84	80	810	1,060	C	
491	Sand Lake Rd	Pointe Plaza Ave	1.02	Cnty	4	594	NB	E	1,960	156	1,210	B	13.7%	51	53	801	1,159	B	
492	Pointe Plaza Ave	Beachline Exp	2.08	Cnty	6	879	WB	E	2,940	19	2,042	B	9.4%	35	37	935	2,005	B	
																		Sum:	$1,063,381

Retail Square Footage (in 1,000's): 138 *InB:* 371
Hotel Rooms: 1613 *OutB* 390

Comparison of Impact Fee Creditable Owner Contributions To New Vested Trips

Agreed Upon Value of International Drive Conveyed Lands (See Section 2(d))	$844,969.00	
Expected Value of Road and Signalization Improvements (See Section 3(e))	$222,896.41	
Subtotal of Impact Fee Creditable Owner Contributions		$1,067,865.41
Equivalent Value of 761 net new two way p.m. peak trips		$1,063,381.00
Difference		$4,484.41

STORMWATER MANAGEMENT:

1. STORMWATER MANAGEMENT FACILITIES WILL BE DESIGNED TO PROVIDE FOR THE REQUIREMENTS OF WATER QUALITY AND WATER QUANTITY CRITERIA OF THE COUNTY AS WELL AS THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT. THE STORMWATER MANAGEMENT SYSTEM WILL BE REVIEWED AND APPROVED CONCURRENTLY BY THE COUNTY AND THE DISTRICT.
2. DRAINAGE FACILITIES AND OPEN SPACE TO BE OWNED AND MAINTAINED BY THE OWNER OR ESTABLISHED PROPERTY OWNERS ASSOCIATION.

REV	DATE	DESCRIPTION	ISSUED FOR	DATE

KATHLEEN S. LEO, P.E.
FLORIDA REG. NO. 51419
DATE:

CLIENT: **UNICORP NATIONAL DEVELOPMENTS, INC.**

PROJECT: **WYNDHAM ORLANDO RESORT & SHOPS PD**
ORANGE COUNTY, FLORIDA

SHEET TITLE: **LAND USE PLAN**

ATKINS

CORPORATE OFFICE:
4030 W. BOY SCOUT BOULEVARD
TAMPA, FLORIDA 33607
FBPR CERTIFICATE OF AUTHORIZATION NO.24

LOCAL OFFICE:
482 SOUTH KELLER ROAD
ORLANDO, FL 32810
TEL. 407.647.7275
FAX. 407.806.4500

www.atkinsglobal.com

JOB NO.:	100028112
PROJECT ENG:	JMR
DRAWN:	JMR
CHECKED:	JPW
APPROVED:	KSL
SHEET NO.	C200

PLOT DATE: Sep 03, 2014 – 9:50am
FILE NAME: N:\Unicorp\Shops\Land Use Plan\ISHC-LUP.dwg