



# GATEWAY

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C-41184-0006

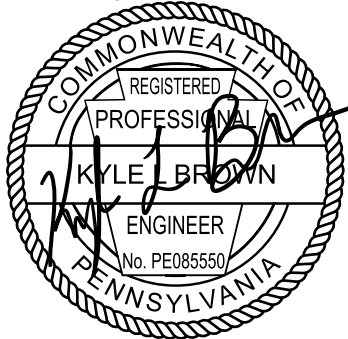
July 2021

## Proposed Redevelopment of 419 Melwood Avenue (The Julian)

419 Melwood Avenue  
North Oakland Neighborhood  
City of Pittsburgh  
Allegheny County, PA

**PREPARED FOR**

The Hudson Company  
2450 Shenango Valley Freeway  
Hermitage, PA 16148



**SUBMITTED BY**

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A FULL-SERVICE CIVIL ENGINEERING FIRM

TRANSPORTATION MEMO

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# EXECUTIVE SUMMARY

## Project Description

The proposed project is the redevelopment of 419 Melwood Avenue located in the North Oakland Neighborhood of the City of Pittsburgh. The redevelopment includes the construction of a ten (10) story building with 176,908 square feet (s.f.) and 148 residential units.

The site is in the City of Pittsburgh's 4<sup>th</sup> Ward and is within the Urban Industrial (UI) zoning district.

## Trip Generation and Distribution

### *Trip Generation*

The Institute of Transportation Engineers' (ITE) *Trip Generation*, 10<sup>th</sup> Edition, was used to determine the trip generation rates for the proposed development effort. Specifically, LU Code 221 – *Multifamily Housing (Mid-Rise)* was utilized.

## Summary and Conclusions

As has been demonstrated in this report, the proposed redevelopment of 419 Melwood Avenue is not anticipated to significantly impact the study area.

The proposed residential redevelopment is proposed with primary access via Gold Way, the lower-ordered roadway adjacent to the site. The anticipated number of vehicular trips to the site is anticipated to be negligible based on the size of the development and the existing mode split for the Oakland Neighborhood based on "Make My Trip Count" data. Additionally, the proposed redevelopment meets the zoning requirements with regards to off-street vehicular / bicycle parking and off-street loading.

In an effort to further reduce the vehicular demands of the proposed redevelopment, the developer is proposing Transportation Demand Management (TDM) measures to incentivize non-vehicular trips. The following TDM measures are intended to be implemented and maintained by the developer as a part of the redevelopment of 419 Melwood Avenue:

- Meet with the Transportation Management Association (TMA) and set mode split goals consistent with North Oakland plans and goals.
- Property owner will make potential tenants aware of TDM requirements and the requirement to maintain multi-modal facilities.

- Offer employees and residents free or discount bikeshare membership through the Healthy Ride Corporate Membership Program.
- Provide parking policies that unbundle the cost of parking lease from rent.
- Promotion of the SPC Commuter Connects programs.
- Provide a corporate carpool and/or ride partners program.
- Provide infrastructure within the facility for real time transportation displays.

In addition to these programmatic TDM measures, the following site plan strategies are proposed to be implemented:

- Provide adequate sidewalk widths and ADA ramps along the Melwood Avenue building frontage.
- Provide bicycle parking required to satisfy code, which will include secure covered parking in the garage with access from the ground floor.
- Sponsored car share or bikeshare memberships for employees or residents.
- Pursue a bikeshare station on site.
- Provide unbundled parking options to residents.

In conclusion, the proposed redevelopment of 419 Melwood Avenue in the North Oakland Neighborhood of the City of Pittsburgh is not anticipated to have a significant impact to traffic operations in the vicinity of the site and satisfies the ordinance requirements for off-street parking and loading requirements. The developer is committed to implementing TDM measures to further reduce the vehicular demands of the site.



## 1.0 NAME OF PROJECT

Name of Project: The Julian

Developer / Applicant: Hudson Companies

Anticipated Development Date: April 2022

Date Filed: May 28th, 2021

Prepared By: The Gateway Engineers, Inc.

## 2.0 PROJECT LOCATION

The proposed project is the redevelopment of the existing 1-story building located at 419 Melwood Avenue in the North Oakland Neighborhood of the City of Pittsburgh. The site location can be seen on **Figure 1** in the Figures Section at the end of this report. A City Neighborhood Map of the area has also been provided as **Figure 2**. The site is located in the City of Pittsburgh's 4<sup>th</sup> Ward and is within the Urban Industrial (UI) zoning district.

A Transportation Study Scoping Meeting was held on June 10, 2021 with representatives of the City of Pittsburgh's Department of Mobility and Infrastructure (DOMI). A copy of the Scoping Checklist has been provided in **Appendix A** at the end of this report. The project team also met with representatives of DOMI on July 2, 2021 to discuss the project further.

## 3.0 PROJECT COMPONENTS

### 3.1 *Development Description*

The property currently contains a one (1) story 17,600 s.f warehouse with two (2) existing curb cuts along Melwood Avenue.

The proposed redevelopment will provide a total of 176,908 s.f of space over ten (10) floors with a total of 148 residential units. The proposed units will be comprised of the following apartment types:

- Micro Apartments – 9 units
- Studio Apartments – 8 units
- One (1) Bedroom Apartments – 80 units
- Two (2) Bedroom Apartments – 51 units

The proposed site reconstruction will provide a garage with 105 off-street vehicular parking spaces and 50 bicycle parking spaces. The proposed garage entrance is via Gold Way and will be constructed with a width wide enough to accommodate passenger vehicles entering and exiting at the same time. Additionally, the door for the garage is inset from

Gold Way to provide some on-site storage for vehicles queuing before entering the parking garage.

### ***3.2 Project Phasing***

Construction of the proposed redevelopment is anticipated to begin in April 2022 with completion projected for October 2023. No phasing is currently proposed.

## **4.0 ZONING**

### ***4.1 Zoning Code Designation of Site***

The proposed redevelopment is within the Urban Industrial (UI) zoning district as is shown on **Figure 3** at the end of this report.

### ***4.2 Zoning Code Designation of Adjacent Sites***

The areas immediately adjacent to the proposed development site are zoned Hillside (H), Multi-Unit Residential Moderate Density (RM-M), and Multi-Unit Residential Very High Density (RM-VH). South of the RM-M zoning district is the Oakland Public Realm (OPR-B) zoning district and the Oakland Area Planned Development District (SP-7) zoning district.

## **5.0 MULTI-MODAL ANALYSIS**

### ***5.1 Bicycle Routes***

Melwood Avenue is currently an on-street bike route consisting of sharrows north of Baum Boulevard. North of the site, the bicycle route jogs to Gold Way via Denver Street. Melwood Avenue remains an on-street bike route without sharrows south of Baum Boulevard through to Centre Avenue. The bicycle routes in the vicinity of the site can be seen on **Figure 4** at the end of this report.

### ***5.2 Transit Routes***

The Port Authority has multiple bus routes that provide service near the study area with multiple stops within walking distance of the site. The bus routes that provide service in the vicinity of the site are Route 54 (North Side/Oakland/South Side), Route 77 (Penn Hills), Route 71C (Point Breeze), Route 82 (Lincoln), Route 93 (Lawrenceville), and Route P3 (East Busway – Oakland). A copy of the Port Authority System Map in the vicinity of the site has been provided as **Figure 5** at the end of this report. In addition to the Port Authority bus routes, there are also other transportation providers in this area including the

University of Pittsburgh and Carnegie Mellon University. These are discussed further in Section 9.0 of the report.

### ***5.3 Pedestrian Access, Circulation & Safety***

Pedestrian access to the site is proposed to be provided via Melwood Avenue where sidewalks line both sides of Melwood Avenue. The proposed private alley on the southern end of the redevelopment will also provide pedestrian access for the redevelopment. While there will be pedestrian access to Gold Way adjacent to the garage, this access is not anticipated to be utilized for regular pedestrian access. Gold Way does consist of a sidewalk along the western side running between Baum Boulevard and the garage exit for 417 Gold Way.

## **6.0 TRIP GENERATION**

### ***6.1 Trip Generation Rate***

The Institute of Transportation Engineers' (ITE) *Trip Generation* 10<sup>th</sup> Edition was used to determine the trip generation rate for the proposed development. Specifically, LU Code 221 – *Multifamily Housing (Mid-Rise)* was utilized.

The proposed site is anticipated to generate 384 daily trips (192 inbound and outbound), 74 AM peak hour trips (13 inbound, 61 outbound), and 54 PM peak hour trips (37 inbound and 17 outbound). These trips are not all vehicular and would include various alternative transportation modes. For more information on the breakdown of the types of trips (vehicular, pedestrian, transit, and bicycle), see Section 6.3 below. The anticipated weekday, AM and PM peak hour trips for the redevelopment are also summarized in **Table 1** at the end of this report.

A copy of the trip generation calculations for the proposed development is included in **Appendix B** at the end of this report.

### ***6.2 Trip Generation Adjustment Factors***

No trip adjustment factors were applied to the proposed development site trips in this study.

### ***6.3 Modal Split***

“Make My Trip Count” data collected in 2018 was utilized to estimate the commuter characteristics for the North Oakland Neighborhood. The resulting distribution of trip types are as follows:

- Vehicle Trips – 51.4%
- Public Transportation Trips – 28.5%

- Bicycle Trips – 3.6%
- Pedestrian Trips – 9.7%

A summary of this data has been included as **Appendix B** at the end of this report.

## **7.0 PARKING DEMAND/SUPPLY CONDITIONS**

### ***7.1 Existing Conditions***

There is no Parking Management Plan (PMP) for the existing site to be taken into consideration with the proposed redevelopment.

There are existing Residential Permit Parking Program (RPPP) areas in the vicinity of the site; however, residents of the proposed development will not be permitted to obtain these permits. The existing RPPP areas are shown on **Figure 6** at the end of this report.

### ***7.2 Vehicular Parking***

For multi-unit residential developments, the City of Pittsburgh Zoning Ordinance requires a minimum of one (1) vehicular parking space per unit and a maximum of two (2) vehicular parking spaces per unit. With the proposal for 148 apartment units, the site is required to provide between 148 and 296 off-street parking spaces; however, this requirement is permitted to be reduced with the provision of on-site bicycle parking. The Zoning Ordinance permits a reduction of no more than thirty (30) percent of the vehicular parking requirement. With the provision of on-site bicycle parking, the minimum vehicular parking requirement is reduced from 148 spaces to 104, a reduction of 44 vehicular spaces.

The proposed development is scheduled to provide 105 off-street vehicular parking spaces in the garage structure thereby satisfying the Zoning Ordinance.

### ***7.3 Bicycle Parking***

For multi-unit residential developments, the City of Pittsburgh Zoning Ordinance requires a minimum of one (1) bicycle parking space for every three (3) units. With the proposal for 148 apartment units, the site is required to provide fifty (50) bicycle parking spaces.

The proposed redevelopment of 419 Melwood is proposed to include internal bicycle parking storage in the structured garage. The development is proposed to include space for fifty (50) bicycle parking spaces, satisfying the Ordinance.

## **7.4 ADA Parking Requirements**

Based upon the minimum parking requirement of 148 vehicular spaces for the site, the City Zoning Ordinance requires five (5) ADA accessible parking spaces. The site is proposed to include five (5) ADA accessible parking spaces, satisfying the Ordinance requirements.

## **7.5 On-Site Parking Circulation**

The proposed site includes four (4) levels of structured parking internal to the building with access provided via Gold Way. The plans depicting the parking levels of the proposed development as well as turning templates into the proposed garage have been included in **Appendix C** at the end of this report.

# **8.0 LOADING ANALYSIS**

## **8.1 Loading Management**

The loading operations for the redevelopment of 419 Melwood Avenue are proposed to occur within the garage, along the private thruway proposed to be constructed with the site, and via a 15-minute loading zone that is proposed along Melwood Avenue. A conceptual site plan has been provided as **Figure 7** at the end of this report. Plans depicting the parking levels and the proposed off-street loading areas have been included in **Appendix C**. Additionally, Appendix D includes turning templates for the garage access via Gold Way.

## **8.2 Refuse Storage/Pickup Analysis**

The refuse for the development will be located on the southwest corner of the building near the intersection of Gold Way and the proposed private thruway in conjunction with the site. Similar to the existing facilities along Gold Way, the trash will be collected by the garbage truck in Gold Way thereby requiring employees of the facility to move the receptacles to the alleyway when pickup is occurring. Outside of those pickup times, the trash bins will be stored within the building in the trash room. The bins will only be brought into Gold Way for the short period in which the scheduled pick up occurs.

# **9.0 OTHER TRANSPORTATION**

In addition to the various Port Authority routes servicing the roadway network in the vicinity of the site, there are also several shuttles that service the area as well from the University of Pittsburgh, UPMC Hospitals, and Carnegie Mellon University. Specifically, the University of Pittsburgh 10B, 20A, and 20B shuttles all provide service in the vicinity of the proposed site as do the Carnegie Mellon University A Route, AB Route, and Oakland – Green Zone shuttles. Finally, the UPMC Oakland/Shadyside shuttle also provides service to the area. Each of these services provide additional options for

alternative modes of transportation to the residents of the proposed development, further reducing the need for single occupancy vehicle trips.

## **10.0 CONCLUSION**

As has been demonstrated in this report, the proposed redevelopment of 419 Melwood Avenue is not anticipated to significantly impact the study area.

The proposed residential redevelopment is proposed with primary access via Gold Way, the lower-ordered roadway adjacent to the site. The anticipated number of vehicular trips to the site is anticipated to be negligible based on the size of the development and the existing mode split for the Oakland Neighborhood based on “Make My Trip Count” data. Additionally, the proposed redevelopment meets the zoning requirements with regards to off-street vehicular / bicycle parking and off-street loading.

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- Pursue a bikeshare station on site.
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In conclusion, the proposed redevelopment of 419 Melwood Avenue in the North Oakland Neighborhood of the City of Pittsburgh is not anticipated to have a significant impact to traffic operations in the vicinity of the site and satisfies the ordinance requirements for off-street parking and loading requirements. The developer is committed to implementing TDM measures to further reduce the vehicular demands of the site.

# **TABLES**



**Table 1  
Trip Generation Summary**

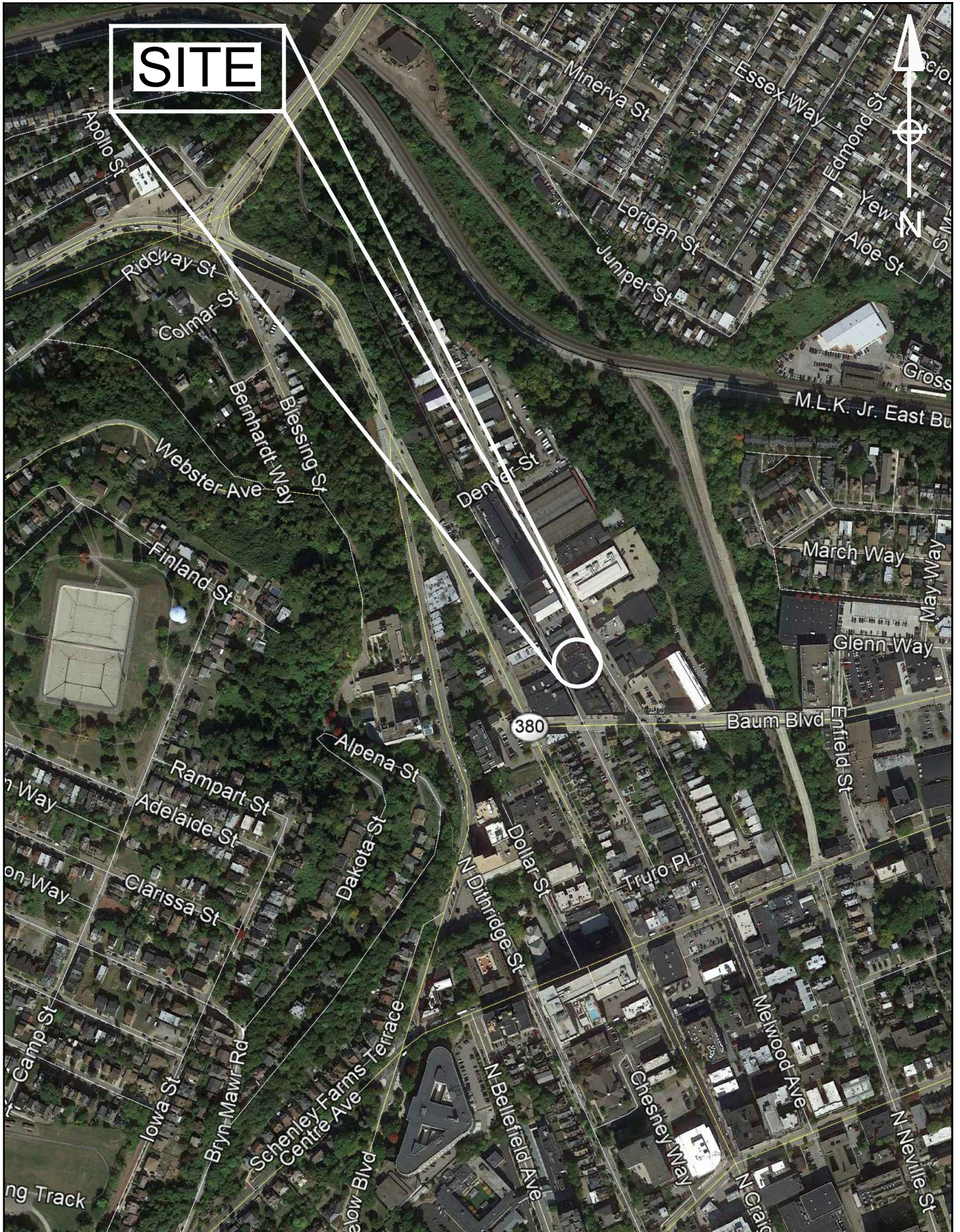
TIME PERIOD	ANTICIPATED TRIP GENERATION		
	IN	OUT	TOTAL
<b><sup>1</sup>Land Use Code #221, Multifamily Housing (Mid-Rise) – 148 units</b>			
<b>ADT</b>	<b>192</b>	<b>192</b>	<b>384</b>
<b>AM Peak Hour</b>	<b>13</b>	<b>61</b>	<b>74</b>
<i>Transit Trips (29%) <sup>2</sup></i>	<i>4</i>	<i>18</i>	<i>22</i>
<i>Walking Trips (7%) <sup>2</sup></i>	<i>1</i>	<i>4</i>	<i>5</i>
<i>Bicycle Trips (4%) <sup>2</sup></i>	<i>1</i>	<i>2</i>	<i>3</i>
<i>Other / Non-Auto (10%) <sup>2</sup></i>	<i>1</i>	<i>6</i>	<i>7</i>
Vehicular Trips	6	31	37
<b>PM Peak Hour</b>	<b>37</b>	<b>17</b>	<b>54</b>
<i>Transit Trips (29%) <sup>2</sup></i>	<i>11</i>	<i>5</i>	<i>16</i>
<i>Walking Trips (7%) <sup>2</sup></i>	<i>3</i>	<i>1</i>	<i>4</i>
<i>Bicycle Trips (4%) <sup>2</sup></i>	<i>1</i>	<i>1</i>	<i>2</i>
<i>Other / Non-Auto (10%) <sup>2</sup></i>	<i>4</i>	<i>2</i>	<i>6</i>
Vehicular Trips	18	8	26

<sup>1</sup> Trips estimated using “Dense Multi-Use Urban” setting/location.

<sup>2</sup> Based on “Make My Trip Count Data” collected in 2018 for the Oakland Area.

## **REPORT FIGURES**





**SITE**



Path & Filename: C:\projects\100041184 The Julian\006 Traffic\Doc\1 Scoping Meeting\Scoping Figures.dwg  
 Plot Date: 6/7/2021 10:10 AM Kyle L. Brown, P.E.  
 Save Date: 8/13/2020 5:38 AM



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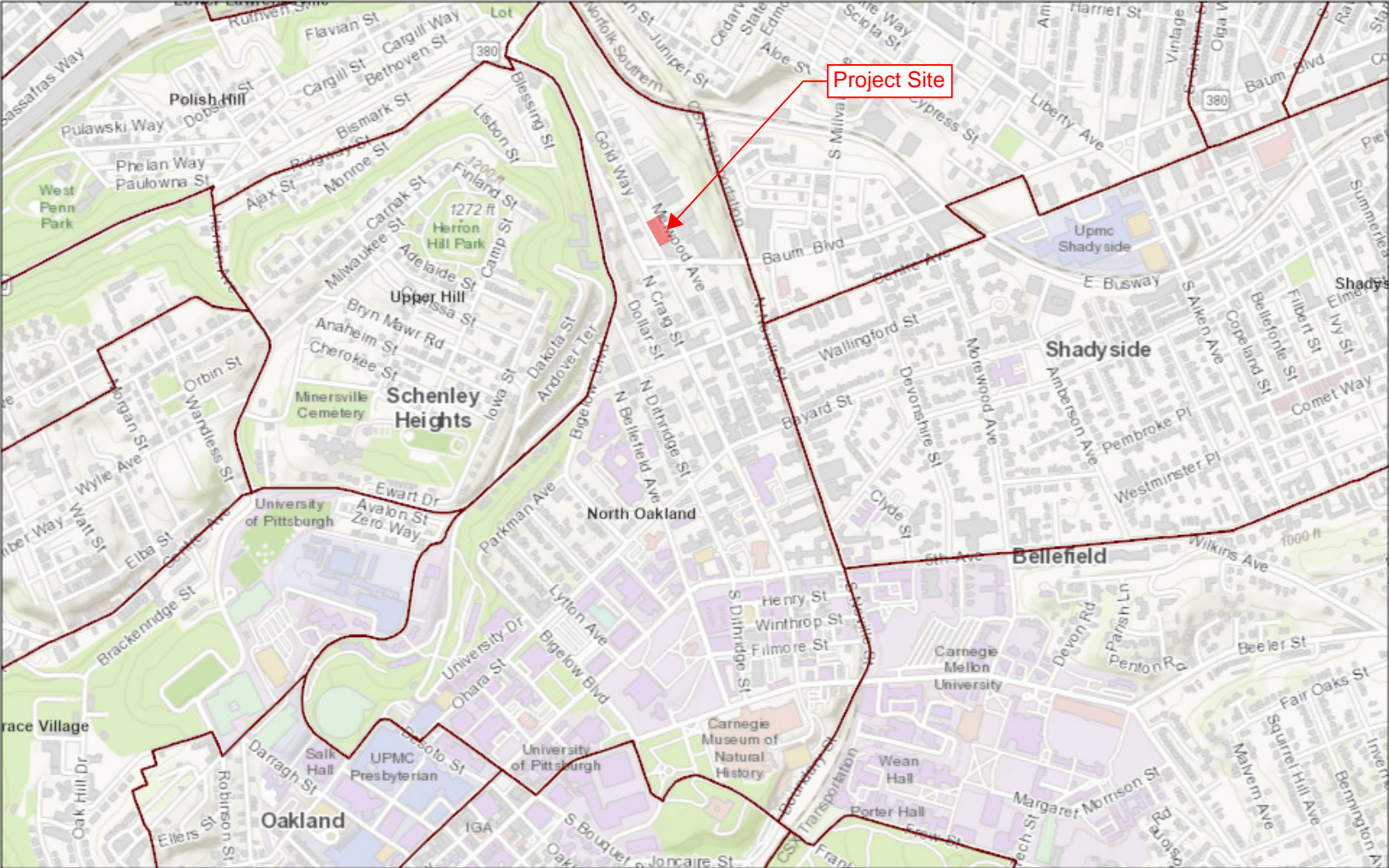
**419 Melwood (The Julian)**  
 City of Pittsburgh, Allegheny County, PA

**Site Location**

DOMI Scoping Form	
Project Number:	C-41184-0006
Drawing Scale:	N.T.S.
Date Issued:	JUN 2021
Index Number:	
Drawn By:	KL.B.
Checked By:	
Project Manager:	KL.B.

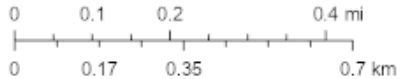


Figure 2  
Pittsburgh Neighborhoods



June 1, 2021

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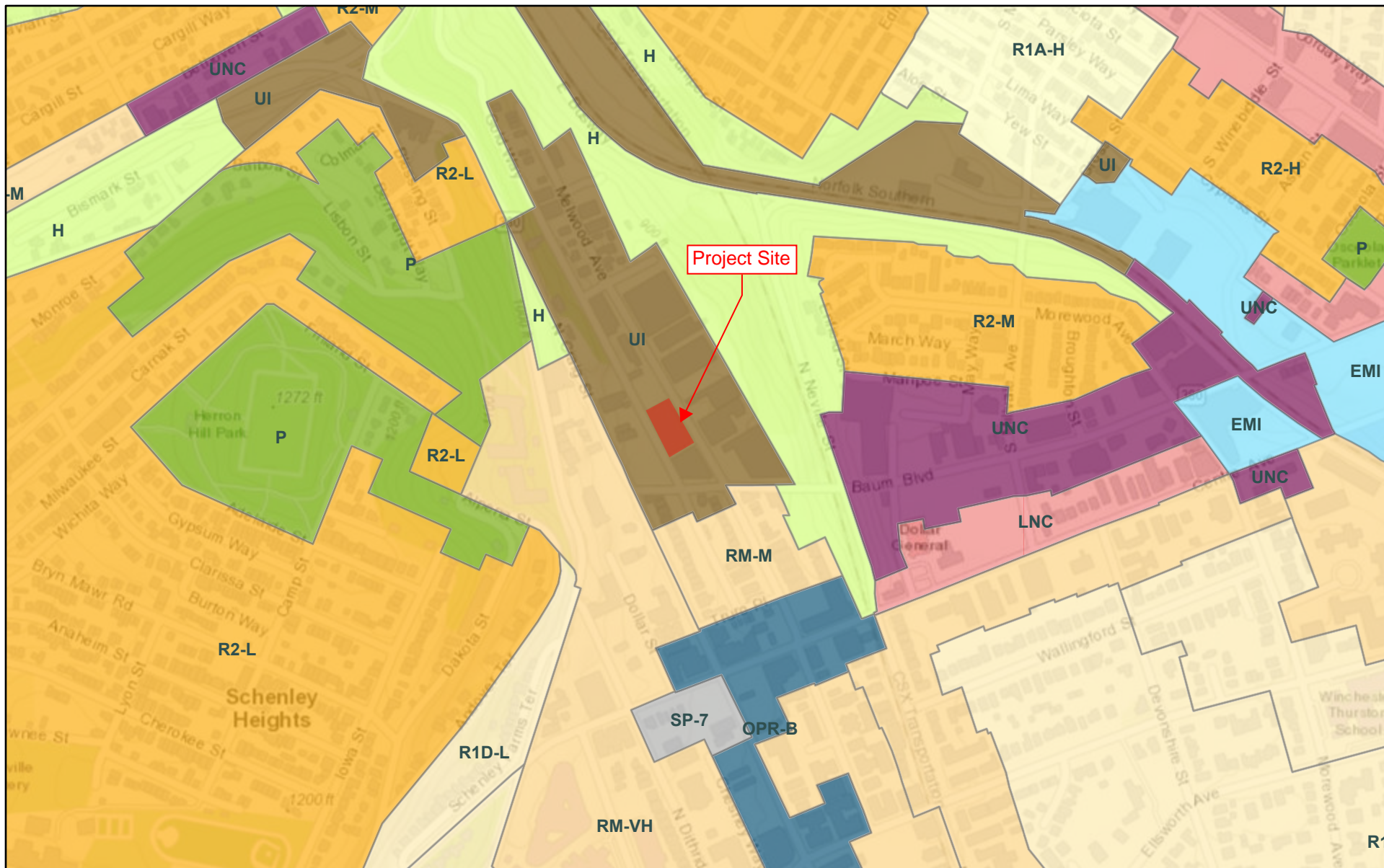


County of Allegheny, West Virginia GIS, Esri, HERE, Garmin, INCREMENT

pgh.admin

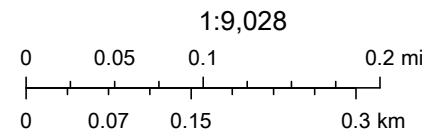


# Figure 3 City of Pittsburgh Zoning Map



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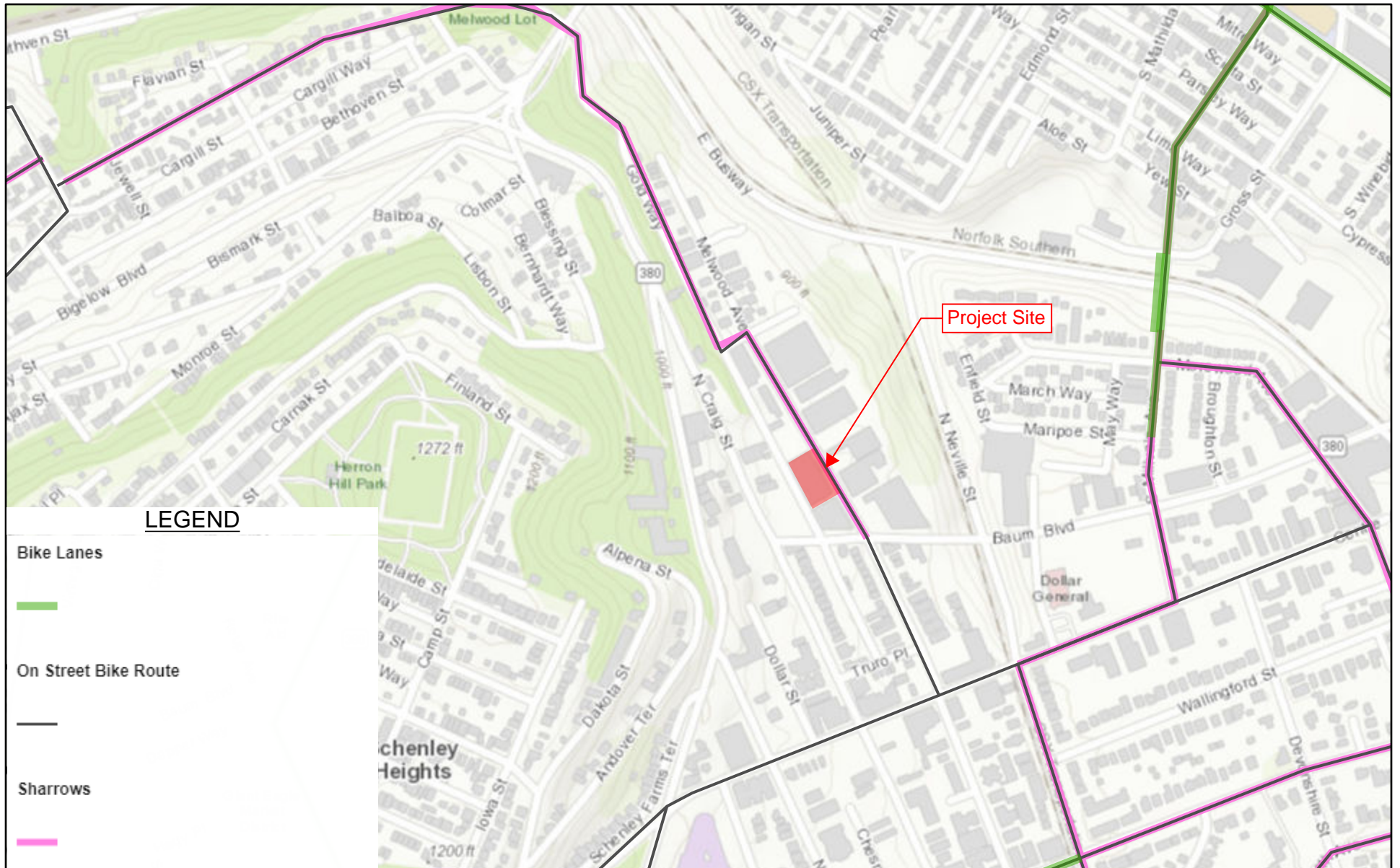
- |  |   |   |
|--|---|---|
| Zoning Districts   | <span style="color: cyan;">■</span> Educational/Medical Institution | <span style="color: brown;">■</span> Urban Industrial               |
| <span style="color: blue;">■</span> Oakland Public Realm | <span style="color: green;">■</span> Parks                          | <span style="color: pink;">■</span> Local Neighborhood Commercial   |
| <span style="color: gray;">■</span> Specially Planned    | <span style="color: lightgreen;">■</span> Hillside                  | <span style="color: purple;">■</span> Urban Neighborhood Commercial |



Allegheny County 2012; 2010 Imagery, County of Allegheny, West Virginia

City of Pittsburgh  
City of Pittsburgh

# Figure 4 BikePGH Map



### LEGEND

Bike Lanes



On Street Bike Route



Sharrows



June 1, 2021

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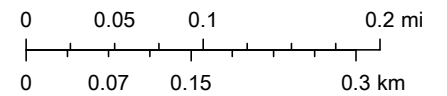




Figure 5

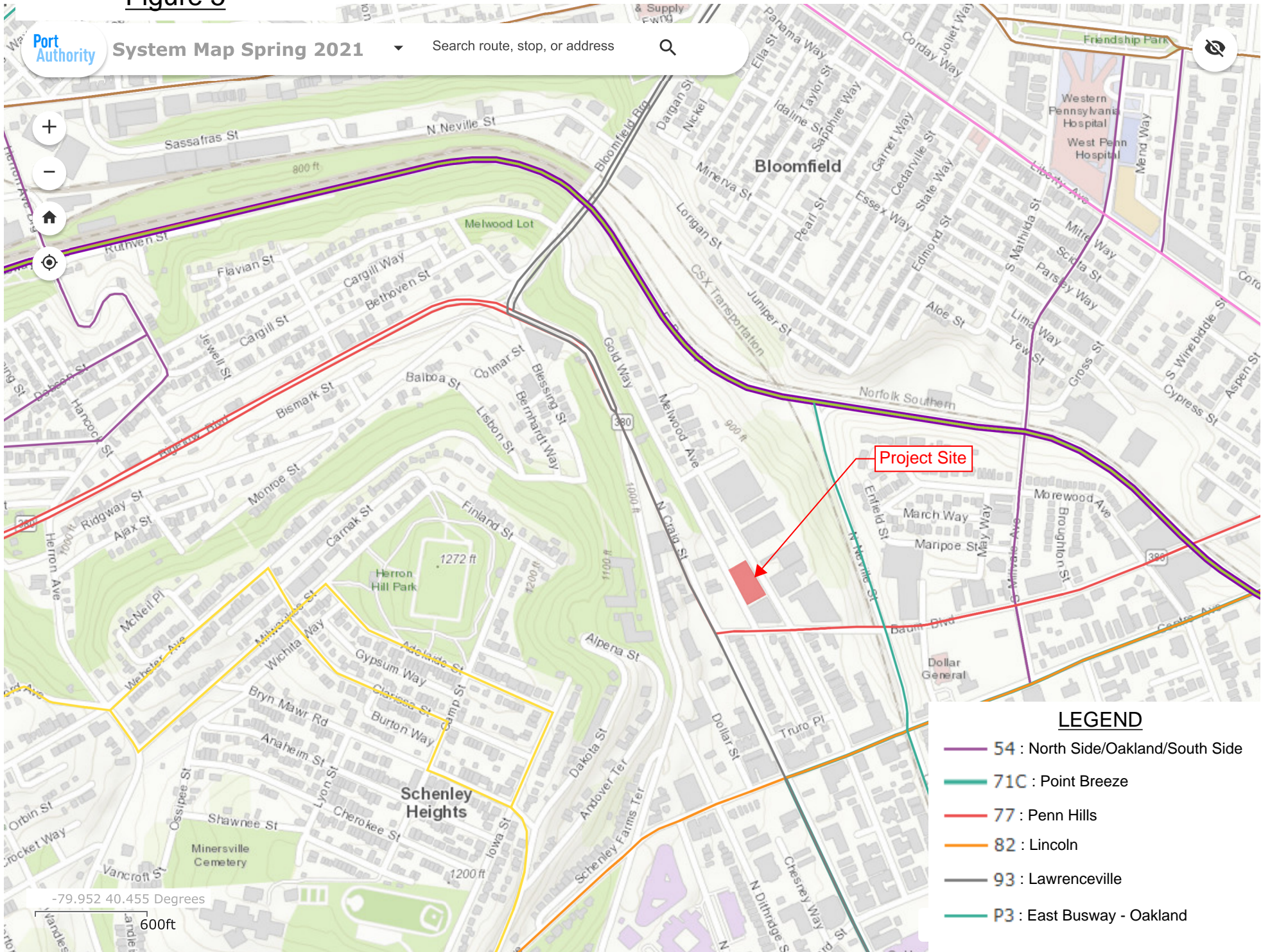
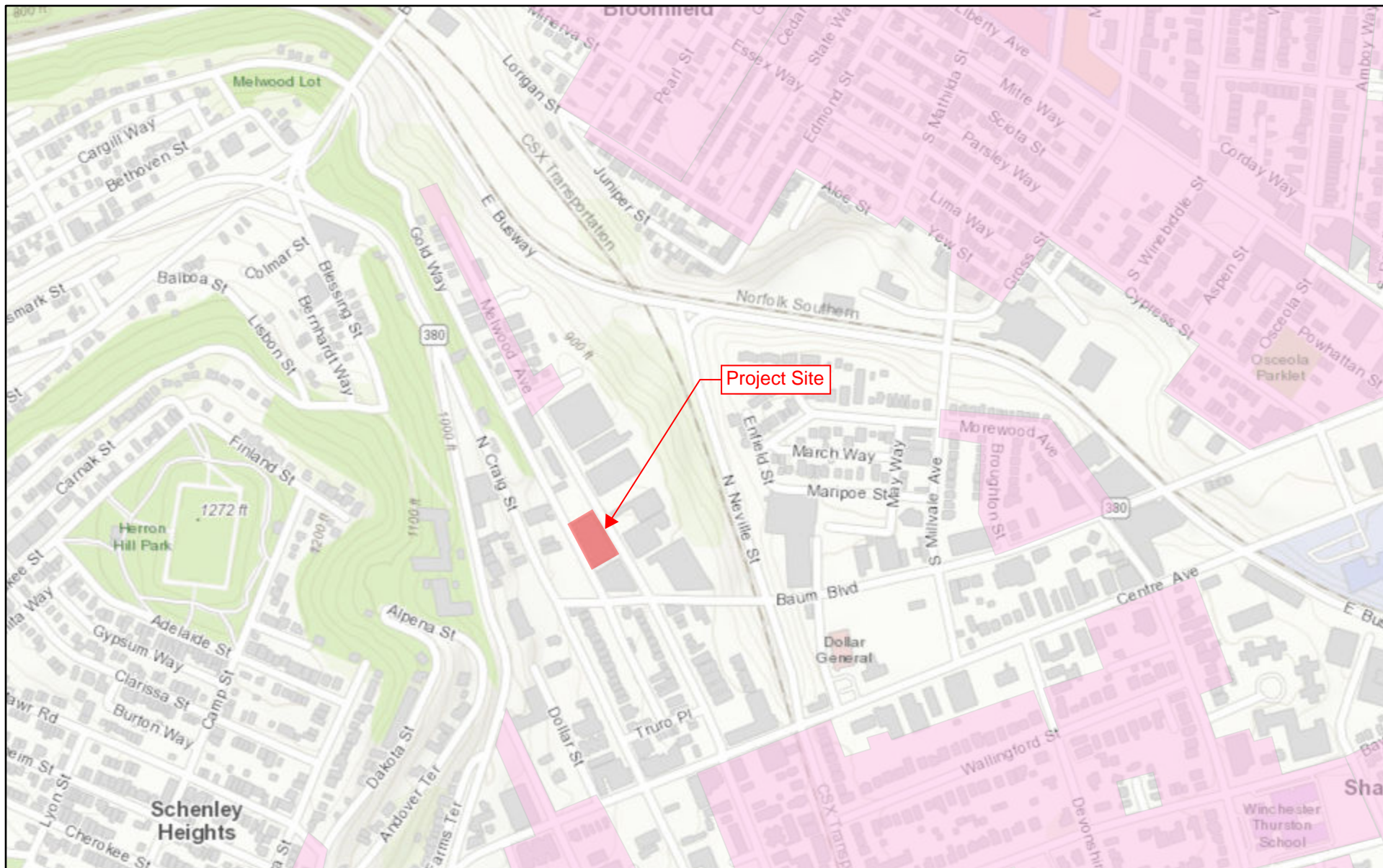




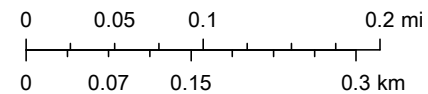
Figure 6  
Pittsburgh Residential Permit Parking



June 1, 2021

 RPP Program Areas

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## **APPENDICES**

# **APPENDIX A**

## DOMI Transportation Scoping Checklist



**DEPARTMENT OF MOBILITY AND INFRASTRUCTURE  
TRANSPORTATION STUDY SCOPING FORM  
Revised August 2018**

*Submit scoping form and trip generation one week prior to scoping meeting or the meeting may need to be rescheduled.*

*Final scoping form, sign-in sheet and meeting minutes subject to DOMI approval.*

*For more information, please see DOMI Transportation Review Impact Guidelines.*

**NAME OF PROJECT** The Julian

**Developer/Applicant:** Hudson Companies

**Anticipated Development Date:** April 2022 **Anticipated Completion Date:** October 2023

**Date Filed:** May 28, 2021

**Prepared by:** The Gateway Engineers, Inc.

**1.0. Project Overview** Redevelopment of the existing 1-story building located at 419 Melwood Avenue in the North Oakland Neighborhood.

**1.1 Physical Address or Cross Street:** 419 Melwood Avenue

**1.2 ZBA Hearing Required**  YES  NO **Notes:** Hearing scheduled for July 8th, 2021.

**1.3 Planning Commission Required**  YES  NO **Notes:** \_\_\_\_\_

**1.4 Adopted/Approved Plans**  YES  NO **Notes:** \_\_\_\_\_

**1.5 Impact or access to PennDOT Road**  YES  NO **Notes:** \_\_\_\_\_

**1.6 TDM Plan Required**  YES  NO **Notes:** \_\_\_\_\_  
Complete Checklist for TDM at end of form

**1.7 Development Description: For phased developments, description should be provided by phase**

Project Component	EXISTING ON-SITE CONDITIONS			FUTURE ON-SITE CONDITIONS			NET DIFFERENCE
	Size (Sq. Ft.)	# of Units	# Parking	Size (Sq. Ft.)	# of Units	# Parking	
<small>List by Type Ex: Office, Residential, Retail, etc.</small>							
Industrial	17,600	0	0				-17,600
Residential				176,290	148	105	+148
<b>TOTAL</b>	17,600	0	0	176,290	148	105	

**Comments:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**2.0 Site Plan: Attach latest site plan**

**2.1 Vehicular Site Access**

**Vehicular Site Access**

Proposed Conditions	Signalized	Unsignalized	Proposed Access (Full or Restricted)
Project Entry/Exit Points		X	Full access to be provided via the lower ordered street (Gold Way) per DDMI feedback
		X	Developer is proposing a thruway between Melwood and Gold Way for drop-off/loading operations

The distance calculation to be provided for all access points

**2.2 Loading**

2.2.1	<b>On-Site</b> Note: Include Vehicle Class: <u>SU-30 design vehicle</u>	Check <input type="checkbox"/>
2.2.2	<b>On Street Requested</b>	<input type="checkbox"/>
2.2.3	<b>Loading Demand Analysis</b> Note: Include timing, type, frequency, and vehicle class: _____	<input type="checkbox"/>
2.2.4	<b>Refuse Storage/Pickup</b>	<input type="checkbox"/>

**3.0 Multi Modal Analysis: Attach map for existing bike, transit or pedestrian facilities**

**3.1 Bicycle Routes to or Near Site**

<b>Bicycle Routes to or Near Site</b>		<b>Check</b>
3.1.1	Bicycle Parking Required	<input type="checkbox"/>
3.1.2	Bicycle Parking for vehicular parking reduction	<input type="checkbox"/>
3.1.3	Additional Bicyclist End-of trip Facilities Provided (Showers, Changing Rooms, etc.) for TDM	<input type="checkbox"/>

**Comment:** Due to development being residential, end-of-trip facilities are provided via the units themselves.

**3.2 Bicycle Routes to or Near Site (Attach Map)**

		<b>Check</b>
3.2.1	Identify existing on-street bike routes or trail connections to the site	<input type="checkbox"/>
3.2.2	Identify proposed developer created amenities to attract greater bicyclist use	<input type="checkbox"/>
3.2.3	Identify planned new or extended bicycle routes near the site	<input type="checkbox"/>
3.2.4	Site is located within .25 miles of a Healthy Ride Station	<input type="checkbox"/>
3.2.5	Site is located within .25 miles of trail access	<input type="checkbox"/>

**Comment:** Healthy Ride Station at N. Craig Street & Centre Avenue

**3.3 Pedestrian Access, Circulation and Safety**

- 3.3.1 On-site Points of Entry and Egress
- 3.3.2 New or Replace sidewalk
- 3.3.3 Crosswalk need and warrants Note pedestrian desire lines

Check

X
X

**Comment:** \_\_\_\_\_

**3.4 Transit Routes to or Near the Site (Attach Map)**

**Transit Routes to or Near the Site (Attach Map)**

- 3.4.1 Identify Peak and Non-Peak Bus Routes At or Near the Site and Frequency
- 3.4.2 Identify Bus Stop and Shelter Locations At or Near the Site
- 3.4.3 Identify developer created amenities to attract greater transit use
- 3.4.4 Site is Located within .25 miles of busway or T station
- 3.4.5 Existing stop adjacent to site

Check

X
X
X

**Comment:** Neville Ramp from MLK Jr. East Busway at Centre Avenue

**4.0 Trip Generation: Submit prior to scoping meeting to ensure thorough review, attach to scoping form**

Trip Generation Rate	Project Component	Note
ITE General Urban/Suburban		
ITE Dense Multi-Use Urban	Residential Apartments	LU Code 221 Person Trips
ITE Rural		
ITE Center City Core		
Independent Survey		
Other (specify)		

**4.1 Trip Removals**

Trip Reduction Based on Transportation Demand Analysis			Check
Mode Share traffic Adjustment Factors	Percent	<i>Data Source (Specify)</i>	X
Auto	51.4 %	2018 Make my Trip Count data for the Oakland area.	
Total non-Auto	48.6 %		
Transit	28.5 %		
Bicycle	3.6 %		
Pedestrian	6.8 %		
Other	9.7 %		

**4.2 Trip Adjustment Factors**

Trip Generation Adjustment Factors (check as applicable and explain)			Check
Base Traffic Adjustment Factors	Percent	<i>Comment</i>	
Internal Trips	TBD %		
Shared Trips	TBD %		
Pass-by Trips	TBD %		

5.0 Roadway Network and Operations Analysis: See section 4.5.0 of Transportation Impact Review Guidelines

5.1 Area of Impact- Required Data Collection

Check

Study Intersections	Unsignalized	Signalized
Not Applicable		

Attach map showing project site, nearby critical intersections, study intersections, and proposed project entry/exit points.  
 Note: Data Collection Must Include: Turning Movement, Transit, Heavy Vehicles, Bicycle, and Pedestrian Counts.

Not Applicable

5.2 ATR

5.2.1

Location (Street & Cross Streets)	48-Hour	7-Day	Other
Not Applicable			

Check


Comment:

5.2.2 Type ATR Count(Please check)

	Check	Comment
Volume Counts		
15-Minute Increments		
1-Hour Increments		
Speed Data		
Vehicle Classification Data		

Check

--

Comment:

**5.3 Study Periods**

**Study Periods (Please check)**

	Check	Comment-Note Hours
AM Peak	<input type="checkbox"/>	Not Applicable
PM Peak	<input type="checkbox"/>	
Saturday Peak	<input type="checkbox"/>	
Custom Design Peak (ex: School, Hospital, Event, Religious, etc.)	<input type="checkbox"/>	
Other	<input type="checkbox"/>	

**5.4 Trip Distribution and Assignment**

**Methodology for Trip Assignment (Please check)**

Existing Traffic Data
Gravity Distribution Model-See TIS Guidelines
SPC Model
Market Study
Other (Specify)

**Check**

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

**Comment:** Not Applicable

**5.5 Background Traffic/Future Conditions**

**5.5.1 Future Year Conditions**

Annual Base Traffic Growth per year (Please indicate date, source and provide comments)

**Check**

<input type="checkbox"/>
--------------------------

**Comment:** Not Applicable

**5.5.2 Trip Removals (Please check and comment)**

Onsite Removals	<input type="checkbox"/>
Other (Explain)	<input type="checkbox"/>

**Check**

<input type="checkbox"/>
<input type="checkbox"/>

**Comment:** Not Applicable

**5.5.3 New Projects to be added to base traffic (As specified by DCP)**

Note these are developments which the city has approved but have not been built or occupied and would not otherwise be covered under background trips			Check
Project	Year	Data Source	
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>
			<input type="checkbox"/>

**Check**

<input type="checkbox"/>
--------------------------

**5.6 Capacity Analysis**

**Capacity Analysis**

- 5.6.1 Existing Conditions
- 5.6.2 Analysis Year Without New Project
- 5.6.3 Analysis Year With New Project
- 5.6.4 Analysis Year With New Project and Mitigation

**Check**

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>



- 5 year Horizon
- 10 year Master Plan
- 20 Year (federally funded)
- Other Time Frame

Check


**Comment:**

---

**5.7 Queuing Analysis**

**Queuing Analysis**

**Locations**

Each Movement of all Study Interactions

**Queuing Method**

Synchro

HCS

Other

**Comment:**

---

Check

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Check

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Check

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**5.8 Traffic Signal Warrant Analysis**

**5.8.1 Signal Warrant Analysis**

- 5.8.1.a All unsignalized study intersections
- 5.8.1.b All signalized study intersections
- 5.8.1.c All Site Driveways
- 5.8.1.d Signal Deficiency Review (Removal, Phasing or Pedestrian or other Upgrades)
- 5.8.1.e Custom (Specify Locations below)

Check

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**5.8.2 Signal Warrant Analysis**

- 5.8.2.a 8-Hour
- 5.8.2.b 4-Hour
- 5.8.2.c Peak Hour
- 5.8.2.d Pedestrian Volume
- 5.8.2.e School Crossing
- 5.8.2.f Coordinated Signal System
- 5.8.2.g Crash Experience
- 5.8.2.h Roadway Network

Check

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**5.8.3 Auxiliary Turn Lane Warrant**

- 5.8.3.a Left Turn Lane Warrant
- 5.8.3.b Right Turn Lane Warrant
- 5.8.3.c Recommended Length

Check

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--

--

**Comment:**

---

## 5.8 Crash History/ Analysis

<b>5.9.1</b>	<b>Check</b>
<b>Locations</b>	<input type="checkbox"/>
_____	
_____	
_____	
Contact: <a href="mailto:penndotcrashhelp@pa.gov">penndotcrashhelp@pa.gov</a>	

<b>5.9.2</b>	<b>Check</b>
<b>Collision Diagram</b>	<input type="checkbox"/>
3-Year Data	<input type="checkbox"/>
5-Year Data	<input type="checkbox"/>
<b>Comment:</b>	
_____	
_____	

## 6.0 Parking

<b>6.1 Existing Conditions</b>	<b>Check</b>
Existing Parking Management Plan (for Institutional Master Plans)	<input checked="" type="checkbox"/>
Existing Residential Permit Parking Program (RPPP) Areas (attach map)	<input type="checkbox"/>
Please refer to: <a href="http://www.pittsburghparking.com/rppp">http://www.pittsburghparking.com/rppp</a>	<input checked="" type="checkbox"/>

## 6.2 Proposed Parking

<b>Proposed Parking (Check Source used)</b>	<b>Check</b>
Methodology	<input type="checkbox"/>
ITE Parking Generation Manual	<input type="checkbox"/>
City of Pittsburgh Zoning Code	<input checked="" type="checkbox"/>
Site specific Parking Study or Market Demand	<input type="checkbox"/>
Other Methodology (ex: Urban Land Institute or other, please specify)	<input type="checkbox"/>
<b>Comment:</b>	
_____	

<b>Parking Conditions Supply and Demand Analysis</b>	<b>Check</b>
Existing Conditions	<input type="checkbox"/>
Phase 1 Year	<input type="checkbox"/>
Phase 2 Year	<input type="checkbox"/>
Phase 3 Year	<input type="checkbox"/>
10-Year Master Plan Year	<input type="checkbox"/>
<b>Comment:</b>	
_____	

## 6.3 Parking Reduction

<b>Parking Reduction: Check all that apply</b>	<b>Check</b>
6.3.1   Parking Reduction Area	<input type="checkbox"/>
6.3.2   Bicycle parking reduction	<input checked="" type="checkbox"/>
6.3.3   Shared Parking	<input type="checkbox"/>
6.3.4   Fee in lieu	<input type="checkbox"/>

## 6.4 Parking Demand Analysis

<b>Parking Demand Analysis</b>	<b>Check</b>
On and off street inventory(map)	<input type="checkbox"/>
<b>Data Collection(Describe):</b>	<input type="checkbox"/>
_____	
_____	

**6.5 Other Transportation**

**Other Transportation**

**Shuttle Bus /Other Private Carrier Service Analysis**

- Identify Peak and Non Peak Routes
- Identify Shuttle Stop Locations At or Near the Site
- Estimate number of passengers served
- Time of Day/Frequency of Operations

**Check**

X

**School Buses**

- Identify Peak and Non Peak Routes
- Identify School Bus Stop Locations At or Near the Site
- Estimate number of students served
- Time of Day/Frequency of operations


**Comment:** \_\_\_\_\_

Submission Requirements	
2 copies - DOMI	<b>Hard copy of Final Traffic Impact Study Report</b>
	<b>Executive Summary (include in the beginning of report)</b>
	<b>City Correspondence/Comment Response Letters (Include in beginning of Final Report)</b>
	<b>Approved Scoping Form (Include copy in back of Final Report)</b>
2 copies - DOMI	<b>Hard copy of Technical Appendix</b>
1 Copy, emailed	<b>Digital copies of report, appendices, analysis and data in PDF format (no CD's)</b>

**Check**


**Send To:**

Name	Department	Mailing Address	Email
Angie Martinez, Senior Planner	City of Pittsburgh Dept. of Mobility and Infrastructure	414 Grant St., 2nd Fl, Pittsburgh, PA 15219	angela.martinez@pittsburghpa.gov
Sergey Brodskiy, Staff Engineer	City of Pittsburgh Dept. of Mobility and Infrastructure	414 Grant St., 3rd Fl, Pittsburgh, PA 15219	sergey.brodskiy@pittsburghpa.gov
Amanda Purcell, Traffic Engineer Zoning Case Manager	City of Pittsburgh Dept. of Mobility and Infrastructure	414 Grant St., 3rd Fl, Pittsburgh, PA 15219	amanda.broadwater@pittsburghpa.gov

## **APPENDIX B**

ITE Trip Generation & Oakland MMTTC Data

# Land Use: 221

## Multifamily Housing (Mid-Rise)

### Description

Mid-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have between three and 10 levels (floors). Multifamily housing (low-rise) (Land Use 220), multifamily housing (high-rise) (Land Use 222), off-campus student apartment (Land Use 225), and mid-rise residential with 1st-floor commercial (Land Use 231) are related land uses.

### Additional Data

In prior editions of *Trip Generation Manual*, the mid-rise multifamily housing sites were further divided into rental and condominium categories. An investigation of vehicle trip data found no clear differences in trip making patterns between the rental and condominium sites within the ITE database. As more data are compiled for future editions, this land use classification can be reinvestigated.

For the six sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 2.46 residents per occupied dwelling unit.

For the five sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 95.7 percent of the total dwelling units were occupied.

Time-of-day distribution data for this land use are presented in Appendix A. For the eight general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:00 and 8:00 a.m. and 4:45 and 5:45 p.m., respectively.

For the four dense multi-use urban sites with 24-hour count data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:15 and 8:15 a.m. and 4:15 and 5:15 p.m., respectively. For the three center city core sites with 24-hour count data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 6:45 and 7:45 a.m. and 5:00 and 6:00 p.m., respectively.

For the six sites for which data were provided for both occupied dwelling units and residents, there was an average of 2.46 residents per occupied dwelling unit.

For the five sites for which data were provided for both occupied dwelling units and total dwelling units, an average of 95.7 percent of the units were occupied.

The average numbers of person trips per vehicle trip at the five center city core sites at which both person trip and vehicle trip data were collected were as follows:

- 1.84 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.94 during Weekday, AM Peak Hour of Generator
- 2.07 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 2.59 during Weekday, PM Peak Hour of Generator

The average numbers of person trips per vehicle trip at the 32 dense multi-use urban sites at which both person trip and vehicle trip data were collected were as follows:

- 1.90 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.90 during Weekday, AM Peak Hour of Generator
- 2.00 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 2.08 during Weekday, PM Peak Hour of Generator

The average numbers of person trips per vehicle trip at the 13 general urban/suburban sites at which both person trip and vehicle trip data were collected were as follows:

- 1.56 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.88 during Weekday, AM Peak Hour of Generator
- 1.70 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 2.07 during Weekday, PM Peak Hour of Generator

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), British Columbia (CAN), California, Delaware, District of Columbia, Florida, Georgia, Illinois, Maryland, Massachusetts, Minnesota, New Hampshire, New Jersey, Ontario, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Utah, Virginia, and Wisconsin.

### **Source Numbers**

168, 188, 204, 305, 306, 321, 357, 390, 436, 525, 530, 579, 638, 818, 857, 866, 901, 904, 910, 912, 918, 934, 936, 939, 944, 947, 948, 949, 959, 963, 964, 966, 967, 969, 970

# Multifamily Housing (Mid-Rise) (221)

Vehicle Trip Ends vs: Dwelling Units  
On a: Weekday

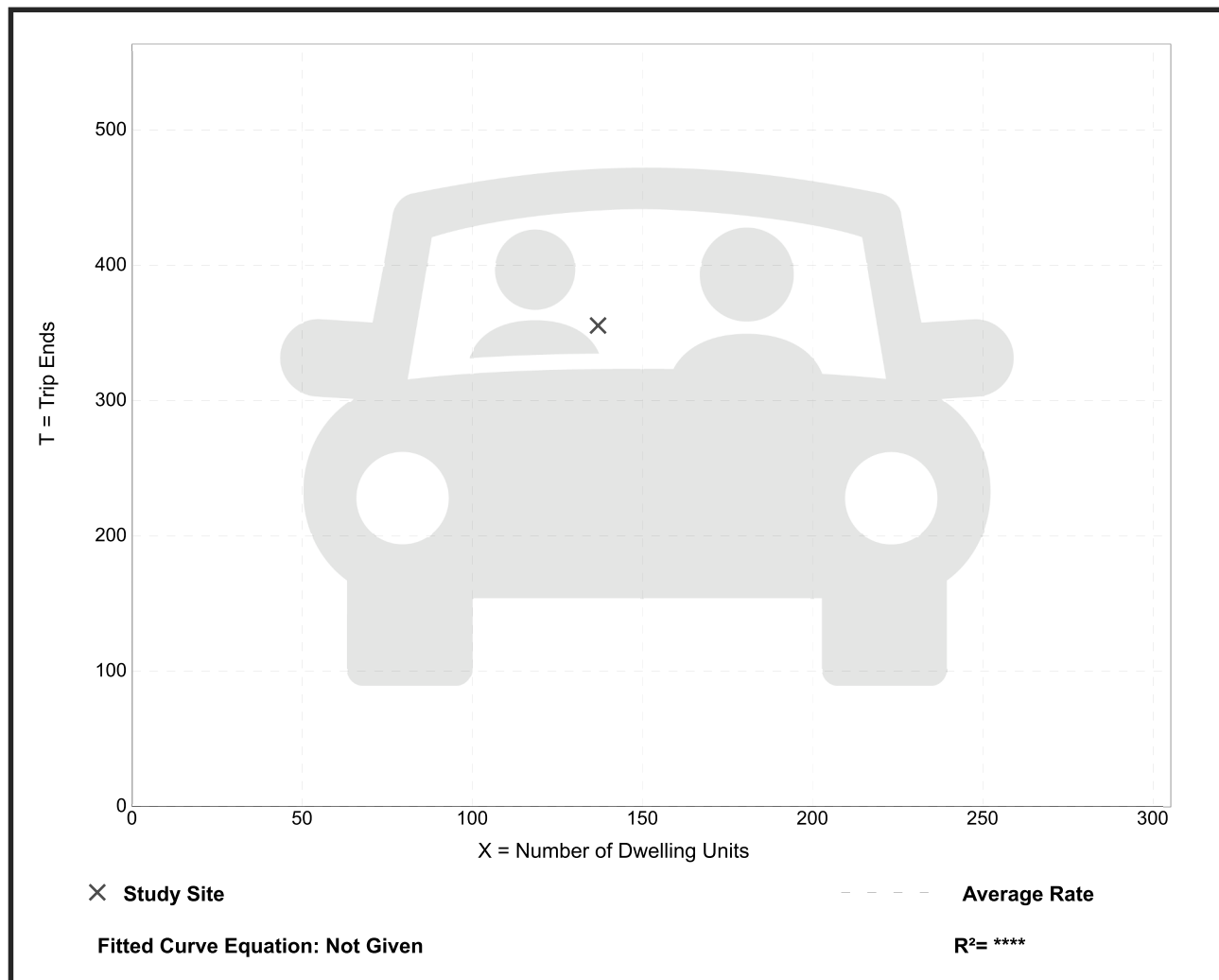
Setting/Location: Dense Multi-Use Urban  
Number of Studies: 1  
Avg. Num. of Dwelling Units: 137  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
2.59	2.59 - 2.59	*

## Data Plot and Equation

*Caution – Small Sample Size*



# Multifamily Housing (Mid-Rise) (221)

**Person Trip Ends vs: Dwelling Units**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 7 and 9 a.m.**

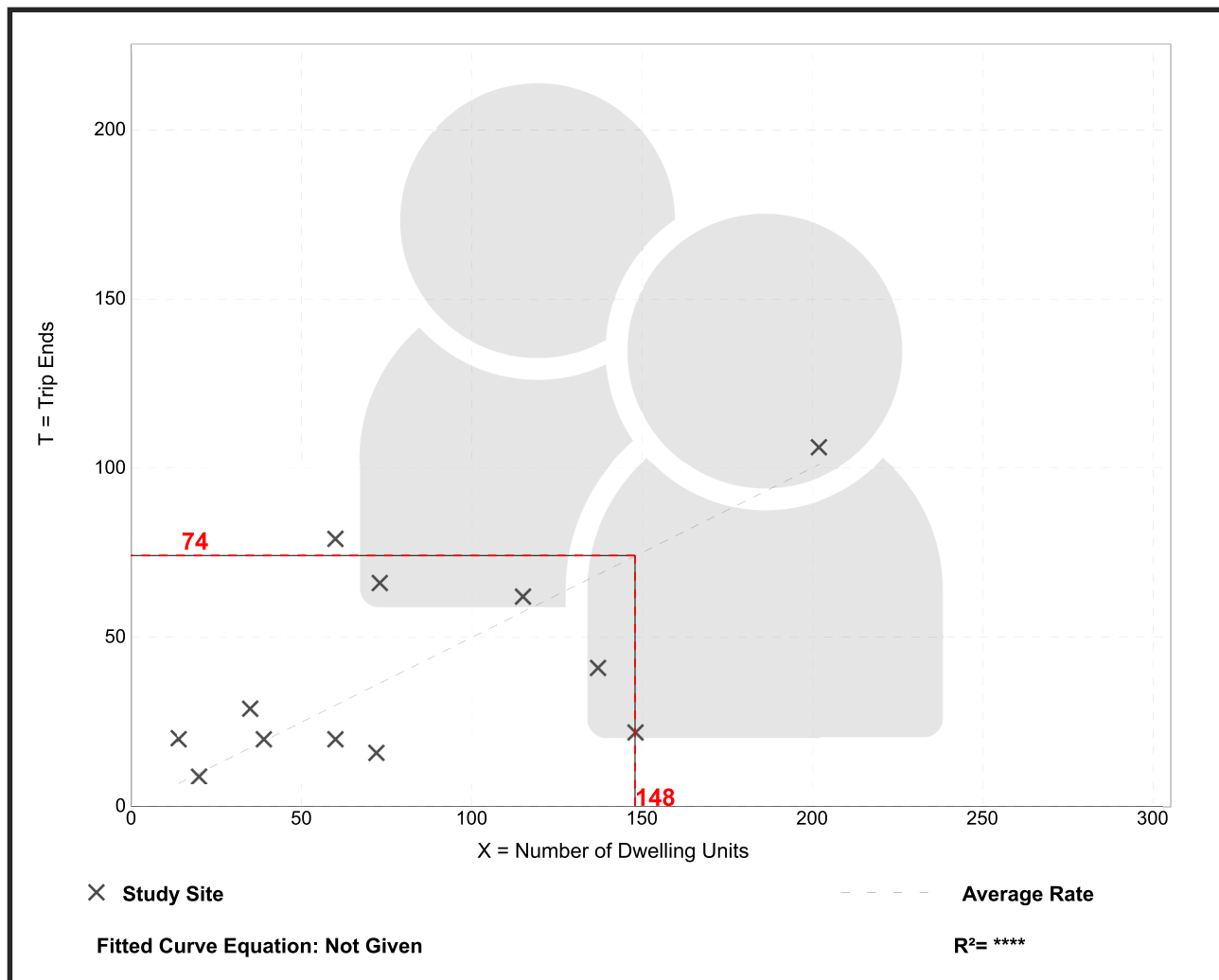
**Setting/Location: Dense Multi-Use Urban**

Number of Studies: 12  
 Avg. Num. of Dwelling Units: 81  
 Directional Distribution: 17% entering, 83% exiting

## Person Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.50	0.15 - 1.43	0.33

## Data Plot and Equation





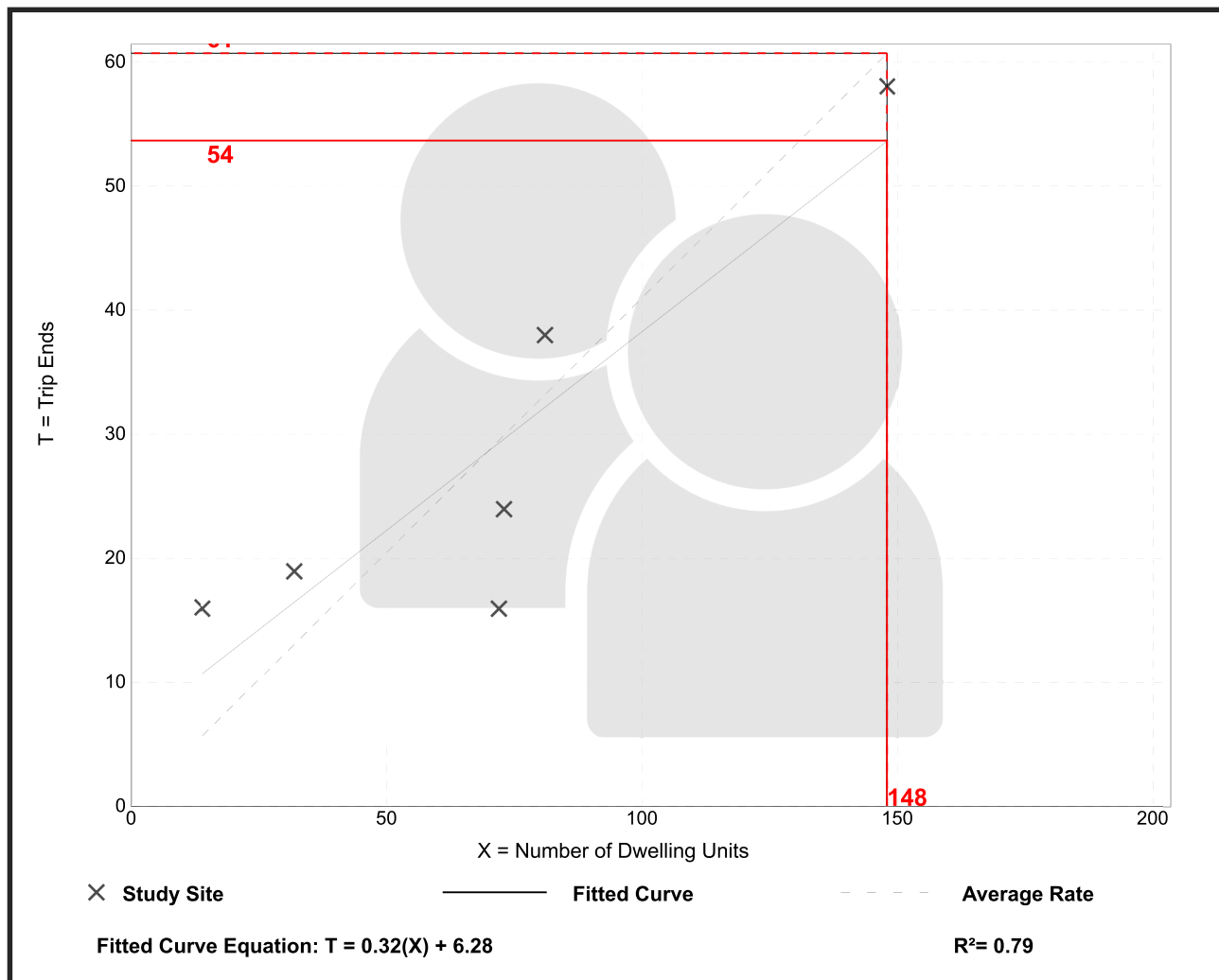
# Multifamily Housing (Mid-Rise) (221)

**Person Trip Ends vs: Dwelling Units**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 4 and 6 p.m.**  
**Setting/Location: Dense Multi-Use Urban**  
 Number of Studies: 6  
 Avg. Num. of Dwelling Units: 70  
 Directional Distribution: 69% entering, 31% exiting

## Person Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.41	0.22 - 1.14	0.18

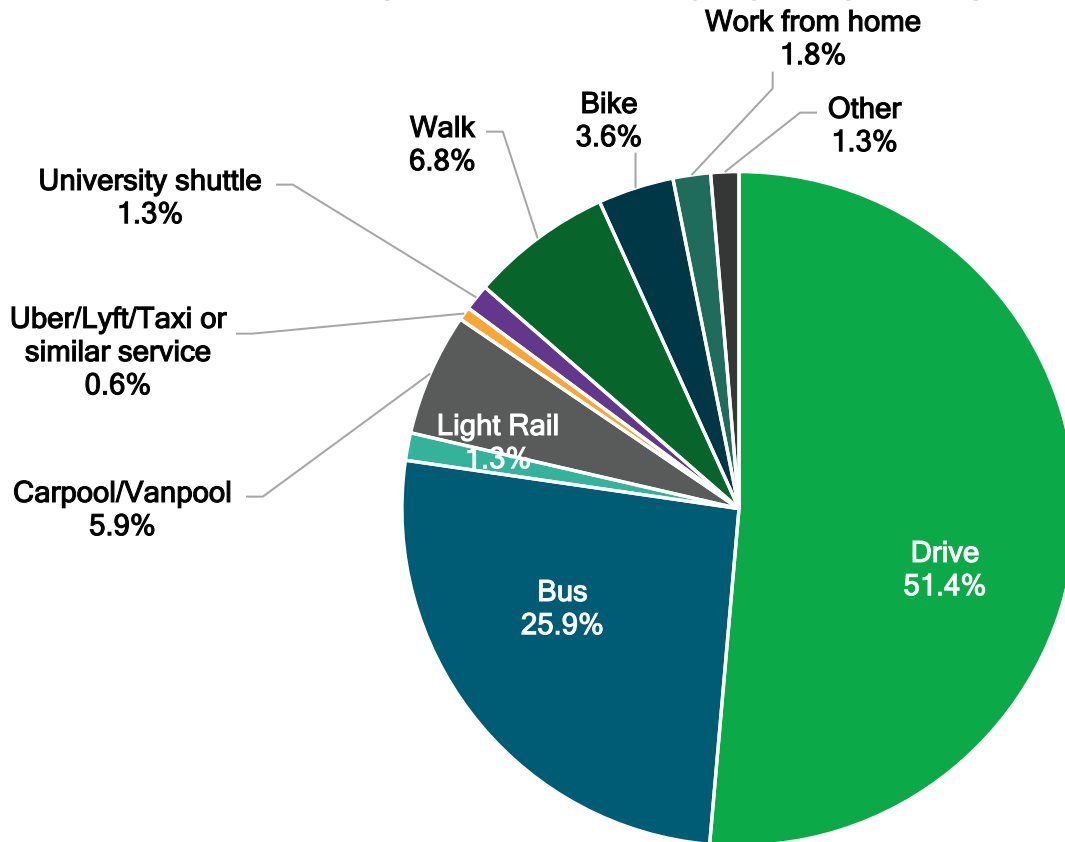
## Data Plot and Equation



## 2018 Make My Trip Count Data

OAKLAND AREA		
	Weekly Trips Percentages	
Drive	23,916.10	51.4%
Bus	12,056.16	25.9%
Light Rail	613.92	1.3%
Carpool/Vanpool	2,742.26	5.9%
Uber/Lyft/Taxi or similar service	300.59	0.6%
University shuttle	584.42	1.3%
Walk	3,167.85	6.8%
Bike	1,694.73	3.6%
Work from home	836.77	1.8%
Other	627.20	1.3%
Total	46,540.00	
Number of Commuters	4661	

### OAKLAND: 2018 MODE SPLIT



## **APPENDIX C**

Parking Garage Floor Plans & Turning Movement Templates



Architecture  
Interiors  
Planning  
2283 Elmhill Road  
Pittsburgh, PA 15221  
412.352.1784



Melwood  
Investments LLC

THE JULIAN  
VERSION B.1  
A Hudson  
Property

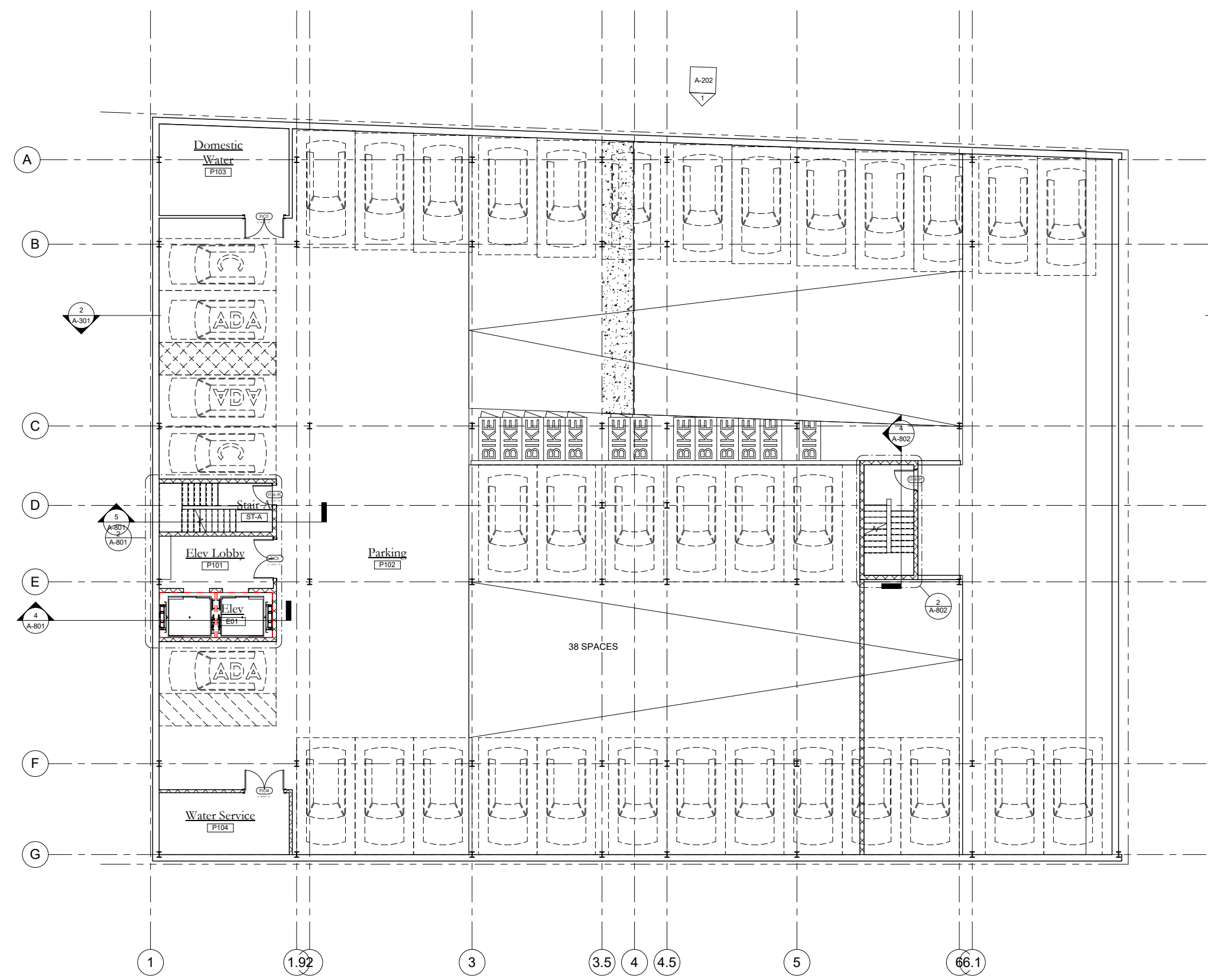
419 Melwood Avenue  
Pittsburgh, Pennsylvania

Revisions		
No.	Date	Description

Project Data	
Project	2020.32
Date	-/-/-

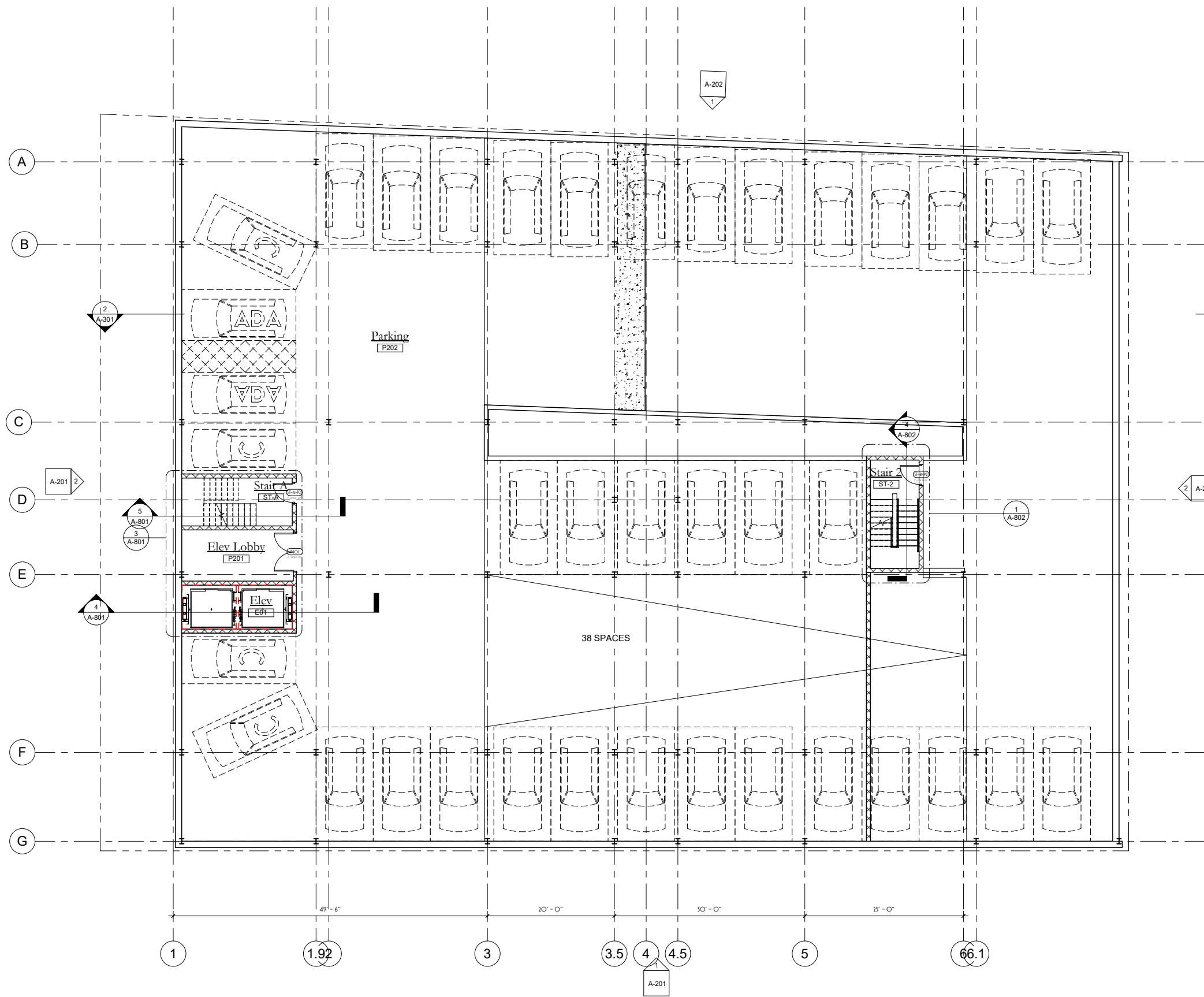
Parking P1 Plan

A-100.1



1 P1 - PARKING LEVEL 1  
1/8" = 1'-0"

12 JULY 2021 - PRICING SET



① P2 - PARKING LEVEL 2  
1/8" = 1'-0"



Architecture  
Interiors  
Planning  
2283 Elmhill Road  
Pittsburgh, PA 15221  
412.352.1784



Melwood  
Investments LLC

THE JULIAN  
VERSION B.1  
A Hudson  
Property

419 Melwood Avenue  
Pittsburgh, Pennsylvania

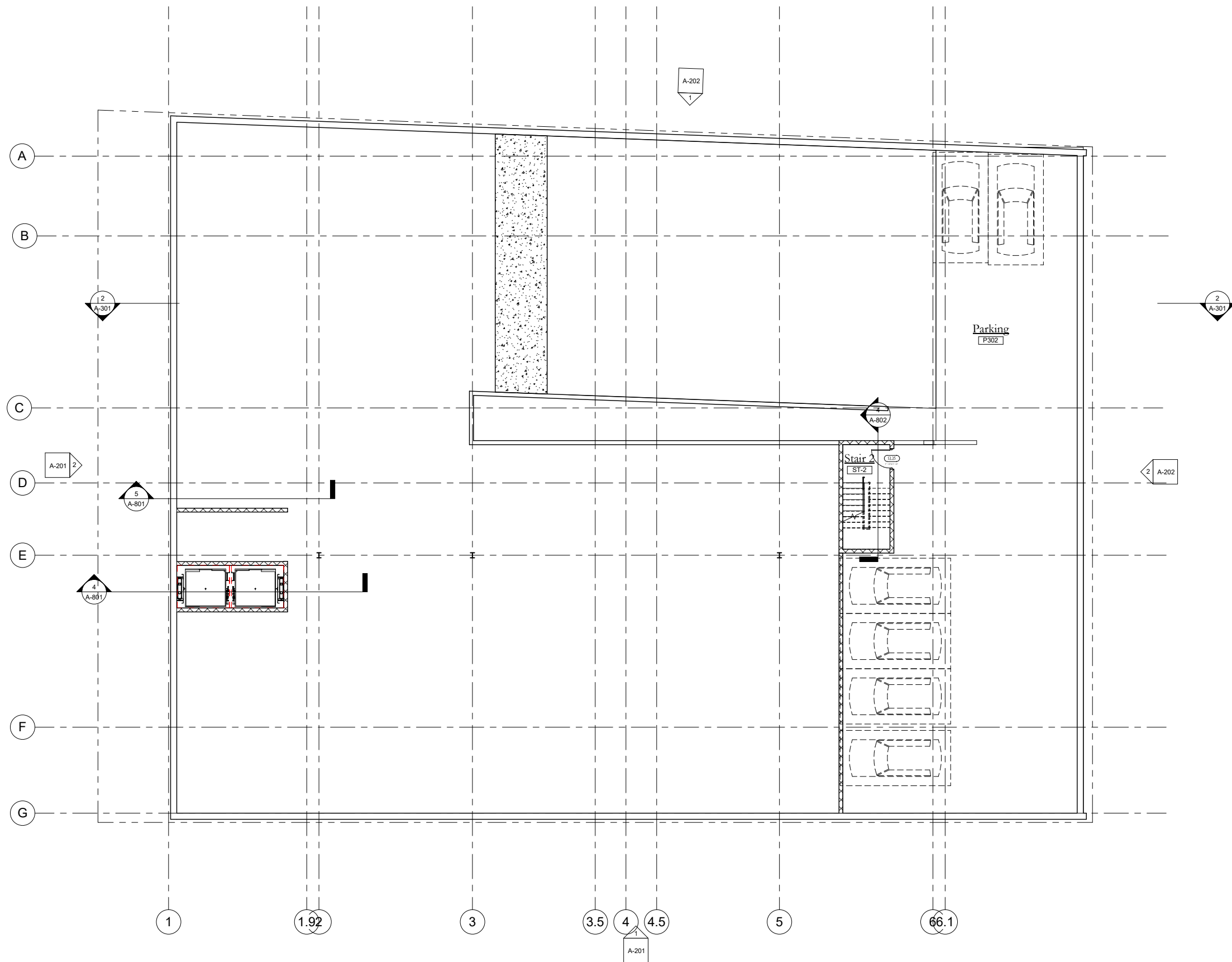
12 JULY 2021 - PRICING SET

Revisions		
No.	Date	Description

Project Data	
Project	2020.32
Date	--/--

Parking P2 Plan

A-100.2



1 P3 - PARKING LEVEL 2.5  
1/8" = 1'-0"



Architecture  
Interiors  
Planning  
2283 Elmhill Road  
Pittsburgh, PA 15221  
412.352.1784



Melwood  
Investments LLC

THE JULIAN  
VERSION B.1  
A Hudson  
Property

419 Melwood Avenue  
Pittsburgh, Pennsylvania

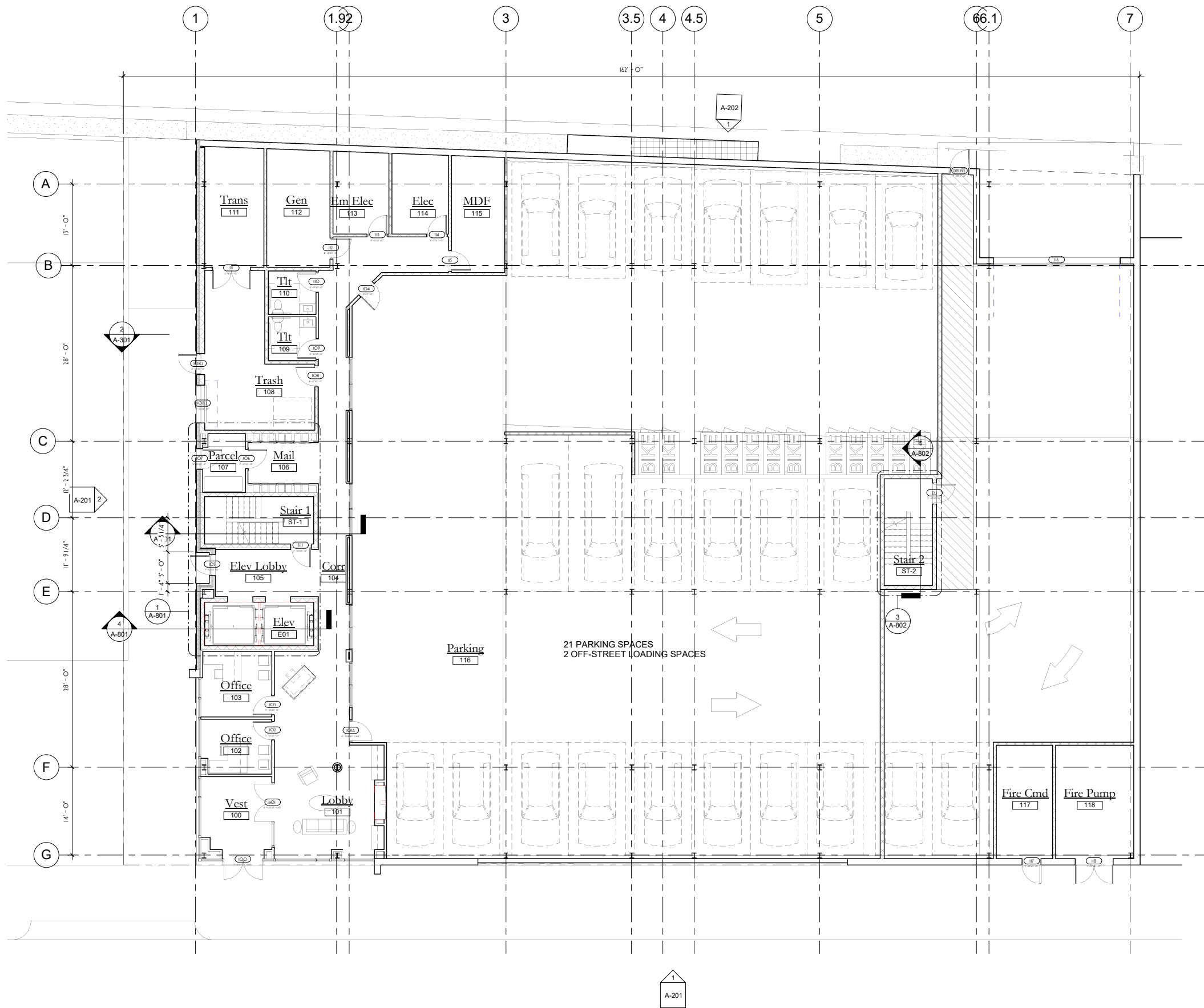
Revisions		
No.	Date	Description

Project Data	
Project	2020.32
Date	--/--

Parking P2.5 Plan

A-100.25

12 JULY 2021 - PRICING SET



1 First Floor Plan  
1/8" = 1'-0"



Architecture  
Interiors  
Planning

2283 Elmhill Road  
Pittsburgh, PA 15221  
412.352.1784



Melwood  
Investments LLC

THE JULIAN  
VERSION B.1  
A Hudson  
Property

419 Melwood Avenue  
Pittsburgh, Pennsylvania

12 JULY 2021 - PRICING SET

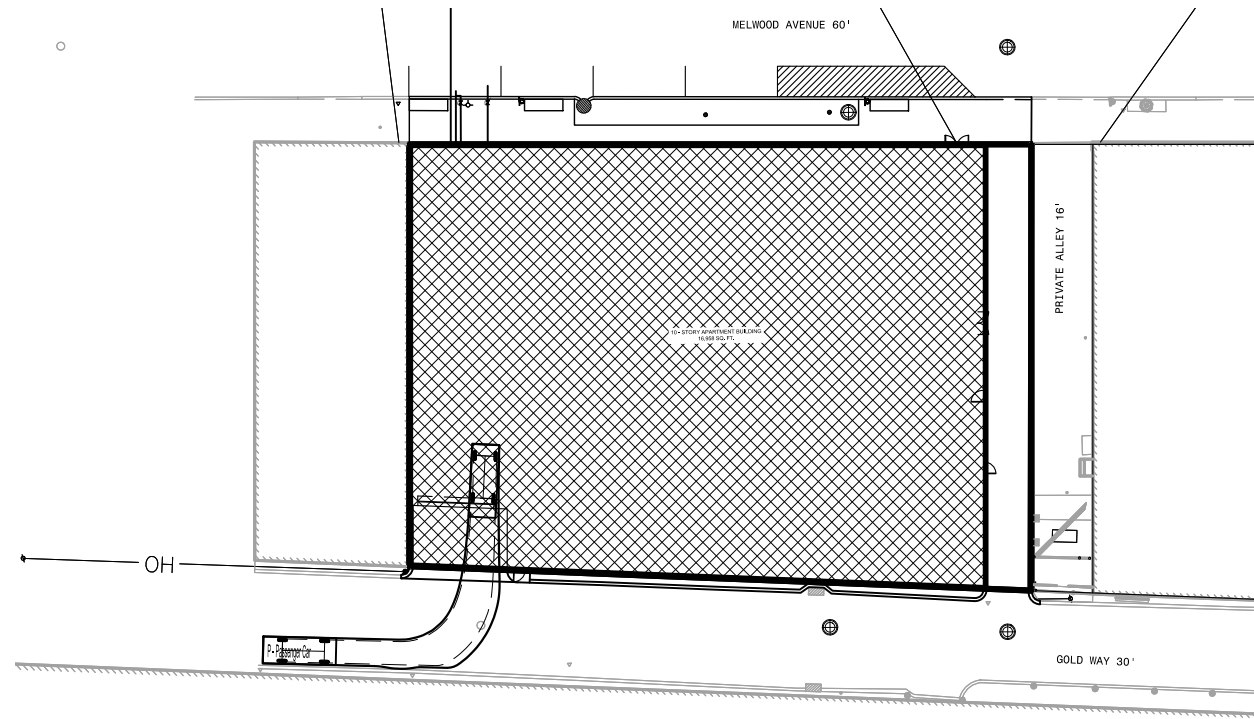
Revisions		
No.	Date	Description

Project Data	
Project	2020.32
Date	--/--

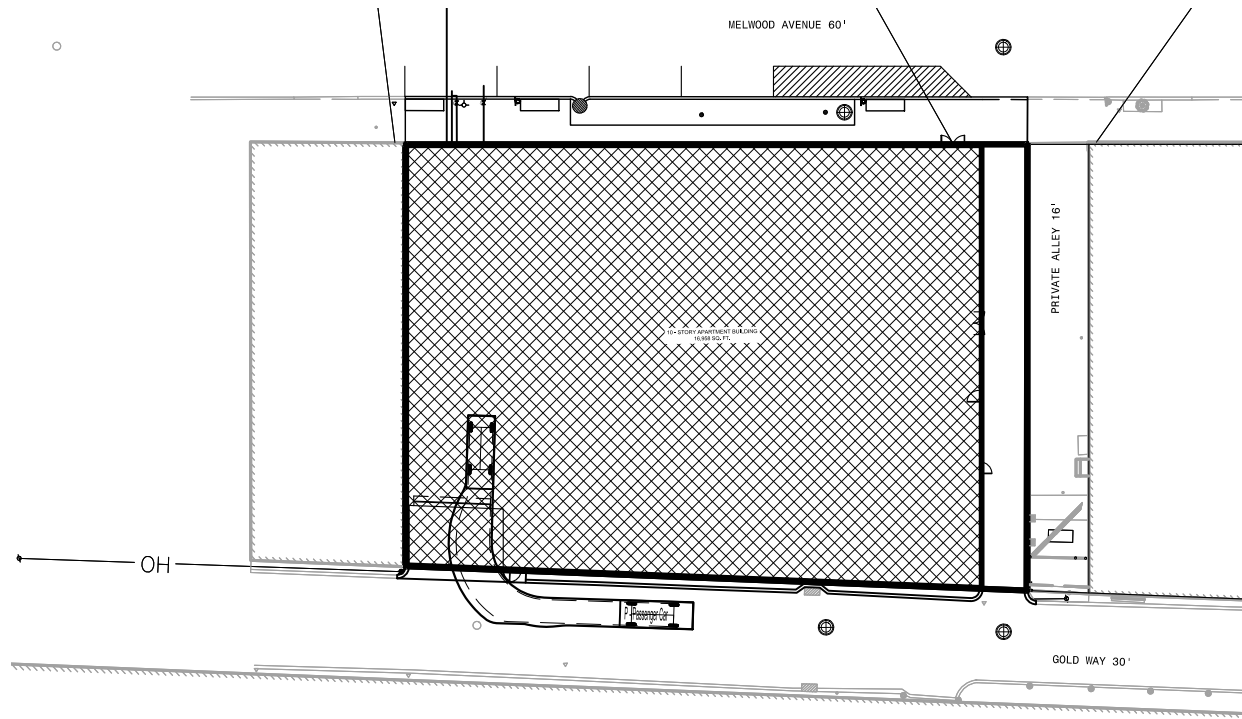
First Floor Plan

A-101

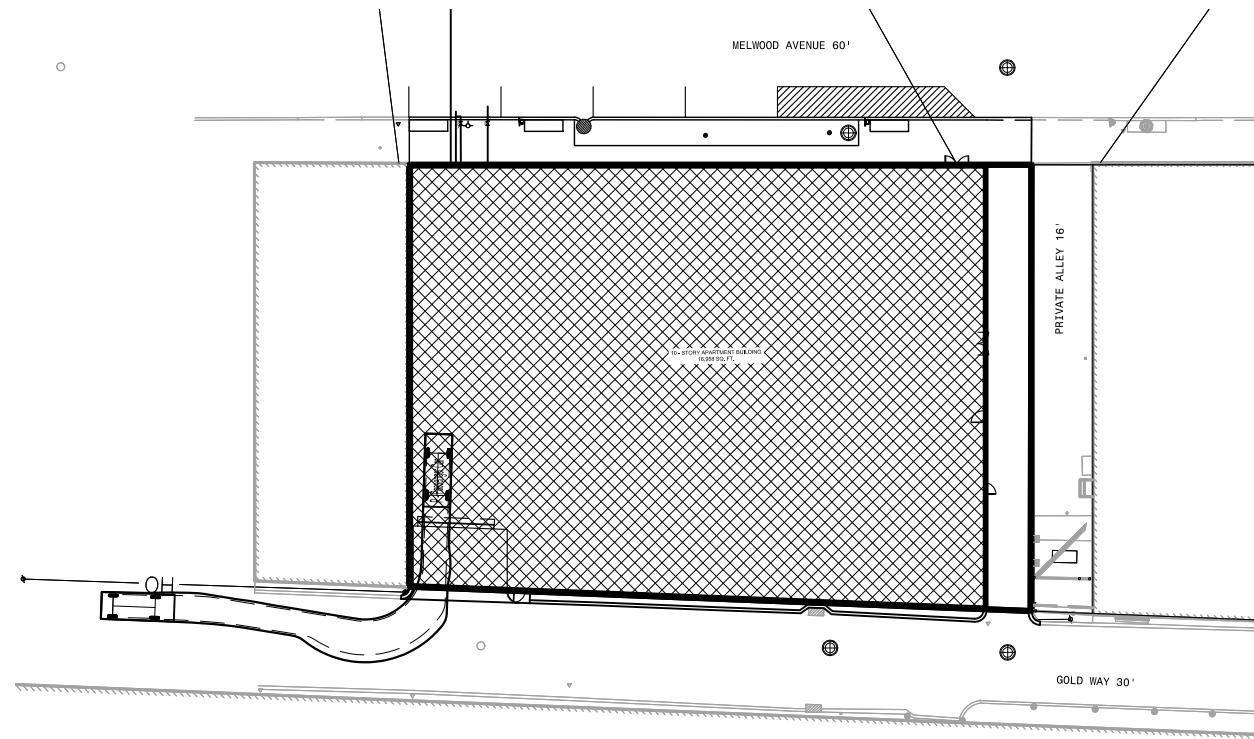
I:\Path & Filename=G:\Projects\41000\41184 The Julian\0001 Civil\Dwg\02-Sheet\EX1 - TURNING TEMPLATES.dwg  
 Plot Date=6/9/2021 11:26 AM Kelley R. Harrington, E.I.T. Save Date=6/9/2021 11:25 AM



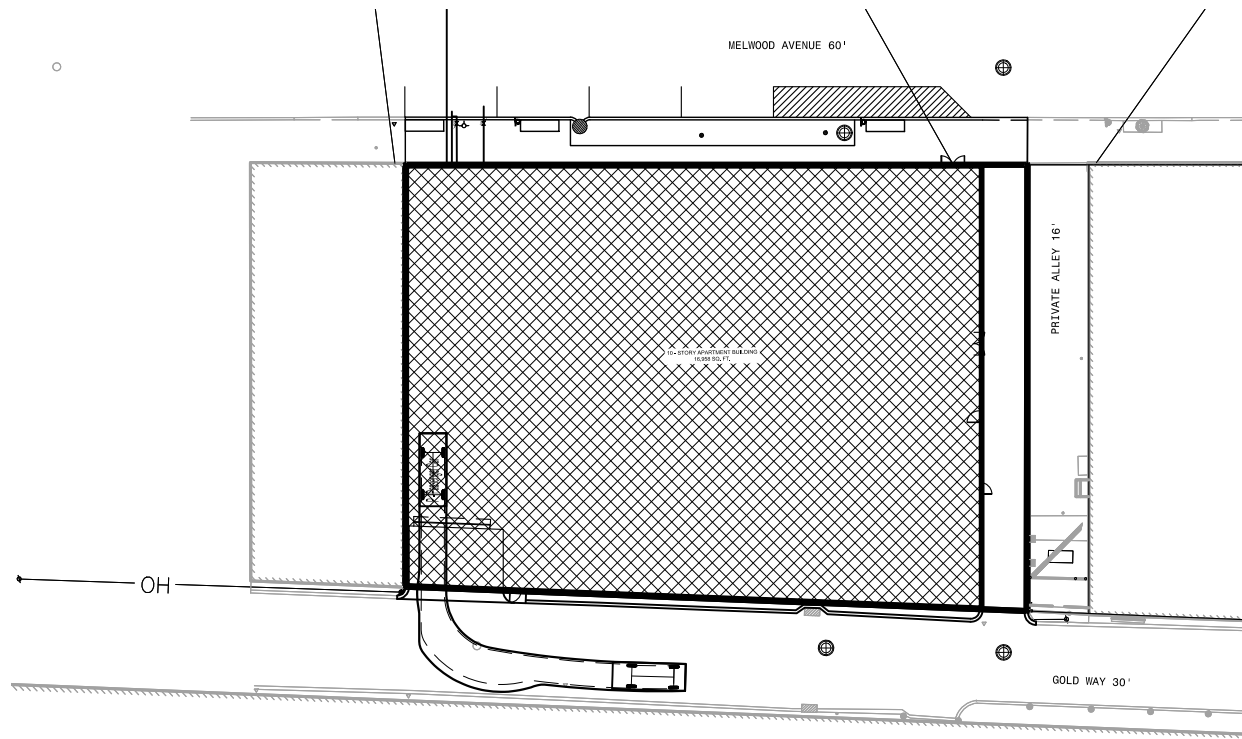
PASSENGER CAR - LEFT IN  
 SCALE: 1" = 50'



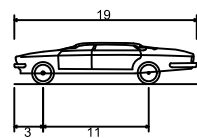
PASSENGER CAR - RIGHT IN  
 SCALE: 1" = 50'



PASSENGER CAR - RIGHT OUT  
 SCALE: 1" = 50'

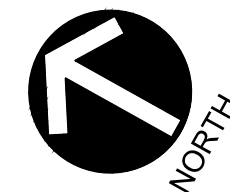


PASSENGER CAR - LEFT OUT  
 SCALE: 1" = 50'



P - Passenger Car  
 Overall Length 19.000ft  
 Overall Width 7.000ft  
 Overall Body Height 4.300ft  
 Min Body Ground Clearance 1.115ft  
 Track Width 6.000ft  
 Lock-to-lock time 4.00s  
 Max Steering Angle (Virtual) 31.60°

19.000ft  
 7.000ft  
 4.300ft  
 1.115ft  
 6.000ft  
 4.00s  
 31.60°



GRAPHIC SCALE



( IN FEET )  
 1 inch = 50 ft.

REVISION RECORD

No.	Date
01	
02	
03	
04	
05	
06	
07	
08	

THE JULIAN, A HUDSON PROPERTY  
 419 MELWOOD AVENUE  
 PITTSBURGH, PA 15213

PREPARED FOR:  
 HUDSON MELWOOD, LP  
 2450 SHENANGO VALLEY FREEWAY  
 HERMITAGE, PA 16148

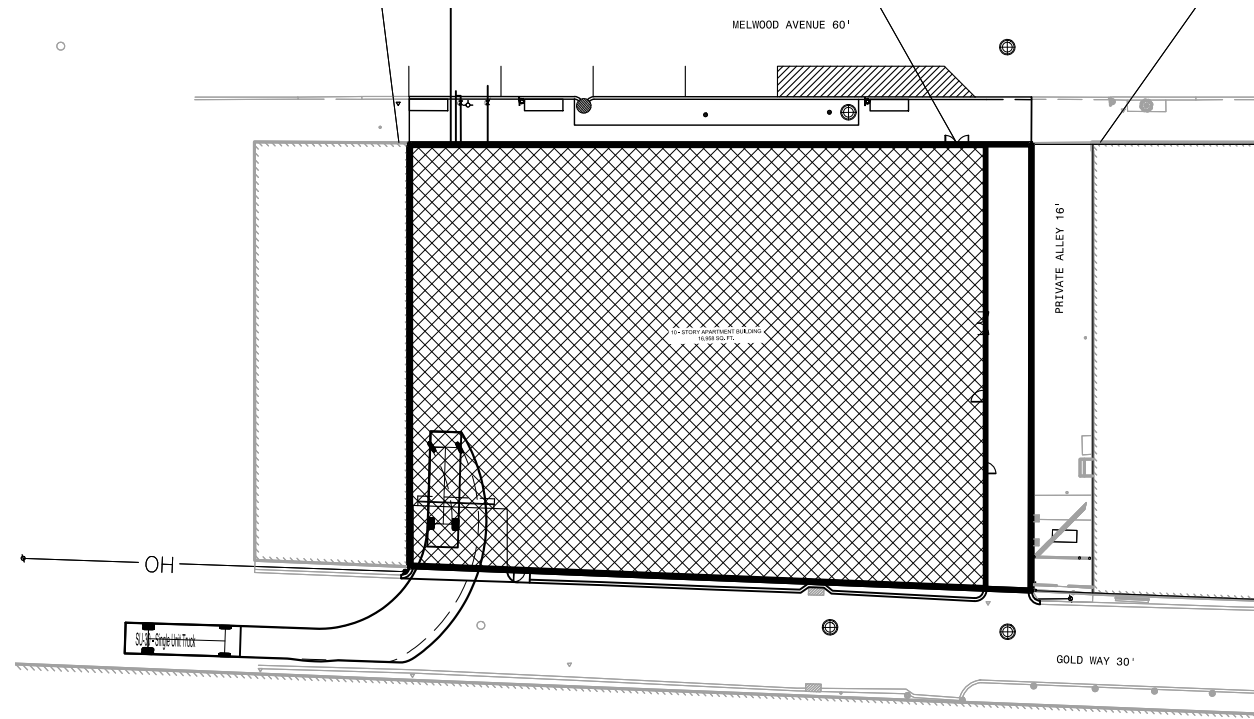
GARAGE VEHICLE  
 TURNING TEMPLATE

Project Number: 41184-0001  
 Drawing Scale: 1" = 50'  
 Date Issued: JUNE 2021  
 Index Number: -  
 Drawn By: SLM  
 Checked By: MGA  
 Project Manager: MGA

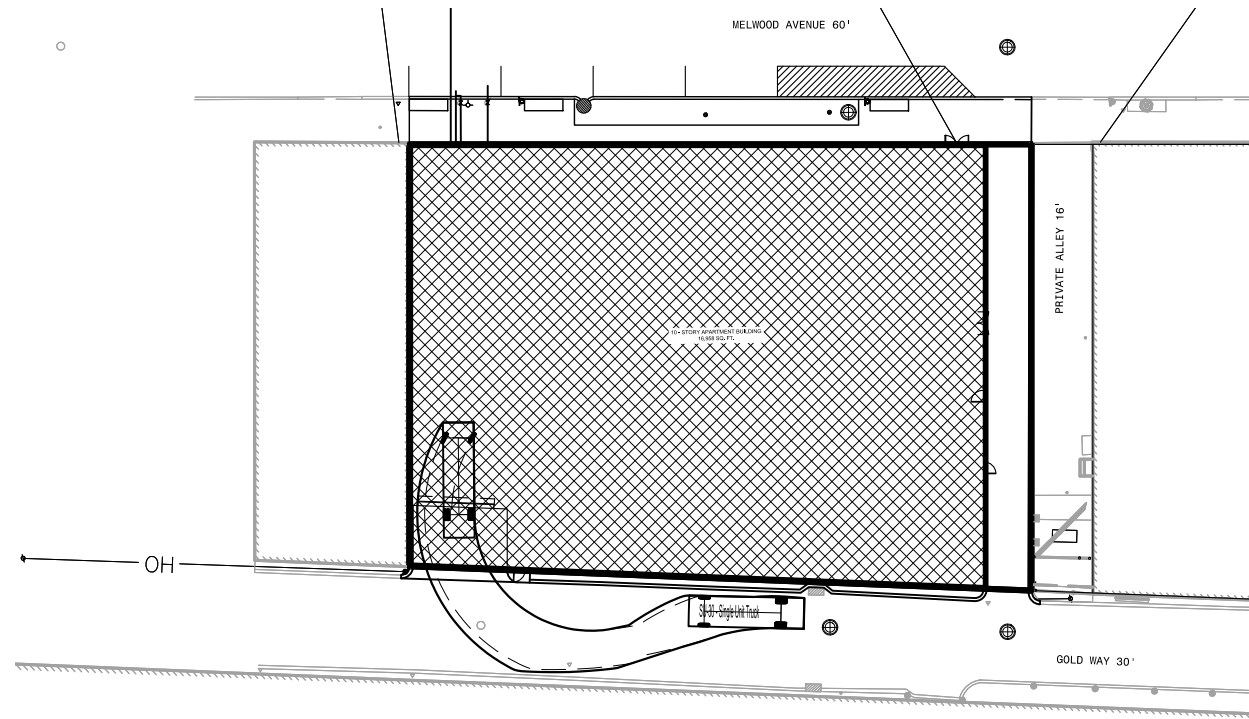
EX-1A



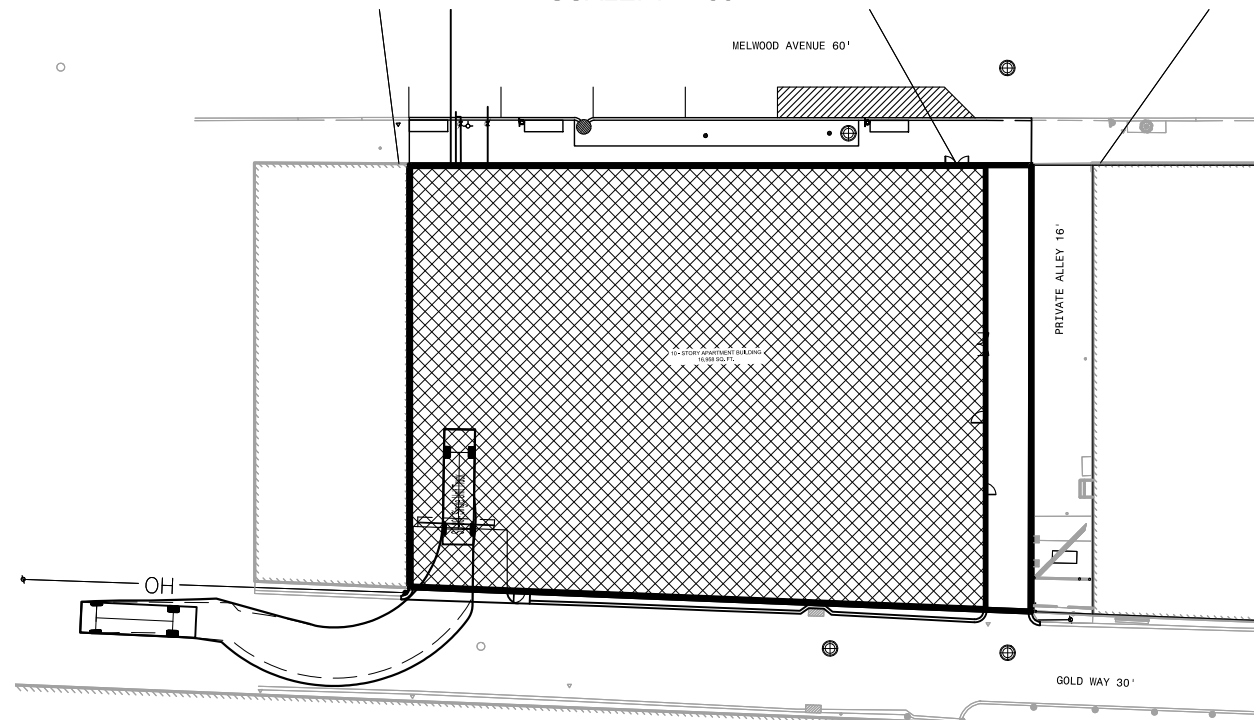
I:\Path & Filename=G:\Projects\41000\41184 The Julian\0001 Civil\Drawings\02-Sheet\EX1 - TURNING TEMPLATES.dwg  
 Plot Date=6/9/2021 11:27 AM Kelley R. Harrington, E.I.T.  
 Save Date=6/9/2021 11:25 AM



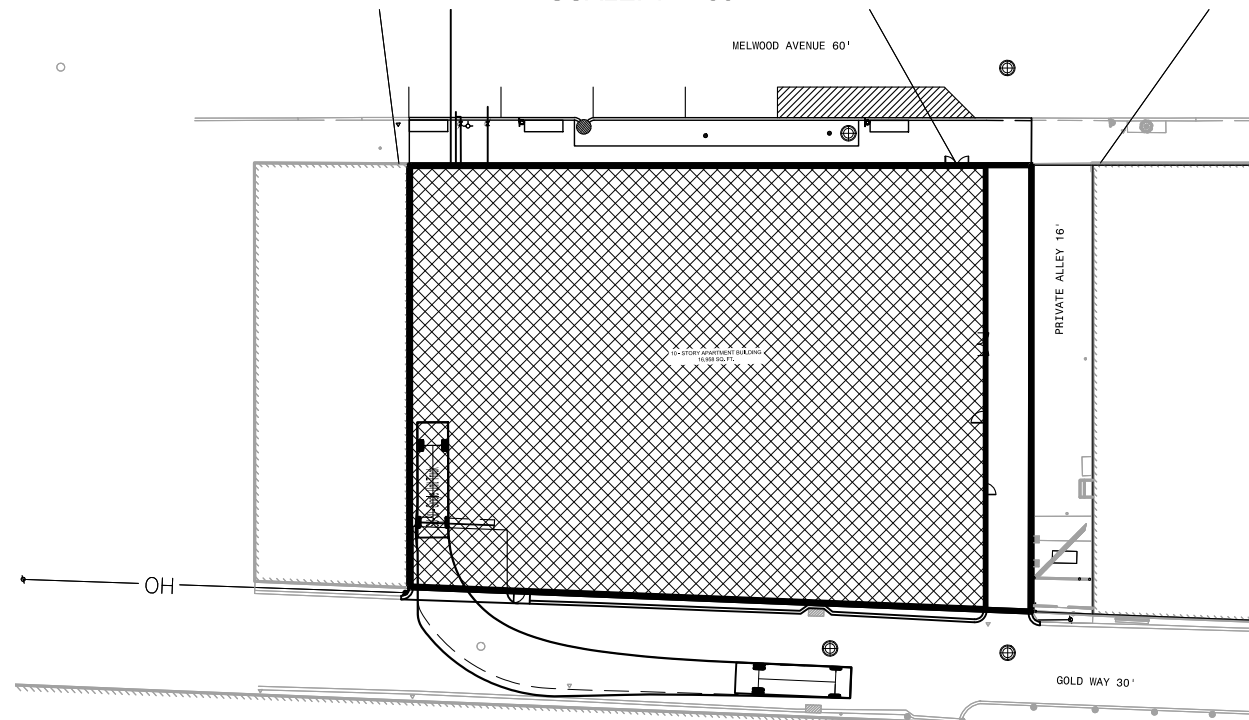
**SINGLE UNIT TRUCK - LEFT IN**  
 SCALE: 1" = 50'



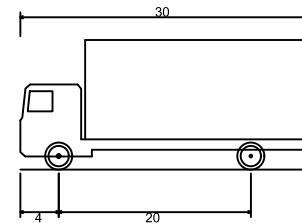
**SINGLE UNIT TRUCK - RIGHT IN**  
 SCALE: 1" = 50'



**SINGLE UNIT TRUCK - RIGHT OUT**  
 SCALE: 1" = 50'

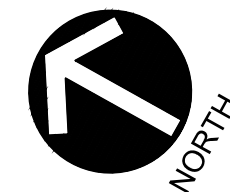


**SINGLE UNIT TRUCK - LEFT OUT**  
 SCALE: 1" = 50'

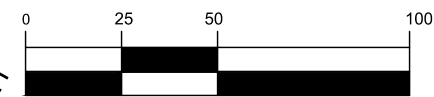


SU-30 - Single Unit Truck  
 Overall Length 30.000ft  
 Overall Width 8.000ft  
 Overall Body Height 13.500ft  
 Min Body Ground Clearance 1.367ft  
 Track Width 8.000ft  
 Lock-to-lock time 5.00s  
 Max Steering Angle (Virtual) 31.80°

30.000ft  
 8.000ft  
 13.500ft  
 1.367ft  
 8.000ft  
 5.00s  
 31.80°



**GRAPHIC SCALE**



( IN FEET )  
 1 inch = 50 ft.

REVISION RECORD

No.	Date
01	
02	
03	
04	
05	
06	
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**THE JULIAN, A HUDSON PROPERTY**  
 419 MELWOOD AVENUE  
 PITTSBURGH, PA 15213

**HUDSON MELWOOD, LP**  
 2450 SHENANGO VALLEY FREEWAY  
 HERMITAGE, PA 16148

GARAGE VEHICLE  
 TURNING TEMPLATE

Project Number: 41184-0001  
 Drawing Scale: 1" = 50'  
 Date Issued: JUNE 2021  
 Index Number: -  
 Drawn By: SLM  
 Checked By: MGA  
 Project Manager: MGA

**EX-1B**