

Case #: 6-ZN-2022

Review Cycle: 2

Status: Accepted

Reviewed By: GA

Date: 10/10/2022

Note that this report was accepted in cycle 2. The non-significant comments shown in the excerpt below were made in tracking sheets to be addressed during final plans preparation

PRELIMINARY DRAINAGE REPORT

3200 SCOTTSDALE

3202 N. Scottsdale Road,
Scottsdale, Arizona

Prepared For:

3202 Scottsdale, LLC
7669 E. Pinnacle Peak Rd., Ste. 250
Scottsdale, AZ 85255

Prepared by:



Sustainability Engineering Group
8280 E. Gelding Drive, Suite 101
Scottsdale, AZ 85260
480.588.7226 www.azSEG.com

Project Number: 210708
Submittal Date: November 17, 2021
Revision Date: August 3, 2022

2022
Case#: 6-ZN-2002

Plan Check#: TBD

6-ZN-2022
8/11/2022

Table of Contents

LIST OF FIGURES:	iii
APPENDIX:	iii
1. INTRODUCTION	1
2. LOCATION AND PROJECT DESCRIPTION	1
2.1 LOCATION:	1
2.2 EXISTING AND PROPOSED DEVELOPMENTS SURROUNDING THE SITE:	1
2.3 EXISTING SITE DESCRIPTION:	2
2.4 PROPOSED SITE DEVELOPMENT:	2
2.5 FLOOD HAZARD ZONE:	2
3. EXISTING DRAINAGE CONDITIONS	2
3.1 OFF-SITE DRAINAGE PATTERNS	2
3.2 ON-SITE DRAINAGE	3
4. PROPOSED STORM WATER MANAGEMENT	4
4.1 DESIGN INTENT:	4
4.2 STORMWATER STORAGE REQUIREMENTS:	4
4.3 LAND CHARACTERISTICS:	4
4.4 STORMWATER RETENTION:	5
4.6 STORMWATER BASINS DRAINING	7
4.7 ADEQ WATER QUALITY REQUIREMENTS	8
5. FLOOD SAFETY FOR DWELLINGS	8
5.1 FINISHED FLOOR ELEVATIONS	8
6. CONCLUSIONS	9
6.1 OVERALL PROJECT:	9
6.2 PROJECT PHASING:	9
7. WARNING AND DISCLAIMER OF LIABILITY	9
8. REFERENCES	9



LIST OF FIGURES:

FIGURE 1	-	Vicinity Map
FIGURE 2	-	Aerial
FIGURE 3	-	FIRM
FIGURE 4	-	Flo-2D Map

APPENDIX:

APPENDIX I	-	Rainfall Data
APPENDIX II	-	Calculations
APPENDIX III	-	Grading and Drainage Plan
APPENDIX IV	-	Lower Indian Bend Wash Study (LIBWS) Excerpt

1. INTRODUCTION

This Preliminary Drainage Report represents the storm water analysis for 3202 Scottsdale development proposed in Scottsdale, Arizona. The purpose of this report is to provide the hydrologic and hydraulic analysis, required by the City of Scottsdale, to support the proposed site plan for said development. This report includes discussions and calculations defining the storm water management concepts for the collection and conveyance necessary to comply with the drainage requirements of the City of Scottsdale and Maricopa County. Preparation of this report has been done in accordance with the requirements of the City of Scottsdale Design Standards & Policies Manual (DS&PM) 2018 ¹, and the Drainage Design Manuals for Maricopa County, Arizona, Volumes I² and Volume II³.

2. LOCATION AND PROJECT DESCRIPTION

2.1 LOCATION:

The subject property consists of land located between N. 71 Street and N. Scottsdale Road, about 200' north of E. Earll Drive in Scottsdale, AZ:

- A portion of the East Half of the Southeast 1/4 of Section 27, Township 2 North, Range 4 East, of the Gila and Salt River Base and Meridian, Maricopa County, Scottsdale, Arizona.
- Parcel ID: Parcel 130-16-007A; Scottsdale Trailer Corral, Zoning C-3
- Address: 3202 N. Scottsdale Road

Proposed zoning is D/DMU-2, Downtown Multiple Use, Type 2.

Refer to **FIGURE 1 - Vicinity Map** for the project's location with respect to major cross streets

2.2 EXISTING AND PROPOSED DEVELOPMENTS SURROUNDING THE SITE:

- South:

The site is bound to the south by the following properties:

- Parcel 130-16-008H; Abandoned lot, Zoning D/DMU-2 DO
- Parcel 130-16-008D; Abandoned lot, Zoning D/DMU-2 DO
- Parcel 130-16-008A; Tile Man; Zoning is R1-7.
- Parcel 130-16-008F; Allen Instruments & Supplies, Zoning is C-3.
- Parcel 130-16-008G; Allen Instruments & Supplies, Zoning is C-3.

- North:

- Parcel 130-16-006B; The Griffin Apartments; Zoning is D/DMU-2 PBD DO.

- West:

Parcel is bound by N. 71st to the west, across is:

- Parcel 130-16-015A; Colonial Grand at Old Town Scottsdale; Zoning is R-5

- East:

Parcel is bound by N. Scottsdale Road to the east, across are:

- Parcel 130-21-021B; Holiday Inn Express; Zoning is C-3 DO.
- Parcel 130-21-021A; Lo-Lo's Chicken & Waffles; Zoning is C-3 DO.

2.3 EXISTING SITE DESCRIPTION:

The project area includes approximately 2.11 acres of land and is designated with zoning C-3. The site is currently developed as a for rent residential trailer and RV community. North and south neighbor parcels are currently separated by walls and fences.

Per Topographic Survey prepared by AW Land Surveying, LLC., the site slopes from north to south at approximately 0.60%. Elevation varies from approximately 1244.30' at the north to approximately 1242.72' at the south.

Refer to **FIGURE 2** attached for an aerial of the site.

2.4 PROPOSED SITE DEVELOPMENT:

Site development includes the demolition of existing structures and designated parking lots for the construction of a new high density multifamily project. The development will include a proposed access off N. Scottsdale Road leading to a drop-off area, and an additional access off N. 71 Street connecting to the proposed parking garage. A driveway entrance at the southwest corner of the site will provide access from N. 71st Street to the loading dock and refuse area.

Refer to **Appendix III** – Grading and Drainage Plan for site layout.

2.5 FLOOD HAZARD ZONE:

FIRM Map Number 04013C2235M dated September 18, 2020 indicates the site is designated as Zone "X". As such, it is defined as areas determined to be outside the 0.2% annual chance floodplain and therefore is not in a special flood hazard area.

Refer to **FIGURE 3** for the FIRM.

3. EXISTING DRAINAGE CONDITIONS

3.1 OFF-SITE DRAINAGE PATTERNS

Off-site drainage patterns were determined based on topographic information and Flo 2D LIBW South Study (refer to **FIGURE 4**). Runoff captured by the city's storm network from 71st Street and Scottsdale Road combines at Earll Drive and is ultimately discharged into Indian Bend Wash (Refer to **Appendix IV** for Lower Indian Bend Wash Study (LIBWS) Excerpt). Overall, no offsite flows affect the site. The topographic survey and Flo 2D LIBW South Study provides the following information for offsite drainage:

- *North:* The property is directly adjacent to the fire lane of multi-family complex Griffin Apartments to the north. An existing wall running between N. 71st and N. Scottsdale Road along the entire north border of the site separates the properties and therefore prevents run-off from entering the project property. No off-site flows affect the site from this direction.
- *East:* Run-off from N. Scottsdale Road flows from north to south and is conveyed via existing curb & gutter adjacent to the site. The Flo-2D Lower Indian Bend Wash (LIBW) South study for the 100-year, 6-hour event shows a peak discharge of 8.01 cfs at the southeast corner of the property, which is the greatest flow taken by the gutter in N. Scottsdale Road at the frontage of the site.

- **West:** Run-off from N. 71st is also conveyed via existing curb & gutter from north to south. There is an existing catch basin, EX-CB-2, located in the northeast corner of N. 71st and E. Earll Drive intersection. This structure captures the east half of the street flows of N. 71st, which reach a peak discharge of 19.27 cfs per Flo-2 LIBW South study for the 100-year, 6-hour event. EX-CB-3 is located at the opposite side of N. 71st and captures the remainder west half of the street run-off from N. 71st. All the previous structures are connected to the public storm drain system at E. Earll Drive. No off-site flows affect the site from this direction. Refer to **Existing Conditions Drainage Area Map** in Appendix II for EX-CB-2 and EX-CB-3 locations.
- **South:** The south properties drain to the south, sheetflowing through existing parking lots into Earll Drive. All the run-off from these properties is ultimately conveyed to several catch basins north of Earll Drive and directed into the 90" public city storm pipe. No off-site flows affect the site from this direction.

3.2 ON-SITE DRAINAGE

Based on the topographic information, the pre-development outfalls are as follows:

- The parcel discharges minor flows to N. 71 St and N. Scottsdale Road: existing drainage areas EX-1 and EX-4 discharge stormwater via overland flow to the west and east into the adjacent roadways respectively. Run-off from these areas is conveyed by curb & gutter and ultimately captured by existing catch basins along the north curb of E. Earll Drive.
- Existing drainage area EX-2 at the center of the property discharges runoff to south parcel 130-16-008H, a fence at the south boundary of the site enables flow to cross between the properties. Stormwater sheetflows through the neighbor property's parking lot before reaching existing catch basins north of E. Earll Drive.
- EX-3 drains to on-site catch basin EX-CB-1 (grated inlet in sump). Review of the topographic survey and existing site information does not provide evidence of on-site retention, therefore it will be assumed that the structure discharges to the 72" public storm pipe along Scottsdale.
- The topography generally slopes from the northwest to the southeast with less than two feet of fall.

Refer to Appendix II for **Existing Conditions Drainage Area Map**.

Table 1 below is a summary of existing conditions weighted run-off coefficient (Cwt) and runoff calculations. Refer to Section 4.3 for land characteristics.

TABLE 1:

EXISTING SITE DISCHARGES								
	TOTAL AREA	Cwt 10	Intensity 10 yr 5-min	Q 10	Cwt 100	Intensity 100 yr 5-min	Q 100	Control Point
	(ac)	(-)	(in/hr)	(cfs)	(-)	(in/hr)	(cfs)	CP#
	2.11		4.68	-		7.43	-	-
EX-1	0.01	0.90	4.68	0.04	0.95	7.43	0.07	CP #1
EX-2	1.48	0.67	4.68	4.64	0.73	7.43	8.03	CP #2
EX-3	0.47	0.66	4.68	1.45	0.73	7.43	2.55	CP #3/EX-CB-1
EX-4	0.15	0.86	4.68	0.60	0.92	7.43	1.03	CP #4

Refer to the **Existing Cwt Exhibit and Existing Conditions Drainage Area Map** in **Appendix II**.

4. PROPOSED STORM WATER MANAGEMENT

4.1 DESIGN INTENT:

In order to preserve existing drainage patterns, most of the on-site drainage will discharge to the pre-development outlets (see "section 4.6-Pre vs post discharges" for more discussion on post development flow management), a portion of the site run-off will also be stored in basins to fulfill stormwater retention requirements. Flows will be conveyed via roof drains, storm pipes and overland flow. Since the existing site already discharges all the run-off to the right of way, directly or across adjacent developments, drainage of the proposed development shall be designed to match or reduce off-site drainage contributions to the existing public storm drain system. On-site retention shall be calculated per City of Scottsdale DSPM 4-1.201 as described in the following section.

4.2 STORMWATER STORAGE REQUIREMENTS:

The site has been previously developed. In accordance with City of Scottsdale requirements for lots that are already developed, stormwater storage for the 100-year 2-hour storm event is required based on the difference between the pre vs. post development runoff volume from the 100-year 2-hour storm, event if increased, or first flush volume, whichever is greater, in addition to maintaining any stormwater volume in any existing basin or facility. Per topographic information, there are no existing retention facilities within the site. As such, retention shall be provided only for the pre vs. post difference in volume or first flush volume.

4.3 LAND CHARACTERISTICS:

The proposed project site consists of a multi-family residential building with a main drive and landscape areas along the perimeter of the structure. Based on the DS&PM, runoff coefficients for the 100-year storm event used are as follows:

- C=0.95 for building or concrete (C=0.90 for 10-year event)
- C=0.95 for paved surface (C=0.90 for 10-year event)
- C=0.45 for undisturbed natural desert or desert landscape (C=0.37 for 10-year event)

HYDROLOGIC ANALYSIS: The hydrologic analysis is determined using the procedures in the City of Scottsdale Design Standards & Policies Manual and the Drainage Design Manual for Maricopa County, Arizona, Volume I.

Table 2 below is a summary of the proposed weighted run-off coefficient (Cwt) and runoff calculations:

TABLE 2:

PROPOSED SITE DISCHARGES								
	TOTAL AREA	Cwt 10 YR	Intensity 10 yr 5-min	Q 10	Cwt 100 YR	Intensity 100 yr 5-min	Q 100	Control Point
	(ac)	(-)	(in/hr)	(cfs)	(-)	(in/hr)	(cfs)	CP#
	2.11		4.68	-		7.43	-	-
DA-1	0.09	0.55	4.68	0.23	0.62	7.43	0.41	CP #1
DA-2	1.32	0.90	4.68	5.56	0.95	7.43	9.32	CP #5
DA-3	0.38	0.44	4.68	0.78	0.52	7.43	1.46	CP #6
DA-4	0.32	0.40	4.68	0.60	0.48	7.43	1.14	CP #4

Refer to the **Proposed Cwt Exhibit and Proposed Conditions Drainage Area Map** in **Appendix II**.

4.4 STORMWATER RETENTION:

100-YR, 2-HR STORM: Per City of Scottsdale DSPM 4-1.201, development storage requirements for the 100-yr, 2-hr storm event are calculated as follows:

$$V_r = \Delta C \left(\frac{R}{12} \right) A$$

where:

V_r = Required storage (cf)

R = Precipitation amount = 2.16 in per NOAA Atlas 14 Precipitation Frequency Estimates

A = Total area of site (sf)

$\Delta C = C_{post} - C_{pre}$

$$V_r = (0.78 - 0.74) \left(\frac{2.16}{12} \right) (91,855) = 661.36 \text{ cf}$$

Since the difference of the weighted coefficients is positive, stormwater flows in the project area will increase, generating additional flow contributions to existing drainage patterns. Therefore, stormwater retention is required for the development.

FIRST FLUSH: First Flush volume required is calculated in accordance with City of Scottsdale DSPM 4-1.201. Only the areas where runoff could be affected by vehicular contact are considered in the first flush calculation. The roof drainage is considered to be free of heavy traffic pollutants, therefore, on-site driveway areas, parking lots and sidewalks will be considered for the calculation. As shown in the Proposed Conditions Cwt Exhibit, first flush area is calculated as the total project area (91,855 sf) minus roof area (57,555 sf) and landscape areas (30,347 sf), equating to 3,953 sf.

$$FF_r = C \left(\frac{P}{12} \right) A$$

where:

FF_r = First Flush required storage volume (cf)

P = Precipitation amount =0.5 in per C.O.S. DSPM

A = Area of site excluding roofs and landscape (sf)

C = The weighted average runoff coefficient =0.95

$$FF_r = (0.95) \left(\frac{0.5}{12} \right) 3,953 = 156 \text{ cf}$$

The above assessment indicates that the required First Flush storage is 156 cf.

Retention shall be provided for the greater of Pre vs Post and First Flush volumes, therefore on-site retention will be designed to store the Pre vs. Post volume. (661.36 cf). The provided storage volume will also fulfill the First Flush requirement. A drainage easement is required around the basin and to be dedicated to City of Scottsdale during final plans.

PROVIDED VOLUME: Open retention Basin 1 is proposed at the landscape area south of the building. The east parking lot area will drain to this basin via a provided curb opening and a rip-rap channel, fulfilling the First Flush requirement by storing stormwater from the project's zone that is more likely to contain pollutants. Basin 1 will therefore retain flows from the proposed parking, building roof, and most of the south landscape area. Under a storm event exceeding Basin 1 retention capacity, stormwater will overflow to N. Scottsdale Road through the ultimate outfall of the project, located at the southeast corner at an elevation of 1,242.44'.

Basin 1 will be a 1' retention basin and not require drywells, its retention capacity is calculated with the average-end method as shown below:

TABLE 3:

BASIN 1					
ELEV.	AREA	DEPTH	AVG VOLUME	SUM VOLUME	COMMENT
(FT)	(SF)	(FT)	(CF)	(CF)	
1241.0	2,114			0.00	Bottom
		1.00	3,235.97		
1242.0	4,358			3,236	Volume Provided

The proposed basin has been oversized as part of the proposed drainage management plan as discussed in Basin 1 routing in the following section.

4.6 STORMWATER BASINS DRAINING

Proposed drainage area DA-3 contributing to on-site retention Basin 1 will include the paved areas within the project to avoid discharging pollutants to adjacent streets. Basin 1 will overflow to N. Scottsdale Road when its capacity is exceeded.

For basins with depth over 6", bleedoff calculations is required to demonstrate that the basin can drain in a time not to exceed 36 hours. The calculations should be based on a surface percolation test. Bleedoff calculations will be addressed in the Final Drainage Report.

Basin 1 routing:

As shown in the *Proposed Conditions Drainage Area Map*, no stormwater will be directed to the south parcel, as opposed to the existing condition where most of the site's run-off entered the south property. Proposed Basin 1 is designed to store the associated pre vs. post volume of the project. Basin 1 will be discharged via an 12" storm pipe with a discharge capacity of 2.55 cfs to the existing 72" storm main along Scottsdale Road. Flow routing calculation was performed to calculate the stormwater contributions to the public right-of-way during the 100-year storm event. The basin routing method in **Appendix II** shows that Basin 1 will have a $Q_{100(OUT)}$ of 2.55 cfs at previous described conditions.

Pre vs post discharges (for flows not discharging to Basin 1)

Proposed conditions will ultimately reduce site flow contributions to the existing public storm drain system. Even though the overall run-off coefficient of the site will be increased by 0.4, provided on-site retention will enable run-off reductions to the public drains.

Table 4 below summarizes the project discharges per outfall for the 10-year and 100-year storm events, providing the differences between existing and proposed peak flows for each case. The overall site contributions to the existing public drain system are also shown for the drainage areas that will ultimately discharge to it either through catch basins or the proposed manhole connection.

TABLE 4:

Control point	Outfall	Q10 (cfs)			Q100 (cfs)		
		Existing	Proposed	Δ	Existing	Proposed	Δ
CP #1	N. 71 St	0.04	0.23	0.19	0.07	0.41	0.34
CP #2	South parcel	4.64	0.00	-4.64	8.03	0.00	-8.03
CP #3/EX-CB-1	Public drain	1.45	2.55	1.10	2.55	2.55	0.00
CP #4	N. Scottsdale Rd.	0.60	0.60	0.00	1.03	1.14	0.12
CP #5 (Roof Drain)	Basin 1	0.00	5.56	5.56	0.00	9.32	9.32
CP #6	Basin 1	0	0.78	0.78	0	1.46	1.46

During the 100-year storm event, discharges to N. 71 St will be increased by 0.34 cfs while peak flows to N. Scottsdale Road will be increased by 0.12 cfs. A total of 8.03 cfs that previously drained south will no longer impact the neighbor property. Street capacity will be verified at later stages of the project with the newly modified peak flows to check hydraulics of existing gutter sections in adjacent streets. As shown in the table, the total flow contributions from the site to the public streets was 11.68 cfs, while at proposed conditions discharges will be increased to 12.33 cfs. As such, most of the historical outlets will be maintained. Refer to **Appendix IV** for LIBWS Excerpts.

Refer to **Existing Conditions Drainage Area Map** and **Proposed Conditions Drainage Area Map** in **Appendix II**.

Existing public storm drain capacity at North Scottsdale Road:

Basin 1 will be directly connected to the existing 72" R.C.P. storm drain at N. Scottsdale Road via a new 5' manhole. As described in Table 4 above, no additional flow will be added to the system since the existing 2.55 cfs discharged into the 76" storm drain will be maintained with the proposed 12" bleed-off. A portion of the public stormdrain system in the Lower Indian Bend Wash Area has been intentionally oversized to accommodate additional flows from nearby areas.

The Lower Indian Bend Wash Study (LIBWS) by FCDMC shows the profile and hydraulic grade lines for the existing 72" storm drain and all the downstream drainage structures to outfall WTRIBWOUTFALL discharging to the Indian Bend Wash.

Refer to **Appendix IV** for LIBWS Excerpt, calculations and profiles of the existing storm drain system for the 10-year and 100-year storm event.

4.7 ADEQ WATER QUALITY REQUIREMENTS

The total disturbed area of this site is approximately 2.11 acres. The Arizona Department of Environmental Quality requires that any site disturbance over an acre is required to submit an NOI. A NOI will be submitted to ADEQ for this site after the first submittal of the construction documents as this site disturbance is over 1 acre. A copy of the NOI along with SWPPP plans and report will be submitted to city with final plans, or before any grading activities on the site, for review and acceptance.

5. FLOOD SAFETY FOR DWELLINGS

5.1 FINISHED FLOOR ELEVATIONS

This project lies in an "X" Flood Zone. Therefore, the proposed building finished floor elevation will be set a minimum of 14 inches above the lot ultimate outfall, located at the southeast corner of the site at an elevation of 1242.44'.

6. CONCLUSIONS

6.1 OVERALL PROJECT:

1. The finish floor elevations will be designed to be safe from flooding per city requirements.
2. Historical outfalls will be maintained at proposed conditions, or mitigated, and no detrimental effects will be posed to existing drainage patterns.
3. On-site storage facilities will be provided to account for the Pre vs. Post volume and First Flush volumes.

6.2 PROJECT PHASING:

This project will be constructed in a single phase.

7. WARNING AND DISCLAIMER OF LIABILITY

RE: following page.

8. REFERENCES

1. *Design Standards & Policies Manual, City of Scottsdale – January 2018*
2. *Drainage Design Manual for Maricopa County, Arizona, Volume I, Hydrology, Flood Control District of Maricopa County, Fourth Edition, December 14, 2018*
3. *Drainage Design Manual for Maricopa County, Arizona, Volume II, Hydraulics, Flood Control District of Maricopa County, December 14, 2018*

GRADING & DRAINAGE LANGUAGE

WARNING AND DISCLAIMER OF LIABILITY

The City's Stormwater and Floodplain Management Ordinance is intended to minimize the occurrence of losses, hazards and conditions adversely affecting the public health, safety and general welfare which might result from flooding. The Stormwater and Floodplain Management Ordinance identifies floodplains, floodways, flood fringes and special flood hazard areas. However, a property outside these areas could be inundated by floods. Also, much of the city is a dynamic flood area; floodways, floodplains, flood fringes and special flood hazard areas may shift from one location to another, over time, due to natural processes.

WARNING AND DISCLAIMER OF LIABILITY

The flood protection provided by the Stormwater and Floodplain Management Ordinance is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Floods larger than the base flood can and will occur on rare occasions. Floodwater heights may be increased by constructed or natural causes. The Stormwater and Floodplain Management Ordinance does not create liability on the part of the city, any officer or employee thereof, or the federal, state or county government for any flood damages that result from reliance on the Ordinance or any administrative decision lawfully made thereunder.

Compliance with the Stormwater and Floodplain Management Ordinance does not ensure complete protection from flooding. Flood-related problems such as natural erosion, streambed meander, or constructed obstructions and diversions may occur and have an adverse effect in the event of a flood. You are advised to consult your own engineer or other expert regarding these considerations.

I have read and understand the above.

Plan Check #

Owner

Date

FIGURES

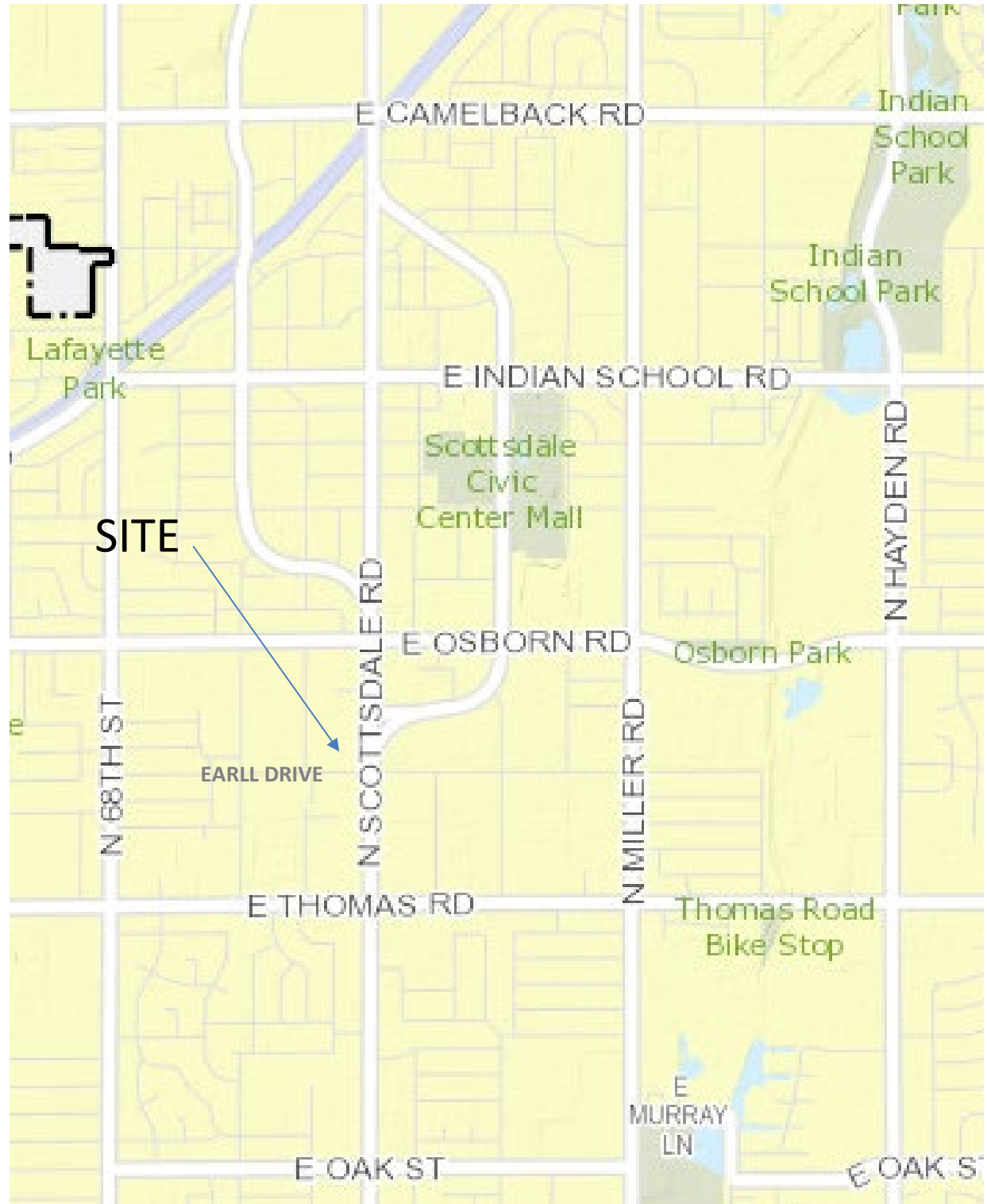


FIGURE 1
Vicinity Map

8280 E. Gelding Dr., Suite 101
Scottsdale, AZ 85260

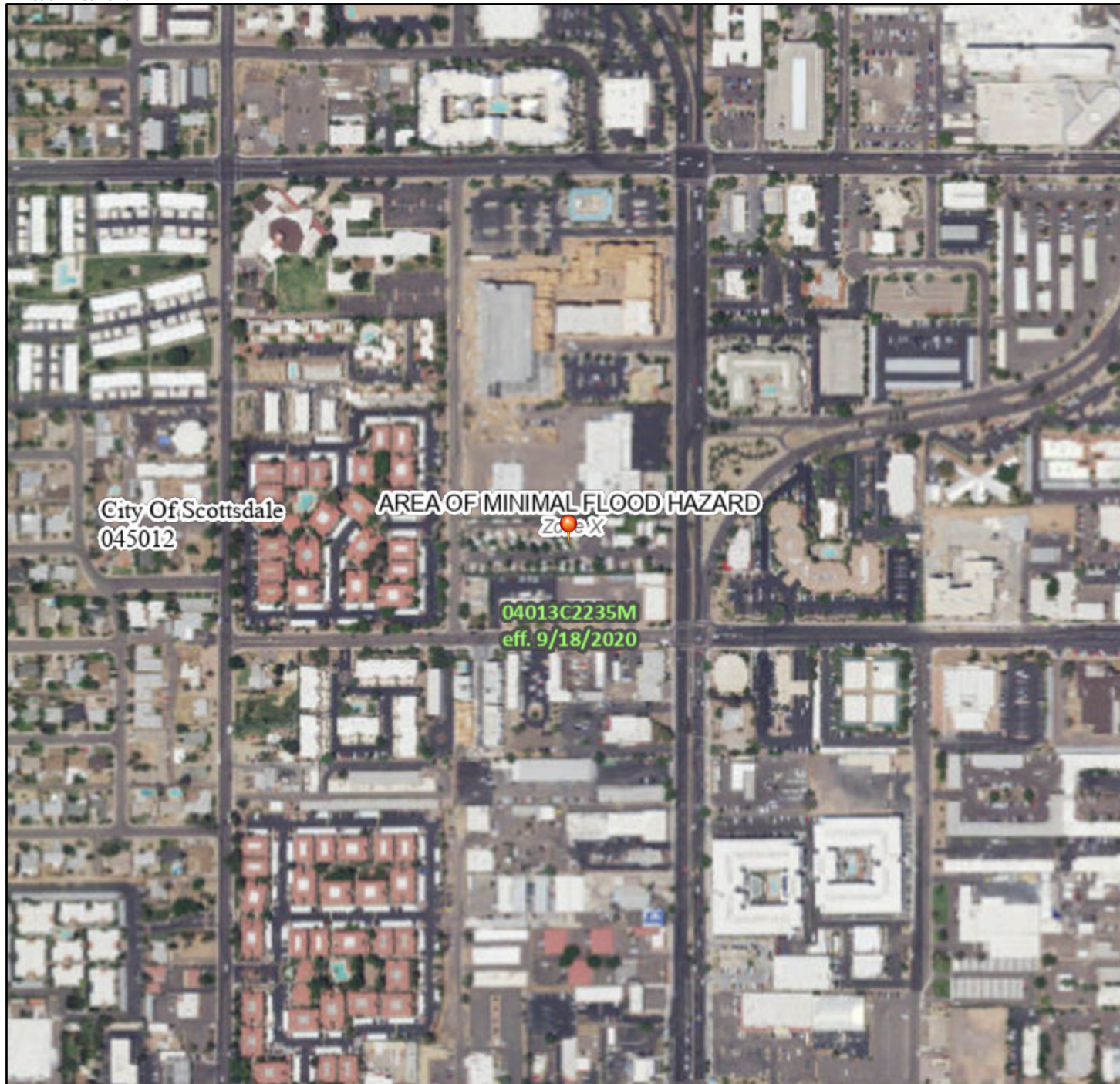


FIGURE 2 – Aerial

National Flood Hazard Layer FIRMMette



111°55'57"W 33°29'20"N



0 250 500 1,000 1,500 2,000 Feet 1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

111°55'19"W 33°28'50"N

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

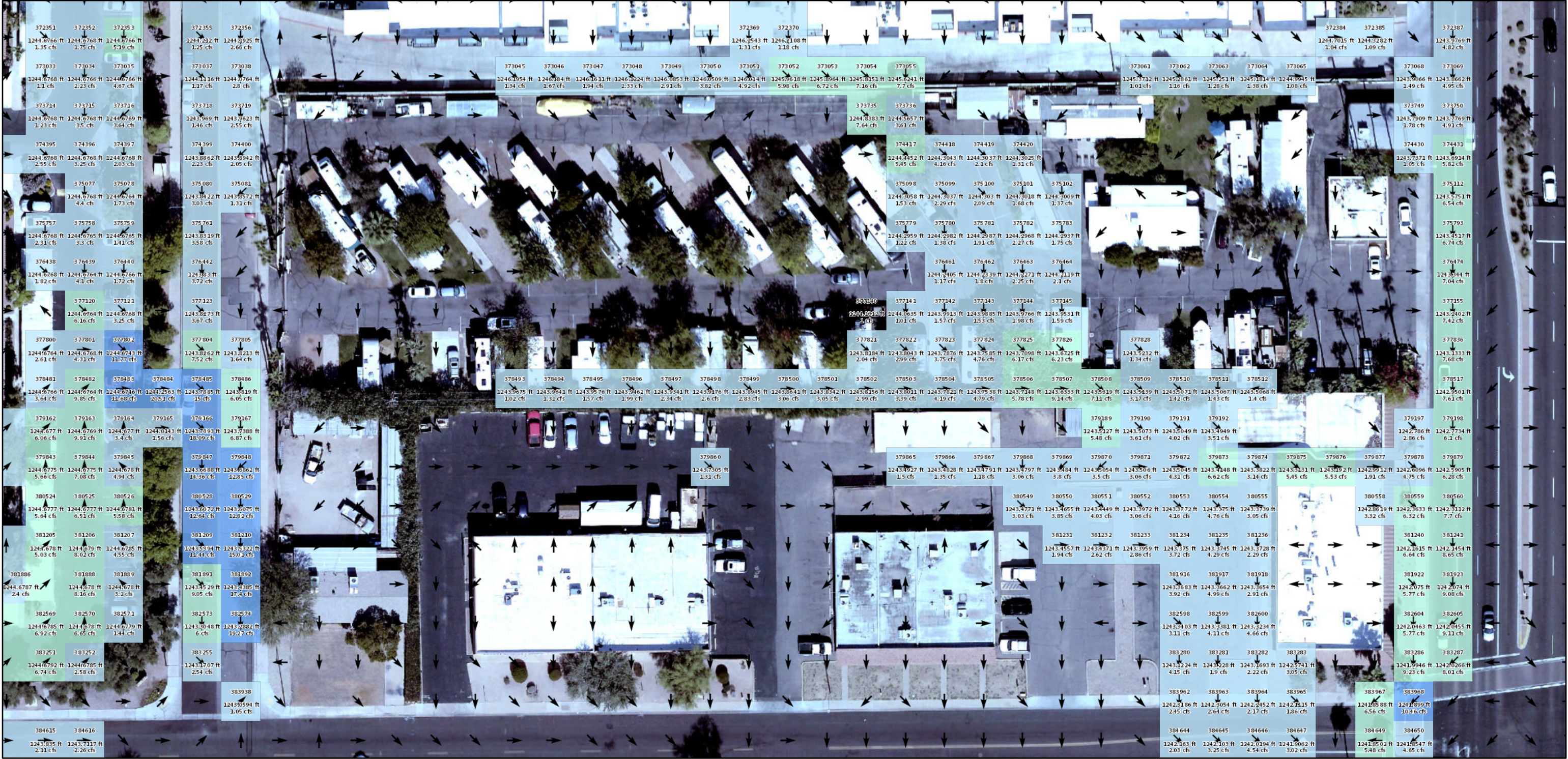
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 9/7/2021 at 5:56 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

6-ZN-2022
8/11/2022

679_LIBW - South 100YR6HR



September 6, 2021

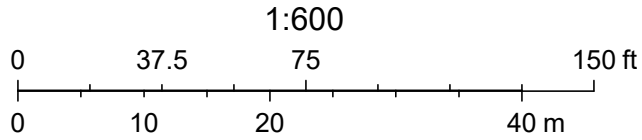


FIGURE 2 - FLO2D MAP

APPENDIX I

RAINFALL DATA



NOAA Atlas 14, Volume 1, Version 5
Location name: Scottsdale, Arizona, USA*
Latitude: 33.4847°, Longitude: -111.9273°
Elevation: 1242.08 ft**

* source: ESRI Maps

** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps_&_aerials](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.183 (0.153-0.222)	0.239 (0.202-0.290)	0.324 (0.272-0.394)	0.390 (0.325-0.471)	0.480 (0.393-0.576)	0.549 (0.444-0.656)	0.619 (0.491-0.738)	0.691 (0.539-0.822)	0.787 (0.598-0.938)	0.860 (0.641-1.03)
10-min	0.278 (0.233-0.338)	0.363 (0.307-0.442)	0.494 (0.414-0.599)	0.594 (0.495-0.717)	0.730 (0.598-0.876)	0.835 (0.675-0.998)	0.941 (0.747-1.12)	1.05 (0.820-1.25)	1.20 (0.909-1.43)	1.31 (0.975-1.56)
15-min	0.344 (0.289-0.419)	0.450 (0.380-0.548)	0.612 (0.513-0.742)	0.737 (0.613-0.889)	0.905 (0.741-1.09)	1.03 (0.837-1.24)	1.17 (0.926-1.39)	1.30 (1.02-1.55)	1.48 (1.13-1.77)	1.62 (1.21-1.94)
30-min	0.464 (0.389-0.564)	0.607 (0.512-0.738)	0.825 (0.691-1.00)	0.992 (0.826-1.20)	1.22 (0.998-1.46)	1.39 (1.13-1.67)	1.57 (1.25-1.87)	1.75 (1.37-2.09)	2.00 (1.52-2.38)	2.19 (1.63-2.61)
60-min	0.574 (0.481-0.698)	0.751 (0.633-0.913)	1.02 (0.855-1.24)	1.23 (1.02-1.48)	1.51 (1.24-1.81)	1.73 (1.39-2.06)	1.95 (1.54-2.32)	2.17 (1.69-2.59)	2.47 (1.88-2.95)	2.71 (2.01-3.23)
2-hr	0.664 (0.567-0.792)	0.861 (0.735-1.03)	1.15 (0.981-1.37)	1.38 (1.16-1.63)	1.68 (1.40-1.98)	1.92 (1.57-2.25)	2.16 (1.74-2.53)	2.40 (1.90-2.82)	2.73 (2.11-3.21)	2.99 (2.26-3.53)
3-hr	0.722 (0.613-0.867)	0.926 (0.790-1.12)	1.22 (1.03-1.46)	1.45 (1.22-1.73)	1.77 (1.47-2.10)	2.03 (1.66-2.40)	2.30 (1.85-2.72)	2.58 (2.04-3.05)	2.97 (2.27-3.51)	3.29 (2.45-3.90)
6-hr	0.869 (0.754-1.02)	1.10 (0.959-1.30)	1.41 (1.23-1.66)	1.66 (1.43-1.94)	2.00 (1.70-2.32)	2.27 (1.89-2.62)	2.55 (2.09-2.94)	2.83 (2.28-3.27)	3.22 (2.53-3.73)	3.52 (2.70-4.10)
12-hr	0.972 (0.851-1.13)	1.23 (1.08-1.43)	1.56 (1.36-1.80)	1.82 (1.58-2.10)	2.17 (1.86-2.49)	2.43 (2.06-2.79)	2.71 (2.26-3.11)	2.99 (2.46-3.44)	3.36 (2.70-3.89)	3.66 (2.88-4.26)
24-hr	1.16 (1.04-1.31)	1.48 (1.32-1.67)	1.92 (1.71-2.15)	2.26 (2.01-2.54)	2.74 (2.42-3.07)	3.12 (2.74-3.49)	3.52 (3.06-3.93)	3.93 (3.39-4.39)	4.49 (3.84-5.03)	4.94 (4.18-5.54)
2-day	1.26 (1.12-1.42)	1.61 (1.44-1.81)	2.11 (1.88-2.37)	2.51 (2.23-2.82)	3.07 (2.72-3.44)	3.52 (3.09-3.94)	3.99 (3.48-4.48)	4.48 (3.88-5.03)	5.17 (4.43-5.81)	5.72 (4.85-6.45)
3-day	1.33 (1.19-1.50)	1.70 (1.52-1.91)	2.24 (1.99-2.51)	2.67 (2.37-2.99)	3.28 (2.90-3.67)	3.77 (3.30-4.21)	4.28 (3.73-4.80)	4.83 (4.17-5.41)	5.60 (4.78-6.28)	6.21 (5.25-6.99)
4-day	1.40 (1.25-1.58)	1.79 (1.60-2.02)	2.36 (2.10-2.65)	2.83 (2.51-3.17)	3.48 (3.07-3.90)	4.01 (3.52-4.49)	4.58 (3.98-5.12)	5.18 (4.47-5.80)	6.02 (5.13-6.74)	6.71 (5.66-7.53)
7-day	1.55 (1.38-1.75)	1.98 (1.77-2.24)	2.62 (2.33-2.94)	3.13 (2.78-3.52)	3.86 (3.41-4.33)	4.44 (3.90-4.98)	5.07 (4.41-5.68)	5.73 (4.95-6.43)	6.66 (5.68-7.48)	7.42 (6.25-8.34)
10-day	1.69 (1.51-1.90)	2.16 (1.93-2.43)	2.85 (2.54-3.20)	3.41 (3.02-3.81)	4.18 (3.69-4.67)	4.81 (4.22-5.37)	5.47 (4.76-6.11)	6.16 (5.33-6.89)	7.14 (6.10-7.99)	7.92 (6.70-8.88)
20-day	2.07 (1.86-2.32)	2.67 (2.39-2.98)	3.52 (3.15-3.93)	4.17 (3.71-4.64)	5.04 (4.47-5.61)	5.71 (5.05-6.35)	6.39 (5.62-7.12)	7.08 (6.20-7.89)	8.01 (6.95-8.95)	8.72 (7.51-9.76)
30-day	2.42 (2.16-2.71)	3.12 (2.79-3.48)	4.11 (3.66-4.57)	4.86 (4.33-5.40)	5.87 (5.20-6.52)	6.64 (5.86-7.38)	7.44 (6.54-8.26)	8.25 (7.21-9.16)	9.34 (8.10-10.4)	10.2 (8.75-11.3)
45-day	2.81 (2.52-3.13)	3.62 (3.25-4.03)	4.76 (4.27-5.31)	5.61 (5.02-6.25)	6.73 (6.00-7.49)	7.57 (6.73-8.43)	8.42 (7.45-9.38)	9.27 (8.16-10.3)	10.4 (9.08-11.6)	11.2 (9.76-12.6)
60-day	3.11 (2.80-3.46)	4.01 (3.61-4.46)	5.28 (4.74-5.86)	6.20 (5.55-6.88)	7.39 (6.61-8.21)	8.28 (7.37-9.19)	9.17 (8.13-10.2)	10.0 (8.87-11.2)	11.2 (9.81-12.5)	12.0 (10.5-13.4)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

[Back to Top](#)

PF graphical



NOAA Atlas 14, Volume 1, Version 5
Location name: Scottsdale, Arizona, USA*
Latitude: 33.4847°, Longitude: -111.9273°
Elevation: 1242.08 ft**

* source: ESRI Maps

** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF_tabular](#) | [PF_graphical](#) | [Maps_&_aerials](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	2.20 (1.84-2.66)	2.87 (2.42-3.48)	3.89 (3.26-4.73)	4.68 (3.90-5.65)	5.76 (4.72-6.91)	6.59 (5.33-7.87)	7.43 (5.89-8.86)	8.29 (6.47-9.86)	9.44 (7.18-11.3)	10.3 (7.69-12.3)
10-min	1.67 (1.40-2.03)	2.18 (1.84-2.65)	2.96 (2.48-3.59)	3.56 (2.97-4.30)	4.38 (3.59-5.26)	5.01 (4.05-5.99)	5.65 (4.48-6.73)	6.31 (4.92-7.51)	7.18 (5.45-8.57)	7.85 (5.85-9.38)
15-min	1.38 (1.16-1.68)	1.80 (1.52-2.19)	2.45 (2.05-2.97)	2.95 (2.45-3.56)	3.62 (2.96-4.34)	4.14 (3.35-4.95)	4.67 (3.70-5.56)	5.21 (4.07-6.20)	5.94 (4.51-7.08)	6.49 (4.84-7.76)
30-min	0.928 (0.778-1.13)	1.21 (1.02-1.48)	1.65 (1.38-2.00)	1.98 (1.65-2.39)	2.44 (2.00-2.93)	2.79 (2.25-3.33)	3.14 (2.49-3.75)	3.51 (2.74-4.18)	4.00 (3.04-4.77)	4.37 (3.26-5.22)
60-min	0.574 (0.481-0.698)	0.751 (0.633-0.913)	1.02 (0.855-1.24)	1.23 (1.02-1.48)	1.51 (1.24-1.81)	1.73 (1.39-2.06)	1.95 (1.54-2.32)	2.17 (1.69-2.59)	2.47 (1.88-2.95)	2.71 (2.01-3.23)
2-hr	0.332 (0.284-0.396)	0.430 (0.368-0.514)	0.576 (0.490-0.685)	0.688 (0.578-0.816)	0.840 (0.698-0.990)	0.958 (0.785-1.13)	1.08 (0.870-1.27)	1.20 (0.952-1.41)	1.37 (1.06-1.60)	1.49 (1.13-1.76)
3-hr	0.240 (0.204-0.289)	0.308 (0.263-0.372)	0.406 (0.344-0.487)	0.483 (0.405-0.576)	0.590 (0.489-0.701)	0.676 (0.552-0.800)	0.766 (0.615-0.906)	0.859 (0.678-1.01)	0.989 (0.757-1.17)	1.09 (0.816-1.30)
6-hr	0.145 (0.126-0.171)	0.184 (0.160-0.216)	0.236 (0.205-0.277)	0.278 (0.238-0.324)	0.334 (0.283-0.387)	0.379 (0.316-0.437)	0.425 (0.349-0.491)	0.472 (0.380-0.547)	0.537 (0.422-0.623)	0.588 (0.451-0.684)
12-hr	0.081 (0.071-0.094)	0.102 (0.089-0.119)	0.129 (0.113-0.150)	0.151 (0.131-0.174)	0.180 (0.154-0.207)	0.202 (0.171-0.232)	0.225 (0.188-0.258)	0.248 (0.204-0.285)	0.279 (0.224-0.323)	0.304 (0.239-0.353)
24-hr	0.048 (0.043-0.055)	0.062 (0.055-0.069)	0.080 (0.071-0.090)	0.094 (0.084-0.106)	0.114 (0.101-0.128)	0.130 (0.114-0.145)	0.147 (0.128-0.164)	0.164 (0.141-0.183)	0.187 (0.160-0.209)	0.206 (0.174-0.231)
2-day	0.026 (0.023-0.029)	0.033 (0.030-0.038)	0.044 (0.039-0.049)	0.052 (0.047-0.059)	0.064 (0.057-0.072)	0.073 (0.064-0.082)	0.083 (0.073-0.093)	0.093 (0.081-0.105)	0.108 (0.092-0.121)	0.119 (0.101-0.134)
3-day	0.018 (0.016-0.021)	0.024 (0.021-0.027)	0.031 (0.028-0.035)	0.037 (0.033-0.042)	0.046 (0.040-0.051)	0.052 (0.046-0.059)	0.060 (0.052-0.067)	0.067 (0.058-0.075)	0.078 (0.066-0.087)	0.086 (0.073-0.097)
4-day	0.015 (0.013-0.016)	0.019 (0.017-0.021)	0.025 (0.022-0.028)	0.029 (0.026-0.033)	0.036 (0.032-0.041)	0.042 (0.037-0.047)	0.048 (0.041-0.053)	0.054 (0.047-0.060)	0.063 (0.053-0.070)	0.070 (0.059-0.078)
7-day	0.009 (0.008-0.010)	0.012 (0.011-0.013)	0.016 (0.014-0.018)	0.019 (0.017-0.021)	0.023 (0.020-0.026)	0.026 (0.023-0.030)	0.030 (0.026-0.034)	0.034 (0.029-0.038)	0.040 (0.034-0.045)	0.044 (0.037-0.050)
10-day	0.007 (0.006-0.008)	0.009 (0.008-0.010)	0.012 (0.011-0.013)	0.014 (0.013-0.016)	0.017 (0.015-0.019)	0.020 (0.018-0.022)	0.023 (0.020-0.025)	0.026 (0.022-0.029)	0.030 (0.025-0.033)	0.033 (0.028-0.037)
20-day	0.004 (0.004-0.005)	0.006 (0.005-0.006)	0.007 (0.007-0.008)	0.009 (0.008-0.010)	0.010 (0.009-0.012)	0.012 (0.011-0.013)	0.013 (0.012-0.015)	0.015 (0.013-0.016)	0.017 (0.014-0.019)	0.018 (0.016-0.020)
30-day	0.003 (0.003-0.004)	0.004 (0.004-0.005)	0.006 (0.005-0.006)	0.007 (0.006-0.007)	0.008 (0.007-0.009)	0.009 (0.008-0.010)	0.010 (0.009-0.011)	0.011 (0.010-0.013)	0.013 (0.011-0.014)	0.014 (0.012-0.016)
45-day	0.003 (0.002-0.003)	0.003 (0.003-0.004)	0.004 (0.004-0.005)	0.005 (0.005-0.006)	0.006 (0.006-0.007)	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.009 (0.008-0.010)	0.010 (0.008-0.011)	0.010 (0.009-0.012)
60-day	0.002 (0.002-0.002)	0.003 (0.003-0.003)	0.004 (0.003-0.004)	0.004 (0.004-0.005)	0.005 (0.005-0.006)	0.006 (0.005-0.006)	0.006 (0.006-0.007)	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.008 (0.007-0.009)

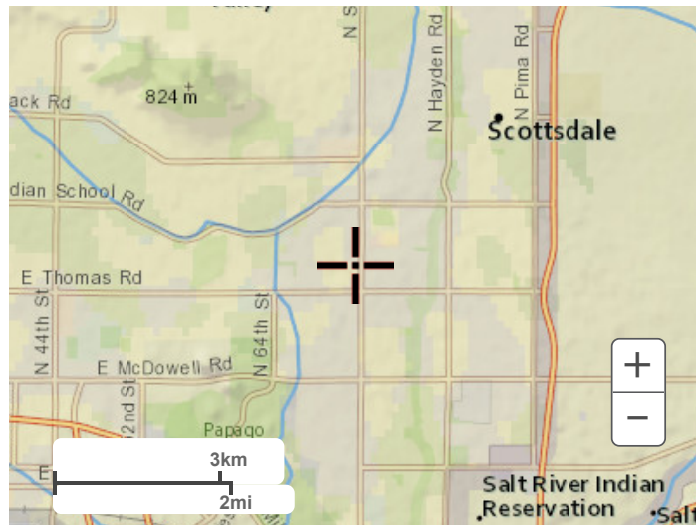
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

[Back to Top](#)

PF graphical



Large scale terrain



Large scale map

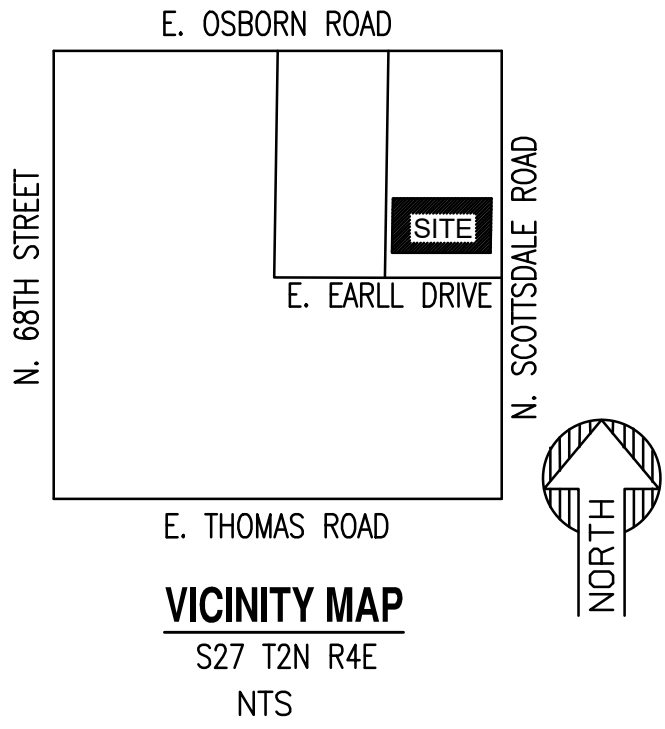


Large scale aerial

APPENDIX II

CALCULATIONS

3200 SCOTTSDALE
EXISTING CONDITIONS C_{WT} EXHIBIT
3202 N. SCOTTSDALE ROAD. SCOTTSDALE, AZ.



100 YR STORM			
<div></div>	PAVED STREETS/PARKING LOTS/ROOFS/DRIVEWAYS =	53,471 SF (1.23 AC)	⊗ CWT=0.95 AC
<div></div>	NATURAL DESERT LANDSCAPE =	38,383 SF (0.88 AC)	⊗ CWT=0.45 AC
	TOTAL ON-SITE CWT =	91,855 SF (2.11 AC)	⊗ CWT=0.74

10 YR STORM			
<div></div>	PAVED STREETS/PARKING LOTS/ROOFS/DRIVEWAYS =	53,471 SF (1.23 AC)	⊗ CWT=0.90
<div></div>	NATURAL DESERT LANDSCAPE =	38,383 SF (0.88 AC)	⊗ CWT=0.37
	TOTAL ON-SITE CWT =	91,855 SF (2.11 AC)	⊗ CWT=0.68

PRELIMINARY
NOT FOR
CONSTRUCTION

SUSTAINABILITY
ENGINEERING
GROUP



8280 E. GELDING DRIVE SUITE 101, SCOTTSDALE, ARIZONA 85260
WWW.AZSEG.COM TEL. 480.588.7226 FAX. 480.259.3534



PROJECT
3200 SCOTTSDALE

LOCATION
3202 N. SCOTTSDALE ROAD.
SCOTTSDALE, AZ.

DRAWN _____ LP 08/03/2022
DESIGNED _____ LP 08/03/2022
QC _____ SC 08/01/2022
FINAL QC _____
PROJ. MGR. _____ AF 08/03/2022

DATE: 08/03/2022
ISSUED FOR: REZONING

REVISION NO.	DATE
<div></div>	
<div></div>	
<div></div>	
<div></div>	

JOB NO.: 210708

SHEET TITLE:

EXISTING CONDITIONS
C_{WT} EXHIBIT

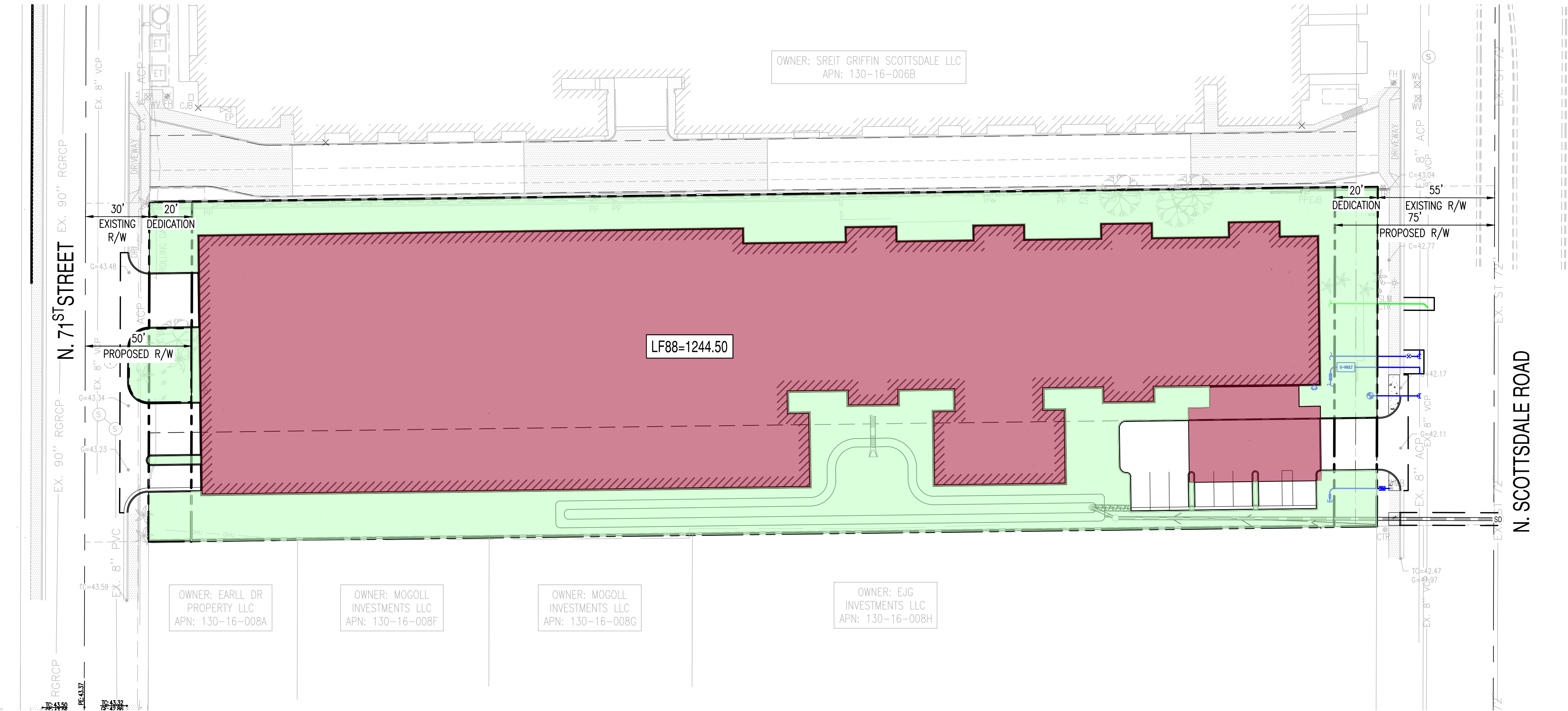
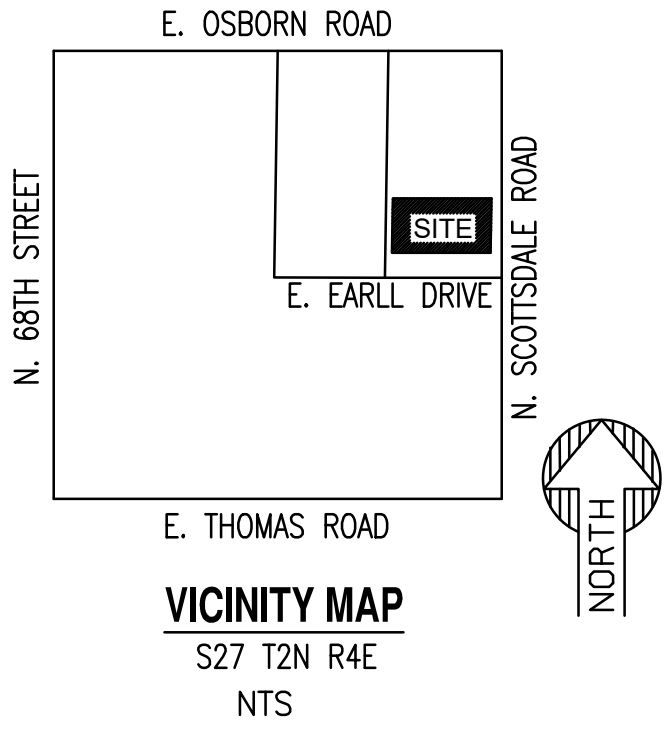
PAGE NO.:
SHEET NO.:
EX-CWT

THIS DRAWING IS AN INSTRUMENT OF SERVICE AND THE PROPERTY OF SUSTAINABILITY ENGINEERING GROUP, AND SHALL REMAIN THEIR PROPERTY. THE USE OF THIS DRAWING SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH IT IS PREPARED AND PUBLICATION THEREOF IS EXPRESSLY LIMITED TO SUCH USE.

PRE-APP # - 488-PA-2021

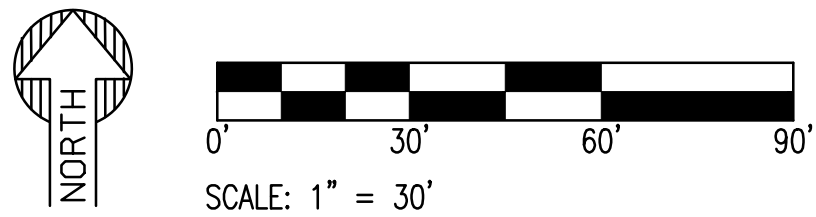
6-ZN-2022
8/11/2022

3200 SCOTTSDALE
PROPOSED CONDITIONS C_{WT} EXHIBIT
3202 N. SCOTTSDALE ROAD. SCOTTSDALE, AZ.



100-YR STORM			
	ROOF AREA	57,555 SF (1.75 AC)	⊙ CWT=0.95
	PAVED SURFACE =	61,508 SF (1.41 AC)	⊙ CWT=0.95
	NATURAL DESERT LANDSCAPE =	30,347 SF (0.70 AC)	⊙ CWT=0.45
TOTAL ON-SITE CWT =		91,855 SF (2.11 AC)	⊙ CWT=0.78

10-YR STORM			
	ROOF AREA	57,555 SF (1.75 AC)	⊙ CWT=0.90
	PAVED SURFACE =	61,508 SF (1.41 AC)	⊙ CWT=0.90
	NATURAL DESERT LANDSCAPE =	30,347 SF (0.70 AC)	⊙ CWT=0.37
TOTAL ON-SITE CWT =		91,855 SF (2.11 AC)	⊙ CWT=0.72



PRELIMINARY
NOT FOR
CONSTRUCTION

SUSTAINABILITY
ENGINEERING
GROUP

SEG



8280 E. GELDING DRIVE SUITE 101, SCOTTSDALE, ARIZONA 85260
WWW.AZSEG.COM TEL. 480.588.7226 FAX. 480.259.3534



PROJECT
3200 SCOTTSDALE

LOCATION
3202 N. SCOTTSDALE ROAD.
SCOTTSDALE, AZ.

DRAWN _____ LP 08/03/2022
DESIGNED _____ LP 08/03/2022
QC _____ SC 08/01/2022
FINAL QC _____
PROJ. MGR. _____ AF 08/03/2022

DATE: 08/03/2022

ISSUED FOR:

REZONING

REVISION NO.: DATE:

JOB NO.: 210708

SHEET TITLE:

PROPOSED CONDITIONS
C_{WT} EXHIBIT

PAGE NO.:

SHEET NO.:

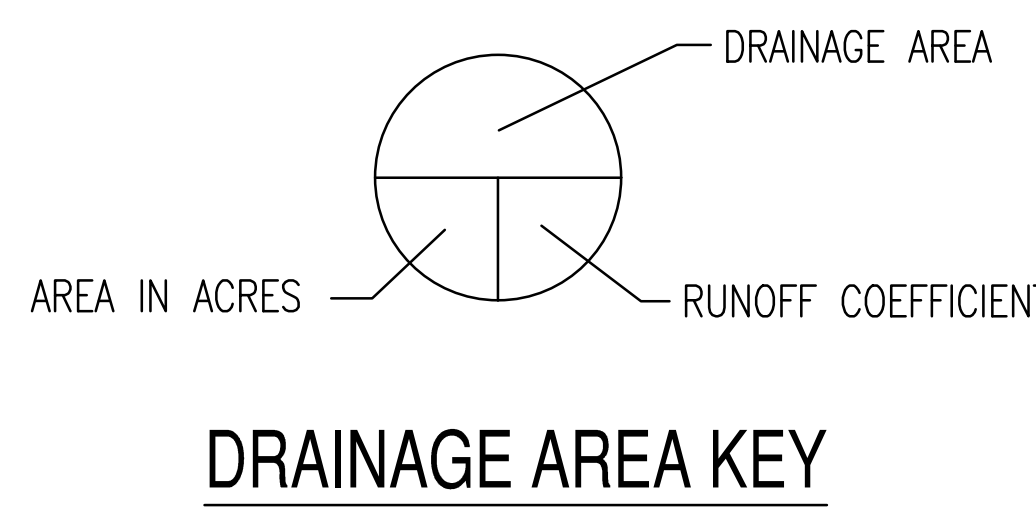
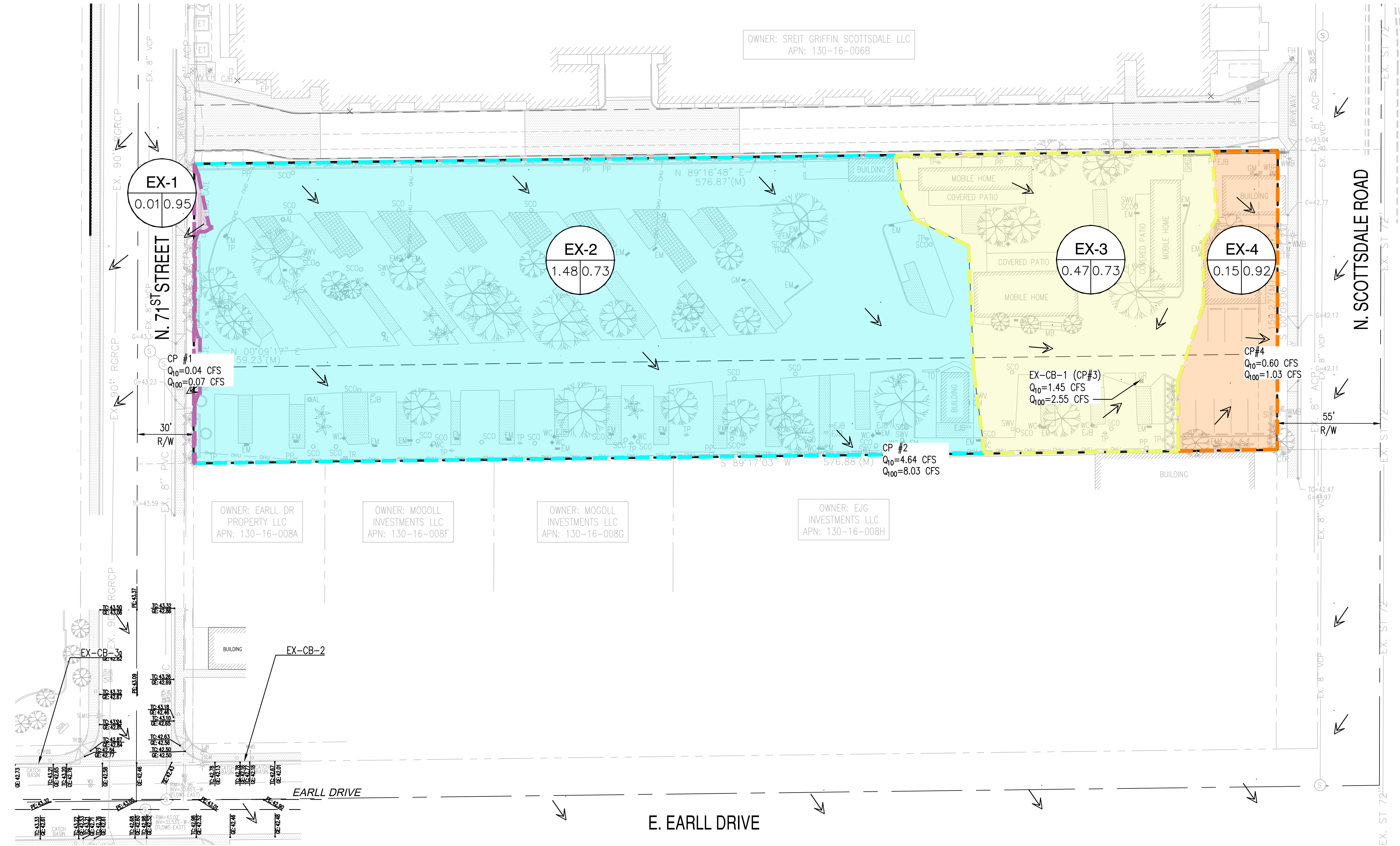
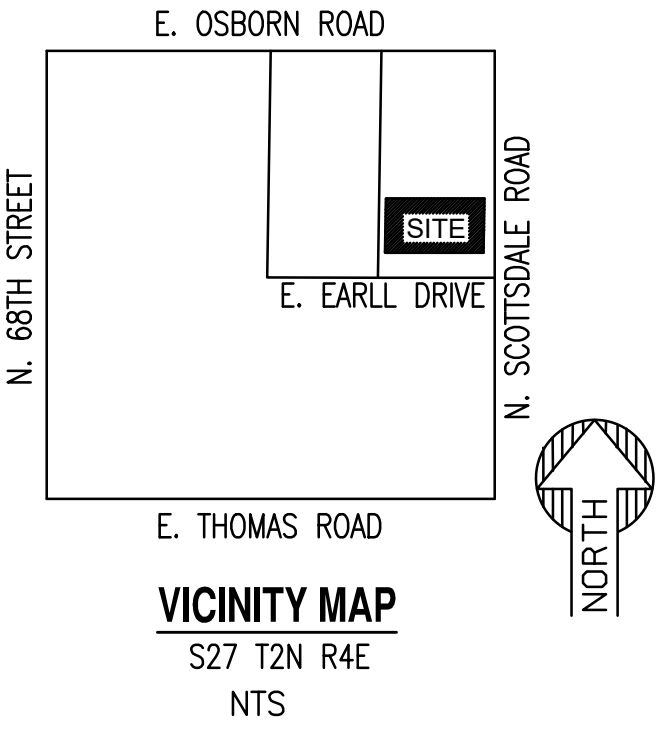
P-CWT

THIS DRAWING IS AN INSTRUMENT OF SERVICE AND THE PROPERTY OF SUSTAINABILITY ENGINEERING GROUP, AND SHALL REMAIN THEIR PROPERTY. THE USE OF THIS DRAWING SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH IT IS PREPARED AND PUBLICATION THEREOF IS EXPRESSLY LIMITED TO SUCH USE.

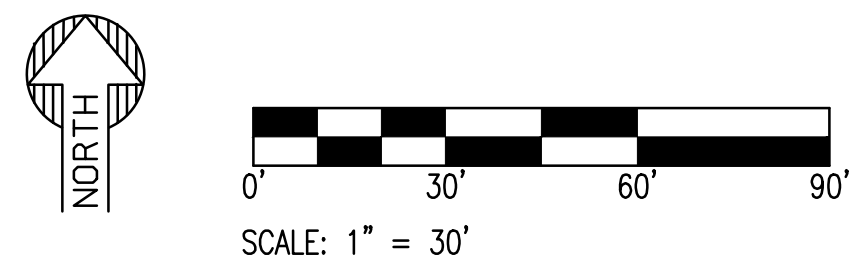
PRE-APP # - 488-PA-2021

6-ZN-2022
8/11/2022

3200 SCOTTSDALE
EXISTING CONDITIONS DRAINAGE AREA MAP
3202 N. SCOTTSDALE ROAD. SCOTTSDALE, AZ.



- EXISTING LEGEND
- DRAINAGE AREAS DISCHARGING TO N. SCOTTSDALE ROAD
 - DRAINAGE AREAS DISCHARGING TO EX-CB-1 AND STORM DRAIN SYSTEM
 - DRAINAGE AREAS DISCHARGING TO SOUTH PARCEL
 - DRAINAGE AREAS DISCHARGING TO N. 71 ST.
 - FLOW ARROW



PRELIMINARY
NOT FOR
CONSTRUCTION

SUSTAINABILITY
ENGINEERING
GROUP

SEG

8280 E. GELDING DRIVE SUITE 101, SCOTTSDALE, ARIZONA 85260
WWW.AZSEG.COM TEL. 480.588.7226 FAX. 480.259.3534



PROJECT 3200 SCOTTSDALE		LOCATION 3202 N. SCOTTSDALE ROAD. SCOTTSDALE, AZ.	
DRAWN	LP	08/03/2022	
DESIGNED	LP	08/03/2022	
QC	SC	08/01/2022	
FINAL QC			
PROJ. MGR.	AF	08/03/2022	
DATE:		08/03/2022	
ISSUED FOR:		REZONING	
REVISION NO.:		DATE:	
JOB NO.:		210708	
SHEET TITLE:		EXISTING CONDITIONS DRAINAGE AREA MAP	
PAGE NO.:		SHEET NO.:	EX-DAM

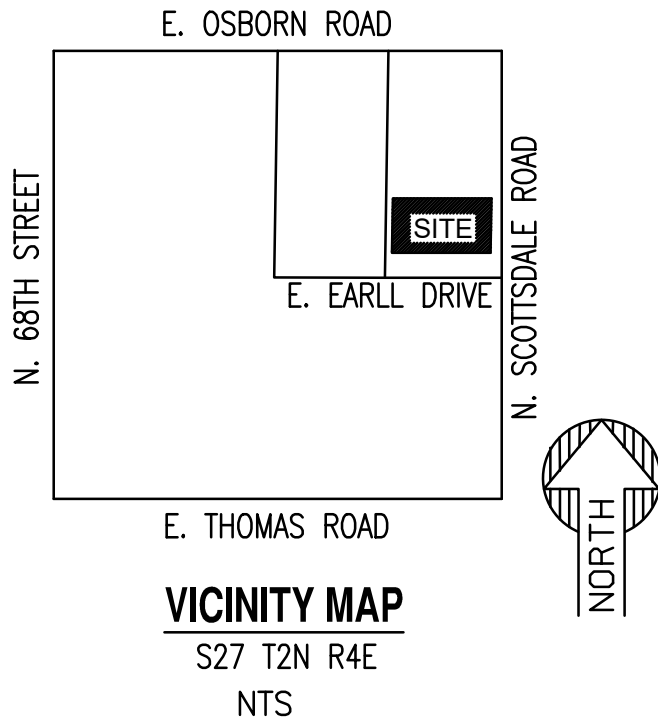
THIS DRAWING IS AN INSTRUMENT OF SERVICE AND THE PROPERTY OF SUSTAINABILITY ENGINEERING GROUP, AND SHALL REMAIN THEIR PROPERTY. THE USE OF THIS DRAWING SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH IT IS PREPARED AND PUBLICATION THEREOF IS EXPRESSLY LIMITED TO SUCH USE.

PRE-APP # - 488-PA-2021

6-ZN-2022
8/11/2022

3200 SCOTTSDALE
PROPOSED CONDITIONS DRAINAGE AREA MAP

3202 N. SCOTTSDALE ROAD. SCOTTSDALE, AZ.



PRELIMINARY
NOT FOR
CONSTRUCTION

SUSTAINABILITY
ENGINEERING
GROUP

SEG



8280 E. GELDING DRIVE SUITE 101, SCOTTSDALE, ARIZONA 85260
WWW.AZSEG.COM TEL. 480.588.7226 FAX. 480.259.3534

THIS DRAWING IS AN INSTRUMENT OF SERVICE AND THE PROPERTY OF SUSTAINABILITY ENGINEERING GROUP, AND SHALL REMAIN THEIR PROPERTY. THE USE OF THIS DRAWING SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH IT IS PREPARED AND PUBLICATION THEREOF IS EXPRESSLY LIMITED TO SUCH USE.



PROJECT
3200 SCOTTSDALE
LOCATION
3202 N. SCOTTSDALE ROAD.
SCOTTSDALE, AZ.

DRAWN LP 08/03/2022
DESIGNED LP 08/03/2022
QC SC 08/01/2022
FINAL QC
PROJ. MGR. AF 08/03/2022

DATE: 08/03/2022

ISSUED FOR: REZONING

REVISION NO.: DATE:
1
2
3

JOB NO.: 210708

SHEET TITLE:

PROPOSED CONDITIONS
DRAINAGE AREA MAP

PAGE NO.:

SHEET NO.:

P-DAM

EXISTING OVERALL SITE C _w 100YR				
	Pavement	DESERT LANDSCAPE	TOTAL AREA	Cwt
C-VALUE	0.95	0.45		
AREA (ac)	1.24	0.87	2.11	0.74
EX-1	0.01	0.00	0.01	0.95
EX-2	0.83	0.65	1.48	0.73
EX-3	0.26	0.21	0.47	0.73
EX-4	0.14	0.01	0.15	0.92

EXISTING OVERALL SITE C _w 10 YR				
	Pavement	DESERT LANDSCAPE	TOTAL AREA	Cwt
C-VALUE	0.90	0.37		
AREA (ac)	1.24	0.87	2.11	0.68
EX-1	0.01	0.00	0.01	0.90
EX-2	0.83	0.65	1.48	0.67
EX-3	0.26	0.21	0.47	0.66
EX-4	0.14	0.01	0.15	0.86

PROPOSED OVERALL SITE C _{wt} 100 YR				
	Building/ Pavement	DESERT LANDSCAPE	TOTAL AREA	Cwt
C-VALUE	0.95	0.45		
AREA (ac)	1.42	0.69	2.11	0.78
DA-1	0.03	0.06	0.09	0.62
DA-2	1.32	0.00	1.32	0.95
DA-3	0.05	0.33	0.38	0.52
DA-4	0.02	0.30	0.32	0.48

PROPOSED OVERALL SITE C _{wt} 10 YR				
	Building/ Pavement	DESERT LANDSCAPE	TOTAL AREA	Cwt
C-VALUE	0.90	0.37		
AREA (ac)	1.42	0.69	2.11	0.72
DA-1	0.03	0.06	0.09	0.55
DA-2	1.32	0.00	1.32	0.90
DA-3	0.05	0.33	0.38	0.44
DA-4	0.02	0.30	0.32	0.40

Basin Routing to Determine Q outflow						
			DA-2 & DA-3 Area =1.70 ac		Basin 1 V=3,236 cf	
Tc (min.)	I100	A (ac)	C	Q(in) (cfs)	Q (out) (cfs)	(Qi-Qo) * Tc * 60 (cf)
5	7.43	1.70	0.73	9.26	2.55	2012.16
10	5.65	1.70	0.73	7.04	2.55	2693.67
15	4.67	1.70	0.73	5.82	2.55	2941.61
30	3.14	1.70	0.73	3.91	2.55	2451.95
60	1.95	1.70	0.73	2.43	2.55	-433.63
120	1.08	1.70	0.73	1.35	2.55	-8671.72

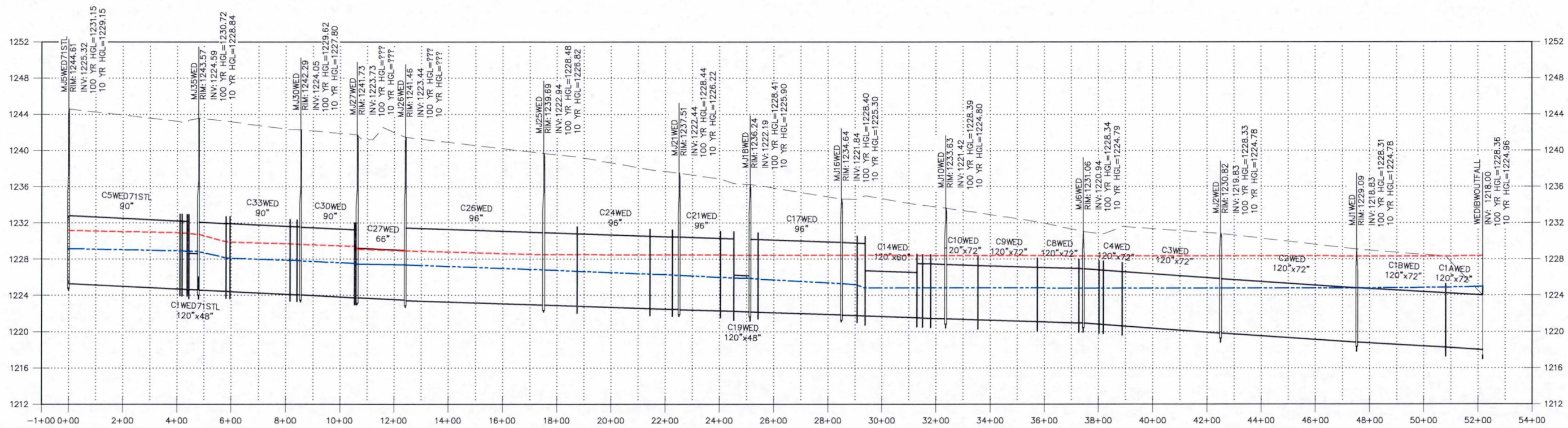
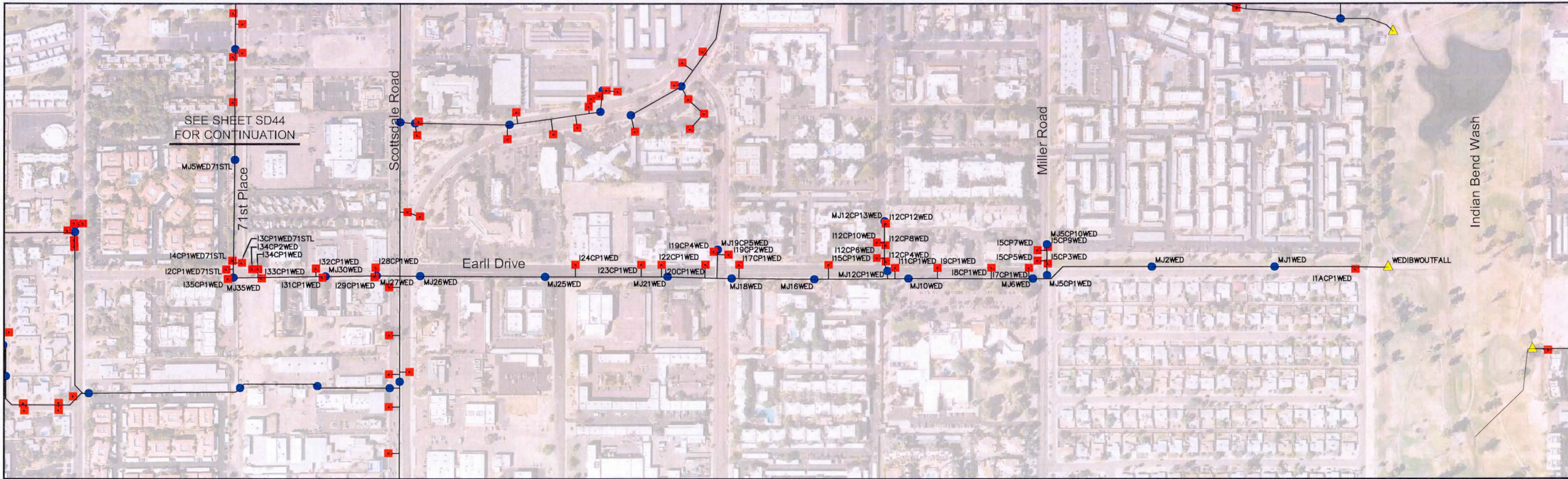
APPENDIX III

PRELIMINARY GRADING PLAN

C3.10

APPENDIX IV

Lower Indian Bend Wash Study (LIBWS) Excerpt



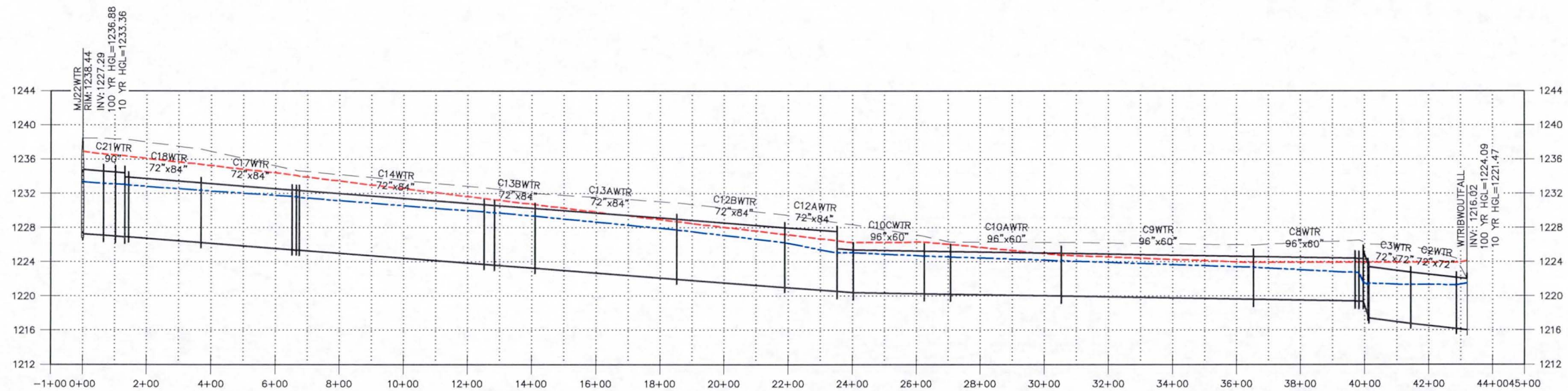
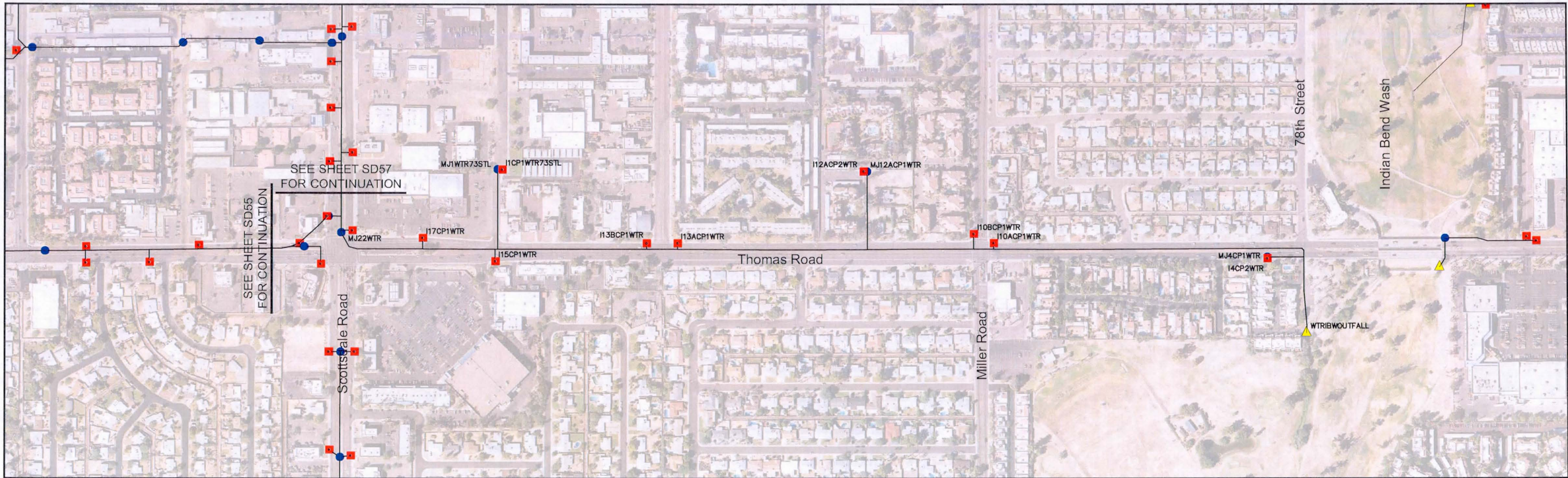
Pipe Discharge Summary Table					
Conduit Name	Normal Depth Capacity	FLO-2D/SWMM Model Discharge			
		100-yr, 24-hr	100-yr, 6-hr	10-yr, 24-hr	10-yr, 6-hr
		(cfs)	(cfs)	(cfs)	(cfs)
C1AWED	462.8	279.9	308.2	144.5	164.0
C1BWED	430.6	279.2	307.5	144.3	163.5
C2WED	465.5	281.3	308.9	145.4	164.5
C3WED	487.1	281.6	308.7	144.6	164.4
C4WED	501.1	282.2	308.8	145.3	165.2
C5WED	403.9	282.0	308.8	145.5	165.3
C6WED	494.9	252.3	274.1	135.3	152.0
C7WED	329.8	251.9	274.1	135.4	152.0
C8WED	345.1	251.0	274.1	135.5	152.1
C9WED	322.1	248.0	272.0	134.3	151.8
C10WED	318.0	249.8	272.6	134.4	152.0
C11WED	346.9	247.5	274.0	134.8	150.7
C12WED	327.3	248.5	272.5	134.2	150.9
C13WED	392.1	235.3	259.3	129.2	145.2
C14WED	259.1	235.1	256.6	129.2	146.0
C15WED	336.8	234.1	256.5	147.0	153.4
C16WED	292.4	233.8	253.8	128.9	145.2
C17WED	294.4	233.3	254.2	128.2	144.6
C18WED	287.9	232.2	254.8	128.1	144.5
C19WED	183.7	233.2	257.4	128.1	144.6
C20WED	260.9	230.1	247.8	124.9	140.8
C21WED	285.4	223.2	245.6	124.7	140.5
C22WED	263.6	228.2	247.7	124.6	140.5
C23WED	301.0	222.5	245.9	124.5	140.4
C24WED	288.6	222.2	239.6	123.7	139.7
C25WED	283.8	217.6	236.1	122.2	138.3
C26WED	285.7	216.6	237.8	121.9	138.4
C27WED	125.8	216.7	238.9	122.2	138.4
C28WED	171.7	216.8	260.5	122.3	138.3
C29WED	171.7	211.4	251.7	119.4	135.3
C30WED	297.7	206.1	228.4	117.4	133.3
C31WED	242.8	206.1	226.5	117.5	134.5
C32WED	300.2	205.5	224.0	117.3	131.9
C33WED	288.3	205.4	223.7	117.3	132.7
C34WED	242.8	205.4	228.8	117.3	132.6
C35WED	294.9	205.3	225.0	117.2	132.6
C1WED71STL	216.1	204.6	223.2	117.1	132.4
C2WED71STL	171.7	203.1	226.0	116.7	131.9
C3WED71STL	297.4	203.1	222.4	116.7	131.9
C4WED71STL	171.7	184.0	201.1	107.3	120.8
C5WED71STL	295.7	181.6	196.2	107.0	120.6
C6WED71STL	296.7	181.6	196.7	107.0	121.1
C7WED71STL	299.0	178.5	193.4	105.7	119.6
C8WED71STL	297.4	178.7	193.5	105.8	119.6
C9WED71STL	242.8	178.6	193.4	105.8	119.6

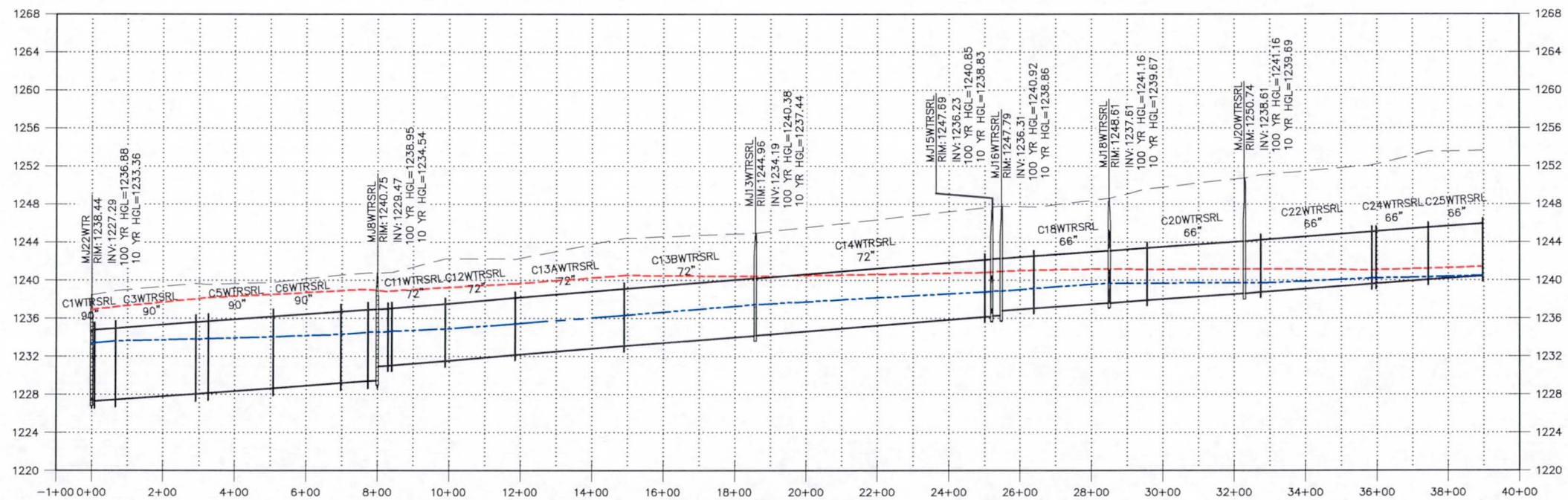
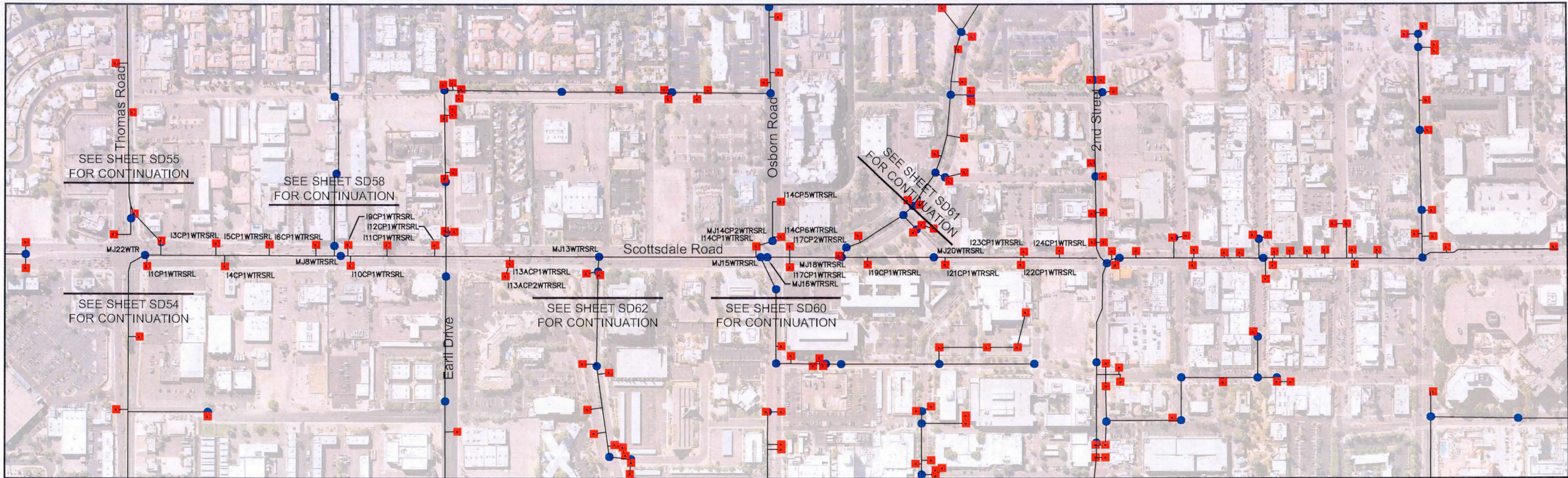
Pipe Discharge Summary Table					
Conduit Name	Normal Depth Capacity	FLO-2D/SWMM Model Discharge			
		100-yr, 24-hr	100-yr, 6-hr	10-yr, 24-hr	10-yr, 6-hr
		(cfs)	(cfs)	(cfs)	(cfs)
C10WED71STL	293.3	178.8	193.5	105.8	119.7
C11WED71STL	307.3	178.9	193.4	105.8	119.7
C12WED71STL	294.1	178.6	193.1	105.7	119.5
C1WEDORL	2814	178.7	194.3	105.8	119.4
C2WEDORL	295.7	176.5	191.6	105.2	118.6
C3WEDORL	292.8	174.7	189.6	104.8	118.1
C4WEDORL	295.4	171.0	185.7	103.8	116.8
C5WEDORL	294.2	171.2	186.5	103.8	117.1
C6WEDORL	297.7	166.5	181.2	102.2	114.9
C7WEDORL	284.3	156.6	169.5	97.6	109.0
C8WEDORL	297.4	151.0	162.4	95.9	106.4
C9WEDORL	363.2	151.2	162.9	95.9	106.5
C10WEDORL	365.0	143.9	154.3	93.2	102.9
C11WEDORL	364.4	142.5	152.6	92.8	102.4
C12WEDORL	356.6	142.7	152.5	92.8	102.4
C13WEDORL	355.6	141.5	150.3	92.6	102.2
C14WEDORL	356.2	141.6	150.2	92.7	102.1
C15WEDORL	361.2	141.2	150.4	92.8	102.1
C16WEDORL	234.5	156.6	163.5	91.5	107.2
C17WEDORL	360.3	138.3	146.6	91.7	100.7
C18WEDORL	359.6	85.6	91.5	54.1	59.7
C19WEDORL	159.0	85.6	91.5	54.0	59.8
C20WEDORL	156.2	85.1	90.9	53.9	59.6
C21WEDORL	158.7	85.1	91.1	53.9	59.5
C22WEDORL	157.9	65.2	68.8	45.6	49.3
C23WEDORL	142.7	65.1	68.8	45.6	49.3
C24WEDORL	165.0	64.7	68.3	45.5	49.1
C1WEDPAIUTPARK	126.2	54.1	56.4	40.0	43.5
C2WEDPAIUTPARK	125.3	54.1	56.3	40.0	43.5
C3WEDPAIUTPARK	128.5	54.1	56.3	40.0	43.5
C4WEDPAIUTPARK	130.2	54.1	56.3	40.0	43.5
C5WEDPAIUTPARK	127.3	54.1	56.3	40.0	43.5

PIPE DISCHARGE SUMMARY TABLE NOTES:

1. The normal depth capacity discharges were obtained from the SWMM.RPT file.

2. The pipe discharge is the peak hydrograph discharge taken from the "Link Results" in the SWMM.RTP file.





Inlet Summary Table										
SWMM Name		Curb High / Soffit High Inflow	FLO-2D/SWMM Model							
			100-yr, 24-hr		100-yr, 6-hr		10-yr, 24-hr		10-yr, 6-hr	
Inlet	Connector Pipe		Inflow	Pipe Max	Inflow	Pipe Max	Inflow	Pipe Max	Inflow	Pipe Max
		(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
I18CP3WTRADL	C18CP3WTRADL	17.4	9.9	10.2	10.3	10.2	8.8	8.8	10.1	10.1
I18CP2WTRADL	C18CP2WTRADL	17.4	13.9	20.9	15.2	215	8.8	17.5	13.5	217
I11CP1WTRADL	C11CP1WTRADL	8.2	12.6	10.1	13.5	9.7	6.4	6.4	7.4	7.4
I12CP1WTRADL	C12CP1WTRADL	8.2	12.6	10.1	13.6	9.7	6.4	6.4	7.4	7.4
I26CP1WTRADL	C26CP1WTRADL	19.5	42.0	419	42.4	417	418	39.2	418	40.6
I25CP1WTRADL	C25CP1WTRADL	5.2	119	119	12.4	12.4	9.9	9.9	10.4	10.4
I25CP2WTRADL	C25CP2WTRADL	7.8	15.2	15.1	15.4	15.2	3.4	3.4	7.6	7.6
I24CP1WTRADL	C24CP1WTRADL	2.2	3.5	3.5	4.0	4.0	0.9	0.9	1.4	1.4
I22CP1WTRADL	C22CP1WTRADL	11.3	5.0	5.0	5.5	5.4	2.9	2.9	3.5	3.5
I23CP1WTRADL	C23CP1WTRADL	11.3	5.1	5.1	5.5	5.5	2.8	2.8	3.5	3.5
I21CP1WTRADL	C21CP1WTRADL	11.3	4.8	5.3	3.6	3.8	1.1	1.1	1.4	1.3
I20CP1WTRADL	C20CP1WTRADL	11.3	5.0	5.5	3.8	3.7	1.1	1.0	1.3	1.3
I3CP1WTRCLRL	C3CP1WTRCLRL	7.8	0.4	0.4	0.6	0.6	0.2	0.2	0.2	0.2
I37CP2WTRADL	C37CP2WTRADL	11.3	10.0	10.0	9.7	9.6	6.1	6.1	7.4	7.4
I37CP1WTRADL	C37CP1WTRADL	11.3	10.0	10.0	9.6	9.5	6.0	6.0	7.3	7.3
I29CP2WTRADL	C29CP2WTRADL	17.4	14.4	16.2	14.6	14.1	116	116	12.8	12.8
I5CP4WTRCLRL	C5CP4WTRCLRL	11.3	5.5	5.4	5.8	5.7	4.7	4.7	5.0	4.9
I5CP2WTRCLRL	C5CP2WTRCLRL	11.3	9.0	9.0	10.5	10.5	4.1	4.1	5.3	5.3
I4CP1WTRCLRL	C4CP1WTRCLRL	9.1	12	12	1.9	1.8	0.6	0.6	0.7	0.7
I6CP1WTRCLRL	C6CP1WTRCLRL	11.3	3.2	3.2	3.7	3.7	2.0	2.0	2.4	2.4
I9CP2WTRCLRL	C9CP2WTRCLRL	20.0	14.6	14.5	15.1	14.8	8.4	8.4	10.1	10.1
I9CP3WTRCLRL	C9CP3WTRCLRL	20.0	14.7	14.5	15.1	14.9	8.2	8.2	9.9	10.0
I12CP1WTRSRL	C12CP1WTRSRL	32.2	2.9	2.9	3.9	4.0	1.1	1.1	1.6	1.6
I11CP1WTRSRL	C11CP1WTRSRL	32.2	2.5	2.5	3.0	2.8	1.4	1.4	1.8	1.8
I9CP1WTRSRL	C9CP1WTRSRL	32.2	14.4	13.8	14.5	13.8	6.8	6.8	8.4	8.4
I10CP1WTRSRL	C10CP1WTRSRL	11.3	3.4	3.3	3.9	3.9	2.1	2.1	2.5	2.5
I6CP1WTRSRL	C6CP1WTRSRL	32.2	2.5	2.5	4.8	4.8	0.7	0.7	0.8	0.8
I5CP1WTRSRL	C5CP1WTRSRL	32.2	14.5	14.5	16.7	16.7	5.6	5.6	6.0	6.0
I4CP1WTRSRL	C4CP1WTRSRL	17.4	7.6	7.6	8.5	8.2	4.7	4.7	5.7	5.6
I3CP1WTRSRL	C3CP1WTRSRL	32.2	8.3	8.5	8.3	8.6	3.2	3.1	3.9	3.9
I1ACP1WTRTRL	C1ACP1WTRTRL	32.2	14.4	14.8	16.6	17.0	4.6	4.6	5.6	5.6
I1CP1WTRSRL	C1CP1WTRSRL	7.8	6.8	6.8	8.6	8.6	2.6	2.6	3.3	3.3
I5CP2WTRTRL	C5CP2WTRTRL	32.2	27.4	26.9	27.3	27.0	17.0	17.0	19.0	19.0
I5CP1WTRTRL	C5CP1WTRTRL	32.2	13.0	13.0	14.5	14.4	7.3	7.3	8.2	8.2
I4CP1WTRTRL	C4CP1WTRTRL	32.2	6.7	7.3	8.8	14.0	2.7	2.7	3.3	3.3
I3CP1WTRTRL	C3CP1WTRTRL	32.2	2.7	4.5	4.0	6.9	1.3	1.3	1.6	1.6
I1BWTRTRL	C1BWTRTRL	32.2	212	102.5	20.6	100.6	6.3	610	7.0	70.6
I1CCP3WTRTRL	C1CCP3WTRTRL	17.4	6.0	7.0	7.0	6.9	3.9	3.9	4.7	4.7
I7CP1WTR	C7CP1WTR	32.2	5.4	5.4	9.3	9.6	3.3	3.3	4.1	4.1
I15CP1WTR	C15CP1WTR	32.2	4.3	4.1	7.2	8.1	2.0	2.0	2.6	2.6
I1CP1WTR73STL	C1CP1WTR73STL	22.7	27.2	27.1	26.5	25.7	14.2	14.1	15.7	15.7

Inlet Summary Table										
SWMM Name		Curb High / Soffit High Inflow	FLO-2D/SWMM Model							
			100-yr, 24-hr		100-yr, 6-hr		10-yr, 24-hr		10-yr, 6-hr	
Inlet	Connector Pipe		(cfs)	Inflow (cfs)	Pipe Max (cfs)	Inflow (cfs)	Pipe Max (cfs)	Inflow (cfs)	Pipe Max (cfs)	Inflow (cfs)
I14CP1WTRSRL	C14CP1WTRSRL	4.4	8.3	25.1	8.6	25.6	5.4	16.2	6.9	19.0
I19CP1WTRSRL	C19CP1WTRSRL	7.2	3.1	3.1	3.8	3.8	19	19	2.3	2.3
I21CP1WTRSRL	C21CP1WTRSRL	7.2	2.4	2.4	2.8	2.8	15	15	18	18
I23CP1WTRSRL	C23CP1WTRSRL	7.2	2.3	2.3	2.7	2.7	12	12	14	14
I22CP1WTRSRL	C22CP1WTRSRL	7.2	2.7	2.7	3.3	3.3	17	17	2.1	2.1
I24CP1WTRSRL	C24CP1WTRSRL	7.2	12	12	14	14	0.8	0.8	0.9	0.9
I2CP1WTRORL	C2CP1WTRORL	11.3	0.9	0.9	11	15	0.6	0.6	0.7	0.7
I4CP1WTRORL	C4CP1WTRORL	32.2	16	16	2.3	2.2	0.7	0.7	0.8	0.8
I5CP1WTRORL	C5CP1WTRORL	11.3	8.5	8.5	9.9	15.2	3.6	3.5	4.7	4.7
I7CP1WTRORL	C7CP1WTRORL	17.4	0.1	0.1	0.1	10	0.0	0.0	0.0	0.0
I6CP1WTRORL	C6CP1WTRORL	20.0	15.0	15.0	16.8	16.7	9.0	8.9	10.6	10.5
I18CP1WTRSRL	C18CP1WTRSRL	5.2	1.1	1.0	1.3	1.3	0.1	0.1	0.2	0.2
I13CP1WTRGBL	C13CP1WTRGBL	17.4	4.6	4.6	5.5	5.1	2.4	2.4	3.0	3.0
I12CP1WTRGBL	C12CP1WTRGBL	11.3	6.1	5.8	7.2	7.1	3.6	3.6	4.3	4.3
I11CP2WTRGBL	C11CP2WTRGBL	11.3	2.8	2.6	3.6	3.6	15	15	19	19
I11CP1WTRGBL	C11CP1WTRGBL	5.2	8.4	8.4	8.8	9.8	4.1	4.1	4.8	4.8
I10CP1WTRGBL	C10CP1WTRGBL	11.3	0.5	0.5	0.7	0.7	0.3	0.3	0.4	0.4
I9CP1WTRGBL	C9CP1WTRGBL	20.0	10	10	12	12	0.6	0.6	0.8	0.8
I8CP2WTRGBL	C8CP2WTRGBL	11.3	4.5	4.5	5.3	5.1	2.7	2.7	3.3	3.3
I8CP3WTRGBL	C8CP3WTRGBL	11.3	1.8	1.8	2.2	2.1	1.1	1.1	1.3	1.3
I7CP1WTRGBL	C7CP1WTRGBL	5.3	1.9	1.9	2.3	2.3	0.9	0.9	1.1	1.1
I6CP1WTRGBL	C6CP1WTRGBL	17.4	5.1	5.1	6.3	6.0	3.2	3.2	3.9	3.9
I5CP2WTRGBL	C5CP2WTRGBL	17.4	8.8	8.7	11.3	11.2	3.7	3.7	5.2	5.2
I5CP3WTRGBL	C5CP3WTRGBL	7.8	8.0	8.0	8.8	8.7	6.2	6.2	6.8	6.8
I4CP2WTRGBL	C4CP2WTRGBL	2.6	0.3	0.3	0.4	0.4	0.2	0.2	0.2	0.2
I4CP1WTRGBL	C4CP1WTRGBL	17.4	2.4	2.4	3.2	3.2	1.3	1.3	1.6	1.6
I3CP2WTRGBL	C3CP2WTRGBL	2.6	2.1	2.1	2.2	2.2	1.4	1.4	1.7	1.7
I3CP3WTRGBL	C3CP3WTRGBL	2.6	1.4	4.0	1.6	4.6	1.1	2.6	1.2	3.1
I3CP4WTRGBL	C3CP4WTRGBL	5.2	2.6	2.6	3.1	3.1	1.6	1.6	1.9	1.9
I2CP1WTRGBL	C2CP1WTRGBL	11.3	7.3	7.2	8.5	8.4	2.3	2.3	2.7	2.7
I17CP1WTRSRL	C17CP1WTRSRL	11.3	1.9	1.9	2.3	2.3	1.2	1.2	1.4	1.4
I10CP2WTRORL	C10CP2WTRORL	5.3	2.3	6.0	2.7	7.3	1.4	3.8	1.7	4.6
I10CP3WTRORL	C10CP3WTRORL	5.3	1.7	3.8	2.1	4.5	1.1	2.4	1.4	2.9
I10CP4WTRORL	C10CP4WTRORL	5.3	1.5	2.1	1.8	2.5	0.9	1.3	1.2	1.6
I10CP5WTRORL	C10CP5WTRORL	5.3	0.5	0.5	0.7	0.7	0.3	0.3	0.4	0.4
I4CP2WTR	C4CP2WTR	10.5	5.1	30.9	7.1	7.5	2.7	2.7	3.2	3.2
I7CP2WTR64STL	C7CP2WTR64STL	17.4	27.0	27.1	29.8	29.9	15.6	15.6	18.1	18.1
I7CP1WTR64STL	C7CP1WTR64STL	17.4	5.3	32.4	6.6	35.9	1.2	16.5	1.6	19.2
I6CP1WTR64STL	C6CP1WTR64STL	17.4	3.1	3.1	3.5	3.6	1.1	1.1	1.4	1.4
I4CP1WTR64STL	C4CP1WTR64STL	11.3	11.1	11.1	12.3	12.3	5.5	5.5	6.3	6.3
I3CP1WTR64STL	C3CP1WTR64STL	11.3	1.7	1.7	2.1	2.1	0.4	0.4	0.5	0.5

INLET SUMMARY TABLE NOTES:

1. The curb high/soffit high inflow discharge were calculated according to the procedures outlined in the District's Hydraulics Manual.
2. The inflow discharge is the peak hydrograph discharge taken from the SWMMQIN.OUT file.
3. The pipe Max Discharge is the peak hydrograph discharge taken from the 'Link Results' in the SWMM.RTP file.

Inlet Summary Table										
SWMM Name		Curb High / Soffit High Inflow	FLO-2D/SWMM Model							
			100-yr, 24-hr		100-yr, 6-hr		10-yr, 24-hr		10-yr, 6-hr	
Inlet	Connector Pipe		Inflow	Pipe Max	Inflow	Pipe Max	Inflow	Pipe Max	Inflow	Pipe Max
		(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
I2CP1WTR64STL	C2CP1WTR64STL	17.4	0.4	0.4	0.5	0.5	0.3	0.3	0.3	0.3
I15CP1WTRTRL	C15CP1WTRTRL	7.8	1.3	1.3	1.4	1.4	1.0	1.0	1.1	1.1
I15CP2WTRTRL	C15CP2WTRTRL	13.1	4.1	4.0	5.0	4.9	2.2	2.2	2.7	2.7
I12ACP2WTR	C12ACP2WTR	3.1	2.8	2.8	3.1	3.1	1.4	1.4	1.6	1.6
I13ACP1WTR	C13ACP1WTR	5.7	11.2	11.2	11.3	11.5	9.9	9.9	10.1	10.1
I13BCP1WTR	C13BCP1WTR	5.7	9.0	8.0	9.4	9.2	4.2	4.2	4.6	4.6
I11ACP1WTRADL	C11ACP1WTRADL	3.8	15.7	16.0	15.7	16.0	2.0	2.0	2.9	2.9
I11ACP2WTRADL	C11ACP2WTRADL	3.8	15.8	16.1	15.8	16.1	2.0	2.0	2.9	2.9
I10ACP1WTRADL	C10ACP1WTRADL	3.1	5.9	5.9	6.4	6.4	1.3	1.3	1.5	1.5
I17CP2WTRSRL	C17CP2WTRSRL	12.2	5.7	5.7	7.4	7.4	2.0	2.0	2.5	2.5
I14CP6WTRSRL	C14CP6WTRSRL	7.8	8.4	8.4	8.4	8.4	5.2	5.2	6.3	6.3
I14CP5WTRSRL	C14CP5WTRSRL	7.8	8.9	8.8	9.1	8.9	5.5	5.5	6.1	6.1
I8CP1WTR64STL	C8CP1WTR64STL	17.4	16.8	16.8	19.4	19.3	3.5	3.5	5.4	5.4
I10ACP1WTR	C10ACP1WTR	6.1	11.1	13.6	11.4	13.5	6.2	6.4	7.2	7.2
I10BCP1WTR	C10BCP1WTR	5.1	11.7	12.7	11.8	13.2	6.8	7.4	7.7	7.8
I7CP3WTRDBL	C7CP3WTRDBL	28.9	7.3	7.5	8.0	7.4	3.9	3.9	4.9	4.8
I9CP1WTRDBL	C9CP1WTRDBL	28.9	7.1	16.4	8.0	11.8	4.1	5.2	5.1	5.6
I9CP2WTRDBL	C9CP2WTRDBL	5.2	10.5	10.5	10.2	10.2	2.6	2.6	2.5	2.5
I7CP2WTRDBL	C7CP2WTRDBL	5.4	1.0	8.3	12	8.3	0.6	4.5	0.7	5.5
I7CP1WTRDBL	C7CP1WTRDBL	28.9	7.3	15.3	8.6	16.8	4.7	9.1	5.6	11.1
I6CP1WTRDBL	C6CP1WTRDBL	11.0	5.7	5.7	7.0	7.0	2.4	2.4	2.9	2.8
I5CP1WTRDBL	C5CP1WTRDBL	5.2	3.4	3.3	3.7	3.6	2.2	2.1	2.4	2.3
I2CP1WTRDBL	C2CP1WTRDBL	11.0	3.4	3.3	4.2	4.2	1.9	1.9	2.3	2.3
I13ACP2WTRSRL	C13ACP2WTRSRL	17.0	4.1	3.9	4.8	4.6	2.0	2.0	2.5	2.5
I13ACP1WTRSRL	C13ACP1WTRSRL	11.3	0.8	4.7	10	10.2	0.5	8.2	0.6	9.2
I1CP1WTRDBL	C1CP1WTRDBL	7.8	6.2	6.2	7.9	8.2	3.2	3.2	3.5	3.5
I1CP2WTRDBL	C1CP2WTRDBL	17.4	21.6	23.8	27.9	24.6	12.5	12.5	15.0	15.0
I4CP1WTRDBL	C4CP1WTRDBL	3.6	1.9	1.7	2.3	2.2	1.2	1.2	1.5	1.5

- INLET SUMMARY TABLE NOTES:
- 1. The curb high/soffit high inflow discharge were calculated according to the procedures outlined in the District's Hydraulics Manual.
 - 2. The inflow discharge is the peak hydrograph discharge taken from the SWMMQIN.OUT file.
 - 3. The pipe Max Discharge is the peak hydrograph discharge taken from the 'Link Results' in the SWMM.RTP file.

SHEET SD64 OF SD121



LOWER INDIAN BEND WASH ADMS/P
STUDY AREA-SOUTH

SWMM Outfall:		
WTRIBWOUTFALL (West Thomas Road S.D. Outfall)		
	By	Date
Prepared	AJA	12/18/2017
Checked	MTG	1/19/2018

6-ZN-2022
8/11/2022

Pipe Discharge Summary Table					
Conduit Name	Normal Depth Capacity	FLO-2D/SWMM Model Discharge			
		100-yr, 24-hr	100-yr, 6-hr	10-yr, 24-hr	10-yr, 6-hr
	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
C1WTR	366.3	496.1	505.7	345.7	396.0
C2WTR	355.9	490.8	507.3	347.1	395.3
C3WTR	372.4	502.0	513.3	350.8	398.2
C4WTR	713.4	546.2	542.5	347.1	393.0
C5WTR	1522.8	543.5	484.1	339.9	392.9
C6WTR	192.7	538.3	559.8	390.2	455.9
C7WTR	304.7	537.2	508.4	346.8	396.0
C8WTR	152.8	480.9	495.4	346.2	391.1
C9WTR	153.4	496.0	493.5	343.8	387.9
C10AWTR	157.4	514.0	493.2	346.5	389.6
C10BWTR	150.4	510.0	496.2	362.9	379.9
C10CWTR	152.6	5116	496.4	352.8	402.8
C11WTR	322.4	509.0	496.6	325.1	435.5
C12AWTR	354.6	470.7	486.9	337.5	393.9
C12BWTR	353.0	467.6	468.5	334.6	379.2
C13AWTR	353.1	458.6	465.0	331.8	378.1
C13BWTR	352.2	447.8	454.0	322.1	367.8
C13CWTR	3516	4413	447.3	317.9	363.0
C14WTR	353.3	4413	447.3	317.4	362.3
C15WTR	256.0	4216	427.9	305.8	349.0
C16WTR	2956	420.2	428.1	305.1	348.2
C17WTR	357.3	420.3	428.0	305.1	348.2
C18WTR	356.1	419.0	4258	303.8	347.0
C19WTR	147.8	419.0	4259	303.7	347.0
C20WTR	397.2	419.0	4259	303.6	347.0
C21WTR	398.8	419.0	4258	303.6	347.0
C22WTR	413.5	418.9	4258	303.5	347.1
C1AWTRTRL	183.3	106.2	111.8	62.6	72.1
C1BWTRTRL	26.7	102.5	100.6	61.0	70.6
C1CWTRTRL	99.2	81.1	80.0	55.0	64.0
C2WTRTRL	96.3	79.4	78.3	52.9	614
C3WTRTRL	96.9	79.4	78.3	52.3	614
C4WTRTRL	96.9	82.4	83.3	51.6	59.6
C5WTRTRL	97.0	88.4	89.6	49.9	57.5
C6WTRTRL	97.0	76.1	78.6	26.3	312
C7WTRTRL	114.1	60.5	67.2	26.5	312
C8WTRTRL	85.6	60.5	67.1	26.6	313
C9WTRTRL	85.5	60.5	66.8	26.5	313
C10WTRTRL	24.0	60.4	67.1	26.5	312
C11WTRTRL	65.3	60.8	67.6	26.8	315
C12WTRTRL	65.3	60.8	69.5	27.2	317
C13WTRTRL	84.7	614	70.5	27.2	318
C14WTRTRL	418	614	70.6	27.1	317
C15WTRTRL	34.0	5.3	6.3	3.1	3.7
C1WTRSR	242.8	419.0	4258	303.5	347.1

Pipe Discharge Summary Table					
Conduit Name	Normal Depth Capacity	FLO-2D/SWMM Model Discharge			
		100-yr, 24-hr	100-yr, 6-hr	10-yr, 24-hr	10-yr, 6-hr
	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
C2WTRSR	389.0	4156	420.4	302.1	345.6
C3WTRSR	404.0	354.2	365.4	249.3	287.0
C4WTRSR	406.0	346.7	359.1	248.0	286.2
C5WTRSR	401.9	343.4	354.4	246.3	284.6
C6WTRSR	402.6	335.2	348.0	241.9	280.5
C7WTRSR	393.8	332.7	343.2	242.3	280.6
C8WTRSR	398.4	194.1	181.1	120.4	141.7
C9WTRSR	232.0	195.1	181.0	120.5	141.3
C10WTRSR	164.0	179.9	171.5	114.1	133.1
C11WTRSR	235.1	182.6	169.2	113.2	131.6
C12WTRSR	246.0	185.0	168.9	112.4	131.1
C13AWTRSR	234.6	187.3	208.6	111.1	130.5
C13BWTRSR	230.2	188.7	209.1	110.4	128.7
C14WTRSR	235.0	139.3	155.2	75.8	90.6
C15WTRSR	232.0	113.7	125.6	60.9	73.8
C16WTRSR	231.2	83.2	92.5	44.4	53.7
C17WTRSR	171.2	82.8	93.1	44.4	53.6
C18WTRSR	173.0	74.4	86.3	41.8	50.5
C19WTRSR	172.3	10.6	16.9	6.1	7.7
C20WTRSR	172.7	7.6	19.1	4.4	5.5
C21WTRSR	178.5	7.9	17.0	4.8	5.7
C22WTRSR	176.7	6.2	8.2	3.6	4.3
C23WTRSR	130.1	3.5	7.0	1.9	2.3
C24WTRSR	175.4	1.2	6.3	0.8	0.9
C25WTRSR	178.1	0.0	3.0	0.0	0.0
C1WTRADL	233.2	183.9	185.1	133.7	156.3
C2WTRADL	108.1	183.9	185.1	133.1	156.3
C3WTRADL	78.7	183.9	185.2	132.4	155.5
C4WTRADL	85.0	183.8	185.1	132.4	155.3
C5WTRADL	108.1	183.9	185.1	132.1	154.2
C6WTRADL	108.0	183.9	185.1	132.3	153.9
C7WTRADL	108.0	183.7	185.1	132.4	153.9
C8WTRADL	105.2	181.9	184.9	132.7	155.3
C9WTRADL	106.0	157.9	162.2	119.1	136.4
C10AWTRADL	104.6	157.8	162.1	107.3	127.1
C10BWTRADL	106.2	153.3	156.9	106.1	125.1
C11AWTRADL	103.2	153.2	156.9	106.1	125.1
C11BWTRADL	106.1	132.2	137.3	102.6	120.5
C12WTRADL	90.9	122.0	128.9	97.6	114.7
C13WTRADL	103.7	112.0	120.6	92.8	108.9
C14WTRADL	107.1	111.9	120.7	92.8	108.9
C15WTRADL	105.4	111.9	120.7	92.8	108.9
C16WTRADL	103.7	111.9	114.8	92.8	108.9
C17WTRADL	87.9	111.8	114.7	92.8	109.4
C18WTRADL	98.3	111.9	114.8	92.7	108.9

Pipe Discharge Summary Table					
Conduit Name	Normal Depth Capacity	FLO-2D/SWMM Model Discharge			
		100-yr, 24-hr	100-yr, 6-hr	10-yr, 24-hr	10-yr, 6-hr
	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
C19WTRADL	44.0	95.9	102.5	77.1	89.3
C20WTRADL	87.9	95.9	102.5	77.1	89.3
C21WTRADL	62.2	91.0	99.3	76.9	89.0
C22WTRADL	103.2	91.2	96.6	76.6	88.8
C23WTRADL	62.2	88.4	91.8	75.4	87.4
C24WTRADL	103.7	85.9	87.2	74.3	86.2
C25WTRADL	103.2	91.4	90.6	74.0	85.3
C26WTRADL	86.4	68.5	68.8	60.8	67.6
C27WTRADL	213	30.2	31.0	21.7	29.4
C28WTRADL	212	30.2	31.0	21.7	29.4
C29WTRADL	20.5	30.5	30.8	21.7	29.4
C30WTRADL	20.3	19.1	19.0	10.5	16.6
C31WTRADL	20.3	17.7	17.3	10.4	19.1
C32WTRADL	20.3	25.5	19.3	11.8	18.9
C33WTRADL	20.4	45.2	16.4	11.9	15.1
C34WTRADL	20.2	16.6	16.5	12.0	15.1
C35WTRADL	39.5	16.6	17.1	12.1	15.5
C36WTRADL	6.9	16.5	18.1	12.1	15.1
C37WTRADL	6.8	20.0	18.7	12.1	14.8
C1WTRCLRL	106.2	42.9	45.1	26.2	31.3
C2WTRCLRL	103.8	43.2	45.1	26.2	31.1
C3WTRCLRL	103.8	45.4	49.4	26.5	32.0
C4WTRCLRL	107.1	45.7	49.4	26.5	32.1
C5WTRCLRL	106.1	44.6	47.7	26.2	31.7
C6WTRCLRL	68.3	31.1	32.1	18.0	22.0
C7WTRCLRL	67.4	28.6	29.0	16.6	20.2
C8WTRCLRL	67.2	29.0	29.3	16.6	20.2
C9WTRCLRL	67.4	29.0	29.4	16.7	20.1
C10WTRCLRL	80.4	0.2	0.3	0.1	0.1
C1WTR64STL	277.5	59.5	68.2	25.0	29.2
C2WTR64STL	611	59.6	68.2	25.0	29.2
C3WTR64STL	63.8	59.5	68.1	24.9	29.1
C4WTR64STL	63.4	58.2	66.3	24.8	29.0
C5WTR64STL	73.9	47.4	54.7	20.1	24.1
C6WTR64STL	419	47.4	54.7	20.2	24.1
C7WTR64STL	42.6	44.3	51.3	19.5	23.4
C8WTR64STL	42.8	16.3	18.1	3.4	5.4
C1WTRORL	60.8	30.3	33.7	16.5	20.0
C2WTRORL	85.3	30.2	34.8	16.6	20.2
C3WTRORL	87.4	30.1	39.2	16.4	20.0
C4WTRORL	121.0	30.4	42.2	16.6	20.2
C5WTRORL	121.3	29.3	65.8	16.0	19.6
C6WTRORL	120.2	20.9	23.7	12.6	14.9
C7WTRORL	106.5	5.9	7.1	3.7	4.7
C8WTRORL	90.9	5.9	7.0	3.7	4.5

Pipe Discharge Summary Table					
Conduit Name	Normal Depth Capacity	FLO-2D/SWMM Model Discharge			
		100-yr, 24-hr	100-yr, 6-hr	10-yr, 24-hr	10-yr, 6-hr
	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
C9WTRORL	128.6	6.0	7.2	3.7	4.6
C10WTRORL	16.3	6.0	7.2	3.7	4.6
C11WTRORL	46.3	0.5	0.5	0.3	0.3
C12WTRORL	48.4	0.0	0.0	0.0	0.0
C1WTRGBL	1110	64.7	77.2	35.4	42.3
C2WTRGBL	56.9	64.7	77.2	35.3	42.3
C3WTRGBL	56.5	57.4	68.8	32.7	39.8
C4WTRGBL	27.2	51.6	62.7	28.9	35.4
C5WTRGBL	11.7	49.3	60.0	27.8	34.0
C6WTRGBL	35.7	32.9	41.3	18.5	22.6
C7WTRGBL	35.8	29.2	35.4	16.1	19.7
C8WTRGBL	35.7	27.6	33.1	15.2	18.8
C9WTRGBL	16.9	20.8	26.0	11.5	13.8
C10WTRGBL	16.9	20.0	24.8	11.0	13.2
C11WTRGBL	16.9	19.7	24.1	10.8	12.9
C12WTRGBL	13.8	9.8	11.8	5.8	7.1
C13WTRGBL	13.4	4.1	4.7	2.3	2.9
C1WTRDBL	133.0	65.7	71.1	35.5	39.5
C2WTRDBL	118.0	36.6	41.3	20.3	23.5
C3WTRDBL	229.4	37.2	40.9	18.6	21.8
C4WTRDBL	48.7	37.7	40.9	18.6	21.9
C5WTRDBL	42.1	37.5	38.7	17.6	20.7
C6WTRDBL	40.0	35.7	35.3	15.5	18.8
C7WTRDBL	43.4	31.0	28.5	13.4	16.3
C8WTRDBL	10.6	16.4	11.8	5.3	5.4
C9WTRDBL	9.8	16.4	11.8	5.2	5.5
C9CP1WTRDBL	22.5	16.4	11.8	5.2	5.6
C9CP2WTRDBL	36.8	10.5	10.2	2.6	2.5

PIPE DISCHARGE SUMMARY TABLE NOTES:

1. The normal depth capacity discharges were obtained from the SWMM.RPT file.
2. The pipe discharge is the peak hydrograph discharge taken from the "Link Results" in the SWMM.RTP file.