WOOD PATEL

**PRELIMINARY DRAINAGE REPORT**
**FOR**
**FAIRMONT SCOTTSDALE PRINCESS**
**PRIVADO WELCOME BUILDING AND PARKING MODIFICATIONS**

October 12, 2022
WP# 215319


EXPIRES 06-30-25

**TABLE OF CONTENTS**



**APPENDICES**



**EXHIBITS**




EXPIRES 06-30-25

se

Y:\WP\Reports\Commercial\215319 FSP Privado Welcome Building & Parking Mods Preliminary Drainage Report.docx

# 1.0 INTRODUCTION

## 1.1 General Background

The Fairmont Scottsdale Princess Privado Welcome Building and Parking Modifications (Site) is a proposed welcome building and parking lot development on an approximate 6-acre parcel in the City of Scottsdale (APN#215-08-003C). The proposed development will consist of one (1) building and a new parking lot expansion. The project will include parking, hardscape, landscape, and utility improvements to support the development. The Site is located approximately 1,300 feet southeast of Scottsdale Road and Princess Boulevard, at the end of Cottage Terrace within Section 35, Township 4 North, Range 4 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona. Refer to Exhibit 1 – *Vicinity Map* for project location. The existing property, currently zoned C-2, is primarily developed with buildings, parking lots, pools, sidewalks, and a variety of landscaping (desert and grass).

This Drainage Report has been prepared in accordance with Wood, Patel & Associates, Inc.'s (WOODPATEL's) understanding of the City of Scottsdale technical drainage requirements (Ref. 1) and the *Drainage Design Manuals for Maricopa County Hydrology and Hydraulics (2018),* as applicable to the Site.

## 1.2 FEMA Regulated Flood Zones

The Federal Emergency Management Agency (FEMA) publishes Flood Insurance Rate Map (FIRM) information for communities that adhere to FEMA regulations. The FEMA FIRM panel for this Site is 04013C1320L, effective date October 16, 2013, and indicates the Site falls within "Zone AO" shaded (Refer to Exhibit 2 – *FEMA FIRM*).

"Zone AO" shaded is defined by FEMA as follows:

> *"Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined".*

It is the understanding of WOODPATEL, based on past experience and interpretations of the City of Scottsdale floodplain ordinance that development of land within FEMA Zone "AO" is acceptable as long as, in general, the lowest finish floor elevation is above or properly protected from the anticipated 100-year water surface elevations. No problems are anticipated with developing the parcel in accordance with the City's floodplain ordinance. No underground structures or parking are proposed.

# 2.0 HYDROLOGY ANALYSIS

## 2.1 Offsite Hydrology

The proposed Site does not receive any offsite flows, only modifications to pre-existing flows from the Fairmont Scottsdale community. However, the community does receive offsite flows from a watershed north of the Site. See Appendix A - *Drainage Report for Fairmont Scottsdale Hotel Expansion by Wood, Patel & Associates, Inc., dated May 1, 2015,* which provides a history of the current offsite drainage and retention.

## 2.2 Onsite Hydrology

As a part of the proposed expansion, the existing storm drain and TPC Golf Course basin is planned to handle the increase in onsite flows from proposed improvements. All runoff from the proposed building and south of the building will sheet flow directly into the TPC Golf Course. Runoff from the proposed parking lot is designed to direct stormwater away from the proposed building and drain overland to existing catch basins and storm drain which ultimately outflows to the TPC Golf Course to the south. The flow into the existing storm drain system has increased by 0.3 cfs with the total increase in flow to the TPC Golf Course calculated to be 1.3 cfs for the 100-year condition. See Appendix G - *Hydrologic and Hydraulic Calculations* for the existing versus proposed drainage calculations.

Onsite peak flow estimates for the proposed development were generated using the Rational Method, as outlined in the *Drainage Design Manual for Maricopa County, Arizona: Volume I – Hydrology (*Ref 2). NOAA Atlas 14 precipitation data was obtained and utilized to develop Intensity-Duration-Frequency (I-D-F) curves for the Site. Rational Method peak flows were computed at concentration points within the Site at key design locations. Runoff coefficients were estimated to reflect post-development land use conditions for the 2-year, 10-year, and 100-year events (Refer to Appendix G – *Hydrologic and Hydraulic Calculations*).

Appendix A - *Drainage Report Fairmont Scottsdale Hotel Expansion by Wood, Patel & Associates, Inc., dated May 1, 2015*, provides a history of the current onsite drainage and retention. Based on the information above, the proposed Site improvements mimic current drainage patterns and areas of retention for onsite with very minimal alteration.

## 2.3 Establishing Lowest Finish Floor (LF88 Elevations)

The Grading and Drainage Plan has been designed to comply with the City of Scottsdale floodplain ordinance for a Zone “AO” floodplain. It is our understanding, unless other flood proof measures are presented and approved, the proposed Lowest habitable Finished Floor (LFF) elevation must be designed a minimum of 1 foot above the anticipated 100-year flood elevation. Scottsdale currently requires the lowest finished floor elevation of 1 foot above the flood depth, which results in a finished floor elevation of 2 feet above the Highest Adjacent natural Grade (HAG) to the proposed building which would be the regulatory flood elevation. Due to the Site being disturbed after the Zone “AO” Special Flood Hazard was established, the current condition of the Site cannot determine the HAG. Due to this change the HAG must be established using topographical information showing the pre disturbed condition of the Site.

According to Curry’s Corner 7.5-minute Topographic Survey Map by USGS from 1964 with a contour interval of 10 feet, the approximate highest natural grade of this Site prior to development must be changed from the NAVD29 datum to the NAVD88 datum. This change consists of an elevation increase of 1.749 feet determined using surveyed elevations of a nearby monument on both vertical datums.

Using Auto CAD Civil 3D, the quad map was aligned to the site using common monument lines (section lines) contained within the quad map and previously surveyed by WOODPATEL. The 10-foot interval contours were digitized, adjusting to NAVD88 and applied to a TIN surface model. The surface model was supplemented with break lines at estimated ridge and flowline locations. The surface was used to display interpolated 1-foot contours for the pre-disturbed condition, the proposed building limits were overlaid on the contour map and the HAG was determined for the proposed building. The proposed building lowest finished floor elevation is a minimum of 2 feet above the HAG. Refer to Appendix E - *Regional Contour Map / Opinion of Existing Highest Natural Grade Elevation* and Appendix F - *Curry's Corner Quadrangle Map.* Overlaying the building over the adjusted digitized lowest finish floor elevation map was determined to be 1541.00 making it 1.2-feet above the regulatory flood elevation of 1539.80.

## 3.0 HYDRAULIC ANALYSIS

The Site was designed to utilize the existing storm drain system in Cottage Terrace Drive and to maintain the existing site outfall locations at the southwest corner of the property. The existing storm drain system was designed to capture runoff through catch basins at low points throughout the Site and convey it to the TPC Golf Course. With the minimal increase in runoff from the proposed improvements, the storm drain system will capture the 10-year storm event. As previously designed, runoff from the 100-year storm event was expected to exceed capacity of the storm drain system and the excess will be conveyed overland (south on Cottage Terrace Drive) to the outfall at the southwest corner of the Site and to the TPC golf course. The additional flow for the 100-year event will continue to exceed capacity and overland flow south to the Site outfall. See Appendix A – *Drainage Report for Fairmont Scottsdale Hotel Expansion by Wood, Patel & Associates, Inc., dated May 1, 2015*, for the previously designed system. The increase in runoff is not significant enough to affect the existing drainage conditions and therefore no additional stormwater infrastructure is required.

## 4.0 MAINTENANCE

Ongoing maintenance of the designed or recommended drainage systems is required to preserve the design integrity and purpose of the drainage system. Failure to provide maintenance can prevent the drainage system from performing to its intended design purpose and can result in reduced performance. Maintenance within the public right-of-way is the responsibility of the governing municipality. However, it is the responsibility of landowners (such as private developers or property owners' associations) for facilities on private property. Prior to ultimate condition build-out upstream of drainage structures, additional maintenance may be required due to an increase in sedimentation build-up. A regular maintenance program is required to have drainage systems perform to the level of protection or service, as presented in this report and the projects' plans and specifications.

## 5.0 CONCLUSIONS

Based on our analysis of the Site, the following conclusions can be made:

1. This Drainage Report has been prepared in accordance with WOODPATEL's understanding of the City of Scottsdale technical drainage requirements and the *Drainage Design Manuals for Maricopa County Hydrology and Hydraulics (2018)*, as applicable to the Site.

2. The Site is within a FEMA designated 100-year floodplain (Zone "AO-Depth 1 foot") in both pre- and post-development conditions.

3. The Site is protected from offsite flows from the north by improvements, as outlined in the approved stormwater storage waiver.

4. No stormwater retention has been provided for this project, per the approved stormwater storage waiver.

5. The onsite 100-year storm event is to be conveyed south, by existing storm drain and overland flow, to the existing TPC Golf Course.

6. The 100-year high water elevation is 1537.80 in the adjacent TPC golf course, which is the same estimated highest natural ground elevation. This is 3.2 feet below the proposed Welcome Center lowest finish floor elevation of 1541.00. It is our understanding this is in compliance with the City of Scottsdale floodplain ordinance, which requires the lowest finished floor to be a minimum of 2 feet above (1 foot for AO and 1 foot of freeboard) the natural highest grade.

7. Ongoing maintenance is required for the existing drainage systems to assure design performance. Maintenance is the responsibility of the private parties involved.

## 6.0 REFERENCES


1. *Design Standards & Policies Manual*, City of Scottsdale, 2018

2. *Drainage Report for Fairmont Scottsdale Hotel Expansion* by Wood, Patel & Associates, Inc., dated May 1, 2015

3. *Drainage Report for Fairmont Scottsdale Western Theme Town* by Wood, Patel & Associates, Inc., dated May 15, 2015

4. *Drainage Memo for Fairmont Scottsdale Sunset Beach Pool* by Wood, Patel & Associated, Inc., dated September 11, 2015

5. *Curry's Corner Quadrangle,* 7.5 Minute Series Topographic Map, USGS, 1964.

**APPENDIX A – DRAINAGE REPORT FOR FAIRMONT SCOTTSDALE HOTEL EXPANSION BY WOOD, PATEL & ASSOCIATES, INC., DATED MAY 1, 2015**

APPENDIX A - FOR REFERENCE ONLY

# DRAINAGE REPORT
# FOR
# FAIRMONT SCOTTSDALE
# HOTEL EXPANSION

May 1, 2015
WP# 154302
C.O.S. No.: 1217-PA-2014

*Prepared for:*

**Strategic Hotels and Resorts**
Mr. George Stowers
200 West Madison
Suite 1700
Chicago, Illinois 60606
*Phone: (312) 658-6016*

*Submitted to:*

**City of Scottsdale**
9388 East San Salvador Drive
Scottsdale, Arizona 85258
*Phone: (480) 312-5636*

*Prepared by:*

**Wood, Patel & Associates, Inc.**
2220 South Country Club Drive
Suite 101
Mesa, Arizona 85210
*Phone: (480) 834-3300*
*Website: www.woodpatel.com*


WOOD/PATEL
MISSION: CLIENT SERVICE™

APPENDIX A - FOR REFERENCE ONLY

## TABLE OF CONTENTS

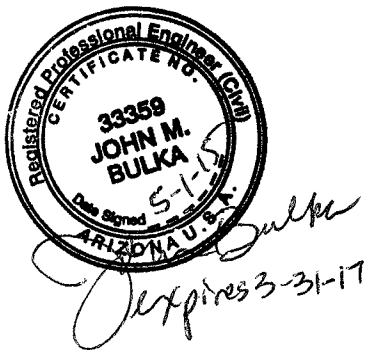


## APPENDICES



## EXHIBITS






km
X:\Y-Drive\WP\Reports\Commercial\154302 Fairmont Scottsdale Hotel Expansion Drainage Report.docx

## 1.0 INTRODUCTION

The proposed Fairmont Scottsdale Hotel Expansion (Fairmont) is a new 102-room (144-bed) hotel building with associated parking. The proposed development is located at the existing Fairmont Scottsdale Hotel, located east of Scottsdale Road and south of Princess Drive. The project includes one (1) new building and a new parking lot expansion (refer to Exhibit 1 – *Vicinity Map*). The parking lot expansion is located along Cottage Terrace, on approximately 1.22 acres (ac), and is west of the existing parking lot for the Ballroom. The building addition is located on approximately 2.19 ac, and is north of the tennis cottages on the east side of Cottage Terrace. More specifically, the sites are located in the southwest quarter of Section 35, Township 4 North, Range 4 East of the Gila and Salt River Meridian (refer to Exhibit 1). The existing property, currently zoned C-2, is primarily developed with buildings, parking lots, tennis courts, sidewalks, and a variety of landscaping (desert and grass). There is some undeveloped area at the northeast corner of the property that is currently dirt and decomposed granite. Current zoning is expected to stay the same for the proposed improvements.

The purpose of this report is to obtain City of Scottsdale Approval for the proposed Fairmont Scottsdale Hotel Expansion, with respect to the City of Scottsdale's drainage criteria.

Analysis and modeling for this study was performed in accordance with the requirements of the *Design Standards and Policies Manual, Chapter 4: Grading and Drainage* (DS&PM), City of Scottsdale, 2010 (Ref. 1). The methods of analysis, sources of data and assumptions, and the results of the analysis are discussed in detail in the following sections of this report.

APPENDIX A - FOR REFERENCE ONLY

## 2.0 EXISTING DRAINAGE CONDITIONS AND CHARACTERISTICS

### 2.1 FEMA Floodplain

The Federal Emergency Management Agency (FEMA) has published a 100-year floodplain, per Flood Insurance Rate Map (FIRM) Panel 1320 of 4425, Map Number 04013C1320L, dated October 16, 2013. The site is within a flood zone labeled "AO-Depth 1 Foot, Velocity 3 FPS".

Zone "AO" is defined by FEMA as follows:

> *"Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined."*

As displayed on the FEMA FIRM panel, the floodplain delineation includes a large portion of land, which includes this project site (refer to Exhibit 2 – *FEMA Map*).

It is the understanding of Wood, Patel & Associates, Inc. (Wood/Patel), based on past experience and interpretations of the City of Scottsdale's floodplain ordinance that development of land within a FEMA Zone "AO" is acceptable as long as, in general, the lowest floor elevation is above or properly protected from the anticipated 100-year water surface elevations. No problems are anticipated with developing the parcel in accordance with the City's floodplain ordinance. No underground structures or parking structures are proposed.

### 2.2 Offsite Drainage Conditions

A large watershed occurs north of the Fairmont Scottsdale Resort. The watershed has been previously studied and peak flows estimated for existing and proposed conditions, and results were published in the Core North/Core South Drainage Study (Ref. 5). Refer to Appendix D – *Offsite Watershed Exhibits* for the Regional Contour Map, Aerial Map, and Plate 1 and Table 1 from the Core North/Core South study and report (Ref. 5). The Fairmont Scottsdale Resort property is protected from this offsite flow by several past improvements. Originally, when Princess Boulevard was constructed, offsite flows were diverted to the west by a channel on the north site of Princess Boulevard. The flood waters are routed to an existing drainage culvert under Princess Boulevard, just east of

Scottsdale Road. These flood waters are routed south along the east side of Scottsdale Road to the Tournament Players Club (TPC) Golf Course. As the Fairmont Scottsdale Resort continued to develop over the years, the City of Scottsdale requested additional improvements to protect the property from offsite flows from the north. Additional improvements were contingent with the Request for Stormwater Storage Waiver for the Fairmont Scottsdale Resort property in 2008 as development continued (refer to Exhibit B – *Stormwater Storage Waiver / Proposed Drainage Improvements Exhibit*). The additional improvements included adding a flood/screen wall along the south side of Princess Boulevard, providing a high point on Cottage Terrace just south of Princess Drive, providing a high point just south of the traffic circle on Princess Drive, providing a channel and floodwall along the west side of the Maravilla site, and removing and replacing the existing culverts on Princess Drive with a new bridge structure. Currently, all of these improvements have been constructed with past projects (Fairmont Ballroom Addition and the Maravilla Senior Living Community) with the exception of replacing the culverts on Princess Drive with a bridge structure. It is our understanding the Fairmont ownership is working with the City of Scottsdale on an agreement to replace these culverts.

The Hayden/Rhodes (Granite Reef) Aqueduct was constructed as part of the (CAP) by the U.S. Bureau of Reclamation. This existing aqueduct is located along the south edge of the TPC golf course and extends east-west the length of CAP canal. The aqueduct is at a significantly higher elevation than the golf course and acts as a dike which creates stormwater ponding in the existing golf course. The 100-year high water level is at an elevation of 1536.00 NGVD 29 Datum (Ref. 6). The conversion to the NAVD 88 Datum is 1.8 feet, so the 100-year high water level elevation is approximately 1537.80. The proposed finish floor for the new hotel building will be at elevation 1550.41, or 12.61 feet above the 100-year high water elevation.

When the Maravilla Senior Living Community was constructed, Cottage Terrace Drive (a private drive) was relocated to the west side of the Fairmont Scottsdale Resort property to accommodate vehicle access to the Resort. A storm drain system was installed with the driveway improvements to benefit both properties and assumed developed conditions for both sites. Based on new topography obtained for the Fairmont Scottsdale Hotel addition, we have re-analyzed this storm drain system due to an increase in tributary area

from the Fairmont site. Existing drainage areas E2 and E3 have been adjusted accordingly from their original boundaries, and the "B" drainage areas added from the Ballroom. The "M" drainage areas on Maravilla have been revised to more accurately represent the contributing areas to the existing storm drain system in Cottage Terrace. Refer to Exhibit 3 – *Maravilla East Property Line Road Drainage Map*, and Exhibit 4 for a comparison. In addition, existing drainage area E2 has an existing 1-foot deep sediment basin which acts as a retention basin. Therefore, we have not included this in the flows for the existing storm drain system since the volume provided exceeds the volume required for the 100-year, 2-hour storm (refer to Appendix A – *Hydrologic and Hydraulic Calculations*).

Runoff from the existing Princess MXD Mercer Institute (MXD) site drains to the west to the existing flood control channel located between Scottsdale Road and the Maravilla project (Exhibit 4).

### 2.3 Onsite Drainage Conditions (Pre-Development)

The existing sites slope generally from the northeast to the southwest with an average slope of approximately two percent (2%). Stormwater is captured into an existing storm drain system via existing catch basins and curb inlets located within Cottage Terrace Drive (private drive), which ultimately drains into the existing TPC Golf Course at the Fairmont Scottsdale Princess Resort, located immediately north of the Hayden-Rhodes Aqueduct. Currently, the site consists of parking lots, tennis courts, sidewalks, and a variety of desert landscaping (desert and grass). There is some undeveloped area at the northeast corner of the property that is currently dirt and decomposed granite (refer to Exhibit 4).

When the existing storm drain system was first analyzed as part of the Maravilla East Property Line Road, all the contributing areas were assigned a weighted C-value of 0.90 for the 100-year storm event to account for future buildout in those areas, which accounted for approximately 20.5 ac. Since that time, Maravilla, the Ballroom, and the Maravilla East Property Line Road have all been constructed, and a detailed topographic survey of the area for this project has been completed. In re-analyzing the data from those completed projects and the current survey information, the existing tributary drainage area boundaries were adjusted (refer to Section 2.2 of this report) and weighted C-values were calculated. An adjusted C-value of 0.77 was calculated for the combined existing storm

tributary area, which accounts for approximately 22.0 ac. Even though the overall tributary area went up 1.5 ac, the overall runoff coefficient went down. The result is the existing storm drain system still has adequate capacity for the 10-year storm event, with the 100-year storm flowing overland within Cottage Terrace, as originally designed. Refer to the *Drainage Report for Maravilla East Property Line Road*, dated May 12, 2008, revised October 15, 2008 (Ref. 4), and Appendix A for specific tributary area and C-value information.

## 3.0 PROPOSED DRAINAGE PLAN

### 3.1 Onsite Drainage Conditions (Post-Development)

This site was designed to utilize the existing storm drain system in Cottage Terrace Drive and to maintain the existing site outfall locations at the southwest corner of the property. During a 10-year storm event, the proposed storm drain system is designed to capture the runoff through a series of roof drains and catch basins at low points throughout the project site and convey it to the existing storm drain system located within Cottage Terrace. During a 100-year storm event, the runoff is expected to exceed the capacity of the proposed storm drain system and the excess will be conveyed overland (south on Cottage Terrace Drive) to the outfall at the southwest corner of the site and to the TPC golf course. The proposed grading is designed to allow for no more than 1.8 feet of ponding before the runoff overtops the local high points and continue towards the outfall location. The existing onsite private storm drain has also been extended to the outfall location of the new parking lot expansion where a new catch basin has been added. A catch basin has also been added to the existing sediment basin adjacent to the ultimate outfall along Hacienda Way. This portion of new storm drain has also been designed to accept runoff from a future Western Theme Town that will be located in this area (refer to Exhibits 5A and 5B – *Proposed Drainage Maps 1 &* 2 for location). Cottage Terrace Drive has been designed to handle the 100-year flow, per the approved *Drainage Report for Maravilla East Property Line Road*, dated May 12, 2008, revised October 15, 2008 (Ref. 4).

The tributary areas contributing to the existing storm drain system within Cottage Terrace is approximately 22.0 ac. The combined weighted C-value has been calculated for all the tributary areas contributing to the existing storm drain system, including the proposed improvements. The combined weighted C-value has been calculated to be 0.78. Refer to Appendix A for specific tributary area and C-value information, and Exhibits 5A and 5B for tributary area delineation. For a summary of the pre- versus post-weighted C-Values, see the table below:

| Drainage Condition | Tributary Area (ac) | Weighted C-Value |
|---|---|---|
| Maravilla | 20.5 | 0.90 |
| Pre-Development (including Maravilla) | 22.0 | 0.77 |
| Post-Development (including Maravilla) | 22.0 | 0.78 |
| Pre-Fairmont | 8.3 | 0.59 |
| Post-Fairmont | 8.3 | 0.61 |

Tributary areas, flow directions, catch basins, storm drains, 100-year overland flow paths, and the ultimate site outfall location are labeled on Exhibit 5A and 5B. The downstream location of the existing storm drain system that the proposed system is to tie into can be seen on Exhibit 4. Storm drain sizing calculations are provided in Appendix A.

### 3.2 Lowest Habitable Finished Floor Elevations

The Grading and Drainage Plan has been designed to comply with the City of Scottsdale's floodplain ordinance for a Zone "AO" floodplain. It is our understanding, unless other flood proof measures are presented and approved, the proposed lowest habitable finished floor (LFF) elevation must be designed a minimum of 1 foot above the anticipated 100-year flood elevation. As previously mentioned, the proposed finish floor for the new hotel building will be at elevation 1550.41, or 12.61 feet above the 100-year high water elevation in the TPC Golf Course. In addition, the lowest finish floor elevation is designed to be a minimum of 1 foot above the adjacent finish grade. Refer to Exhibits 5A and 5B for graphical representation.

The Site is located within a Zone "AO" floodplain, defined as having a flood depth of 1 foot. Therefore, the anticipated 100-year flood elevation is 1 foot above "natural" grade, and proposed LFF elevation must have 1 foot additional freeboard or be a minimum of 2 feet above natural grade. Due to the disturbed condition of the Site from previous development, the natural grade has been modified. According to Curry's Corner 7.5 minute Topographic Survey Map by USGS from 1964 with a contour interval of 10-feet, the approximate highest natural grade of this site prior to development is 1545.00, which is 5.41 feet lower than the proposed lowest finish floor of 1550.41. It is our understanding this is in compliance with the City's floodplain ordinance. Refer to the *Regional Contour Map* within Appendix D, which shows the highest natural grade elevation relative to the proposed building location.

### 3.3 Stormwater Retention

A Request for Stormwater Storage Waiver was submitted and approved by the City of Scottsdale on October 23, 2008 (refer to Appendix B). Therefore, onsite stormwater retention is not required.

### 3.4 Operation and Maintenance

The property owner shall be solely responsible for the operation and maintenance of the stormwater drainage system.

# 4.0 SPECIAL CONDITIONS

## 4.1 Special Conditions

Currently, there are no washes with 100-year flows greater than 50 cfs that traverse the project site. Also, there are no designated Section 404 washes within the site; therefore, no Section 404 permit is required.

# 5.0 DATA ANALYSIS

## 5.1 Hydrologic Analysis

The drainage improvements are to be developed consistent with Chapter 4 of the City of Scottsdale *Design Standards and Policies Manual*, 2010. The Rational Method has been used to quantify peak discharge values for onsite concentration points for the proposed build out scenario during the 10-year and 100-year storm events. Weighted "C" runoff coefficients were referenced from Chapter 4 of the City of Scottsdale *Design Standards and Policies Manual*, 2010. Refer to Appendix A – *Hydrologic and Hydraulic Calculations* for rational calculation printouts, and Exhibit 5 – *Proposed Drainage Map 1* for drainage basin tributary areas and concentration point locations.

## 5.2 Hydraulic Analysis

The onsite storm drain system has been designed to accommodate the 10-year storm event. Bentley StormCAD Version 8i was utilized to analyze the existing and proposed storm sewer system. StormCAD printouts and storm drain profiles can be located in Appendix A.

## 6.0 CONCLUSIONS

The project site is believed to be capable of development as presented with regard to the City of Scottsdale's onsite and offsite drainage requirements. The project's drainage highlights are as follows:

- The site is protected from offsite flows from the north by improvements, as outlined in the approved stormwater storage waiver.

- The proposed drainage infrastructure has been designed in accordance with the City of Scottsdale *Design Standards & Policies Manual*, 2010. The Rational Method was used to estimate peak discharges for all drainage areas. The flow capacities of the proposed storm system have been designed to accept the 10-year storm event.

- No stormwater retention has been provided for this project, per the approved stormwater storage waiver from the City of Scottsdale.

- The onsite 100-year storm event is to be conveyed south, by storm drain and overland flow, to the existing TPC Golf Course.

- The 100-year high water elevation is 1537.80 in the adjacent TPC golf course, which is 12.61 feet below the proposed new building lowest finish floor elevation of 1550.41.

- The project site is in a FEMA designated 100-year floodplain (Zone "AO-Depth 1 foot") in both pre- and post-development conditions.

- The lowest finish floor elevation of 1550.41 is approximately 5.41 feet higher than the highest natural ground elevation of 1545.00. It is our understanding this is in compliance with the City's floodplain ordinance, which requires the lowest finished floor to be a minimum of 2 feet above (1 foot for AO and 1 foot of freeboard) the natural highest grade.

APPENDIX A - FOR REFERENCE ONLY

## 7.0 REFERENCES


1. *Design Standards and Policies Manual, Chapter 4: Grading and Drainage*, City of Scottsdale, January 2010.
2. *Onsite Drainage Report for Fairmont Scottsdale Ballroom Addition*, Wood, Patel & Associates, Inc., July 14, 2011.
3. *Offsite Drainage Report for Fairmont Scottsdale Ballroom Addition*, Wood, Patel & Associates, Inc., July 14, 2011.
4. *Drainage Report for Maravilla East Property Line Road*, Wood, Patel & Associates, Inc., dated May 12, 2008, revised October 15, 2008.
5. *Drainage Study Core North/Core South Scottsdale, AZ,* Robert Ward, P.E., Consulting Engineering, September 25, 2001. Prepared for Arizona State Land Department.
6. *Sedimentation Report Reach 11 Dikes Hayden/Rhodes (Granite Reef) Aqueduct*, Earth Science Division, Surface Water Branch, Sedimentation Office of Denver, Colorado, July 1990.
7. *Maravilla Scottsdale Senior Living Community*, Wood, Patel & Associates, Inc., December 18, 2008, Revised February 13, 2009.
8. *Curry's Corner Quadrangle*, 7.5 Minute Series Topographic Map, USGS, 1964.

APPENDIX A - FOR REFERENCE ONLY

# APPENDIX A

# HYDROLOGIC AND HYDRAULIC CALCULATIONS

APPENDIX A - FOR REFERENCE ONLY

**WOOD/PATEL**

CIVIL ENGINEERS * HYDROLOGISTS * LAND SURVEYORS * CONSTRUCTION MANAGERS

## Site I-D-F Curve

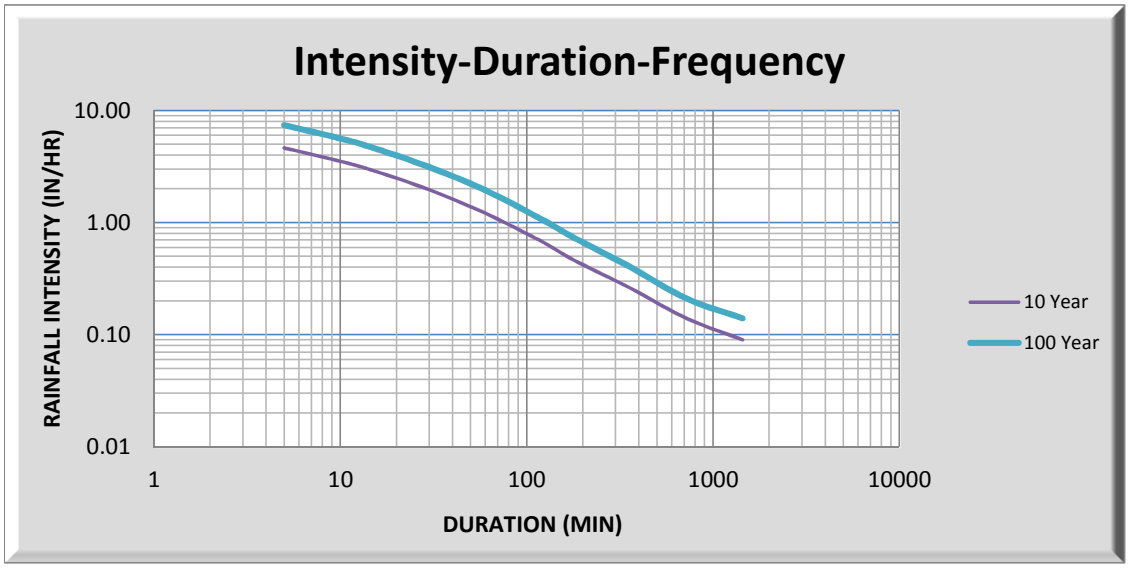
**Description:** Rational Method IDF Curve
**Location:** Fairmont Scottsdale Hotel Expansion
City of Scottsdale, Arizona

**NOAA ATLAS 14 RAINFALL DEPTHS, INCHES**

| Duration | Average Recurrence Interval (years) | | | | | |
|---|---|---|---|---|---|---|
| | 2 | 5 | 10 | 25 | 50 | 100 |
| 5-min | 0.257 | 0.346 | 0.415 | 0.507 | 0.578 | 0.651 |
| 10-min | 0.391 | 0.526 | 0.631 | 0.772 | 0.880 | 0.990 |
| 15-min | 0.484 | 0.652 | 0.782 | 0.957 | 1.090 | 1.230 |
| 30-min | 0.651 | 0.879 | 1.050 | 1.290 | 1.470 | 1.650 |
| 60-min | 0.806 | 1.090 | 1.300 | 1.600 | 1.820 | 2.050 |
| 2-hr | 0.931 | 1.240 | 1.480 | 1.800 | 2.040 | 2.290 |
| 3-hr | 1.020 | 1.330 | 1.580 | 1.920 | 2.200 | 2.480 |
| 6-hr | 1.210 | 1.540 | 1.810 | 2.170 | 2.450 | 2.750 |
| 12-hr | 1.360 | 1.720 | 2.000 | 2.380 | 2.670 | 2.970 |
| 24-hr | 1.610 | 2.070 | 2.450 | 2.970 | 3.380 | 3.810 |

**RAINFALL INTENSITY, INCHES/HOUR**

| Duration minutes | Frequency, years | | | | | |
|---|---|---|---|---|---|---|
| | 2 | 5 | 10 | 25 | 50 | 100 |
| 5 | 3.08 | 4.15 | 4.98 | 6.08 | 6.94 | 7.81 |
| 10 | 2.35 | 3.16 | 3.79 | 4.63 | 5.28 | 5.94 |
| 15 | 1.94 | 2.61 | 3.13 | 3.83 | 4.36 | 4.92 |
| 30 | 1.30 | 1.76 | 2.10 | 2.58 | 2.94 | 3.30 |
| 60 | 0.81 | 1.09 | 1.30 | 1.60 | 1.82 | 2.05 |
| 120 | 0.47 | 0.62 | 0.74 | 0.90 | 1.02 | 1.15 |
| 180 | 0.34 | 0.44 | 0.53 | 0.64 | 0.73 | 0.83 |
| 360 | 0.20 | 0.26 | 0.30 | 0.36 | 0.41 | 0.46 |
| 720 | 0.11 | 0.14 | 0.17 | 0.20 | 0.22 | 0.25 |
| 1440 | 0.07 | 0.09 | 0.10 | 0.12 | 0.14 | 0.16 |



# APPENDIX A - FOR REFERENCE ONLY

**NOAA Atlas 14, Volume 1, Version 5**
**Location name: Scottsdale, Arizona, US***
**Latitude: 33.6488°, Longitude: -111.9060°**
**Elevation: 1583 ft***
* source: Google Maps

**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 | 0.196 (0.163–0.241) | 0.257 (0.215–0.315) | 0.346 (0.287–0.422) | 0.415 (0.342–0.505) | 0.507 (0.412–0.615) | 0.578 (0.463–0.696) | 0.651 (0.512–0.782) | 0.723 (0.560–0.867) | 0.821 (0.620–0.987) | 0.896 (0.663–1.08) |
| 10-min | 0.299 (0.248–0.366) | 0.391 (0.326–0.479) | 0.526 (0.436–0.643) | 0.631 (0.520–0.768) | 0.772 (0.626–0.936) | 0.880 (0.705–1.06) | 0.990 (0.780–1.19) | 1.10 (0.852–1.32) | 1.25 (0.943–1.50) | 1.36 (1.01–1.64) |
| 15-min | 0.371 (0.308–0.454) | 0.484 (0.405–0.593) | 0.652 (0.540–0.797) | 0.782 (0.645–0.953) | 0.957 (0.777–1.16) | 1.09 (0.874–1.31) | 1.23 (0.966–1.48) | 1.36 (1.06–1.64) | 1.55 (1.17–1.86) | 1.69 (1.25–2.03) |
| 30-min | 0.499 (0.414–0.611) | 0.651 (0.545–0.799) | 0.879 (0.728–1.07) | 1.05 (0.868–1.28) | 1.29 (1.05–1.56) | 1.47 (1.18–1.77) | 1.65 (1.30–1.99) | 1.84 (1.42–2.20) | 2.09 (1.57–2.51) | 2.28 (1.68–2.74) |
| 60-min | 0.617 (0.513–0.756) | 0.806 (0.674–0.989) | 1.09 (0.901–1.33) | 1.30 (1.08–1.59) | 1.60 (1.29–1.93) | 1.82 (1.46–2.19) | 2.05 (1.61–2.46) | 2.27 (1.76–2.73) | 2.58 (1.95–3.10) | 2.82 (2.08–3.39) |
| 2-hr | 0.720 (0.606–0.862) | 0.931 (0.786–1.12) | 1.24 (1.04–1.48) | 1.48 (1.22–1.76) | 1.80 (1.48–2.13) | 2.04 (1.65–2.41) | 2.29 (1.83–2.70) | 2.55 (1.99–3.00) | 2.89 (2.21–3.40) | 3.15 (2.36–3.73) |
| 3-hr | 0.795 (0.670–0.973) | 1.02 (0.861–1.25) | 1.33 (1.12–1.63) | 1.58 (1.31–1.92) | 1.92 (1.58–2.32) | 2.20 (1.78–2.64) | 2.48 (1.97–2.98) | 2.78 (2.17–3.33) | 3.19 (2.42–3.82) | 3.52 (2.61–4.22) |
| 6-hr | 0.958 (0.823–1.14) | 1.21 (1.04–1.44) | 1.54 (1.32–1.82) | 1.81 (1.53–2.13) | 2.17 (1.81–2.54) | 2.45 (2.02–2.86) | 2.75 (2.23–3.20) | 3.05 (2.43–3.56) | 3.45 (2.68–4.03) | 3.77 (2.86–4.41) |
| 12-hr | 1.08 (0.933–1.27) | 1.36 (1.17–1.60) | 1.72 (1.48–2.01) | 2.00 (1.71–2.33) | 2.38 (2.01–2.77) | 2.67 (2.22–3.10) | 2.97 (2.44–3.44) | 3.27 (2.65–3.79) | 3.67 (2.90–4.28) | 3.98 (3.09–4.67) |
| 24-hr | 1.27 (1.11–1.47) | 1.61 (1.41–1.86) | 2.07 (1.81–2.41) | 2.45 (2.13–2.83) | 2.97 (2.56–3.43) | 3.38 (2.89–3.89) | 3.81 (3.22–4.40) | 4.26 (3.56–4.92) | 4.89 (4.01–5.65) | 5.39 (4.36–6.26) |
| 2-day | 1.37 (1.19–1.59) | 1.75 (1.52–2.02) | 2.29 (1.98–2.64) | 2.72 (2.35–3.13) | 3.32 (2.84–3.82) | 3.80 (3.22–4.37) | 4.30 (3.62–4.96) | 4.83 (4.02–5.59) | 5.56 (4.55–6.46) | 6.15 (4.95–7.17) |
| 3-day | 1.47 (1.29–1.69) | 1.88 (1.65–2.16) | 2.48 (2.17–2.84) | 2.96 (2.58–3.39) | 3.65 (3.15–4.17) | 4.19 (3.60–4.79) | 4.78 (4.06–5.48) | 5.40 (4.54–6.21) | 6.27 (5.19–7.23) | 6.97 (5.70–8.08) |
| 4-day | 1.58 (1.39–1.80) | 2.02 (1.78–2.30) | 2.67 (2.35–3.04) | 3.21 (2.81–3.65) | 3.97 (3.46–4.51) | 4.59 (3.97–5.22) | 5.26 (4.51–5.99) | 5.96 (5.06–6.82) | 6.97 (5.83–8.00) | 7.80 (6.44–8.99) |
| 7-day | 1.78 (1.56–2.05) | 2.28 (2.00–2.61) | 3.03 (2.65–3.46) | 3.64 (3.17–4.15) | 4.51 (3.91–5.14) | 5.22 (4.49–5.95) | 5.97 (5.10–6.83) | 6.79 (5.73–7.80) | 7.94 (6.61–9.15) | 8.89 (7.30–10.3) |
| 10-day | 1.94 (1.70–2.22) | 2.48 (2.18–2.84) | 3.29 (2.89–3.75) | 3.94 (3.45–4.49) | 4.87 (4.23–5.53) | 5.62 (4.85–6.39) | 6.42 (5.49–7.32) | 7.27 (6.16–8.31) | 8.48 (7.08–9.73) | 9.46 (7.79–10.9) |
| 20-day | 2.40 (2.12–2.74) | 3.10 (2.73–3.52) | 4.10 (3.61–4.65) | 4.86 (4.26–5.51) | 5.90 (5.15–6.69) | 6.71 (5.83–7.61) | 7.54 (6.51–8.58) | 8.39 (7.19–9.58) | 9.55 (8.10–11.0) | 10.5 (8.78–12.1) |
| 30-day | 2.82 (2.48–3.21) | 3.64 (3.21–4.13) | 4.81 (4.23–5.45) | 5.70 (5.00–6.45) | 6.91 (6.03–7.82) | 7.85 (6.82–8.88) | 8.82 (7.62–9.98) | 9.80 (8.41–11.1) | 11.1 (9.47–12.7) | 12.2 (10.3–14.0) |
| 45-day | 3.30 (2.92–3.74) | 4.26 (3.77–4.82) | 5.63 (4.97–6.36) | 6.65 (5.86–7.52) | 8.02 (7.03–9.06) | 9.06 (7.90–10.2) | 10.1 (8.78–11.5) | 11.2 (9.65–12.7) | 12.6 (10.8–14.5) | 13.8 (11.6–15.8) |
| 60-day | 3.67 (3.26–4.14) | 4.75 (4.21–5.35) | 6.26 (5.54–7.05) | 7.37 (6.50–8.30) | 8.82 (7.76–9.94) | 9.92 (8.68–11.2) | 11.0 (9.59–12.5) | 12.1 (10.5–13.7) | 13.6 (11.7–15.5) | 14.7 (12.5–16.8) |

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

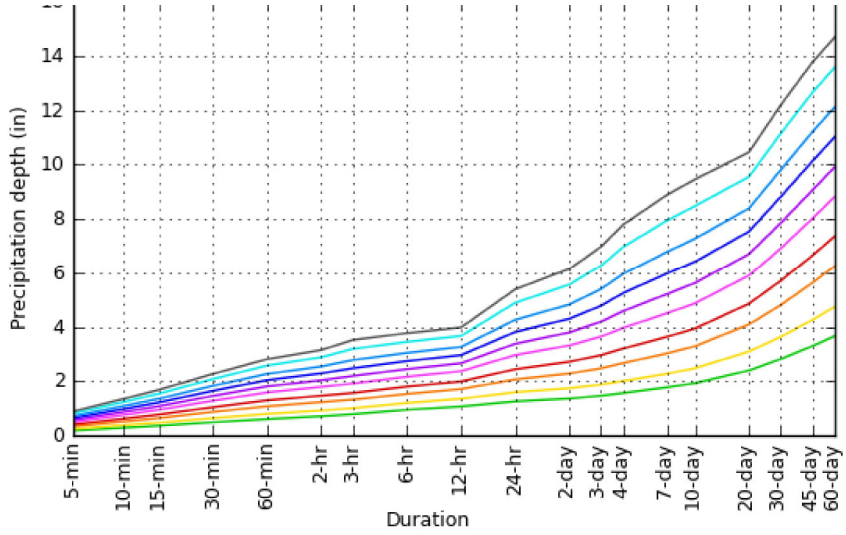
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper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

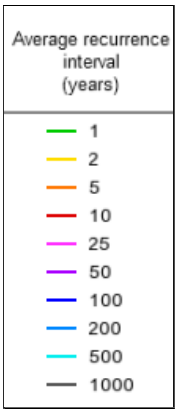
Please refer to NOAA Atlas 14 document for more information.

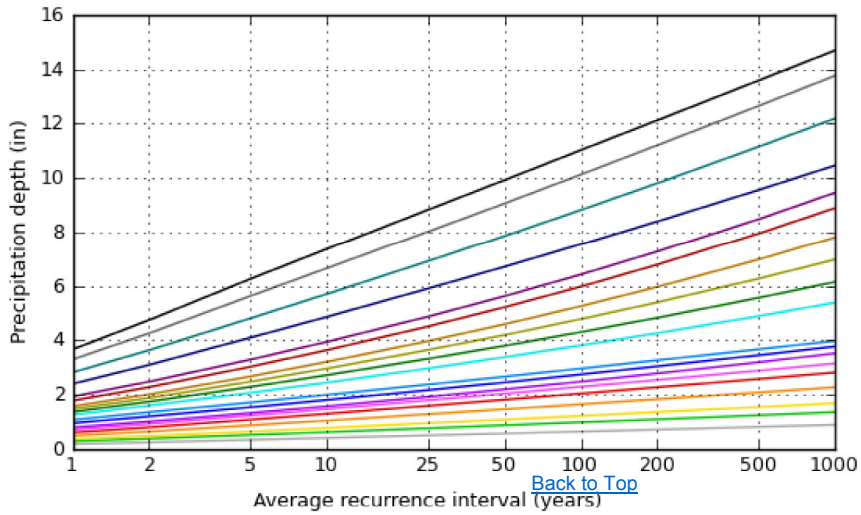
Back to Top

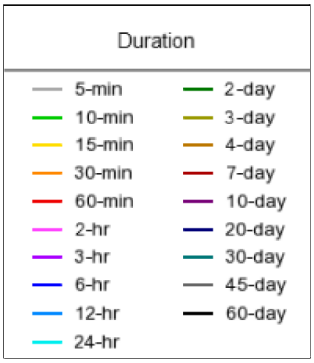
## PF graphical

APPENDIX A - FOR REFERENCE ONLY



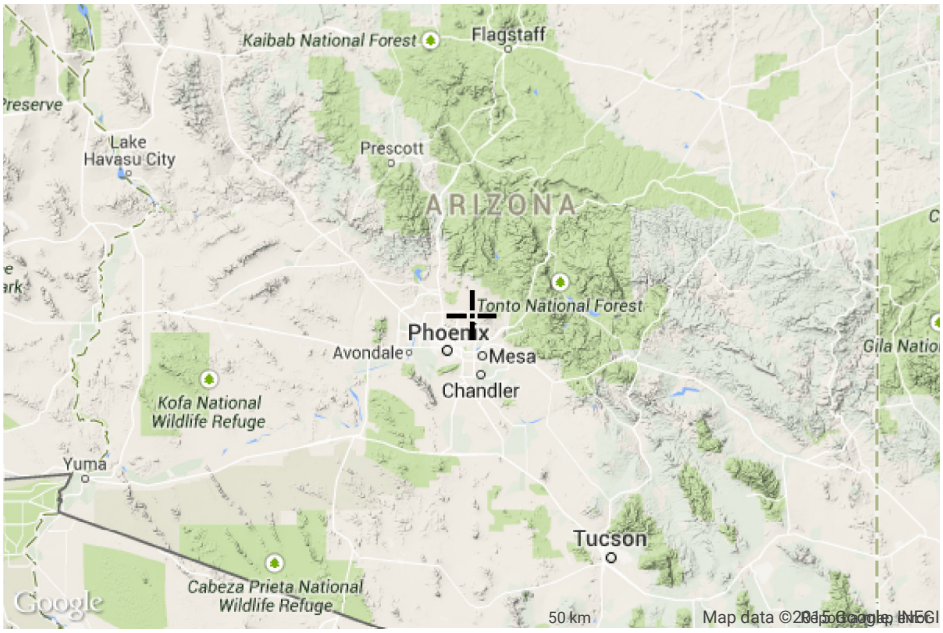




Back to Top

## Maps & aerials

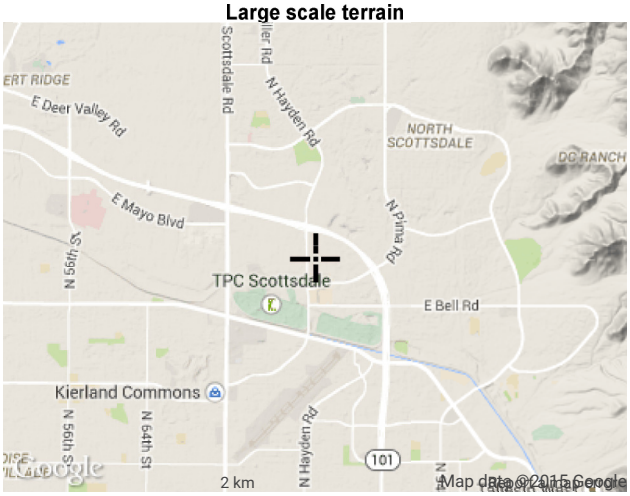
NOAA Atlas 14, Volume 1, Version 5 Created (GMT): Thu Feb 12 15:40:16 2015

**Small scale terrain**

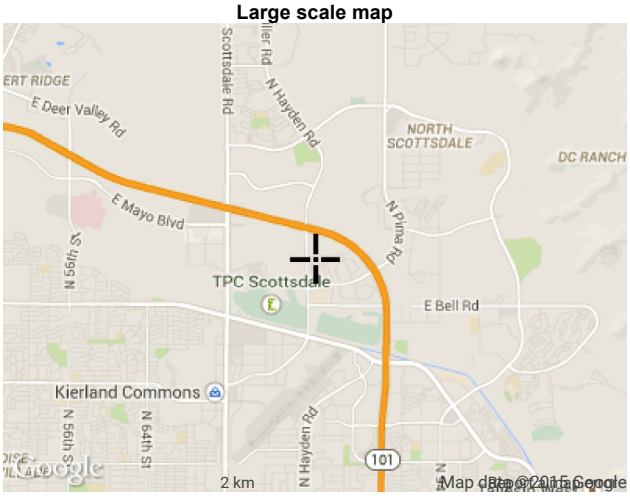


APPENDIX A - FOR REFERENCE ONLY

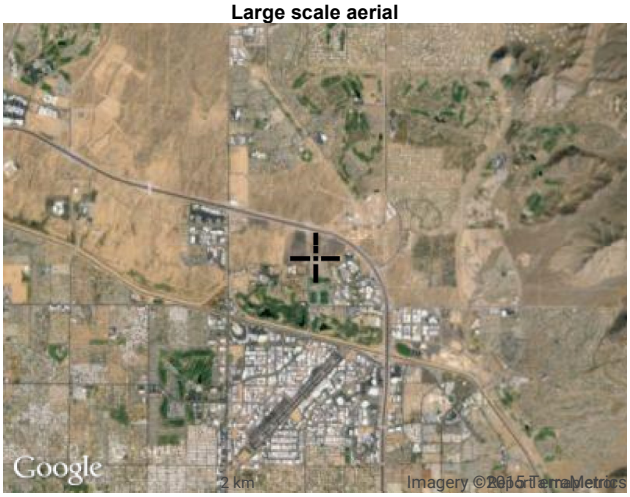
**Large scale terrain**




**Large scale map**




**Large scale aerial**




Back to Top

US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
Office of Hydrologic Development
1325 East West Highway
Silver Spring, MD 20910

**WOOD/PATEL**

CIVIL ENGINEERS * HYDROLOGISTS * LAND SURVEYORS * CONSTRUCTION MANAGERS

## Retention Volume Required

**Description:** Calculation of Required Retention Volume Using the Rational Method
**Location:** Fairmont Scottsdale Hotel Expansion
City of Scottsdale, Arizona
**Reference:** City of Scottsdale Design Standards and Policies Manual, 2010

**Known Values:** Design storm: 100-yr, 2-hr
Rainfall, D: 2.29

**Calc. Values:**

$$Vrequired = C \times \frac{D}{12} \times A$$

Where: V = Retention Volume Required
C = Runoff Coefficient
D = Depth of Rainfall
A = Area of Watershed Contributing

| Retention Basin | Contributing Sub-Basins | Area (ac) | Land Use | 100-Year Runoff Coefficient | 100-Year, 2-Hour Volume (cu.ft) | 100-Year, 2-Hour Volume (ac.ft) |
|---|---|---|---|---|---|---|
| **Pre-Condition** | | | | | | |
| E2 | E2 | 0.44 | 100% Desert | 0.45 | 1,646 | 0.04 |
| | | | | | | |
| **Post-Condition** | | | | | | |
| E2 | E2 | 0.40 | 100% Desert | 0.45 | 1,496 | 0.03 |

**WOOD/PATEL**

CIVIL ENGINEERS * HYDROLOGISTS * LAND SURVEYORS * CONSTRUCTION MANAGERS

## Retention Volume Provided

**Description:** Calculation of Proposed Retention Volume Provided
**Location:** Fairmont Scottsdale Hotel Expansion
**Reference:** City of Scottsdale Design Standards and Policies Manual, 2010

| Basin ID | Bottom Contour Area (sq.ft.) | Top Contour Area (sq.ft.) | Bottom Elevation (ft) | Top Elevation (ft) | Volume Provided (cu. ft.) | Total Volume Provided (acre-ft.) |
|---|---|---|---|---|---|---|
| **E2** | 2,320 | 5,240 | 1556.0 | 1557.0 | 3,780 | 0.09 |

**WOOD/PATEL**

CIVIL ENGINEERS * HYDROLOGISTS * LAND SURVEYORS * CONSTRUCTION MANAGERS

## Rational Method Summary

**Description:** Rational Method Inputs and Results
**Location:** Fairmont Scottsdale Hotel Expansion
City of Scottsdale, Arizona

**Existing Runoff**

| Drainage ID | Longest Watercourse (ft) | Longest Watercourse "L" (mi) | Drainage Area (s.f.) | Drainage Area "A" (acres) | Watershed Resistance Coefficient "$K_b$" | Top Elev. (ft) | Bottom Elev. (ft) | Basin Slope "S" (ft/mi) | Land Use (1) | Post Q100 "Tc" (min) | 100 YR Intensity "i" (in/hr) | 100YR Runoff Coefficient "C" | **Post Q100 (cfs)** | Post Q10 "Tc" (min) | 10 YR Intensity "i" (in/hr) | 10YR Runoff Coefficient "C" | **Post Q10 (cfs)** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B1 | 544.0 | 0.103 | 138121 | 3.17 | 0.0731 | 60.0 | 54.0 | 58 | 100% Desert Landscaping | 7.7 | 6.80 | 0.45 | **9.7** | 9.5 | 3.91 | 0.37 | **4.6** |
| B2 | 209.0 | 0.040 | 38479 | 0.88 | 0.0403 | 59.5 | 56.3 | 81 | 100% Paved | 2.9 | 8.60 | 0.95 | **7.2** | 3.5 | 5.34 | 0.90 | **4.2** |
| B3 | 209.0 | 0.040 | 40583 | 0.93 | 0.0402 | 60.0 | 57.2 | 71 | 100% Paved | 3.0 | 8.56 | 0.95 | **7.6** | 3.6 | 5.31 | 0.90 | **4.4** |
| B4 | 218.0 | 0.041 | 41039 | 0.94 | 0.0402 | 58.0 | 54.7 | 80 | 100% Paved | 3.0 | 8.56 | 0.95 | **7.6** | 3.5 | 5.34 | 0.90 | **4.5** |
| B5 | 204.0 | 0.039 | 39679 | 0.91 | 0.0403 | 59.0 | 55.5 | 91 | 100% Paved | 2.8 | 8.63 | 0.95 | **7.5** | 3.3 | 5.38 | 0.90 | **4.4** |
| B6 | 397.0 | 0.075 | 86513 | 1.99 | 0.0381 | 57.4 | 53.0 | 59 | 71% Paved 29% Desert | 4.4 | 8.03 | 0.80 | **12.8** | 5.3 | 4.91 | 0.74 | **7.2** |
| B7 | 227.0 | 0.043 | 34517 | 0.79 | 0.0406 | 59.0 | 54.9 | 95 | 100% Commercial | 2.9 | 8.60 | 0.86 | **5.8** | 3.5 | 5.34 | 0.80 | **3.4** |
| B8 | 777.0 | 0.147 | 111872 | 2.57 | 0.0374 | 58.5 | 54.9 | 24 | 75% Paved 16% Grass 9% Desert | 8.8 | 6.39 | 0.80 | **13.1** | 10.9 | 3.58 | 0.74 | **6.8** |
| B9 | 120.0 | 0.023 | 9010 | 0.21 | 0.0442 | 75.5 | 75.2 | 13 | 100% Roof | 4.2 | 8.11 | 0.95 | **1.6** | 5.0 | 4.98 | 0.90 | **0.9** |
| B10 | 213.0 | 0.040 | 25528 | 0.59 | 0.0414 | 75.5 | 74.9 | 15 | 100% Roof | 5.2 | 7.74 | 0.95 | **4.3** | 6.3 | 4.67 | 0.90 | **2.5** |
| B11 | 207.0 | 0.039 | 15190 | 0.35 | 0.0428 | 75.5 | 74.9 | 15 | 100% Roof | 5.2 | 7.74 | 0.95 | **2.6** | 6.3 | 4.67 | 0.90 | **1.5** |
| B12 | 110.0 | 0.021 | 11907 | 0.27 | 0.0436 | 75.5 | 75.2 | 14 | 100% Roof | 3.9 | 8.22 | 0.95 | **2.1** | 4.6 | 5.08 | 0.90 | **1.2** |
| E3 | 186.4 | 0.035 | 6320 | 0.15 | 0.0913 | 60.2 | 53.5 | 190 | 100% Desert Landscaping | 3.2 | 8.48 | 0.45 | **0.6** | 3.9 | 5.24 | 0.37 | **0.3** |
| E4 | 572.6 | 0.108 | 115992 | 2.66 | 0.0373 | 53.0 | 47.1 | 54 | 59% Paved 41% Desert | 5.5 | 7.62 | 0.74 | **15.0** | 6.6 | 4.60 | 0.68 | **8.3** |
| E5 | 815.3 | 0.154 | 110212 | 2.53 | 0.0375 | 52.3 | 44.6 | 50 | 57% Paved 24% Desert 19% Grass | 6.9 | 7.10 | 0.71 | **12.8** | 8.4 | 4.17 | 0.64 | **6.8** |
| E6 | 881.3 | 0.167 | 114537 | 2.63 | 0.0374 | 51.9 | 41.0 | 65 | 100% Commercial | 6.6 | 7.21 | 0.86 | **16.3** | 8.0 | 4.27 | 0.80 | **9.0** |
| M1 | 533.3 | 0.101 | 133357 | 3.06 | 0.0370 | 43.1 | 41.1 | 20 | 100% Commercial | 7.4 | 6.91 | 0.86 | **18.2** | 9.1 | 4.00 | 0.80 | **9.8** |
| M2 | 212.3 | 0.040 | 17531 | 0.40 | 0.0855 | 34.4 | 31.2 | 80 | 100% Desert Landscaping | 4.4 | 8.03 | 0.45 | **1.4** | 5.4 | 4.88 | 0.37 | **0.7** |

**$C_{Pre}$ (Overall) = 0.77**
**$C_{Pre}$ (Fairmont) = 0.59**

Notes:
1. The "B" areas represent the areas contributing to the storm drain line in Cottage Terrace from the Ballroom Addition project.
2. The "E" areas represent the areas contributing to the storm drain line in Cottage Terrace from the Maravilla East Property Line Road project.
3. The "M" areas represent the areas contributing to the storm drain line in Cottage Terrace from the Maravilla Senior Living project.

APPENDIX A - FOR REFERENCE ONLY

# Active Scenario: 10 yr - Existing

## Catch Basin FlexTable: CatchBasin Table

| Label | Elevation (Rim) (ft) | Elevation (Invert) (ft) | Flow (Additional) (cfs) | Flow (Total Out) (cfs) | Hydraulic Grade Line (In) (ft) | Hydraulic Grade Line (Out) (ft) | Velocity (Out) (ft/s) | Headloss (ft) |
|---|---|---|---|---|---|---|---|---|
| EX CB-B1 | 56.00 | 44.73 | 4.60 | 4.60 | 50.03 | 50.00 | 1.46 | 0.03 |
| EX CB-B2 | 56.30 | 52.80 | 4.20 | 4.20 | 53.90 | 53.59 | 4.48 | 0.31 |
| EX CB-B3 | 57.20 | 53.70 | 4.40 | 4.40 | 54.83 | 54.50 | 4.56 | 0.32 |
| EX CB-B4 | 54.70 | 51.20 | 4.50 | 4.50 | 52.70 | 52.59 | 2.63 | 0.11 |
| EX CB-B5 | 55.50 | 52.00 | 4.40 | 4.40 | 53.90 | 53.80 | 2.49 | 0.10 |
| EX CB-B6A | 53.00 | 49.50 | 4.32 | 4.32 | 51.47 | 51.38 | 2.44 | 0.09 |
| EX CB-B6B | 60.95 | 51.00 | 1.44 | 1.44 | 55.04 | 54.78 | 4.13 | 0.26 |
| EX CB-B6C | 60.84 | 50.70 | 1.44 | 2.88 | 54.38 | 53.32 | 8.25 | 1.06 |
| EX CB-B7 | 54.90 | 51.40 | 3.40 | 3.40 | 53.42 | 53.42 | 1.92 | 0.00 |
| EX CB-B8 | 54.90 | 51.40 | 6.80 | 6.80 | 53.51 | 53.43 | 2.16 | 0.07 |
| EX CB-B9 | 57.00 | 51.38 | 0.90 | 0.90 | 53.15 | 52.82 | 4.58 | 0.33 |
| EX CB-B10 | 59.70 | 52.30 | 2.50 | 2.50 | 62.22 | 59.70 | 12.73 | 2.52 |
| EX CB-B11 | 60.20 | 51.68 | 1.50 | 1.50 | 59.47 | 58.56 | 7.64 | 0.91 |
| EX CB-B12A | 60.80 | 51.00 | 0.60 | 0.60 | 51.51 | 51.36 | 3.07 | 0.15 |
| EX CB-B12B | 60.81 | 51.00 | 0.60 | 0.60 | 51.51 | 51.39 | 2.86 | 0.13 |
| EX CB-E3 | 53.52 | 49.52 | 0.30 | 0.30 | 49.82 | 49.75 | 2.26 | 0.08 |
| EX CB-E4 | 47.03 | 38.21 | 8.30 | 8.30 | 45.97 | 45.63 | 4.70 | 0.34 |
| EX CB-E6A | 42.78 | 37.06 | 0.90 | 0.90 | 41.79 | 41.79 | 0.51 | 0.00 |
| EX CB-E6B | 41.10 | 36.37 | 3.60 | 3.60 | 41.00 | 40.93 | 2.04 | 0.06 |
| EX CB-E6C | 38.00 | 35.95 | 0.90 | 0.90 | 38.00 | 38.00 | 0.51 | 0.00 |
| EX CB-E6D | 37.00 | 32.97 | 3.60 | 3.60 | 35.37 | 35.36 | 0.60 | 0.01 |
| EX CB-M1 | 39.20 | 35.83 | 9.80 | 9.80 | 39.68 | 39.20 | 5.55 | 0.48 |
| EX CB-M2 | 39.70 | 32.70 | 0.70 | 80.50 | 35.36 | 34.48 | 7.56 | 0.89 |

APPENDIX A - FOR REFERENCE ONLY

# Active Scenario: 10 yr - Existing

## FlexTable: Conduit Table

| Label | Start Node | Stop Node | Manning's n | Diameter (in) | Flow (cfs) | Length (Unified) (ft) | Slope (Calculated) (ft/ft) | Capacity (Full Flow) (cfs) | Hydraulic Grade Line (In) (ft) | Hydraulic Grade Line (Out) (ft) | Velocity (ft/s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EX CO-15 | EX MH-1 | EX MH-6 | 0.012 | 18.0 | 8.70 | 77.7 | 0.021 | 16.32 | 52.28 | 51.82 | 4.92 |
| EX CO-25 | EX MH-2 | EX MH-4 | 0.012 | 18.0 | 8.80 | 76.6 | 0.016 | 14.42 | 53.49 | 53.03 | 4.98 |
| EX CO-35 | EX MH-3 | EX MH-4 | 0.012 | 24.0 | 10.20 | 135.2 | 0.007 | 19.77 | 53.26 | 53.03 | 3.25 |
| EX CO-45 | EX MH-4 | EX MH-5 | 0.012 | 30.0 | 20.50 | 154.0 | 0.007 | 35.99 | 52.81 | 52.49 | 4.18 |
| EX CO-55 | EX MH-5 | EX MH-6 | 0.012 | 30.0 | 23.00 | 158.0 | 0.007 | 36.05 | 52.25 | 51.82 | 4.69 |
| EX CO-65 | EX MH-6 | EX MH-7 | 0.012 | 36.0 | 31.70 | 125.3 | 0.007 | 58.46 | 51.57 | 51.33 | 4.48 |
| EX CO-75 | EX MH-7 | EX MH-8 | 0.012 | 36.0 | 32.60 | 67.0 | 0.007 | 58.56 | 51.33 | 51.20 | 4.61 |
| EX CO-85 | EX MH-8 | EX MH-9 | 0.012 | 36.0 | 36.92 | 97.3 | 0.007 | 58.61 | 50.90 | 50.65 | 5.22 |
| EX CO-95 | EX MH-9 | EX MH-10 | 0.012 | 36.0 | 41.00 | 73.7 | 0.014 | 84.14 | 50.23 | 49.99 | 5.80 |
| EX CO-105 | EX MH-10 | EX MH-11 | 0.012 | 36.0 | 45.60 | 89.4 | 0.014 | 84.41 | 49.47 | 49.12 | 6.45 |
| EX CO-115 | EX MH-11 | EX MH-12 | 0.012 | 36.0 | 45.90 | 101.8 | 0.014 | 85.63 | 48.59 | 48.18 | 6.49 |
| EX CO-125 | EX MH-12 | EX MH-13 | 0.012 | 36.0 | 45.90 | 142.3 | 0.019 | 100.07 | 47.59 | 47.02 | 6.49 |
| EX CO-135 | EX MH-13 | EX MH-14 | 0.012 | 36.0 | 45.90 | 16.4 | 0.002 | 35.67 | 46.82 | 46.75 | 6.49 |
| EX CO-145 | EX MH-14 | EX MH-15 | 0.012 | 36.0 | 45.90 | 239.4 | 0.003 | 39.63 | 46.56 | 45.59 | 6.49 |
| EX CO-155 | EX MH-15 | EX MH-16 | 0.012 | 36.0 | 54.20 | 208.3 | 0.003 | 39.73 | 44.95 | 43.78 | 7.67 |
| EX CO-165 | EX MH-16 | EX MH-17 | 0.012 | 36.0 | 61.00 | 271.6 | 0.003 | 39.46 | 43.72 | 41.79 | 8.63 |
| EX CO-175 | EX MH-17 | EX MH-18 | 0.012 | 42.0 | 61.90 | 127.7 | 0.003 | 59.45 | 41.34 | 40.92 | 6.43 |
| EX CO-185 | EX MH-18 | EX MH-19 | 0.012 | 42.0 | 65.50 | 155.0 | 0.003 | 59.37 | 40.20 | 39.64 | 6.81 |
| EX CO-195 | EX MH-19 | EX CB-M2 | 0.012 | 42.0 | 76.20 | 97.9 | 0.032 | 193.90 | 38.53 | 34.42 | 18.94 |
| EX CO-205 | EX CB-M2 | O-1 | 0.013 |  | 80.50 | 162.0 | 0.009 | 195.32 | 34.48 | 32.56 | 10.22 |
| EX CO-215 | EX MH-20 | EX MH-21 | 0.012 | 8.0 | 1.20 | 38.8 | 0.035 | 2.45 | 51.28 | 50.95 | 3.44 |
| EX CO-225 | EX MH-21 | EX MH-9 | 0.012 | 18.0 | 4.08 | 187.4 | 0.016 | 14.28 | 50.89 | 50.65 | 2.31 |
| EX CO-235 | EX CB-E3 | EX MH-11 | 0.013 | 12.0 | 0.30 | 219.9 | 0.028 | 5.99 | 49.75 | 49.12 | 3.97 |
| EX CO-B1 | EX CB-B1 | EX MH-10 | 0.012 | 24.0 | 4.60 | 21.7 | 0.005 | 16.62 | 50.00 | 49.99 | 1.46 |
| EX CO-B2 | EX CB-B2 | EX MH-1 | 0.012 | 18.0 | 4.20 | 176.9 | 0.020 | 15.94 | 53.59 | 52.54 | 7.61 |
| EX CO-B3 | EX CB-B3 | EX MH-2 | 0.012 | 18.0 | 4.40 | 164.0 | 0.016 | 14.30 | 54.50 | 53.76 | 7.12 |
| EX CO-B4 | EX CB-B4 | EX MH-1 | 0.012 | 18.0 | 4.50 | 37.1 | 0.050 | 25.54 | 52.59 | 52.54 | 10.89 |
| EX CO-B5 | EX CB-B5 | EX MH-2 | 0.012 | 18.0 | 4.40 | 29.0 | 0.031 | 19.92 | 53.80 | 53.76 | 2.49 |
| EX CO-B6A | EX CB-B6A | EX MH-8 | 0.012 | 18.0 | 4.32 | 124.1 | 0.019 | 15.76 | 51.38 | 51.20 | 2.44 |

APPENDIX A - FOR REFERENCE ONLY

# Active Scenario: 10 yr - Existing

## FlexTable: Conduit Table

| Label | Start Node | Stop Node | Manning's n | Diameter (in) | Flow (cfs) | Length (Unified) (ft) | Slope (Calculated) (ft/ft) | Capacity (Full Flow) (cfs) | Hydraulic Grade Line (In) (ft) | Hydraulic Grade Line (Out) (ft) | Velocity (ft/s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EX CO-B6B | EX CB-B6B | EX CB-B6C | 0.012 | 8.0 | 1.44 | 31.3 | 0.010 | 1.25 | 54.78 | 54.38 | 4.13 |
| EX CO-B6C | EX CB-B6C | EX MH-21 | 0.012 | 8.0 | 2.88 | 49.0 | 0.041 | 2.66 | 53.32 | 50.95 | 8.25 |
| EX CO-B7 | EX CB-B7 | EX MH-3 | 0.012 | 18.0 | 3.40 | 22.4 | 0.020 | 15.94 | 53.42 | 53.40 | 1.92 |
| EX CO-B8 | EX CB-B8 | EX MH-3 | 0.012 | 24.0 | 6.80 | 48.6 | 0.009 | 23.32 | 53.43 | 53.40 | 2.16 |
| EX CO-B9 | EX CB-B9 | EX MH-7 | 0.012 | 6.0 | 0.90 | 68.0 | 0.047 | 1.32 | 52.82 | 51.33 | 4.58 |
| EX CO-B10 | EX CB-B10 | EX MH-5 | 0.012 | 6.0 | 2.50 | 101.4 | 0.024 | 0.94 | 69.64 | 52.49 | 12.73 |
| EX CO-B11 | EX CB-B11 | EX MH-4 | 0.012 | 6.0 | 1.50 | 90.8 | 0.019 | 0.83 | 58.56 | 53.03 | 7.64 |
| EX CO-B12A | EX CB-B12A | EX MH-20 | 0.012 | 8.0 | 0.60 | 5.5 | 0.175 | 5.48 | 51.36 | 51.41 | 10.31 |
| EX CO-B12B | EX CB-B12B | EX MH-20 | 0.012 | 8.0 | 0.60 | 27.7 | 0.035 | 2.44 | 51.39 | 51.41 | 5.79 |
| EX CO-E4 | EX CB-E4 | EX MH-15 | 0.012 | 18.0 | 8.30 | 6.3 | 0.021 | 16.36 | 45.63 | 45.59 | 4.70 |
| EX CO-E6A | EX CB-E6A | EX MH-17 | 0.012 | 18.0 | 0.90 | 22.9 | 0.018 | 15.40 | 41.79 | 41.79 | 0.51 |
| EX CO-E6B | EX CB-E6B | EX MH-18 | 0.012 | 18.0 | 3.60 | 10.6 | 0.010 | 11.57 | 40.93 | 40.92 | 2.04 |
| EX CO-E6C | EX CB-E6C | EX MH-19 | 0.012 | 18.0 | 0.90 | 16.3 | 0.009 | 10.90 | 39.64 | 39.64 | 0.51 |
| EX CO-E6D | EX CB-E6D | EX CB-M2 | 0.012 | 36.0 | 3.60 | 32.3 | 0.008 | 66.08 | 35.36 | 35.36 | 5.00 |
| EX CO-M1 | EX CB-M1 | EX MH-19 | 0.012 | 18.0 | 9.80 | 15.4 | 0.002 | 5.01 | 39.76 | 39.64 | 5.55 |

# Active Scenario: 10 yr - Existing

## FlexTable: Manhole Table

| Label | Elevation (Ground) (ft) | Elevation (Rim) (ft) | Elevation (Invert) (ft) | Diameter (in) | Flow (Total Out) (cfs) | Headloss Coefficient (Standard) | Hydraulic Grade Line (In) (ft) | Hydraulic Grade Line (Out) (ft) | Local Fixed Flow (cfs) |
|---|---|---|---|---|---|---|---|---|---|
| EX MH-1 | 55.40 | 55.40 | 49.33 | 48.0 | 8.70 | 0.700 | 52.54 | 52.28 | 0.00 |
| EX MH-2 | 55.70 | 55.70 | 51.11 | 48.0 | 8.80 | 0.700 | 53.76 | 53.49 | 0.00 |
| EX MH-3 | 56.00 | 56.00 | 50.86 | 48.0 | 10.20 | 0.800 | 53.40 | 53.26 | 0.00 |
| EX MH-4 | 56.15 | 56.15 | 49.88 | 48.0 | 20.50 | 0.800 | 53.03 | 52.81 | 0.00 |
| EX MH-5 | 56.00 | 56.00 | 48.87 | 48.0 | 23.00 | 0.700 | 52.49 | 52.25 | 0.00 |
| EX MH-6 | 54.82 | 54.82 | 47.73 | 48.0 | 31.70 | 0.800 | 51.82 | 51.57 | 0.00 |
| EX MH-7 | 54.78 | 54.78 | 46.81 | 48.0 | 32.60 |  | 51.33 | 51.33 | 0.00 |
| EX MH-8 | 54.72 | 54.72 | 46.37 | 48.0 | 36.92 | 0.700 | 51.20 | 50.90 | 0.00 |
| EX MH-9 | 52.60 | 52.60 | 45.63 | 48.0 | 41.00 | 0.800 | 50.65 | 50.23 | 0.00 |
| EX MH-10 | 53.30 | 53.30 | 44.53 | 48.0 | 45.60 | 0.800 | 49.99 | 49.47 | 0.00 |
| EX MH-11 | 52.60 | 52.60 | 43.21 | 48.0 | 45.90 | 0.800 | 49.12 | 48.59 | 0.00 |
| EX MH-12 | 53.00 | 53.00 | 41.68 | 48.0 | 45.90 | 0.900 | 48.18 | 47.59 | 0.00 |
| EX MH-13 | 50.50 | 50.50 | 38.84 | 48.0 | 45.90 | 0.300 | 47.02 | 46.82 | 0.00 |
| EX MH-14 | 50.00 | 50.00 | 38.80 | 48.0 | 45.90 | 0.300 | 46.75 | 46.56 | 0.00 |
| EX MH-15 | 47.70 | 47.70 | 38.08 | 48.0 | 54.20 | 0.700 | 45.59 | 44.95 | 0.00 |
| EX MH-16 | 45.20 | 45.20 | 37.45 | 48.0 | 61.00 | 0.050 | 43.78 | 43.72 | 6.80 |
| EX MH-17 | 42.80 | 42.80 | 36.64 | 48.0 | 61.90 | 0.700 | 41.79 | 41.34 | 0.00 |
| EX MH-18 | 42.20 | 42.20 | 36.26 | 48.0 | 65.50 | 1.000 | 40.92 | 40.20 | 0.00 |
| EX MH-19 | 41.50 | 41.50 | 35.80 | 48.0 | 76.20 | 0.800 | 39.64 | 38.53 | 0.00 |
| EX MH-20 | 60.00 | 60.00 | 50.04 | 48.0 | 1.20 | 0.700 | 51.41 | 51.28 | 0.00 |
| EX MH-21 | 52.30 | 52.30 | 48.68 | 48.0 | 4.08 | 0.800 | 50.95 | 50.89 | 0.00 |

APPENDIX A - FOR REFERENCE ONLY

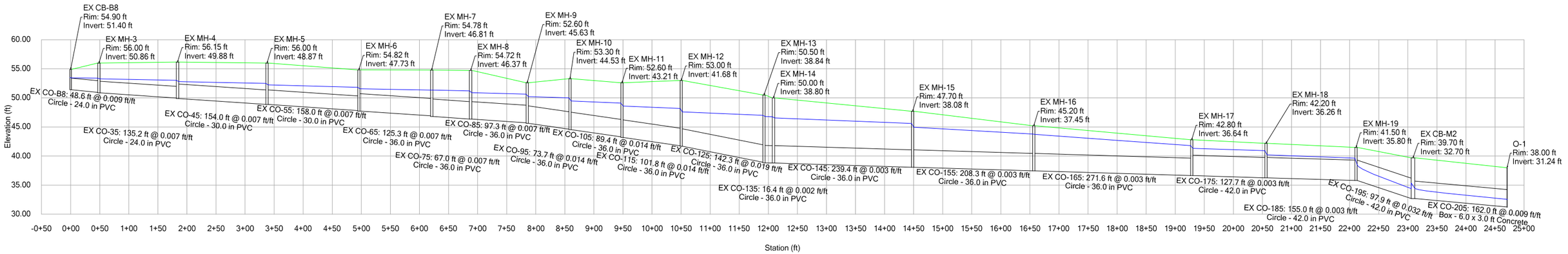
# Active Scenario: 10 yr - Existing

## FlexTable: Outfall Table

| Label | Elevation (Ground) (ft) | Set Rim to Ground Elevation | Elevation (Invert) (ft) | Flow (Total Out) (cfs) | Boundary Condition Type |
|---|---|---|---|---|---|
| O-1 | 38.00 | True | 31.24 | 80.50 | Free Outfall |

APPENDIX A - FOR REFERENCE ONLY

# Active Scenario: 10 yr - Existing
# Profile Report
# Engineering Profile - EX CB-B8 TO O-1 (4302 StormCAD - Existing.stsw)



**WOOD/PATEL**

## Rational Method Summary

**Description:** Rational Method Inputs and Results
**Location:** Fairmont Scottsdale Hotel Expansion
City of Scottsdale, Arizona

**Proposed Runoff**

| Drainage ID | Longest Watercourse (ft) | Longest Watercourse "L" (mi) | Drainage Area (s.f.) | Drainage Area "A" (acres) | Watershed Resistance Coefficient "$K_b$" | Top Elev. (ft) | Bottom Elev. (ft) | Basin Slope "S" (ft/mi) | Land Use (1) | Post Q100 "Tc" (min) | 100 YR Intensity "i" (in/hr) | 100YR Runoff Coefficient "C" | **Post Q100 (cfs)** | Post Q10 "Tc" (min) | 10 YR Intensity "i" (in/hr) | 10YR Runoff Coefficient | **Post Q10 (cfs)** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Existing** | | | | | | | | | | | | | | | | | |
| B1 | 570.8 | 0.108 | 98439 | 2.26 | 0.0378 | 58.5 | 54.0 | 42 | 93% Desert 7% Paved | 6.0 | 7.44 | 0.49 | **8.2** | 7.3 | 4.43 | 0.41 | **4.1** |
| B2 | 209.0 | 0.040 | 38479 | 0.88 | 0.0403 | 59.5 | 56.3 | 81 | 100% Paved | 2.9 | 8.60 | 0.95 | **7.2** | 3.5 | 5.34 | 0.90 | **4.2** |
| B3 | 209.0 | 0.040 | 40583 | 0.93 | 0.0402 | 60.0 | 57.2 | 71 | 100% Paved | 3.0 | 8.56 | 0.95 | **7.6** | 3.6 | 5.31 | 0.90 | **4.4** |
| B4 | 218.0 | 0.041 | 41039 | 0.94 | 0.0402 | 58.0 | 54.7 | 80 | 100% Paved | 3.0 | 8.56 | 0.95 | **7.6** | 3.5 | 5.34 | 0.90 | **4.5** |
| B5 | 204.0 | 0.039 | 39679 | 0.91 | 0.0403 | 59.0 | 55.5 | 91 | 100% Paved | 2.8 | 8.63 | 0.95 | **7.5** | 3.3 | 5.38 | 0.90 | **4.4** |
| B6 | 397.0 | 0.075 | 86513 | 1.99 | 0.0381 | 57.4 | 53.0 | 59 | 71% Paved 29% Desert | 4.4 | 8.03 | 0.80 | **12.8** | 5.3 | 4.91 | 0.74 | **7.2** |
| B7 | 227.0 | 0.043 | 34517 | 0.79 | 0.0406 | 59.0 | 54.9 | 95 | 100% Commercial | 2.9 | 8.60 | 0.86 | **5.8** | 3.5 | 5.34 | 0.80 | **3.4** |
| B8 | 777.0 | 0.147 | 111872 | 2.57 | 0.0374 | 58.5 | 54.9 | 24 | 75% Paved 16% Grass 9% Desert | 8.8 | 6.39 | 0.80 | **13.1** | 10.9 | 3.58 | 0.74 | **6.8** |
| B9 | 120.0 | 0.023 | 9010 | 0.21 | 0.0442 | 75.5 | 75.2 | 13 | 100% Roof | 4.2 | 8.11 | 0.95 | **1.6** | 5.0 | 4.98 | 0.90 | **0.9** |
| B10 | 213.0 | 0.040 | 25528 | 0.59 | 0.0414 | 75.5 | 74.9 | 15 | 100% Roof | 5.2 | 7.74 | 0.95 | **4.3** | 6.3 | 4.67 | 0.90 | **2.5** |
| B11 | 207.0 | 0.039 | 15190 | 0.35 | 0.0428 | 75.5 | 74.9 | 15 | 100% Roof | 5.2 | 7.74 | 0.95 | **2.6** | 6.3 | 4.67 | 0.90 | **1.5** |
| B12 | 110.0 | 0.021 | 11907 | 0.27 | 0.0436 | 75.5 | 75.2 | 14 | 100% Roof | 3.9 | 8.22 | 0.95 | **2.1** | 4.6 | 5.08 | 0.90 | **1.2** |
| E3 | 186.4 | 0.035 | 6320 | 0.15 | 0.0913 | 60.2 | 53.5 | 190 | 100% Desert | 3.2 | 8.48 | 0.45 | **0.6** | 3.9 | 5.24 | 0.37 | **0.3** |
| E4 | 572.6 | 0.108 | 115992 | 2.66 | 0.0373 | 53.0 | 47.1 | 54 | 59% Paved 41% Desert | 5.5 | 7.62 | 0.74 | **15.0** | 6.6 | 4.60 | 0.68 | **8.3** |
| E5A | 362.1 | 0.069 | 23934 | 0.55 | 0.0416 | 52.3 | 51.5 | 12 | 25% Grass 37% Desert 38% Paved | 7.7 | 6.80 | 0.60 | **2.2** | 9.5 | 3.91 | 0.53 | **1.1** |
| E5B | 461.3 | 0.087 | 18390 | 0.42 | 0.0424 | 47.8 | 43.6 | 48 | 63% Paved 37% Desert | 5.4 | 7.62 | 0.76 | **2.4** | 6.6 | 4.60 | 0.70 | **1.4** |
| E6 | 362.1 | 0.069 | 96144 | 2.21 | 0.0378 | 49.2 | 41.0 | 120 | 100% Commercial | 3.3 | 8.45 | 0.86 | **16.1** | 4.0 | 5.22 | 0.80 | **9.2** |
| M1 | 533.3 | 0.101 | 133357 | 3.06 | 0.0370 | 43.1 | 41.1 | 20 | 100% Commercial | 7.4 | 6.91 | 0.86 | **18.2** | 9.1 | 4.00 | 0.80 | **9.8** |
| M2 | 212.3 | 0.040 | 17531 | 0.40 | 0.0855 | 34.4 | 31.2 | 80 | 100% Desert | 4.4 | 8.03 | 0.45 | **1.4** | 5.3 | 4.91 | 0.37 | **0.7** |

**WOOD/PATEL**

## Rational Method Summary

**Description:** Rational Method Inputs and Results
**Location:** Fairmont Scottsdale Hotel Expansion
City of Scottsdale, Arizona

**Proposed Runoff**

| Drainage ID | Longest Watercourse (ft) | Longest Watercourse "L" (mi) | Drainage Area (s.f.) | Drainage Area "A" (acres) | Watershed Resistance Coefficient "$K_b$" | Top Elev. (ft) | Bottom Elev. (ft) | Basin Slope "S" (ft/mi) | Land Use (1) | Post Q100 "Tc" (min) | 100 YR Intensity "i" (in/hr) | 100YR Runoff Coefficient "C" | **Post Q100 (cfs)** | Post Q10 "Tc" (min) | 10 YR Intensity "i" (in/hr) | 10YR Runoff Coefficient | **Post Q10 (cfs)** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Proposed** | | | | | | | | | | | | | | | | | |
| N1 | 214.3 | 0.041 | 23664 | 0.54 | 0.0417 | 59.0 | 55.0 | 99 | 100% Paved | 2.8 | 8.63 | 0.95 | **4.4** | 3.4 | 5.36 | 0.90 | **2.6** |
| N2 | 177.1 | 0.034 | 17431 | 0.40 | 0.0425 | 56.9 | 54.0 | 86 | 100% Paved | 2.7 | 8.67 | 0.95 | **3.3** | 3.2 | 5.41 | 0.90 | **1.9** |
| S1 | 213.4 | 0.040 | 10161 | 0.23 | 0.0440 | 51.3 | 47.1 | 104 | 100% Desert | 2.8 | 8.63 | 0.45 | **0.9** | 3.4 | 5.36 | 0.37 | **0.5** |
| S2 | 142.7 | 0.027 | 14219 | 0.33 | 0.0430 | 50.3 | 47.5 | 104 | 90% Grass 6% Desert 4% Paved | 2.3 | 8.82 | 0.34 | **1.0** | 2.7 | 5.53 | 0.24 | **0.4** |
| S3 | 223.3 | 0.042 | 9702 | 0.22 | 0.0441 | 61.3 | 49.0 | 291 | 53% Paved 47% Grass | 2.1 | 8.89 | 0.64 | **1.3** | 2.5 | 5.58 | 0.57 | **0.7** |
| S4 | 95.2 | 0.018 | 4391 | 0.10 | 0.0463 | 75.0 | 74.1 | 50 | 100% Roof | 2.4 | 8.78 | 0.95 | **0.8** | 2.9 | 5.48 | 0.90 | **0.5** |
| S5 | 94.2 | 0.018 | 4494 | 0.10 | 0.0463 | 75.0 | 74.1 | 50 | 100% Roof | 2.4 | 8.78 | 0.95 | **0.8** | 2.9 | 5.48 | 0.90 | **0.5** |
| S6 | 98.0 | 0.019 | 4535 | 0.10 | 0.0463 | 75.0 | 74.0 | 54 | 100% Roof | 2.4 | 8.78 | 0.95 | **0.8** | 2.9 | 5.48 | 0.90 | **0.5** |
| S7 | 98.1 | 0.019 | 4481 | 0.10 | 0.0463 | 75.0 | 74.0 | 54 | 100% Roof | 2.4 | 8.78 | 0.95 | **0.8** | 2.9 | 5.48 | 0.90 | **0.5** |
| S8 | 95.4 | 0.018 | 4336 | 0.10 | 0.0463 | 75.0 | 74.1 | 50 | 100% Roof | 2.4 | 8.78 | 0.95 | **0.8** | 2.9 | 5.48 | 0.90 | **0.5** |
| S9 | 70.1 | 0.013 | 4212 | 0.10 | 0.0463 | 49.9 | 44.0 | 444 | 90% Desert 10% Paved | 1.0 | 9.31 | 0.50 | **0.5** | 1.2 | 5.88 | 0.42 | **0.2** |
| S10 | 63.7 | 0.012 | 2915 | 0.07 | 0.0472 | 75.0 | 74.4 | 50 | 100% Roof | 2.0 | 8.93 | 0.95 | **0.6** | 2.4 | 5.60 | 0.90 | **0.4** |
| S11 | 73.0 | 0.014 | 3903 | 0.09 | 0.0465 | 75.0 | 74.3 | 51 | 100% Roof | 2.1 | 8.89 | 0.95 | **0.8** | 2.5 | 5.58 | 0.90 | **0.5** |
| S12 | 151.2 | 0.029 | 19168 | 0.44 | 0.0422 | 51.6 | 47.5 | 143 | 49% Grass 35% Desert 16% Paved | 2.1 | 8.89 | 0.45 | **1.8** | 2.5 | 5.58 | 0.37 | **0.9** |

**$C_{post}$ (Overall) = 0.78**
**$C_{post}$ (Fairmont) = 0.61**

Notes:
1. The "B" areas represent the areas contributing to the storm drain line in Cottage Terrace from the Ballroom Addition project.
2. The "E" areas represent the areas contributing to the storm drain line in Cottage Terrace from the Maravilla East Property Line Road project.
3. The "M" areas represent the areas contributing to the storm drain line in Cottage Terrace from the Maravilla Senior Living project.

**WOOD/PATEL**

CIVIL ENGINEERS * HYDROLOGISTS * LAND SURVEYORS * CONSTRUCTION MANAGERS

## Curb Opening Summary

**Description:** Design Calculations for Curb Openings
**Reference:** FCDMC Drainage Design Manual for Maricopa County, Arizona, *Hydraulics (2013)*
**Location:** Fairmont Scottsdale Hotel Expansion

Known Values and Equations:

$$Q^{(1)} = CLH^{3/2}$$

Where:
Q = Capacity (cfs)
C = Coefficient = 3.0 for Curb Opening, Use: 3.0
L = Length of Opening (ft)
H = Max Headwater Depth of Flow (ft)

### Curb Opening Summary

| Drainage Area | Opening Type | Length, L (ft) | Coefficient | Depth, H (ft) | Capacity Q (cfs) | $Q_{10}$ (cfs) | $Q_{100}$ (cfs) |
|---|---|---|---|---|---|---|---|
| N1 | Curb Opening | 4 | 3.0 | 0.5 | 4.2 | 2.6 | 4.4 |
| N2 | Curb Opening | 4 | 3.0 | 0.5 | 4.2 | 1.9 | 3.3 |

Notes
1) Per FCDMC Drainage Design Manual, Volume II, Hydraulics, (2013) equation 8.19
2) When the curb opening for drainage area N1 is exceeded, the excess will flow to the curb opening in drainage area N2.

**WOOD/PATEL**

CIVIL ENGINEERS * HYDROLOGISTS * LAND SURVEYORS * CONSTRUCTION MANAGERS

## Inlet Capacity Summary

**Description:** Summary of Inlet Sizing Calculations
**Location:** Fairmont Scottsdale Hotel Expansion

| Inlet ID | Contributing Drainage Area ID | Q10 (cfs) | Available Head (ft) | Inlet Type | Inlet Capacity (cfs) | 10-Year Actual Ponding Depth (ft) |
|---|---|---|---|---|---|---|
| CB-S1 | S1 & E5A | 1.6 | 0.5 | MAG 535 | 9.02 | 0.17 |
| CB-S2 | S2 | 0.4 | 0.5 | MAG 535 | 9.02 | 0.07 |
| CB-S3 | S3 | 0.7 | 0.5 | MAG 535 | 9.02 | 0.06 |
| CB-S9 | S9 | 0.2 | 0.5 | MAG 535 | 9.02 | 0.05 |
| CB-S12 | S12 | 0.9 | 0.5 | MAG 535 | 9.02 | 0.09 |
| CB-N12 | N1 & N2 | 4.5 | 1.0 | MAG 535 | 25.50 | 0.31 |
| CB-B1 | 1/3 B1 | 1.4 | 1.5 | MAG 535 | 35.69 | 0.15 |

**WOOD/PATEL**

CIVIL ENGINEERS * HYDROLOGISTS * LAND SURVEYORS * CONSTRUCTION MANAGERS

## Inlet Capacity - Sump Locations

**Description:** Calculation of Inlet Capacity for Single MAG 535 Catch Basin (w/o Curb)
**Location:** Fairmont Scottsdale Hotel Expansion
**Reference:** Drainage Design Manual for Maricopa County, Vol. II, Hydraulics, pg. 3-27

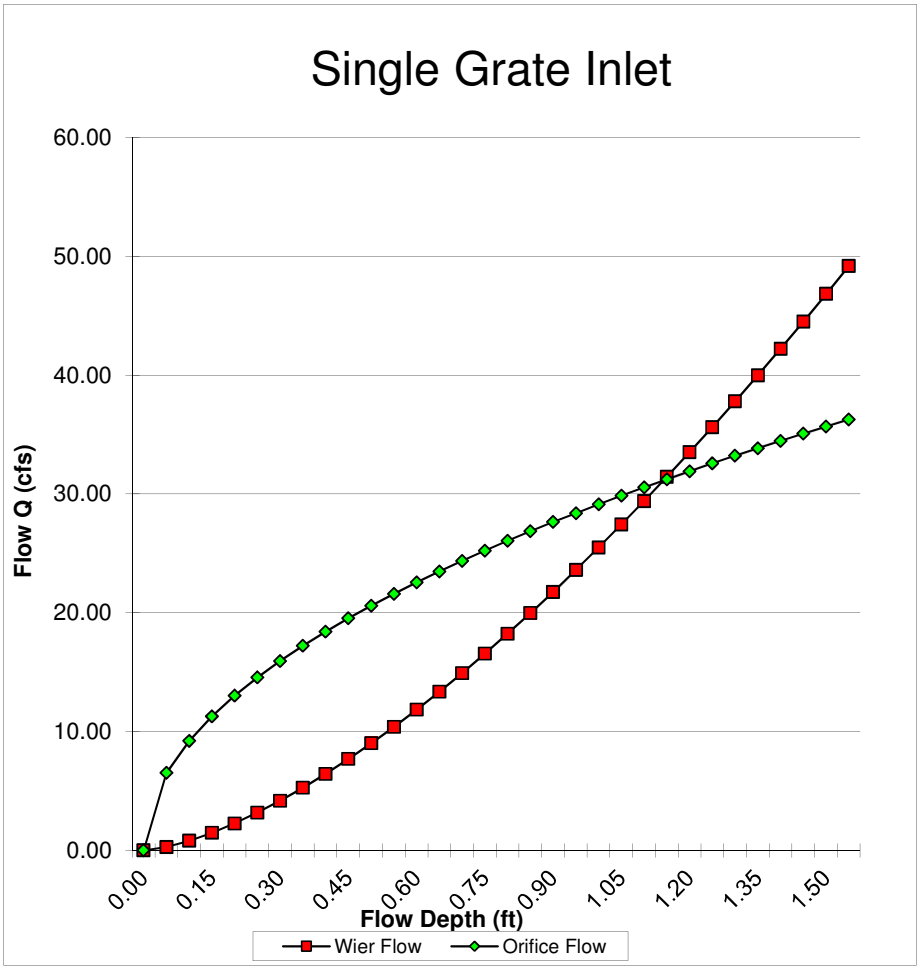
**Weir EQ.** $Q_i = C_w P d^{1.5}$ **Orifice EQ.** $Q_i = C_o A (2gd)^{0.5}$

**Where:** $C_w = 3.0$, $C_o = 0.67$

| | | |
|---|---|---|
| **P =** | **8.50** | **ft** |
| **A =** | **5.42** | **sq.ft.** |

where,
P = Perimeter of Catchbasin minus
area of longitudinal & lateral bars (2 Short Sides, 1 Long Side)
A = Total area of grate minus
area of longitudinal & lateral bars

| Depth (ft) | Weir Qi (cfs) | Orifice Qi (cfs) |
|---|---|---|
| 0.00 | **0.00** | **0.00** |
| 0.05 | **0.29** | **6.52** |
| 0.10 | **0.81** | **9.22** |
| 0.15 | **1.48** | **11.29** |
| 0.20 | **2.28** | **13.03** |
| 0.25 | **3.19** | **14.57** |
| 0.30 | **4.19** | **15.96** |
| 0.35 | **5.28** | **17.24** |
| 0.40 | **6.45** | **18.43** |
| 0.45 | **7.70** | **19.55** |
| 0.50 | **9.02** | **20.61** |
| 0.55 | **10.40** | **21.61** |
| 0.60 | **11.85** | **22.57** |
| 0.65 | **13.36** | **23.49** |
| 0.70 | **14.93** | **24.38** |
| 0.75 | **16.56** | **25.24** |
| 0.80 | **18.25** | **26.07** |
| 0.85 | **19.98** | **26.87** |
| 0.90 | **21.77** | **27.65** |
| 0.95 | **23.61** | **28.40** |
| 1.00 | **25.50** | **29.14** |
| 1.05 | **27.44** | **29.86** |
| 1.10 | **29.42** | **30.56** |
| 1.15 | 31.45 | **31.25** |
| 1.20 | 33.52 | **31.92** |
| 1.25 | 35.64 | **32.58** |
| 1.30 | 37.80 | **33.23** |
| 1.35 | 40.00 | **33.86** |
| 1.40 | 42.24 | **34.48** |
| 1.45 | 44.52 | **35.09** |
| 1.50 | 46.85 | **35.69** |
| 1.55 | 49.21 | **36.28** |



APPENDIX A - FOR REFERENCE ONLY

# Active Scenario: 10 yr - Proposed

## Catch Basin FlexTable: CatchBasin Table

| Label | Elevation (Rim) (ft) | Elevation (Invert) (ft) | Flow (Additional) (cfs) | Flow (Total Out) (cfs) | Hydraulic Grade Line (In) (ft) | Hydraulic Grade Line (Out) (ft) | Velocity (Out) (ft/s) | Headloss (ft) |
|---|---|---|---|---|---|---|---|---|
| CB-B1 | 51.00 | 44.93 | 1.36 | 8.60 | 51.12 | 51.00 | 2.74 | 0.12 |
| CB-N12 | 52.50 | 48.04 | 4.50 | 4.50 | 51.32 | 51.29 | 1.43 | 0.03 |
| CB-S1 | 46.00 | 38.60 | 1.60 | 6.10 | 46.06 | 46.00 | 1.94 | 0.06 |
| CB-S2 | 47.50 | 42.66 | 0.40 | 4.00 | 46.13 | 46.11 | 1.27 | 0.03 |
| CB-S3 | 49.00 | 44.00 | 0.70 | 0.70 | 46.14 | 46.13 | 0.40 | 0.00 |
| CB-S4 | 50.41 | 46.40 | 0.50 | 0.50 | 46.93 | 46.76 | 3.30 | 0.17 |
| CB-S5 | 50.41 | 46.40 | 0.50 | 0.50 | 48.48 | 47.97 | 5.73 | 0.51 |
| CB-S6 | 50.41 | 46.40 | 0.50 | 0.50 | 46.93 | 46.76 | 3.30 | 0.17 |
| CB-S7 | 50.41 | 44.56 | 0.50 | 0.50 | 46.71 | 46.61 | 2.55 | 0.10 |
| CB-S8 | 50.41 | 46.40 | 0.50 | 0.50 | 49.68 | 49.17 | 5.73 | 0.51 |
| CB-S9 | 44.00 | 39.00 | 0.20 | 1.10 | 44.01 | 44.00 | 0.62 | 0.01 |
| CB-S10A | 48.90 | 43.64 | 0.20 | 0.20 | 44.17 | 44.09 | 2.29 | 0.08 |
| CB-S10B | 50.41 | 43.60 | 0.20 | 0.20 | 44.31 | 44.23 | 2.29 | 0.08 |
| CB-S11A | 50.41 | 45.00 | 0.25 | 0.25 | 45.44 | 45.28 | 3.20 | 0.16 |
| CB-S11B | 50.41 | 44.54 | 0.25 | 0.25 | 44.98 | 44.82 | 3.20 | 0.16 |
| CB-S12 | 47.50 | 44.00 | 0.90 | 1.90 | 46.24 | 46.22 | 1.08 | 0.02 |
| EX CB-B1 | 56.00 | 44.73 | 0.00 | 8.60 | 53.44 | 53.32 | 2.74 | 0.12 |
| EX CB-E4 | 47.30 | 38.21 | 8.30 | 8.30 | 47.64 | 47.30 | 4.70 | 0.34 |
| EX CB-E6A | 42.78 | 37.06 | 0.92 | 0.92 | 42.14 | 42.13 | 0.52 | 0.00 |
| EX CB-E6B | 41.10 | 36.37 | 3.68 | 3.68 | 41.17 | 41.10 | 2.08 | 0.07 |
| EX CB-E6C | 38.00 | 35.95 | 0.92 | 0.92 | 38.00 | 38.00 | 0.52 | 0.00 |
| EX CB-E6D | 37.00 | 32.97 | 3.68 | 3.68 | 35.50 | 35.49 | 0.58 | 0.01 |
| EX CB-M1 | 39.20 | 35.83 | 9.80 | 9.80 | 39.68 | 39.20 | 5.55 | 0.48 |
| EX CB-M2 | 39.70 | 32.70 | 0.70 | 86.50 | 35.49 | 34.56 | 7.74 | 0.93 |

APPENDIX A - FOR REFERENCE ONLY

# Active Scenario: 10 yr - Proposed

## FlexTable: Conduit Table

| Label | Start Node | Stop Node | Manning's n | Diameter (in) | Flow (cfs) | Length (Unified) (ft) | Slope (Calculated) (ft/ft) | Capacity (Full Flow) (cfs) | Hydraulic Grade Line (In) (ft) | Hydraulic Grade Line (Out) (ft) | Velocity (ft/s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CO-15 | CB-S1 | MH-1 | 0.012 | 24.0 | 6.10 | 9.4 | 0.011 | 25.26 | 47.55 | 47.54 | 1.94 |
| CO-25 | MH-2 | CB-S1 | 0.012 | 24.0 | 4.50 | 223.4 | 0.016 | 30.81 | 46.08 | 46.00 | 1.43 |
| CO-35 | CB-S4 | MH-2 | 0.012 | 6.0 | 0.50 | 21.9 | 0.157 | 2.41 | 46.76 | 46.10 | 9.67 |
| CO-45 | CB-S2 | MH-2 | 0.012 | 24.0 | 4.00 | 33.8 | 0.016 | 30.68 | 46.11 | 46.10 | 1.27 |
| CO-55 | CB-S5 | MH-10 | 0.012 | 4.0 | 0.50 | 30.7 | 0.119 | 0.71 | 47.97 | 46.16 | 5.73 |
| CO-65 | CB-S3 | CB-S2 | 0.012 | 18.0 | 0.70 | 75.3 | 0.018 | 15.18 | 46.13 | 46.13 | 0.40 |
| CO-75 | MH-10 | CB-S2 | 0.012 | 18.0 | 2.90 | 5.7 | 0.016 | 14.26 | 46.14 | 46.13 | 1.64 |
| CO-77 | MH-3 | MH-10 | 0.012 | 18.0 | 2.40 | 63.6 | 0.015 | 14.06 | 46.19 | 46.16 | 1.36 |
| CO-85 | CB-S6 | MH-3 | 0.012 | 6.0 | 0.50 | 28.2 | 0.074 | 1.66 | 46.76 | 46.21 | 7.39 |
| CO-95 | CB-S12 | MH-3 | 0.012 | 18.0 | 1.90 | 17.7 | 0.016 | 14.30 | 46.22 | 46.21 | 1.08 |
| CO-105 | MH-4 | CB-S12 | 0.012 | 8.0 | 1.00 | 23.8 | 0.034 | 2.42 | 46.37 | 46.24 | 2.86 |
| CO-115 | CB-S7 | MH-4 | 0.012 | 6.0 | 0.50 | 20.2 | -0.021 | 0.88 | 46.61 | 46.48 | 2.55 |
| CO-125 | CB-S8 | MH-4 | 0.012 | 4.0 | 0.50 | 45.9 | 0.035 | 0.38 | 49.17 | 46.48 | 5.73 |
| CO-135 | CB-S11A | MH-5 | 0.012 | 4.0 | 0.25 | 2.5 | 0.020 | 0.29 | 45.28 | 45.20 | 3.74 |
| CO-145 | MH-5 | MH-6 | 0.010 | 12.0 | 0.25 | 16.5 | 0.028 | 7.73 | 44.83 | 44.53 | 4.51 |
| CO-155 | CB-S11B | MH-6 | 0.012 | 4.0 | 0.25 | 2.5 | 0.020 | 0.29 | 44.82 | 44.74 | 3.74 |
| CO-165 | MH-6 | MH-7 | 0.012 | 12.0 | 0.50 | 32.0 | 0.028 | 6.48 | 44.45 | 44.06 | 4.88 |
| CO-175 | CB-S10A | MH-7 | 0.012 | 4.0 | 0.20 | 2.5 | 0.020 | 0.29 | 44.09 | 44.06 | 2.29 |
| CO-185 | MH-7 | MH-8 | 0.012 | 12.0 | 0.70 | 44.6 | 0.028 | 6.49 | 44.05 | 44.04 | 5.40 |
| CO-195 | CB-S10B | MH-8 | 0.012 | 4.0 | 0.20 | 19.8 | 0.064 | 0.52 | 44.23 | 44.04 | 2.29 |
| CO-205 | MH-8 | CB-S9 | 0.012 | 12.0 | 0.90 | 47.1 | 0.064 | 9.74 | 44.03 | 44.00 | 1.15 |
| CO-215 | CB-S9 | MH-9 | 0.012 | 18.0 | 1.10 | 14.9 | 0.080 | 32.18 | 44.32 | 44.32 | 0.62 |
| CO-220 | MH-10 | EX CB-B1 | 0.010 | 24.0 | 8.60 | 7.2 | 0.006 | 21.96 | 53.45 | 53.44 | 2.74 |
| CO-225 | CB-B1 | MH-10 | 0.012 | 24.0 | 8.60 | 31.9 | 0.005 | 17.36 | 53.52 | 53.48 | 2.74 |
| CO-230 | MH-11 | CB-B1 | 0.012 | 24.0 | 7.24 | 163.4 | 0.007 | 20.47 | 51.14 | 51.00 | 2.30 |
| CO-235 | MH-12 | MH-11 | 0.010 | 24.0 | 5.87 | 90.0 | 0.007 | 24.40 | 51.24 | 51.20 | 1.87 |
| CO-240 | CB-N12 | MH-12 | 0.012 | 24.0 | 4.50 | 22.7 | 0.015 | 30.41 | 51.29 | 51.29 | 1.43 |
| EX CO-105 | EX MH-10 | EX MH-11 | 0.012 | 36.0 | 49.60 | 89.4 | 0.014 | 84.41 | 52.99 | 52.56 | 7.02 |
| EX CO-115 | EX MH-11 | EX MH-12 | 0.012 | 36.0 | 49.90 | 101.8 | 0.014 | 85.63 | 51.95 | 51.46 | 7.06 |

# Active Scenario: 10 yr - Proposed

## FlexTable: Conduit Table

| Label | Start Node | Stop Node | Manning's n | Diameter (in) | Flow (cfs) | Length (Unified) (ft) | Slope (Calculated) (ft/ft) | Capacity (Full Flow) (cfs) | Hydraulic Grade Line (In) (ft) | Hydraulic Grade Line (Out) (ft) | Velocity (ft/s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| EX CO-125 | EX MH-12 | EX MH-13 | 0.012 | 36.0 | 49.90 | 142.3 | 0.019 | 100.08 | 50.76 | 50.08 | 7.06 |
| EX CO-135 | EX MH-13 | EX MH-14 | 0.012 | 36.0 | 49.90 | 16.2 | 0.002 | 35.87 | 49.85 | 49.77 | 7.06 |
| EX CO-145 | EX MH-14 | EX MH-15 | 0.012 | 36.0 | 49.90 | 239.4 | 0.003 | 39.63 | 49.54 | 48.40 | 7.06 |
| EX CO-155A | EX MH-15 | MH-1 | 0.012 | 36.0 | 58.20 | 25.0 | 0.003 | 40.84 | 47.70 | 47.54 | 8.23 |
| EX CO-155B | MH-1 | EX MH-16 | 0.012 | 36.0 | 64.30 | 183.3 | 0.003 | 39.58 | 46.65 | 45.20 | 9.10 |
| EX CO-165A | EX MH-16 | MH-9 | 0.012 | 36.0 | 65.70 | 129.0 | 0.003 | 39.72 | 45.39 | 44.32 | 9.29 |
| EX CO-165B | MH-9 | EX MH-17 | 0.012 | 36.0 | 66.80 | 142.6 | 0.003 | 39.22 | 43.35 | 42.13 | 9.45 |
| EX CO-175 | EX MH-17 | EX MH-18 | 0.012 | 42.0 | 67.72 | 127.3 | 0.003 | 59.55 | 41.59 | 41.10 | 7.04 |
| EX CO-185 | EX MH-18 | EX MH-19 | 0.012 | 42.0 | 71.40 | 155.2 | 0.003 | 59.33 | 40.50 | 39.84 | 7.42 |
| EX CO-195 | EX MH-19 | EX CB-M2 | 0.012 | 42.0 | 82.12 | 96.5 | 0.032 | 195.30 | 38.63 | 34.50 | 19.42 |
| EX CO-205 | EX CB-M2 | O-1 | 0.013 |  | 86.50 | 163.2 | 0.009 | 194.59 | 34.56 | 32.64 | 10.42 |
| EX CO-B1 | EX CB-B1 | EX MH-10 | 0.012 | 24.0 | 8.60 | 19.6 | 0.005 | 17.49 | 53.32 | 53.30 | 2.74 |
| EX CO-E4 | EX CB-E4 | EX MH-15 | 0.012 | 18.0 | 8.30 | 5.8 | 0.023 | 17.10 | 48.43 | 48.40 | 4.70 |
| EX CO-E6A | EX CB-E6A | EX MH-17 | 0.012 | 18.0 | 0.92 | 22.6 | 0.019 | 15.52 | 42.13 | 42.13 | 0.52 |
| EX CO-E6B | EX CB-E6B | EX MH-18 | 0.012 | 18.0 | 3.68 | 10.7 | 0.010 | 11.55 | 41.11 | 41.10 | 2.08 |
| EX CO-E6C | EX CB-E6C | EX MH-19 | 0.012 | 18.0 | 0.92 | 16.7 | 0.009 | 10.77 | 39.84 | 39.84 | 0.52 |
| EX CO-E6D | EX CB-E6D | EX CB-M2 | 0.012 | 36.0 | 3.68 | 30.1 | 0.009 | 68.42 | 35.49 | 35.49 | 5.15 |
| EX CO-M1 | EX CB-M1 | EX MH-19 | 0.012 | 18.0 | 9.80 | 16.0 | 0.002 | 4.93 | 39.96 | 39.84 | 5.55 |

APPENDIX A - FOR REFERENCE ONLY

# Active Scenario: 10 yr - Proposed

## FlexTable: Manhole Table

| Label | Elevation (Ground) (ft) | Elevation (Rim) (ft) | Elevation (Invert) (ft) | Diameter (in) | Flow (Total Out) (cfs) | Headloss Coefficient (Standard) | Hydraulic Grade Line (In) (ft) | Hydraulic Grade Line (Out) (ft) | Local Fixed Flow (cfs) |
|---|---|---|---|---|---|---|---|---|---|
| EX MH-10 | 53.30 | 53.30 | 44.53 | 48.0 | 49.60 | 0.800 | 53.60 | 52.99 | 41.00 |
| EX MH-11 | 52.60 | 52.60 | 43.21 | 48.0 | 49.90 | 0.800 | 52.56 | 51.95 | 0.30 |
| EX MH-12 | 53.00 | 53.00 | 41.68 | 48.0 | 49.90 | 0.900 | 51.46 | 50.76 | 0.00 |
| EX MH-13 | 50.50 | 50.50 | 38.84 | 36.0 | 49.90 | 0.300 | 50.08 | 49.85 | 0.00 |
| EX MH-14 | 50.00 | 50.00 | 38.80 | 48.0 | 49.90 | 0.300 | 49.77 | 49.54 | 0.00 |
| EX MH-15 | 48.40 | 48.40 | 38.08 | 36.0 | 58.20 | 0.800 | 48.55 | 47.70 | 0.00 |
| EX MH-16 | 45.20 | 45.20 | 37.45 | 48.0 | 65.70 | 0.050 | 45.27 | 45.20 | 1.40 |
| EX MH-17 | 42.80 | 42.80 | 36.64 | 48.0 | 67.72 | 0.700 | 42.13 | 41.59 | 0.00 |
| EX MH-18 | 42.20 | 42.20 | 36.26 | 48.0 | 71.40 | 0.700 | 41.10 | 40.50 | 0.00 |
| EX MH-19 | 41.50 | 41.50 | 35.80 | 48.0 | 82.12 | 0.800 | 39.84 | 38.63 | 0.00 |
| MH-1 | 47.54 | 47.54 | 38.00 | 48.0 | 64.30 | 0.700 | 47.55 | 46.65 | 0.00 |
| MH-2 | 48.50 | 48.50 | 42.13 | 36.0 | 4.50 | 0.700 | 46.10 | 46.08 | 0.00 |
| MH-3 | 47.75 | 47.75 | 43.72 | 36.0 | 2.40 | 0.700 | 46.21 | 46.19 | 0.00 |
| MH-4 | 47.75 | 47.75 | 44.81 | 48.0 | 1.00 | 0.800 | 46.48 | 46.37 | 0.00 |
| MH-5 | 49.91 | 49.91 | 44.62 | 36.0 | 0.25 | 0.900 | 44.89 | 44.83 | 0.00 |
| MH-6 | 49.91 | 49.91 | 44.16 | 36.0 | 0.50 | 0.700 | 44.53 | 44.45 | 0.00 |
| MH-7 | 48.38 | 48.38 | 43.26 | 36.0 | 0.70 | 0.700 | 44.06 | 44.05 | 0.00 |
| MH-8 | 47.80 | 47.80 | 42.00 | 36.0 | 0.90 | 0.700 | 44.04 | 44.03 | 0.00 |
| MH-9 | 45.00 | 45.00 | 37.06 | 48.0 | 66.80 | 0.700 | 44.32 | 43.35 | 0.00 |
| MH-10 | 47.52 | 47.52 | 42.75 | 36.0 | 2.90 | 0.700 | 46.16 | 46.14 | 0.00 |
| MH-10 | 53.65 | 53.65 | 44.77 | 36.0 | 8.60 | 0.300 | 53.48 | 53.45 | 0.00 |
| MH-11 | 53.50 | 53.50 | 46.07 | 48.0 | 7.24 | 0.700 | 51.20 | 51.14 | 1.37 |
| MH-12 | 55.60 | 55.60 | 46.69 | 48.0 | 5.87 | 0.900 | 51.29 | 51.24 | 1.37 |

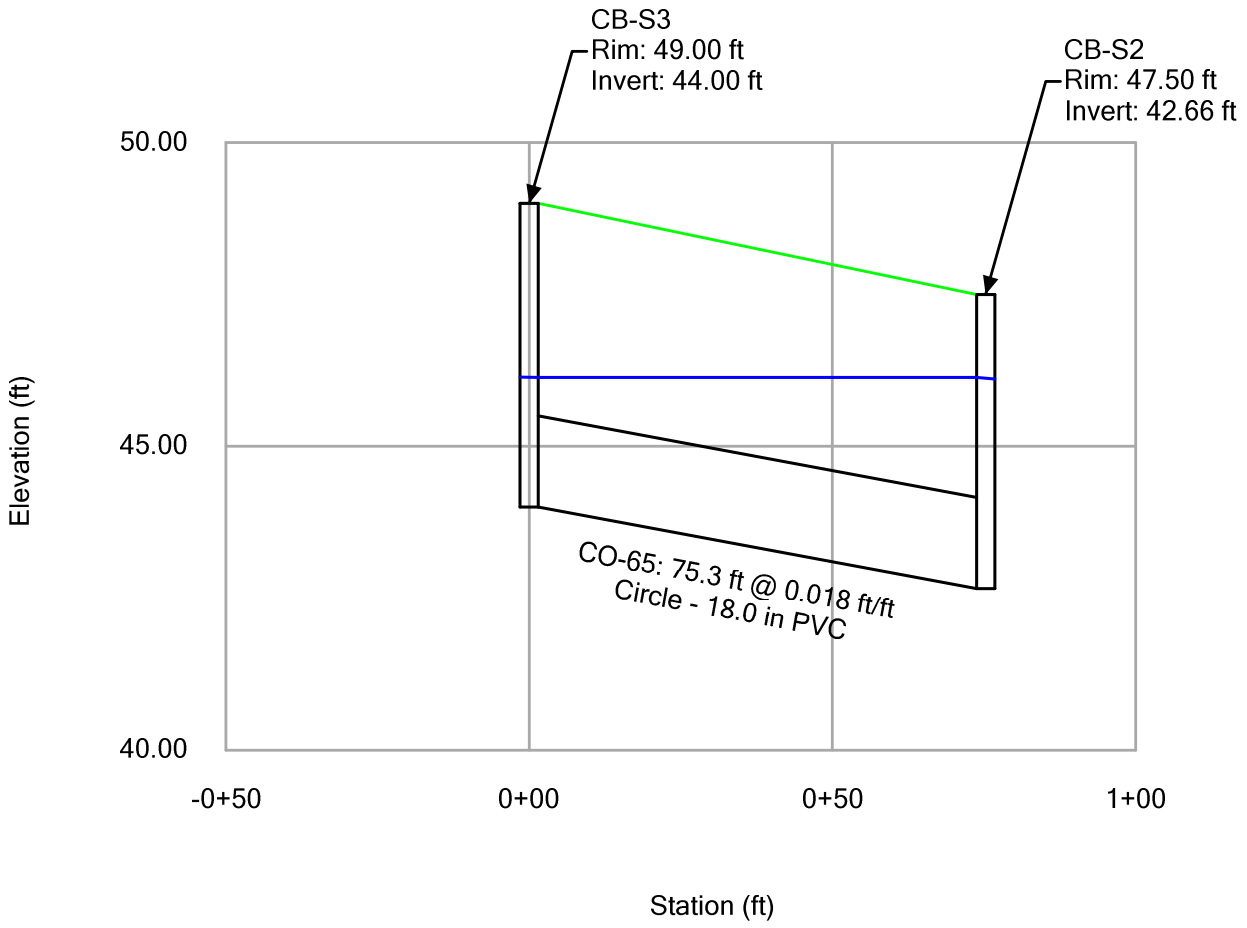
APPENDIX A - FOR REFERENCE ONLY

# Active Scenario: 10 yr - Proposed
# FlexTable: Outfall Table

| Label | Elevation (Ground) (ft) | Set Rim to Ground Elevation | Elevation (Invert) (ft) | Flow (Total Out) (cfs) | Boundary Condition Type |
|---|---|---|---|---|---|
| O-1 | 38.00 | True | 31.24 | 86.50 | Free Outfall |

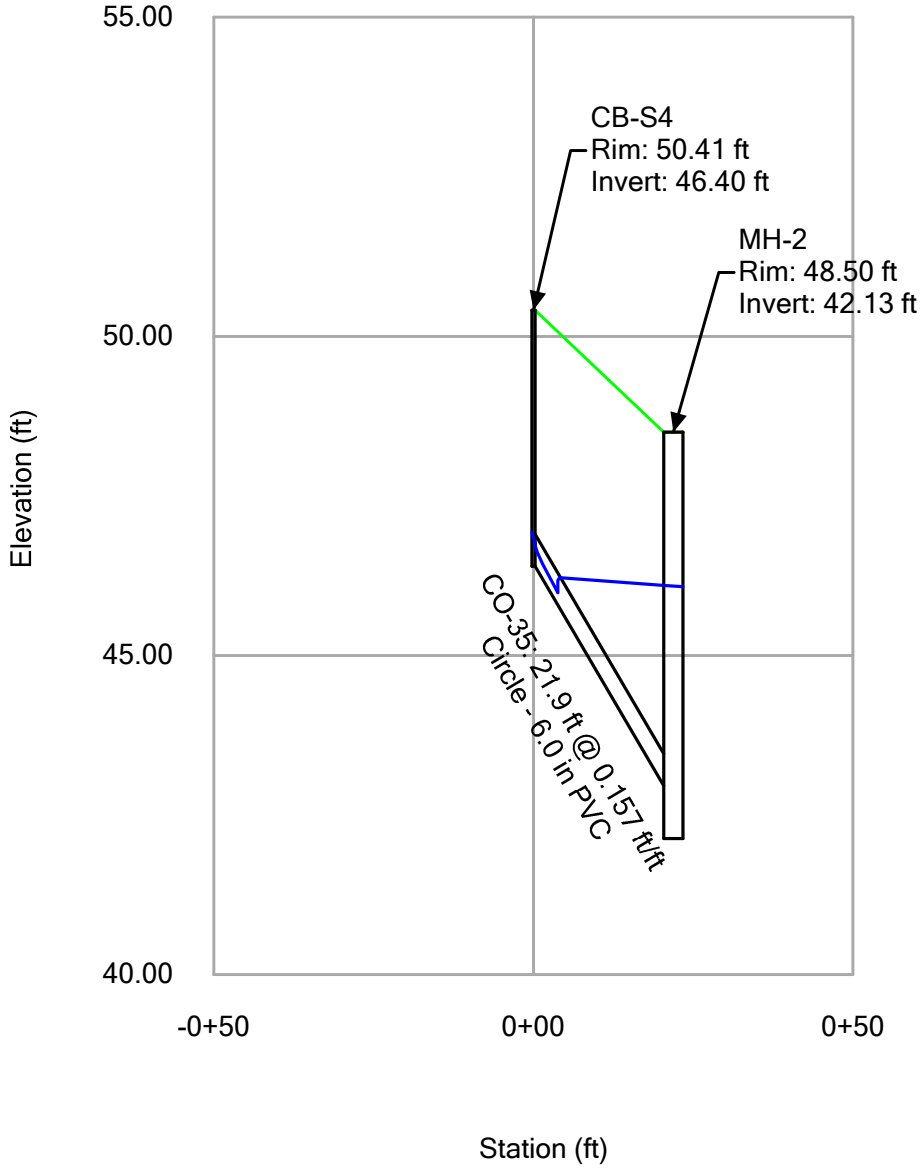
APPENDIX A - FOR REFERENCE ONLY

# Active Scenario: 10 yr - Proposed
# Profile Report
# Engineering Profile - CB-S3 TO CB-S2 (4302 StormCAD - Proposed.stsw)



APPENDIX A - FOR REFERENCE ONLY

# Active Scenario: 10 yr - Proposed
# Profile Report
# Engineering Profile - CB-S4 TO MH-2 (4302 StormCAD - Proposed.stsw)

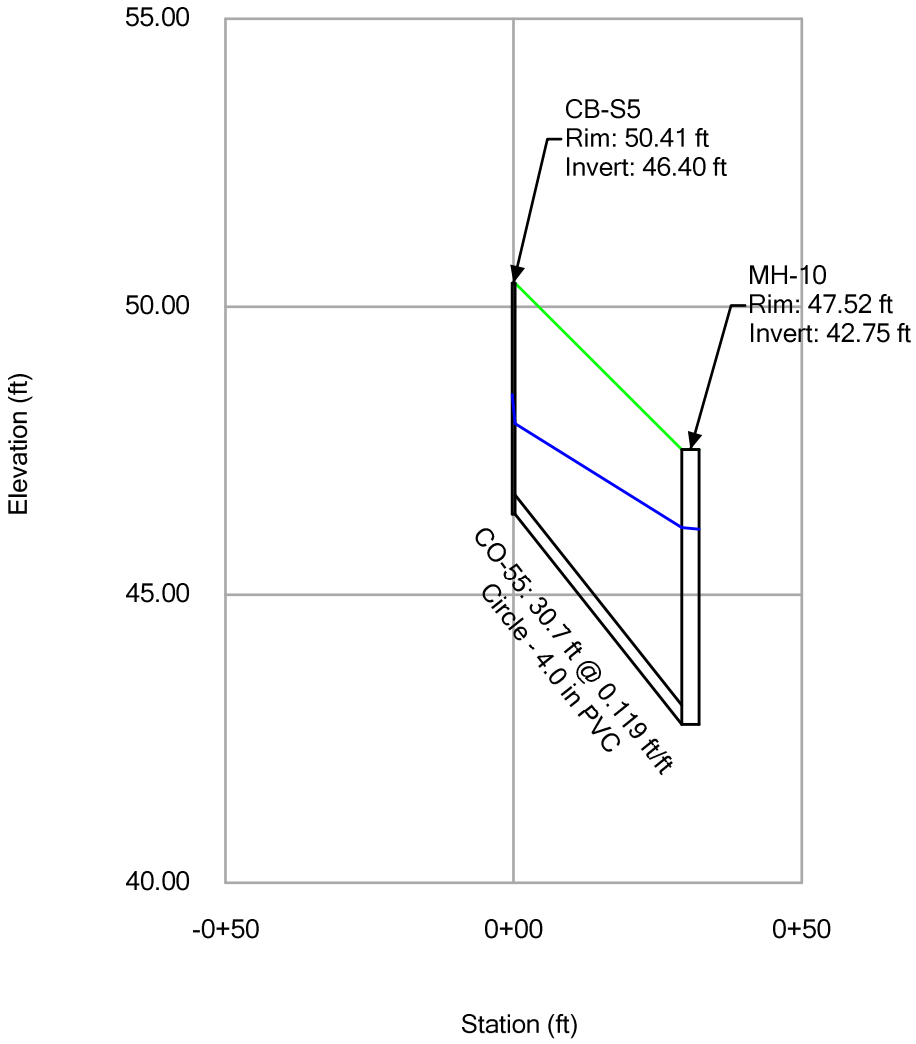


APPENDIX A - FOR REFERENCE ONLY

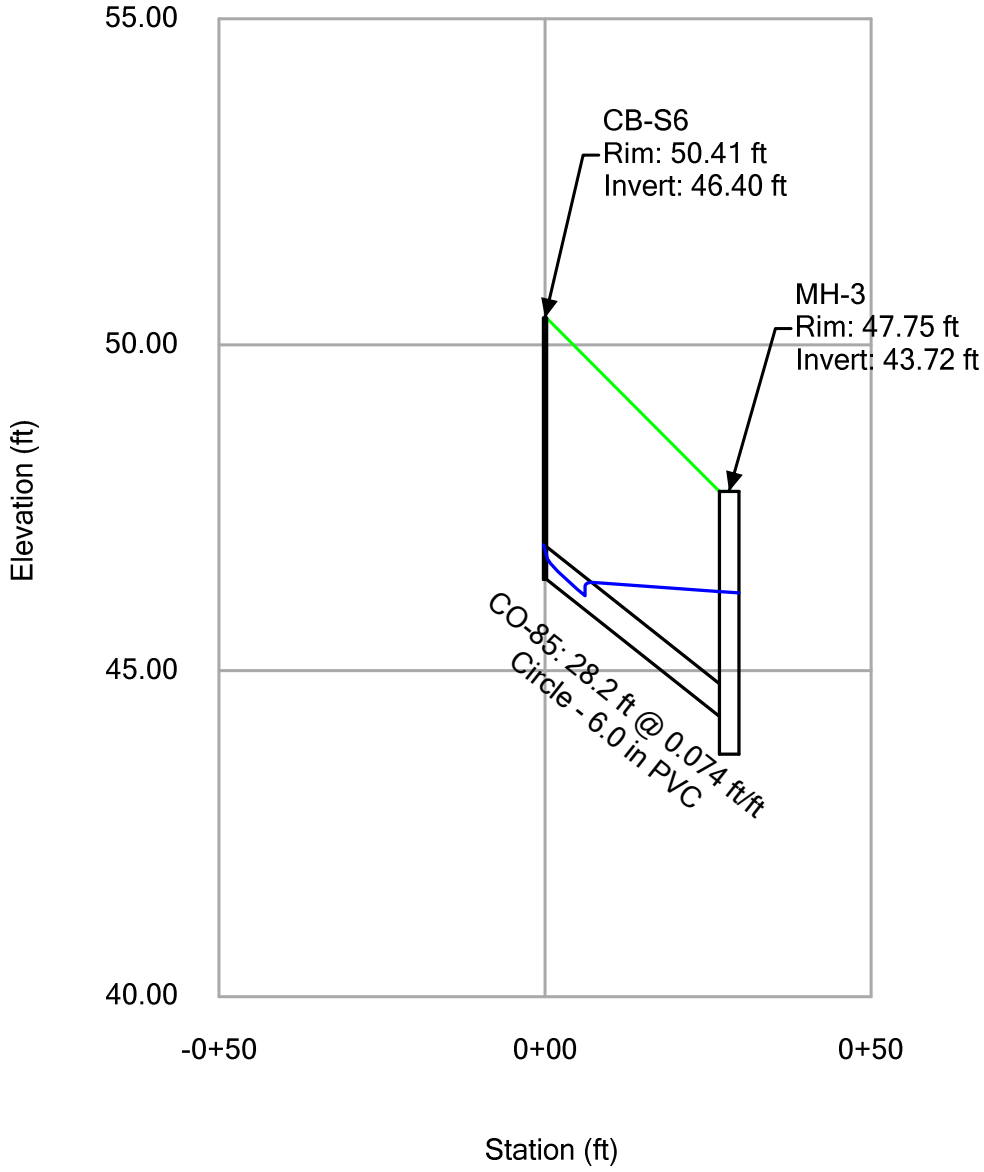
# Active Scenario: 10 yr - Proposed

# Profile Report

# Engineering Profile - CB-S5 TO MH-10 (4302 StormCAD - Proposed.stsw)

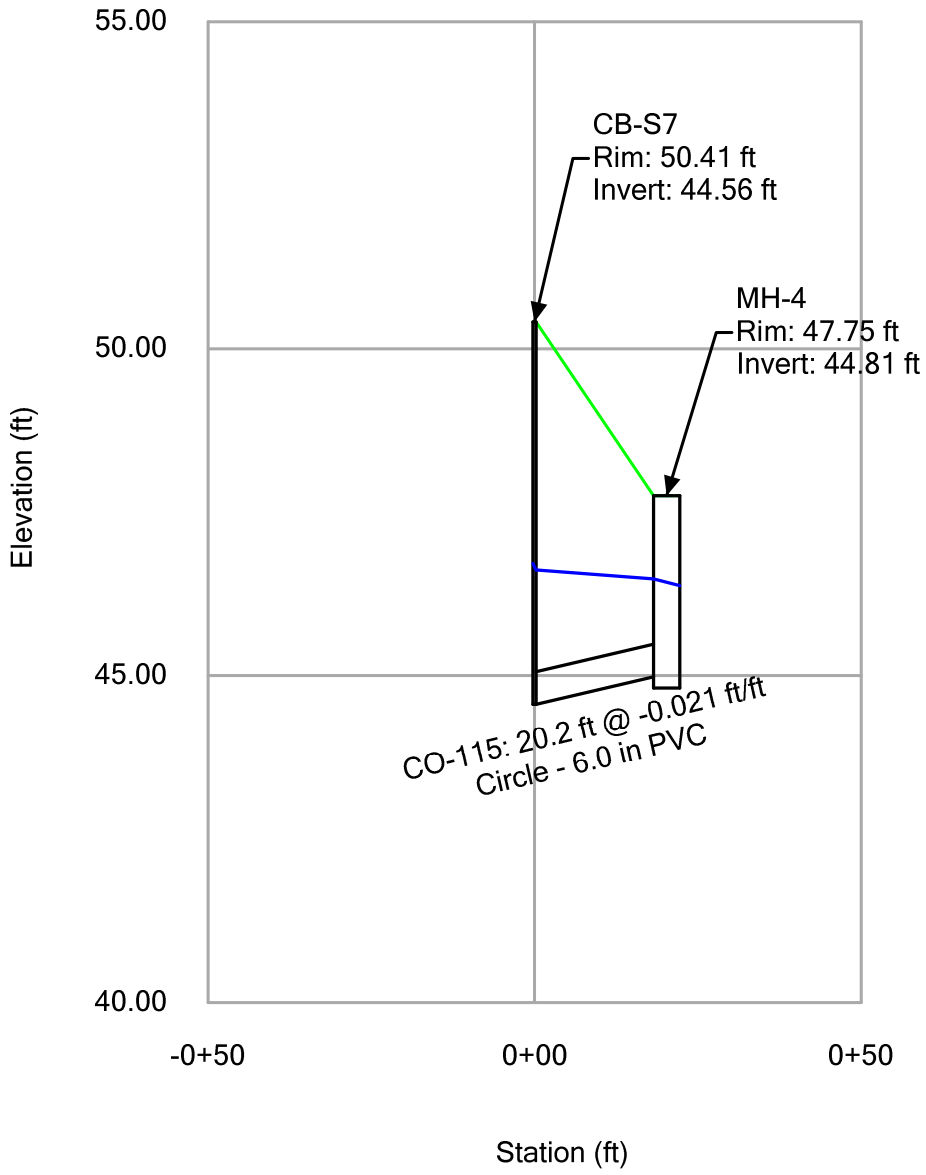


# Active Scenario: 10 yr - Proposed
## Profile Report
## Engineering Profile - CB-S6 TO MH-3 (4302 StormCAD - Proposed.stsw)



APPENDIX A - FOR REFERENCE ONLY

# Active Scenario: 10 yr - Proposed
# Profile Report
# Engineering Profile - CB-S7 TO MH-4 (4302 StormCAD - Proposed.stsw)

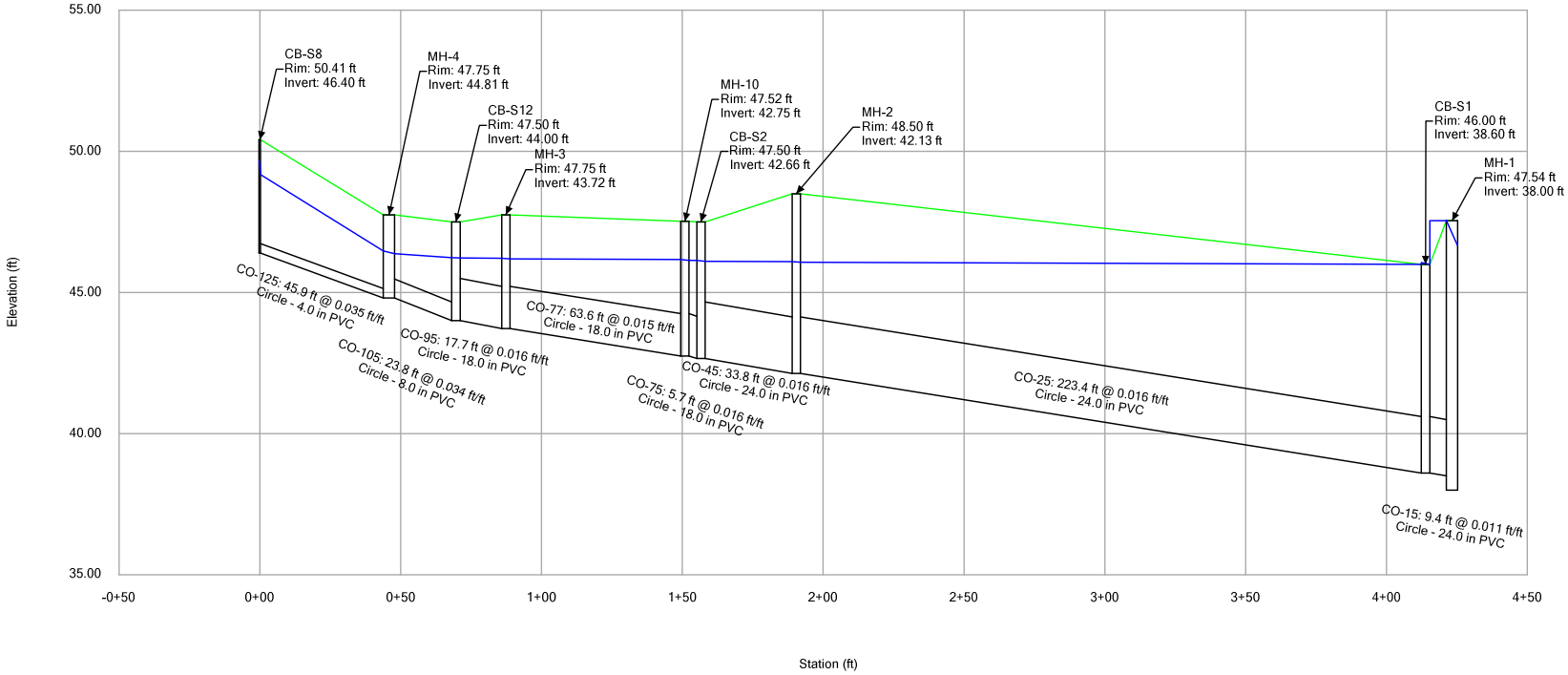


APPENDIX A - FOR REFERENCE ONLY

# Active Scenario: 10 yr - Proposed

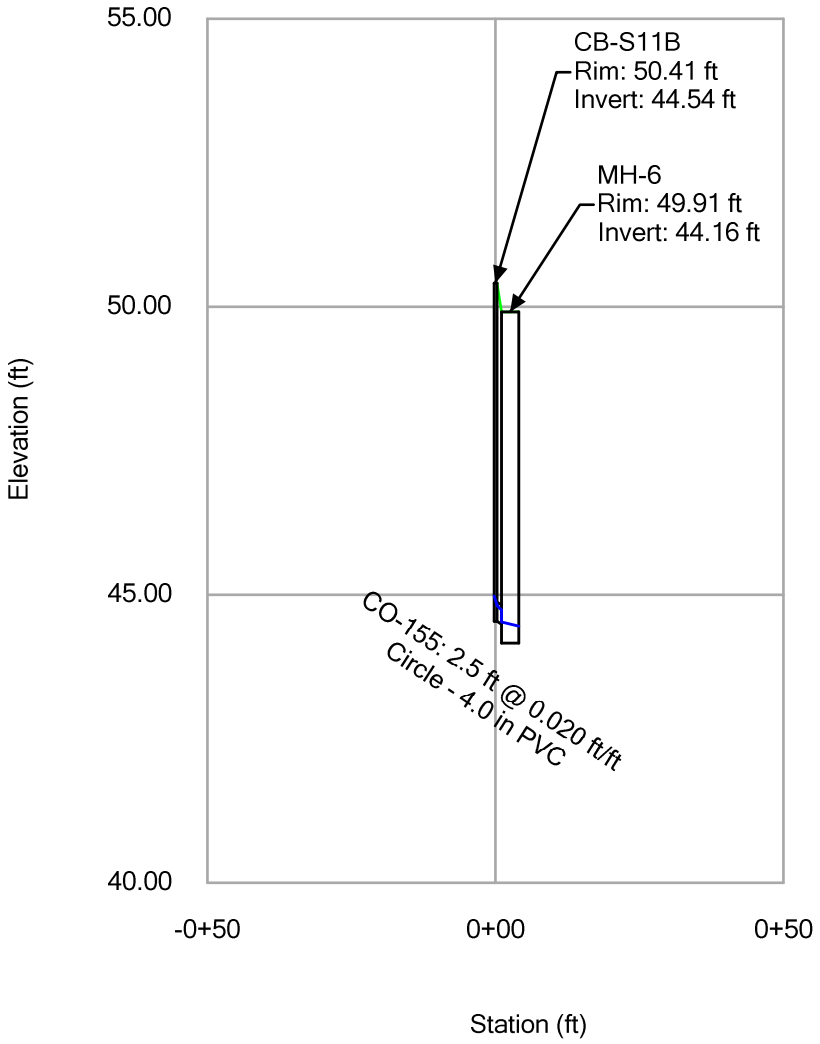
## Profile Report

## Engineering Profile - CB-S8 TO MH-1 (4302 StormCAD - Proposed.stsw)



APPENDIX A - FOR REFERENCE ONLY

# Active Scenario: 10 yr - Proposed
# Profile Report
# Engineering Profile - CB-S11B TO MH-6 (4302 StormCAD - Proposed.stsw)

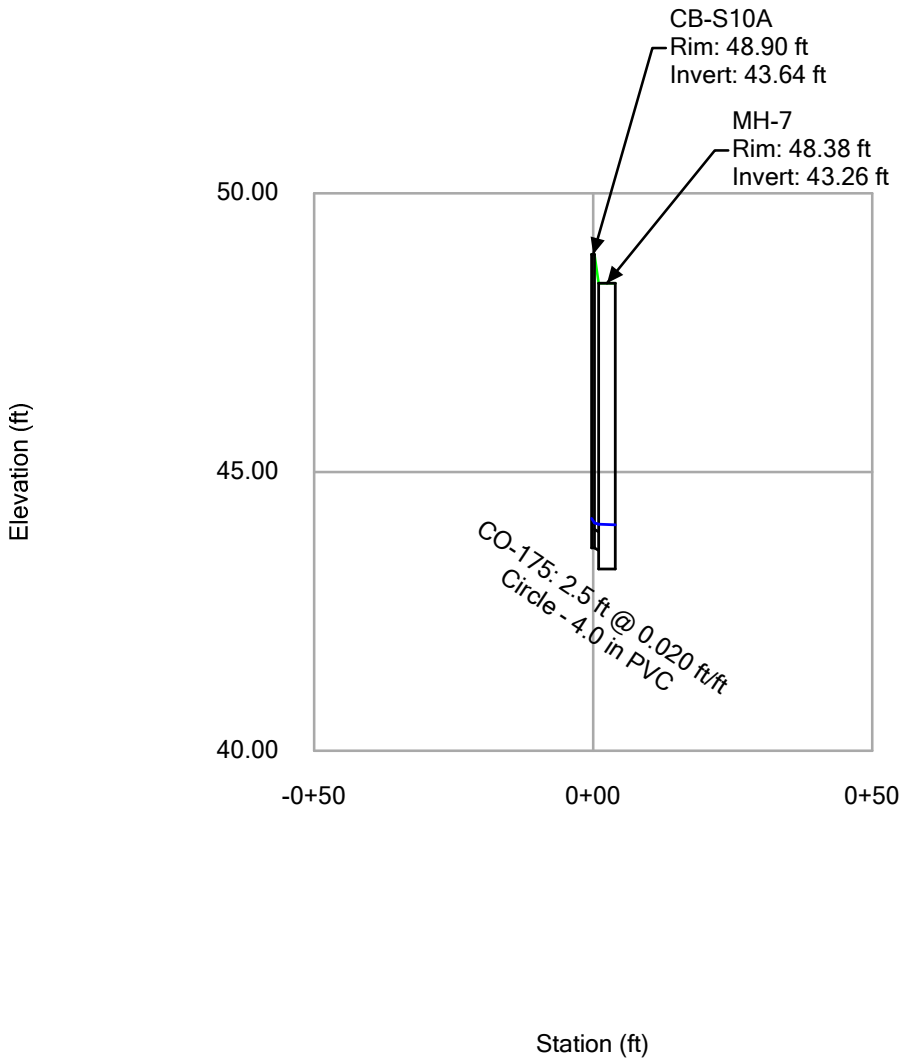


APPENDIX A - FOR REFERENCE ONLY

# Active Scenario: 10 yr - Proposed

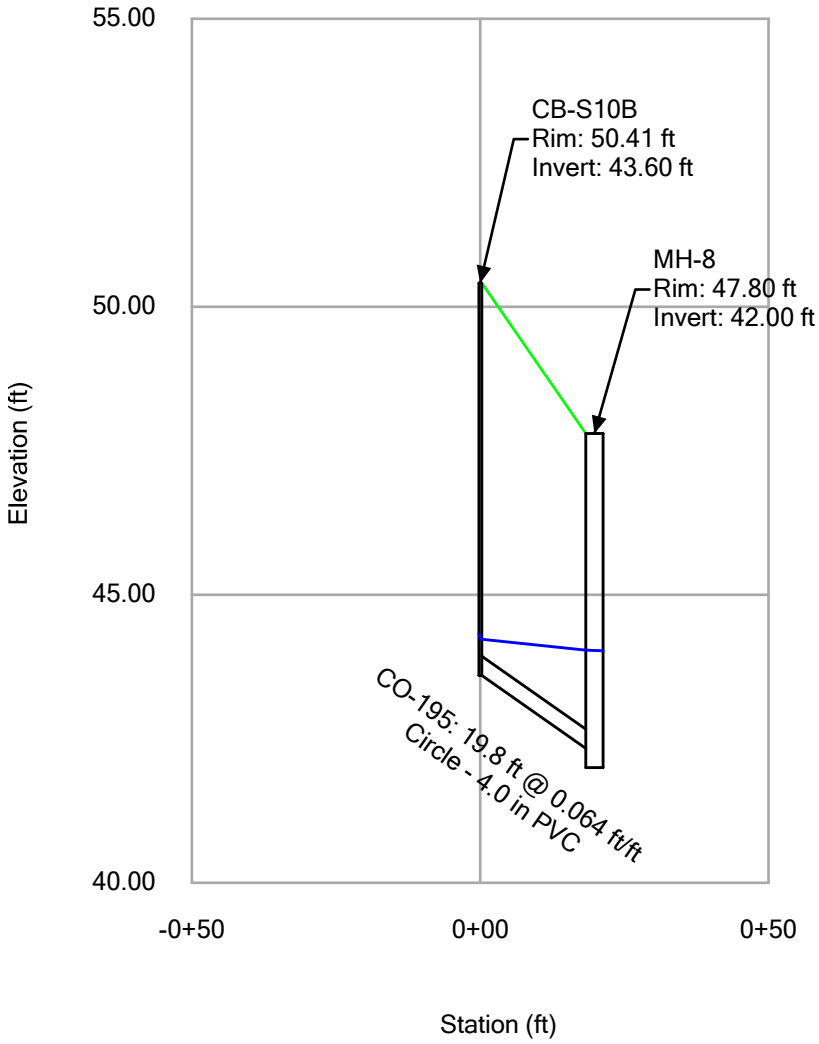
## Profile Report

## Engineering Profile - CB-S10A TO MH-7 (4302 StormCAD - Proposed.stsw)



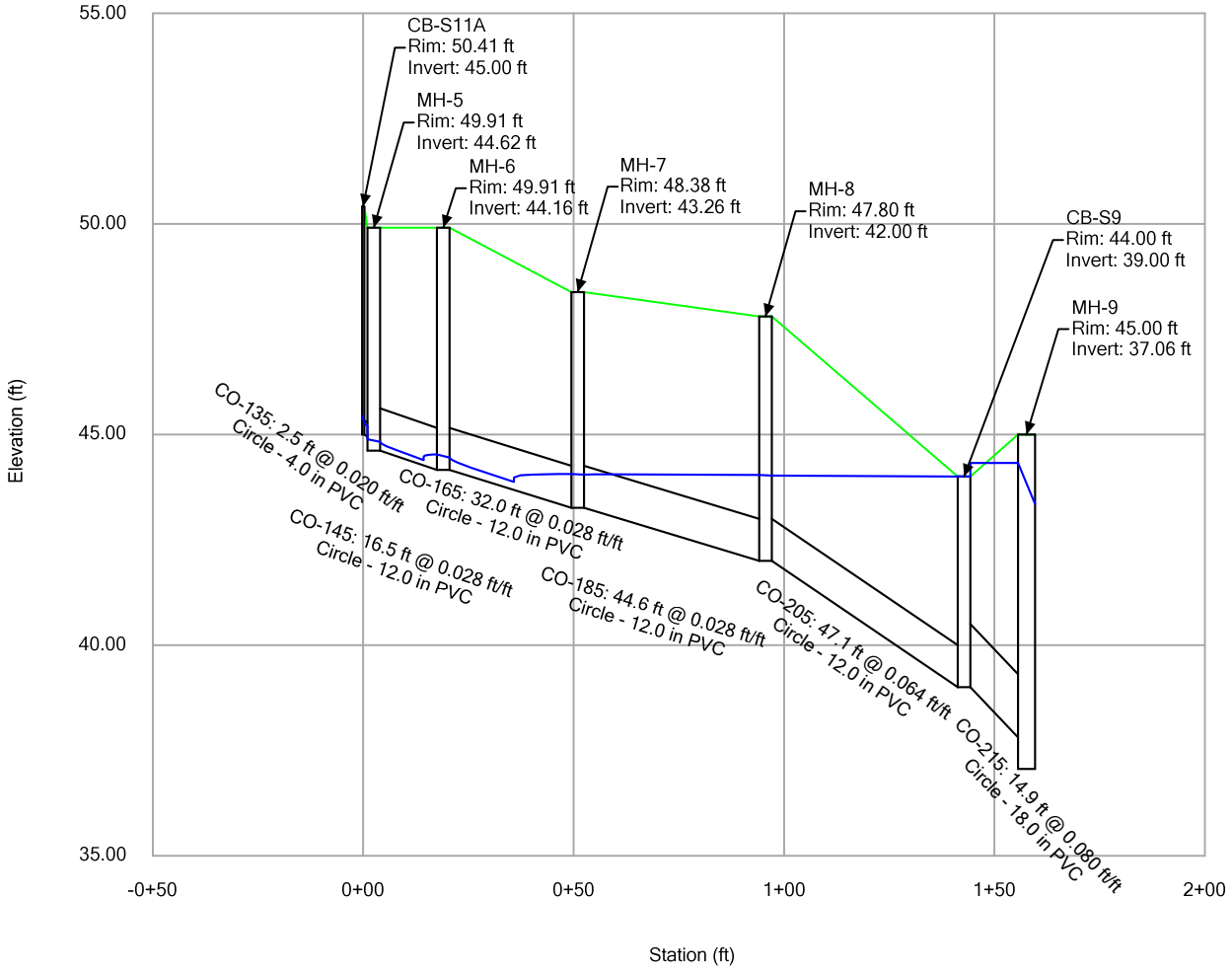
APPENDIX A - FOR REFERENCE ONLY

# Active Scenario: 10 yr - Proposed
# Profile Report
# Engineering Profile - CB-S10B TO MH-8 (4302 StormCAD - Proposed.stsw)



APPENDIX A - FOR REFERENCE ONLY

# Active Scenario: 10 yr - Proposed
# Profile Report
# Engineering Profile - CB-S11A TO MH-9 (4302 StormCAD - Proposed.stsw)

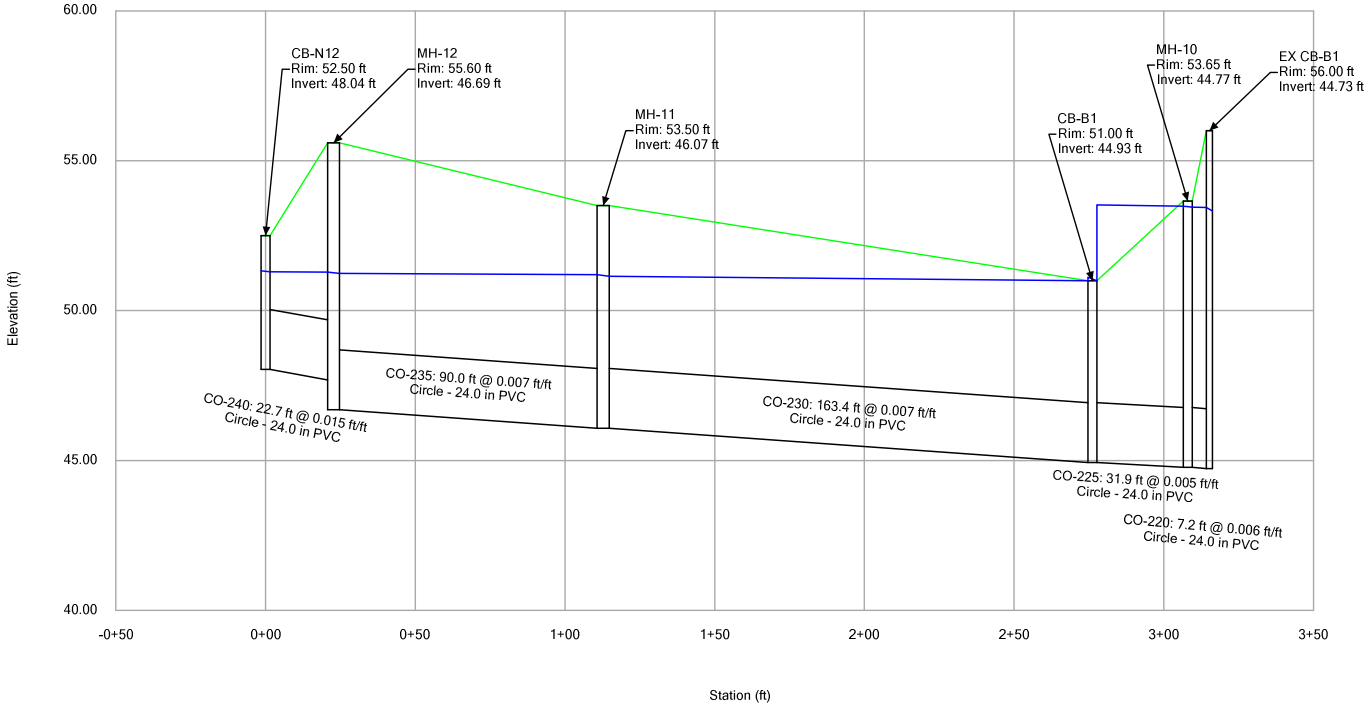


APPENDIX A - FOR REFERENCE ONLY

# Active Scenario: 10 yr - Proposed

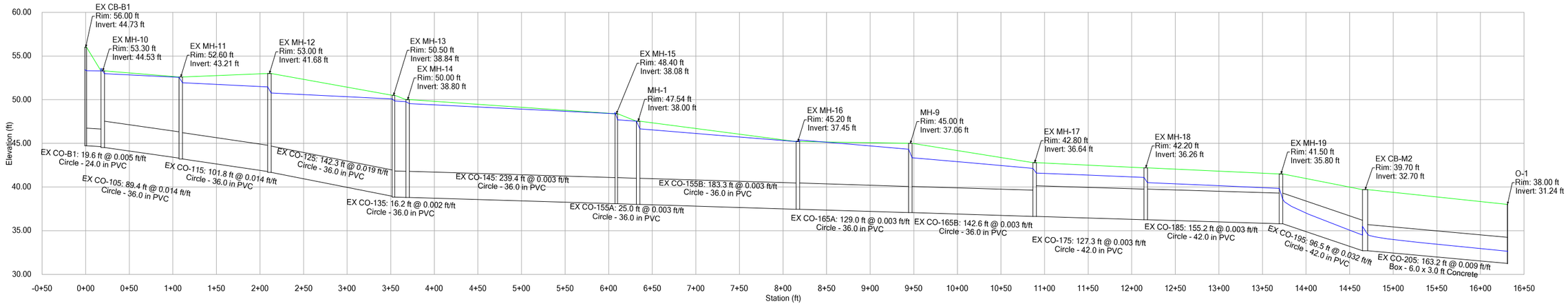
## Profile Report

## Engineering Profile - CB-N12 TO EX CB-B1 (4302 StormCAD - Proposed.stsw)



APPENDIX A - FOR REFERENCE ONLY

# Active Scenario: 10 yr - Proposed
# Profile Report
# Engineering Profile - EX CB-B1 TO O-1 (4302 StormCAD - Proposed.stsw)



APPENDIX A - FOR REFERENCE ONLY

# APPENDIX B

## STORMWATER STORAGE WAIVER /
## PROPOSED DRAINAGE IMPROVEMENTS EXHIBIT

PRINCESS

APPENDIX A - FOR REFERENCE ONLY

10/22

# Request for Stormwater Storage Waiver

292-SA-2007

City of Scottsdale Case Numbers:

___ - PA - ___ ___ - ZN - ___ ___ - UP - ___ ___ - DR - ___ ___ - PP - ___ PC# 6332-07-7

The applicant/developer must complete and submit this form to the city for processing and obtain approval of waiver request *before submitting Improvement plans.* Denial of the waiver may require the developer to submit a revised site plan to the Development Review Board.

Date 7/14/08 Project Name Fairmont Scottsdale Princess Resort

Project Location 7575 East Princess Drive Scottsdale, AZ 85255

Applicant Contact John Bulka Company Name Wood Patel & Associates

Phone 480-834-3300 Fax 480-834-3320 E-mail jbulka@woodpatel.com

Address 1855 N. Stapley Mesa, AZ 85203

**Waiver Criteria**

A waiver is an intentional relinquishment of a claim or right. A project must meet at least one of six criteria listed below for the city to consider waiving some or all required stormwater storage. Check the applicable box and provide a signed engineering report and supporting engineering analyses that demonstrate the project meets the criteria *and* that the effect of a waiver will not increase the potential for flooding on any property.

☐ 1. The runoff for the project has been included in a storage facility at another location. The applicant must demonstrate that the stormwater storage facility was specifically designed to accommodate runoff from the subject property and that the runoff will be conveyed to this location through an adequately designed conveyance facility.

☒ 2. The development is adjacent to a watercourse or channel that an engineering analysis shows is designed and constructed to handle the additional runoff without increasing the potential for flood damage to the subject property or to any other property.

☐ 3. The development is on a parcel less than one-half acre in size in an area where the engineering analysis demonstrates there is no significant increase in potential for flood damage due to its development.

☐ 4. Stormwater storage requirements conflict with requirements of the Environmentally Sensitive Lands Ordinance (ESLO). The applicant must demonstrate there is no increased potential for flood damage to the subject property or to any other property. Such conflicts with ESLO may include:

- Total land requirements for storage basin, easements, setbacks, and NAOS prevent building allowable footprint per zoning.
- Topography prevents building storage basin.
- Creating a storage facility requires wash modification.
- Instances where the Zoning Administrator cannot allow a modification to ESL requirements.

☐ 5. The project is located within the Downtown Fee Reduction Area as described and approved by City Council Resolution #6238 (see map). The applicant must demonstrate there is no increased potential for flood damage to any property. Even if the project is located in the Downtown area, if the project creates additional potential for increased flood damage, the developer must provide alternative mitigation methods to prevent the damage.

☐ 6. The project is located within a watershed that drains directly to the Salt River Pima-Maricopa Indian Community (SRPMIC) (see map). The project must provide the pre-development peak discharge flow to the SRPMIC, and attenuate flows over and above pre-development.

By signing below, I certify that the stated project meets the waiver criteria selected above as demonstrated by the attached documentation.

John Bulka

Developer or Engineer (circle one)

7-16-08

Date

**Planning & Development Services Department**

7447 E Indian School Road, Suite 105, Scottsdale, AZ 85251 • Phone: 480-312-7000 • Fax: 480-312-7088



SWW

6332-07-7

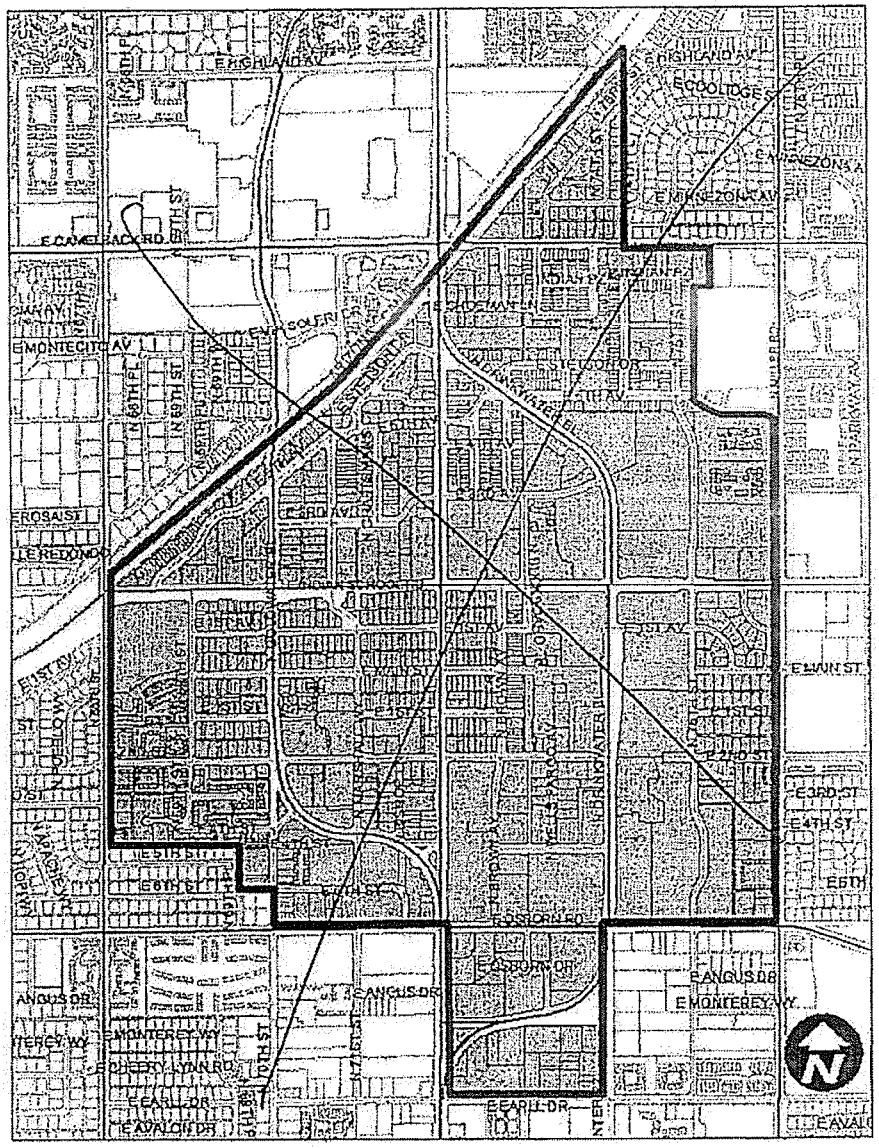
APPENDIX A - FOR REFERENCE ONLY

# Request for Stormwater Storage Waiver

292-SA-2007

City of Scottsdale Case Numbers:

___ - PA - ____ ____ - ZN - ____ ____ - UP - ____ ____ - DR - ____ ____ - PP - ____ PC#_____


E HIGHLAND AV
E COOLIDGE
E MINNEZONA AV
E CAMELBACK RD
E MONTECITO AV
N 68TH ST
N 64TH ST
N 60TH ST
N 56TH ST
N 52ND ST
N 48TH ST
N 44TH ST
N 40TH ST
N 36TH ST
N 32ND ST
N 28TH ST
N 24TH ST
N 20TH ST
N 16TH ST
N 12TH ST
N 8TH ST
N 4TH ST
E ROSA ST
E LEE ST
E WILSHIRE DR
E OSBORN RD
E MCDOWELL RD
E 1ST AV
E 1ST ST
E 2ND ST
E 3RD ST
E 4TH ST
E 5TH ST
E 6TH ST
E 7TH ST
E 8TH ST
E 9TH ST
E 10TH ST
E 11TH ST
E 12TH ST
E 13TH ST
E 14TH ST
E 15TH ST
E 16TH ST
E 17TH ST
E 18TH ST
E 19TH ST
E 20TH ST
E 21ST ST
E 22ND ST
E 23RD ST
E 24TH ST
E 25TH ST
E 26TH ST
E 27TH ST
E 28TH ST
E 29TH ST
E 30TH ST
E 31ST ST
E 32ND ST
E 33RD ST
E 34TH ST
E 35TH ST
E 36TH ST
E 37TH ST
E 38TH ST
E 39TH ST
E 40TH ST
E 41ST ST
E 42ND ST
E 43RD ST
E 44TH ST
E 45TH ST
E 46TH ST
E 47TH ST
E 48TH ST
E 49TH ST
E 50TH ST
E 51ST ST
E 52ND ST
E 53RD ST
E 54TH ST
E 55TH ST
E 56TH ST
E 57TH ST
E 58TH ST
E 59TH ST
E 60TH ST
E 61ST ST
E 62ND ST
E 63RD ST
E 64TH ST
E 65TH ST
E 66TH ST
E 67TH ST
E 68TH ST
E 69TH ST
E 70TH ST
E 71ST ST
E 72ND ST
E 73RD ST
E 74TH ST
E 75TH ST
E 76TH ST
E 77TH ST
E 78TH ST
E 79TH ST
E 80TH ST
E 81ST ST
E 82ND ST
E 83RD ST
E 84TH ST
E 85TH ST
E 86TH ST
E 87TH ST
E 88TH ST
E 89TH ST
E 90TH ST
E 91ST ST
E 92ND ST
E 93RD ST
E 94TH ST
E 95TH ST
E 96TH ST
E 97TH ST
E 98TH ST
E 99TH ST
E 100TH ST
E 101ST ST
E 102ND ST
E 103RD ST
E 104TH ST
E 105TH ST
E 106TH ST
E 107TH ST
E 108TH ST
E 109TH ST
E 110TH ST
E 111TH ST
E 112TH ST
E 113TH ST
E 114TH ST
E 115TH ST
E 116TH ST
E 117TH ST
E 118TH ST
E 119TH ST
E 120TH ST
E 121ST ST
E 122ND ST
E 123RD ST
E 124TH ST
E 125TH ST
E 126TH ST
E 127TH ST
E 128TH ST
E 129TH ST
E 130TH ST
E 131ST ST
E 132ND ST
E 133RD ST
E 134TH ST
E 135TH ST
E 136TH ST
E 137TH ST
E 138TH ST
E 139TH ST
E 140TH ST
E 141ST ST
E 142ND ST
E 143RD ST
E 144TH ST
E 145TH ST
E 146TH ST
E 147TH ST
E 148TH ST
E 149TH ST
E 150TH ST
E 151ST ST
E 152ND ST
E 153RD ST
E 154TH ST
E 155TH ST
E 156TH ST
E 157TH ST
E 158TH ST
E 159TH ST
E 160TH ST
E 161ST ST
E 162ND ST
E 163RD ST
E 164TH ST
E 165TH ST
E 166TH ST
E 167TH ST
E 168TH ST
E 169TH ST
E 170TH ST
E 171ST ST
E 172ND ST
E 173RD ST
E 174TH ST
E 175TH ST
E 176TH ST
E 177TH ST
E 178TH ST
E 179TH ST
E 180TH ST
E 181ST ST
E 182ND ST
E 183RD ST
E 184TH ST
E 185TH ST
E 186TH ST
E 187TH ST
E 188TH ST
E 189TH ST
E 190TH ST
E 191ST ST
E 192ND ST
E 193RD ST
E 194TH ST
E 195TH ST
E 196TH ST
E 197TH ST
E 198TH ST
E 199TH ST
E 200TH ST
E 201ST ST
E 202ND ST
E 203RD ST
E 204TH ST
E 205TH ST
E 206TH ST
E 207TH ST
E 208TH ST
E 209TH ST
E 210TH ST
E 211TH ST
E 212TH ST
E 213TH ST
E 214TH ST
E 215TH ST
E 216TH ST
E 217TH ST
E 218TH ST
E 219TH ST
E 220TH ST
E 221ST ST
E 222ND ST
E 223RD ST
E 224TH ST
E 225TH ST
E 226TH ST
E 227TH ST
E 228TH ST
E 229TH ST
E 230TH ST
E 231ST ST
E 232ND ST
E 233RD ST
E 234TH ST
E 235TH ST
E 236TH ST
E 237TH ST
E 238TH ST
E 239TH ST
E 240TH ST
E 241ST ST
E 242ND ST
E 243RD ST
E 244TH ST
E 245TH ST
E 246TH ST
E 247TH ST
E 248TH ST
E 249TH ST
E 250TH ST
E 251ST ST
E 252ND ST
E 253RD ST
E 254TH ST
E 255TH ST
E 256TH ST
E 257TH ST
E 258TH ST
E 259TH ST
E 260TH ST
E 261ST ST
E 262ND ST
E 263RD ST
E 264TH ST
E 265TH ST
E 266TH ST
E 267TH ST
E 268TH ST
E 269TH ST
E 270TH ST
E 271ST ST
E 272ND ST
E 273RD ST
E 274TH ST
E 275TH ST
E 276TH ST
E 277TH ST
E 278TH ST
E 279TH ST
E 280TH ST
E 281ST ST
E 282ND ST
E 283RD ST
E 284TH ST
E 285TH ST
E 286TH ST
E 287TH ST
E 288TH ST
E 289TH ST
E 290TH ST
E 291ST ST
E 292ND ST
E 293RD ST
E 294TH ST
E 295TH ST
E 296TH ST
E 297TH ST
E 298TH ST
E 299TH ST
E 300TH ST
E 301ST ST
E 302ND ST
E 303RD ST
E 304TH ST
E 305TH ST
E 306TH ST
E 307TH ST
E 308TH ST
E 309TH ST
E 310TH ST
E 311TH ST
E 312TH ST
E 313TH ST
E 314TH ST
E 315TH ST
E 316TH ST
E 317TH ST
E 318TH ST
E 319TH ST
E 320TH ST
E 321ST ST
E 322ND ST
E 323RD ST
E 324TH ST
E 325TH ST
E 326TH ST
E 327TH ST
E 328TH ST
E 329TH ST
E 330TH ST
E 331ST ST
E 332ND ST
E 333RD ST
E 334TH ST
E 335TH ST
E 336TH ST
E 337TH ST
E 338TH ST
E 339TH ST
E 340TH ST
E 341ST ST
E 342ND ST
E 343RD ST
E 344TH ST
E 345TH ST
E 346TH ST
E 347TH ST
E 348TH ST
E 349TH ST
E 350TH ST
E 351ST ST
E 352ND ST
E 353RD ST
E 354TH ST
E 355TH ST
E 356TH ST
E 357TH ST
E 358TH ST
E 359TH ST
E 360TH ST
E 361ST ST
E 362ND ST
E 363RD ST
E 364TH ST
E 365TH ST
E 366TH ST
E 367TH ST
E 368TH ST
E 369TH ST
E 370TH ST
E 371ST ST
E 372ND ST
E 373RD ST
E 374TH ST
E 375TH ST
E 376TH ST
E 377TH ST
E 378TH ST
E 379TH ST
E 380TH ST
E 381ST ST
E 382ND ST
E 383RD ST
E 384TH ST
E 385TH ST
E 386TH ST
E 387TH ST
E 388TH ST
E 389TH ST
E 390TH ST
E 391ST ST
E 392ND ST
E 393RD ST
E 394TH ST
E 395TH ST
E 396TH ST
E 397TH ST
E 398TH ST
E 399TH ST
E 400TH ST
E 401ST ST
E 402ND ST
E 403RD ST
E 404TH ST
E 405TH ST
E 406TH ST
E 407TH ST
E 408TH ST
E 409TH ST
E 410TH ST
E 411TH ST
E 412TH ST
E 413TH ST
E 414TH ST
E 415TH ST
E 416TH ST
E 417TH ST
E 418TH ST
E 419TH ST
E 420TH ST
E 421ST ST
E 422ND ST
E 423RD ST
E 424TH ST
E 425TH ST
E 426TH ST
E 427TH ST
E 428TH ST
E 429TH ST
E 430TH ST
E 431ST ST
E 432ND ST
E 433RD ST
E 434TH ST
E 435TH ST
E 436TH ST
E 437TH ST
E 438TH ST
E 439TH ST
E 440TH ST
E 441ST ST
E 442ND ST
E 443RD ST
E 444TH ST
E 445TH ST
E 446TH ST
E 447TH ST
E 448TH ST
E 449TH ST
E 450TH ST
E 451ST ST
E 452ND ST
E 453RD ST
E 454TH ST
E 455TH ST
E 456TH ST
E 457TH ST
E 458TH ST
E 459TH ST
E 460TH ST
E 461ST ST
E 462ND ST
E 463RD ST
E 464TH ST
E 465TH ST
E 466TH ST
E 467TH ST
E 468TH ST
E 469TH ST
E 470TH ST
E 471ST ST
E 472ND ST
E 473RD ST
E 474TH ST
E 475TH ST
E 476TH ST
E 477TH ST
E 478TH ST
E 479TH ST
E 480TH ST
E 481ST ST
E 482ND ST
E 483RD ST
E 484TH ST
E 485TH ST
E 486TH ST
E 487TH ST
E 488TH ST
E 489TH ST
E 490TH ST
E 491ST ST
E 492ND ST
E 493RD ST
E 494TH ST
E 495TH ST
E 496TH ST
E 497TH ST
E 498TH ST
E 499TH ST
E 500TH ST
E 501ST ST
E 502ND ST
E 503RD ST
E 504TH ST
E 505TH ST
E 506TH ST
E 507TH ST
E 508TH ST
E 509TH ST
E 510TH ST
E 511TH ST
E 512TH ST
E 513TH ST
E 514TH ST
E 515TH ST
E 516TH ST
E 517TH ST
E 518TH ST
E 519TH ST
E 520TH ST
E 521ST ST
E 522ND ST
E 523RD ST
E 524TH ST
E 525TH ST
E 526TH ST
E 527TH ST
E 528TH ST
E 529TH ST
E 530TH ST
E 531ST ST
E 532ND ST
E 533RD ST
E 534TH ST
E 535TH ST
E 536TH ST
E 537TH ST
E 538TH ST
E 539TH ST
E 540TH ST
E 541ST ST
E 542ND ST
E 543RD ST
E 544TH ST
E 545TH ST
E 546TH ST
E 547TH ST
E 548TH ST
E 549TH ST
E 550TH ST
E 551ST ST
E 552ND ST
E 553RD ST
E 554TH ST
E 555TH ST
E 556TH ST
E 557TH ST
E 558TH ST
E 559TH ST
E 560TH ST
E 561ST ST
E 562ND ST
E 563RD ST
E 564TH ST
E 565TH ST
E 566TH ST
E 567TH ST
E 568TH ST
E 569TH ST
E 570TH ST
E 571ST ST
E 572ND ST
E 573RD ST
E 574TH ST
E 575TH ST
E 576TH ST
E 577TH ST
E 578TH ST
E 579TH ST
E 580TH ST
E 581ST ST
E 582ND ST
E 583RD ST
E 584TH ST
E 585TH ST
E 586TH ST
E 587TH ST
E 588TH ST
E 589TH ST
E 590TH ST
E 591ST ST
E 592ND ST
E 593RD ST
E 594TH ST
E 595TH ST
E 596TH ST
E 597TH ST
E 598TH ST
E 599TH ST
E 600TH ST
E 601ST ST
E 602ND ST
E 603RD ST
E 604TH ST
E 605TH ST
E 606TH ST
E 607TH ST
E 608TH ST
E 609TH ST
E 610TH ST
E 611TH ST
E 612TH ST
E 613TH ST
E 614TH ST
E 615TH ST
E 616TH ST
E 617TH ST
E 618TH ST
E 619TH ST
E 620TH ST
E 621ST ST
E 622ND ST
E 623RD ST
E 624TH ST
E 625TH ST
E 626TH ST
E 627TH ST
E 628TH ST
E 629TH ST
E 630TH ST
E 631ST ST
E 632ND ST
E 633RD ST
E 634TH ST
E 635TH ST
E 636TH ST
E 637TH ST
E 638TH ST
E 639TH ST
E 640TH ST
E 641ST ST
E 642ND ST
E 643RD ST
E 644TH ST
E 645TH ST
E 646TH ST
E 647TH ST
E 648TH ST
E 649TH ST
E 650TH ST
E 651ST ST
E 652ND ST
E 653RD ST
E 654TH ST
E 655TH ST
E 656TH ST
E 657TH ST
E 658TH ST
E 659TH ST
E 660TH ST
E 661ST ST
E 662ND ST
E 663RD ST
E 664TH ST
E 665TH ST
E 666TH ST
E 667TH ST
E 668TH ST
E 669TH ST
E 670TH ST
E 671ST ST
E 672ND ST
E 673RD ST
E 674TH ST
E 675TH ST
E 676TH ST
E 677TH ST
E 678TH ST
E 679TH ST
E 680TH ST
E 681ST ST
E 682ND ST
E 683RD ST
E 684TH ST
E 685TH ST
E 686TH ST
E 687TH ST
E 688TH ST
E 689TH ST
E 690TH ST
E 691ST ST
E 692ND ST
E 693RD ST
E 694TH ST
E 695TH ST
E 696TH ST
E 697TH ST
E 698TH ST
E 699TH ST
E 700TH ST
E 701ST ST
E 702ND ST
E 703RD ST
E 704TH ST
E 705TH ST
E 706TH ST
E 707TH ST
E 708TH ST
E 709TH ST
E 710TH ST
E 711TH ST
E 712TH ST
E 713TH ST
E 714TH ST
E 715TH ST
E 716TH ST
E 717TH ST
E 718TH ST
E 719TH ST
E 720TH ST
E 721ST ST
E 722ND ST
E 723RD ST
E 724TH ST
E 725TH ST
E 726TH ST
E 727TH ST
E 728TH ST
E 729TH ST
E 730TH ST
E 731ST ST
E 732ND ST
E 733RD ST
E 734TH ST
E 735TH ST
E 736TH ST
E 737TH ST
E 738TH ST
E 739TH ST
E 740TH ST
E 741ST ST
E 742ND ST
E 743RD ST
E 744TH ST
E 745TH ST
E 746TH ST
E 747TH ST
E 748TH ST
E 749TH ST
E 750TH ST
E 751ST ST
E 752ND ST
E 753RD ST
E 754TH ST
E 755TH ST
E 756TH ST
E 757TH ST
E 758TH ST
E 759TH ST
E 760TH ST
E 761ST ST
E 762ND ST
E 763RD ST
E 764TH ST
E 765TH ST
E 766TH ST
E 767TH ST
E 768TH ST
E 769TH ST
E 770TH ST
E 771ST ST
E 772ND ST
E 773RD ST
E 774TH ST
E 775TH ST
E 776TH ST
E 777TH ST
E 778TH ST
E 779TH ST
E 780TH ST
E 781ST ST
E 782ND ST
E 783RD ST
E 784TH ST
E 785TH ST
E 786TH ST
E 787TH ST
E 788TH ST
E 789TH ST
E 790TH ST
E 791ST ST
E 792ND ST
E 793RD ST
E 794TH ST
E 795TH ST
E 796TH ST
E 797TH ST
E 798TH ST
E 799TH ST
E 800TH ST
E 801ST ST
E 802ND ST
E 803RD ST
E 804TH ST
E 805TH ST
E 806TH ST
E 807TH ST
E 808TH ST
E 809TH ST
E 810TH ST
E 811TH ST
E 812TH ST
E 813TH ST
E 814TH ST
E 815TH ST
E 816TH ST
E 817TH ST
E 818TH ST
E 819TH ST
E 820TH ST
E 821ST ST
E 822ND ST
E 823RD ST
E 824TH ST
E 825TH ST
E 826TH ST
E 827TH ST
E 828TH ST
E 829TH ST
E 830TH ST
E 831ST ST
E 832ND ST
E 833RD ST
E 834TH ST
E 835TH ST
E 836TH ST
E 837TH ST
E 838TH ST
E 839TH ST
E 840TH ST
E 841ST ST
E 842ND ST
E 843RD ST
E 844TH ST
E 845TH ST
E 846TH ST
E 847TH ST
E 848TH ST
E 849TH ST
E 850TH ST
E 851ST ST
E 852ND ST
E 853RD ST
E 854TH ST
E 855TH ST
E 856TH ST
E 857TH ST
E 858TH ST
E 859TH ST
E 860TH ST
E 861ST ST
E 862ND ST
E 863RD ST
E 864TH ST
E 865TH ST
E 866TH ST
E 867TH ST
E 868TH ST
E 869TH ST
E 870TH ST
E 871ST ST
E 872ND ST
E 873RD ST
E 874TH ST
E 875TH ST
E 876TH ST
E 877TH ST
E 878TH ST
E 879TH ST
E 880TH ST
E 881ST ST
E 882ND ST
E 883RD ST
E 884TH ST
E 885TH ST
E 886TH ST
E 887TH ST
E 888TH ST
E 889TH ST
E 890TH ST
E 891ST ST
E 892ND ST
E 893RD ST
E 894TH ST
E 895TH ST
E 896TH ST
E 897TH ST
E 898TH ST
E 899TH ST
E 900TH ST
E 901ST ST
E 902ND ST
E 903RD ST
E 904TH ST
E 905TH ST
E 906TH ST
E 907TH ST
E 908TH ST
E 909TH ST
E 910TH ST
E 911TH ST
E 912TH ST
E 913TH ST
E 914TH ST
E 915TH ST
E 916TH ST
E 917TH ST
E 918TH ST
E 919TH ST
E 920TH ST
E 921ST ST
E 922ND ST
E 923RD ST
E 924TH ST
E 925TH ST
E 926TH ST
E 927TH ST
E 928TH ST
E 929TH ST
E 930TH ST
E 931ST ST
E 932ND ST
E 933RD ST
E 934TH ST
E 935TH ST
E 936TH ST
E 937TH ST
E 938TH ST
E 939TH ST
E 940TH ST
E 941ST ST
E 942ND ST
E 943RD ST
E 944TH ST
E 945TH ST
E 946TH ST
E 947TH ST
E 948TH ST
E 949TH ST
E 950TH ST
E 951ST ST
E 952ND ST
E 953RD ST
E 954TH ST
E 955TH ST
E 956TH ST
E 957TH ST
E 958TH ST
E 959TH ST
E 960TH ST
E 961ST ST
E 962ND ST
E 963RD ST
E 964TH ST
E 965TH ST
E 966TH ST
E 967TH ST
E 968TH ST
E 969TH ST
E 970TH ST
E 971ST ST
E 972ND ST
E 973RD ST
E 974TH ST
E 975TH ST
E 976TH ST
E 977TH ST
E 978TH ST
E 979TH ST
E 980TH ST
E 981ST ST
E 982ND ST
E 983RD ST
E 984TH ST
E 985TH ST
E 986TH ST
E 987TH ST
E 988TH ST
E 989TH ST
E 990TH ST
E 991ST ST
E 992ND ST
E 993RD ST
E 994TH ST
E 995TH ST
E 996TH ST
E 997TH ST
E 998TH ST
E 999TH ST
E 1000TH ST
E 1001ST ST
E 1002ND ST
E 1003RD ST
E 1004TH ST
E 1005TH ST
E 1006TH ST
E 1007TH ST
E 1008TH ST
E 1009TH ST
E 1010TH ST
E 1011TH ST
E 1012TH ST
E 1013TH ST
E 1014TH ST
E 1015TH ST
E 1016TH ST
E 1017TH ST
E 1018TH ST
E 1019TH ST
E 1020TH ST
E 1021ST ST
E 1022ND ST
E 1023RD ST
E 1024TH ST
E 1025TH ST
E 1026TH ST
E 1027TH ST
E 1028TH ST
E 1029TH ST
E 1030TH ST
E 1031ST ST
E 1032ND ST
E 1033RD ST
E 1034TH ST
E 1035TH ST
E 1036TH ST
E 1037TH ST
E 1038TH ST
E 1039TH ST
E 1040TH ST
E 1041ST ST
E 1042ND ST
E 1043RD ST
E 1044TH ST
E 1045TH ST
E 1046TH ST
E 1047TH ST
E 1048TH ST
E 1049TH ST
E 1050TH ST
E 1051ST ST
E 1052ND ST
E 1053RD ST
E 1054TH ST
E 1055TH ST
E 1056TH ST
E 1057TH ST
E 1058TH ST
E 1059TH ST
E 1060TH ST
E 1061ST ST
E 1062ND ST
E 1063RD ST
E 1064TH ST
E 1065TH ST
E 1066TH ST
E 1067TH ST
E 1068TH ST
E 1069TH ST
E 1070TH ST
E 1071ST ST
E 1072ND ST
E 1073RD ST
E 1074TH ST
E 1075TH ST
E 1076TH ST
E 1077TH ST
E 1078TH ST
E 1079TH ST
E 1080TH ST
E 1081ST ST
E 1082ND ST
E 1083RD ST
E 1084TH ST
E 1085TH ST
E 1086TH ST
E 1087TH ST
E 1088TH ST
E 1089TH ST
E 1090TH ST
E 1091ST ST
E 1092ND ST
E 1093RD ST
E 1094TH ST
E 1095TH ST
E 1096TH ST
E 1097TH ST
E 1098TH ST
E 1099TH ST
E 1100TH ST
E 1101ST ST
E 1102ND ST
E 1103RD ST
E 1104TH ST
E 1105TH ST
E 1106TH ST
E 1107TH ST
E 1108TH ST
E 1109TH ST
E 1110TH ST
E 1111TH ST
E 1112TH ST
E 1113TH ST
E 1114TH ST
E 1115TH ST
E 1116TH ST
E 1117TH ST
E 1118TH ST
E 1119TH ST
E 1120TH ST
E 1121ST ST
E 1122ND ST
E 1123RD ST
E 1124TH ST
E 1125TH ST
E 1126TH ST
E 1127TH ST
E 1128TH ST
E 1129TH ST
E 1130TH ST
E 1131ST ST
E 1132ND ST
E 1133RD ST
E 1134TH ST
E 1135TH ST
E 1136TH ST
E 1137TH ST
E 1138TH ST
E 1139TH ST
E 1140TH ST
E 1141ST ST
E 1142ND ST
E 1143RD ST
E 1144TH ST
E 1145TH ST
E 1146TH ST
E 1147TH ST
E 1148TH ST
E 1149TH ST
E 1150TH ST
E 1151ST ST
E 1152ND ST
E 1153RD ST
E 1154TH ST
E 1155TH ST
E 1156TH ST
E 1157TH ST
E 1158TH ST
E 1159TH ST
E 1160TH ST
E 1161ST ST
E 1162ND ST
E 1163RD ST
E 1164TH ST
E 1165TH ST
E 1166TH ST
E 1167TH ST
E 1168TH ST
E 1169TH ST
E 1170TH ST
E 1171ST ST
E 1172ND ST
E 1173RD ST
E 1174TH ST
E 1175TH ST
E 1176TH ST
E 1177TH ST
E 1178TH ST
E 1179TH ST
E 1180TH ST
E 1181ST ST
E 1182ND ST
E 1183RD ST
E 1184TH ST
E 1185TH ST
E 1186TH ST
E 1187TH ST
E 1188TH ST
E 1189TH ST
E 1190TH ST
E 1191ST ST
E 1192ND ST
E 1193RD ST
E 1194TH ST
E 1195TH ST
E 1196TH ST
E 1197TH ST
E 1198TH ST
E 1199TH ST
E 1200TH ST
E 1201ST ST
E 1202ND ST
E 1203RD ST
E 1204TH ST
E 1205TH ST
E 1206TH ST
E 1207TH ST
E 1208TH ST
E 1209TH ST
E 1210TH ST
E 1211TH ST
E 1212TH ST
E 1213TH ST
E 1214TH ST
E 1215TH ST
E 1216TH ST
E 1217TH ST
E 1218TH ST
E 1219TH ST
E 1220TH ST
E 1221ST ST
E 1222ND ST
E 1223RD ST
E 1224TH ST
E 1225TH ST
E 1226TH ST
E 1227TH ST
E 1228TH ST
E 1229TH ST
E 1230TH ST
E 1231ST ST
E 1232ND ST
E 1233RD ST
E 1234TH ST
E 1235TH ST
E 1236TH ST
E 1237TH ST
E 1238TH ST
E 1239TH ST
E 1240TH ST
E 1241ST ST
E 1242ND ST
E 1243RD ST
E 1244TH ST
E 1245TH ST
E 1246TH ST
E 1247TH ST
E 1248TH ST
E 1249TH ST
E 1250TH ST
E 1251ST ST
E 1252ND ST
E 1253RD ST
E 1254TH ST
E 1255TH ST
E 1256TH ST
E 1257TH ST
E 1258TH ST
E 1259TH ST
E 1260TH ST
E 1261ST ST
E 1262ND ST
E 1263RD ST
E 1264TH ST
E 1265TH ST
E 1266TH ST
E 1267TH ST
E 1268TH ST
E 1269TH ST
E 1270TH ST
E 1271ST ST
E 1272ND ST
E 1273RD ST
E 1274TH ST
E 1275TH ST
E 1276TH ST
E 1277TH ST
E 1278TH ST
E 1279TH ST
E 1280TH ST
E 1281ST ST
E 1282ND ST
E 1283RD ST
E 1284TH ST
E 1285TH ST
E 1286TH ST
E 1287TH ST
E 1288TH ST
E 1289TH ST
E 1290TH ST
E 1291ST ST
E 1292ND ST
E 1293RD ST
E 1294TH ST
E 1295TH ST
E 1296TH ST
E 1297TH ST
E 1298TH ST
E 1299TH ST
E 1300TH ST
E 1301ST ST
E 1302ND ST
E 1303RD ST
E 1304TH ST
E 1305TH ST
E 1306TH ST
E 1307TH ST
E 1308TH ST
E 1309TH ST
E 1310TH ST
E 1311TH ST
E 1312TH ST
E 1313TH ST
E 1314TH ST
E 1315TH ST
E 1316TH ST
E 1317TH ST
E 1318TH ST
E 1319TH ST
E 1320TH ST
E 1321ST ST
E 1322ND ST
E 1323RD ST
E 1324TH ST
E 1325TH ST
E 1326TH ST
E 1327TH ST
E 1328TH ST
E 1329TH ST
E 1330TH ST
E 1331ST ST
E 1332ND ST
E 1333RD ST
E 1334TH ST
E 1335TH ST
E 1336TH ST
E 1337TH ST
E 1338TH ST
E 1339TH ST
E 1340TH ST
E 1341ST ST
E 1342ND ST
E 1343RD ST
E 1344TH ST
E 1345TH ST
E 1346TH ST
E 1347TH ST
E 1348TH ST
E 1349TH ST
E 1350TH ST
E 1351ST ST
E 1352ND ST
E 1353RD ST
E 1354TH ST
E 1355TH ST
E 1356TH ST
E 1357TH ST
E 1358TH ST
E 1359TH ST
E 1360TH ST
E 1361ST ST
E 1362ND ST
E 1363RD ST
E 1364TH ST
E 1365TH ST
E 1366TH ST
E 1367TH ST
E 1368TH ST
E 1369TH ST
E 1370TH ST
E 1371ST ST
E 1372ND ST
E 1373RD ST
E 1374TH ST
E 1375TH ST
E 1376TH ST
E 1377TH ST
E 1378TH ST
E 1379TH ST
E 1380TH ST
E 1381ST ST
E 1382ND ST
E 1383RD ST
E 1384TH ST
E 1385TH ST
E 1386TH ST
E 1387TH ST
E 1388TH ST
E 1389TH ST
E 1390TH ST
E 1391ST ST
E 1392ND ST
E 1393RD ST
E 1394TH ST
E 1395TH ST
E 1396TH ST
E 1397TH ST
E 1398TH ST
E 1399TH ST
E 1400TH ST
E 1401ST ST
E 1402ND ST
E 1403RD ST
E 1404TH ST
E 1405TH ST
E 1406TH ST
E 1407TH ST
E 1408TH ST
E 1409TH ST
E 1410TH ST
E 1411TH ST
E 1412TH ST
E 1413TH ST
E 1414TH ST
E 1415TH ST
E 1416TH ST
E 1417TH ST
E 1418TH ST
E 1419TH ST
E 1420TH ST
E 1421ST ST
E 1422ND ST
E 1423RD ST
E 1424TH ST
E 1425TH ST
E 1426TH ST
E 1427TH ST
E 1428TH ST
E 1429TH ST
E 1430TH ST
E 1431ST ST
E 1432ND ST
E 1433RD ST
E 1434TH ST
E 1435TH ST
E 1436TH ST
E 1437TH ST
E 1438TH ST
E 1439TH ST
E 1440TH ST
E 1441ST ST
E 1442ND ST
E 1443RD ST
E 1444TH ST
E 1445TH ST
E 1446TH ST
E 1447TH ST
E 1448TH ST
E 1449TH ST
E 1450TH ST
E 1451ST ST
E 1452ND ST
E 1453RD ST
E 1454TH ST
E 1455TH ST
E 1456TH ST
E 1457TH ST
E 1458TH ST
E 1459TH ST
E 1460TH ST
E 1461ST ST
E 1462ND ST
E 1463RD ST
E 1464TH ST
E 1465TH ST
E 1466TH ST
E 1467TH ST
E 1468TH ST
E 1469TH ST
E 1470TH ST
E 1471ST ST
E 1472ND ST
E 1473RD ST
E 1474TH ST
E 1475TH ST
E 1476TH ST
E 1477TH ST
E 1478TH ST
E 1479TH ST
E 1480TH ST
E 1481ST ST
E 1482ND ST
E 1483RD ST
E 1484TH ST
E 1485TH ST
E 1486TH ST
E 1487TH ST
E 1488TH ST
E 1489TH ST
E 1490TH ST
E 1491ST ST
E 1492ND ST
E 1493RD ST
E 1494TH ST
E 1495TH ST
E 1496TH ST
E 1497TH ST
E 1498TH ST
E 1499TH ST
E 1500TH ST
E 1501ST ST
E 1502ND ST
E 1503RD ST
E 1504TH ST
E 1505TH ST
E 1506TH ST
E 1507TH ST
E 1508TH ST
E 1509TH ST
E 1510TH ST
E 1511TH ST
E 1512TH ST
E 1513TH ST
E 1514TH ST
E 1515TH ST
E 1516TH ST
E 1517TH ST
E 1518TH ST
E 1519TH ST
E 1520TH ST
E 1521ST ST
E 1522ND ST
E 1523RD ST
E 1524TH ST
E 1525TH ST
E 1526TH ST
E 1527TH ST
E 1528TH ST
E 1529TH ST
E 1530TH ST
E 1531ST ST
E 1532ND ST
E 1533RD ST
E 1534TH ST
E 1535TH ST
E 1536TH ST
E 1537TH ST
E 1538TH ST
E 1539TH ST
E 1540TH ST
E 1541ST ST
E 1542ND ST
E 1543RD ST
E 1544TH ST
E 1545TH ST
E 1546TH ST
E 1547TH ST
E 1548TH ST
E 1549TH ST
E 1550TH ST
E 1551ST ST
E 1552ND ST
E 1553RD ST
E 1554TH ST
E 1555TH ST
E 1556TH ST
E 1557TH ST
E 1558TH ST
E 1559TH ST
E 1560TH ST
E 1561ST ST
E 1562ND ST
E 1563RD ST
E 1564TH ST
E 1565TH ST
E 1566TH ST
E 1567TH ST
E 1568TH ST
E 1569TH ST
E 1570TH ST
E 1571ST ST
E 1572ND ST
E 1573RD ST
E 1574TH ST
E 1575TH ST
E 1576TH ST
E 1577TH ST
E 1578TH ST
E 1579TH ST
E 1580TH ST
E 1581ST ST
E 1582ND ST
E 1583RD ST
E 1584TH ST
E 1585TH ST
E 1586TH ST
E 1587TH ST
E 1588TH ST
E 1589TH ST
E 1590TH ST
E 1591ST ST
E 1592ND ST
E 1593RD ST
E 1594TH ST
E 1595TH ST
E 1596TH ST
E 1597TH ST
E 1598TH ST
E 1599TH ST
E 1600TH ST
E 1601ST ST
E 1602ND ST
E 1603RD ST
E 1604TH ST
E 1605TH ST
E 1606TH ST
E 1607TH ST
E 1608TH ST
E 1609TH ST
E 1610TH ST
E 1611TH ST
E 1612TH ST
E 1613TH ST
E 1614TH ST
E 1615TH ST
E 1616TH ST
E 1617TH ST
E 1618TH ST
E 1619TH ST
E 1620TH ST
E 1621ST ST
E 1622ND ST
E 1623RD ST
E 1624TH ST
E 1625TH ST
E 1626TH ST
E 1627TH ST
E 1628TH ST
E 1629TH ST
E 1630TH ST
E 1631ST ST
E 1632ND ST
E 1633RD ST
E 1634TH ST
E 1635TH ST
E 1636TH ST
E 1637TH ST
E 1638TH ST
E 1639TH ST
E 1640TH ST
E 1641ST ST
E 1642ND ST
E 1643RD ST
E 1644TH ST
E 1645TH ST
E 1646TH ST
E 1647TH ST
E 1648TH ST
E 1649TH ST
E 1650TH ST
E 1651ST ST
E 1652ND ST
E 1653RD ST
E 1654TH ST
E 1655TH ST
E 1656TH ST
E 1657TH ST
E 1658TH ST
E 1659TH ST
E 1660TH ST
E 1661ST ST
E 1662ND ST
E 1663RD ST
E 1664TH ST
E 1665TH ST
E 1666TH ST
E 1667TH ST
E 1668TH ST
E 1669TH ST
E 1670TH ST
E 1671ST ST
E 1672ND ST
E 1673RD ST
E 1674TH ST
E 1675TH ST
E 1676TH ST
E 1677TH ST
E 1678TH ST
E 1679TH ST
E 1680TH ST
E 1681ST ST
E 1682ND ST
E 1683RD ST
E 1684TH ST
E 1685TH ST
E 1686TH ST
E 1687TH ST
E 1688TH ST
E 1689TH ST
E 1690TH ST
E 1691ST ST
E 1692ND ST
E 1693RD ST
E 1694TH ST
E 1695TH ST
E 1696TH ST
E 1697TH ST
E 1698TH ST
E 1699TH ST
E 1700TH ST
E 1701ST ST
E 1702ND ST
E 1703RD ST
E 1704TH ST
E 1705TH ST
E 1706TH ST
E 1707TH ST
E 1708TH ST
E 1709TH ST
E 1710TH ST
E 1711TH ST
E 1712TH ST
E 1713TH ST
E 1714TH ST
E 1715TH ST
E 1716TH ST
E 1717TH ST
E 1718TH ST
E 1719TH ST
E 1720TH ST
E 1721ST ST
E 1722ND ST
E 1723RD ST
E 1724TH ST
E 1725TH ST
E 1726TH ST
E 1727TH ST
E 1728TH ST
E 1729TH ST
E 1730TH ST
E 1731ST ST
E 1732ND ST
E 1733RD ST
E 1734TH ST
E 1735TH ST
E 1736TH ST
E 1737TH ST
E 1738TH ST
E 1739TH ST
E 1740TH ST
E 1741ST ST
E 1742ND ST
E 1743RD ST
E 1744TH ST
E 1745TH ST
E 1746TH ST
E 1747TH ST
E 1748TH ST
E 1749TH ST
E 1750TH ST
E 1751ST ST
E 1752ND ST
E 1753RD ST
E 1754TH ST
E 1755TH ST
E 1756TH ST
E 1757TH ST
E 1758TH ST
E 1759TH ST
E 1760TH ST
E 1761ST ST
E 1762ND ST
E 1763RD ST
E 1764TH ST
E 1765TH ST
E 1766TH ST
E 1767TH ST
E 1768TH ST
E 1769TH ST
E 1770TH ST
E 1771ST ST
E 1772ND ST
E 1773RD ST
E 1774TH ST
E 1775TH ST
E 1776TH ST
E 1777TH ST
E 1778TH ST
E 1779TH ST
E 1780TH ST
E 1781ST ST
E 1782ND ST
E 1783RD ST
E 1784TH ST
E 1785TH ST
E 1786TH ST
E 1787TH ST
E 1788TH ST
E 1789TH ST
E 1790TH ST
E 1791ST ST
E 1792ND ST
E 1793RD ST
E 1794TH ST
E 1795TH ST
E 1796TH ST
E 1797TH ST
E 1798TH ST
E 1799TH ST
E 1800TH ST
E 1801ST ST
E 1802ND ST
E 1803RD ST
E 1804TH ST
E 1805TH ST
E 1806TH ST
E 1807TH ST
E 1808TH ST
E 1809TH ST
E 1810TH ST
E 1811TH ST
E 1812TH ST
E 1813TH ST
E 1814TH ST
E 1815TH ST
E 1816TH ST
E 1817TH ST
E 1818TH ST
E 1819TH ST
E 1820TH ST
E 1821ST ST
E 1822ND ST
E 1823RD ST
E 1824TH ST
E 1825TH ST
E 1826TH ST
E 1827TH ST
E 1828TH ST
E 1829TH ST
E 1830TH ST
E 1831ST ST
E 1832ND ST
E 1833RD ST
E 1834TH ST
E 1835TH ST
E 1836TH ST
E 1837TH ST
E 1838TH ST
E 1839TH ST
E 1840TH ST
E 1841ST ST
E 1842ND ST
E 1843R

APPENDIX A - FOR REFERENCE ONLY

# Request for Stormwater Storage Waiver

City of Scottsdale Case Numbers:

___ - PA - ____ ____ - ZN - ____ ____ - UP - ____ ____ - DR - ____ ____ - PP - ____ PC#_____

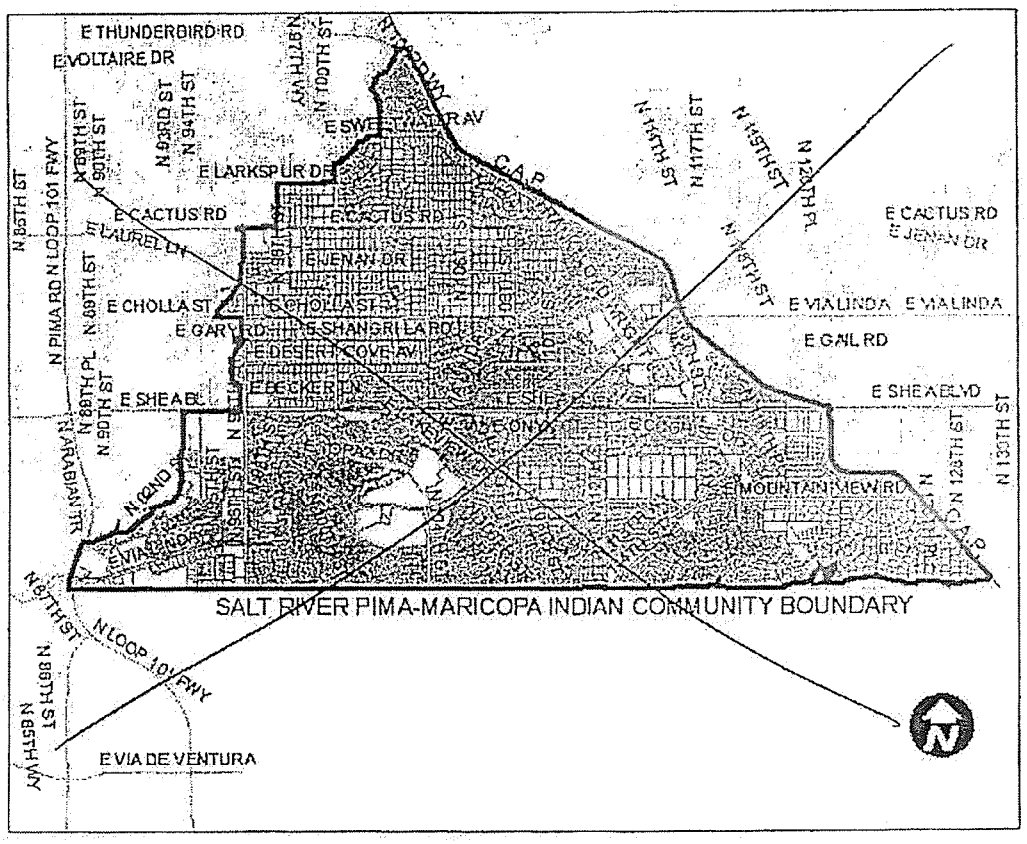



Figure 2. Watersheds Draining to Salt River Pima-Maricopa Indian Community

NOT APPLICABLE


**Planning & Development Services Department**

7447 E Indian School Road, Suite 105, Scottsdale, AZ 85251 • Phone: 480-312-7000 • Fax: 480-312-7088

APPENDIX A - FOR REFERENCE ONLY

# Request for Stormwater Storage Waiver

292-SA-2007

City of Scottsdale Case Numbers:

___ - PA - ___ ___ - ZN - ___ ___ - UP - ___ ___ - DR - ___ ___ - PP - ___ PC# ___

**CITY STAFF TO COMPLETE THIS PAGE**

Project Name FAIRMONT SCOTTSDALE PRINCESS RESORT

Check Appropriate Boxes:

☐ Meets waiver criteria (specify): ☐ 1 ☑ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

☑ Recommend approve waiver.

☐ Recommend deny waiver:
- ☐ None of waiver criteria met.
- ☐ Downstream conditions prohibit waiver of any storage.
- ☐ Other:

Explain: _____

☐ Return waiver request:
- ☐ Insufficient data provided.
- ☐ Other: _____

Explain: _____

Recommended Conditions of Waiver:
- ☒ All storage requirements waived.
- ☐ Pre development conditions must be maintained.
- ☑ Other:

Explain: In land improvements exceed cost of in-lieu fee.

☒ **Waiver approved per above conditions.**

☐ **Waiver denied.**

C. Ashley Couch — Floodplain Administrator or Designee

10/23/08 — Date

**Planning & Development Services Department**
7447 E Indian School Road, Suite 105, Scottsdale, AZ 85251 • Phone: 480-312-7000 • Fax: 480-312-7088

APPENDIX A - FOR REFERENCE ONLY

# Request for Stormwater Storage Waiver

292-SA-2007 City of Scottsdale Case Numbers:

___ - PA - ___ ___ - ZN - ___ ___ - UP - ___ ___ - DR - ___ ___ - PP - ___ PC#_____

## In-Lieu Fee and In-Kind Contributions

If the city grants a waiver, the developer is required to calculate and contribute an In-Lieu Fee based on what it would cost the city to provide the waived storage volume, including costs such as land acquisition, construction, landscaping, design, construction management, and maintenance over a 75-year design life. For FY 2007/2008, this cost is $3.22 per cubic foot of stormwater stored. This unit cost will be updated annually, but the city reserves the right to revise the unit cost at any time at its sole discretion.

The Floodplain Administrator considers in-kind contributions on a case-by-case basis. An in-kind contribution can serve as part of or instead of the calculated in-lieu fee. The Floodplain Administrator or designee must approve in-lieu fees and in-kind contributions.

Project Name Fairmont Scottsdale Princess Resort

The waived stormwater storage volume is calculated as follows:

**V = CRA; where**
V = stormwater storage volume required, in cubic feet,
C = weighted average runoff coefficient over disturbed area,
R = 100-year/2-hour precipitation depth, in feet (2.82 inches, or 0.235 feet, for all regions of Scottsdale), and
A = area of disturbed ground, in square feet

Furthermore,

$V_w = V - V_p$; where
$V_w$ = volume waived,
V = volume required, and
$V_p$ = volume provided

C = 0.9
A = 424,753
V = 89,826
$V_p$ = 0
$V_w$ = 89,826

☐ An In-Lieu Fee will be paid, based on the following calculations and supporting documentation:
In-lieu fee ($) = $V_w$ (cu. ft.) x $3.22 per cubic foot = 289,240

☒ An In-Kind Contribution will be made, as follows:
See attachment. Princess Drive Bridge Reconstruction, in accordance with approved plans.

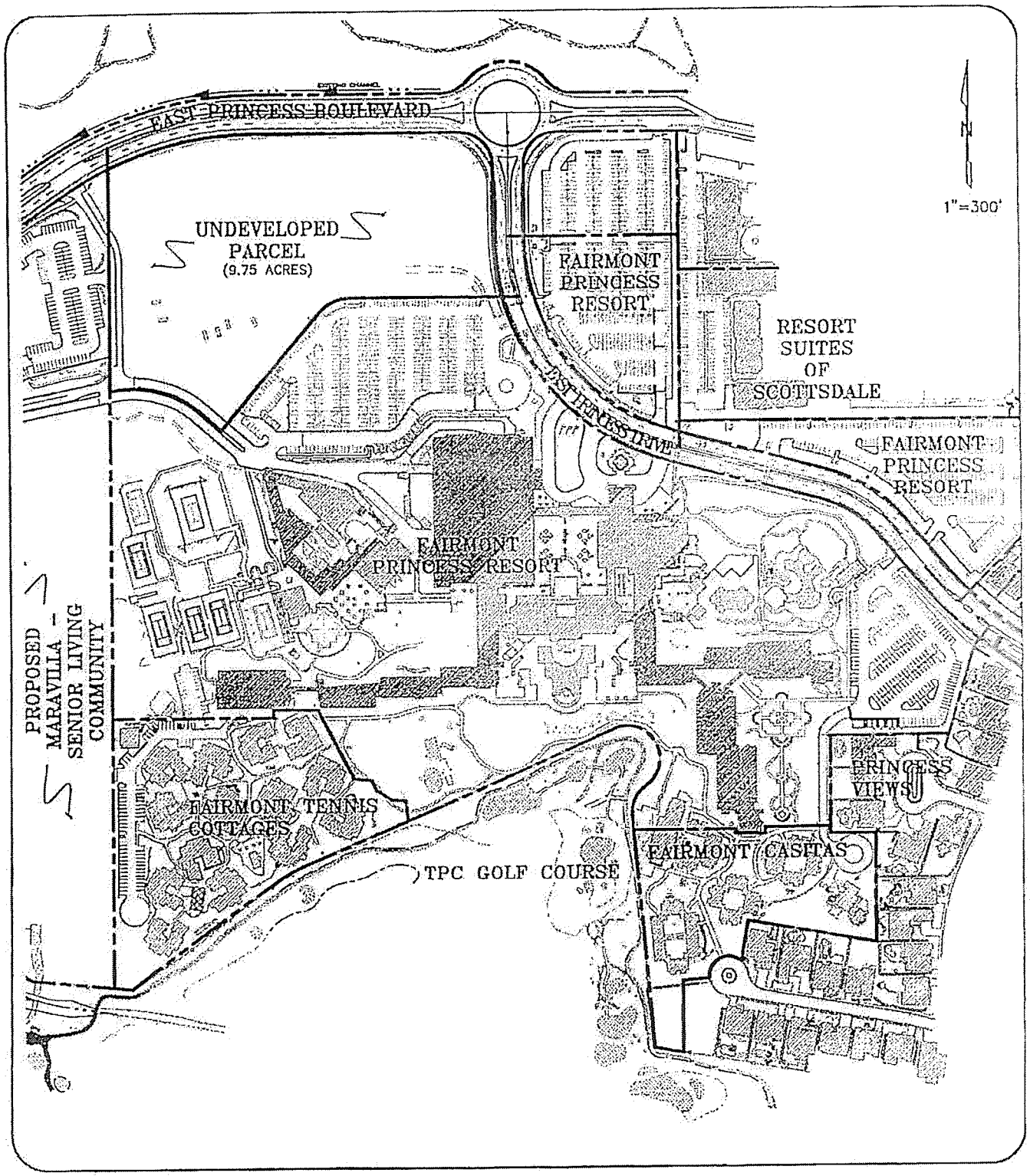
☐ No In-Lieu Fee is required. Reason:

**Approved by:** C. Ashley Conklin 10/23/08

Floodplain Administrator or Designee — Date

**Planning & Development Services Department**
7447 E Indian School Road, Suite 105, Scottsdale, AZ 85251 • Phone: 480-312-7000 • Fax: 480-312-7088

APPENDIX A - FOR REFERENCE ONLY




# EXHIBIT 1

FAIRMONT SCOTTSDALE PRINCESS RESORT

| | |
|---|---|
| ENGINEER | J. Bulka |
| DESIGNER | J. Haywood |
| CAD TECHNICIAN | J. Sanchez |
| SCALE | 1"=300' |
| DATE | 07/14/08 |
| JOB NUMBER | 07910 |
| REF. SHEET | 1 OF 1 |

WOOD/PATEL & ASSOCIATES INC.
Civil Engineers, Hydrologists and Land Surveyors
1855 North Stapley Drive
Mesa, Arizona 85203
(480) 834-3300
(480) 834-3320 FAX

APPENDIX A - FOR REFERENCE ONLY

October 23, 2008

WP# 072910



Attachment to Stormwater Storage Waiver Request

for Fairmont Scottsdale Princess Resort & Regional Flood Control

The Fairmont Scottsdale Princess Resort (Site) is a 60 acre resort located near the southwest corner of Princess Boulevard and Princess Drive. The Site is bounded by the Princess Blvd. to the north, the Maravilla Scottsdale Senior Living Community to the east, the TPC Golf Course to the south and existing residential developments to the west (see Exhibit 1, attached). The existing Fairmont Scottsdale Princess Resort consists of multiple hotel buildings, a ballroom, spa, tennis cottages, tennis courts, and parking. A majority of the site is developed and portions are being updated and renovated. At the north end of the site there is a 9.75 acre portion of the property that has yet to be developed, and other portions are scheduled for upgrades.

It is Wood/Patel's understanding that the ownership of the Fairmont Scottsdale Princess Resort, Strategic Hotels and Resorts, has agreed to fund regional flood control improvements to the public road/channel crossing at Princess Blvd and Scottsdale Road, in return for the City approving this waiver and it being applicable to the entire site. The improvements consist of removing the existing concrete box culvert crossing and replacing it with a bridge structure. The cost of a new bridge structure is estimated at $1,053,000.

City of Scottsdale In-Lieu Fees:

V(req) Volume required = CRA = (0.90) x (0.235 feet) x (9.75 acres) = 89,826 cu-ft.

C (Runoff Coefficient) = 0.90

R (100-year/2-hour precipitation depth) = 0.235 feet

Site area = 9.75 acres

City of Scottsdale In-Lieu Fees = V(req) x $3.22 = (89,826 cu-ft) x $3.22 = $289,240

Summary:

Public Drainage Improvements = $1,053,000 (*)

City of Scottsdale in Lieu Fee = $289,240

(*) See Sheet 2 of 2 Engineering Preliminary Opinion of Probable Cost

APPENDIX A - FOR REFERENCE ONLY



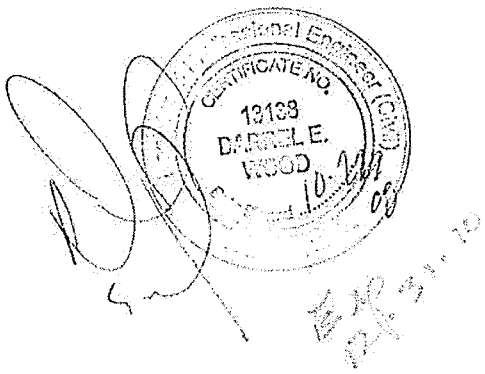
Attachment to Stormwater Storage Waiver Request
for Fairmont Scottsdale Princess Resort & Regional Flood Control

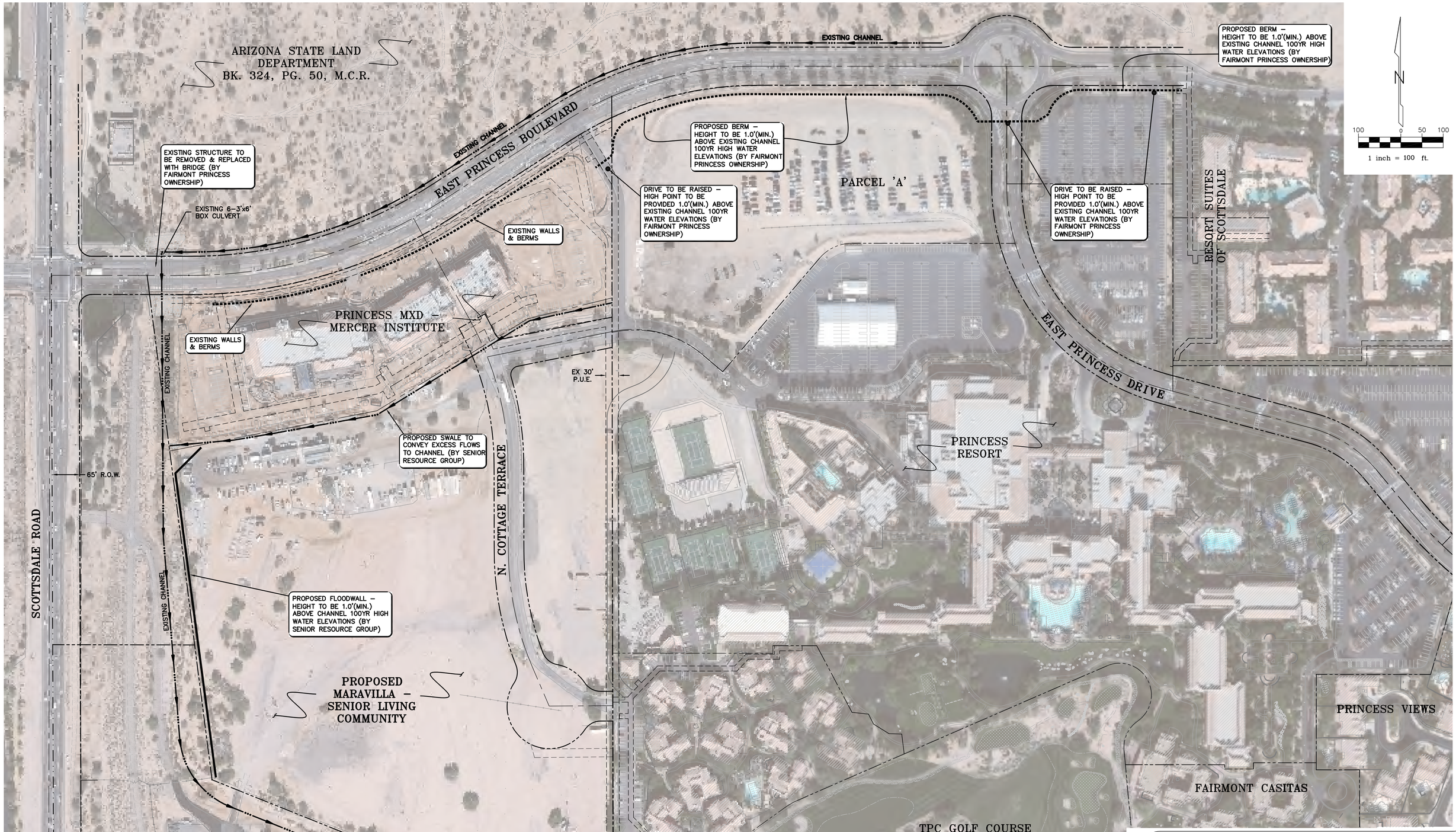
**Engineering Preliminary Opinion of Probable Cost (*)**

Prepared Bridge Structure at Princess Drive, just east of Scottsdale Road serving unnamed wash.

Estimated Bridge Surface = 8,100 square feet x $130/s.f. $1,053,000

(*) Offered without the benefit of construction documents and specifications.






MARAVILLA SCOTTSDALE/
FAIRMONT SCOTTSDALE PRINCESS RESORT

PROPOSED DRAINAGE IMPROVEMENTS EXHIBIT

DATE: 12/20/07

**WOOD/PATEL**
LAND DEVELOPMENT • WATER RESOURCES
STRUCTURES • TRANSPORTATION / TRAFFIC
WATER / WASTEWATER • SURVEYING
CONSTRUCTION MANAGEMENT
(480) 834–3300
PHOENIX • MESA • GOODYEAR • TUCSON

N:\2007\073091\dwg\Exhibits\3091EX01–AERIAL.dwg

APPENDIX A - FOR REFERENCE ONLY

# APPENDIX C

# CITY OF SCOTTSDALE FORMS

Appendix 4-1C

# WARNING & DISCLAIMER OF LIABILITY

The Drainage and Floodplain Regulations and Ordinances of the City of Scottsdale are intended to "minimize the occurrence of losses, hazards and conditions adversely affecting the public health, safety and general welfare which might result from flooding caused by the surface runoff of rainfall" (Scottsdale Revised Code §37-16).

As defined in S.R.C. §37-17, a flood plain or "*Special flood hazard* area means an area having flood and/or flood related erosion hazards as shown on a FHBM or FIRM as zone A, AO, A1-30, AE, A99, AH, or E, and those areas identified as such by the floodplain administrator, delineated in accordance with subsection 37-18(b) and adopted by the floodplain board." It is possible that a property could be inundated by greater frequency flood events or by a flood greater in magnitude than a 100-year flood. Additionally, much of the Scottsdale area is a dynamic flood area; that is, the floodplains may shift from one location to another, over time, due to natural processes.

**WARNING AND DISCLAIMER OF LIABILITY PURSUANT TO S.R.C §37-22**
"The degree of flood protection provided by the requirements in this article 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 man-made or natural causes. This article (Chapter 37, Article II) shall not create liability on the part of the city, any officer or employee thereof, or the federal government for any flood damages that result from reliance on this article or any administrative decision lawfully made thereunder."

Compliance with Drainage and Floodplain Regulations and Ordinances does not insure complete protection from flooding. The Floodplain Regulations and Ordinances meet established local and federal standards for floodplain management, but neither this review nor the Regulations and Ordinances take into account such flood related problems as natural erosion, streambed meander or man-made obstructions and diversions, all of which may have an adverse affect 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. If I am an agent for an owner I have made the owner aware of and explained this disclaimer.

| Plan Check No. | Owner or Agent | Date |
|---|---|---|
| | | 2/6/2015 |

APPENDIX A - FOR REFERENCE ONLY

# Section 404 Certification

Before the City issues development permits for a project, the developer's Engineer or the property owner must certify that it complies with, or is exempt from, Section 404 of the Clean Water Act of the United States. Section 404, administered by the U.S. Army Corps of Engineers (COE), regulates the discharge of dredged or fill material into a wetland, lake, (including dry lakes), river, stream (including intermittent streams, ephemeral washes, and arroyos), or other waters of the United States.

**Prior to submittal of improvement plans to Project Review** the form below must be completed (and submitted with the improvement plans) as evidence of compliance

## Certification of Section 404 Permit Status

Owner's Name: Strategic Hotels and Resorts  Phone No. 312-658-6016

Project Name/Description: Fairmont Scottsdale Hotel Exp.  Case No. _____

Project Location/Address: 7575 E. Princess Blvd., Scottsdale, Az. 85255

**A registered Engineer or the property Owner must check the applicable condition and certify by signing below that:**

1. **Section 404 <u>does</u> apply to the project because there will be a discharge of dredged or fill material to waters of the U.S., and:**

   ☐ A Section 404 Permit has already been obtained for this project.

   -or-

   ☐ This project qualifies for a "Nationwide Permit," and this project will meet all terms and conditions of the applicable nationwide permit.

2. **Section 404 <u>does not</u> apply to the project because:**

   ☒ No watercourses or other waters of the U.S. exist on the property.

   ☐ No jurisdictional waters of the U.S. exist on the property. Attached is a copy of the COE's Jurisdictional Determination.

   ☐ Watercourses or other waters of the U.S. do exist on the property, but the project will not involve the discharge of dredged or fill material into any of these waters.

**I certify that the above statement is true.**

John Bulka
Engineer's Signature and Seal, or Owner's Signature

Registered Professional Engineer (Civil) CERTIFICATE NO. 33359 JOHN M. BULKA Date Signed 2-6-15 ARIZONA U.S.A.

2-6-15
Date

Project Manager
Title

Company Wood, Patel

John Bulka expires: 3-31-17

**Planning & Development Services Department**
7447 E Indian School Road, Suite 100, Scottsdale, AZ 85251 ◆ Phone: 480-312-2500 ◆ Fax: 480-312-7088

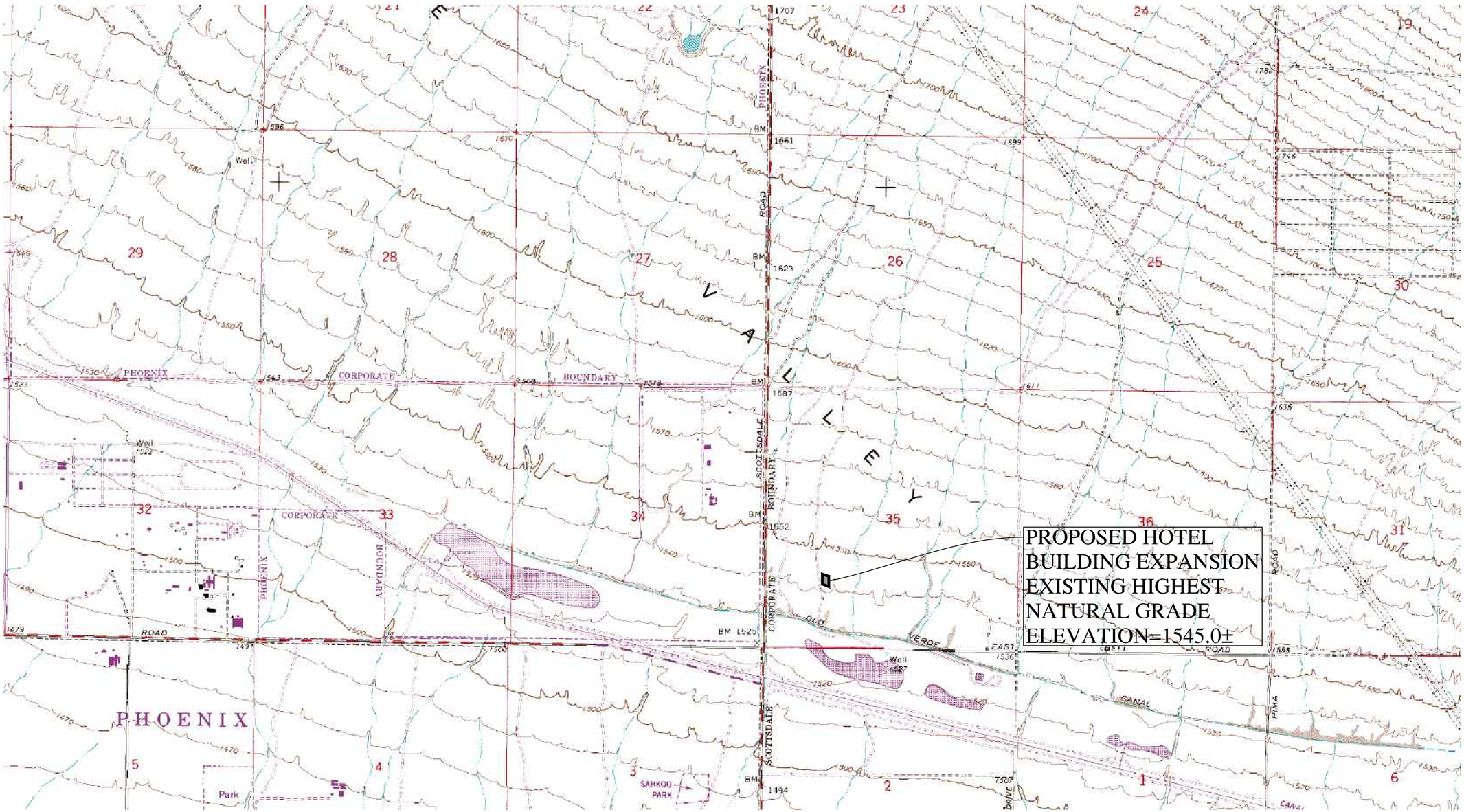
APPENDIX A - FOR REFERENCE ONLY

# APPENDIX D

# OFFSITE WATERSHED EXHIBITS

APPENDIX A - FOR REFERENCE ONLY

# Regional Contour Map /
# Opinion of Existing Highest Natural Grade Elevation



PROPOSED HOTEL BUILDING EXPANSION EXISTING HIGHEST NATURAL GRADE ELEVATION=1545.0±

**WOOD/PATEL**
MISSION: CLIENT SERVICE ™
(602) 335-8500
WWW.WOODPATEL.COM
PHOENIX - MESA - TUCSON

Call at least two full working days before you begin excavation.
ARIZONA811
Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

Fairmont
SCOTTSDALE PRINCESS

HOTEL EXPANSION
REGIONAL CONTOUR MAP/OPINION OF EXISTING
HIGHEST NATURAL GRADE ELEVATION

| REV | DESCRIPTION | DATE |
|---|---|---|
| | | |

NOT
FOR
CONSTRUCTION

SCALE (HORIZONTAL) N/A
SCALE (VERTICAL) N/A
DATE 03/16/2015
JOB NUMBER 154302
SHEET 1 OF 1

N:\2015\154302\Project Support\Reports\Drainage\Exhibits\4302 Exhibit - - Regional Contour Map.dwg

(CHECKED BY: JB DESIGNED BY: JB DRAFTED BY: JrS)

APPENDIX A - FOR REFERENCE ONLY

# Aerial Map


N:\2015\154302\Project Support\Reports\Drainage\Exhibits\154302 Exhibits - Aerial Hotel.dwg

# FAIRMONT SCOTTSDALE HOTEL EXPANSION

2015 AERIAL PHOTOGRAPH

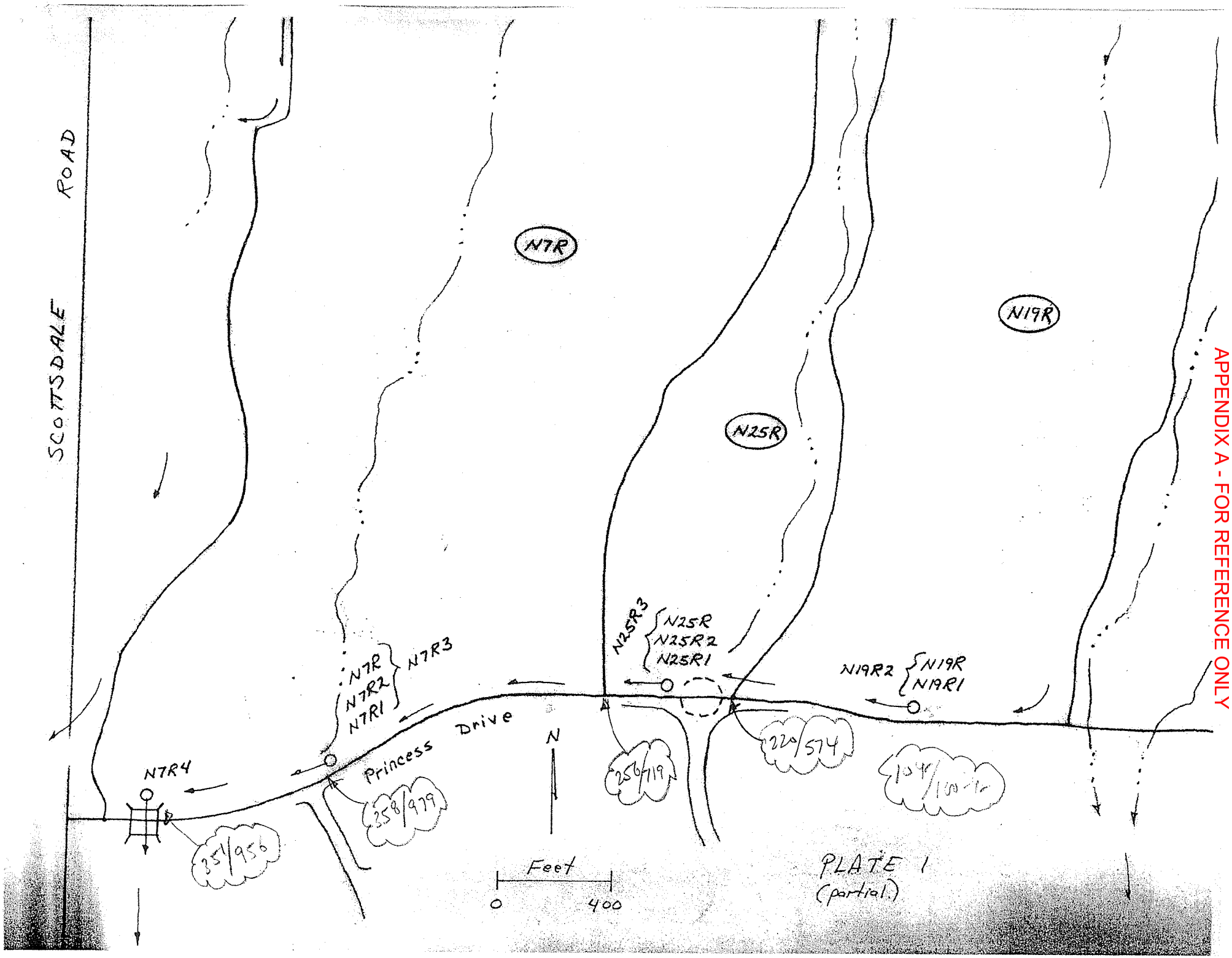
**WOOD/PATEL**
2220 S. Country Club Dr.
Mesa, AZ 85210
(480) 834-3300
www.woodpatel.com
PHOENIX • MESA • TUCSON

JOB# 154302

APPENDIX A - FOR REFERENCE ONLY

# Plate 1 Exhibit

## (from Core North/Core South Drainage Study)



APPENDIX A - FOR REFERENCE ONLY

# Table 1 Spreadsheet

# (from Core North/Core South Drainage Study)

**Table 1**
**Peak Discharge Summary**

**Princess Drive Channel**
**Fairmont Scottsdale Princess Resort**
**Scottsdale, Arizona**

| Location | HEC-1 CP | Peak Discharge (cfs) By Storm Return Interval (6-Hour Duration) | | | | | |
|---|---|---|---|---|---|---|---|
| | | 2-Yr | 5-Yr | 10-Yr | 25-Yr | 50-Yr | 100-Yr |
| 750-Ft East of Roundabout | N19R2 | 60 | 146 | 220 | 342 | 444 | 574 |
| At Roundabout | N25R3 | 62 | 167 | 256 | 417 | 549 | 719 |
| 700-Ft Upstream of Culvert | N7R3 | 90 | 228 | 358 | 583 | 787 | 979 |
| At Princess Drive Culvert | N7R4 | 89 | 227 | 351 | 580 | 779 | 956 |
| HEC-1 File: | | PRN2 | PRN5 | PRN10 | PRN25 | PRN50 | PRN100 |

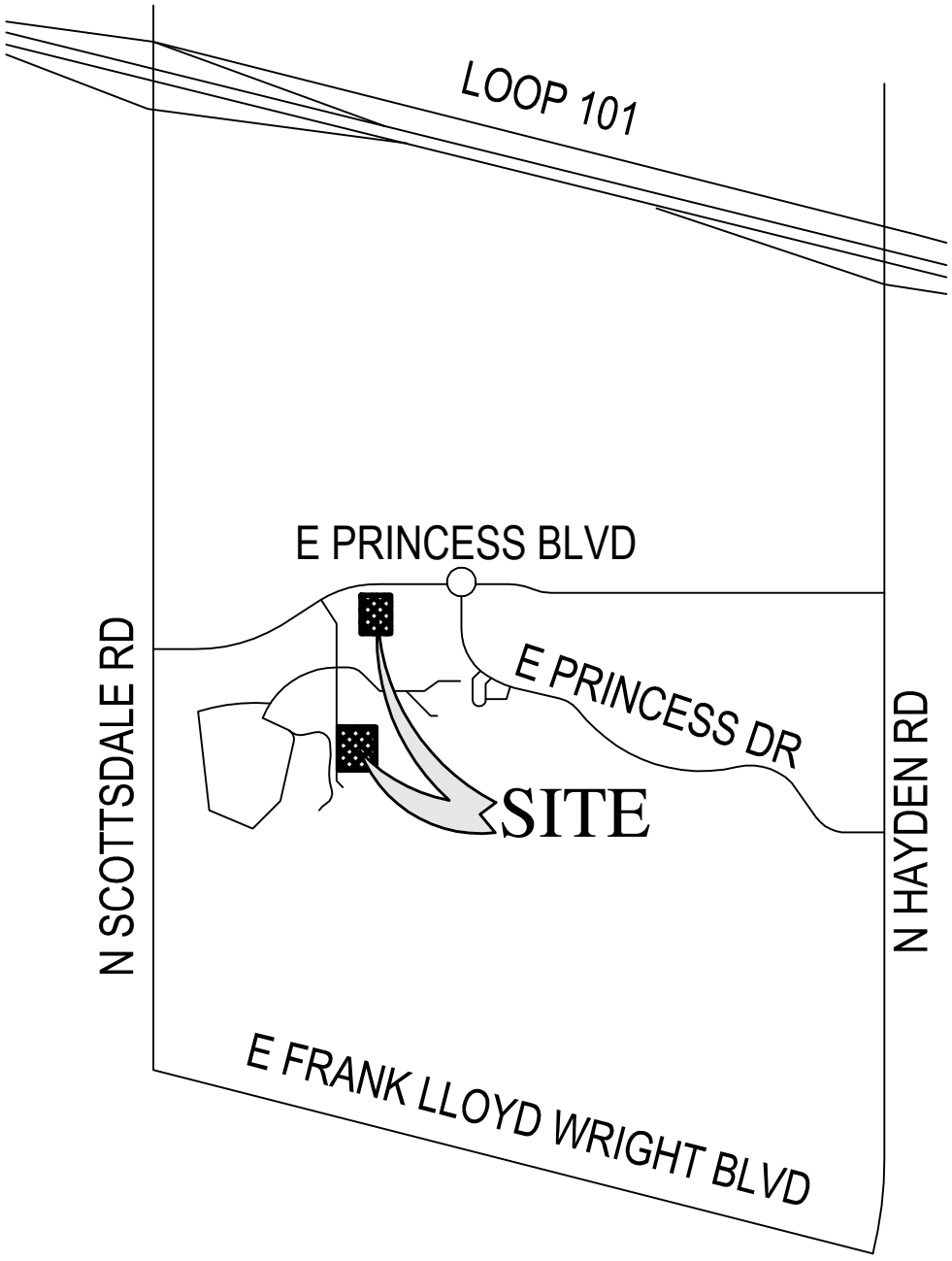
Note: See Plate 1 for HEC-1 concentration point locations.

5/31/2007

APPENDIX A - FOR REFERENCE ONLY

# EXHIBIT 1

# VICINITY MAP




N

SCOTTSDALE, ARIZONA

N.T.S.

FAIRMONT SCOTTSDALE
HOTEL EXPANSION

EXHIBIT 1
VICINITY MAP

WOOD/PATEL
2220 S. Country Club Dr.
Suite 101
Mesa, AZ 85210
(480) 834-3300
www.woodpatel.com
PHOENIX • MESA • TUCSON

JOB# 154302

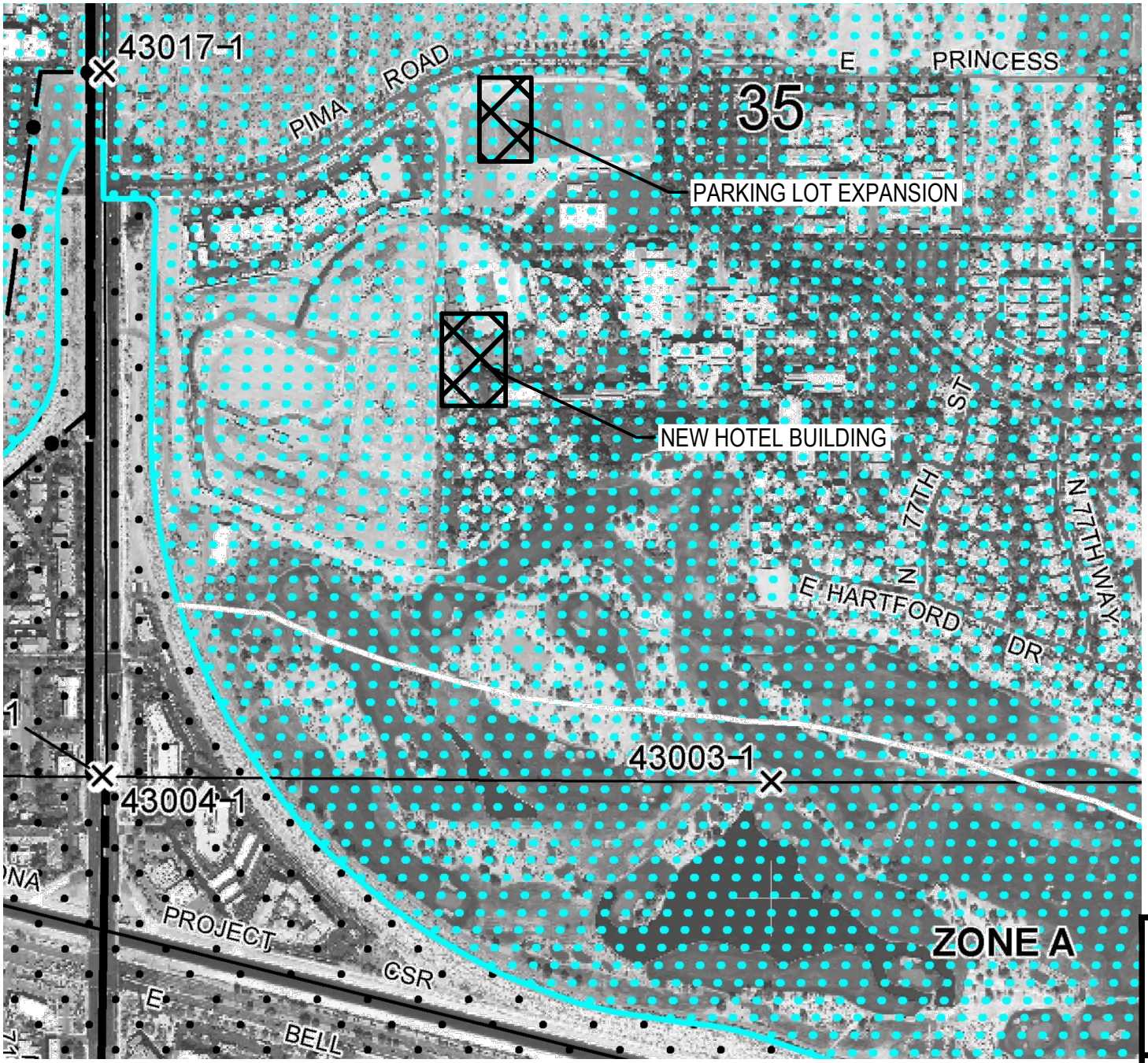
N:\2015\154302\Project Support\Reports\Drainage\Exhibits\ 4302 Exhibit 1 - Vicinity Map.dwg

APPENDIX A - FOR REFERENCE ONLY

# EXHIBIT 2

# FEMA MAP

APPENDIX A - FOR REFERENCE ONLY




NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1320L

**FIRM**

**FLOOD INSURANCE RATE MAP**

**MARICOPA COUNTY, ARIZONA**

**AND INCORPORATED AREAS**

**PANEL 1320 OF 4425**

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

| COMMUNITY | NUMBER | PANEL | SUFFIX |
|---|---|---|---|
| MARICOPA COUNTY | 040037 | 1320 | L |
| PHOENIX, CITY OF | 040051 | 1320 | L |
| SCOTTSDALE, CITY OF | 045012 | 1320 | L |

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

**MAP NUMBER**
**04013C1320L**

**MAP REVISED**
**OCTOBER 16, 2013**

**Federal Emergency Management Agency**

N

600 0 300 600

1 inch = 600 ft.

PROJECT AREA

NOT FOR CONSTRUCTION

# FAIRMONT SCOTTSDALE HOTEL EXPANSION

## EXHIBIT 2
## FEMA FIRM


**WOOD/PATEL**
2220 S. Country Club Dr.
Suite 101
Mesa, AZ 85210
(480) 834-3300
www.woodpatel.com
PHOENIX • MESA • TUCSON

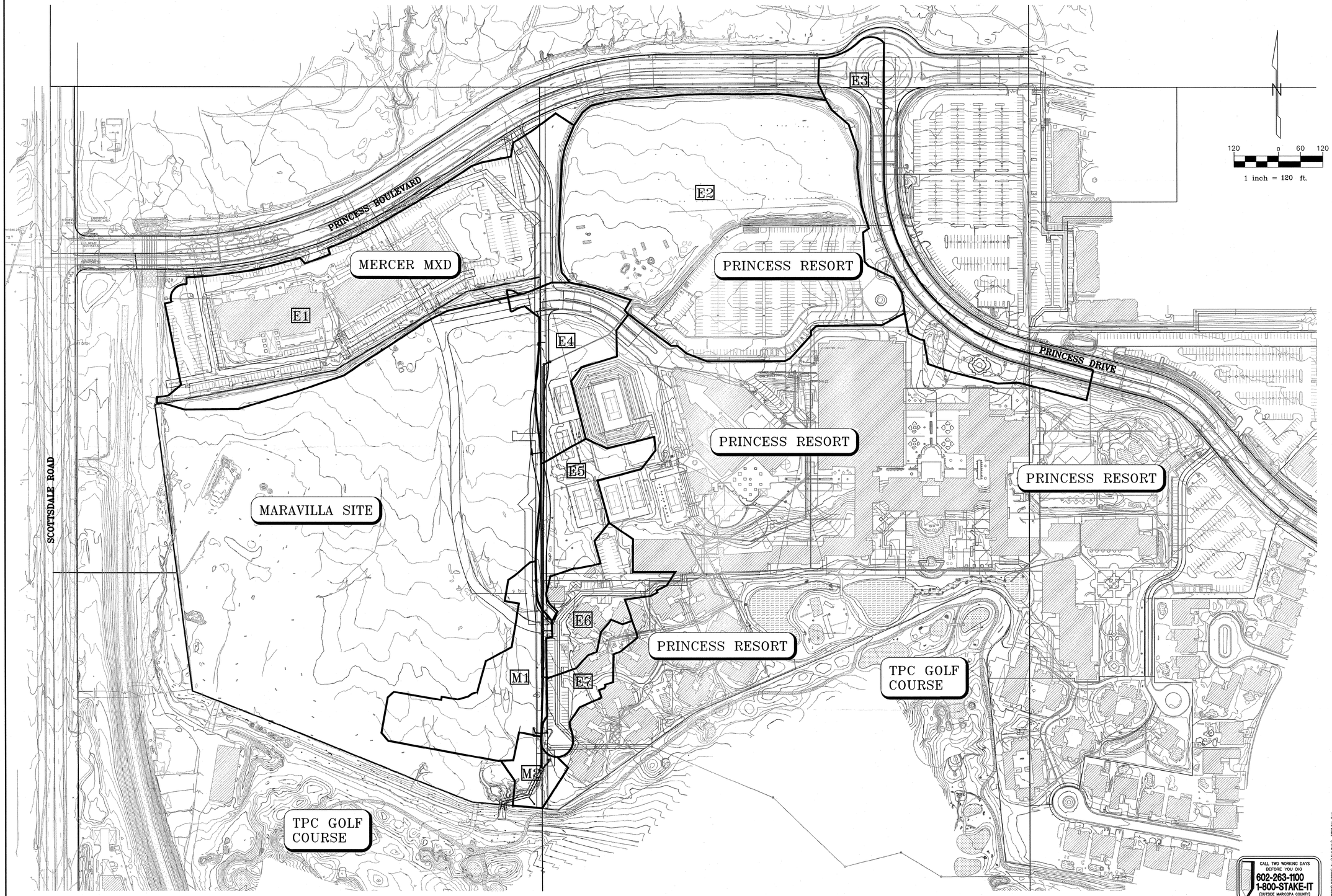

JOB# 154302

N:\2015\154302\Project Support\Reports\Drainage\Exhibits\ 4302 Exhibit 2 – FEMA FIRM.dwg

APPENDIX A - FOR REFERENCE ONLY

# EXHIBIT 3

# MARAVILLA EAST PROPERTY LINE ROAD DRAINAGE MAP




# MARAVILLA

## EAST PROPERY LINE ROADWAY

### DRAINAGE MAP

NOT FOR CONSTRUCTION OR RECORDING

**WOOD/PATEL**
LAND DEVELOPMENT • WATER RESOURCES
TRANSPORTATION / TRAFFIC
WATER / WASTEWATER • SURVEYING
CONSTRUCTION MANAGEMENT
1855 N. Stapley Drive
Mesa, AZ 85203
(480) 834-3300
www.woodpatel.com
PHOENIX • MESA • TUCSON • GOODYEAR

| | |
|---|---|
| ENGINEER | J. BULKA |
| DESIGNER | J. HEYWOOD |
| CAD TECHNICIAN | J. SANCHEZ |
| SCALE (HORIZ) | SCALE_HORIZ |
| SCALE (VERT) | SCALE_VERT |
| DATE | 4/09/08 |
| JOB NUMBER | 073091 |
| SHEET | 1 OF 1 |

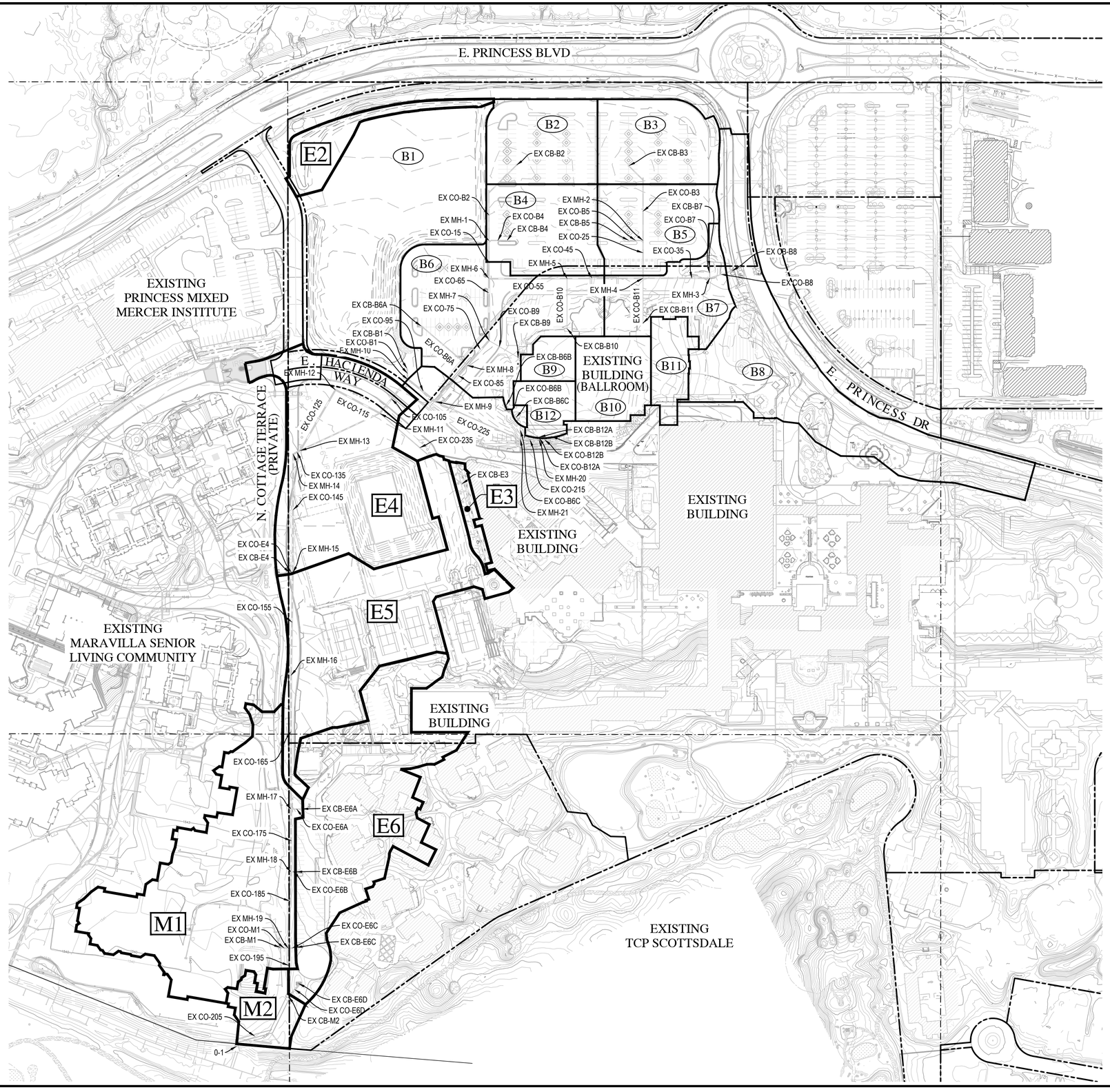
CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

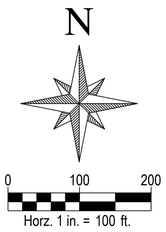
N:\2007\073091\dwg\Exhibits_3091drn.dwg

APPENDIX A - FOR REFERENCE ONLY

# EXHIBIT 4

# EXISTING DRAINAGE MAP




## LEGEND

- BASIN BOUNDARY
- PROPERTY BOUNDARY
- FLOW ARROW
- EXISTING STORM DRAIN
- E1 — EXISTING DRAINAGE AREA
- B1 — EXISTING DRAINAGE AREA - BALLROOM ADDITION
- M1 — EXISTING DRAINAGE AREA - MARAVILLA

N:\2015\154302\Project Support\Reports\Drainage\Exhibits\4302 Exhibit 4 - Existing Drainage Map.dwg

Call at least two full working days before you begin excavation.
ARIZONA 811
Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

# FAIRMONT SCOTTSDALE HOTEL EXPANSION

EXHIBIT 4
EXISTING
DRAINAGE MAP

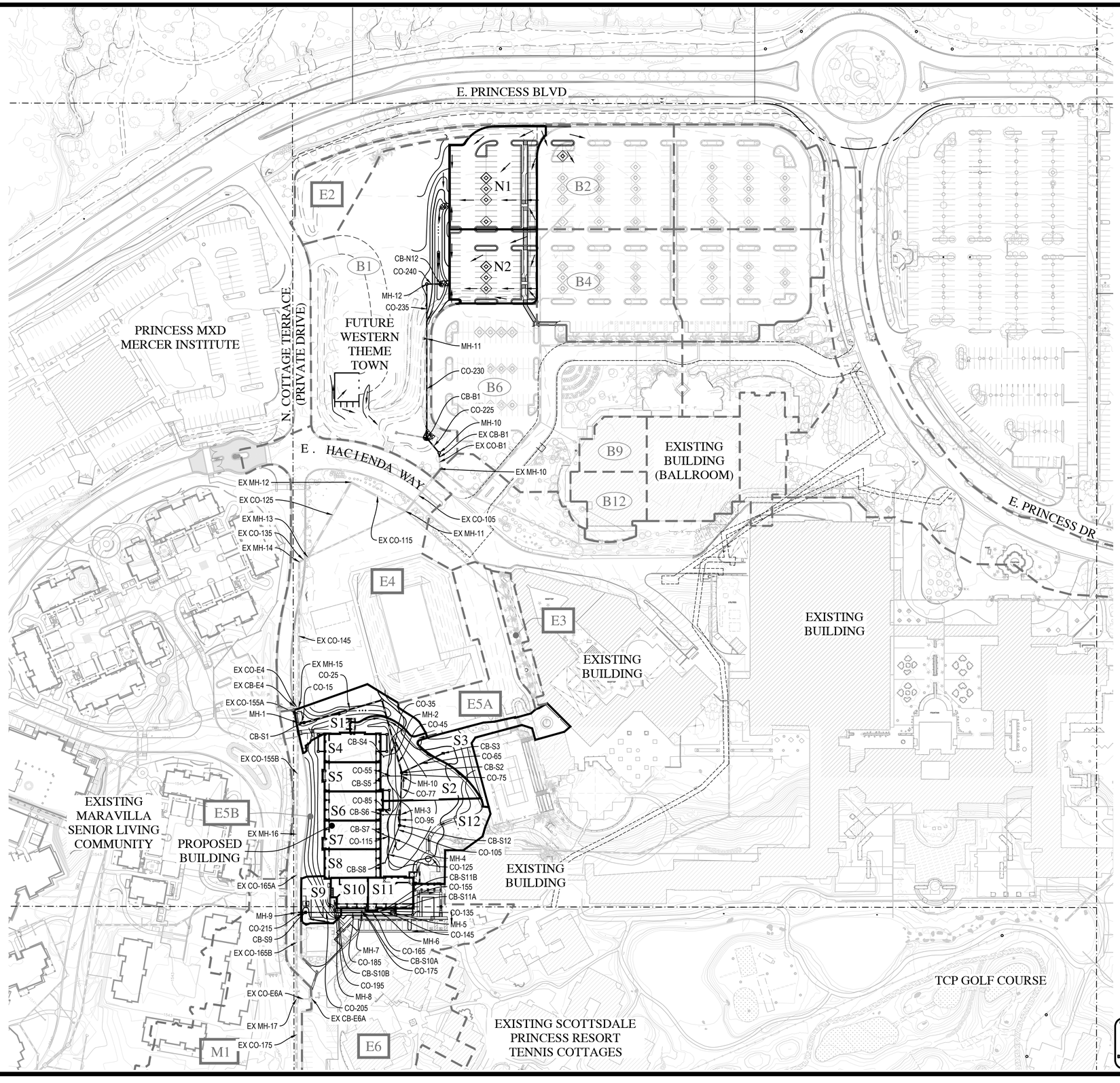
**WOOD/PATEL**
2220 S. Country Club Dr.
Mesa, AZ 85210
(480) 834-3300
www.woodpatel.com
PHOENIX • MESA • TUCSON

JOB# 154302

APPENDIX A - FOR REFERENCE ONLY

# EXHIBIT 5A

# PROPOSED DRAINAGE MAP 1




N

0 80 160

Horz. 1 in. = 80 ft.

## LEGEND

- PROPOSED DRAINAGE AREA
- EXISTING DRAINAGE AREA
- PROPERTY BOUNDARY
- FLOW ARROW
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- EXISTING INTERMEDIATE CONTOUR
- EXISTING INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED INDEX CONTOUR
- N1 PROPOSED DRAINAGE AREA - NORTH
- S1 PROPOSED DRAINAGE AREA - SOUTH
- E1 EXISTING DRAINAGE AREA
- B1 EXISTING DRAINAGE AREA - BALLROOM ADDITION
- M1 EXISTING DRAINAGE AREA - MARAVILLA
- ULTIMATE OUTFALL ULTIMATE OUTFALL

N:\JOB\15\154302\Project Support\Reports\Drainage Exhibits\4502 Exhibit 5 - Proposed Drainage Map.dwg

# FAIRMONT SCOTTSDALE HOTEL EXPANSION

## EXHIBIT 5A PROPOSED DRAINAGE MAP-1

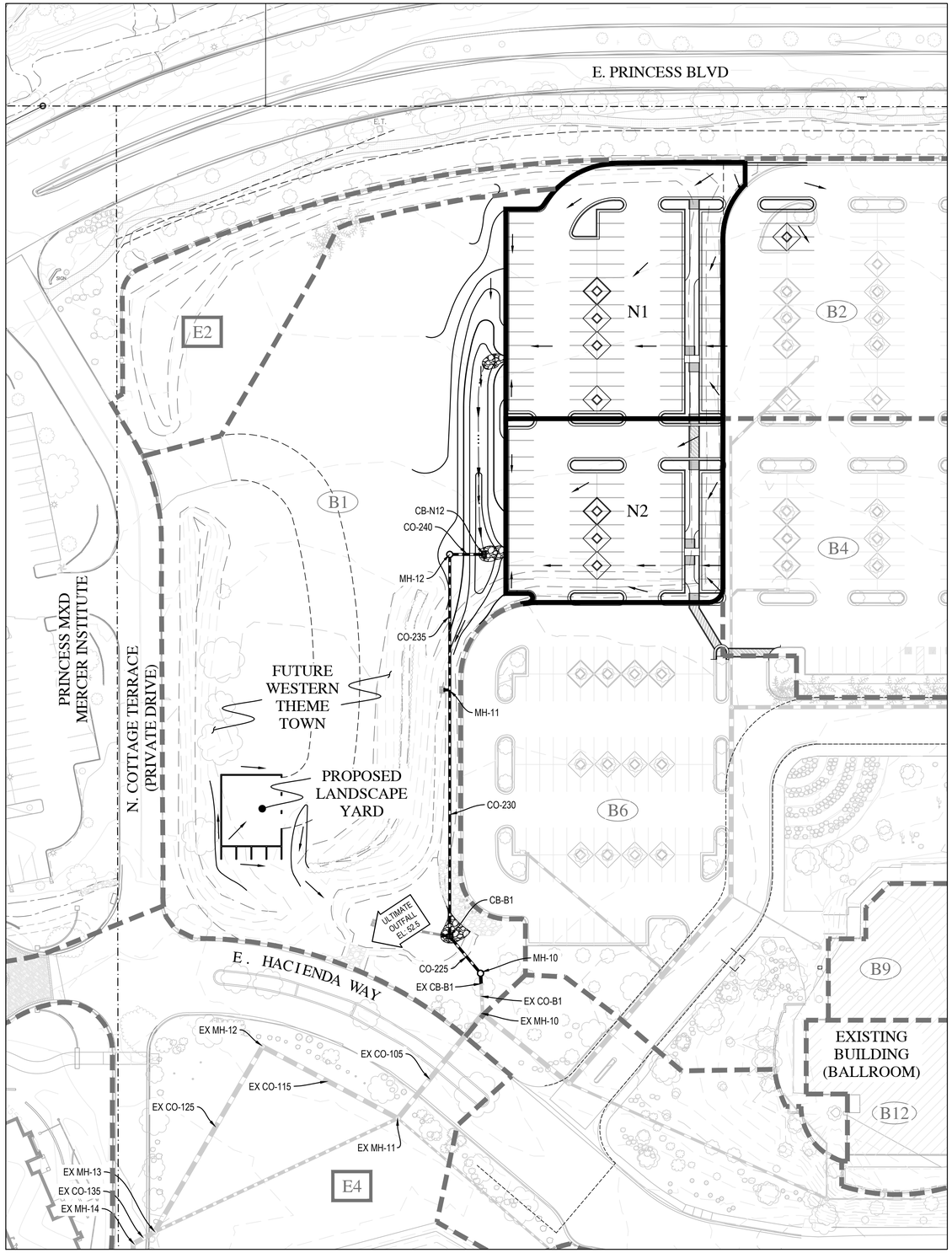
**WOOD/PATEL**
2220 S. Country Club Dr.
Mesa, AZ 85210
(480) 834-3300
www.woodpatel.com
PHOENIX • MESA • TUCSON

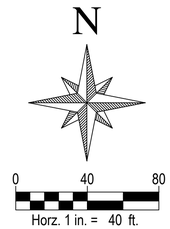
JOB# 154302

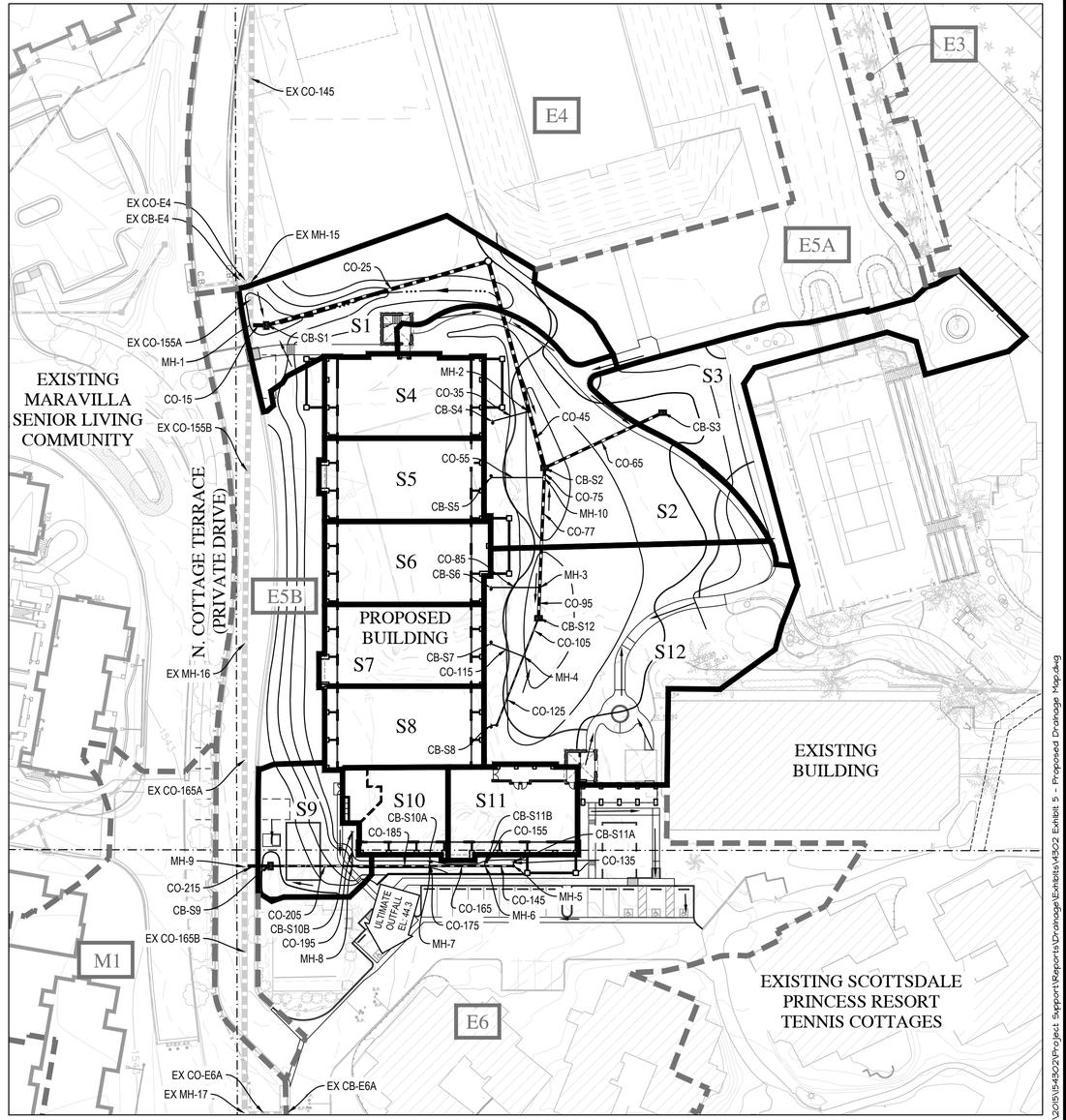
APPENDIX A - FOR REFERENCE ONLY

# EXHIBIT 5B

# PROPOSED DRAINAGE MAP 2




N:\JOBS\154302\Project Support\Reports\Drainage\Exhibits\154302 Exhibit 5 - Proposed Drainage Map.dwg

## LEGEND

- PROPOSED DRAINAGE AREA
- EXISTING DRAINAGE AREA
- PROPERTY BOUNDARY
- FLOW ARROW
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- EXISTING INTERMEDIATE CONTOUR
- EXISTING INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED INDEX CONTOUR

- N1 — PROPOSED DRAINAGE AREA - NORTH
- S1 — PROPOSED DRAINAGE AREA - SOUTH
- E1 — EXISTING DRAINAGE AREA
- B1 — EXISTING DRAINAGE AREA - BALLROOM ADDITION
- M1 — EXISTING DRAINAGE AREA - MARAVILLA
- ULTIMATE OUTFALL — ULTIMATE OUTFALL



# FAIRMONT SCOTTSDALE HOTEL EXPANSION

## EXHIBIT 5B PROPOSED DRAINAGE MAP-2

**WOOD/PATEL**
2220 S. Country Club Dr.
Mesa, AZ 85210
(480) 834-3300
www.woodpatel.com
PHOENIX • MESA • TUCSON

JOB# 154302

**APPENDIX B – DRAINAGE REPORT FOR FAIRMONT SCOTTSDALE WESTERN THEME TOWN BY WOOD, PATEL & ASSOCIATES, INC., DATED MAY 15, 2015**

APPENDIX B - FOR REFERENCE ONLY

# DRAINAGE REPORT
# FOR
# FAIRMONT SCOTTSDALE
# WESTERN THEME TOWN

May 15, 2015
WP# 154302.10
C.O.S. No.: 321-PA-2015

*Prepared for:*

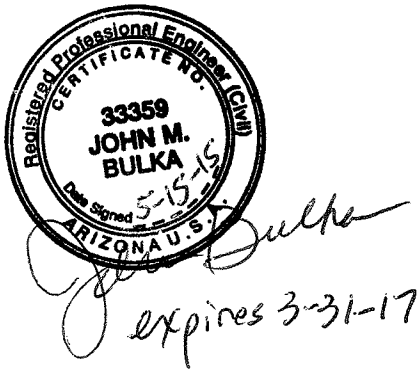
**Strategic Hotels and Resorts**
Mr. George Stowers
200 West Madison
Suite 1700
Chicago, Illinois 60606
*Phone: (312) 658-6016*

*Submitted to:*

**City of Scottsdale**
9388 East San Salvador Drive
Scottsdale, Arizona 85258
*Phone: (480) 312-5636*

*Prepared by:*

**Wood, Patel & Associates, Inc.**
2220 South Country Club Drive
Suite 101
Mesa, Arizona 85210
*Phone: (480) 834-3300*
*Website: www.woodpatel.com*




WOOD/PATEL
MISSION: CLIENT SERVICE™

APPENDIX B - FOR REFERENCE ONLY

## TABLE OF CONTENTS

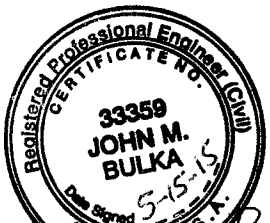


## APPENDICES



## EXHIBITS






expires 3-31-17

km
X:\Y-Drive\WP\Reports\Commercial\154302.10 Fairmont Scottsdale Western Theme Town Drainage Report.docx

## 1.0 INTRODUCTION

The proposed Fairmont Scottsdale Western Theme Town (Town) is a western-themed, outdoor entertainment theater with associated pantry and restroom facilities. The proposed development is located adjacent to the existing parking lot for the existing Fairmont Ballroom, located east of Scottsdale Road and south of Princess Drive. The project includes three (3) new buildings (refer to Exhibit 1 – *Vicinity Map*). The proposed Town is located along Cottage Terrace, on approximately 2.26 acres (ac), and is west of the existing parking lot for the Ballroom. More specifically, the site is located in the southwest quarter of Section 35, Township 4 North, Range 4 East of the Gila and Salt River Meridian (refer to Exhibit 1). The existing property, currently zoned C-2, is primarily undeveloped with a few bushes and trees. Current zoning is expected to stay the same for the proposed improvements.

The purpose of this report is to obtain City of Scottsdale approval for the proposed Fairmont Scottsdale Western Theme Town, with respect to the City of Scottsdale's drainage criteria.

Analysis and modeling for this study was performed in accordance with the requirements of the *Design Standards and Policies Manual, Chapter 4: Grading and Drainage* (DS&PM), City of Scottsdale, 2010 (Ref. 1). The methods of analysis, sources of data and assumptions, and the results of the analysis are discussed in detail in the following sections of this report.

# 2.0 EXISTING DRAINAGE CONDITIONS AND CHARACTERISTICS

## 2.1 FEMA Floodplain

The Federal Emergency Management Agency (FEMA) has published a 100-year floodplain, per Flood Insurance Rate Map (FIRM) Panel 1320 of 4425, Map Number 04013C1320L, dated October 16, 2013. The site is within a flood zone labeled "AO-Depth 1 Foot, Velocity 3 FPS".

Zone "AO" is defined by FEMA as follows:

> *"Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined."*

As displayed on the FEMA FIRM panel, the floodplain delineation includes a large portion of land, which includes this project site (refer to Exhibit 2 – *FEMA Map*).

It is the understanding of Wood, Patel & Associates, Inc. (Wood/Patel), based on past experience and interpretations of the City of Scottsdale's floodplain ordinance that development of land within a FEMA Zone "AO" is acceptable as long as, in general, the lowest floor elevation is above or properly protected from the anticipated 100-year water surface elevations. No problems are anticipated with developing the parcel in accordance with the City's floodplain ordinance. No underground structures or parking structures are proposed.

## 2.2 Offsite Drainage Conditions

A large watershed occurs north of the Fairmont Scottsdale Resort. The watershed has been previously studied and peak flows estimated for existing and proposed conditions, and results were published in the Core North/Core South Drainage Study (Ref. 5). Refer to Appendix D – *Offsite Watershed Exhibits* for the Regional Contour Map, Aerial Map, and Plate 1 and Table 1 from the Core North/Core South study and report (Ref. 5). The Fairmont Scottsdale Resort property is protected from this offsite flow by several past improvements. Originally, when Princess Boulevard was constructed, offsite flows were diverted to the west by a channel on the north site of Princess Boulevard. The flood waters are routed to an existing drainage culvert under Princess Boulevard, just east of

Scottsdale Road. These flood waters are routed south along the east side of Scottsdale Road to the Tournament Players Club (TPC) Golf Course. As the Fairmont Scottsdale Resort continued to develop over the years, the City of Scottsdale requested additional improvements to protect the property from offsite flows from the north. Additional improvements were contingent with the Request for Stormwater Storage Waiver for the Fairmont Scottsdale Resort property in 2008 as development continued (refer to Exhibit B – *Stormwater Storage Waiver / Proposed Drainage Improvements Exhibit*). The additional improvements included adding a flood/screen wall along the south side of Princess Boulevard, providing a high point on Cottage Terrace just south of Princess Drive, providing a high point just south of the traffic circle on Princess Drive, providing a channel and floodwall along the west side of the Maravilla site, and removing and replacing the existing culverts on Princess Drive with a new bridge structure. Currently, all of these improvements have been constructed with past projects (Fairmont Ballroom Addition and the Maravilla Senior Living Community) with the exception of replacing the culverts on Princess Drive with a bridge structure. It is our understanding the Fairmont ownership is working with the City of Scottsdale on an agreement to replace these culverts.

The Hayden/Rhodes (Granite Reef) Aqueduct was constructed as part of the (CAP) by the U.S. Bureau of Reclamation. This existing aqueduct is located along the southern edge of the TPC golf course, and extends east-west the length of the CAP canal. The aqueduct is at a significantly higher elevation than the golf course and acts as a dike which creates stormwater ponding in the existing golf course. The 100-year high water level is at an elevation of 1536.00 NGVD 29 Datum (Ref. 6). The conversion to the NAVD 88 Datum is 1.8 feet, so the 100-year high water level elevation is approximately 1537.80. The proposed finish floors for the new Town buildings will be elevation 1557.00 for the pantry/restroom and restroom buildings, and elevation 1559.30 for the theater building, which are19.20 and 21.50 feet above the 100-year high water elevation, respectively.

When the Maravilla Senior Living Community was constructed, Cottage Terrace Drive (a private drive) was relocated to the west side of the Fairmont Scottsdale Resort property to accommodate vehicle access to the Resort. A storm drain system was installed with the driveway improvements to benefit both properties. An analysis of the storm drain system

was done as a part of the Fairmont Scottsdale Hotel Expansion project for the existing and proposed conditions, and results were published in the *Drainage Report for the Fairmont Scottsdale Hotel Expansion* (Ref. 9).

Runoff from the existing Princess MXD Mercer Institute (MXD) site drains to the west to the existing flood control channel located between Scottsdale Road and the Maravilla project (Ref. 9).

## 2.3 Onsite Drainage Conditions (Pre-Development)

The existing site slopes generally from the northeast to the southwest with an average slope of approximately two percent (2%). Stormwater is captured into an existing storm drain system via existing catch basins and curb inlets located within Cottage Terrace Drive (private drive), which ultimately drains into the existing TPC Golf Course at the Fairmont Scottsdale Princess Resort, located immediately north of the Hayden-Rhodes Aqueduct. Currently, the site consists of a variety of desert landscaping (bushes and trees). There is some undeveloped area at the northeast corner of the property that is currently dirt and decomposed granite (refer to Exhibit 3). A C-value of 0.37 was used for the existing conditions of the site for desert landscaping (Ref. 9).

## 3.0 PROPOSED DRAINAGE PLAN

### 3.1 Onsite Drainage Conditions (Post-Development)

This site was designed to utilize the existing storm drain system in Cottage Terrace Drive and to maintain the existing site outfall locations at the southwest corner of the property. During a 10-year storm event, the proposed storm drain system is designed to capture the runoff through a series of catch basins at low points throughout the project site and convey it to the existing storm drain system located within Cottage Terrace. During a 100-year storm event, the runoff is expected to exceed the capacity of the proposed storm drain system and the excess will be conveyed overland (south on Cottage Terrace Drive) to the outfall at the TPC golf course. The proposed grading is designed to allow for approximately 2.6 feet of ponding for the area to the north before the runoff overtops the local high points and continue towards the outfall location. This depth is a temporary condition, and will likely reduce once the area is developed. Cottage Terrace Drive has been designed to handle the 100-year flow, per the approved *Drainage Report for Maravilla East Property Line Road*, dated May 12, 2008, revised October 15, 2008 (Ref. 4). A weighted C-value of 0.41 was used for the proposed condition of the site for desert landscaping and the buildings of the Town (Ref. 9). Tributary areas, flow directions, catch basins, storm drains, 100-year overland flow paths, and the ultimate site outfall location are labeled on Exhibit 4.

### 3.2 Lowest Habitable Finished Floor Elevations

The Grading and Drainage Plan has been designed to comply with the City of Scottsdale's floodplain ordinance for a Zone "AO" floodplain. It is our understanding, unless other flood proof measures are presented and approved, the proposed lowest habitable finished floor (LFF) elevation must be designed a minimum of 1 foot above the anticipated 100-year flood elevation. As previously mentioned, the proposed finish floors for the new Town buildings will be at elevations 1557.00 and 1559.30, or 19.20 and 21.50 feet, respectively, above the 100-year high water elevation in the TPC Golf Course. In addition, the lowest finish floor elevation is designed to be a minimum of 1 foot above the adjacent finish grade. Refer to Exhibit 4 for a graphical representation.

The Site is located within a Zone "AO" floodplain, defined as having a flood depth of 1 foot. Therefore, the anticipated 100-year flood elevation is 1 foot above "natural" grade, and proposed LFF elevation must have 1 foot additional freeboard or be a minimum of 2 feet above natural grade. Due to the disturbed condition of the Site from previous

development, the natural grade has been modified. According to Curry's Corner 7.5 minute Topographic Survey Map by USGS from 1964 with a contour interval of 10-feet, the approximate highest natural grade of this site prior to development is 1555.00, which is 2.00 and 4.30 feet lower than the proposed lowest finish floors of 1557.00 and 1559.30, respectively. It is our understanding this is in compliance with the City's floodplain ordinance. Refer to the *Regional Contour Map* within Appendix D, which shows the highest natural grade elevation relative to the proposed building location.

### 3.3 Stormwater Retention

A Request for Stormwater Storage Waiver was submitted and approved by the City of Scottsdale on October 23, 2008 (refer to Appendix B). Therefore, onsite stormwater retention is not required.

### 3.4 Operation and Maintenance

The property owner shall be solely responsible for the operation and maintenance of the stormwater drainage system.

# 4.0 SPECIAL CONDITIONS

## 4.1 Special Conditions

Currently, there are no washes with 100-year flows greater than 50 cfs that traverse the project site. Also, there are no designated Section 404 washes within the site; therefore, no Section 404 permit is required.

# 5.0 DATA ANALYSIS

## 5.1 Hydrologic Analysis

The drainage improvements are to be developed consistent with Chapter 4 of the City of Scottsdale *Design Standards and Policies Manual*, 2010. The Rational Method has been used to quantify peak discharge values for onsite concentration points for the proposed build out scenario during the 10-year and 100-year storm events. Weighted "C" runoff coefficients were referenced from Chapter 4 of the City of Scottsdale *Design Standards and Policies Manual*, 2010. Refer to Appendix A – *Hydrologic and Hydraulic Calculations* for inlet capacity information, Exhibit 4 – *Proposed Drainage Map* for drainage basin tributary area and concentration point locations, and the *Drainage Report for Fairmont Scottsdale Hotel Expansion* for Rational Method calculations and rainfall data.

## 5.2 Hydraulic Analysis

The onsite storm drain system has been designed to accommodate the 10-year storm event. Bentley StormCAD Version 8i was utilized to analyze the existing and proposed storm sewer system with printouts and storm drain profiles as part of the *Drainage Report for the Fairmont Scottsdale Hotel Expansion* (Ref. 9).

## 6.0 CONCLUSIONS

The project site is believed to be capable of development as presented with regard to the City of Scottsdale's onsite and offsite drainage requirements. The project's drainage highlights are as follows:

- The site is protected from offsite flows from the north by improvements, as outlined in the approved stormwater storage waiver.

- The proposed drainage infrastructure has been designed in accordance with the City of Scottsdale *Design Standards & Policies Manual*, 2010. The Rational Method was used to estimate peak discharges for all drainage areas. The flow capacities of the proposed storm system have been designed to accept the 10-year storm event.

- No stormwater retention has been provided for this project, per the approved stormwater storage waiver from the City of Scottsdale.

- The onsite 100-year storm event is to be conveyed south, by storm drain and overland flow, to the existing TPC Golf Course, per the *Drainage Report for Fairmont Scottsdale Hotel Expansion.*

- The 100-year high water elevation is 1537.80 in the adjacent TPC golf course, which is 19.20 and 21.50 feet below the proposed new buildings lowest finish floor elevations of 1557.00 and 1559.30, respectively.

- The project site is in a FEMA designated 100-year floodplain (Zone "AO-Depth 1 foot") in both pre- and post-development conditions.

- The lowest finish floor elevations of 1557.00 and 1559.30 are approximately 2.00 and 4.30 feet higher than the highest natural ground elevation of 1555.00. It is our understanding this is in compliance with the City's floodplain ordinance, which requires the lowest finished floor to be a minimum of 2 feet above (1 foot for AO and 1 foot of freeboard) the natural highest grade.

## 7.0 REFERENCES


1. *Design Standards and Policies Manual, Chapter 4: Grading and Drainage*, City of Scottsdale, January 2010.
2. *Onsite Drainage Report for Fairmont Scottsdale Ballroom Addition*, Wood, Patel & Associates, Inc., July 14, 2011.
3. *Offsite Drainage Report for Fairmont Scottsdale Ballroom Addition*, Wood, Patel & Associates, Inc., July 14, 2011.
4. *Drainage Report for Maravilla East Property Line Road*, Wood, Patel & Associates, Inc., dated May 12, 2008, revised October 15, 2008.
5. *Drainage Study Core North/Core South Scottsdale, AZ*, Robert Ward, P.E., Consulting Engineering, September 25, 2001. Prepared for Arizona State Land Department.
6. *Sedimentation Report Reach 11 Dikes Hayden/Rhodes (Granite Reef) Aqueduct*, Earth Science Division, Surface Water Branch, Sedimentation Office of Denver, Colorado, July 1990.
7. *Maravilla Scottsdale Senior Living Community*, Wood, Patel & Associates, Inc., December 18, 2008, Revised February 13, 2009.
8. *Curry's Corner Quadrangle*, 7.5 Minute Series Topographic Map, USGS, 1964.
9. *Drainage Report for Fairmont Scottsdale Hotel Expansion*, Wood, Patel & Associates, Inc., May 1, 2015.

APPENDIX B - FOR REFERENCE ONLY

# APPENDIX A

# HYDROLOGIC AND HYDRAULIC CALCULATIONS

**WOOD/PATEL**

CIVIL ENGINEERS * HYDROLOGISTS * LAND SURVEYORS * CONSTRUCTION MANAGERS

## Inlet Capacity Summary

**Description:** Summary of Inlet Sizing Calculations
**Location:** Fairmont Scottsdale Western Town

| Inlet ID | Contributing Drainage Area ID* | Q10 (cfs)* | Available Head (ft) | Inlet Type | Inlet Capacity (cfs) | 10-Year Actual Ponding Depth (ft) |
|---|---|---|---|---|---|---|
| MAG | 1/2 B1 | 2.1 | 1.0 | MAG 535 | 25.50 | 0.17 |
| Neenah | 1/2 B1 | 2.1 | 1.0 | Neenah R-2557 | 9.60 | 0.15 |

*Contributing drainage area ID and flow information taken from the *Drainage Report for the Fairmont Scottsdale Hotel Expansion*, Wood, Patel and Associates, dated May 1, 2015.

**WOOD/PATEL**

CIVIL ENGINEERS * HYDROLOGISTS * LAND SURVEYORS * CONSTRUCTION MANAGERS

## Inlet Capacity - Sump Locations

**Description:** Calculation of Inlet Capacity for Single MAG 535 Catch Basin (w/o Curb)
**Location:** Fairmont Scottsdale Western Town
**Reference:** Drainage Design Manual for Maricopa County, Vol. II, Hydraulics, pg. 3-27

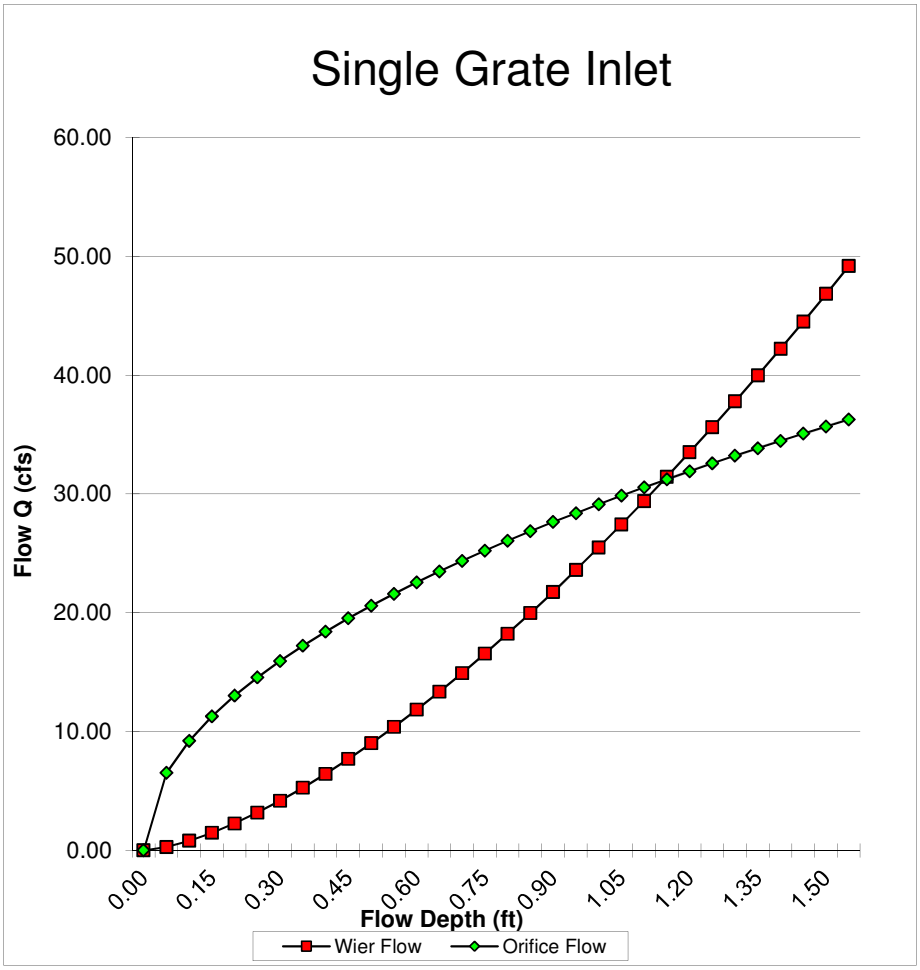
**Weir EQ.** $Q_i = C_w P d^{1.5}$ **Orifice EQ.** $Q_i = C_o A (2gd)^{0.5}$

**Where:** $C_w = 3.0$, $C_o = 0.67$

| | | |
|---|---|---|
| **P =** | **8.50** | **ft** |
| **A =** | **5.42** | **sq.ft.** |

where,
P = Perimeter of Catchbasin minus
area of longitudinal & lateral bars (2 Short Sides, 1 Long Side)
A = Total area of grate minus
area of longitudinal & lateral bars

| Depth (ft) | Weir Qi (cfs) | Orifice Qi (cfs) |
|---|---|---|
| 0.00 | **0.00** | **0.00** |
| 0.05 | **0.29** | **6.52** |
| 0.10 | **0.81** | **9.22** |
| 0.15 | **1.48** | **11.29** |
| 0.20 | **2.28** | **13.03** |
| 0.25 | **3.19** | **14.57** |
| 0.30 | **4.19** | **15.96** |
| 0.35 | **5.28** | **17.24** |
| 0.40 | **6.45** | **18.43** |
| 0.45 | **7.70** | **19.55** |
| 0.50 | **9.02** | **20.61** |
| 0.55 | **10.40** | **21.61** |
| 0.60 | **11.85** | **22.57** |
| 0.65 | **13.36** | **23.49** |
| 0.70 | **14.93** | **24.38** |
| 0.75 | **16.56** | **25.24** |
| 0.80 | **18.25** | **26.07** |
| 0.85 | **19.98** | **26.87** |
| 0.90 | **21.77** | **27.65** |
| 0.95 | **23.61** | **28.40** |
| 1.00 | **25.50** | **29.14** |
| 1.05 | **27.44** | **29.86** |
| 1.10 | **29.42** | **30.56** |
| 1.15 | 31.45 | **31.25** |
| 1.20 | 33.52 | **31.92** |
| 1.25 | 35.64 | **32.58** |
| 1.30 | 37.80 | **33.23** |
| 1.35 | 40.00 | **33.86** |
| 1.40 | 42.24 | **34.48** |
| 1.45 | 44.52 | **35.09** |
| 1.50 | 46.85 | **35.69** |
| 1.55 | 49.21 | **36.28** |



APPENDIX B - FOR REFERENCE ONLY



MUNICIPAL PRODUCT SEARCH

Enter a product number. Go

Downloadable Product Catalog

ENGINEERING TOOLS

- Modified Manning Calculators
- Weir and Orifice Calculator
  - Weir Flow
  - Orifice Flow
- Curb Opening Hydraulics Calculator
- R-4999 Vane Trench Grate Hydraulics
- Neenah Grate Information
- Engineering Literature & Videos

# WEIR & ORIFICE CALCULATOR

The Weir and Orifice Calculator is used to determine the inlet capacity in sag (ponding) conditions by use of the Weir and Orifice equations. Knowing this information will allow you to select the proper grate type and size for your specific job or project.

### Weir Flow Calculations

Weir Equation: $Q = 3.3P(h)^{1.5}$

- **Q** = Capacity in CFS
- **P** = Feet perimeter
- **h** = Head in feet
- Weir Information

### Orifice Flow Calculations

Orifice Flow Equation: $Q = 0.6A\sqrt{2gh}$

- **Q** = Capacity in CFS
- **A** = Free open area of grate in sq. ft.
- **g** = 32.2 (feet per sec/sec)
- **h** = Head in feet
- Orifice Information

### Instructions:

1. Select a catalog number (will automatically fill in Open Area and Perimeter) or enter your own values
2. Enter head value
3. Click "calculate"

The results will determine automatically if your situation falls into a Weir, Transitional or Orifice flow. Additionally, Neenah grates which fall within the parameters chosen will appear below the calculator.

**Catalog Number and Grate Type:**

R-2557:G

| Feet perimeter (P): | Head in feet (h): | Free open area in sq. ft. (A): |
|---|---|---|
| 8.4 | 1 | 2.0 |

Calculate

| Weir capacity in cfs: | Transitional flow in cfs: | Orifice capacity in cfs: |
|---|---|---|
| | | 9.6 |

**Based on orifice flow, the following grates match the criteria you entered.**

| Catalog Number | Grate Type |
|---|---|
| R-1792-GG | G |
| R-1879-A6G | A or C |
| R-2557 | G |
| R-2558 | G |
| R-2560-E2 | Beehive |

APPENDIX B - FOR REFERENCE ONLY

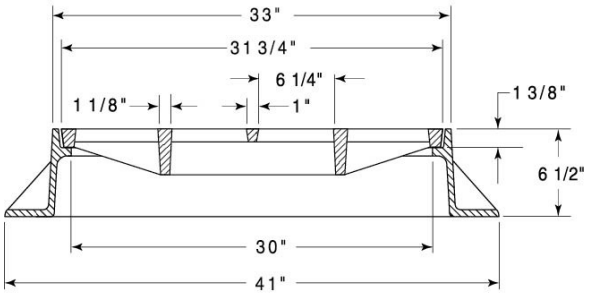
NEENAH FOUNDRY

# R-2557 - Inlet Frames & Grates

## R-2557

**Inlet Frame, Grate**

Heavy Duty




| CATALOG NUMBER | GRATE TYPE | SQ. FT. OPEN | WEIR PERIMETER LINEAL FEET |
|---|---|---|---|
| R-2557 | G | 2.0 | 8.4 |

Available Lid: **R-1557**

| Catalog Number | A | B | C | E | F |
|---|---|---|---|---|---|
| **R-2557** | 31-3/4 | 1-3/8 | 30 | 41 | 6-1/2 |

**All dimensions are listed in inches unless otherwise noted.**

To order Neenah Foundry products, please call **800.558.5075**.

APPENDIX B - FOR REFERENCE ONLY

# APPENDIX B

## STORMWATER STORAGE WAIVER /
## PROPOSED DRAINAGE IMPROVEMENTS EXHIBIT

PRINCESS

APPENDIX B - FOR REFERENCE ONLY

10/22

# Request for Stormwater Storage Waiver

292-SA-2007

City of Scottsdale Case Numbers:

___ - PA - ___ ___ - ZN - ___ ___ - UP - ___ ___ - DR - ___ ___ - PP - ___ PC# 6332-07-7

The applicant/developer must complete and submit this form to the city for processing and obtain approval of waiver request *before submitting Improvement plans.* Denial of the waiver may require the developer to submit a revised site plan to the Development Review Board.

Date 7/14/08 Project Name Fairmont Scottsdale Princess Resort

Project Location 7575 East Princess Drive Scottsdale, AZ 85255

Applicant Contact John Bulka Company Name Wood Patel & Associates

Phone 480-834-3300 Fax 480-834-3320 E-mail jbulka@woodpatel.com

Address 1855 N. Stapley Mesa, AZ 85203

**Waiver Criteria**

A waiver is an intentional relinquishment of a claim or right. A project must meet at least one of six criteria listed below for the city to consider waiving some or all required stormwater storage. Check the applicable box and provide a signed engineering report and supporting engineering analyses that demonstrate the project meets the criteria *and* that the effect of a waiver will not increase the potential for flooding on any property.

☐ 1. The runoff for the project has been included in a storage facility at another location. The applicant must demonstrate that the stormwater storage facility was specifically designed to accommodate runoff from the subject property and that the runoff will be conveyed to this location through an adequately designed conveyance facility.

☒ 2. The development is adjacent to a watercourse or channel that an engineering analysis shows is designed and constructed to handle the additional runoff without increasing the potential for flood damage to the subject property or to any other property.

☐ 3. The development is on a parcel less than one-half acre in size in an area where the engineering analysis demonstrates there is no significant increase in potential for flood damage due to its development.

☐ 4. Stormwater storage requirements conflict with requirements of the Environmentally Sensitive Lands Ordinance (ESLO). The applicant must demonstrate there is no increased potential for flood damage to the subject property or to any other property. Such conflicts with ESLO may include:

- Total land requirements for storage basin, easements, setbacks, and NAOS prevent building allowable footprint per zoning.
- Topography prevents building storage basin.
- Creating a storage facility requires wash modification.
- Instances where the Zoning Administrator cannot allow a modification to ESL requirements.

☐ 5. The project is located within the Downtown Fee Reduction Area as described and approved by City Council Resolution #6238 (see map). The applicant must demonstrate there is no increased potential for flood damage to any property. Even if the project is located in the Downtown area, if the project creates additional potential for increased flood damage, the developer must provide alternative mitigation methods to prevent the damage.

☐ 6. The project is located within a watershed that drains directly to the Salt River Pima-Maricopa Indian Community (SRPMIC) (see map). The project must provide the pre-development peak discharge flow to the SRPMIC, and attenuate flows over and above pre-development.

By signing below, I certify that the stated project meets the waiver criteria selected above as demonstrated by the attached documentation.

John Bulka

Developer or Engineer (circle one)

7-16-08

Date

**Planning & Development Services Department**

7447 E Indian School Road, Suite 105, Scottsdale, AZ 85251 • Phone: 480-312-7000 • Fax: 480-312-7088



SWW

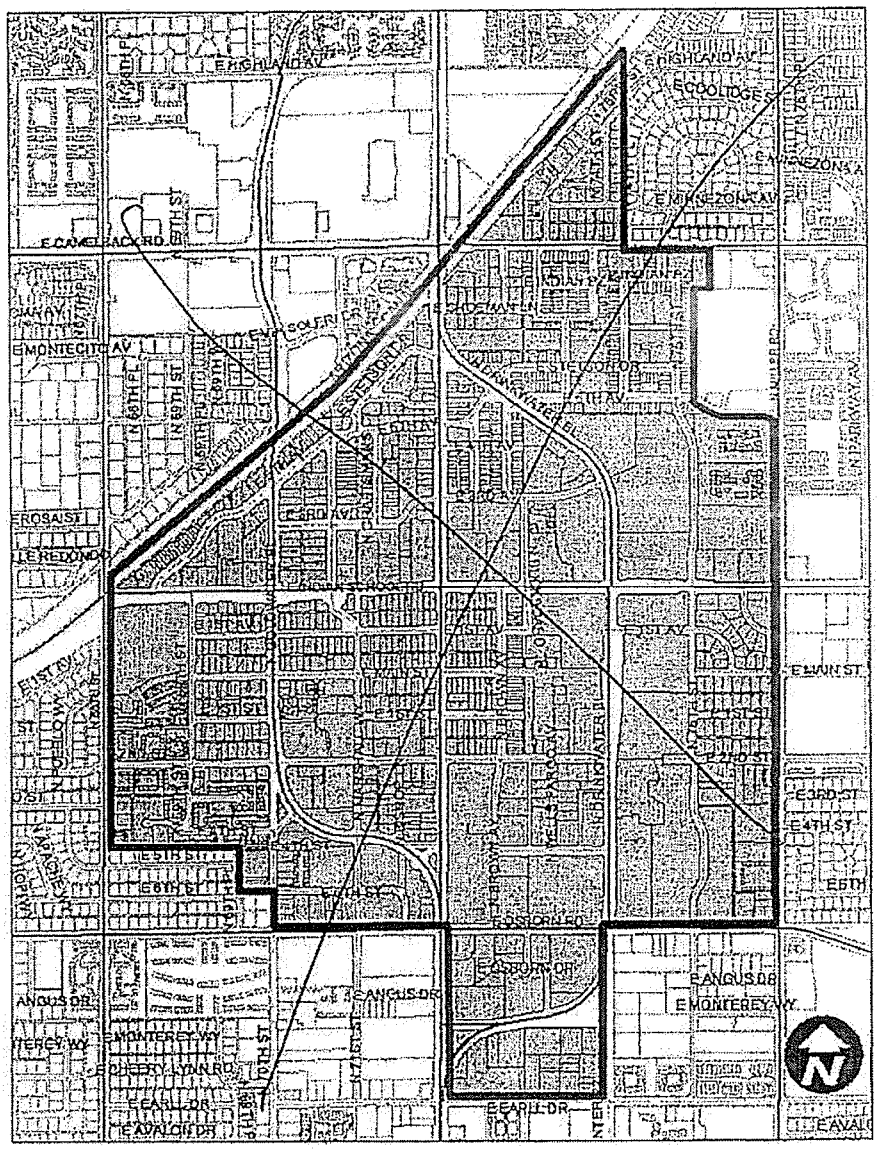
6332-07-7

# Request for Stormwater Storage Waiver

292-SA-2007

City of Scottsdale Case Numbers:

___ - PA - ____ ____ - ZN - ____ ____ - UP - ____ ____ - DR - ____ ____ - PP - ____ PC#_____




NOT APPLICABLE

**Figure 1. Designated Area for Downtown Stormwater Storage Waivers**

**Planning & Development Services Department**

7447 E Indian School Road, Suite 105, Scottsdale, AZ 85251 • Phone: 480-312-7000 • Fax: 480-312-7088

# Request for Stormwater Storage Waiver

City of Scottsdale Case Numbers:

___ - PA - ____ ____ - ZN - ____ ____ - UP - ____ ____ - DR - ____ ____ - PP - ____ PC#_____

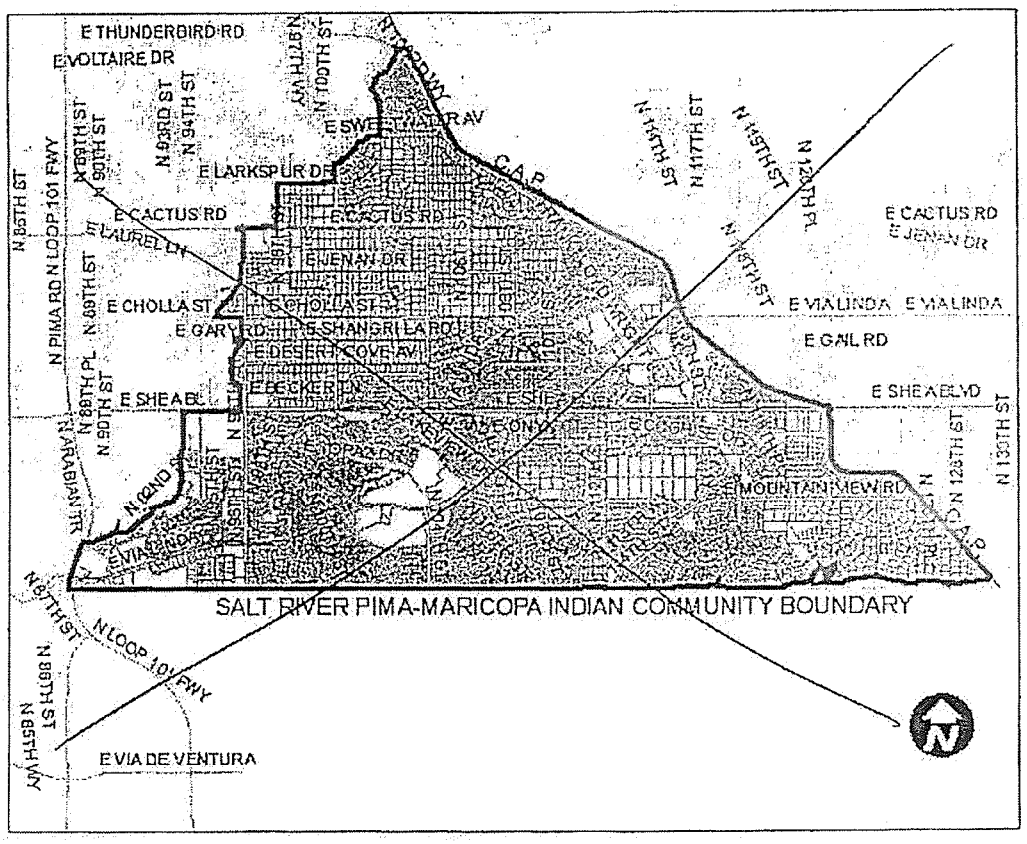



Figure 2. Watersheds Draining to Salt River Pima-Maricopa Indian Community

NOT APPLICABLE

**Planning & Development Services Department**
7447 E Indian School Road, Suite 105, Scottsdale, AZ 85251 • Phone: 480-312-7000 • Fax: 480-312-7088

# Request for Stormwater Storage Waiver

292-SA-2007

City of Scottsdale Case Numbers:

___ - PA - ___ ___ - ZN - ___ ___ - UP - ___ ___ - DR - ___ ___ - PP - ___ PC#_____

**CITY STAFF TO COMPLETE THIS PAGE**

Project Name FAIRMONT SCOTTSDALE PRINCESS RESORT

Check Appropriate Boxes:

☐ Meets waiver criteria (specify): ☐ 1 ☑ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

☑ Recommend approve waiver.

☐ Recommend deny waiver:
- ☐ None of waiver criteria met.
- ☐ Downstream conditions prohibit waiver of any storage.
- ☐ Other:

Explain: _____

☐ Return waiver request:
- ☐ Insufficient data provided.
- ☐ Other: _____

Explain: _____

Recommended Conditions of Waiver:
- ☒ All storage requirements waived.
- ☐ Pre development conditions must be maintained.
- ☑ Other:

Explain: In land improvements exceed cost of in-lieu fee.

☒ **Waiver approved per above conditions.**

☐ **Waiver denied.**

C. Ashley Couch — Floodplain Administrator or Designee

10/23/08 — Date

**Planning & Development Services Department**
7447 E Indian School Road, Suite 105, Scottsdale, AZ 85251 • Phone: 480-312-7000 • Fax: 480-312-7088

APPENDIX B - FOR REFERENCE ONLY

# Request for Stormwater Storage Waiver

292-SA-2007 City of Scottsdale Case Numbers:

___ - PA - ___ ___ - ZN - ___ ___ - UP - ___ ___ - DR - ___ ___ - PP - ___ PC#_____

## In-Lieu Fee and In-Kind Contributions

If the city grants a waiver, the developer is required to calculate and contribute an In-Lieu Fee based on what it would cost the city to provide the waived storage volume, including costs such as land acquisition, construction, landscaping, design, construction management, and maintenance over a 75-year design life. For FY 2007/2008, this cost is $3.22 per cubic foot of stormwater stored. This unit cost will be updated annually, but the city reserves the right to revise the unit cost at any time at its sole discretion.

The Floodplain Administrator considers in-kind contributions on a case-by-case basis. An in-kind contribution can serve as part of or instead of the calculated in-lieu fee. The Floodplain Administrator or designee must approve in-lieu fees and in-kind contributions.

Project Name Fairmont Scottsdale Princess Resort

The waived stormwater storage volume is calculated as follows:

**V =CRA; where**
V =stormwater storage volume required, in cubic feet,
C =weighted average runoff coefficient over disturbed area,
R =100-year/2-hour precipitation depth, in feet (2.82 inches, or 0.235 feet, for all regions of Scottsdale), and
A =area of disturbed ground, in square feet

Furthermore,

$V_w = V - V_p$; where
$V_w$ = volume waived,
V = volume required, and
$V_p$ = volume provided

C = 0.9
A = 424,753
V = 89,826
$V_p$ = 0
$V_w$ = 89,826

☐ An In-Lieu Fee will be paid, based on the following calculations and supporting documentation:
In-lieu fee ($) = $V_w$ (cu. ft.) x $3.22 per cubic foot = 289,240

☒ An In-Kind Contribution will be made, as follows:
See attachment. Princess Drive Bridge Reconstruction, in accordance with approved plans.

☐ No In-Lieu Fee is required. Reason:

**Approved by:** C. Ashley Conklin 10/23/08

Floodplain Administrator or Designee — Date

**Planning & Development Services Department**
7447 E Indian School Road, Suite 105, Scottsdale, AZ 85251 • Phone: 480-312-7000 • Fax: 480-312-7088

APPENDIX B - FOR REFERENCE ONLY

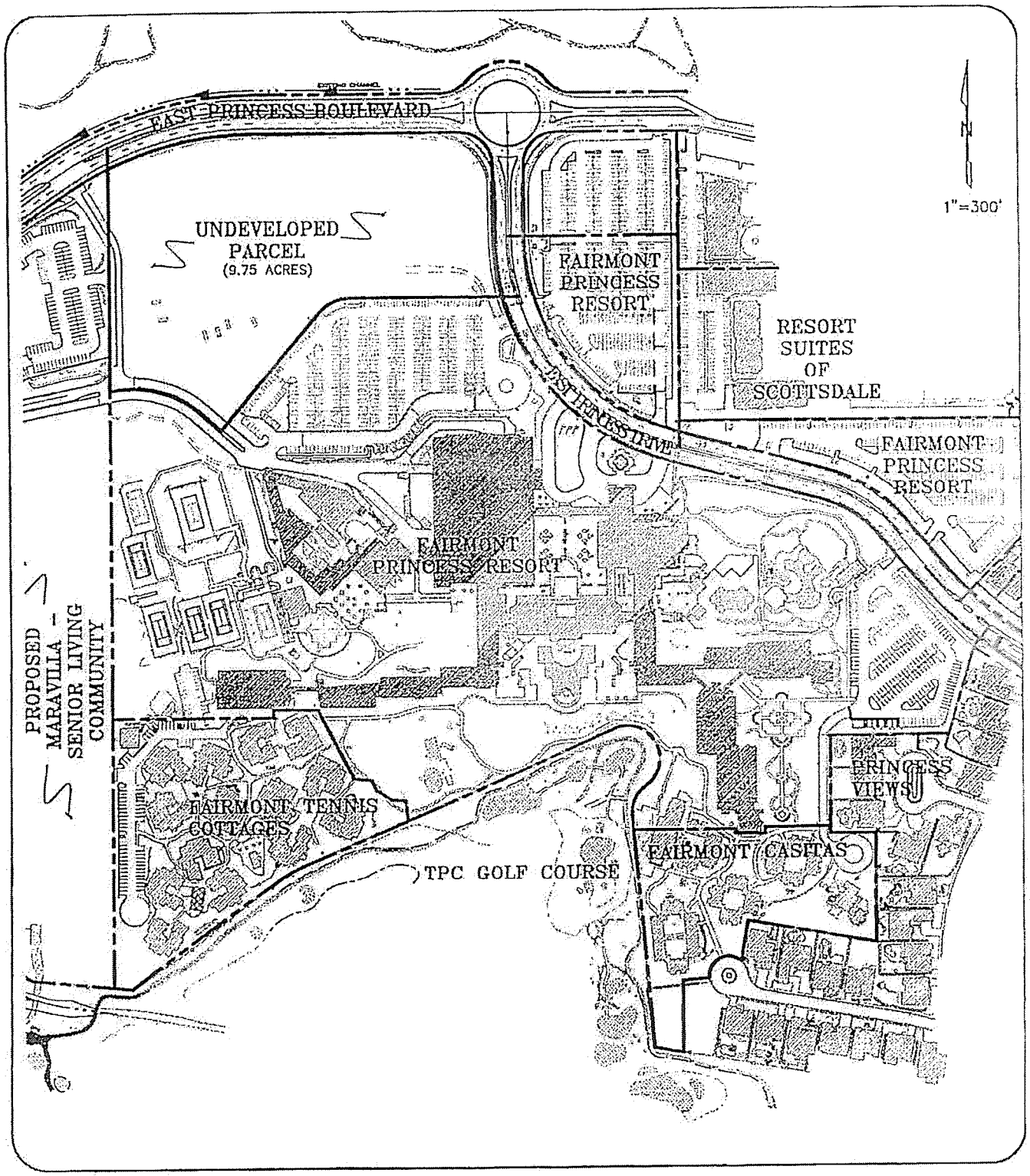



EXHIBIT 1

FAIRMONT SCOTTSDALE PRINCESS RESORT

| | |
|---|---|
| ENGINEER | J. Bulka |
| DESIGNER | J. Haywood |
| CAD TECHNICIAN | J. Sanchez |
| SCALE | 1"=300' |
| DATE | 07/14/08 |
| JOB NUMBER | 07910 |
| REF. SHEET | 1 OF 1 |

WOOD/PATEL & ASSOCIATES INC.
Civil Engineers, Hydrologists and Land Surveyors
1855 North Stapley Drive
Mesa, Arizona 85203
(480) 834-3300
(480) 834-3320 FAX

APPENDIX B - FOR REFERENCE ONLY

October 23, 2008

WP# 072910



Attachment to Stormwater Storage Waiver Request

for Fairmont Scottsdale Princess Resort & Regional Flood Control

The Fairmont Scottsdale Princess Resort (Site) is a 60 acre resort located near the southwest corner of Princess Boulevard and Princess Drive. The Site is bounded by the Princess Blvd. to the north, the Maravilla Scottsdale Senior Living Community to the east, the TPC Golf Course to the south and existing residential developments to the west (see Exhibit 1, attached). The existing Fairmont Scottsdale Princess Resort consists of multiple hotel buildings, a ballroom, spa, tennis cottages, tennis courts, and parking. A majority of the site is developed and portions are being updated and renovated. At the north end of the site there is a 9.75 acre portion of the property that has yet to be developed, and other portions are scheduled for upgrades.

It is Wood/Patel's understanding that the ownership of the Fairmont Scottsdale Princess Resort, Strategic Hotels and Resorts, has agreed to fund regional flood control improvements to the public road/channel crossing at Princess Blvd and Scottsdale Road, in return for the City approving this waiver and it being applicable to the entire site. The improvements consist of removing the existing concrete box culvert crossing and replacing it with a bridge structure. The cost of a new bridge structure is estimated at $1,053,000.

City of Scottsdale In-Lieu Fees:

V(req) Volume required = CRA = (0.90) x (0.235 feet) x (9.75 acres) = 89,826 cu-ft.

C (Runoff Coefficient) = 0.90

R (100-year/2-hour precipitation depth) = 0.235 feet

Site area = 9.75 acres

City of Scottsdale In-Lieu Fees = V(req) x $3.22 = (89,826 cu-ft) x $3.22 = $289,240

Summary:

Public Drainage Improvements = $1,053,000 (*)

City of Scottsdale in Lieu Fee = $289,240

(*) See Sheet 2 of 2 Engineering Preliminary Opinion of Probable Cost

October 23, 2008

WP# 072910



Attachment to Stormwater Storage Waiver Request

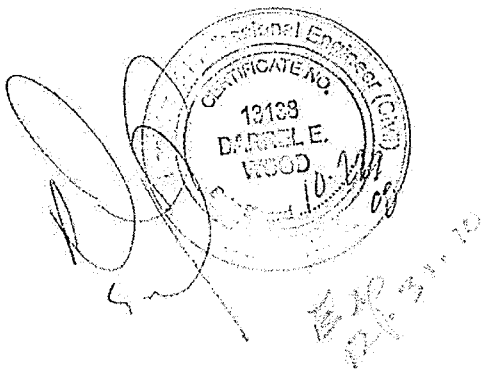
for Fairmont Scottsdale Princess Resort & Regional Flood Control

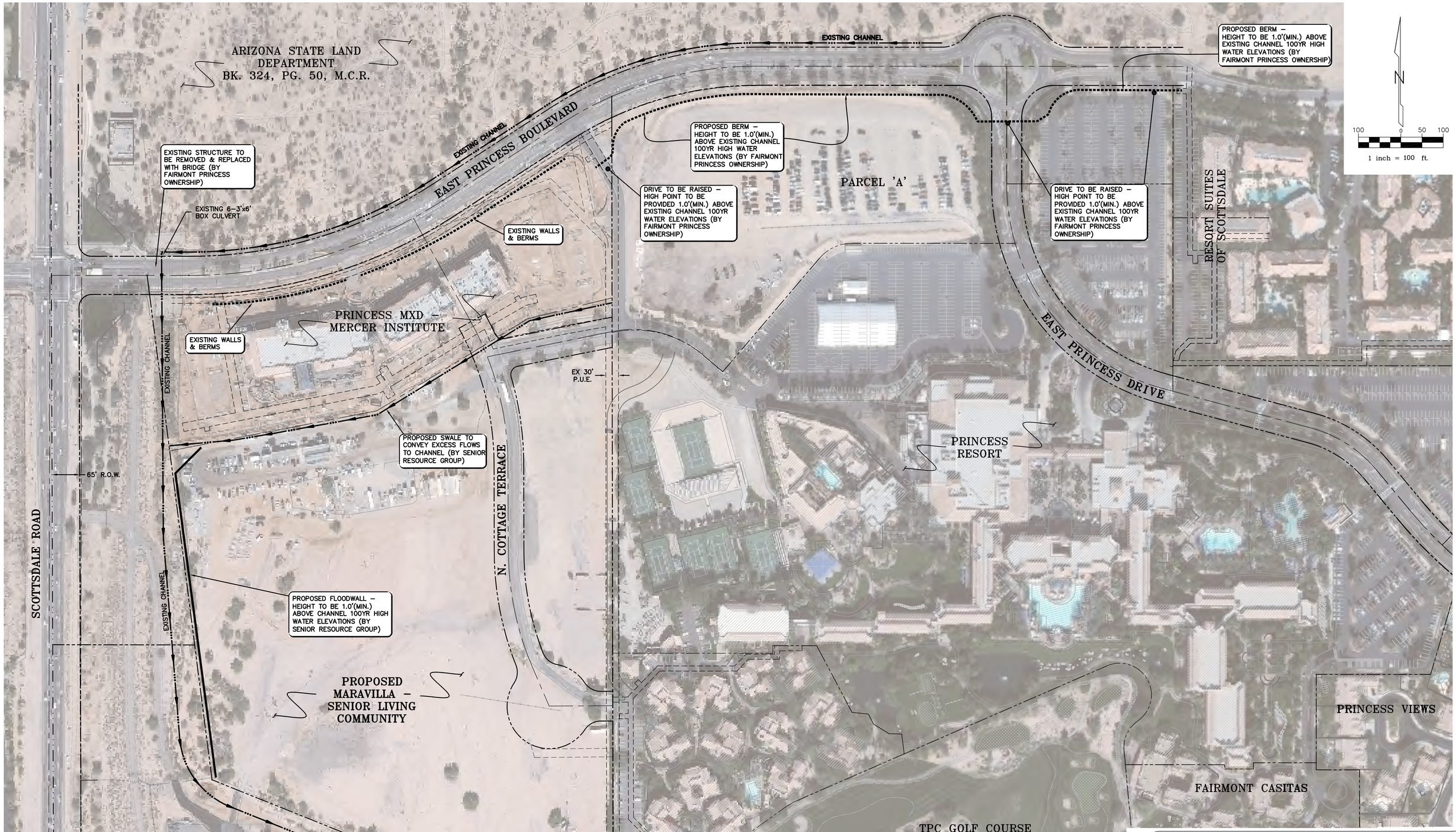
**Engineering Preliminary Opinion of Probable Cost (*)**

Prepared Bridge Structure at Princess Drive, just east of Scottsdale Road serving unnamed wash.

Estimated Bridge Surface = 8,100 square feet x $130/s.f. $1,053,000

(*) Offered without the benefit of construction documents and specifications.






MARAVILLA SCOTTSDALE/
FAIRMONT SCOTTSDALE PRINCESS RESORT

PROPOSED DRAINAGE IMPROVEMENTS EXHIBIT

DATE: 12/20/07

**WOOD/PATEL**
LAND DEVELOPMENT • WATER RESOURCES
STRUCTURES • TRANSPORTATION / TRAFFIC
WATER / WASTEWATER • SURVEYING
CONSTRUCTION MANAGEMENT
(480) 834–3300
PHOENIX • MESA • GOODYEAR • TUCSON

N:\2007\073091\dwg\Exhibits\3091EX01–AERIAL.dwg

APPENDIX B - FOR REFERENCE ONLY

# APPENDIX C

# CITY OF SCOTTSDALE FORMS

Appendix 4-1C

# WARNING & DISCLAIMER OF LIABILITY

The Drainage and Floodplain Regulations and Ordinances of the City of Scottsdale are intended to "minimize the occurrence of losses, hazards and conditions adversely affecting the public health, safety and general welfare which might result from flooding caused by the surface runoff of rainfall" (Scottsdale Revised Code §37-16).

As defined in S.R.C. §37-17, a flood plain or "*Special flood hazard* area means an area having flood and/or flood related erosion hazards as shown on a FHBM or FIRM as zone A, AO, A1-30, AE, A99, AH, or E, and those areas identified as such by the floodplain administrator, delineated in accordance with subsection 37-18(b) and adopted by the floodplain board." It is possible that a property could be inundated by greater frequency flood events or by a flood greater in magnitude than a 100-year flood. Additionally, much of the Scottsdale area is a dynamic flood area; that is, the floodplains may shift from one location to another, over time, due to natural processes.

**WARNING AND DISCLAIMER OF LIABILITY PURSUANT TO S.R.C §37-22**
"The degree of flood protection provided by the requirements in this article 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 man-made or natural causes. This article (Chapter 37, Article II) shall not create liability on the part of the city, any officer or employee thereof, or the federal government for any flood damages that result from reliance on this article or any administrative decision lawfully made thereunder."

Compliance with Drainage and Floodplain Regulations and Ordinances does not insure complete protection from flooding. The Floodplain Regulations and Ordinances meet established local and federal standards for floodplain management, but neither this review nor the Regulations and Ordinances take into account such flood related problems as natural erosion, streambed meander or man-made obstructions and diversions, all of which may have an adverse affect 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. If I am an agent for an owner I have made the owner aware of and explained this disclaimer.

| Plan Check No. | Owner or Agent | Date |
|---|---|---|
| | | 2/6/2015 |

APPENDIX B - FOR REFERENCE ONLY

# Section 404 Certification

Before the City issues development permits for a project, the developer's Engineer or the property owner must certify that it complies with, or is exempt from, Section 404 of the Clean Water Act of the United States. Section 404, administered by the U.S. Army Corps of Engineers (COE), regulates the discharge of dredged or fill material into a wetland, lake, (including dry lakes), river, stream (including intermittent streams, ephemeral washes, and arroyos), or other waters of the United States.

**Prior to submittal of improvement plans to Project Review** the form below must be completed (and submitted with the improvement plans) as evidence of compliance

## Certification of Section 404 Permit Status

Owner's Name: Strategic Hotels and Resorts  Phone No. 312-658-6016

Project Name/Description: Fairmont Scottsdale Hotel Exp.  Case No. _____

Project Location/Address: 7575 E. Princess Blvd., Scottsdale, Az. 85255

**A registered Engineer or the property Owner must check the applicable condition and certify by signing below that:**

1. **Section 404 <u>does</u> apply to the project because there will be a discharge of dredged or fill material to waters of the U.S., and:**

   ☐ A Section 404 Permit has already been obtained for this project.

   -or-

   ☐ This project qualifies for a "Nationwide Permit," and this project will meet all terms and conditions of the applicable nationwide permit.

2. **Section 404 <u>does not</u> apply to the project because:**

   ☒ No watercourses or other waters of the U.S. exist on the property.

   ☐ No jurisdictional waters of the U.S. exist on the property. Attached is a copy of the COE's Jurisdictional Determination.

   ☐ Watercourses or other waters of the U.S. do exist on the property, but the project will not involve the discharge of dredged or fill material into any of these waters.

**I certify that the above statement is true.**

John Bulka
Engineer's Signature and Seal, or Owner's Signature

Registered Professional Engineer (Civil) CERTIFICATE NO. 33359 JOHN M. BULKA Date Signed 2-6-15 ARIZONA U.S.A.

2-6-15
Date

Project Manager
Title

Company Wood, Patel

John Bulka expires: 3-31-17

**Planning & Development Services Department**
7447 E Indian School Road, Suite 100, Scottsdale, AZ 85251 ◆ Phone: 480-312-2500 ◆ Fax: 480-312-7088

APPENDIX B - FOR REFERENCE ONLY

# APPENDIX D

# OFFSITE WATERSHED EXHIBITS

APPENDIX B - FOR REFERENCE ONLY

# Regional Contour Map /
# Opinion of Existing Highest Natural Grade Elevation

APPENDIX B - FOR REFERENCE ONLY

N

PROPOSED WESTERN TOWN EXISTING HIGHEST NATURAL GRADE ELEVATION=1555.0±

PHOENIX

SCOTTSDALE

CORPORATE BOUNDARY

VALLEY ROAD

OLD VEROF ROAD EAST

BELL ROAD

CANAL

PIMA ROAD

SAHKOO PARK

Park

Well

BM L525

BM L552

BM 1587

BM 1661

BM 1623

BM 1494


WOOD/PATEL
MISSION: CLIENT SERVICE ™
(602) 335-8500
WWW.WOODPATEL.COM
PHOENIX - MESA - TUCSON




Fairmont
SCOTTSDALE PRINCESS

WESTERN TOWN
REGIONAL CONTOUR MAP/OPINION OF EXISTING
HIGHEST NATURAL GRADE ELEVATION

| REV | DESCRIPTION | DATE |
|---|---|---|
| | | |

NOT
FOR
CONSTRUCTION

| | |
|---|---|
| SCALE (HORIZONTAL) | N/A |
| SCALE (VERTICAL) | N/A |
| DATE | 05/15/2015 |
| JOB NUMBER | 154302.01 |
| SHEET | 1 OF 1 |

X:\N-Drive\2015\154302.10\Project Support\Reports\Drainage\Exhibits\4302 Exhibit - - Regional Contour Map.dwg

(CHECKED BY: JB DESIGNED BY: JB DRAFTED BY: JHS)

APPENDIX B - FOR REFERENCE ONLY

# Aerial Map

APPENDIX B - FOR REFERENCE ONLY

EAST PRINCESS BOULEVARD

ARIZONA STATE LAND DEPARTMENT

PROPOSED SITE

EAST PRINCESS DRIVE

RESORT SUITES OF SCOTTSDALE

PRINCESS MXD: MERCER INSTITUTE

APPROXIMATE PROJECT LIMITS

PRINCESS RESORT

N. SCOTTSDALE ROAD

MARAVILLA SENIOR LIVING COMMUNITY

SCOTTSDALE PRINCESS RESORT TENNIS COTTAGES

TCP GOLF COURSE

N

0 100 200

Horz. 1 in. = 100 ft.

X:\N-Drive\Q015\154302\0\Project Support\Reports\Drainage\Exhibits\Ex02 Exhibit - Aerial Map.dwg

# FAIRMONT SCOTTSDALE WESTERN TOWN

2015 AERIAL PHOTOGRAPH

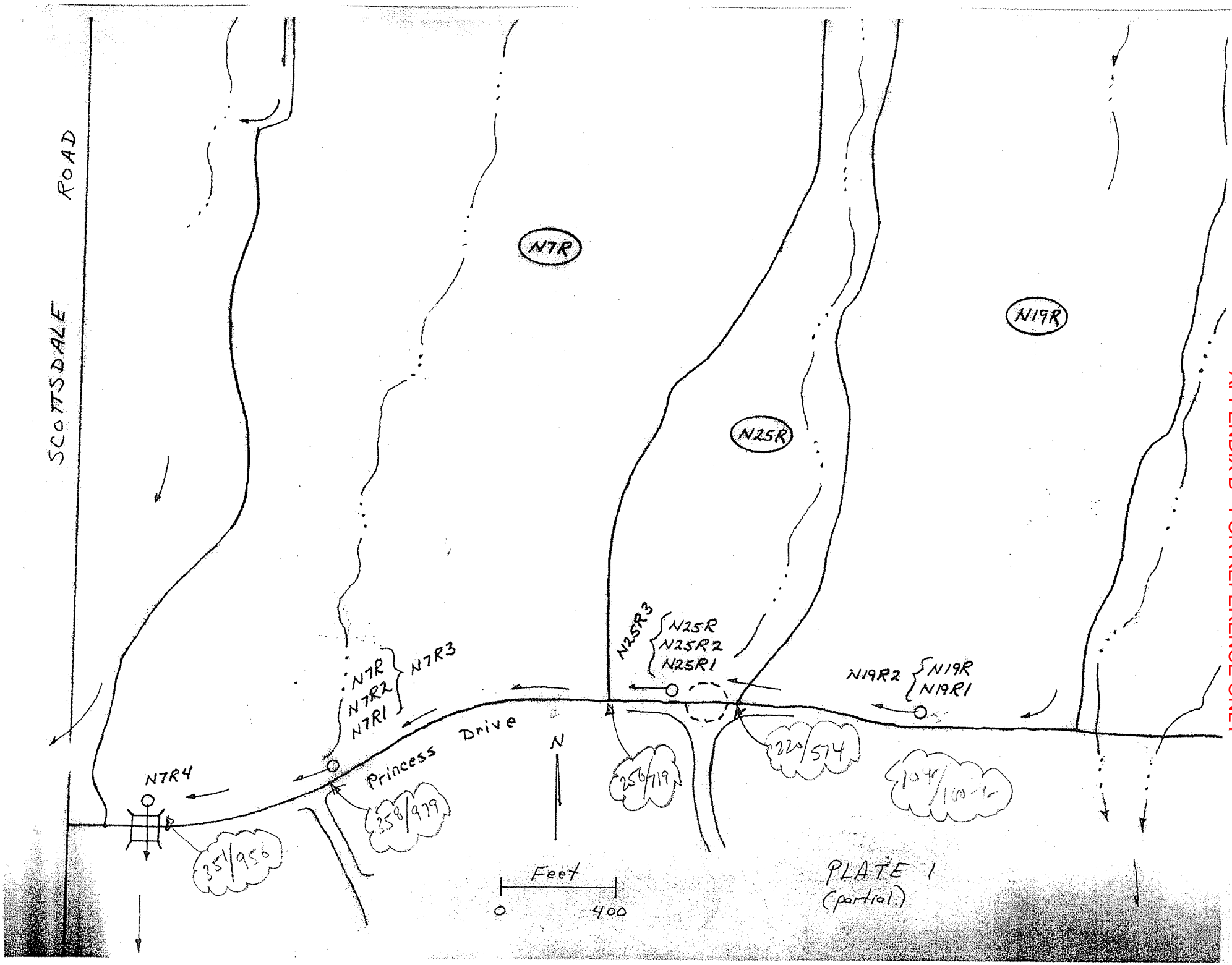
**WOOD/PATEL**
2220 S. Country Club Dr.
Mesa, AZ 85210
(480) 834-3300
www.woodpatel.com
PHOENIX - MESA - TUCSON

JOB# 154302.10

APPENDIX B - FOR REFERENCE ONLY

# Plate 1 Exhibit

## (From Core North/Core South Drainage Study)



APPENDIX B - FOR REFERENCE ONLY

# Table 1 Spreadsheet

# (From Core North/Core South Drainage Study)

APPENDIX B - FOR REFERENCE ONLY

**Table 1**
**Peak Discharge Summary**

**Princess Drive Channel**
**Fairmont Scottsdale Princess Resort**
**Scottsdale, Arizona**

| Location | HEC-1 CP | Peak Discharge (cfs) By Storm Return Interval (6-Hour Duration) | | | | | |
|---|---|---|---|---|---|---|---|
| | | 2-Yr | 5-Yr | 10-Yr | 25-Yr | 50-Yr | 100-Yr |
| 750-Ft East of Roundabout | N19R2 | 60 | 146 | 220 | 342 | 444 | 574 |
| At Roundabout | N25R3 | 62 | 167 | 256 | 417 | 549 | 719 |
| 700-Ft Upstream of Culvert | N7R3 | 90 | 228 | 358 | 583 | 787 | 979 |
| At Princess Drive Culvert | N7R4 | 89 | 227 | 351 | 580 | 779 | 956 |
| HEC-1 File: | | PRN2 | PRN5 | PRN10 | PRN25 | PRN50 | PRN100 |

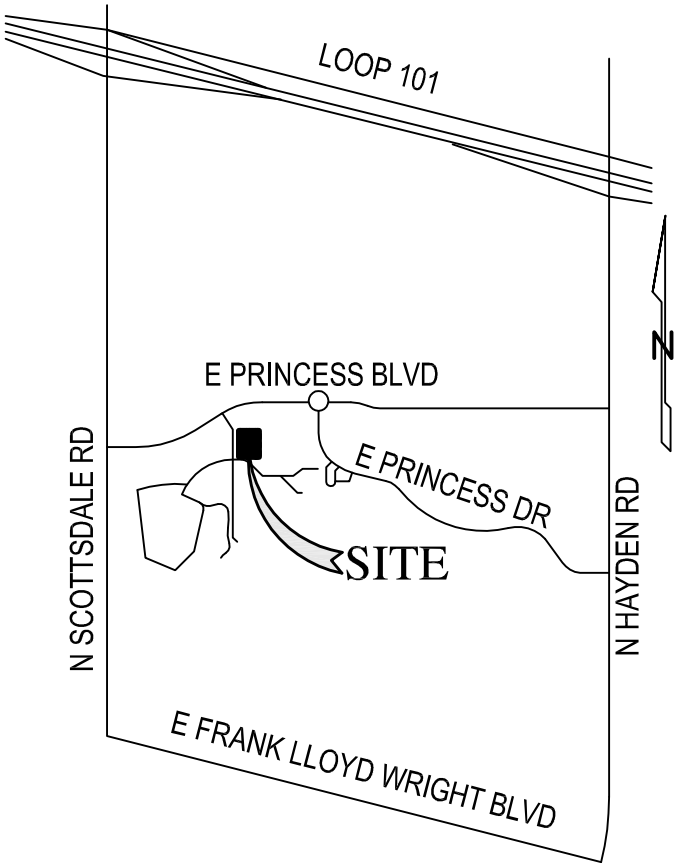
Note: See Plate 1 for HEC-1 concentration point locations.

5/31/2007

APPENDIX B - FOR REFERENCE ONLY

# EXHIBIT 1

# VICINITY MAP




# VICINITY MAP

N.T.S.

N

N.T.S.

SCOTTSDALE, ARIZONA

FAIRMONT SCOTTSDALE
WESTERN TOWN

EXHIBIT 1
VICINITY MAP

WOOD/PATEL
2220 S. Country Club Dr.
Suite 101
Mesa, AZ 85210
(480) 834-3300
www.woodpatel.com
PHOENIX • MESA • TUCSON

JOB# 154302.10

X:\W-Drive\2015\154302.10\Project Support\Reports\Drainage\Exhibits\ 4302 Exhibit 1 - Vicinity Map.dwg

APPENDIX B - FOR REFERENCE ONLY

# EXHIBIT 2

# FEMA MAP

APPENDIX B - FOR REFERENCE ONLY


NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1320L

**FIRM**

**FLOOD INSURANCE RATE MAP**

**MARICOPA COUNTY, ARIZONA**

**AND INCORPORATED AREAS**

**PANEL 1320 OF 4425**

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

| COMMUNITY | NUMBER | PANEL | SUFFIX |
|---|---|---|---|
| MARICOPA COUNTY | 040037 | 1320 | L |
| PHOENIX, CITY OF | 040051 | 1320 | L |
| SCOTTSDALE, CITY OF | 045012 | 1320 | L |

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

**MAP NUMBER**
**04013C1320L**

**MAP REVISED**
**OCTOBER 16, 2013**

Federal Emergency Management Agency

N

600 0 300 600

1 inch = 600 ft.

PROJECT AREA

NOT FOR CONSTRUCTION

X:\W-Drive\2015\154302.10\Project Support\Reports\Drainage\Exhibits\ 4302 Exhibit 2 - FEMA FIRM.dwg

# FAIRMONT SCOTTSDALE WESTERN TOWN

## EXHIBIT 2 FEMA FIRM

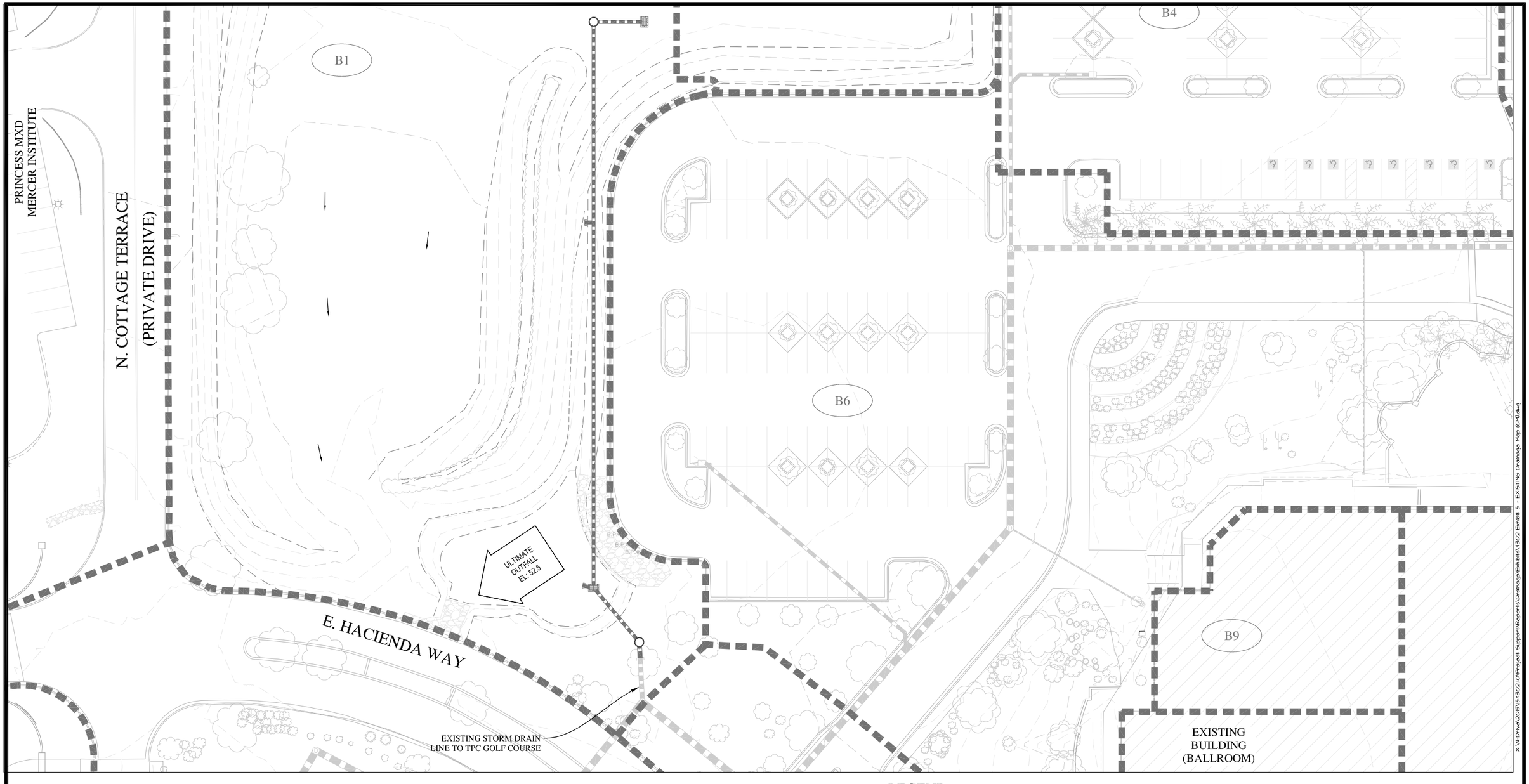

WOOD/PATEL
2220 S. Country Club Dr.
Suite 101
Mesa, AZ 85210
(480) 834-3300
www.woodpatel.com
PHOENIX • MESA • TUCSON


JOB# 154302.10

APPENDIX B - FOR REFERENCE ONLY

# EXHIBIT 3

# EXISTING DRAINAGE MAP




N

0 20 40

Horz. 1 in. = 20 ft.

LEGEND

- PROPOSED DRAINAGE AREA
- EXISTING DRAINAGE AREA
- FLOW ARROW
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- EXISTING INTERMEDIATE CONTOUR
- EXISTING INDEX CONTOUR
- B1 — EXISTING DRAINAGE AREA - BALLROOM ADDITION
- ULTIMATE OUTFALL — ULTIMATE OUTFALL

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County (602) 263-1100

# FAIRMONT SCOTTSDALE WESTERN TOWN

## EXHIBIT 3 EXISTING DRAINAGE MAP

WOOD/PATEL
2220 S. Country Club Dr.
Mesa, AZ 85210
(480) 834-3300
www.woodpatel.com
PHOENIX • MESA • TUCSON

JOB# 154302.10

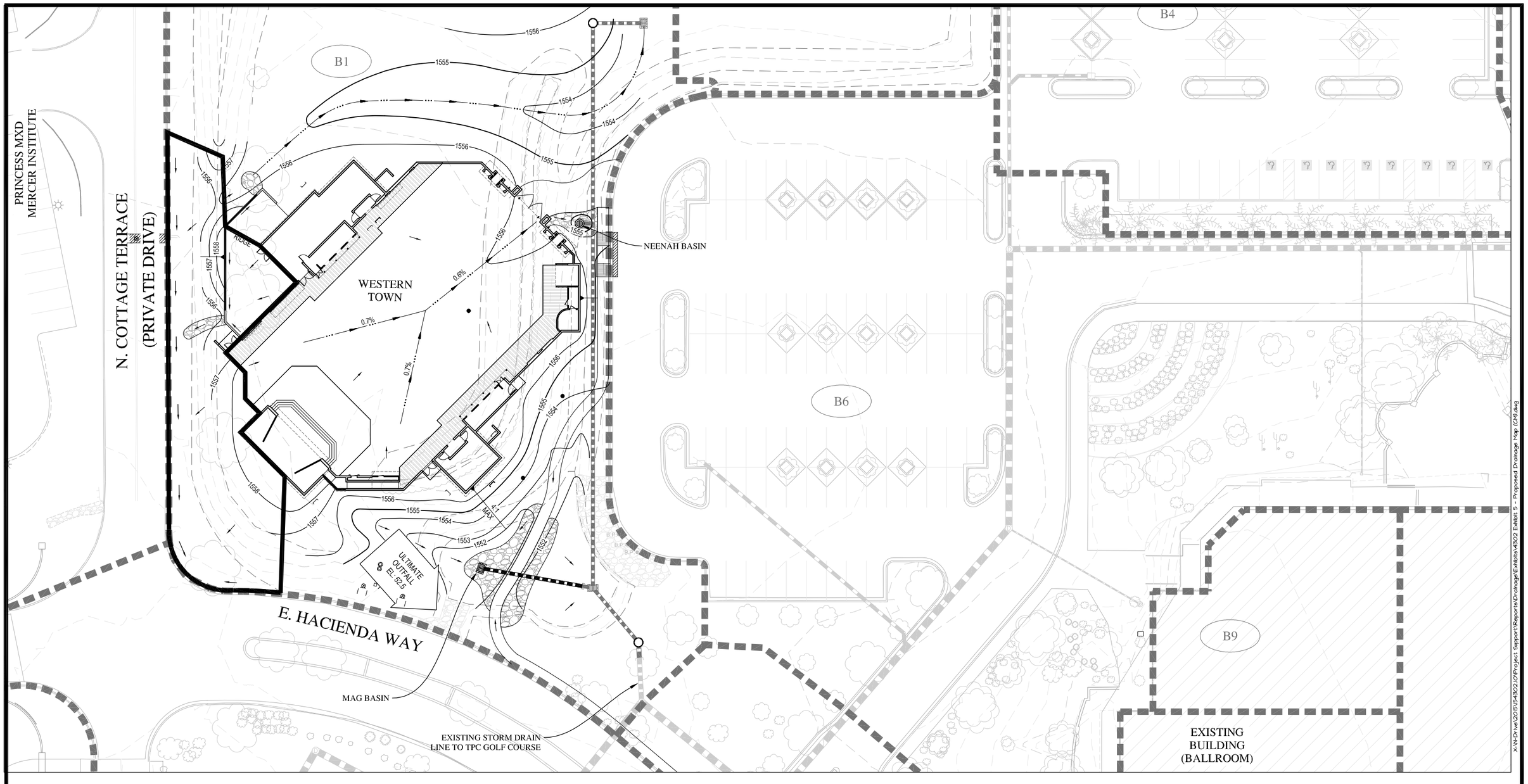
X:\N-Drive\2015\154302.10\Project Support\Reports\Drainage\Exhibits\43022 Exhibit 5 - EXISTING Drainage Map (CM).dwg

APPENDIX B - FOR REFERENCE ONLY

# EXHIBIT 4

# PROPOSED DRAINAGE MAP

APPENDIX B - FOR REFERENCE ONLY




N

0 20 40

Horz. 1 in. = 20 ft.

LEGEND

- PROPOSED DRAINAGE AREA
- EXISTING DRAINAGE AREA
- PROPERTY BOUNDARY
- FLOW ARROW
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- EXISTING INTERMEDIATE CONTOUR
- EXISTING INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED INDEX CONTOUR
- B1 — EXISTING DRAINAGE AREA - BALLROOM ADDITION
- ULTIMATE OUTFALL — ULTIMATE OUTFALL

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

# FAIRMONT SCOTTSDALE WESTERN TOWN

## EXHIBIT 4 PROPOSED DRAINAGE MAP


**WOOD/PATEL**
2220 S. Country Club Dr.
Mesa, AZ 85210
(480) 834-3300
www.woodpatel.com
PHOENIX • MESA • TUCSON


JOB# 154302.10

X:\N-Drive\2015\154302.10\Project Support\Reports\Drainage\Exhibits\43502 Exhibit 5 - Proposed Drainage Map (CM).dwg

**APPENDIX C – DRAINAGE MEMO FOR FAIRMONT SCOTTSDALE SUNSET BEACH POOL BY WOOD, PATEL & ASSOCIATES, INC., DATED SEPTEMBER 11, 2015**

APPENDIX C - FOR REFERENCE ONLY

# DRAINAGE MEMO
# FOR
# FAIRMONT SCOTTSDALE
# SUNSET BEACH POOL

September 11, 2015
WP# 154302.30


*Prepared For:*

**Strategic Hotels and Resorts**
Mr. George Stowers
200 West Madison
Suite 1700
Chicago, Illinois 60606
*Phone: (312) 658-6016*

*Submitted To:*

**City of Scottsdale**
9388 East San Salvador Drive
Scottsdale, Arizona 85258
*Phone: (480) 312-5636*

*Prepared By:*

**Wood, Patel & Associates, Inc.**
2220 South Country Club Drive
Suite 101
Mesa, Arizona 85210
*Phone: (480) 834-3300*
*Website: www.woodpatel.com*


WOOD/PATEL
MISSION: CLIENT SERVICE®

WOOD/PATEL
MISSION: CLIENT SERVICE®

CIVIL ENGINEERS • HYDROLOGISTS • LAND SURVEYORS • CONSTRUCTION MANAGERS

Darrel E. Wood, P.E., R.LS.
Ashok C. Patel, P.E., R.L.S., CFM
Michael T. Young, P.E.
James S. Campbell, P.E.
Thomas R. Gettings, R.L.S.
Darin L. Moore, P.E.
Jeffrey R. Minch, P.E., CFM
Robert D. Gofonia, P.E., R.L.S.

September 11, 2015

City of Scottsdale
9388 East San Salvador Drive
Scottsdale, AZ 85258

*(480) 312- 5636*
*dmann@scottsdaleaz.gov*

Re: **Fairmont Scottsdale Sunset Beach Pool**
Drainage Memo
WP# 154302.30

To Whom It May Concern:

The proposed Fairmont Scottsdale Sunset Beach Pool (Pool) project is a 7,000 S.F. pool project with a sand/beach area, splash pad, hardscape and landscaping. The proposed development is located east of Scottsdale Road and south of Princess Drive along Cottage Terrace. More specifically, the site is located in the southwest quarter of Section 35, Township 4 North, Range 4 East of the Gila and Salt River Meridian. Refer to Exhibit 1 – *Vicinity Map* at the back of this report for the project location. The existing property, currently zoned C-2, includes a hotel, parking lot, multiple tennis courts, hardscape and desert landscaping.

This project occurs in the courtyard of the previously-approved Fairmont Scottsdale Hotel Expansion (Plan Check #1708-15-1). This memo will act as a supplement to the drainage report for that project. The items addressed herein are drainage-related items that have changed to accommodate this project. Refer to the *Final Drainage Report for the Fairmont Scottsdale Hotel Expansion*, dated May 1, 2015, for the drainage specifics related to that project.

Storm water flows from the Pool will ultimately discharge into an existing 42-inch storm drain line within Cottage Terrace through a proposed storm drain system. The existing 42-inch storm drain line discharges into the Tournament Players Club (TPC) Golf Course, and has been sized to convey the 10-year storm. The 100-year storm flows overland within Cottage Terrace, as designed to the TPC.

The design criteria used to estimate storm water flows and evaluate system hydraulics are based on Wood, Patel & Associates, Inc.'s (Wood/Patel) understanding of the requirements listed in the *City of Scottsdale Design Standards and Policies Manual, Chapter 4: Grading and Drainage, 2010.*

Existing drainage areas S1 through S3, S12, and E5A, from the Fairmont Scottsdale Hotel Expansion, have been further delineated to include S13 through S20 to accommodate the additional inlets required to accommodate this project. The Pool has been omitted from this study, as the 10-year storm is contained within the pool design. The 100-year storm is anticipated to flow overland to Cottage Terrace. Refer to the *Rational Method Summary* and Exhibit 2 – *Proposed Drainage Map* at the back of this report for more information.

City of Scottsdale
**Fairmont Scottsdale Sunset Beach Pool**
Drainage Memo
WP# 154302.30

September 11, 2015

The proposed catch basins have been sized to convey the 100-year, 2-hour storm event with virtually no ponding. Refer to the *Inlet Capacity Summary* and the associated catch basin information at the back of this report for more information.

Thank you for your review of this Drainage Memo provided for the Fairmont Scottsdale Sunset Beach Pool. Please feel free to contact me if you have any questions.

Sincerely,

**Wood, Patel & Associates, Inc.**


John M. Bulka, P.E.
Project Manager

JMB/km

X:\Y-Drive\WP\Reports\Commercial\154302.30 Fairmont Scottsdale Sunset Beach Pool Drainage Memo.docx

APPENDIX C - FOR REFERENCE ONLY

# HYDRAULIC AND HYDROLOGIC CALCULATIONS

**WOOD/PATEL**

## Rational Method Summary

**Description:** Rational Method Inputs and Results
**Location:** Fairmont Scottsdale Sunset Pool
City of Scottsdale, Arizona

| Drainage ID | Longest Watercourse (ft) | Longest Watercourse "L" (mi) | Drainage Area (s.f.) | Drainage Area "A" (acres) | Watershed Resistance Coefficient "$K_b$" | Top Elev. (ft) | Bottom Elev. (ft) | Basin Slope "S" (ft/mi) | Land Use (1) | Post Q100 "Tc" (min) | 100 YR Intensity "i" (in/hr) | 100YR Runoff Coefficient "C" | **Post Q100 (cfs)** | Post Q10 "Tc" (min) | 10 YR Intensity "i" (in/hr) | 10YR Runoff Coefficient "C" | **Post Q10 (cfs)** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Existing** | | | | | | | | | | | | | | | | | |
| E5A | 277.4 | 0.053 | 12884 | 0.30 | 0.0433 | 52.3 | 51.5 | 15 | 25% Grass<br>37% Desert<br>38% Paved | 6.4 | 6.80 | 0.60 | **1.2** | 7.9 | 3.91 | 0.53 | **0.6** |
| **Proposed** | | | | | | | | | | | | | | | | | |
| S1 | 323.2 | 0.061 | 14586 | 0.33 | 0.0430 | 57.0 | 46.0 | 180 | 90% Desert<br>10% Paved | 2.9 | 8.63 | 0.50 | **1.4** | 3.5 | 5.36 | 0.42 | **0.7** |
| S2 | 47.5 | 0.009 | 2354 | 0.05 | 0.0481 | 50.0 | 48.0 | 222 | 66% Desert<br>34% Paved | 1.1 | 8.82 | 0.62 | **0.3** | 1.3 | 5.53 | 0.54 | **0.1** |
| S3 | 92.2 | 0.017 | 6522 | 0.15 | 0.0451 | 52.5 | 50.6 | 109 | 90% Desert<br>10% Paved | 1.8 | 8.89 | 0.50 | **0.7** | 2.2 | 5.58 | 0.42 | **0.4** |
| S12 | 97.5 | 0.018 | 9636 | 0.22 | 0.0441 | 50.4 | 48.0 | 130 | 49% Grass<br>35% Desert<br>16% Paved | 1.7 | 8.89 | 0.45 | **0.9** | 2.1 | 5.58 | 0.37 | **0.5** |
| S13 | 43.2 | 0.008 | 2299 | 0.05 | 0.0481 | 50.0 | 48.0 | 244 | 15% Grass<br>50% Desert<br>35% Paved | 1.0 | 8.89 | 0.60 | **0.3** | 1.2 | 5.58 | 0.51 | **0.1** |
| S14 | 54.7 | 0.010 | 3874 | 0.09 | 0.0465 | 52.5 | 51.5 | 97 | 100% Paved | 1.5 | 8.89 | 0.95 | **0.8** | 1.7 | 5.58 | 0.90 | **0.5** |
| S15 | 53.0 | 0.010 | 2685 | 0.06 | 0.0476 | 52.5 | 51.5 | 100 | 100% Paved | 1.5 | 8.89 | 0.95 | **0.5** | 1.8 | 5.58 | 0.90 | **0.3** |
| S16 | 70.7 | 0.013 | 4194 | 0.10 | 0.0463 | 52.5 | 48.2 | 321 | 50% Grass<br>15% Desert<br>35% Paved | 1.1 | 8.89 | 0.53 | **0.5** | 1.4 | 5.58 | 0.44 | **0.2** |
| S17 | 111.5 | 0.021 | 6800 | 0.16 | 0.0450 | 52.5 | 51.5 | 47 | 100% Sand | 2.6 | 8.89 | 0.25 | **0.4** | 3.1 | 5.58 | 0.15 | **0.1** |
| S18 | 83.3 | 0.016 | 5982 | 0.14 | 0.0453 | 52.5 | 51.3 | 76 | 100% Paved | 2.0 | 8.89 | 0.95 | **1.2** | 2.4 | 5.58 | 0.90 | **0.7** |
| S19 | 128.1 | 0.024 | 5448 | 0.13 | 0.0455 | 61.2 | 59.8 | 58 | 100% Paved | 2.6 | 8.89 | 0.95 | **1.1** | 3.1 | 5.58 | 0.90 | **0.7** |
| S20 | 103.1 | 0.020 | 10101 | 0.23 | 0.0440 | 61.2 | 50.2 | 563 | 50% Desert<br>50% Paved | 1.2 | 8.89 | 0.70 | **1.4** | 1.4 | 5.58 | 0.61 | **0.8** |

**WOOD/PATEL**

CIVIL ENGINEERS * HYDROLOGISTS * LAND SURVEYORS * CONSTRUCTION MANAGERS

## Inlet Capacity Summary

**Description:** Summary of Inlet Sizing Calculations
**Location:** Fairmont Scottsdale Sunset Pool

| Inlet ID | Contributing Drainage Area ID | Q10 (cfs) | Available Head (ft) | Inlet Type | Inlet Capacity (cfs) | 10-Year Actual Ponding Depth (ft) |
|---|---|---|---|---|---|---|
| CB-S1 | S1 | 0.7 | 0.5 | MAG 535 | 9.02 | 0.09 |
| CB-S2 | S2 | 0.1 | 1.1 | MAG 535 | 29.42 | 0.02 |
| CB-S3 | S3 | 0.4 | 0.7 | 15" Area Drain | 1.70 | 0.11 |
| CB-S12 | S12 | 0.5 | 1.1 | MAG 535 | 29.42 | 0.07 |
| CB-S13 | S13 | 0.1 | 1.1 | MAG 535 | 29.42 | 0.02 |
| CB-S14 | S14 | 0.5 | 0.5 | 15" Area Drain | 1.45 | 0.30 |
| CB-S15 | S15 | 0.3 | 0.5 | 15" Area Drain | 1.45 | 0.08 |
| CB-S16 | S16 | 0.2 | 1.0 | 15" Area Drain | 2.05 | 0.08 |
| CB-S17 | S17 | 0.1 | 1.0 | 15" Area Drain | 2.05 | 0.04 |
| CB-S19 | S19 | 0.7 | 0.5 | 15" Area Drain | 1.45 | 0.16 |
| CB-S20 | S20 | 0.8 | 1.0 | 15" Area Drain | 2.05 | 0.17 |

**WOOD/PATEL**

CIVIL ENGINEERS * HYDROLOGISTS * LAND SURVEYORS * CONSTRUCTION MANAGERS

## Inlet Capacity - Sump Locations

**Description:** Calculation of Inlet Capacity for Single MAG 535 Catch Basin (w/o Curb)
**Location:** Fairmont Scottsdale Sunset Pool
**Reference:** Drainage Design Manual for Maricopa County, Vol. II, Hydraulics, pg. 3-27

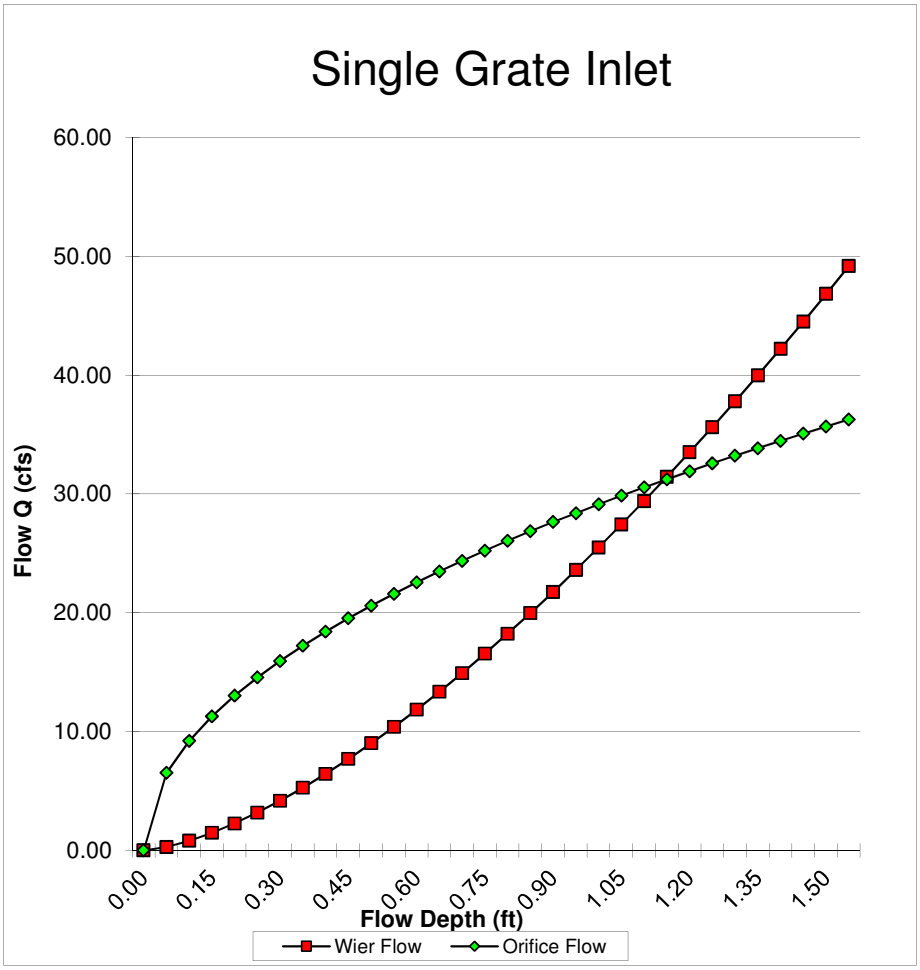
**Weir EQ.** $Q_i = C_w P d^{1.5}$ **Orifice EQ.** $Q_i = C_o A (2gd)^{0.5}$

**Where:** $C_w = 3.0$, $C_o = 0.67$

| | | |
|---|---|---|
| **P =** | **8.50** | **ft** |
| **A =** | **5.42** | **sq.ft.** |

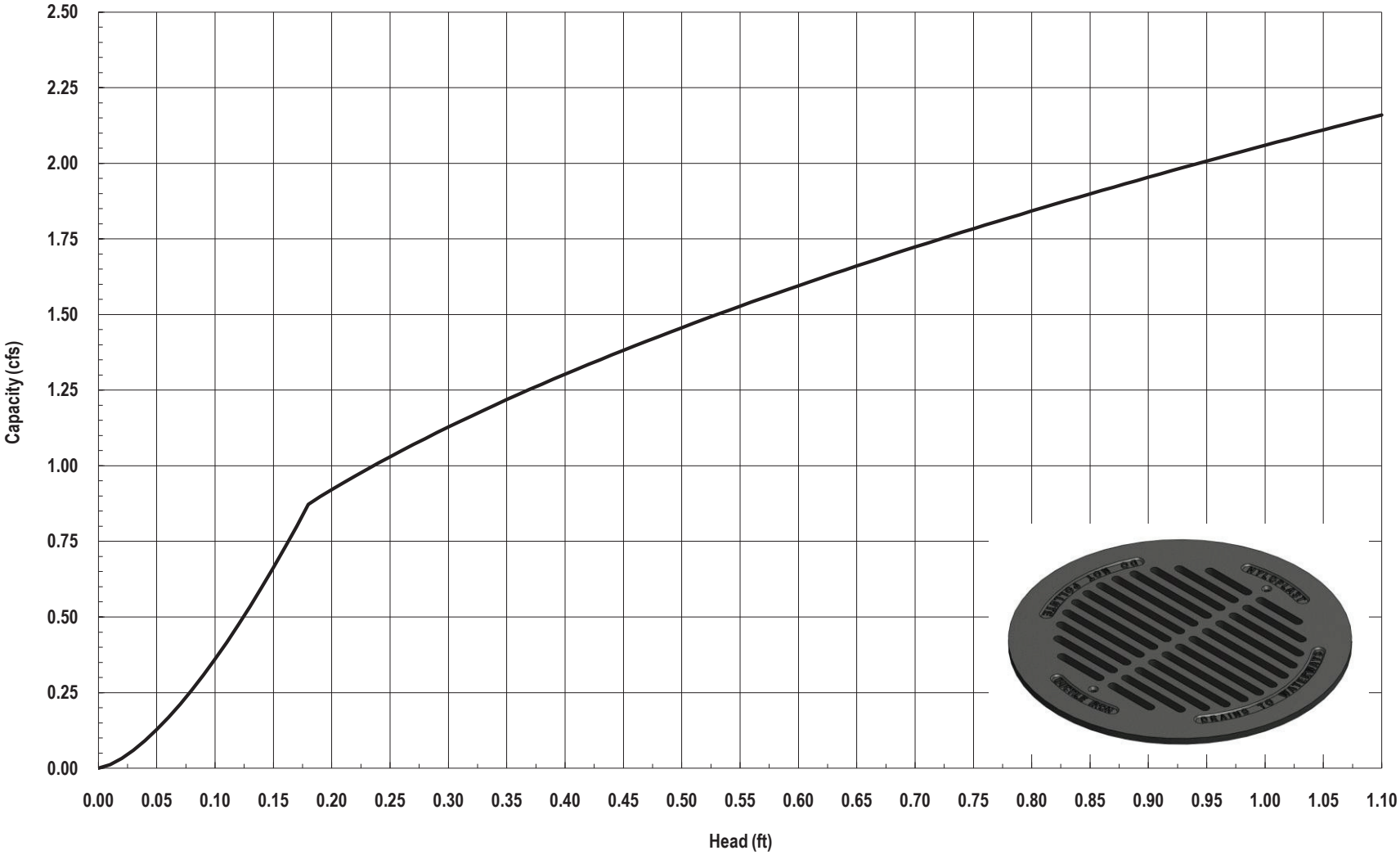
where,
P = Perimeter of Catchbasin minus
area of longitudinal & lateral bars (2 Short Sides, 1 Long Side)
A = Total area of grate minus
area of longitudinal & lateral bars

| Depth (ft) | Weir Qi (cfs) | Orifice Qi (cfs) |
|---|---|---|
| 0.00 | **0.00** | **0.00** |
| 0.05 | **0.29** | **6.52** |
| 0.10 | **0.81** | **9.22** |
| 0.15 | **1.48** | **11.29** |
| 0.20 | **2.28** | **13.03** |
| 0.25 | **3.19** | **14.57** |
| 0.30 | **4.19** | **15.96** |
| 0.35 | **5.28** | **17.24** |
| 0.40 | **6.45** | **18.43** |
| 0.45 | **7.70** | **19.55** |
| 0.50 | **9.02** | **20.61** |
| 0.55 | **10.40** | **21.61** |
| 0.60 | **11.85** | **22.57** |
| 0.65 | **13.36** | **23.49** |
| 0.70 | **14.93** | **24.38** |
| 0.75 | **16.56** | **25.24** |
| 0.80 | **18.25** | **26.07** |
| 0.85 | **19.98** | **26.87** |
| 0.90 | **21.77** | **27.65** |
| 0.95 | **23.61** | **28.40** |
| 1.00 | **25.50** | **29.14** |
| 1.05 | **27.44** | **29.86** |
| 1.10 | **29.42** | **30.56** |
| 1.15 | 31.45 | **31.25** |
| 1.20 | 33.52 | **31.92** |
| 1.25 | 35.64 | **32.58** |
| 1.30 | 37.80 | **33.23** |
| 1.35 | 40.00 | **33.86** |
| 1.40 | 42.24 | **34.48** |
| 1.45 | 44.52 | **35.09** |
| 1.50 | 46.85 | **35.69** |
| 1.55 | 49.21 | **36.28** |



APPENDIX C - FOR REFERENCE ONLY

## Nyloplast 15" Drop In Grate Inlet Capacity Chart



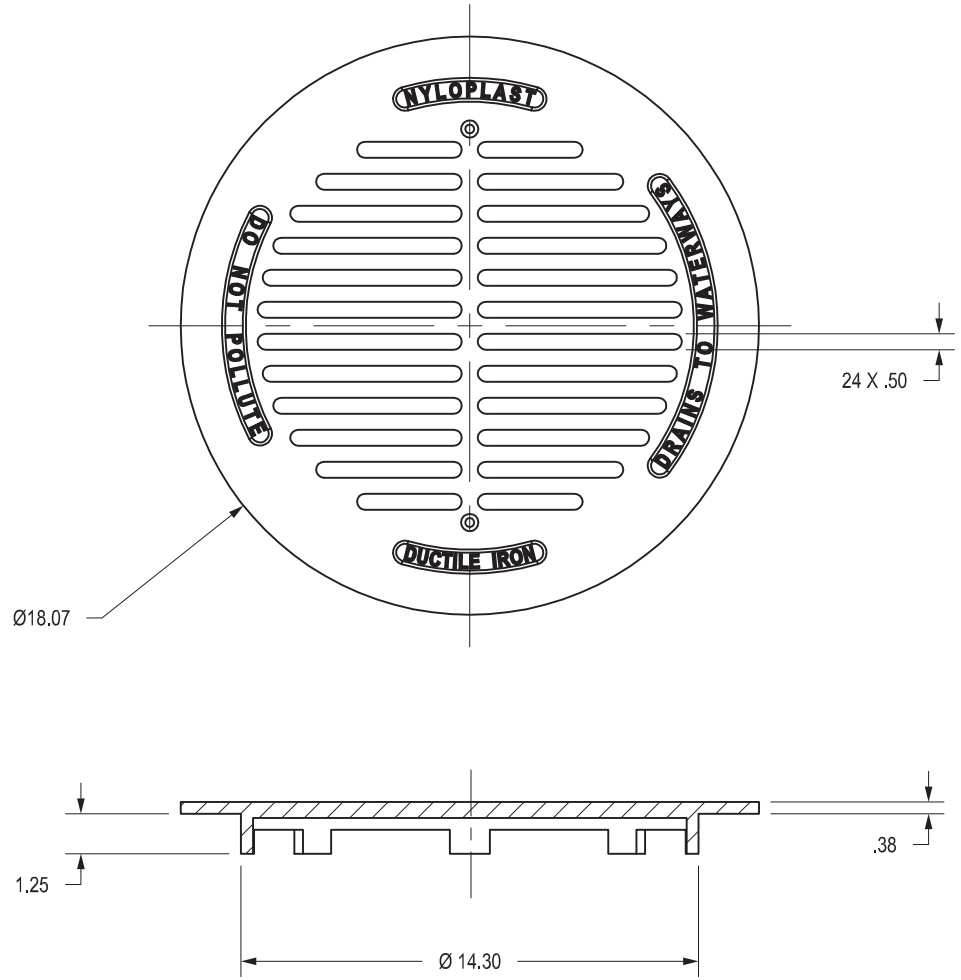


Nyloplast®
3130 Verona Avenue • Buford, GA 30518
(866) 888-8479 / (770) 932-2443 • Fax: (770) 932-2490

APPENDIX C - FOR REFERENCE ONLY

# 1501DI

APPROX. DRAIN AREA = 62.03 SQ IN
APPROX. WEIGHT = 26.42 LBS




DIMENSIONS ARE FOR REFERENCE ONLY
ACTUAL DIMENSIONS MAY VARY
DIMENSIONS ARE IN INCHES
GRATE HAS LIGHT DUTY RATING
QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
SIZE OF OPENING MEETS REQUIREMENTS OF AMERICAN DISABILITY ACT AS STATED IN FEDERAL REGISTER PART III, DEPARTMENT OF JUSTICE, 28 CFR PART 36.

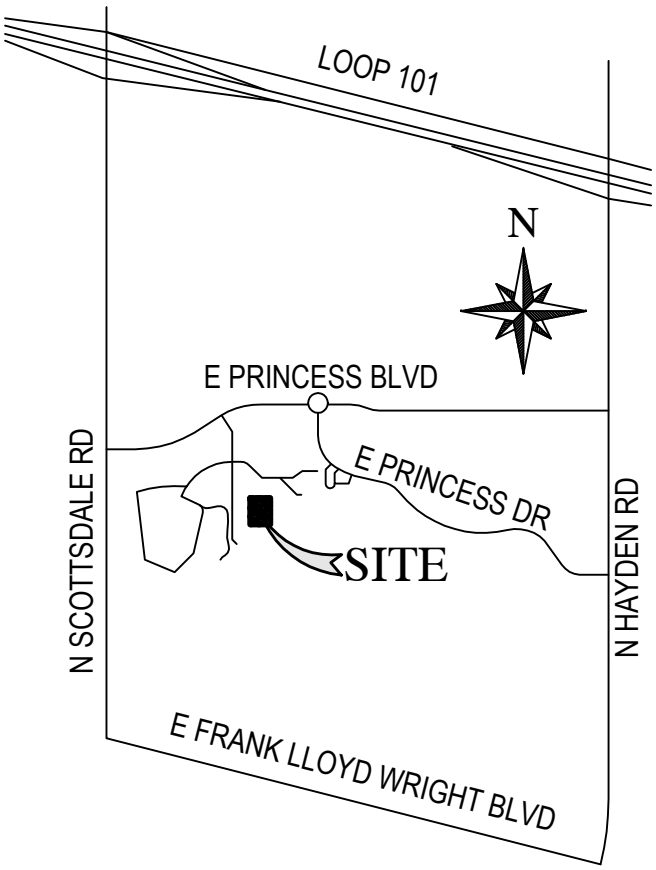


| | | | |
|---|---|---|---|
| DRAWN BY CJA | MATERIAL | Nyloplast® | 3130 VERONA AVE<br>BUFORD, GA 30518<br>PHN (770) 932-2443<br>FAX (770) 932-2490<br>www.nyloplast-us.com |
| DATE 7-5-01 | | | |
| REVISED BY JJC | PROJECT NO./NAME | TITLE | |
| DATE 8-14-12 | | 15 IN DROP IN | |
| DWG SIZE A | SCALE 1:6 SHEET 1 OF 1 | DWG NO. 7001-110-073 | REV D |

APPENDIX C - FOR REFERENCE ONLY

# EXHIBIT 1

# VICINITY MAP




N

SCOTTSDALE, ARIZONA

N.T.S.

N:\2015\154302.30\Project Support\Reports\Drainage\Exhibits\ 4302_30 Exhibit 1 - Vicinity Map.dwg

FAIRMONT SCOTTSDALE
SUNSET POOL

EXHIBIT 1
VICINITY MAP

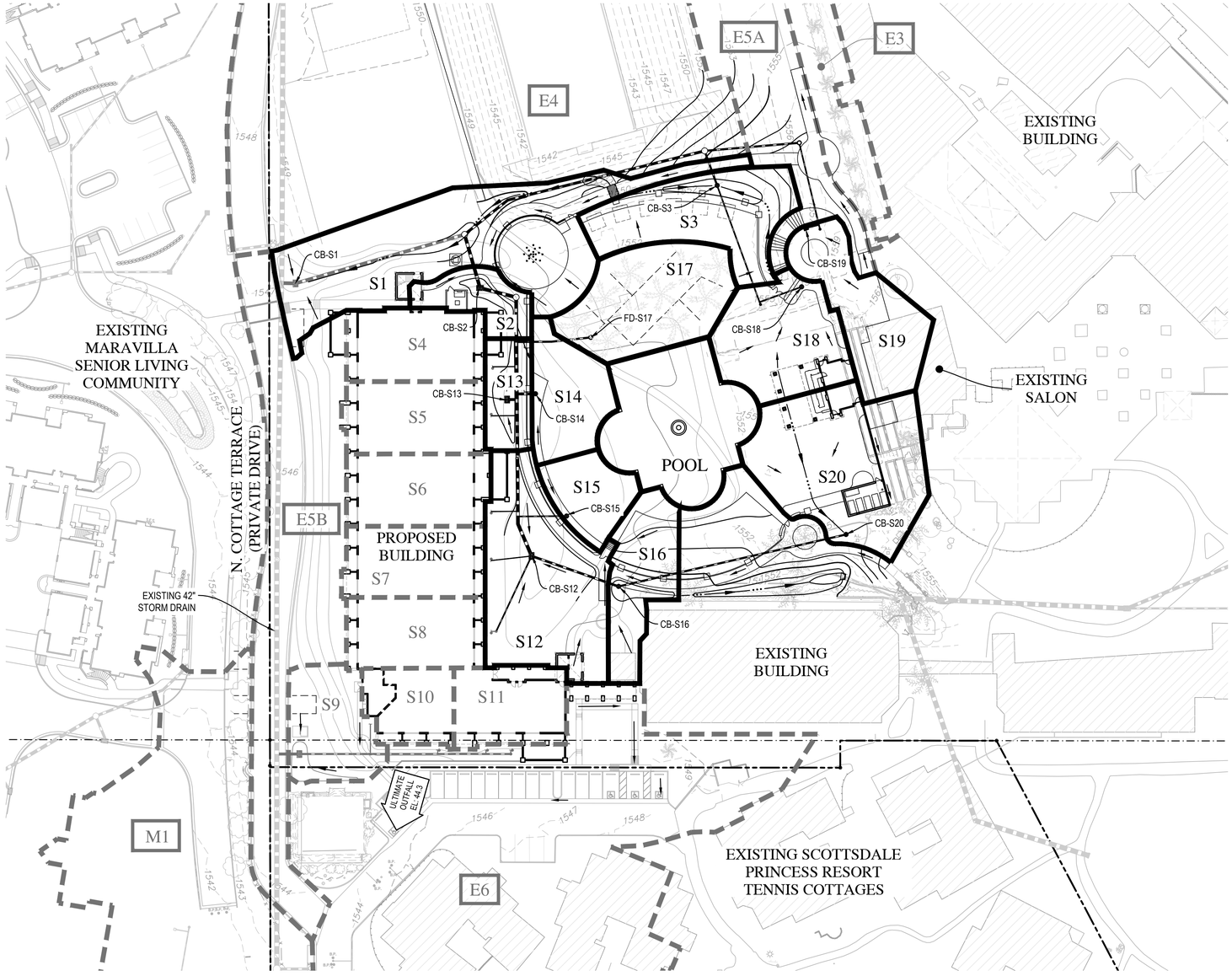
WOOD/PATEL
2220 S. Country Club Dr.
Suite 101
Mesa, AZ 85210
(480) 834-3300
www.woodpatel.com
PHOENIX • MESA • TUCSON

JOB# 154302.30

APPENDIX C - FOR REFERENCE ONLY

# EXHIBIT 2

# PROPOSED DRAINAGE MAP




N

0 40 80

Horz. 1 in. = 40 ft.

N:\JOB\15\54302.30\Project Support\Reports\Drainage\Exhibits\54302_30 Exhibit 2 - Proposed Drainage Map.dwg

## LEGEND

- PROPOSED DRAINAGE AREA
- EXISTING DRAINAGE AREA
- PROPERTY BOUNDARY
- FLOW ARROW
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- EXISTING INTERMEDIATE CONTOUR
- EXISTING INDEX CONTOUR
- PROPOSED INTERMEDIATE CONTOUR
- PROPOSED INDEX CONTOUR

- S1 — PROPOSED DRAINAGE AREA
- E1 — EXISTING DRAINAGE AREA
- M1 — EXISTING DRAINAGE AREA - MARAVILLA
- ULTIMATE OUTFALL — ULTIMATE OUTFALL

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

# FAIRMONT SCOTTSDALE SUNSET POOL

## EXHIBIT 2 PROPOSED DRAINAGE MAP

**WOOD/PATEL**
2220 S. Country Club Dr.
Mesa, AZ 85210
(480) 834-3300
www.woodpatel.com
PHOENIX • MESA • TUCSON

JOB# 154302.30

## APPENDIX D – STORM STORAGE WAIVER / PROPOSED DRAINAGE IMPROVEMENTS EXHIBIT

Princess

10/22

# Request for Stormwater Storage Waiver

292-SA-2007

City of Scottsdale Case Numbers:

___ - PA - ___ ___ - ZN - ___ ___ - UP - ___ ___ - DR - ___ ___ - PP - ___ PC# 6332-07-7

The applicant/developer must complete and submit this form to the city for processing and obtain approval of waiver request *before submitting Improvement plans.* Denial of the waiver may require the developer to submit a revised site plan to the Development Review Board.

Date 7/14/08 **Project Name** Fairmont Scottsdale Princess Resort

**Project Location** 7575 East Princess Drive Scottsdale, AZ 85255

**Applicant Contact** John Bulka **Company Name** Wood Patel & Associates

Phone 480-834-3300 Fax 480-834-3320 E-mail jbulka@woodpatel.com

Address 1855 N. Stapley Mesa, AZ 85203

**Waiver Criteria**

A waiver is an intentional relinquishment of a claim or right. A project must meet at least one of six criteria listed below for the city to consider waiving some or all required stormwater storage. Check the applicable box and provide a signed engineering report and supporting engineering analyses that demonstrate the project meets the criteria *and* that the effect of a waiver will not increase the potential for flooding on any property.

☐ 1. The runoff for the project has been included in a storage facility at another location. The applicant must demonstrate that the stormwater storage facility was specifically designed to accommodate runoff from the subject property and that the runoff will be conveyed to this location through an adequately designed conveyance facility.

☒ 2. The development is adjacent to a watercourse or channel that an engineering analysis shows is designed and constructed to handle the additional runoff without increasing the potential for flood damage to the subject property or to any other property.

☐ 3. The development is on a parcel less than one-half acre in size in an area where the engineering analysis demonstrates there is no significant increase in potential for flood damage due to its development.

☐ 4. Stormwater storage requirements conflict with requirements of the Environmentally Sensitive Lands Ordinance (ESLO). The applicant must demonstrate there is no increased potential for flood damage to the subject property or to any other property. Such conflicts with ESLO may include:

- Total land requirements for storage basin, easements, setbacks, and NAOS prevent building allowable footprint per zoning.
- Topography prevents building storage basin.
- Creating a storage facility requires wash modification.
- Instances where the Zoning Administrator cannot allow a modification to ESL requirements.

☐ 5. The project is located within the Downtown Fee Reduction Area as described and approved by City Council Resolution #6238 (see map). The applicant must demonstrate there is no increased potential for flood damage to any property. Even if the project is located in the Downtown area, if the project creates additional potential for increased flood damage, the developer must provide alternative mitigation methods to prevent the damage.

☐ 6. The project is located within a watershed that drains directly to the Salt River Pima-Maricopa Indian Community (SRPMIC) (see map). The project must provide the pre-development peak discharge flow to the SRPMIC, and attenuate flows over and above pre-development.

By signing below, I certify that the stated project meets the waiver criteria selected above as demonstrated by the attached documentation.

John Bulka

Developer or Engineer (circle one)

7-16-08

Date

**Planning & Development Services Department**

7447 E Indian School Road, Suite 105, Scottsdale, AZ 85251 • Phone: 480-312-7000 • Fax: 480-312-7088



SWW

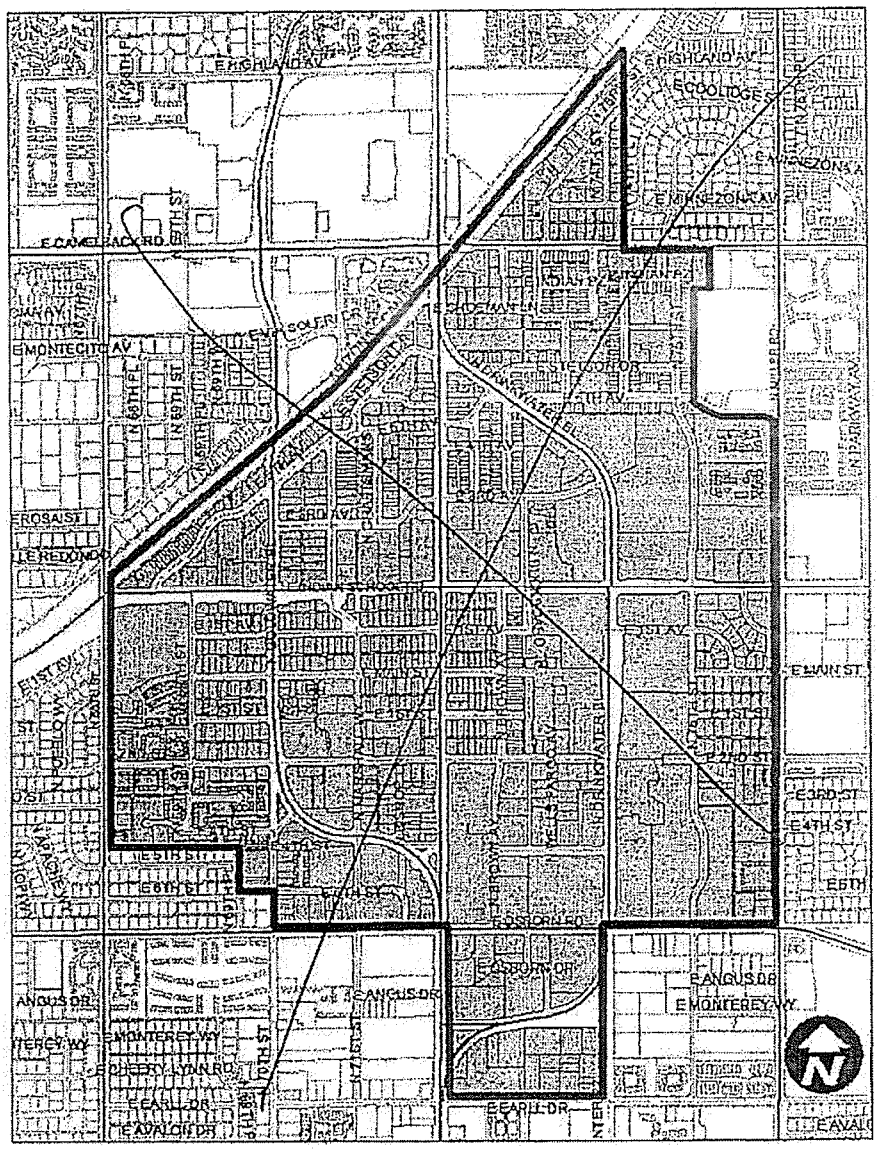
6332-07-7

# Request for Stormwater Storage Waiver

292-SA-2007

City of Scottsdale Case Numbers:

___ - PA - ____ ____ - ZN - ____ ____ - UP - ____ ____ - DR - ____ ____ - PP - ____ PC#_____




NOT APPLICABLE

**Figure 1. Designated Area for Downtown Stormwater Storage Waivers**


**Planning & Development Services Department**

7447 E Indian School Road, Suite 105, Scottsdale, AZ 85251 • Phone: 480-312-7000 • Fax: 480-312-7088

# Request for Stormwater Storage Waiver

City of Scottsdale Case Numbers:

___ - PA - ____ ____ - ZN - ____ ____ - UP - ____ ____ - DR - ____ ____ - PP - ____ PC#_____

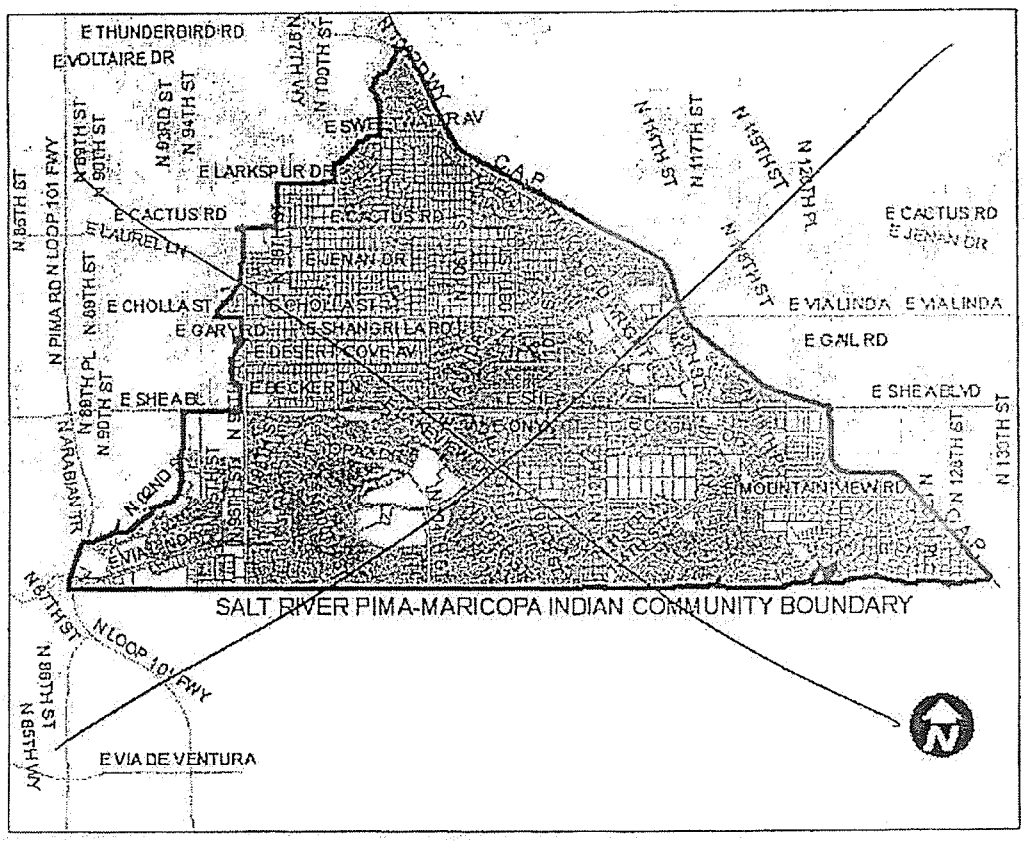



**Figure 2. Watersheds Draining to Salt River Pima-Maricopa Indian Community**

NOT APPLICABLE


**Planning & Development Services Department**

7447 E Indian School Road, Suite 105, Scottsdale, AZ 85251 • Phone: 480-312-7000 • Fax: 480-312-7088

# Request for Stormwater Storage Waiver

292-SA-2007

City of Scottsdale Case Numbers:

___ - PA - ___ ___ - ZN - ___ ___ - UP - ___ ___ - DR - ___ ___ - PP - ___ PC#_____

**CITY STAFF TO COMPLETE THIS PAGE**

Project Name FAIRMONT SCOTTSDALE PRINCESS RESORT

Check Appropriate Boxes:

☐ Meets waiver criteria (specify): ☐ 1 ☑ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

☑ Recommend approve waiver.

☐ Recommend deny waiver:
- ☐ None of waiver criteria met.
- ☐ Downstream conditions prohibit waiver of any storage.
- ☐ Other:

Explain: _____

☐ Return waiver request:
- ☐ Insufficient data provided.
- ☐ Other: _____

Explain: _____

Recommended Conditions of Waiver:
- ☒ All storage requirements waived.
- ☐ Pre development conditions must be maintained.
- ☑ Other:

Explain: In land improvements exceed cost of in-lieu fee.

☒ **Waiver approved per above conditions.**

☐ **Waiver denied.**

C. Ashley Gould — 10/23/08

Floodplain Administrator or Designee — Date

**Planning & Development Services Department**
7447 E Indian School Road, Suite 105, Scottsdale, AZ 85251 • Phone: 480-312-7000 • Fax: 480-312-7088

# Request for Stormwater Storage Waiver

292-SA-2007 City of Scottsdale Case Numbers:

___ - PA - ___ ___ - ZN - ___ ___ - UP - ___ ___ - DR - ___ ___ - PP - ___ PC#_____

## In-Lieu Fee and In-Kind Contributions

If the city grants a waiver, the developer is required to calculate and contribute an In-Lieu Fee based on what it would cost the city to provide the waived storage volume, including costs such as land acquisition, construction, landscaping, design, construction management, and maintenance over a 75-year design life. For FY 2007/2008, this cost is $3.22 per cubic foot of stormwater stored. This unit cost will be updated annually, but the city reserves the right to revise the unit cost at any time at its sole discretion.

The Floodplain Administrator considers in-kind contributions on a case-by-case basis. An in-kind contribution can serve as part of or instead of the calculated in-lieu fee. The Floodplain Administrator or designee must approve in-lieu fees and in-kind contributions.

Project Name Fairmont Scottsdale Princess Resort

The waived stormwater storage volume is calculated as follows:

**V = CRA; where**
V = stormwater storage volume required, in cubic feet,
C = weighted average runoff coefficient over disturbed area,
R = 100-year/2-hour precipitation depth, in feet (2.82 inches, or 0.235 feet, for all regions of Scottsdale), and
A = area of disturbed ground, in square feet

Furthermore,

$V_w = V - V_p$; where
$V_w$ = volume waived,
V = volume required, and
$V_p$ = volume provided

C = 0.9
A = 424,753
V = 89,826
$V_p$ = 0
$V_w$ = 89,826

☐ An In-Lieu Fee will be paid, based on the following calculations and supporting documentation:
In-lieu fee ($) = $V_w$ (cu. ft.) x $3.22 per cubic foot = 289,240

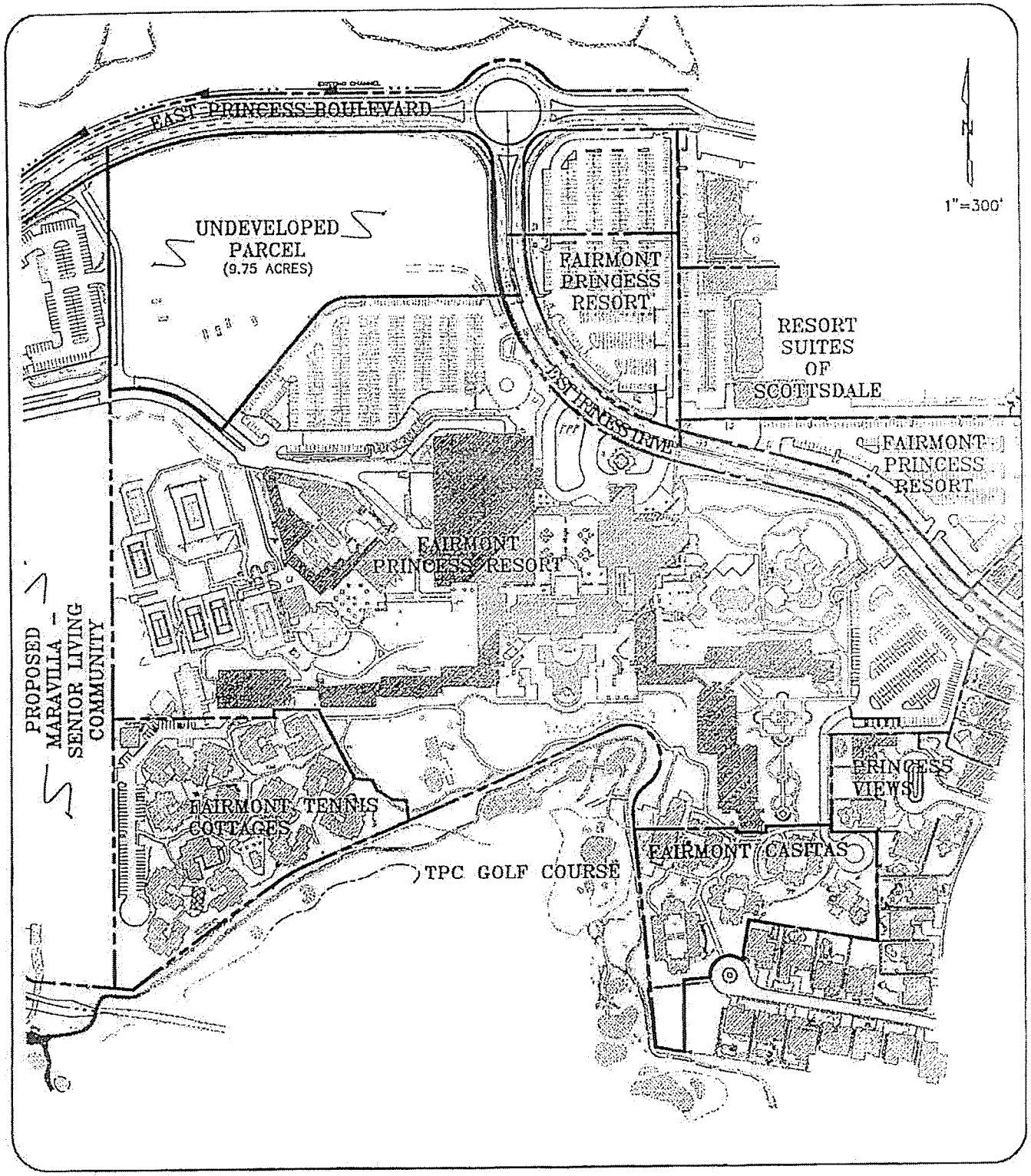
☒ An In-Kind Contribution will be made, as follows:
See attachment. Princess Drive Bridge Reconstruction, in accordance with approved plans.

☐ No In-Lieu Fee is required. Reason:

**Approved by:** C. Ashley Conklin 10/23/08

Floodplain Administrator or Designee — Date


**Planning & Development Services Department**
7447 E Indian School Road, Suite 105, Scottsdale, AZ 85251 • Phone: 480-312-7000 • Fax: 480-312-7088




# EXHIBIT 1

## FAIRMONT SCOTTSDALE PRINCESS RESORT

| | |
|---|---|
| ENGINEER | J. Bulka |
| DESIGNER | J. Haywood |
| CAD TECHNICIAN | J. Sanchez |
| SCALE | 1"=300' |
| DATE | 07/14/08 |
| JOB NUMBER | 07910 |
| REF. SHEET | 1 OF 1 |

WOOD/PATEL & ASSOCIATES INC.
Civil Engineers, Hydrologists and Land Surveyors
1855 North Stapley Drive
Mesa, Arizona 85203
(480) 834-3300
(480) 834-3320 FAX

Attachment to Stormwater Storage Waiver Request
for Fairmont Scottsdale Princess Resort & Regional Flood Control

The Fairmont Scottsdale Princess Resort (Site) is a 60 acre resort located near the southwest corner of Princess Boulevard and Princess Drive. The Site is bounded by the Princess Blvd. to the north, the Maravilla Scottsdale Senior Living Community to the east, the TPC Golf Course to the south and existing residential developments to the west (see Exhibit 1, attached). The existing Fairmont Scottsdale Princess Resort consists of multiple hotel buildings, a ballroom, spa, tennis cottages, tennis courts, and parking. A majority of the site is developed and portions are being updated and renovated. At the north end of the site there is a 9.75 acre portion of the property that has yet to be developed, and other portions are scheduled for upgrades.

It is Wood/Patel's understanding that the ownership of the Fairmont Scottsdale Princess Resort, Strategic Hotels and Resorts, has agreed to fund regional flood control improvements to the public road/channel crossing at Princess Blvd and Scottsdale Road, in return for the City approving this waiver and it being applicable to the entire site. The improvements consist of removing the existing concrete box culvert crossing and replacing it with a bridge structure. The cost of a new bridge structure is estimated at $1,053,000.

City of Scottsdale In-Lieu Fees:

V(req) Volume required = CRA = (0.90) x (0.235 feet) x (9.75 acres) = 89,826 cu-ft.

C (Runoff Coefficient) = 0.90

R (100-year/2-hour precipitation depth) = 0.235 feet

Site area = 9.75 acres

City of Scottsdale In-Lieu Fees = V(req) x $3.22 = (89,826 cu-ft) x $3.22 = $289,240

Summary:

Public Drainage Improvements = $1,053,000 (*)

City of Scottsdale in Lieu Fee = $289,240

(*) See Sheet 2 of 2 Engineering Preliminary Opinion of Probable Cost

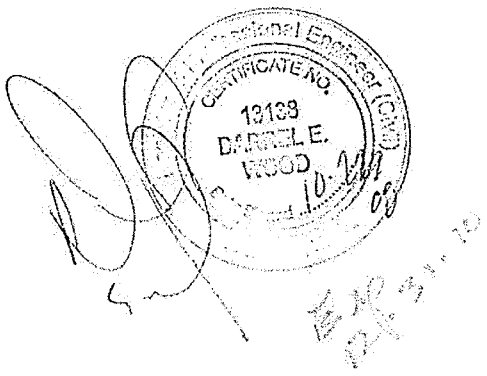
Attachment to Stormwater Storage Waiver Request
for Fairmont Scottsdale Princess Resort & Regional Flood Control

**Engineering Preliminary Opinion of Probable Cost (*)**

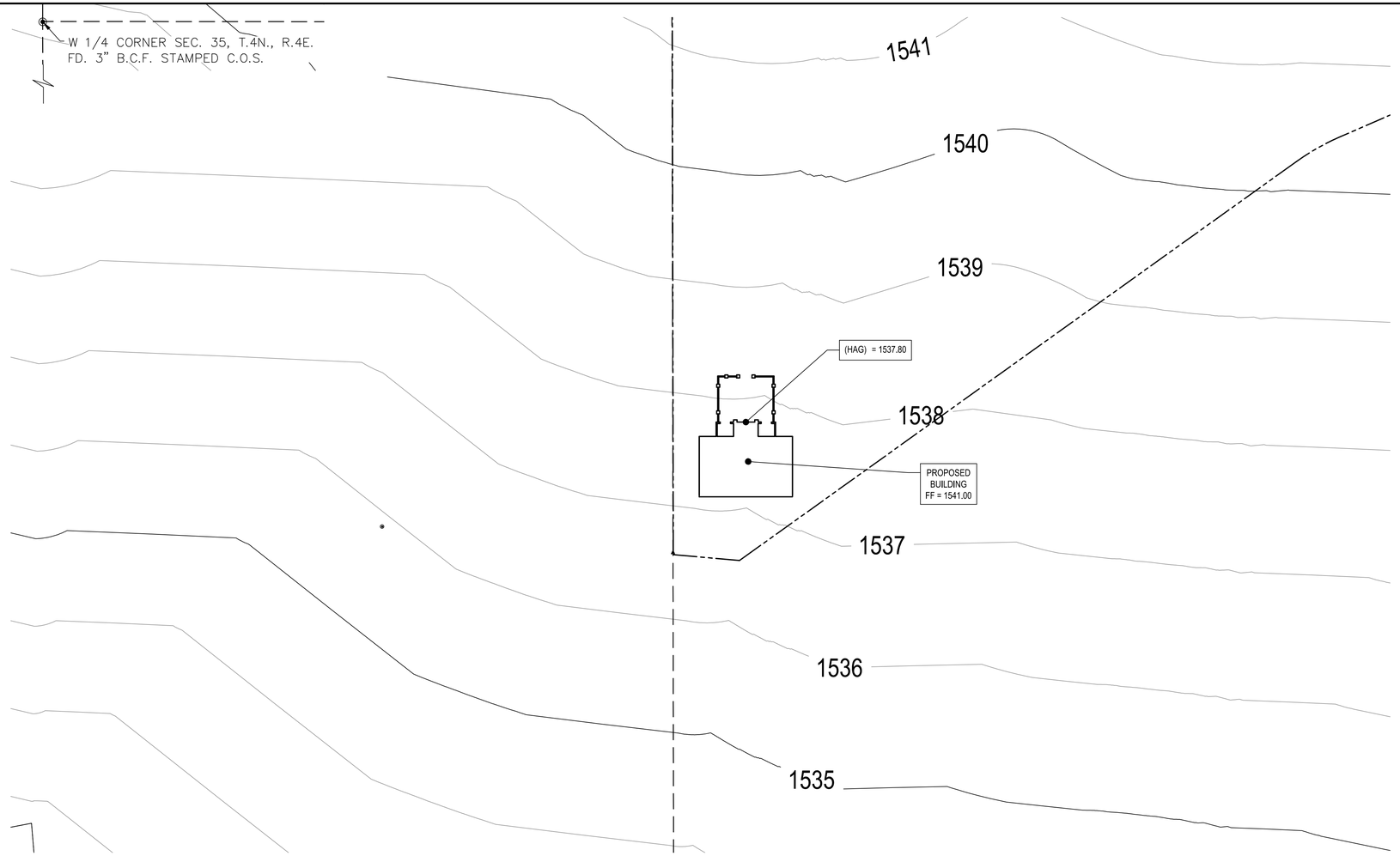
Prepared Bridge Structure at Princess Drive, just east of Scottsdale Road serving unnamed wash.

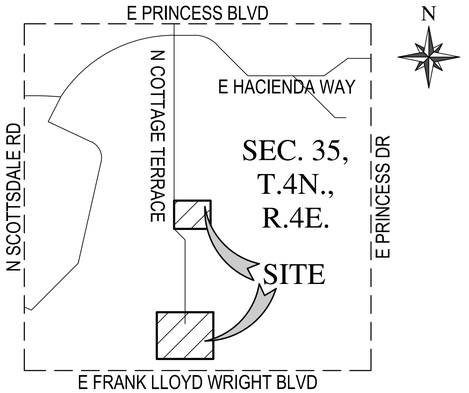
Estimated Bridge Surface = 8,100 square feet x $130/s.f. $1,053,000

(*) Offered without the benefit of construction documents and specifications.



## APPENDIX E – REGIONAL CONTOUR MAP / OPINION OF EXISTING HIGHEST NATURAL GRADE ELEVATION




## VICINITY MAP

N.T.S.

## LEGEND

| | |
|---|---|
| ——— | PROPOSED BUILDING OUTLINE |
| — - — - — | BOUNDARY LINE |
| - - - - - | SECTION LINE |
| —1550— | ESTIMATED 5' CONTOUR NAVD88 DATUM |
| —1541— | ESTIMATED 1' CONTOUR NAVD88 DATUM |
| 1551.75 | ORIGINAL 1964 CURRYS CORNER CONTOURS ON NAVD88 DATUM |
| HAG | HIGHEST ADJACENT NATURAL GRADE |
| LAG | LOWEST ADJACENT NATURAL GRADE |
| RFD | REGULATORY FLOOD DEPTH = HAG +2' (ZONE AO DEPTH (1') = 1' FREEBOARD) |
| LGF | LOWEST GARAGE FLOOR |

## ELEVATION STATEMENT

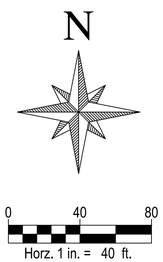
THE WORK PRODUCT PRESENTED IS THE RESULT OF OBTAINING BEST AVAILABLE HISTORICAL ELEVATION INFORMATION, AND EMPLOYING PROFESSIONAL JUDGMENT TO BEST PRESENT IN SITE GROUND ELEVATIONS. ELEVATIONS ARE BASED ON 1964 CURRYS CORNER NGVD29 DATUM CONVERTED TO NAVD88 USING MARICOPA LAND SURVEY CONVERSION OF 1.749 FT.

## BENCHMARK

THE VERTICAL DATUM FOR THIS EXHIBIT IS BASED ON GDACS POINT 43017-1, 3 INCH CITY OF SCOTTSDALE BRASS CAP FLUSH LOCATED ON SCOTTSDALE ROAD SOUTH OF PRINCESS DRIVE HAVING AN ELEVATION OF 1552.985, CITY OF SCOTTSDALE NAVD88 DATUM.

| FEMA SUMMARY TABLE | | | | | | | |
|---|---|---|---|---|---|---|---|
| NAME | ADDRESS | LOWEST FINISHED FLOOR ELEVATION (LF88) | HIGHEST ADJACENT NATURAL GRADE | REGULATORY FLOOD ELEVATION | FEMA REQUIREMENTS | | |
| BUILDINGS | | | | | FLOOD VENTING | WET FLOODPROOFING | OTHER |
| WELCOME CENTER | 7575 | 1541.00 | 1537.80 | 1539.80 | NO VENT | NOT REQUIRED | N/A |

1) WHEN REQUIRED AS INDICATED ABOVE, FLOOD VENTS SHALL BE PROVIDED ON AT LEAST 2 SEPARATE WALLS. THE FLOOD VENTS SHALL HAVE ONE SQUARE INCH OF OPENING SPACE FOR EVERY SQUARE FOOT OF ENCLOSED SPACE BELOW THE REGULATORY FLOOD ELEVATION, OR AS NOTED ABOVE. SEE ARCHITECTURAL PLANS FOR VENTS OPENINGS. PROPOSED GRADE ADJACENT TO BUILDING MAY EFFECT VENT LOCATIONS, CONSULT ENGINEER PRIOR TO CONSTRUCTION WITH ANY QUESTIONS.
2) WHEN REQUIRED AS INDICATED ABOVE, WET FLOODPROOFING SHALL BE PROVIDED UP TO THE REGULATORY FLOOD DEPTH. WET FLOODPROOFING CONSIST OF CONSTRUCTION WITH FLOOD RESISTANT MATERIALS.
3) WHEN REQUIRED AS NOTED ABOVE, ELECTRICAL AND MECHANICAL EQUIPMENT SHALL BE ELEVATED ABOVE THE REGULATORY FLOOD DEPTH.
4) PROPOSED BUILDING M1 WILL BE A STRUCTURALLY INDEPENDENT NON-RESIDENTIAL STRUCTURE.
5) FEMA DEFINES DRY FLOODPROOFING AS A COMBINATION OF MEASURES THAT RESULT IN A STRUCTURE, INCLUDING THE ATTENDANT UTILITIES AND EQUIPMENT, BEING WATERTIGHT WITH ALL ELEMENTS SUBSTANTIALLY IMPERMEABLE TO THE ENTRANCE OF FLOODWATER AND WITH STRUCTURAL COMPONENTS HAVING THE CAPACITY TO RESIST FLOOD LOADS.




WOOD/PATEL
MISSION: CLIENT SERVICE®
(602) 335-8500
WWW.WOODPATEL.COM

# PRIVADO WELCOME BUILDING AND PARKING MODIFICATIONS

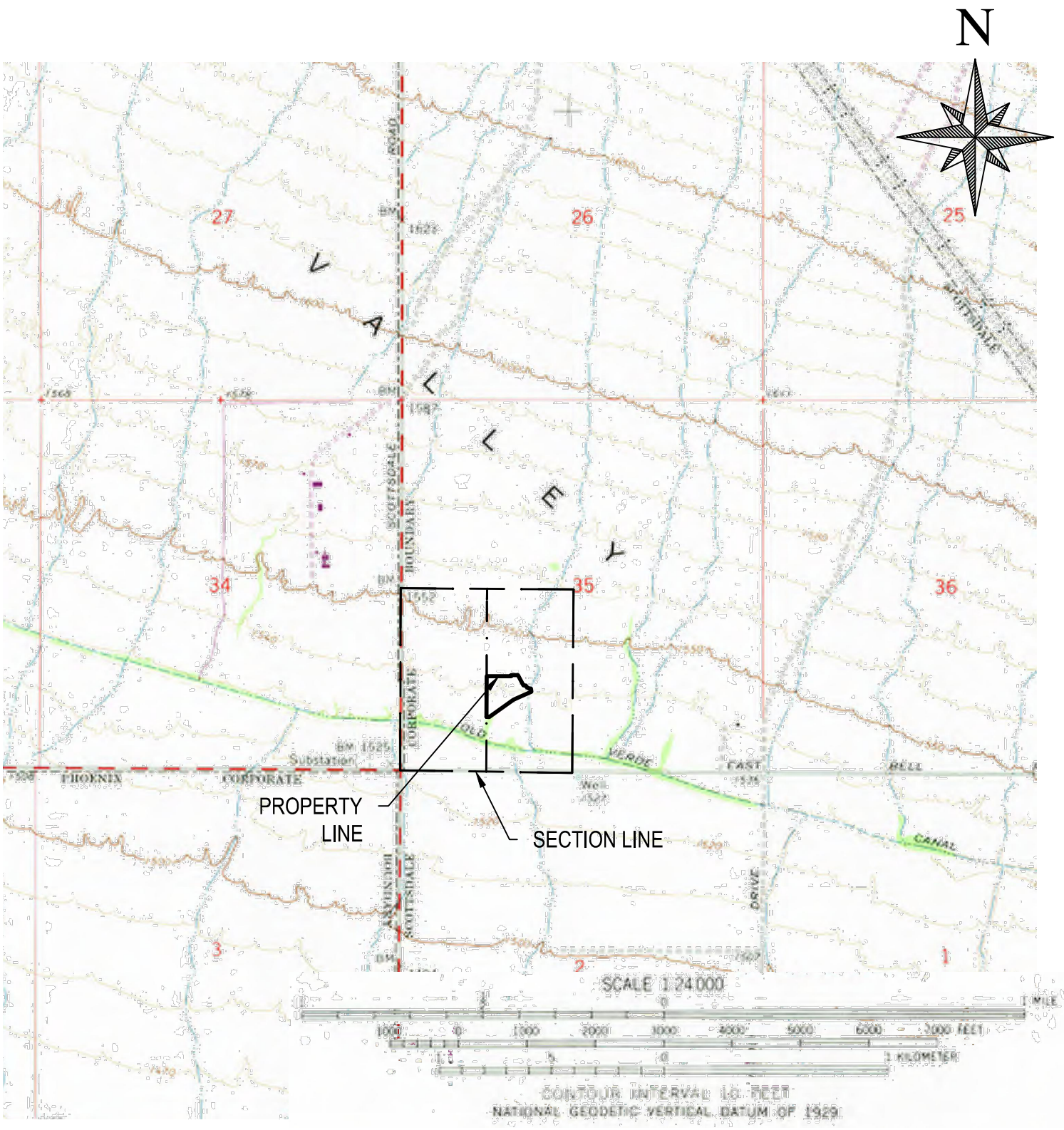
REGIONAL CONTOUR MAP / OPINION OF EXISTING HIGHEST NATURAL GRADE ELEVATION

Registered Professional Engineer
CERTIFICATE NO.
36382
DARIN L. MOORE
Date Signed
ARIZONA, U.S.A.

EXPIRES 06-30-22

COMPLETED SURVEY FIELD WORK ON: N/A
CHECKED BY: RS
CAD TECHNICIAN: AJ
SCALE: 1" = 40'
DATE: 09/21/2022
JOB NUMBER: 215319
SHEET: 1 OF 2

Z:\2021\215319\Project Support\Reports\5319 - Welcome Center\Drainage\Exhibits\5319 Exhibit – Regional Contour Map.dwg




Registered Professional Engineer (Civil)
CERTIFICATE NO.
36382
DARIN L.
MOORE
Date Signed .....
ARIZONA, U.S.A.

EXPIRES 06-30-22

WOOD PATEL

# PRINCESS WELCOME BUILDING AND PARKING MODIFICATIONS

## REGIONAL CONTOUR MAP/OPINION OF EXISTING HIGHEST NATURAL GRADE ELEVATION

| | | | | | |
|---|---|---|---|---|---|
| DATE | 10-05-2022 | SCALE | 1" = 1' | SHEET | 2 OF 2 |
| JOB NO. | 215319 | DESIGN | RS | CHECK | RS |
| | | DRAWN | AJS | RFI # | N/A |

Z:\2021\215319\Project Support\Reports\5319 - Welcome Center\Drainage\Exhibits\Regional Contour Map 2.dwg

## APPENDIX F – CURRY'S CORNER QUADRANGLE MAP

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

# CURRYS CORNER QUADRANGLE
ARIZONA—MARICOPA CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

(NEW RIVER SE) 3551 I SE

(WILDCAT HILL) 3651 IV SE

112°00' 33°45' 111°52'30" 33°42'30" 33°37'30"

R. 3 E. R. 4 E. R. 5 E.

CAVE CREEK 8.1 MI. CAVE CREEK 6 MI.

3651 IV SW (CAVE CREEK)

510 000 FEET 990 000 FEET 960 000 FEET 480 000 FEET

T. 5 N. T. 4 N. T. 3 N.

Ironwood Golf Course

PARADISE VALLEY

Currys Corner

PINNACLE PEAK SUBSTATION

Water Tank

Park

Trailer Park

Paradise Valley Hi

Well

BM 1630

BM 1838

BM 1787

BM 1525 Substation

BMX1891

CAVE CREEK ROAD

SCOTTSDALE ROAD

PIMA ROAD

JOMAX ROAD

PINNACLE PEAK ROAD

BELL ROAD

EAST BELL ROAD

OLD VERDE CANAL

UNION HILLS DRIVE

GREENWAY BLVD

SCOTTSDALE BOUNDARY

PHOENIX CORPORATE

SCOTTSDALE CORPORATE

ARIZONA CANAL

TATUM BLVD

40TH STREET

64TH STREET

PIMA DRIVE

WALDORF

66 MI. TO INTERSTATE 17

FORT MC DOWELL 11 MI.

(MC DOWELL PEAK) 3651 III NE

(SUNNYSLOPE) 3551 II SE

(SAWIK MTN.) 3651 III SE

(UNION HILLS) 3551 I NE

(PARADISE VALLEY) SCOTTSDALE P.O. 9.5 MI.
3651 III SW PHOENIX (CIVIC CENTER) 21 MI.

SCALE 1:24 000

1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 KILOMETER

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

ROAD CLASSIFICATION
Medium-duty — Light-duty
Unimproved dirt

Mapped, edited, and published by the Geological Survey

Control by USGS and USC&GS

Topography by photogrammetric methods from aerial photographs taken 1962. Field checked 1964

Polyconic projection. 1927 North American datum
10,000-foot grid based on Arizona coordinate system, central zone
1000-meter Universal Transverse Mercator grid ticks, zone 12, shown in blue

Revisions shown in purple compiled from aerial photographs taken 1973. This information not field checked

GN MN 0°31' 9 MILS 13½° 240 MILS

UTM GRID AND 1973 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

ARIZONA

QUADRANGLE LOCATION

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



MAR 2 0 1975

CURRYS CORNER, ARIZ.
N3337.5—W11152.5/7.5

1964
PHOTOREVISED 1973
AMS 3651 III NW—SERIES V898

2560

# APPENDIX G – HYDROLOGIC AND HYDRAULIC CALCULATIONS

## IDF DATA FROM FCDMC NOAA – ATLAS 14 PRECIPITATION DATA

WOOD PATEL

SITE I-D-F CURVE

**Project** Fairmont Scottsdale Princess Privado Welcome Center and Parking Expansion
**Location** Scottsdale AZ
**Project Number** 215319
**Project Engineer** Darin Moore, PE

**RAINFALL DEPTHS, INCHES**

| Duration | Average Reccurence Interval (years) | | | | | |
|---|---|---|---|---|---|---|
| | 2 | 5 | 10 | 25 | 50 | 100 |
| 5-min | 0.253 | 0.341 | 0.409 | 0.501 | 0.571 | 0.643 |
| 10-min | 0.385 | 0.520 | 0.623 | 0.762 | 0.869 | 0.978 |
| 15-min | 0.478 | 0.644 | 0.772 | 0.945 | 1.080 | 1.210 |
| 30-min | 0.643 | 0.867 | 1.040 | 1.270 | 1.450 | 1.630 |
| 60-min | 0.796 | 1.070 | 1.290 | 1.580 | 1.800 | 2.020 |
| 2-hr | 0.921 | 1.230 | 1.460 | 1.780 | 2.020 | 2.270 |
| 3-hr | 1.010 | 1.320 | 1.560 | 1.910 | 2.180 | 2.460 |
| 6-hr | 1.200 | 1.530 | 1.800 | 2.150 | 2.440 | 2.730 |
| 12-hr | 1.350 | 1.700 | 1.970 | 2.350 | 2.630 | 2.930 |
| 24-hr | 1.580 | 2.040 | 2.410 | 2.920 | 3.320 | 3.740 |

**RAINFALL INTENSITY, INCHES/HOUR**

| Duration minutes | Frequency, years | | | | | |
|---|---|---|---|---|---|---|
| | 2 | 5 | 10 | 25 | 50 | 100 |
| 5 | 3.04 | 4.09 | 4.91 | 6.01 | 6.85 | 7.72 |
| 10 | 2.31 | 3.12 | 3.74 | 4.57 | 5.21 | 5.87 |
| 15 | 1.91 | 2.58 | 3.09 | 3.78 | 4.32 | 4.84 |
| 30 | 1.29 | 1.73 | 2.08 | 2.54 | 2.90 | 3.26 |
| 60 | 0.80 | 1.07 | 1.29 | 1.58 | 1.80 | 2.02 |
| 120 | 0.46 | 0.62 | 0.73 | 0.89 | 1.01 | 1.14 |
| 180 | 0.34 | 0.44 | 0.52 | 0.64 | 0.73 | 0.82 |
| 360 | 0.20 | 0.26 | 0.30 | 0.36 | 0.41 | 0.46 |
| 720 | 0.11 | 0.14 | 0.16 | 0.20 | 0.22 | 0.24 |
| 1440 | 0.07 | 0.09 | 0.10 | 0.12 | 0.14 | 0.16 |

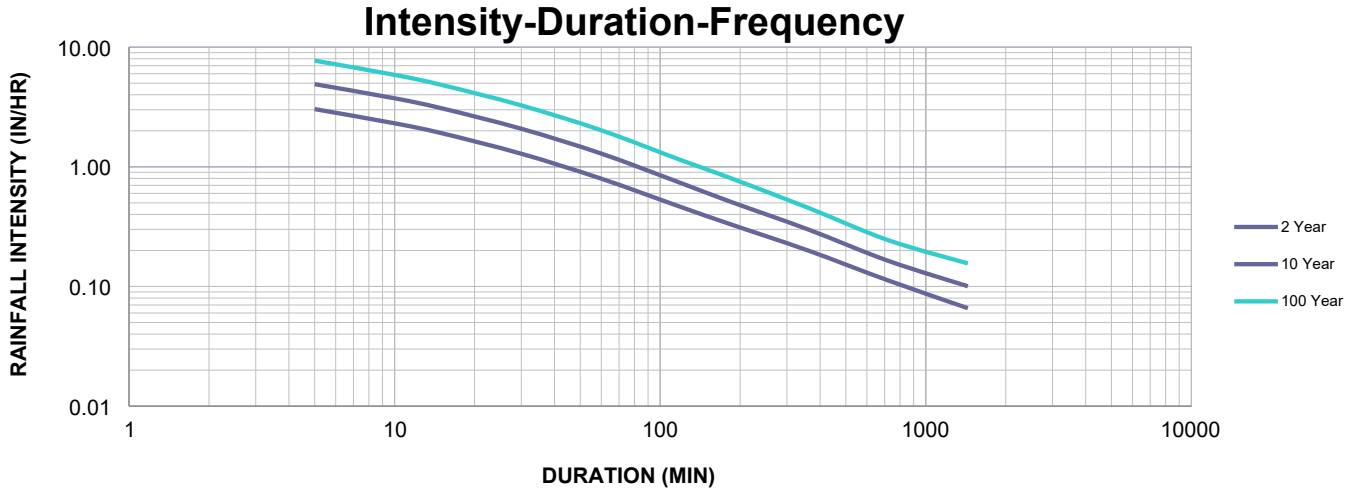


**TABLE 1 – EXISTING WEIGHTED C VALUES**

WOOD PATEL

## COMPOSITE WEIGHTED "C" FACTOR CALCULATIONS
100 YEAR

| | |
|---|---|
| **Project** | Fairmont Scottsdale Princess Privado Welcome Center and Parking Expansion |
| **Location** | Scottsdale AZ |
| **Project Number** | 215319 |
| **Project Engineer** | Darin Moore, PE |

Existing C Factor

| **Drainage Subbasin ID** | **Area** | **Desert** | | **Paved** | | **Roof** | | **Grass** | | **Commercial** | | **100 YR Runoff Coefficient** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **(Description/ID)** | **(Acres)** | **%** | **"C"** | **%** | **"C"** | **%** | **"C"** | **%** | **"C"** | **%** | **"C"** | **"C"** |
| S9 | 0.10 | 90 | 0.45 | 10 | 0.95 | 0 | 0.95 | 0 | 0.30 | 0 | 0.86 | **0.50** |
| M2 | 0.40 | 100 | 0.45 | 0 | 0.95 | 0 | 0.95 | 0 | 0.30 | 0 | 0.86 | **0.45** |
| E6 | 2.21 | 0 | 0.45 | 0 | 0.95 | 0 | 0.95 | 0 | 0.30 | 100 | 0.86 | **0.86** |

## TABLE 2 – PROPOSED WEIGHTED C VALUES

WOOD PATEL

## COMPOSITE WEIGHTED "C" FACTOR CALCULATIONS
100 YEAR

| | |
|---|---|
| **Project** | Fairmont Scottsdale Princess Privado Welcome Center and Parking Expansion |
| **Location** | Scottsdale AZ |
| **Project Number** | 215319 |
| **Project Engineer** | Darin Moore, PE |

Proposed C Factor

| **Drainage Subbasin ID** | **Area** | **Desert** | | **Paved** | | **Roof** | | **Grass** | | **Commercial** | | **100 YR Runoff Coefficient** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **(Description/ID)** | **(Acres)** | **%** | **"C"** | **%** | **"C"** | **%** | **"C"** | **%** | **"C"** | **%** | **"C"** | **"C"** |
| S9 | 0.04 | 100 | 0.45 | 0 | 0.95 | 0 | 0.95 | 0 | 0.30 | 0 | 0.86 | **0.45** |
| M2 | 0.36 | 100 | 0.45 | 0 | 0.95 | 0 | 0.95 | 0 | 0.30 | 0 | 0.86 | **0.45** |
| E6 | 2.31 | 0 | 0.45 | 0 | 0.95 | 0 | 0.95 | 0 | 0.30 | 100 | 0.86 | **0.86** |
| E7 | 0.19 | 0 | 0.45 | 0 | 0.95 | 0 | 0.95 | 0 | 0.30 | 100 | 0.86 | **0.86** |

## TABLE 3 – EXISTING RATIONAL METHOD

WOOD PATEL

# RATIONAL METHOD SUMMARY
100 YEAR, 10 YEAR

| | |
|---|---|
| **Project** | Fairmont Scottsdale Princess Privado Welcome Center and Parking Expansion |
| **Location** | Scottsdale AZ |
| **Project Number** | 215319 |
| **Project Engineer** | Darin Moore, PE |

**EXISTING ON-SITE WATERSHEDS**

| Drainage Subbasin ID | Longest Watercourse 'L' (ft) | Longest Watercourse 'L' (mi) | Drainage Area 'A' (sf) | Drainage Area 'A' (Acres) | '$K_b$' Type[1] | Watershed Resistance Coefficient '$K_b$' | Top Elevation | Bottom Elevation | Basin Slope 'S' (ft/mi) | 100 YEAR: Calculated Q100 'Tc' (See Note 2) (min) | 100 YEAR: 100 YEAR Intensity 'i' (in/hr) | 100 YEAR: 100 YR Runoff Coefficient 'C' | 100 YEAR: Q100 Flow (cfs) | 10 YEAR: Calculated Q10 'Tc' (See Note 2) (min) | 10 YEAR: 10 YEAR Intensity 'i' (in/hr) | 10 YEAR: 10 YR Runoff Coefficient 'C' | 10 YEAR: Q10 Flow (cfs) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S9 | 70 | 0.013 | 4,212 | 0.10 | A | 0.0463 | 49.9 | 44.0 | 444.4 | 1.0 | 9.31 | 0.50 | **0.5** | 1.2 | 5.88 | 0.41 | **0.2** |
| M2 | 212 | 0.040 | 17,531 | 0.40 | B | 0.0854 | 34.4 | 31.2 | 79.7 | 4.4 | 8.03 | 0.86 | **2.8** | 5.4 | 4.91 | 0.37 | **0.7** |
| E6 | 362 | 0.069 | 96,144 | 2.21 | A | 0.0379 | 49.2 | 41.0 | 119.6 | 3.3 | 8.45 | 0.45 | **8.4** | 4.0 | 5.22 | 0.80 | **9.2** |

**Notes**

1. Per Drainage Design Manual for Maricopa County, Vol. I, Hydrology (2013), Table 3.1: Equation for Estimating Kb in the Tc Equation
2. Minimum Tc is 5 minutes.

**TABLE 4 – PROPOSED RATIONAL METHOD**

WOOD PATEL

## STORMCEPTOR RATIONAL METHOD SUMMARY

100 YEAR, 10 YEAR

| | |
|---|---|
| **Project** | Fairmont Scottsdale Princess Privado Welcome Center and Parking Expansion |
| **Location** | Scottsdale AZ |
| **Project Number** | 215319 |
| **Project Engineer** | Darin Moore, PE |

**PROPOSED ON-SITE WATERSHEDS**

| Drainage Subbasin ID | Longest Watercourse 'L' (ft) | Longest Watercourse 'L' (mi) | Drainage Area 'A' (sf) | Drainage Area 'A' (Acres) | '$K_b$' Type[1] | Watershed Resistance Coefficient '$K_b$' | Top Elevation | Bottom Elevation | Basin Slope 'S' (ft/mi) | 100 YEAR | | | | 10 YEAR | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Calculated Q100 'Tc' (See Note 2) (min) | 100 YEAR Intensity 'i' (in/hr) | 100 YR Runoff Coefficient 'C' | Q100 Flow (cfs) | Calculated Q10 'Tc' (See Note 2) (min) | 10 YEAR Intensity 'i' (in/hr) | 10 YR Runoff Coefficient 'C' | Q10 Flow (cfs) |
| S9 | 53 | 0.010 | 1,896 | 0.04 | A | 0.0485 | 49.9 | 44.0 | 587.8 | 0.8 | 9.31 | 0.45 | **0.2** | 1.0 | 5.60 | 0.45 | **0.1** |
| M2 | 171 | 0.032 | 15,864 | 0.36 | B | 0.0860 | 34.4 | 31.2 | 98.8 | 3.8 | 8.03 | 0.86 | **2.5** | 4.5 | 4.98 | 0.86 | **1.6** |
| E6 | 554 | 0.105 | 100,754 | 2.31 | A | 0.0377 | 49.2 | 41.0 | 78.2 | 4.6 | 8.45 | 0.45 | **8.8** | 5.7 | 4.81 | 0.45 | **5.0** |
| E7 | 136 | 0.026 | 8,111 | 0.19 | A | 0.0446 | 51.2 | 1539.8 | 38.0 | 3.1 | 8.78 | 0.86 | **1.4** | 3.8 | 4.98 | 0.86 | **0.8** |

**Notes**

1. Per Drainage Design Manual for Maricopa County, Vol. I, Hydrology (2013), Table 3.1: Equation for Estimating Kb in the Tc Equation

**APPENDIX H – PRIVADO WELCOME BUILDING AND PARKING MODIFICATIONS – IMPROVEMENT PLANS**

# PRIVADO WELCOME BUILDING AND PARKING MODIFICATIONS

## IMPROVEMENT PLAN

## SCOTTSDALE, ARIZONA

A PORTION OF SECTION 35, TOWNSHIP 4 NORTH, RANGE 4 EAST
OF THE GILA AND SALT RIVER MERIDIAN, MARICOPA COUNTY, ARIZONA

## ENGINEER'S NOTES

1. MARICOPA ASSOCIATION OF GOVERNMENTS (M.A.G.) UNIFORM STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION INCLUDING LATEST REVISION AND CURRENT SUPPLEMENTALS THEREOF PER THE LOCAL TOWN OR CITY) ARE INCORPORATED INTO THIS PLAN IN THEIR ENTIRETY.
2. ALL WORK REQUIRED TO COMPLETE THE CONSTRUCTION COVERED BY THIS PLAN SHALL BE IN ACCORDANCE WITH THE M.A.G. STANDARD SPECIFICATIONS AND DETAILS AND CURRENT SUPPLEMENTS THEREOF PER THE LOCAL CITY OR TOWN UNLESS SPECIFIED OTHERWISE IN THESE PLANS OR ELSEWHERE IN THE CONTRACT DOCUMENTS. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH ALL REQUIRED STANDARD SPECIFICATIONS, DETAILS AND SUPPLEMENTS PRIOR TO BIDDING THE WORK FOR THE CONSTRUCTION COVERED BY THIS PLAN.
3. THE CONTRACTOR IS RESPONSIBLE FOR ALL METHODS, SEQUENCING, AND SAFETY CONCERNS ASSOCIATED WITH THIS PROJECT DURING CONSTRUCTION, UNLESS SPECIFICALLY ADDRESSED OTHERWISE IN THIS PLAN OR ELSEWHERE IN THE CONTRACT.
4. THE CONTRACTOR IS TO COMPLY WITH ALL LOCAL, STATE, AND FEDERAL LAWS AND REGULATIONS APPLICABLE TO THE CONSTRUCTION COVERED BY THIS PLAN.
5. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL PERMITS REQUIRED TO COMPLETE ALL WORK COVERED BY THIS PLAN.
6. THE QUANTITIES AND SITE CONDITIONS DEPICTED IN THESE PLANS ARE FOR GENERAL INFORMATIONAL PURPOSES ONLY AND MIGHT NOT REFLECT ACTUAL QUANTITIES AND SITE CONDITIONS. CONTRACTORS SHALL SATISFY THEMSELVES AS TO ACTUAL QUANTITIES AND SITE CONDITIONS PRIOR TO BIDDING THE WORK FOR THE CONSTRUCTION COVERED BY THIS PLAN.
7. A REASONABLE EFFORT HAS BEEN MADE TO SHOW THE LOCATIONS OF EXISTING UNDERGROUND FACILITIES AND UTILITIES IN THE CONSTRUCTION AREA. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO UTILITIES AND/OR FACILITIES CAUSED DURING THEIR CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL CALL 48 HOURS IN ADVANCE FOR BLUE STAKE (1-800-STAKE-IT) PRIOR TO ANY EXCAVATION.
8. THE CONTRACTOR IS RESPONSIBLE FOR ALL COORDINATION OF CONSTRUCTION AFFECTING UTILITIES AND THE COORDINATION OF ANY NECESSARY UTILITY RELOCATION WORK.
9. ALL PAVING, GRADING, EXCAVATION, TRENCHING, PIPE BEDDING, CUT FILL AND BACKFILL SHALL COMPLY WITH THE RECOMMENDATIONS SET FORTH IN THE SOILS (GEOTECHNICAL) REPORT FOR THIS PROJECT IN ADDITION TO THE REFERENCED REQUIRED SPECIFICATIONS AND DETAILS. THE CONTRACTOR SHALL BE AWARE THAT CERTAIN UTILITIES REQUIRE PROPER ATTENTION AND CAREFUL PLANNING DURING SITE CONSTRUCTION. PLEASE NOTE THAT UTILITIES ON THESE PLANS MAY NOT EXHIBIT THE FULL PROTECTIVE COVER REQUIRED DURING THE SUBGRADE PREPARATION PHASE OF THE CONSTRUCTION. IN SUCH INSTANCES, THE CONTRACTOR SHALL PROVIDE ADDITIONAL PROTECTION (SUCH AS RAMPING) OR INCREASED PIPE STRENGTH TO PROVIDE THE NECESSARY PROTECTION REQUIRED TO PREVENT DAMAGE DURING THE CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL HOLD THE ENGINEER HARMLESS IN ALL CASES FOR DAMAGES TO UTILITIES WHERE INADEQUATE PROTECTIVE MEASURES OCCUR.
10. THE CONTRACTOR IS TO VERIFY THE LOCATION AND THE ELEVATIONS OF ALL EXISTING UTILITIES AT POINTS OF TIE-IN PRIOR TO COMMENCING ANY NEW CONSTRUCTION. SHOULD ANY LOCATION OR ELEVATION DIFFER FROM THAT SHOWN ON THESE PLANS, THE CONTRACTOR SHALL CONTACT THE OWNER'S AGENT.
11. CONTRACTOR TO VERIFY AND COORDINATE ALL DIMENSIONS AND SITE LAYOUT WITH ARCHITECT'S FINAL SITE PLAN AND FINAL BUILDING DIMENSIONS BEFORE STARTING WORK. REPORT DISCREPANCIES TO OWNER'S AGENT.
12. COORDINATION BETWEEN ALL PARTIES IS ESSENTIAL PART OF CONTRACT.
13. CONTRACTOR IS RESPONSIBLE FOR PROJECT AND SITE CONDITIONS, AND TO WORK WITH WEATHER CONDITIONS AS THE PROJECT SITE MAY BE LOCATED IN A FLOOD PRONE AREA AND SUBJECT TO FLOODING AND ITS HAZARDS.
14. THE CONTRACTOR IS TO VERIFY THE LOCATION, ELEVATION, CONDITION, AND PAVEMENT CROSS-SLOPE OF ALL EXISTING SURFACES AT POINTS OF TIE-IN AND MATCHING, PRIOR TO COMMENCEMENT OF GRADING, PAVING, CURB AND GUTTER, OR OTHER SURFACE CONSTRUCTION. SHOULD EXISTING LOCATIONS, ELEVATIONS, CONDITION, OR PAVEMENT CROSS-SLOPE DIFFER FROM THAT SHOWN ON THESE PLANS, RESULTING IN THE DESIGN INTENT REFLECTED ON THESE PLANS NOT ABLE TO BE CONSTRUCTED, THE CONTRACTOR SHALL NOTIFY THE OWNER'S AGENT IMMEDIATELY FOR DIRECTION ON HOW TO PROCEED PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR ACCEPTS RESPONSIBILITY FOR ALL COSTS ASSOCIATED WITH CORRECTIVE ACTION IF THESE PROCEDURES ARE NOT FOLLOWED.
15. CONTRACTOR IS RESPONSIBLE TO COORDINATE UTILITY CROSSINGS AT CULVERT CROSSINGS BEFORE STARTING WORK ON CULVERT. COORDINATE WITH OWNER REPRESENTATIVE. VERIFY UTILITY LINES AND/OR CONDUITS ARE IN PLACE BEFORE STARTING CULVERT WORK.
16. CONSTRUCT RETENTION BASIN AS SHOWN. CONTRACTOR TO SCARIFY BOTTOM OF BASIN TWO FEET DEEP AND NOT ALLOW COMPACTION OVER 80%.
17. THIS PROJECT REQUIRES A REGULAR ONGOING MAINTENANCE PROGRAM FOR THE DESIGNED DRAINAGE SYSTEM(S) TO PRESERVE THE DESIGN INTEGRITY AND THE ABILITY TO PERFORM ITS OPERATIONAL INTENT. FAILURE TO PROVIDE MAINTENANCE WILL JEOPARDIZE THE DRAINAGE SYSTEM(S)' PERFORMANCE AND MAY LEAD TO IT'S INABILITY TO PERFORM PROPERLY AND/OR CAUSE DAMAGE ELSEWHERE IN THE PROJECT.
18. SEWER LINES DESIGNED IN PROFILE AND PUBLIC WATER LINES ARE REQUIRED TO BE ASBUILT AND THE INSTALLATION AND TESTING WITNESSED BY A PROFESSIONAL ENGINEER IN ACCORDANCE WITH ARIZONA ADMINISTRATIVE CODES R18-9-E301 "4.01 GENERAL PERMIT: SEWAGE COLLECTIONS SYSTEMS" AND R18-5-507 AND 508 "APPROVAL OF CONSTRUCTION" AND "RECORD DRAWINGS", RESPECTIVELY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY OWNER 72 HOURS IN ADVANCE WHEN THOSE SYSTEMS ARE READY TO BE WITNESSED.
19. THE WORK PRODUCT PRESENTED IS BELIEVED TO BE COMPLIANT WITH THE INTENT OF THE CURRENT AMERICANS DISABILITIES ACT (ADA) REQUIREMENTS AS INTERPRETED BY THE REVIEWING AGENCY(S), IF CONSTRUCTION OF THE PROJECT IS DELAYED, THIS WORK PRODUCT SHOULD BE UPDATED TO ACCOUNT FOR ANY RELEVANT ADA UPDATES BEFORE CONSTRUCTION BEGINS.
20. LOWEST FLOOR (LF) REFERS TO EITHER FLOOR/SLAB ELEVATION OR TOP OF BASEMENT SLAB. LF ELEVATIONS ON THE GRADING AND DRAINAGE PLANS FOR RESIDENTIAL UNITS REFLECT SLAB ON GRADE CONDITIONS AND CANNOT BE LOWERED WITHOUT AGENCY APPROVAL IN LOCATIONS WHERE 'SPECIAL FLOOD HAZARD AREAS' EXIST. IN NON-FLOOD HAZARD LOCATIONS, TO ENSURE THAT ADEQUATE RESIDENTIAL LOT DRAINAGE CAN BE ACHIEVED, A PROFESSIONAL ENGINEER SHOULD BE CONSULTED IF THE LF FOR THE SLAB IS PROPOSED TO BE LOWERED, OR IF A BASEMENT IS TO BE CONSTRUCTED.

## EARTHWORK QUANTITIES (ESTIMATED)

| | |
|---|---|
| RAW CUT: | 213 CY |
| RAW FILL: | 397 CY |

QUANTITIES ARE ESTIMATED IN PLACE. NO PRECOMPACTION, SHRINK OR SWELL IS ASSUMED.

## CITY OF SCOTTSDALE NOTES

PLEASE REFER TO SHEET C2 FOR CITY OF SCOTTSDALE NOTES.

## QUANTITIES

PLEASE REFER TO SHEET C2 FOR ESTIMATED QUANTITIES FOR WORK IN PUBLIC RIGHTS-OF-WAY AND EASEMENTS.

## LEGEND

PLEASE REFER TO SHEET C2 FOR LEGEND AND LIST OF ABBREVIATIONS.

## UTILITY NOTES

1. THESE PLANS HAVE BEEN SUBMITTED TO THE FOLLOWING UTILITY COMPANIES FOR APPROVAL WITHIN THEIR AREA OF INTEREST. THE SIZE AND LOCATIONS, AS SHOWN, OF THE GAS, TELEPHONE AND POWER LINES, AND CONNECTIONS AGREE WITH THE FURNISHED INFORMATION CONTAINED IN THE UTILITY COMPANY'S RECORDS. WHERE THE WORK TO BE DONE CONFLICTS WITH ANY OF THESE UTILITIES, THE CONFLICTS SHALL BE RESOLVED AS SPECIFIED IN THE SPECIAL PROVISIONS AND/OR AS OTHERWISE NOTED ON THESE PLANS. CONFLICTS ARISING DURING THE COURSE OF CONSTRUCTION FROM UNFORESEEN CIRCUMSTANCES SHALL BE REPORTED TO THE INTERESTED UTILITY COMPANY AND BE RESOLVED BY THEM AND THE DESIGN ENGINEER.
2. THE CITY WILL NOT PARTICIPATE IN THE COST OF CONSTRUCTION OR UTILITY RELOCATION.

## FEMA FIRM NOTE (ZONE AO)

ACCORDING TO FEMA FLOOD INSURANCE RATE MAPPING, THE SUBJECT PROPERTY IS LOCATED IN 'SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD' "ZONE AO". ZONE AO IS DESCRIBED AS: "FLOOD DEPTHS OF 1 TO 3 FEET (USUALLY SHEET FLOW ON SLOPING TERRAIN); AVERAGE DEPTHS DETERMINED. FOR AREAS OF ALLUVIAL FAN FLOODING, VELOCITIES ALSO DETERMINED."

## FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

| COMMUNITY NUMBER | PANEL NUMBER | SUFFIX | DATE OF FIRM | FIRM ZONE | BASE FLOOD ELEVATION (IN AO ZONE, USE DEPTH) |
|---|---|---|---|---|---|
| 04013C | 1320 | L | 07/20/2021 | AO | 1 |

## ENGINEER'S CERTIFICATION

ENGINEER'S CERTIFICATION: THE LOWEST FLOOR ELEVATION(S) AND/OR FLOOD PROOFING ELEVATION(S) ON THIS PLAN ARE SUFFICIENTLY HIGH TO PROVIDE PROTECTION FROM FLOODING CAUSED BY A ONE-HUNDRED YEAR STORM, AND ARE IN ACCORDANCE WITH CITY OF SCOTTSDALE REVISED CODE, CHAPTER 37-FLOODPLAIN AND STORMWATER REGULATIONS.

Darin L. Moore — 10/12/2022

ENGINEER SIGNATURE — DATE

## AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED ENGINEER/ LAND SURVEYOR — DATE

SEAL

## PARCEL DESCRIPTION

PARCEL NO. 2: (TENNIS COTTAGES PARCEL)
THAT PORT OF THE SOUTHWEST ONE-QUARTER OF SECTION 35, TOWNSHIP 4 NORTH, RANGE 4 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA, DESCRIBED AS FOLLOWS:
COMMENCING AT THE SOUTH ONE-QUARTER CORNER OF SAID SECTION 35;
THENCE NORTH 00 DEGREES 08 MINUTES 41 SECONDS EAST, ALONG THE NORTH-SOUTH MED-SECTION LINE OF SAID SECTION 35, A DISTANCE OF 1486.58 FEET;
THENCE NORTH 89 DEGREES 49 MINUTES 06 SECONDS WEST, 840.00 FEET OF THE POINT OF BEGINNING;
THENCE SOUTH 27 DEGREES 44 MINUTES 13 SECONDS EAST, 177.75 FEET;
THENCE SOUTH 83 DEGREES 46 MINUTES 19 SECONDS EAST, 39.13 FEET;
THENCE SOUTH 26 DEGREES 47 MINUTES 27 SECONDS EAST, 26.35 FEET;
THENCE SOUTH 58 DEGREES 07 MINUTES 53 SECONDS EAST, 43.04 FEET;
THENCE SOUTH 88 DEGREES 18 MINUTES 25 SECONDS EAST, 29.86 FEET;
THENCE SOUTH 07 DEGREES 07 MINUTES 02 SECONDS EAST, 47.49 FEET;
THENCE SOUTH 66 DEGREES 38 MINUTES 00 SECONDS WEST, 275.66 FEET TO THE BEGINNING OF A CURVE CONCAVE TO THE SOUTHEAST HAVING A RADIUS OF 150.00 FEET;
THENCE SOUTH WESTERLY ALONG SAID CURVE THOUGH A CENTRAL ANGLE OF 12 DEGREES 08 MINUTES 15 SECONDS, AN ARCH DISTANCE OF 31.78 FEET;
THENCE SOUTH 54 DEGREES 29 MINUTES 46 SECONDS WEST, 446.31 FEET;
THENCE NORTH 84 DEGREES 49 MINUTES 13 SECONDS WEST, 43.57 FEET;
THENCE NORTH 00 DEGREES 01 MINUTES 45 SECONDS EAST, 619.54 FEET;
THENCE SOUTH 89 DEGREES 49 MINUTES 06 SECONDS EAST, 377.78;
THENCE NORTH 00 DEGREES 01 MINUTES 45 SECONDS EAST, 18.00 FEET;
THENCE SOUTH 89 DEGREES 49 MINUTES 06 SECONDS EAST, 103.52 FEET TO THE POINT OF BEGINNING.
EXCEPT ONE-HALF OF ALL OIL AND MINERAL RIGHTS AS RESERVED IN INSTRUMENT RECORDED IN BOOK 124, PAGE 39, RECORDS OF MARICOPA COUNTY, ARIZONA; AND ALSO
EXCEPT ALL OIL GAS, OTHER HYDROCARBON SUBSTANCES, HELIUM OR OTHER SUBSTANCES OF A GASEOUS NATURE, COAL, METALS, MINERALS, FOSSILS, FERTILIZER OF EVERY NAME AND DESCRIPTION; AND ALSO
EXCEPT ALL URANIUM, THORIUM OR ANY OTHER MATERIAL WHICH IS OR MAY BE DETERMINED TO BE PECULIARLY ESSENTIAL TO THE PRODUCTION OF FISSIONABLE MATERIALS WHETHER OR NOT OF COMMERCIAL VALUE, AS SET FORTH IN SECTION 37-231, ARIZONA REVISED STATUTES.

## SOILS REPORT NOTE

A SOILS GEOTECHNICAL REPORT HAS BEEN PREPARED FOR THIS PROJECT TITLED FAIRMONT CASITAS ADDITION BY ALPHA GEOTECHNICAL & MATERIALS, INC. DATED DECEMBER 15, 2021. REPORT NO. 21-G-12692.

## SHEET INDEX



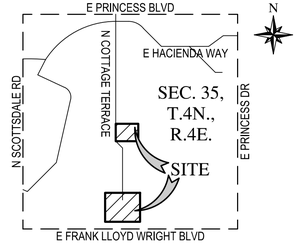
## BENCHMARK

CITY OF SCOTTSDALE BRASS CAP FLUSH 450'± NORTH OF PRINCESS DRIVE ON SCOTTSDALE ROAD, BEING THE WEST QUARTER CORNER OF SECTION 35, TOWNSHIP 4 NORTH, RANGE 4 EAST.
CITY OF SCOTTSDALE DATUM, NAVD88 DATUM
ELEVATION=1553.22'.

I HEREBY CERTIFY THAT ALL ELEVATIONS REPRESENTED ON THIS PLAN ARE BASED ON NAVD 1988, MCDOT, AND MEET THE FEMA BENCHMARK MAINTENANCE (BMM) CRITERIA.

## PUBLIC UTILITIES

| | |
|---|---|
| WATER | CITY OF SCOTTSDALE |
| SEWER | CITY OF SCOTTSDALE |
| ELECTRIC | APS |
| TELEPHONE | LUMEN |
| NATURAL GAS | SOUTHWEST GAS |
| CABLE TV | COX COMMUNICATIONS |




VICINITY MAP
N.T.S.

## OWNER / DEVELOPER

STRATEGIC HOTELS & RESORTS
150 NORTH RIVERSIDE PLAZA, SUITE 4270
CHICAGO, IL 60606
CONTACT: TIMOTHY TAYLOR
PHONE: (312) 658-6038

## ENGINEER

WOOD, PATEL & ASSOCIATES, INC.
2051 WEST NORTHERN AVENUE, SUITE 100
PHOENIX, ARIZONA 85021
CONTACT: DARIN MOORE, P.E.
PHONE: (602) 335-8500
FAX: (602) 335-8580

## ARCHITECT

KOLLIN ALTOMARE ARCHITECTS
4265 E. CONANT STREET, SUITE 101
LONG BEACH, CA 90808
CONTACT: PAUL ALTOMARE
PHONE: (562) 597-8760

## PROJECT SITE DATA

ASSESSOR PARCEL NUMBER(S):
215-08-003C
PROJECT SITE ADDRESS:
7575 E PRINCESS BLVD
SCOTTSDALE, ARIZONA 85255
PROJECT SITE AREA(S):
NET AREA = 6.09 AC
DISTURBED AREA = 0.68± AC
ZONING:
C2

## NO CONFLICT SIGNATURE BLOCK

| UTILITY | UTILITY COMPANY | NAME OF COMPANY REPRESENTATIVE | TELEPHONE NUMBER | DATE CONTACTED | DATE SIGNED |
|---|---|---|---|---|---|
| ELECTRIC | ARIZONA PUBLIC SERVICE | HAILEY PARKS | 602-493-4401 | 08/22/2022 | |
| TELEPHONE | LUMEN | JEANETTE DEBOARD | 480-221-7810 | 08/22/2022 | |
| NATURAL GAS | SOUTHWEST GAS | ANDY SAKS | 480-730-3857 | 08/22/2022 | |
| CABLE TV | COX COMMUNICATIONS | JACOB HORSMAN | - | 08/22/2022 | |
| OTHER | MCI | RICHARD YOUNG | 602-615-8995 | 08/22/2022 | |
| | | | | | |

ENGINEER'S CERTIFICATION

I DARIN L. MOORE, P.E., AS THE ENGINEER OF RECORD FOR THIS DEVELOPMENT, HEREBY CERTIFY THAT ALL UTILITY COMPANIES LISTED ABOVE HAVE BEEN PROVIDED FINAL IMPROVEMENT PLANS FOR REVIEW, AND THAT ALL CONFLICTS IDENTIFIED BY THE UTILITIES HAVE BEEN RESOLVED. IN ADDITION, "NO CONFLICT" FORMS HAVE BEEN OBTAINED FROM EACH UTILITY COMPANY AND ARE INCLUDED IN THIS SUBMITTAL.

Darin L. Moore — 10/12/2022

SIGNATURE — DATE

## CITY OF SCOTTSDALE CIVIL APPROVAL

REVIEW & RECOMMENDED APPROVAL BY:

| | | | |
|---|---|---|---|
| PAVING | | SIGNS & MARKINGS | |
| GRADING & DRAINAGE | | PLANNING | |
| WATER & SEWER | | FIRE | |
| RETAINING WALLS | | SIGNALS & STREET | |

ENGINEERING DEPARTMENT MANAGER — DATE

WOOD PATEL

Wood, Patel & Associates, Inc.
Civil Engineering
Water Resources
Land Survey
Construction Management
602.335.8500
www.woodpatel.com

Call at least two full working days before you begin excavation.
ARIZONA811 Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

PRIVADO WELCOME BUILDING AND PARKING MODIFICATIONS
IMPROVEMENT PLANS
SCOTTSDALE, ARIZONA
COVER SHEET

| REV | DESCRIPTION | DATE |
|---|---|---|
| | | |

Registered Professional Engineer (Civil)
CERTIFICATE NO.
36382
DARIN L.
MOORE
10/12/22
Date Signed
ARIZONA U.S.A.
Darin L. Moore
EXPIRES 06-30-25

| | |
|---|---|
| SCALE (HORIZ.) | N/A |
| SCALE (VERT.) | N/A |
| DATE | 10/12/2022 |
| JOB NUMBER | 215319 |
| SHEET | C1 OF 11 |

CHECKED BY: DM DESIGNED BY: RS DRAFTED BY: JRS

Z:\2021\215319\Dwg\Imp\5319 - Welcome Center\5319-001-002-CV PWB.dwg

## CITY OF SCOTTSDALE NOTES

GENERAL CONSTRUCTION NOTES FOR CAPITAL PROJECTS

1. ALL IMPROVEMENT CONSTRUCTION SHALL COMPLY WITH THE 2020 MARICOPA COUNTY ASSOCIATION OF GOVERNMENTS STANDARD SPECIFICATIONS AND DETAILS FOR PUBLIC WORKS CONSTRUCTION AS AMENDED BY THE LATEST VERSION OF THE CITY OF SCOTTSDALE SUPPLEMENTAL STANDARD SPECIFICATIONS AND DETAILS AND CITY OF SCOTTSDALE'S DESIGN STANDARDS & POLICIES MANUAL (DS&PM). IF THERE IS A CONFLICT, THE LATTER SHALL APPLY. ALL FACILITIES CONSTRUCTION SHALL COMPLY WITH THE LATEST BUILDING CODES AS AMENDED AND ADOPTED BY THE CITY OF SCOTTSDALE.
2. THE ENGINEERING DESIGNS ON THESE PLANS ARE APPROVED BY THE CITY IN SCOPE AND NOT IN DETAIL. IF CONSTRUCTION QUANTITIES ARE SHOWN ON THESE PLANS, THEY ARE NOT VERIFIED BY THE CITY.
3. BASED ON THE INFORMATION SUBMITTED ON THE PLANS AND ASSOCIATED DOCUMENTS, THE CITY HAS REVIEWED AND FOUND THEM TO BE IN ACCORDANCE WITH THE SCOTTSDALE REVISED CODE AND ARE ACCEPTABLE FOR PERMIT ISSUANCE. THIS ACCEPTANCE BY THE CITY DOES NOT AUTHORIZE VIOLATIONS OF ANY APPLICABLE CODE, ORDINANCE OR STANDARD AS ADOPTED BY THE SCOTTSDALE REVISED CODE.
4. APPROVAL OF THE PLANS BY THE CITY IS VALID FOR SIX MONTHS. IF A PERMIT FOR THE CONSTRUCTION HAS NOT BEEN ISSUED WITHIN SIX MONTHS OF REVIEW, THE PLANS SHALL BE RESUBMITTED TO THE CITY FOR REAPPROVAL.
5. ANY DEVIATION FROM THE APPROVED PLANS SHALL BE REVIEWED AND APPROVED BY THE CITY PRIOR TO THAT CHANGE BEING INCORPORATED INTO THE PROJECT.
6. A CITY CAPITAL PROJECTS INSPECTOR WILL INSPECT ALL WORK WITHIN THE CITY RIGHTS-OF-WAY, EASEMENTS AND FACILITIES.
7. ANY SPECIAL INSPECTION REQUIRED SHALL BE IN ADDITION TO ANY ROUTINE INSPECTION BY THE CITY.
8. CITY ENCROACHMENT AND BUILDING PERMITS ARE REQUIRED FOR WORK IN PUBLIC RIGHTS-OF-WAY, EASEMENTS GRANTED FOR PUBLIC PURPOSES AND FACILITIES. PERMITS WILL BE ISSUED BY THE CITY THROUGH THE CITY'S ONE STOP SHOP. COPIES OF ALL PERMITS SHALL BE RETAINED ON-SITE AND SHALL BE AVAILABLE FOR INSPECTION AT ALL TIMES. FAILURE TO PRODUCE THE REQUIRED PERMITS WILL RESULT IN IMMEDIATE WORK STOPPAGE UNTIL THE PROPER PERMIT DOCUMENTATION IS OBTAINED.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FOR SALVAGING PROTECTED NATIVE PLANTS PRIOR TO THE START OF CONSTRUCTION.
10. CONTRACTOR SHALL CONTACT AZ 811 TWO FULL WORKING DAYS PRIOR TO BEGINNING EXCAVATION.
11. ALL EXCAVATION AND GRADING WHICH IS NOT IN PUBLIC RIGHTS-OF-WAY OR IN EASEMENTS GRANTED FOR PUBLIC PURPOSES MUST CONFORM TO SECTION 1803 AND APPENDIX J OF THE LATEST INTERNATIONAL CODE COUNCIL AS ADOPTED AND AMENDED BY THE CITY OF SCOTTSDALE. A PERMIT FOR THIS GRADING MUST BE SECURED FROM THE CITY.
12. THRUST RESTRAINT, WHERE REQUIRED, ON ALL CITY WATER LINES SHALL BE PROVIDED USING MEGALUG MECHANICAL JOINT RESTRAINTS OR CITY-APPROVED EQUAL.
13. ANY ASPHALT MIX DESIGN USED ON CITY PROJECTS SHALL HAVE BEEN APPROVED FOR THAT USE PER SECTION 5-10 OF THE CITY'S DS&PM AND APPEAR ON THE "APPROVED LIST OF ASPHALT MIXES" AS DISTRIBUTED BY THE EAST VALLEY ASPHALT COMMITTEE (EVAC).
14. THE CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE AND REPLACE, AT NO ADDITIONAL COST TO THE CITY, ANY AND ALL PAVEMENT, SIDEWALK, CURB AND GUTTER, DRAINAGE STRUCTURES, ETC. OUTSIDE THE PAY LIMIT THAT ARE DAMAGED DUE TO THEIR ACTIVITIES ON THE PROJECT. THIS INCLUDES, BUT IS NOT LIMITED TO, THE REMOVAL AND REPLACEMENT OF NEWLY CRACKED ROADWAY INFRASTRUCTURE, THE REMOVAL AND REPLACEMENT OF EXISTING CRACKED ROADWAY INFRASTRUCTURE WHERE THE CRACKS HAVE BEEN ENLARGED DUE TO THE CONTRACTOR'S OPERATIONS, THE REMOVAL AND REPLACEMENT OF DEFORMED ROADWAY INFRASTRUCTURE. ALL SAWCUTS USED FOR THE REMOVAL OF THESE ITEMS SHALL BE PERPENDICULAR AND PARALLEL TO THE CENTERLINE CONTROLLING THAT ITEM, OR AT THE DIRECTION OF THE CITY'S CAPITAL PROJECTS INSPECTOR.
15. ALL CAPITAL IMPROVEMENT PROJECTS SHALL MEET THE PROCEDURES AND STANDARDS FOR THE USE OF TEMPORARY/SECURITY FENCING AROUND THE PERIMETER OF CONSTRUCTION SITES, AS DEFINED IN THE CITY'S ZONING ORDINANCE, ARTICLE VII, SECTION 7.700.

GENERAL NOTES FOR PUBLIC WORKS CONSTRUCTION

1. ALL CONSTRUCTION IN THE PUBLIC RIGHTS-OF-WAY OR IN EASEMENTS GRANTED FOR PUBLIC USE MUST CONFORM TO THE LATEST MAG UNIFORM STANDARD SPECIFICATIONS AND UNIFORM STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION AS AMENDED BY THE LATEST VERSION OF THE CITY OF SCOTTSDALE SUPPLEMENTAL STANDARD SPECIFICATIONS AND SUPPLEMENTAL STANDARD DETAILS. IF THERE IS A CONFLICT, THE CITY'S SUPPLEMENTAL STANDARD DETAILS WILL GOVERN.
2. THE CITY ONLY APPROVES THE SCOPE, NOT THE DETAIL, OF ENGINEERING DESIGNS; THEREFORE, IF CONSTRUCTION QUANTITIES ARE SHOWN ON THESE PLANS, THEY ARE NOT VERIFIED BY THE CITY.
3. THE APPROVAL OF PLANS IS VALID FOR SIX (6) MONTHS. IF A RIGHT-OF-WAY PERMIT FOR THE CONSTRUCTION HAS NOT BEEN ISSUED WITHIN THIS TIME FRAME, THE PLANS MUST BE RESUBMITTED TO THE CITY FOR REAPPROVAL.
4. A CITY INSPECTOR WILL INSPECT ALL WORKS WITHIN THE CITY OF SCOTTSDALE. NOTIFY INSPECTION SERVICES 72 HOURS BEFORE BEGINNING WORK.
5. WHENEVER EXCAVATION IS NECESSARY, CALL THE BLUE STAKE CENTER, 811, TWO WORKING DAYS BEFORE EXCAVATION BEGINS.
6. PERMISSION TO WORK IN THE RIGHT-OF-WAY (PWR) PERMITS ARE REQUIRED FOR ALL WORKS WITHIN THE RIGHTS-OF-WAY AND EASEMENTS GRANTED FOR PUBLIC PURPOSES. COPIES OF ALL PERMITS MUST BE RETAINED ON-SITE AND BE AVAILABLE FOR INSPECTION AT ALL TIMES. FAILURE TO PRODUCE THE REQUIRED PERMITS WILL RESULT IN IMMEDIATE SUSPENSION OF ALL WORK UNTIL THE PROPER PERMIT DOCUMENTATION IS OBTAINED.

## FIRE NOTE:

1. ALL PRIVATE STREETS AND DRIVES SHALL CONFORM TO THE FIRE DEPARTMENT GUIDELINES FOR EMERGENCY VEHICLE ACCESS.

## SEWER NOTE:

1. THE ONSITE SEWER SYSTEM CONSTRUCTED BY THIS PLAN SET IS A PRIVATE SYSTEM AND WILL NOT BE MAINTAINED BY THE CITY OF SCOTTSDALE.
2. MAINTENANCE OF THE ONSITE SEWER SYSTEM IS THE RESPONSIBILITY OF THE OWNER.

## WATER NOTE:

1. THE WATER SYSTEM SHOWN HEREIN HAS BEEN DESIGNED TO ADEQUATELY SUPPLY WATER IN SUFFICIENT QUANTITY AND PRESSURE TO MEET LOCAL FIRE REQUIREMENTS.

## PAVING QUANTITIES (ESTIMATED)

| | | |
|---|---|---|
| 3" A.C. OVER 7" A.B.C. | 1593.37 | SY |
| 3" A.C. OVER 11" A.B.C. | 5829.1 | SY |
| 6" VERTICAL CURB & GUTTER | 260.4 | LF |
| 6" P.C.C OVER 4" A.B.C. OVERCOMPACTED | 486.0 | SY |
| 6" SINGLE CURB | 128.8 | LF |
| CONCRETE SIDEWALK | 3,771.84 | SF |
| CONCRETE APRON | 709.10 | SF |
| VALLEY GUTTER | 140.15 | LF |
| SIDEWALK RAMP | 1 | EA |
| SAWCUT, REMOVE & REPLACE EXISTING PAVEMENT | 7776.03 | SY |

## PRIVATE WATER QUANTITIES (ESTIMATED)

| | | |
|---|---|---|
| 2" DOMESTIC WATER SERVICE & METER | 1 | EA |
| 2" REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION | 2 | EA |
| 6" REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION | 1 | EA |
| FIRE HYDRANT | 1 | EA |
| 6" WATER VALVE | 1 | EA |
| 45° BEND | 4 | EA |
| 2" SCH 80 PVC WATER LINE | 196.30 | LF |
| 6" POLYWRAPPED D.I.P. PRESSURE CLASS 350 WATER LINE | 223.0 | LF |
| CONNECT TO EXISTING WATERLINE | 3 | EA |

## PRIVATE SEWER QUANTITIES (ESTIMATED)

| | | |
|---|---|---|
| CONNECT TO EXISTING SEWER LINE | 1 | EA |
| 6" PVC SDR 35 SANITARY SEWER PIPE | 127.8 | LF |
| SANITARY SEWER CLEAN OUT | 2 | EA |
| WYE OR WYE WITH 45° BEND | 2 | EA |
| 30" SANITARY SEWER MANHOLE | 1 | EA |

## LEGEND

### EXISTING SURVEY

- SECTION LINE
- RIGHT OF WAY
- PROPERTY LINE
- ROAD CENTERLINE
- EASEMENT
- SURVEY MARKER
- E — UG ELECTRIC (BURIED CABLE)
- E (CONDUIT) — UG ELECTRIC (CONDUIT)
- E (DUCT BANK) — UG ELECTRIC (DUCT BANK)
- OHE — OVERHEAD ELECTRIC
- OHT — OVERHEAD TELEPHONE
- T — UG TELEPHONE
- TV — CABLE TELEVISION
- OHTV — OVERHEAD CABLE TELEVISION
- T (DUCT BANK) — TELEPHONE DUCT BANK
- BARBED WIRE FENCE
- CHAIN LINK FENCE
- WOOD FENCE
- BLOCK WALL
- 4"G (MATERIAL) — GAS LINE
- 8"S (MATERIAL) — SEWER LINE
- STORM DRAIN PIPE
- 4"IRR (MATERIAL) — IRRIGATION LINE
- 8"W (MATERIAL) — WATER LINE
- CURB
- SIDEWALK
- -1300- — MAJOR CONTOUR
- -1299- — MINOR CONTOUR
- VEGETATION
- BUILDING
- (S) — SEWER MANHOLE
- (D) — STORM DRAIN MANHOLE
- (T) — TELEPHONE MANHOLE
- P 0.00 — SPOT ELEVATION
- SIGN
- JUNCTION BOX/RISER
- FIRE HYDRANT
- WATER VALVE
- STREET/PARKING LIGHT
- UTILITY POLE
- CATCH BASIN

### PROPOSED GRADING, DRAINAGE & PAVING

- 1300 — MAJOR CONTOUR
- 1299 — MINOR CONTOUR
- C 0.00 / P 0.00 — SPOT ELEVATIONS
- STORM DRAIN PIPE
- STORM DRAIN CATCH BASIN
- 1.0% — SLOPE ARROW
- GB / RIDGE — GRADE BREAK/RIDGE
- RIP RAP
- TW 0.00 / TF 0.00 — WALL ELEVATION
- ROOF DRAIN/DRAIN ARROW
- DRYWELL
- OUTFALL ELEVATION EL:XX.XX — SITE ULTIMATE OUTFALL LOCATION & ELEVATION
- WALL
- CONCRETE SIDEWALK
- CONCRETE PAVEMENT
- LIGHT DUTY ASPHALT PAVEMENT
- HEAVY DUTY ASPHALT PAVEMENT
- STREET/PARKING LIGHT
- ADA PARKING SYMBOL

### PROPOSED WATER & SEWER

- WATER LINE
- WATER LINE FITTINGS
- BACKFLOW PREVENTION DEVICE
- WATER VALVE
- FIRE DEPARTMENT CONNECTION
- FIRE HYDRANT
- WATER METER
- PLUG
- REDUCER
- TAPPING SLEEVE & VALVE
- CURB STOP
- PRESSURE RELEASE VALVE
- AIR/VACUUM RELEASE VALVE
- SEWER LINE
- SEWER MANHOLE
- CLEANOUT

## ABBREVIATIONS

| | |
|---|---|
| BB | BOTTOM OF BANK |
| C | CONCRETE ELEVATION |
| COS | CITY OF SCOTTSDALE |
| E.S.V.A.E. | EMERGENCY VEHICLE ACCESS EASEMENT |
| EX | EXISTING |
| FG | FINISHED GROUND |
| FL | FLOW LINE ELEVATION |
| G | GUTTER ELEVATION |
| GB | GRADE BREAK |
| INV | INVERT ELEVATION |
| IRR | IRRIGATION |
| LF | LINEAR FEET |
| LFF | LOWEST FINISHED FLOOR ELEVATION |
| MIN | MINIMUM |
| NG | NATURAL GROUND ELEVATION |
| N.T.S. | NOT TO SCALE |
| P | PAVEMENT ELEVATION |
| PL | PROPERTY LINE |
| RIM | RIM ELEVATION |
| S | SLOPE |
| SD | STORM DRAIN |
| SE | SEWER EASEMENT |
| SS | SEWER SERVICE |
| STD | STANDARD |
| TB | TOP OF BANK |
| TC | TOP OF CURB |
| TF | TOP OF FOOTING ELEVATION |
| TW | TOP OF WALL ELEVATION |
| U.E. | UTILITY EASEMENT |
| UG | UNDERGROUND |
| W.I. | WROUGHT IRON |
| | |
| | |
| | |


WOOD PATEL

Wood, Patel & Associates, Inc.

Civil Engineering
Water Resources
Land Survey
Construction Management

602.335.8500

www.woodpatel.com




# PRIVADO WELCOME BUILDING AND PARKING MODIFICATIONS

## IMPROVEMENT PLANS

SCOTTSDALE, ARIZONA
NOTES & QUANTITIES

| REV | DESCRIPTION | DATE |
|---|---|---|
| | | |

Registered Professional Engineer (Civil)
CERTIFICATE NO.
36382
DARIN L. MOORE
Date Signed 06/30/22
ARIZONA U.S.A.

EXPIRES 06-30-25

| | |
|---|---|
| SCALE (HORIZ.) | N/A |
| SCALE (VERT.) | N/A |
| DATE | 10/12/2022 |
| JOB NUMBER | 215319 |
| SHEET | C2 OF 11 |

CHECKED BY: DM DESIGNED BY: RS DRAFTED BY: JRS

Z:\2021\215319\Dwg\Imp\5319 - Welcome Center\5319-001-002-GV PWB.dwg

**WOOD PATEL**

**Wood, Patel & Associates, Inc.**

Civil Engineering
Water Resources
Land Survey
Construction Management

602.335.8500

www.woodpatel.com

Call at least two full working days before you begin excavation.
ARIZONA811
Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

# PRIVADO WELCOME BUILDING AND PARKING MODIFICATIONS

## IMPROVEMENT PLANS

SCOTTSDALE, ARIZONA
INDEX MAP

| REV | DATE | DESCRIPTION |
|---|---|---|
| | | |

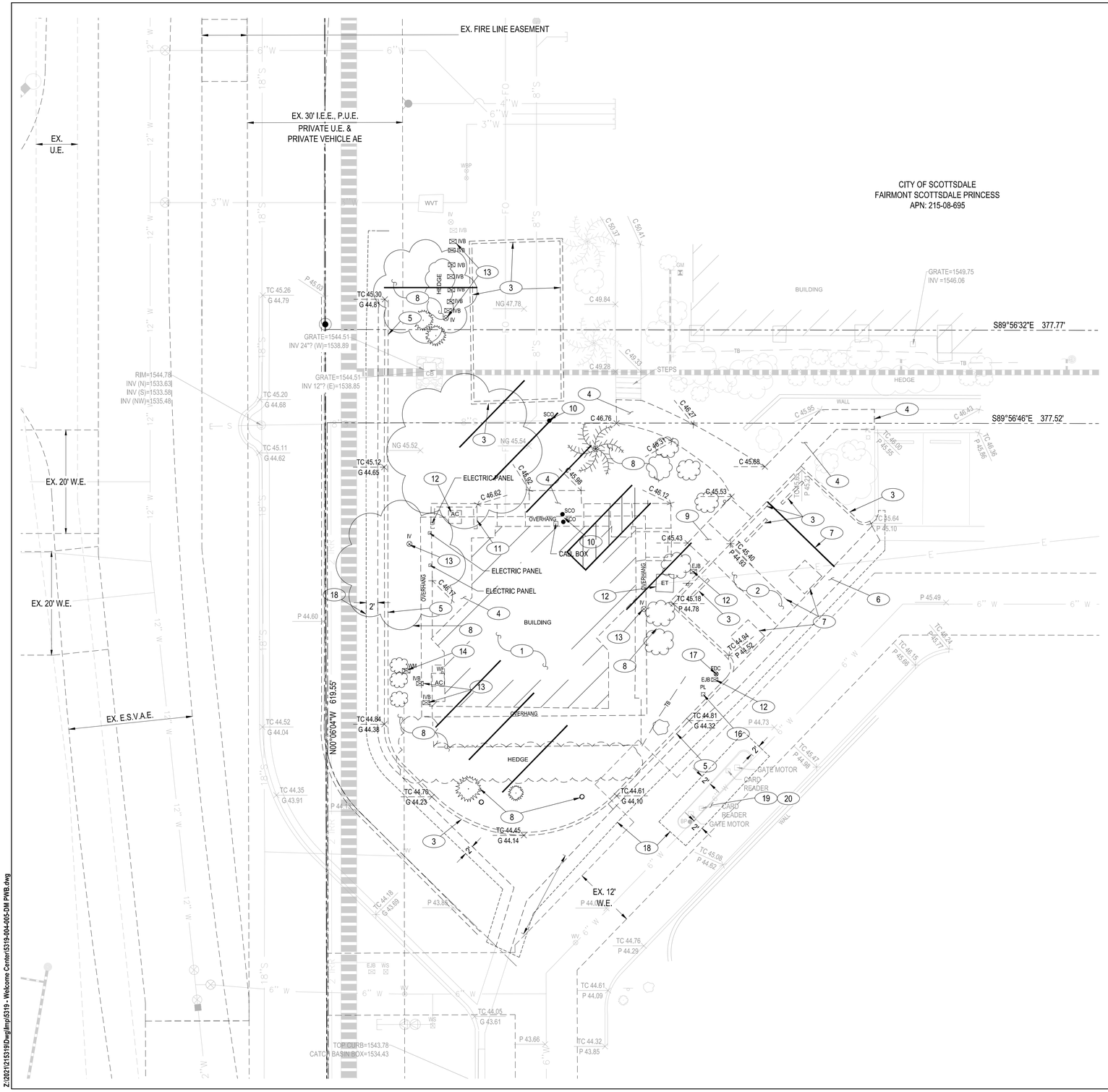
Registered Professional Engineer (Civil)
CERTIFICATE NO. 36382
DARIN L. MOORE
Date Signed 10/12/22
ARIZONA, U.S.A.
Darin L. Moore
EXPIRES 06-30-25

| | |
|---|---|
| SCALE (HORIZ.) | 1" = 30' |
| SCALE (VERT.) | N/A |
| DATE | 10/12/2022 |
| JOB NUMBER | 215319 |

SHEET
C3 OF 11

CHECKED BY: DM DESIGNED BY: RS DRAFTED BY: JRS

Z:\2021\215319\Dwg\Imp\5319 - Welcome Center\5319-003-NX PWB.dwg




N

0 10 20

Horz. 1 in. = 10 ft.

## DEMOLITION NOTES

1. REMOVE EXISTING BUILDING.
2. REMOVE EXISTING ASPHALT PAVEMENT.
3. REMOVE EXISTING CURB.
4. REMOVE EXISTING SIDEWALK.
5. REMOVE EXISTING CURB & GUTTER.
6. REMOVE EXISTING VALLEY GUTTER.
7. OBLITERATE EXISTING STRIPING TO THE LIMITS SHOWN PER ADOT STD. SPECIFICATIONS FOR ROAD AND BRIDGE. PAINTING OVER EXISTING STRIPING IS NOT ACCEPTABLE.
8. REMOVE EXISTING LANDSCAPE.
9. REMOVE EXISTING SIDEWALK RAMP.
10. EXISTING SEWER SERVICE TO BE CAPPED & CLEANOUT TO BE REMOVED. CONTRACTOR TO COORDINATE WITH CITY OF SCOTTSDALE PRIOR TO REMOVALS.
11. REMOVE EXISTING FENCE.
12. EXISTING ELECTRICAL LINE AND EQUIPMENT TO BE REMOVED. CONTRACTOR TO COORDINATE WITH APS PRIOR TO REMOVALS.
13. EXISTING IRRIGATION LINE AND EQUIPMENT TO BE RELOCATED. SEE LANDSCAPE PLAN FOR DETAILS.
14. EXISTING WATER LINE TO BE CAPPED AND EQUIPMENT TO BE REMOVED. CONTRACTOR TO COORDINATE WITH CITY OF SCOTTSDALE PRIOR TO REMOVALS.
16. EXISTING LIGHT POLE TO BE SALVAGED FOR RELOCATION.
17. EXISTING FDC TO REMAIN AND PROTECTED IN-PLACE.
18. SAWCUT AND REMOVE EXISTING PAVEMENT TO THE LIMITS SHOWN PER M.A.G. SPEC. 336.
19. EXISTING GATE AND CARD READER TO BE REMOVED. CONTRACTOR TO COORDINATE WITH OWNER
20. CONTRACTOR TO VERIFY DEPTH TO EXISTING 6" WATER LINE IS A MINIMUM OF 3'. NOTIFY ENGINEER OF ANY DISCREPANCY.


WOOD PATEL

**Wood, Patel & Associates, Inc.**

Civil Engineering
Water Resources
Land Survey
Construction Management

602.335.8500

www.woodpatel.com




# PRIVADO WELCOME BUILDING AND PARKING MODIFICATIONS

## IMPROVEMENT PLANS

SCOTTSDALE, ARIZONA

DEMOLITION PLAN

| REV | DESCRIPTION | DATE |
|---|---|---|
| | | |

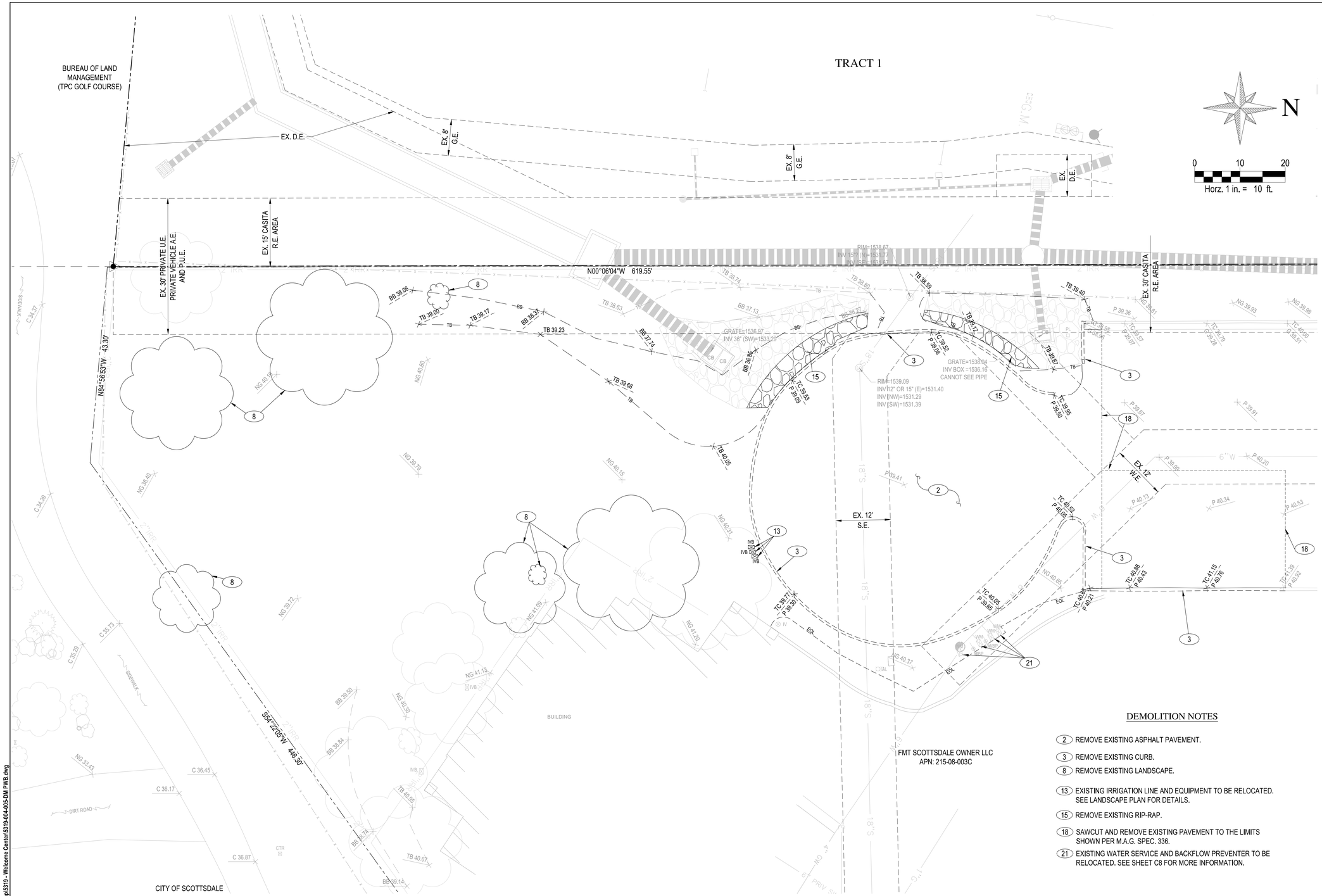
Registered Professional Engineer (Civil)
36382
DARRIN L. MOORE
10/12/2022
ARIZONA, U.S.A.

EXPIRES 06-30-25

| | |
|---|---|
| SCALE (HORIZ.) | 1" = 10' |
| SCALE (VERT.) | N/A |
| DATE | 10/12/2022 |
| JOB NUMBER | 215319 |
| SHEET | C4 OF 11 |

CHECKED BY: DM DESIGNED BY: RS DRAFTED BY: JRS

Z:\2021\215319\Dwg\Imp\5319 - Welcome Center\5319-004-005-DM PWB.dwg




## DEMOLITION NOTES

(2) REMOVE EXISTING ASPHALT PAVEMENT.

(3) REMOVE EXISTING CURB.

(8) REMOVE EXISTING LANDSCAPE.

(13) EXISTING IRRIGATION LINE AND EQUIPMENT TO BE RELOCATED. SEE LANDSCAPE PLAN FOR DETAILS.

(15) REMOVE EXISTING RIP-RAP.

(18) SAWCUT AND REMOVE EXISTING PAVEMENT TO THE LIMITS SHOWN PER M.A.G. SPEC. 336.

(21) EXISTING WATER SERVICE AND BACKFLOW PREVENTER TO BE RELOCATED. SEE SHEET C8 FOR MORE INFORMATION.


WOOD PATEL

Wood, Patel & Associates, Inc.

Civil Engineering
Water Resources
Land Survey
Construction Management

602.335.8500

www.woodpatel.com




# PRIVADO WELCOME BUILDING AND PARKING MODIFICATIONS

## IMPROVEMENT PLANS

SCOTTSDALE, ARIZONA

DEMOLITION PLAN

| REV | DESCRIPTION | DATE |
|---|---|---|
| | | |

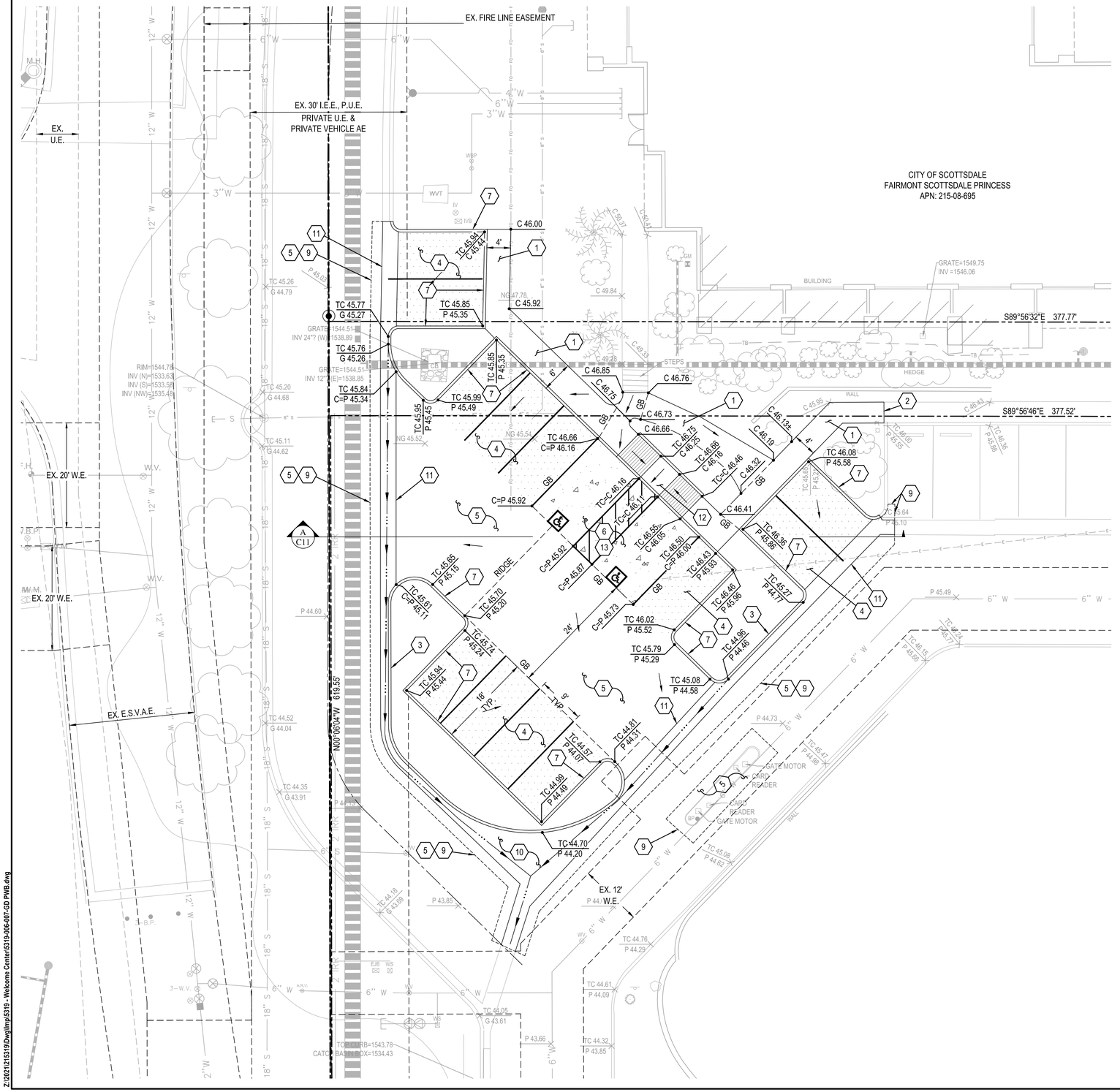
Registered Professional Engineer (Civil)
CERTIFICATE NO.
36382
DARIN L. MOORE
Date Signed 10/12/2022
ARIZONA U.S.A.

EXPIRES 06-30-25

| | |
|---|---|
| SCALE (HORIZ.) | 1" = 10' |
| SCALE (VERT.) | N/A |
| DATE | 10/12/2022 |
| JOB NUMBER | 215319 |
| SHEET | C5 OF 11 |

CHECKED BY: DM DESIGNED BY: RS DRAFTED BY: JRS

Z:\2021\215319\Dwg\Imp\5319 - Welcome Center\5319-004-005-DM PWB.dwg




N

0 10 20

Horz. 1 in. = 10 ft.

## PAVING NOTES

1. CONSTRUCT SIDEWALK PER M.A.G. STD. DET. 230. SEE LANDSCAPE PLANS FOR COLOR & FINISH.
2. MATCH EXISTING ELEVATIONS. CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCIES.
3. CONSTRUCT 6" CURB & GUTTER PER M.A.G. STD. DET. 220, TYPE A.
4. INSTALL LIGHT DUTY PAVEMENT, 3" A.C. PAVEMENT OVER 7" A.B.C. PER GEOTECHNICAL REPORT.
5. INSTALL HEAVY DUTY PAVEMENT, 3" A.C. PAVEMENT OVER 11" A.B.C. PER GEOTECHNICAL REPORT.
6. CONSTRUCT CONCRETE PAVEMENT. 6" P.C.C. OVER 4" A.B.C. OVER COMPACTED SUBGRADE PER GEOTECHNICAL REPORT RECOMMENDATIONS. REFER TO GEOTECHNICAL REPORT FOR FURTHER INFORMATION.
7. CONSTRUCT 6" SINGLE CURB PER MAG STD. DET. 222, TYPE A.
9. MATCH NEW PAVEMENT TO EXISTING PAVEMENT AT SAWCUT LINE
10. CONSTRUCT CONCRETE APRON PER M.A.G. STD. DET. 240.
11. CONSTRUCT VALLEY GUTTER PER M.A.G. STD. DET. 240 MODIFIED TO A WIDTH OF 3'.
12. CONSTRUCT SIDEWALK RAMP PER C.O.S. STD. DETAIL 2231 AND THE DETAIL ON SHEET C11.
13. CONFIGURATION OF THE HANDICAP PARKING STALLS PER THE DETAIL ON SHEET C11.

WOOD PATEL

Wood, Patel & Associates, Inc.
Civil Engineering
Water Resources
Land Survey
Construction Management
602.335.8500
www.woodpatel.com



# PRIVADO WELCOME BUILDING AND PARKING MODIFICATIONS

## IMPROVEMENT PLANS

SCOTTSDALE, ARIZONA
GRADING, & DRAINAGE PLAN

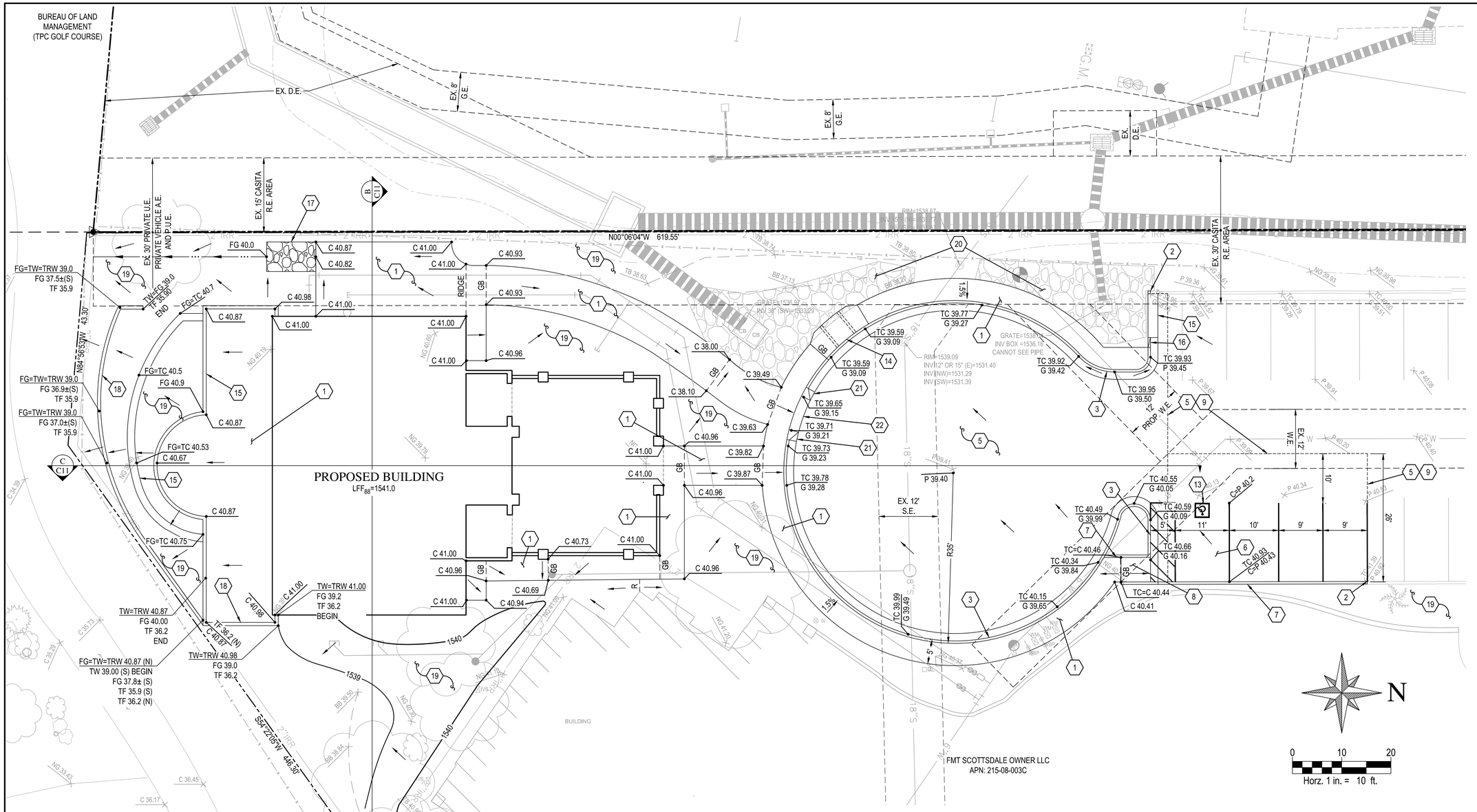
| REV | DESCRIPTION | DATE |
|---|---|---|
| | | |

Registered Professional Engineer (Civil)
DANIEL L. MOORE
36382
Date Signed 10/12/22
ARIZONA U.S.A.
EXPIRES 06-30-25

| | |
|---|---|
| SCALE (HORIZ.) | 1" = 10' |
| SCALE (VERT.) | N/A |
| DATE | 10/12/2022 |
| JOB NUMBER | 215319 |
| SHEET | C6 OF 11 |

CHECKED BY: DM DESIGNED BY: RS DRAFTED BY: JRS

Z:\2021\215319\Dwg\Imp\5319 - Welcome Center\5319-006-007-GD PWB.dwg




**NOTE:**
PROVIDE POSITIVE DRAINAGE AWAY FROM ALL STRUCTURES.

CONTRACTOR TO VERIFY ROAD MEETS OR EXCEEDS THE 83,000 LB REQUIREMENT.

## PAVING NOTES

1. CONSTRUCT SIDEWALK PER M.A.G. STD. DET. 230. SEE LANDSCAPE PLANS FOR COLOR & FINISH.
2. MATCH EXISTING ELEVATIONS. CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCIES.
3. CONSTRUCT 6" CURB & GUTTER PER M.A.G. STD. DET. 220, TYPE A.
5. INSTALL HEAVY DUTY PAVEMENT, 3" A.C. PAVEMENT OVER 11" A.B.C. PER GEOTECHNICAL REPORT.
6. CONSTRUCT CONCRETE PAVEMENT. 6" P.C.C. OVER 4" A.B.C. OVER COMPACTED SUBGRADE PER GEOTECHNICAL REPORT RECOMMENDATIONS. REFER TO GEOTECHNICAL REPORT FOR FURTHER INFORMATION.
7. CONSTRUCT 6" SINGLE CURB PER MAG STD. DET. 222, TYPE A.
8. CONSTRUCT SIDEWALK RAMP PER DETAIL ON SHEET C11. ALL RAMPS MUST MEET A.D.A. ACCESSIBILITY GUIDELINES (ADAAG); 2% MAX CROSS SLOPE & 12:1 MAX LONGITUDINAL SLOPE.
9. MATCH NEW PAVEMENT TO EXISTING PAVEMENT AT SAWCUT LINE
13. CONFIGURATION OF THE HANDICAP PARKING STALLS PER THE DETAIL ON SHEET C11.
14. CONSTRUCT SIDEWALK SCUPPER PER M.A.G. STD. DETAIL 206.
15. CONSTRUCT RIBBON CURB PER C.O.S. STD DETAIL 2220, TYPE B.
16. CONSTRUCT CURB TERMINATION PER M.A.G. STD. DETAIL 222.
17. INSTALL LOOSE RIPRAP (D50 = 6", THICKNESS 18") PER THE DETAIL ON SHEET 11.
18. RETAINING WALL PER ARCHITECTURAL PLAN.
19. SEE LANDSCAPE PLAN FOR PLANT MATERIAL AND LOCATIONS.
20. EXISTING RIPRAP TO BE REPAIRED/REPLACED AS NECESSARY IF DAMAGED/DISTURBED DURING CONSTRUCTION.
21. CONSTRUCT CURB TRANSITION TYPE 'E' TO TYPE 'A' PER M.A.G. STD. DETAIL 220-2.
22. CONSTRUCT MOUNTABLE CURB, TYPE 'E', PER M.A.G. STD. DETAIL 220-2

WOOD PATEL

Wood, Patel & Associates, Inc.
Civil Engineering
Water Resources
Land Survey
Construction Management

602.335.8500

www.woodpatel.com



# PRIVADO WELCOME BUILDING AND PARKING MODIFICATIONS

## IMPROVEMENT PLANS

SCOTTSDALE, ARIZONA
GRADING & DRAINAGE PLAN

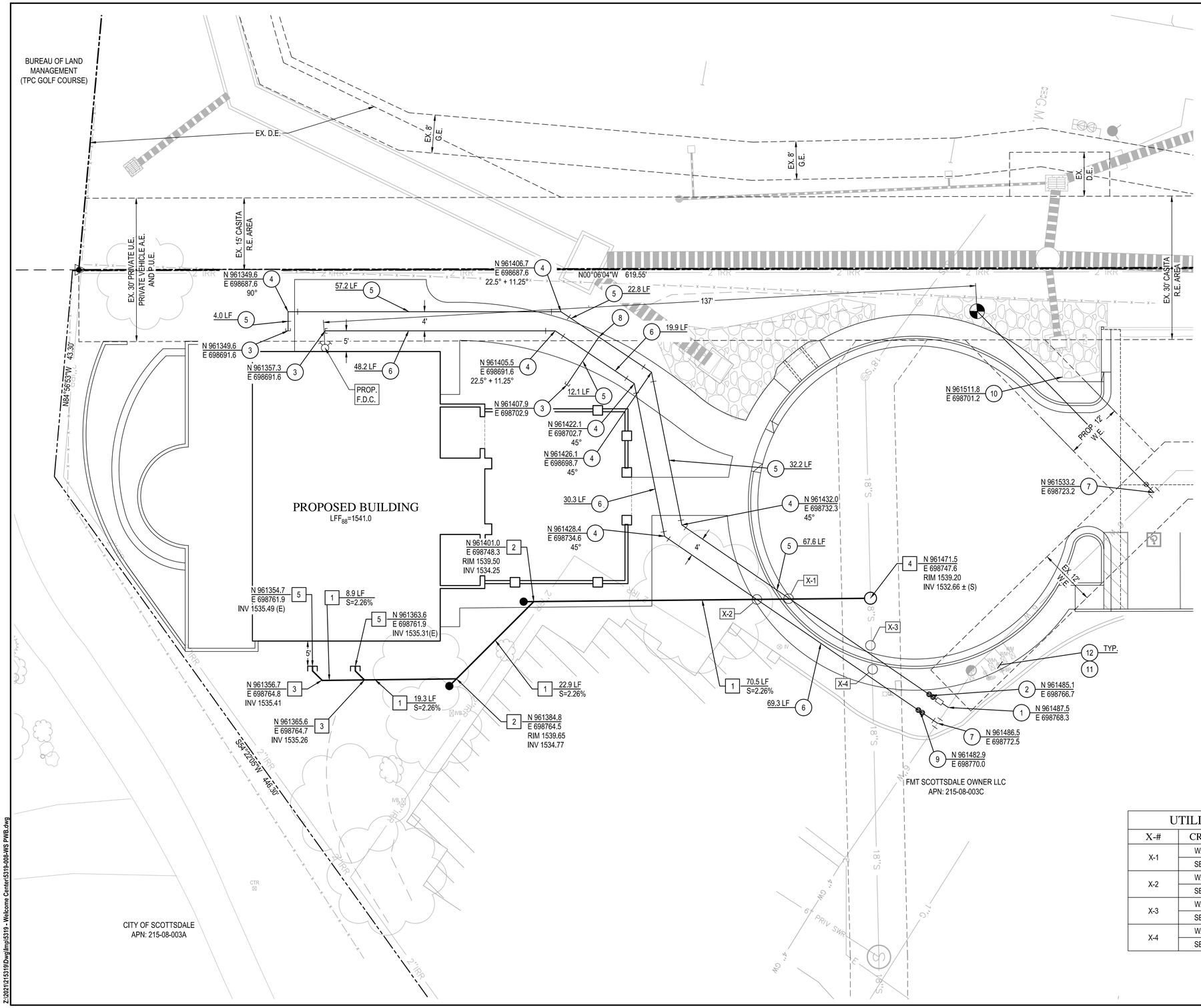
| REV | DESCRIPTION | DATE |
|---|---|---|
| | | |

Registered Professional Engineer (Civil)
CERTIFICATE NO.
36382
DARIN L. MOORE
Date Signed 10/12/2022
ARIZONA U.S.A.
EXPIRES 06-30-25

| | |
|---|---|
| SCALE (HORIZ.) | 1" = 10' |
| SCALE (VERT.) | N/A |
| DATE | 10/12/2022 |
| JOB NUMBER | 215319 |
| SHEET | C7 OF 11 |

CHECKED BY: DM DESIGNED BY: RS DRAFTED BY: JRS

Z:\2021\215319\Dwg\Imp\5319 - Welcome Center\5319-006-007-GD PWB.dwg




N

0 10 20

Horz. 1 in. = 10 ft.

## SEWER NOTES

1. INSTALL 6" CLASS 350 DUCTILE IRON SANITARY SEWER PIPE.
2. INSTALL SANITARY SEWER CLEANOUT PER M.A.G. STD. DTL. 441.
3. INSTALL WYE OR WYE WITH 45° BEND AS APPLICABLE, SIZE PER ADJOINING PIPE DIAMETER.
4. INSTALL 30" SANITARY SEWER MANHOLE PER M.A.G. STD. DTL. 420-1. CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL LOCATION WITH PLUMBING PLAN PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ANY DISCREPANCIES.
5. SEE PLUMBING PLAN FOR CONTINUATION. CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL LOCATION WITH PLUMBING PLAN PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ANY DISCREPANCIES.

## WATER NOTES

1. INSTALL 2" WATER METER PER C.O.S. STD. DTL. 2330.
2. INSTALL 2" REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY PER C.O.S. STD. DTL. 2352.
3. SEE PLUMBING PLANS FOR CONTINUATION. CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ANY DISCREPANCIES.
4. INSTALL BEND. SEE PLAN FOR ANGLE(S).
5. INSTALL 2" SCH 80 PVC WATER LINE STARTING 3' FROM THE BACKFLOW PREVENTER.
6. INSTALL 6" POLYWRAPPED D.I.P. PRESSURE CLASS 350 WATERLINE PER M.A.G. SPEC. SECTION 610. 3' MINIMUM COVER UNLESS NOTED ON PLAN.
7. CONNECT TO EXISTING WATER LINE. CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF ANY DISCREPANCIES.
8. INSTALL TEE. SIZE PER ADJOINING PIPE DIAMETERS.
9. INSTALL 6" REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY PER C.O.S. STD. DTL. 2351.
10. INSTALL FIRE HYDRANT COMPLETE PER M.A.G. STD. DETAIL 360.1.
11. ADJUST WATER METER BOX AND COVER TO FINISH SURFACE OF THE PROPOSED SIDEWALK.
12. EXISTING BACKFLOW PREVENTER TO BE RELOCATED OUTSIDE THE PROPOSED SIDEWALK.

## UTILITY CROSSINGS

| X-# | CROSSING | ELEVATION |
|---|---|---|
| X-1 | WATER BOT | 1536.32 |
| | SEWER TOP | 1533.36 |
| X-2 | WATER BOT | 1536.59 |
| | SEWER TOP | 1533.53 |
| X-3 | WATER BOT | 1536.42 |
| | SEWER TOP | 1533.25 |
| X-4 | WATER BOT | 1536.38 |
| | SEWER TOP | 1533.22 |

WOOD PATEL

Wood, Patel & Associates, Inc.
Civil Engineering
Water Resources
Land Survey
Construction Management
602.335.8500
www.woodpatel.com



# PRIVADO WELCOME BUILDING AND PARKING MODIFICATIONS
## IMPROVEMENT PLANS
SCOTTSDALE, ARIZONA
WATER & SEWER PLAN

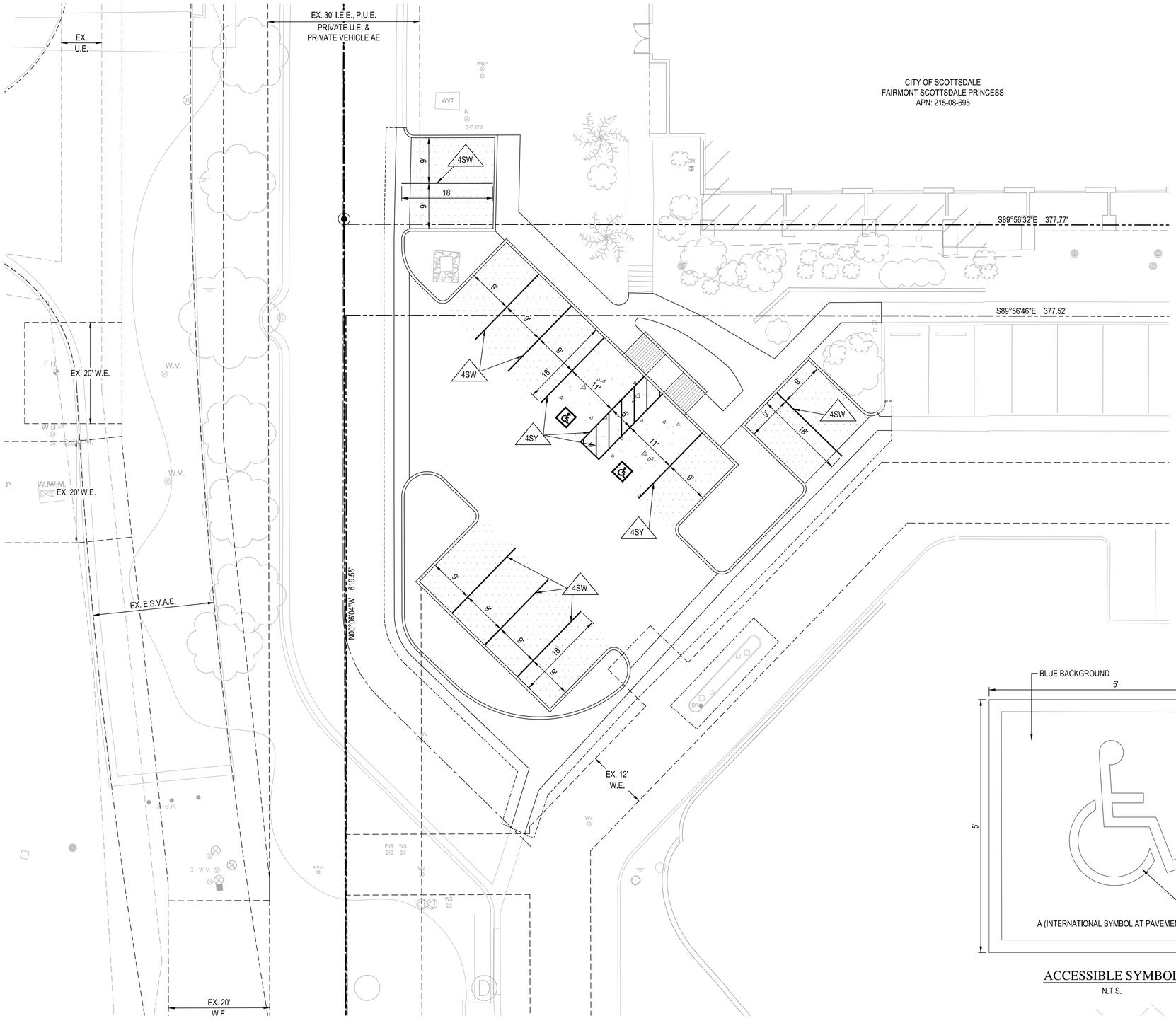
| REV | DESCRIPTION | DATE |
|---|---|---|
| | | |



| | |
|---|---|
| SCALE (HORIZ.) | 1" = 10' |
| SCALE (VERT.) | N/A |
| DATE | 10/12/2022 |
| JOB NUMBER | 215319 |
| SHEET | C8 OF 11 |

CHECKED BY: DM DESIGNED BY: RS DRAFTED BY: JRS

Z:\2021\215319\Dwg\Imp\5319 - Welcome Center\5319-008-WS PWB.dwg




N

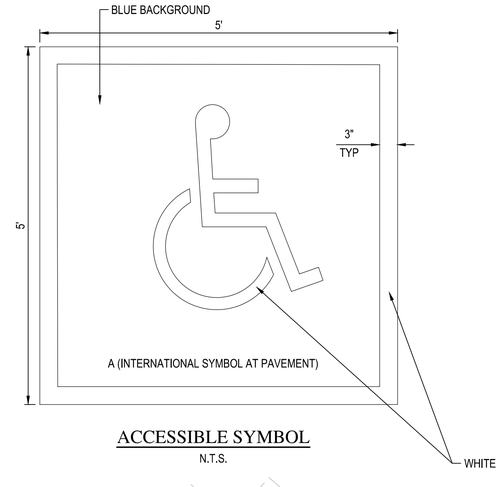
0 10 20

Horz. 1 in. = 10 ft.

STRIPING LEGEND

4SY — 4" SOLID YELLOW LINE

4SW — 4" SOLID WHITE LINE




ACCESSIBLE SYMBOL

N.T.S.

WOOD PATEL

Wood, Patel & Associates, Inc.

Civil Engineering
Water Resources
Land Survey
Construction Management

602.335.8500

www.woodpatel.com



# PRIVADO WELCOME BUILDING AND PARKING MODIFICATIONS

## IMPROVEMENT PLANS

SCOTTSDALE, ARIZONA

SIGNING AND STRIPING PLAN

| REV | DESCRIPTION | DATE |
|---|---|---|
| | | |

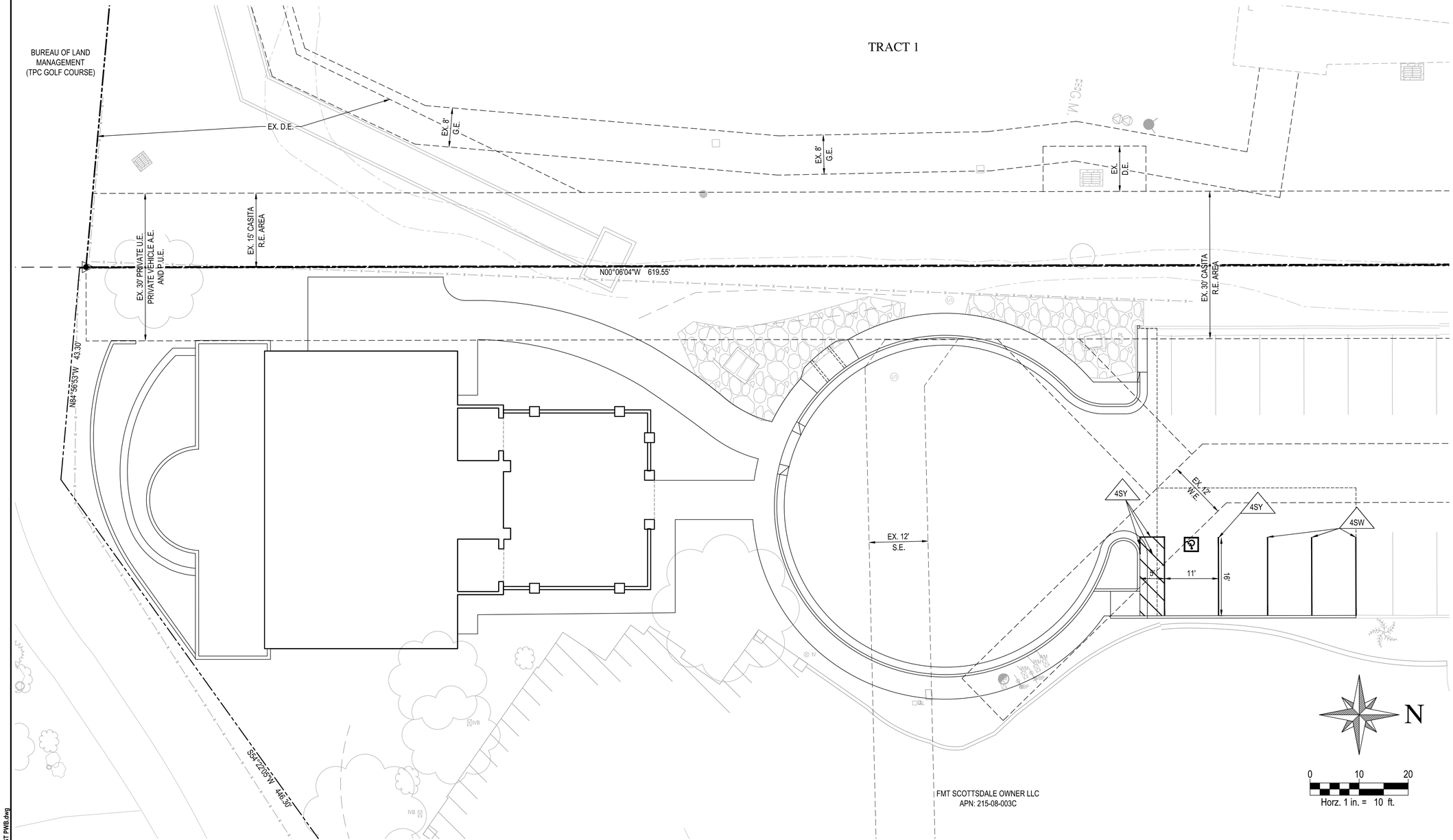
Registered Professional Engineer (Civil)
CERTIFICATE NO.
36382
DARIN L. MOORE
10-07-22
Date Signed
ARIZONA U.S.A.

EXPIRES 06-30-25

| | |
|---|---|
| SCALE (HORIZ.) | 1" = 10' |
| SCALE (VERT.) | N/A |
| DATE | 10/12/2022 |
| JOB NUMBER | 215319 |
| SHEET | C9 OF 11 |

CHECKED BY: DM DESIGNED BY: RS DRAFTED BY: JRS

Z:\2021\215319\Dwg\Imp\5319 - Welcome Center\5319-009-010-ST PWB.dwg




## STRIPING LEGEND

4SY — 4" SOLID YELLOW LINE

4SW — 4" SOLID WHITE LINE

WOOD PATEL

Wood, Patel & Associates, Inc.

Civil Engineering
Water Resources
Land Survey
Construction Management

602.335.8500

www.woodpatel.com



# PRIVADO WELCOME BUILDING AND PARKING MODIFICATIONS

## IMPROVEMENT PLANS

SCOTTSDALE, ARIZONA
SIGNING AND STRIPING PLAN

| REV | DESCRIPTION | DATE |
|---|---|---|
| | | |

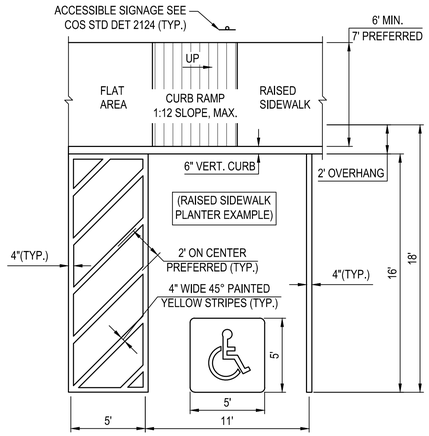
Registered Professional Engineer (Civil)
CERTIFICATE NO.
36382
DARIN L. MOORE
Date Registered: 10/12/2022
ARIZONA U.S.A.

EXPIRES 06-30-25

| | |
|---|---|
| SCALE (HORIZ.) | 1" = 10' |
| SCALE (VERT.) | N/A |
| DATE | 10/12/2022 |
| JOB NUMBER | 215319 |
| SHEET | C10 OF 11 |

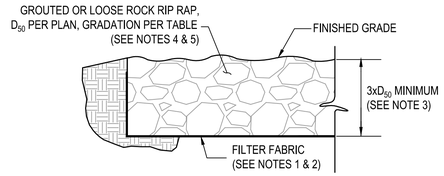
CHECKED BY: DM DESIGNED BY: RS DRAFTED BY: JRS

Z:\2021\215319\Dwg\Imp\5319 - Welcome Center\5319-009-010-ST PWB.dwg




PREFERRED ACCESSIBLE PARKING SPACES

N.T.S.

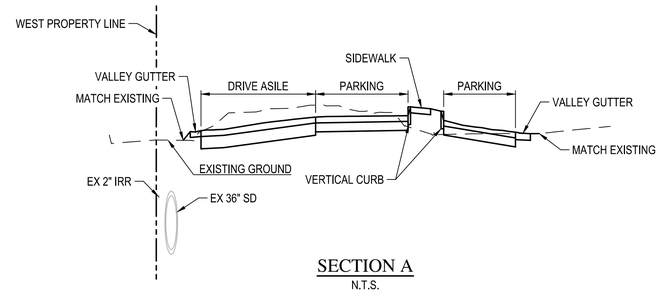



ROCK RIPRAP SECTION

| ROCK RIPRAP GRADATION TABLE | | | | |
|---|---|---|---|---|
| PERCENT PASSING | ROCK SIZE (IN.) | | | |
| | $D_{50}$=4" | $D_{50}$=6" | $D_{50}$=8" | $D_{50}$=12" |
| 100 TO 90 | 8 | 12 | 16 | 24 |
| 85 TO 70 | 6 | 9 | 12 | 18 |
| 50 TO 30 | 4 | 6 | 8 | 12 |
| 15 TO 5 | 3 | 4 | 5 | 8 |
| 5 TO 0 | 1 | 2 | 3 | 4 |

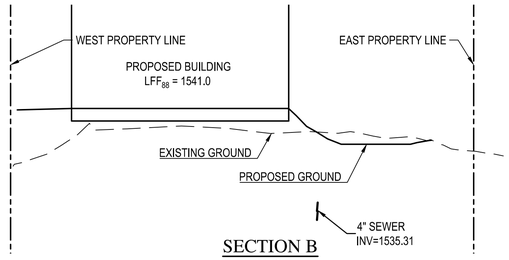
NOTES:

1. FOR LOOSE RIPRAP APPLICATIONS INSTALL "MIRAFI 140NL" FILTER FABRIC, OR APPROVED EQUAL, UNDER ALL LOOSE RIPRAP.
2. FOR GROUTED RIPRAP APPLICATIONS OMIT FILTER FABRIC.
3. DEPTH OF LOOSE RIPRAP SHALL BE $3xD_{50}$ MINIMUM UNLESS OTHERWISE SPECIFIED. DEPTH OF GROUTED RIPRAP SHALL BE $2xD_{50}$ MINIMUM UNLESS OTHERWISE SPECIFIED.
4. RIPRAP SHALL BE ANGULAR ROCK.
5. REFER TO LANDSCAPE PLAN FOR RIPRAP COLOR.



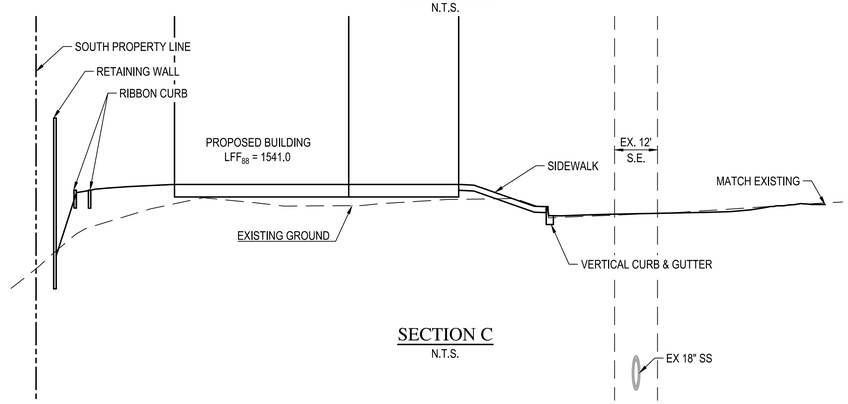

SECTION A

N.T.S.




SECTION B

N.T.S.




SECTION C

N.T.S.


WOOD PATEL

Wood, Patel & Associates, Inc.

Civil Engineering
Water Resources
Land Survey
Construction Management

602.335.8500

www.woodpatel.com




# PRIVADO WELCOME BUILDING AND PARKING MODIFICATIONS

## IMPROVEMENT PLANS

SCOTTSDALE, ARIZONA

DETAILS

| REV | DESCRIPTION | DATE |
|---|---|---|
| | | |

Registered Professional Engineer (Civil)
CERTIFICATE NO.
36382
DARIN L. MOORE
10/12/22
Date Signed
ARIZONA

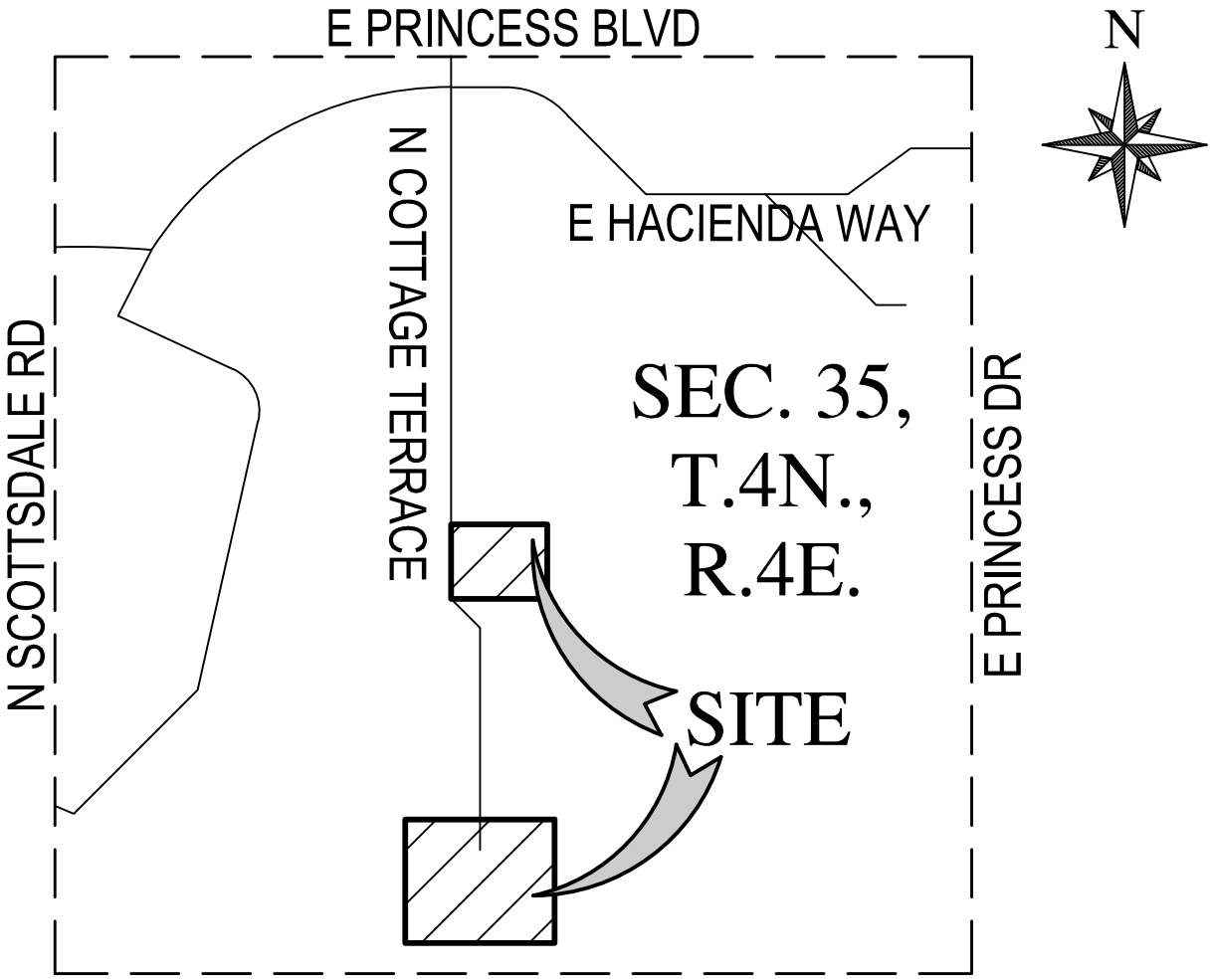
EXPIRES 06-30-25

| | |
|---|---|
| SCALE (HORIZ.) | N/A |
| SCALE (VERT.) | N/A |
| DATE | 10/12/2022 |
| JOB NUMBER | 215319 |
| SHEET | C11 OF 11 |

CHECKED BY: DM DESIGNED BY: RS DRAFTED BY: JRS

Z:\2021\215319\Dwg\Imp\5319 - Welcome Center\5319-d11-DT PWB.dwg

**EXHIBIT 1 – VICINITY MAP**




# VICINITY MAP

N.T.S.

**NOT**
**FOR**
**CONSTRUCTION**
**OR RECORDING**

WOOD PATEL

FAIRMONT SCOTTSDALE PRINCESS PRIVADO WELCOME CENTER AND PARKING MODIFICATIONS

## VICINITY MAP EXHIBIT

| | | | | | |
|---|---|---|---|---|---|
| DATE | 8-22-2022 | SCALE | N.T.S | SHEET | 1 OF 1 |
| JOB NO. | 215319 | DESIGN | RS | CHECK | |
| | | DRAWN | LBD | RFI # | |

Z:\2021\215319\Project Support\Reports\5319 - Welcome Center\Drainage\Exhibits\5319-EXH1-VM.dwg

**EXHIBIT 2 – FEMA FIRM**

# National Flood Hazard Layer FIRMette

FEMA

111°55'40"W 33°39'4"N


111°55'2"W 33°38'34"N

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

1:6,000

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

## 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
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

**MAP PANELS**
- Digital Data Available
- No Digital Data Available
- Unmapped

N

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 3/31/2021 at 1:10 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.

**EXHIBIT 3 – EXISTING DRAINAGE MAP**


## LEGEND

- EXISTING DRAINAGE AREA
- 1 EXISTING DRAINAGE AREA

N

0 60 120

Horz. 1 in. = 60 ft.

**NOT FOR CONSTRUCTION OR RECORDING**

WOOD PATEL

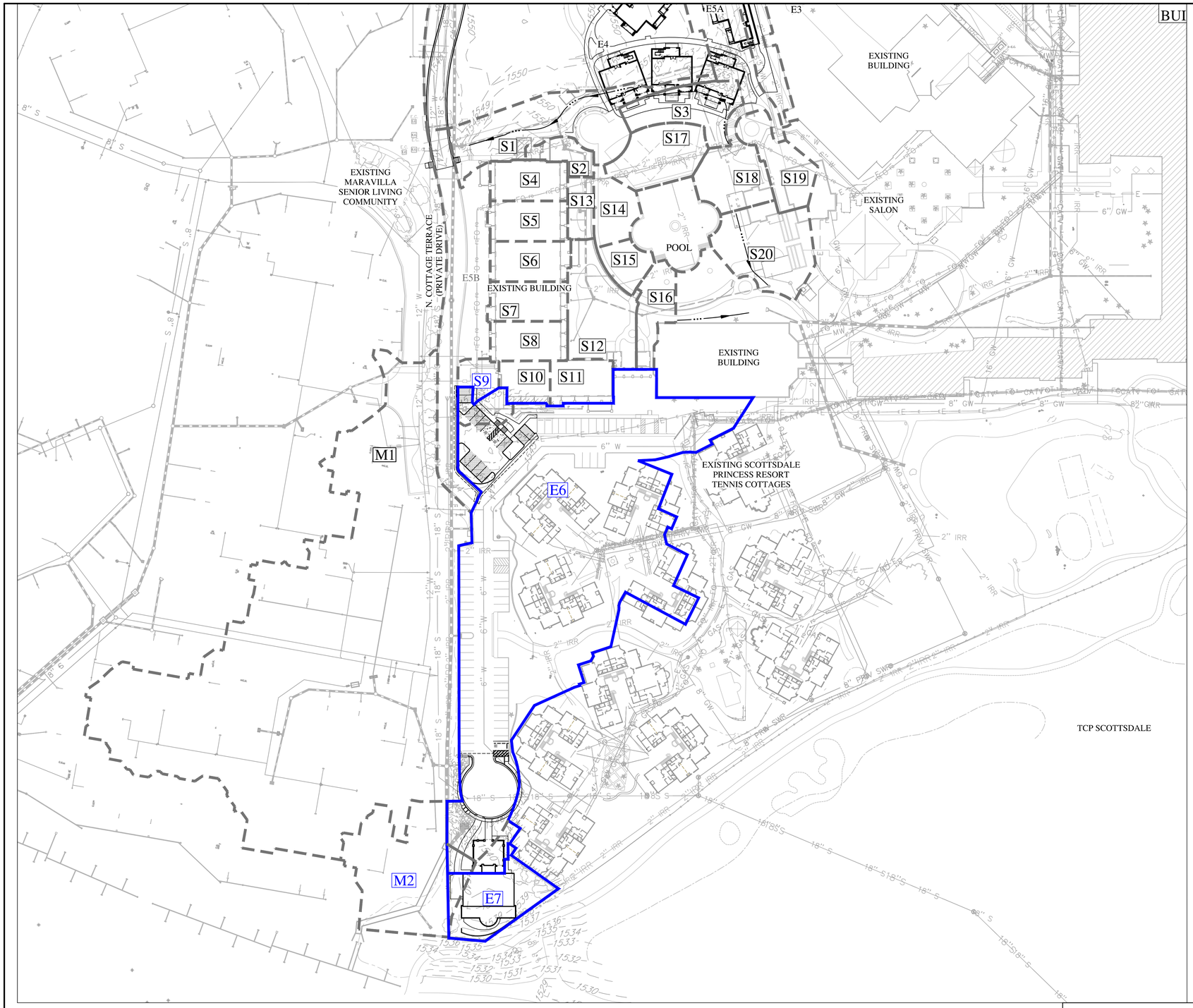
FAIRMONT SCOTTSDALE PRINCESS PRIVADO WELCOME CENTER AND PARKING MODIFICATIONS

# EXISTING DRAINAGE MAP

| | | | | | |
|---|---|---|---|---|---|
| DATE | 10/12/2022 | SCALE | 1" = 60' | SHEET | 1 OF 1 |
| JOB NO. | 215305 | DESIGN | DCN | DRAWN | MHS |

Z:\2021\215319\Project Support\Reports\5319 - Welcome Center\Drainage\Exhibits\5319-EXH2- Existing Drainage Area.dwg

**EXHIBIT 4 – PROPOSED DRAINAGE MAP**




**NOT FOR CONSTRUCTION OR RECORDING**

WOOD PATEL

FAIRMONT SCOTTSDALE PRINCESS PRIVADO WELCOME CENTER AND PARKING MODIFICATIONS

# PROPOSED DRAINAGE MAP

| | | | | | |
|---|---|---|---|---|---|
| DATE | 10/12/2022 | SCALE | 1" = 60' | SHEET | 1 OF 1 |
| JOB NO. | 215305 | DESIGN | DCN | DRAWN | MHS |

Z:\2021\215319\Project Support\Reports\5319 - Welcome Center\Drainage\Exhibits\5319-EXH2-Drainage Area (not completed).dwg