The Roasterie – Phase 4D
Scottsdale, AZ

Preliminary Drainage Report

Prepared for:
Fairmont Scottsdale Princess
7575 E Princess Drive
Scottsdale, AZ 85255

Prepared by:
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November 2023

Preliminary Drainage Report
The Roasterie – Phase 4D
Fairmont Scottsdale Princess

NOVEMBER 22, 2023

Prepared By:

Kimley»Horn

Contents

Appendices

1. INTRODUCTION

1.1 PROJECT DESCRIPTION

1.1.1. General Project Information

The proposed development, located at 7575 E Princess Drive in Scottsdale, Arizona, consists of ± 1 acre of existing resort property. The proposed development is located within the City of Scottsdale (COS), APN# 215-08-695, in a portion of quarter of Section 35, Township 4 North, Range 4 East relative to the Gila and Salt River Base Line and Meridian, Maricopa County Arizona.

More specifically, the site is located south of the resort's Well & Being Spa and North of Building F of the Fairmont Scottsdale Princess (FSP). Refer to *Appendix A* for the project location. The existing property is currently zoned as C-2 and is primarily developed with buildings, sidewalks, and a variety of desert landscaping.

1.1.2. Type of Report

This Preliminary Drainage Report is intended to satisfy City of Scottsdale and Maricopa County requirements for the site improvement drainage design. This report provides a description of the current stormwater drainage patterns and systems and a description of the required and proposed drainage improvements.

1.1.3. Project Description

As part of Phase 4D of the resort's expansion, the FSP is proposing to construct one restaurant/coffee shop with indoor and outdoor dining areas, bounded by existing FSP buildings. The project is anticipated to consist of one 2-story building, outdoor dining, water features, extensive landscaping with integrated hardscape improvements, and utility improvements to support the development. There is no direct access to the site from public ROW or private vehicular drives.

1.1.4. Existing Drainage Studies

Refer to *Appendix B* for the Preliminary Drainage Report for Fairmont Scottsdale Princess Privado Welcome Building and Parking Modifications, prepared in October 2022 by Wood Patel (Project No. 215319).

1.1.5. Purpose and Objectives

This report provides a drainage plan for the subject site that is intended to meet the drainage standards and guidelines for the City of Scottsdale and Maricopa County. This report will demonstrate the following:

1. Off-site flows from adjacent FSP property.
2. Deferred on-site flows.
3. The development drains to existing infrastructure which has been designed to accommodate the developed site.
4. Existing/Proposed structures/catch basins will be designed such that they do not flood during any storm up to the 100-year, 2-hour event.

1.1.6. FEMA Flood Hazard Zones

The FEMA FIRM panel for the proposed site is 04013C1320L, effective date October 16, 2013, indicates the site falls within Zone AO.

Zone AO is defined by FEMA as follows:

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

2. HYDROLOGIC ANALYSIS

2.1 OFF-SITE HYDROLOGY

The proposed site does not receive offsite flows, only modifications to pre-existing flows from the FSP property.

2.2 ON-SITE HYDROLOGY

On-site generated runoff is collected and conveyed via existing catch basins and 36" storm drain, ultimately to the TPC Gold Course basin. The basins are all sized to accommodate runoff generated from the 100-year, 2-hour storm event.

2.2.2. Existing Land Use

The property is currently a combination of concrete patio area (both covered and uncovered) and landscaping with meandering sidewalk areas, bounded on all sides by existing FSP property including buildings, paved concrete, and landscaping.

Onsite, the general topography of the property is steep sloping terrain to the south of the existing patio/event area. The site's pad area is surrounded to the south by an existing retaining wall separating it from the steep sloping "cactus gardens". Refer to *Appendix C* for the Topographic Survey.

2.2.3. Proposed Land Use

The proposed land use for the development is to remain as resort use and supporting development. The land use imperviousness will not increase with the proposed development of the new restaurant, and therefore the existing drainage infrastructure will continue to mitigate flooding from the 100-year, 2-hour storm event.

3. HYDRAULIC ANALYSIS

3.1 CONVEYANCE OF RUNOFF THROUGH SITE

3.1.1. Storm Drain Conveyance

The site is designed to utilize the existing storm drain infrastructure consisting of catch basins and 36" storm rain in the immediate vicinity of the proposed project area. The existing system was designed to capture runoff through catch basins located throughout the FSP property and convey it via storm drains to the TPC golf course. The proposed development will not increase runoff and therefore will not significantly affect the existing storm drain infrastructure. No additional structures or below grade improvements are anticipated.

3.2.4. Retention Basin Ultimate Outfall

A request for a Stormwater Storage Waiver was submitted and approved by the City of Scottsdale on October 23rd, 2008, refer to Appendix E. Therefore, onsite stormwater retention is not required and has been waived.

The Ultimate Outfall for the site is 1549.80, draining to the south of the site. To accommodate storm events larger than the 100-year storm, all proposed finished floors on site are at least one foot above this ultimate outfall elevation.

3.3 MINIMUM FINISHED FLOOR ELEVATION REQUIREMENTS

The following criteria was utilized to establish the lowest finished floor elevations for this development:

- Finished Floors shall be a minimum of 1 foot above the anticipated flood depth.
- Finished floors shall be 2 feet above the highest adjacent natural grade (HAG) to the proposed building.

The HAG analysis was performed using the Princess/Eagle Storm Drain Plan as-builts dated March 1986. The HAG was determined to be 1549.55', refer to *Appendix F* for the HAG Exhibit. The minimum FF was determined based on existing surrounding building infrastructure and existing storm drain catch basin inverts. The minimum FF was determined to be 1557.50'.

4. MAINTENANCE

Ongoing maintenance is required to preserve the system integrity and avoid overload. Failure to provide adequate maintenance can lead to reduced system performance. Maintenance within the property is the responsibility of the owner/developer.

5. SUMMARY AND CONCLUSIONS

The development proposed for the FSP is designed to meet or exceed the drainage requirements set by the City of Scottsdale technical drainage requirements and the Drainage Design Manual for Maricopa County Hydrology and Hydraulics (2018). Drainage improvements will not be necessary to route on-site runoff though the site. The existing infrastructure is designed to meet the 100-year, 2-hour storm and will outfall to the existing TPC golf course. No stormwater retention is provided for this project. The minimum FF was determined based on existing surrounding building infrastructure and existing storm drain catch basin inverts. The minimum FF was determined to be 1557.50'.

6. REFERENCES

Design Standards & Policies Manual, City of Scottsdale, 2018

Drainage Report for Fairmont Scottsdale Hotel Expansion by Wood, Patel & Associates, Inc., dated October 12,

2022

Appendix A – Resort Map

FAIRMONT GOLD
6101-6114 | 6201-6216
6301-6316 | 6401-6424

B BUILDING
1082-1118 | 2082-2118
3082-3115 | 4082-4098

C BUILDING
1119-1144 | 2119-2144
3119-3141

D BUILDING
1067-1081 | 2067-2081
3061-3081 | 4061-4081

E BUILDING
3038-3060 | 4038-4060

F BUILDING
1014-1037 | 2006-2037
3001-3037 | 4001-4021

G BUILDING
1201-1220 | 2201-2220
3201-3220

SUNSET BEACH
1401-1435 | 2401-2435
3401-3435

CASITAS I
5100-5109
5110-5121
5122-5131
5132-5141

CASITAS II
5200-5209
5210-5221
5222-5231
5232-5241

CASITAS III
5300-5309
5310-5321
5322, 24, 26, 28, 30
5332, 34, 36, 38, 40

CASITAS IV
5400-5409
5410, 12, 14, 16, 18

CASITAS MEETING ROOMS
▲I 5130 Ambassador
▲II 5232 Ambassador
▲III 5308 Chairmans
▲III 5320 Ambassador
▲III 5332 Chairmans
▲IV 5400

Fairmont
SCOTTSDALE PRINCESS

KEY LOCATIONS
★ 1 Lobby
2 Front Desk
3 Bell Desk
4 Concierge/Golf Concierge
5 Car Rental
6 Ironwood Circle
7 Fragrance Garden
8 Fairmont Fitness Center*
9 FedEx Business Center

RESTAURANTS & LOUNGES
10 Bourbon Steak by Michael Mina
11 The Plaza Bar
12 La Hacienda by Richard Sandoval
13 The Social at Princess Pool
14 Sunset Beach Pool Bar
15 Ironwood American Kitchen*
16 Toro Latin Resturant & Rum Bar at TPC *(Complimentary shuttle at front drive)*

POOLS
17 Sonoran Splash Pool & Waterslides
18 Sonoran Landing Pool & Bar *(18 & older)*
19 Princess Pool & Jacuzzis
20 Casita Pool & Jacuzzi
21 Sunset Beach Pool & Splash Pad
22 Well & Being Rooftop Pool *(18 & older)*

RECREATION & RETAIL
23 Provisions Coffee Shop & Retail Market
24 Anna J Women's Boutique
25 Maverick Menswear
26 Trailblazers Recreation Center*
27 Virtual Reality Experience*
28 Sport Court & Playground
29 Well & Being Spa | Sisley-Paris Spa
30 Well & Being Salon

MEETING SPACES
31 Fairmont Gold Meeting Room
32 Princess Plaza
33 Princess Falls*
34 Princess Pool Upper East Deck
35 Princess Pool Upper West Deck
36 Princess Overlook
37 Princess Ballroom & Conference Center
38 Palomino Ballroom & Conference Center
39 North Palomino Plaza
40 East Palomino Plaza
41 Ironwood Meeting Room*
42 Canyon Lawn
43 Hacienda Plaza & Trellis
44 Sunset Lawn
45 Pavilion *(Seasonal)*
46 Copper Canyon Western Town

* = LOWER LEVEL
E = ELEVATORS

View the Resort's Current Events & Offerings
SCAN THIS CODE

Appendix B – Preliminary Drainage Report for Fairmont Scottsdale Princess Privado Welcome Building and Parking Modifications

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

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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

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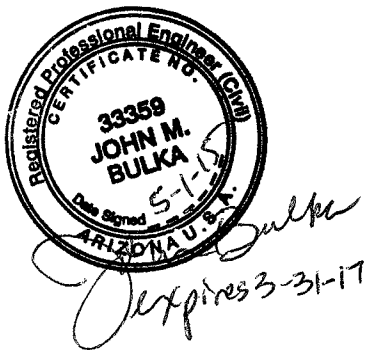
APPENDIX A - FOR REFERENCE ONLY

TABLE OF CONTENTS

APPENDICES

EXHIBITS



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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

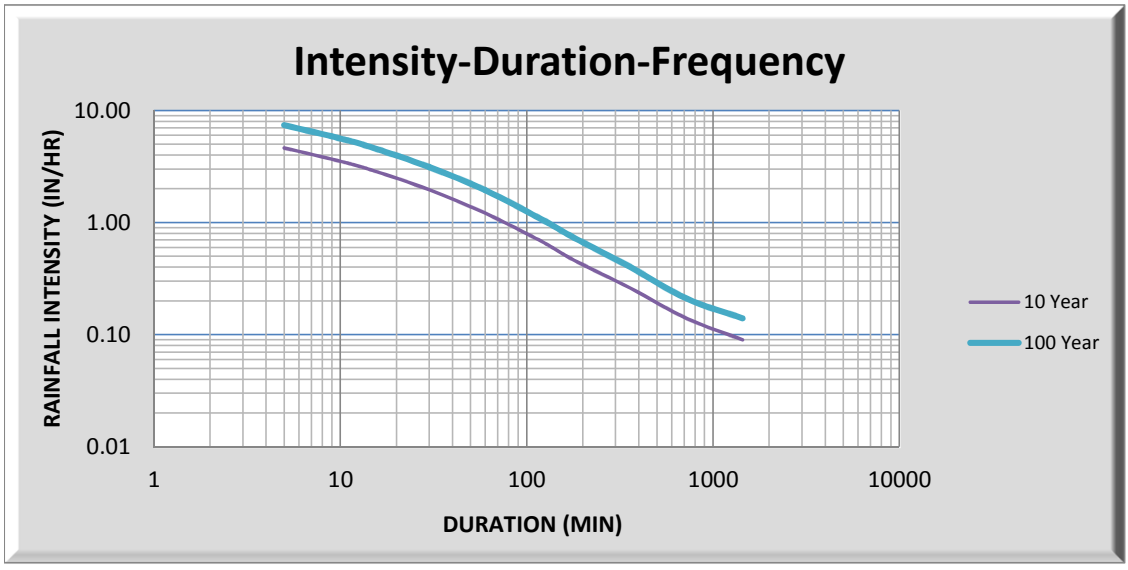
Description: Rational Method IDF Curve
Location: Fairmont Scottsdale Hotel Expansion
City of Scottsdale, Arizona

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

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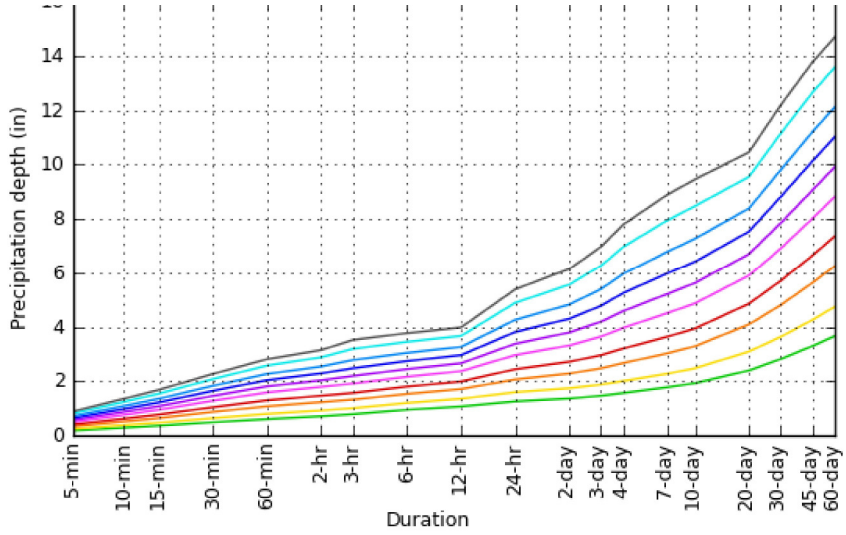
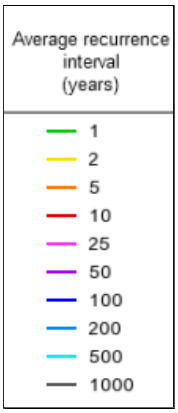
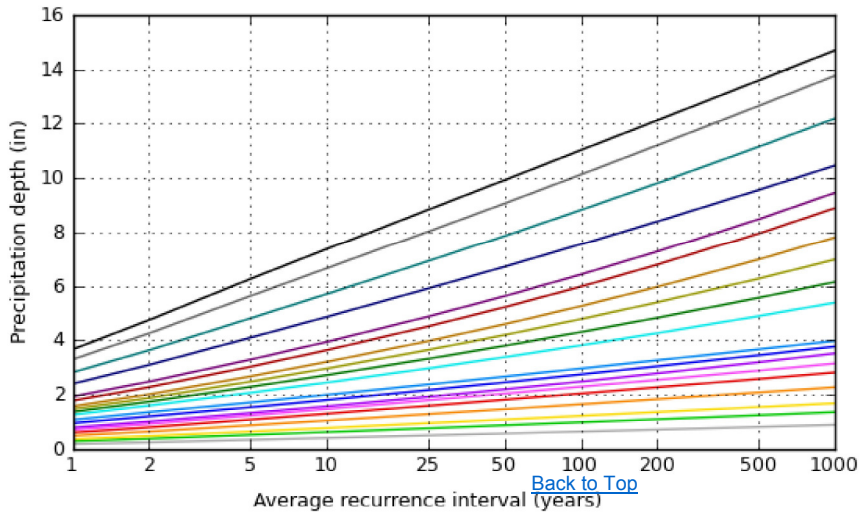
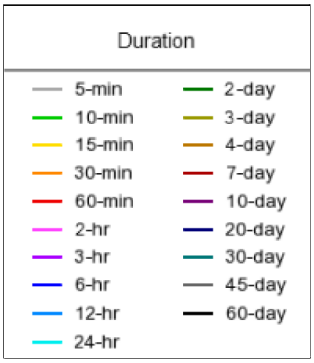






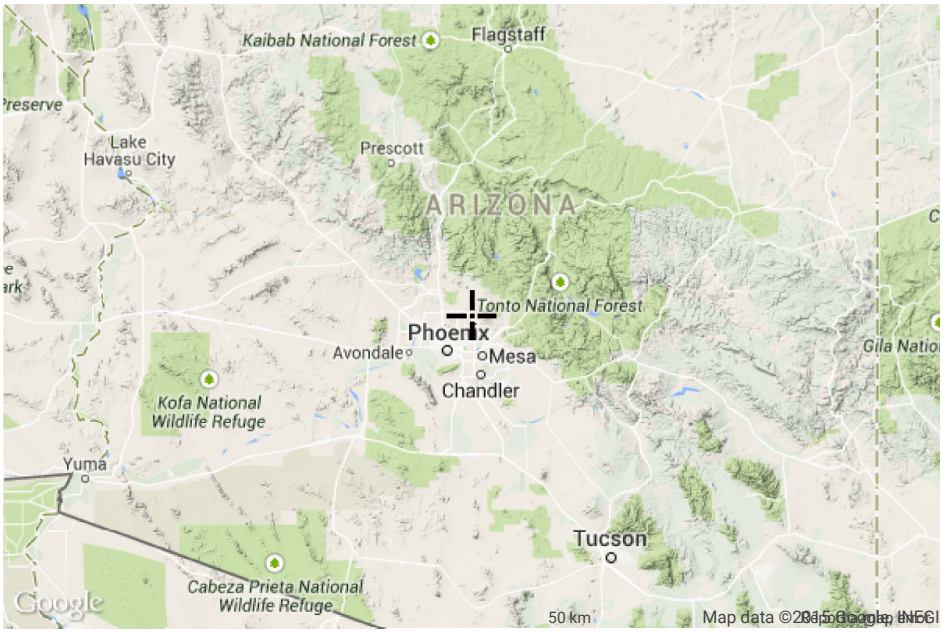


Back to Top

Maps & aerials

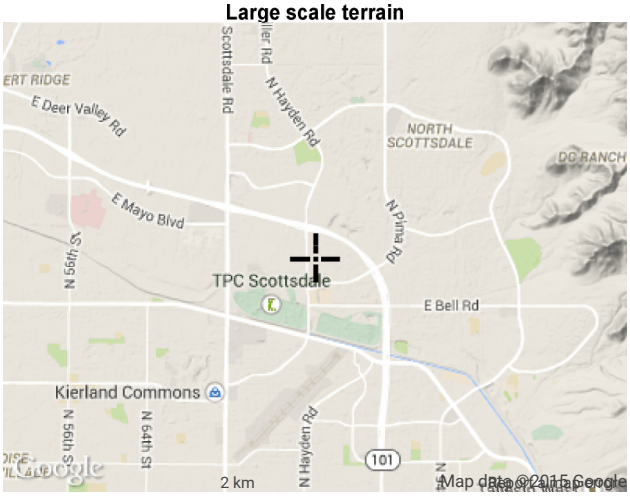
NOAA Atlas 14, Volume 1, Version 5 Created (GMT): Thu Feb 12 15:40:16 2015

Small scale terrain



APPENDIX A - FOR REFERENCE ONLY

Large scale terrain



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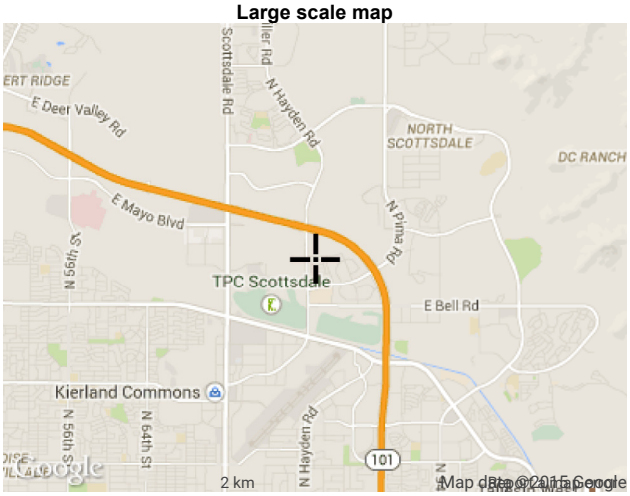
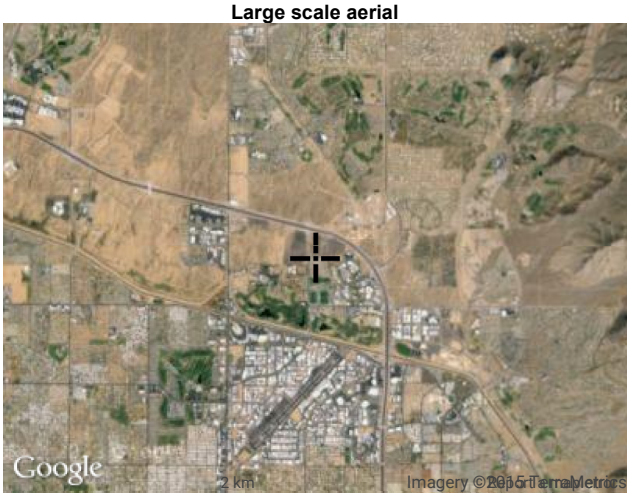


Large scale aerial



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

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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

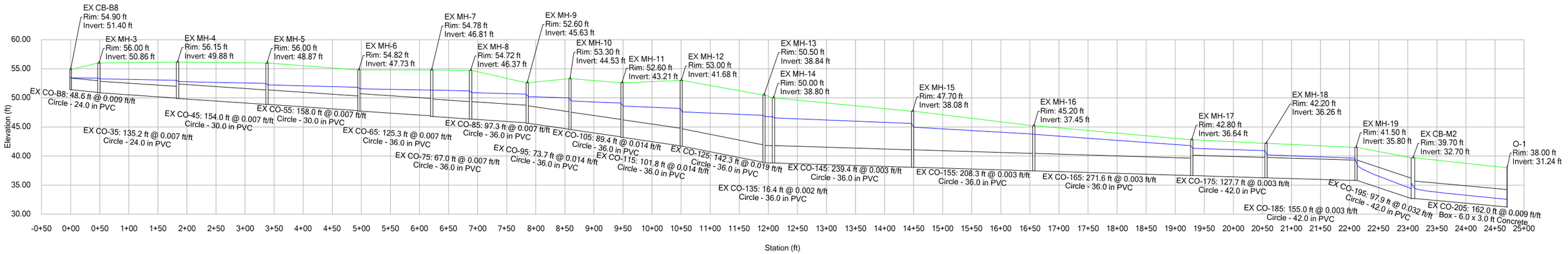
Active Scenario: 10 yr - Existing

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

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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.

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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

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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

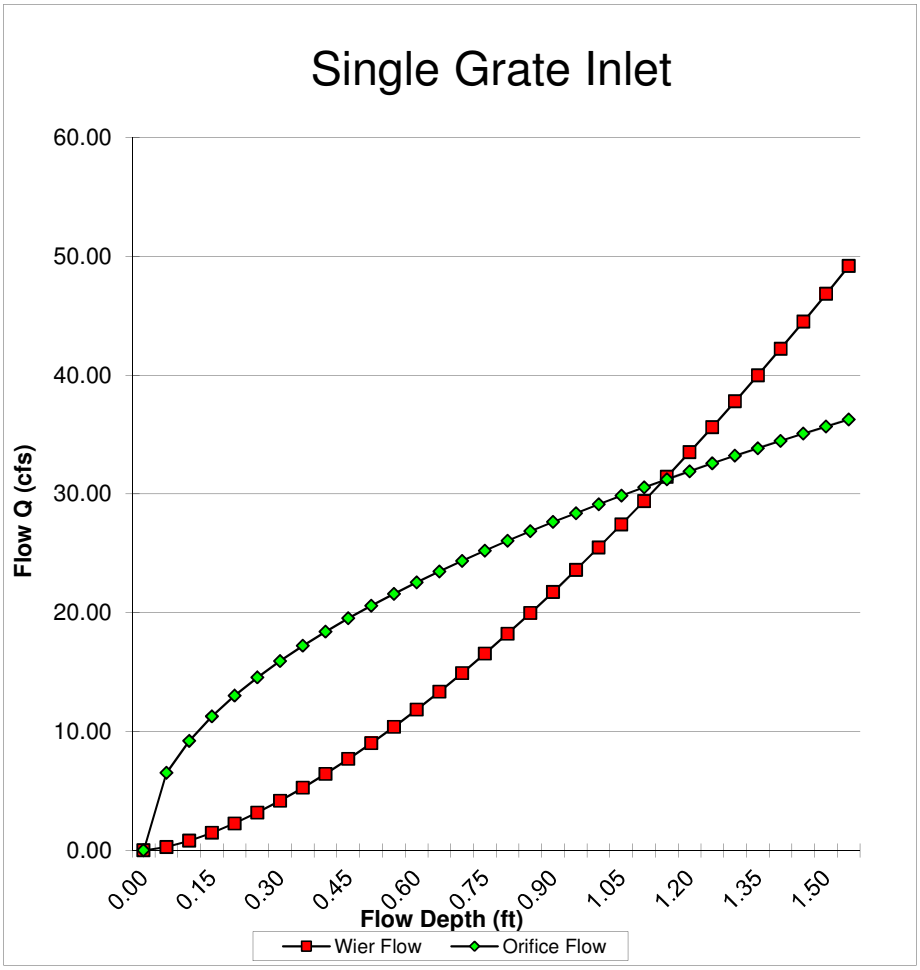
Weir EQ. $Q_i = C_w P d^{1.5}$ **Orifice EQ.** $Q_i = C_o A (2gd)^{0.5}$

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

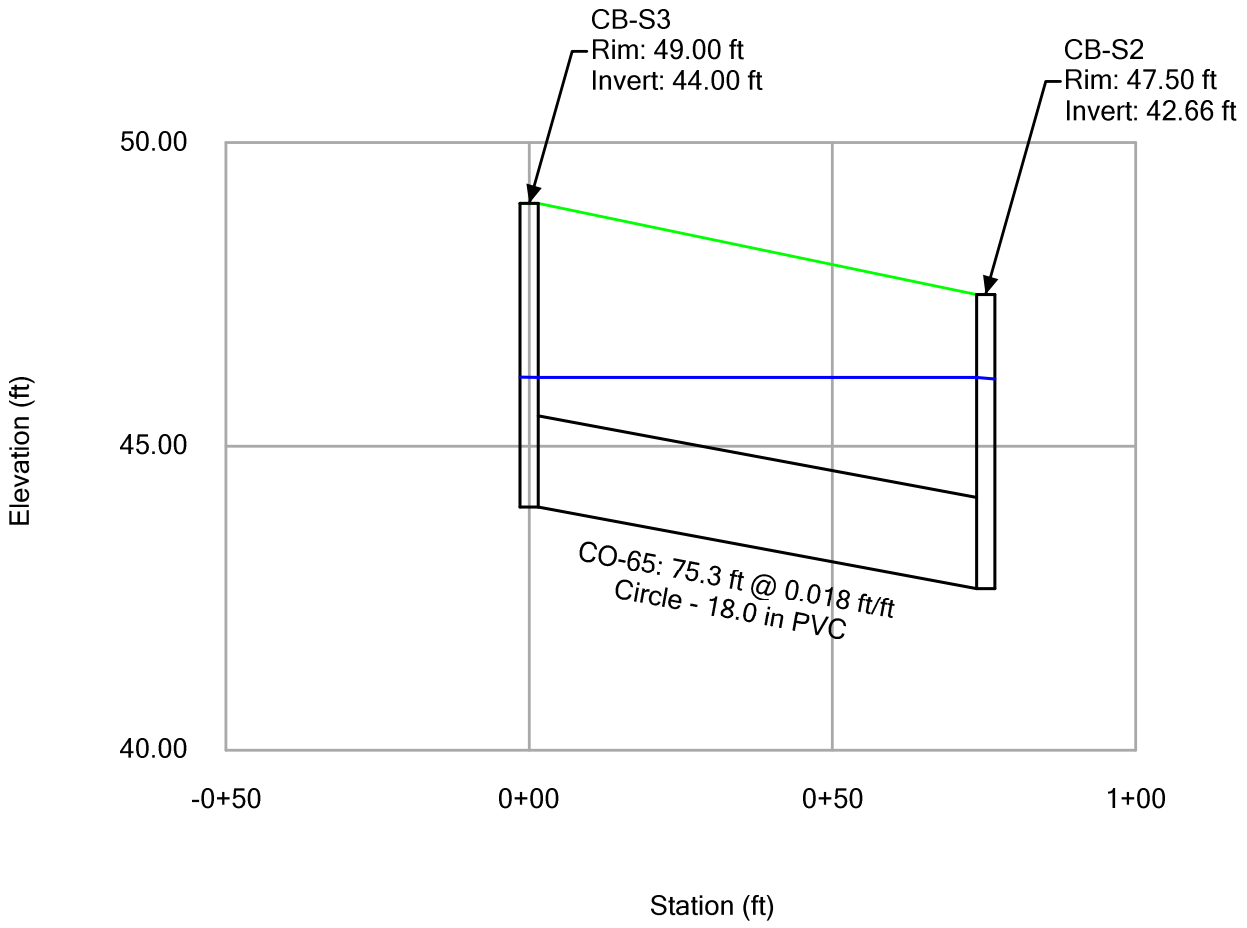
APPENDIX A - FOR REFERENCE ONLY

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

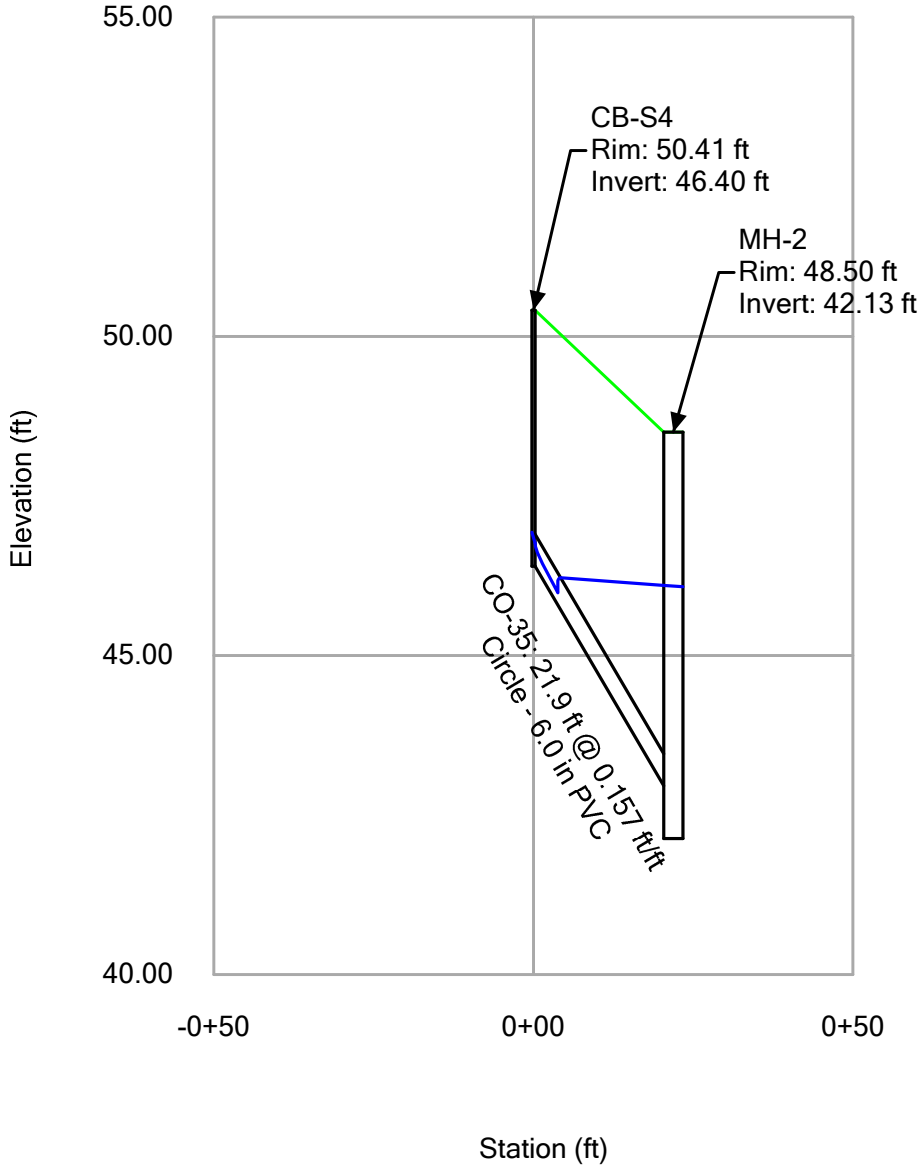
APPENDIX A - FOR REFERENCE ONLY

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)

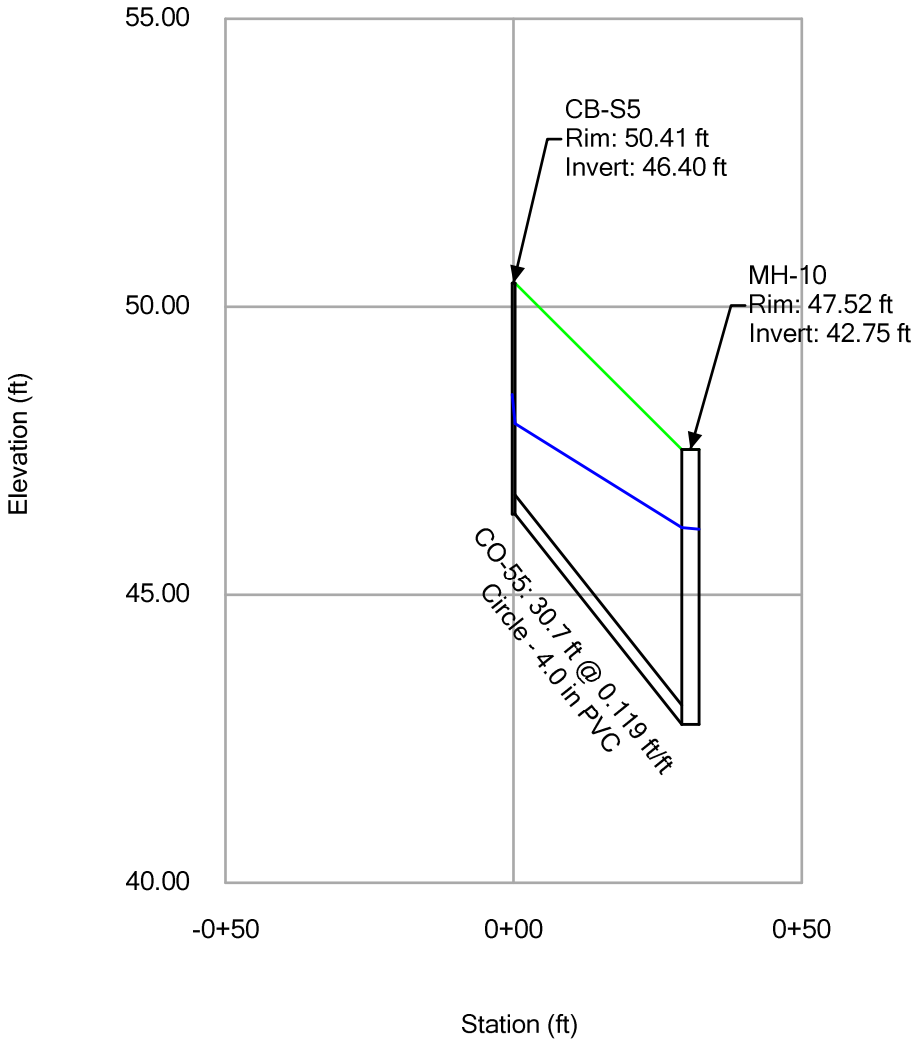


APPENDIX A - FOR REFERENCE ONLY

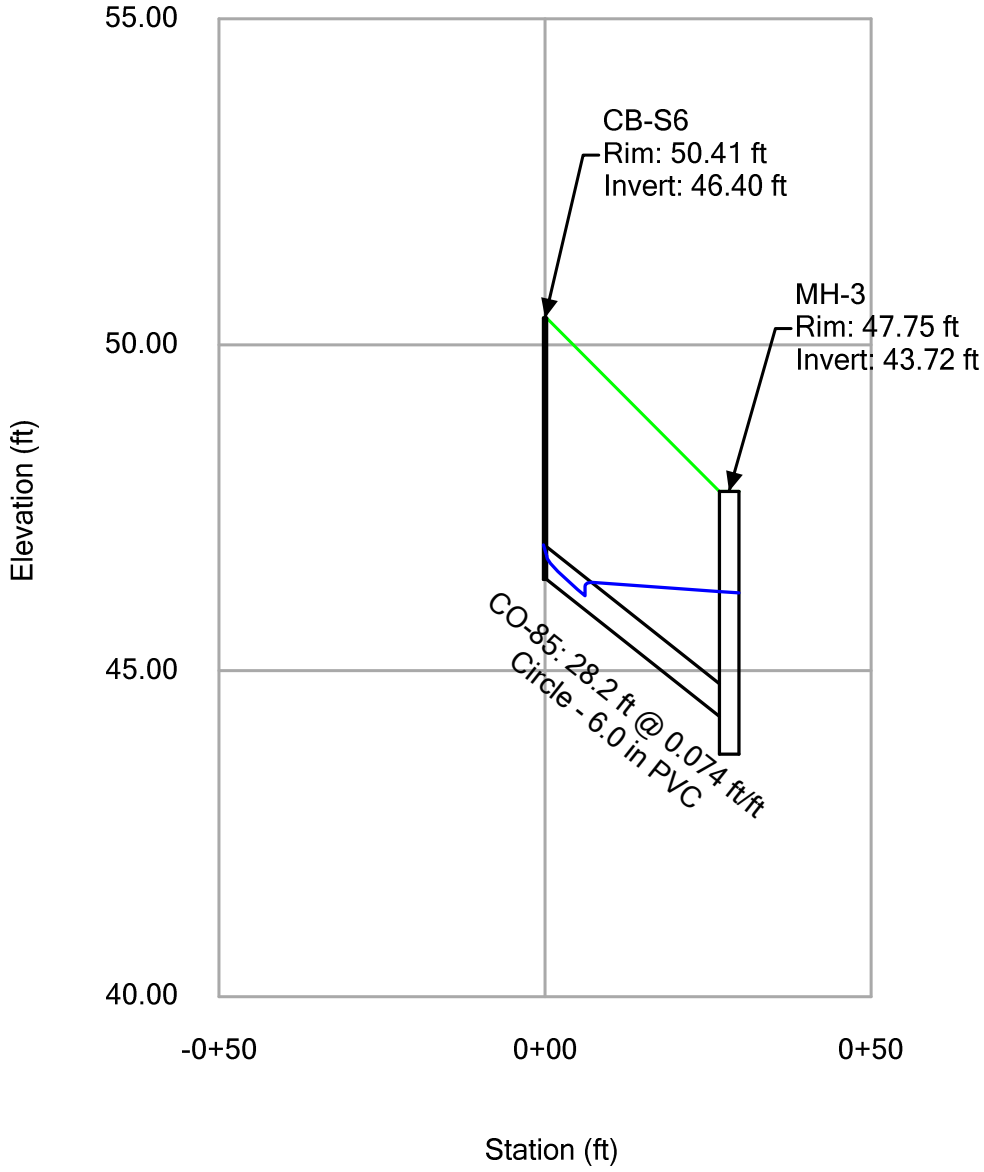
Active Scenario: 10 yr - Proposed

Profile Report

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

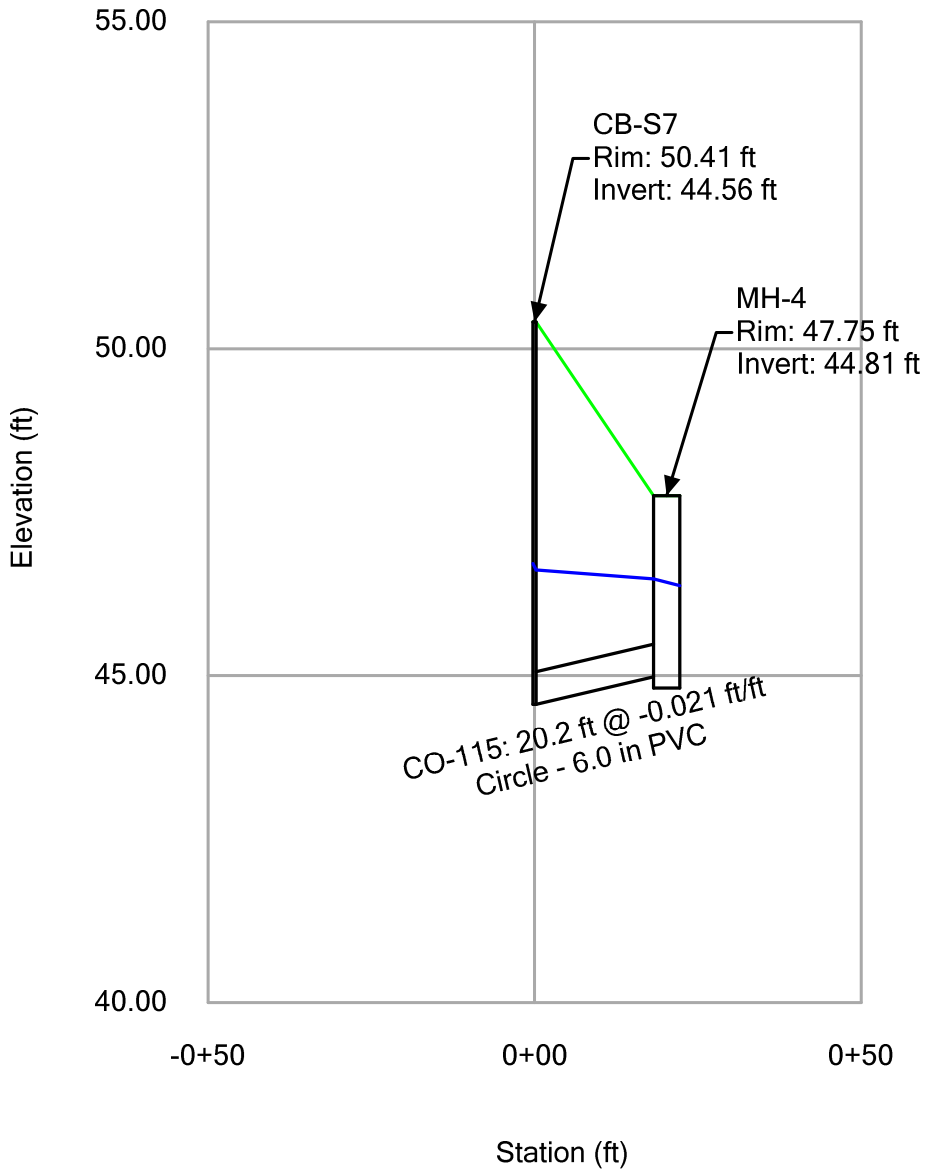


Active Scenario: 10 yr - Proposed
Profile Report
Engineering Profile - CB-S6 TO MH-3 (4302 StormCAD - Proposed.stsw)



APPENDIX A - FOR REFERENCE ONLY

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

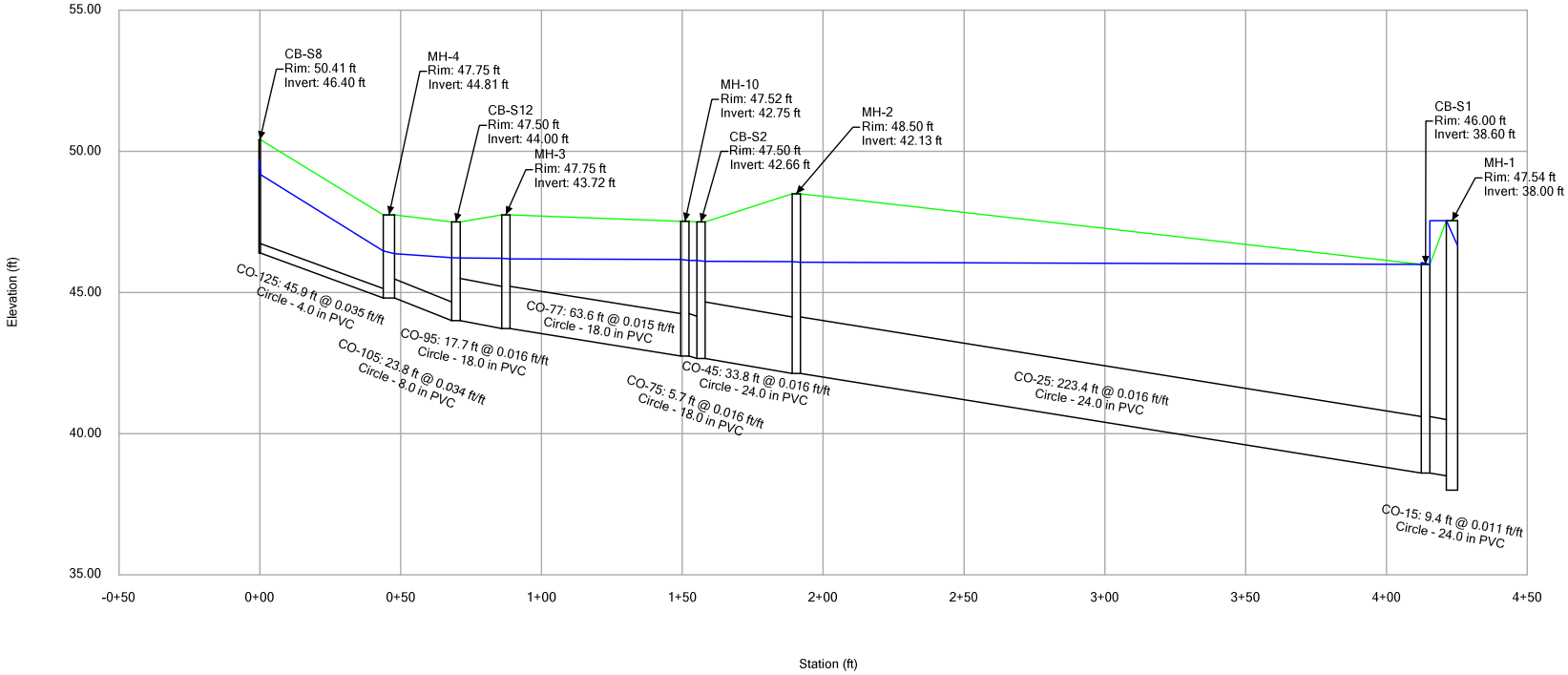


APPENDIX A - FOR REFERENCE ONLY

Active Scenario: 10 yr - Proposed

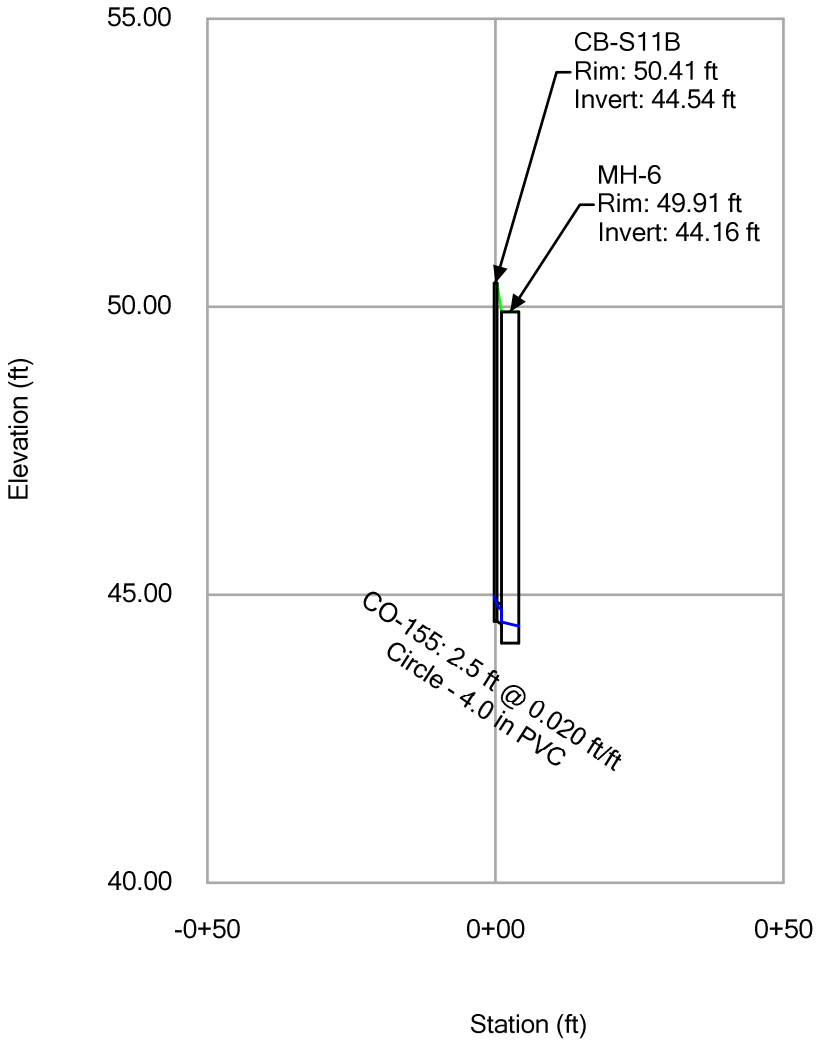
Profile Report

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)

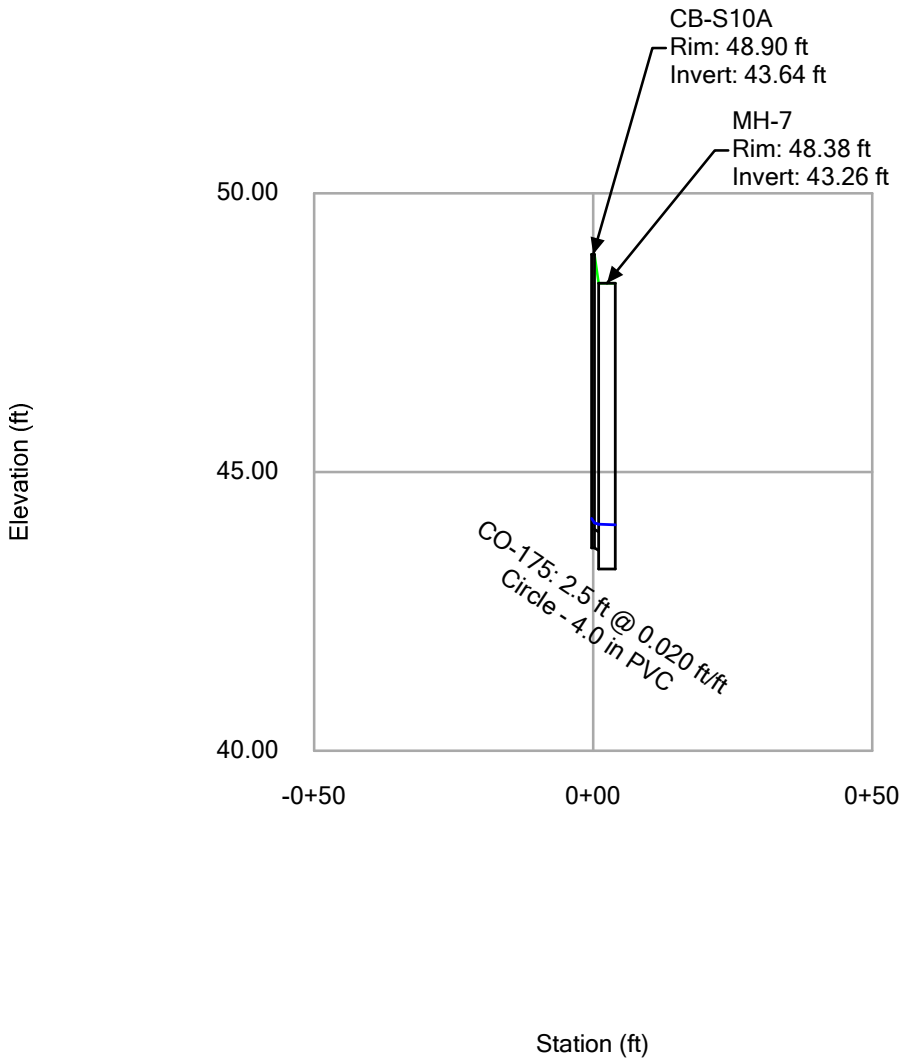


APPENDIX A - FOR REFERENCE ONLY

Active Scenario: 10 yr - Proposed

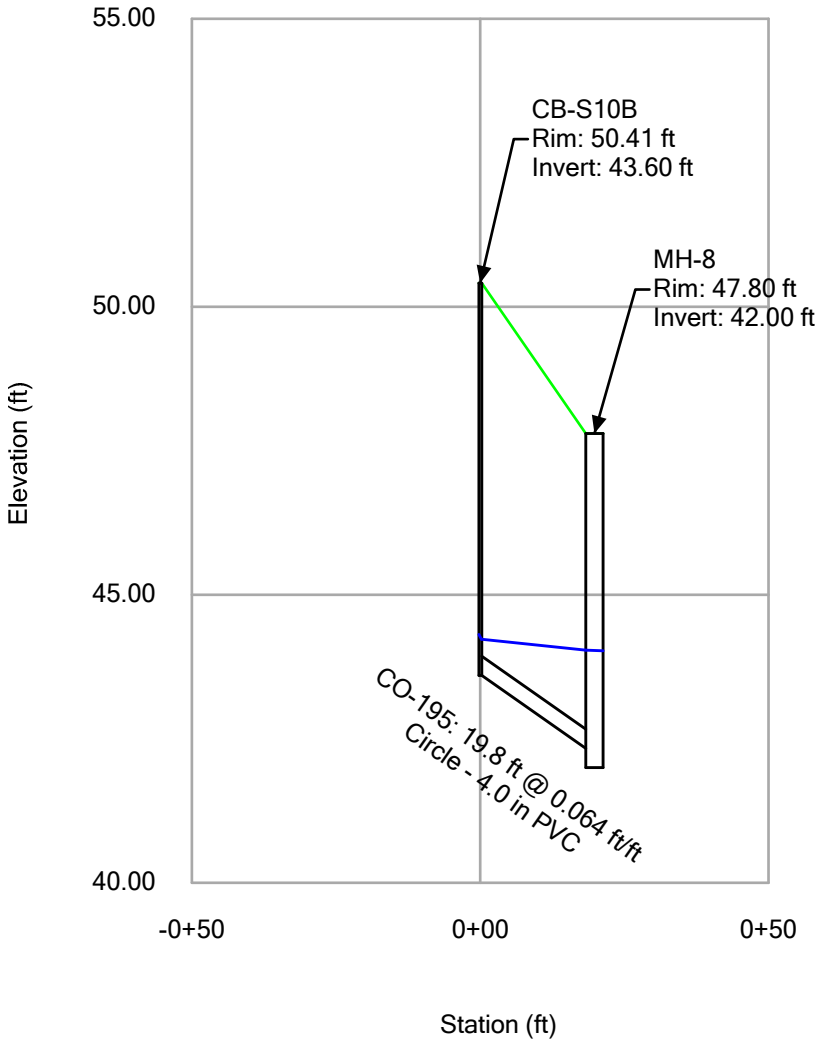
Profile Report

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



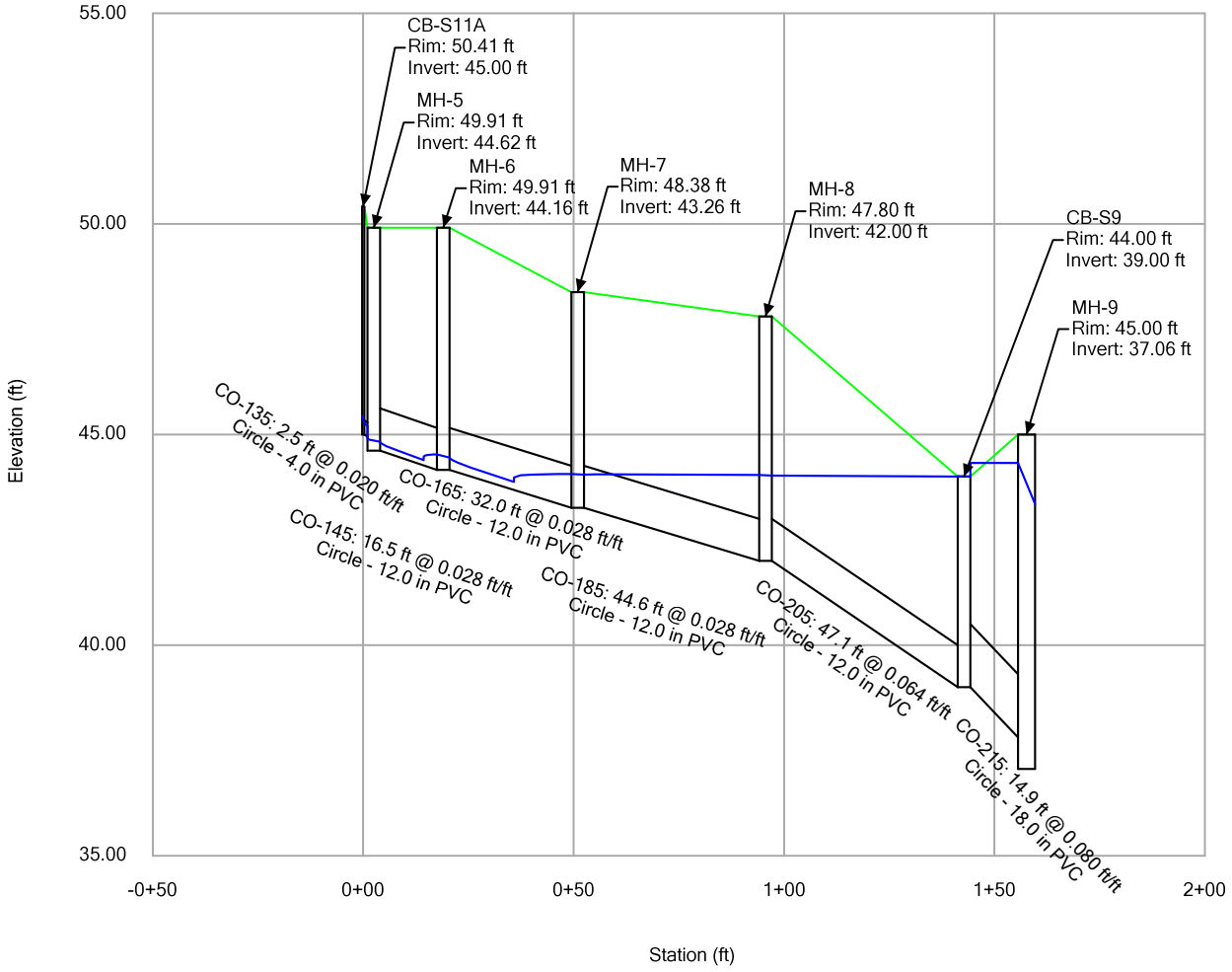
APPENDIX A - FOR REFERENCE ONLY

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)

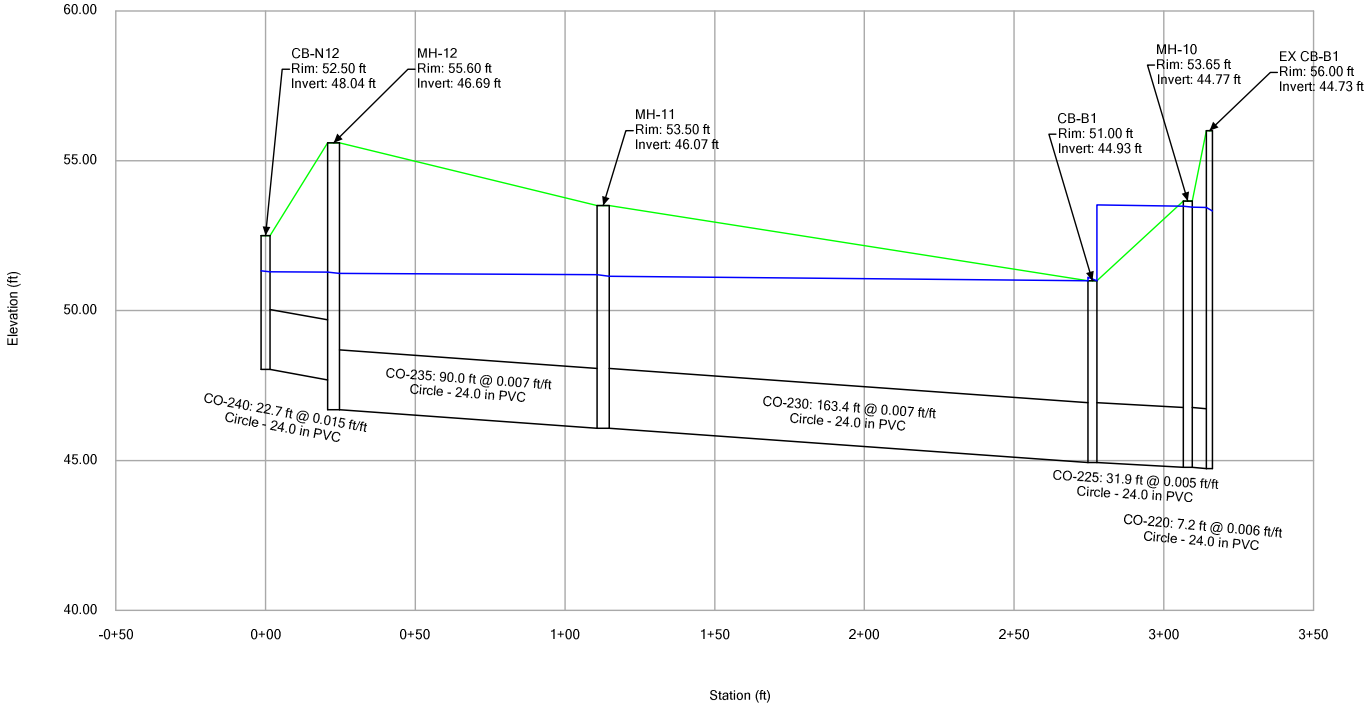


APPENDIX A - FOR REFERENCE ONLY

Active Scenario: 10 yr - Proposed

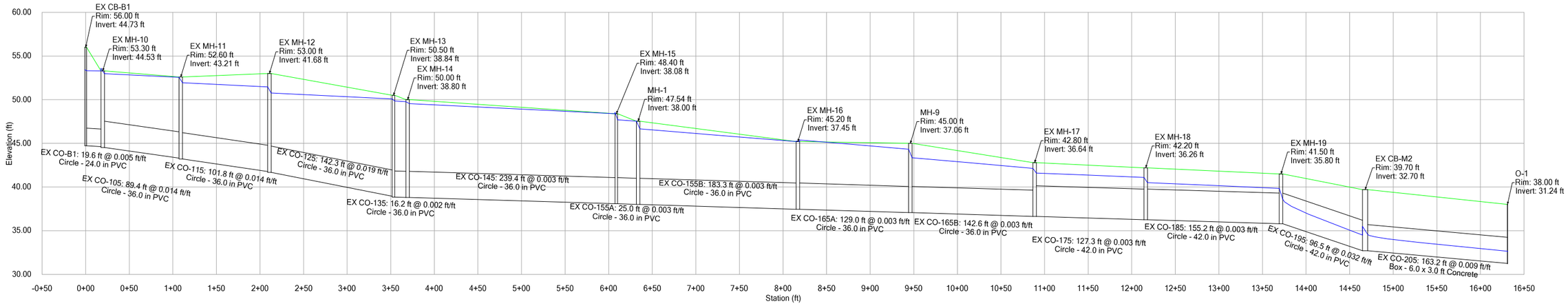
Profile Report

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

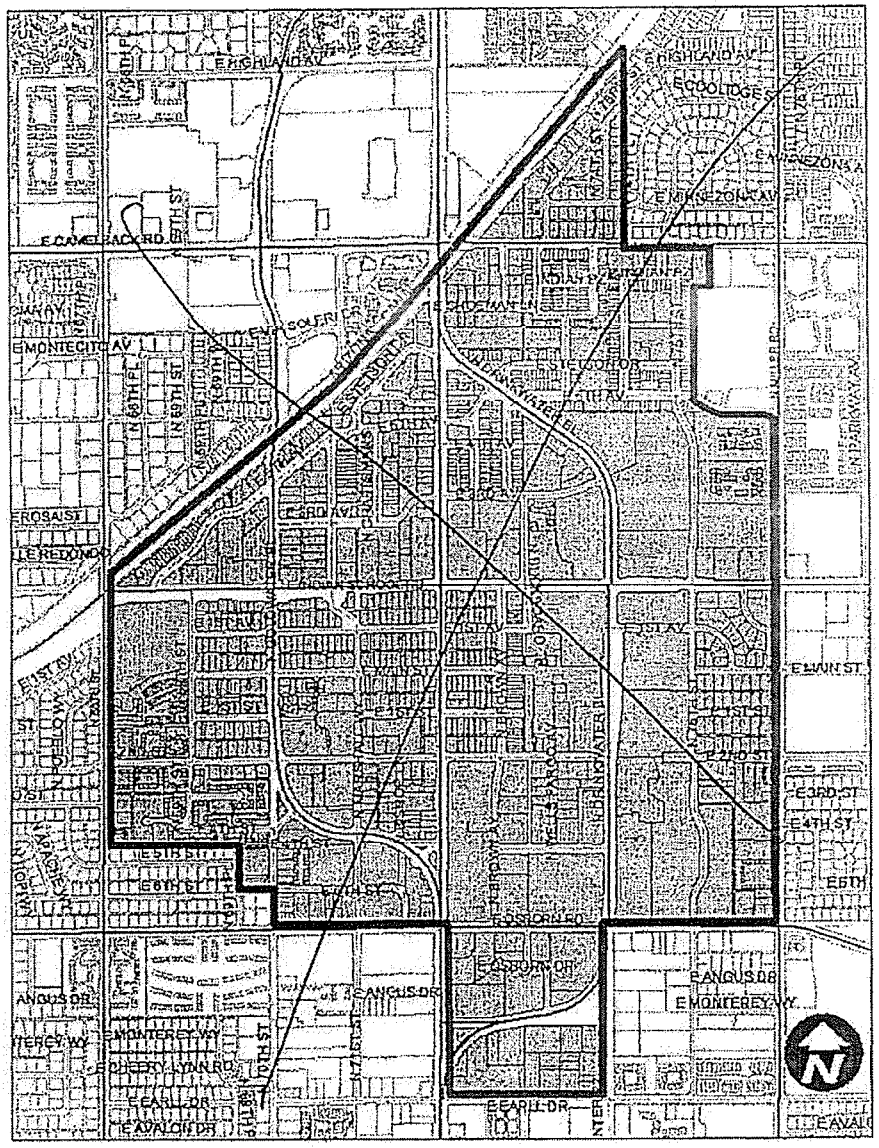
APPENDIX A - FOR REFERENCE ONLY

Request for Stormwater Storage Waiver

292-SA-2007

City of Scottsdale Case Numbers:

___ - PA - ____ ____ - ZN - ____ ____ - UP - ____ ____ - DR - ____ ____ - PP - ____ PC#_____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APPENDIX A - FOR REFERENCE ONLY

Request for Stormwater Storage Waiver

City of Scottsdale Case Numbers:

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

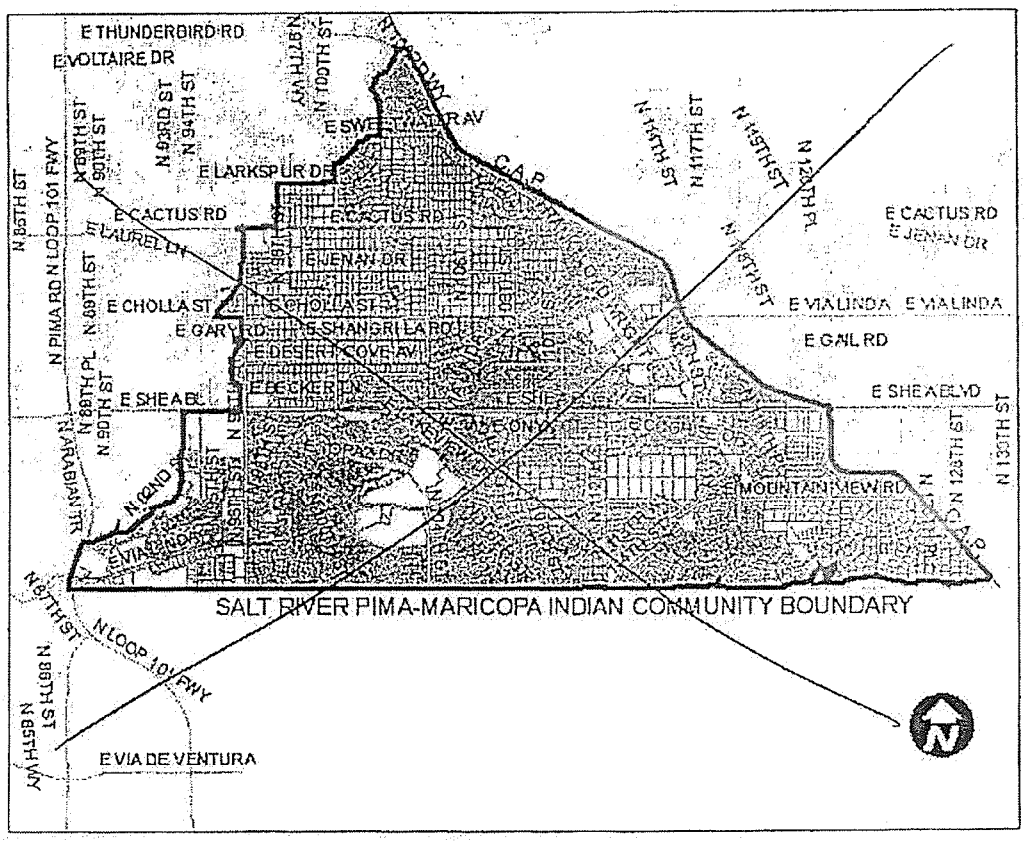


Figure 2. Watersheds Draining to Salt River Pima-Maricopa Indian Community

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

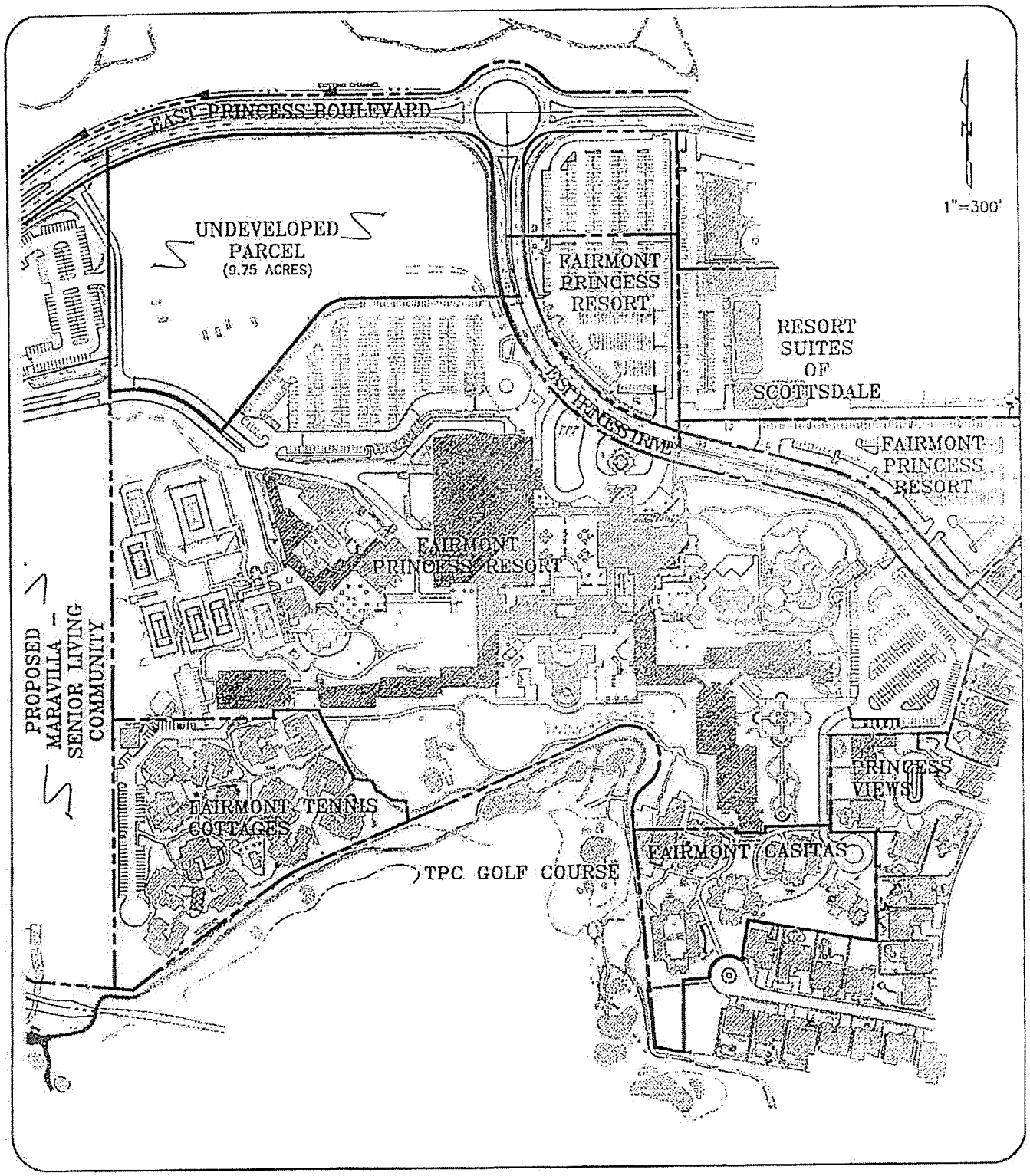


EXHIBIT 1

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

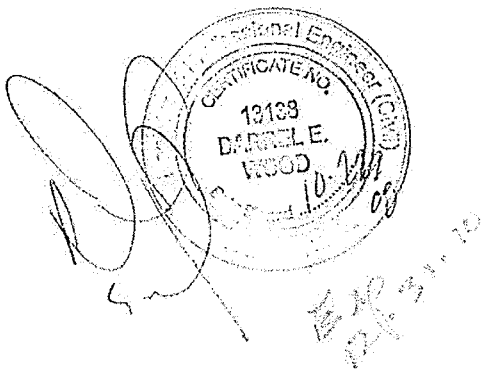
Attachment to Stormwater Storage Waiver Request
for Fairmont Scottsdale Princess Resort & Regional Flood Control

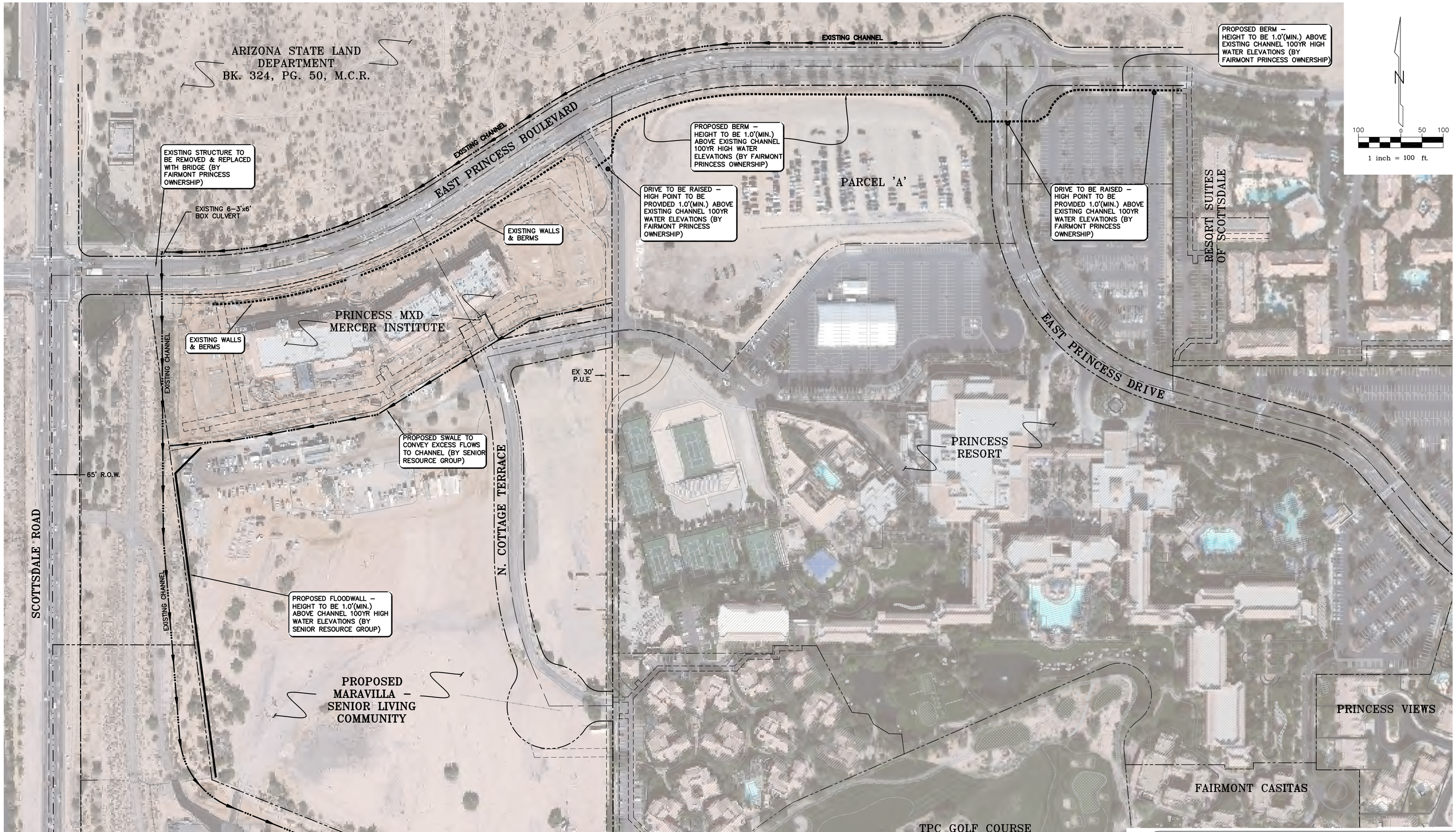
Engineering Preliminary Opinion of Probable Cost (*)

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

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CONSTRUCTION MANAGEMENT
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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

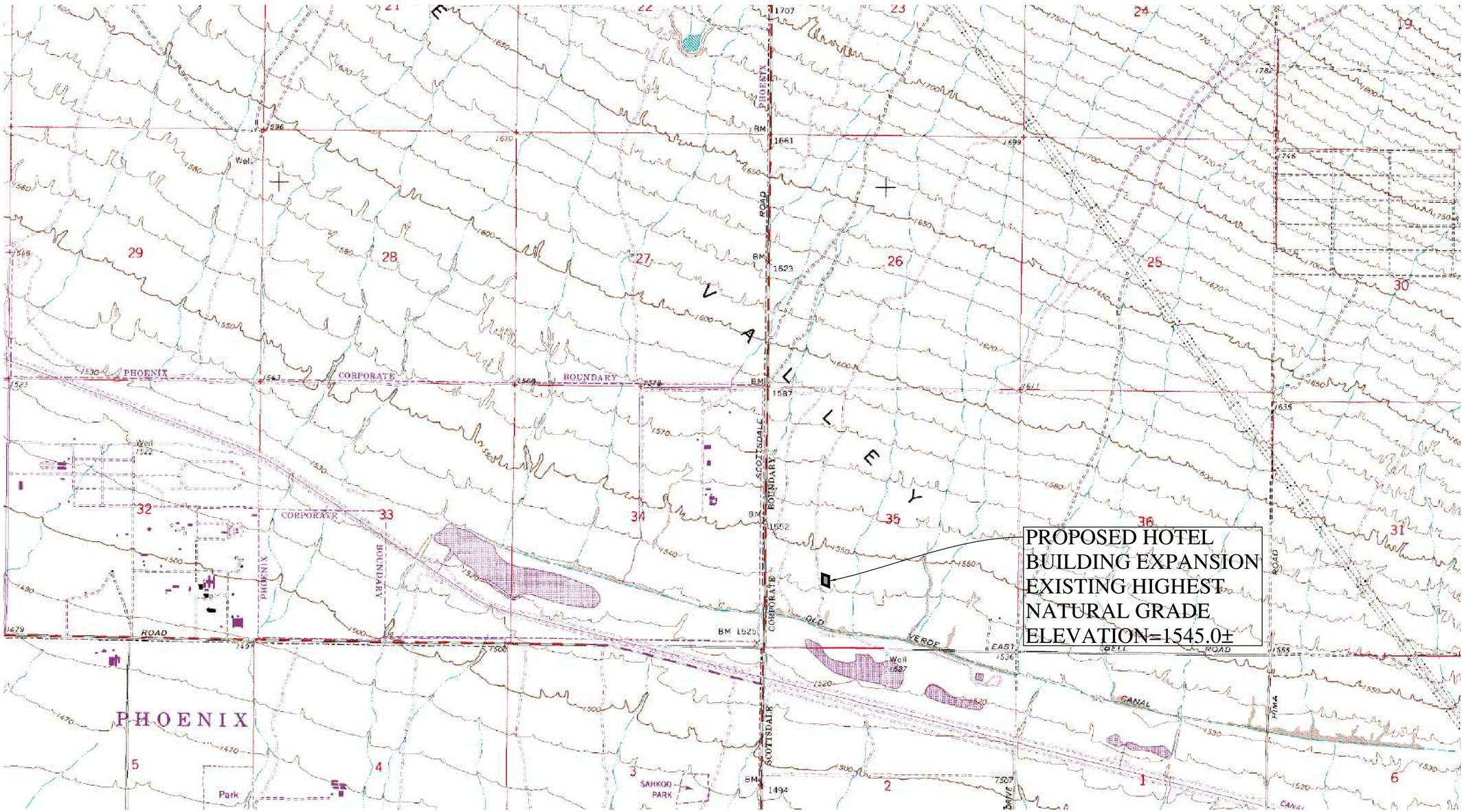
APPENDIX D

OFFSITE WATERSHED EXHIBITS

APPENDIX A - FOR REFERENCE ONLY

Regional Contour Map /
Opinion of Existing Highest Natural Grade Elevation

APPENDIX A - FOR REFERENCE ONLY



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

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WWW.WOODPATEL.COM
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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

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FAIRMONT SCOTTSDALE HOTEL EXPANSION

2015 AERIAL PHOTOGRAPH

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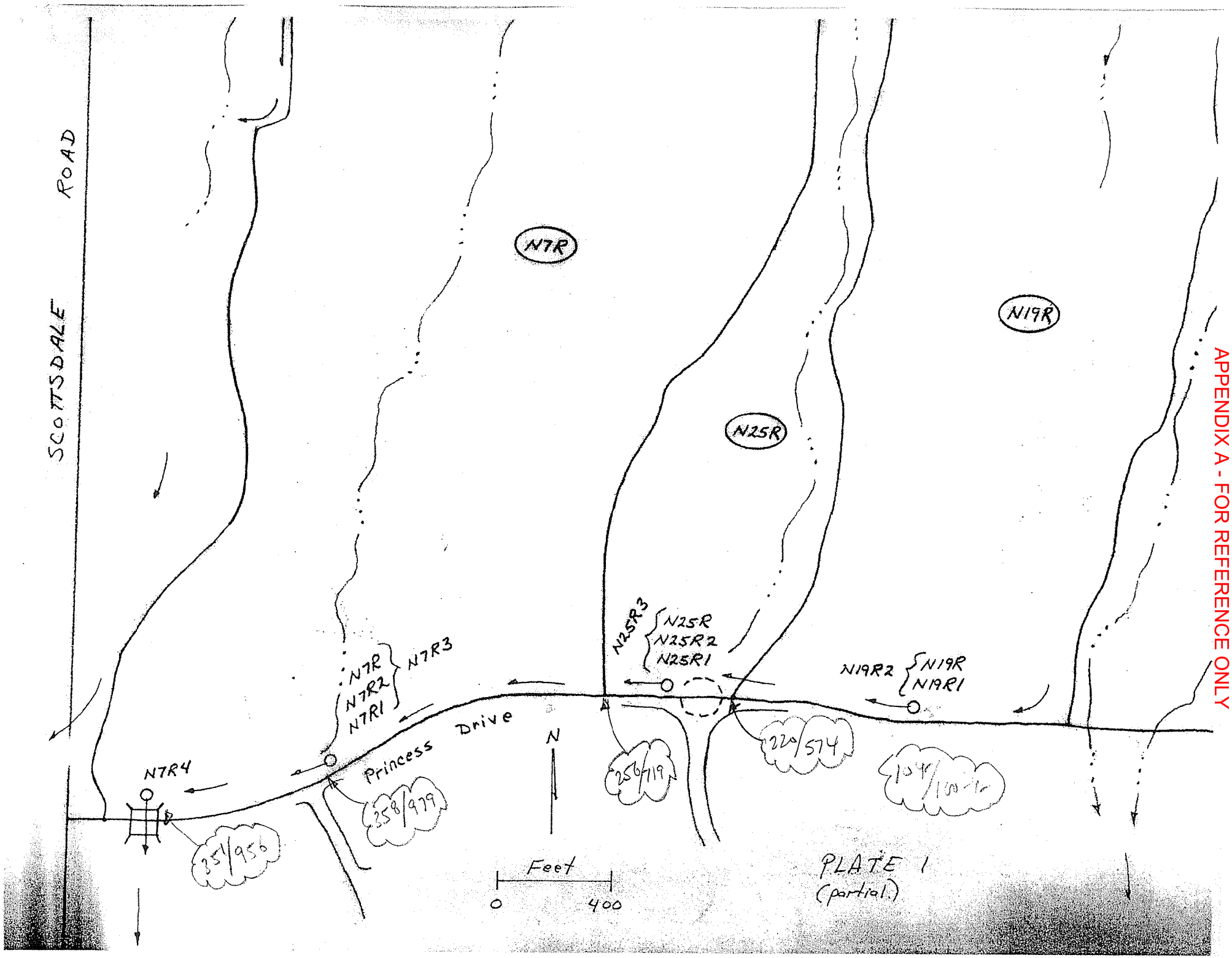
www.woodpatel.com
PHOENIX • MESA • TUCSON

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

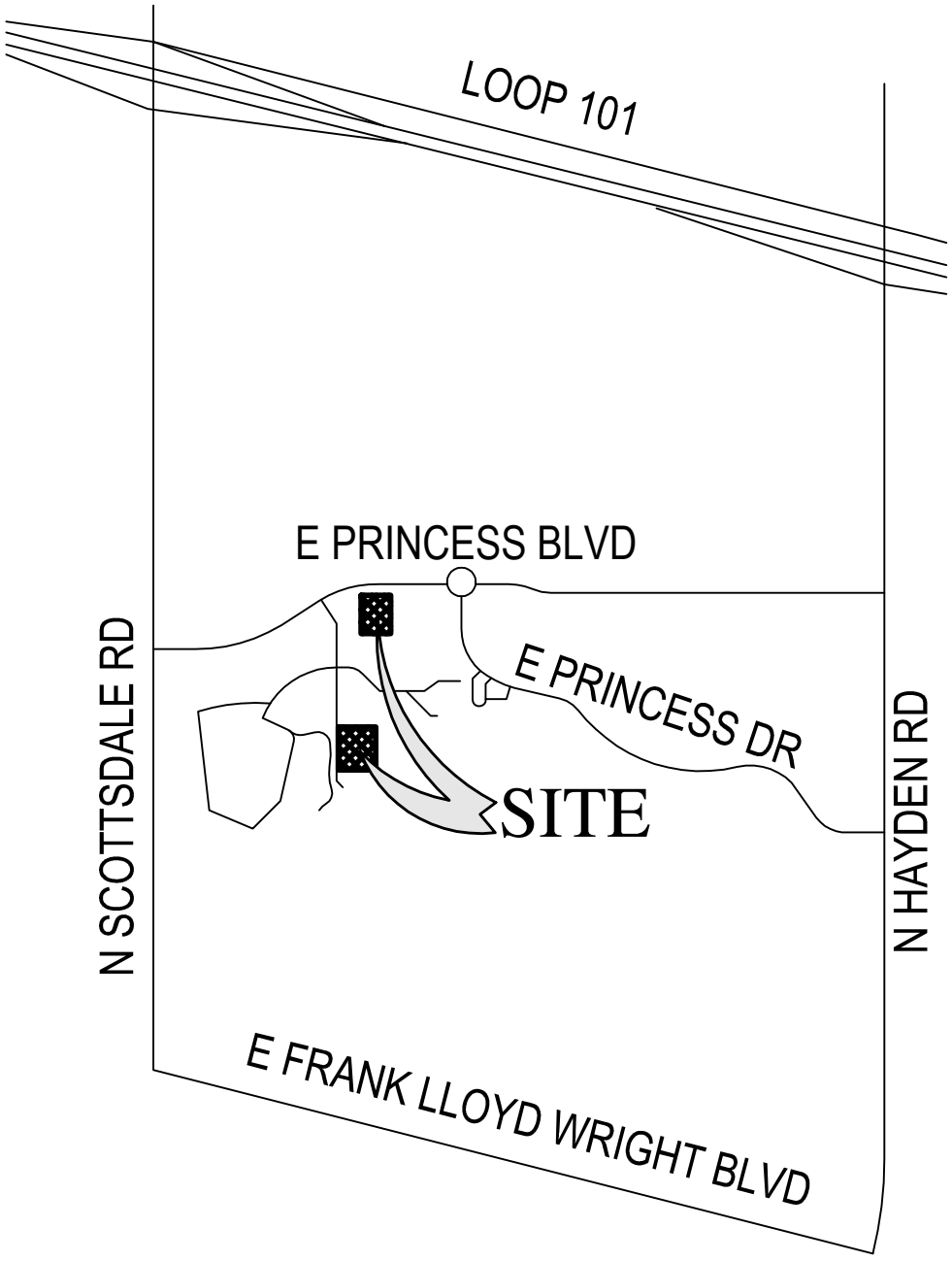
Note: See Plate 1 for HEC-1 concentration point locations.

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

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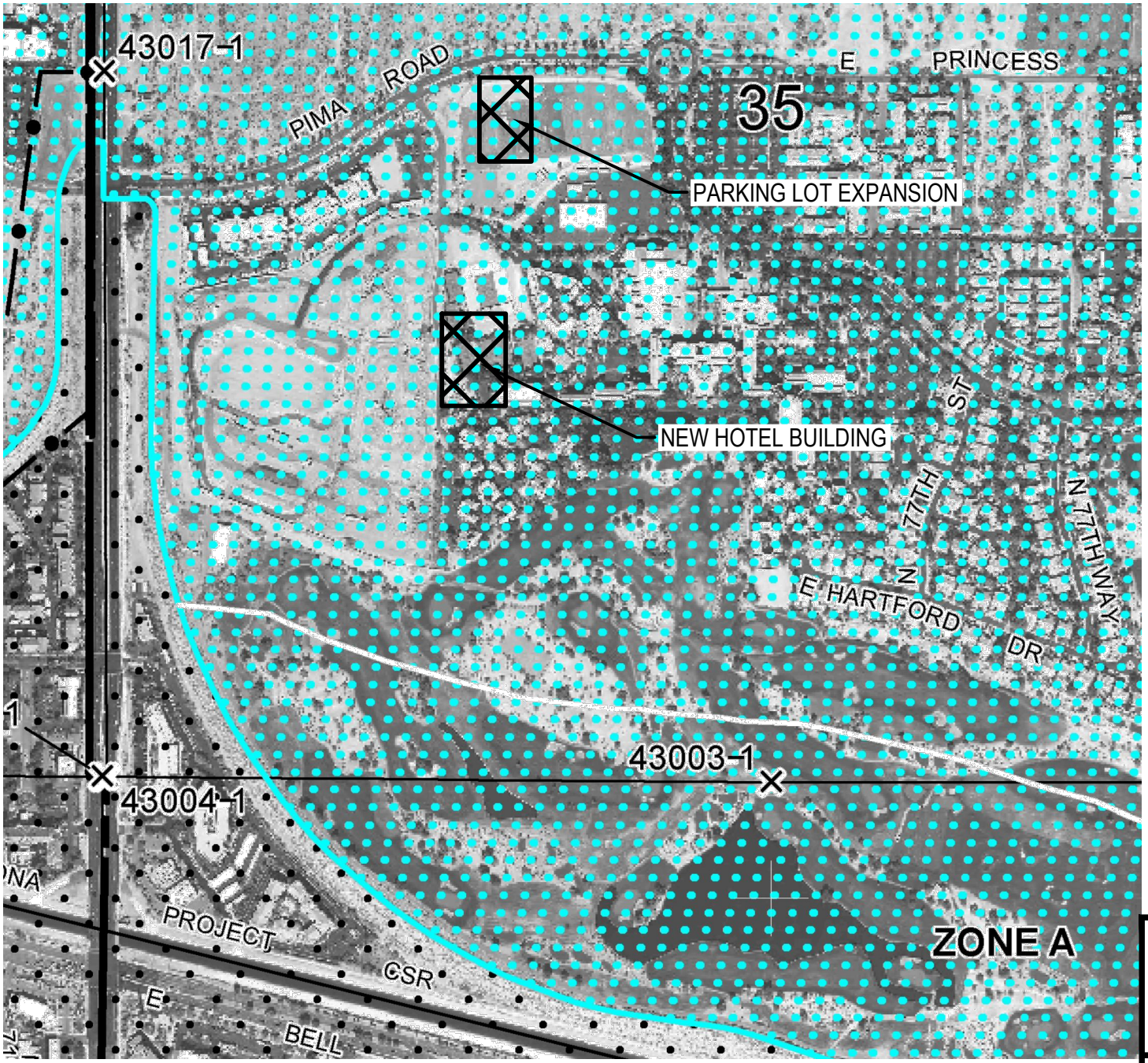
APPENDIX A - FOR REFERENCE ONLY

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

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JOB# 154302

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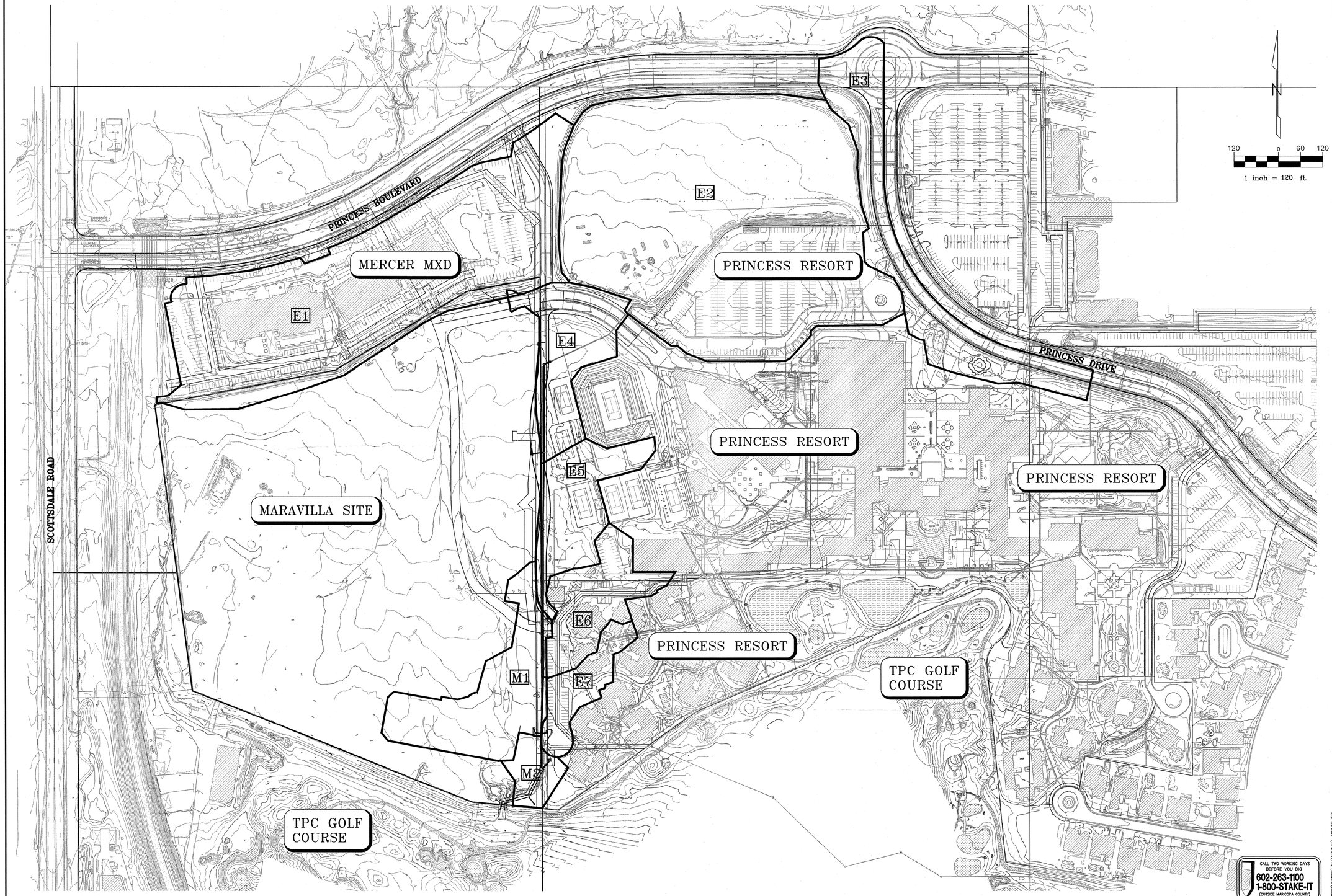
APPENDIX A - FOR REFERENCE ONLY

EXHIBIT 3

MARAVILLA EAST PROPERTY LINE ROAD DRAINAGE MAP



MARAVILLA

EAST PROPERY LINE ROADWAY

DRAINAGE MAP

NOT FOR CONSTRUCTION OR RECORDING

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Mesa, AZ 85203
(480) 834-3300
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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
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1-800-STAKE-IT
(OUTSIDE MARICOPA COUNTY)

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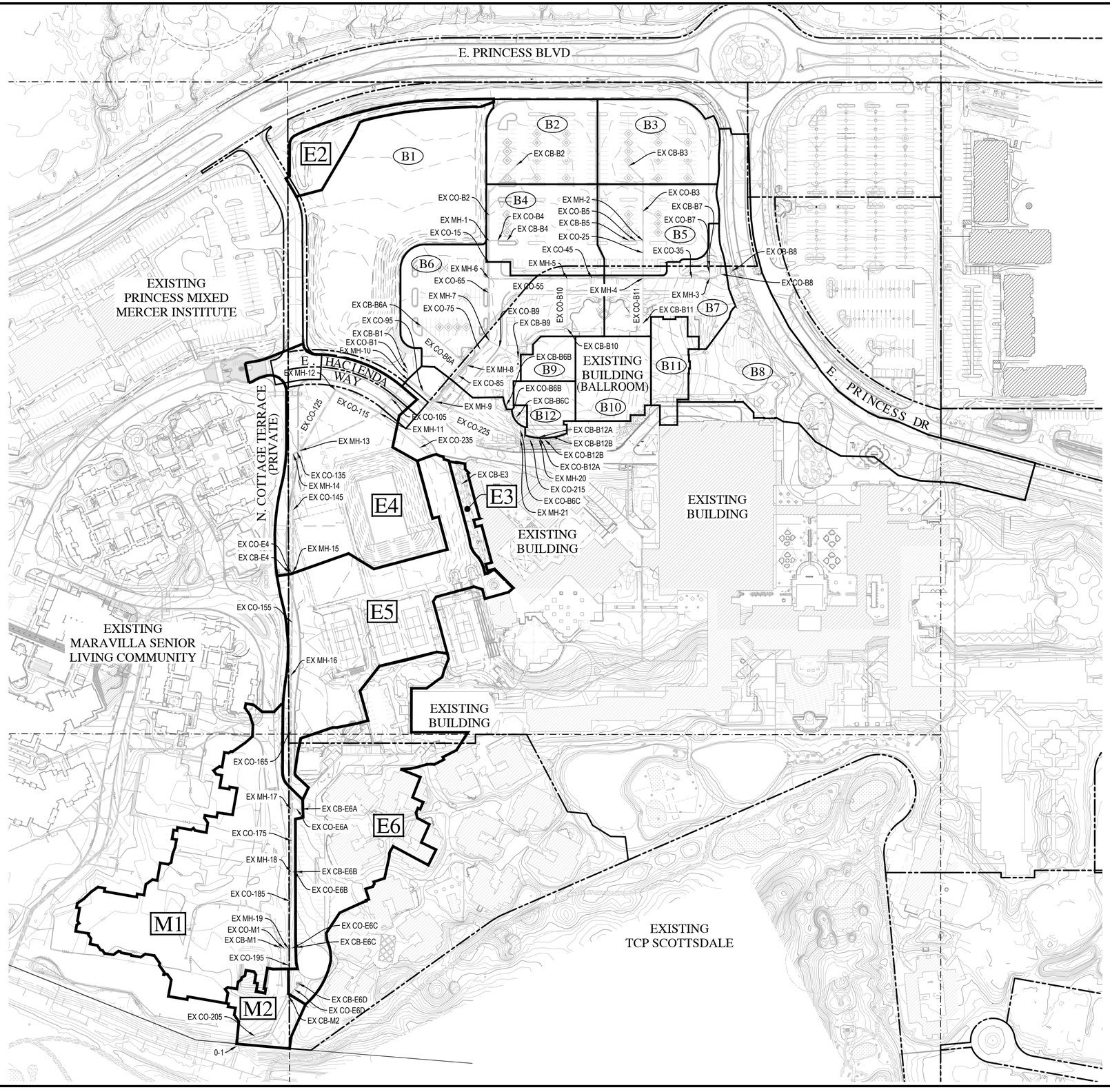
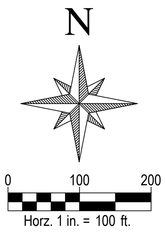
APPENDIX A - FOR REFERENCE ONLY

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

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In Maricopa County: (602) 263-1100

FAIRMONT SCOTTSDALE HOTEL EXPANSION

EXHIBIT 4
EXISTING
DRAINAGE MAP

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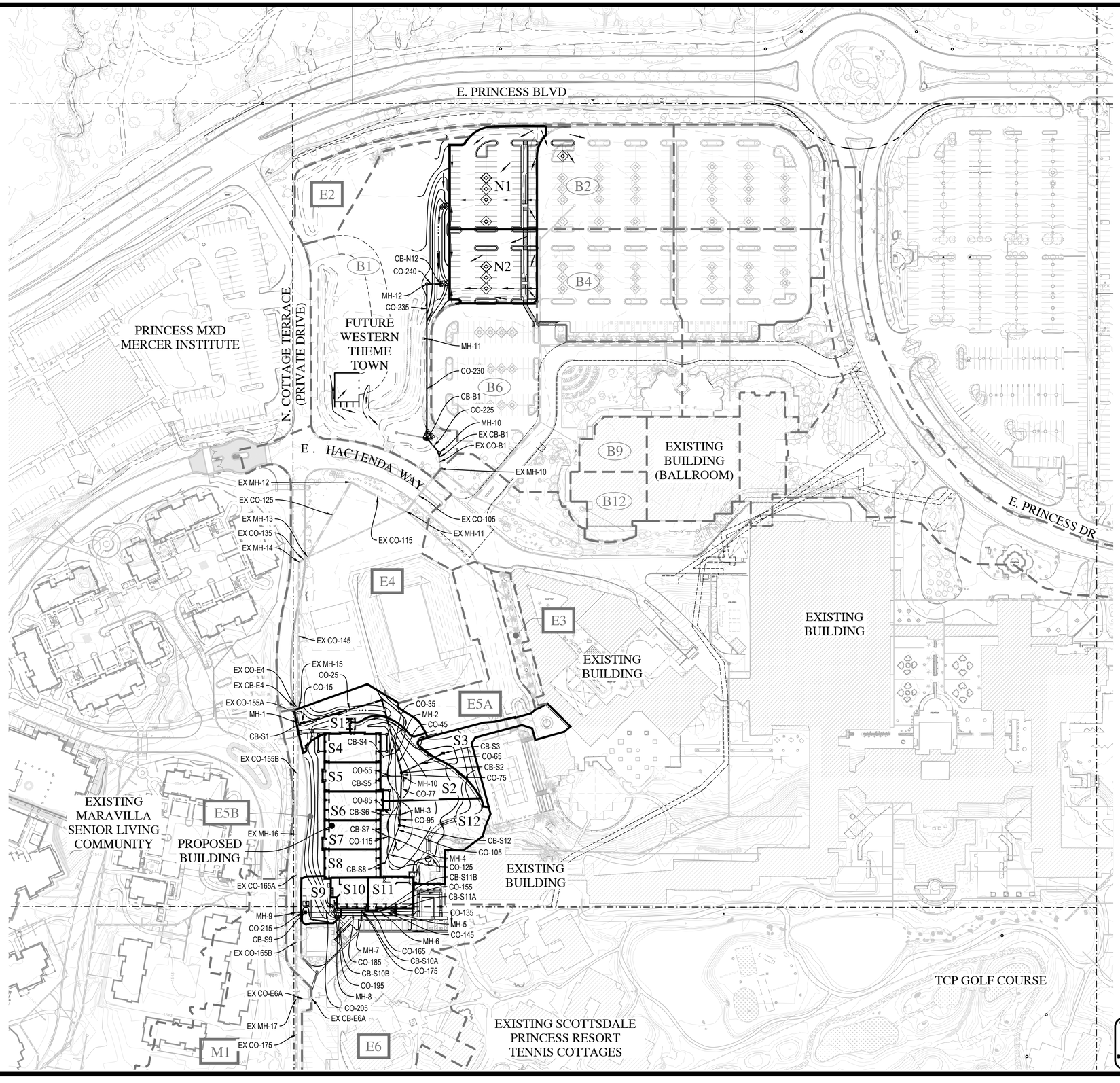
APPENDIX A - FOR REFERENCE ONLY

EXHIBIT 5A

PROPOSED DRAINAGE MAP 1



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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

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FAIRMONT SCOTTSDALE HOTEL EXPANSION

EXHIBIT 5A PROPOSED DRAINAGE MAP-1

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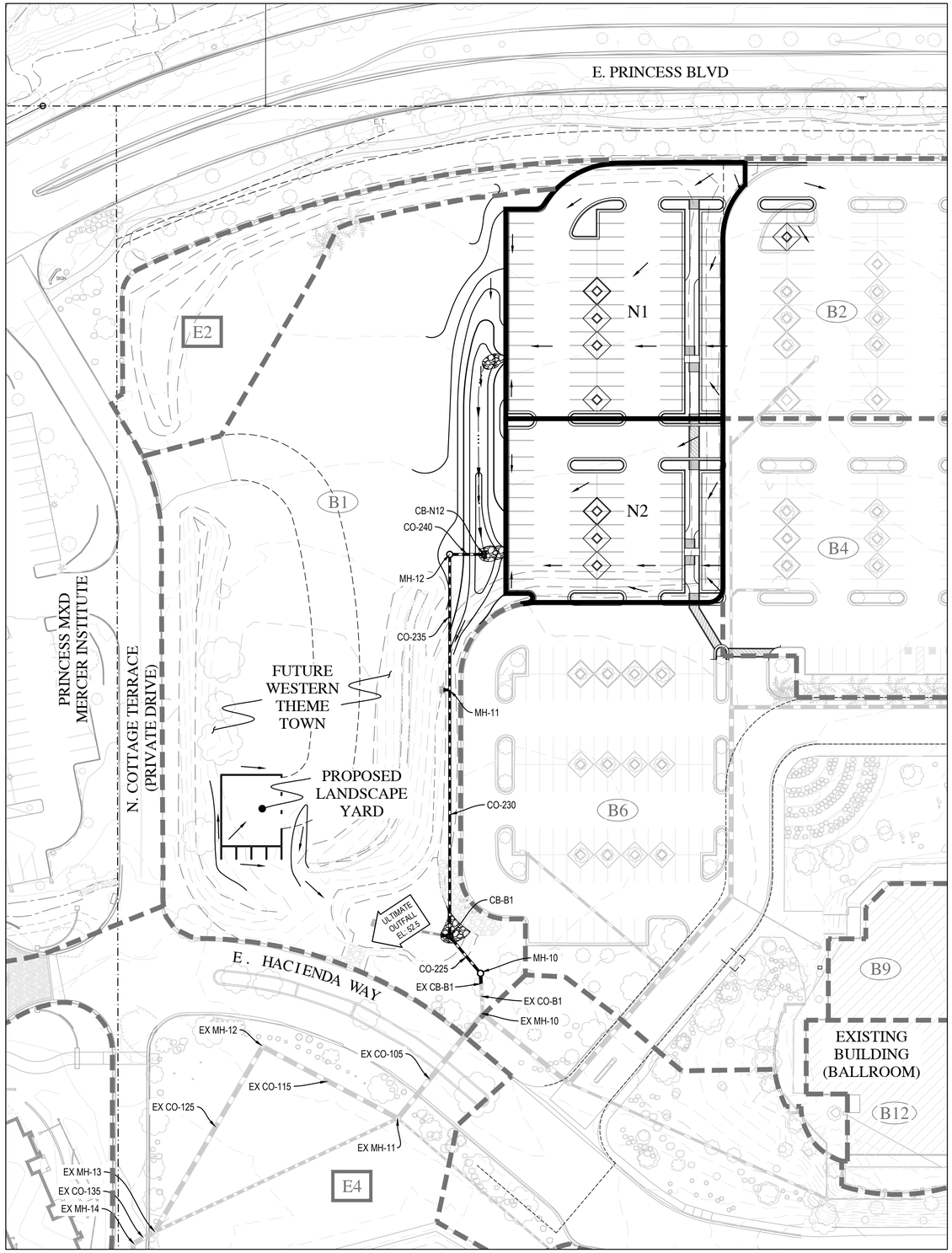
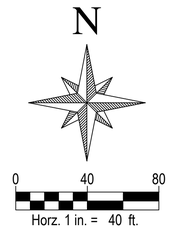
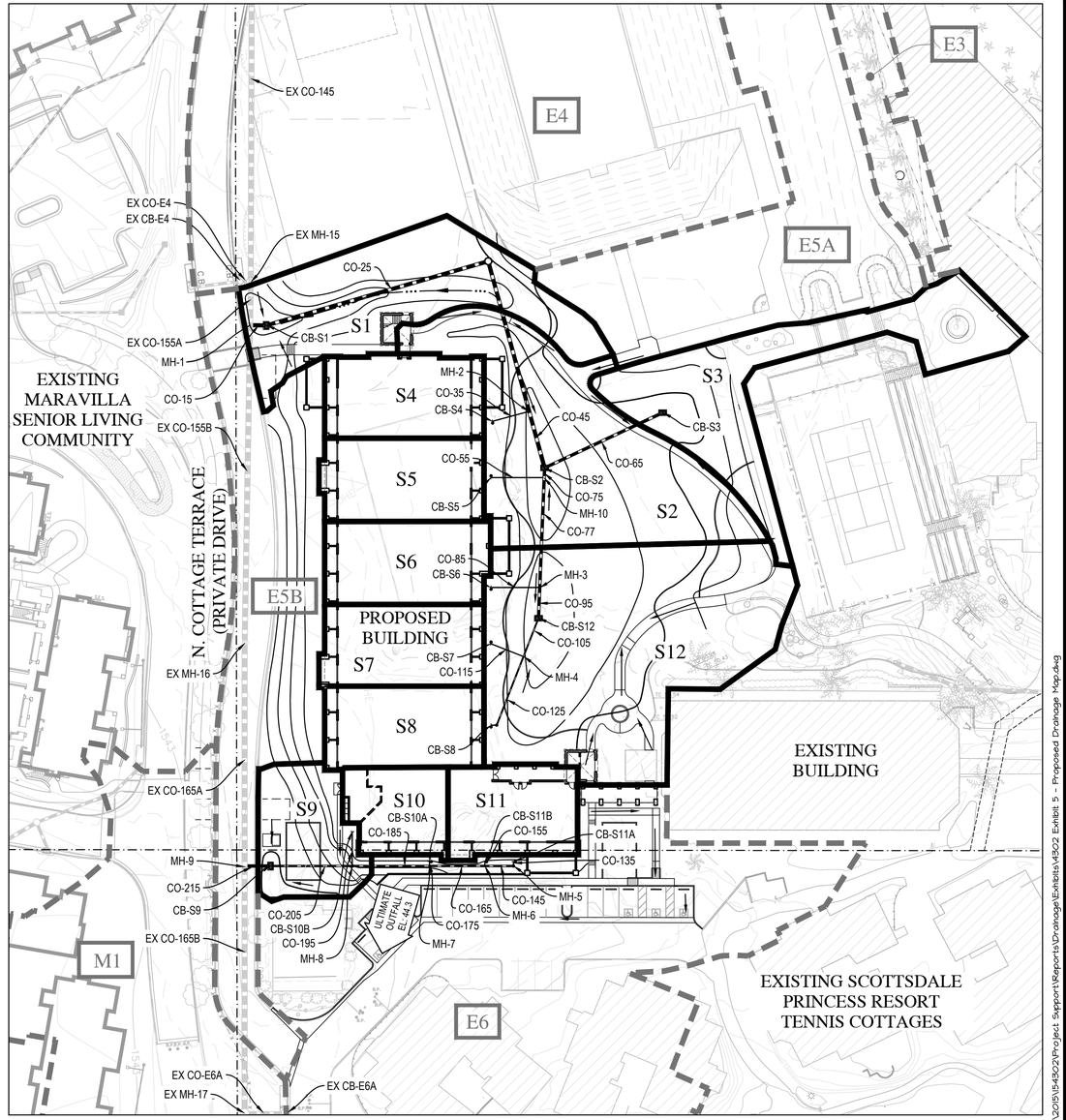
APPENDIX A - FOR REFERENCE ONLY

EXHIBIT 5B

PROPOSED DRAINAGE MAP 2







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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

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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:

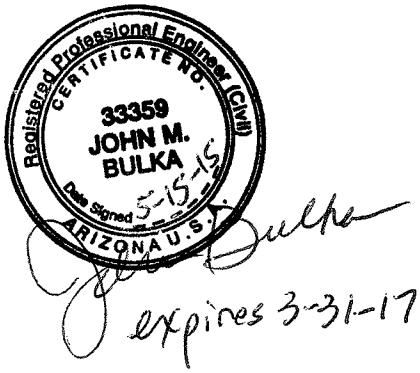
Strategic Hotels and Resorts
Mr. George Stowers
200 West Madison
Suite 1700
Chicago, Illinois 60606
Phone: (312) 658-6016

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
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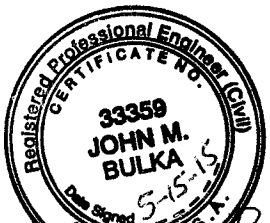
APPENDIX B - FOR REFERENCE ONLY

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

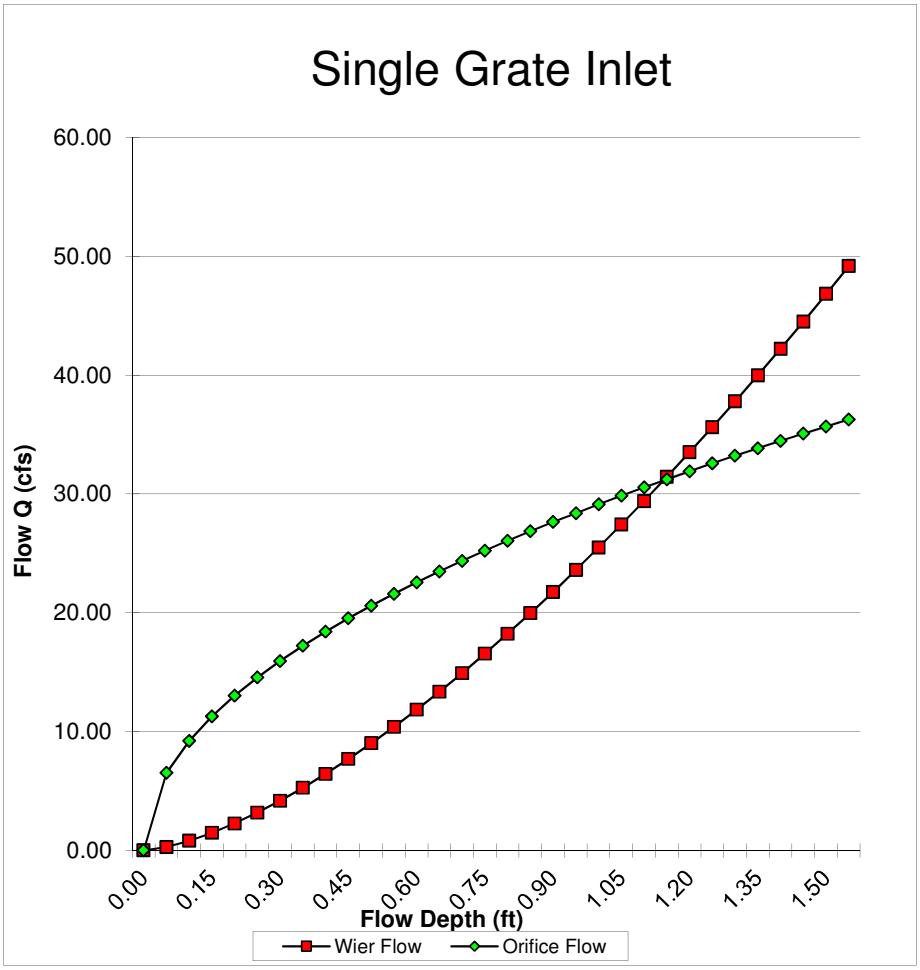
Weir EQ. $Q_i = C_w P d^{1.5}$ **Orifice EQ.** $Q_i = C_o A (2gd)^{0.5}$

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

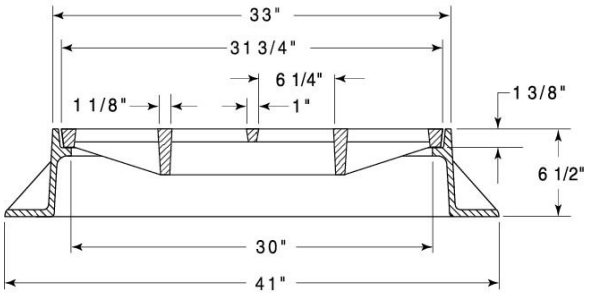
NEENAH FOUNDRY

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

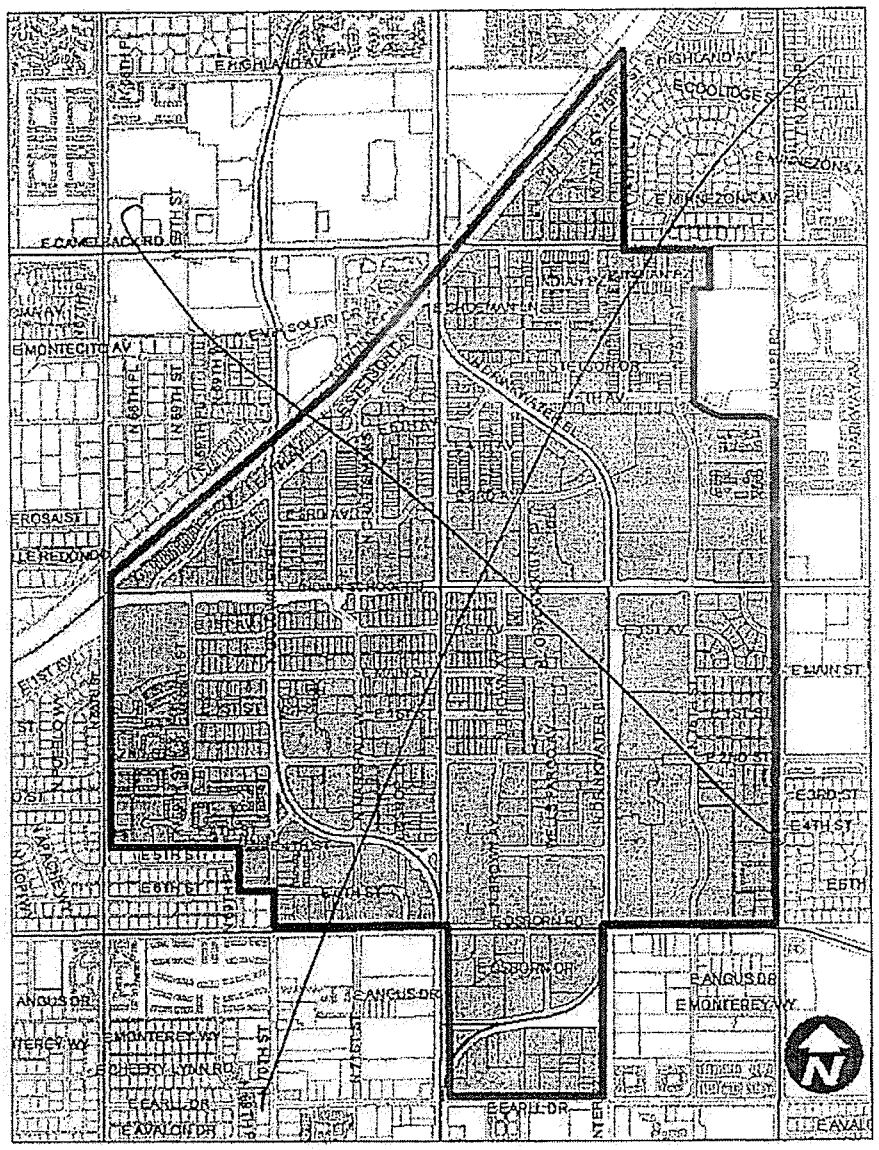
6332-07-7

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#_____

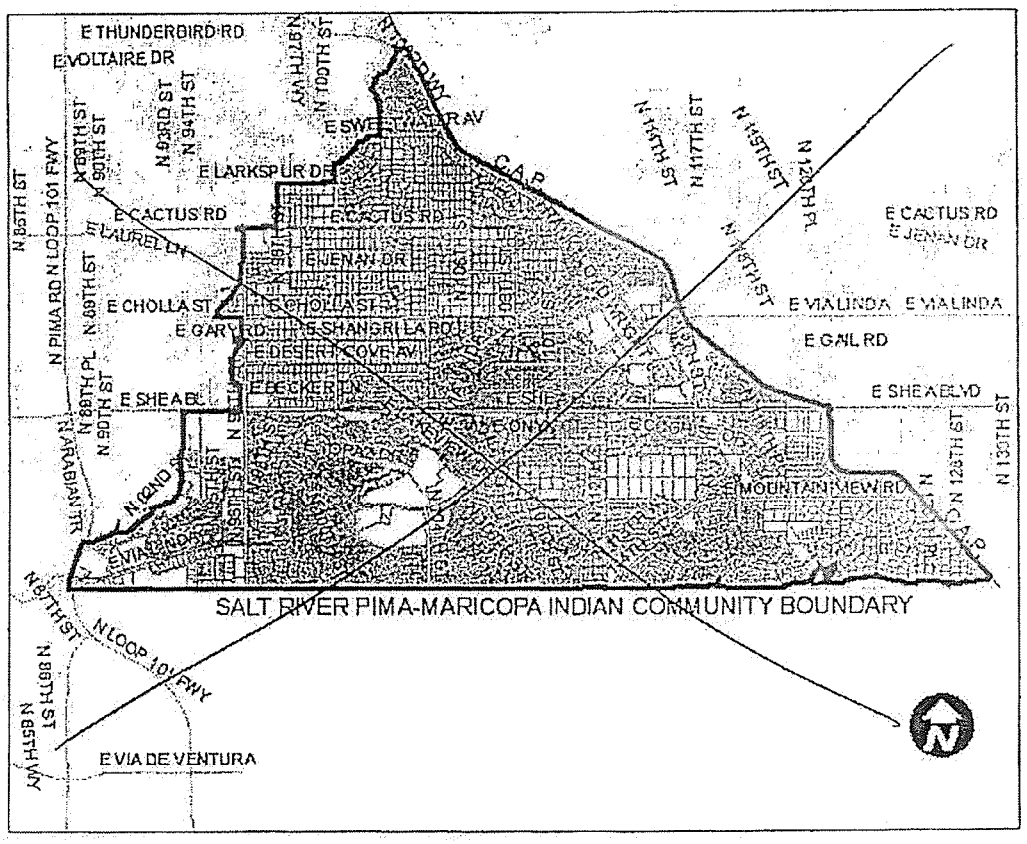


Figure 2. Watersheds Draining to Salt River Pima-Maricopa Indian Community

NOT APPLICABLE

Planning & Development Services Department
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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

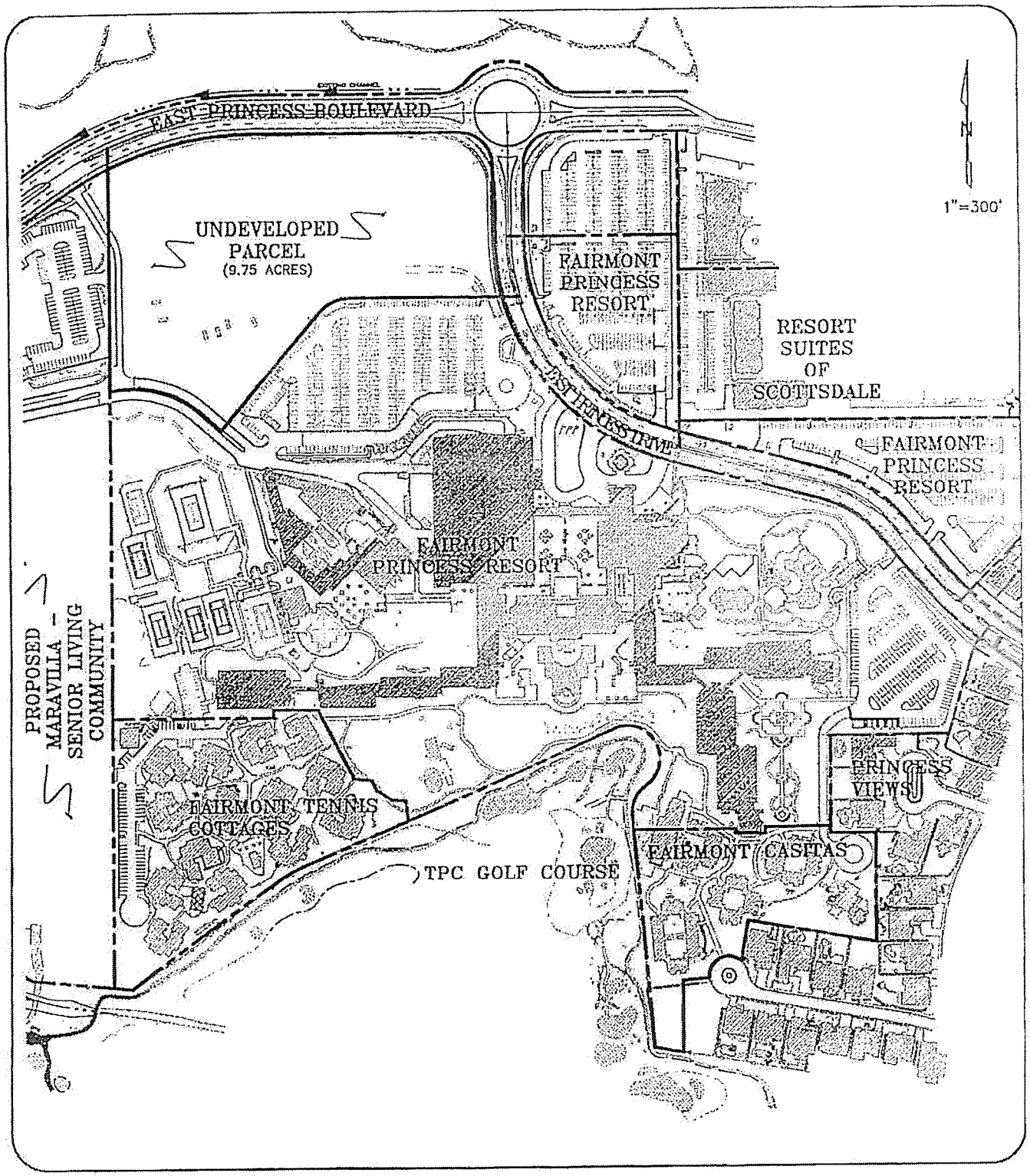


EXHIBIT 1

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

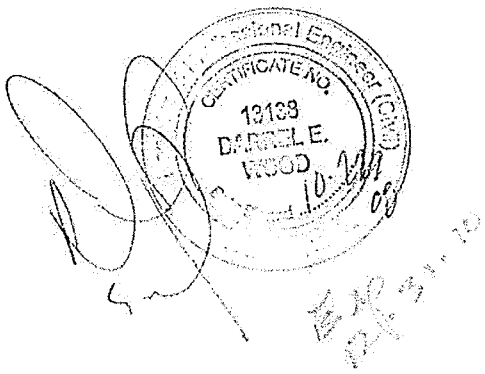
for Fairmont Scottsdale Princess Resort & Regional Flood Control

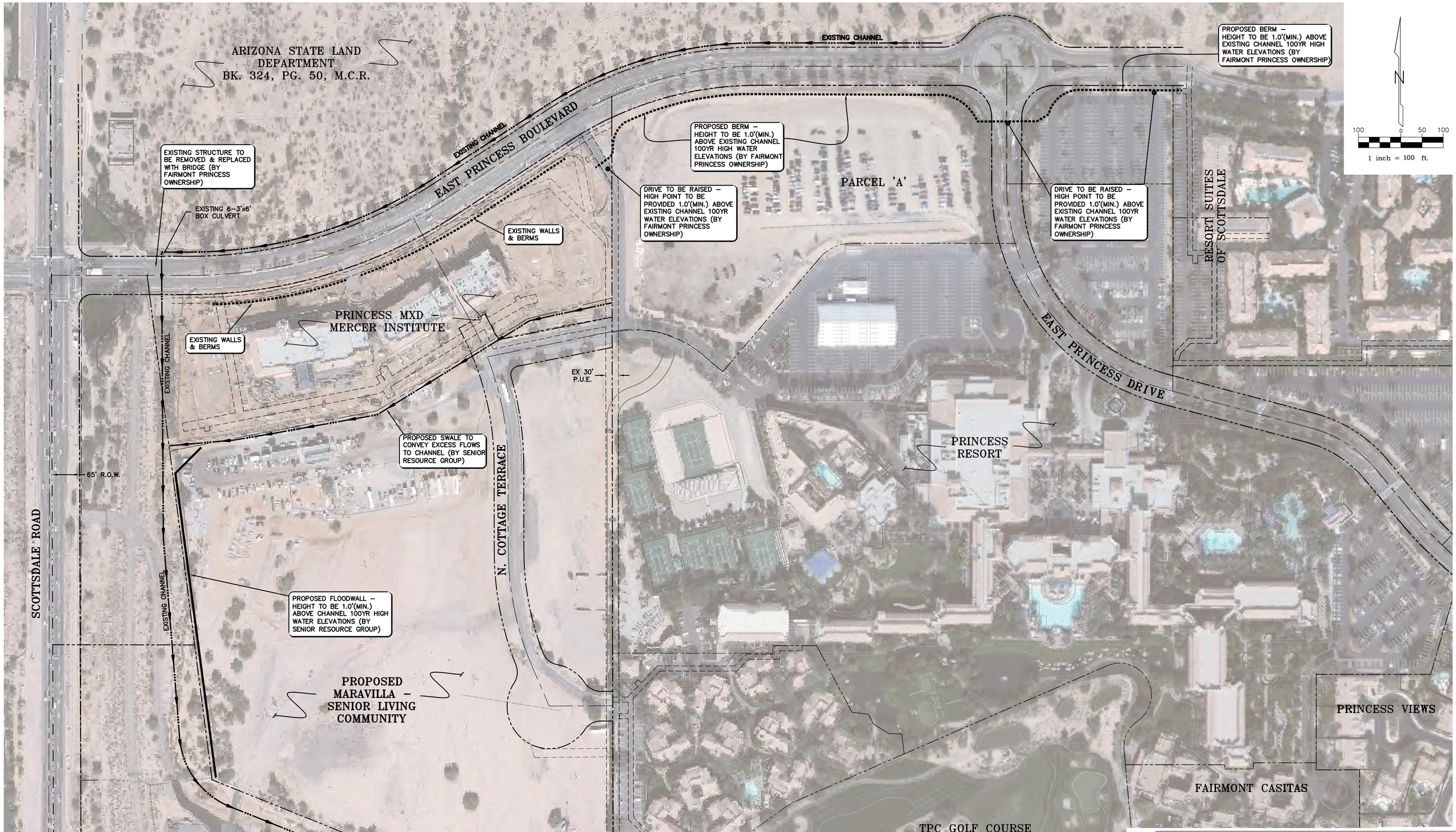
Engineering Preliminary Opinion of Probable Cost (*)

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

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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

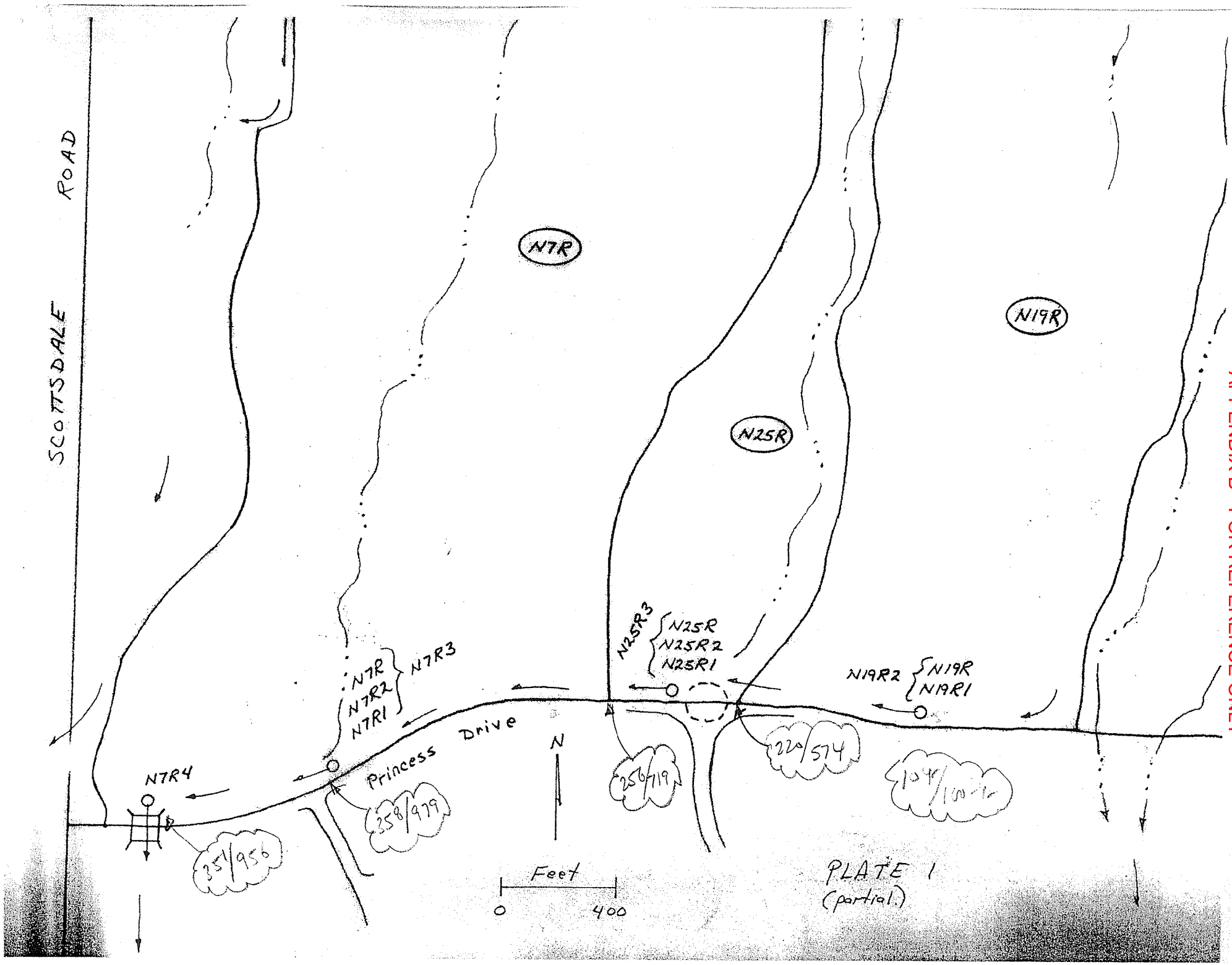
WOOD/PATEL
2220 S. Country Club Dr.
Mesa, AZ 85210
(480) 834-3300
www.woodpatel.com
PHOENIX - MESA - TUCSON

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

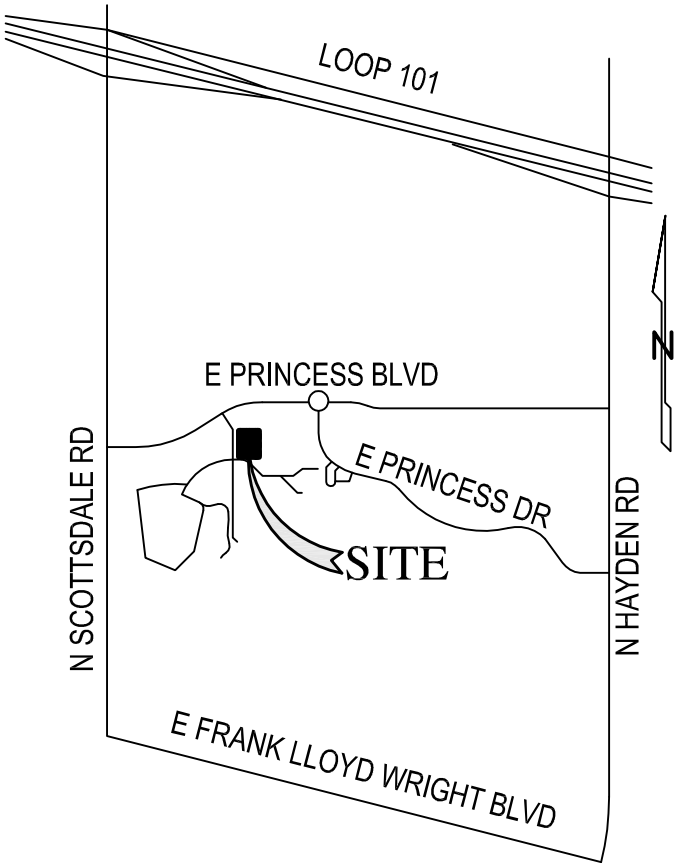
Note: See Plate 1 for HEC-1 concentration point locations.

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

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Suite 101
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www.woodpatel.com
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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

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www.woodpatel.com
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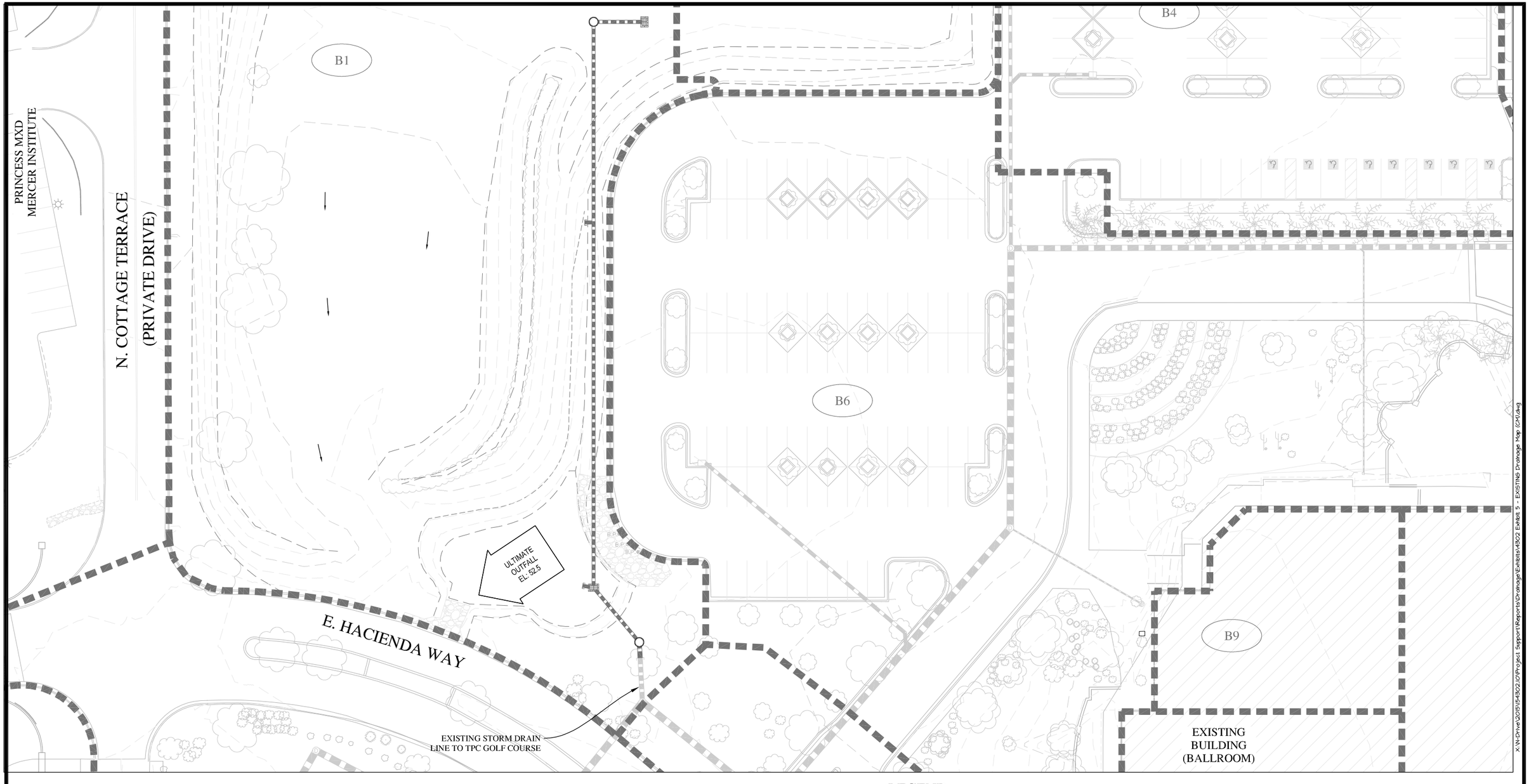
JOB# 154302.10

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.
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JOB# 154302.10

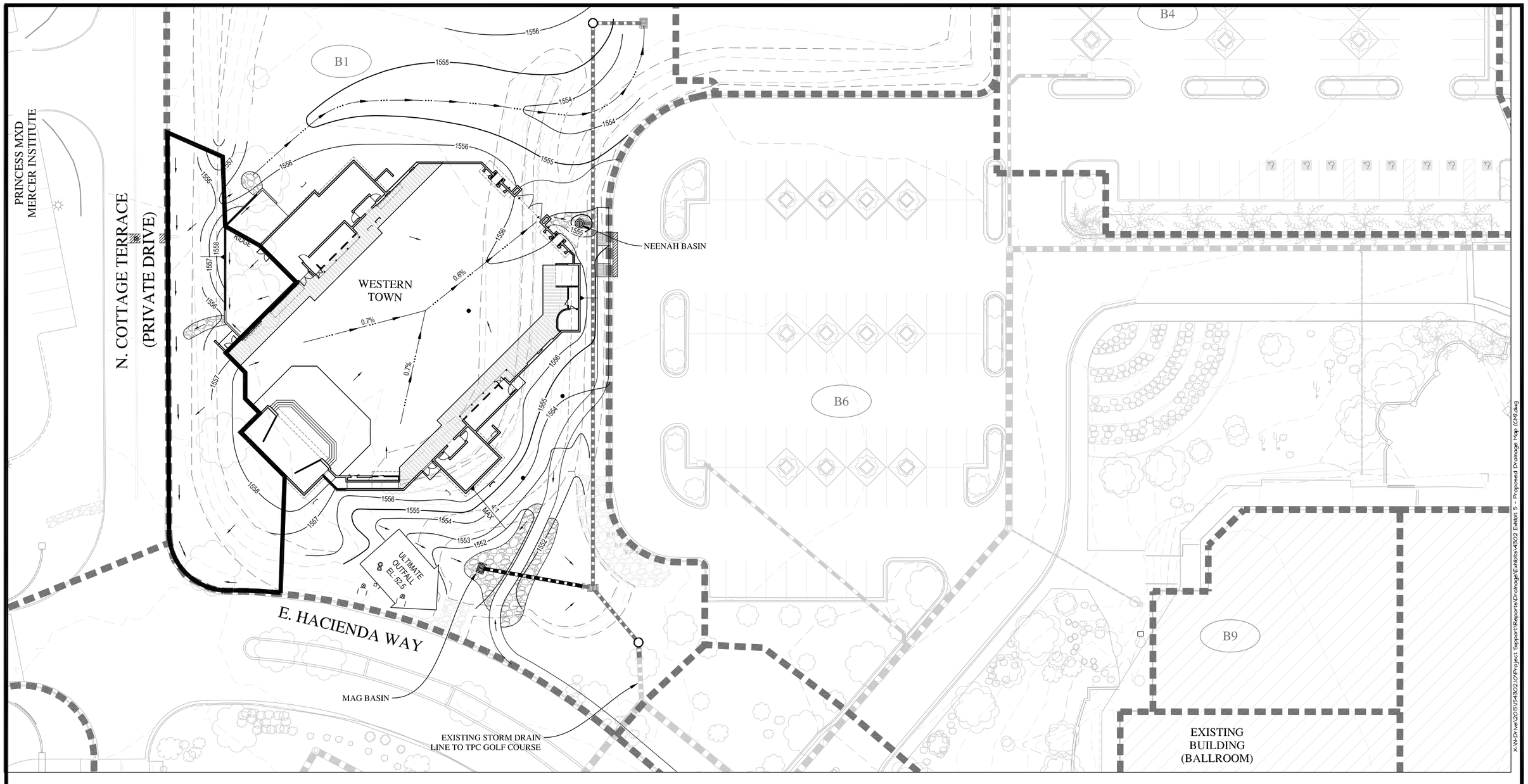
X:\N-Drive\2015\154302.10\Project Support\Reports\Drainage\Exhibits\43022 Exhibit 5 - EXISTING Drainage Map (CM).dwg

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

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Mesa, AZ 85210
(480) 834-3300
www.woodpatel.com
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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

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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 37% Desert 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 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 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 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 35% Desert 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 50% Desert 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 15% Desert 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 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

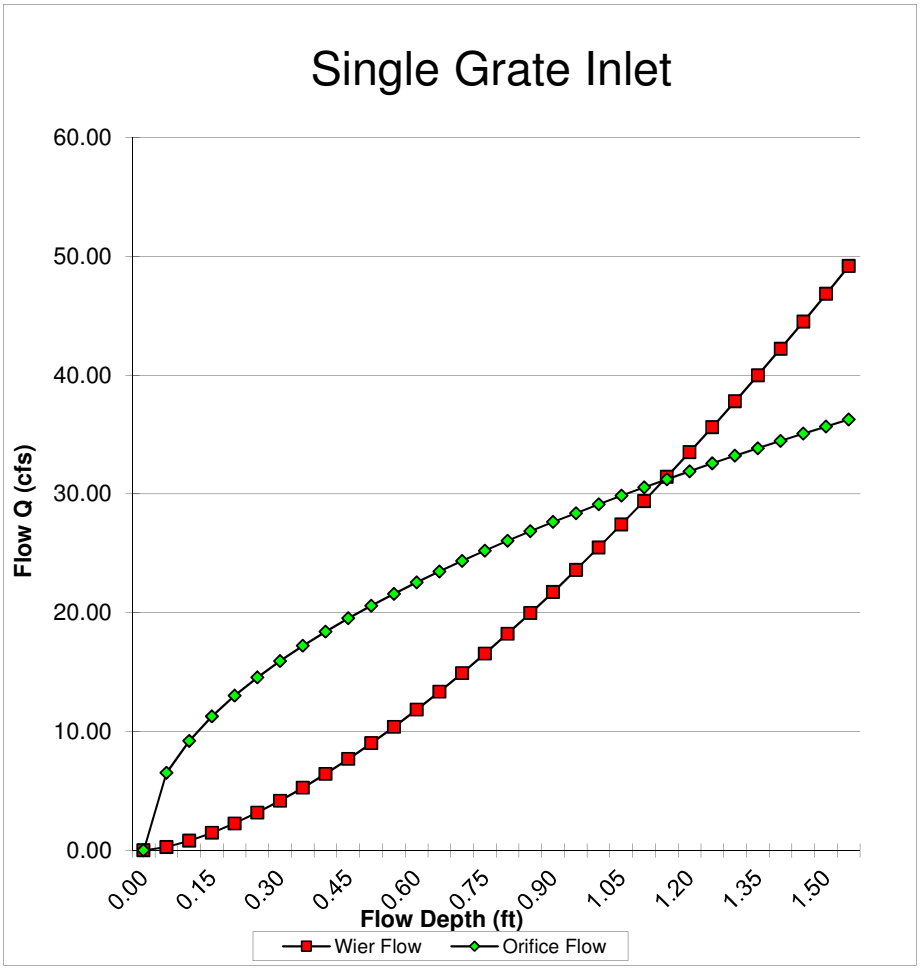
Weir EQ. $Q_i = C_w P d^{1.5}$ **Orifice EQ.** $Q_i = C_o A (2gd)^{0.5}$

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

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

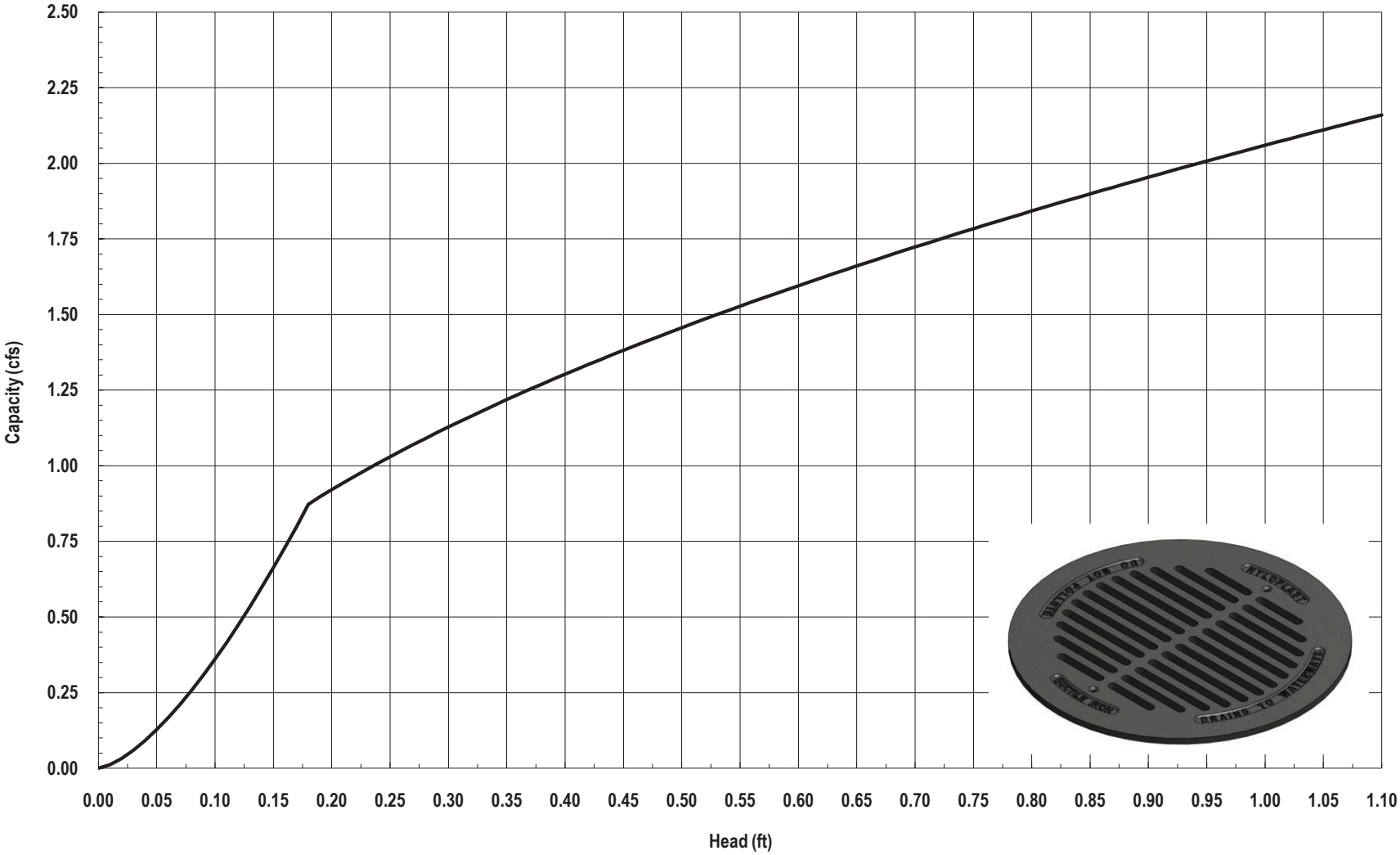
where,
P = Perimeter of Catchbasin minus
area of longitudinal & lateral bars (2 Short Sides, 1 Long Side)
A = Total area of grate minus
area of longitudinal & lateral bars

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

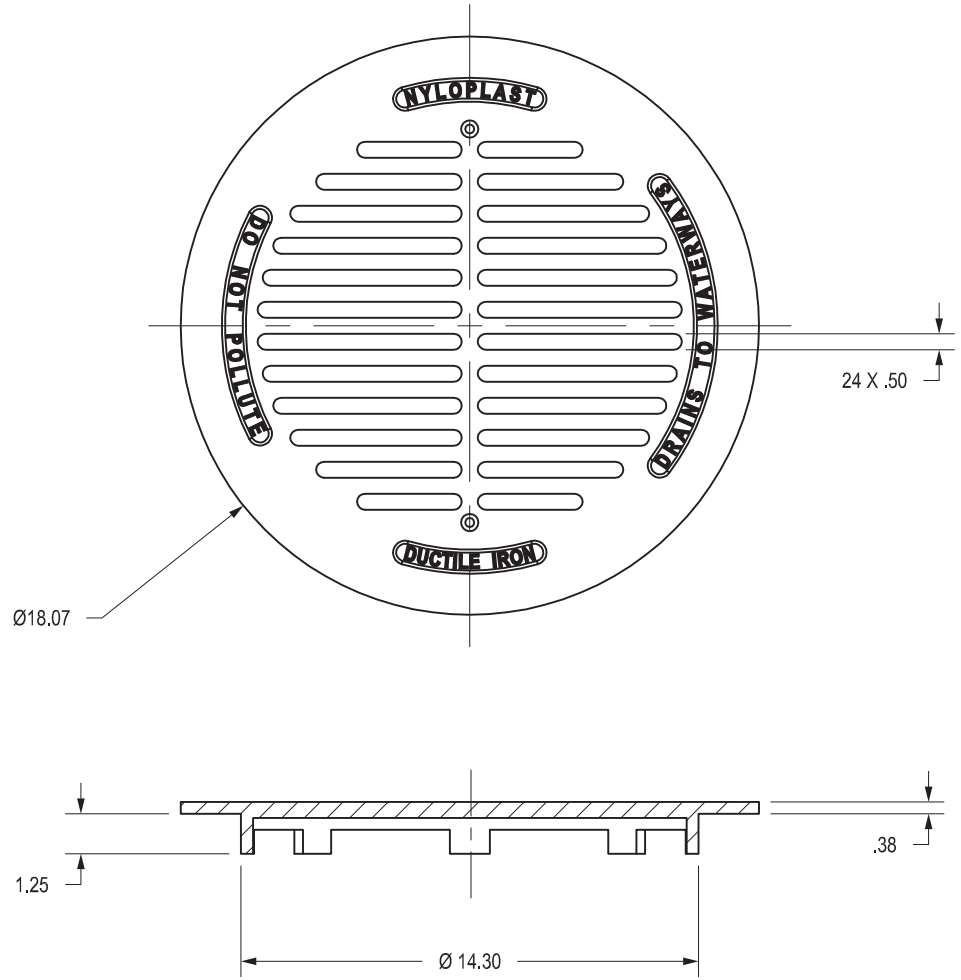


Nyloplast®
3130 Verona Avenue • Buford, GA 30518
(866) 888-8479 / (770) 932-2443 • Fax: (770) 932-2490

APPENDIX C - FOR REFERENCE ONLY

1501DI

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



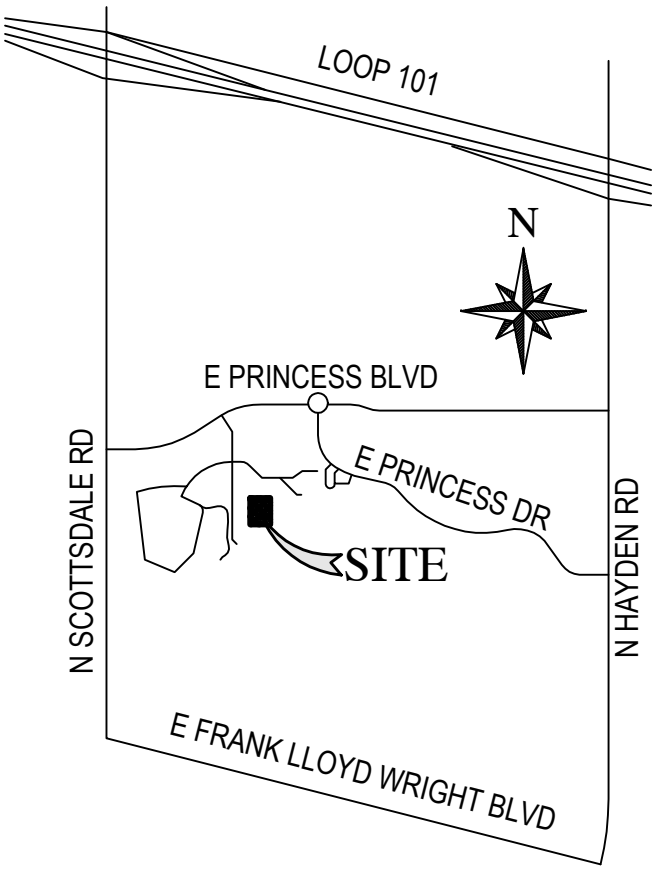
DIMENSIONS ARE FOR REFERENCE ONLY
ACTUAL DIMENSIONS MAY VARY
DIMENSIONS ARE IN INCHES
GRATE HAS LIGHT DUTY RATING
QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
SIZE OF OPENING MEETS REQUIREMENTS OF AMERICAN DISABILITY ACT AS STATED IN FEDERAL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

DRAWN BY CJA	MATERIAL	Nyloplast®	3130 VERONA AVE BUFORD, GA 30518 PHN (770) 932-2443 FAX (770) 932-2490 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

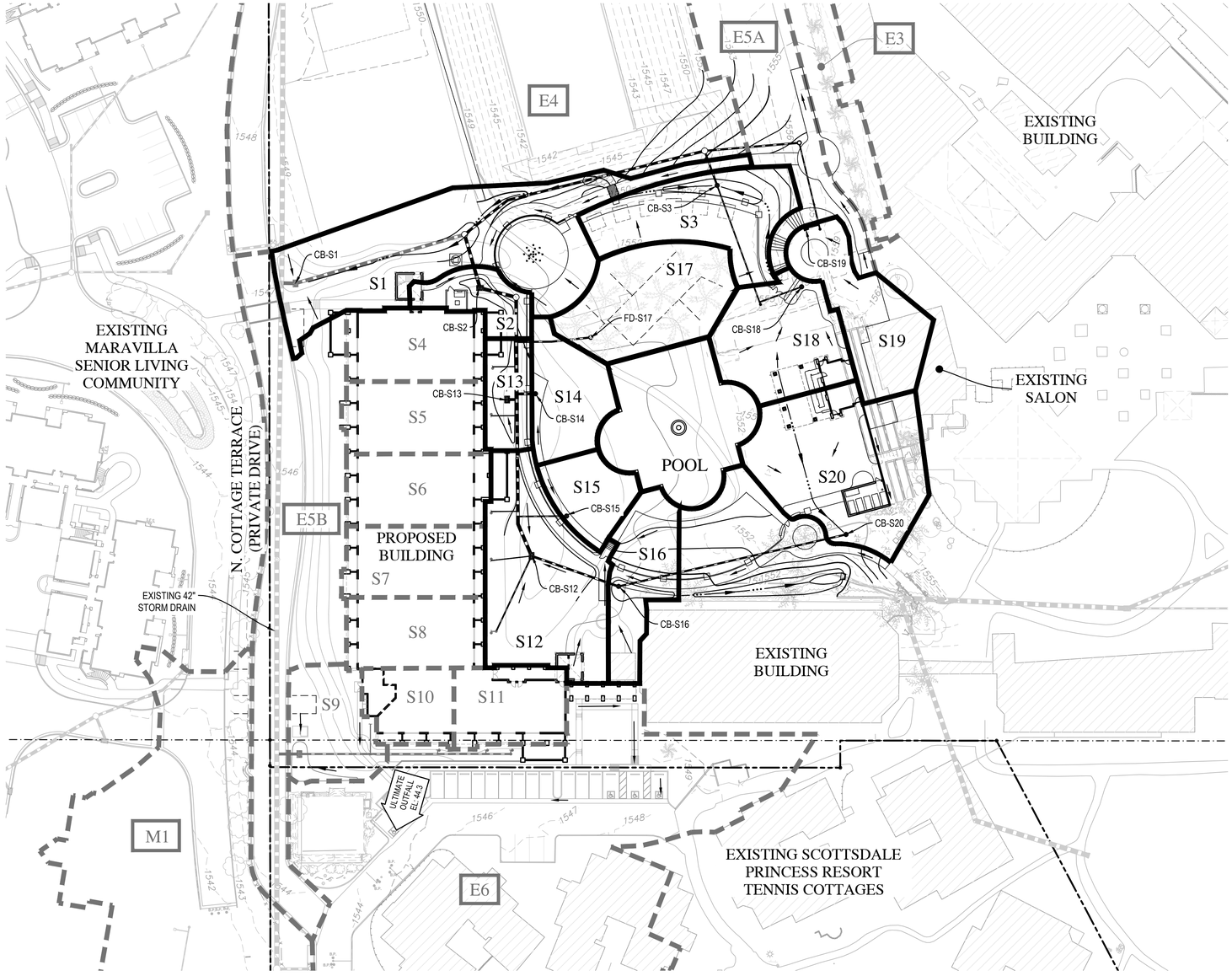
WOOD/PATEL
2220 S. Country Club Dr.
Suite 101
Mesa, AZ 85210
(480) 834-3300
www.woodpatel.com
PHOENIX • MESA • TUCSON

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

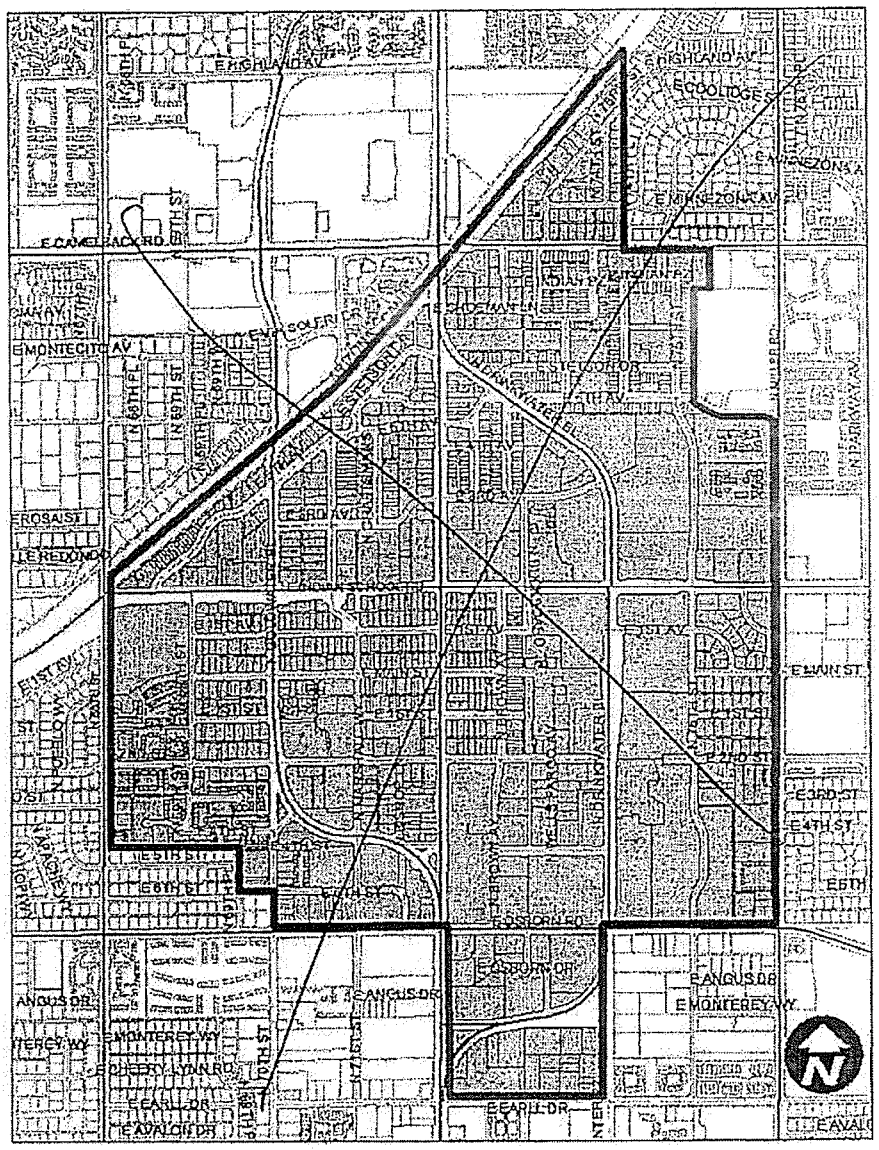
6332-07-7

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#_____

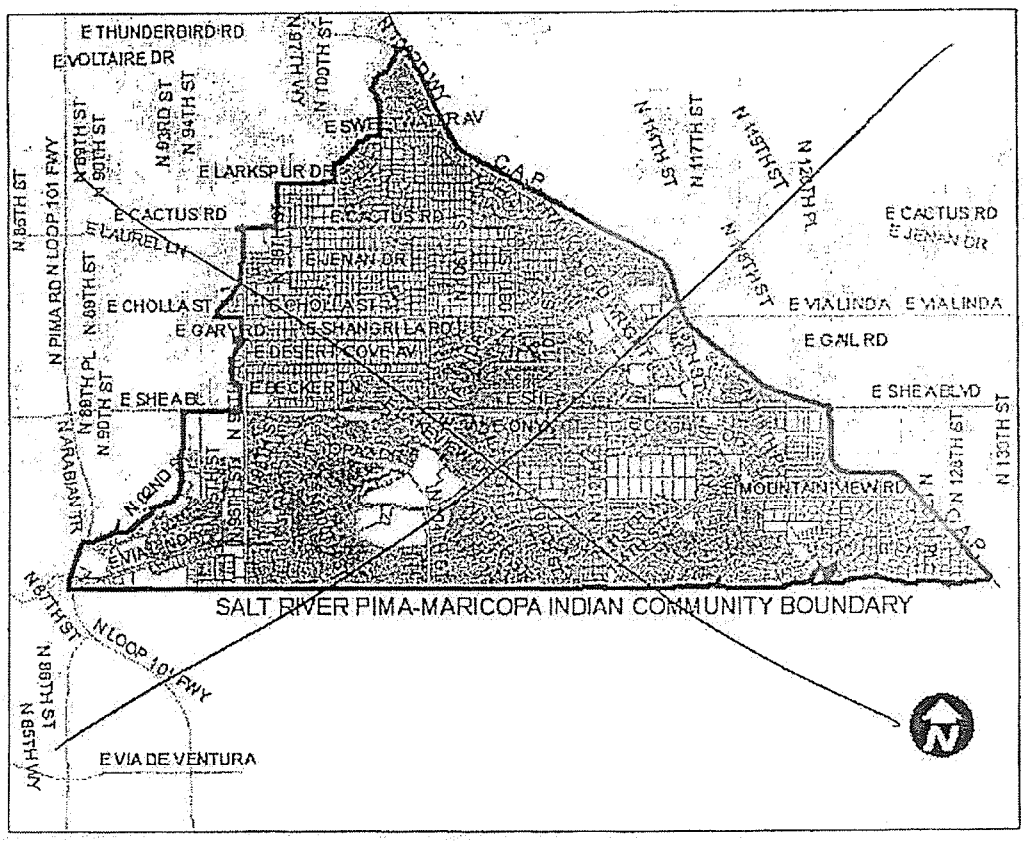


Figure 2. Watersheds Draining to Salt River Pima-Maricopa Indian Community

NOT APPLICABLE

Planning & Development Services Department

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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

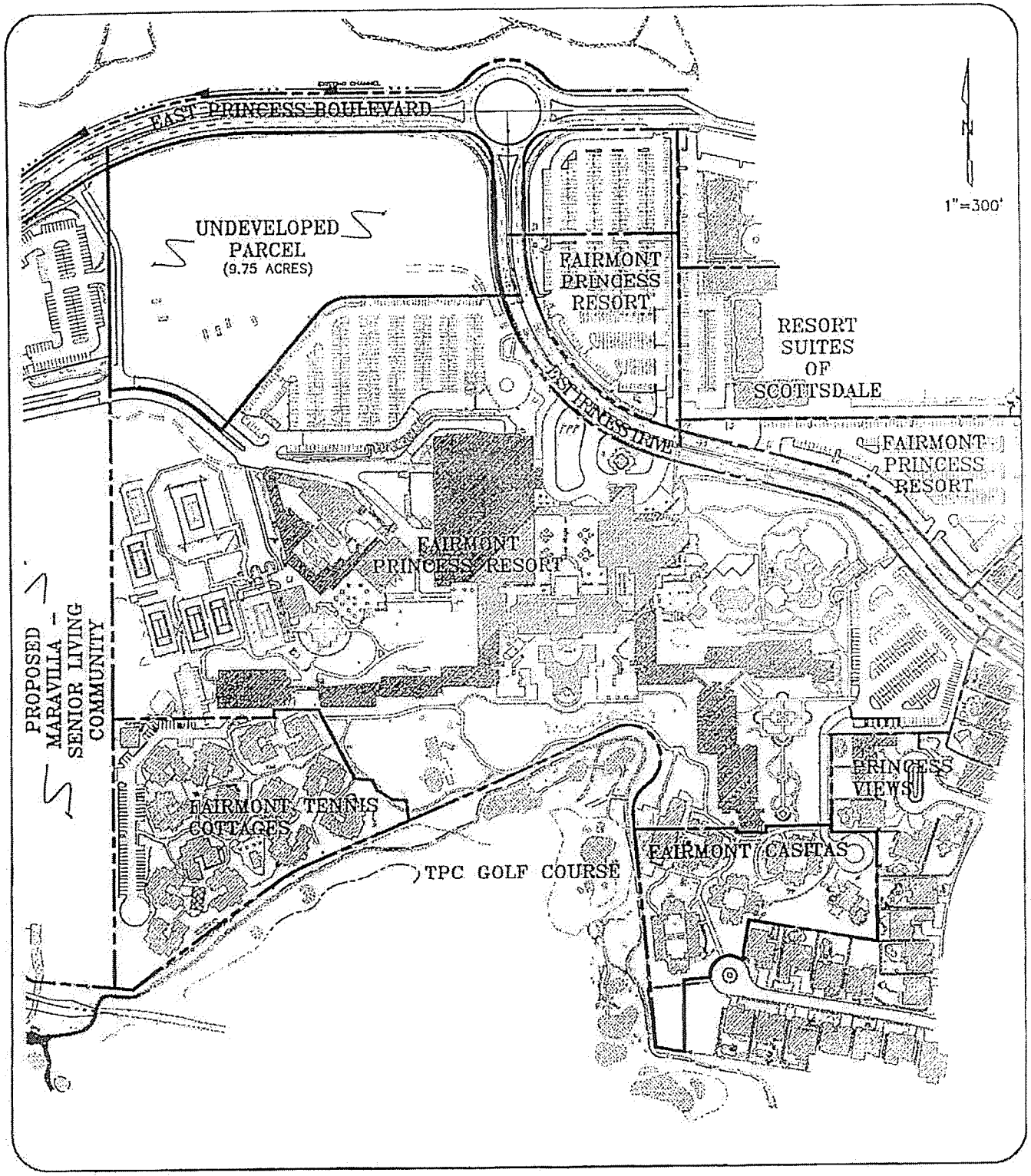


EXHIBIT 1

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

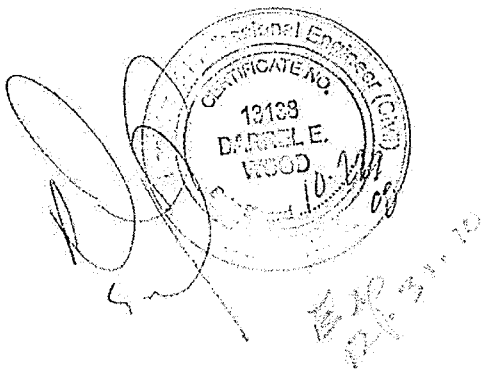
Attachment to Stormwater Storage Waiver Request
for Fairmont Scottsdale Princess Resort & Regional Flood Control

Engineering Preliminary Opinion of Probable Cost (*)

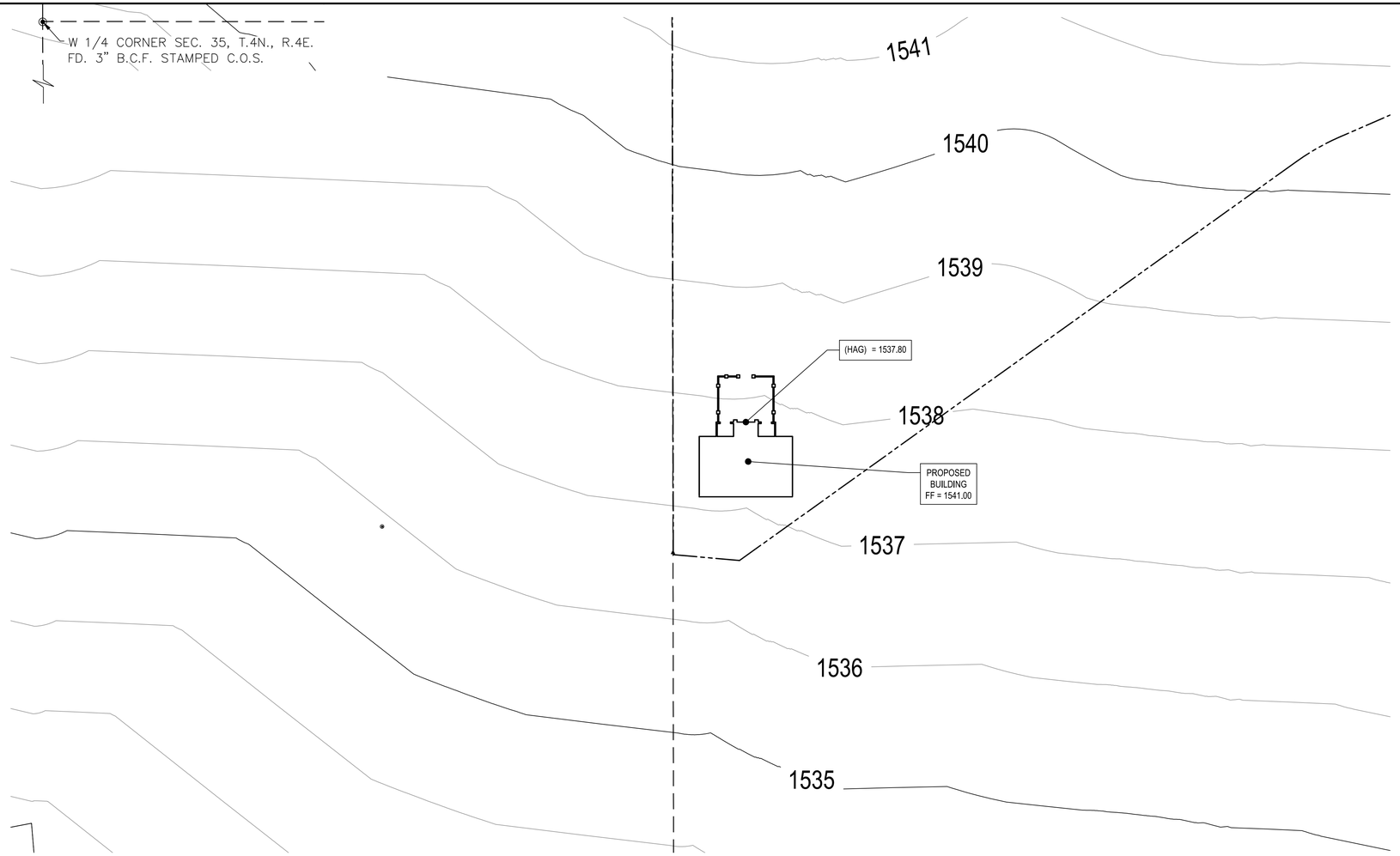
Prepared Bridge Structure at Princess Drive, just east of Scottsdale Road serving unnamed wash.

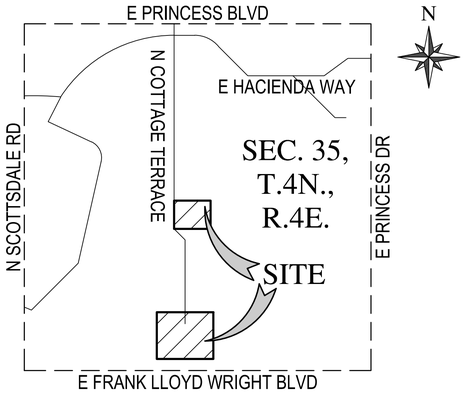
Estimated Bridge Surface = 8,100 square feet x $130/s.f. $1,053,000

(*) 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

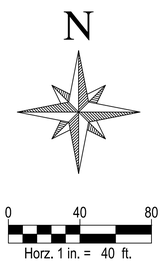
THE WORK PRODUCT PRESENTED IS THE RESULT OF OBTAINING BEST AVAILABLE HISTORICAL ELEVATION INFORMATION, AND EMPLOYING PROFESSIONAL JUDGMENT TO BEST PRESENT IN SITE GROUND ELEVATIONS. ELEVATIONS ARE BASED ON 1964 CURRYS CORNER NGVD29 DATUM CONVERTED TO NAVD88 USING MARICOPA LAND SURVEY CONVERSION OF 1.749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

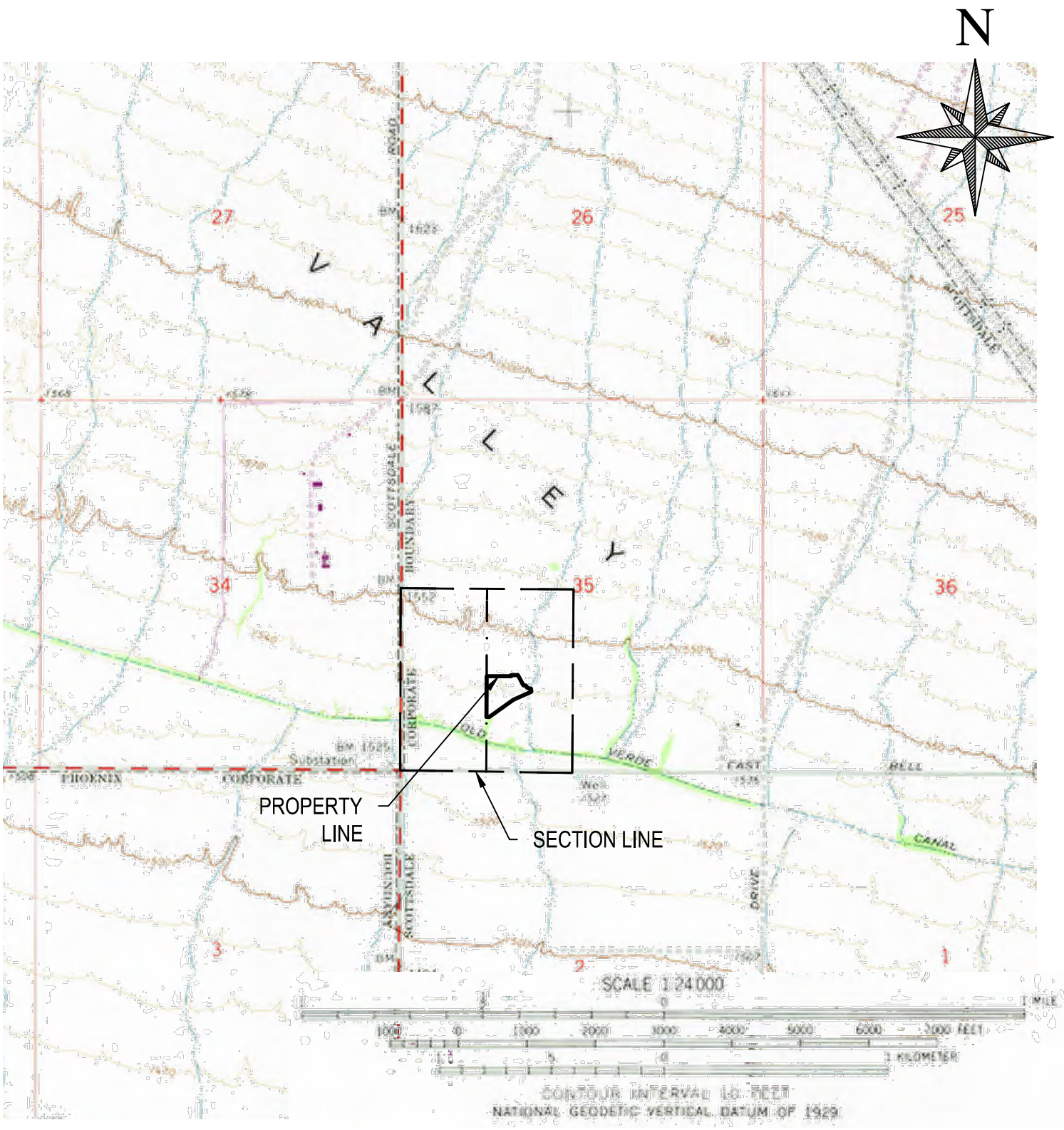
REGIONAL CONTOUR MAP / OPINION OF EXISTING HIGHEST NATURAL GRADE ELEVATION

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

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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

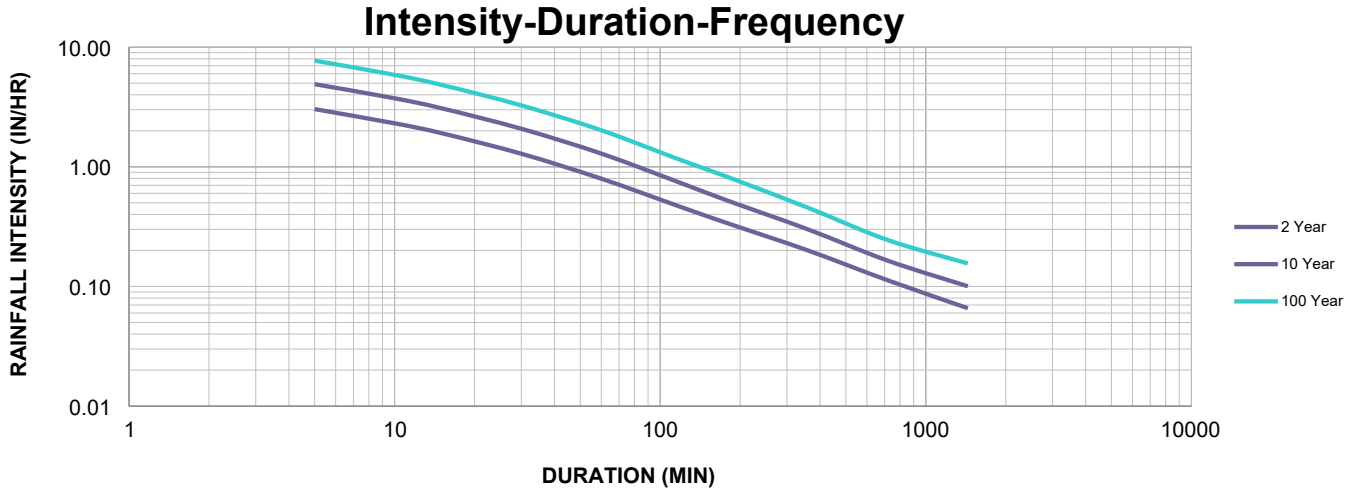


TABLE 1 – EXISTING WEIGHTED C VALUES

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

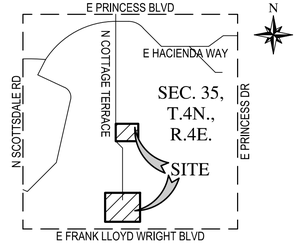
BENCHMARK

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

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602.335.8500
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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
10/11/22
ARIZONA
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

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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

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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

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PRIVADO WELCOME BUILDING AND PARKING MODIFICATIONS

IMPROVEMENT PLANS

SCOTTSDALE, ARIZONA
INDEX MAP

REV	DESCRIPTION	DATE

36382
DARIN L.
MOORE
10/12/22
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

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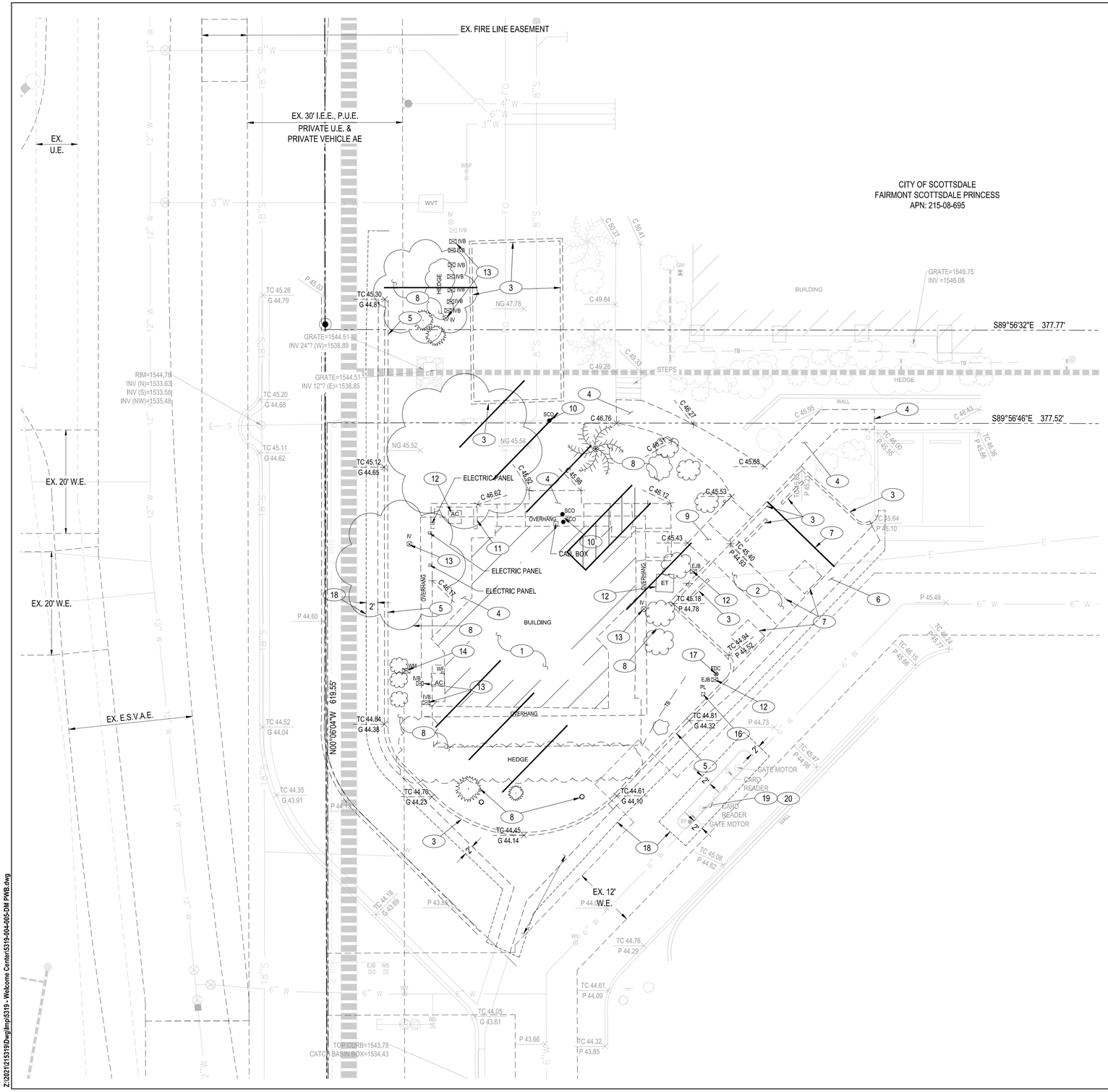

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Horz. 1 in. = 10 ft.

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.

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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

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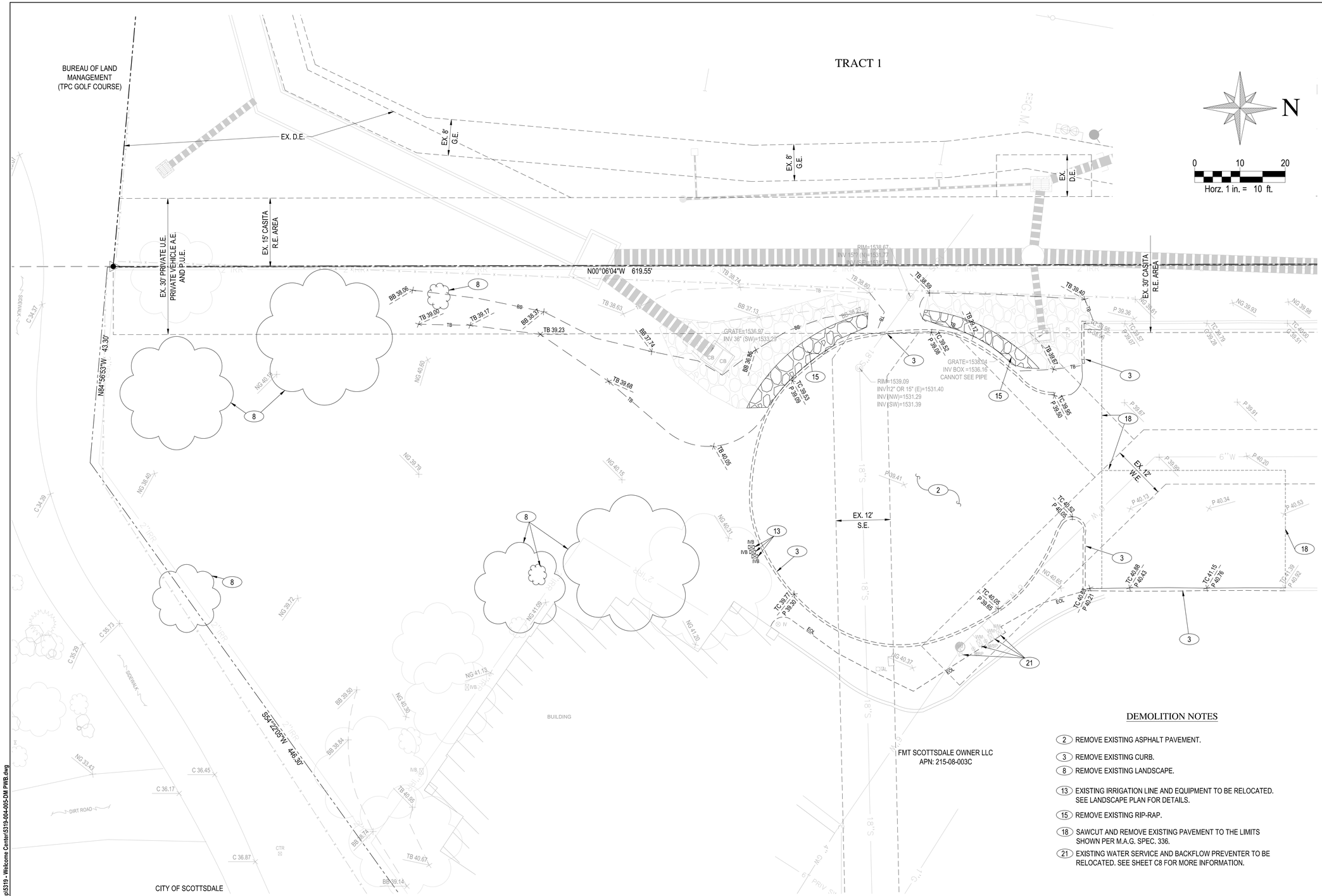

DEMOLITION NOTES

(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.

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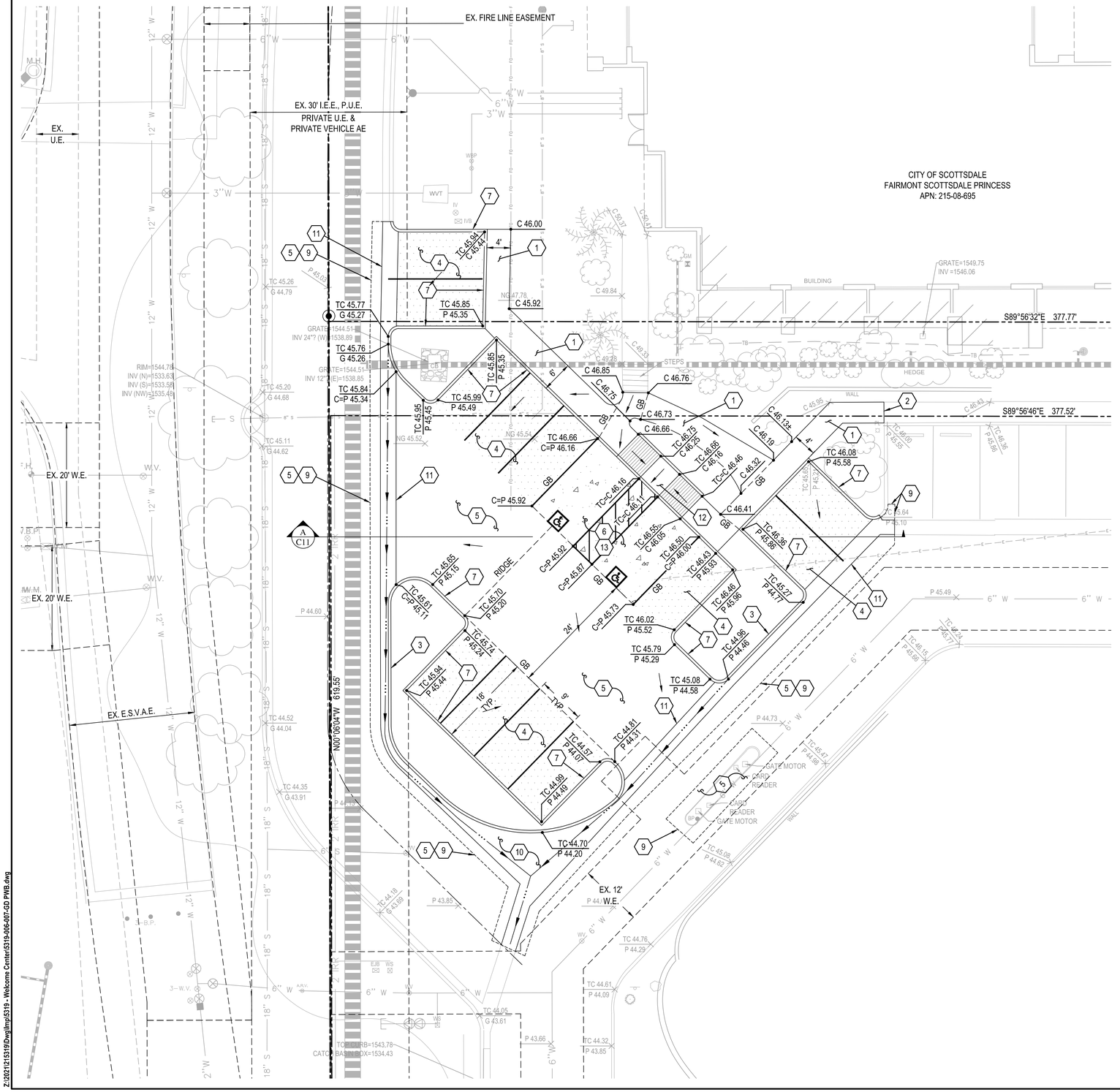

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Horz. 1 in. = 10 ft.

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.

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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

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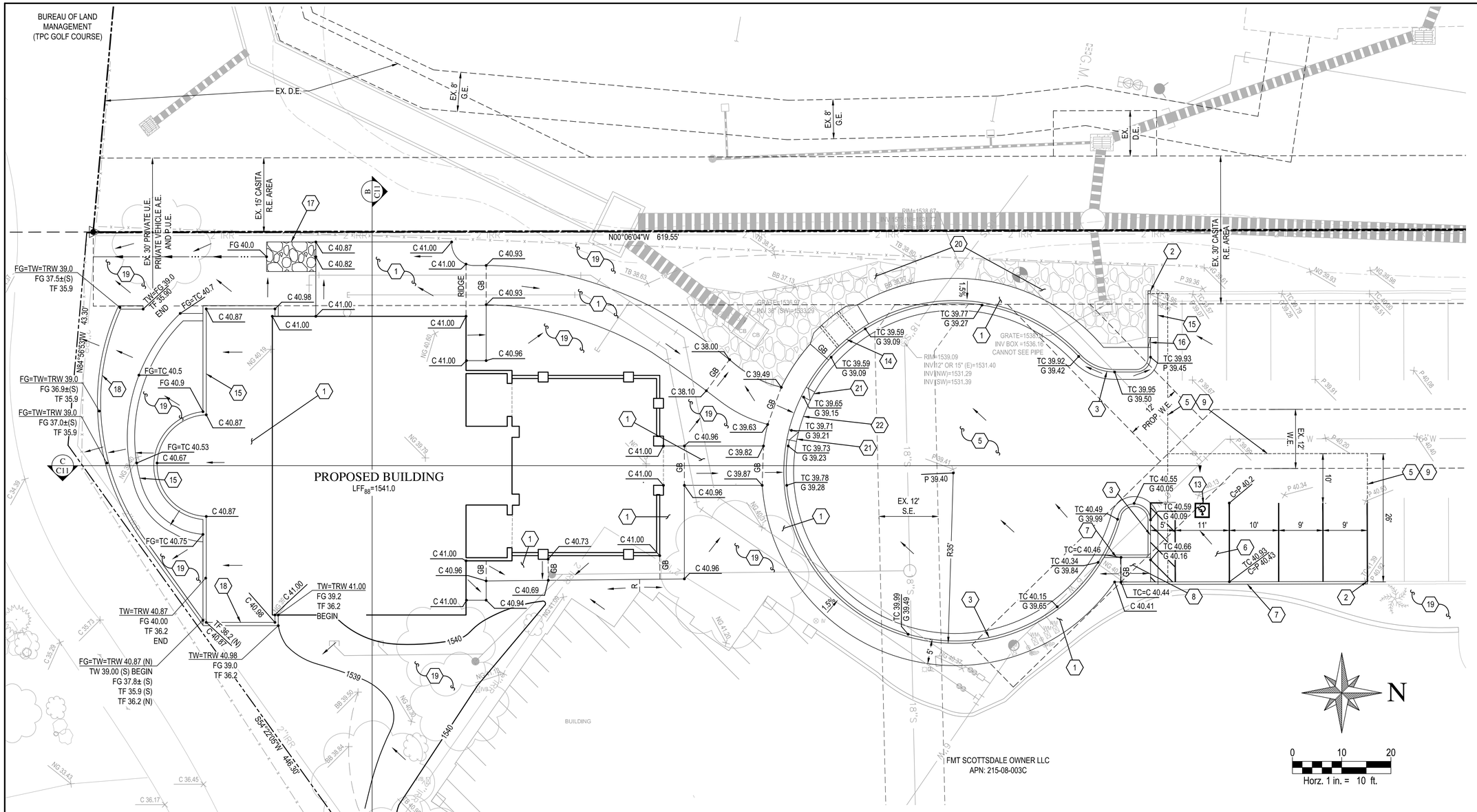

NOTE:
PROVIDE POSITIVE DRAINAGE AWAY FROM ALL STRUCTURES.

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

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Land Survey
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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

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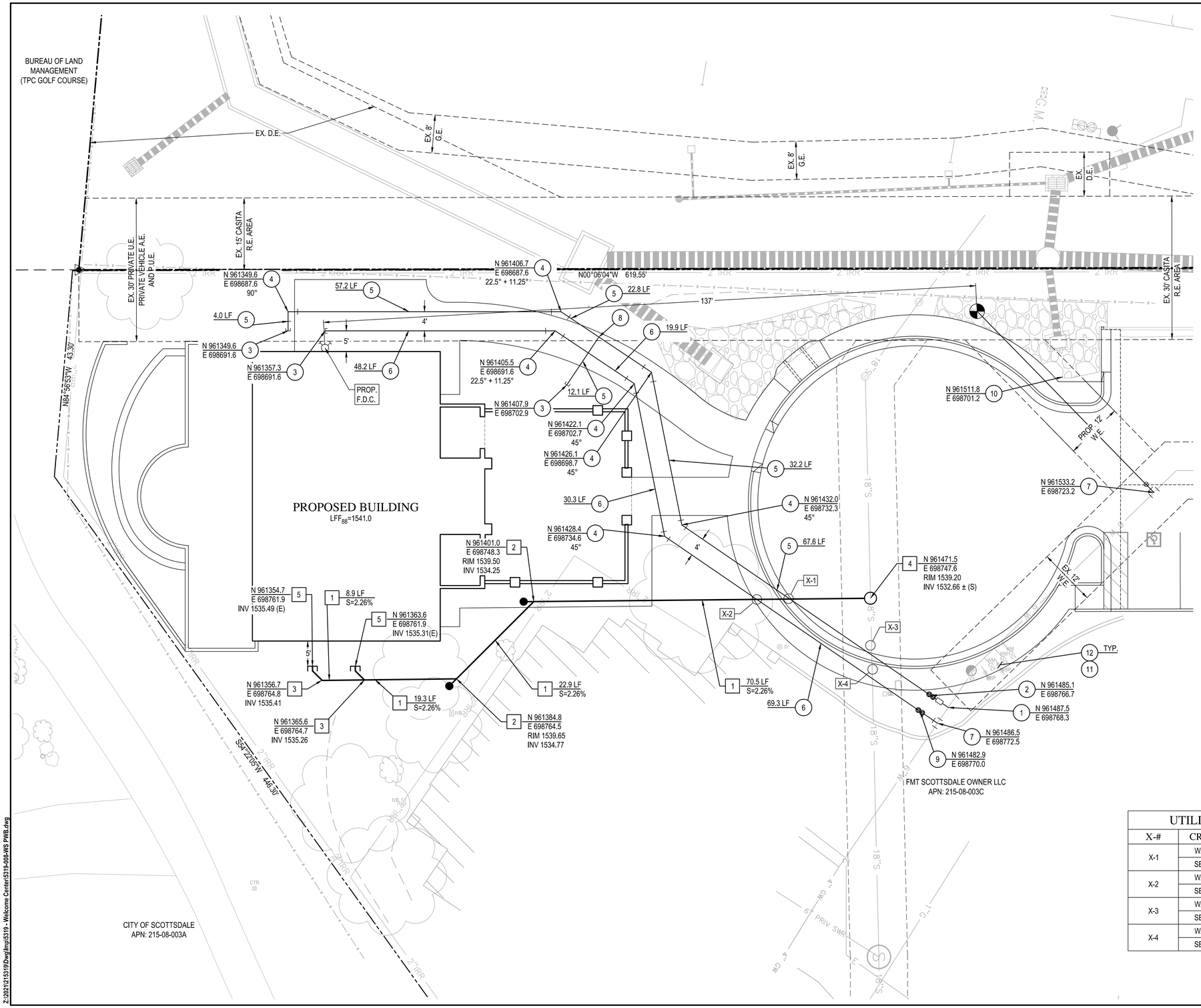

N

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

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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

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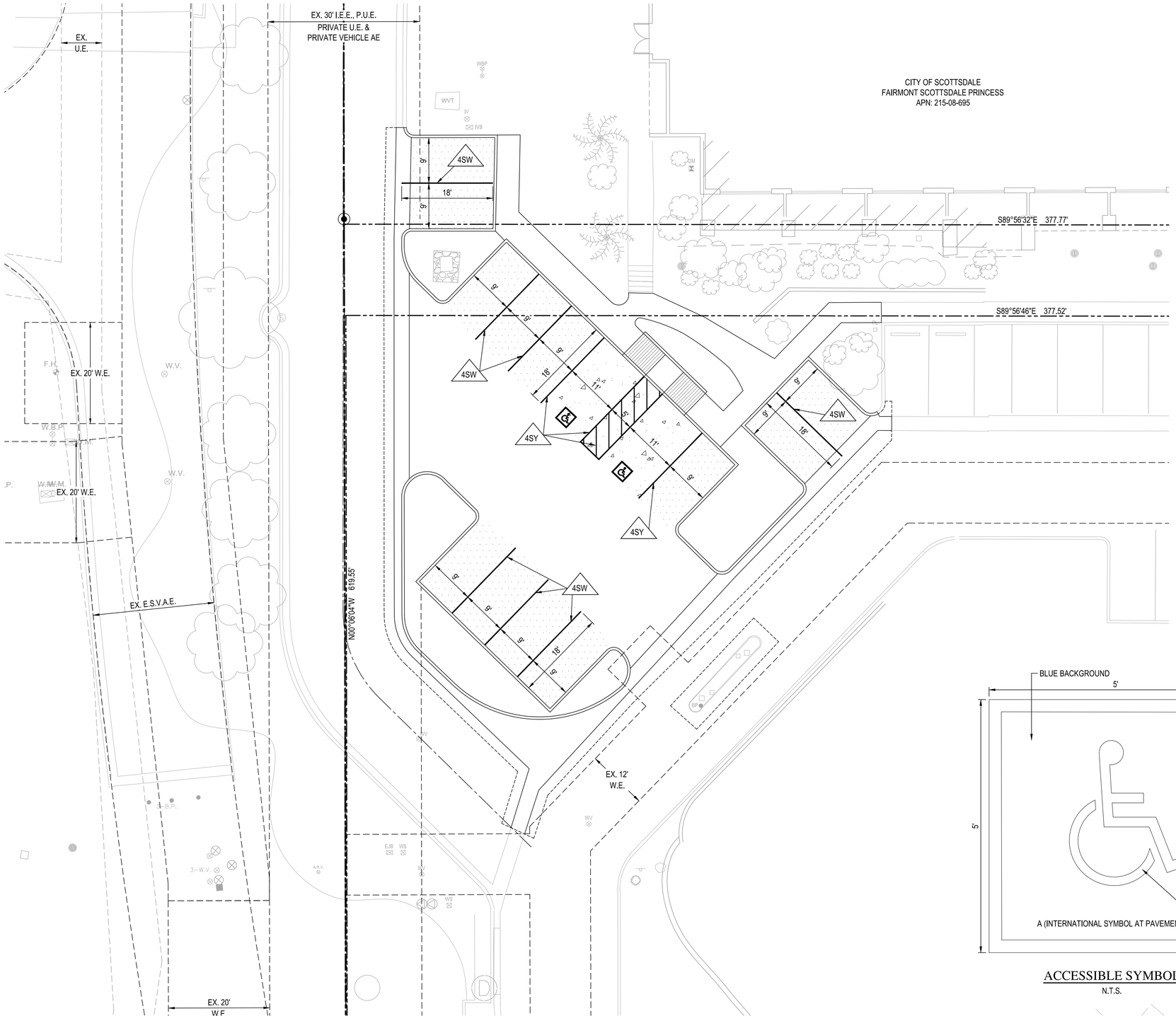

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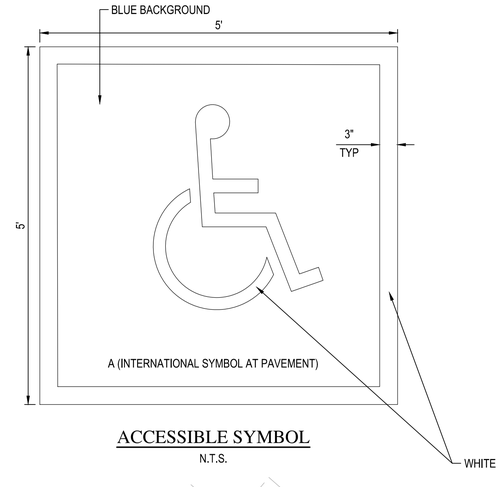
0 10 20

Horz. 1 in. = 10 ft.

STRIPING LEGEND

4SY — 4" SOLID YELLOW LINE

4SW — 4" SOLID WHITE LINE



ACCESSIBLE SYMBOL

N.T.S.

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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

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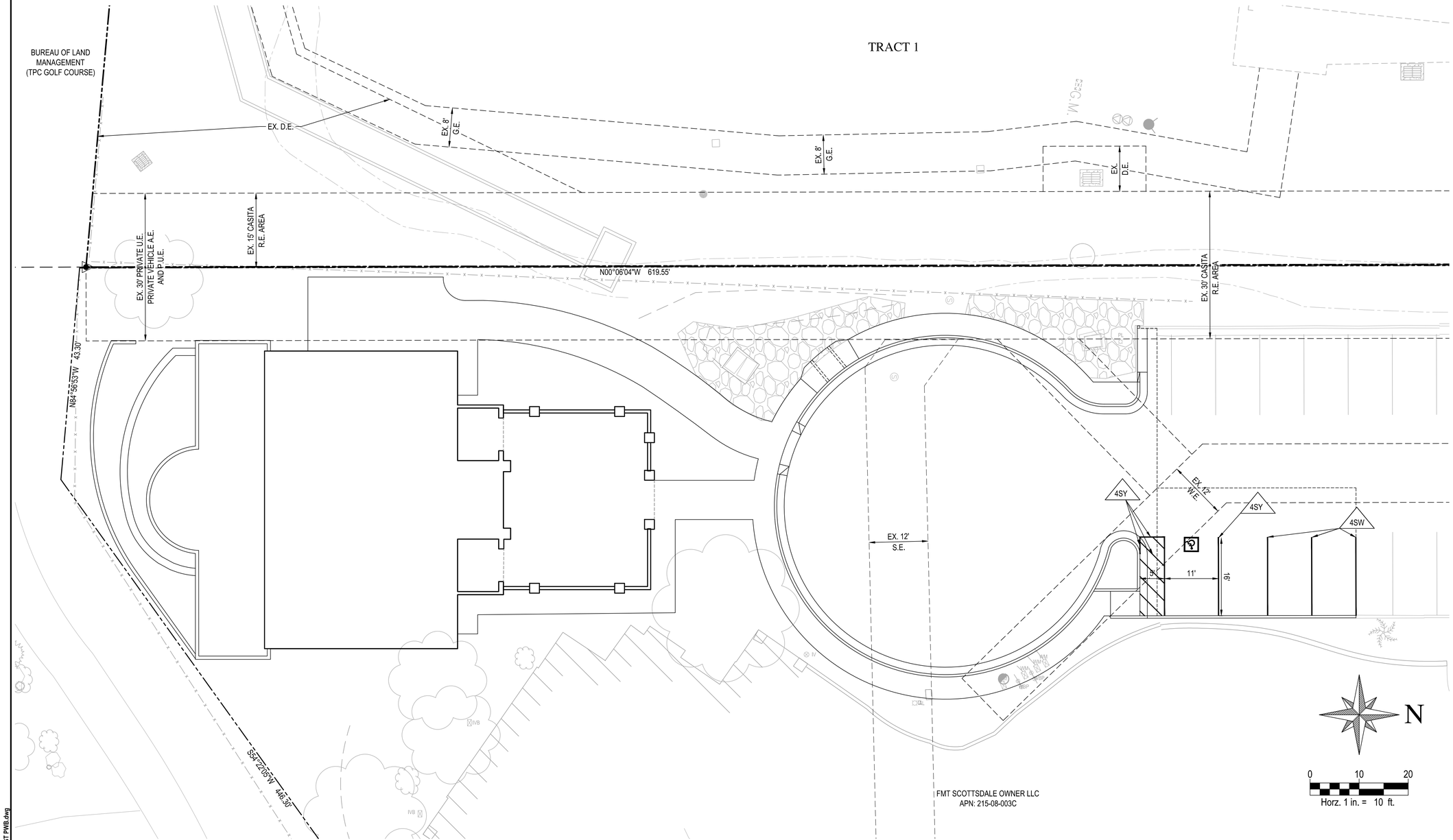

STRIPING LEGEND

4SY — 4" SOLID YELLOW LINE

4SW — 4" SOLID WHITE LINE

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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

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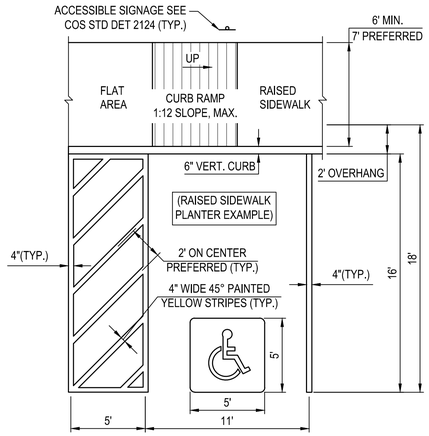
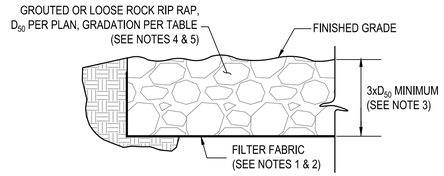


PREFERRED ACCESSIBLE PARKING SPACES

N.T.S.

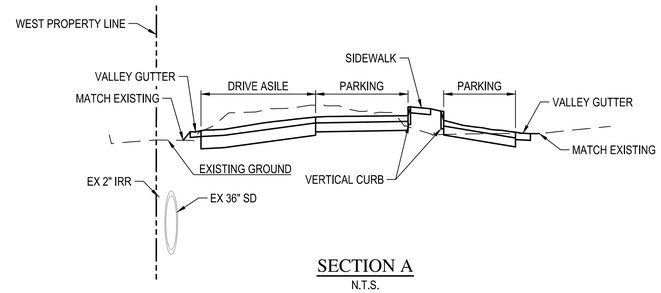


ROCK RIPRAP SECTION

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

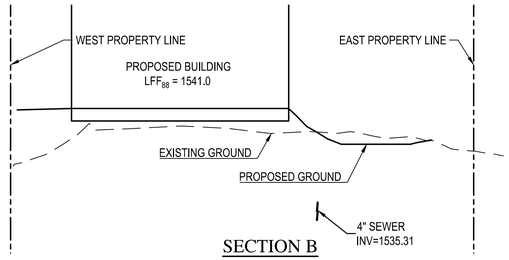
NOTES:

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

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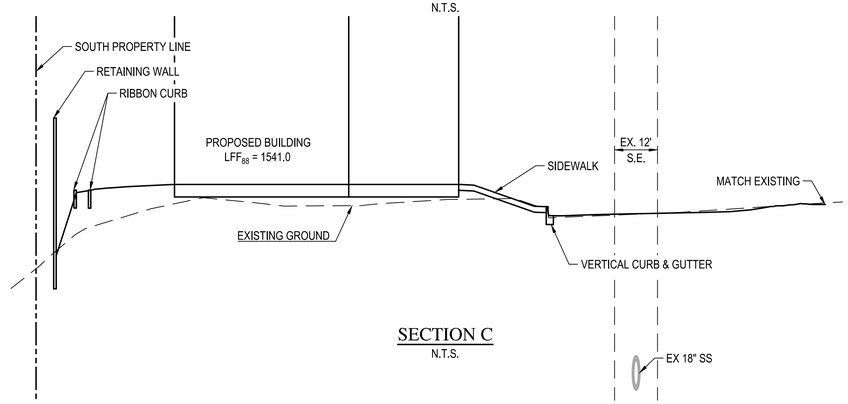

SECTION C

N.T.S.

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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

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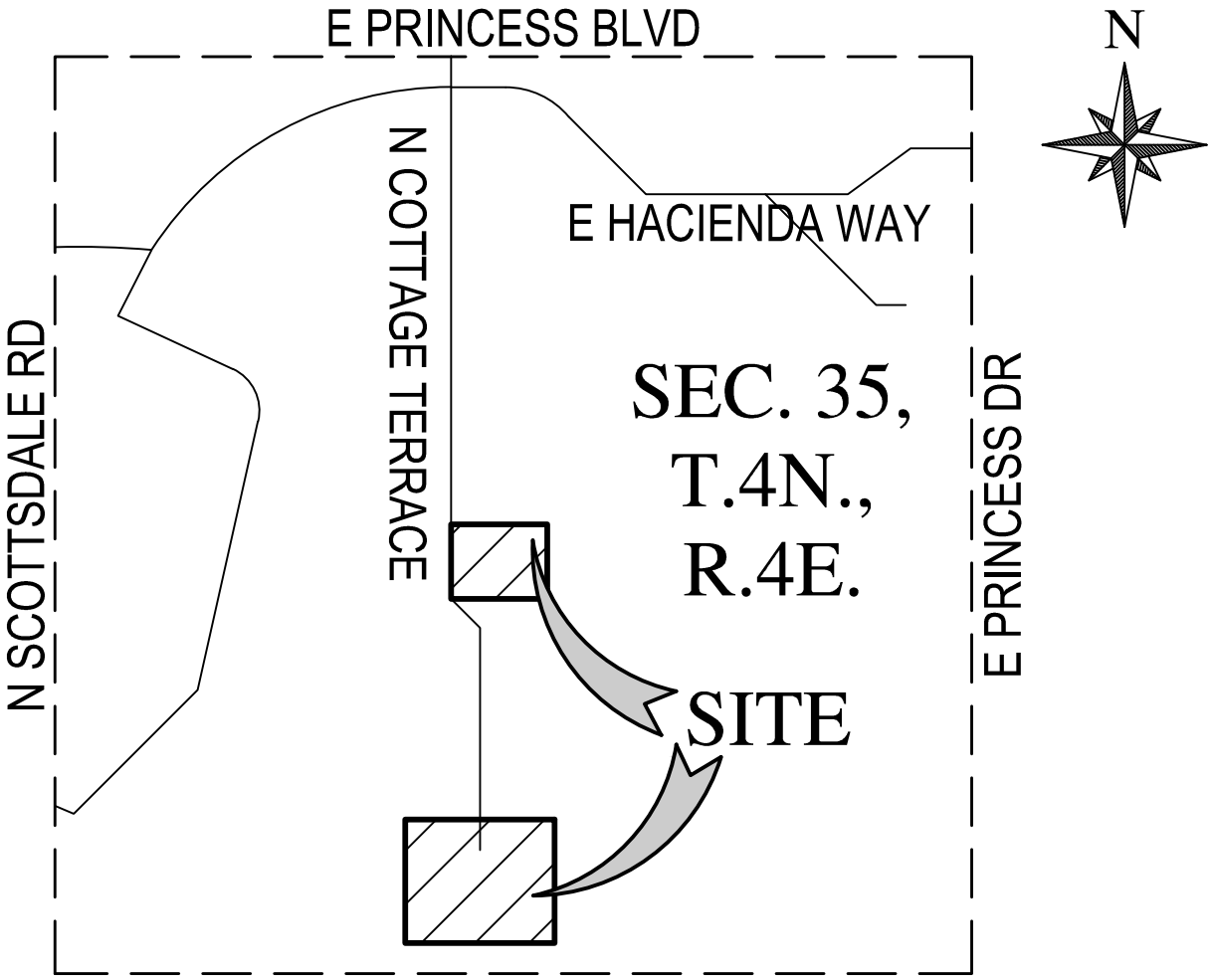
EXHIBIT 1 – VICINITY MAP



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 #	

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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

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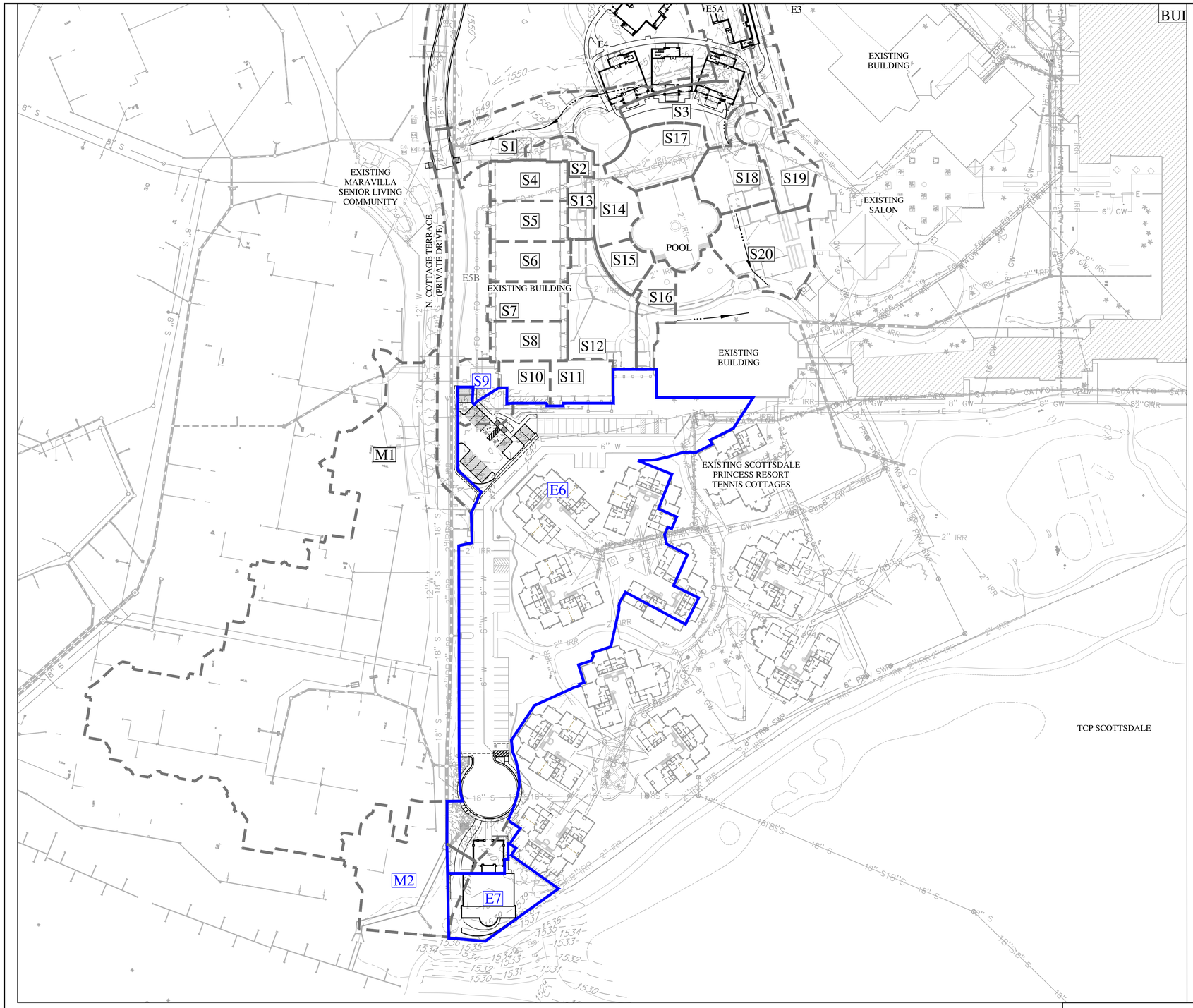
EXHIBIT 4 – PROPOSED DRAINAGE MAP



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

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Appendix C – Topographic Survey

TOPOGRAPHIC SURVEY
FAIRMONT PRINCESS, OASIS RESTAURANT

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

BASIS OF BEARING

THE WEST LINE OF THE SOUTHWEST QUARTER OF SECTION 35. SAID LINE BEARS SOUTH 00 DEGREES 13 MINUTES 11 SECONDS EAST.

ZONING

ZONE: C2
ZONING INFORMATION OBTAINED FROM MARICOPA COUNTY ASSESSORS WEBSITE.

*PER 2023 ALTA MINIMUM STANDARD DETAIL REQUIREMENTS: CURRENT ZONING CLASSIFICATION, BUILDING SETBACK REQUIREMENTS AND HEIGHT AND FLOOR SPACE AREA RESTRICTIONS ARE TO BE PROVIDED TO THE SURVEYOR BY THE INSURER. THE CLASSIFICATION, REQUIREMENTS AND RESTRICTIONS HAVE NOT BEEN PROVIDED AT THE TIME OF THIS SURVEY. THE ZONING CLASSIFICATIONS SHOWN ARE FOR REFERENCE.

FLOOD ZONE

ACCORDING TO THE FLOOD INSURANCE RATE MAP #04013C1320L, DATED 10/16/2013, THIS PROPERTY IS LOCATED IN FLOOD ZONE "X". AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD.

LEGAL DESCRIPTION

A PORTION OF LOT 3 OF THE MINOR LAND DIVISION FOR FAIRMONT SCOTTSDALE PRINCESS, RECORDED IN BOOK 1104 OF MAPS, PAGE 3, MARICOPA COUNTY RECORDS.

BENCHMARK

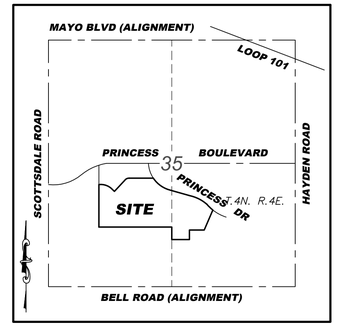
FOUND MARICOPA COUNTY BRASS CAP IN HANDHOLE AT C/L OF OLD BELL RD. & SCOTTSDALE RD. NORTH OF FRANK LLOYD WRIGHT BLVD., WEST MONUMENT OF TWO (DOWN 0.33')

ELEVATION = 1524.22 NAVD 88

ADDRESS

7505 E. PRINCESS BOULEVARD
SCOTTSDALE, ARIZONA 85255

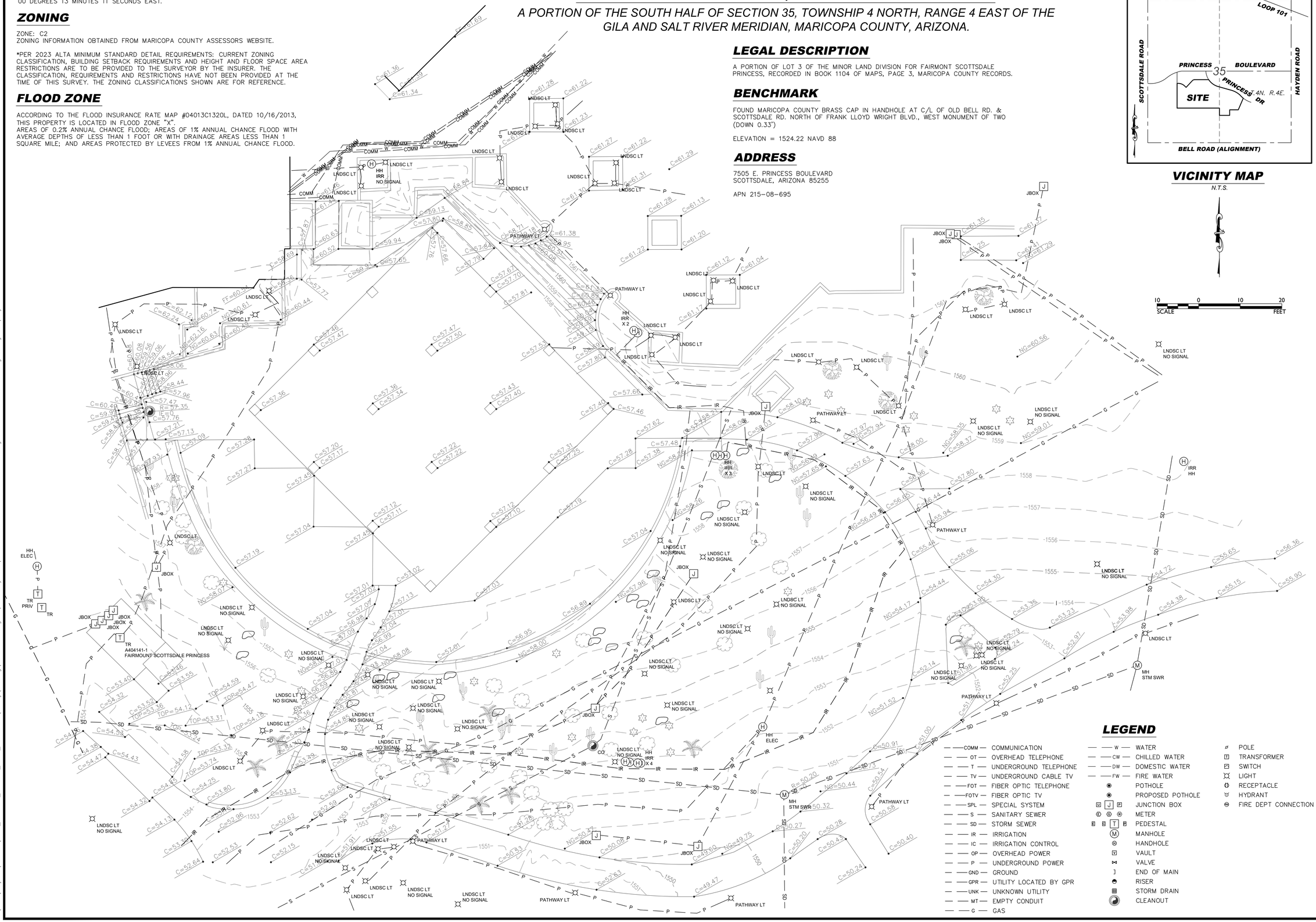
APN 215-08-695



VICINITY MAP

N.T.S.

SCALE 10 0 10 20 FEET



LEGEND

- COMM — COMMUNICATION
- OT — OVERHEAD TELEPHONE
- T — UNDERGROUND TELEPHONE
- TV — UNDERGROUND CABLE TV
- FOT — FIBER OPTIC TELEPHONE
- FOTV — FIBER OPTIC TV
- SPL — SPECIAL SYSTEM
- S — SANITARY SEWER
- SD — STORM SEWER
- IR — IRRIGATION
- IC — IRRIGATION CONTROL
- OP — OVERHEAD POWER
- P — UNDERGROUND POWER
- GND — GROUND
- GPR — UTILITY LOCATED BY GPR
- UNK — UNKNOWN UTILITY
- MT — EMPTY CONDUIT
- G — GAS
- W — WATER
- CW — CHILLED WATER
- DW — DOMESTIC WATER
- FW — FIRE WATER
- POTHOLE
- PROPOSED POTHOLE
- JUNCTION BOX
- METER
- PEDESTAL
- MANHOLE
- HANDHOLE
- VAULT
- VALVE
- END OF MAIN
- RISER
- STORM DRAIN
- CLEANOUT
- POLE
- TRANSFORMER
- SWITCH
- LIGHT
- RECEPTACLE
- HYDRANT
- FIRE DEPT CONNECTION

NO.	BY	DATE	REVISION

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
60897
JARED HANSMANN
3-16-23
DATE SIGNED
ARIZONA U.S.A.

22425 N 16TH STREET SUITE #1
PHOENIX, AZ 85024
480.922.0780
rickengineering.com

RICK ENGINEERING COMPANY
San Diego - Riverside - San Luis Obispo - Sacramento - Orange - Tucson - Phoenix - Las Vegas - Denver

DRAWN BY:	DSR	SCALE:	1"=10'
CHECKED BY:	JH	DATE:	3/06/2023

TOPOGRAPHIC SURVEY
FAIRMONT PRINCESS, OASIS RESTAURANT
SCOTTSDALE, ARIZONA

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811
Call 811 or click Arizona811.com

PROJECT NO.
6612
SHEET NO. 1 OF 1

Appendix D – FEMA FIRMETTE Map

National Flood Hazard Layer FIRMette

FEMA

111°55'40"W 33°39'4"N

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

1:6,000

111°55'2"W 33°38'34"N

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 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- 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.

Appendix E – Stormwater Storage Waiver, 2008

APPENDIX B

STORMWATER 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

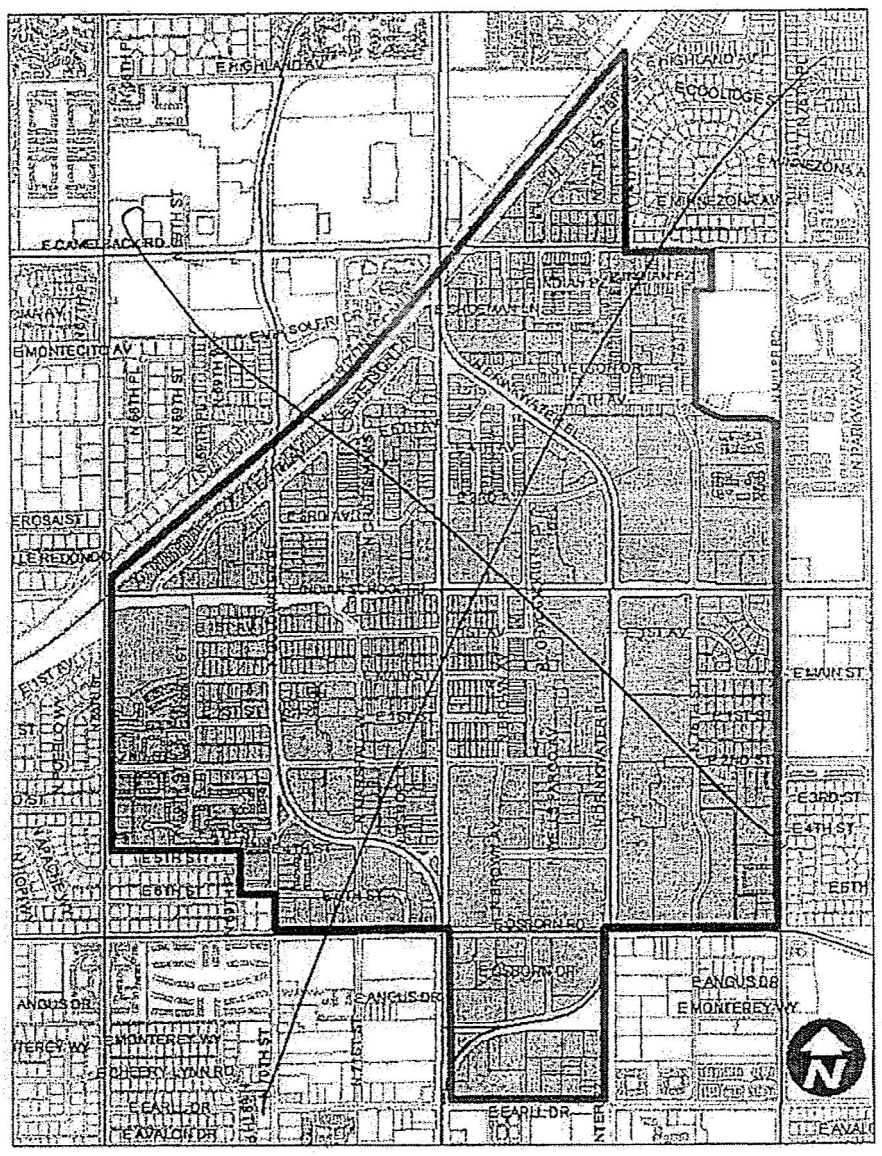
6332-07-7

Request for Stormwater Storage Waiver

2-22-24-2007

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#_____

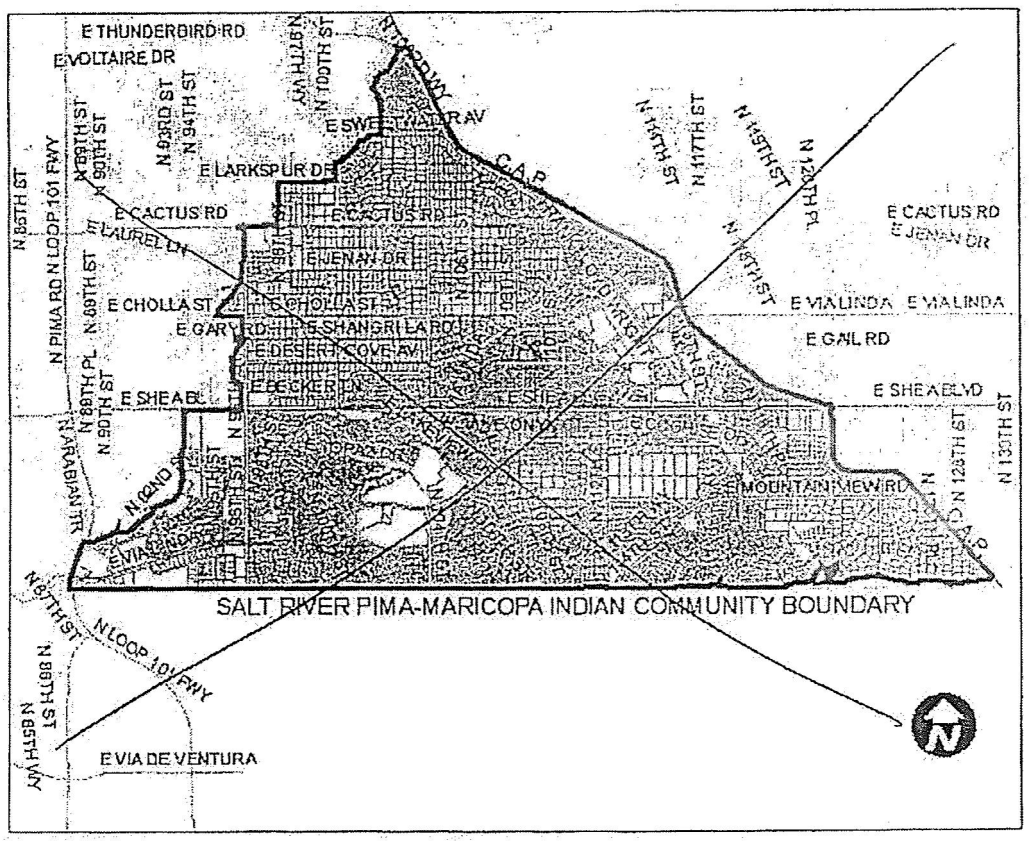


Figure 2. Watersheds Draining to Salt River Pima-Maricopa Indian Community

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

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 Cook 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

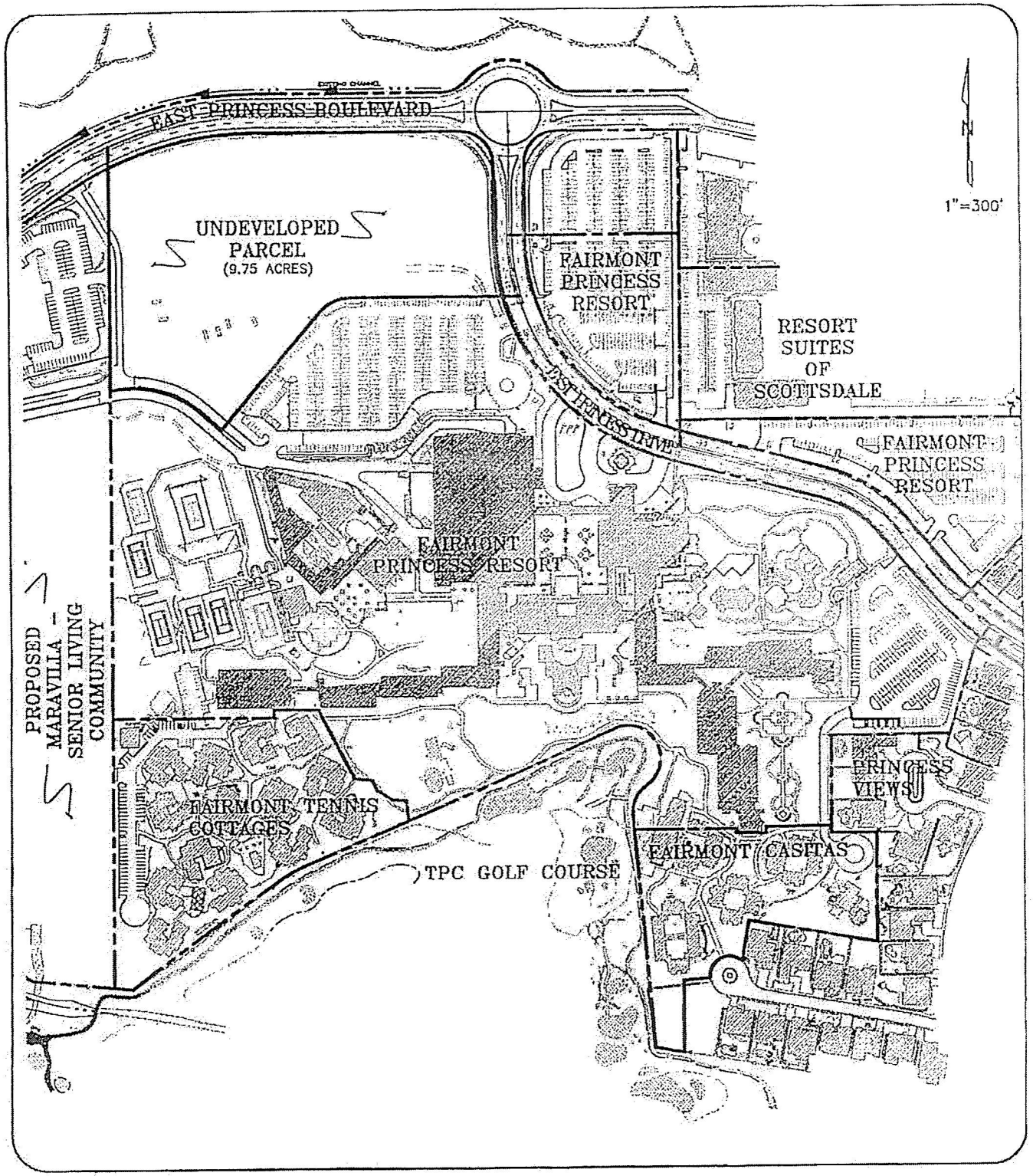


EXHIBIT 1

FAIRMONT SCOTTSDALE PRINCESS RESORT

ENGINEER	J. Bulka	SCALE	1"=300'
DESIGNER	J. Haywood	DATE	07/14/08
CAD TECHNICIAN	J. Sanchez	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

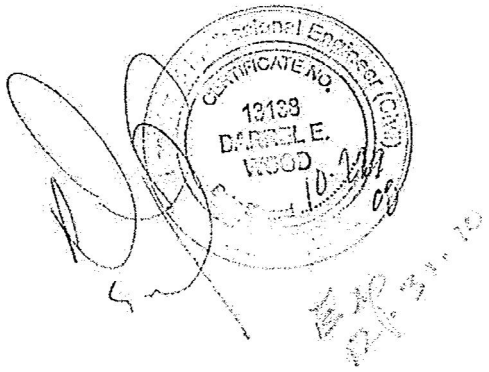
Attachment to Stormwater Storage Waiver Request
for Fairmont Scottsdale Princess Resort & Regional Flood Control

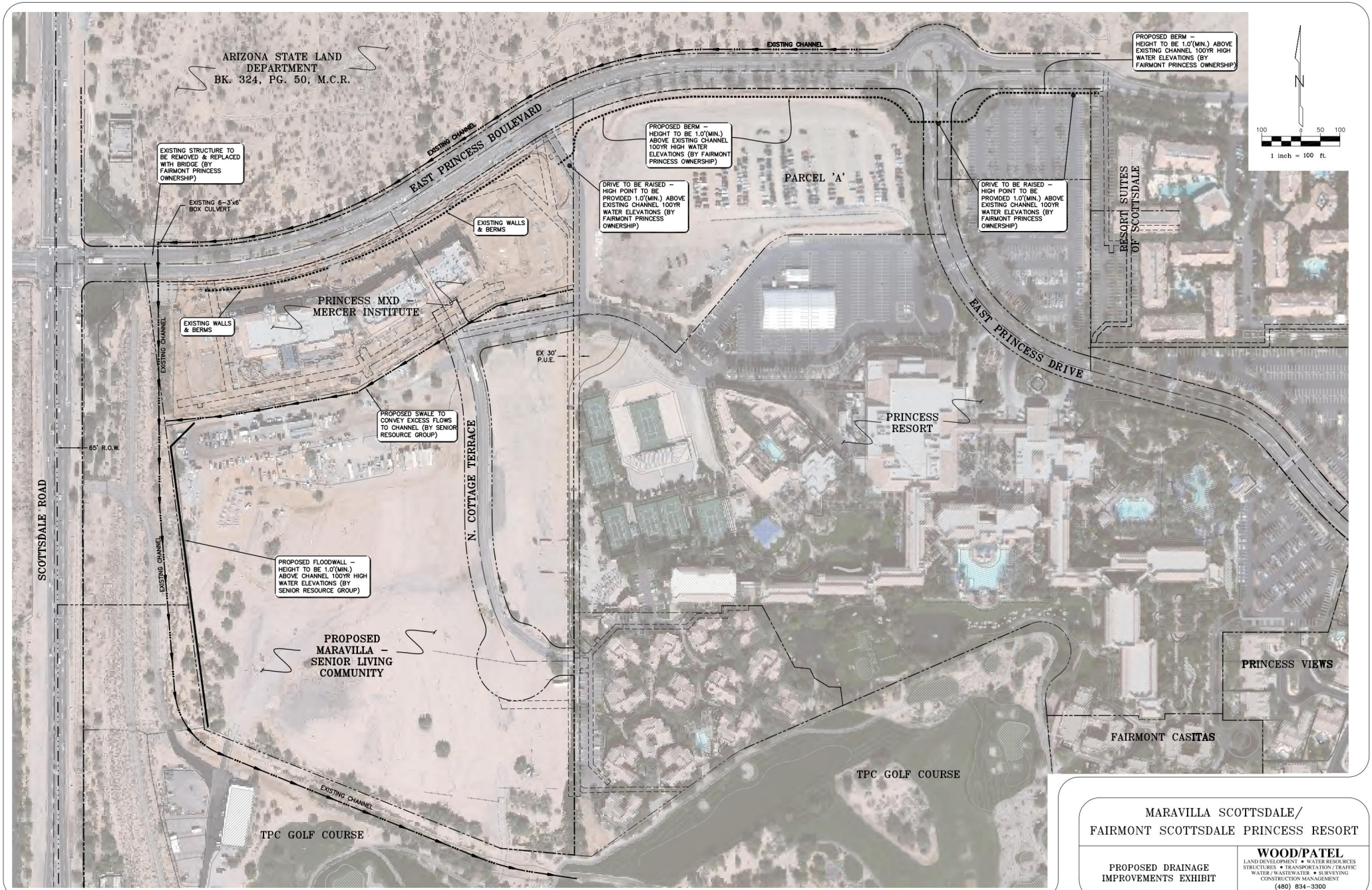
Engineering Preliminary Opinion of Probable Cost (*)

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.





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

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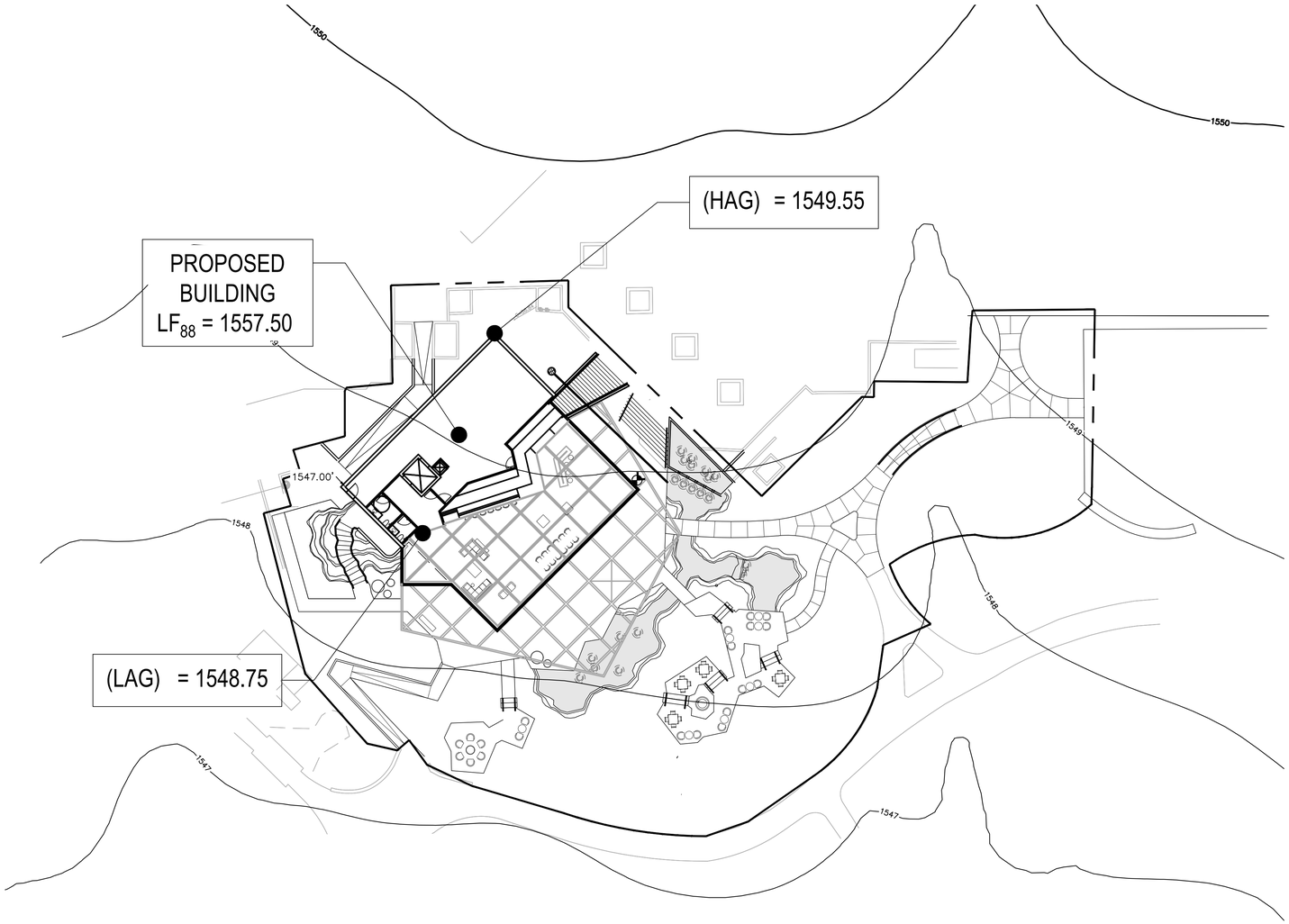
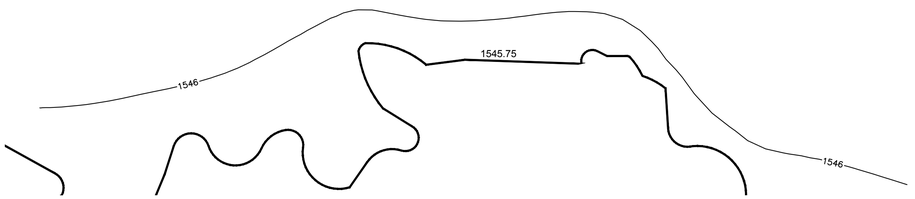
Appendix F – Highest Adjacent Natural Grade Exhibit





FEMA SUMMARY TABLE								
NAME	ADDRESS	LOWEST FINISHED FLOOR ELEVATION (LF88)	HIGHEST ADJACENT NATURAL GRADE	LOWEST ADJACENT NATURAL GRADE	REGULATORY FLOOD ELEVATION	FEMA REQUIREMENTS		
BUILDINGS						FLOOD VENTING	WET FLOODPROOFING	OTHER
RESTAURANT	7575	1,557.5	1,549.55	1,548.75	1,551.55	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.

LEGEND

———	PROPOSED BUILDING OUTLINE
———	BOUNDARY LINE
— — —	SECTION LINE
—1550—	ESTIMATED 5' CONTOUR NAVD88 DATUM
—1541—	ESTIMATED 1' CONTOUR NAVD88 DATUM
1545.75	ORIGINAL 1986 PRINCESS/EAGLE 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 1986 PRINCESS/EAGLE CONSTRUCTION PLANS NGVD29 DATUM CONVERTED TO NAVD88 USING MARICOPA LAND SURVEY CONVERSION OF 1.749 FT.

BENCHMARK

FOUND MARICOPA COUNTY BRASS CAP IN HANDHOLE AT THE WEST $\frac{1}{4}$ CORNER OF SECTION 35. T4N, R4E, B.C. 0.25' ± BELOW PAVEMENT.
ELEVATION = 1551.63 NGVD 29

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

Kimley»Horn © 2023