

CONCEPTUAL DRAINAGE REPORT FOR

Marshall Way Mixed Use

Plan #: 14-ZN-2022

Review Cycle:1

Status: Correction

Reviewed By: GA

Date: 12/07/2022

Address comments on the drainage report and on the grading and drainage plans, as applicable, and update both accordingly

To ensure all comments are addressed and avoid project delay, please provide a written response to all drainage review comments on the drainage report and grading and drainage plans.

It is preferred that responses are provided, as applicable, on a copy of:

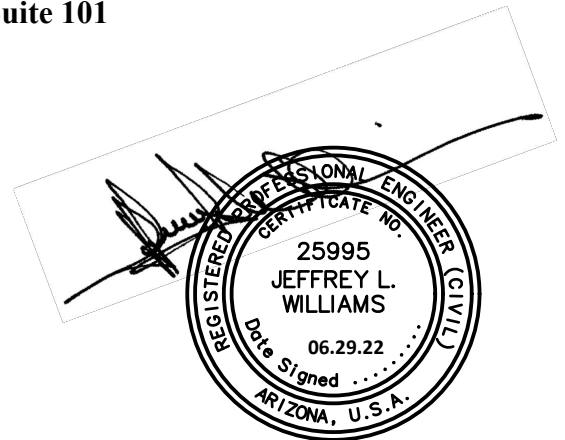
Drainage Report Correction file

Grading and Drainage Plans Correction file

Next submittal may be considered incomplete otherwise.

**PREPARED FOR
SYNECTIC DESIGN
1111 WEST UNIVERSITY DRIVE
SUITE 104
TEMPE, AZ 85281**

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June 30, 2022

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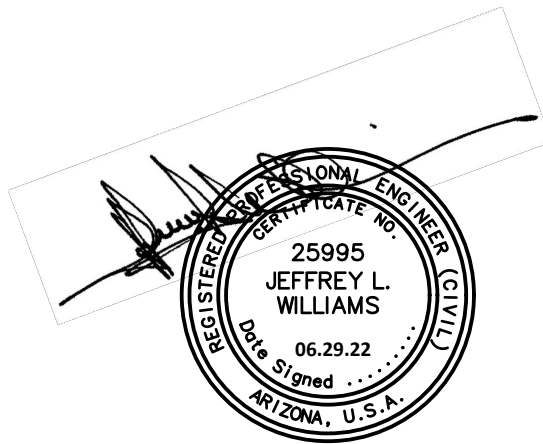
APPENDIX

DRAINAGE EXHIBIT

FIRM PANEL

POINT PRECIPITATION FREQUENCY ESTIMATES

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1.0 INTRODUCTION

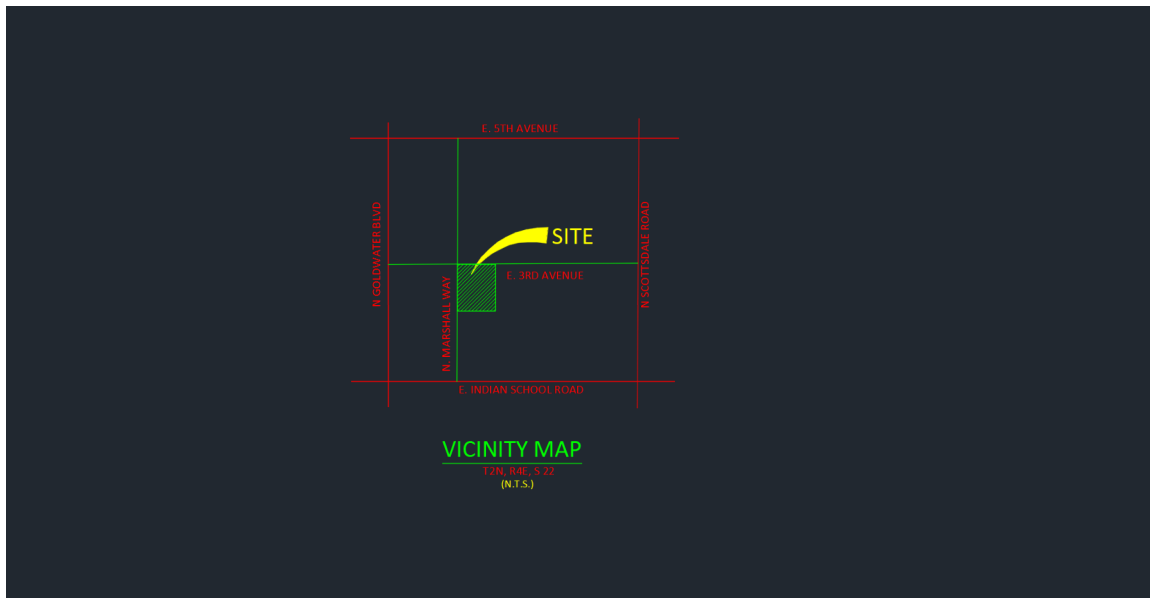
The scope of this conceptual drainage report is to provide a preliminary hydrologic and hydraulic analysis for the proposed improvements known as “Marshall Way Mixed Use”. The proposed project is a mixed use development consisting of a 4-story building with 13,717 sf of commercial space on the first level and 60 units of residential space occupying the top 3 levels with underground parking on a 38,18-square foot parcel. This report will discuss the proposed storm water retention system for the referenced site.

also

1.1 LOCATION

The site is located at the SEC of N. Marshall Way and E. 3rd Avenue in the City of Scottsdale, AZ. The project site is located in Section 22, Township 2 North, Range 4 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona.

Also Provide an aerial image to demonstrate existing conditions



2.0 DESCRIPTION OF STUDY AREA

2.1 EXISTING CONDITIONS

This property is bounded by E. 3rd Avenue on the north, N. Marshall Way on the west, an alley on the east and commercial properties on the south. The site currently consists of a commercial building and surface parking lot. The existing building and improvements

will be demolished. The gross site area is approximately 57,337 square feet, and the net site area is approximately 38,189 square feet. Topography generally slopes toward the south at an approximate slope of 0.7%.

2.2 ~~F.I.R.M.~~ FEMA FLOOD ZONE DESIGNATION

The project property lies in a FEMA designated zone 'X' per Map No. 04013C2235M dated September 18, 2022. Zone 'X' is defined as "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."

3.0 ONSITE DRAINAGE AND STORMWATER STORAGE REQUIREMENTS

~~3.1 RETENTION~~

The onsite storm water retention system is designed based upon the City of Scottsdale's Design Standards & Policies Manual and Maricopa County Drainage Design Manual. The city's design standards specify requirements are that for sites that have been previously developed, ~~the existing retention system must be increased to store the additional runoff generated by the 100-year, 2-hour design event.~~ The COS Design Standards were used to estimate a precipitation depth of 2.2 inches. The ~~pre-development runoff coefficient (Cpre) used in the drainage calculations is 0.95 and the post-development runoff coefficient (Cpost) used is 0.95.~~ Therefore, no additional stormwater storage facilities are required above the existing system. A site visit was conducted to determine what type of existing storm water retention system is currently being used. Based on the site visit, it appears that existing stormwater runoff is allowed to surface drain to a valley gutter on the east side of N. Marshall Way and also to the alley on the east side of the property. The valley gutter and alley both drain to the existing storm drain system in Indian School Road. Therefore, the proposed project will continue to allow stormwater runoff from the front of the project (existing parking area and sidewalks) to drain to the existing valley gutter on N. Marshall Way. The runoff generated by the building will be carried to the alley and allowed to continue to Indian School Road per historical patterns.

On-site drainage is more than just retention requirements. Describe flow conditions and describe any drainage components conveying the flow

the stormwater storage required should be based on the post-conditions minus pre-conditions 100-year, 2-hour runoff volume, in addition to maintaining any existing stormwater volume on the site.

observe the existing drainage pattern and identify any existing stormwater storage basins.

Discuss how the underground parking garage will be protected from flooding and discuss how, if any flow enters the underground garage will be drained

no on-site basins exist and that

Note:
The existing drainage pattern needs to be maintained, i.e. can't shift more flow to one outlet compared to existing conditions. Either provide supporting calculations or add a statement in this section to indicate this requirements will be observed during final design. If calculations is provided, show on the grading and drainage plans the flows entering, if applicable, and leaving the site

3.2 FINISHED FLOOR ELEVATION

The lowest finished floor elevation for the proposed facility has not been set at this time. The project consists of an underground parking garage. The lowest finished floor elevation cannot be set until that design is complete. The ultimate outfall elevation for the project is located at the southwest and south east corners of the site at an approximate elevation of 1265.00.

Discuss city of scottsdale requirements for setting the lowest finish floor, and since a survey appears to have been conducted, provide the proposed lowest floor elevations, consistent with the requirements. You can specify that the lowest floor elevation for the garage will be provided in the final plans once the garage design is complete

Off-site drainage is typically discussed before on-site drainage, since often off-site flows go through and mix with on-site flows

4.0 OFFSITE DRAINAGE

N. Marshall Way along west boundary and E. 3rd Avenue, along the east boundary are fully developed with curb, gutter, sidewalk and drainage improvements. Both streets drain to E. Indian School Road. There are existing storm drainage improvements in E. Indian School Road, therefore, no offsite flows impact this site.

Off-site drainage is not only adjacent streets, it is the watershed drainage. The site is located within the Lower Indian Bend Wash drainage study, based on FLO-2D modeling. The results of the study can be used, upon the project engineers acknowledging the result to represent best available data. The study result are available at the FCDMC websites. Review and reference the study and add adequate excerpts

5.0 SUMMARY

In summary, the onsite storm water retention system is designed based upon the City of Scottsdale's Design Standards & Policies Manual and Maricopa County Drainage Design Manual. Due to the existing nature of the site, no onsite retention facilities are required. No offsite runoff will impact this site.

Add a section to discuss SWPPP requirements. It is required for disturbed areas of more than one acre. When required, copies of the SWPPP plans and report and NOI need to be submitted to the city before the final plans are approved. At this case level, just describe the conditions and, if applicable, present commitments to providing requirements during final plan.

APPENDIX

DRAINAGE REQUIREMENTS

PER CITY OF SCOTTSDALE DRAINAGE AND DESIGN STANDARDS AND POLICIES MANUAL.
(MARICOPA COUNTY DRAINAGE DESIGN MANUAL, VOLUME II AND III)

$$V_r = C(R/12)A$$

WHERE: V_r = VOLUME OF RETENTION REQUIRED (CUBIC FEET)

C = INCREASE IN THE WEIGHTED AVERAGE RUNOFF

COEFFICIENT OVER DISTURBED AREAS (C_{post} - C_{pre})

R = 100-YEAR, 2-HOUR RAINFALL (IN INCHES)

A = DRAINAGE AREA (SQUARE FEET)

A = 38,189 SF (EXISTING STORM DRAIN IN PLACE ON MARSHALL AND 3RD AVE.

R = 2.2 INCHES

C_{pre} = 0.95 (COMMERCIAL DOWNTOWN)

C_{post} = 0.95 (COMMERCIAL DOWNTOWN)

C = 0.00

$$V_r = 0.00(2.2/12)(38,189 \text{ SF}) = \underline{0.00 \text{ ADDITIONAL STORM WATER STORAGE REQUIRED.}}$$

NO STORM WATER STORAGE FACILITIES OBSERVED FROM SITE VISITS. THEREFORE, NO STORM WATER STORAGE FACILITIES PROVIDED. STORM WATER RUNOFF MITIGATED VIA EXISTING STORM DRAIN SYSTEM IN INDIAN SCHOOL ROAD.

Since already stated in the report text that the runoff coefficient is the same for post and pre-development conditions, there is no need for this calculations indicating the same