

CITY OF ALBUQUERQUE



January 15, 2016

Richard J. Berry, Mayor

Steven K. Morrow, P.E.
Molzen Corbin
2701 Miles Rd SE
Albuquerque, NM, 87106

**RE: Aviation Center of Excellence
City of Albuquerque Aviation Department
Drainage Master Plan
Engineer's Stamp Date 1-13-2016 (File: M16D024N)**

Dear Mr. Morrow:

Based upon the information provided in your submittal received 1-13-2016, the above-referenced Drainage Master Plan is approved for the Development.

PO Box 1293

The plan is also approved for Site Plan for Subdivision action by the DRB.

Albuquerque

For your information, the development will require an approved Erosion and Sediment Control Plan prior to Grading Permit and Building Permit approval, since it is over 1-acre of disturbance. You may coordinate the requirement with Mr. Curtis Cherne, the City's Stormwater Quality Engineer.

New Mexico 87103

If you have any questions, you can contact me at 924-3986.

Sincerely,

www.cabq.gov

Abiel Carrillo, P.E.
Principal Engineer, Planning Dept.
Development Review Services

Orig: Drainage file



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: _____ **Building Permit #:** _____ **City Drainage #:** _____

DRB#: _____ **EPC#:** _____ **Work Order#:** _____

Legal Description: _____

City Address: _____

Engineering Firm: _____ **Contact:** _____

Address: _____

Phone#: _____ **Fax#:** _____ **E-mail:** _____

Owner: _____ **Contact:** _____

Address: _____

Phone#: _____ **Fax#:** _____ **E-mail:** _____

Architect: _____ **Contact:** _____

Address: _____

Phone#: _____ **Fax#:** _____ **E-mail:** _____

Other Contact: _____ **Contact:** _____

Address: _____

Phone#: _____ **Fax#:** _____ **E-mail:** _____

Check all that Apply:

DEPARTMENT:

- ☐ HYDROLOGY/ DRAINAGE
☐ TRAFFIC/ TRANSPORTATION
☐ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

- ☐ ENGINEER/ ARCHITECT CERTIFICATION
- ☐ CONCEPTUAL G & D PLAN
☐ GRADING PLAN
☐ DRAINAGE MASTER PLAN
☐ DRAINAGE REPORT
☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT (TCL)
☐ TRAFFIC IMPACT STUDY (TIS)
☐ EROSION & SEDIMENT CONTROL PLAN (ESC)
- ☐ OTHER (SPECIFY) _____

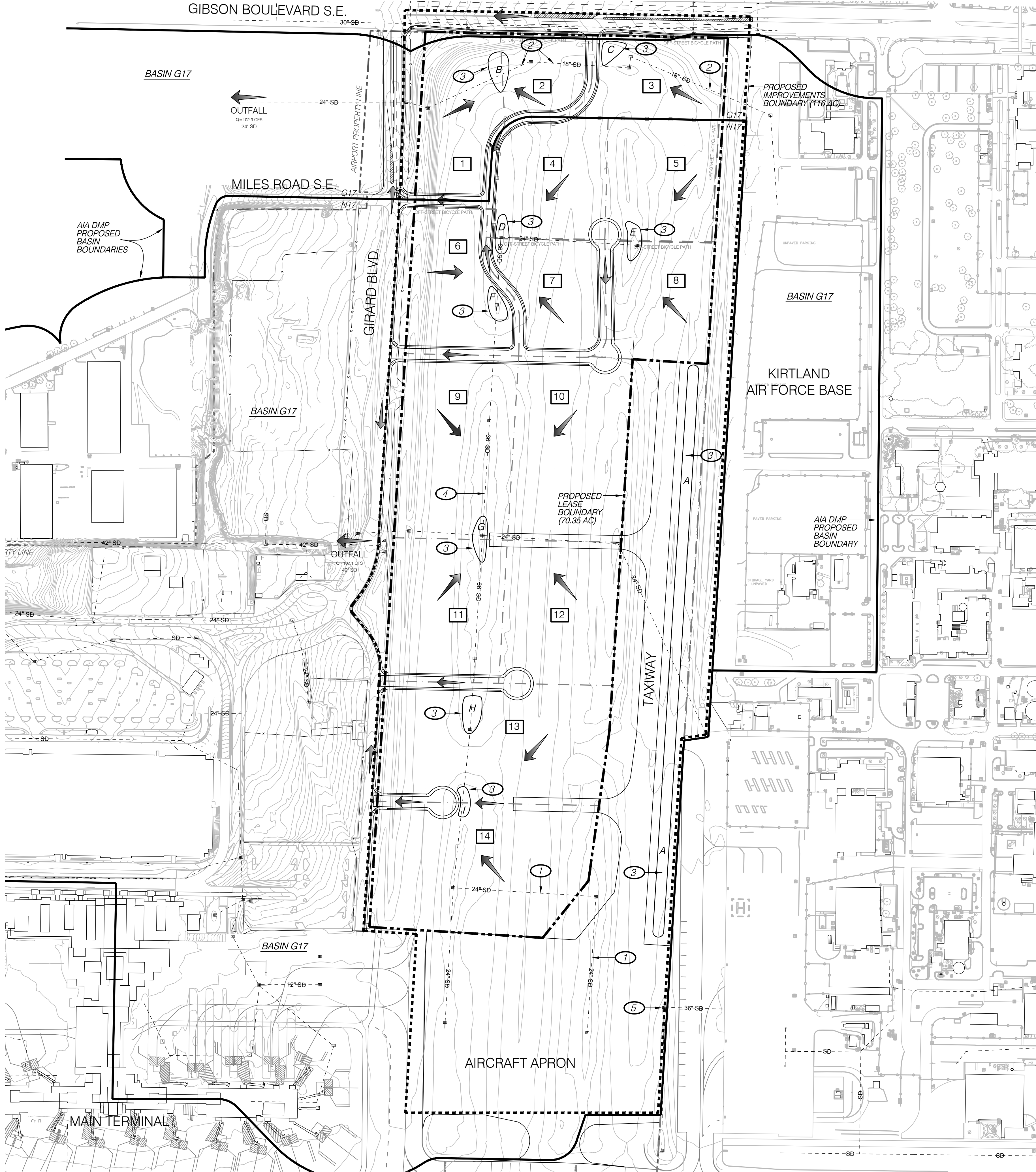
CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- ☐ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY
- ☐ PRELIMINARY PLAT APPROVAL
☐ SITE PLAN FOR SUB'D APPROVAL
☐ SITE PLAN FOR BLDG. PERMIT APPROVAL
☐ FINAL PLAT APPROVAL
☐ SIA/ RELEASE OF FINANCIAL GUARANTEE
☐ FOUNDATION PERMIT APPROVAL
☐ GRADING PERMIT APPROVAL
☐ SO-19 APPROVAL
☐ PAVING PERMIT APPROVAL
☐ GRADING/ PAD CERTIFICATION
☐ WORK ORDER APPROVAL
☐ CLOMR/LOMR
- ☐ PRE-DESIGN MEETING
☐ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: ☐ Yes ☐ No

DATE SUBMITTED: _____ **By:** _____

COA STAFF: _____ ELECTRONIC SUBMITTAL RECEIVED: _____



MASTER DRAINAGE PLAN NARRATIVE

PROJECT DESCRIPTION:
The Albuquerque International Sunport is planning to develop the northern section of the property where the decommissioned Runway 17-35 is. The Sunport plans to develop and lease "lots" they've created for planning purposes. These lots are in the conceptual stage of design and could change in size and shape depending on the need of future developers. Lots 1 through 3 are planned for commercial retail/service. Lots 4 through 8 are planned for office development, and Lots 9 through 14 are planned for aviation and/or manufacturing. Refer to the map shown on this sheet for lot configuration. Interior access roads will be constructed as the site develops and associated improvements to Gibson Blvd and Girard Blvd will be constructed for access and capacity purposes. Improvements not included with the leaseable lots include a new taxiway and apron for aviation access to the lots.

It is important to note the lots lines shown are illustrative and there will be no subdivision actions on the property.

HYDROLOGIC CRITERIA:
The hydrologic criteria for this drainage report were determined using the City of Albuquerque Development Process Manual, Chapter 22. Hydrologic calculations were based on the 100yr/10day storm and precipitation data was collected from the NOAA Atlas specific to the project location. Tables listed below show first flush volumes and hydrologic characteristics of the site. References throughout this drainage report are made to the Albuquerque International Airport Storm Drainage Master Plan (AIA DMP) dated May, 1995. (Drainage File AIA DMP - M16D024)

EXISTING CONDITIONS:
The area of the proposed improvements is approximately 116 acres and consists of an out-of-service runway and two unused taxiways. The location is utilized for remote parking for aircraft and special events. The site has not changed since the AIA DMP was accepted; consequently, all the existing conditions for the ACE Development can be assumed to be the same as the existing conditions in the AIA DMP.

Two basins from the AIA DMP encompass the project site. Refer to the attached pages from the AIA DMP for basin characteristics and outfalls. Runoff from the existing site is collected in the subsurface storm drainage system and infield ponds onsite. The runoff from the project site within the N17 basin discharges into the Yale Blvd storm sewer system and outfalls into the Kirtland Channel. The project site within the G17 basin discharges into a storm sewer system between the developed commercial lots (west of the project site) and into the Gibson Blvd storm sewer system.

DEVELOPED CONDITIONS:
The developed condition for the ACE project site differs from the AIA DMP in the following instances: the AIA DMP proposed a terminal building expansion making a large portion the site impervious. The proposed basins boundaries will move based on lot development.

Though the land use description for the ACE project is different than the AIA DMP suggested, the hydrology can be used for the purposes of this report. The ACE site development is expected to have an overall area of impervious surfaces (land treatment D) equal to or less than what is shown in the AIA DMP. As each lot develops, the storm sewer system will be constructed to match proposed condition of the AIA DMP. There is a proposed alternative shown in the AIA DMP of a single 48" storm drain from south N17 to middle N17 in the case that the current storm drain configuration proved to be impractical. For the purposes of this report, the proposed conditions will be to upsize the existing storm drain configuration. Refer to the attached Drainage Basin Map for Proposed Future Development to note the increased sizes in storm sewer pipes. Table 1 below shows the hydrology of the site.

The developed condition basins for the ACE development will differ from the proposed basins in the AIA DMP; however, the overall area of each basin will remain the same. Due to the layout of the proposed lots for the ACE development, it is assumed that lots 1 through 3 will be incorporated into Basin G17 and the remaining project site will be incorporated into Basin N17. This change removes the southern ends of sub-basins 104 and 106 from Basin G17 and adds to Basin N17. The change also removes the northern ends of sub-basins 205 and 206 from Basin N17 and adds to Basin G17. The exchange in area is nearly identical, making the overall Basins' area equal to that shown in the AIA DMP. It appears that the far west edge of Subbasin 1400 of Middle Basin will be added to Basin N17 to include the eastern edge of the proposed aircraft apron. The drop inlet at this location will be relocated east to avoid accumulating any flows from the proposed improvements area. This will add approximately 0.4% of area to Basin N17 and will be captured by the upsized storm drains on the proposed apron and Pond A. Refer to the attached Drainage Basin Map for Proposed Future Development for the updated Basin boundary layouts. Offsite flows are not anticipated to enter the project site.

The conceptual phasing for this project begins with demolition and grading of the entire site. As each lot is developed, the necessary access road and taxiway will be constructed. EACH DEVELOPER OF A LOT WILL BE REQUIRED TO MANAGE THE 90TH PERCENTILE STORM EVENT (FIRST FLUSH) ONSITE BASED ON THE PROPERTIES OF THE RESPECTIVE LOT. Table 2 lists conceptual pond calculations for first flush management.

FIRST FLUSH CALCULATION

$$Volume_{first\ flush} = \frac{0.34\ in.}{12\ in./ft} \times Area_{Land\ Treatment\ D}$$

$$2.4354\ ac \cdot ft = \frac{0.34\ in.}{12\ in./ft} \times 85.95\ ac\ (entire\ project\ site)$$

TABLE 1: SITE HYDROLOGY

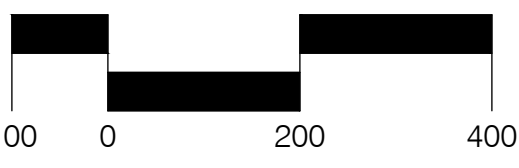
| LOT NO. | TOTAL AREA | IMPERVIOUS AREA | BASED ON 100YR/10DAY STORM | | |
|-----------------|------------|-----------------|----------------------------|------------|--------------|
| | | | TOTAL VOLUME | FLOW | FIRST FLUSH |
| | (acres) | (acres) | (ac-ft) | (cfs) | (ac-ft) |
| 1 | 4.07 | 3.4595 | 1.13 | 18.16 | 0.0980 |
| 2 | 2.22 | 1.8870 | 0.62 | 9.90 | 0.0535 |
| 3 | 3.53 | 3.0005 | 0.98 | 15.75 | 0.0850 |
| 4 | 4.28 | 3.6380 | 1.19 | 19.10 | 0.1031 |
| 5 | 4.25 | 3.6125 | 1.18 | 18.96 | 0.1024 |
| 6 | 4.38 | 3.7230 | 1.22 | 19.54 | 0.1055 |
| 7 | 3.63 | 3.0855 | 1.01 | 16.20 | 0.0874 |
| 8 | 3.97 | 3.3745 | 1.10 | 17.71 | 0.0956 |
| 9 | 6.49 | 5.5165 | 1.80 | 28.96 | 0.1563 |
| 10 | 6.52 | 5.5420 | 1.81 | 29.09 | 0.1570 |
| 11 | 5.06 | 4.3010 | 1.40 | 22.58 | 0.1219 |
| 12 | 5.06 | 4.3010 | 1.40 | 22.58 | 0.1219 |
| 13 | 8.43 | 7.1655 | 2.34 | 37.61 | 0.2030 |
| 14 | 8.43 | 7.1655 | 2.34 | 37.61 | 0.2030 |
| Aviation R.O.W. | 45.68 | 26.18 | 9.95 | 184.0 | 0.7418 |
| Totals | 116 ac | 85.95 ac | 29.47 ac-ft | 497.75 cfs | 2.4354 ac-ft |

TABLE 2: POND CHARACTERISTICS

| Pond Name | Pond Accepts Flows from | Pond Volume | Volume Required |
|-----------|-------------------------------|-------------|-----------------|
| | | (ac-ft) | (ac-ft) |
| A | Proposed TW and Apron | 1.94 | 0.75 |
| B | Proposed Lots 1 & 2 | 0.29 | 0.16 |
| C | Proposed Lot 3 | 0.17 | 0.09 |
| D | Proposed Lots 4 & 7 | 0.23 | 0.19 |
| E | Proposed Lots 5 & 8 | 0.35 | 0.26 |
| F | Proposed Lot 6 | 0.18 | 0.11 |
| G | Proposed Lots 9, 10, 11, & 12 | 0.58 | 0.56 |
| H | Proposed Lot 13 | 0.25 | 0.21 |
| I | Proposed Lot 14 | 0.25 | 0.21 |
| TOTAL = | | 4.24 | 2.54 |



Scale: 1" = 200'



LEGEND

| | |
|--|-----------------------------------|
| | EXISTING TOPOGRAPHY CONTOUR |
| | EXISTING STORM DRAINAGE UTILITIES |
| | DRAINAGE FLOW DIRECTION |
| | LOT NUMBER |
| | CONCEPTUAL POND |
| | AIA DMP PROPOSED BASIN BOUNDARY |
| | PROPOSED IMPROVEMENTS BOUNDARY |
| | PROPOSED LEASE BOUNDARY |
| | AIRPORT PROPERTY LINE |

NOTES

- THE DEVELOPER OF A LOT WILL BE REQUIRED TO MANAGE THE 90TH PERCENTILE STORM EVENT (FIRST FLUSH) ONSITE FOR THE RESPECTIVE LOT. THE ALBUQUERQUE DEPARTMENT OF AVIATION WILL MANAGE THE 90TH PERCENTILE STORM EVENT RUNOFF FOR THE NEW ROADWAYS, TAXIWAY, AND APRON ONSITE BY PONDS. FOR LARGER STORMS THE POND WILL OVERFLOW INTO THE STORM SEWER SYSTEM AS DESCRIBED BY THE ALBUQUERQUE INTERNATIONAL AIRPORT STORM DRAINAGE MASTER PLAN, MAY 1995.
- Q SHOWN IS DISCHARGE GENERATED FROM EACH SITE (100 YR / 6 HR STORM). FLOWS IN EXCESS OF THE ALLOWABLE Q 100/6 SHALL BE PONDED ON SITE.
- V SHOWN IS VOLUME GENERATED BY 100 YR / 24 HR STORM.
- DESIGN OF STORM DRAINAGE FACILITIES WILL BE BASED ON THE ALBUQUERQUE INTERNATIONAL AIRPORT STORM DRAINAGE MASTER PLAN MAY 1995. THE MASTER PLAN INCLUDES A CONCEPTUAL STORM DRAIN PLAN FOR THE MANAGEMENT OF STORMWATER FROM THE SITE. HYDROLOGY IN THE MASTER PLAN ASSUMES THAT THE SITE WILL BE DEVELOPED IN MANNER SIMILAR TO THE PROPOSED DEVELOPMENT SHOWN IN THIS SITE PLAN FOR SUBDIVISION.

KEYED NOTES

- EXISTING 24" STORM DRAIN TO BE REPLACED WITH 36" STORM DRAIN.
- EXISTING 18" STORM DRAIN TO BE REPLACED WITH 24" STORM DRAIN.
- NEW 90TH PERCENTILE STORM EVENT RUNOFF MANAGEMENT POND.
- EXISTING STORM DRAIN TO REMAIN.
- EXISTING DROP INLET TO BE RELOCATED.

TABLE 3: AIA DMP FLOWS VS. ACE FLOWS

| Basin | Subbasin | Q100 | Portion of subbasin used for ACE | Adjusted Q100 |
|-------|----------------------------------|--------|----------------------------------|---------------|
| | | (cfs) | (%) | (cfs) |
| G17 | 103 | 65.13 | 100% | 65.13 |
| | 104 | 72.79 | 100% | 72.79 |
| | 105 | 75.76 | 20% | 15.15 |
| | 106 | 68.8 | 45% | 30.96 |
| N17 | 201 | 9.67 | 100% | 9.67 |
| | 203 | 48.83 | 100% | 48.83 |
| | 204 | 52.67 | 100% | 52.67 |
| | 205 | 34.26 | 100% | 34.26 |
| | 206 | 25.67 | 100% | 25.67 |
| | 207 | 91.5 | 100% | 91.50 |
| | 208 | 30.82 | 90% | 27.74 |
| | 209 | 107.05 | 100% | 107.05 |
| | 210 | 109.64 | 50% | 54.82 |
| | AIA DMP Proposed Flows (TOTAL) = | | | 636.24 |

ACE Development Proposed flows (TOTAL) = 497.75

AVIATION CENTER OF EXCELLENCE

MASTER DRAINAGE PLAN

Prepared for:
City of Albuquerque Aviation Department

Prepared by:
Consensus Planning, Inc.
302 8th Street NW
Albuquerque, NM 87102

Molzen Corbin
2701 Miles Road SE
Albuquerque, NM 87106

DECEMBER 2015



SHEET 4 OF 5