City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: Aviation Center of Excellence Building Permit #: _____ City Drainage #: M16D024N

DRB#: 1000270 EPC#: 14EPC-40024 Work Order#: 751580

Legal Description: A portion of Tract A-1, Sunport Municipal Addition

City Address: Southeast Corner of Gibson Blvd. SE and Girard Blvd. SE

Engineering Firm: Molzen Corbin Contact: Steve Morrow

Address: 2701 Miles Road

Phone#: 505-242-5700 Fax#: _____ E-mail: smorrow@molzencorbin.com

Owner: City of Albuquerque Aviation Dept. Contact: Jim Hinde

Address: P O Box 1293

Phone#: _____ Fax#: _____ E-mail: JHinde@cabq gov

Architect: _____ Contact: _____

Address: _____

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

Other Contact: _____ Contact: _____

Address: _____

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

Check all that Apply:

DEPARTMENT:

__X__ HYDROLOGY/ DRAINAGE
_____ TRAFFIC/ TRANSPORTATION
_____ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

_____ ENGINEER/ ARCHITECT CERTIFICATION

_____ CONCEPTUAL G & D PLAN
_____ GRADING PLAN
_____ DRAINAGE MASTER PLAN
__X__ DRAINAGE REPORT
_____ CLOMR/LOMR

_____ TRAFFIC CIRCULATION LAYOUT (TCL)
_____ TRAFFIC IMPACT STUDY (TIS)
_____ EROSION & SEDIMENT CONTROL PLAN (ESC)

_____ OTHER (SPECIFY) _____

RECEIVED
FEB 08 2017
FEB 06 2017
LAND DEVELOPMENT SECTION
LAND DEVELOPMENT SECTION

RECEIVED
FEB 08 2017
LAND DEVELOPMENT SECTION

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

_____ BUILDING PERMIT APPROVAL
_____ CERTIFICATE OF OCCUPANCY

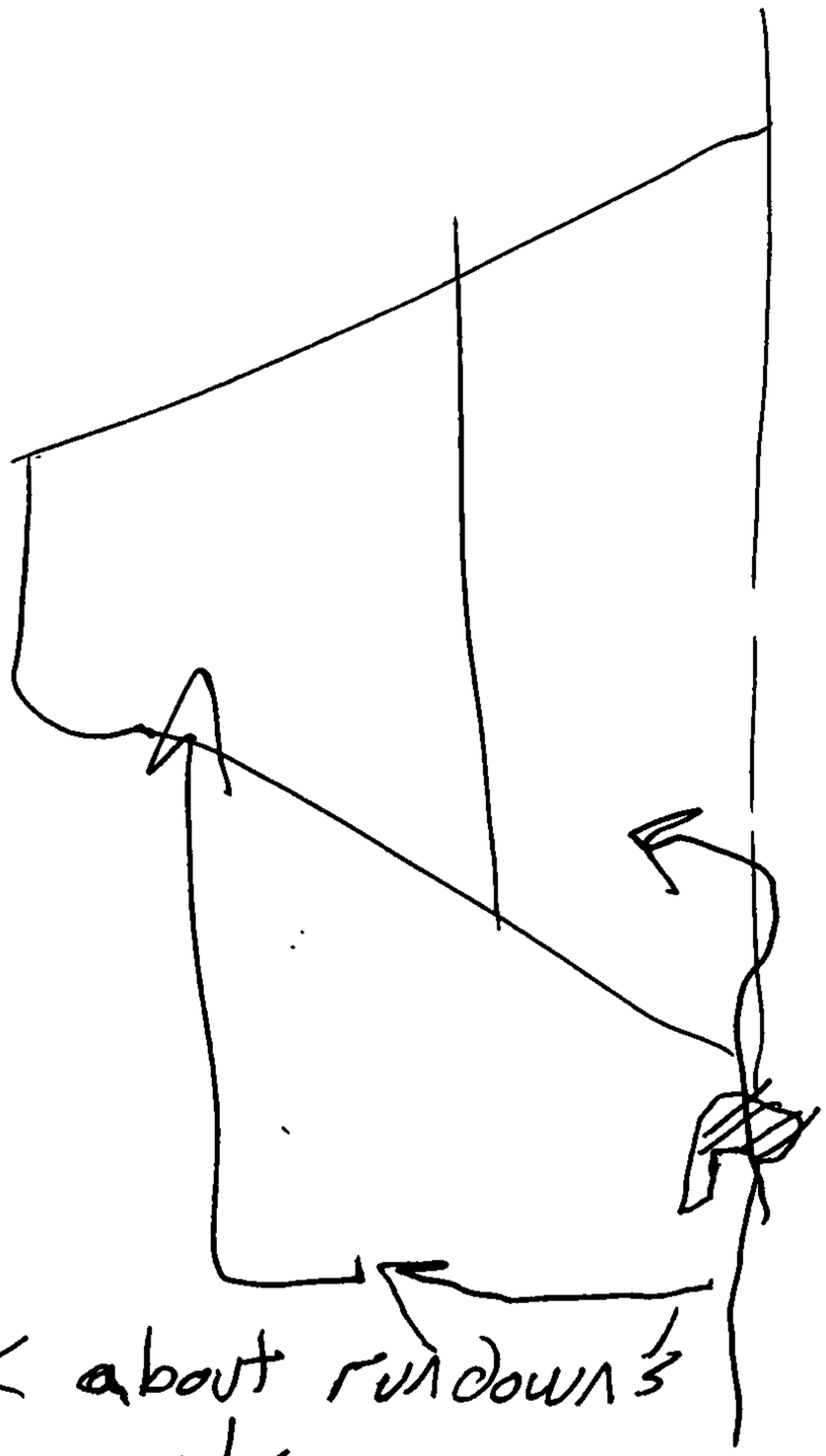
_____ PRELIMINARY PLAT APPROVAL
_____ SITE PLAN FOR SUB'D APPROVAL
_____ SITE PLAN FOR BLDG. PERMIT APPROVAL
_____ FINAL PLAT APPROVAL
_____ SIA/ RELEASE OF FINANCIAL GUARANTEE
_____ FOUNDATION PERMIT APPROVAL
__X__ GRADING PERMIT APPROVAL
_____ SO-19 APPROVAL
_____ PAVING PERMIT APPROVAL
_____ GRADING/ PAD CERTIFICATION
_____ WORK ORDER APPROVAL
_____ CLOMR/LOMR

_____ PRE-DESIGN MEETING
_____ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: _____ Yes __X__ No

DATE SUBMITTED: 02-08-17 By: Steve Morrow

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___



- ask about rundowns
- comments
  - ~~use~~ add Dimin. to ponds
  - Ensure waterblocks

CITY OF ALBUQUERQUE

Richard J. Berry, Mayor

March 2, 2017

Steven Morrow, P.E.
Molzen-Corbin & Associates
2701 Miles Road SE
Albuquerque, NM 87106

RE: **Aviation Center of Excellence Drainage Report**
Engineer's Stamp Date: 2/8/17
Hydrology File: M16D024N

Dear Mr. Morrow:

Based upon the information provided in your submittal received 2/8/17, the Drainage Report is not approved for Grading Permit. The following comments need to be addressed for approval of the above referenced project:

1. The first flush ponds need to be designed as part of these improvements. This information includes pond dimensions, bottom of pond, side slopes, maximum water surface elevation, and pond volume.

2. Waterblocks are necessary where the private roads meet public roads (Girard and Gibson).

It is Hydrology's understanding that these are low-speed, local roads, and the use of dip sections and curb cuts in accordance with standard drawing 2422 is acceptable. If you have any questions, please contact me at 924-3695 or dpeterson@cabq.gov.

Sincerely,

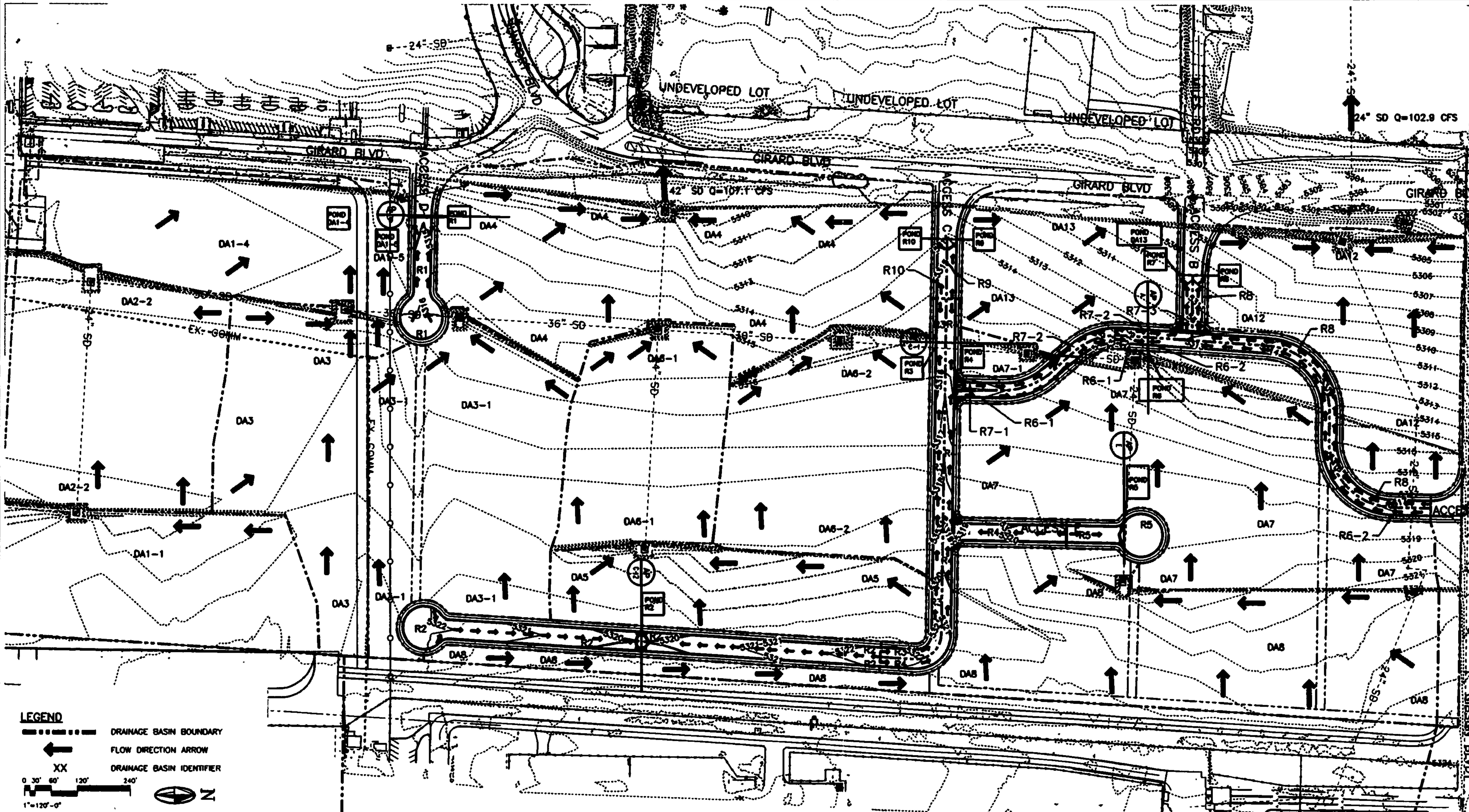
Dana Peterson, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage File

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

Future developments:

- need to show new SD layout in ~~[illegible]~~ ARC map ~~layout~~
- when SD alignment determined, based on future development, engr. needs to show hydrology to size new SD, and also show how intended upsize from last DMP is no longer needed
- provide NOAH atlas which MDP used.
- when rough grading - need sediment ponds near inlets



PROJECT DESCRIPTION & SITE LOCATION:

THE ALBUQUERQUE INTERNATIONAL SUNPORT IS PLANNING TO DEVELOP 115 ACRES ON THE SITE OF DECOMMISSIONED RUNWAY 17-35 FOR COMMERCIAL, RETAIL, OFFICE, INDUSTRIAL, MANUFACTURING, WAREHOUSING, AND OFFICE USE. THE DEVELOPMENT OF THE AVIATION CENTER OF EXCELLENCE (ACE) WILL OCCUR IN 4 PHASES: 1. MASS DEMOLITION AND GRADING OF THE AREA WITHIN THE AIRFIELD. 2. PERIMETER ROAD IMPROVEMENTS ON GIBSON BLVD AND GIRARD BLVD. 3. THE UTILITY WORK FOR THE ENTIRE SITE. 4 THE DEVELOPMENT OF THE INTERIOR ROADS. THE INDIVIDUAL PLANNED LOTS WILL BE DEVELOPED AS THEY ARE LEASED

THIS DRAINAGE REPORT IS FOR PHASE 4: THE INTERIOR ROAD IMPROVEMENTS THAT ARE TO BE COMPLETED FOR LEASED LOT ACCESS WITHIN THE ACE SITE. PROPOSED DRAINAGE IMPROVEMENTS ARE CONSISTENT WITH THE AVIATION CENTER OF EXCELLENCE MASTER DRAINAGE PLAN APPROVED 1-15-16 (FILE: M160024N).

HYDROLOGIC CRITERIA:

THE HYDROLOGIC CRITERIA FOR THIS DRAINAGE REPORT IS THE CITY OF ALBUQUERQUE DEVELOPMENT PROCESS MANUAL (DPM). HYDROLOGIC CALCULATIONS WERE BASED ON THE 100YR, 24HR STORM PRECIPITATION DATA WAS USED FROM THE DPM, WITH THE SITE LOCATION BEING CONSIDERED AS ZONE 2 100 YEAR, 24 HOUR, STORM AS REQUIRED BY ALBUQUERQUE INTERNATIONAL AIRPORT DRAINAGE MASTER PLAN.

EXISTING CONDITIONS:

THE EXISTING SITE HAS BEEN PREVIOUSLY GRADED IN PHASE 1 TO DIRECT RUNOFF TO THE EXISTING INLETS WITHIN THE SITE VIA SOIL SWALES THE INLETS HAVE SEDIMENTATION BASINS TO CAPTURE SEDIMENT FOR THE FIRST FLUSH. THE INLETS SOUTH OF MILES RD WILL ROUTE IT TO THE 42" SYSTEM. THAT SYSTEM OUTFALLS INTO THE KIRTLAND CHANNEL AND EVENTUALLY THE SOUTH DIVERSION CHANNEL. THE NORTHERN INLETS NEAR GIBSON BLVD, DRAIN TO A 24" SYSTEM THAT EVENTUALLY CONNECTS TO THE GIBSON BLVD STORM SYSTEM NEAR COLUMBIA BLVD THE FINAL OUTFALL OF THE GIBSON BLVD STORM SYSTEM IS GENEVA'S ARROYO, AND TERMINATES IN THE SOUTH DIVERSION CHANNEL

DEVELOPED CONDITIONS:

PHASE 4 WILL CONSTRUCT THE INTERIOR ROADS FOR THE ACE DEVELOPMENT ALL ROAD RUNOFF WILL BE INTERCEPTED ON SITE AND PONDED ONSITE, OR ROUTED THROUGH A SEDIMENTATION BASIN TO THE EXISTING STORM DRAIN NETWORK. THE SEDIMENTATION BASINS ARE SIZED TO CAPTURE THE 90TH PERCENTILE STORM OR "FIRST FLUSH" THE ROADS ARE SHOWN IN THE ABOVE BASIN MAP THE ROADS WILL HAVE TYPE C INLETS BUILT TO DRAIN THE ROADS. THESE INLETS WILL OUTFALL TO A POND NEAR THE INLET LOCATION SHOWN ON THE BASIN MAP. THIS IS TO ALLOW FOR FUTURE FLEXIBILITY OF THE ENTIRE SYSTEM WHERE INTERIOR ROADS ARE CONNECTING TO GIRARD OR GIBSON, RUNDOWNS WILL BE CONSTRUCTED TO INTERCEPT AND DIVERT RUNOFF SO IT DOES NOT EXIT THE SITE. THE EXISTING BASINS WILL BE CHANGED BY CONSTRUCTION OF THE INTERIOR ROADS. THESE BASINS WILL HAVE NEW PONDING LOCATIONS OR GRADED TO A NEW INLET AS SHOWN ON THE BASIN MAP

REFER TO THIS SHEET FOR PROPOSED BASIN LOCATIONS. SEE GRADING AND DRAINAGE SHEET FOR INLET LOCATIONS. THESE NEW INLETS MUST BE MAINTAINED TO OPERATE AS DESIGNED IN THIS REPORT

Basin	Area (ac)	Q(24 hr) (cfs)	V(24 hr) (cf)	90th % V(CF)	Inlet Cap. Q (CFS)	Pond Q out (CFS)
R1	0 54	2 30	4,334 7	713.0	12 00	0 00
R2	1 89	8 11	15,291 1	2,514.6	12 00	0 00
R3	0 74	3 16	5,964 3	980 5	12 00	0 00
R4	1 14	4 93	9,325 6	1,540 5	12 00	0 00
R5	0 45	1 94	3,656 8	602 4	12 00	0 00
R6-1	0.34	1.43	2,684 4	437 6	12 00	0 00
R6-2	0 62	2 63	4,932.6	800 8	12 00	0 00
R7-1	0.18	0.78	1,463 7	239 4	12 00	0 00
R7-2	0 19	0 81	1,532 7	252.4	12 00	0 00
R7-3	0.17	0 74	1,398.7	233.6	12 00	0 00
R8	0 65	2 76	5,180 2	846 3	12 00	0 00
R9	0.11	0 47	886 7	145 6	0.00	0 00
R10	0.11	0 47	887.1	145 7	0.00	0.00
DA1-4	4.61	14 43	18,902 5	–	0 00	0.00
DA1-5	0.78	2.46	3,217 9	–	0 00	0 00
DA3	4 73	14 82	19,411.2	–	22 00	14 82
DA3-1	6 45	20 20	26,469 6	–	22.00	20.20
DA4	9 98	31.23	40,917 5	–	22.00	22 00
DA5	3.64	11 38	14,914 4	–	22.00	11 38
DA6-1	4 01	12 55	16,445.1	–	22 00	12.50
DA6-2	5.24	16.40	21,484 1	–	22.00	16.40
DA7	0.36	1 12	1,464 9	–	22.00	1 12
DA7-1	5.24	16 40	21,484 1	–	22.00	16 40
DA8	8 96	28 06	36,763 5	–	22.00	22.00
DA12	3.54	11 07	14,500 6	–	22.00	11 07
DA13	5.42	16 98	22,247 1	–	0.00	0.00

$V_{FIRST\ FLUSH} = \frac{0.44\ IN}{12(IN/FT)} \times AREA_{LAND\ TREATMENT\ D}$

$V_{FIRST\ FLUSH} = 9{,}452.6\ CF$

STREET		
Analysis Point	Carrying Cap CFS	Q Calc CFS
A	6 75	2 76
C-1	15 45	4 93
C-2	11 32	4 06
D	9 05	1 15
E	7 00	0 87

MOLZENCORBIN

2701 Miles Road SE Albuquerque, New Mexico 87106

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

TITLE: SUNPORT ACE SITE ROADWAYS AND UTILITIES IMPROVEMENTS

PROPOSED BASIN MAP AND DRAINAGE REPORT

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet X Of X
751581	M-16	G-006

AS BUILT INFORMATION: CONTRACTOR; WORK STARTED BY, DATE; INSPECTOR'S ACCEPTANCE BY, DATE; FIELD VERIFICATION BY, DATE; DRAWINGS CORRECTED BY, DATE

MICRO-FILM INFORMATION: RECORDED BY, DATE; NO.

BENCH MARKS: 19-L16 - 3 1/4 INCH ALUMINUM DISC N=479188.5779, E=532270.698, EL.=5297.51; 14-L17 - 3 1/4 INCH ALUMINUM DISC N=480697.724 E=534906.820; NAD 83 NAVD 88 - CENTRAL ZONE

SURVEY INFORMATION: FIELD NOTES | NO. | BY | DATE

ENGINEER'S SEAL: PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS: NO. | DATE | REMARKS | BY

DESIGN: DESIGNED BY SM / RD DATE FEB. 2017; DRAWN BY RD DATE FEB. 2017; CHECKED BY SM DATE FEB. 2017

GAB-DRAX 2/10/17 1:1

2/10/2017 ABQ114-9C Calculated by: R. Durden Date:_____
Road Flow Calculations ACE - Interior Checked by:_____ Date:_____

Access A East Street Calculations: Analysis Point A

$$y = z\left(\frac{QnS_x}{S^{1/2}}\right)^{3/8}$$

Equation 10-1

where

y = depth of water in the curb and gutter cross section (ft or m)

Q = gutter flow rate (cfs or m^3/s)

n = Manning's roughness coefficient

S = longitudinal slope (ft./ft. or m/m)

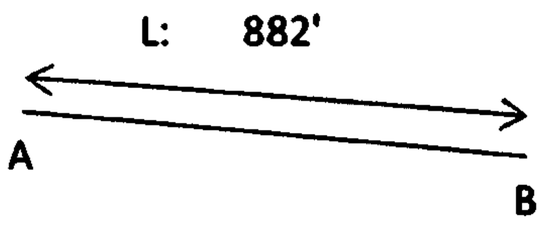
S_x = pavement cross slope = 1/x (ft./ft. or m/m)

z = 1.24 for English measurements or 1.443 for metric.

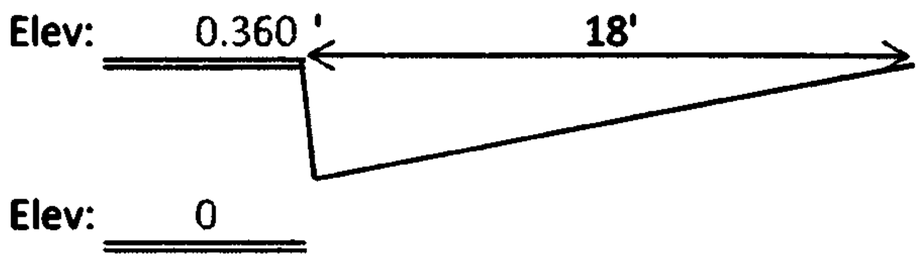
The table below presents suggested Manning's "n" values for various pavement surfaces
Department recommendation for design is the use of the rough texture values

Mannings, z:	1.24	(U.S.)
Flow Capacity, Q:	2.73	CFS (R6-2)
Mannings #, n:	0.017	
Slope, S:	0.0058	FT/FT
Pvmt. Cross Slope, Sx:	0.02	FT/FT
Solving for Depth, y=	0.23749	ft
Converting y, y=	2.85	IN
18'*.02(x-slope)=	0.36	FT

Channel Profile



Channel Section



Length:	881.61 feet	Channel Width:	18 feet
Elev. A :	5317.65 feet	Depth:	0.36 feet
Elev. B :	5312.62 feet	Area:	3.24 ft. sq.
Δ Elev. :	5.03 feet	Wetted Perimeter:	18.36 feet
Slope:	0.005707 ft/ft	Hydraulic Radius, R:	0.176436 feet
		Looked up coefficient, n:	0.017

$$Q = VA = \left(\frac{1.49}{n}\right)AR^{\frac{2}{3}}\sqrt{S} \quad [U.S.]$$ Flow Capacity, Q: 6.75 CFS

Access A North West Street Calculations: Analysis Point A

$$y = z\left(\frac{QnS_x}{S^{1/2}}\right)^{3/8}$$

Equation 10-1

where

y = depth of water in the curb and gutter cross section (ft. or m)

Q = gutter flow rate (cfs or m^3/s)

n = Manning's roughness coefficient

S = longitudinal slope (ft./ft. or m/m)

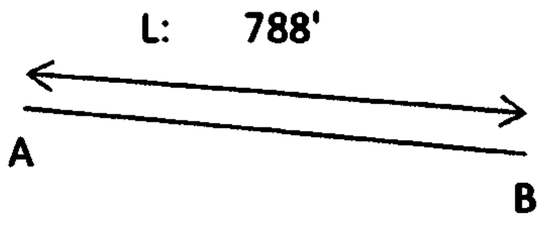
S_x = pavement cross slope = 1/x (ft./ft. or m/m)

z = 1.24 for English measurements or 1.443 for metric

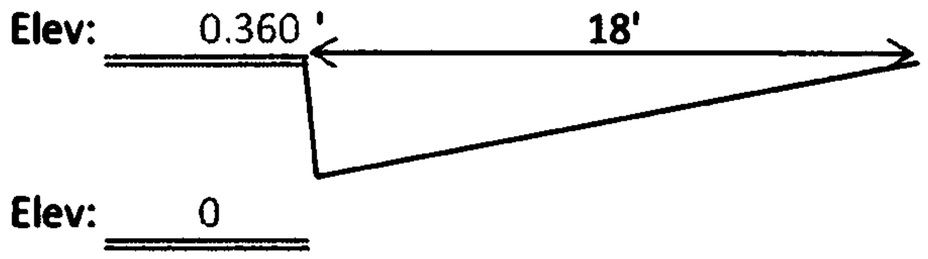
The table below presents suggested Manning's "n" values for various pavement surfaces
Department recommendation for design is the use of the rough texture values

Mannings, z:	1.24 (U.S.)
Flow Capacity, Q:	2.76 CFS (R8)
Mannings #, n:	0.017
Slope, S:	0.0049 FT/FT
/mt. Cross Slope, Sx:	0.02 FT/FT
Solving for Depth, y=	0.246125 ft
Converting y, y=	2.95 IN
18'*.02(x-slope)=	0.36 FT

Channel Profile



Channel Section



Length:	788.47 feet
Elev. A :	5317.65 feet
Elev. B :	5313.14 feet
Δ Elev. :	4.51 feet
Slope:	0.005716 ft/ft

Channel Width:	18 feet
Depth:	0.36 feet
Area:	3.24 ft. sq.
Wetted Perimeter:	18.36 feet
Hydraulic Radius, R:	0.176436 feet
Looked up coefficient, n:	0.017

$$Q = VA = \left(\frac{1.49}{n}\right)AR^{\frac{2}{3}}\sqrt{S} \quad [U.S.]$$ Flow Capacity, Q: 6.75 CFS

Access C North Street Calculations: Analysis Point C-1

$$y = z\left(\frac{QnS_x}{S^{1/2}}\right)^{3/8}$$

Equation 10-1

where

y = depth of water in the curb and gutter cross section (ft or m)

Q = gutter flow rate (cfs or m^3/s)

n = Manning's roughness coefficient

S = longitudinal slope (ft./ft. or m/m)

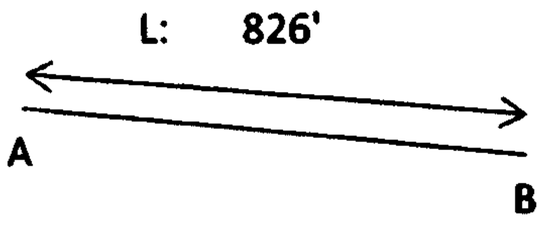
S_x = pavement cross slope = 1/x (ft./ft. or m/m)

z = 1.24 for English measurements or 1.443 for metric.

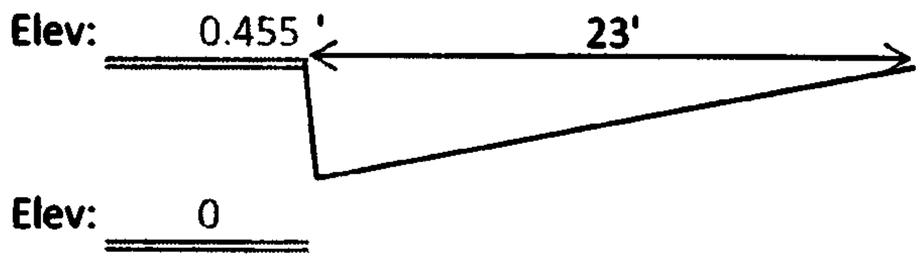
The table below presents suggested Manning's "n" values for various pavement surfaces
Department recommendation for design is the use of the rough texture values

Mannings, z:	1.24	(U.S.)
Flow Capacity, Q:	4.93	CFS (R4)
Mannings #, n:	0.017	
Slope, S:	0.0093	FT/FT (C-207)
Pvmt. Cross Slope, Sx:	0.02	FT/FT
Solving for Depth, y=	0.271302	ft
Converting y, y=	3.26	IN
22.75'*.02(x-slope)=	0.455	FT

Channel Profile



Channel Section



Length:	826.03 feet	Channel Width:	22.75 feet
Elev. A :	5322.57 feet	Depth:	0.455 feet
Elev. B :	5315.48 feet	Area:	5.175625 ft. sq.
Δ Elev. :	7.09 feet	Wetted Perimeter:	23.21 feet
Slope:	0.008583 ft/ft	Hydraulic Radius, R:	0.222995 feet
		Looked up coefficient, n:	0.017

$$Q = VA = \left(\frac{1.49}{n}\right)AR^{\frac{2}{3}}\sqrt{S} \quad [U.S.]$$ Flow Capacity, Q: 15.45 CFS

Access C South Street Calculations: Analysis Point C-1

$$y = z\left(\frac{QnS_x}{S^{1/2}}\right)^{3/8}$$

Equation 10-1

where

y = depth of water in the curb and gutter cross section (ft. or m)

Q = gutter flow rate (cfs or m^3/s)

n = Manning's roughness coefficient

S = longitudinal slope (ft./ft. or m/m)

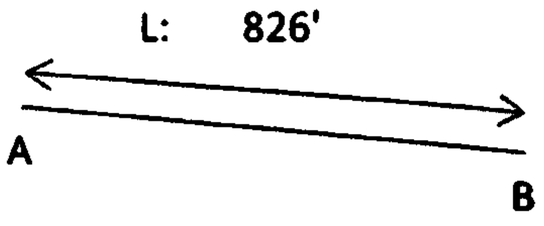
S_x = pavement cross slope = $1/x$ (ft /ft. or m/m)

z = 1 24 for English measurements or 1 443 for metric.

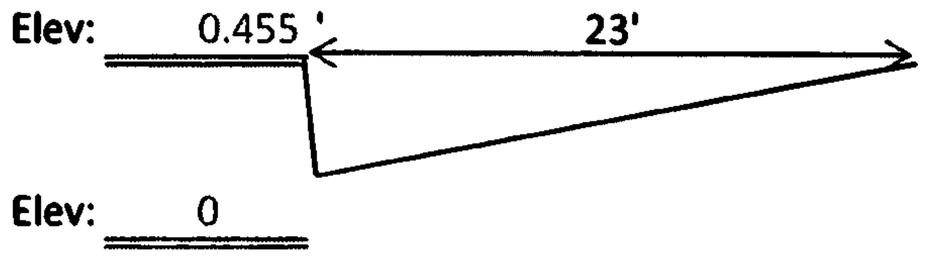
The table below presents suggested Manning's 'n' values for various pavement surfaces. Department recommendation for design is the use of the rough texture values

Mannings, z:	1.24	(U.S.)
Flow Capacity, Q:	3.16	CFS (R3)
Mannings #, n:	0.017	
Slope, S:	0.0093	FT/FT (C-207)
Pvmt. Cross Slope, Sx:	0.02	FT/FT
Solving for Depth, y=	0.229625	ft
Converting y, y=	2.76	IN
22.75'*.02(x-slope)=	0.455	FT

Channel Profile



Channel Section



Length:	826.03 feet	Channel Width:	22.75 feet
Elev. A :	5322.57 feet	Depth:	0.455 feet
Elev. B :	5315.48 feet	Area:	5.175625 ft. sq.
Δ Elev. :	7.09 feet	Wetted Perimeter:	23.21 feet
Slope:	0.008583 ft/ft	Hydraulic Radius, R:	0.222995 feet
		Looked up coefficient, n:	0.017

$$Q = VA = \left(\frac{1.49}{n}\right)AR^{\frac{2}{3}}\sqrt{S} \quad [U.S.]$$ Flow Capacity, Q: 15.45 CFS

Access C South Street Calculations: Analysis Point C-2

$$y = z\left(\frac{QnS_x}{S^{1/2}}\right)^{3/8}$$

Equation 10-1.

where.

y = depth of water in the curb and gutter cross section (ft. or m)

Q = gutter flow rate (cfs or m^3/s)

n = Manning s roughness coefficient

S = longitudinal slope (ft./ft. or m/m)

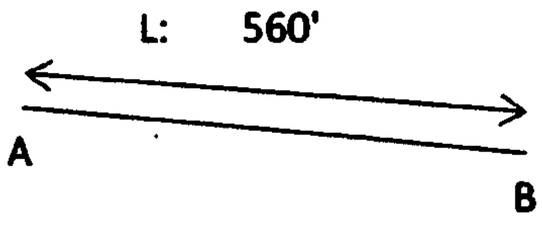
S_x = pavement cross slope = 1/x (ft /ft. or m/m)

z = 1.24 for English measurements or 1.443 for metric.

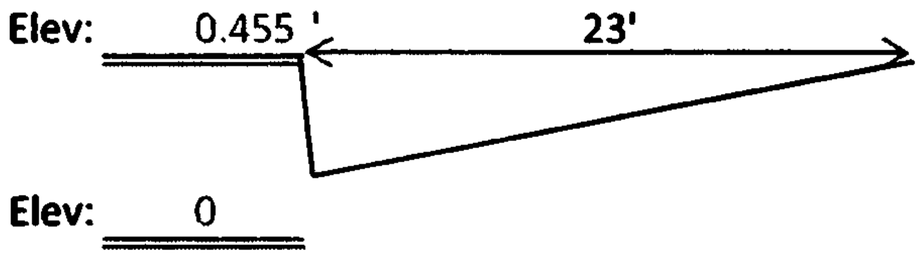
The table below presents suggested Manning's 'n' values for various pavement surfaces
Department recommendation for design is the use of the rough texture values

Mannings, z:	1.24	(U.S.)
Flow Capacity, Q:	2.03	CFS (R8/4)
Mannings #, n:	0.017	
Slope, S:	0.005	FT/FT (C-207)
Pvmt. Cross Slope, Sx:	0.02	FT/FT
Solving for Depth, y=	0.218414	ft
Converting y, y=	2.62	IN
22.75'*.02(x-slope)=	0.455	FT

Channel Profile



Channel Section



Length:	559.89 feet	Channel Width:	22.75 feet
Elev. A :	5322.57 feet	Depth:	0.455 feet
Elev. B :	5319.99 feet	Area:	5.175625 ft. sq.
Δ Elev. :	2.58 feet	Wetted Perimeter:	23.21 feet
Slope:	0.004608 ft/ft	Hydraulic Radius, R:	0.222995 feet
		Looked up coefficient, n:	0.017

$$Q = VA = \left(\frac{1.49}{n}\right)AR^{\frac{2}{3}}\sqrt{S} \quad [U.S.]$$ Flow Capacity, Q: 11.32 CFS

Access C South Street Calculations: Analysis Point C-2

$$y = z\left(\frac{QnS_x}{S^{1/2}}\right)^{3/8}$$

Equation 10-1

where.

y = depth of water in the curb and gutter cross section (ft or m)

Q = gutter flow rate (cfs or m^3/s)

n = Manning's roughness coefficient

S = longitudinal slope (ft./ft. or m/m)

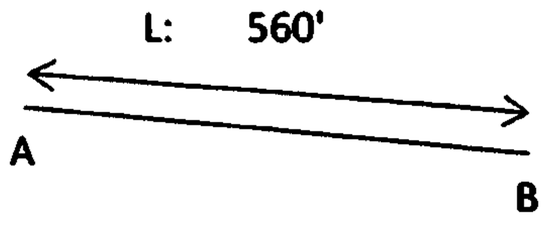
S_x = pavement cross slope = 1/x (ft./ft. or m/m)

z = 1.24 for English measurements or 1.443 for metric.

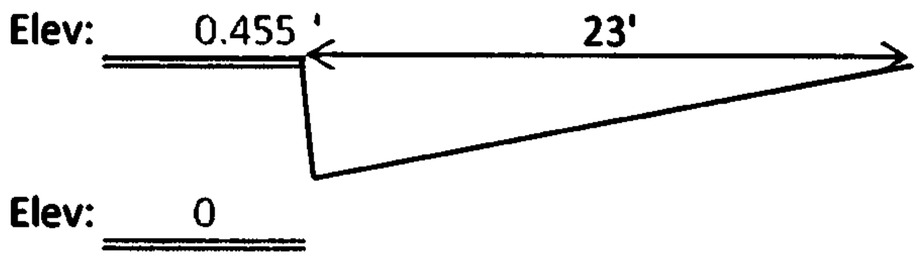
The table below presents suggested Manning's 'n' values for various pavement surfaces.
Department recommendation for design is the use of the rough texture values

Mannings, z:	1.24	(U.S.)
Flow Capacity, Q:	4.06	CFS (R2/2)
Mannings #, n:	0.017	
Slope, S:	0.005	FT/FT (C-207)
Pvmt. Cross Slope, Sx:	0.02	FT/FT
Solving for Depth, y=	0.283247	ft
Converting y, y=	3.40	IN
22.75'*.02(x-slope)=	0.455	FT

Channel Profile



Channel Section



Length:	559.89 feet	Channel Width:	22.75 feet
Elev. A :	5322.57 feet	Depth:	0.455 feet
Elev. B :	5319.99 feet	Area:	5.175625 ft. sq.
Δ Elev. :	2.58 feet	Wetted Perimeter:	23.21 feet
Slope:	0.004608 ft/ft	Hydraulic Radius, R:	0.222995 feet
		Looked up coefficient, n:	0.017

$$Q = VA = \left(\frac{1.49}{n}\right)AR^{\frac{2}{3}}\sqrt{S} \quad [U.S.]$$ Flow Capacity, Q: 11.32 CFS

Access C South Street Calculations: Analysis Point D

$$y = z\left(\frac{QnS_x}{S^{1/2}}\right)^{3/8}$$

Equation 10-1

where

y = depth of water in the curb and gutter cross section (ft. or m)

Q = gutter flow rate (cfs or m^3/s)

n = Manning's roughness coefficient

S = longitudinal slope (ft./ft. or m/m)

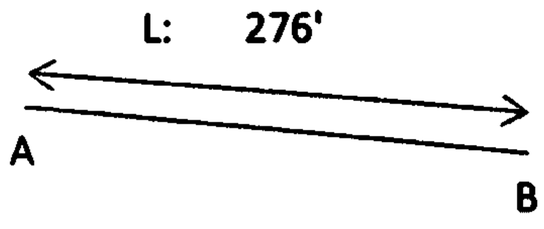
S_x = pavement cross slope = 1/x (ft./ft. or m/m)

z = 1.24 for English measurements or 1.443 for metric.

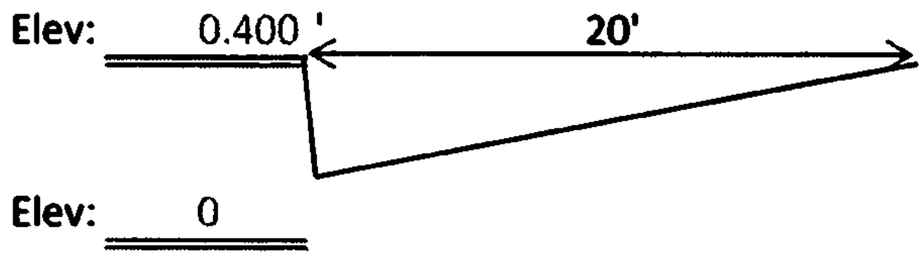
The table below presents suggested Manning's 'n' values for various pavement surfaces
Department recommendation for design is the use of the rough texture values

Mannings, z:	1.24	(U.S.)
Flow Capacity, Q:	1.15	CFS (R1/2)
Mannings #, n:	0.017	
Slope, S:	0.0059	FT/FT (C-207)
Pvmt. Cross Slope, Sx:	0.02	FT/FT
Solving for Depth, y=	0.17118	ft
Converting y, y=	2.05	IN
20'*.02(x-slope)=	0.4	FT

Channel Profile



Channel Section



Length:	276.06 feet	Channel Width:	20 feet
Elev. A :	5316.54 feet	Depth:	0.4 feet
Elev. B :	5314.92 feet	Area:	4 ft. sq.
Δ Elev. :	1.62 feet	Wetted Perimeter:	20.40 feet
Slope:	0.005854 ft/ft	Hydraulic Radius, R:	0.19604 feet
		Looked up coefficient, n:	0.017

$$Q = VA = \left(\frac{1.49}{n}\right)AR^{\frac{2}{3}}\sqrt{S} \quad [U.S.]$$ Flow Capacity, Q: 9.05 CFS

2/10/2017 ABQ114-9C Calculated by: R. Durden Date:_____
Road Flow Calculations ACE - Interior Checked by:_____ Date:_____

Access C South Street Calculations: Analysis Point E

$$y = z\left(\frac{QnS_x}{S^{1/2}}\right)^{3/8}$$

Equation 10-1

where

y = depth of water in the curb and gutter cross section (ft. or m)

Q = gutter flow rate (cfs or m^3/s)

n = Manning's roughness coefficient

S = longitudinal slope (ft./ft. or m/m)

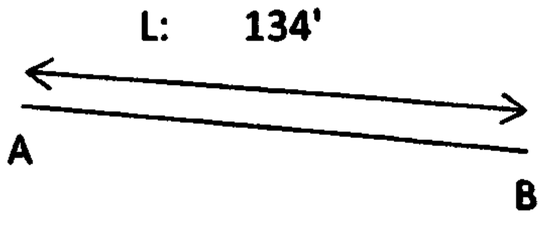
S_x = pavement cross slope = 1/x (ft /ft or m/m)

z = 1.24 for English measurements or 1.443 for metric.

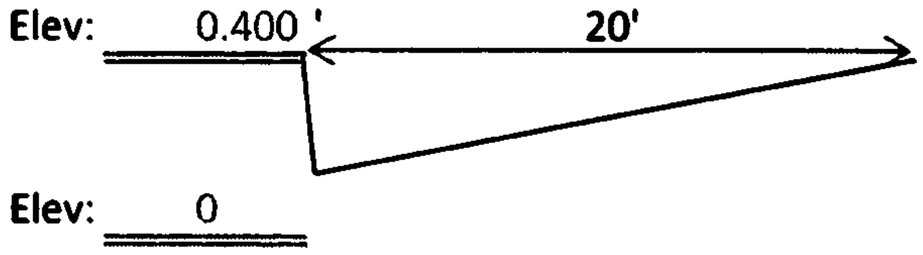
The table below presents suggested Manning's 'n' values for various pavement surfaces
Department recommendation for design is the use of the rough texture values

Mannings, z:	1.24	(U.S.)
Flow Capacity, Q:	0.97	CFS (R5/2)
Mannings #, n:	0.017	
Slope, S:	0.0052	FT/FT (C-207)
Pvmt. Cross Slope, Sx:	0.02	FT/FT
Solving for Depth, y=	0.164443	ft
Converting y, y=	1.97	IN
20*.02(x-slope)	0.4	FT

Channel Profile



Channel Section



Length:	134.17 feet	Channel Width:	20 feet
Elev. A :	5320.92 feet	Depth:	0.4 feet
Elev. B :	5320.45 feet	Area:	4 ft. sq.
Δ Elev. :	0.47 feet	Wetted Perimeter:	20.40 feet
Slope:	0.003503 ft/ft	Hydraulic Radius, R:	0.19604 feet
		Looked up coefficient, n:	0.017

$$Q = VA = \left(\frac{1.49}{n}\right)AR^{\frac{2}{3}}\sqrt{S} \quad [U.S.]$$ Flow Capacity, Q: 7.00 CFS

CITY OF ALBUQUERQUE

Richard J. Berry, Mayor

September 27, 2016

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

RE: Aviation Center of Excellence
City of Albuquerque Aviation Department
Mass Grading & Drainage Plan
Engineer's Stamp Date 9-8-2016 (File: M16D024N)

Dear Mr. Morrow:

Based upon the information provided in your submittal received 9-9-2016, the above-referenced Grading and Drainage Plan is approved for Rough Grading and construction of the perimeter access road.

We understand that the Erosion and Sediment Control requirements will be addressed by the Aviation Department.

If there are as-builts generated (not a requirement for mass grading), please forward a copy for our file.

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

Sincerely,

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

Orig: Drainage file

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: Aviation Center of Excellence Building Permit #: _____ City Drainage #: M16D024N

DRB#: 1000270 EPC#: 14EPC-40024 Work Order#: 751580

Legal Description: A portion of Tract A-1, Sunport Municipal Addition

City Address: Southeast Corner of Gibson Blvd. SE and Girard Blvd. SE

Engineering Firm: Molzen Corbin Contact: Steve Morrow

Address: 2701 Miles Road

Phone#: 505-242-5700 Fax#: _____ E-mail: smorrow@molzencorbin.com

Owner: City of Albuquerque Aviation Dept. Contact: Jim Hinde

Address: P.O. Box 1293

Phone#: _____ Fax#: _____ E-mail: JHinde@cabq.gov

Architect: _____ Contact: _____

Address: _____

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

Other Contact: _____ Contact: _____

Address: _____

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

Check all that Apply:

DEPARTMENT:

__X__ HYDROLOGY/ DRAINAGE
_____ TRAFFIC/ TRANSPORTATION
_____ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

_____ ENGINEER/ ARCHITECT CERTIFICATION

_____ CONCEPTUAL G & D PLAN
__X__ GRADING PLAN
_____ DRAINAGE MASTER PLAN
_____ DRAINAGE REPORT
_____ CLOMR/LOMR

_____ TRAFFIC CIRCULATION LAYOUT (TCL)
_____ TRAFFIC IMPACT STUDY (TIS)
_____ EROSION & SEDIMENT CONTROL PLAN (ESC)

_____ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: _____ Yes __X__ No

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
Rough __X__ GRADING PERMIT APPROVAL
_____ SO-19 APPROVAL
_____ PAVING PERMIT APPROVAL
_____ GRADING/ PAD CERTIFICATION
_____ WORK ORDER APPROVAL
_____ CLOMR/LOMR

_____ PRE-DESIGN MEETING
_____ OTHER (SPECIFY) _____

RECEIVED
SEP 08 2016
LAND DEVELOPMENT SECTION

DATE SUBMITTED: 9-08-16 By: Steve Morrow

RECEIVED
SEP 09 2016
LAND DEVELOPMENT SECTION

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

SECTION III

EXISTING CONDITIONS

A. General. This study began with an analysis of existing conditions at the AIA. Existing conditions for the purpose of this study includes the completion of the reconstruction of Taxiways A and E which were completed in 1994. Existing conditions does not include reconstruction of Runway 3-21 to air carrier standards and abandonment of Runway 17-35. Existing conditions includes Runway 3-21 as general aviation and the freight apron located west of Runway 3-21. It further includes completion of Spirit Drive. A basic description of the major basins is given in the following sections.

B. Basin G17. This 0.10140 square mile basin encompasses the northern end of Runway 17-35 and developed areas west of the runway end. Drainage from the US Customs area ramps is collected in a storm sewer, routed around the north end of the runway and through developed commercial areas west of the runway end and just south of Gibson Blvd. The system experiences problems just south of Gibson Blvd. near the old potato chip factory where the storm sewer makes a 90 degree bend to connect to the 36 inch storm sewer in Gibson. Because of this bend, the hydraulic grade line surfaces and flows leave the storm sewer and surface in the street.

TABLE III-1
Basin G17

[illegible]	AREA (sq mi)	Q10 (cfs)	Q100 (cfs)	V10 (ac-ft)	V100 (ac-ft)	OUTFALL	DESCRIPTION
101	0.0284	32.42	54.60	1.3824	2.394	18" SD	US Customs Apron
102	0.0566	33.74	63.21	2.267	4.221	18" SD	E. of R/W 17-35 N. End
103	0.0622	34.00	65.13	2.504	4.652	24" SD	N. of R/W 17-35
104	0.0710	38.05	72.59	2.921	5.384	24" SD	W. of R/W 17-35 N. End
105	0.0820	36.55	75.76	3.461	6.319	27" SD	Offices NW of R/W 17-35
106	0.0727	32.77	68.80	2.982	5.502	Surface	Columbia Drive
107	0.0894	47.40	81.72	3.835	6.971	30" SD	Offices (SAIC) NW of R/W 17-35
108	0.0087	15.82	24.74	0.5433	0.890	21" SD	Commercial area on Gibson
Σ	0.1014	66.97	102.89	4.599	8.215	30"SD	to Gibson Blvd. Storm Drain

C. **Basin N17.** This 0.4119 square mile basin extends along Runway 17-35 from the Runway 8-26 intersection up to the north runway end. This area also includes the main parking structure, car rental parking area, the loop road, the main terminal ramp and commercial development areas just north of the parking structures to Alamo Drive. Drainage is conveyed to the Yale Blvd. storm sewer system and eventually discharged into the Kirtland Channel. Problems with storm sewer flows surfacing have been experienced just north of the parking structure near the commercial development. Furthermore, the terminal expansion project included installation of a restrictor plate in the storm sewer conveying flows from the ramp through the terminal area. This restrictor plate causes ponding on the aircraft parking ramp south of the terminal. The restrictor plate was installed to correct the first problem described above, that is the flooding near the commercial development caused by stormwater exiting the storm drain.

TABLE III-2

Basin N17

SUB-BASIN NO.	AREA (sq. mi)	Q10 (cfs)	Q100 (cfs)	V10 (ac-ft)	V100 (ac-ft)	OUTFALL	DESCRIPTION
201	0.0129	5.38	9.67	0.538	1.000	24" SD	E. Side T/W D
202							eliminated
203	0.0210	28.89	48.83	0.951	1.713	24" SD	Between R/W 17-35 & T/W D
204	0.0217	31.28	52.67	0.973	1.759	24" SD	Between R/W 17-35 & T/W D
205	0.0267	20.35	34.26	1.169	2.131	24" SD	Between R/W 17-35 & T/W D
206	0.0405	20.50	25.67	1.861	3.337	36" SD	Between R/W 17-35 & T/W C
207	0.1267	66.58	91.50	5.913	10.570	36" SD	Between R/W 17-35 & T/W C
208	0.0435	22.95	30.82	2.029	3.620	24" SD	Between R/W 17-35 & T/W C
209	0.1408	75.33	107.05	6.545	11.689	42" SD	Between T/W C & Access Road
210	0.1449	77.03	109.64	6.730	12.019	42" SD	Between Access Road & Girard
211	0.0268	38.18	60.46	1.637	2.687	24" SD	Girard Airport Entrance
212	0.0058	11.58	17.64	0.414	0.654	24" SD	Rental Car Parking
213	0.0480	59.98	75.86	3.327	5.299	24" SD	Rental Car Parking
214	0.1084	141.64	204.43	7.213	11.597	24" SD	S. Side Airport Loop Road
214.1	0.2533	193.20	281.40	13.943	23.616	10" SD	S. Side Airport Loop Road
214.2	0.2839	220.09	332.63	15.079	25.819	36" SD	S. Side Airport Loop Road
215	0.0124	10.52	22.05	0.270	0.642	surface	W. side of Girard
216	0.0134	7.00	18.49	0.193	0.535	Surface	W. Side of Girard; N. of 215
217	0.0535	15.46	37.22	0.766	2.310	Surface	Business complex
217.1	0.3374	232.83	358.61	15.845	21.130	Surface	S. Side of Alamo Drive

[illegible]	AREA [illegible]	Q10 (cfs)	Q100 (cfs)	V10 (ac-ft)	V100 (ac-ft)	OUTFALL	DESCRIPTION
218	0.0932	116.18	165.12	6.224	9.995	24" SD	Lower parking lot
219	0.664	105.46	105.46	4.587	7.309	Surface	Parking Structure
220	0.0327	97.81	97.81	2.260	3.603	36" SD	E. Terminal Ramp
221	0.0370	46.43	46.43	2.542	4.058	36" SD	Terminal Entrance, East
222	0.0215	45.55	45.55	1.351	2.196	24" SD	Terminal Entrance, West
223	0.3651	418.23	418.23	17.521	30.882	60" SD	Areas E. of Alamo/Yale
224	0.2612	295.18	295.18	14.315	24.274	24" SD	Amfac Hotel, East
225	0.0227	49.80	49.80	0.765	1.545	Surface	Amfac Hotel, North
226	0.0428	87.14	87.14	2.397	4.003	Surface	Amfac Hotel, West
227	0.0353	70.75	70.75	2.011	3.344	24" SD	Airport Entrance by Yale
228	0.4119	514.03	514.03	20.169	35.293	24" SD	E. side of Yale
Σ	0.4119	328.37	514.53	20.169	35.293	2-42" CMP	to Basin KC

D. **Basin KC.** This 0.6810 square mile basin extends from Yale Blvd to the South Diversion Channel and includes commercial development on each side of Randolph. The principal drainage feature of this basin is the Kirtland Channel which begins just west of the Yale/Alamo intersection and discharges to the South Diversion Channel via a baffle chute drop structure west of Mulberry. The principal problems experienced in this basin are in the lower reaches of the Kirtland Channel where the concrete lined channel makes two rather severe horizontal bends. Very high velocities which exist in the channel have resulted in the flows overtopping the channel banks in this area.

The Kirtland Channel has experienced some problems near the box culvert crossing on Mulberry. These problems have been noted through visual observations and some damages that have occurred during past rainfall events. The Kirtland Channel in this area makes two horizontal bends on what appears to be rather severe horizontal curves. Both of these bends occur just upstream from the Mulberry to form an "S" curve. The downstream curve immediately upstream of the Mulberry crossing has experienced overtopping along the southern channel bank encroaching on some existing homes in this area. In addition to this curvilinear alignment, there is a side channel discharging into the Kirtland Channel just upstream of the Mulberry crossing. The Mulberry crossing itself is a two cell 6'X6' box culvert. Downstream of this culvert is a short segment of channel and then a baffle drop spillway discharging into the South Diversion Channel.

From visual observation it appears that the problem of flow overtopping the channel is caused by superelevation of flows with high velocities around this second curve. Additional freeboard was added to this area by constructing a one foot high concrete retaining wall along this channel

TABLE III-15
Far East Basin

SUB-BASIN NO.	AREA (sq mi)	Q10 (cfs)	Q100 (cfs)	V10 (ac-ft)	V100 (ac-ft)	OUTFALL	DESCRIPTION
1700	0.2260	79.46	153.96	9.261	17.265	30" SD 48" SD	NE of R/W 8-26 end
1701	0.0160	24.24	40.13	0.772	1.363	54" SD	SE of R/W 8-26 end
Σ	0.2420	46.40	96.82	10.03	18.628	54" SD	to KAFB

R. **Other Areas.** There are numerous other drainage areas which are technically inside the airport property and drain offsite. These areas include those steep slopes along the side of Tijeras Arroyo between the airport and the railroad at the toe of this slope. These areas do not affect airport activities, and in most cases, are not impacted by airport activities. A summary of these drainage areas is shown in the following table.

S. **Summary of Existing Area Problems.** The following is a summary of the problems encountered in the existing system.

1. **Basin G17.** The storm sewer collecting runoff from the areas around the extreme north end of Runway 17-35 discharges into the storm sewer in Gibson Boulevard. Approximately half way between Yale and Girard and just south of Gibson this sewer makes a 90 degree bend to enter the Gibson system. At this severe bend, water leaves the manhole and floods the surface.

2. **Basin N17.** ,There are two principal problems in this basin. First, there is a restrictor plate installed in the storm sewer conveying around the terminal building. Second, there is some stormwater exiting the storm sewer just north of the lower parking lot and adjacent to the commercial development areas along Alamo Drive. The restrictor plate was installed to correct the flooding problem at this location.

3. **Basin WE.** The 2-60" culverts under University have a capacity of 100 cfs whereas the existing flows are 370 cfs.

4. **Basin WE.** Subbasin 504, between the B and C Concourses on the terminal apron ponds significantly during typical storms.

5. **Basin GA.** Crossing structures on University Boulevard have inadequate inlet capacities.

The existing EEND Basin is considered fully developed under this study. The portion within Airport property was expanded under the Taxiway E and Taxiway A projects. Under the master plan, two connector taxiways are planned in the south central portion of the basin. The addition of these taxiways will not significantly impact the recently constructed system. The discharges from the EEND Basin fall within KAFB property. Improvements are planned by KAFB for both of these discharge points due to their impact on an abandoned landfill. The improvements are not considered in this study since they fall downstream of the Airport and are within KAFB jurisdiction.

The Far East End Basin lies predominantly within KAFB property off the east end of the Airport. Improvements made during the Taxiway E project were sized to handle developed conditions on the airfield. If future development occurs on Air Force property, KAFB should be responsible for any increase in discharge or volume to the Airport system.

C. **G-17 Basin.** The existing conditions in Basin G17 is are assumed to be fully developed under this study. Subbasins 101 and 102 lie within KAFB and are predominantly vacant. Capacity of the storm drainage system serving these areas will not allow additional flows to be discharged. Diversion to the storm sewer system in Gibson Blvd. is not an option according to City of Albuquerque Public Works because of the existing stress on the system from current conditions. Diversion of subbasins 101, 102, 103 and 104 to N17 Basin at subbasin 206 is recommended after improvements are made within N17 Basin. The diversion will help relieve capacity problems in subbasin 108 at the 90-degree bend upstream of the basin discharge to Gibson Blvd.

Downstream of subbasin 104, the existing storm sewer system serves a light industrial and business park. It does not appear that additional significant development can occur in these subbasins. The existing drainage system is adequate for the 10-year event with the exception of the 90 degree turn in subbasin 108. Improvement to this bend will relieve flooding problems on the surrounding private property. Appendix H contains a conceptual scope for the improvements in this area.

D. **N17 - KC Basins.** Significant changes are proposed for N-17 Basin in the AIA master plan. Most significant is the proposed terminal expansion in the upper reaches of N-17 basin, specifically in subbasins 203, 204, 207, 208, 209, 210, 211, 212, 213, and 220. Currently, this area contains most of the northern portion of Runway 17-35 and Taxiway C. If Runway 17-35 is closed and the terminal is expanded into this area, it is assumed that the majority of the area will be impervious.

Under the proposed conditions outlined in the master plan, the new aircraft parking apron which will surround the new terminal area will cover subbasins 203, 204, 207, 208 and 209. Subbasin 209 is a consolidation of subbasins 209, 210, 212, 213 and a portion of 211. An increase in the storm drain system will be required to carry the increased flows from the apron and terminal as outlined below in Table IV-1.

To initiate the analysis of the lower reaches of the Kirtland Channel, general flow characteristics of the channel were computed. These are as follows:

Q	=	950 cfs			
Yn	=	2.58'	Yc	=	4.92'
n	=	0.016			
B	=	10'			
H/V	=	1.74			
Vn	=	25.44 fps	Vc	=	10.41 fps
S	=	0.0334 ft/ft	Sc	=	0.00282 ft/ft
TWn	=	18.98'			
An	=	37.38sf			

Obviously, flow in the channel is well within the supercritical flow regime and velocities are quite high. Using the DPM criteria, superelevation of the water surface was checked as follows:

$$Se = 1.3\ \frac{V^2(b+2zD)}{(g)(r)} = (1.3)\ \frac{(25.44^2)(10+(2)(1.74)(2.58)}{(32.2)(800)} = 0.62 \text{ ft.}$$

Based on these calculations, the problems experienced with the overtopping the channel side should not be occurring as the maximum outside radius depth of flow is only 3.20 feet. The channel has a lined depth of five feet. Additional freeboard is needed to maintain a two foot minimum but the overtopping of flows should not be occurring strictly from the superelevation.

Another source of the problem could involve the box culvert capacity. Using the DPM criteria, the pier losses were calculated and the results show that this box does, indeed, have proper capacity. Constructing a HEC-2 (Water surface profiles analysis) was not done as it was felt that HEC-2 would not accurately model the complex variables occuring at this location.

It is somewhat apparent that the problem is being caused by the reverse curves in the channel alignment. Since the flow in the channel is supercritical, the box itself cannot be causing a backwater affect unless the box has insufficient capacity. Calculations show that the box does have capacity. Therefore, the only affect that the box has on the flow is some disturbance at the center pier, an affect which cannot be recognized further upstream. If the flow in the channel were subcritical, then such an affect would be felt some distance upstream. While some effort has been made to increase freeboard along the channel, the success of these improvements is limited due to the presence of an additional channel discharge just upstream of the box culvert. This side channel cannot be blocked by increasing freeboard on the Kirtland Channel.

The problems experienced in this area are complex. Solutions cannot be achieved by computer analysis, but rather by a more logical approach. The Kirtland Channel should be reconstructed in a new location, further south of the existing alignment. This reconstruction should occur between the most upstream horizontal curve and the South Diversion Channel. This area is currently undeveloped and some flexibility would exist in both horizontal and vertical alignment. This reconstruction would allow the two horizontal curves to be lengthened causing less superelevation or eliminated completely. Furthermore, the side discharge from the residential areas to the north could be realigned to enter the Kirtland Channel at a more desirable location, without the potential of Kirtland flows backing up into this side channel. The box culvert could also be eliminated with this channel realignment. This is dependent upon the future planning of

the undeveloped areas surrounding the Mulberry crossing. If Mulberry will not be extended south in the future, no channel crossing will be needed.

TABLE IV-1
Improvements to N17 Basin

SUBBASIN NO.	PIPE DIAMETER	FLOW, 10 and 100 year, cfs	COMMENTS
204-207	30-inch	19.6 (10), 32 (100)	North N17 to center N17.
203-208	36-inch	24 (10), 37 (100)	Flow from 203 to 208
208-207	48-inch	49.3 (10), 76.2 (100)	South N17 to center N17
207-209	66-inch	164 (10), 255 (100)	Flow from 207 to 209
216-215	30-inch	13.8 (10), 20.3 (100)	Currently vacant parcel
220	60-inch	272.3 (10), 430.7 (100)	Flow from east terminal area
209-215-220	66-inch	272.3 (10), 430.7 (100)	Flow from new apron and terminal
214.2	42-inch	112 (10)	Flow from exist. terminal area, parking, rental lots, Craddock.
214.2-Alamo	72-inch	403 (10) 558 (100)	Flow from exist. terminal area, parking, rental lots, and new loop road curbside to new terminal.

The proposed terminal expansion will be drained through subbasin 207 collecting flows from the northern and southern portion of N17 Basin with new 30-inch and 48-inch drains, respectfully. Subbasin 209, consolidated, will accept the flow from subbasin 207 and discharge through a new 60-inch drain. This drain will increase in size to a 66-inch drain running west on the south side of the Craddock Business Park. After flow is collected from subbasin 214.2, incorporating discharges from the existing terminal area, parking area and rental car lots, a 72-inch drain will carry the 10-year flow to Alamo St. The existing 60-inch drain in Alamo St. will discharge across Yale Blvd. into the upstream reaches of the Kirtland Channel.

The current storm sewer system serving the existing terminal, parking, loop road, and rental car lot subbasins are restricted by the capacity of the 36-inch drain across subbasin 214.2 An orifice plate was installed at the discharge point of subbasin 220 when the existing terminal was expanded to control the discharge to approximately 30 cfs. Removal of this plate is recommended with the increase in capacity of the downstream system in subbasin 214.2 where the 36-inch drain will be replaced with a new 42-inch drain through subbasin 214.2. A new 72-

inch drain from northwest corner of subbasin 214.2 to Alamo St. is recommended to replace the existing 60-inch drain.

Subbasins 227 and 228, which serve the south end of Yale Blvd., will continue to discharge into the Kirtland Channel system through the 60-inch Yale crossing near Alamo St. and Yale Blvd. The conditions in the Yale system will be relieved with the construction of Sunport Blvd. which diverts a significant amount of the storm water from the north and west side of the existing terminal. This diversion is discussed in and Section IV-E.

E. **SP Basin.** SP Basin contains Sunport Boulevard, George Road, a portion of University Blvd., and various commercial tracts of land between the airport and the South Diversion Channel. Sunport Blvd. and the relocation of George Road are currently under design with construction scheduled to start Fall, 1994.

Incorporated into the Sunport Blvd. project is a system which will collect storm water runoff from the new roadways from the terminal building to Interstate 25 and from surrounding property. The storm drainage system within the Sunport right of way was designed using the 100-year, 6-hour event. Sunport Blvd. will be an elevated roadway from the Interstate to a point approximately 700-feet east of University Blvd. The drainage system will be installed at an elevation which will enable a significant amount of the surrounding properties to discharge into it. Discharge from the new Sunport System will be through existing crossing points at Interstate 25.

A major diversion is proposed in the Sunport project at its eastern terminus with Yale Blvd. The existing system which transports storm flows from the west terminal area, subbasin 222 on Plate 1, will be severed by the new Sunport system. The diversion will amount to approximately 77 cfs and 3.2 a-f under present conditions. Storm runoff from the old airport terminal building and the USPS Air Mail Facility will be collected by the new system installed during the relocation of George Road.

A detention basin is proposed south of Sunport Blvd. and west of University Blvd. for the attenuation of peak flows discharged from subbasins 400, 401, 401.1, 401.2, 402, 401.1 and 402.3. The basin is required to protect the existing 3-36" RCP culverts under Interstate 25 west of subbasin 404. Without the detention basin, an additional crossing would be required at the Interstate. Discharge from the basin through a riser with an orifice plate will be controlled at approximately 85 cfs. Total pond storage volume to the emergency spillway crest is approximately 7.6 a-f. This facility was designed using the 100-year, 24-hour event per the City of Albuquerque and New Mexico State Highway and Transportation Department.

The Master Plan identifies the parcels of land adjacent to the relocated George Road as future airport support areas. The design of the drain systems in the Sunport project have taken into account the development of these properties. In addition, property within the SP Basin was considered fully developed for the design of the Sunport storm drainage system an as such, this study does not incorporate any additional development scenarios for analysis. Reference is made to the Sunport Boulevard Drainage Report, February, 1994, Molzen-Corbin & Associates, for additional and specific information regarding the design of the Sunport storm drainage system.

CITY OF ALBUQUERQUE

Richard J. Berry, Mayor

January 15, 2016

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.

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

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.

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

Sincerely,

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

Orig: Drainage file

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: Aviation Center of Excellence Building Permit #: _____ City Drainage #: M16D024N

DRB#: 1000270 EPC#: 14EPC-40024 Work Order#: _____

Legal Description: Tract A-1, Sunport Municipal Addition

City Address: Southeast Corner of Gibson Blvd. SE and Girard Blvd. SE

Engineering Firm: Molzen Corbin Contact: Steve Morrow

Address: 2701 Miles Road, Albuquerque, NM 87106

Phone#: 505-242-5700 Fax#: _____ E-mail: smorrow@molzencorbin.com

Owner: City of Albuquerque Aviation Dept Contact: Jim Hinde

Address: P.O Box 1293, Albuquerque NM 87103

Phone#: _____ Fax#: _____ E-mail: JHinde@cabq.gov

Architect: _____ Contact: _____

Address: _____

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

Other Contact: _____ Contact: _____

Address: _____

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

Check all that Apply:

DEPARTMENT:

X HYDROLOGY/ DRAINAGE
_____ TRAFFIC/ TRANSPORTATION
_____ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

_____ ENGINEER/ ARCHITECT CERTIFICATION

_____ CONCEPTUAL G & D PLAN
_____ GRADING PLAN
X 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
X 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) _____

RECEIVED
JAN 13 2016
LAND DEVELOPMENT SECTION

IS THIS A RESUBMITTAL?: _____ Yes X No

DATE SUBMITTED: 9-10-15 By: Steve Morrow

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED. ___

CITY DEPARTMENT INFRASTRUCTURE LIST

Current DRC

Project Number: M16D024N

FIGURE 12

INFRASTRUCTURE LIST

Date Submitted: 19-Apr-16
Date Site Plan Approved: 27-Jan-16
Date Preliminary Plat Approved:
Date Preliminary Plat Expires:
DRB Project No.: 1000270
DRB Application No.: 15DRB-70375

EXHIBIT "A"

TO SUBDIVISION IMPROVEMENTS AGREEMENT

DEVELOPMENT REVIEW BOARD (D.R.B.) REQUIRED INFRASTRUCTURE LIST

Aviation Center of Excellence

PROPOSED NAME OF PLAT AND/OR SITE DEVELOPMENT PLAN

Tract A-1, Sunport Municipal Addition

EXISTING LEGAL DESCRIPTION PRIOR TO PLATTING ACTION

Following is a summary of PUBLIC/PRIVATE Infrastructure required to be constructed or financially guaranteed for the above development. This Listing is not necessarily a complete listing. During the SIA process and/or in the review of the construction drawings, if the DRC Chair determines that appurtenant items and/or unforeseen items have not been included in the infrastructure listing, the DRC Chair may include those items in the listing and related financial guarantee. Likewise, if the DRC Chair determines that appurtenant or non-essential items can be deleted from the listing, those items may be deleted as well as the related portions of the financial guarantees. All such revisions require approval by the DRC Chair, the User Department and agent/owner. If such approvals are obtained, these revisions to the listing will be incorporated administratively. In addition, any unforeseen items which arise during construction which are necessary to complete the project and which normally are the Subdivider's responsibility will be required as a condition of project acceptance and close out by the City.

PAVING

SIA Sequence #	COA DRC Project #	Size	Type of Improvement	Location	From	To	Private Inspector	City Inspector	City Cnst Engineer
		6'	PCC SIDEWALK ON EAST SIDE OF GIRARD BLVD INCL CURB & GUTTER	GIRARD BLVD	0.63 MILES SOUTH OF GIBSON BLVD	GIBSON BLVD	/	/	/
		6'	PCC SIDEWALK ON SOUTH SIDE OF GIBSON BLVD INCL PCC CURB & GUTTER	GIBSON BLVD	GIRARD BLVD	HICKMAN AVE	/	/	/
							/	/	/
		12'+	PCC PAVING FOR MEDIAN TURN LANE ON GIBSON BLVD W/ PCC MEDIAN CURB & GUTTER	GIBSON BLVD	0.11 MILES EAST OF GIRARD BLVD	0.20 MILES EAST OF GIRARD BLVD	/	/	/
		18'+	PCC PAVING FOR TURN BAYS AND BIKE LANE ON EASTBOUND GIBSON BLVD	GIBSON BLVD	GIRARD BLVD	HICKMAN AVE	/	/	/
		36'+	ASPHALT PAVING ON GIRARD BLVD TO INCLUDE NEW TURN BAYS	GIRARD BLVD	GIBSON BLVD	0.63 MILES SOUTH OF GIBSON BLVD	/	/	/
		10'	ASPHALT PAVING FOR MULTI-USE PATH TO THE WEST OF GIRARD	GIRARD BLVD	GIBSON BLVD	0.36 MILES SOUTH OF GIBSON BLVD	/	/	/
		12'+	ASPHALT PAVING FOR NEW TURN BAY	MILES RD	GIRARD BLVD	0.03 MILES WEST OF GIRARD BLVD	/	/	/

PUBLIC STORM DRAIN IMPROVEMENTS

SIA Sequence #	COA DRC Project #	Size	Type of Improvement	Location	From	To	Private Inspector	City Inspector	City Cnst Engineer
		5 EA	CURB DROP INLETS REMOVE AND REPLACE TO NEW CURB LOCATION W/ DRAIN PIPE EXTENTION	GIBSON BLVD	GIRARD BLVD	HICKMAN AVE	/	/	/
							/	/	/
							/	/	/
							/	/	/
		UTILITY							
		12"	WATERLINE STUBOUT (150LF)	CROSSING GIBSON BLVD	NE CORNER OF LOT 3	NORTH SIDE OF GIBSON BLVD	/	/	/
		12"	WATERLINE STUBOUT (150LF)	CROSSING GIRARD BLVD	SW CORNER OF LOT 6	WEST SIDE OF GIRARD BLVD	/	/	/
		12"	WATERLINE (250LF)	MILES RD	EAST SIDE OF GIBSON BLVD	APPROX 250LF WEST ON MILES	/	/	/
		12"	WATERLINE STUBOUT (150LF)	CROSSING GIRARD	NW CORNER OF LOT 14	WEST SIDE OF GIRARD BLVD	/	/	/
							/	/	/
							/	/	/
							/	/	/
							/	/	/
							/	/	/
							/	/	/

NAME OF PLAT AND/OR SITE PLAN_____

NOTES

The improvements identified above will be the responsibility of the City of Albuquerque, Dept of Aviation. By signing below, I JAMES D. HINDE understand that my division is financially responsible for the above listed items . This agreement will constitute as a Subdivision Improvement Agreement (SIA). Acquiring funding for these imems is my responsibility. These items listed above will be completed 12 months after written notification from the City Engineer. The estimated cost of these improvements are $1,327,150.00.

James D. Hinde
4.19.16

AGENT / OWNER	DEVELOPMENT REVIEW BOARD MEMBER APPROVALS	
STEVEN MORROW, P.E. NAME (print)	DRB CHAIR - date	PARKS & GENERAL SERVICES - date
MOLZEN CORBIN FIRM	TRANSPORTATION DEVELOPMENT - date	AMAFCA - date
SIGNATURE - date	UTILITY DEVELOPMENT - date	_____ - date
MAXIMUM TIME ALLOWED TO CONSTRUCT THE IMPROVEMENTS WITHOUT A DRB EXTENSION: _____	CITY ENGINEER - date	_____ - date

DESIGN REVIEW COMMITTEE REVISIONS

REVISION	DATE	DRC CHAIR	USER DEPARTMENT	AGENT /OWNER

CITY DEPARTMENT INFRASTRUCTURE LIST

Current DRC
Project Number. M16D024N

ORIGINAL

FIGURE 12

INFRASTRUCTURE LIST

Date Submitted. 22-Jan-16
Date Site Plan Approved 1-27-16
Date Preliminary Plat Approved
Date Preliminary Plat Expires
DRB Project No.: 1000270
DRB Application No.: 15DRB-70375

EXHIBIT "A"
TO SUBDIVISION IMPROVEMENTS AGREEMENT
DEVELOPMENT REVIEW BOARD (D.R.B.) REQUIRED INFRASTRUCTURE LIST

Aviation Center of Excellence
PROPOSED NAME OF [redacted] SITE DEVELOPMENT PLAN

Tract A-1, Sunport Municipal Addition
EXISTING LEGAL DESCRIPTION PRIOR TO PLATTING ACTION

Following is a summary of PUBLIC/PRIVATE Infrastructure required to be constructed or financially guaranteed for the above development. This Listing is not necessarily a complete listing. During the SIA process and/or in the review of the construction drawings, if the DRC Chair determines that appurtenant items and/or unforeseen items have not been included in the infrastructure listing, the DRC Chair may include those items in the listing and related financial guarantee. Likewise, if the DRC Chair determines that appurtenant or non-essential items can be deleted from the listing, those items may be deleted as well as the related administratively. In addition, any unforeseen items which anse during construction which are necessary to complete the project and which normally are the Subdivider's responsibility will be required as a condition of project acceptance and close out by the City.

PAVING

SIA Sequence #	COA DRC Project #	Size	Type of Improvement	Location	From	To	Private Inspector	City Inspector	City Cnst Engineer
		6'	PCC SIDEWALK ON EAST SIDE OF GIRARD BLVD	GIRARD BLVD	0.63 MILES SOUTH OF GIBSON BLVD	GIBSON BLVD	/	/	/
		6'	PCC SIDEWALK ON SOUTH SIDE OF GIBSON BLVD W/ PCC CURB & GUTTER	GIBSON BLVD	GIRARD BLVD	HICKMAN AVE	/	/	/
		12'+	PCC PAVING FOR MEDIAN TURN LANE ON GIBSON BLVD W/ PCC MEDIAN CURB & GUTTER	GIBSON BLVD	0 11 MILES EAST OF GIRARD BLVD	0 20 MILES EAST OF GIRARD BLVD	/	/	/
							/	/	/
							/	/	/
							/	/	/
							/	/	/
							/	/	/
							/	/	/

PUBLIC STORM DRAIN IMPROVEMENTS

SIA Sequence #	COA DRC Project #	Size	Type of Improvement	Location	From	To	Private Inspector	City Inspector	City Cnst Engineer
		4 EA	CURB DROP INLETS REMOVE AND REPLACE TO NEW CURB LOCATION W/ DRAIN PIPE EXTENTION	GIBSON BLVD	GIRARD BLVD	HICKMAN AVE	/	/	/
							/	/	/
							/	/	/
							/	/	/
		UTILITY							
		12"	WATERLINE (3150LF)	EASEMENT	NE CORNER OF LOT 14	NE CORNER OF LOT 3	/	/	/
		12"	WATERLINE (900LF)	NORTH INTERIOR ACCESS RD	SW CORNER OF LOT 6	SW CORNER OF LOT 8	/	/	/
		12"	WATERLINE (500LF)	NORTH INTERIOR ACCESS RD	SW CORNER OF LOT 8	SW CORNER OF LOT 5	/	/	/
		12"	WATERLINE (800LF)	SOUTH INTERIOR ACCESS RD	GIRARD BLVD	TAXIWAY	/	/	/
		12"	WATERLINE (360LF)	BTWN LOT 5 AND LOT 8	NW CORNER OF LOT 8	NE CORNER OF LOT 8	/	/	/
							/	/	/
							/	/	/
							/	/	/
							/	/	/
							/	/	/

NAME OF PLAT AND/OR SITE PLAN _____

NOTE: Water line sizes and alignments are subject to change as parcels develop.

NOTES

The improvements identified above will be the responsibility of the City of Albuquerque, Dept of ~~Municipal Development~~ AVIATION. By signing below, I JAMES D. HINDE understand that my division is financially responsible for the above listed items . This agreement will constitute as a Subdivision Improvement Agreement (SIA). Acquiring funding for these imems is my responsibility. These items listed above will be completed 6 months after written notification from the City Engineer. The estimated cost of these improvements are $ 1,210,900.00.

James D. Hinde 1.21.16

AGENT / OWNER

STEVEN MORROW, P.E.
NAME (print)

MOLZEN CORBIN
FIRM

1-21-16
SIGNATURE - date

MAXIMUM TIME ALLOWED TO CONSTRUCT THE IMPROVEMENTS WITHOUT A DRB EXTENSION: _____

DEVELOPMENT REVIEW BOARD MEMBER APPROVALS

1-27-16
DRB CHAIR - date

1/27/16
TRANSPORTATION DEVELOPMENT - date

01/27/16
UTILITY DEVELOPMENT - date

1-27-16
CITY ENGINEER - date

Carol S. Dumont 1-27-16
PARKS & ~~GENERAL SERVICES~~ Recreation - date

_____
AMAFCA - date

_____
_____ - date

_____
_____ - date

DESIGN REVIEW COMMITTEE REVISIONS

REVISION	DATE	DRC CHAIR	USER DEPARTMENT	AGENT /OWNER

CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

October 21, 2015

Steve Morrow, P.E.
Molzen Corbin
2701 Miles Road SE
Albuquerque, NM 87106

RE: Aviation Center of Excellence - ACE (M16D024N)
Conceptual Drainage Plan
Engineer Stamp Date: 9-10-15

Dear Mr. Morrow,

Based upon the information provided in your submittal received 10/20/15, the above referenced submittal cannot be approved for action by the DRB on the Site Plan for Subdivision until the following comments are addressed:

1. Because this project is owned by the City of Albuquerque Aviation Department, standard process procedures may not apply. In this case, this plan will serve as the Master Drainage Plan for the future development of the Proposed Leased Lots. Rename the Title sheet as DRAINAGE MASTER PLAN.
2. Rename the Narrative as Master Drainage Plan Narrative
3. There needs to be a clear boundary of what the Proposed Site Plan encompasses, and the Drainage Master Plan will have to encompass the same area. The entire area of the Leased Lots needs to be included within this boundary. Coordinate this boundary with the Planner, and clearly show the limits of the determined boundary. Label it appropriately. The Site Plan is erroneously labeling it as the "Property Boundary". It is understood that the internal lot boundaries may change, but the overall boundary needs to be determined as it gives the limits of the approvals.
4. Show and label the actual Legal Property Boundary.
5. Reference the Drainage File of the older Master Drainage Plan, AIA DMP – M16D024
6. In Existing Conditions paragraph, the acreage should match that show on the Site Plan. The Site Plan says 70 acres and this plan says 116 Acres. 70 is Leased Boundary.
7. Compare the Total Flow from Table 1, 498 cfs, to the Total allowed from the AIA DMP for the same sub-basins. For the sub-basins that are not fully within the new Major Basin, use some percentage of the sub-basin. For ex. Use 80% of Basin 205, or whatever is the appropriate value.
8. Determine what is the status of the 24" Storm Drain and inlet that extends to the eastern boundary as well as the 48" upgraded Strom Drain shown on the "Proposed Future Development" plan.
9. Show the modified basin boundaries and Label as G17 and N17. The plan will probably need to be scaled down slightly so that the most southern boundary of N17 can be shown. It needs to be clear that the southeastern portion of the N17 basin is to discharge to the existing

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

inlets at the Aircraft Apron. The need not be shown. Show the western portion of basins G17 and N17 to the extent possible.

10. According to the MDP, Basin 209 is supposed to drain to 42" SD "Between T/W and Access Road". Where is this on the new MDP? Where does the western edge of Basin 209 lie relative to the limits of the new MDP? Is it Girard? half of Girard.
11. Does some portion of Basin 220 lie within this plan? Is it still following the planned outfall to the 36" SD? Where is this outfall located?
12. Based on the above comments in 9,10, and 11, it may be more useful to provide a Basin Boundary map, showing the location of the sub-basins and Major basins from the AIA DMP overlayed over this new DMP, showing the new Major basin boundaries (N17 and G17).
13. When resubmitting, mark off Master Drainage Plan on the DTIS sheet as the Type of Submittal.

If you have any questions, you can contact me at 924-3695.

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig Drainage file
c pdf: via Email. recipient

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: Aviation Center of Excellence Building Permit #: _____ City Drainage #: M16D024N

DRB#: _____ EPC#. 1000270 14EPC-40024 Work Order# _____

Legal Description: A portion of Tract A-1, Sunport Municipal Addition

City Address: Southeast Corner of Gibson Blvd. SE and Girard Blvd. SE

Engineering Firm: Molzen Corbin Contact: Steve Morrow

Address: 2701 Miles Road

Phone# 505-242-5700 Fax#: _____ E-mail: smorrow@molzencorbin com

Owner: City of Albuquerque Aviation Dept Contact: Jim Hinde

Address: P O Box 1293

Phone#: _____ Fax#: _____ E-mail. JHinde@cabq.gov

Architect: _____ Contact: _____

Address: _____

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

Other Contact: _____ Contact: _____

Address: _____

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

Check all that Apply.

DEPARTMENT:

x HYDROLOGY/ DRAINAGE
____ TRAFFIC/ TRANSPORTATION
____ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

____ ENGINEER/ ARCHITECT CERTIFICATION

~~X~~ ~~CONCEPTUAL~~ G & D PLAN
____ GRADING PLAN
~~X~~ ~~DRAINAGE MASTER PLAN~~
____ DRAINAGE REPORT
____ CLOMR/LOMR

____ TRAFFIC CIRCULATION LAYOUT (TCL)
____ TRAFFIC IMPACT STUDY (TIS)
____ EROSION & SEDIMENT CONTROL PLAN (ESC)

____ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?. ____ Yes ~~X~~ ~~No~~

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

____ BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY

____ PRELIMINARY PLAT APPROVAL
~~X~~ ~~X~~ SITE PLAN FOR SUB'D APPROVAL
OK ~~X~~ 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) _____

RECEIVED 10-20-15

DATE SUBMITTED. 9-10-15 By Steve Morrow

COA STAFF ELECTRONIC SUBMITTAL RECEIVED ___

~~Verbal~~ ~~No~~ Verbal No

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: Aviation Center of Excellence Building Permit #: _____ City Drainage #: M16D024N

DRB#: _____ EPC#: 1000270 14EPC-40024 Work Order#: _____

Legal Description: A portion of Tract A-1, Sunport Municipal Addition

City Address: Southeast Corner of Gibson Blvd. SE and Girard Blvd. SE

Engineering Firm: Molzen Corbin Contact: Steve Morrow

Address: 2701 Miles Road

Phone#: 505-242-5700 Fax#: _____ E-mail: smorrow@molzencorbin.com

Owner: City of Albuquerque Aviation Dept. Contact: Jim Hinde

Address: P.O Box 1293

Phone#: _____ Fax#: _____ E-mail: JHinde@cabq.gov

Architect: _____ Contact: _____

Address: _____

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

Other Contact: _____ Contact: _____

Address: _____

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

Check all that Apply:

DEPARTMENT:

x HYDROLOGY/ DRAINAGE
____ TRAFFIC/ TRANSPORTATION
____ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

____ ENGINEER/ ARCHITECT CERTIFICATION

x 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) _____

IS THIS A RESUBMITTAL?: ____ Yes X No

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

____ BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY

AB

____ PRELIMINARY PLAT APPROVAL
x 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

RECEIVED
SEP 11 2015
LAND DEVELOPMENT SECTION

* ____ PRE-DESIGN MEETING ~~Don't Scan out~~ (Sheets & brings excerpts)
____ OTHER (SPECIFY) _____

forgot to leave excerpts
I sent email asking for on next submittal

DATE SUBMITTED: 9-10-15 By: Steve Morrow

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

DRB file #

EPC 1000270

Site Plan for Subdivision

Comment:

The plan is to contain Stormwater Control information to manage the first flush.

Condition for DRB approval:

1. Add a section to "Required Information" on Sheet 1 for "Stormwater Control" similar to:

"Future Site Plans will contain Stormwater Control measures designed to manage the first flush and control runoff generated by contributing impervious surfaces. "

2. In the Sustainability section on Sheet 3 of 5, please rename to Sustainability and Stormwater Control" and either add some first flush language to one of the existing paragraphs or create another paragraph.

: Decommissioned runway
o 1995 Support Drainage MDP
↳ ~ same % D ; runoff
→ complying w/ DMP.

DRB: SPSD
→ leased lots
- consensus planning

M16-D024
ABD 71-1103