CITY OF ALBUQUERQUE

Planning Department
Brennon Williams, Director

Mayor Timothy M. Keller

August 3, 2020

Mike Balaskovits, PE
Bohannan Huston, Inc.
7500 Jefferson St NE
Albuquerque, NM 87109

RE: Kirtland AFB Enhanced Use Lease
Grading & Drainage Plan and Drainage Report
Engineer's Stamp Date: 07/21/20
Hydrology File: M17D001A

Dear Mr. Balaskovits:

Based upon the information provided in your submittal received 07/22/20, the Grading & Drainage Plan and Drainage Report are approved for Grading Permit.

As we had discussed on the phone, the detention facility for this development will be designed as a series of connecting ponds. I suggested that PCSWWM would be the perfect program to use to design this detention facility once you submit for Building Permit.

As a reminder, if the project total area of disturbance (including the staging area and any work within the adjacent Right-of-Way) is 1 acre or more, then an Erosion and Sediment Control (ESC) Plan and Owner's certified Notice of Intent (NOI) is required to be submitted to the Stormwater Quality Engineer (Doug Hughes, PE, jhughes@cabq.gov, 924-3420) 14 days prior to any earth disturbance.

If you have any questions, please contact me at 924-3995 or rbrissette@cabq.gov .

Sincerely,

Renée C. Brissette

Renée C. Brissette, P.E. CFM
Senior Engineer, Hydrology
Planning Department

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Project Title: KIRTLAND AFB ENHANCED USE LEASE Building Permit #: _____ Hydrology File #: _____

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

Legal Description: SEC. 35 KIRTLAND AIR FORCE BASE

City Address: GIBSON BLVD SE

Applicant: BOHANNAN HUSTON Contact: MICHAEL BALASKOVITS

Address: 7500 JEFFERSON ST NE, ALBUQUERQUE NM, 87109

Phone#: 505-823-1000 Fax#: _____ E-mail: MBALASKOVITS@BHINC.COM

Other Contact: THUNDERBIRD KIRTLAND DEVELOPMENT, LLC Contact: BRAD GERKEN

Address: 8501 WASHINGTON ST NE, ALBUQUERQUE, NM 87113

Phone#: _____ Fax#: _____ E-mail: gerkenb@idpenergy.com

TYPE OF DEVELOPMENT: ☐ PLAT ☐ RESIDENCE ☑ DRB SITE ☐ ADMIN SITE

Check all that Apply:

DEPARTMENT:

☑ HYDROLOGY/ DRAINAGE
☐ TRAFFIC/ TRANSPORTATION

TYPE OF SUBMITTAL:

☐ ENGINEER/ARCHITECT CERTIFICATION
☐ PAD CERTIFICATION
☑ CONCEPTUAL G & D PLAN
☐ GRADING PLAN
☐ DRAINAGE REPORT
☑ DRAINAGE MASTER PLAN
☐ FLOODPLAIN DEVELOPMENT PERMIT APPLIC
☐ ELEVATION CERTIFICATE
☐ CLOMR/LOMR
☐ TRAFFIC CIRCULATION LAYOUT (TCL)
☐ TRAFFIC IMPACT STUDY (TIS)
☐ STREET LIGHT LAYOUT
☐ OTHER (SPECIFY) _____
☐ PRE-DESIGN MEETING?

IS THIS A RESUBMITTAL?: ☐ Yes ☑ No

TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

☐ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY

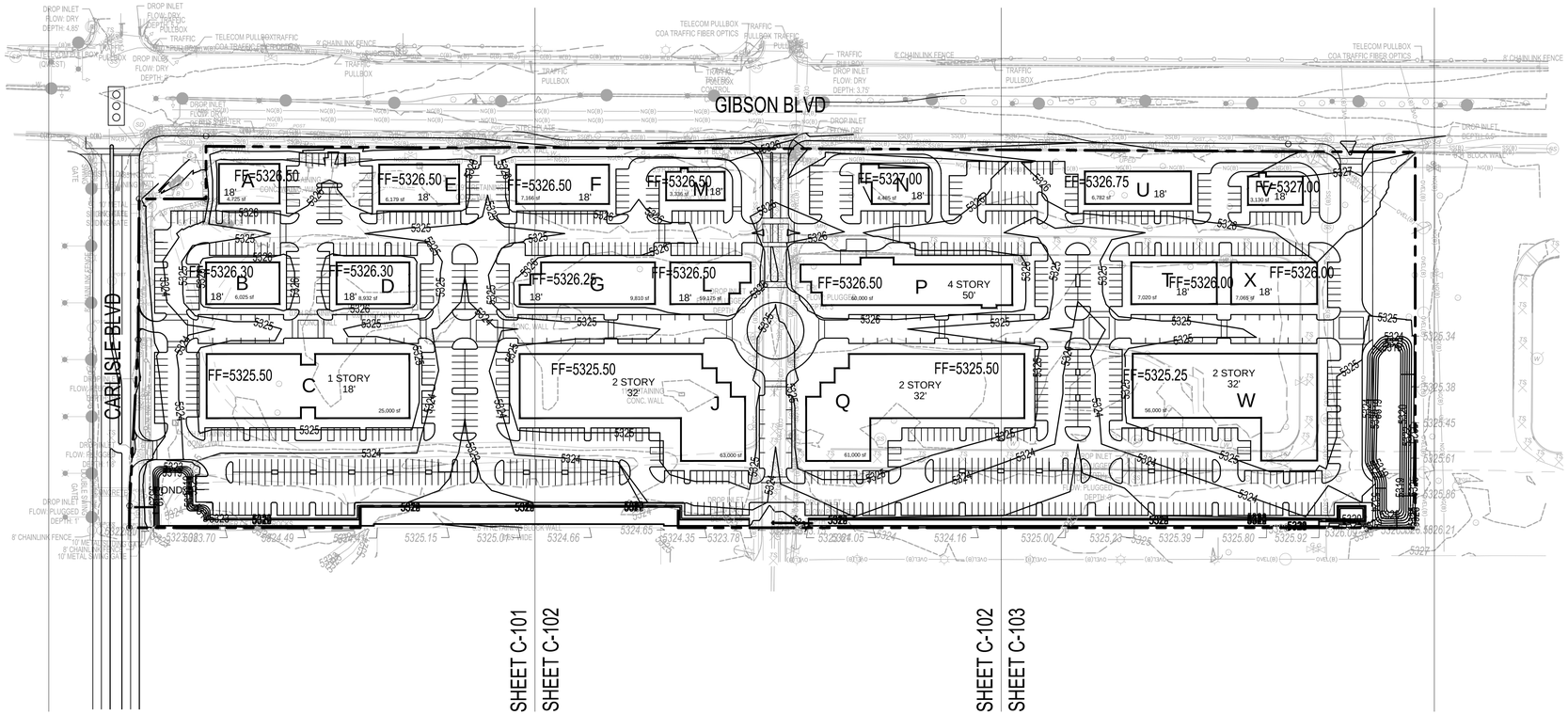
☐ PRELIMINARY PLAT APPROVAL
☐ SITE PLAN FOR SUB'D APPROVAL
☐ SITE PLAN FOR BLDG. PERMIT APPROVAL
☐ FINAL PLAT APPROVAL

☐ 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
☐ FLOODPLAIN DEVELOPMENT PERMIT
☐ OTHER (SPECIFY) _____

DATE SUBMITTED: 07-21-2020 By: MICHAEL BALASKOVITS

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____



CIVIL GENERAL NOTES

1. ALL WORK DETAILED ON THESE PLANS AND PERFORMED UNDER THIS CONTRACT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND THE PROJECT GEOTECHNICAL REPORT. WHERE APPLICABLE, CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION SHALL APPLY.

2. THE CONTRACTOR SHALL ABIDE BY ALL LOCAL, STATE, AND FEDERAL LAWS, RULES AND REGULATIONS WHICH APPLY TO THE CONSTRUCTION OF THESE IMPROVEMENTS, INCLUDING EPA REQUIREMENTS WITH RESPECT TO STORM WATER DISCHARGE.

3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL POTENTIAL OBSTRUCTIONS INCLUDING ALL UNDERGROUND UTILITIES. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE CONTRACTING OFFICER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.

4. ALL ELECTRICAL, TELEPHONE, CABLE TV, GAS AND OTHER UTILITY LINES, CABLES, AND APPURTENANCES ENCOUNTERED DURING CONSTRUCTION THAT REQUIRE RELOCATION, SHALL BE COORDINATED WITH THE CONTRACTING OFFICER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL NECESSARY UTILITY ADJUSTMENTS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR DELAYS OR INCONVENIENCES CAUSED BY THE CONTRACTING OFFICER'S WORK CREWS. THE CONTRACTOR MAY BE REQUIRED TO RESCHEDULE HIS ACTIVITIES TO ALLOW THE CONTRACTING OFFICER'S CREWS TO PERFORM THEIR REQUIRED WORK.

5. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITY LINES WITHIN THE CONSTRUCTION AREA. ANY DAMAGE TO EXISTING FACILITIES CAUSED BY CONSTRUCTION ACTIVITY SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE AND APPROVED BY THE CONTRACTING OFFICER.

6. CONSTRUCTION ACTIVITY SHALL BE LIMITED TO THE PROJECT LIMITS. ANY DAMAGE TO ADJACENT IMPROVEMENTS RESULTING FROM THE CONSTRUCTION PROCESS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.

7. OVERNIGHT PARKING OF CONSTRUCTION EQUIPMENT SHALL NOT OBSTRUCT DRIVEWAYS OR DESIGNATED TRAFFIC LANES.

8. THE CONTRACTOR SHALL COORDINATE WITH THE CONTRACTING OFFICER TO OBTAIN ALL THE NECESSARY PERMITS FOR THE PROJECT PRIOR TO COMMENCING CONSTRUCTION.

9. ALL BARRICADES AND CONSTRUCTION SIGNING SHALL CONFORM TO APPLICABLE SECTIONS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), US DEPARTMENT OF TRANSPORTATION, LATEST EDITION.

10. THE CONTRACTOR SHALL MAINTAIN ALL CONSTRUCTION BARRICADES AND SIGNING AT ALL TIMES.

11. THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO CONFORM WITH EPA REQUIREMENTS, INCLUDING COMPLIANCE WITH NPDES PHASE 2 REQUIREMENTS, FDP & SWPPP.

GRADING NOTES

1. EXCEPT AS PROVIDED HEREIN, GRADING SHALL BE PERFORMED AT THE ELEVATIONS AND IN ACCORDANCE WITH THE DETAILS SHOWN ON THIS PLAN.

2. THE COST FOR REQUIRED CONSTRUCTION DUST AND EROSION CONTROL MEASURES SHALL BE INCIDENTAL TO THE PROJECT COST.

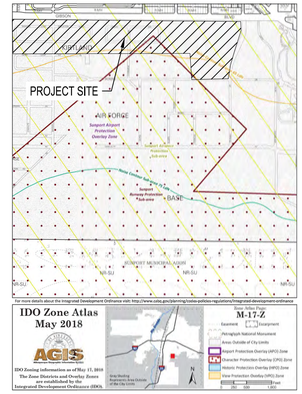
3. EARTH SLOPES SHALL NOT EXCEED 3 HORIZONTAL TO 1 VERTICAL UNLESS SHOWN OTHERWISE.

4. IT IS THE INTENT OF THESE PLANS THAT THIS CONTRACTOR SHALL NOT PERFORM ANY WORK OUTSIDE OF THE PROJECT BOUNDARIES EXCEPT AS REQUIRED BY THIS PLAN.

5. THE CONTRACTOR IS TO ENSURE THAT NO SOIL ERODES FROM THE SITE ONTO ADJACENT PROPERTY. THIS SHOULD BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS OR SILT FENCE AT THE PROPERTY LINES AND WETTING THE SOIL TO PROTECT IT FROM WIND EROSION.

6. THE CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY AND PERMANENT SURFACE EROSION CONTROL MEASURES FOR ALL DISTURBED AREAS IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.

VICINITY MAP



PLAN DRAWING SCALE: 1" = 100'

LEGEND

- PROPERTY LINE
- PROJECT LIMITS OF GRADING
- 4925 EXISTING INDEX CONTOUR
- 4924 EXISTING INTERMEDIATE CONTOUR
- 4925.25 EXISTING GROUND SPOT ELEVATION
- 4925 PROPOSED INDEX CONTOUR
- 4924 PROPOSED INTERMEDIATE CONTOUR
- 26.75 PROPOSED GRADE SPOT ELEVATION
  - FL=FLOW LINE
  - TC=TOP OF CURB
  - TS=TOP OF SIDEWALK
- DIRECTION OF FLOW
- WATER BLOCK/GRADE BREAK

Bohannan Huston
www.bhinc.com 800.877.5332

ENGINEER'S SEAL

MICHAEL BALDONADO MARTINEZ
NEW MEXICO
18187
LICENSED PROFESSIONAL ENGINEER
7-21-20

AS-BUILT INFORMATION

BENCH MARKS

NO.	DATE	REMARKS	BY	DATE
		DESIGN	MHS	02/2020
		REVISIONS	MJB	####
			JN	####

		DATE
CONTRACTOR		
WORK STAKED BY		
INSPECTORS ACCEPTANCE BY		
FIELD VERIFICATION BY		
DRAWINGS CORRECTED BY		

KIRTLAND AFB ENHANCED USE LEASE
OVERALL GRADING PLAN
ROUGH GRADING PACKAGE

BHI PROJECT NO.	DWG NO.	SHEET	OF
20190098	C-100	1	5

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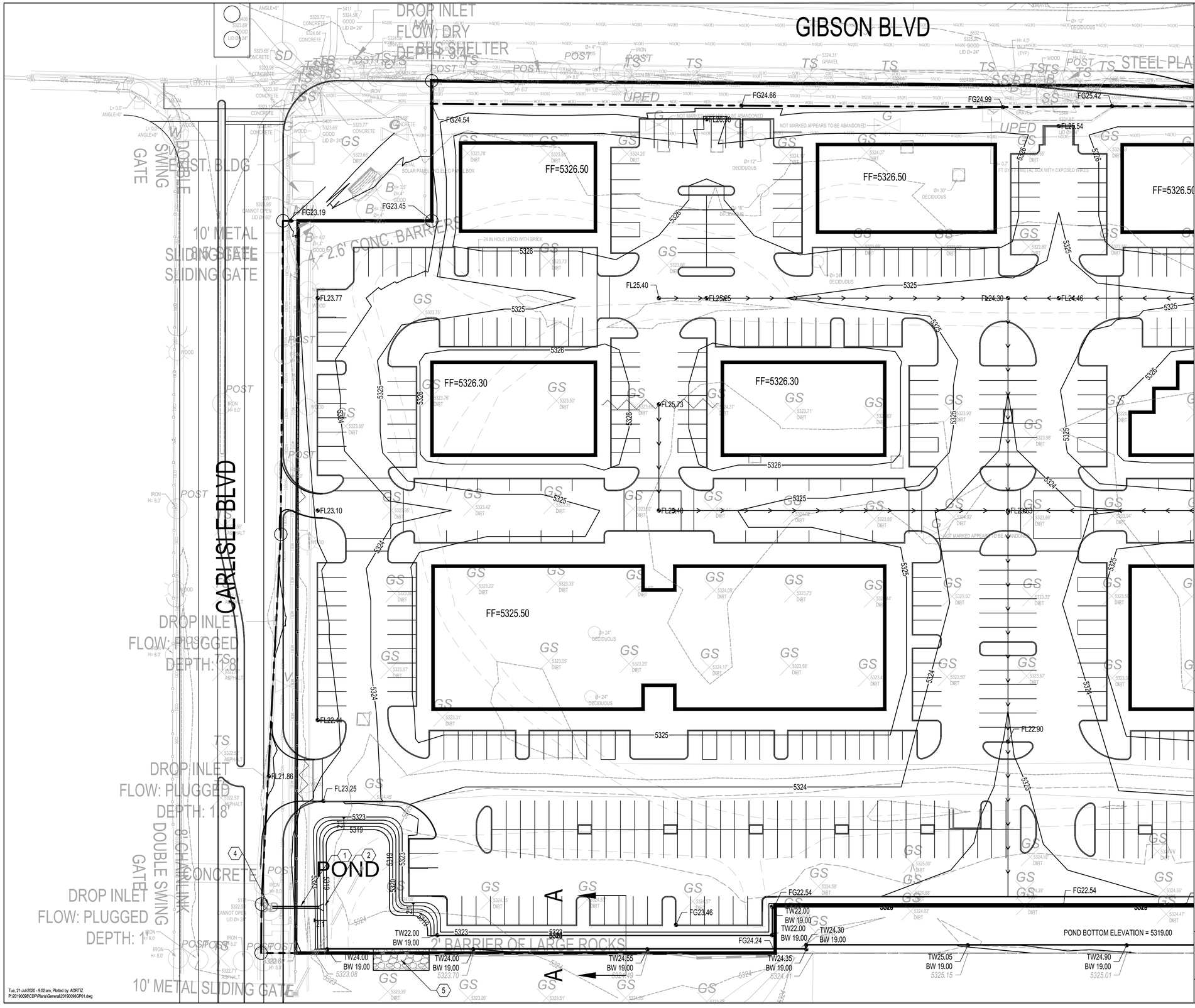

GRADING KEYNOTES

1. INSTALL HDPE (N12WT, OR APROVED EQUAL) STORM DRAIN PIPE. SEE PLAN FOR SIZE.
2. INSTALL CMP END SECTION (CONTECH OR APPROVED EQUAL). SEE PLAN FOR SIZE.
3. INSTALL 36" RCP STORM DRAIN PIPE.
4. CONNECT TO EXISTING MANHOLE. CONTRACTOR TO FIELD VERIFY LOCATION AND INVERT OF EXISTING UTILITIES.
5. INSTALL RIP-RAP PER DETAIL 'XX'. SHEET C-103.
6. CONSTRUCT 6' DIA TYPE "E" STORM DRAIN MANHOLE PER COA STD DWG 2102.

NOT FOR CONSTRUCTION

PLAN DRAWING SCALE: 1" = 30'

LEGEND

- PROPERTY LINE
- PROJECT LIMITS OF GRADING
- 4925 EXISTING INDEX CONTOUR
- 4924 EXISTING INTERMEDIATE CONTOUR
- 4925.25 EXISTING GROUND SPOT ELEVATION
- 4925 PROPOSED INDEX CONTOUR
- 4924 PROPOSED INTERMEDIATE CONTOUR
- 26.75 PROPOSED GRADE SPOT ELEVATION (FL=FLOW LINE, TC=TOP OF CURB, TS=TOP OF SIDEWALK)
- DIRECTION OF FLOW
- WATER BLOCK/GRADE BREAK

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X-21-20

AS-BUILT INFORMATION

	CONTRACTOR	WORK STAKED BY	INSPECTORS ACCEPTANCE BY	FIELD VERIFICATION BY	DRAWINGS CORRECTED BY
DATE					

BENCH MARKS

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	

DESIGNED BY	MHS	DATE 02/2020
CHECKED BY	MJB	DATE #####
DRAWN BY	JN	DATE #####

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KIRTLAND AFB ENHANCED USE LEASE
GRADING PLAN
ROUGH GRADING PACKAGE

BHI PROJECT NO.	DWG NO.	SHEET	OF
20190098	C-101	2	5

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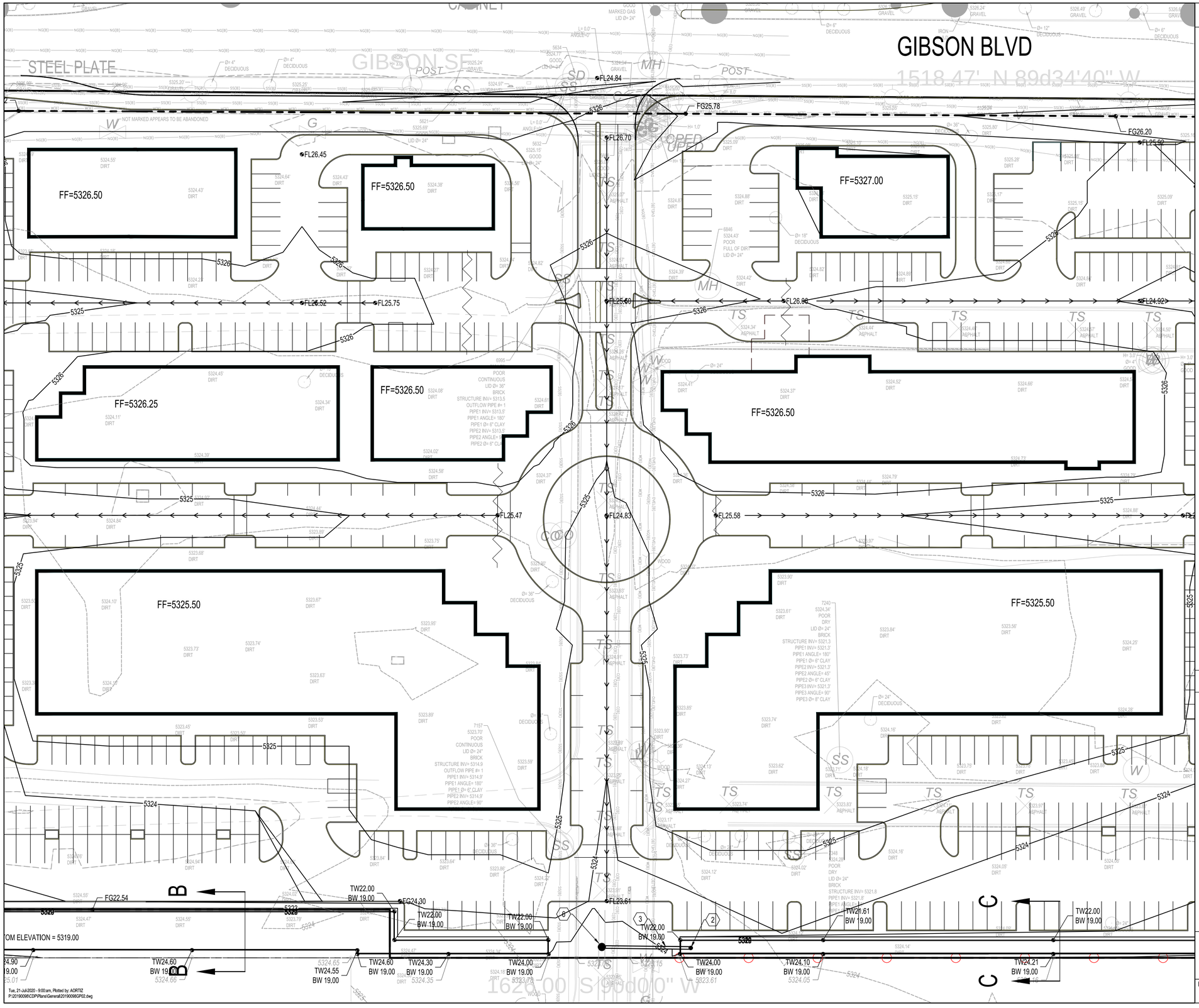

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6. CONSTRUCT 6' DIA TYPE "E" STORM DRAIN MANHOLE PER COA STD DWG 2102.

NOT FOR CONSTRUCTION

PLAN DRAWING SCALE: 1" = 30'

LEGEND

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- 4925 EXISTING INDEX CONTOUR
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- 4925.25 EXISTING GROUND SPOT ELEVATION
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BENCH MARKS

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		REVISIONS		
		DESIGN		02/2020
				DATE
				DATE

DESIGNED BY MHS
CHECKED BY MJB
DRAWN BY JN

KIRTLAND AFB ENHANCED USE LEASE
GRADING PLAN
ROUGH GRADING PACKAGE

BHI PROJECT NO.	DWG NO.	SHEET	OF
20190098	C-102	3	5

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GIBSON BLVD

GRADING KEYNOTES

1. INSTALL HDPE (N12WT, OR APROVED EQUAL) STORM DRAIN PIPE. SEE PLAN FOR SIZE.
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NOT FOR CONSTRUCTION

PLAN DRAWING SCALE: 1" = 30'

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X-21-20

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BENCH MARKS

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		DESIGN	
	02/2020	DESIGNED BY	MHS
	####	CHECKED BY	MJB
	####	DRAWN BY	JN

KIRTLAND AFB ENHANCED USE LEASE
GRADING PLAN
ROUGH GRADING PACKAGE

BHI PROJECT NO.	DWG NO.	SHEET	OF
20190098	C-103	4	5

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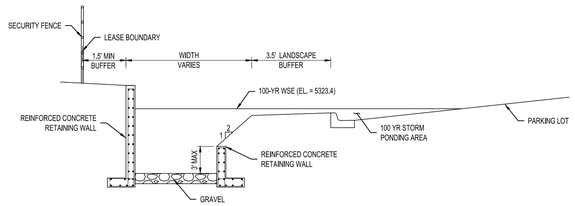
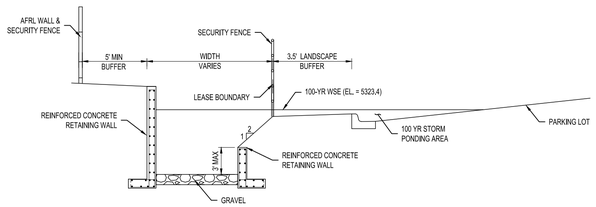


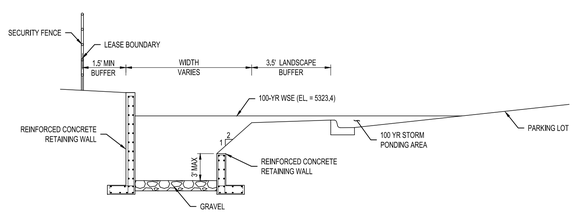
AA DETENTION POND TYPICAL SECTION

NTS



BB DETENTION POND TYPICAL SECTION

NTS



CC DETENTION POND TYPICAL SECTION

NTS

NOT FOR CONSTRUCTION

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X-21-20

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		DESIGN	

		DATE
DESIGNED BY	MHS	02/2020
CHECKED BY	MJB	####
DRAWN BY	JN	####

KIRTLAND AFB ENHANCED USE LEASE
GRADING PLAN
ROUGH GRADING PACKAGE

BHI PROJECT NO.	DWG NO.	SHEET	OF
20190098	C-103	5	5

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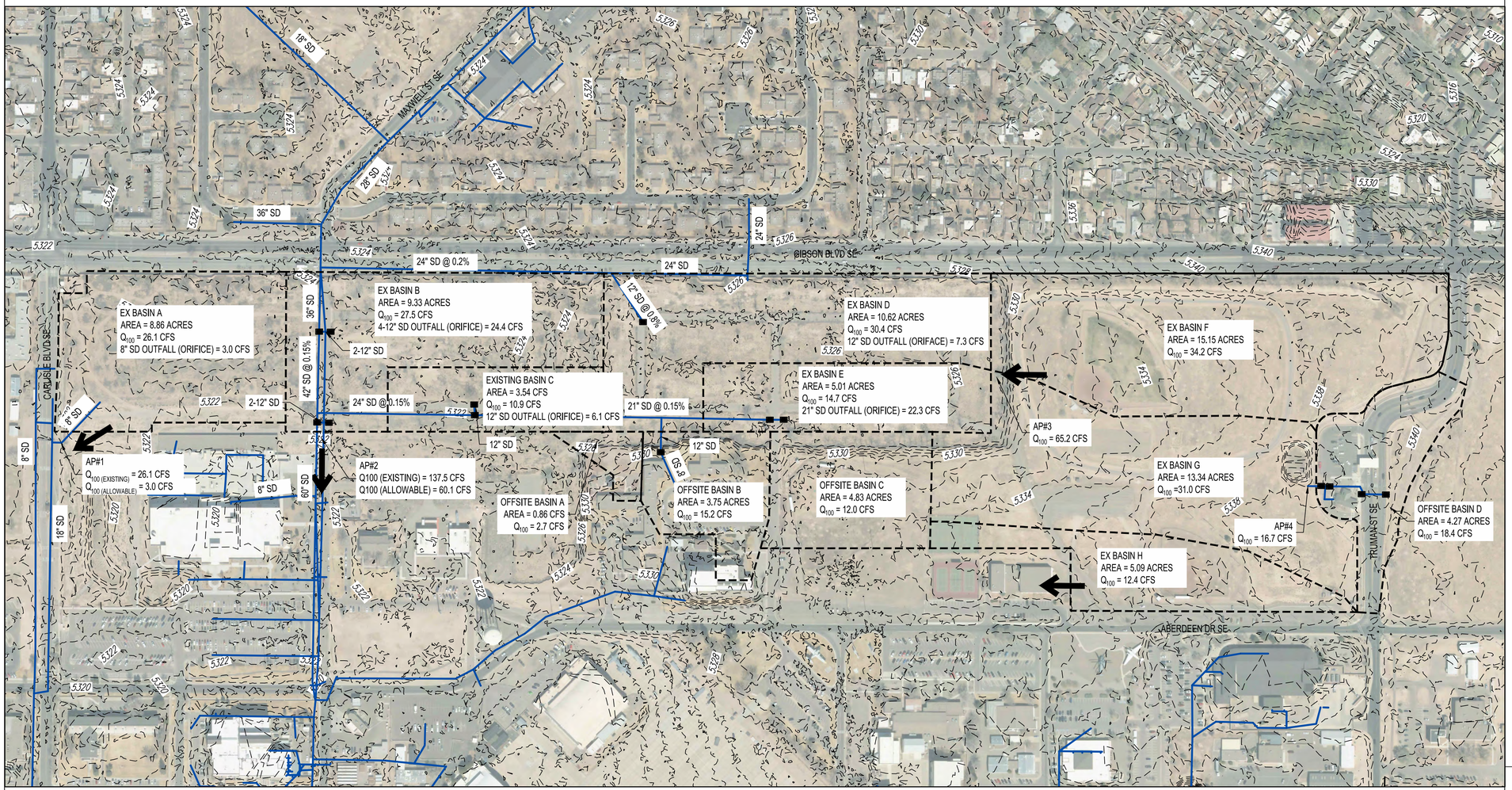

DRAINAGE NARRATIVE:

INTRODUCTION:

THIS DRAINAGE MANAGEMENT PLAN IS PRESENTED IN SUPPORT OF THE KAFB EUL MAX Q ROUGH GRADING PERMIT APPROVAL. THE 70 ACRE SITE IS LOCATED SOUTH OF GIBSON BLVD, NORTH OF THE KIRKLAND AIR FORCE BASE, EAST OF CARLISLE BLVD AND WEST OF TRUMAN ST. PER FEMA COMMUNITY MAP PANELS #35001C0361G & #35001C0362H THE SITE IS NOT LOCATED WITHIN A FEMA REGULATORY FLOODPLAIN.

METHODOLOGY:

THE HYDROLOGY ANALYSIS HAS BEEN PREPARED IN ACCORDANCE WITH CHAPTER 6 OF THE CITY OF ALBUQUERQUE DEVELOPMENT PROCESS MANUAL DATED 06/08/2020. THE DESIGN STORM IS THE 100 YEAR - 24 HOUR EVENT. EXISTING CONDITIONS HAVE BEEN ANALYZED USING HEC-HMS 4.3. BASIN CURVE NUMBERS RANGE FROM 83 TO 87 . EXISTING INFRASTRUCTURE CAPACITY HAS BEEN STUDIED USING THE ORIFICE EQUATION WHERE APPLICABLE.

EXISTING CONDITIONS:

THE SITE WAS PREVIOUSLY KAFB HOUSING THAT HAS SINCE BEEN TORN DOWN AND REMAINS MOSTLY UNDEVELOPED. A FEW STRUCTURES AND PAVED ROADS REMAIN FROM A PREVIOUS RESIDENTIAL DEVELOPMENT. THE SITE GENERALLY DRAINS EAST TO WEST AND SOUTH. THERE ARE TWO PRIMARY OUTFALLS FOR THE EXISTING SITE, AN 8" STORM DRAIN LOCATED ALONG CARLISLE, WEST OF AFRL, AND A 42" STORM DRAIN WITHIN MAXWELL. VARIOUS INLETS THROUGHOUT THE RESIDENTIAL AREA ULTIMATELY CONNECT TO THE EXISTING 42" IN MAXWELL THE PORTION OF THE SITE LOCATED WEST OF MAXWELL DRAINS TO THE WEST INTO THE CARLISLE STORM DRAIN SYSTEM. THE SITE CONVEYS OFFSITE FLOWS FROM THE SOUTH AND THE EAST.

ONSITE BASINS:

EX BASIN A IS LOCATED WEST OF MAXWELL RD. THIS BASIN HISTORICALLY DISCHARGE INTO AN EXISTING 8" STORM DRAIN PIPE LOCATED IN THE SOUTHWEST CORNER OF THE BASIN. RUNOFF FROM THIS BASIN CONTRIBUTES TO ANALYSIS POINT #1.

EX BASIN B IS LOCATED EAST OF MAXWELL RD. THIS BASIN DRAINS EAST TO WEST. RUNOFF FROM THIS BASIN DISCHARGES INTO 4-12" STORM DRAIN PIPES (VIA INLETS) WITHIN MAXWELL RD THAT ULTIMATELY CONNECT TO THE EXISTING 42" STORM DRAIN IN MAXWELL. THIS BASIN CONTRIBUTES TO ANALYSIS POINT #2.

EX BASIN C IS LOCATED EAST OF MAXWELL RD. RUNOFF FROM THIS BASIN INTO 1-12" STORM DRAIN PIPE (VIA INLETS) WITHIN AN EXISTING ROADWAY. THESE INLETS AND PIPE ULTIMATELY CONNECT TO THE EXISTING 42" STORM DRAIN IN MAXWELL. THIS BASIN CONTRIBUTES TO ANALYSIS POINT #2.

EX BASIN D IS LOCATED IN THE MIDDLE OF THE SITE. RUNOFF FROM THIS BASIN DISCHARGES INTO AN EXISTING INLET THAT CONNECTS TO A 12" STORM DRAIN PIPE. THIS PIPE RUNS NORTH INTO GIBSON BLVD BUT ULTIMATELY CONNECTS TO THE EXISTING 42" STORM DRAIN IN MAXWELL. THIS BASIN CONTRIBUTES TO ANALYSIS POINT #2.

EX BASIN F AND EX BASIN G ARE LOCATED IMMEDIATELY WEST OF TRUMAN ST. RUNOFF FROM THESE BASINS SHEET FLOWS TO THE WEST TOWARD EX BASIN D AN EX BASIN E. RUNOFF FROM THESE BASINS CONTRIBUTE TO ANALYSIS POINT #3, BUT ULTIMATELY DISCHARGES INTO MAXWELL RD.

EX BASIN H IS LOCATED NORTH OF ABERDEEN DR NEAR ITS INTERSECTION WITH TRUMAN ST. RUNOFF FROM THIS BASIN SHEET FLOWS TO THE WEST TOWARDS ABERDEEN RD AND DOES NOT IMPACT THE REST OF THE EXISTING SITE.

OFFSITE BASINS:

OFFSITE BASINS A, B & C DISCHARGE TO THE NORTH. RUNOFF FROM BASINS DISCHARGE INTO THE EXISTING STORM DRAIN INFRASTRUCTURE WHERE EX BASINS C & E DISCHARGE TO. RUNOFF FROM THESE BASINS CONTRIBUTES TO ANALYSIS POINT #2.

OFFSITE BASIN D IS LOCATED ALONG TRUMAN ST. RUNOFF FROM THIS BASIN DISCHARGES INTO A POND WEST OF THE TRUMAN GATE. RUNOFF DOES NOT IMPACT THE REMAINDER OF THE SITE.

ALLOWABLE DISCHARGE:

BASED ON THE CALCULATED RUNOFF FLOWRATES, EXISTING HISTORICAL FLOWRATES EXCEED THE CAPACITY OF THE EXISTING INFRASTRUCTURE. CAPACITY OF THE EXISTING INFRASTRUCTURE WAS THEN USED TO ESTABLISH THE FLOWRATES THE PROPOSED DEVELOPMENT SHOULD BE HELD TO. BASED ON THIS FINDING , THE ALLOWABLE DISCHARGE TO THE CARLISLE SYSTEM IS 3.0 CFS WHILE 60.1 CFS IS THE ALLOWABLE DISCHARFE TO THE MAXWELL SYSTEM.

N

200 100 0 200

1"=200'

LEGEND

- EXISTING BASIN BOUNDARY
- EXISTING STORM DRAIN LINE
- 5335 EXISTING INDEX CONTOUR
- 5334 EXISTING INTERMEDIATE CONTOUR
- EXISTING STORM DRAIN INLET

ENGINEER'S SEAL

MICHAEL BALDONADO
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AS-BUILT INFORMATION

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WORK STAKED BY	
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DRAWINGS CORRECTED BY	

BENCH MARKS

NO.	DATE	REMARKS	BY
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		DESIGN	

		DATE
DESIGNED BY	MHS	02/2020
CHECKED BY	MJB	####
DRAWN BY	JN	####

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KIRTLAND AFB ENHANCED USE LEASE
EXISTING DRAINAGE MANAGEMENT PLAN
ROUGH GRADING PACKAGE

BHI PROJECT NO.	DWG NO.	SHEET	OF
20190098			

Tue, 21-Jul-2020 - 9:15:am, Plotted by: AORTIZ
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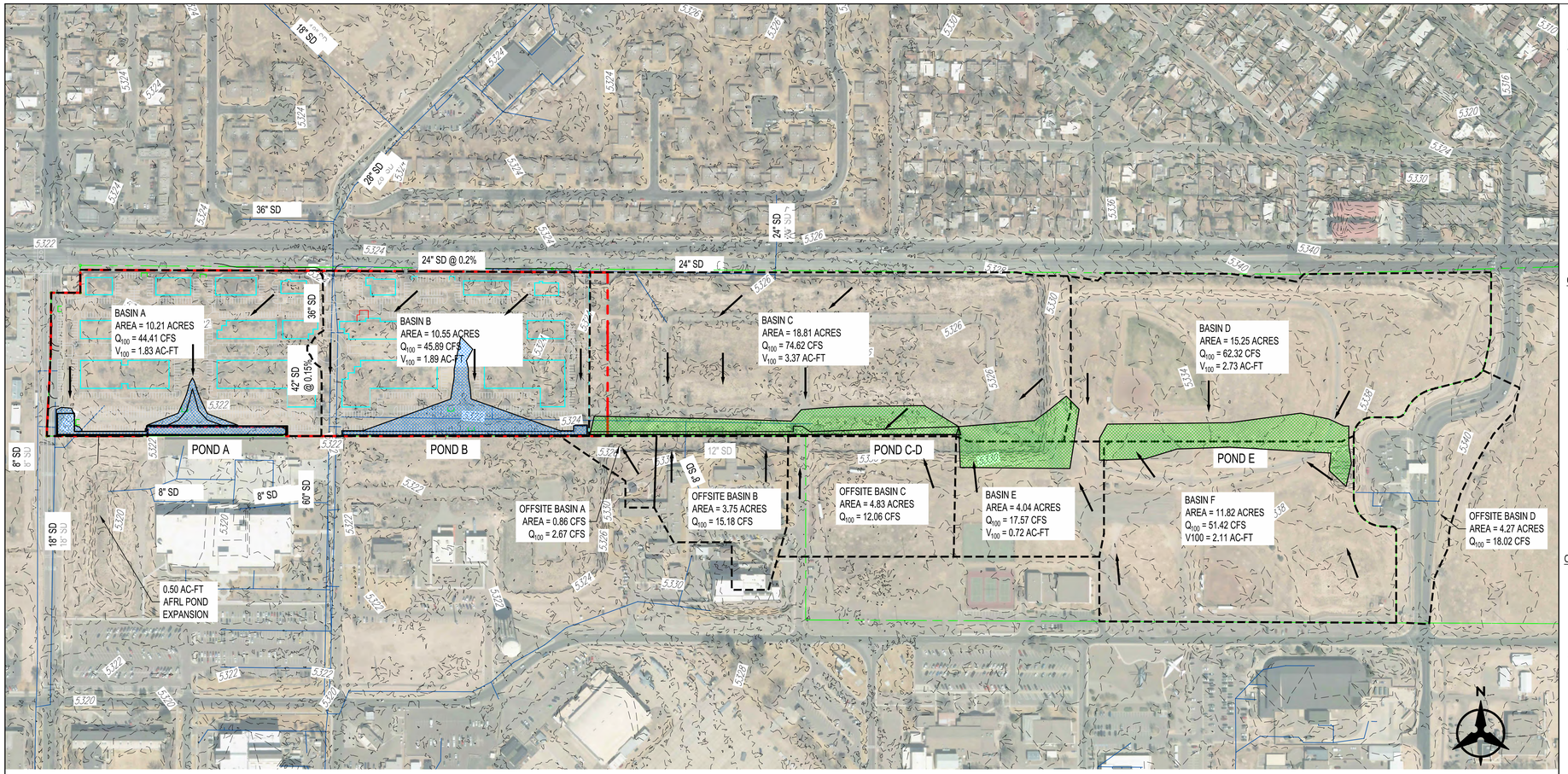

PLAN DRAWING SCALE: 1" = 200'

DRAINAGE NARRATIVE:

DEVELOPED CONDITIONS:

THIS DRAINAGE MANAGEMENT PLAN ADDRESSES PROPOSED STORM DRAIN INFRASTRUCTURE AND DRAINAGE MANAGEMENT SCHEMES FOR FULLY DEVELOPED CONDITIONS TO ALLOW FOR THE SAFE MANAGEMENT OF STORM RUNOFF. WHILE THE SITE WILL BE DEVELOPED IN SEVERAL PHASES, THE LIKELYHOOD OF THE SITE PLAN TO BE ALTERED WILL REQUIRE EACH PHASING SUBMITTAL TO BE SUPPORTED BY A PHASE SPECIFIC DMP AND GRADING PLAN THAT WILL ENSURE EXISTING ONSITE AND OFFSITE DOWNSTREAM INFRASTRUCTURE IS NOT NEGATIVELY IMPACTED.

A SERIES OF ONSITE DETENTION PONDS WILL BE CONSTRUCTED TO ATTENUATE DEVELOPED RUNOFF. THE AFRL RETENTION POND WILL BE EXPANDED. PONDING LOCATED ON SUBSEQUENT PHASES WILL BE NECESSARY TO ATTENUATE DEVELOPED FLOWS. DETAILS ASSOCIATED WITH THESE OFFSITE PONDS (i.e. SIZE, DEPTH, LOCATION, ETC.) WILL BE PROVIDED UPON SUBMITTAL OF SUBSEQUENT PHASES.

ONSITE BASINS:

BASIN A IS LOCATED WEST OF MAXWELL RD. RUNOFF FROM THIS BASIN DRAINS SOUTH TO POND A. POND A PROVIDES A TOTAL 1.7 AC-FT OF STORAGE AND 0.25 AC-FT OF STORM WATER QUALITY VOLUME. POND A HAS AN 8" OUTLET PIPE CONNECTED TO THE STORM DRAIN WITHIN CARLISLE BLVD. AND A SPILLWAY AND CHANNEL TO AFRL POND.

BASIN B IS LOCATED EAST OF MAXWELL RD. THIS BASIN DRAINS SOUTH TO POND B. POND B PROVIDES A TOTAL 0.9 AC-FT OF STORAGE AND 0.1 AC-FT OF STORM WATER QUALITY VOLUME.

BASIN C IS LOCATED IN THE MIDDLE OF THE SITE. RUNOFF FROM THIS BASIN DISCHARGES SOUTH TO POND C-D.

BASIN E IS LOCATED IN THE MIDDLE OF THE SITE NORTH OF ABERDEEN RD. THIS BASIN DRAINS NORTH TO POND C-D.

BASINS D AND E ARE LOCATED EAST OF TRUMAN RD. RUNOFF FROM THESE BASINS DISCHARGE INTO POND E.

PONDS C-D AND E SHALL PROVIDE A COMBINED STORAGE VOLUME OF APPROXIMATELY 8.2 AC-FT.

OFFSITE BASINS:

OFFSITE BASINS A, B & C DISCHARGE TO THE NORTH. RUNOFF FROM BASINS DISCHARGE INTO PONDS B AND C-D.

OFFSITE BASIN D IS LOCATED ALONG TRUMAN ST. RUNOFF FROM THIS BASIN DISCHARGES INTO POND E.

STORMWATER QUALITY:

PER THE CITY OF ALBUQUERQUE CURRENT DPM, THE SITE IS REQUIRED TO RETAIN THE "FIRST FLUSH" STORMWATER QUALITY VOLUME COMPUTED AS THE IMPERVIOUS AREA TIMES 0.26". RETENTION COMPONENTS WITHIN THE LARGER DETENTION FACILITIES WILL BE PROVIDED TO ACCOMMODATE THIS FIRST FLUSH VOLUME. IN ADDITION AREAS FOR ONSITE RETENTION WITHIN THE SPECIFIC BUILD PERMITS PACKAGES WILL BE EXPLORED. WHERE RETENTION IS NOT FEASIBLE THE DEVELOPMENT MAY REQUEST THE OPTION OF CASH-IN-LIEU TO COVER THE FIRST FLUSH VOLUME.

CONCLUSIONS:

THE PROPOSED ONSITE AND OFFSITE INFRASTRUCTURE WILL BE SIZED TO ACCOMMODATE THE 100-YEAR, 24-HOUR STORM EVENT AND PREVENT DAMAGES TO PROPERTY. DETENTION PONDS ATTENUATE PEAK DEVELOPED FLOWS TO ENSURE NO ADVERSE EFFECTS TO DOWNSTREAM INFRASTRUCTURE. THIS OVERALL MASTER DRAINAGE MANAGEMENT PLAN IS IN COMPLIANCE WITH THE CITY OF ALBUQUERQUE DEVELOPMENT PROCESS MANUAL.

KAFB EUL
Developed Conditions Basin Data Table

Basin ID	Area (SQ. FT)	Area (AC.)	Land Treatment Percentages A	B	C	D	Q(100yr) (CFS)	$V_{(100yr-24hr)}$ (AC-FT)	Weighted Curve #	SWQV (CF)
ONSITE BASINS										
BASIN A	444843	10.21	0.0%	0.0%	15.0%	85.0%	**44.40**	*1.83*	96	*8193*
BASIN B	459634	10.55	0.0%	0.0%	15.0%	85.0%	**45.89**	*1.89*	96	*8465*
BASIN C	819445	18.81	0.0%	0.0%	15.0%	85.0%	**74.62**	*3.37*	96	*15091*
BASIN D	664472	15.25	0.0%	0.0%	15.0%	85.0%	**63.32**	*2.73*	96	*12237*
BASIN E	175928	4.04	0.0%	0.0%	15.0%	85.0%	**17.56**	*0.72*	96	*3240*
BASIN F	515070	11.82	0.0%	0.0%	15.0%	85.0%	**51.42**	*2.11*	96	*9486*
TOTAL	**3079392**	**70.69**	-	-	-	-	**297.2**	***12.65***		***56712***
OFFSITE BASINS										
OFF BASIN A	37479	0.86	0.0%	0.0%	80.0%	20.0%	**2.67**	*0.10*	88	*N/A*
OFF BASIN B	163451	3.75	0.0%	0.0%	35.0%	65.0%	**15.18**	*0.61*	94	*N/A*
OFF BASIN C	212294	4.87	0.0%	45.0%	45.0%	10.0%	**13.02**	*0.48*	84	*N/A*
OFF BASIN D	186001	4.27	0.0%	20.0%	20.0%	60.0%	**18.02**	*0.71*	92	*N/A*
TOTAL	**599225**	**13.76**	-	-	-	-	**48.9**	***1.90***		***N/A***

Pond A Data:

Q_in =	44.41 cfs
V_s =	1.7 ac-ft
Bottom Elev =	5319.5 ft
Top Elev =	5324.5 ft
Max WSE =	5323.3 ft
Spillway Elev =	5323.15 ft
Q_out (spillway)=	9.8 cfs
8" Outlet Pipe (Carlisle)	
Pipe Invert Elev =	5320.2
Q_out (pipe)=	2.9 cfs
SWQV =	0.25 ac-ft

Pond B Data:

Q_in =	71 cfs
V_s =	0.9 ac-ft
Bottom Elev =	5319 ft
Top Elev =	5324.5 ft
Max WSE =	5323.5 ft
Spillway Elev =	5323.25 ft
Q_out (spillway)=	12.8 cfs
36" Outlet Pipe (Maxwell)	
Pipe Invert Elev =	5320 ft
Q_out (pipe)=	55.54 cfs
SWQV =	0.1 ac-ft

Pond C-D Data:*

Q_in =	155.3 cfs

Pond E Data:*

Q_in =	131.5 cfs

* PONDS C-D & E SHALL PROVIDE A COMBINED STORAGE VOLUME OF 8.2 AC-FT

LEGEND

- PROPERTY LINE
- PROJECT LIMITS OF GRADING
- 4925 EXISTING INDEX CONTOUR
- 4924 EXISTING INTERMEDIATE CONTOUR
- 4925.25 EXISTING GROUND SPOT ELEVATION
- 4925 PROPOSED INDEX CONTOUR
- 4924 PROPOSED INTERMEDIATE CONTOUR
- 26.75 PROPOSED GRADE SPOT ELEVATION FL=FLOW LINE TC=TOP OF CURB TS=TOP OF SIDEWALK
- DIRECTION OF FLOW
- WATER BLOCK/GRADE BREAK

Bohannan Huston
www.bhinc.com 800.877.5332

ENGINEER'S SEAL

MICHAEL BAILEY SCHUTTER
NEW MEXICO
18187
4-21-20
LICENSED PROFESSIONAL ENGINEER

AS-BUILT INFORMATION

	CONTRACTOR	WORK STAKED BY	INSPECTION/ ACCEPTANCE BY	FIELD VERIFICATION BY	DRAWINGS CORRECTED BY
DATE					

BENCH MARKS

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	
	02/2020	DATE	MHS
	####	DATE	MJB
	####	DATE	JN

DESIGNED BY
CHECKED BY
DRAWN BY

KIRTLAND AFB ENHANCED USE LEASE
OVERALL MASTER DRAINAGE MANAGEMENT PLAN

BHI PROJECT NO.	DWG NO.	SHEET	OF
20190098			

Tue, 21-Jul-2020 - 9:15:am, Plotted by: AORTIZ
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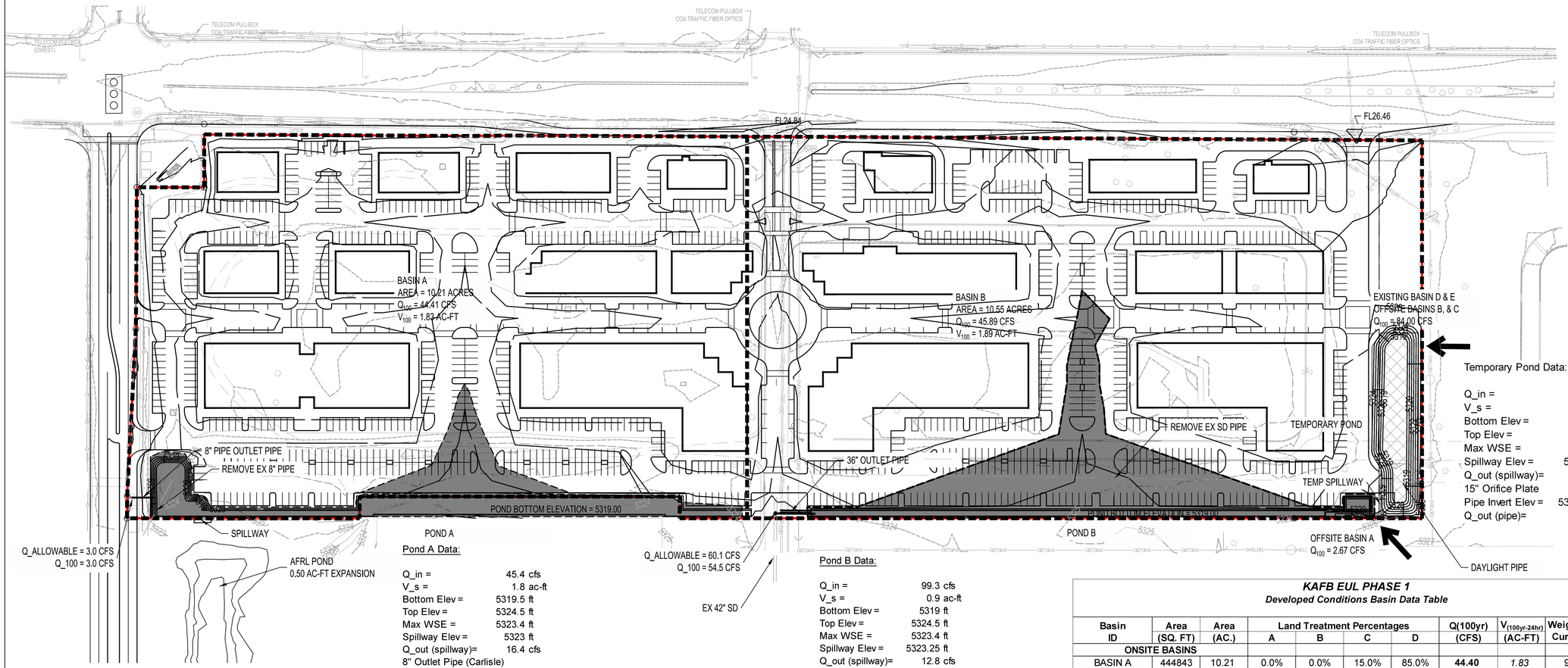

Temporary Pond Data:

Q_in =	86.7 cfs
V_s =	1.34 ac-ft
Bottom Elev =	5319
Top Elev =	5324
Max WSE =	5323
Spillway Elev =	5322.2
Q_out (spillway)=	70.7 cfs
15" Orifice Plate	
Pipe Invert Elev =	5320.17
Q_out (pipe)=	8.4 cfs

POND A

Pond A Data:

Q_in =	45.4 cfs
V_s =	1.8 ac-ft
Bottom Elev =	5319.5 ft
Top Elev =	5324.5 ft
Max WSE =	5323.4 ft
Spillway Elev =	5323 ft
Q_out (spillway)=	16.4 cfs
8" Outlet Pipe (Carlisle)	
Pipe Invert Elev =	5320.2
Q_out (pipe)=	3.0 cfs
SWQV =	0.25 ac-ft

Pond B Data:

Q_in =	99.3 cfs
V_s =	0.9 ac-ft
Bottom Elev =	5319 ft
Top Elev =	5324.5 ft
Max WSE =	5323.4 ft
Spillway Elev =	5323.25 ft
Q_out (spillway)=	12.8 cfs
36" Outlet Pipe (Maxwell)	
Pipe Invert Elev =	5320 ft
Q_out (pipe)=	54.5 cfs
SWQV =	0.1 ac-ft

KAFB EUL PHASE 1
Developed Conditions Basin Data Table

Basin ID	Area (SQ. FT)	Area (AC.)	Land Treatment Percentages A	B	C	D	Q(100yr) (CFS)	$V_{(100yr-24hr)}$ (AC-FT)	Weighted Curve #	SWQV (CF)
ONSITE BASINS										
BASIN A	444843	10.21	0.0%	0.0%	15.0%	85.0%	**44.40**	*1.83*	96	*8193*
BASIN B	459634	10.55	0.0%	0.0%	15.0%	85.0%	**45.89**	*1.89*	96	*8465*
TOTAL	**904476**	**20.76**					**90.3**	***3.72***		***16657***

DRAINAGE NARRATIVE:

INTRODUCTION:

THE PHASE 1 DRAINAGE MANAGEMENT PLAN IS PRESENTED IN SUPPORT OF HYDROLOGY APPROVAL OF THE PHASE 1 KAFB EUL DEVELOPMENT AND ROUGH GRADING PERMIT APPROVAL FOR PHASE 1 ONLY. PHASE 1 IS APPROXIMATELY 21.4 ACRES OF THE 70 ACRE ULTIMATE DEVELOPMENT AND IT IS LOCATED AT THE SOUTHEAST CORNER OF CARLISE AND GIBSON. PER FEMA COMMUNITY MAP PANELS #35001C0361G & #35001C0362H THE SITE IS NOT LOCATED WITHIN A FEMA REGULATORY FLOODPLAIN.

DEVELOPED CONDITIONS:

THIS DRAINAGE MANAGEMENT PLAN ADDRESSES PROPOSED STORM DRAIN INFRASTRUCTURE AND DRAINAGE MANAGEMENT SCHEMES FOR FULLY DEVELOPED CONDITIONS TO ALLOW FOR THE SAFE MANAGEMENT OF STORM RUNOFF. WHILE THE SITE WILL BE DEVELOPED IN SEVERAL PHASES, THE LIKELYHOOD OF THE SITE PLAN TO BE ALTERED WILL REQUIRE EACH PHASING SUBMITTAL TO BE SUPPORTED BY A PHASE SPECIFIC DMP AND GRADING PLAN THAT WILL ENSURE EXISTING ONSITE AND OFFSITE DOWNSTREAM INFRASTRUCTURE IS NOT NEGATIVELY IMPACTED.

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EXISTING BASINS D & E ENCOMPASSES THE REMAINDER OF THE SITE TO THE WEST OF THE PHASE 1 BOUNDARY. THE UNDEVELOPED RUNOFF OF THESE BASINS CONTRIBUTE TO THE TEMPORARY POND. THIS INTERIM FACILITY SERVES AS A DISALTATION BASIN AS WELL AS A DETENTION. THE TEMPORARY POND DISCHARGES TO POND B THROUGH AN OUTLET PIPE AND A SPILLWAY.

OFFSITE BASINS:

OFFSITE BASINS A DRAINS NORTH TO POND B.

OFFSITE BASINS B & C DISCHARGE TO THE NORTH. RUNOFF FROM THESE BASINS DISCHARGE INTO THE EXISTING ONSITE STORM DRAIN INFRASTRUCTURE. THIS STORM DRAIN PIPE DAYLIGHTS AT THE TEMPORARY POND AT THIS PHASE.

STORMWATER QUALITY:

PER THE CITY OF ALBUQUERQUE CURRENT DPM, THE SITE IS REQUIRED TO RETAIN THE "FIRST FLUSH" STORMWATER QUALITY VOLUME COMPUTED AS THE IMPERVIOUS AREA TIMES 0.26". RETENTION COMPONENTS WITHIN THE LARGER DETENTION FACILITIES WILL BE PROVIDED TO ACCOMMODATE THIS FIRST FLUSH VOLUME. IN ADDITION AREAS FOR ONSITE RETENTION WITHIN THE SPECIFIC BUILD PERMITS PACKAGES WILL BE EXPLORED. WHERE RETENTION IS NOT FEASIBLE THE DEVELOPMENT MAY REQUEST THE OPTION OF CASH-IN-LIEU TO COVER THE FIRST FLUSH VOLUME.

CONCLUSIONS:

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LEGEND

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  FL=FLOW LINE
  TC=TOP OF CURB
  TS=TOP OF SIDEWALK
- DIRECTION OF FLOW
- WATER BLOCK/GRADE BREAK

N

60 30 0 60

1"=60'

Bohannan Huston
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KIRTLAND AFB ENHANCED USE LEASE
OVERALL MASTER DRAINAGE MANAGEMENT PLAN

BHI PROJECT NO.	DWG NO.	SHEET OF
20190098		

ENGINEER'S SEAL

MICHAEL BALDONADO NEW MEXICO 18187 LICENSED PROFESSIONAL ENGINEER 10-21-20

AS-BUILT INFORMATION

CONTRACTOR DATE
WORK STAKED BY DATE
INSPECTORS ACCEPTANCE BY DATE
FIELD VERIFICATION BY DATE
DRAWINGS CORRECTED BY DATE

BENCH MARKS

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	

DESIGNED BY MHS 02/2020
CHECKED BY MJB ### DATE
DRAWN BY JN ### DATE