

CITY OF ALBUQUERQUE



August 8, 2007

Jeffrey L. Mulberry, P.E.
Bohannon Huston, Inc.
7500 Jefferson NE – Courtyard 1
Albuquerque, NM 87109

Re: Mesa Del Sol Elevated Water Reservoir Grading and Drainage Plan
Engineer's Stamp dated 7-24-07 (R16/DA3004)

Dear Mr. Mulberry,

Based upon the information provided in your submittal dated 7-25-07, the above referenced plan is approved for Site Development Plan by the DRB, Grading Permit and Foundation Permit.

P.O. Box 1293

This project requires a National Pollutant Discharge Elimination System (NPDES) permit. You are required to send a copy of your SWPPP on a CD to the following address:

Albuquerque

Department of Municipal Development, Storm Drainage Division, P.O. Box 1293,
One Civic Plaza, Rm. 301, Albuquerque, NM 87103

New Mexico 87103

If you have any question concerning the SWPPP, please contact Kathy Verhage 768-3654.

www.cabq.gov

Upon completion of the project, please provide an Engineer Certification for our files.

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

Sincerely,

Curtis A. Cherne, P.E.
Engineering Associate, Planning Dept.
Development and Building Services

C: file
Brad Bingham
Kathy Verhage, DMD

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/11/2002)

PROJECT TITLE: Mesa del Sol Elevated Water Reservoir ZONE MAP/DRG. FILE # R-16
DRB #: 1005355 EPC#: 07EPC-00110 WORK ORDER#: _____

LEGAL DESCRIPTION: Future Tract 20, Bulk Land Plat for Mesa del Sol Innovation Park
CITY ADDRESS: _____

ENGINEERING FIRM: Bohannon Huston, Inc.
ADDRESS: 7500 Jefferson NE – Courtyard I
CITY, STATE: Albuquerque, NM

CONTACT: Jeff Mulbery
PHONE: (505) 823-1000
ZIP CODE: 87109

OWNER: Forest City Covington, N.M., LLC
ADDRESS: 801 University Blvd. SE, Suite 200
CITY, STATE: Albuquerque, NM

CONTACT: Manny Barrera
PHONE: 505-400-3021
ZIP CODE: 87106

ARCHITECT: _____
ADDRESS: _____
CITY, STATE: _____

CONTACT: _____
PHONE: _____
ZIP CODE: _____

SURVEYOR: _____
ADDRESS: _____
CITY, STATE: _____

CONTACT: _____
PHONE: _____
ZIP CODE: _____

CONTRACTOR: _____
ADDRESS: _____
CITY, STATE: _____

CONTACT: _____
PHONE: _____
ZIP CODE: _____

CHECK TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
☐ DRAINAGE PLAN
☒ **RESUBMITTAL** CONCEPTUAL
 GRADING & DRAINAGE PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☐ ENGINEER'S CERTIFICATION (HYDROLOGY)
☐ CLOMR/LOMR
☐ TRAFFIC CIRCULATION LAYOUT (TCL)
☐ ENGINEERS CERTIFICATION (TCL)
☐ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
☐ OTHER (DRAINAGE DESIGN ANALYSIS REPORT)
 REVISION

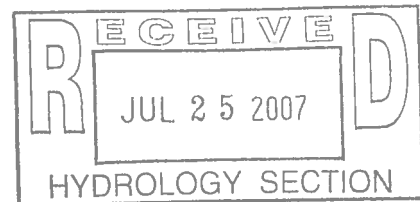
CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SIA / FINANCIAL GUARANTEE RELEASE
☐ PRELIMINARY PLAT APPROVAL

☐ S. DEV. PLAN FOR SUB'D. APPROVAL
☒ S. DEV. PLAN FOR DRB APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☒ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY (PERM.)
☐ CERTIFICATE OF OCCUPANCY (TEMP.)
☒ ROUGH GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ WORK ORDER (*CHANGE ORDER*) APPROVAL
☐ OTHER (DRC HYDROLOGY APPROVAL)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ☐ YES
☐ NO
☐ COPY PROVIDED



DATE SUBMITTED: 7-24-07 BY: Jeff Mulbery/mb

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

- 1. Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
- 2. Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
- 3. Drainage Report:** Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

June 25, 2007

Curtis A Cherne, E.I.
Engineering Associate, Planning Dept.
Development and Building Services
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

Re: Mesa del Sol Elevated Water Tank Grading and Drainage Plan (R16/D096)
Engineer's Stamp dated 7-9-07 (Resubmitted Engineer's Stamp dated 7-24-07)

Dear Curtis:

Based upon the comments provided in your letter dated July 16, 2007, the Grading and Drainage plan for the above referenced project has been updated to meet the requirements for Site Development action by the DRB, Rough Grading and Foundation Permit approval. The following revisions have been addressed:

1. The access road to the site has been revised on all sheets. The access road is currently located east of the trail. In addition the power pole has been shown correctly on the Site Access Plan. The Grading Plan shows this pole in the correct location.
2. A maintenance agreement will be obtained by PNM/ABCWAU for the access road.
3. Inverts for the 2-36" RCP storm drain connecting the regional retention pond together was provided.
4. The rip rap specification call-out was revised and corrected.
5. An invert for the rundown in the south pond was provided.
6. Volumes for the design volume required and the volume provided have been shown on sheet

If you have questions or require further information, please contact me at 823-1000.

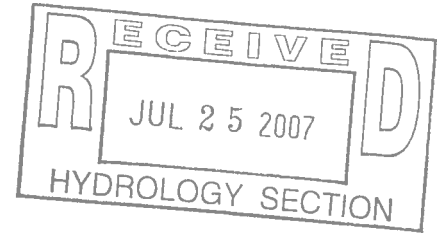
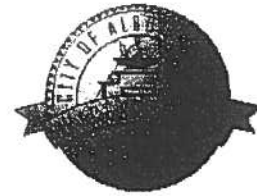
Sincerely,



Michael Balaskovits, E.I.
Engineer
Community Development and Planning

MJB/cc
Enclosures

CITY OF ALBUQUERQUE



July 16, 2007

Jeffrey L. Mulberry, P.E.
Bohannon Huston, Inc.
7500 Jefferson NE – Courtyard 1
Albuquerque, NM 87109

Re: Mesa Del Sol Elevated Water Tank Grading and Drainage Plan
Engineer's Stamp dated 7-9-07 (R16/D096)

Dear Mr. Mulberry,

Based upon the information provided in your submittal dated 7-9-07, the above referenced plan cannot be approved for Site Development action by the DRB, Rough Grading Permit or Foundation Permit.

P.O. Box 1293

Concerning Site Development approval by the DRB:

Albuquerque

- The Site Access Plan shows the access road in the bottom of the swale leading to the regional pond, while the grading plan shows the access road on the east shoulder of the swale. The location east of the swale is preferable. The Site Access Plan also shows the power pole in the drainage tract, whereas the Grading Plan depicts it outside of the drainage tract.
- The access road in the drainage tract should be maintained by PNM/ABCWAU. A maintenance agreement is required.

New Mexico 87103

www.cabq.gov

Concerning Rough Grading and Foundation Permits:

- More information is required before the ponds can be graded and related infrastructure can be built.
 - Inverts are required for the 2-36" RCP storm drain connecting the two ponds. In addition show the pipe ends in both ponds.
 - Which COA STD SPEC are you planning on using for the Rip Rap rundowns? What is Type VL? Is "1" thick" a typo?
 - Provide an invert for the rundown into the south pond.
 - Provide new volumes of the two ponds.
- It appears that grading of the site is integral with grading of the ponds and since more information is required before grading the ponds, the site should not be graded until approval is given to grade the ponds.

CITY OF ALBUQUERQUE



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

Sincerely,

A handwritten signature in cursive script, reading "Curtis A. Cheme".

Curtis A. Cheme, P.E.
Engineering Associate, Planning Dept.
Development and Building Services

C: file
Brad Bingham

P.O. Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

CLIENT/COURIER TRANSMITTAL**To:** Curtis Cherne
600 Second St.
Albuquerque, NM 87102**Requested by:** Mike Balaskovits**Date:** July 25, 2007**Time Due:** ☒ This A.M.
☐ This P.M.
☐ Rush _____
☐ By Tomorrow**Phone:** 924-3695**Job No.:** 070204**Job Name:** Elevated Water Reservoir**DELIVERY VIA**☒ Courier ☐ Federal Express
☐ Mail ☐ UPS
☐ Other**PICK UP****Item:** _____

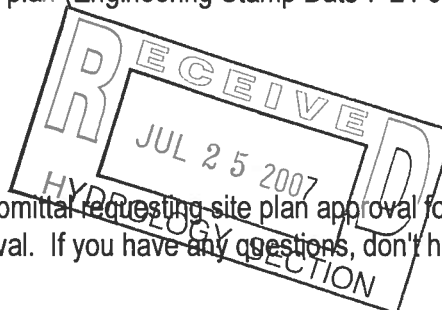
<u>ITEM NO.</u>	<u>QUANTITY</u>	<u>DESCRIPTION</u>
1	1	Drainage Information Sheet
2	1	COA Comment Letter Sent 7-16-07
3	1	Reply to COA Comment Letter (Dated 7-25-07)
4	3 Sheets	Resubmittal of grading and drainage plan (Engineering Stamp Date 7-24-07)

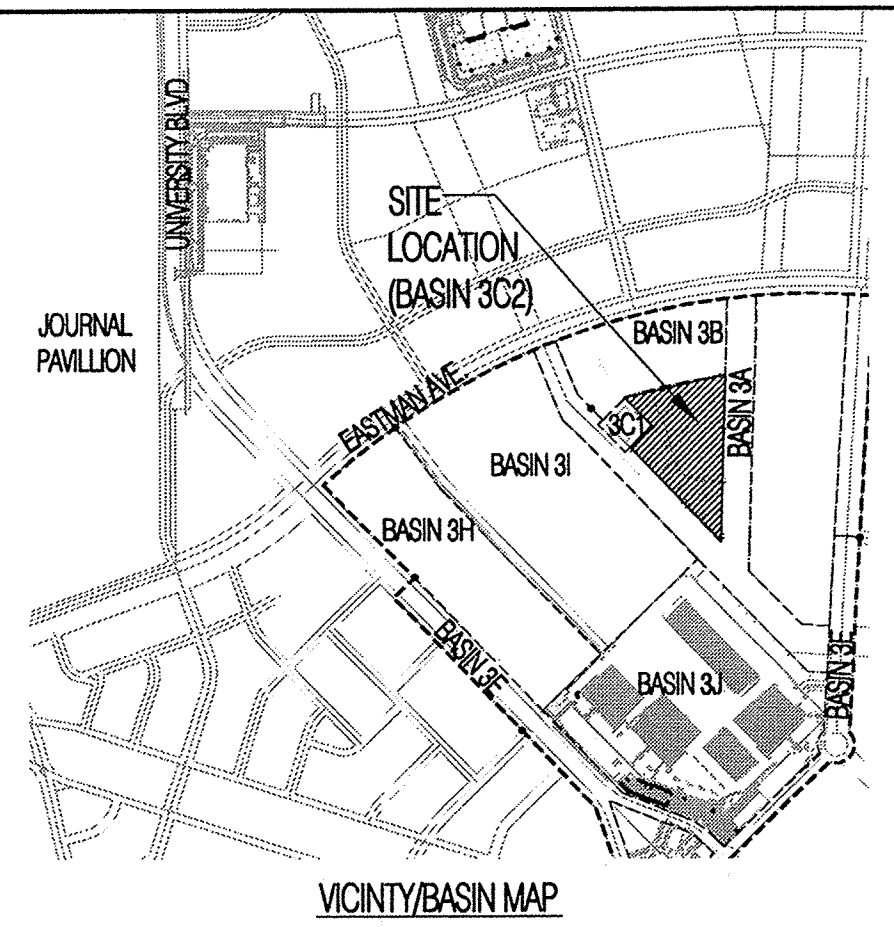
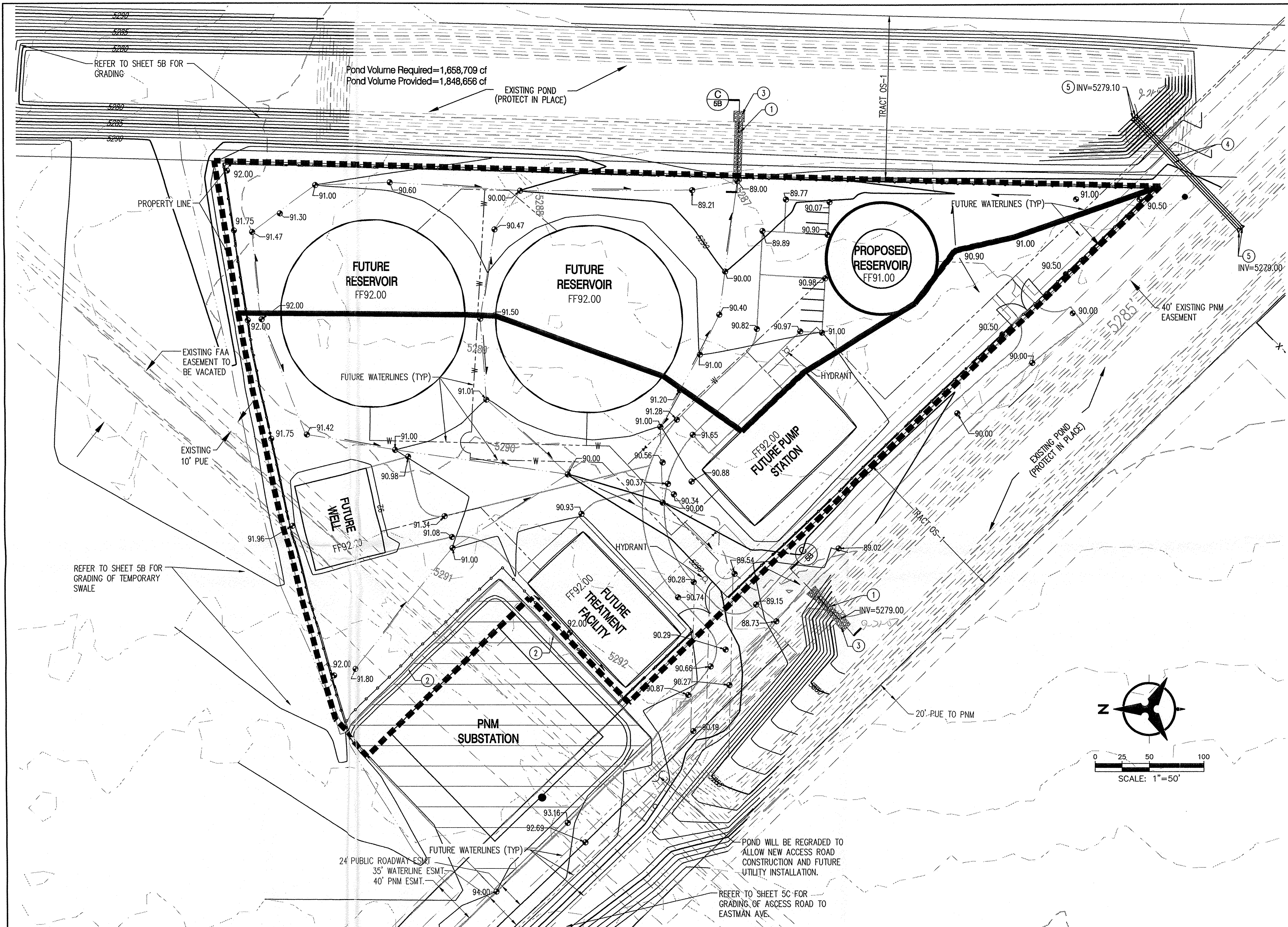
COMMENTS / INSTRUCTIONS

Curtis,

Attached is the resubmittal for the Elevated Water Reservoir submittal requesting site plan approval for DRB action approval, Foundation permit approval and rough grading approval. If you have any questions, don't hesitate to contact Jeff Mulbery or myself Thanks.

Mike Balaskovits

**REC'D BY:** _____ **DATE:** _____ **TIME:** _____**ENGINEERING ▲****SPATIAL DATA ▲****ADVANCED TECHNOLOGIES ▲**



Existing Conditions
The elevated reservoir site ("The Site") is located on approximately 6.24 acre lot, which currently is undeveloped and slopes 0.5% to 1.0% from the west to east. It is located in between the two Regional Retention Ponds ("Ponds") constructed with the Albuquerque Studios Site (COA Hydro File #R16/0002A). In addition, a PNM substation has been constructed to the northwest of The Site. The majority of this site is self contained and will not adversely affect the elevated reservoir site (See COA Hydro File #R16/0002B).

Once The Site is completed, it will be bound on three sides. The Ponds to the east and southwest and a future developed parcel to the north.

Offsite Drainage
Current drainage from the undeveloped land to the west of the site drains into the existing pond constructed with the Albuquerque Studios site via storm drain and surface flow. A temporary swale west of the access road will direct flows to the existing pond. All drainage to the east of these adjacent tracts continues to outfall to the existing playa system to the east and will not affect the site. Drainage from the north will be diverted east into the existing ponds via a temporary swale. Upon development of the future parcels, drainage will be conveyed to the existing ponds in a manner suitable to each specific site plan, and each site will be subject to future submittal and approval.

Proposed Site Grading
The slope of the site under proposed conditions will be between 0.5% to 1.0%. A portion of the site will drain to the eastern pond while the remainder of the site will drain to the southwestern pond (See drainage basin boundaries).

All drainage will be diverted into a rip-rap rundown to prevent erosion. The ponds have previously been constructed to account for developed flows from this site with the Albuquerque Studios submittal. Currently there are only a few basins contributing to the existing Ponds. Under current conditions for these basins (including the developed flows from The Site), the maximum water surface elevation (MWSEL) is approximately 5284.60.

(Note: the ponds were sized to accept the 100 year, 10 day storm generated by the fully developed drainage area in accordance with the methodology outlined in the DPM section 22.2. Developed land treatments for Mesa del Sol sites are assumed to be 90% treatment D and 10% treatment B. Currently the top of the ponds extend to 5289.00).

A portion of the existing western pond constructed with the Albuquerque Studios site will be filled in order to allow room for an access road and future utilities to serve both the Elevated Reservoir site and the Mesa del Sol development. The pond to the east will be extended to the north to account for this volume. (Total pond volume provided after pond adjustments = 42.4 acre-ft, Total volume required for current contributing basins to the existing ponds = 18.9 acre-ft - see Table 1).

Floodplain
In accordance with FEMA Community Map Panel #35001C0555E, the site is not located within a floodplain.

Conclusion
This drainage submittal has been prepared in accordance with City of Albuquerque requirements. This plan demonstrates the proposed grading and drainage design. The implementation of this design would result in the safe passage and retention of the 100 yr, 10 day storm event. With this submittal we request COA Hydrology Department approval for DRB Site Plan approval, foundation permit approval and rough grading approval.

- KEYED NOTES**
- INSTALL RIP RAP WEIR AND RUNDOWN PER DETAIL A & B, SHEET 5B. TRANSITION FROM WEIR SECTION TO RUNDOWN SECTION OVER 10'.
 - INSTALL TURN BLOCKS FOR DRAINAGE EVERY 20 FT, O.C.
 - INSTALL 10"x10" RIP RAP BLANKET.
 - INSTALL 2-36" RCP STORM DRAIN PIPES.
 - INSTALL 36" RCP END SECTION.

ROUGH GRADING	(±0.5')
APPROVED FOR ROUGH GRADING	DATE

- GENERAL NOTES**
- CONTRACTOR MUST OBTAIN A TOPSOIL DISTURBANCE PERMIT FROM THE ENVIRONMENTAL HEALTH DIVISION PRIOR TO CONSTRUCTION.
 - THE CONTRACTOR IS TO REFER TO EARTHWORK SPECIFICATION AS NOTED IN THE SOILS REPORT BY GEO-TESTING, DATED 1/07 (JOB NO. 1-61022).
 - THE CONTRACTOR SHALL CONFORM TO ALL CITY, COUNTY, STATE, AND FEDERAL DUST CONTROL MEASURES & REQUIREMENTS AND WILL BE RESPONSIBLE FOR PREPARING AND OBTAINING ALL NECESSARY APPLICATIONS AND APPROVALS.
 - THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE LOTS INTO PUBLIC RIGHT-OF-WAY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AND WETTING THE SOIL TO KEEP IT FROM BLOWING.
 - BOULDERS GREATER THAN 3 FEET IN DIAMETER EXCAVATED DURING GRADING ACTIVITIES SHALL BE STOCKPILED AND DISPOSED OF AT THE DISCRETION OF THE OWNER.
 - ALL WALLS SHOWN ARE TO BE PLACED ALONG PROPERTY LINE.

TABLE 1 ELEVATED RESERVOIR - DEVELOPED HYDRAULIC CALCULATIONS											
Basin Data Table											
This table is based on the DPM Section 22.2, Zone I-E											
SUB-BASIN ID	Area (SQ. FT)	Area (AC.)	Land Treatment Percentages				Q(100) (cfs/ac.)	Q(100) (cfs)	WT E (inches)	V(100) _{bas} (CF)	V(100) _{total} (CF)
			A	B	C	D					
Basin 3A (Open Space/Regional Retention Ponds)	531834	12.21	0.0%	50.0%	50.0%	0.0%	3.33	40.60	1.27	56286	56286
Basin 3B*	337468	7.75	50.0%	50.0%	0.0%	0.0%	1.92	14.87	0.66	18420	18420
Basin 3C1 (PNM Substation)	39640	0.91	0.0%	10.0%	0.0%	90.0%	4.46	4.06	1.99	6560	11317
Basin 3C2 (Elevated Reservoir)	271814	6.24	0.0%	10.0%	0.0%	90.0%	4.46	27.82	1.99	44985	77603
Basin 3E (University Blvd and Hawking Dr)	735836	16.89	0.0%	10.0%	0.0%	90.0%	4.46	75.31	1.99	121781	210081
Basin 3H*	689417	15.83	50.0%	50.0%	0.0%	0.0%	1.92	30.39	0.66	37831	37831
Basin 3I*	1111681	25.53	50.0%	50.0%	0.0%	0.0%	1.92	49.01	0.66	60680	60680
Basin 3J (Albuquerque Studios)	1231689	28.28	0.0%	10.0%	0.0%	90.0%	4.46	126.05	1.99	203944	351647
Total	4080276.80	93.67								475491.81	823675.14
* UNDEVELOPED CONDITIONS AT THIS TIME											

- LEGEND**
- 91.62 PROPOSED SPOT ELEVATIONS
 - ✕ 92.46 EXISTING SPOT ELEVATIONS
 - 5470 EXISTING CONTOUR W/ INDEX ELEVATION
 - FLOW ARROW
 - W PROPOSED TANK WATER LINE
 - DRAINAGE BASIN BOUNDARIES
 - PROPOSED WALL
 - PROPOSED SLOPE

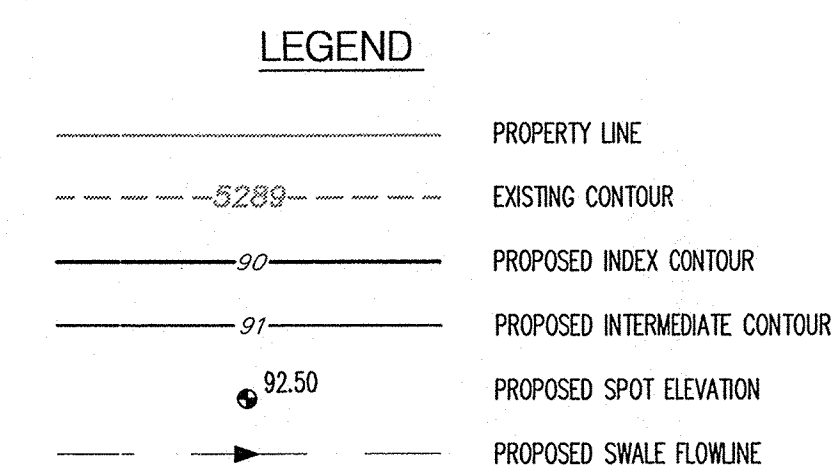
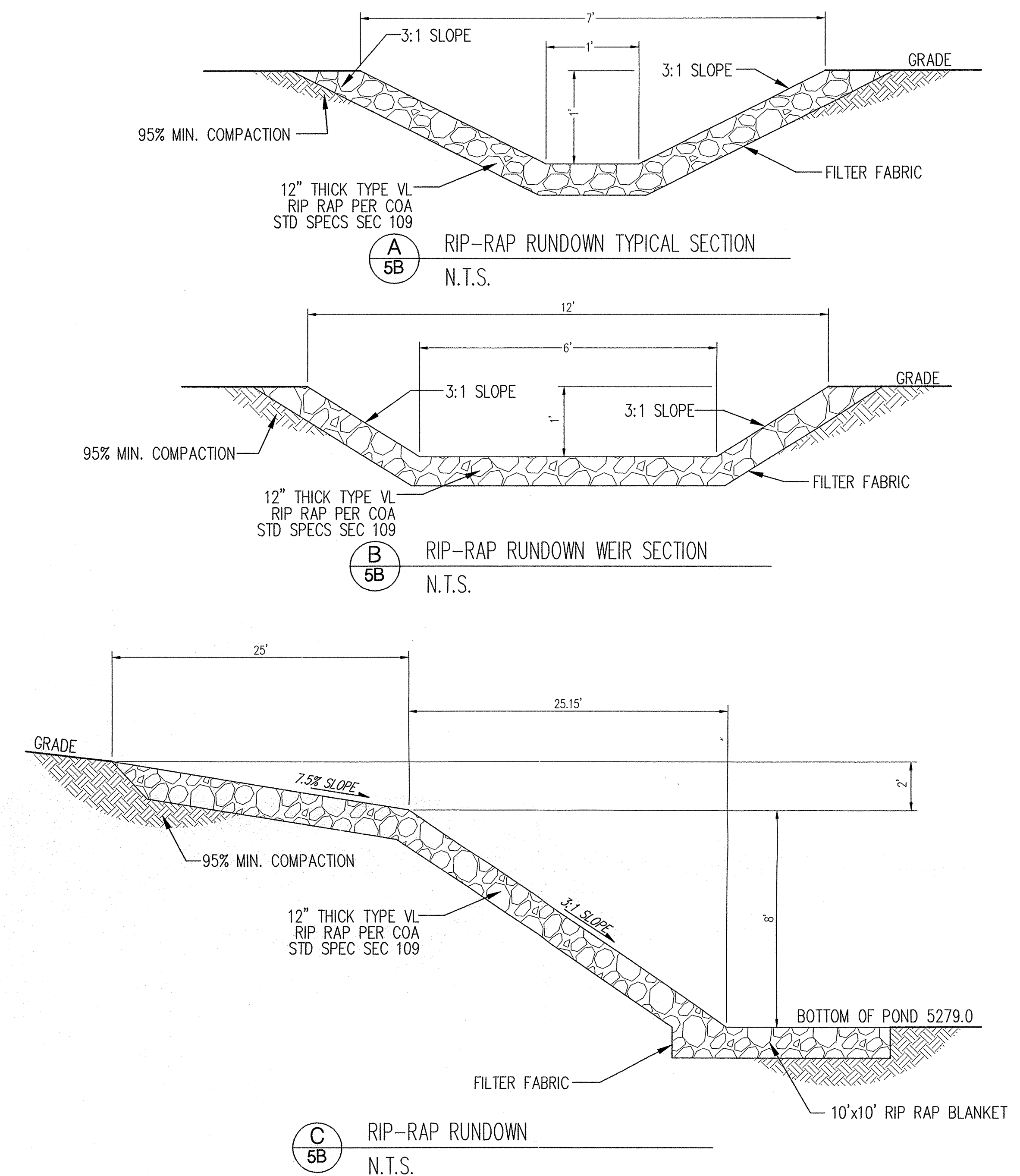
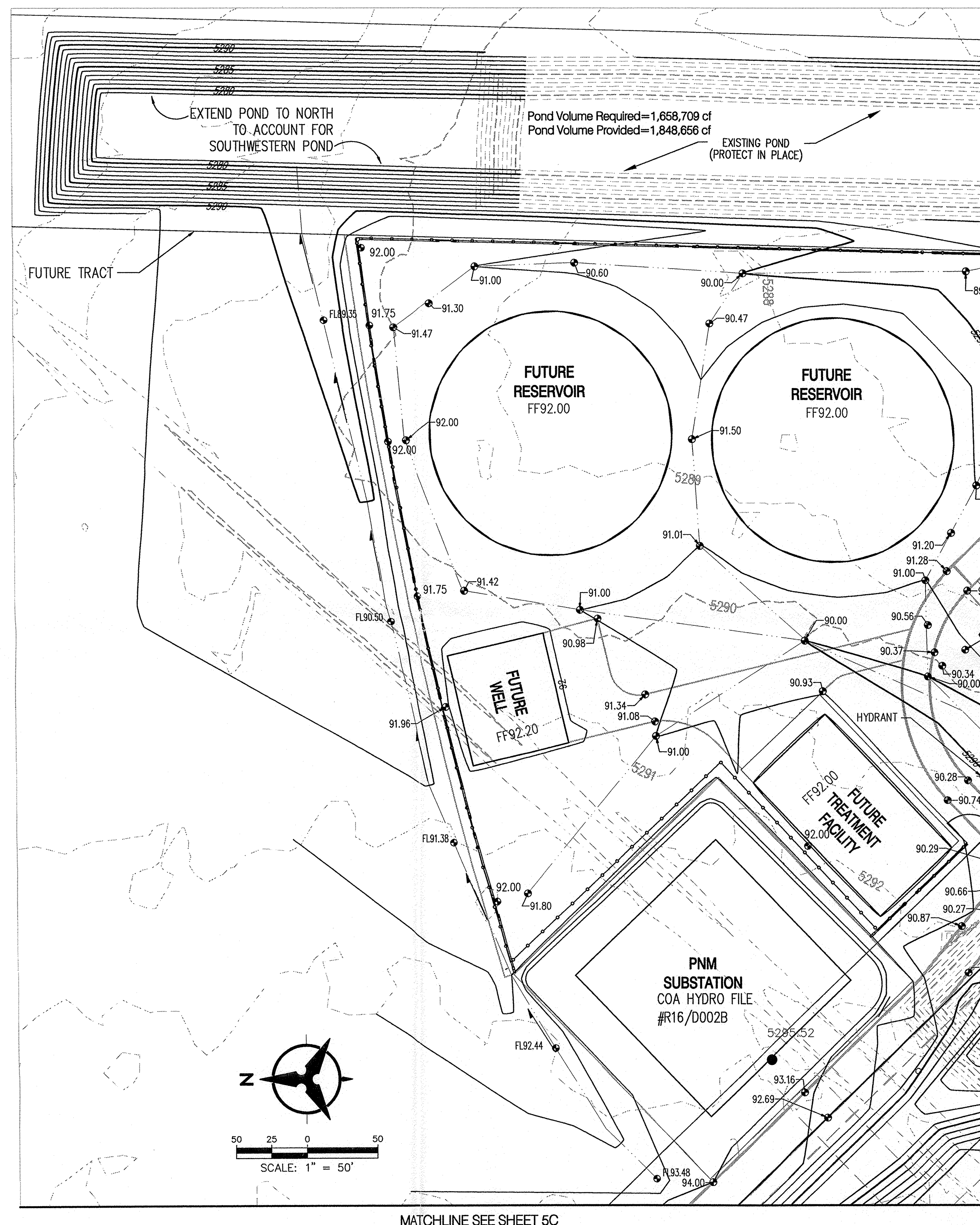
Bohannon & Huston
Engineering & Spatial Data & Advanced Technologies
7600 Jefferson St. NE Albuquerque, NM 87109-4336

CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT
MESA DEL SOL
ELEVATED WATER RESERVOIR
SITE GRADING, DRAINAGE, AND UTILITY PLAN

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	MO./DAY/YR.	MO./DAY/YR.

CITY PROJECT NO. DRB	ZONE MAP NO. R-16-Z	SHEET 5A	OF 5
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AS-BUILT INFORMATION				BENCH MARKS				SURVEY INFORMATION				ENGINEER'S SEAL			
CONTRACTOR	DATE	CONTRACTOR	DATE	ACS 3-1/4" ALUMINUM CAP	REVIEWED TO A	DATE	BY	NO.	DATE	BY	DATE				
STARTED BY	DATE	STARTED BY	DATE	TUBE SET IN A CONCRETE BASE	IN THE	DATE	BY								
INSPECTOR	DATE	INSPECTOR	DATE	GROUND STAMPED	"5-Q-14, 1987"	DATE	BY					REMARKS REVISIONS DESIGN			
FIELD	DATE	FIELD	DATE	FROM THE RIO GRAYO BLVD. AND BROADWAY		DATE	BY								
VERIFICATION BY	DATE	VERIFICATION BY	DATE	INTERSECTION GO SOUTH 0.9 MILES AND		DATE	BY					DESIGNED BY CBP DRAWN BY MTD CHECKED BY DJG			
CORRECTED BY	DATE	CORRECTED BY	DATE	PROCEED 123' WEST OF THE CENTERLINE		DATE	BY								
MICRO-FILM INFORMATION				STATE PLANE COORDINATES (CENTRAL ZONE, NAD83/NAVD88) N=1460471.432, E=1521388.180 (GROUND) ELEV=4981.17				DATE 01/2007				DATE 01/2007			
RECORDED BY	DATE	RECORDED BY	DATE					DATE 01/2007				DATE 01/2007			



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Mon, 23-Jul-2007 - 5:09:pm, Plotted by: MBALASKOVITS

BHI JOB NO. 070204

Bohannon  **Huston** INC.

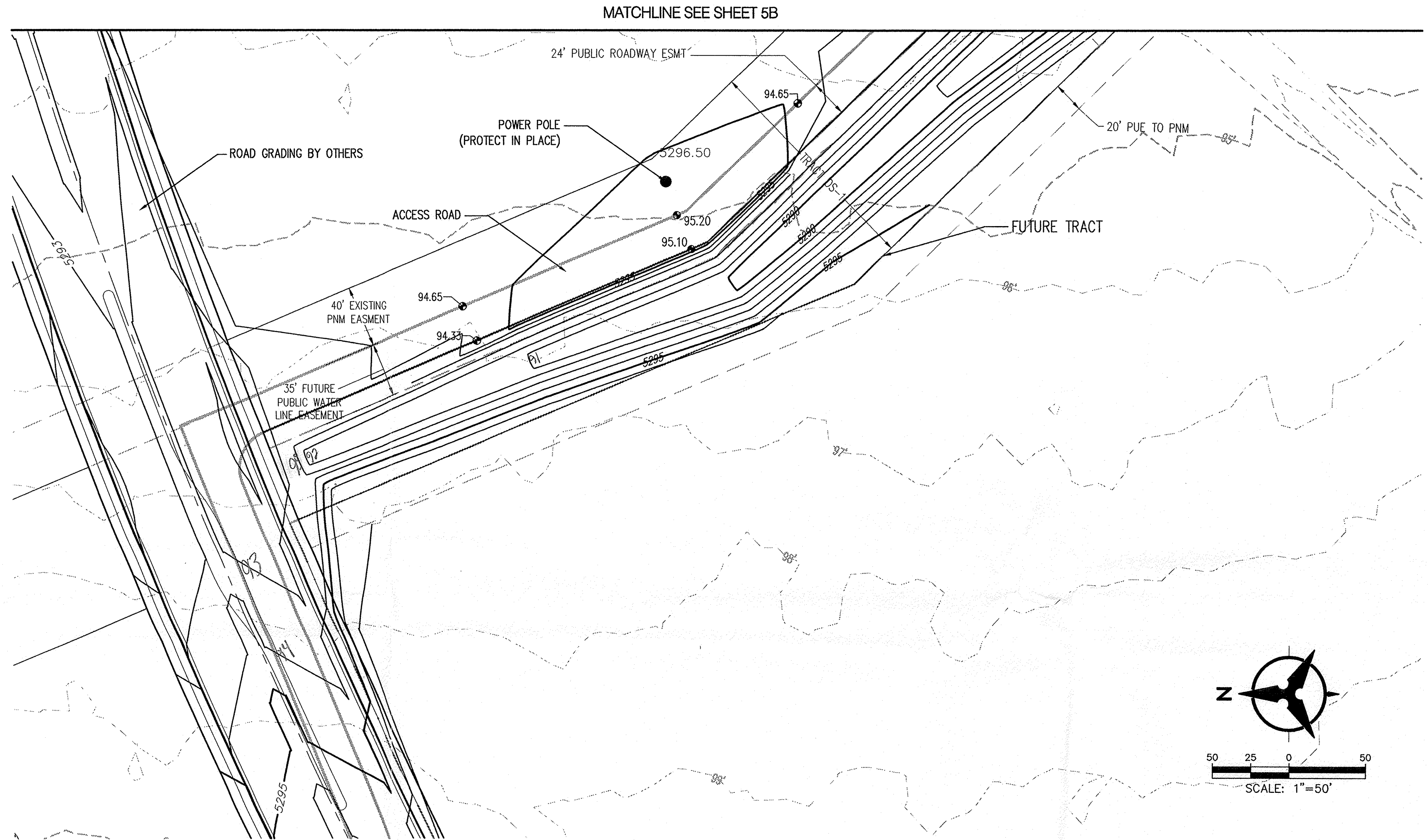
Courtyard I 7500 Jefferson St. NE Albuquerque, NM 87109-4335
ENGINEERING • SPATIAL DATA • ADVANCED TECHNOLOGIES


 CITY OF ALBUQUERQUE
 DEPARTMENT OF
 MUNICIPAL DEVELOPMENT

MESA DEL SOL ELEVATED RESERVOIR
CONCEPTUAL OFFSITE GRADING & DRAINAGE PLAN

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.

CITY PROJECT NO. DBR	ZONE MAP NO. R-16-Z	SHEET 5B	OF 5
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Bohannon & Huston, Inc.
Court yard | 7600 Jefferson St. NE Albuquerque, NM 87109-4395
ENGINEERING • SPATIAL DATA • ADVANCED TECHNOLOGIES



CITY OF ALBUQUERQUE
DEPARTMENT OF
MUNICIPAL DEVELOPMENT

MESA DEL SOL ELEVATED RESERVOIR
CONCEPTUAL OFFSITE GRADING & DRAINAGE PLAN

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	MO./DAY/YR.	MO./DAY/YR.

CITY PROJECT NO. DRB	ZONE MAP NO. R-16-Z	SHEET 5C	OF 5
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ENGINEER'S SEAL		SURVEY INFORMATION		BENCH MARKS		AS-BUILT INFORMATION	
		FIELD NOTES		ACS 3-1/4" ALUMINUM CAP REVEIT TO A TUBE SET IN A CONCRETE BASE IN THE GROUND STAMPED "5-Q-14, 1987", FROM THE RIO BRAVO BLVD. AND BROADWAY INTERSECTION GO SOUTH 0.9 MILES AND PROCEED 123' WEST OF THE CENTERLINE. STATE PLANE COORDINATES (CENTRAL ZONE, NAD83/NAVD88) N=1460471.432, E=1521388.180 (GROUND) ELEV.=4981.17		CONTRACTOR	
		NO.		TUBE SET IN A CONCRETE BASE IN THE GROUND STAMPED "5-Q-14, 1987", FROM THE RIO BRAVO BLVD. AND BROADWAY INTERSECTION GO SOUTH 0.9 MILES AND PROCEED 123' WEST OF THE CENTERLINE. STATE PLANE COORDINATES (CENTRAL ZONE, NAD83/NAVD88) N=1460471.432, E=1521388.180 (GROUND) ELEV.=4981.17		WORKED BY	
		BY		INSPECTOR'S		DATE	
		REMARKS		ACCEPTANCE BY		DATE	
		DESIGN		DRAWINGS BY		DATE	
DESIGNED BY		DATE		MICRO-FILM INFORMATION		RECORDED BY	
DRAWN BY		DATE		NO.		DATE	
CHECKED BY		DATE					