CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

August 25, 2015

Reza Afaghpour, P.E.
SBS Construction and Engineering
P.O. Box 10264
Albuquerque, NM 87184

RE: Western United Electric
Conceptual Grading and Drainage Plan
Engineer's Stamp Date 8-9-2015 (H10D029)

Dear Mr. Afaghpour:

Based upon the information provided in your submittal received 8-18-2015, the above referenced plan is approved for action by the DRB on the Site Plan for Building Permit. Prior to Building Permit the following comments must be addressed:

1. While the DMP states free discharge to La Morada is allowed for this site, the site is still limited to the discharge used in the original analysis. The AHYMO run shows 8.13 cfs. A copy of this information should be provided as part of the excepts, but I will include it in the file for you. It is based on a D=80%
2. DMP shows that offsite basin 6-A was intended to flow thru this site to La Morada. Please address.
3. In the runoff calculations shown on plan, do not include the AHYMO input/output for the 10yr storm as it is not needed and confusing.
4. Site plan shows that crushed gravel is used in the north portion of the lot and should be noted on the grading plan. Is the intent to pave in the future? The AHYMO input shows D= 88%. Should it be lowered?
5. How are flows from Pond A getting to Pond B? Show a channel or swale and a section cut.
6. SW culverts are sized using the orifice equation but they are above the pond. Use the weir equation.
7. Show how flows are conveyed from Pond B to the SW culvert. Provide additional spot elevations around Pond B.
8. Provide SO-19 notes if this is not going thru the Work Order process.
9. The 1ft retaining curb does not appear to be sufficient. Show slope ties.

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

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: Shawn Biazar

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: WESTERN UNITED ELECTRIC Building Permit #: _____ City Drainage #: H10D029

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

Legal Description: TRACT 6, LADERA BUSINESS PARK, UNIT 1

City Address: 7311 LA MORADA PLACE, NW, ALBUQUERQUE, NM 87120

Engineering Firm: SBS CONSTRUCTION AND ENGINEERING, LLC Contact: SHAWN BIAZAR

Address: 10209 SNOWFLAKE CT., NW, ALBUQUERQUE, NM 87114

Phone#: 505-804-5013 Fax#: 505-897-4996 E-mail: AECLLC@AOL.COM

Owner: _____ Contact: _____

Address: _____

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

Architect: _____ Contact: _____

Address: _____

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

Surveyor: _____ Contact: _____

Address: _____

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

Contractor: _____ Contact: _____

Address: _____

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

TYPE OF SUBMITTAL:

- ____ DRAINAGE REPORT
- X DRAINAGE PLAN 1st SUBMITTAL
- ____ DRAINAGE PLAN RESUBMITTAL
- X CONCEPTUAL G & D PLAN
- ____ GRADING PLAN
- ____ EROSION & SEDIMENT CONTROL PLAN (ESC)
- ____ ENGINEER'S CERT (HYDROLOGY)
- ____ CLOMR/LOMR
- ____ TRAFFIC CIRCULATION LAYOUT (TCL)
- ____ ENGINEER'S CERT (TCL)
- ____ ENGINEER'S CERT (DRB SITE PLAN)
- ____ ENGINEER'S CERT (ESC)
- ____ SO-19
- ____ OTHER (SPECIFY)

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- ____ SIA/FINANCIAL GUARANTEE RELEASE
- ____ PRELIMINARY PLAT APPROVAL
- ____ S. DEV. PLAN FOR SUB'D APPROVAL
- X S. DEV. FOR BLDG. PERMIT APPROVAL
- ____ SECTOR PLAN APPROVAL
- ____ FINAL PLAT APPROVAL
- ____ CERTIFICATE OF OCCUPANCY (PERM)
- ____ CERTIFICATE OF OCCUPANCY (TCL TEMP)
- ____ FOUNDATION PERMIT APPROVAL
- X BUILDING PERMIT APPROVAL
- X GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ WORK ORDER APPROVAL
- ____ GRADING CERTIFICATION
- ____ SO-19 APPROVAL
- ____ ESC PERMIT APPROVAL
- ____ ESC CERT. ACCEPTANCE
- ____ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED: ____ Yes ____ No ____ Copy Provided

DATE SUBMITTED: 08/17/2015 By: SHAWN BIAZAR

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

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 subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

NOTICE TO CONTRACTORS

1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.

2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.

3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.

4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.

5. BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.

6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.

7. WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS.

GENERAL NOTES:

1: CONTOUR INTERVAL IS HALF (1.00) FOOT.
2: ELEVATIONS ARE BASED ON CITY OF ALBUQUERQUE CONTROL STATION 4_H9, HAVING AN ELEVATION OF 5209.315 FEET ABOVE SEA LEVEL.
3: UTILITIES SHOWN HEREON ARE IN THEIR APPROXIMATE LOCATION BASED ONLY ON ABOVE GROUND EVIDENCE FOUND IN THE FIELD AND AS-BUILT INFORMATION PROVIDED BY THE CLIENT. UTILITIES SHOWN HEREON, WHETHER INDICATED AS ABANDONED OR NOT, SHALL BE VERIFIED BY OTHERS FOR EXACT LOCATION AND/ OR DEPTH PRIOR TO EXCAVATION OR DESIGN CON-SIDERATIONS.
4: THIS IS NOT A BOUNDARY SURVEY, BEARINGS ARE ASSUMED, DISTANCES AND FOUND PROPERTY CORNERS ARE FOR INFORMATIONAL PURPOSES ONLY.
5: SLOPES ARE AT 3:1 MAXIMUM.

Location
TRACT 6, LADERA BUSINESS PARK, UNIT 1 Tracr 6, Ladera Business Park, unit 1 is located at 7311 La Morada Pl., NW, and contains +/- 2.0686 Acres. See attached portion of the Vicinity Map for exact location.

Purpose
The purpose of this drainage report is to present a grading and drainage solution for new building and improvements with this tract of land.

Existing Drainage Conditions
This site falls within Master Drainage Plan for the Ladra Business Park, Area 1 (H10/D06A) prepared by Mark Goodwin and Associates. Area 1, discharging directly into streets at various locations which eventually drains direclty into existing storm drain system desing for this development.

Proposed Conditions and On-Site Drainage Management Plan
Since the Master Plan (File H10/D06A) is designed for complete discahrge, we are proposing to pond the 90th Percentile/First Flush requirement which is is 0.34 inches times the impervious area 77,390.18 (2,192.17 cf). Total retention volume provided (3,403.69 cf) far exceeds the ponding requirement for First Flush (2,192.17 cf).

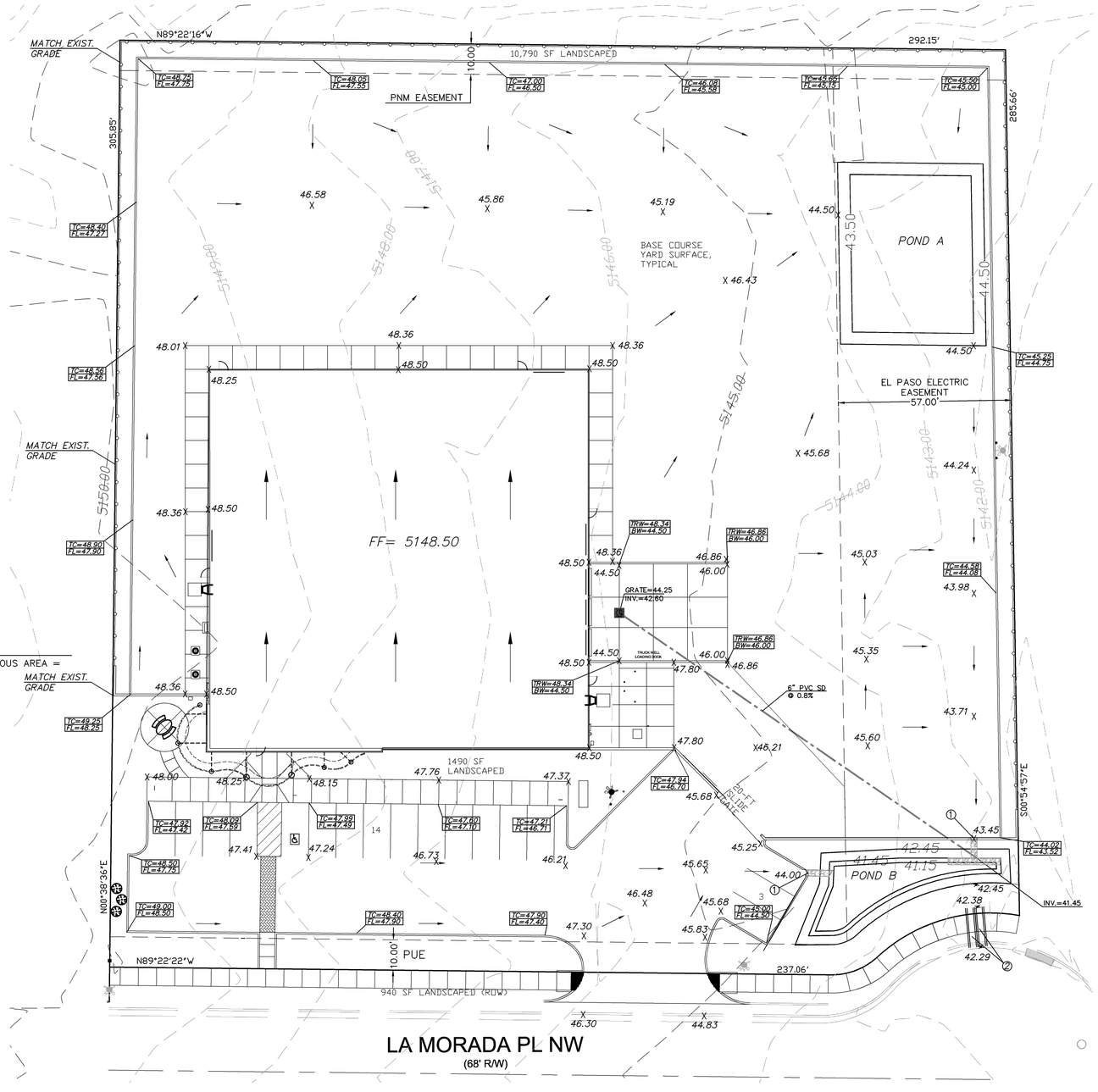
Calculations
City of Albuquerque, Development Process Manuel, Section 22.2, Hydrology Section, was used for runoff calculations. See this plan for AHYMO input and Summary output files.

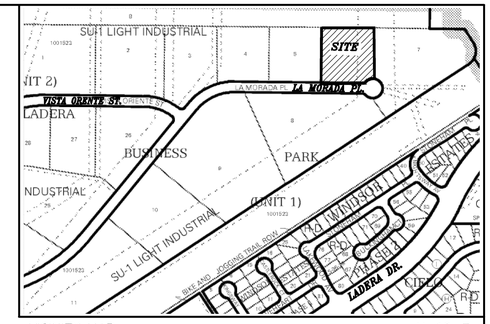
POND VOLUME REQUIRED

TOTAL PONDING VOLUME REQUIRED (90TH PERCENTILE/FIRST FLUSH) = 0.34 INCHES x IMPERVIOUS AREA = (0.34/12 x 77,390.18) = 2,192.17 CF

POND CALCULATION

TOTAL POND AREA PROVIDED = POND A + B = 3,403.69 CF > 2,192.17 CF
PONDING CALCULATIONS:
POND A: AREA @ 44.50 = 2,881.05, AREA @ 43.50 = 1301.59
POND A VOLUME = (2,881.05 + 1,301.59)/2*1.0 = 2,091.32
POND B: AREA @ 42.45 = 1240.57, AREA @ 41.15 = 509.26
POND B VOLUME = (1,240.57 + 509.26)/2*1.50 = 1,312.37





VICINITY MAP: H-10-Z

LEGAL DESCRIPTION:
TRACT 6, LADERA BUSINESS PARK, UNIT 1
CONTAINING 87,790.00 S.F. (2.0613 ACRES)

ADDRESS
7311 LA MORADA PL., NW, ALBUQUERQUE, NM 87120

NOTES:

1. PROVIDE 12" CURB OPENING
2. 2-24" SIDEWALK CULRVET PER CITY STD DWG 2236 (TACK WELD PLATE AT THE BOLT), EXTEND SIDEWALK CULVERT 2' BEYOND PROPERTY LINE.

LEGEND

5030	EXISTING CONTOUR (MAJOR)
5029	EXISTING CONTOUR (MINOR)
	BOUNDARY LINE
X 28.50	PROPOSED SPOT ELEVATION
5029.16	EXISTING GRADE
X 5028.65 FL	EXISTING FLOWLINE ELEVATION
	PROPOSED RETAINING WALL
BC=89.08	BOTTOM OF CHANEL
TRW=48.34	TOP OF RETAINING WALL
BW=44.50	BOTTOM WALL
HP	HIGH POINT
TC=47.92	TOP OF CURB
FL=47.42	FLOW LINE

```
* ZONE 1
*************************************************************************
*        100-YEAR, 6-HR STORM (UNDER EXISTING CONDITIONS)               *
*************************************************************************
START                TIME=0.0
RAINFALL             TYPE=1 RAIN QUARTER=0.0 IN
                     RAIN ONE=1.87 IN RAIN SIX=2.20 IN
                     RAIN DAY=2.66 IN DT=0.03333 HR
* ON-SITE
COMPUTE NM HYD       ID=1 HYD NO=101.0 AREA=0.003149 SQ MI
                     PER A=0.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=0.1333 HR MASS RAINFALL=-1

*************************************************************************
*        10-YEAR, 6-HR STORM (UNDER EXISTING CONDITIONS)                *
*************************************************************************
START                TIME=0.0
RAINFALL             TYPE=1 RAIN QUARTER=0.0 IN
                     RAIN ONE=1.25 IN RAIN SIX=1.47 IN
                     RAIN DAY=1.77 IN DT=0.03333 HR
* ON-SITE
COMPUTE NM HYD       ID=1 HYD NO=111.0 AREA=0.003149 SQ MI
                     PER A=100.00 PER B=100.00 PER C=0.00 PER D=0.00
                     TP=0.1333 HR MASS RAINFALL=-1
*************************************************************************
*        100-YEAR, 6-HR STORM (UNDER PROPOSED CONDITIONS)               *
*************************************************************************
*
START                TIME=0.0
RAINFALL             TYPE=1 RAIN QUARTER=0.0 IN
                     RAIN ONE=1.87 IN RAIN SIX=2.20 IN
                     RAIN DAY=2.66 IN DT=0.03333 HR
* ON-SITE
COMPUTE NM HYD       ID=1 HYD NO=103.1 AREA=0.003149 SQ MI
                     PER A=0.00 PER B=6.00 PER C=6.00 PER D=88.00
                     TP=0.1333 HR MASS RAINFALL=-1
*************************************************************************
*        10-YEAR, 6-HR STORM (UNDER PROPOSED CONDITIONS)                *
*************************************************************************
START                TIME=0.0
RAINFALL             TYPE=1 RAIN QUARTER=0.0 IN
                     RAIN ONE=1.25 IN RAIN SIX=1.47 IN
                     RAIN DAY=1.77 IN DT=0.03333 HR
* ON-STIE
COMPUTE NM HYD       ID=1 HYD NO=111.1 AREA=0.003149 SQ MI
                     PER A=0.00 PER B=6.00 PER C=6.00 PER D=88.00
                     TP=0.1333 HR MASS RAINFALL=-1
*************************************************************************
FINISH
```

AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) - VERSION: 1997.02d RUN DATE (MON/DAY/YR) =07/27/2015
INPUT FILE = MORADA.TXT USER NO.= AHYMO-I-9702c01000R31-AH

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1 NOTATION
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 2.200
COMPUTE NM HYD	101.00	-	1	.00315	4.09	.112	.66738	1.533	2.031	PER IMP= .00
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 1.470
COMPUTE NM HYD	111.00	-	1	.00315	.94	.025	.14676	1.533	.468	PER IMP= .00
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 2.200
COMPUTE NM HYD	103.10	-	1	.00315	8.35	.307	1.82751	1.500	4.145	PER IMP= 88.00
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 1.470
COMPUTE NM HYD	111.10	-	1	.00315	5.40	.189	1.12745	1.500	2.680	PER IMP= 88.00
FINISH										

SIDEWALK CULVERT CALCULATIONS

2-24" Sidewalk Culvert Flow Capacity Calculation Using Orifice Equation

Orifice Equation: Q=CA(2gh)^0.50

h (head) = 0.67'
A = 0.67 sf
g = 32.20

Q = 0.60 x 2.68 x(2 x 32.2 x 0.67)^0.50
= 10.56 cfs

10.56 cfs >> 8.35 cfs (Entire runoff generated from site)

20 10 0 20
SCALE: 1"=20'

LAST REVISION: 08-17-15

REZA AFAGHPOUR
P.E. #11814
08/09/2015

SBS CONSTRUCTION AND ENGINEERING, LLC
10209 SNOWFLAKE CT., NW
ALBUQUERQUE, NEW MEXICO 87114
(505)899-5570

WESTERN UNITED ELECTRIC
GRADING AND DRAINAGE PLAN

DRAWING:	DRAWN BY:	DATE:	SHEET #
201513-GD.DWG	SB	07-04-2015	4 OF 6