

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(Rev. 01/06)

PROJECT TITLE: PNM Reeves Station Solar Park ZONE MAP/DRG. FILE # D-17/D102
DRB#: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: Portion of PNM Reeves Solar Site
CITY ADDRESS: 4400 Paseo Del Norte NE Albuquerque NM 87113

ENGINEERING FIRM: Miller Engineering Consultants CONTACT: Verlyn Miller
ADDRESS: 3500 Comanche NE Bldg E PHONE: (505) 888-7500
CITY, STATE: Albuquerque NM ZIP CODE: 87107

OWNER: Public Service Company of New Mexico CONTACT: Thomas Kelly
ADDRESS: 414 Silver Ave SE MS1030 PHONE: (505) 241-4972
CITY, STATE: Albuquerque NM ZIP CODE: 87158

ARCHITECT: N/A CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

SURVEYOR: Terra Land Surveys CONTACT: Chris Medina
ADDRESS: P.O. Box 2532 PHONE: (505) 792-0513
CITY, STATE: Corrales, NM ZIP CODE: 87048

PROFESSIONAL LICENSED SURVEYOR SIGNATURE

LICENSE NO.

DATE

CONTRACTOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

TYPE OF SUBMITTAL:

☐ DRAINAGE REPORT
☐ DRAINAGE PLAN 1" SUBMITTAL
☐ DRAINAGE PLAN RESUBMITTAL
☐ CONCEPTUAL G & D PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☒ ENGINEER'S CERT (HYDROLOGY)
☐ CLOMR/LOMR
☐ TRAFFIC CIRCULATION LAYOUT
☐ ENGINEER/ARCHITECT CERT (TCL)
☐ ENGINEER/ARCHITECT (DRB SITE PLAN)
☐ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

☐ SIA/FINANCIAL GUARANTEE RELEASE
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D APPROVAL
☐ S. DEV. FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☐ CERTIFICATE OF OCCUPANCY (PERM)
☐ CERTIFICATE OF OCCUPANCY (TEMP)
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ WORK ORDER APPROVAL
☒ OTHER (SPECIFY) GRADING CERT

WAS A PRE-DESIGN CONFERENCE ATTENDED:

☐ YES
☐ NO
☐ COPY PROVIDED

SUBMITTED BY: John Jacques Miller Engineering Consultants DATE: 1/12/11

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 define 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 subdivision containing more than ten (10) lots or constituting five (5) acres or more.

JAN 13 2011

HYDROLOGY
SECTION

CITY OF ALBUQUERQUE



January 14, 2011

Verlyn Miller, PE
Miller Engineering Consultants
3500 Comanche Blvd NE, Bldg F
Albuquerque, NM 87107

Re: PNM Reeves Solar Array Project Engineering Certification
Engineer's Stamp dated 1-12-11, (D17/D102)

Dear Mr. Miller,

Based upon the information provided in your submittal dated 1-13-11, the above referenced certification plan is acceptable. Thank you for working with us on this design and for providing us with this as-built plan.

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

Sincerely,

Bradley L. Bingham, PE
Principal Engineer, Planning Dept
Development and Building Services

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

C: file

Janet Sifers, Chair
Danny Hernandez, Vice Chair
Ronald D. Brown, Secretary-Treasurer
Tim Eichenberg, Assistant Secretary-Treasurer
Daniel F. Lyon, Director

Jerry M. Lovato, P.E.
Executive Engineer



**Albuquerque
Metropolitan
Arroyo
Flood
Control
Authority**

2600 Prospect N.E., Albuquerque, NM 87107
Phone: (505) 884-2215 Fax: (505) 884-0214
Website: www.amafca.org

November 17, 2010

Mr. Curtis A. Cherne, P.E.
City of Albuquerque Planning Dept.
Development and Building Services
P.O. Box 1293
Albuquerque, New Mexico 87103

Re: PNM Reeves Station Solar Facility Grading and Drainage Plan
Engineer's Stamp Dated November 11, 2010, ZAP D-17

Dear Mr. Cherne:

I reviewed the referenced plan and your comment letter and have no additional comments. We discussed allowing the detention pond retain the 100-year, 24-hour storm and moving the emergency overflow to the south side. The overflow would go into the biological treatment pond at AMAFCA's North Pino Arroyo water quality facility. AMAFCA has no objection to receiving this overflow.

If you have any questions, please call me at 884-2215.

Sincerely,
AMAFCA

Lynn M. Mazur, P.E., C.F.M.
Development Review Engineer

Cc: Verlyn Miller, Miller Engineering

CITY OF ALBUQUERQUE



November 16, 2010

Verlyn A. Miller, P.E.
Miller Engineering Consultants, Inc.
3500 Comanche NE, Bldg F
Albuquerque, NM 87107

Re: PNM Reeves Station Solar Park Grading and Drainage Plan
Engineer's Stamp date 11-11-10 (D17/D102)

Dear Mr. Miller,

Based upon the information provided in your submittal received 11-12-10, the above referenced plan cannot be approved for Grading Permit until the following comments are addressed:

- Retention ponds must be sized for the 100yr-10 day storm. Please annotate the WSE, Volume Required and Volume Provided on Sheet USS-164902-2.
- Land Treatment "A" is used for land that has not been touched. It appears this area has been driven on and used for a storage yard. Once the site has been seeded, it would qualify for a Land Treatment "B".
- Why are the Existing and Proposed basins different sizes?
- The proposed new parking area should be included in a proposed basin. Will it be paved? The outfall for this area is unclear. This area should also be restricted to historic flows unless ponded.
- The pond spillway should be moved since there is a building in the flow path in its proposed location. There are ponds south and west of this location, which would be a better direction for the pond to spill.
- Spot elevations at the southwest corner of the site are lower than the northwest corner. This contradicts the flow direction.
- At the northwest corner of the project, the plan proposes to turn approx 100 cfs 90 and 180 degrees. What is the velocity of the runoff at this point? How are you certain it will make this turn?
- At the same area discussed above, a cut will mostly develop as the flows cross the dirt road.
- Since this site is next to an AMAFCA facility, AMAFCA is being provided the plan for comment.

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

Sincerely,

Curtis A. Cherne, P.E.
Senior Engineer, Planning Dept.
Development and Building Services

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(Rev. 01/06)

PROJECT TITLE: PNM Reeves Station Solar Park ZONE MAP/DRG. FILE # D-17-EDDZ
 DRB#: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: Portion of P.N.M. Reeves Solar Site
 CITY ADDRESS: 4400 Paseo Del Norte N.E. Albuquerque NM 87113

ENGINEERING FIRM: Miller Engineering Consultants
 ADDRESS: 3500 Comanche N.E. Bldg. F
 CITY, STATE: Albuquerque NM

CONTACT: Verlyn Miller
 PHONE: (505) 888-7500
 ZIP CODE: 87107

OWNER: Public Service Company of New Mexico
 ADDRESS: 414 Silver S.E. MS 1030
 CITY, STATE: Albuquerque NM

CONTACT: Thomas Kelly
 PHONE: (505) 241-4972
 ZIP CODE: 87158

ARCHITECT: N/A
 ADDRESS: _____
 CITY, STATE: _____

CONTACT: _____
 PHONE: _____
 ZIP CODE: _____

SURVEYOR: Terra Land Surveys
 ADDRESS: P.O. Box 2532
 CITY, STATE: Corrales, NM

CONTACT: Chris Medina
 PHONE: (505) 792-0513
 ZIP CODE: 87048

PROFESSIONAL LICENSED SURVEYOR SIGNATURE

LICENSE NO.

DATE

CONTRACTOR: _____
 ADDRESS: _____
 CITY, STATE: _____

CONTACT: _____
 PHONE: _____
 ZIP CODE: _____

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☒ DRAINAGE PLAN 1st SUBMITTAL
- ☐ DRAINAGE PLAN RESUBMITTAL
- ☐ CONCEPTUAL G & D PLAN
- ☒ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☐ ENGINEER'S CERT (HYDROLOGY)
- ☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT
- ☐ ENGINEER/ARCHITECT CERT (TCL)
- ☐ ENGINEER/ARCHITECT (DRB SITE PLAN)
- ☐ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SIA/FINANCIAL GUARANTEE RELEASE
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D APPROVAL
- ☐ S. DEV. FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☒ FOUNDATION PERMIT APPROVAL
- ☒ BUILDING PERMIT APPROVAL
- ☐ CERTIFICATE OF OCCUPANCY (PERM)
- ☐ CERTIFICATE OF OCCUPANCY (TEMP)
- ☒ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ WORK ORDER APPROVAL
- ☐ OTHER (SPECIFY) _____

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ☐ YES
- ☐ NO
- ☐ COPY PROVIDED

SUBMITTED BY: [Signature]

DATE: 11/12/10

NOV 12 2010

HYDROLOGY
SECTION

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 define 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 subdivision containing more than ten (10) lots or constituting five (5) acres or more.

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(Rev. 01/06)

PROJECT TITLE: PNM Reeves Station Solar Park ZONE MAP/DRG. FILE # 0-17-77102
 DRB#: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: Portion of PNM Reeves Solar Site
 CITY ADDRESS: 4400 Paseo Del Norte NE Albuquerque NM 87113

ENGINEERING FIRM: Miller Engineering Consultants CONTACT: Verlyn Miller
 ADDRESS: 3500 Comanche NE Bldg F PHONE: (505) 888-7500
 CITY, STATE: Albuquerque NM ZIP CODE: 87107

OWNER: Public Service Company of New Mexico CONTACT: Thomas Kelly
 ADDRESS: 414 Silver Ave S.E. MS1030 PHONE: (505) 241-4972
 CITY, STATE: Albuquerque NM ZIP CODE: 87158

ARCHITECT: N/A CONTACT: _____
 ADDRESS: _____ PHONE: _____
 CITY, STATE: _____ ZIP CODE: _____

SURVEYOR: Terra Land Surveys CONTACT: Chris Medina
 ADDRESS: P.O. Box 2532 PHONE: (505) 792-0513
 CITY, STATE: Corrales, NM ZIP CODE: 87048

PROFESSIONAL LICENSED SURVEYOR SIGNATURE	LICENSE NO.	DATE
------------------------------------------	-------------	------

CONTRACTOR: _____ CONTACT: _____
 ADDRESS: _____ PHONE: _____
 CITY, STATE: _____ ZIP CODE: _____

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN 1st SUBMITTAL
- ☒ DRAINAGE PLAN RESUBMITTAL
- ☐ CONCEPTUAL G & D PLAN
- ☒ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☐ ENGINEER'S CERT (HYDROLOGY)
- ☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT
- ☐ ENGINEER/ARCHITECT CERT (TCL)
- ☐ ENGINEER/ARCHITECT (DRB SITE PLAN)
- ☐ OTHER

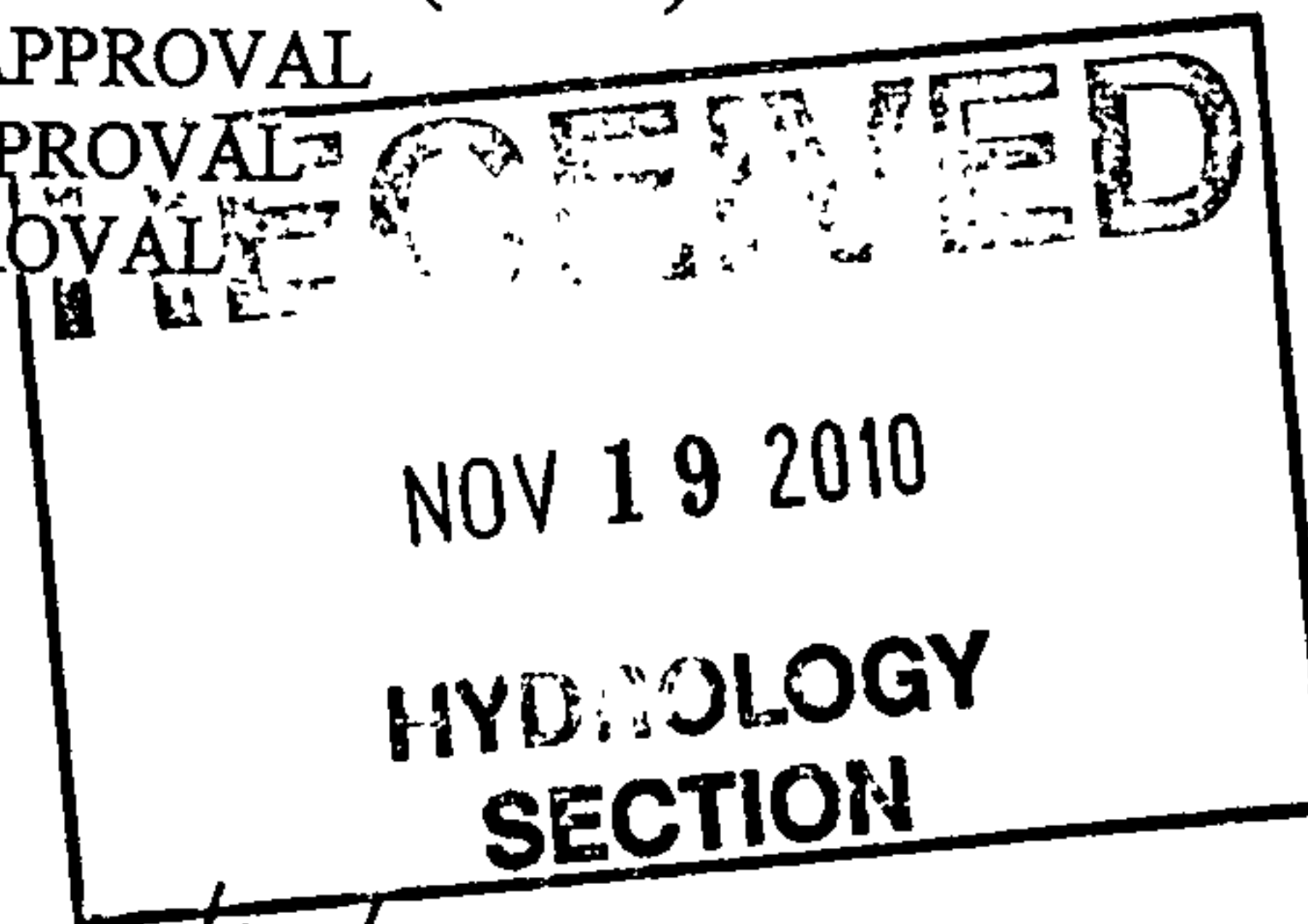
CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SIA/FINANCIAL GUARANTEE RELEASE
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D APPROVAL
- ☐ S. DEV. FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ FOUNDATION PERMIT APPROVAL
- ☐ BUILDING PERMIT APPROVAL
- ☐ CERTIFICATE OF OCCUPANCY (PERM)
- ☐ CERTIFICATE OF OCCUPANCY (TEMP)
- ☒ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ WORK ORDER APPROVAL
- ☐ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ☐ YES
- ☐ NO
- ☐ COPY PROVIDED

SUBMITTED BY: [Signature] DATE: 11/19/10



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 define 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 subdivision containing more than ten (10) lots or constituting five (5) acres or more.

Worksheet for Broad Crested Weir - 1

SPILLWAY

Project Description

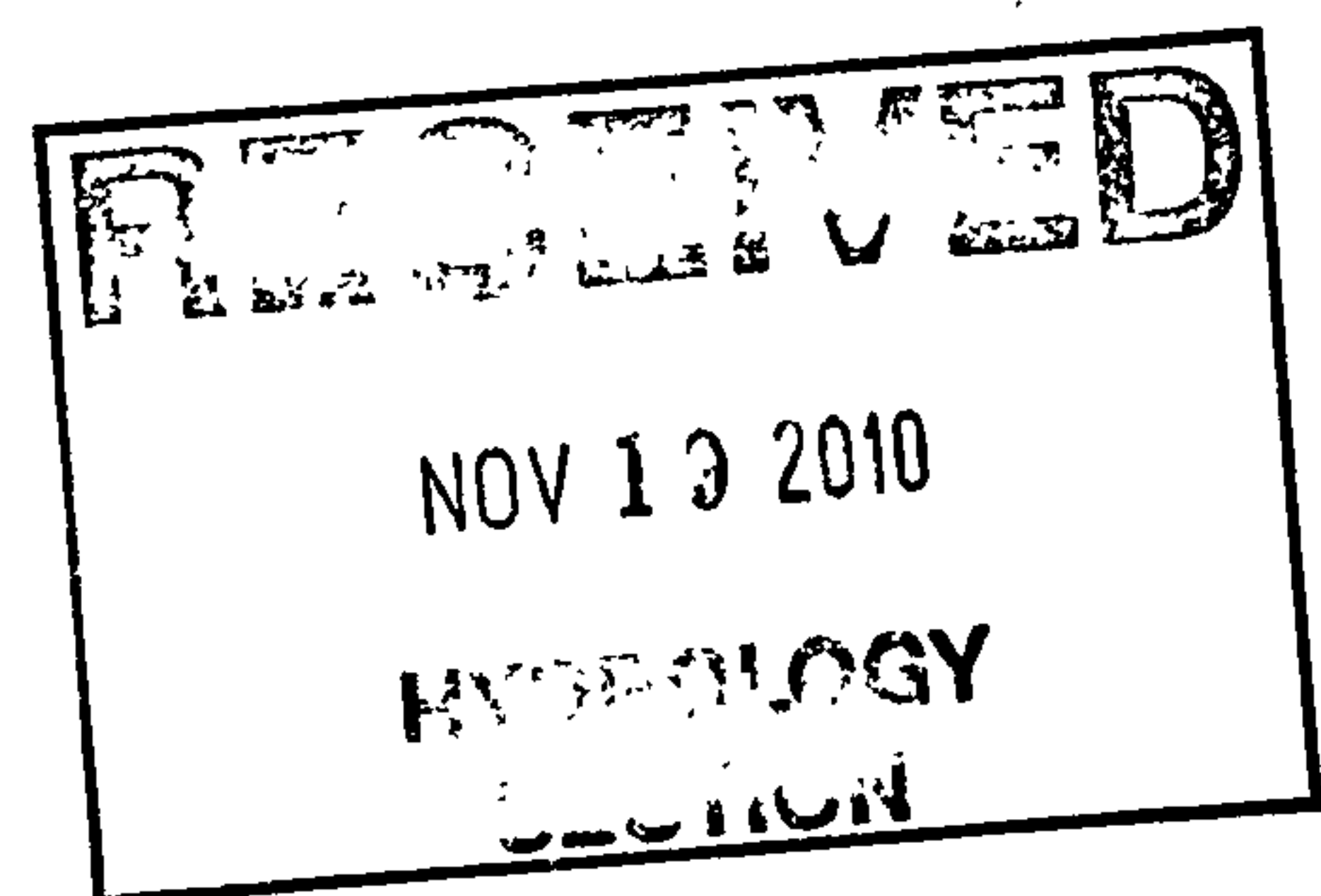
Flow Element: Broad Crested Weir
Solve For: Discharge

Input Data

Headwater Elevation:	95.00	ft
Crest Elevation:	94.00	ft
Tailwater Elevation:	94.50	ft
Crest Surface Type:	Gravel	
Crest Breadth:	10.00	ft
Crest Length:	40.00	ft

Results

Discharge:	113.12 > 81.5 " O.K.	ft ³ /s
Headwater Height Above Crest:	1.00	ft
Tailwater Height Above Crest:	0.50	ft
Weir Coefficient:	2.83	US
Submergence Factor:	1.00	
Adjusted Weir Coefficient:	2.83	US
Flow Area:	40.00	ft ²
Velocity:	2.83	ft/s
Wetted Perimeter:	42.00	ft
Top Width:	40.00	ft



Design2

REEVES STATION - WEST POND				
Pond Rating Table				
Side Slope		3:1		
Depth	Area		Volume	Cum Volume
(ft)	(sq ft)	(ac)	(ac-ft)	(ac-ft)
0	39799	0.914	0	0
1	42300	0.971	0.942	0.942
2	44857	1.030	1.000	1.943
3	47471	1.090	1.060	3.003
4	50141	1.151	1.120	4.123

80
81
82
83
84

WSE = 83.5

RECEIVED
NOV 19 2010
HYDROLOGY
SECTION

CITY OF ALBUQUERQUE



December 1, 2010

Verlyn Miller, PE
Miller Engineering Consultants
3500 Comanche Blvd NE, Bldg F
Albuquerque, NM 87107

**Re: PNM Reeves Solar Array Project Grading and Drainage Plan Addendum
Engineer's Stamp dated 11-19-10, (D17/D102)**

Dear Mr. Miller,

Based upon the information provided in your submittal dated 11-19-10, the above referenced plan is approved for Grading Permit. Upon completion of the project, please submit an Engineering Certification of this plan for our files.

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

Sincerely,

Bradley L. Bingham, PE
Principal Engineer, Planning Dept
Development and Building Services

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

C: file