

CITY OF ALBUQUERQUE



March 15, 2011

Fred C. Arfman, P.E.
Isaacson & Arfman, P.A.
128 Monroe St. NE
Albuquerque, NM 87108

**Re: Rio Grande Zoo – Penguin Exhibit Grading and Drainage Plan
Engineer's Stamp dated 3-10-11 (K13/D034D)**

Dear Mr. Arfman,

Based upon the information provided in your submittal received 3-11-11, the above referenced plan is approved for Building Permit.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

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

C: file

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(Rev. 12/05)

PROJECT TITLE: Rio Grande Zoo – Penguin Exhibit ZONE MAP/DRG.FILE# K13 10034D.
DRB#: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: A PORTION OF THE RIO GRANDE ZOO
CITY ADDRESS: _____

ENGINEERING FIRM: ISAACSON AND ARFMAN, P.A.
ADDRESS: 128 MONROE N.E.
CITY, STATE: ALBUQUERQUE, NM

CONTACT: FRED ARFMAN
PHONE: 268-8828
ZIP CODE: 87108

OWNER: City of Albuquerque
ADDRESS: _____
CITY, STATE: _____

CONTACT: _____
PHONE: _____
ZIP CODE: _____

ARCHITECT: Van H. Gilbert Architect, PC
ADDRESS: 2428 Baylor Dr. SE
CITY, STATE: Albuquerque, NM

CONTACT: Steven Chechvala
PHONE: 247-9955
ZIP CODE: 87106

SURVEYOR: Surv Tek, Inc.
ADDRESS: 9384 Valley View Dr. NW
CITY, STATE: Albuquerque, NM

CONTACT: Russ P. Hugg
PHONE: 897-3366
ZIP CODE: 87114

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 CERT (DRB S.P.)
☐ ENGINEER/ARCHITECT CERT (AA)
☐ OTHER (SPECIFY) _____

CHECK TYPE OF APPROVAL SOUGHT:

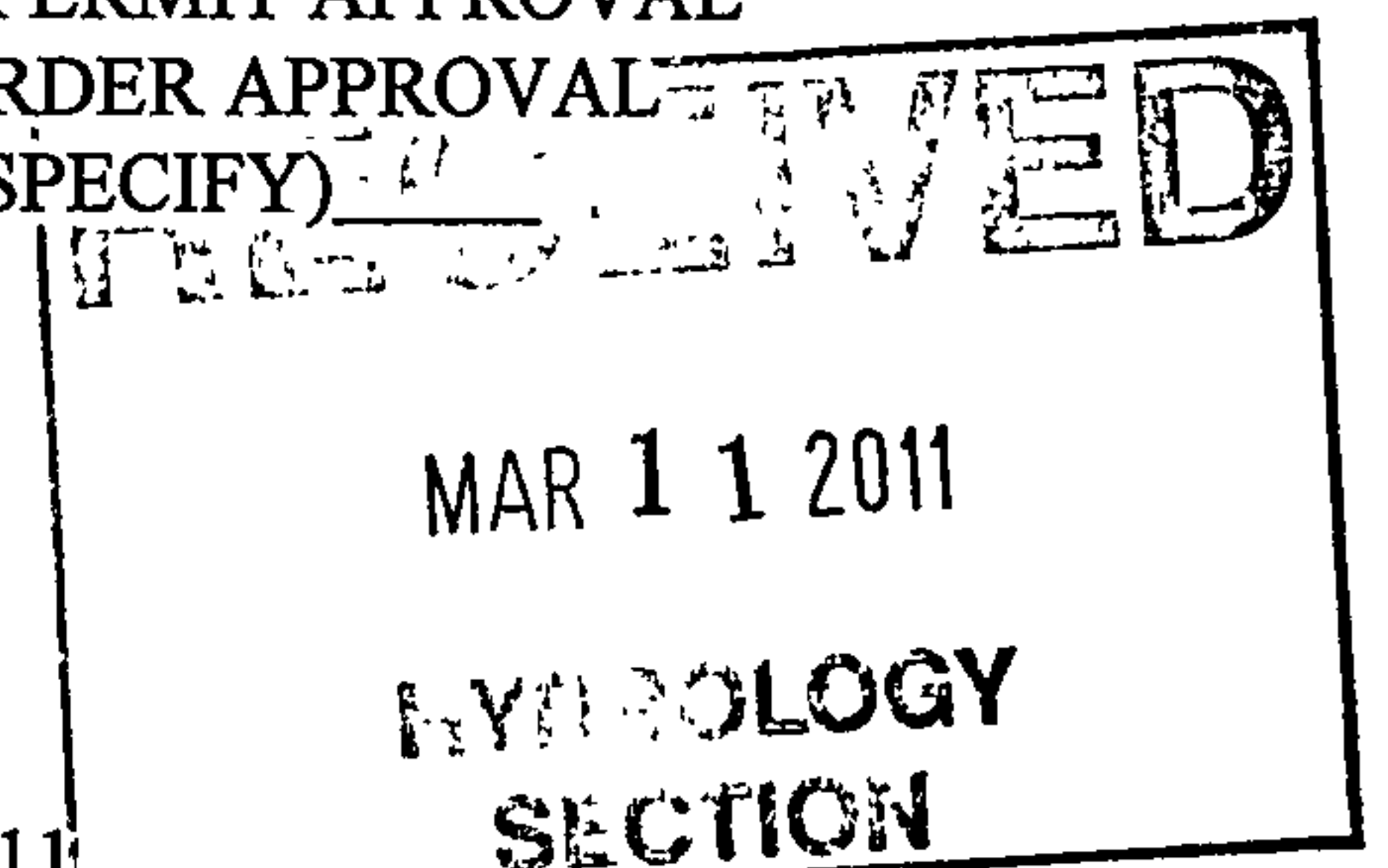
- ☐ SIA/FINANCIAL GUARANTEE RELEASE
☐ RELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D APPROVAL
☐ S. DEV. FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ UNDATION PERMIT APPROVAL
☒ BUILDING PERMIT APPROVAL
☐ CRTIFICATE OF OCCUPANCY (PERM)
☐ CRTIFICATE OF OCCUPANCY (TEMP)
☐ GRADING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

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ☐ YES
☒ NO
☐ COPY PROVIDED

SUBMITTED BY: Fred Arfman
Isaacson & Arfman, P.A.

DATE: March 9, 2011



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.

CALCULATIONS: RIO GRANDE ZOO - PENGUIN EXHIBIT : 3/10/11

Based on Drainage Design Criteria for City of Albuquerque Section 22.2, DPM, Vol 2, dated Jan., 1993

ON-SITEAREA OF SITE:

26687

 SF = 0.6

100-year, 6-hour

HISTORIC FLOWS:**DEVELOPED FLOWS:****EXCESS PRECIP:**

	Treatment SF	%
Area A =	0	0%
Area B =	7472.36	28%
Area C =	1334.35	5%
Area D =	17880.29	67%
Total Area =	26687	100%

	Treatment SF	%
Area A =	0	0%
Area B =	6672	25%
Area C =	2669	10%
Area D =	17347	65%
Total Area =	26687	100%

Precip. Zone	
2	
$E_A = 0.53$	
$E_B = 0.78$	
$E_C = 1.13$	
$E_D = 2.12$	

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

$$\text{Weighted E} = \frac{E_A A_A + E_B A_B + E_C A_C + E_D A_D}{A_A + A_B + A_C + A_D}$$

Historic E =	1.70 in.	Developed E =	1.69 in.
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On-Site Volume of Runoff: $V_{360} = E \cdot A / 12$

Historic V_{360} =	3770 CF	Developed V_{360} =	3750 CF
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On-Site Peak Discharge Rate: $Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D / 43,560$

For Precipitation Zone 2

$Q_{pA} =$	1.56	$Q_{pC} =$	3.14
$Q_{pB} =$	2.28	$Q_{pD} =$	4.70

Historic Q_p =	2.4 CFS	Developed Q_p =	2.4 CFS
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