CITY OF ALBUQUERQUE

Richard J. Berry, Mayor

March 18, 2016

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

RE: Manzano Mesa Park Pickleball Courts
Grading and Drainage Plan
Engineer's Stamp Date 2-1-16 (File: L21D037B2)

Dear Mr. Arfman:

Based upon the information provided in your submittal received 2-2-16, the above referenced submittal is approved for Grading Permit. Furthermore, we have the following recommendations to consider:

1. Consider an 18" sidewalk culvert (on Pond 2) to pass the approximately 7 CFS peak flow expected during the 100-year event. The 1-foot culvert appears to be acceptable, however, for the 2-year and 10-year events.

2. The City, as the lead of the project, might not be able to direct the contractor to sole-source drainage (or other) products (NDS, Geotex, etc). We recommend stating "or equivalent", or follow the guidance from the funding agency (if the project is federal or state funded).

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

Sincerely,

Abiel Carrillo, P.E.
Principal Engineer, Planning Dept.
Development Review Services

Orig: Drainage file

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: Manzano Mesa Park Pickleball Courts Building Permit #: _____ City Drainage #: L21/D037B2

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

Legal Description A Portion of Manzano Mesa Park

City Address 501 Elizabeth Street SE - Albuquerque, NM

Engineering Firm: Isaacson & Arfman, P.A. Contact. Fred C. Arfman

Address: 128 Monroe Street NE - Albuquerque, NM 87108

Phone#. (505) 268-8828 Fax# _____ E-mail fred@iacivil.com

Owner: City of Albuquerque - Parks & Recreation Department Contact. _____

Address _____

Phone#: _____ Fax# _____ E-mail _____

Architect: Morrow Reardon Wilkinson Miller, Ltd. Contact _____

Address: 210 La Veta Drive NE - Albuquerque, NM 87108

Phone#. (505) 268-2266 Fax# _____ E-mail. _____

Other Contact: _____ Contact _____

Address: _____

Phone#: _____ Fax# _____ E-mail _____

Check all that Apply:

DEPARTMENT:

X HYDROLOGY/ DRAINAGE

____ TRAFFIC/ TRANSPORTATION

____ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

____ ENGINEER/ ARCHITECT CERTIFICATION

____ CONCEPTUAL G & D PLAN

X GRADING PLAN

____ DRAINAGE MASTER PLAN

____ DRAINAGE REPORT

____ CLOMR/LOMR

____ TRAFFIC CIRCULATION LAYOUT (TCL)

____ TRAFFIC IMPACT STUDY (TIS)

____ EROSION & SEDIMENT CONTROL PLAN (ESC)

____ OTHER (SPECIFY) _____

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

X 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

X GRADING PERMIT APPROVAL

____ SO-19 APPROVAL

____ PAVING PERMIT APPROVAL

____ GRADING/ PAD CERTIFICATION

____ WORK ORDER APPROVAL

____ CLOMR/LOMR

____ PRE-DESIGN MEETING

____ OTHER (SPECIFY) _____

RECEIVED
FEB 02 2016
LAND DEVELOPMENT SECTION

IS THIS A RESUBMITTAL?: ____ Yes X No

DATE SUBMITTED February 1, 2016 By: Fred C. Arfman

COA STAFF ELECTRONIC SUBMITTAL RECEIVED ___

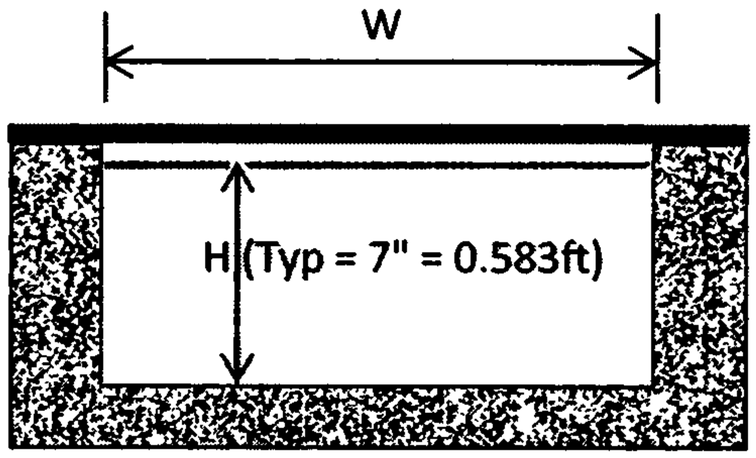
Sidewalk culvert calculator (FOR CHECKING PURPOSES ONLY)

Project: Manzano Mesa Park Pickle Ball

Prepared by: Abiel Carrillo

Hyd Number: L21D037B2

Date: Friday, March 18, 2016



n = 0.012 Typ (Conc)

Typical Slope, S = .0208 ft / ft = 0.0208

H =	0.583	ft
W =	1.5	ft
S =	0.0208	ft/ft
n =	0.012	

Wetted Area, A =	W x H =	0.8745	SF
Wetted Perimeter, P =	W + 2H =	2.666	ft
Hydraulic Radius, R =	A / P =	0.33	ft

Velocity, v = $\left(\frac{1.486}{n}\right) * R^{\frac{2}{3}} * S^{\frac{1}{2}}$ = 8.5 ft/sec

Full-flow Capacity, Q = v x A = **7.4** **cfs**