

CITY OF ALBUQUERQUE

Planning Department
Brennon Williams, Director



Mayor Timothy M. Keller

January 16, 2020

Phillip W. Clark, PE
Clark Consulting Engineers
19 Ryan Rd
Edgewood, NM 87015

RE: The Commons @ Eagle Rock
5501 Eagle Rock NE
Approval of Sidewalk Culvert Revision
Engineers Stamp Date 12/26/07 (C18D037H)
Certification Date: 12-13-19

Dear Mr. Clark:

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Based upon the certification provided in your submittal received 12/13/2019 and the revised calculations received 4/24/2009, the overflow sidewalk culvert from the south east pond is approved to be sized as a single 12 inch sidewalk culvert. Please follow the requirements of the SO-19 Permit.

The sidewalk culvert must be inspected and approved by Storm Drain Maintenance (Augie Armijo at (505) 857-8607).

If you have any questions, please contact me at 924-3986 or earmijo@cabq.gov.

Sincerely,

Ernest Armijo, P.E.
Principal Engineer, Hydrology
Planning Department



Clark Consulting Engineers

19 Ryan Road

Edgewood, New Mexico 87015

E-Mail: ccealbq@aol.com

Tele: (505) 281-2444

Fax: (505) 281-2444

Phillip W. Clark, P.E.

Date: 4/10/09

→ Refax. 4/13/09

CLARK FAX COVER

TO: Brad Bingham - Tim Simms

ORGANIZATION: COA

FROM: Phil C.

REGARDING: Eagle Rock Commons - Revised Cales.

MESSAGE:

TOTAL NO. PAGES: 2 + 1

plse find revised cals. for Basin 'A'
which are associated w/ Bldg. 'B' / West-most
pond - This reflects current outlet/release
of 1-12" wide SDWK. culvert.

- Plse give me a call to discuss the
basin 'B' pond. Thx.

Philip W. Clark

C: J. Schiffer

Designing To Shape The Future.....

Thank you - Tim - As discussed also w/ Brad
I will deepen a defined pond S. of
Bldg. B. One

CALCULATIONS

Revised 4/10/09 *OWC*
DATE: 12/18/07
PROJECT: The Commons
@ Eagle Rock
OWC

DESIGN CRITERIA

HYDROLOGIC METHODS PER SECTION 22.2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL (DPM)
REVISED JANUARY 1993 FOR CITY OF ALBUQUERQUE, ADOPTED BY THE COUNTY OF BERNALILLO
DISCHARGE RATE: $Q = Q_{PEAK} \times AREA$. "Peak Discharge Rates For Small Watersheds"
VOLUMETRIC DISCHARGE: $VOLUME = E_{Weighted} \times AREA$
 $P_{100} = 2.60$ Inches, Zone 3 Time of Concentration, $T_C = 10$ Minutes
DESIGN STORM: 100-YEAR/6-HOUR, 10-YEAR/6-HOUR [] = 10 YEAR VALUES

EXISTING CONDITIONS - PER LOT

LOT AREA = 0.88 ACRES, WHERE EXCESS PRECIP. 'A' = 0.66 in. [0.19],
PEAK DISCHARGE, $Q_{100} = 1.7$ CFS [0.5], WHERE UNIT PEAK DISCHARGE 'A' = 1.87 CFS/AC. [0.58]
THEREFORE: $VOLUME_{100} = 2108$ CF [607]

DEVELOPED CONDITIONS

DETERMINE LAND TREATMENTS, PEAK DISCHARGE AND VOLUMETRIC DISCHARGE
FOR STUDY AREA

	AREA	LAND TREATM'T	Q_{Peak}	E
UNDEVELOPED	--- Ac.	A	1.87[0.58]	0.66[0.19]
LANDSCAPING - POND	0.13 Ac.(15%)	B	2.60[1.19]	0.92[0.36]
COMPACTED SOIL & Slopes >	--- Ac.(0%)	C	3.45[2.00]	1.29[0.62]
ROOF - PAVEMENT	0.75 Ac.(85%)	D	5.02[3.39]	2.36[1.50]
	0.88 Ac.			

THEREFORE: $E_{Weighted} = 2.14$ in. [1.33] &

$Q_{100} = 4.1$ CFS

$Q_{10} = 2.7$ CFS

$VOLUME_{100} = 6836$ CF

$VOLUME_{10} = 4248$ CF

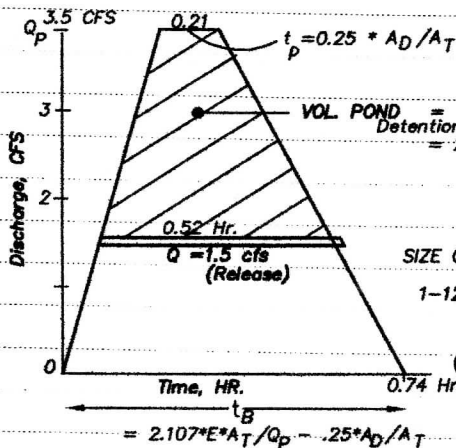
THEREFORE: UNIT DISCH. = 4.65 CFS (100-YR.) per Acre

BASIN A

DETERMINE POND SIZE

DETENTION POND PER HYDROGRAPH & DPM, Section A.8

STORAGE VOLUME (Required) = VOLUME AREA ABOVE ALLOWABLE RELEASE



SIZE OUTLET CULVERT: $Q = CA \sqrt{2gh}$

1-12" SDWK. CULVERT $= Q = 1.5-2 \text{ CFS}$
Release

USE 1-24" CULVERT, OR
4-6"X6" CMU OPENINGS
2-6"X6" " " "

Where: $C = 0.7$

$A = 0.5 \text{ SF}$

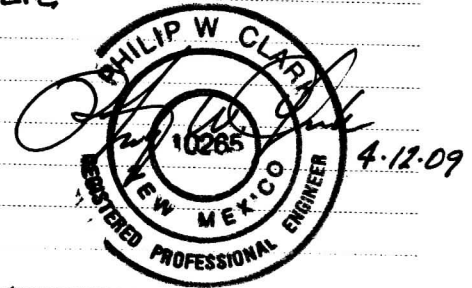
$H = 0.5'$

$g = 32 \text{ ft/s}^2$

$A = 0.20 \text{ SF (1-6" PVC)}$

$\Rightarrow Q_R = 0.8 \text{ cfs}$

OR 2-6" PVC



CALCULATIONS

DATE: 12/18/07

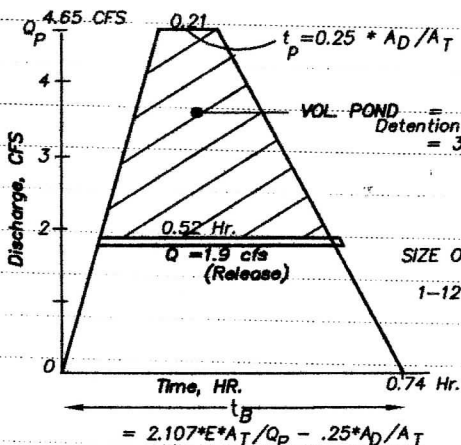
PROJECT: The Commons
Ph C

BASIN B

DETERMINE POND SIZE

DETENTION POND PER HYDROGRAPH & DPM, Section A.8

STORAGE VOLUME (Required) = VOLUME AREA ABOVE ALLOWABLE RELEASE



$$\text{VOL. POND Detention} = \frac{(0.52 + 0.21)}{2} * 2.75 \text{ CFS} * 3600 \text{ s/Hr.} = 3614 \text{ C.F.}$$

SIZE OUTLET CULVERT: $Q = CA\sqrt{2gH}$

1-12" SDWK. CULVERT = $Q = 1.5-2 \text{ CFS}$ Release

USE 1-24" CULVERT, OR
4-3"X3" CMU OPENINGS

Where: $C = 0.7$

$A = 0.5 \text{ SF}$

$H = 0.5'$

$g = 32 \text{ f/s}^2$

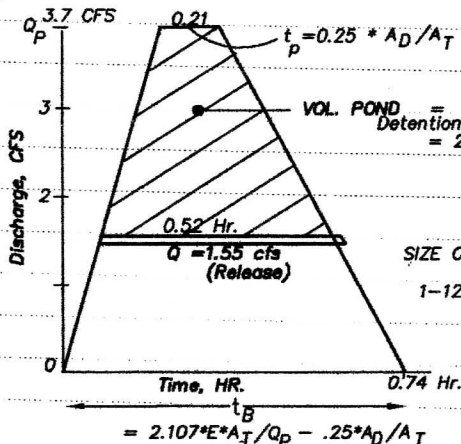
$A = 0.20 \text{ SF (1-6" PVC)}$

BASIN C

DETERMINE POND SIZE

DETENTION POND PER HYDROGRAPH & DPM, Section A.8

STORAGE VOLUME (Required) = VOLUME AREA ABOVE ALLOWABLE RELEASE



$$\text{VOL. POND Detention} = \frac{(0.52 + 0.21)}{2} * 2.15 \text{ CFS} * 3600 \text{ s/Hr.} = 2825 \text{ C.F.}$$

SIZE OUTLET CULVERT: $Q = CA\sqrt{2gH}$

1-12" SDWK. CULVERT = $Q = 1.5-2 \text{ CFS}$ Release

USE 1-24" CULVERT, OR
4-3"X3" CMU OPENINGS

Where: $C = 0.7$

$A = 0.5 \text{ SF}$

$H = 0.5'$

$g = 32 \text{ f/s}^2$

$A = 0.20 \text{ SF (1-6" PVC)}$

$\Rightarrow Q_R = 0.8 \text{ cfs}$

