City of Albuquerque

Planning Department
Development & Building Services Division
DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV 02/2013)

Project Title: 614 1st Street Parking Lot Improvements   Building Permit #: _____   City Drainage #: J14/D006

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

Legal Description: Lots 1-5 & 20-24

City Address: 612 First Street NW

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

Address: 128 Monroe Street, NE - Albuquerque, NM 87120

Phone#: (505) 268-8828   Fax#: N/A   E-mail: freda@iacivil.com

Owner: Park It Place c/o Moses Dunn Law Firm   Contact: Joe Werntz

Address: 612 1st Street NW, ABQ, NM 87102

Phone#: (505) 843-9440   Fax#: _____   E-mail: _____

Architect: N/A   Contact: _____

Address: _____

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

Surveyor: Aldrich Land Surveying   Contact: Tim Aldrich

Address: P.O. Box 30701

Phone#: (505) 884-1990   Fax#: _____   E-mail: _____

Contractor: TBD   Contact: _____

Address: _____

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

TYPE OF SUBMITTAL:

_____ DRAINAGE REPORT
_____ DRAINAGE PLAN 1st SUBMITTAL
__x__ DRAINAGE PLAN RESUBMITTAL
_____ 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
_____ S. DEV. FOR BLDG. PERMIT APPROVAL
_____ SECTOR PLAN APPROVAL
_____ FINAL PLAT APPROVAL
_____ CERTIFICATE OF OCCUPANCY (PERM)
_____ CERTIFICATE OF OCCUPANCY (TCL TEMP)
_____ FOUNDATION PERMIT APPROVAL
_____ BUILDING PERMIT APPROVAL
__x__ GRADING PERMIT APPROVAL   __x__ SO-19 APPROVAL
__x__ PAVING PERMIT APPROVAL   _____ ESC PERMIT APPROVAL
_____ WORK ORDER APPROVAL   _____ ESC CERT. ACCEPTANCE
_____ GRADING CERTIFICATION   _____ OTHER (SPECIFY)

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

DATE SUBMITTED: April 24, 2014 GLD   By: Genevieve Donart, PE   For: Isaacson & Arfman, PA

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 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
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
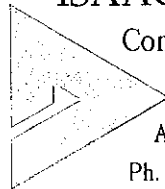
MAY 1, 2014

SUPPLEMENTAL INFORMATION

FOR

614 1st Street Parking Lot Improvements

BY

ISAACSON & ARFMAN, P.A.

Consulting Engineering Associates

128 Monroe Street N.E.

Albuquerque, New Mexico 87108

Ph. 505-268-8828   Fax. 505-268-2632

CALCULATIONS: 614 1st. Street Parking Lot : 3/12/2014
HYDROGRAPH FOR SMALL WATERSHED
DPM SECTION 22-2 * PAGE A-13/14

Base time, t_B, for a small watershed hydrograph is,

$tB = (2.107 * E * A / Q_P) - (0.25 * A_D / A)$

Where

| E	=	2.07 inches
A	=	0.32 acres
A_D	=	0.36 acres
Q_P	=	1.7 cfs

t_B	=	0.55 hours

E is the excess precipitation in inches (from DPM TABLE A-8), Q_P is the peak flow, A_D is the area (acres) of treatment D, and A_T is the total area in acres. Using the time of concentration, t_C (hours), the time to peak in hours is:

$t_P = (0.7 * tC) + ((1.6 - (A_D / A)) / 12)$

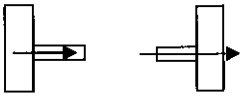| Where	t_C	=	0.20 hours
	t_P	=	0.18 hours

Continue the peak for $0.25 * A_D / A_T$ hours. When A_D is zero, the hydrograph will be triangular. When A_D is not zero, the hyrograph will be trapezoidal. see the graph below:
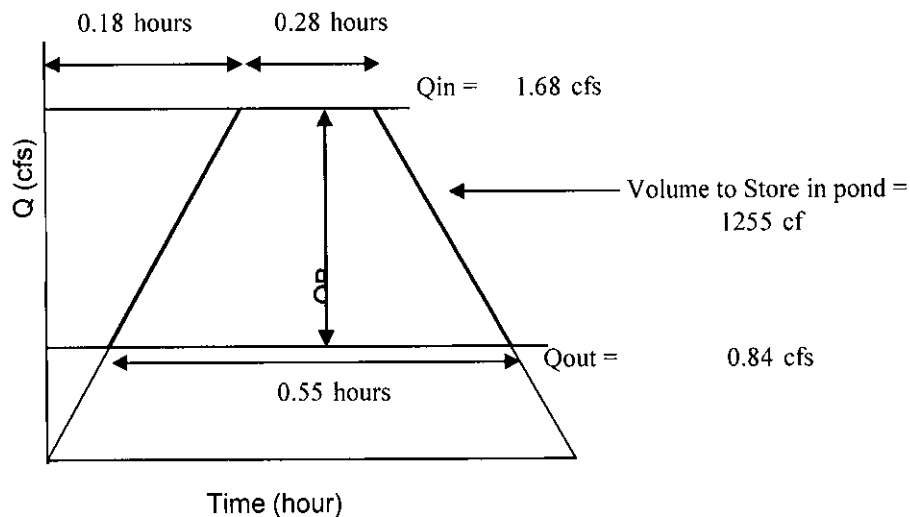
INFLOW / OUTFLOW HYDROGRAPH

8" WIDE SIDEWALK CULVERT - INLET CONTROLLED

ORIFICE EQUATION - RECTANGULAR						
Rectangular Area	48 sq.in.	0.33 sq.ft.				
Width	8 in	0.67 ft				
Height	6 in	0.50 ft				
Headwater Elevation	0.55 feet	0.30 Actual H to centerline of culvert				
C	0.61		C values	Rounded	Sharp	Tube Out	Tube In
g	32.2 f/s^2			0.98	0.61	0.80	0.51
Q = C*A*((2*g*H)^0.5)	=	0.89 cfs	for 0.33 sq.ft. orifice			

CALCULATIONS: 614 1st. Street Parking Lot : 3/12/2014
HYDROGRAPH FOR SMALL WATERSHED DPM SECTION 22-2 * PAGE A-13/14

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$tB = (2.107 * E * A / Q_P) - (0.25 * A_D / A)$

Where

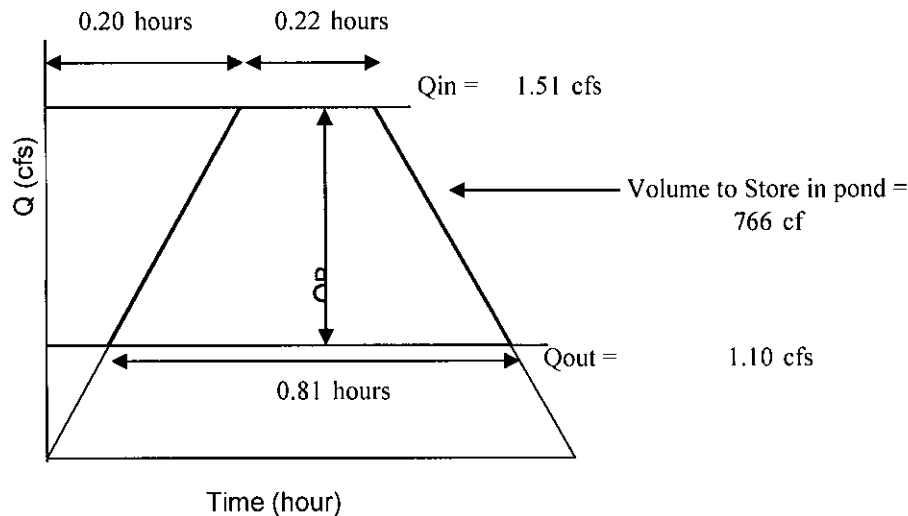| E	=	2.07 inches	Basin 1
A	=	0.36 acres	
A_D	=	0.32 acres	
Q_P	=	1.5 cfs	

t_B	=	0.81 hours

E is the excess precipitation in inches (from DPM TABLE A-8), Q_P is the peak flow, A_D is the area (acres) of treatment D, and A_T is the total area in acres. Using the time of concentration, t_C (hours), the time to peak in hours is:
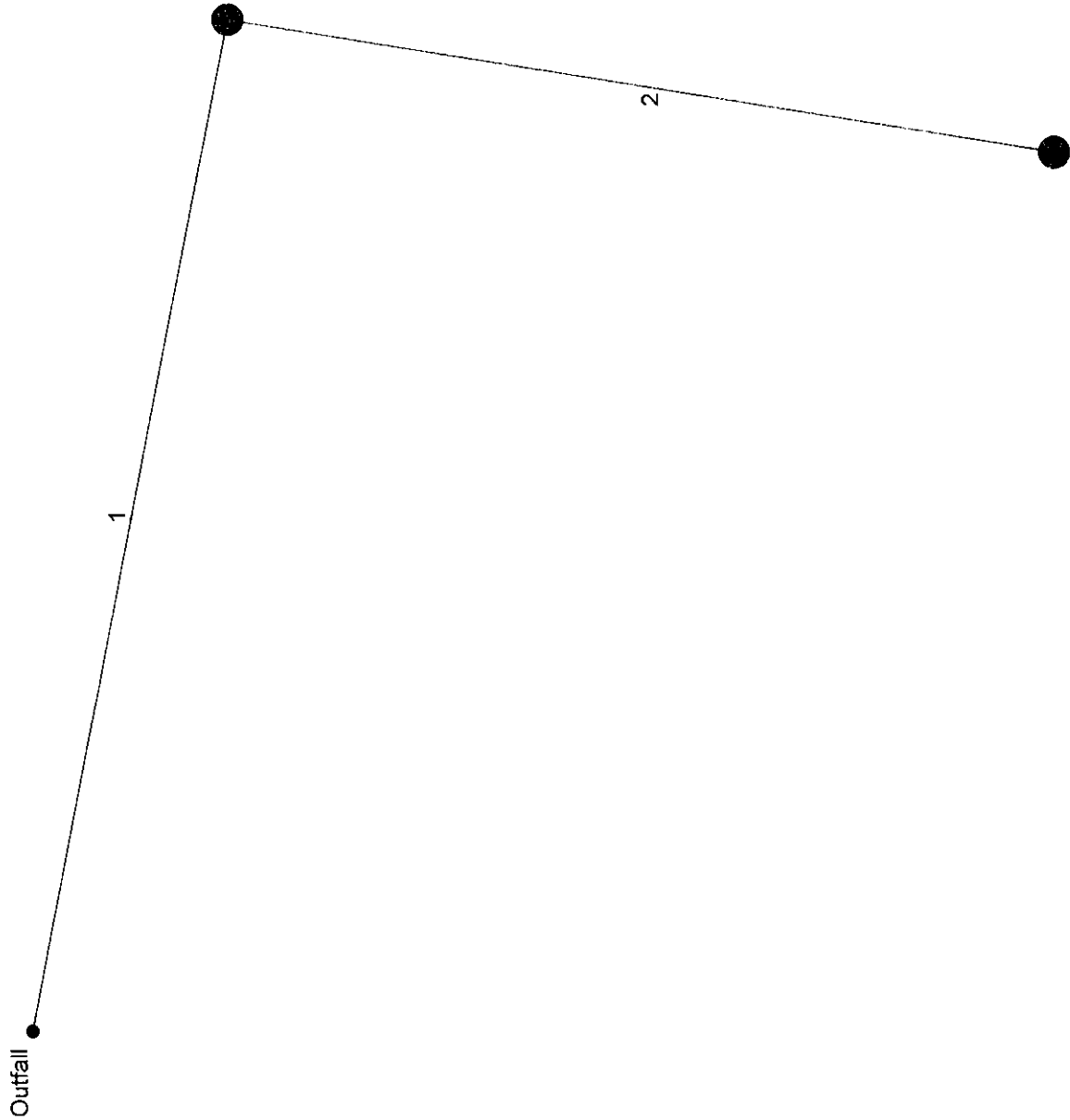
$t_P = (0.7 * tC) + ((1.6 - (A_D / A)) / 12)$

Where t_C =   0.20 hours

        t_P =   0.20 hours

Continue the peak for $0.25 * A_D / A_T$ hours. When A_D is zero, the hydrograph will be triangular. When A_D is not zero, the hyrograph will be trapezoidal. see the graph below:

INFLOW / OUTFLOW HYDROGRAPH

Hydraflow Storm Sewers Extension for Autodesk® AutoCAD® Civil 3D® Plan

Outfall

1

2

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line		Incr	Total	(C)	Incr	Total	Inlet	Syst					Size	Slope	Dn	Up	Dn	Up	Dn	Up	
		(ft)	(ac)	(ac)				(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	131.104	0.00	0.00	0.00	0.00	0.00	0.0	0.6	0.0	1.10	0.77	3.15	8	0.34	54.50	54.95	55.17	56.09	56.40	57.20	
2	1	107.601	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.55	0.35	2.80	6	0.33	54.95	55.30	56.25	57.13	57.20	57.20	

Project File: 1965 SD.stm

Number of lines: 2

Run Date: 5/1/2014

NOTES:Intensity = 127.16 / ((Inlet time + 17.80) ^ 0.82 ; Return period =Yrs. 100 ; c = cir e = ellip b = box

Storm Sewers v10.30