

CITY OF ALBUQUERQUE



May 13, 2015

Reza Afaghpour, PE
through SBS Construction and Engineering, LLC
10209 Snowflake Court NW
Albuquerque, NM 87114

**RE: Lot 7, Unit 3, Broadway Industrial Center, 2520 Karsten Ct.
Grading and Drainage Plan
Engineer's Stamp Date 5-12-2015 (File: M14-D004D)**

Dear Mr. Afaghpour:

Based upon the information provided in your submittal received 4-18-15, the above referenced plan is approved for Building Permit. Please attach a copy of this approved plan in the construction sets when submitting for a building permit.

PO Box 1293

Prior to Certificate of Occupancy release, Engineer Certification per the DPM Checklist will be required. Additionally, it will be required to submit the construction work within COA right-of-way through the DRC Process.

Albuquerque

If you have any questions, you can contact me at 924-3924.

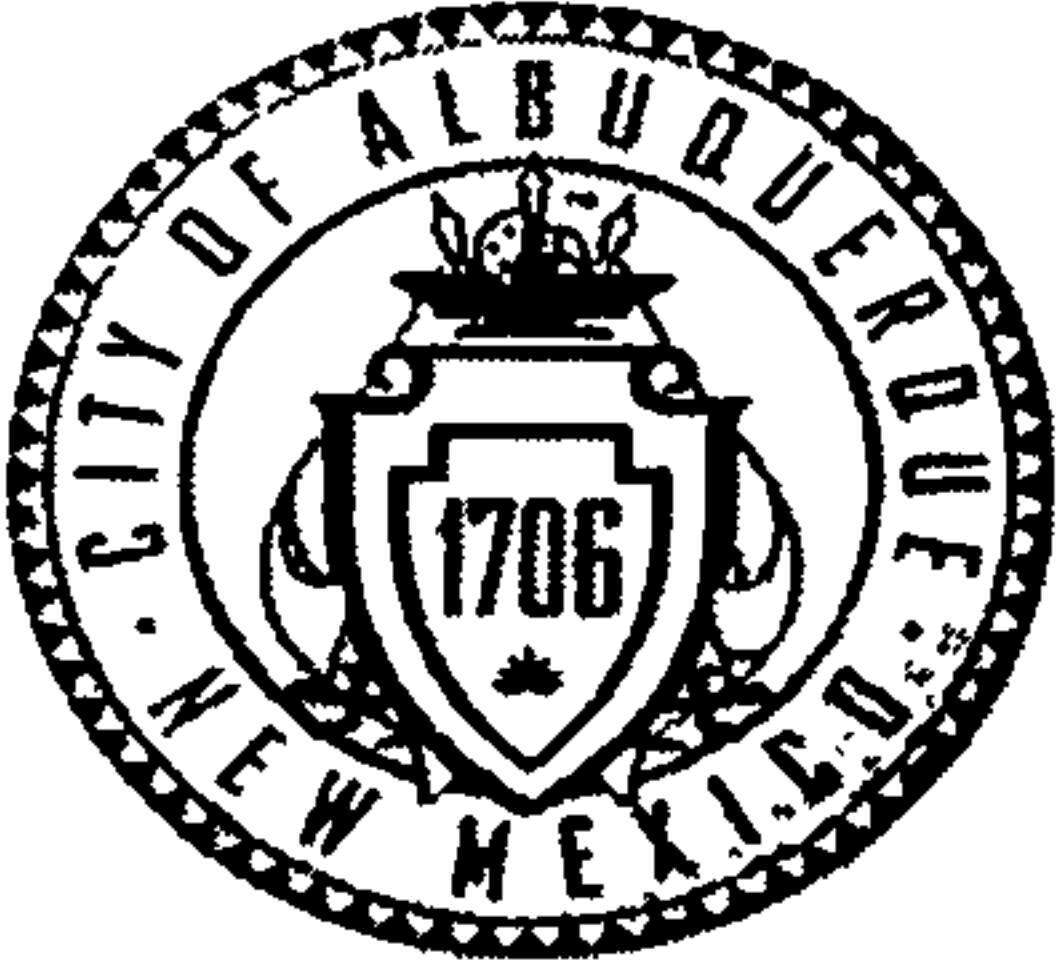
New Mexico 87103

Sincerely,

Jeanne Wolfenbarger, P.E.
Senior Engineer, Planning Dept.
Development Review Services

www.cabq.gov

Orig: Drainage file
c.pdf Addressee via Email



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: LOT 7, UNIT 3, BROADWAY INDUSTRIAL CENTER Building Permit #: _____ City Drainage #: M14-D004D
DRB#: _____ EPC#: _____ Work Order#: _____
Legal Description: LOT 7, UNIT 3, BROADWAY INDUSTRIAL CENTER
City Address: 2520 KARSTEN CT., SE

Engineering Firm: SBS CONSTRUCTION AND ENGINEERING, LLC Contact: SHAWN BIAZAR
Address: 10209 SNOWFLAKE CT., NW, ALBUQUERQUE, NM 87114
Phone#: 505-804-5013 Fax#: 505-897-4996 E-mail: AECLLC@AOL.COM

Owner: _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

Architect: _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

Surveyor: _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

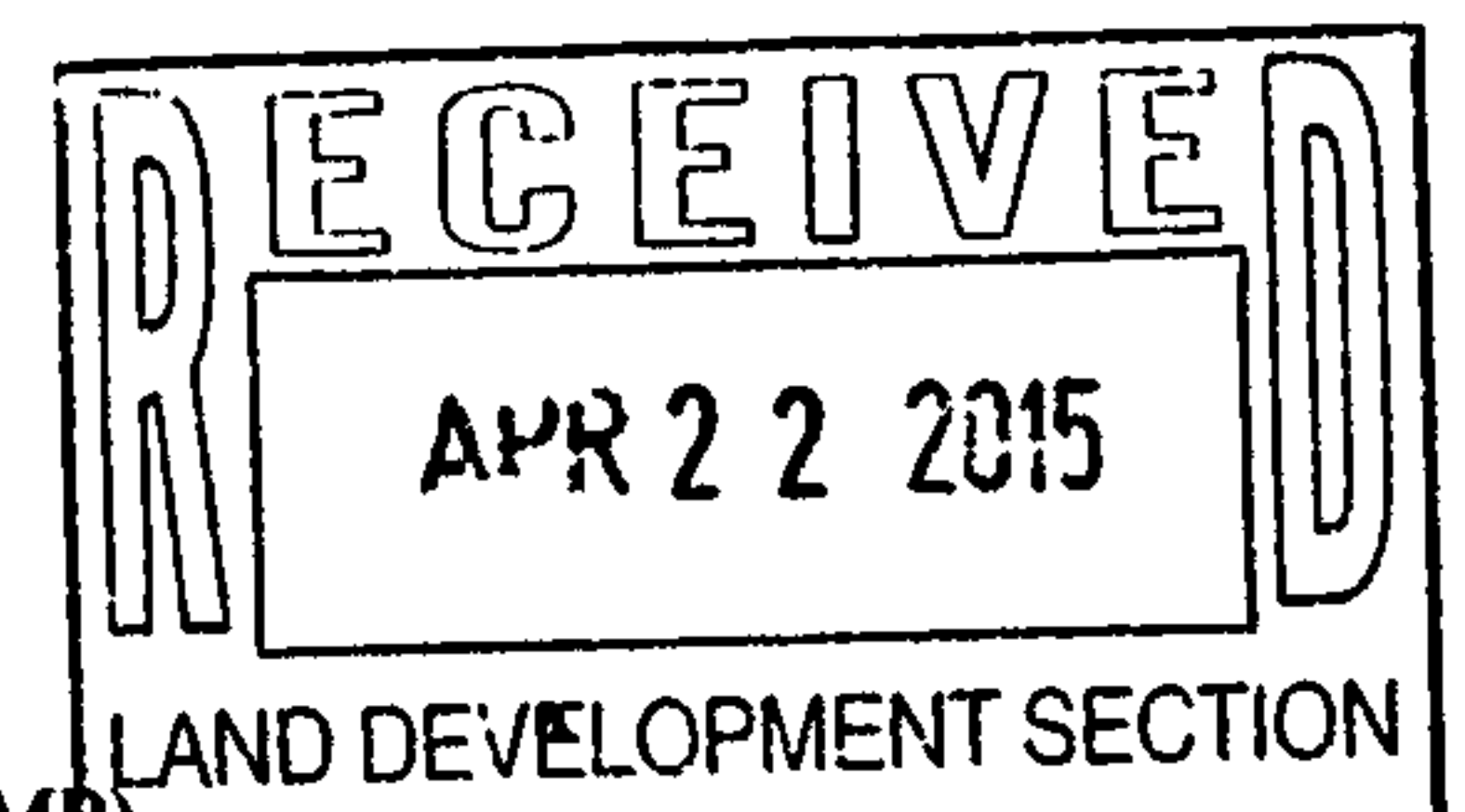
Contractor: _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

TYPE OF SUBMITTAL:

- ☒ DRAINAGE REPORT
☐ DRAINAGE PLAN 1st SUBMITTAL
☒ 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
☒ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ WORK ORDER APPROVAL
☐ GRADING CERTIFICATION



rs verified

- ☐ SO-19 APPROVAL
☐ ESC PERMIT APPROVAL
☐ ESC CERT. ACCEPTANCE
☐ OTHER (SPECIFY) _____

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

DATE SUBMITTED: 4/18/2015 By: SHAWN BIAZAR

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

SBS CONSTRUCTION AND ENGINEERING, LLC

April 18, 2015

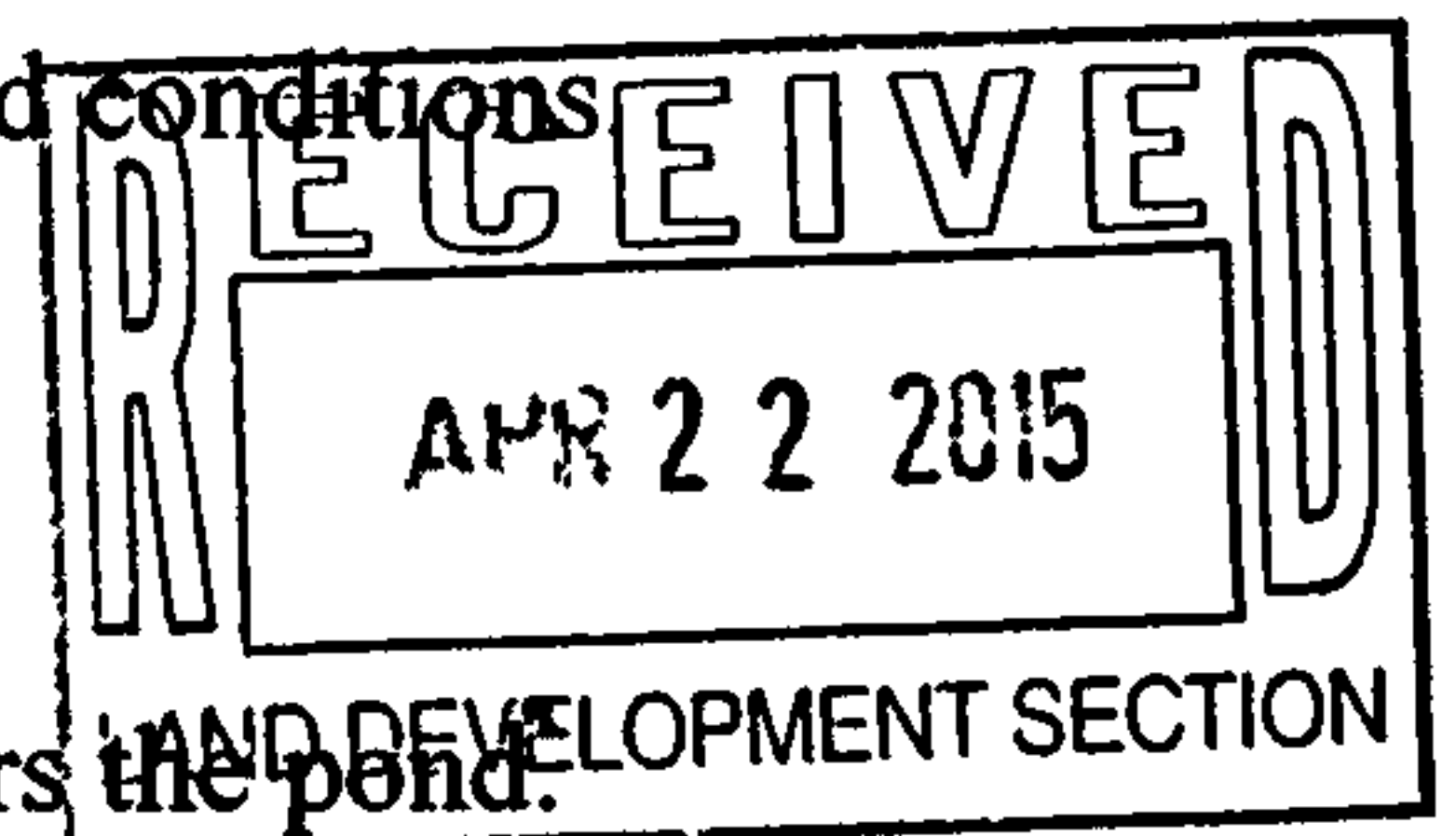
Mrs. Jeanne Wolfenbarger, P. E.
Senior Engineer, Planning Dept.
Development Review Services
P. O. Box 1293, 600 Second Street, NW
Albuquerque, NM 87103

**RE: Lot 7, Unit 3, Broadway Industrial Center, 2520 Karsten Ct.
Grading and Drainage Plan (M14D004D) Responses to Comments Dated April 3-2015**

Dear Mrs. Wolfenbarger:

The following are the responses to your comments received dated April 3, 2015:

- 1) Bench Mark information and spot elevations along the entire site perimeter were added to the plan.
- 2) We will be controlling the discharge to the 24" SD pipe by using 15" diameter orifice plate. Therefore, the maximum discharge from the site will be at 14.07 cfs which is less than the allowable discharge of 14.32 cfs. Please see the attached revised pond calculations and AHYMO runs.
- 3) See previous response.
- 4) Top wall is at proposed grade or slightly higher. Bottom of the wall elevation is added. Bottom of the wall elevations matches existing elevations. There is an existing fence to the west and to the south. There are no surveying points beyond the fence line. Spot elevations are included to verify the existing elevations along the property line. The proposed contours were slightly changed at the far northwest corner. The retaining wall extended to the east, closer to the access to the site. The existing spot elevations are shown at the property line at the existing access easement. These grades are being maintained under the proposed conditions.
- 5) Riprap dimensions, sizing and depth are added to the plan.
- 6) A 14'x41' grouted riprap area is shown where runoff from the site enters the pond.
- 7) Proposed 100-year flows for the proposed 18" (6.32 cfs) and 36" (73.21 cfs) storm drain pipe are shown on the plan. Since the pipes are going to be under pressure, orifice equation ($Q = CA\sqrt{2gh}$) was used to calculate the capacity of the 18" (21.78 cfs) and 36" (88.10 cfs) pipes. There is an existing Double-D inlet that has been built to intercept the runoff from Lot 8 (39.83

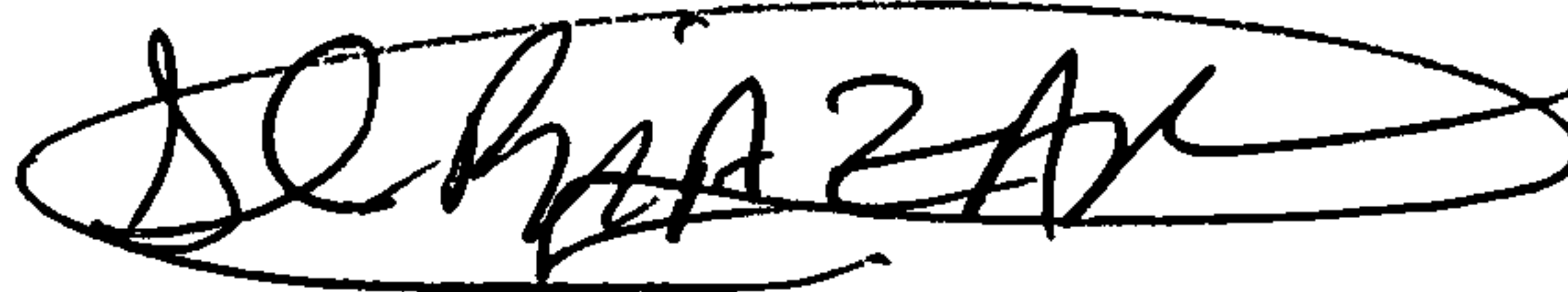


cfs) which is not shown on the Master Drainage plan. The inlet discharges the runoff to the existing pond via 24" storm drain pipe. The 24" pipe has a capacity of 45.78 cfs. The proposed flows of each of the existing pipes along with the capacity of the each pipe was obtain from the Master Drainage plan and was added to the grading and drainage plan.

- 8) The existing pipe near Karsten Ct. is an 18" pipe. We had shown it as 24" pipe. A bend is proposed at this connection and is shown on the plan.
- 9) The 30' existing private access easement is added to the plan. Slope spelling was corrected.
- 10) Proposed parking lot will be with asphalt milling.
- 11) The narrative of the Basin 104 through 107 being along I-25 embankment, and other contributing lots surrounding Karsten Ct. was added to the narrative of the plan. Existing Master Drainage plan was referenced for details on the contributing basins to the existing storm drain pipes. A copy of the Master plan was provided with our previous submittal.

Please Contact me at (505) 804-5013 if you require additional information or have any questions.

Sincerely,



Shahram (Shawn) Biazar, Managing Member

Enclosures
JN: 201423

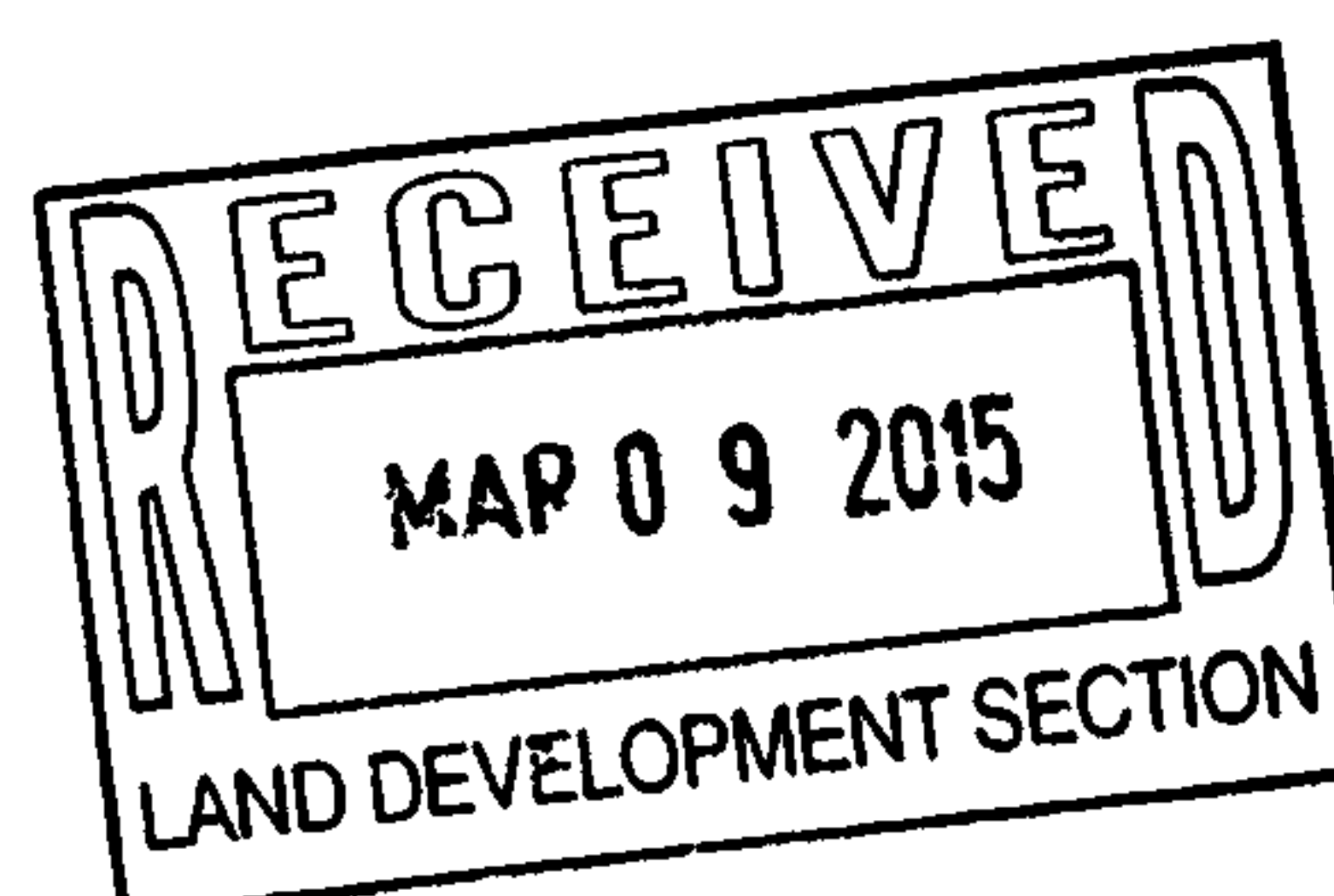


Contributing Basins To Lot 7*

BASIN	AREA (AC-FT)	AREA (MI^2)	% D	ID	Q
104		0.00630	10	1	12.94
105		0.00508	30	2	11.45
106B		0.00389	10	3	7.99
107		0.00395	30	4	8.90
LOT 7	2.1445	0.00335	90	5	9.42
LOT 8	4.0951	0.00640	90	6	17.99
LOT 9	3.1720	0.00496	90	7	13.94
LOT 10	1.4426	0.00225	90	8	6.32

* Basins From Drainage Masterplan For Broadway Industrial Center Unit 3 (M14/D004)

Prepared By Mark Goodwin and Associates.



PIPE FLOW CAPACITY CALCULATIONS

Flow capacity calculations were done using the orifice equation

Orifice Equation: $Q = CA \sqrt{2gh}$

Existing 24" Pipe

h (head) = 8.96'

$A = 3.1416$ sf

$g = 32.20$

$$Q = 0.60 \times 3.1416 \times \sqrt{(2 \times 32.2 \times 8.96)} = 45.28 \text{ cfs}$$

Proposed 36" Pipe

h (head) = 6.70'

$A = 7.0685$ sf

$g = 32.20$

$$Q = 0.60 \times 7.0685 \times \sqrt{(2 \times 32.2 \times 6.70)} = 88.10 \text{ cfs}$$

Proposed 18" Pipe

h (head) = 6.55'

$A = 1.7671$ sf

$g = 32.20$

$$Q = 0.60 \times 1.7671 \times \sqrt{(2 \times 32.2 \times 6.55)} = 21.78 \text{ cfs}$$

Ponding Calculation

Actual Elev.	Depth (ft)	Volume (ac-ft)	Q (cfs)	Surface Area (sf)
4997.00	0.00	0.00000	0.00	2,927.20
4998.50	0.00	0.12799	0.00	4,506.34
5000.00	1.50	0.31315	4.18	6,247.81
5002.00	3.50	0.65911	9.34	8,822.26
5003.00	4.50	0.87766	11.05	10,217.69
5004.00	5.50	1.13910	12.53	12,559.32
5005.00	6.50	1.75644	13.85	41,223.21
5006.00	7.50	3.07605	15.06	73,741.05

$$Q = CA \sqrt{2gH}$$

$$C = 0.6$$

$$\text{Orifice Dia. (in)} = 15$$

$$A \text{ (sf)} = 1.227$$

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* ZONE 2
*****
*          100-YEAR,  6-HR STORM (UNDER PROPOPOSED CONDITIONS)          *
*****
START          TIME=0.0
RAINFALL       TYPE=1 RAIN QUARTER=0.0 IN
               RAIN ONE=2.01 IN RAIN SIX=2.35 IN
               RAIN DAY=2.75 IN DT=0.03333 HR

* BASIN 104
COMPUTE NM HYD ID=1 HYD NO=104.0 AREA=0.00630 SQ MI
               PER A=0.00 PER B=10.00 PER C=80.00 PER D=10.00
               TP=0.1333 HR MASS RAINFALL=-1

* BASIN 105
COMPUTE NM HYD ID=2 HYD NO=105.0 AREA=0.00508 SQ MI
               PER A=0.00 PER B=10.00 PER C=60.00 PER D=30.00
               TP=0.1333 HR MASS RAINFALL=-1

* BASIN 106B
COMPUTE NM HYD ID=3 HYD NO=106.0 AREA=0.00389 SQ MI
               PER A=0.00 PER B=10.40 PER C=79.60 PER D=10.00
               TP=0.1333 HR MASS RAINFALL=-1

* BASIN 107
COMPUTE NM HYD ID=4 HYD NO=107.0 AREA=0.00395 SQ MI
               PER A=0.00 PER B=10.20 PER C=59.8 PER D=30.00
               TP=0.1333 HR MASS RAINFALL=-1

* LOT 7
COMPUTE NM HYD ID=5 HYD NO=100.7 AREA=0.00335 SQ MI
               PER A=9.70 PER B=0.00 PER C=0.30 PER D=90.00
               TP=0.1333 HR MASS RAINFALL=-1

* LOT 8
COMPUTE NM HYD ID=6 HYD NO=100.8 AREA=0.00640 SQ MI
               PER A=9.50 PER B=0.00 PER C=0.50 PER D=90.00
               TP=0.1333 HR MASS RAINFALL=-1

* LOT 9
COMPUTE NM HYD ID=7 HYD NO=100.9 AREA=0.00496 SQ MI
               PER A=9.70 PER B=0.00 PER C=0.30 PER D=90.00
               TP=0.1333 HR MASS RAINFALL=-1

* LOT 10
COMPUTE NM HYD ID=8 HYD NO=100.10 AREA=0.00225 SQ MI
               PER A=10.10 PER B=0.00 PER C=0.00 PER D=89.90
               TP=0.1333 HR MASS RAINFALL=-1

*
* ADD BASINS 104 & 105
ADD HYD        ID=10 HYD NO=104.10 ID=1 ID=2
*
* ADD BASINS 106B & ID=10
ADD HYD        ID=20 HYD NO=106.10 ID=10 ID=3
*
* ADD BASINS 107 & ID=20
ADD HYD        ID=30 HYD NO=107.10 ID=20 ID=4
*
* ADD LOT 7 & ID=30
ADD HYD        ID=40 HYD NO=100.71 ID=30 ID=5
*
* ADD LOT 8 & ID=40
ADD HYD        ID=50 HYD NO=100.81 ID=40 ID=6
*
* ADD LOT 9 & ID=50
ADD HYD        ID=60 HYD NO=100.91 ID=50 ID=7
*
* ADD LOT 10 & ID=60
ADD HYD        ID=70 HYD NO=100.11 ID=60 ID=8
*
ROUTE RESERVOIR ID=100 HYD NO=501.1 INFLOW ID=70 CODE=24
                OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                0.00              0.00000        4998.50
                10.69             0.31315        5000.00
                23.91             0.65911        5002.00
                28.29             0.87766        5003.00
                32.07             1.13910        5004.00
                35.46             1.75644        5005.00
                38.55             3.07605        5006.00
*****
FINISH

```

RUN DATE (MON/DAY/YR) =04/09/2015
USER NO.= AHYMO-I-9702c01000R31-AH

TIME=	.00
RAIN6=	2.350
PER IMP=	10.00
PER IMP=	30.00
PER IMP=	10.00
PER IMP=	30.00
PER IMP=	90.00
PER IMP=	90.00
PER IMP=	90.00
PER IMP=	89.90
AC-FT=	1.994

AHYMO PROGRAM (AHYMO_97) - - Version: 1997.02d
 RUN DATE (MON/DAY/YR) = 04/09/2015
 START TIME (HR:MIN:SEC) = 22:47:58 USER NO.= AHYMO-I-9702c01000R31-AH
 INPUT FILE = df.txt

* ZONE 2

 * 100-YEAR, 6-HR STORM (UNDER PROPOSED CONDITIONS) *

 START TIME=0.0
 RAINFALL TYPE=1 RAIN QUARTER=0.0 IN
 RAIN ONE=2.01 IN RAIN SIX=2.35 IN
 RAIN DAY=2.75 IN DT=0.03333 HR

COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
 DT = .033330 HOURS END TIME = 5.999400 HOURS

.0000	.0016	.0033	.0049	.0066	.0084	.0102
.0120	.0139	.0158	.0178	.0199	.0219	.0241
.0263	.0286	.0309	.0333	.0358	.0384	.0411
.0439	.0467	.0497	.0529	.0561	.0596	.0631
.0669	.0709	.0751	.0807	.0866	.0930	.1066
.1371	.1840	.2514	.3434	.4644	.6186	.8106
1.0449	1.2624	1.3533	1.4300	1.4982	1.5602	1.6174
1.6704	1.7200	1.7664	1.8102	1.8514	1.8904	1.9273
1.9622	1.9953	2.0268	2.0566	2.0850	2.0915	2.0976
2.1033	2.1088	2.1140	2.1191	2.1239	2.1285	2.1329
2.1373	2.1414	2.1454	2.1494	2.1531	2.1568	2.1604
2.1639	2.1673	2.1706	2.1739	2.1771	2.1802	2.1832
2.1862	2.1891	2.1919	2.1947	2.1975	2.2002	2.2028
2.2054	2.2080	2.2105	2.2130	2.2154	2.2178	2.2202
2.2225	2.2248	2.2270	2.2293	2.2315	2.2336	2.2358
2.2379	2.2399	2.2420	2.2440	2.2460	2.2480	2.2500
2.2519	2.2538	2.2557	2.2576	2.2594	2.2612	2.2631
2.2648	2.2666	2.2684	2.2701	2.2718	2.2735	2.2752
2.2769	2.2785	2.2802	2.2818	2.2834	2.2850	2.2866
2.2881	2.2897	2.2912	2.2928	2.2943	2.2958	2.2973
2.2987	2.3002	2.3017	2.3031	2.3045	2.3060	2.3074
2.3088	2.3102	2.3115	2.3129	2.3143	2.3156	2.3169
2.3183	2.3196	2.3209	2.3222	2.3235	2.3248	2.3261
2.3273	2.3286	2.3298	2.3311	2.3323	2.3335	2.3348
2.3360	2.3372	2.3384	2.3396	2.3408	2.3419	2.3431
2.3443	2.3454	2.3466	2.3477	2.3488	2.3500	

* BASIN 104
 COMPUTE NM HYD ID=1 HYD NO=104.0 AREA=0.00630 SQ MI
 PER A=0.00 PER B=10.00 PER C=80.00 PER D=10.00
 TP=0.1333 HR MASS RAINFALL=-1

7.106420 K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N =
 UNIT PEAK = 2.4873 CFS UNIT VOLUME = .9949 B = 526.28 P60 = 2.0100
 AREA = .000630 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

4.318134 K = .110184HR TP = .133300HR K/TP RATIO = .826586 SHAPE CONSTANT, N =
 UNIT PEAK = 15.987 CFS UNIT VOLUME = .9995 B = 375.85 P60 = 2.0100
 AREA = .005670 SQ MI IA = .36667 INCHES INF = .87667 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* BASIN 105
 COMPUTE NM HYD ID=2 HYD NO=105.0 AREA=0.00508 SQ MI
 PER A=0.00 PER B=10.00 PER C=60.00 PER D=30.00
 TP=0.1333 HR MASS RAINFALL=-1

7.106420 K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N =
 UNIT PEAK = 6.0168 CFS UNIT VOLUME = .9976 B = 526.28 P60 = 2.0100

AREA = .001524 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

4.284601 K = .110966HR TP = .133300HR K/TP RATIO = .832455 SHAPE CONSTANT, N =
UNIT PEAK = 9.9696 CFS UNIT VOLUME = .9990 B = 373.72 P60 = 2.0100

AREA = .003556 SQ MI IA = .37143 INCHES INF = .89000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* BASIN 106B
COMPUTE NM HYD

ID=3 HYD NO=106.0 AREA=0.00389 SQ MI
PER A=0.00 PER B=10.40 PER C=79.60 PER D=10.00
TP=0.1333 HR MASS RAINFALL=-1

7.106420 K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N =
UNIT PEAK = 1.5358 CFS UNIT VOLUME = .9922 B = 526.28 P60 = 2.0100

AREA = .000389 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

4.313397 K = .110293HR TP = .133300HR K/TP RATIO = .827408 SHAPE CONSTANT, N =
UNIT PEAK = 9.8635 CFS UNIT VOLUME = .9990 B = 375.55 P60 = 2.0100

AREA = .003501 SQ MI IA = .36733 INCHES INF = .87853 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* BASIN 107
COMPUTE NM HYD

ID=4 HYD NO=107.0 AREA=0.00395 SQ MI
PER A=0.00 PER B=10.20 PER C=59.8 PER D=30.00
TP=0.1333 HR MASS RAINFALL=-1

7.106420 K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N =
UNIT PEAK = 4.6784 CFS UNIT VOLUME = .9969 B = 526.28 P60 = 2.0100

AREA = .001185 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

4.281607 K = .111037HR TP = .133300HR K/TP RATIO = .832983 SHAPE CONSTANT, N =
UNIT PEAK = 7.7480 CFS UNIT VOLUME = .9986 B = 373.53 P60 = 2.0100

AREA = .002765 SQ MI IA = .37186 INCHES INF = .89120 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* LOT 7
COMPUTE NM HYD

ID=5 HYD NO=100.7 AREA=0.00335 SQ MI
PER A=9.70 PER B=0.00 PER C=0.30 PER D=90.00
TP=0.1333 HR MASS RAINFALL=-1

7.106420 K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N =
UNIT PEAK = 11.903 CFS UNIT VOLUME = .9984 B = 526.28 P60 = 2.0100

AREA = .003015 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

2.985007 K = .158573HR TP = .133300HR K/TP RATIO = 1.189596 SHAPE CONSTANT, N =
UNIT PEAK = .70518 CFS UNIT VOLUME = .9791 B = 280.60 P60 = 2.0100

AREA = .000335 SQ MI IA = .64100 INCHES INF = 1.64480 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* LOT 8

COMPUTE NM HYD ID=6 HYD NO=100.8 AREA=0.00640 SQ MI
PER A=9.50 PER B=0.00 PER C=0.50 PER D=90.00
TP=0.1333 HR MASS RAINFALL=-1

7.106420 K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N =
UNIT PEAK = 22.741 CFS UNIT VOLUME = .9988 B = 526.28 P60 = 2.0100
AREA = .005760 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
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3.003448 K = .157519HR TP = .133300HR K/TP RATIO = 1.181688 SHAPE CONSTANT, N =
UNIT PEAK = 1.3544 CFS UNIT VOLUME = .9890 B = 282.10 P60 = 2.0100
AREA = .000640 SQ MI IA = .63500 INCHES INF = 1.62800 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* LOT 9

COMPUTE NM HYD ID=7 HYD NO=100.9 AREA=0.00496 SQ MI
PER A=9.70 PER B=0.00 PER C=0.30 PER D=90.00
TP=0.1333 HR MASS RAINFALL=-1

7.106420 K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N =
UNIT PEAK = 17.624 CFS UNIT VOLUME = .9988 B = 526.28 P60 = 2.0100
AREA = .004464 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

2.985007 K = .158573HR TP = .133300HR K/TP RATIO = 1.189596 SHAPE CONSTANT, N =
UNIT PEAK = 1.0441 CFS UNIT VOLUME = .9862 B = 280.60 P60 = 2.0100
AREA = .000496 SQ MI IA = .64100 INCHES INF = 1.64480 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* LOT 10

COMPUTE NM HYD ID=8 HYD NO=100.10 AREA=0.00225 SQ MI
PER A=10.10 PER B=0.00 PER C=0.00 PER D=89.90
TP=0.1333 HR MASS RAINFALL=-1

7.106420 K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N =
UNIT PEAK = 7.9859 CFS UNIT VOLUME = .9981 B = 526.28 P60 = 2.0100
AREA = .002023 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

2.957910 K = .160154HR TP = .133300HR K/TP RATIO = 1.201459 SHAPE CONSTANT, N =
UNIT PEAK = .47457 CFS UNIT VOLUME = .9696 B = 278.37 P60 = 2.0100
AREA = .000227 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

*

* ADD BASINS 104 & 105

ADD HYD ID=10 HYD NO=104.10 ID=1 ID=2

*

* ADD BASINS 106B & ID=10

ADD HYD ID=20 HYD NO=106.10 ID=10 ID=3

*

* ADD BASINS 107 & ID=20

ADD HYD ID=30 HYD NO=107.10 ID=20 ID=4

*

* ADD LOT 7 & ID=30

ADD HYD ID=40 HYD NO=100.71 ID=30 ID=5

*

* ADD LOT 8 & ID=40

ADD HYD ID=50 HYD NO=100.81 ID=40 ID=6

*

* ADD LOT 9 & ID=50

ADD HYD ID=60 HYD NO=100.91 ID=50 ID=7

*

* ADD LOT 10 & ID=60

ADD HYD ID=70 HYD NO=100.11 ID=60 ID=8

*

ROUTE RESERVOIR ID=100 HYD NO=501.1 INFLOW ID=70 CODE=24

OUTFLOW(CFS)	STORAGE(AC-FT)	ELEVATION(FT)
0.00	0.00000	4998.50
4.18	0.31315	5000.00
9.34	0.65911	5002.00
11.05	0.87766	5003.00
12.53	1.13910	5004.00
13.85	1.75644	5005.00
15.06	3.07605	5006.00

* * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
---------------	-----------------	----------------	-------------------	------------------

.00	.00	4998.50	.000	.00
.80	.00	4998.50	.000	.00
1.60	63.50	5004.32	1.338	12.96
2.40	3.37	5005.04	1.805	13.89
3.20	.58	5003.60	1.034	11.93
4.00	.34	5000.76	.445	6.14
4.80	.33	4999.44	.197	2.63
5.60	.37	4998.96	.097	1.29
6.40	.03	4998.74	.051	.68
7.20	.00	4998.60	.021	.28
8.00	.00	4998.54	.009	.12
8.80	.00	4998.52	.004	.05
9.60	.00	4998.51	.002	.02
10.40	.00	4998.50	.001	.01
11.20	.00	4998.50	.000	.00

PEAK DISCHARGE = 14.068 CFS - PEAK OCCURS AT HOUR 2.10

MAXIMUM WATER SURFACE ELEVATION = 5005.180

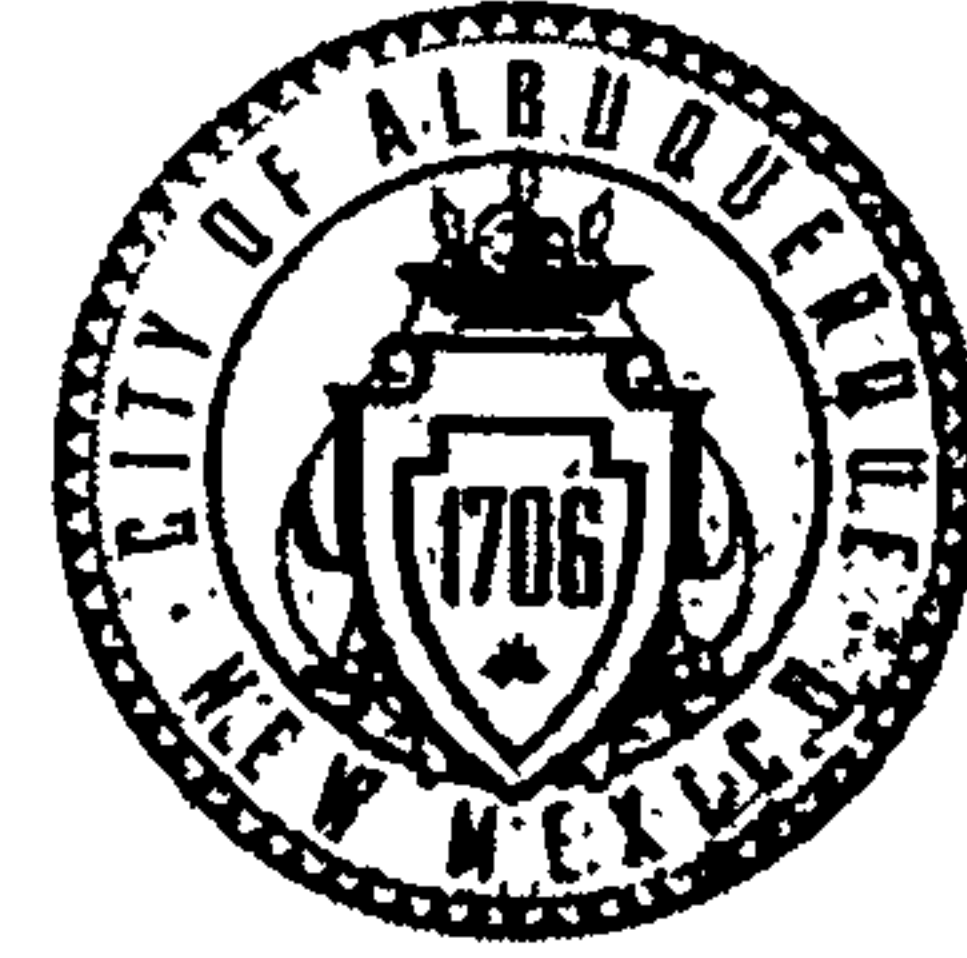
MAXIMUM STORAGE = 1.9937 AC-FT INCREMENTAL TIME= .033330HRS

FINISH

NORMAL PROGRAM FINISH

END TIME (HR:MIN:SEC) = 22:47:58

CITY OF ALBUQUERQUE



April 3, 2015

Reza Afaghpour, PE
through SBS Construction and Engineering, LLC
10209 Snowflake Court NW
Albuquerque, NM 87114

**RE: Lot 7, Unit 3, Broadway Industrial Center, 2520 Karsten Ct.
Grading and Drainage Plan
Engineer's Stamp Date 3-08-2015 (File: M14-D004D)**

Dear Mr. Afaghpour:

Based upon the information provided in your submittal received 3-09-15, the above referenced plan cannot be approved for Building Permit until the following comments are addressed:

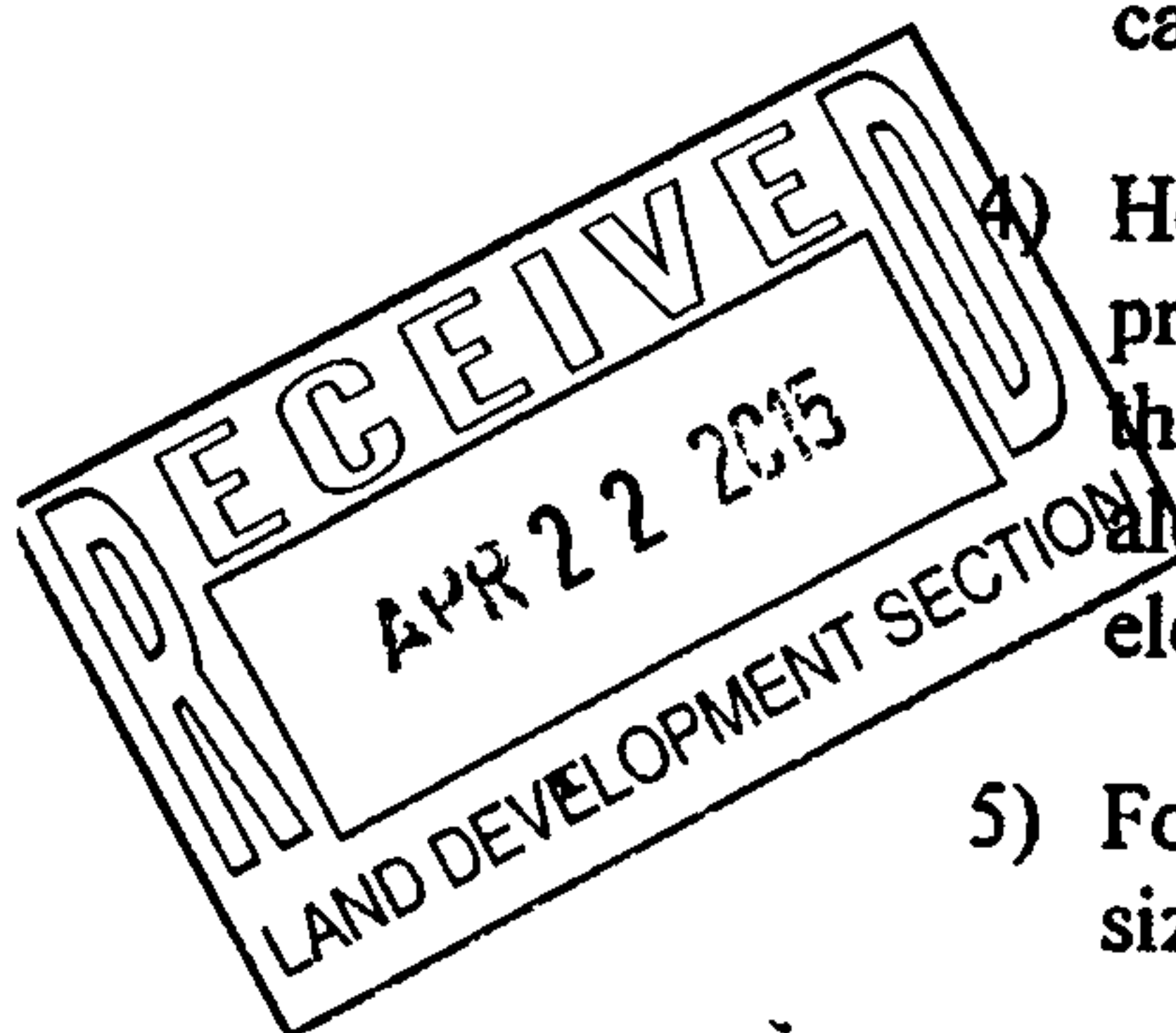
PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

- 1) Provide a survey benchmark and existing spot elevations along the entire site perimeter.
- 2) The Proposed Drainage Master Plan for Broadway Industrial Center shows an allowable flow of 14.32 cfs to discharge from the site, and the existing 24" pipe that is supposed to be accepting the on-site flow shows a pipe capacity of approximately 15 cfs further downstream on both the Drainage Master Plan and on the as-built plans. However, a discharge rate of 32.82 cfs is proposed from the proposed on-site pond into this existing 24" pipe. Please include discussion of allowable discharge and downstream pipe capacity in the Drainage Narrative.
- 3) To control flow into downstream 24" pipe to the allowable pipe flow from site, provide orifice plate and upsize pond as necessary. Provide the hydraulic calculations for the sizing of the orifice.
- 4) How do the retaining wall heights match existing contour elevations? In addition to providing the top of retaining wall, provide the bottom of wall elevations in lieu of the top of footing elevations. Show existing contouring outside of site boundary along both the west and south sides of the property. Correct proposed contour elevations at the far northwest corner of property.
- 5) For riprap within the bottom of the pond, provide dimensioning, depth of riprap, and sizing.



- 6) Where on-site flow is concentrated entering into the proposed pond from the north, provide erosion protection along the pond slope with riprap or concrete. Provide necessary details.
- 7) Show 100-year flow that each of the proposed pipe runs is conveying, and provide capacity calculations for each of these pipe runs. Also, label the 100-year flows that each of the existing pipes is discharging from off-site into the proposed pond and the existing slope of these pipes. It is suggested to provide inlets that discharge to the 36" pipe to collect off-site flows from the east.
- 8) Provide a manhole or a pipe bend where the new pipe connects into the existing 24" pipe near Karsten Court.
- 9) Label 30-foot private access easement, and correct spelling of "slope".
- 10) Is the parking area for the mobile units paved? Call out pavement area on plan if it is paved.
- 11) Within the Drainage Narrative, provide a brief narrative of the location of the contributing basins which mentions that Basins 104 through 107 are along the I-25 embankment, and the other contributing lots are surrounding Karsten Court. Also indicate which basins contribute runoff to the existing pipes conveying drainage to Lot 7 from off-site.

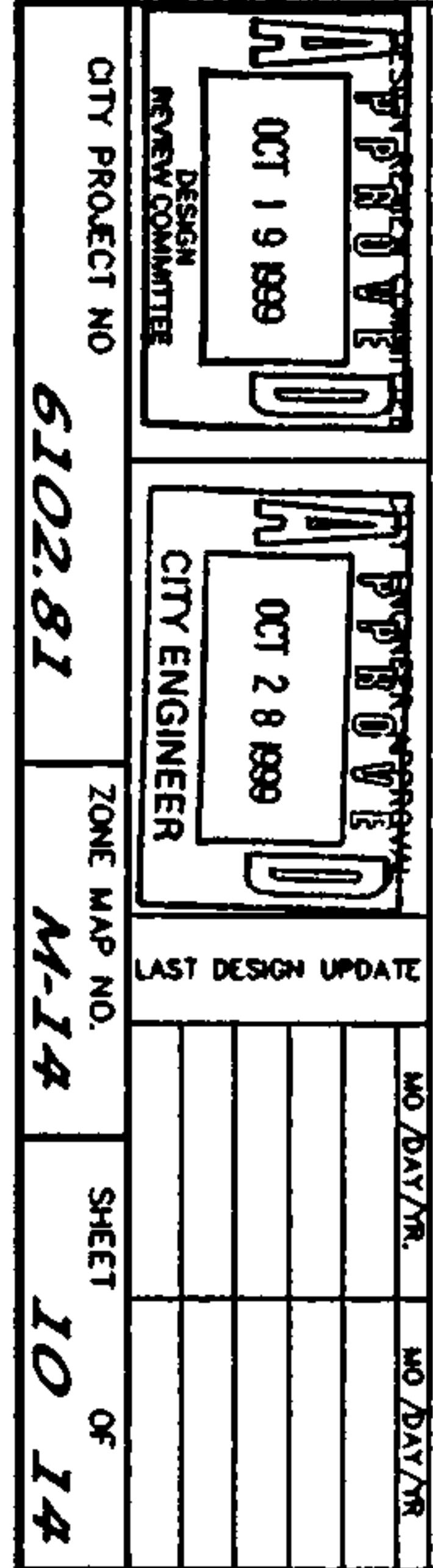
If you have any questions, you can contact me at 924-3924.

Sincerely,



Jeanne Wolfenbarger, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf Addressee via Email



NOTES

1. SEE DRAINAGE FILE M-14 D-12 FOR APPROVED GRADING & DRAINAGE MASTER PLAN

AS BUILT INFORMATION	
CONTRACTOR	FRANKLINS
WORK	
ESTATED BY	ALS, INC DATE 9/80
INSPECTOR'S	
ACCEPTANCE BY	DATE
FIELD	
VERIFICATION BY	ALS, INC DATE 00
DRAWINGS	
CORRECTED BY	ALS, INC DATE 00
MICRO-FILM INFORMATION	
RECORDED BY	DATE
NO	

BENCH MARKS	
NWSMC MONUMENT "7-25-30"	
Y = 1477272.26	X = 383916.04 G-G = 0.99967444
DELTA ALPHA = -0073.22" CENTRAL ZONE (NAD 1927/SLD 1929)	
ELEVATION = 5038.51	
ACS MONUMENT "NW361-3"	
Y = 1475680.30	X = 381897.40 G-G = 0.99967845
DELTA ALPHA = -0073.36" CENTRAL ZONE (NAD 1927/SLD 1929)	
ELEVATION = 49.66.07	

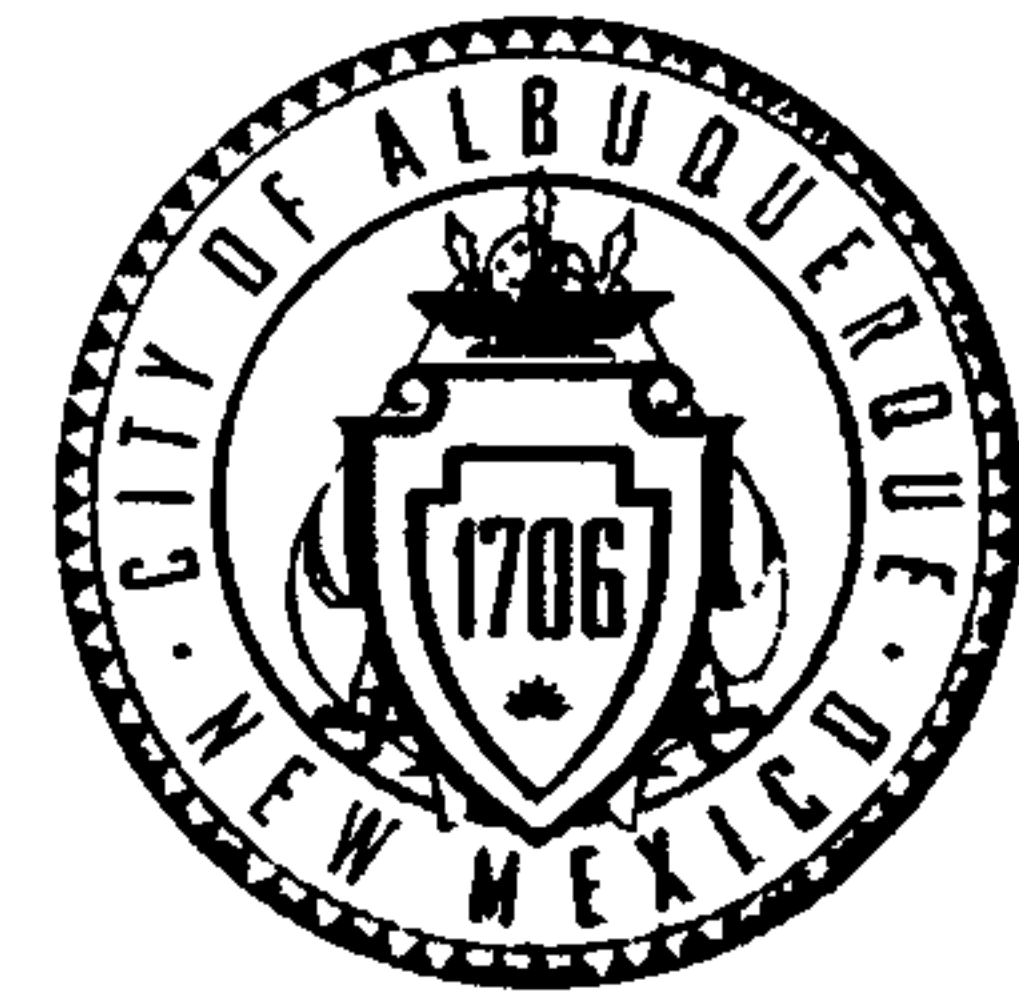
[illegible]

ENGINEER'S SEAL



NO.	DATE	REMARKS		BY
<i>REVISIONS</i>				
DESIGN				
DESIGNED BY	<i>JDH</i>	DATE	<i>4-99</i>	
DRAWN BY	<i>MJR</i>	DATE	<i>4-99</i>	
CHECKED BY	<i>DMG</i>	DATE	<i>4-99</i>	

CITY OF ALBUQUERQUE



April 3, 2015

Reza Afaghpour, PE
through SBS Construction and Engineering, LLC
10209 Snowflake Court NW
Albuquerque, NM 87114

**RE: Lot 7, Unit 3, Broadway Industrial Center, 2520 Karsten Ct.
Grading and Drainage Plan
Engineer's Stamp Date 3-08-2015 (File: M14-D004D)**

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PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

- 1) Provide a survey benchmark and existing spot elevations along the entire site perimeter.
- 2) The Proposed Drainage Master Plan for Broadway Industrial Center shows an allowable flow of 14.32 cfs to discharge from the site, and the existing 24" pipe that is supposed to be accepting the on-site flow shows a pipe capacity of approximately 15 cfs further downstream on both the Drainage Master Plan and on the as-built plans. However, a discharge rate of 32.82 cfs is proposed from the proposed on-site pond into this existing 24" pipe. Please include discussion of allowable discharge and downstream pipe capacity in the Drainage Narrative.
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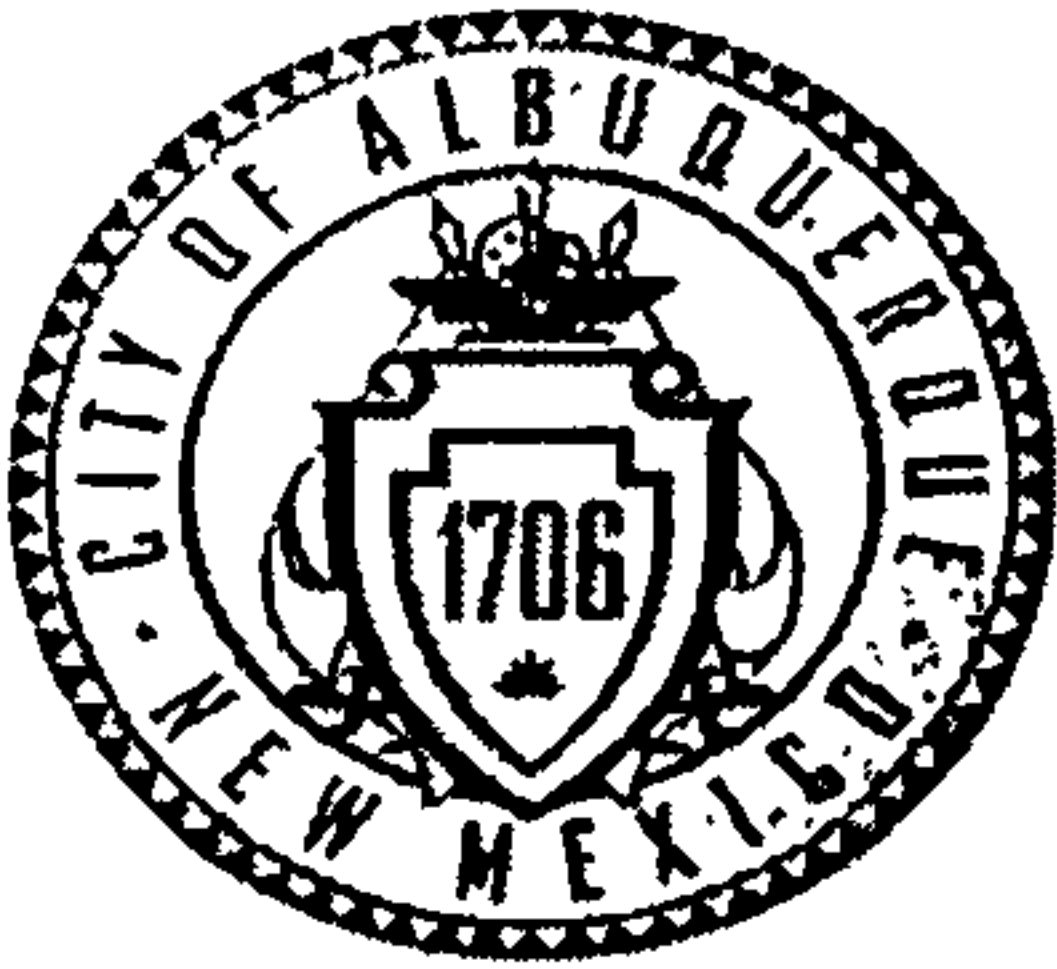
If you have any questions, you can contact me at 924-3924.

Sincerely,



Jeanne Wolfenbarger, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf Addressee via Email



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: LOT 7, UNIT 3, BROADWAY INDUSTRIAL CENTER Building Permit #: _____ City Drainage #: M14D004D
DRB#: _____ EPC#: _____ Work Order#: _____
Legal Description: LOT 7, UNIT 3, BROADWAY INDUSTRIAL CENTER
City Address: 2520 KARSTEN CT., SE

Engineering Firm: SBS CONSTRUCTION AND ENGINEERING, LLC Contact: SHAWN BIAZAR
Address: 10209 SNOWFLAKE CT., NW, ALBUQUERQUE, NM 87114
Phone#: 505-804-5013 Fax#: 505-897-4996 E-mail: AECLLC@AOL.COM

Owner: _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

Architect: _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

Surveyor: _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

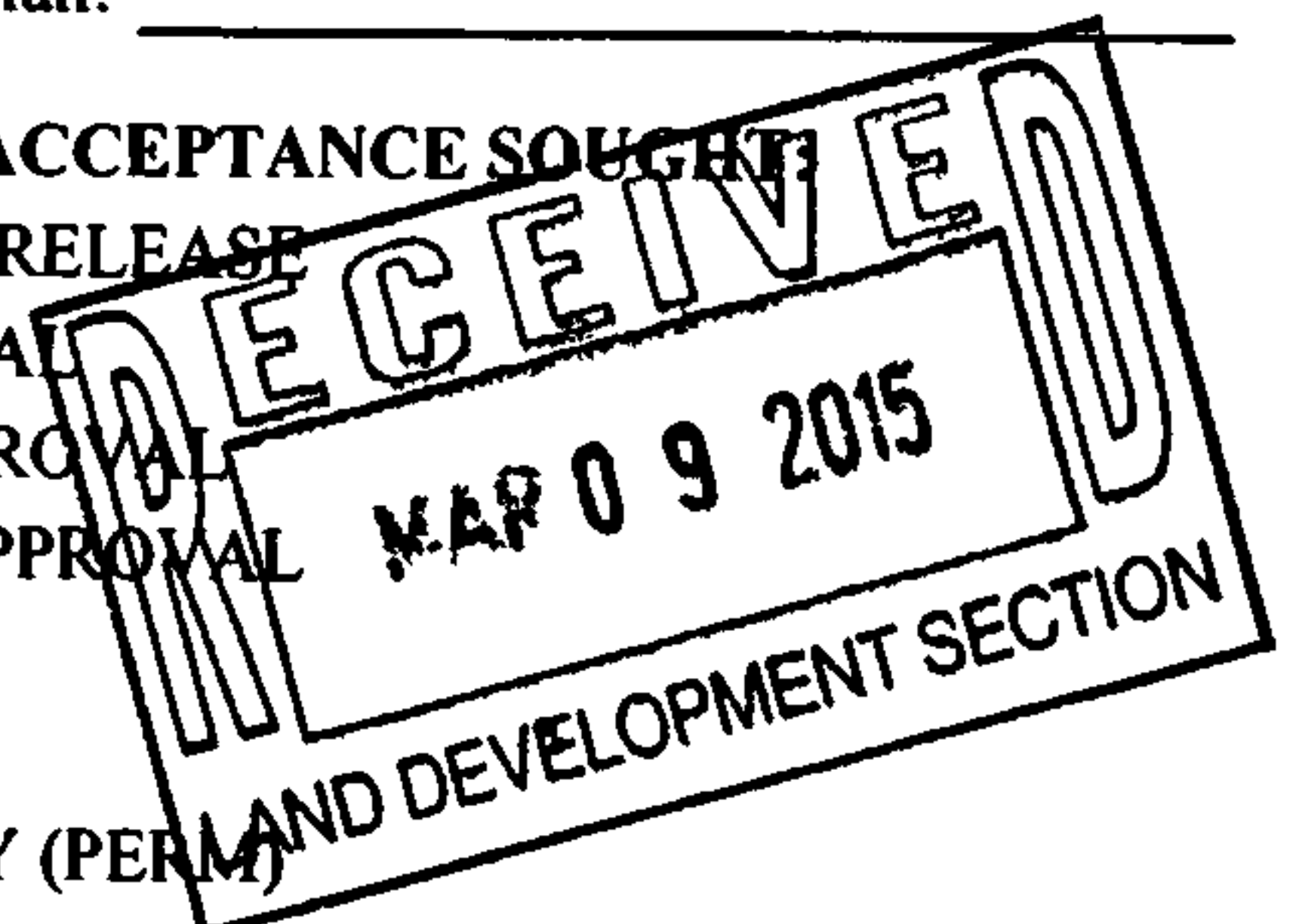
Contractor: _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

TYPE OF SUBMITTAL:

- ☒ DRAINAGE REPORT
- ☒ DRAINAGE PLAN 1st SUBMITTAL
- ☐ 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
- ☒ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ WORK ORDER APPROVAL
- ☐ GRADING CERTIFICATION
- ☐ SO-19 APPROVAL
- ☐ ESC PERMIT APPROVAL
- ☐ ESC CERT. ACCEPTANCE
- ☐ OTHER (SPECIFY) _____



\$5000

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

DATE SUBMITTED: 03/9/2015 By: SHAWN BIAZAR

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 that are part of a larger common plan of development

Ponding Calculation

Actual Elev.	Depth (ft)	Volume (ac-ft)	Q (cfs)	Surface Area (sf)
4997.00	0.00	0.00000	0.00	2,927.20
4998.50	0.00	0.12799	0.00	4,506.34
5000.00	1.50	0.31315	10.69	6,247.81
5002.00	3.50	0.65911	23.91	8,822.26
5003.00	4.50	0.87766	28.29	10,217.69
5004.00	5.50	1.13910	32.07	12,559.32
5005.00	6.50	1.75644	35.46	41,223.21
5006.00	7.50	3.07605	38.55	73,741.05

$$Q = CA \sqrt{2gH}$$

$$C = 0.6$$

$$\text{Orifice Dia. (in)} = 24$$

$$A \text{ (sf)} = 3.140$$

2.1445 AC

93,414.42 SF

4,670.72 5.00% C

4,670.72 5.00% B

84,072.98 90.00% D

FIRST FLUSH = Impervious Area x 0.34'
2,170.33 CF

First Flush Volume Requirement is 2,170.33 CF and Retention Volume from elevation 4997.00 to elevation 4998.50 is 4,506.34 cf

```

* ZONE 2
*****
*          100-YEAR,  6-HR STORM (UNDER PROPOSED CONDITIONS)          *
*****
START          TIME=0.0
RAINFALL        TYPE=1 RAIN QUARTER=0.0 IN
                RAIN ONE=2.01 IN RAIN SIX=2.35 IN
                RAIN DAY=2.75 IN DT=0.03333 HR

* BASIN 104
COMPUTE NM HYD  ID=1 HYD NO=104.0 AREA=0.00630 SQ MI
                PER A=0.00 PER B=10.00 PER C=80.00 PER D=10.00
                TP=0.1333 HR MASS RAINFALL=-1

* BASIN 105
COMPUTE NM HYD  ID=2 HYD NO=105.0 AREA=0.00508 SQ MI
                PER A=0.00 PER B=10.00 PER C=60.00 PER D=30.00
                TP=0.1333 HR MASS RAINFALL=-1

* BASIN 106B
COMPUTE NM HYD  ID=3 HYD NO=106.0 AREA=0.00389 SQ MI
                PER A=0.00 PER B=10.40 PER C=79.60 PER D=10.00
                TP=0.1333 HR MASS RAINFALL=-1

* BASIN 107
COMPUTE NM HYD  ID=4 HYD NO=107.0 AREA=0.00395 SQ MI
                PER A=0.00 PER B=10.20 PER C=59.8 PER D=30.00
                TP=0.1333 HR MASS RAINFALL=-1

* LOT 7
COMPUTE NM HYD  ID=5 HYD NO=100.7 AREA=0.00335 SQ MI
                PER A=9.70 PER B=0.00 PER C=0.30 PER D=90.00
                TP=0.1333 HR MASS RAINFALL=-1

* LOT 8
COMPUTE NM HYD  ID=6 HYD NO=100.8 AREA=0.00640 SQ MI
                PER A=9.50 PER B=0.00 PER C=0.50 PER D=90.00
                TP=0.1333 HR MASS RAINFALL=-1

* LOT 9
COMPUTE NM HYD  ID=7 HYD NO=100.9 AREA=0.00496 SQ MI
                PER A=9.70 PER B=0.00 PER C=0.30 PER D=90.00
                TP=0.1333 HR MASS RAINFALL=-1

* LOT 10
COMPUTE NM HYD  ID=8 HYD NO=100.10 AREA=0.00225 SQ MI
                PER A=10.10 PER B=0.00 PER C=0.00 PER D=89.90
                TP=0.1333 HR MASS RAINFALL=-1

*
* ADD BASINS 104 & 105
ADD HYD          ID=10 HYD NO=104.10 ID=1 ID=2
*
* ADD BASINS 106B & ID=10
ADD HYD          ID=20 HYD NO=106.10 ID=10 ID=3
*
* ADD BASINS 107 & ID=20
ADD HYD          ID=30 HYD NO=107.10 ID=20 ID=4
*
* ADD LOT 7 & ID=30
ADD HYD          ID=40 HYD NO=100.71 ID=30 ID=5
*
* ADD LOT 8 & ID=40
ADD HYD          ID=50 HYD NO=100.81 ID=40 ID=6
*
* ADD LOT 9 & ID=50
ADD HYD          ID=60 HYD NO=100.91 ID=50 ID=7
*
* ADD LOT 10 & ID=60
ADD HYD          ID=70 HYD NO=100.11 ID=60 ID=8
*
ROUTE RESERVOIR  ID=100 HYD NO=501.1 INFLOW ID=70 CODE=24
                  OUTFLOW(CFS)      STORAGE(AC-FT)  ELEVATION(FT)
                  0.00                0.00000        4998.50
                  10.69               0.31315        5000.00
                  23.91               0.65911        5002.00
                  28.29               0.87766        5003.00
                  32.07               1.13910        5004.00
                  35.46               1.75644        5005.00
                  38.55               3.07605        5006.00
*****
FINISH

```

RUN DATE (MON/DAY/YR) =03/08/2015
USER NO.= AHYMO-I-9702c01000R31-AH

COMMAND		HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1
NOTATION											
START											
RAINFALL TYPE= 1											
TIME=.00											
RAIN6= 2.350											
COMPUTE NM HYD	104.00	-	1	.00630	12.94	.398	1.18529	1.500	3.209	PER IMP= 10.00	
COMPUTE NM HYD	105.00	-	2	.00508	11.45	.375	1.38298	1.500	3.521	PER IMP= 30.00	
COMPUTE NM HYD	106.00	-	3	.00389	7.99	.246	1.18367	1.500	3.208	PER IMP= 10.00	
COMPUTE NM HYD	107.00	-	4	.00395	8.90	.291	1.38218	1.500	3.521	PER IMP= 30.00	
COMPUTE NM HYD	100.70	-	5	.00335	9.42	.350	1.95825	1.500	4.394	PER IMP= 90.00	
COMPUTE NM HYD	100.80	-	6	.00640	17.99	.669	1.95912	1.500	4.393	PER IMP= 90.00	
COMPUTE NM HYD	100.90	-	7	.00496	13.94	.518	1.95825	1.500	4.391	PER IMP= 90.00	
COMPUTE NM HYD	100.10	-	8	.00225	6.32	.235	1.95537	1.500	4.389	PER IMP= 89.90	
ADD HYD	104.10	1& 2	10	.01138	24.39	.773	1.27349	1.500	3.348		
ADD HYD	106.10	10& 3	20	.01527	32.37	1.018	1.25059	1.500	3.312		
ADD HYD	107.10	20& 4	30	.01922	41.27	1.310	1.27762	1.500	3.355		
ADD HYD	100.71	30& 5	40	.02257	50.69	1.660	1.37863	1.500	3.509		
ADD HYD	100.81	40& 6	50	.02897	68.69	2.328	1.50686	1.500	3.705		
ADD HYD	100.91	50& 7	60	.03393	82.63	2.846	1.57284	1.500	3.805		
ADD HYD	100.11	60& 8	70	.03618	88.95	3.081	1.59662	1.500	3.841		
ROUTE RESERVOIR	501.10	70	**	.03618	32.82	3.081	1.59662	1.766	1.418	AC-FT= 1.276	
FINISH											

AHYMO PROGRAM (AHYMO 97) -

- Version: 1997.02d

RUN DATE (MON/DAY/YR) = 03/08/2015

START TIME (HR:MIN:SEC) = 17:05:02

USER NO.= AHYMO-I-9702c01000R31-AH

INPUT FILE = de.txt

* ZONE 2

* 100-YEAR, 6-HR STORM (UNDER PROPOSED CONDITIONS) *

START TIME=0.0

RAINFALL TYPE=1 RAIN QUARTER=0.0 IN

RAIN ONE=2.01 IN RAIN SIX=2.35 IN

RAIN DAY=2.75 IN DT=0.03333 HR

COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.

DT = .033330 HOURS END TIME = 5.999400 HOURS

.0000	.0016	.0033	.0049	.0066	.0084	.0102
.0120	.0139	.0158	.0178	.0199	.0219	.0241
.0263	.0286	.0309	.0333	.0358	.0384	.0411
.0439	.0467	.0497	.0529	.0561	.0596	.0631
.0669	.0709	.0751	.0807	.0866	.0930	.1066
.1371	.1840	.2514	.3434	.4644	.6186	.8106
1.0449	1.2624	1.3533	1.4300	1.4982	1.5602	1.6174
1.6704	1.7200	1.7664	1.8102	1.8514	1.8904	1.9273
1.9622	1.9953	2.0268	2.0566	2.0850	2.0915	2.0976
2.1033	2.1088	2.1140	2.1191	2.1239	2.1285	2.1329
2.1373	2.1414	2.1454	2.1494	2.1531	2.1568	2.1604
2.1639	2.1673	2.1706	2.1739	2.1771	2.1802	2.1832
2.1862	2.1891	2.1919	2.1947	2.1975	2.2002	2.2028
2.2054	2.2080	2.2105	2.2130	2.2154	2.2178	2.2202
2.2225	2.2248	2.2270	2.2293	2.2315	2.2336	2.2358
2.2379	2.2399	2.2420	2.2440	2.2460	2.2480	2.2500
2.2519	2.2538	2.2557	2.2576	2.2594	2.2612	2.2631
2.2648	2.2666	2.2684	2.2701	2.2718	2.2735	2.2752
2.2769	2.2785	2.2802	2.2818	2.2834	2.2850	2.2866
2.2881	2.2897	2.2912	2.2928	2.2943	2.2958	2.2973
2.2987	2.3002	2.3017	2.3031	2.3045	2.3060	2.3074
2.3088	2.3102	2.3115	2.3129	2.3143	2.3156	2.3169
2.3183	2.3196	2.3209	2.3222	2.3235	2.3248	2.3261
2.3273	2.3286	2.3298	2.3311	2.3323	2.3335	2.3348
2.3360	2.3372	2.3384	2.3396	2.3408	2.3419	2.3431
2.3443	2.3454	2.3466	2.3477	2.3488	2.3500	

* BASIN 104

COMPUTE NM HYD

ID=1 HYD NO=104.0 AREA=0.00630 SQ MI

PER A=0.00 PER B=10.00 PER C=80.00 PER D=10.00

TP=0.1333 HR MASS RAINFALL=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 2.4873 CFS UNIT VOLUME = .9949 B = 526.28 P60 = 2.0100
AREA = .000630 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .110184HR TP = .133300HR K/TP RATIO = .826586 SHAPE CONSTANT, N = 4.318134
UNIT PEAK = 15.987 CFS UNIT VOLUME = .9995 B = 375.85 P60 = 2.0100
AREA = .005670 SQ MI IA = .36667 INCHES INF = .87667 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* BASIN 105

COMPUTE NM HYD

ID=2 HYD NO=105.0 AREA=0.00508 SQ MI

PER A=0.00 PER B=10.00 PER C=60.00 PER D=30.00

TP=0.1333 HR MASS RAINFALL=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 6.0168 CFS UNIT VOLUME = .9976 B = 526.28 P60 = 2.0100
AREA = .001524 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .110966HR TP = .133300HR K/TP RATIO = .832455 SHAPE CONSTANT, N = 4.284601
UNIT PEAK = 9.9696 CFS UNIT VOLUME = .9990 B = 373.72 P60 = 2.0100
AREA = .003556 SQ MI IA = .37143 INCHES INF = .89000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* BASIN 106B

COMPUTE NM HYD

ID=3 HYD NO=106.0 AREA=0.00389 SQ MI

PER A=0.00 PER B=10.40 PER C=79.60 PER D=10.00
TP=0.1333 HR MASS RAINFALL=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 1.5358 CFS UNIT VOLUME = .9922 B = 526.28 P60 = 2.0100
AREA = .000389 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .110293HR TP = .133300HR K/TP RATIO = .827408 SHAPE CONSTANT, N = 4.313397
UNIT PEAK = 9.8635 CFS UNIT VOLUME = .9990 B = 375.55 P60 = 2.0100
AREA = .003501 SQ MI IA = .36733 INCHES INF = .87853 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* BASIN 107

COMPUTE NM HYD ID=4 HYD NO=107.0 AREA=0.00395 SQ MI
PER A=0.00 PER B=10.20 PER C=59.8 PER D=30.00
TP=0.1333 HR MASS RAINFALL=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 4.6784 CFS UNIT VOLUME = .9969 B = 526.28 P60 = 2.0100
AREA = .001185 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .111037HR TP = .133300HR K/TP RATIO = .832983 SHAPE CONSTANT, N = 4.281607
UNIT PEAK = 7.7480 CFS UNIT VOLUME = .9986 B = 373.53 P60 = 2.0100
AREA = .002765 SQ MI IA = .37186 INCHES INF = .89120 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* LOT 7

COMPUTE NM HYD ID=5 HYD NO=100.7 AREA=0.00335 SQ MI
PER A=9.70 PER B=0.00 PER C=0.30 PER D=90.00
TP=0.1333 HR MASS RAINFALL=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 11.903 CFS UNIT VOLUME = .9984 B = 526.28 P60 = 2.0100
AREA = .003015 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .158573HR TP = .133300HR K/TP RATIO = 1.189596 SHAPE CONSTANT, N = 2.985007
UNIT PEAK = .70518 CFS UNIT VOLUME = .9791 B = 280.60 P60 = 2.0100
AREA = .000335 SQ MI IA = .64100 INCHES INF = 1.64480 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* LOT 8

COMPUTE NM HYD ID=6 HYD NO=100.8 AREA=0.00640 SQ MI
PER A=9.50 PER B=0.00 PER C=0.50 PER D=90.00
TP=0.1333 HR MASS RAINFALL=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 22.741 CFS UNIT VOLUME = .9988 B = 526.28 P60 = 2.0100
AREA = .005760 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .157519HR TP = .133300HR K/TP RATIO = 1.181688 SHAPE CONSTANT, N = 3.003448
UNIT PEAK = 1.3544 CFS UNIT VOLUME = .9890 B = 282.10 P60 = 2.0100
AREA = .000640 SQ MI IA = .63500 INCHES INF = 1.62800 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* LOT 9

COMPUTE NM HYD ID=7 HYD NO=100.9 AREA=0.00496 SQ MI
PER A=9.70 PER B=0.00 PER C=0.30 PER D=90.00
TP=0.1333 HR MASS RAINFALL=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 17.624 CFS UNIT VOLUME = .9988 B = 526.28 P60 = 2.0100
AREA = .004464 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .158573HR TP = .133300HR K/TP RATIO = 1.189596 SHAPE CONSTANT, N = 2.985007
UNIT PEAK = 1.0441 CFS UNIT VOLUME = .9862 B = 280.60 P60 = 2.0100
AREA = .000496 SQ MI IA = .64100 INCHES INF = 1.64480 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

* LOT 10

COMPUTE NM HYD ID=8 HYD NO=100.10 AREA=0.00225 SQ MI
PER A=10.10 PER B=0.00 PER C=0.00 PER D=89.90
TP=0.1333 HR MASS RAINFALL=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 7.9859 CFS UNIT VOLUME = .9981 B = 526.28 P60 = 2.0100
AREA = .002023 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .160154HR TP = .133300HR K/TP RATIO = 1.201459 SHAPE CONSTANT, N = 2.957910
UNIT PEAK = .47457 CFS UNIT VOLUME = .9696 B = 278.37 P60 = 2.0100
AREA = .000227 SQ MI IA = .65000 INCHES INF = 1.67000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

*

* ADD BASINS 104 & 105

ADD HYD ID=10 HYD NO=104.10 ID=1 ID=2

*

* ADD BASINS 106B & ID=10

ADD HYD ID=20 HYD NO=106.10 ID=10 ID=3

*

* ADD BASINS 107 & ID=20

ADD HYD ID=30 HYD NO=107.10 ID=20 ID=4

*

* ADD LOT 7 & ID=30

ADD HYD ID=40 HYD NO=100.71 ID=30 ID=5

*

* ADD LOT 8 & ID=40

ADD HYD ID=50 HYD NO=100.81 ID=40 ID=6

*

* ADD LOT 9 & ID=50

ADD HYD ID=60 HYD NO=100.91 ID=50 ID=7

*

* ADD LOT 10 & ID=60

ADD HYD ID=70 HYD NO=100.11 ID=60 ID=8

*

ROUTE RESERVOIR ID=100 HYD NO=501.1 INFLOW ID=70 CODE=24
OUTFLOW(CFS) STORAGE(AC-FT) ELEVATION(FT)
0.00 0.00000 4998.50
10.69 0.31315 5000.00
23.91 0.65911 5002.00
28.29 0.87766 5003.00
32.07 1.13910 5004.00
35.46 1.75644 5005.00
38.55 3.07605 5006.00

* * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
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.00	.00	4998.50	.000	.00
.80	.00	4998.50	.000	.00
1.60	63.50	5003.87	1.105	31.58
2.40	3.37	5001.24	.528	18.91
3.20	.58	4998.89	.082	2.79
4.00	.34	4998.59	.018	.63
4.80	.33	4998.55	.010	.35
5.60	.37	4998.55	.010	.35
6.40	.03	4998.53	.006	.21
7.20	.00	4998.50	.001	.02
8.00	.00	4998.50	.000	.00

PEAK DISCHARGE = 32.824 CFS - PEAK OCCURS AT HOUR 1.77

MAXIMUM WATER SURFACE ELEVATION = 5004.222

MAXIMUM STORAGE = 1.2764 AC-FT INCREMENTAL TIME= .033330HRS

FINISH

NORMAL PROGRAM FINISH

END TIME (HR:MIN:SEC) = 17:05:02