CITY OF ALBUQUERQUE

October 5, 2015

Dennis Lorenz, P.E.
Lorenz Design & Consulting
2501 Rio Grande Blvd. NW Suite A
Albuquerque, New Mexico 87107

RE: **Anthea – 4th and Granite NW**
330 Granite NW
Request Permanent C.O. - Accepted
Engineers Stamp Date 9/12/14 (J14D171)
Certification Dated: 8/28/15

Dear Mr. Lorenz,

Based on the Certification received 8/31/2015, the site is acceptable for permanent release of Certificate of Occupancy by Hydrology.

If you have any questions please contact me at 924-3985 or Totten Elliott at 924-3982.

Sincerely,

Shahab Biazar, P.E.
City Engineer
Planning and Development Services

TE/SB
C: File

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 04/2009)

PROJECT TITLE: ANTHEA – 4th at GRANITE NW ZONE MAP: J-14/D171
DRB#: 14-DRB-70196 EPC#: NA WORK ORDER#: NA

LEGAL DESCRIPTION: LOT 5A, BLOCK C, DURNA & ALEXANDER ADDN and
LOT 2, BLOCK C, HOMESTEAD & GARDENSPOT ADDN
CITY ADDRESS: 330 GRANITE NW

ENGINEERING FIRM: LORENZ DESIGN & CONSULTING CONTACT: DENNIS LORENZ
ADDRESS: 2501 RIO GRANDE BLVD. NW SUITE A PHONE: 888-6088
CITY, STATE: ALBUQUERQUE, NEW MEXICO ZIP CODE: 87104

OWNER: CONSTRUCT SOUTHWEST CONTACT: BILL SMITH
ADDRESS: 333 RIO RANCHO BLVD NE PHONE: 891-3695
CITY, STATE: RIO RANCHO, NEW MEXICO ZIP CODE: 87123

ARCHITECT: RICK BENNETT ARCHITECTS CONTACT: R. BENNETT
ADDRESS: 1104 PARK AVENUE SW PHONE: 242-1859
CITY, STATE: ALBUQUERQUE, NEW MEXICO ZIP CODE: 87103

SURVEYOR: FEIRRO & COMPANY CONTACT: R. FIERRO
ADDRESS: 2929 COORS NW PHONE: 352-8930
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87120

CONTRACTOR: CONSTRUCT SOUTHWEST CONTACT: BILL SMITH
ADDRESS: 333 RIO RANCHO BLVD NE PHONE: 891-3695
CITY, STATE: RIO RANCHO, NEW MEXICO ZIP CODE: 87123

TYPE OF SUBMITTAL:

_____ DRAINAGE REPORT
_____ DRAINAGE PLAN 1st SUBMITTAL
_____ DRAINAGE PLAN RESUBMITTAL
_____ CONCEPTUAL G & D PLAN
_____ GRADING PLAN
_____ EROSION CONTROL PLAN
XX ENGINEER'S CERT (HYDROLOGY)
_____ CLOMR/LOMR
_____ TRAFFIC CIRCULATION LAYOUT
_____ ENGINEER'S CERT (TCL)
_____ ENGINEER'S CERT (DRB SITE PLAN)
_____ OTHER (SPECIFY)

CHECK TYPE OF APPROVAL 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
_____ FOUNDATION PERMIT APPROVAL
_____ BUILDING PERMIT APPROVAL
_____ CERTIFICATE OF OCCUPANCY (PERM)
XX CERTIFICATE OF OCCUPANCY (TEMP)
_____ GRADING PERMIT APPROVAL
_____ PAVING PERMIT APPROVAL
_____ WORK ORDER APPROVAL
_____ GRADING CERTIFICATION
_____ OTHER (SPECIFY) SO-19

WAS A PRE-DESIGN CONFERENCE ATTENDED:

_____ YES
_____ NO
_____ COPY PROVIDED

DATE SUBMITTED: 8-28-2015

RECEIVED
AUG 31 2015
LAND DEVELOPMENT SECTION

RECEIVED
AUG 26 2015
LAND DEVELOPMENT SECTION

BY: DENNIS A. LORENZ

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.

CITY OF ALBUQUERQUE

September 9, 2015

Dennis Lorenz, P.E.
Lorenz Design & Consulting
2501 Rio Grande Blvd. NW Suite A
Albuquerque, New Mexico 87107

RE: **Anthea – 4th and Granite NW**
330 Granite NW
Request 30 Day Temporary C.O. - Accepted
Engineers Stamp Date 9/12/14 (J14D171)
Certification Dated: 8/28/15

Dear Mr. Lorenz,

Based on the Certification received 8/31/2015, the site is acceptable for 30 Day Temporary release of Certificate of Occupancy by Hydrology.

If you have any questions please contact me at 924-3985 or Totten Elliott at 924-3982.

Sincerely,

Rite Harmon, P.E.
Senior Engineer, Planning Department
Planning Department

TE/CC
C: File

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 04/2009)

PROJECT TITLE: ANTHEA – 4th at GRANITE NW ZONE MAP: J-14/D171
DRB#: 14-DRB-70196 EPC#: NA WORK ORDER#: NA

LEGAL DESCRIPTION: LOT 5A, BLOCK C, DURNA & ALEXANDER ADDN and
LOT 2, BLOCK C, HOMESTEAD & GARDENSPOT ADDN
CITY ADDRESS: 330 GRANITE NW

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ADDRESS: 2501 RIO GRANDE BLVD. NW SUITE A PHONE: 888-6088
CITY, STATE: ALBUQUERQUE, NEW MEXICO ZIP CODE: 87104

DENNIS@LORENZNM.COM

OWNER: CONSTRUCT SOUTHWEST CONTACT: BILL SMITH
ADDRESS: 333 RIO RANCHO BLVD NE PHONE: 891-3695
CITY, STATE: RIO RANCHO, NEW MEXICO ZIP CODE: 87123

ARCHITECT: RICK BENNETT ARCHITECTS CONTACT: R. BENNETT
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_____ CLOMR/LOMR
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_____ OTHER (SPECIFY)

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_____ PAVING PERMIT APPROVAL
_____ WORK ORDER APPROVAL
_____ GRADING CERTIFICATION
_____ OTHER (SPECIFY) SO-19

WAS A PRE-DESIGN CONFERENCE ATTENDED:
_____ YES
_____ NO
_____ COPY PROVIDED

DATE SUBMITTED: 8-28-2015 BY: DENNIS A. LORENZ

RECEIVED
AUG 31 2015
LAND DEVELOPMENT SECTION

RECEIVED
AUG 26 2015
LAND DEVELOPMENT SECTION

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:

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CITY OF ALBUQUERQUE

September 15, 2014

Mr. Dennis Lorenz
Lorenz Design & Consulting
Suite A
2501 Rio Grande Blvd NW
Albuquerque, NM 87104

Re: Anthea – 4th at Granite
Grading and Drainage Plan
Engineer's Stamp Date 9-12-14 (J14D171)

Dear Mr. Lorenz,

Based upon the information provided in your submittal received 9-12-14, the above referenced plan is approved for Building Permit and SO#19 Permit. This permit is required for construction within City Right of Way. A copy of this approval letter must be on hand when applying for the Excavation 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 924-3994.

Sincerely,

Amy L. D. Niese, P.E.
Senior Engineer, Hydrology
Planning Department

C: e-mail
JASON RODRIGUEZ
ANTOINETTE BALDONADO

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

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 04/2009)

PROJECT TITLE: ANTHEA – 4th at GRANITE NW ZONE MAP: J-14/D171
DRB#: 14-DRB-70196 EPC#: NA WORK ORDER#: NA

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LOT 2, BLOCK C, HOMESTEAD & GARDENSPOT ADDN
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ENGINEERING FIRM: LORENZ DESIGN & CONSULTING CONTACT: DENNIS LORENZ
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CITY, STATE: ALBUQUERQUE, NEW MEXICO ZIP CODE: 87103

SURVEYOR: THE SURVEY OFFICE CONTACT: G. MAPLES
ADDRESS: 333 LOMAS NE PHONE: 998-0303
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87102

CONTRACTOR: CONSTRUCT SOUTHWEST CONTACT: BILL SMITH
ADDRESS: 333 RIO RANCHO BLVD NE PHONE: 891-3695
CITY, STATE: RIO RANCHO, NEW MEXICO ZIP CODE: 87123

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_____ GRADING CERTIFICATION
__X__ OTHER (SPECIFY) SO#19

RECEIVED
SEP 12 2014
LAND DEVELOPMENT SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED:
_____ YES
_____ NO
_____ COPY PROVIDED

DATE SUBMITTED: 9-12-2014 BY: DENNIS A. LORENZ

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:

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A_D = .72 DETENTION

Date of Plants - Elec sub

INV S side

KF - inlet

LORENZ
DESIGN & CONSULTING, LLC
Civil Engineering I Construction Management

September 12, 2014

Amy L. Niese, PE
Senior Engineer - Hydrology Section
Development and Building Services
City of Albuquerque
Plaza Del Sol
Albuquerque, New Mexico 87102

SUBJECT: ANTHEA – 4TH AT GRANITE (J14/D171)
14 DRB 70196
PROJECT 1010103

Dear Amy:

Submitted herewith for approval are two (2) copies of the revised Grading and Drainage Plan and Supplemental Calculations. The plan has been revised to address the comments listed in your letter dated September 11, 2014. Specifically, the following revisions have been made to the Plan:

1. First flush calculations are revised documenting the required and proposed ponding volumes. The first flush ponding areas are limited to those landscaped areas that receive runoff from the paved parking lot. As shown by the calculations, we fall short by approximately 300 cubic feet of volume, however we providing ponding to the maximum extent possible given the site conditions.
2. The storm drain from the building roof drainage system has been re-graded to provide additional cover.
3. Other minor corrections were made per our telephone conversation.

Thank you for your assistance. If you have any questions, please call me.

Sincerely,

LORENZ DESIGN & CONSULTING, LLC

Dennis A. Lorenz, PE

P\14-009\AN09122014

RECEIVED
SEP 12 2014
LAND DEVELOPMENT SECTION

2501 Rio Grande Boulevard NW, Suite A | Albuquerque, New Mexico 87104 | [505] 888-6088 P | [505] 242-6655 F

SUPPLEMENTAL CALCULATIONS
ANTHEA
FOURTH @ GRANITE

ALBUQUERQUE, NEW MEXICO

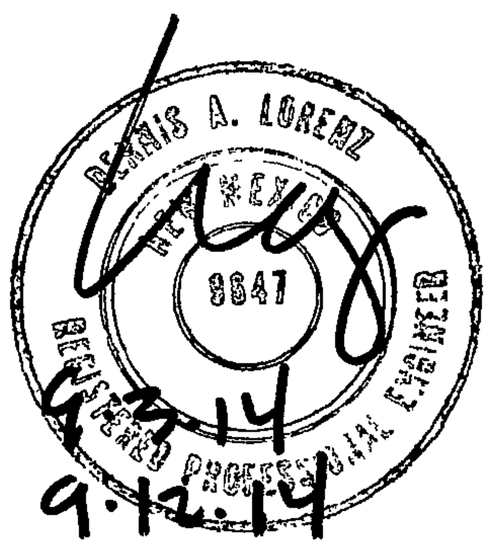
Prepared For:

Construct Southwest, LLC
333 Rio Rancho Drive Suite 104
Rio Rancho, New Mexico 87124

Prepared by:

LORENZ
DESIGN & CONSULTING, LLC
Civil Engineering I Construction Management

September 2014



9.12.14

LORENZ
DESIGN & CONSULTING, LLC
Civil Engineering | Construction Management

PROJECT ANTHEA
DATE 9.3.14 PAGE 1
⚠ REV 9.12.14

---

(1) FIRST FLUSH

90TH PERCENTILE DEPTH = 0.44"
LESS INITIAL ABSTR = 0.10"
RETAINED DEPTH = 0.34"

POND REQUIREMENT = $A_D \times 0.34"$
= 889 CF

⚠ VOLUME PROVIDED:
· SEE ATTACHED EXHIBIT

AREA 1 = 315 SF × 0.65' = 204.75 CF
2 = 540 SF × 0.33' = 178.20
3 = 627 SF × 0.33' = 206.91

TOTAL = 589.86 CF

⇒ 300 CF SHORTFALL, HOWEVER, PLAN MEETS ORDINANCE TO MAXIMUM EXTENT TECHNICALLY FEASIBLE.

(2) ROOF STORM DRAIN

TOTAL ROOF AREA = 11382 SF
1/2 A = 5691 SF
$q_5 = 4.10 \frac{CFS}{AC}$
Q_{100} = 1.23 CFS
$Q_{100/2}$ = 0.62 CFS

AVENUE N.W.
' R.O.W.

6" C.I. WATERLINE

8" PVC SAS

12" VITRIFIED CLAY PIPE SAS

FL=57.63

FL=57.55

TC=58.15
FL=57.48

DRIVE CUT

DRIVEPAD

DR.PD.

ASPHALT

284.34'

RAMP

INV.=56.45

MARKED GAS LINE

8" SD

INV.=55.50

TG=57.00
INV.=54.05

10" SD

DETENTION
POND
WSE=57.70
VOL=2280 CF

AREA 3

AREA 2

AREA 1

BASIN
A

110.00'

OVERHEAD UTIL. LINES

THIRD STREET N.W.

S09°07'38"W

N81°11'44"W

6" PVC WATER LINE

FIRST FLUSH
POND AREAS

(2) CONT.

⚠1 USE 8 INCH PVC SD

BY MANNING:

n = 0.013

S = 1.58% (PER PLAN)

⇒ Q_{MAX} = 1.52 CFS > Q_{100}

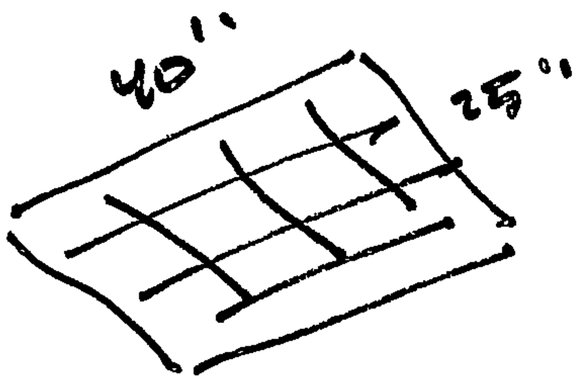
(3) STORM INLET

TYPE 'D' SINGLE INLET DRAINS BASIN 'A'.

Q_{100} = 3.62 CFS

- CHECK CAPACITY

(4) WEIR



$Q = CLH^{3/2}$

C = 2.5

L = 130" = 10.83'

Q = 3.62 CFS

- CHECK FOR H.

$H = [Q/CL]^{2/3} = 0.09'$ ✓

(3) (5) CHECK MY ORIFICE

$Q = CA\sqrt{2gh}$

C = 0.6

A = OPEN AREA
= 4.31 SF

LET H = 0.2'

$\Rightarrow Q = 9.28$ CFS ✓

(4) SD FROM DI TO PUBLIC DI

SITE RISCHG LIMITED TO 2.75 CFS/AC

$Q_{ALLOW} = 0.836 \times 2.75 = 2.30$ CFS

LESS Q_{MIN} (B) $= 0.14$

Q_{OUT} PRIVATE D.I. $= 2.22$ CFS

$\Rightarrow$ SIZE DI OUTLET TO LIMIT

DISCHG TO 2.22 CFS MAX

(A) CHECK PIPE FLOW

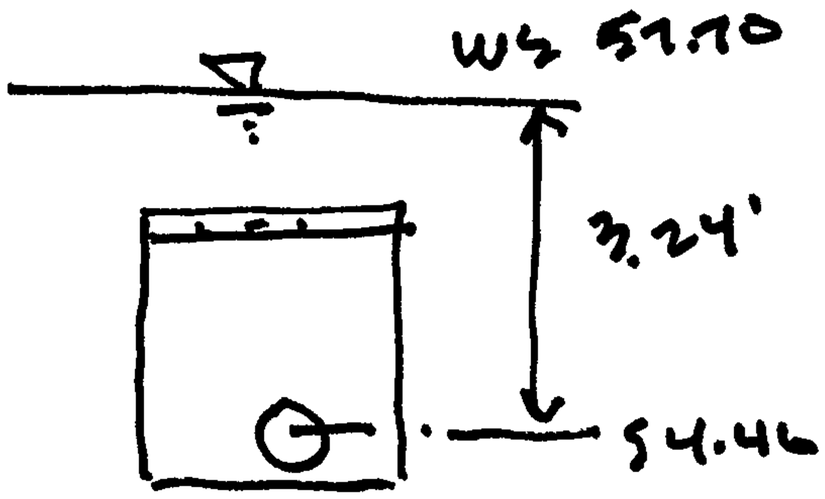
BY MANNING'S

$Q = \frac{1.49}{n} A R^{2/3} S^{1/2}$

n = 0.013 - PVC
A = 0.55 SF (10")
R =
S = 1.00% (PLAN)

$\Rightarrow Q_{OUT} = 2.19$ CFS ✓

(4) (B) CHECK INLET CONTROL



BY ORIFACE: $Q = CA\sqrt{2gh}$

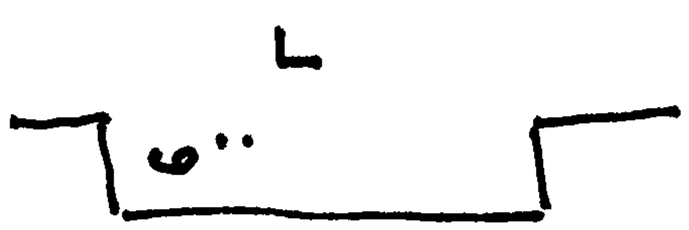
$C = 0.6$
$A = 0.57$ SF (10")
$h = 3.24'$

$\Rightarrow Q = \underline{4.8 \text{ CFS}} > Q_{allow}$ * SYSTEM LIMITED TO 2.19 CFS BY PIPE FLOW

(5) SPILLWAY

PROVIDE OVERFLOW SPILLWAY FOR Q100 SHOULD OUTLET FAIL

Q_{100} BASIN (A) = 3.62 CFS



$Q = CLH^{3/2}$
$H = 0.5'$ $C = 2.5$
$\underline{L = 4.25'}$

(6) POND VOLUME

DETENTION POND RESULTS FROM LIMITING SITE DISCHG TO 2.75 CFS/AC

RUNOFF WILL POND OVER D.I. IN PARKING LOT TO DEPTH OF 0.7 FT

SPILLWAY ELEV @ 57.70
DI GRATE @ 57.00

POND VOLUME :

57.70	6512	SF
57.00	0	SF

VOL = 2280 CF

⇒ SEE ATMO FOR POND ROUTING

Q_{OUT} = 2.14 CFS
WSE = 57.51

```
    AHYMO PROGRAM (AHYMO-S4)                        - Version: S4.01a - Rel: 01a
         RUN DATE (MON/DAY/YR) = 09/08/2014
         START TIME (HR:MIN:SEC) = 14:21:30     USER NO.= AHYMO_Temp_User:20122010
         INPUT FILE = P:\14-009 - 4th & Granite\Drainage\ANTHEA.DAT

**************************************************************************************
*                                  ANTHEA
*                              PROJECT HYDROLOGY
**************************************************************************************
START                 TIME=0.0  PUNCH CODE=0
RAINFALL              TYPE=1  RAIN QUARTER=0.0  RAIN ONE=2.01
                      RAIN SIX=2.35  RAIN DAY=2.75  DT=0.03333 HRS

                   6-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONVECTIVE AREAS (NM & AZ) - D1
                   DT =   0.033330 HOURS       END TIME =     5.999400 HOURS
                     0.0000  0.0015  0.0030  0.0046  0.0063  0.0080  0.0099
                     0.0117  0.0138  0.0159  0.0180  0.0226  0.0272  0.0321
                     0.0372  0.0424  0.0480  0.0537  0.0595  0.0654  0.0713
                     0.0776  0.0838  0.0904  0.0974  0.1044  0.1124  0.1204
                     0.1340  0.1534  0.1727  0.1987  0.2246  0.2558  0.2921
                     0.3284  0.3829  0.4374  0.5117  0.6058  0.7000  0.9502
                     1.2011  1.3965  1.5355  1.6746  1.7448  1.8147  1.8717
                     1.9157  1.9597  1.9903  2.0208  2.0473  2.0696  2.0919
                     2.1089  2.1258  2.1380  2.1455  2.1529  2.1595  2.1661
                     2.1721  2.1775  2.1829  2.1879  2.1928  2.1977  2.2024
                     2.2072  2.2095  2.2118  2.2141  2.2163  2.2185  2.2206
                     2.2227  2.2247  2.2267  2.2287  2.2307  2.2326  2.2345
                     2.2363  2.2382  2.2399  2.2417  2.2435  2.2452  2.2469
                     2.2485  2.2502  2.2518  2.2534  2.2550  2.2565  2.2581
                     2.2596  2.2610  2.2625  2.2640  2.2654  2.2668  2.2682
                     2.2697  2.2710  2.2724  2.2738  2.2751  2.2765  2.2778
                     2.2791  2.2804  2.2817  2.2830  2.2843  2.2856  2.2868
                     2.2881  2.2893  2.2905  2.2917  2.2929  2.2941  2.2953
                     2.2965  2.2977  2.2988  2.3000  2.3012  2.3023  2.3034
                     2.3045  2.3057  2.3068  2.3079  2.3090  2.3100  2.3111
                     2.3122  2.3132  2.3143  2.3153  2.3164  2.3174  2.3184
                     2.3195  2.3205  2.3215  2.3225  2.3235  2.3245  2.3255
                     2.3264  2.3274  2.3284  2.3293  2.3303  2.3312  2.3322
                     2.3331  2.3341  2.3350  2.3359  2.3368  2.3377  2.3386
                     2.3395  2.3404  2.3413  2.3422  2.3431  2.3440  2.3448
                     2.3457  2.3466  2.3474  2.3483  2.3491  2.3500

* DEVELOPED SITE - 0.86 ACRES
COMPUTE NM HYD        ID=1  HYD NO=DEV-SITE  DA=0.001344 SQ MI
                      PER A=0 PER B=6 PER C=9 PER D=85
                      TP=0.1333 HR  MASS RAIN=-1
```

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 4.5103 CFS UNIT VOLUME = 0.9969 B = 526.28 P60 = 2.0100
AREA = 0.001142 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033330

K = 0.117303HR TP = 0.133300HR K/TP RATIO = 0.879990 SHAPE CONSTANT, N = 4.033584
UNIT PEAK = 0.54053 CFS UNIT VOLUME = 0.9759 B = 357.40 P60 = 2.0100
AREA = 0.000202 SQ MI IA = 0.41000 INCHES INF = 0.99800 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033330

PRINT HYD ID=1 CODE=20

HYDROGRAPH FROM AREA DEV-SITE

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.333	1.1	2.666	0.0	4.000	0.0
5.333	0.0						
0.667	0.0	2.000	0.6	3.333	0.0	4.666	0.0
5.999	0.0						

RUNOFF VOLUME = 1.95278 INCHES = 0.1400 ACRE-FEET
PEAK DISCHARGE RATE = 3.96 CFS AT 1.500 HOURS BASIN AREA = 0.0013 SQ. MI.

* DEVELOPED BASIN A - 0.82 ACRES
COMPUTE NM HYD ID=2 HYD NO=DEV-SITE DA=0.001281 SQ MI
PER A=0 PER B=6 PER C=9 PER D=85
TP=0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 4.2988 CFS UNIT VOLUME = 0.9965 B = 526.28 P60 = 2.0100
AREA = 0.001089 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033330

K = 0.117303HR TP = 0.133300HR K/TP RATIO = 0.879990 SHAPE CONSTANT, N = 4.033584
UNIT PEAK = 0.51519 CFS UNIT VOLUME = 0.9734 B = 357.40 P60 = 2.0100
AREA = 0.000192 SQ MI IA = 0.41000 INCHES INF = 0.99800 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033330

PRINT HYD ID=2 CODE=20

HYDROGRAPH FROM AREA DEV-SITE

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.333	1.1	2.666	0.0	4.000	0.0
0.667	0.0	2.000	0.5	3.333	0.0	4.666	0.0
5.333	0.0						
5.999	0.0						

RUNOFF VOLUME = 1.95278 INCHES = 0.1334 ACRE-FEET
PEAK DISCHARGE RATE = 3.78 CFS AT 1.500 HOURS BASIN AREA = 0.0013 SQ. MI.

* DEVELOPED BASIN B - 0.04 ACRES
COMPUTE NM HYD ID=3 HYD NO=DEV-SITE DA=0.000063 SQ MI
PER A=0 PER B=6 PER C=9 PER D=85
TP=0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 0.21142 CFS UNIT VOLUME = 0.9472 B = 526.28 P60 = 2.0100
AREA = 0.000054 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033330

K = 0.117303HR TP = 0.133300HR K/TP RATIO = 0.879990 SHAPE CONSTANT, N = 4.033584
UNIT PEAK = 0.25337E-01CFS UNIT VOLUME = 0.8775 B = 357.40 P60 = 2.0100
AREA = 0.000009 SQ MI IA = 0.41000 INCHES INF = 0.99800 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033330

PRINT HYD ID=3 CODE=20

HYDROGRAPH FROM AREA DEV-SITE

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	0.667	0.0	1.333	0.1	2.000	0.0

RUNOFF VOLUME = 1.95278 INCHES = 0.0066 ACRE-FEET
PEAK DISCHARGE RATE = 0.20 CFS AT 1.500 HOURS BASIN AREA = 0.0001 SQ. MI.

****
* ROUTE DEVELOPED SITE THROUGH DETENTION POND A TO EXISTING INLET

```
* ALLOWABLE DISCHARGE IS 2.75 CFS/AC OR 2.22 CFS FOR BASIN A (10" PIPE)
*****************************************************************************
ROUTE RESERVOIR     ID=4 HYD NO=POND-A-OUT  INFLOW ID=2  CODE=10
                    OUT (CFS)   STORAGE (AC-FT)    ELEV (FT)
                    0           0                    57.00
                    2.10        0.02617              57.35
                    2.19        0.05234              57.70

  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *

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

     0.00       0.00      57.00       0.000       0.00
     0.33       0.00      57.00       0.000       0.00
     0.67       0.00      57.00       0.000       0.00
     1.00       0.13      57.01       0.000       0.04
     1.33       1.06      57.09       0.007       0.57
     1.67       2.15      57.51       0.038       2.14
     2.00       0.54      57.21       0.016       1.27
     2.33       0.15      57.06       0.004       0.34
     2.67       0.03      57.01       0.001       0.09
     3.00       0.01      57.00       0.000       0.02
     3.33       0.01      57.00       0.000       0.01
     3.67       0.01      57.00       0.000       0.01
     4.00       0.01      57.00       0.000       0.01
     4.33       0.01      57.00       0.000       0.01
     4.67       0.01      57.00       0.000       0.01
     5.00       0.01      57.00       0.000       0.01
     5.33       0.01      57.00       0.000       0.01
     5.67       0.01      57.00       0.000       0.01
     6.00       0.02      57.00       0.000       0.02
     6.33       0.00      57.00       0.000       0.01
  PEAK DISCHARGE =          2.142 CFS - PEAK OCCURS AT HOUR    1.67
  MAXIMUM WATER SURFACE ELEVATION =        57.514
  MAXIMUM STORAGE =          0.0384 AC-FT      INCREMENTAL TIME=    0.033330HRS

 PRINT HYD            ID=4 CODE=20

                                HYDROGRAPH FROM AREA POND-A-OUT

     TIME     FLOW      TIME     FLOW      TIME     FLOW      TIME     FLOW
     HRS      CFS       HRS      CFS       HRS      CFS       HRS      CFS
    0.000      0.0     1.333      0.6     2.666      0.1     4.000      0.0
    0.667      0.0     2.000      1.3     3.333      0.0     4.666      0.0
    5.333      0.0
```

5.999 0.0

RUNOFF VOLUME = 1.95254 INCHES = 0.1334 ACRE-FEET
PEAK DISCHARGE RATE = 2.14 CFS AT 1.667 HOURS BASIN AREA = 0.0013 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 14:21:30

ANTHEA - J14-D171 9/10/14

FLOODZONE IN GRANITE + 3rd - AO - 1' DEPTH
BLDG PROPOSED BUT PARKING LOT?

ROOF DRAINS

I GIVE SOIL APPROVAL? - YES

Standard HC Ramp detail? A/C-2.0
WILL HAVE TO GET EXCAVATING + BLDG PERMIT

Identify Basin B correctly
=3.5"
Only .29' cover for 8" storm
Inv on S 1st downspout

Landscaping openings also on downhill
side - water leaves.
~~Not drawing 3" depth~~
Area counted for landscaping > slope where flow
moved to.

Have Foundation permit.

AT ELEVATIONS SHOWN. INSTALL AREA DRAIN AT LOW POINT OF DUMPSTER PAD WITH CONNECTION TO SANITARY SEWER LINE. SEE UTILITY PLAN FOR ADDITIONAL INFORMATION.

19. CONSTRUCT TAN LANDSCAPE BLOCK GRADE TRANSITION – KEYSTONE (OR SIMILAR) TO ACHIEVE MAX. 2' RETAINING TRANSITIONS. TERRACE AS SHOWN WHERE REQUIRED ALONG EAST AND SOUTH PROPERTY LINES. CONTRACTOR TO COORDINATE MATERIAL WITH ARCHITECT. SEE CG–501 FOR ADDITIONAL INFORMATION.

20. DASHED LINE REPRESENTS EXTENTS OF EXTENDED STEMWALL (GRADE OUTSIDE BLDG. > 6" BELOW F.F.). SEE ARCHITECTURAL.

21. PROVIDE 1' WIDE CURB OPENING AT FLOWLINE ELEVATION SHOWN.

S.O.19 : NOTICE TO CONTRACTORS

1	AN EXCAVATION / CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN THE CITY RIGHT–OF–WAY.
2	ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED FOR HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1986 EDITION AS REVISED THROUGH UPDATE #8.
3	TWO WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM (CALL '811') FOR LOCATION OF EXISTING UTILITIES.
4	PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
5	BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC / STREET USE.
6	MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
7	WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24–HOUR BASIS.

APPROVAL	NAME	DATE
INSPECTOR		

60

FREE DISCHARGE TO
SIDEWALK CULVERT (
AT THE NORTHWEST
EXISTING PUBLIC STO
LANE.

A PORTION OF NE RC
TOWNE CENTER LANE
ACCESS DRIVE).

ALL LANDSCAPED PAR
POSSIBLE TO CAPTURE

CALCULATIONS:

Based on Drainage
Section 22

ON-SITE CALCUI

AREA OF SITE: 406

DEVELOPED FLOWS:

		Treatm
Area A	=	0
Area B	=	203
Area C	=	406
Area D	=	345
Total Area	=	40604

On-Site Weighted Excess P
Weighte

On-Site Volume of Runoff:

On-Site Peak Discharge Rate
For Precipitation Zo 2

Q_{pA} = 1.56

Q_{pB} = 2.28

Anthem 4th + Granite T14 D17 8/18/14

→ Provide vicinity map that is legible

BLDG ABOVE FLOOD ELEV — Depth of AO ⇒ water blocks pond in parking lot WSE 57.70

→ First Flush

0.72 ACRE 43560 SF/AC .34 IN = 889 CF RETAIN

12 in/FT

Just routing through, no formal retention

Depress 9"

→ Show pond calcs - SIZE OF ACTUAL POND

~~Overflow weir detail?~~

How much flow going out SW culvert?

INV OFF

x Offsite flow coming on?

→ TYPE OF STORM PIPE + INLET 22 + 23

CALCS FOR SIZING STORM

→ 8019 or WO

2.75 CFS/AC .86 AC = 2.37 CFS MAX

DISCHARGE RESTRICTED TO 2.36 CFS

A_D = .72 Q = 2.36 PGT.

$$Q = 1.49 A R^{2/3} S^{1/2}$$

$$1.49 \frac{\pi}{4}\left(\frac{10}{12}\right)^2 \left(\frac{10/12}{4}\right)^{2/3} \sqrt{.01} \qquad 25.96$$

~~.0091~~ .011

$A = .545$

$R = .351$

$$1.49(.545)(.351)\sqrt{.01} = 2.59 \text{ cfs}$$

$.011$ > 2.36 cfs

CITY OF ALBUQUERQUE

September 11, 2014

Mr. Dennis Lorenz
Lorenz Design & Consulting
Suite A
2501 Rio Grande Blvd NW
Albuquerque, NM 87104

Re: Anthea – 4th at Granite
Grading and Drainage Plan
Engineer's Stamp Date 9-3-14 (J14D171)

Dear Mr. Lorenz,

Based upon the information provided in your submittal received September 3, 2014, the above referenced plan cannot be approved for Building Permit or SO19 until the following comments are addressed:

1. The First Flush calculations have a sum for the landscape areas that include all landscape area on site. However, drainage is not being directed into many of those areas. Revise the calculations to only include landscape areas where ponding is occurring. The inlet in the parking lot can be lowered and used for the First Flush also.
2. For the 8 inch storm drain on the northwest side of the building at 58.29, there is only 0.29 inches of cover. Provide more cover. Show an invert for the 8 inch storm drain connection on the south side of the building.

If you have any questions, you can contact me at 924-3994.

Sincerely,

Amy L. D. Niese, P.E.
Senior Engineer, Hydrology
Planning Department

C: e-mail

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

SUPPLEMENTAL CALCULATIONS
ANTHEA
FOURTH @ GRANITE

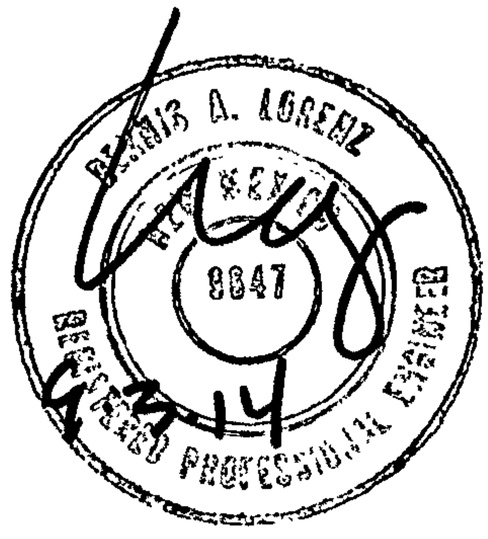
ALBUQUERQUE, NEW MEXICO

Prepared For:

Construct Southwest, LLC
333 Rio Rancho Drive Suite 104
Rio Rancho, New Mexico 87124

Prepared by:

LORENZ
DESIGN & CONSULTING, LLC
Civil Engineering I Construction Management



September 2014

LORENZ
DESIGN & CONSULTING, LLC
Civil Engineering | Construction Management

PROJECT ANTHEA
DATE 9.3.14 PAGE 1

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① FIRST FLUSH

90TH PERCENTILE DEPTH = 0.44"
LESS INITIAL ABSTR = 0.10"
RETAINED DEPTH = 0.34"

POND REQUIREMENT = A_D x 0.34"
= 889 CF

POND PROVIDED
AREA LARGE = 6098 SF 687
ALL LANDSCAPING 0.25' (3")
BELOW AVG GRADE
POND VOL = 6098 (0.25') = 1525 CF 172 CF

② ROOF STORM DRAIN

TOTAL ROOF AREA = 11382 SF
1/2 A = 5691 SF
q_5 = 4.10 CFS/AC
Q_{100} = 1.23 CFS
$Q_{100/2}$ = 0.62 CFS

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Civil Engineering I Construction Management

PROJECT ANTHEA
DATE 9.3.14 PAGE 2

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(2) CONT.

USE 8 INCH PVC SD

BY MANNING:

$n = 0.013$
$S = 1.77\%$ (PER PLAN)

$\Rightarrow Q_{MAX} = \underline{\underline{1.61}}$ CFS $> Q_{100}$ ✓

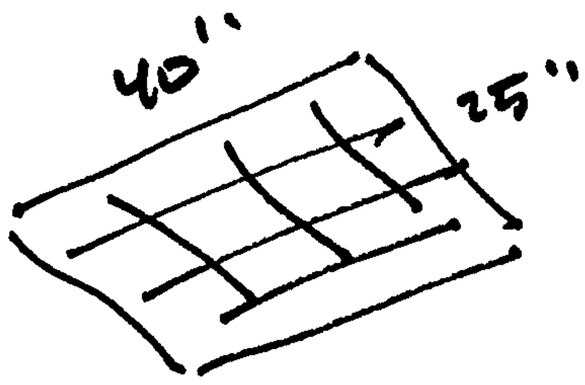
(3) STORM INLET

TYPE 'D' SINGLE INLET DRAINS BASIN 'A'.

$Q_{100} = 3.62$ CFS

- CHECK CAPACITY

(A) WEIR



$Q = CLH^{3/2}$

$C = 2.5$
$L = 130" = 10.83'$
$Q = 3.62$ CFS

- CHECK FOR H.

$H = [Q/CL]^{2/3} = \underline{\underline{0.09'}}$ ✓

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PROJECT ANTHEA
DATE 9.3.14 PAGE 3

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(3) (5) CHECK BY ORIFICE

$Q = CA\sqrt{2gh}$

C = 0.6

A = OPEN AREA
= 4.31 SF

LET H = 0.2'

$\Rightarrow Q = 9.28$ CFS ✓

(4) SD FROM D1 TO PUBLIC D1

SITE BISCHG LIMITED TO 2.75 CFS/AC

$Q_{ALLOW} = 0.86 AC \times 2.75 = 2.36$ CFS

LESS RMIN (5) = 0.14

Q OUT PRIVATE D.I. = 2.22 CFS

$\Rightarrow$ SIZE D1 OUTLET TO LIMIT
DISCHG TO 2.22 CFS MAX

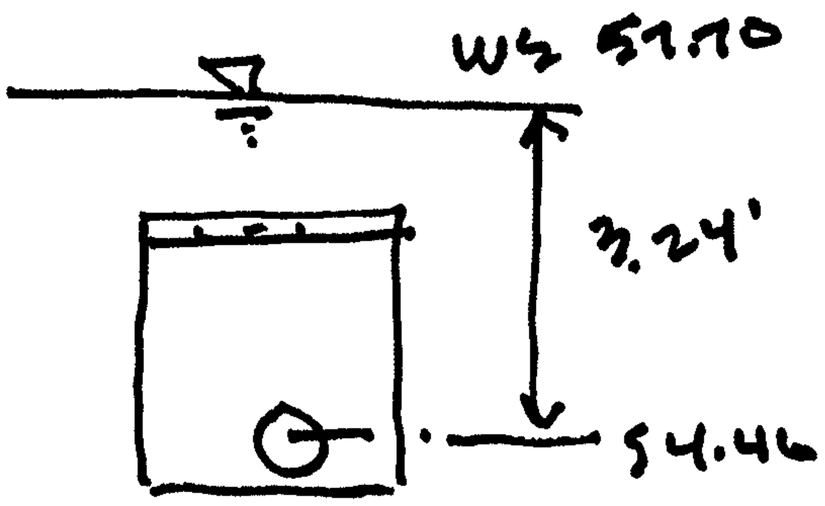
(A) CHECK PIPE FLOW
BY MANNINGS

$Q = \frac{1.49}{n} A R^{2/3} S^{1/2}$

n = 0.013 - PVC
A = 0.55 SF (10")
R =
S = 1.0% (MIN)

$\Rightarrow Q_{OUT} = 2.19$ CFS ✓ ✓

(4) (B) CHECK INLET CONTROL



BY ORIFACE: $Q = CA\sqrt{2gh}$

$C = 0.6$

$A = 0.5 \text{ SF}$ (10")

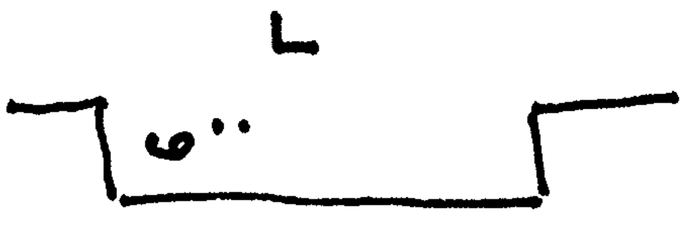
$h = 3.24'$

$\Rightarrow Q = 4.8 \text{ CFS} > Q_{allow}$ * SYSTEM LIMITED TO 2.19 CFS BY PIPE FLOW

(5) SPILLWAY

PROVIDE OVERFLOW SPILLWAY FOR Q_{100} SHOULD OUTLET FAIL

Q_{100} BASIN (A) = 3.62 CFS



$Q = CLH^{3/2}$

$H = 0.5'$ $C = 2.5$

$L = 4.25'$

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PROJECT ANTHEA
DATE 9.3.14 PAGE 5

(6) POND VOLUME

DETENTION POND RESULTS FROM
LIMITING SITE DISCHG TO 2.75 CFS/AC

RUNOFF WILL POND OVER D.I. IN
PARKING LOT TO DEPTH OF 0.7 FT

SPILLWAY ELEV @ 57.70
DI GRATE @ 57.00

POND VOLUME :

57.70	6512	SF
57.00	0	SF

VOL = 2280 CF

```
    AHYMO PROGRAM (AHYMO-S4)                    - Version: S4.01a - Rel: 01a
         RUN DATE (MON/DAY/YR) = 09/08/2014
         START TIME (HR:MIN:SEC) = 14:21:30     USER NO.= AHYMO_Temp_User:20122010
         INPUT FILE = P:\14-009 - 4th & Granite\Drainage\ANTHEA.DAT

*****************************************************************************
*                              ANTHEA
*                          PROJECT HYDROLOGY
*****************************************************************************
START                TIME=0.0  PUNCH CODE=0
RAINFALL             TYPE=1  RAIN QUARTER=0.0  RAIN ONE=2.01
                     RAIN SIX=2.35  RAIN DAY=2.75  DT=0.03333 HRS

                  6-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONVECTIVE AREAS (NM & AZ) - D1
                  DT =   0.033330 HOURS       END TIME =     5.999400 HOURS
                    0.0000  0.0015  0.0030  0.0046  0.0063  0.0080  0.0099
                    0.0117  0.0138  0.0159  0.0180  0.0226  0.0272  0.0321
                    0.0372  0.0424  0.0480  0.0537  0.0595  0.0654  0.0713
                    0.0776  0.0838  0.0904  0.0974  0.1044  0.1124  0.1204
                    0.1340  0.1534  0.1727  0.1987  0.2246  0.2558  0.2921
                    0.3284  0.3829  0.4374  0.5117  0.6058  0.7000  0.9502
                    1.2011  1.3965  1.5355  1.6746  1.7448  1.8147  1.8717
                    1.9157  1.9597  1.9903  2.0208  2.0473  2.0696  2.0919
                    2.1089  2.1258  2.1380  2.1455  2.1529  2.1595  2.1661
                    2.1721  2.1775  2.1829  2.1879  2.1928  2.1977  2.2024
                    2.2072  2.2095  2.2118  2.2141  2.2163  2.2185  2.2206
                    2.2227  2.2247  2.2267  2.2287  2.2307  2.2326  2.2345
                    2.2363  2.2382  2.2399  2.2417  2.2435  2.2452  2.2469
                    2.2485  2.2502  2.2518  2.2534  2.2550  2.2565  2.2581
                    2.2596  2.2610  2.2625  2.2640  2.2654  2.2668  2.2682
                    2.2697  2.2710  2.2724  2.2738  2.2751  2.2765  2.2778
                    2.2791  2.2804  2.2817  2.2830  2.2843  2.2856  2.2868
                    2.2881  2.2893  2.2905  2.2917  2.2929  2.2941  2.2953
                    2.2965  2.2977  2.2988  2.3000  2.3012  2.3023  2.3034
                    2.3045  2.3057  2.3068  2.3079  2.3090  2.3100  2.3111
                    2.3122  2.3132  2.3143  2.3153  2.3164  2.3174  2.3184
                    2.3195  2.3205  2.3215  2.3225  2.3235  2.3245  2.3255
                    2.3264  2.3274  2.3284  2.3293  2.3303  2.3312  2.3322
                    2.3331  2.3341  2.3350  2.3359  2.3368  2.3377  2.3386
                    2.3395  2.3404  2.3413  2.3422  2.3431  2.3440  2.3448
                    2.3457  2.3466  2.3474  2.3483  2.3491  2.3500
```



```
* DEVELOPED SITE - 0.86 ACRES
COMPUTE NM HYD       ID=1  HYD NO=DEV-SITE  DA=0.001344 SQ MI
                     PER A=0 PER B=6 PER C=9 PER D=85
                     TP=0.1333 HR  MASS RAIN=-1
```

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 4.5103 CFS UNIT VOLUME = 0.9969 B = 526.28 P60 = 2.0100
AREA = 0.001142 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033330

K = 0.117303HR TP = 0.133300HR K/TP RATIO = 0.879990 SHAPE CONSTANT, N = 4.033584
UNIT PEAK = 0.54053 CFS UNIT VOLUME = 0.9759 B = 357.40 P60 = 2.0100
AREA = 0.000202 SQ MI IA = 0.41000 INCHES INF = 0.99800 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033330

PRINT HYD ID=1 CODE=20

HYDROGRAPH FROM AREA DEV-SITE

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.333	1.1	2.666	0.0	4.000	0.0
0.667	0.0	2.000	0.6	3.333	0.0	4.666	0.0
5.333	0.0						
5.999	0.0						

RUNOFF VOLUME = 1.95278 INCHES = 0.1400 ACRE-FEET
PEAK DISCHARGE RATE = 3.96 CFS AT 1.500 HOURS BASIN AREA = 0.0013 SQ. MI.

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COMPUTE NM HYD ID=2 HYD NO=DEV-SITE DA=0.001281 SQ MI
PER A=0 PER B=6 PER C=9 PER D=85
TP=0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
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UNIT PEAK = 0.51519 CFS UNIT VOLUME = 0.9734 B = 357.40 P60 = 2.0100
AREA = 0.000192 SQ MI IA = 0.41000 INCHES INF = 0.99800 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033330

PRINT HYD ID=2 CODE=20

HYDROGRAPH FROM AREA DEV-SITE

TIME HRS	TIME FLOW HRS CFS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
	0.000	0.0	1.333	1.1	2.666	0.0	4.000	0.0
5.333	0.0							
	0.667	0.0	2.000	0.5	3.333	0.0	4.666	0.0
5.999	0.0							

RUNOFF VOLUME = 1.95278 INCHES = 0.1334 ACRE-FEET
PEAK DISCHARGE RATE = 3.78 CFS AT 1.500 HOURS BASIN AREA = 0.0013 SQ. MI.

* DEVELOPED BASIN B - 0.04 ACRES
COMPUTE NM HYD ID=3 HYD NO=DEV-SITE DA=0.000063 SQ MI
PER A=0 PER B=6 PER C=9 PER D=85
TP=0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 0.21142 CFS UNIT VOLUME = 0.9472 B = 526.28 P60 = 2.0100
AREA = 0.000054 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033330

K = 0.117303HR TP = 0.133300HR K/TP RATIO = 0.879990 SHAPE CONSTANT, N = 4.033584
UNIT PEAK = 0.25337E-01CFS UNIT VOLUME = 0.8775 B = 357.40 P60 = 2.0100
AREA = 0.000009 SQ MI IA = 0.41000 INCHES INF = 0.99800 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033330

PRINT HYD ID=3 CODE=20

HYDROGRAPH FROM AREA DEV-SITE

TIME HRS	TIME FLOW HRS CFS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
	0.000	0.0	0.667	0.0	1.333	0.1	2.000	0.0

RUNOFF VOLUME = 1.95278 INCHES = 0.0066 ACRE-FEET
PEAK DISCHARGE RATE = 0.20 CFS AT 1.500 HOURS BASIN AREA = 0.0001 SQ. MI.

****
* ROUTE DEVELOPED SITE THROUGH DETENTION POND A TO EXISTING INLET

* ALLOWABLE DISCHARGE IS 2.75 CFS/AC OR 2.22 CFS FOR BASIN A (10" PIPE)

****

ROUTE RESERVOIR ID=4 HYD NO=POND-A-OUT INFLOW ID=2 CODE=10

OUT (CFS)	STORAGE (AC-FT)	ELEV (FT)
0	0	57.00
2.10	0.02617	57.35
2.19	0.05234	57.70

* * * * * * * * * * * * * * * * *

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	57.00	0.000	0.00
0.33	0.00	57.00	0.000	0.00
0.67	0.00	57.00	0.000	0.00
1.00	0.13	57.01	0.000	0.04
1.33	1.06	57.09	0.007	0.57
1.67	2.15	57.51	0.038	2.14
2.00	0.54	57.21	0.016	1.27
2.33	0.15	57.06	0.004	0.34
2.67	0.03	57.01	0.001	0.09
3.00	0.01	57.00	0.000	0.02
3.33	0.01	57.00	0.000	0.01
3.67	0.01	57.00	0.000	0.01
4.00	0.01	57.00	0.000	0.01
4.33	0.01	57.00	0.000	0.01
4.67	0.01	57.00	0.000	0.01
5.00	0.01	57.00	0.000	0.01
5.33	0.01	57.00	0.000	0.01
5.67	0.01	57.00	0.000	0.01
6.00	0.02	57.00	0.000	0.02
6.33	0.00	57.00	0.000	0.01

PEAK DISCHARGE = 2.142 CFS - PEAK OCCURS AT HOUR 1.67

MAXIMUM WATER SURFACE ELEVATION = 57.514

MAXIMUM STORAGE = 0.0384 AC-FT INCREMENTAL TIME= 0.033330HRS

PRINT HYD ID=4 CODE=20

HYDROGRAPH FROM AREA POND-A-OUT

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.333	0.6	2.666	0.1	4.000	0.0
0.667	0.0	2.000	1.3	3.333	0.0	4.666	0.0
5.333	0.0						

5.999 0.0

RUNOFF VOLUME = 1.95254 INCHES = 0.1334 ACRE-FEET
PEAK DISCHARGE RATE = 2.14 CFS AT 1.667 HOURS BASIN AREA = 0.0013 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 14:21:30

LORENZ
DESIGN & CONSULTING, LLC
Civil Engineering I Construction Management

September 3, 2014

Amy L. Niese, PE
Senior Engineer - Hydrology Section
Development and Building Services
City of Albuquerque
Plaza Del Sol
Albuquerque, New Mexico 87102

SUBJECT: ANTHEA – 4TH AT GRANITE (J14/D171)
14 DRB 70196
PROJECT 1010103

Dear Amy:

Submitted herewith are two (2) copies of the revised Grading and Drainage Plan. The plan has been revised to address the comments listed in your letter dated August 20, 2014. Specifically, the following revisions have been made to the Plan:

1. First flush calculations are provided documenting the required and proposed ponding volumes.
2. Supplemental Calculations are provided for the roof drainage system, drop inlet, storm drain lateral connection to the public inlet, spillway and on-site detention pond.
3. Standard SO19 notes and signature block is provided on the plan.
4. The Vicinity map and FIRM Panel have been improved.

Thank you for your assistance. If you have any questions, please call me.

Sincerely,

LORENZ DESIGN & CONSULTING, LLC

Dennis A. Lorenz, PE

P\14-009\AN09032014

2501 Rio Grande Boulevard NW, Suite A | Albuquerque, New Mexico 87104 | [505] 888-6088 P | [505] 242-6655 F

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 04/2009)

PROJECT TITLE: ANTHEA – 4th at GRANITE NW ZONE MAP: J-14/D171
DRB#: 14-DRB-70196 EPC#: NA WORK ORDER#: NA

LEGAL DESCRIPTION: LOT 5A, BLOCK C, DURNA & ALEXANDER ADDN and LOT 2, BLOCK C, HOMESTEAD & GARDENSPOT ADDN
CITY ADDRESS: 330 GRANITE NW

ENGINEERING FIRM: LORENZ DESIGN & CONSULTING CONTACT: DENNIS LORENZ
ADDRESS: 2501 RIO GRANDE BLVD. NW SUITE A PHONE: 888-6088
CITY, STATE: ALBUQUERQUE, NEW MEXICO ZIP CODE: 87104

OWNER: CONSTRUCT SOUTHWEST CONTACT: BILL SMITH
ADDRESS: 333 RIO RANCHO BLVD NE PHONE: 891-3695
CITY, STATE: RIO RANCHO, NEW MEXICO ZIP CODE: 87123

ARCHITECT: RICK BENNETT ARCHITECTS CONTACT: R. BENNETT
ADDRESS: 1104 PARK AVENUE SW PHONE: 242-1859
CITY, STATE: ALBUQUERQUE, NEW MEXICO ZIP CODE: 87103

SURVEYOR: THE SURVEY OFFICE CONTACT: G. MAPLES
ADDRESS: 333 LOMAS NE PHONE: 998-0303
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87102

CONTRACTOR: CONSTRUCT SOUTHWEST CONTACT: BILL SMITH
ADDRESS: 333 RIO RANCHO BLVD NE PHONE: 891-3695
CITY, STATE: RIO RANCHO, NEW MEXICO ZIP CODE: 87123

TYPE OF SUBMITTAL:

- _____ DRAINAGE REPORT
- _____ DRAINAGE PLAN 1st SUBMITTAL
- X DRAINAGE PLAN RESUBMITTAL
- _____ CONCEPTUAL G & D PLAN
- _____ GRADING PLAN
- _____ EROSION CONTROL PLAN
- _____ ENGINEER'S CERT (HYDROLOGY)
- _____ CLOMR/LOMR
- _____ TRAFFIC CIRCULATION LAYOUT
- _____ ENGINEER'S CERT (TCL)
- _____ ENGINEER'S CERT (DRB SITE PLAN)
- + OTHER (SPECIFY) ADDITIONAL INFO.

CHECK TYPE OF APPROVAL 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
- _____ FOUNDATION PERMIT APPROVAL
- X BUILDING PERMIT APPROVAL
- _____ CERTIFICATE OF OCCUPANCY (PERM)
- _____ CERTIFICATE OF OCCUPANCY (TEMP)
- _____ GRADING PERMIT APPROVAL
- _____ PAVING PERMIT APPROVAL
- _____ WORK ORDER APPROVAL
- _____ GRADING CERTIFICATION
- _____ OTHER (SPECIFY) SO-19

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- _____ YES
- _____ NO
- _____ COPY PROVIDED

RECEIVED
SEP 10 2014
LAND DEVELOPMENT SECTION

DATE SUBMITTED: 9-09-2014 BY: DENNIS A. LORENZ

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.

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 04/2009)

PROJECT TITLE: ANTHEA – 4th at GRANITE NW ZONE MAP: J-14/D171
DRB#: 14-DRB-70196 EPC#: NA WORK ORDER#: NA

LEGAL DESCRIPTION: LOT 5A, BLOCK C, DURNA & ALEXANDER ADDN and
LOT 2, BLOCK C, HOMESTEAD & GARDENSPOT ADDN
CITY ADDRESS: 330 GRANITE NW

ENGINEERING FIRM: LORENZ DESIGN & CONSULTING CONTACT: DENNIS LORENZ
ADDRESS: 2501 RIO GRANDE BLVD. NW SUITE A PHONE: 888-6088
CITY, STATE: ALBUQUERQUE, NEW MEXICO ZIP CODE: 87104

OWNER: CONSTRUCT SOUTHWEST CONTACT: BILL SMITH
ADDRESS: 333 RIO RANCHO BLVD NE PHONE: 891-3695
CITY, STATE: RIO RANCHO, NEW MEXICO ZIP CODE: 87123

ARCHITECT: RICK BENNETT ARCHITECTS CONTACT: R. BENNETT
ADDRESS: 1104 PARK AVENUE SW PHONE: 242-1859
CITY, STATE: ALBUQUERQUE, NEW MEXICO ZIP CODE: 87103

SURVEYOR: THE SURVEY OFFICE CONTACT: G. MAPLES
ADDRESS: 333 LOMAS NE PHONE: 998-0303
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87102

CONTRACTOR: CONSTRUCT SOUTHWEST CONTACT: BILL SMITH
ADDRESS: 333 RIO RANCHO BLVD NE PHONE: 891-3695
CITY, STATE: RIO RANCHO, NEW MEXICO ZIP CODE: 87123

TYPE OF SUBMITTAL:

_____ DRAINAGE REPORT
_____ DRAINAGE PLAN 1st SUBMITTAL
__X__ DRAINAGE PLAN RESUBMITTAL
_____ CONCEPTUAL G & D PLAN
_____ GRADING PLAN
_____ EROSION CONTROL PLAN
_____ ENGINEER'S CERT (HYDROLOGY)
_____ CLOMR/LOMR
_____ TRAFFIC CIRCULATION LAYOUT
_____ ENGINEER'S CERT (TCL)
_____ ENGINEER'S CERT (DRB SITE PLAN)
_____ OTHER (SPECIFY)

CHECK TYPE OF APPROVAL 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
_____ FOUNDATION PERMIT APPROVAL
__X__ BUILDING PERMIT APPROVAL
_____ CERTIFICATE OF OCCUPANCY (PERM)
_____ CERTIFICATE OF OCCUPANCY (TEMP)
_____ GRADING PERMIT APPROVAL
_____ PAVING PERMIT APPROVAL
_____ WORK ORDER APPROVAL
_____ GRADING CERTIFICATION
_____ OTHER (SPECIFY) SO-19

WAS A PRE-DESIGN CONFERENCE ATTENDED:

_____ YES
_____ NO
_____ COPY PROVIDED

RECEIVED
SEP - 3 2014
LAND DEVELOPMENT SECTION

DATE SUBMITTED: 9-03-2014 BY: DENNIS A. LORENZ

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.

Gmail by Google

Erin Chavez <echavez5304@gmail.com>

Anthea Revised Grading and Drainage Plan Submittal

2 messages

Erin Chavez <echavez5304@gmail.com> Wed, Sep 3, 2014 at 11:28 AM
To: mortiz@cabq.gov

Monica,

Attached is the revised G&D that I will be submitting later today. Let me know when you get this.

Thanks!

Erin

2 attachments

HPSC0312.pdf
2720K

HPSC0311.pdf
5640K

Ortiz, Monica <mortiz@cabq.gov> Wed, Sep 3, 2014 at 11:32 AM
To: Erin Chavez <echavez5304@gmail.com>

Thanks

Monica Ortiz

Planning Department – Transportation & Hydrology
Development & Building Services Division
600 2nd St. NW, Suite 201
Albuquerque, NM 87102
t 505-924-3981

f 505-924-3864

From: Erin Chavez [mailto:echavez5304@gmail.com]
Sent: Wednesday, September 03, 2014 11:29 AM
To: Ortiz, Monica
Subject: Anthea Revised Grading and Drainage Plan Submittal

[Quoted text hidden]

CITY OF ALBUQUERQUE

August 20, 2014

Mr. Dennis Lorenz
Lorenz Design & Consulting
Suite A
2501 Rio Grande Blvd NW
Albuquerque, NM 87104

ROOF NOW
GOING N-S

Re: Anthea – 4th at Granite
Grading and Drainage Plan
Engineer's Stamp Date 7-30-14 (J14D171)

Dear Mr. Lorenz,

Based upon the information provided in your submittal received July 31, 2014, the above referenced plan cannot be approved for Building Permit or SO19 until the following comments are addressed:

1. Your previous submittal included a conceptual design for retaining the first flush. Unfortunately, this submittal does not address the first flush. Lower the landscaped areas and provide openings in the curb. Direct as much water as possible into the proposed landscaping before going into the inlet. Per the City Drainage ordinance, the 90th Percentile Storm Event, which is 44 inches, is to be managed. Reduce 0.44 inch by the 0.1 inch for the initial impervious abstraction in Table A-6 of Section 22 of the DPM. Multiply the remaining 0.34 inch by your impervious area. This is the portion to retain.
2. Provide calculations showing the actual size of the pond, the maximum amount of flow released by the 10 inch pipe, and the amount of release by the emergency overflow. Call out the specific type of pipe and area drain.
3. Provide standard notes with signature block for SO19 on the plans. Include two copies of the plans for the S019 resubmittal.
4. Include a vicinity map that is legible.

If you have any questions, you can contact me at 924-3994.

Sincerely,

Amy L. D. Niese, P.E.
Senior Engineer, Hydrology
Planning Department

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

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 04/2009)

PROJECT TITLE: ANTHEA – 4th at GRANITE NW ZONE MAP: J-14/D171
DRB#: 14-DRB-70196 EPC#: NA WORK ORDER#: NA

LEGAL DESCRIPTION: LOT 5A, BLOCK C, DURNA & ALEXANDER ADDN and
LOT 2, BLOCK C, HOMESTEAD & GARDENSPOT ADDN
CITY ADDRESS: 330 GRANITE NW

ENGINEERING FIRM: LORENZ DESIGN & CONSULTING CONTACT: DENNIS LORENZ
ADDRESS: 2501 RIO GRANDE BLVD. NW SUITE A PHONE: 888-6088
CITY, STATE: ALBUQUERQUE, NEW MEXICO ZIP CODE: 87104

OWNER: CONSTRUCT SOUTHWEST CONTACT: BILL SMITH
ADDRESS: 333 RIO RANCHO BLVD NE PHONE: 891-3695
CITY, STATE: RIO RANCHO, NEW MEXICO ZIP CODE: 87123

ARCHITECT: RICK BENNETT ARCHITECTS CONTACT: R. BENNETT
ADDRESS: 1104 PARK AVENUE SW PHONE: 242-1859
CITY, STATE: ALBUQUERQUE, NEW MEXICO ZIP CODE: 87103

SURVEYOR: THE SURVEY OFFICE CONTACT: G. MAPLES
ADDRESS: 333 LOMAS NE PHONE: 998-0303
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87102

CONTRACTOR: CONSTRUCT SOUTHWEST CONTACT: BILL SMITH
ADDRESS: 333 RIO RANCHO BLVD NE PHONE: 891-3695
CITY, STATE: RIO RANCHO, NEW MEXICO ZIP CODE: 87123

TYPE OF SUBMITTAL:
_____ DRAINAGE REPORT
__X__ 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'S CERT (TCL)
_____ ENGINEER'S CERT (DRB SITE PLAN)
_____ OTHER (SPECIFY)

CHECK TYPE OF APPROVAL 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
_____ FOUNDATION PERMIT APPROVAL
__X__ BUILDING PERMIT APPROVAL
_____ CERTIFICATE OF OCCUPANCY (PERM)
_____ CERTIFICATE OF OCCUPANCY (TEMP)
_____ GRADING PERMIT APPROVAL
_____ PAVING PERMIT APPROVAL
_____ WORK ORDER APPROVAL
_____ GRADING CERTIFICATION
__X__ OTHER (SPECIFY) SO-19

RECEIVED
JUL 31 2014
LAND DEVELOPMENT SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED:
_____ YES
_____ NO
_____ COPY PROVIDED

DATE SUBMITTED: 7-31-2014 BY: DENNIS A. LORENZ

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

CITY OF ALBUQUERQUE

July 1, 2014

Dennis Lorenz, P.E.
Lorenz Design and Consulting
2501 Rio Grande Blvd NW, Suite A
Albuquerque, NM 87104

Re: Anthea 4th and Granite, Conceptual Grading and Drainage Plan Engineer's Stamp Date 6-17-14 (J14/D171)

Dear Mr. Lorenz,

Based upon the information provided in your submittal received 6-17-14, the above referenced plan is approved for Site Plan for Building Permit action by the DRB, because the drainage plan is conceptually correct. The flow line elevations appear to be approximately 5 feet higher on this plan than on a different plan that listed a benchmark.

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

Sincerely,

Curtis Cherne, P.E.
Principal Engineer, Hydrology
Planning Dept.

C: e-mail

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

LORENZ
DESIGN & CONSULTING, LLC
Civil Engineering I Construction Management

June 17, 2014

Curtis A. Cherne, PE
Principle Engineer - Hydrology Section
Development and Building Services
City of Albuquerque
Plaza Del Sol
Albuquerque, New Mexico 87102

SUBJECT: ANTHEA – 4TH AT GRANITE (J14/D171)
14 DRB 70196
PROJECT 1010103

Dear Curtis:

Submitted herewith is one copy of the revised Conceptual Grading and Drainage plan. The plan has been revised to address the comments listed in your letter dated June 13, 2014. Specifically, the following revisions have been made to the Plan:

1. The maximum discharge rate of 2.75 cfs/acre is documented on the Plan. This will be accomplished by installing a drop inlet on-site connecting to the existing public storm inlet in Granite. An 8-inch storm drain will limit discharge to approximately 2.36 cfs resulting in shallow detention within the parking lot.
2. The Plan indicates that all drainage from the building will be directed east.
3. The site plan has been revised to utilize the existing drivepad on 3rd Street. The existing drop inlet will remain in place without modification.

Thank you for your assistance. If you have any questions regarding this request, please call me.

Sincerely,

LORENZ DESIGN & CONSULTING, LLC

Dennis A. Lorenz, PE

P\14-009\CC06172014

RECEIVED
JUN 17 2014
LAND DEVELOPMENT SECTION

2501 Rio Grande Boulevard NW, Suite A | Albuquerque, New Mexico 87104 | [505] 888-6088 P | [505] 242-6655 F

Cherne, Curtis

From: Dennis Lorenz <DennisL@lorenznm.com>
Sent: Monday, June 30, 2014 3:08 PM
To: Cherne, Curtis
Cc: Rick Bennett (rick@rba81.com); Bill Smith (constructsouthwest@gmail.com)
Subject: Anthea - 4th at Granite

Curtis:

As a follow up to our conversation last week regarding the Conceptual Grading and Drainage Plan, I would like to confirm our understanding that the Conceptual Plan is acceptable for Site Plan purposes and that you are able to sign off on the Plan at DRB this Wednesday. I understand that there details including a datum adjustment, topographic survey, and final design of the detention pond, that will be required upon building permit submittal. Could you please email me an approval letter or simply respond to this email so we will have written record heading into the meeting. Thanks.

Dennis A. Lorenz, PE
Lorenz Design & Consulting, LLC
Office: 505-888-6088
Mobile: 505-220-0869

OK w/ comments

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(REV 04/2009)

PROJECT TITLE: ANTHEA – 4th at GRANITE NW ZONE MAP: J-14/D171
DRB#: 14-DRB-70196 EPC#: NA WORK ORDER#: NA

LEGAL DESCRIPTION: LOT 5A, BLOCK C, DURNA & ALEXANDER ADDN and
LOT 2, BLOCK C, HOMESTEAD & GARDENSPOT ADDN
CITY ADDRESS: 330 GRANITE NW

ENGINEERING FIRM: LORENZ DESIGN & CONSULTING CONTACT: DENNIS LORENZ
ADDRESS: 2501 RIO GRANDE BLVD. NW SUITE A PHONE: 888-6088
CITY, STATE: ALBUQUERQUE, NEW MEXICO ZIP CODE: 87104

OWNER: CONSTRUCT SOUTHWEST CONTACT: BILL SMITH
ADDRESS: 333 RIO RANCHO BLVD NE PHONE: 891-3695
CITY, STATE: RIO RANCHO, NEW MEXICO ZIP CODE: 87123

ARCHITECT: RICK BENNETT ARCHITECTS CONTACT: R. BENNETT
ADDRESS: 1104 PARK AVENUE SW PHONE: 242-1859
CITY, STATE: ALBUQUERQUE, NEW MEXICO ZIP CODE: 87103

SURVEYOR: THE SURVEY OFFICE CONTACT: G. MAPLES
ADDRESS: 333 LOMAS NE PHONE: 998-0303
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87102

CONTRACTOR: CONSTRUCT SOUTHWEST CONTACT: BILL SMITH
ADDRESS: 333 RIO RANCHO BLVD NE PHONE: 891-3695
CITY, STATE: RIO RANCHO, NEW MEXICO ZIP CODE: 87123

TYPE OF SUBMITTAL:
_____ DRAINAGE REPORT
_____ DRAINAGE PLAN 1st SUBMITTAL
_____ DRAINAGE PLAN RESUBMITTAL
__X__ CONCEPTUAL G & D PLAN
_____ GRADING PLAN
_____ EROSION CONTROL PLAN
_____ ENGINEER'S CERT (HYDROLOGY)
_____ CLOMR/LOMR
_____ TRAFFIC CIRCULATION LAYOUT
_____ ENGINEER'S CERT (TCL)
_____ ENGINEER'S CERT (DRB SITE PLAN)
_____ OTHER (SPECIFY)

CHECK TYPE OF APPROVAL SOUGHT:
_____ SIA/FINANCIAL GUARANTEE RELEASE
_____ PRELIMINARY PLAT APPROVAL
_____ S. DEV. PLAN FOR SUB'D APPROVAL
__X__ S. DEV. FOR BLDG. PERMIT APPROVAL
_____ SECTOR PLAN APPROVAL
_____ FINAL PLAT APPROVAL
_____ FOUNDATION PERMIT APPROVAL
_____ BUILDING PERMIT APPROVAL
_____ CERTIFICATE OF OCCUPANCY (PERM)
_____ CERTIFICATE OF OCCUPANCY (TEMP)
_____ GRADING PERMIT APPROVAL
_____ PAVING PERMIT APPROVAL
_____ WORK ORDER APPROVAL
_____ GRADING CERTIFICATION
_____ OTHER (SPECIFY) SO-19

RECEIVED
JUN 17 2014
LAND DEVELOPMENT SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED:
_____ YES
_____ NO
_____ COPY PROVIDED

DATE SUBMITTED: 6-17-2014 BY: DENNIS A. LORENZ

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:

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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.

CITY OF ALBUQUERQUE

June 13, 2014

Dennis Lorenz, P.E.
Lorenz Design and Consulting
2501 Rio Grande Blvd NW, Suite A
Albuquerque, NM 87104

Re: Anthea 4th and Granite, Conceptual Grading and Drainage Plan
Engineer's Stamp Date 6-2-14 (J14/D171)

Dear Mr. Lorenz,

Based upon the information provided in your submittal received 6-3-14, the above referenced plan cannot be approved for Site Plan for Building Permit until the following comments are addressed:

1. The maximum discharge rate for this site is 2.75 cfs/ac. During a predesign in October of 2013 (Hugh Floyd), we figured a pipe into the back of an inlet would be a good way to accomplish this.
2. At DRB, the architect mentioned that the building will drain east. Please show direction of roof flows on the plan.
3. The site plan may change to use the existing drive entrance on Third St. to avoid relocating the inlet. Please revise the plan accordingly.

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

Sincerely,

Curtis Cherne, P.E.
Principal Engineer, Hydrology
Planning Dept.

C: e-mail

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

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 04/2009)

PROJECT TITLE: ANTHEA ZONE MAP: ~~J-14~~ J14 D171

DRB#: _____ EPC#: NA WORK ORDER#: NA

LEGAL DESCRIPTION: LOT 5A, BLOCK C, DURNA & ALEXANDER ADDN and LOT 2, BLOCK C, HOMESTEAD & GARDENSPOT ADDN

CITY ADDRESS: 330 GRANITE NW

ENGINEERING FIRM: LORENZ DESIGN & CONSULTING CONTACT: DENNIS LORENZ
ADDRESS: 2501 RIO GRANDE BLVD. NW SUITE A PHONE: 888-6088
CITY, STATE: ALBUQUERQUE, NEW MEXICO ZIP CODE: 87104

OWNER: CONSTRUCT SOUTHWEST CONTACT: BILL SMITH
ADDRESS: 333 RIO RANCHO BLVD NE PHONE: 891-3695
CITY, STATE: RIO RANCHO, NEW MEXICO ZIP CODE: 87123

ARCHITECT: RICK BENNETT ARCHITECTS CONTACT: R. BENNETT
ADDRESS: 1104 PARK AVENUE SW PHONE: 242-1859
CITY, STATE: ALBUQUERQUE, NEW MEXICO ZIP CODE: 87103

SURVEYOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

CONTRACTOR: CONSTRUCT SOUTHWEST CONTACT: BILL SMITH
ADDRESS: 333 RIO RANCHO BLVD NE PHONE: 891-3695
CITY, STATE: RIO RANCHO, NEW MEXICO ZIP CODE: 87123

TYPE OF SUBMITTAL:
_____ DRAINAGE REPORT
_____ DRAINAGE PLAN 1st SUBMITTAL
_____ DRAINAGE PLAN RESUBMITTAL
__X__ CONCEPTUAL G & D PLAN
_____ GRADING PLAN
_____ EROSION CONTROL PLAN
_____ ENGINEER'S CERT (HYDROLOGY)
_____ CLOMR/LOMR
_____ TRAFFIC CIRCULATION LAYOUT
_____ ENGINEER'S CERT (TCL)
_____ ENGINEER'S CERT (DRB SITE PLAN)
_____ OTHER (SPECIFY)

CHECK TYPE OF APPROVAL SOUGHT:
_____ SIA/FINANCIAL GUARANTEE RELEASE
_____ PRELIMINARY PLAT APPROVAL
_____ S. DEV. PLAN FOR SUB'D APPROVAL
__X__ S. DEV. FOR BLDG. PERMIT APPROVAL
_____ SECTOR PLAN APPROVAL
_____ FINAL PLAT APPROVAL
_____ FOUNDATION PERMIT APPROVAL
_____ BUILDING PERMIT APPROVAL
_____ CERTIFICATE OF OCCUPANCY (PERM)
_____ CERTIFICATE OF OCCUPANCY (TEMP)
_____ GRADING PERMIT APPROVAL
_____ PAVING PERMIT APPROVAL
_____ WORK ORDER APPROVAL
_____ GRADING CERTIFICATION
_____ OTHER (SPECIFY) SO-19

WAS A PRE-DESIGN CONFERENCE ATTENDED:
_____ YES
__X__ NO
_____ COPY PROVIDED

RECEIVED
JUN 03 2014
LAND DEVELOPMENT SECTION

DATE SUBMITTED: 6-03-2014 BY: DENNIS A. LORENZ

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.

J14-D171

CITY OF ALBUQUERQUE
PLANNING DEPARTMENT
DEVELOPMENT SERVICE / HYDROLOGY SECTION

DATE: 10-31-13
CONFERENCE RECAP

ZONE ATLAS PAGE NO: J14
DRAINAGE FILE: _____
ZONING: _____
DRB:
SUBJECT: Apt bldgs
STREET ADDRESS (IF KNOWN): between 3rd and 4th South of Gromite adjacent
SUBDIVISION NAME: _____

APPROVAL REQUESTED: Pre Design

ATTENDANCE: Hugh Floyd, Curtis Cherne

FINDINGS:

1. site to detain flows at a max rate of 2.75 cfs/ac. or retain the first ½" of the storm

2. It ~~appears~~ is acceptable to drain into the back of an inlet in the 3rd St storm drain.

THE UNDERSIGNED AGREES THAT THE ABOVE FINDINGS ARE SUMMARIZED ACCURATELY AND ARE SUBJECT TO CHANGE IF FURTHER INVESTIGATION REVEALS THAT THEY ARE NOT REASONABLE OR THAT THEY ARE BASED ON INACCURATE INFORMATION.

SIGNED: Curt C Cherne
NAME (PRINT): Curtis A. Cherne

SIGNED: Hugh Floyd
NAME (PRINT): Hugh Floyd

NOTE PLEASE PROVIDE A COPY OF THIS RECAP WITH YOUR DRAINAGE SUBMITTAL.

CITY OF ALBUQUERQUE

January 13, 2012

Billy O. McCarty, P.E.
P. O. Box 487
Reserve, NM 87830

Re: Granite Lot Parking Lot, 950 4th St NW, Traffic Circulation Layout
Engineer's Stamp dated 12-27-11 (J14-D171)

Dear Mr. McCarty,

Based upon the information provided in your submittal received 01-06-12, the above referenced plan cannot be approved for Building Permit until the following comments are addressed:

1. The handicapped spaces must include an 8-foot wide van access aisle; all other aisles should be 5 feet in width.
2. Per the *Development Process Manual,* Chapter 23, Section 6, Part B.17, "Any drivepads that are abandoned must be replaced with sidewalk, curb and gutter by the property owner."
3. The sidewalk connection must be 6 feet wide.
4. Clarify the location and use of the curb cut shown across the southwest lot line.
5. Is there a wheelchair ramp at the intersection of 4th and Granite?

If you have any questions, you can contact me at 924-3991.

Sincerely,

Kristal D. Metro, P.E.
Traffic Engineer, Planning Dept.
Development and Building Services

C: File

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

LAZ PARKING
Partners in Parking™
McCarty mccarty.b.o@gmail.com
Lee Hanes
Operations Manager
lhanes@lazparking.com
235-9588
500 4th Street NW • Suite 110 • Albuquerque, NM 87102
Ph: 505-848-8365 • Fax: 505-848-8341 • Cell: 505-991-7414
www.lazparking.com

LAZ PARKING
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Lee Hanes
Operations Manager
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500 4th Street NW • Suite 110 • Albuquerque, NM 87102
Ph: 505-848-8365 • Fax: 505-848-8341 • Cell: 505-991-7414
www.lazparking.com

Albuquerque - Making History 1706-2006

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 12/2005)

PROJECT TITLE: GRANITE LOT PARKING LOT ZONE MAP: J-14/D171

DRB#: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: _____

CITY ADDRESS: 950 4TH ST. NW.

ENGINEERING FIRM: BILLY McCARTY CONTACT: BILLY

ADDRESS: PO BOX 487 PHONE: 505-235-8588

CITY, STATE: RESERVE, NM. 87830 ZIP CODE: 87830

OWNER: [redacted] GERALDINE SNOW CONTACT: GERALDINE

ADDRESS: 9609 CALLE MONTESA CT. NW PHONE: 620-4489

CITY, STATE: ALBUQ N.M ZIP CODE: 87120

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CITY, STATE: _____ ZIP CODE: _____

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CITY, STATE: _____ ZIP CODE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CITY, STATE: _____ 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
__X__ TRAFFIC CIRCULATION LAYOUT
_____ ENGINEER'S CERT (TCL)
_____ ENGINEER'S CERT (DRB SITE PLAN)
_____ OTHER (SPECIFY)

CHECK TYPE OF APPROVAL 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
_____ FOUNDATION PERMIT APPROVAL
_____ BUILDING PERMIT APPROVAL
_____ CERTIFICATE OF OCCUPANCY (PERM)
_____ CERTIFICATE OF OCCUPANCY (TEMP)
_____ GRADING PERMIT APPROVAL
__X__ PAVING PERMIT APPROVAL
_____ WORK ORDER APPROVAL
_____ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

_____ YES
_____ NO
_____ COPY PROVIDED

DATE SUBMITTED: 1/6/12

RECEIVED
JAN 06 2012
HYDROLOGY SECTION

JOE HAMES
505-991-7414

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.

CITY OF ALBUQUERQUE

January 11, 2012

Billy McCarty, P.E.
PO Box 487
Reserve, NM 87830

Re: Lot 5-A, Duran and Alexander Addition, 950 4th Street NW – Grading and Paving Plan

Engineer's Stamp dated 12-27-11 (J-14/D171)

Dear Mr. McCarty,

Based upon the information provided in your submittal dated 01-06-12, the above referenced plan cannot be approved for Grading and Paving Permit until the following comments have been addressed:

- The plan needs to be divided into two separate basins with basin boundaries delineated on the sheet.
- Each basin should pass flows through depressed landscaping areas before discharging to the street.
- Free discharge will be limited to either 2.75 cfs/acre or to capturing the first half inch of rainfall at your discretion. Please illustrate how this will be accomplished.
- The proposed sidewalk culvert is not needed. Hydrology prefers that the flows be directed through the valley gutter to the landscape area and then exit through the drive pad.
- The southern portion running along the lot line appears to drain to the south onto the adjacent property. This area should be depressed to capture the water that falls there and to prevent offsite flows.
- Provide ponding volumes for the depressed landscape areas.

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

Sincerely,

Curtis Cherne, P.E.
Principal Engineer, Planning Dept.
Development and Building Services

C: file
CJH/CC

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

Called 1/11 1:33pm

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 12/2005)

PROJECT TITLE: GRANITE LOT PARKING LOT ZONE MAP: J-14/D171

DRB#: _____ EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: _____

CITY ADDRESS: 950 4TH ST. NW.

ENGINEERING FIRM: BILLY McCARTY CONTACT: BILLY 235-9588

ADDRESS: PO Box 487 PHONE: ~~505-235-8568~~ Wrong #

CITY, STATE: Reserve, NM. 87830 ZIP CODE: 87830

OWNER: [redacted] GERALDINE SNOW CONTACT: Geraldine

ADDRESS: 9609 CALLE MONTESA CT. NW PHONE: 620-4489

CITY, STATE: Albuq. N.M ZIP CODE: 87120

ARCHITECT: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CITY, STATE: _____ ZIP CODE: _____

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CITY, STATE: _____ ZIP CODE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CITY, STATE: _____ ZIP CODE: _____

TYPE OF SUBMITTAL:

_____ DRAINAGE REPORT
__X__ 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'S CERT (TCL)
_____ ENGINEER'S CERT (DRB SITE PLAN)
_____ OTHER (SPECIFY)

CHECK TYPE OF APPROVAL 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
_____ FOUNDATION PERMIT APPROVAL
_____ BUILDING PERMIT APPROVAL
_____ CERTIFICATE OF OCCUPANCY (PERM)
_____ CERTIFICATE OF OCCUPANCY (TEMP)
__X__ GRADING PERMIT APPROVAL
__X__ PAVING PERMIT APPROVAL
_____ WORK ORDER APPROVAL
__X__ OTHER (SPECIFY) SO-19

WAS A PRE-DESIGN CONFERENCE ATTENDED:

_____ YES
_____ NO
_____ COPY PROVIDED

DATE SUBMITTED: 1/6/12 BY: JEFF HAWES 991-7414

RECEIVED
JAN 06 2012
HYDROLOGY SECTION

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:

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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.

CITY OF ALBUQUERQUE

Planning Department
Transportation Development Services

September 9, 2015

Rick Bennett
RBA Architects
1104 Park Ave., SW
Albuquerque, NM 87102

Re: Anthea – 4th and Granite
950 4th St.
Certificate of Occupancy – Transportation Development
Engineer's/Architect's Stamp dated 9-8-15 (J14-D171)
Certification dated ~~7-29-15~~ 8-11-15

Dear Mr. Bennett,

Based upon the information provided in your submittal received 8-26-15, Transportation Development has no objection to the issuance of a Permanent Certificate of Occupancy. This letter serves as a "green tag" from Transportation Development for a Permanent Certificate of Occupancy to be issued by the Building and Safety Division.

If you have any questions, please contact Gary Sandoval at (505) 924-3675 or me at (505)924-3991.

Sincerely,

Racquel M. Michel, P.E.
Traffic Engineer, Planning Dept.
Development Review Services

\ via: email
C: CO Clerk, File

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

rick
bennett
ARCHITECTS

September 15, 2015

Re: Anthea – 4th at Granite
950 4th ST
DRB Approval #1010103/14DRB-70196

TRAFFIC CERTIFICATION

I, Rick Bennett, NMRA # 1240, of The Firm of RBA, hereby certify that this project is in substantial compliance with and in accordance with the design intent of the Traffic Circulation Layout, approved plan dated, July 23, 2014.

The record information edited onto the original design document has been obtained by Rick Bennett Architect, of the firm. I further certify that I have personally visited the project site on August 11, 2015 and have determined by visual inspection that the survey data provided is representative of actual site conditions and is true and correct to the best of my knowledge and belief. This certification is submitted in support of a request for Certificate of Occupancy (Permanent) for Anthea, located at 950 4th St, Albuquerque, NM.

The record information presented hereon is not necessarily complete and intended only to verify substantial compliance of the traffic aspects of this project. Those relying on the record document are advised to obtain independent verification of its accuracy before using it for any other purpose.

Date: 9/15/2015

STATE OF NEW MEXICO
RICHARD R. BENNETT
No. 1240
REGISTERED ARCHITECT

Sincerely,

Rick Bennett, Architect

RECEIVED
SEP 15 2015
LAND DEVELOPMENT SECTION

1104 Park Avenue SW · Albuquerque, New Mexico 87102 505-242-1859 Fax 505-242-6630

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: ANTHEA-4THAT GRANITE Building Permit #: T201492709 T201492710 City Drainage #: J14D171

DRB# 1010103/14DRB-70196 EPC#. _____ Work Order#: _____

Legal Description: LOTS-A, BLOCK C 0.6115 AC. & LOTS 1 THRU 4, & THE NLY 10' LOTS BLK. C DURAN & ALEXANDER ADDITION

City Address: 950 4TH STREET

Engineering Firm: LORENZ DESIGN & CONSULTING Contact. DENNIS LORENZ

Address SUITE A, 2501 RIO GRANDE BLVD. NW; ALBQ. NM 87104

Phone#. 505-888-6088 Fax#: _____ E-mail dennisl@lorenzNM.com

Owner: NOLO FOOTPRINT, LLC Contact: _____

Address: 333 RIO RANCHO DRIVE NE, STE401, RIO RANCHO 87124

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

Architect: RBA ARCHITECTS Contact: RICK BENNETT

Address: 1104 PARK AVE SW; ALBQ. NM 87102

Phone#: 505-242-1859 Fax#: 505-242-6630 E-mail: rick@rba81.com

Surveyor: THE SURVEY OFFICE Contact: GARY MAPLE

Address: 333 LOMAS BLVD., NE; ALBQ. NM 87102

Phone#: 505-998-0303 Fax#: 505-998-0305 E-mail: maple@thesurveyoffice.com

Contractor: CONSTRUCT SOUTHWEST, LLC Contact: BILL SMITH

Address: 333 RIO RANCHO DRIVE NE, STE401, RIO RANCHO 87124

Phone# 505-891-3695 Fax#: _____ E-mail: constructsouthwest@gmail.com

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
- OK TRAFFIC CIRCULATION LAYOUT (TCL)
- ____ ENGINEER'S CERT (TCL)
- X 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
- X 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)

RECEIVED
AUG 26 2015
LAND DEVELOPMENT SECTION

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

DATE SUBMITTED: _____ By. 8/24/15

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 followin

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