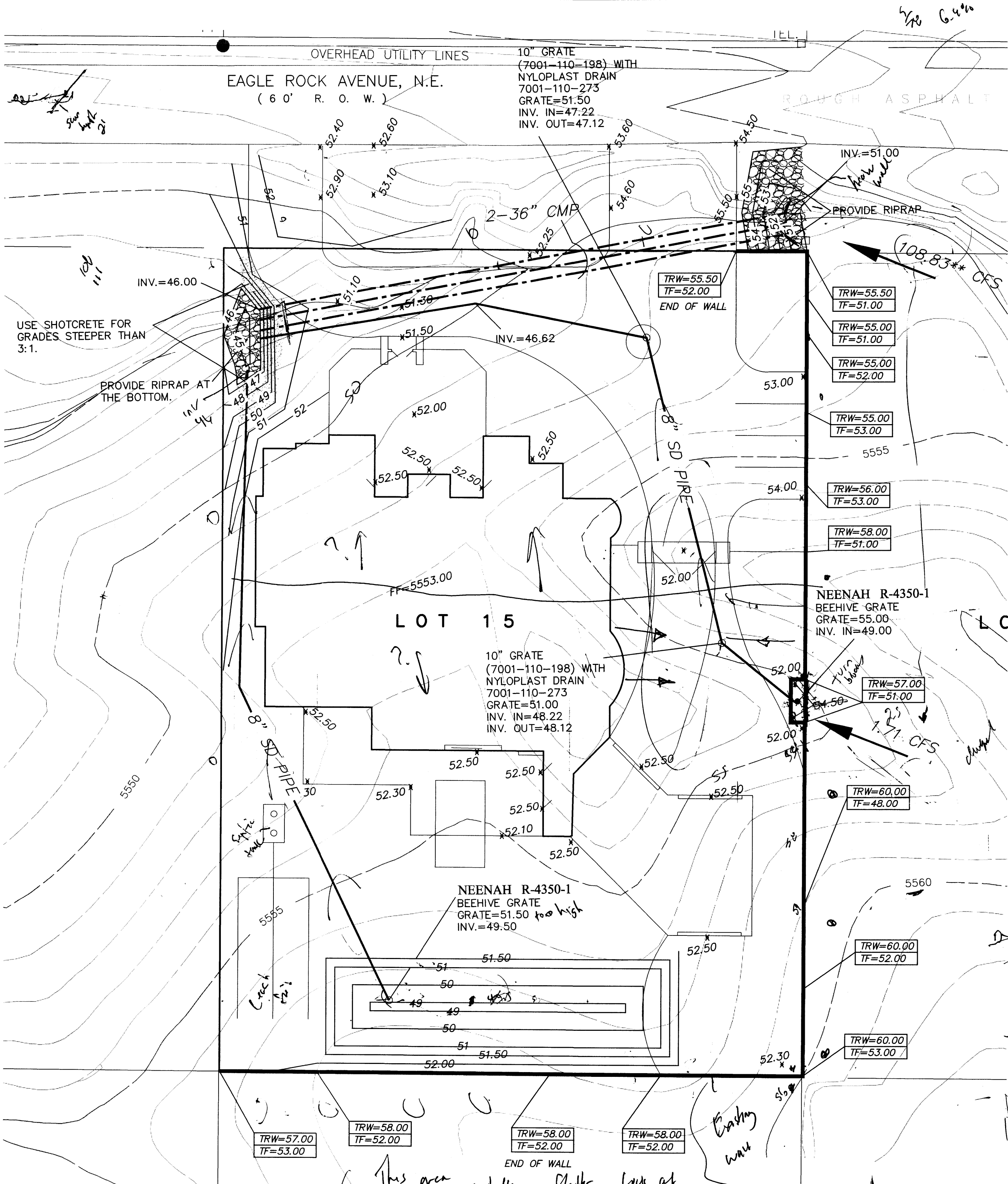


An aerial photograph of a residential neighborhood. The image is divided into several rectangular lots by dark lines representing streets. Overlaid on the image are white text labels: 'EAGLE ROCK' at the top center, 'BASIN 111.0-A\*' in the middle left, 'VENTURA BLVD.' vertically on the right side, and 'OAKLAND AVE' at the bottom center. The photograph shows various houses, some with dark roofs and others with lighter roofs, and some trees. The overall tone is high-contrast, with a lot of black and white.

**Location**  
Lot 15 Block 2, Unit 3, Tract 3, North Albuquerque Acres is located south side of Eagle Rock and west of Ventura Boulevard contains +/- 0.89. See attached portion of the Vicinity Map for exact location.

**Existing Drainage Conditions**  
This site is undeveloped and falls within the NAA Master Drainage Plan prepared by RTI. The site is within Basin 111.0 of the RTI report and is subject to 108.83 cfs which passes through the lot at the northerly portion of the site. Another 1.71 cfs enters the mid portion of the lot from the east. Based on the FIRM Map 35001C0141G (revised September 26, 2008) the site does not fall within a 100-year floodplain.

**Calculations**  
City of Albuquerque, Development Process Manual, Section 22.2, Hydrology Section, was used for runoff calculations. See this plan for AHYMO input and Summary output files.



I love the status

Lot 18

brush made for sewing

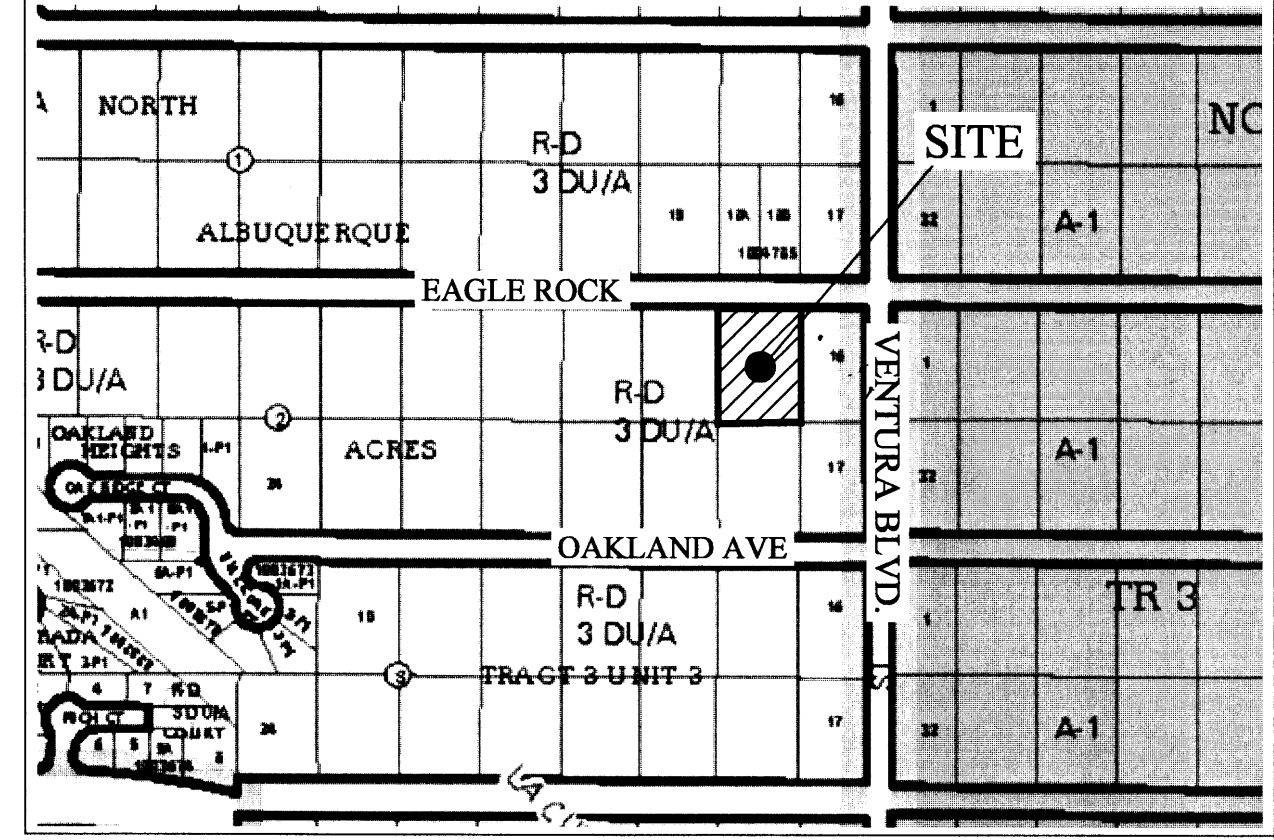
BOTTOM AREA = 179.29 SF (@ 49.00), TOP AREA = 2,672.22 SF (@ 51.50), DEPTH = 2.5'  
VOLUME PROVIDED = (179.29 + 2,672.22)/2 X 2.5 = 3,564.39 CF

TOTAL PONDING VOLUME REQUIRED (NAA) = VOL. PROPOSED CONDITIONS - VOL. ALLOWABLE/NAA  
 = 0.149 - 0.094 = 0.055 AC-FT = 2,395.08 CF

TOTAL PONDING VOLUME REQUIRED (90TH PERCENTILE/FIRST FLUSH) = 0.34 INCHES x IMPERVIOUS AREA  
 = (0.34/12 x 22,393.80) = 634.49 CF

10 5 0 1

SCALE: 1"=10'



VICINITY MAP: \_\_\_\_\_ C-20-Z

LEGAL DESCRIPTION:

Lot 15 Block 2, Unit 3, Tract 3, North Albuquerque Acres  
CONTAINING 0.89 ACRE

GENERAL NOTES:

1: CONTOUR INTERVAL IS HALF (1.00) FOOT.

2: ELEVATIONS ARE BASED ON CITY OF ALBUQUERQUE CONTROL STATION

3: 7\_B20, HAVING AN ELEVATION OF 5566.658 FEET ABOVE SEA LEVEL.

4: UTILITIES SHOWN HEREON ARE IN THEIR APPROXIMATE LOCATION BASED

5: ONLY ON ABOVE GROUND EVIDENCE FOUND IN THE FIELD AND AS-BUILT

6: INFORMATION PROVIDED BY THE CLIENT. UTILITIES SHOWN HEREON, WHETHER

7: INDICATED AS ABANDONED OR NOT, SHALL BE VERIFIED BY OTHERS FOR

8: EXACT LOCATION AND/ OR DEPTH PRIOR TO EXCAVATION OR DESIGN CON-

9: siderations.

10: THIS IS NOT A BOUNDARY SURVEY, BEARINGS ARE ASSUMED, DISTANCES

11: AND FOUND PROPERTY CORNERS ARE FOR INFORMATIONAL PURPOSES ONLY.

12: SLOPES ARE AT 3:1 MAXIMUM.

### NOTICE TO CONTRACTORS

1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, 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.

--- -5100 ---	EXISTING CONTOUR (MAJOR)
--- -5'02 ---	EXISTING CONTOUR (MINOR)
-----	BOUNDARY LINE
✖ 85.46	PROPOSED SPOT ELEVATION
✖ 5265.16	EXISTING GRADE
✖ 5284.43 FL	EXISTING FLOWLINE ELEVATION
■ ■ ■ ■ ■	PROPOSED RETAINING WALL
<i>BC=89.08</i>	BOTTOM OF CHANNEL
<div style="border: 1px solid black; padding: 5px; display: inline-block;">TRW=91.50</div>	TOP OF RETAINING WALL
<div style="border: 1px solid black; padding: 5px; display: inline-block;">TF=88.00</div>	TOP OF FOOTING
HP	HIGH POINT

**SBS CONSTRUCTION  
AND ENGINEERING, LLC**

10209 SNOWFLAKE CT., NW  
ALBUQUERQUE, NEW MEXICO 87113  
(505)899-5570

LOT 15, BLOCK 2, UNIT3, TRACT 3, NAA  
GRADING AND DRAINAGE PLAN

DRAWING: 201423-GR.DWG	DRAWN BY: SH-B	DATE: 2-16-2015	SHEET #
---------------------------	-------------------	--------------------	---------

CALCULATING PIPE CAPACITY USING ORFICIE EQUATION:  $Q = CA(2gh)^{0.50}$

NEENAH R-4350-1 BEEHIVE GRATE:  
 $Q = 0.6 \times 0.30 (2 \times 32.2 \times 2.0)^{0.50} = 2.04 \text{ cfs}$

NYLOPLAST 10" GRATE (7001-110-198):  
 $Q = 0.6 \times 0.20 (2 \times 32.2 \times 1.0)^{0.50} = 0.95 \text{ cfs}$

8" PVC:

---

$$Q = 0.6 \times 0.35 (2 \times 32.2 \times 2.88)^{0.50} = 2.85 \text{ cfs}$$

2-36" PVC:

$$Q = 2 \times 0.6 \times 7.07 \times (2 \times 32.2 \times 4.0)^{0.50} = 136.07 \text{ cfs}$$



\* ZONE 4, ON-SITE  
\*\*\*\*\*  
\* 100-YEAR, 6-HR STORM (UNDER HISTORICAL CONDITIONS) \*  
\*\*\*\*\*  
START RAINFALL TYPE=1 RAIN QUARTER=0.0 IN  
RAIN ONE=2.23 IN RAIN SIX=2.90 IN  
RAIN DELAY=3.65 IN DT=0.03333 HR  
\*\*\*\*\*  
\* ON-SITE  
COMPUTE NM HYD ID=1 HYD NO=101.1 AREA=0.001385 SQ MI  
PER A=100.0 PER B=0.0 PER C=0.0 PER D=0.0  
TP=0.1333 HR MASS RAINFALL=-1  
\*\*\*\*\*  
\* 10-YEAR, 6-HR STORM (UNDER HISTORICAL CONDITIONS) \*  
\*\*\*\*\*  
START RAINFALL TYPE=1 RAIN QUARTER=0.0 IN  
RAIN ONE=1.49 IN RAIN SIX=1.93 IN  
RAIN DELAY=2.43 IN DT=0.03333 HR  
\*\*\*\*\*  
\* ON-SITE  
COMPUTE NM HYD ID=1 HYD NO=111.1 AREA=0.001385 SQ MI  
PER A=100.0 PER B=0.0 PER C=0.0 PER D=0.0  
TP=0.1333 HR MASS RAINFALL=-1  
\*\*\*\*\*  
\* 100-YEAR, 6-HR STORM (UNDER ALLOWABLE CONDITIONS) \*  
\*\*\*\*\*  
START RAINFALL TYPE=1 RAIN QUARTER=0.0 IN  
RAIN ONE=2.23 IN RAIN SIX=2.90 IN  
RAIN DELAY=3.65 IN DT=0.03333 HR  
\*\*\*\*\*  
\* ON-SITE  
COMPUTE NM HYD ID=1 HYD NO=102.1 AREA=0.001385 SQ MI  
PER A=43.0 PER B=20.0 PER C=20.0 PER D=17.0  
TP=0.1333 HR MASS RAINFALL=-1  
\*\*\*\*\*  
\* 100-YEAR, 6-HR STORM (UNDER PROPOSED CONDITIONS) \*  
\*\*\*\*\*  
START RAINFALL TYPE=1 RAIN QUARTER=0.0 IN  
RAIN ONE=2.23 IN RAIN SIX=2.90 IN  
RAIN DELAY=2.43 IN DT=0.03333 HR  
\*\*\*\*\*  
\* ON-SITE  
COMPUTE NM HYD ID=1 HYD NO=101.2 AREA=0.001385 SQ MI  
PER A=0.0 PER B=32.0 PER C=10.0 PER D=58.0  
TP=0.1333 HR MASS RAINFALL=-1  
\*\*\*\*\*  
\* 10-YEAR, 6-HR STORM (UNDER PROPOSED CONDITIONS) \*  
\*\*\*\*\*  
START RAINFALL TYPE=1 RAIN QUARTER=0.0 IN  
RAIN ONE=1.49 IN RAIN SIX=1.93 IN  
RAIN DELAY=2.43 IN DT=0.03333 HR  
\*\*\*\*\*  
\* ON-SITE  
COMPUTE NM HYD ID=1 HYD NO=111.2 AREA=0.001385 SQ MI  
PER A=0.0 PER B=32.0 PER C=10.0 PER D=58.0  
TP=0.1333 HR MASS RAINFALL=-1  
\*\*\*\*\*  
FINISH

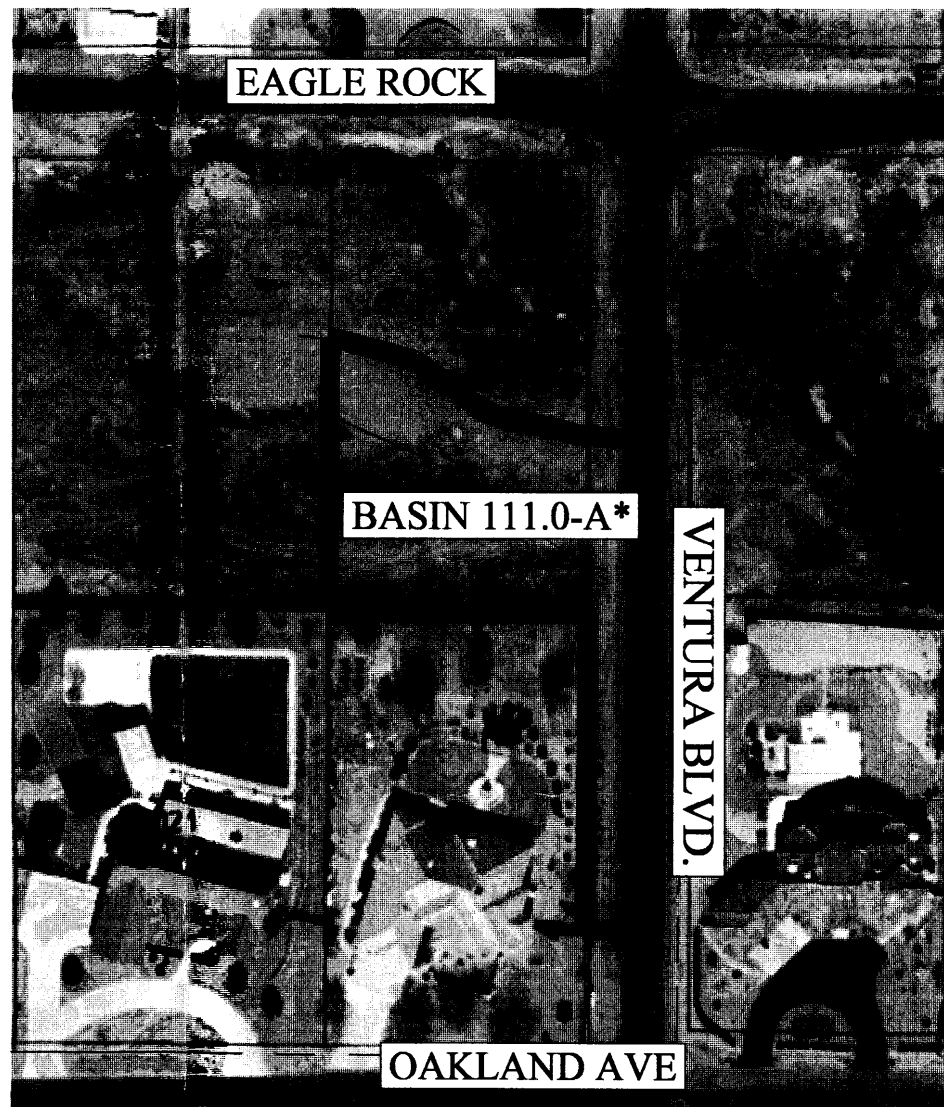
**Location**  
Lot 15 Block 2, Unit 3, Tract 3, North Albuquerque Acres is located south side of Eagle Rock and west of Ventura Boulevard contains +/- 0.89. See attached portion of the Vicinity Map for exact location.

**Purpose**  
The purpose of this drainage report is to present a grading and drainage solution for the proposed buildings.

**Existing Drainage Conditions**  
This site is undeveloped and falls within the NAA Master Drainage Plan prepared by RTI. The site is within Basin 111.0 of the RTI report and is subject to 108.83 cfs which passes through the lot at the northerly portion of the site. Another 1.71 cfs enters the mid portion of the lot from the east. Based on the FIRM Map 35001C0141G (revised September 26, 2008) the site does not fall within a 100-year floodplain.

**Proposed Conditions and On-Site Drainage Management Plan**  
The developed runoff generated from this site will have to comply with the land treatments set as part of the NAA Master Drainage Plan. Additional runoff volume generated by this development will be retained on site. Therefore, a retention pond with a volume of 2,467.38 cf is designed to retain the additional volume. The total retention volume required is only 2,395.08 cf. The offsite flow of 1.71 cfs will enter the site to a pond and then intercepted by the Beehive inlets and then discharged to the west via 10" pipe. The 108.83 cfs offsite runoff from Basin 111.0, NAA Master Drainage Plan Basin #101.10 will be intercepted by 2-36" CMPs and will be carried across the property.

**Calculations**  
City of Albuquerque, Development Process Manual, Section 22.2, Hydrology Section, was used for runoff calculations. See this plan for AHYMO input and Summary output files.



\* PORTION OF BASIN 111.0 FROM RTI'S NAA MASTER DRAINAGE PLAN  
OFFSITE BASIN MAP

AHYMO PROGRAM SUMMARY TABLE (AHYMO\_97) -  
INPUT FILE = sont.txt

VERSION: 1997.02d RUN DATE (MON/DAY/YR) = 02/12/2015  
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										
COMPUTE NM HYD	101.10	-	1	.00139	1.96	.059	.79828	1.500	2.213		RAIN6= 2.900 PER IMP= .00 TIME= .00 RAIN6= 1.930 PER IMP= .00 RAIN6= 2.900 PER IMP= 17.00 RAIN6= 17.00 PER IMP= 17.00 TIME= .00 RAIN6= 1.930 PER IMP= 17.00 RAIN6= 2.900 PER IMP= 58.00 TIME= .00 RAIN6= 1.930 PER IMP= 58.00
START RAINFALL	TYPE=1										
COMPUTE NM HYD	111.10	-	1	.00139	.71	.020	.26998	1.533	.796		RAIN6= 1.930 PER IMP= .00 RAIN6= 2.900 PER IMP= 17.00 RAIN6= 17.00 PER IMP= 17.00 TIME= .00 RAIN6= 1.930 PER IMP= 17.00 RAIN6= 2.900 PER IMP= 58.00 TIME= .00 RAIN6= 1.930 PER IMP= 58.00
START RAINFALL	TYPE=1										
COMPUTE NM HYD	102.10	-	1	.00139	2.81	.094	1.27203	1.500	3.168		RAIN6= 2.900 PER IMP= 17.00 RAIN6= 17.00 PER IMP= 17.00 TIME= .00 RAIN6= 1.930 PER IMP= 17.00 RAIN6= 2.900 PER IMP= 58.00 TIME= .00 RAIN6= 1.930 PER IMP= 58.00
START RAINFALL	TYPE=1										
COMPUTE NM HYD	103.20	-	1	.00084	1.71	.057	1.27203	1.500	3.184		RAIN6= 1.930 PER IMP= 17.00 RAIN6= 17.00 PER IMP= 17.00 TIME= .00 RAIN6= 1.930 PER IMP= 17.00 RAIN6= 2.900 PER IMP= 58.00 TIME= .00 RAIN6= 1.930 PER IMP= 58.00
START RAINFALL	TYPE=1										
COMPUTE NM HYD	112.10	-	1	.00139	1.44	.045	.61083	1.500	1.624		RAIN6= 1.930 PER IMP= 17.00 RAIN6= 2.900 PER IMP= 58.00 TIME= .00 RAIN6= 1.930 PER IMP= 58.00
START RAINFALL	TYPE=1										
COMPUTE NM HYD	101.20	-	1	.00139	3.87	.149	2.01759	1.500	4.367		RAIN6= 2.900 PER IMP= 58.00 TIME= .00 RAIN6= 1.930 PER IMP= 58.00
START RAINFALL	TYPE=1										
COMPUTE NM HYD	111.20	-	1	.00139	2.40	.087	1.18437	1.500	2.709		RAIN6= 1.930 PER IMP= 58.00

#### PIPE & GRATE CAPACITY CALCULATIONS

CALCULATING PIPE CAPACITY USING ORFICIE EQUATION:  $Q = CA(2gh)^{0.50}$

##### NEENAH R-4350-1 BEEHIVE GRATE:

$$Q = 0.6 \times 0.30 (2 \times 32.2 \times 2.0)^{0.50} = 2.04 \text{ cfs}$$

##### NYLOPLAST 10" GRATE (7001-110-198):

$$Q = 0.6 \times 0.20 (2 \times 32.2 \times 2.1)^{0.50} = 0.95 \text{ cfs}$$

##### 8" PVC:

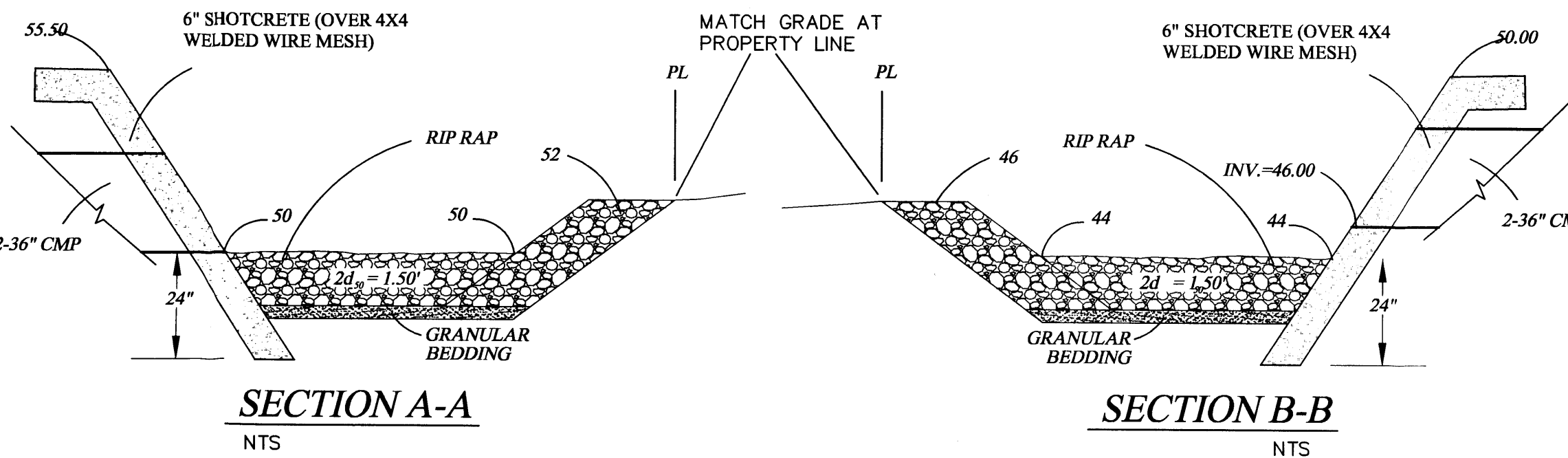
$$Q = 0.6 \times 0.35 (2 \times 32.2 \times 2.1)^{0.50} = 2.06 \text{ cfs}$$

##### 10" PVC:

$$Q = 2 \times 0.6 \times 0.55 (2 \times 32.2 \times 2.0)^{0.50} = 3.79 \text{ cfs}$$

##### 2-36" PVC:

$$Q = 2 \times 0.6 \times 7.07 (2 \times 32.2 \times 4.0)^{0.50} = 136.07 \text{ cfs}$$



\*\* BASIN 111.0 FROM RTI'S NAA MASTER DRAINAGE PLAN

#### NOTES:

1. ROOF DRAIN LOCATION
2. EXTEND ROOF GUTTERS TO THE BACK OF THE HOUSE
3. DAYLIGHT ROOF GUTTER TO THE BACK OF THE HOUSE

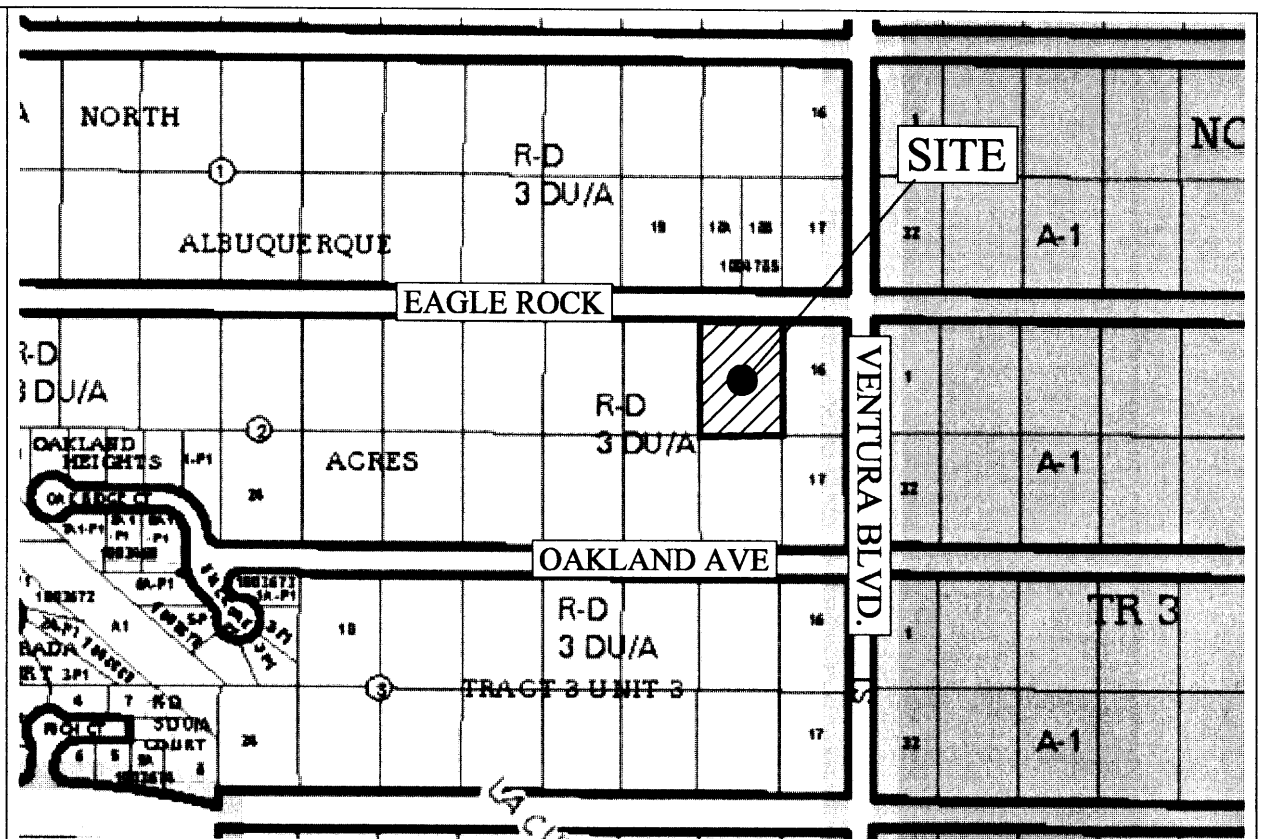
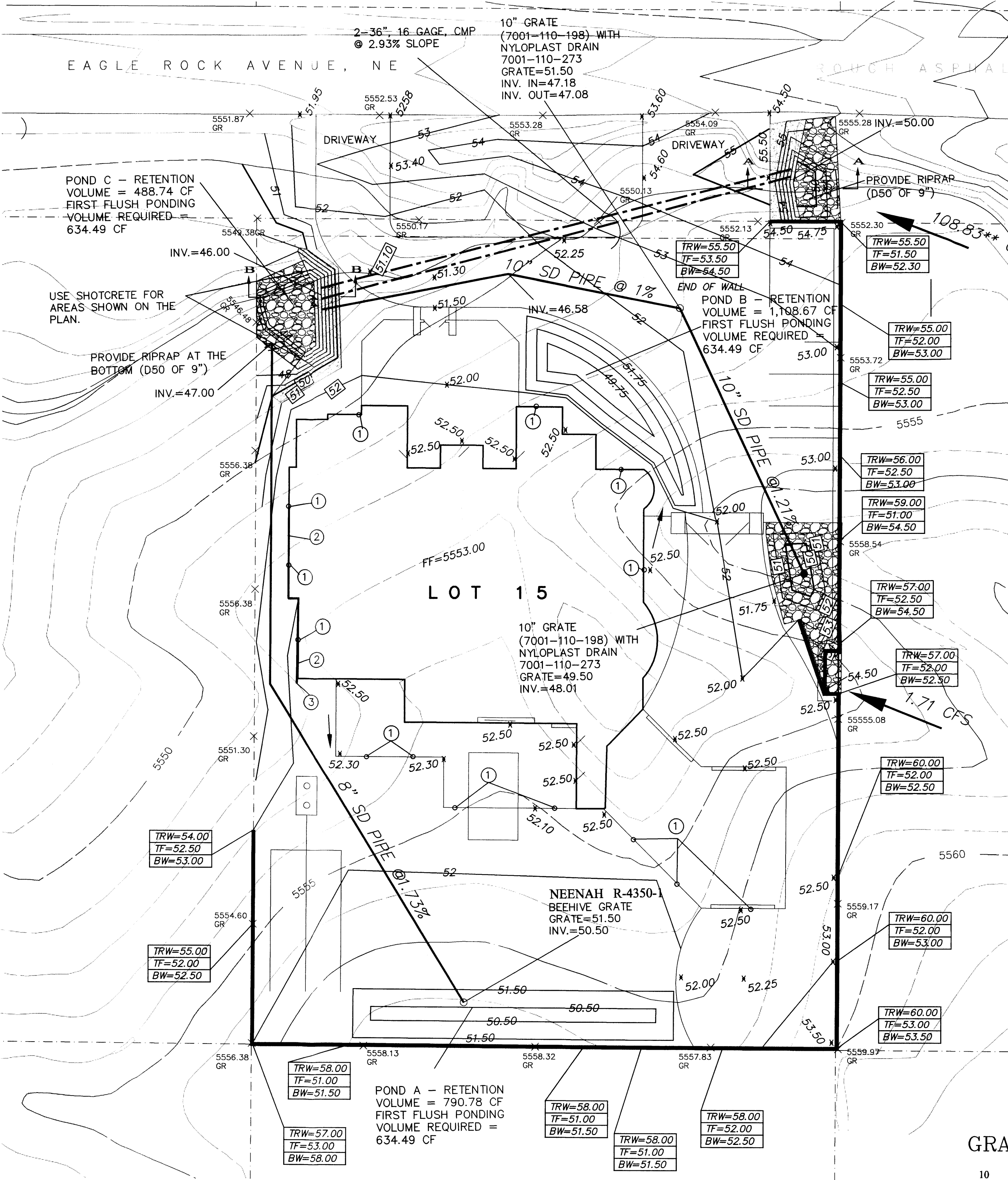
#### POND CALCULATIONS

POND A - BOTTOM AREA = 318.72 SF (@ 50.50), TOP AREA = 1,262.83 SF (@ 51.50), DEPTH = 1.0'  
VOLUME PROVIDED = (318.72 + 1262.83)/2 X 1.0 = 790.78 CF

POND B - BOTTOM AREA = 168.30 SF (@ 49.75), TOP AREA = 940.37 SF (@ 51.75), DEPTH = 2.0'  
VOLUME PROVIDED = (168.30 + 940.37)/2 X 2.0 = 1,108.67 CF

POND C - BOTTOM AREA = 217.96 SF (@ 44.00), TOP AREA = 349.97 SF (@ 46.00), DEPTH = 2.0'  
VOLUME PROVIDED = (217.96 + 349.97)/2 X 2.0 = 567.93 CF  
TOTAL RETENTION VOLUME PROVIDED = 790.78 + 1,108.67 + 567.93 = 2,467.38 CF

TOTAL PONDING VOLUME REQUIRED (NAA) = VOL. PROPOSED CONDITIONS - VOL. ALLOWABLE/NAA  
= 0.149 - 0.094 = 0.055 AC-FT = 2,395.08 CF  
TOTAL PONDING VOLUME REQUIRED (90TH PERCENTILE/FIRST FLUSH) = 0.34 INCHES X IMPERVIOUS AREA  
= (0.34/12 X 22,393.80) = 634.49 CF



#### VICINITY MAP:

#### LEGAL DESCRIPTION:

Lot 15 Block 2, Unit 3, Tract 3, North Albuquerque Acres  
BURGS REPLAT, PERFECTO ARMIJO, CONTAINING 0.89 ACRE

#### BENCH MARK DESCRIPTION:

BM: 7\_B20  
X=1553078.775, Y=1524900.435, ELEV.=5566.658

#### GENERAL NOTES:

1. CONTOUR INTERVAL IS HALF (1.00) FOOT.
2. ELEVATIONS ARE BASED ON CITY OF ALBUQUERQUE CONTROL STATION 7\_B20, HAVING AN ELEVATION OF 5566.658 FEET ABOVE SEA LEVEL.
3. UTILITIES SHOWN HEREON ARE IN THEIR APPROXIMATE LOCATION BASED ONLY ON ABOVE GROUND EVIDENCE FOUND IN THE FIELD AND AS-BUILT INFORMATION PROVIDED BY THE CLIENT. UTILITIES SHOWN HEREON, WHETHER INDICATED AS ABANDONED OR NOT, SHALL BE VERIFIED BY OTHERS FOR EXACT LOCATION AND/OR DEPTH PRIOR TO EXCAVATION OR DESIGN CONSIDERATIONS.
4. THIS IS NOT A BOUNDARY SURVEY, BEARINGS ARE ASSUMED, DISTANCES AND FOUND PROPERTY CORNERS ARE FOR INFORMATIONAL PURPOSES ONLY.
5. SLOPES ARE AT 3:1 MAXIMUM.

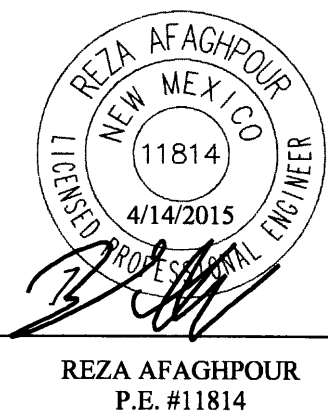
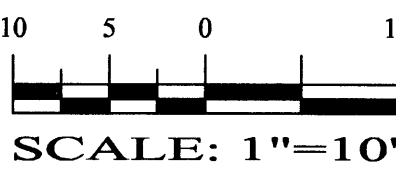
#### NOTICE TO CONTRACTORS

1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
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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.

#### LEGEND

- 5100--- EXISTING CONTOUR (MAJOR)
- 5102--- EXISTING CONTOUR (MINOR)
- BOUNDARY LINE
- X 85.46 PROPOSED SPOT ELEVATION
- X 5265.16 EXISTING GRADE
- X 5284.43 EXISTING FLOWLINE ELEVATION
- X 5284.43 EXISTING GROUND ELEVATION
- PROPOSED RETAINING WALL
- BC=89.08 BOTTOM OF CHANEL
- TRW=91.50 TOP OF RETAINING WALL
- TF=88.00 TOP OF FOOTING
- HP HIGH POINT

#### GRAPHIC SCALE



#### SBS CONSTRUCTION AND ENGINEERING, LLC

10209 SNOWFLAKE CT., NW  
ALBUQUERQUE, NEW MEXICO 87114  
(505)899-5570

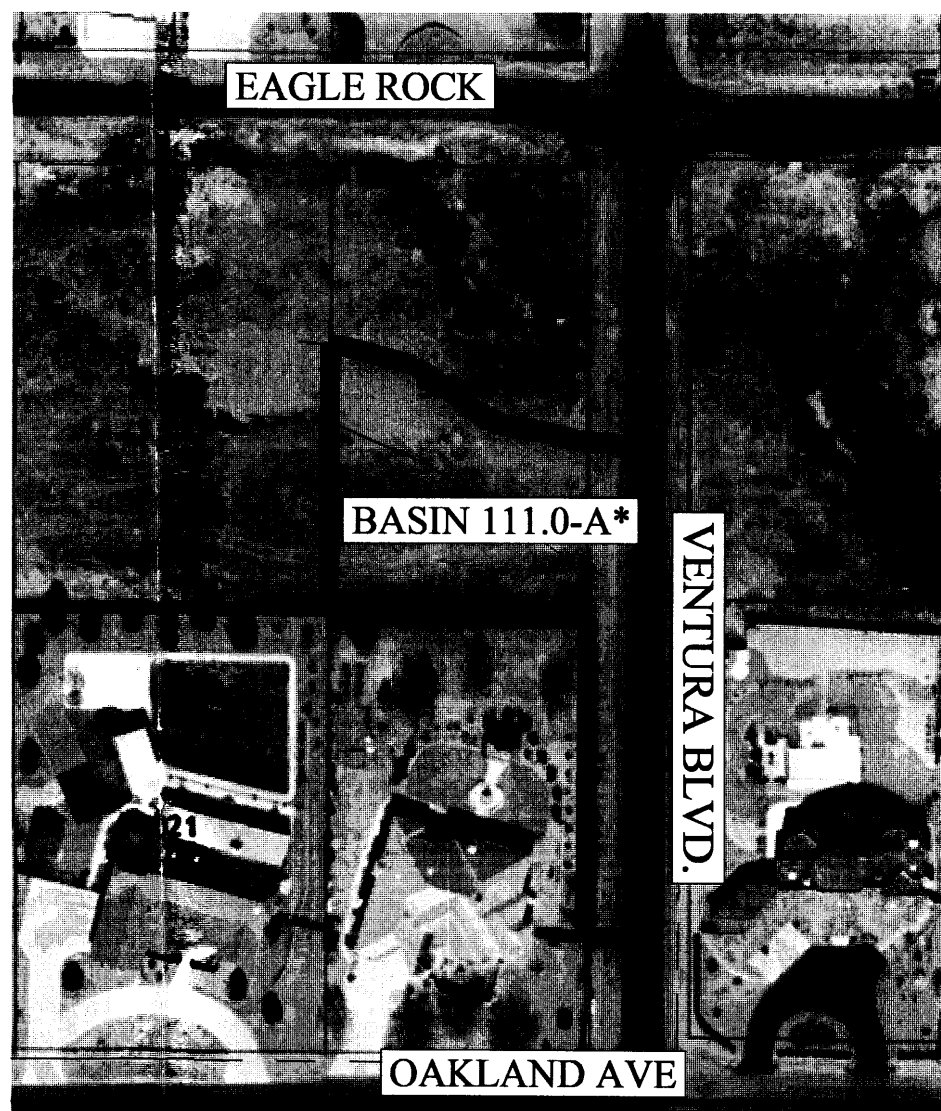
#### LOT 15, BLOCK 2, UNIT 3, TRACT 3, NAA GRADING AND DRAINAGE PLAN

DRAWING:	DRAWN BY:	DATE:	SHEET #
201423-GR.DWG	SH-B	2-16-2015	1

LAST REVISION: 4/14/2015



* ZONE 4, ON-SITE	
*****	
* 100-YEAR, 6-HR STORM (UNDER HISTORICAL CONDITIONS)	
*****	
START RAINFALL	TYPE=1 RAIN QUARTER=0.0 IN RAIN ONE=2.23 IN RAIN SIX=2.90 IN RAIN DELAY=3.65 IN DT=0.03333 HR
*****	
* ON-SITE COMPUTE NM HYD	
ID=1 HYD NO=101.1 AREA=0.001385 SQ MI PER A=100.0 PER B=0.0 PER C=0.0 PER D=0.0 TP=0.1333 HR MASS RAINFALL=-1	
*****	
* 10-YEAR, 6-HR STORM (UNDER HISTORICAL CONDITIONS)	
*****	
START RAINFALL	TYPE=1 RAIN QUARTER=0.0 IN RAIN ONE=1.49 IN RAIN SIX=1.93 IN RAIN DELAY=2.43 IN DT=0.03333 HR
*****	
* ON-SITE COMPUTE NM HYD	
ID=1 HYD NO=111.1 AREA=0.001385 SQ MI PER A=100.0 PER B=0.0 PER C=0.0 PER D=0.0 TP=0.1333 HR MASS RAINFALL=-1	
*****	
* 100-YEAR, 6-HR STORM (UNDER ALLOWABLE CONDITIONS)	
*****	
START RAINFALL	TYPE=1 RAIN QUARTER=0.0 IN RAIN ONE=2.23 IN RAIN SIX=2.90 IN RAIN DELAY=3.65 IN DT=0.03333 HR
*****	
* ON-SITE COMPUTE NM HYD	
ID=1 HYD NO=103.2 AREA=0.000839 SQ MI PER A=43.0 PER B=20.0 PER C=20.0 PER D=17.0 TP=0.1333 HR MASS RAINFALL=-1	
*****	
* OFFSITE 111.0-A COMPUTE NM HYD	
ID=1 HYD NO=103.2 AREA=0.000839 SQ MI PER A=43.0 PER B=20.0 PER C=20.0 PER D=17.0 TP=0.1333 HR MASS RAINFALL=-1	
*****	
* 10-YEAR, 6-HR STORM (UNDER ALLOWABLE CONDITIONS)	
*****	
START RAINFALL	TYPE=1 RAIN QUARTER=0.0 IN RAIN ONE=1.49 IN RAIN SIX=1.93 IN RAIN DELAY=2.43 IN DT=0.03333 HR
*****	
* ON-SITE COMPUTE NM HYD	
ID=1 HYD NO=112.1 AREA=0.001385 SQ MI PER A=43.0 PER B=20.0 PER C=20.0 PER D=17.0 TP=0.1333 HR MASS RAINFALL=-1	
*****	
* 100-YEAR, 6-HR STORM (UNDER PROPOSED CONDITIONS)	
*****	
START RAINFALL	TYPE=1 RAIN QUARTER=0.0 IN RAIN ONE=2.23 IN RAIN SIX=2.90 IN RAIN DELAY=3.65 IN DT=0.03333 HR
*****	
* ON-SITE COMPUTE NM HYD	
ID=1 HYD NO=101.2 AREA=0.001385 SQ MI PER A=0.0 PER B=32.0 PER C=10.0 PER D=58.0 TP=0.1333 HR MASS RAINFALL=-1	
*****	
* 10-YEAR, 6-HR STORM (UNDER PROPOSED CONDITIONS)	
*****	
START RAINFALL	TYPE=1 RAIN QUARTER=0.0 IN RAIN ONE=1.49 IN RAIN SIX=1.93 IN RAIN DELAY=2.43 IN DT=0.03333 HR
*****	
* ON-SITE COMPUTE NM HYD	
ID=1 HYD NO=111.2 AREA=0.001385 SQ MI PER A=0.0 PER B=32.0 PER C=10.0 PER D=58.0 TP=0.1333 HR MASS RAINFALL=-1	
*****	
FINISH	



\* PORTION OF BASIN 111.0 FROM RTI'S NAA MASTER DRAINAGE PLAN  
OFFSITE BASIN MAP

VERSION: 1997.02d RUN DATE (MON/DAY/YR) = 02/12/2015  
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
START RAINFALL	TYPE=1	101.10	-	1	.00139	1.96	.059	.79828	1.500	2.213 PER IMP=
COMPUTE NM HYD	TYPE=1	111.10	-	1	.00139	.71	.020	.26998	1.533	.796 PER IMP=
START RAINFALL	TYPE=1	102.10	-	1	.00139	2.81	.094	1.27203	1.500	3.168 PER IMP=
COMPUTE NM HYD	TYPE=1	103.20	-	1	.00084	1.71	.057	1.27203	1.500	3.184 PER IMP=
START RAINFALL	TYPE=1	112.10	-	1	.00139	1.44	.045	.61083	1.500	1.624 PER IMP=
COMPUTE NM HYD	TYPE=1	101.20	-	1	.00139	3.87	.149	2.01759	1.500	4.367 PER IMP=
START RAINFALL	TYPE=1	111.20	-	1	.00139	2.40	.087	1.18437	1.500	2.709 PER IMP=
COMPUTE NM HYD	TYPE=1									58.00

#### PIPE & GRATE CAPACITY CALCULATIONS

CALCULATING PIPE CAPACITY USING ORFICE EQUATION:  $Q = CA(2gh)^{0.50}$

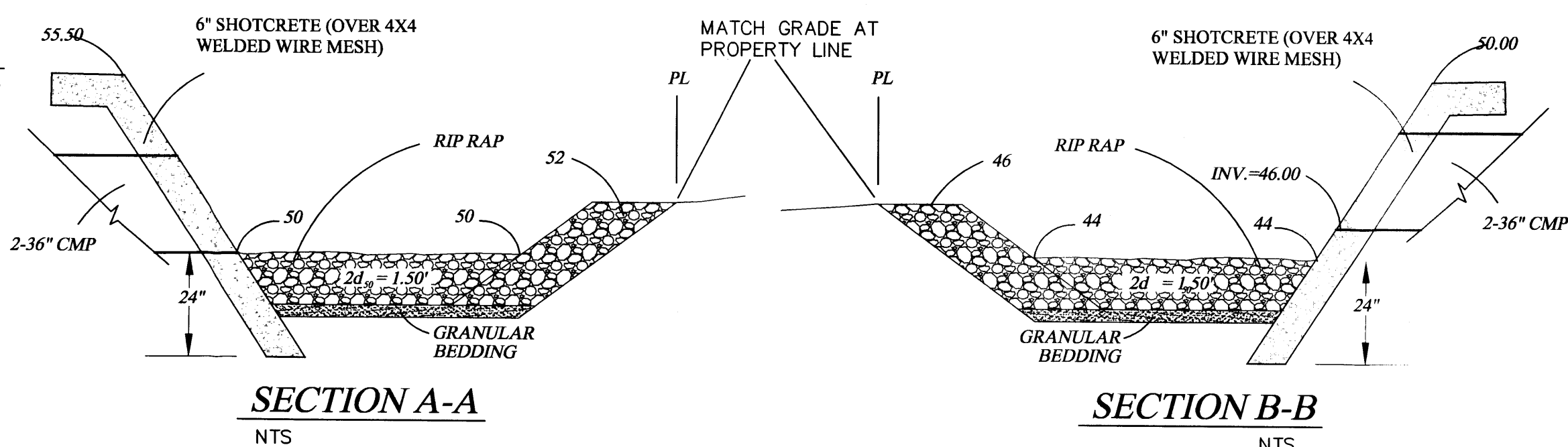
NEENAH R-4350-1 BEEHIVE GRATE:  
 $Q = 0.6 \times 0.30 (2 \times 32.2 \times 2.0)^{0.50} = 2.04$  cfs

NYLOPLAST 10" GRATE (7001-110-198):  
 $Q = 0.6 \times 0.20 (2 \times 32.2 \times 1.0)^{0.50} = 0.95$  cfs

8" PVC:  
 $Q = 0.6 \times 0.35 (2 \times 32.2 \times 1.50)^{0.50} = 2.06$  cfs

10" PVC:  
 $Q = 2 \times 0.6 \times 0.55 (2 \times 32.2 \times 2.0)^{0.50} = 3.79$  cfs

2-36" PVC:  
 $Q = 2 \times 0.6 \times 7.07 (2 \times 32.2 \times 4.0)^{0.50} = 136.07$  cfs



\*\* BASIN 111.0 FROM RTI'S NAA MASTER DRAINAGE PLAN

#### NOTES:

1. ROOF DRAIN LOCATION
2. EXTEND ROOF GUTTERS TO THE BACK OF THE HOUSE
3. DAYLIGHT ROOF GUTTER TO THE BACK OF THE HOUSE

#### POND CALCULATIONS

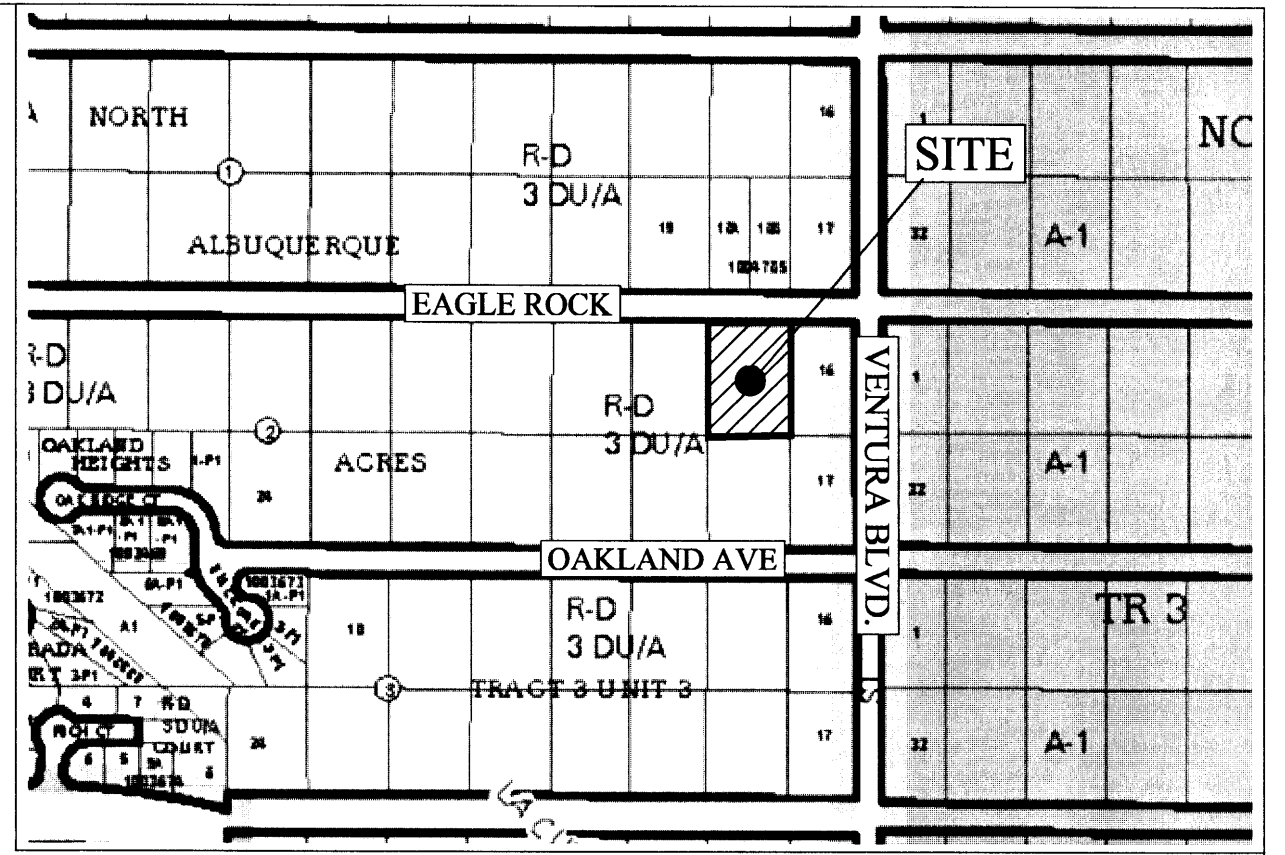
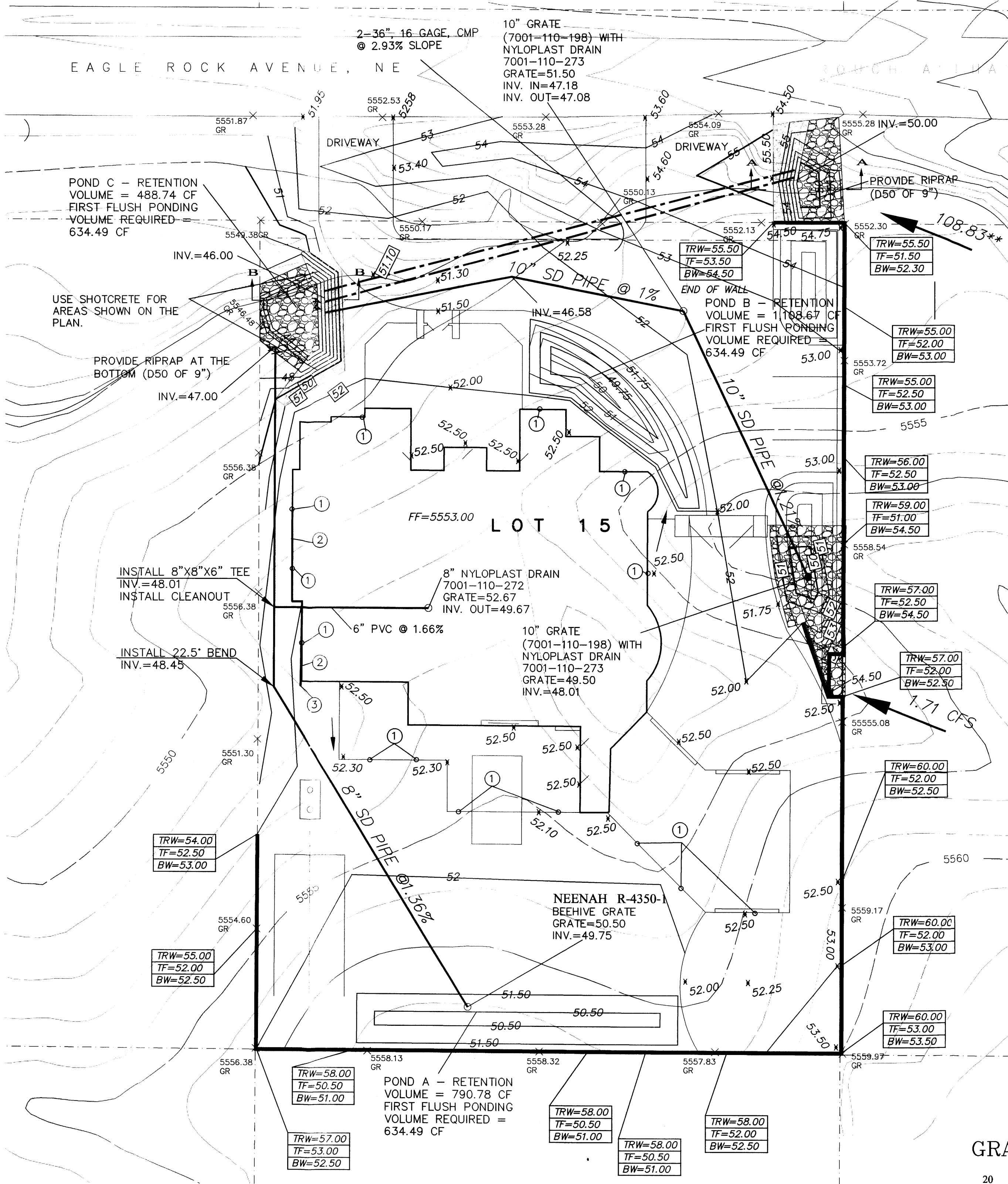
POND A - BOTTOM AREA = 318.72 SF (@ 50.50), TOP AREA = 1,262.83 SF (@ 51.50), DEPTH = 1.0'  
VOLUME PROVIDED =  $(318.72 + 1262.83)/2 \times 1.0 = 790.78$  CF

POND B - BOTTOM AREA = 168.30 SF (@ 49.75), TOP AREA = 940.37 SF (@ 51.75), DEPTH = 2.0'  
VOLUME PROVIDED =  $(168.30 + 940.37)/2 \times 2.0 = 1,108.67$  CF

POND C - BOTTOM AREA = 217.96 SF (@ 44.00), TOP AREA = 349.97 SF (@ 46.00), DEPTH = 2.0'  
VOLUME PROVIDED =  $(217.96 + 349.97)/2 \times 2.0 = 567.93$  CF  
TOTAL RETENTION VOLUME PROVIDED = 790.78 + 1,108.67 + 567.93 = 2,467.38 CF

TOTAL PONDING VOLUME REQUIRED (NAA) = VOL. PROPOSED CONDITIONS - VOL. ALLOWABLE/NAA  
= 0.149 - 0.094 = 0.055 AC-FT = 2,395.08 CF

TOTAL PONDING VOLUME REQUIRED (90TH PERCENTILE/FIRST FLUSH) = 0.34 INCHES x IMPERVIOUS AREA  
=  $(0.34/12 \times 22,393.80) = 634.49$  CF



#### VICINITY MAP:

#### LEGAL DESCRIPTION:

Lot 15 Block 2, Unit 3, Tract 3, North Albuquerque Acres  
BURGS REPLAT, PERFECTO ARMIJO, CONTAINING 0.89 ACRE

#### BENCH MARK DESCRIPTION:

BM: 7\_B20  
X=1553078.775, Y=1524900.435, ELEV.=5566.658

#### GENERAL NOTES:

1. CONTOUR INTERVAL IS HALF (1.00) FOOT.
2. ELEVATIONS ARE BASED ON CITY OF ALBUQUERQUE CONTROL STATION 7\_B20, HAVING AN ELEVATION OF 5566.658 FEET ABOVE SEA LEVEL.
3. UTILITIES SHOWN HEREON ARE IN THEIR APPROXIMATE LOCATION BASED ONLY ON ABOVE GROUND EVIDENCE FOUND IN THE FIELD AND AS-BUILT INFORMATION PROVIDED BY THE CLIENT. UTILITIES SHOWN HEREON, WHETHER INDICATED AS ABANDONED OR NOT, SHALL BE VERIFIED BY OTHERS FOR EXACT LOCATION AND/OR DEPTH PRIOR TO EXCAVATION OR DESIGN CONSIDERATIONS.
4. THIS IS NOT A BOUNDARY SURVEY, BEARINGS ARE ASSUMED, DISTANCES AND FOUND PROPERTY CORNERS ARE FOR INFORMATIONAL PURPOSES ONLY.
5. SLOPES ARE AT 3:1 MAXIMUM.

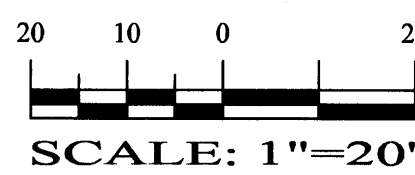
#### NOTICE TO CONTRACTORS

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2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, 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.

#### LEGEND

- 5100--- EXISTING CONTOUR (MAJOR)
- 5102--- EXISTING CONTOUR (MINOR)
- BOUNDARY LINE
- X 85.46 PROPOSED SPOT ELEVATION
- X 5265.16 EXISTING GRADE
- X 5284.43 EXISTING FLOWLINE ELEVATION
- X 5284.43 EXISTING GROUND ELEVATION
- PROPOSED RETAINING WALL
- BC=89.08 BOTTOM OF CHANTEL
- TRW=91.50 TOP OF RETAINING WALL
- TF=88.00 TOP OF FOOTING
- HP HIGH POINT

#### GRAPHIC SCALE



#### SBS CONSTRUCTION AND ENGINEERING, LLC

10209 SNOWFLAKE CT, NW  
ALBUQUERQUE, NEW MEXICO 87114  
(505)899-5570

#### LOT 15, BLOCK 2, UNIT 3, TRACT 3, NAA GRADING AND DRAINAGE PLAN

DRAWING:	DRAWN BY:	DATE:	SHEET #
201423-GR.DWG	SH-B	2-16-2015	1

LAST REVISION: 5/12/2015



\* ZONE 4, ON-SITE  
\*  
\*\*\*\*\*  
\* 100-YEAR, 6-HR STORM (UNDER HISTORICAL CONDITIONS)  
\*\*\*\*\*  
START RAINFALL TYPE=1 RAIN QUARTER=0.0 IN RAIN ONE=2.23 IN RAIN SIX=2.90 IN RAIN DELAY=3.65 IN DT=0.03333 HR  
\* ON-SITE COMPUTE NM HYD ID=1 HYD NO=101.1 AREA=0.001385 SQ MI PER A=100.0 PER B=0.0 PER C=0.0 PER D=0.0 TP=0.1333 HR MASS RAINFALL=-1  
\*\*\*\*\*  
\* 10-YEAR, 6-HR STORM (UNDER HISTORICAL CONDITIONS)  
\*\*\*\*\*  
START RAINFALL TYPE=1 RAIN QUARTER=0.0 IN RAIN ONE=1.49 IN RAIN SIX=1.93 IN RAIN DELAY=2.43 IN DT=0.03333 HR  
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\* 100-YEAR, 6-HR STORM (UNDER ALLOWABLE CONDITIONS)  
\*\*\*\*\*  
START RAINFALL TYPE=1 RAIN QUARTER=0.0 IN RAIN ONE=2.23 IN RAIN SIX=2.90 IN RAIN DELAY=3.65 IN DT=0.03333 HR  
\* ON-SITE COMPUTE NM HYD ID=1 HYD NO=102.1 AREA=0.001385 SQ MI PER A=43.0 PER B=20.0 PER C=20.0 PER D=17.0 TP=0.1333 HR MASS RAINFALL=-1  
\*\*\*\*\*  
\* OFFSITE 111.0-A COMPUTE NM HYD ID=1 HYD NO=103.2 AREA=0.000839 SQ MI PER A=43.0 PER B=20.0 PER C=20.0 PER D=17.0 TP=0.1333 HR MASS RAINFALL=-1  
\*\*\*\*\*  
\* 10-YEAR, 6-HR STORM (UNDER ALLOWABLE CONDITIONS)  
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START RAINFALL TYPE=1 RAIN QUARTER=0.0 IN RAIN ONE=1.49 IN RAIN SIX=1.93 IN RAIN DELAY=2.43 IN DT=0.03333 HR  
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\* ON-SITE COMPUTE NM HYD ID=1 HYD NO=101.2 AREA=0.001385 SQ MI PER A=0.0 PER B=32.0 PER C=10.0 PER D=58.0 TP=0.1333 HR MASS RAINFALL=-1  
\*\*\*\*\*  
\* 10-YEAR, 6-HR STORM (UNDER PROPOSED CONDITIONS)  
\*\*\*\*\*  
START RAINFALL TYPE=1 RAIN QUARTER=0.0 IN RAIN ONE=1.49 IN RAIN SIX=1.93 IN RAIN DELAY=2.43 IN DT=0.03333 HR  
\* ON-SITE COMPUTE NM HYD ID=1 HYD NO=111.2 AREA=0.001385 SQ MI PER A=0.0 PER B=32.0 PER C=10.0 PER D=58.0 TP=0.1333 HR MASS RAINFALL=-1  
\*\*\*\*\*  
FINISH

AHYMO PROGRAM SUMMARY TABLE (AHYMO\_97) - INPUT FILE = sant.txt

COMMAND	HYDROGRAPH IDENTIFICATION	FROM NO.	TO NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1
START RAINFALL TYPE= 1										TIME= .00
COMPUTE NM HYD	101.10	-	1	.00139	1.96	.059	.79828	1.500	2.213 PER IMP=	2.900
START RAINFALL TYPE= 1										TIME= .00
COMPUTE NM HYD	111.10	-	1	.00139	.71	.020	.26998	1.533	.796 PER IMP=	1.930
START RAINFALL TYPE= 1										TIME= .00
COMPUTE NM HYD	102.10	-	1	.00139	2.81	.094	1.27203	1.500	3.168 PER IMP=	17.00
COMPUTE NM HYD	103.20	-	1	.00084	1.71	.057	1.27203	1.500	3.184 PER IMP=	17.00
START RAINFALL TYPE= 1										TIME= .00
COMPUTE NM HYD	112.10	-	1	.00139	1.44	.045	.61083	1.500	1.624 PER IMP=	17.00
START RAINFALL TYPE= 1										TIME= .00
COMPUTE NM HYD	101.20	-	1	.00139	3.87	.149	2.01759	1.500	4.367 PER IMP=	58.00
START RAINFALL TYPE= 1										TIME= .00
COMPUTE NM HYD	111.20	-	1	.00139	2.40	.087	1.18437	1.500	2.709 PER IMP=	58.00

#### PIPE & GRATE CAPACITY CALCULATIONS

CALCULATING PIPE CAPACITY USING ORIFICIE EQUATION:  $Q = CA(2gh)^{0.50}$

NEENAH R-4350-1 BEEHIVE GRATE:  
 $Q = 0.6 \times 0.30 (2 \times 32.2 \times 2.0)^{0.50} = 2.04$  cfs

NYLOPLAST 10" GRATE (7001-110-198):  
 $Q = 0.6 \times 0.20 (2 \times 32.2 \times 1.0)^{0.50} = 0.95$  cfs

8" PVC:  
 $Q = 0.6 \times 0.35 (2 \times 32.2 \times 1.50)^{0.50} = 2.06$  cfs

10" PVC:  
 $Q = 2 \times 0.6 \times 0.55 (2 \times 32.2 \times 2.0)^{0.50} = 3.79$  cfs

2-36" PVC:  
 $Q = 2 \times 0.6 \times 7.07 (2 \times 32.2 \times 4.0)^{0.50} = 136.07$  cfs

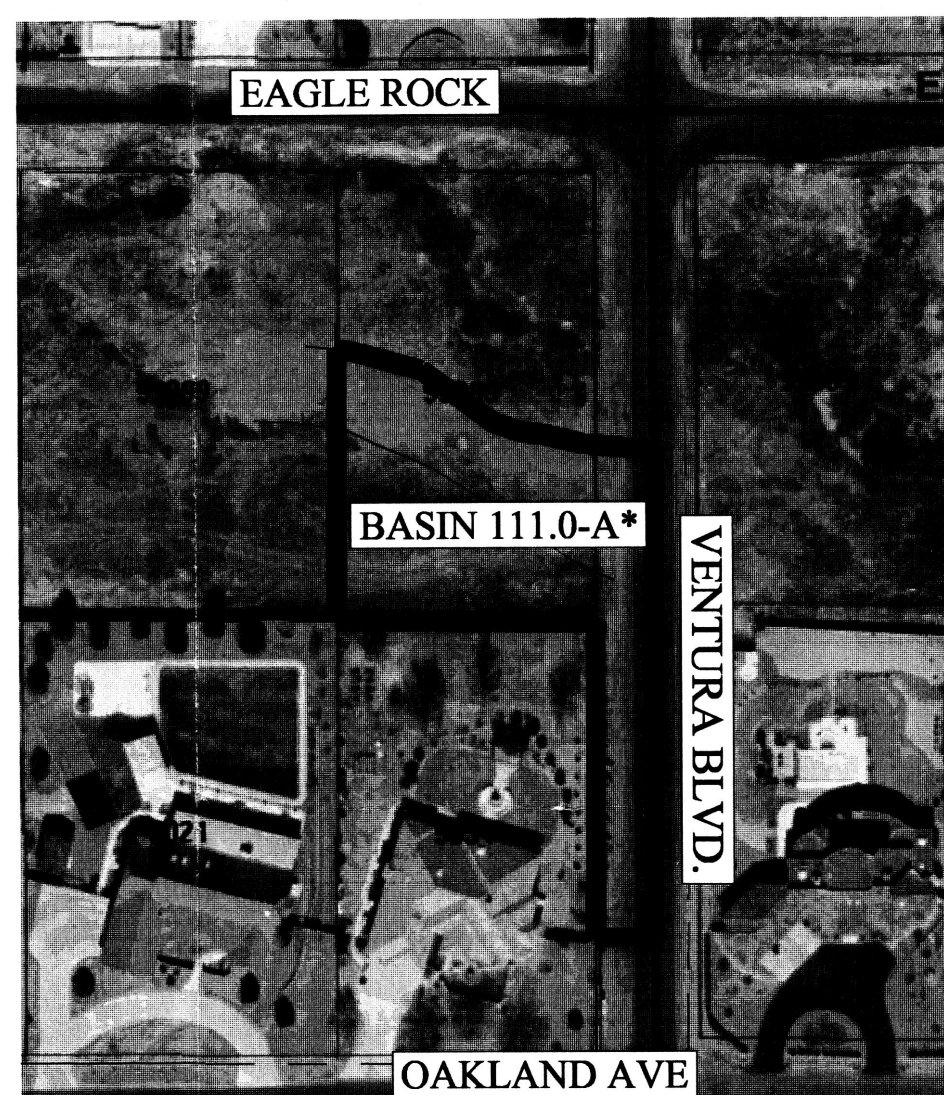
**Location**  
Lot 15 Block 2, Unit 3, Tract 3, North Albuquerque Acres is located south side of Eagle Rock and west of Ventura Boulevard contains +/- 0.89. See attached portion of the Vicinity Map for exact location.

**Purpose**  
The purpose of this drainage report is to present a grading and drainage solution for the proposed buildings.

**Existing Drainage Conditions**  
This site is undeveloped and falls within the NAA Master Drainage Plan prepared by RTI. The site is within Basin 111.0 of the RTI report and is subject to 108.83 cfs which passes through the lot at the northerly portion of the site. Another 1.71 cfs enters the mid portion of the lot from the east. Based on the FIRM Map 35001C0141G (revised September 26, 2008) the site does not fall within a 100-year floodplain.

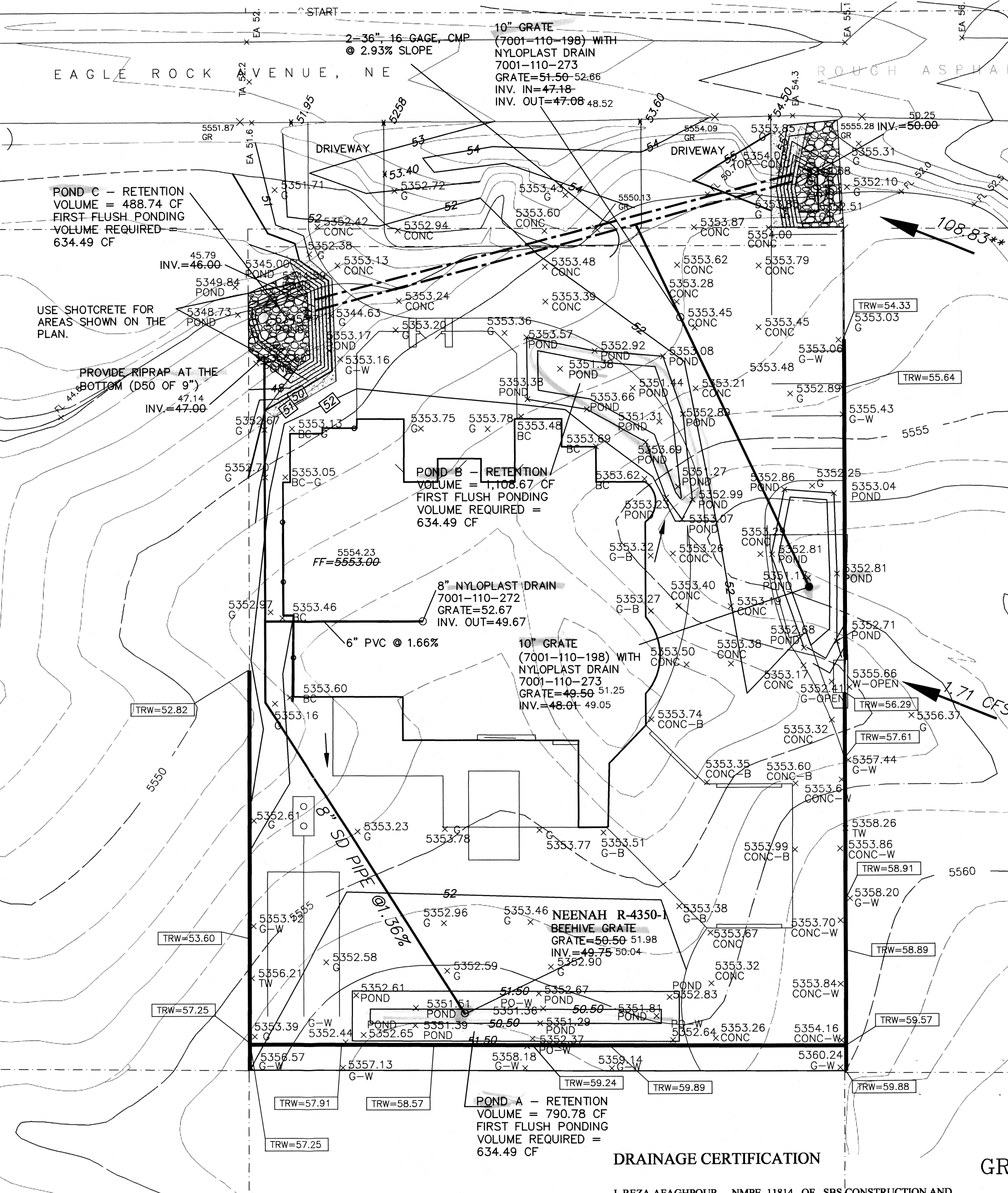
**Proposed Conditions and On-Site Drainage Management Plan**  
The developed runoff generated from this site will have to comply with the land treatments set as part of the NAA Master Drainage Plan. Additional runoff volume generated by this development will be retained on site. Therefore, a retention pond with a volume of 2,467.38 cf is designed to retain the additional volume. The total retention volume required is only 2,395.08 cf. The offsite flow of 1.71 cfs will enter the site to a pond and then intercepted by the Beehive inlets and then discharged to the west via 10" pipe. The 108.83 cfs offsite runoff from Basin 111.0, NAA Master Drainage Plan Basin #101.10 will be intercepted by 2-36" CMPs and will be carried across the property.

**Calculations**  
City of Albuquerque, Development Process Manual, Section 22.2, Hydrology Section, was used for runoff calculations. See this plan for AHYMO input and Summary output files.



\* PORTION OF BASIN 111.0 FROM RTI'S NAA MASTER DRAINAGE PLAN OFFSITE BASIN MAP

VERSION: 1997.02d RUN DATE (MON/DAY/YR) = 02/12/2015  
USER NO. = AHYMO-I-9702c01000R31-AH



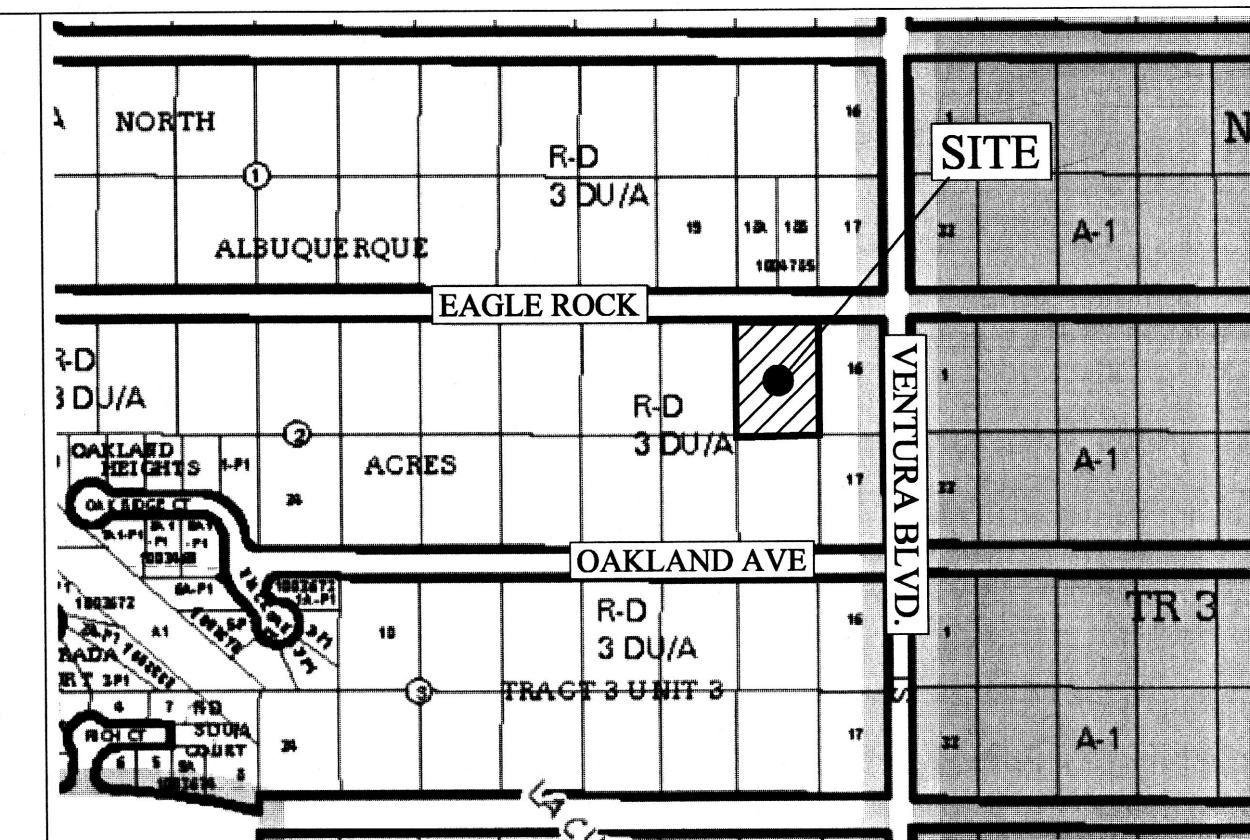
\*\* BASIN 111.0 FROM RTI'S NAA MASTER DRAINAGE PLAN

#### DRAINAGE CERTIFICATION

I, REZA AFAGHPUR, NMPE 11814, OF SBS CONSTRUCTION AND ENGINEERING, LLC, HEREBY CERTIFY THAT THIS PROJECT HAS BEEN GRADED AND WILL DRAIN IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED 05-12-2015. THE RECORD INFORMATION EDITED ONTO THE ORIGINAL DESIGN DOCUMENT HAS BEEN OBTAINED BY NMPS 9801, OF SBS CONSTRUCTION AND ENGINEERING, LLC. I FURTHER CERTIFY THAT I HAVE PERSONALLY VISITED THE PROJECT SITE ON AND HAVE DETERMINED BY VISUAL INSPECTION THAT THE SURVEY SITE DATA IS TRUE AND CORRESPOND TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF A REQUEST FOR FINAL CERTIFICATE OF OCCUPANCY.

THE RECORD INFORMATION PRESENTED HEREON IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE GRADING AND DRAINAGE ASPECTS OF THIS PROJECT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.

REZA AFAGHPUR, NMPE 11814  
7/01/2016  
DATE



VICINITY MAP: C-20-Z

#### LEGAL DESCRIPTION:

Lot 15 Block 2, Unit 3, Tract 3, North Albuquerque Acres  
BURGS REPLAT, PERFECTO ARMIJO, CONTAINING 0.89 ACRE

#### BENCH MARK DESCRIPTION:

BM: 7\_B20  
X=155378.775, Y=1524900.435, ELEV.=5566.658

#### GENERAL NOTES:

1. CONTOUR INTERVAL IS HALF (1.00) FOOT.
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3. UTILITIES SHOWN HEREON ARE IN THEIR APPROXIMATE LOCATION BASED ONLY ON ABOVE GROUND EVIDENCE FOUND IN THE FIELD AND AS-BUILT INFORMATION PROVIDED BY THE CLIENT. UTILITIES SHOWN HEREON, WHETHER INDICATED AS ABANDONED OR NOT, SHALL BE VERIFIED BY OTHERS FOR EXACT LOCATION AND/OR DEPTH PRIOR TO EXCAVATION OR DESIGN CONSIDERATIONS.
4. THIS IS NOT A BOUNDARY SURVEY. BEARINGS ARE ASSUMED, DISTANCES AND FOUND PROPERTY CORNERS ARE FOR INFORMATIONAL PURPOSES ONLY.
5. SLOPES ARE AT 3:1 MAXIMUM.

#### NOTICE TO CONTRACTORS

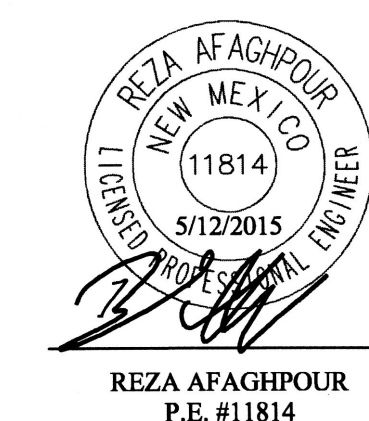
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#### LEGEND

- 5100--- EXISTING CONTOUR (MAJOR)
- 5102--- EXISTING CONTOUR (MINOR)
- BOUNDARY LINE
- X 85.46 PROPOSED SPOT ELEVATION
- 5265.16 EXISTING GRADE
- X 5284.43 EXISTING FLOWLINE ELEVATION
- X 5284.43 EXISTING GROUND ELEVATION
- PROPOSED RETAINING WALL
- BC=89.08 BOTTOM OF CHANEL
- TRW=91.50 TOP OF RETAINING WALL
- TF=88.00 TOP OF FOOTING
- HP HIGH POINT
- TRW=55.64 AS-BUILT RET. WALL
- X 5353.05 AS-BUILT GRADES

#### GRAPHIC SCALE

20 10 0 20  
SCALE: 1"=20'



SBS CONSTRUCTION AND ENGINEERING, LLC

10209 SNOWLAKE CT., NW  
ALBUQUERQUE, NEW MEXICO 87114  
(505)899-5570

#### LOT 15, BLOCK 2, UNIT3, TRACT 3, NAA GRADING AND DRAINAGE PLAN

DRAWING:	DRAWN BY:	DATE:	SHEET #
201423-GR.DWG	SH-B	2-16-2015	1



\* ZONE 4, ON-SITE

\*\*\*\*\*

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

\*\*\*\*\*

START RAINFALL TYPE=1 RAIN QUARTER=0.0 IN RAIN ONE=2.23 IN RAIN SIX=2.90 IN RAIN DELAY=3.65 IN DT=0.03333 HR

\* ON-SITE COMPUTE NM HYD ID=1 HYD NO=101.1 AREA=0.001385 SQ MI PER A=100.0 PER B=0.0 PER C=0.0 PER D=0.0 TP=0.1333 HR MASS RAINFALL=-1

\*\*\*\*\*

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\*\*\*\*\*

START RAINFALL TYPE=1 RAIN QUARTER=0.0 IN RAIN ONE=1.49 IN RAIN SIX=1.93 IN RAIN DELAY=2.43 IN DT=0.03333 HR

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\*\*\*\*\*

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

\*\*\*\*\*

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\*\*\*\*\*

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\*\*\*\*\*

FINISH

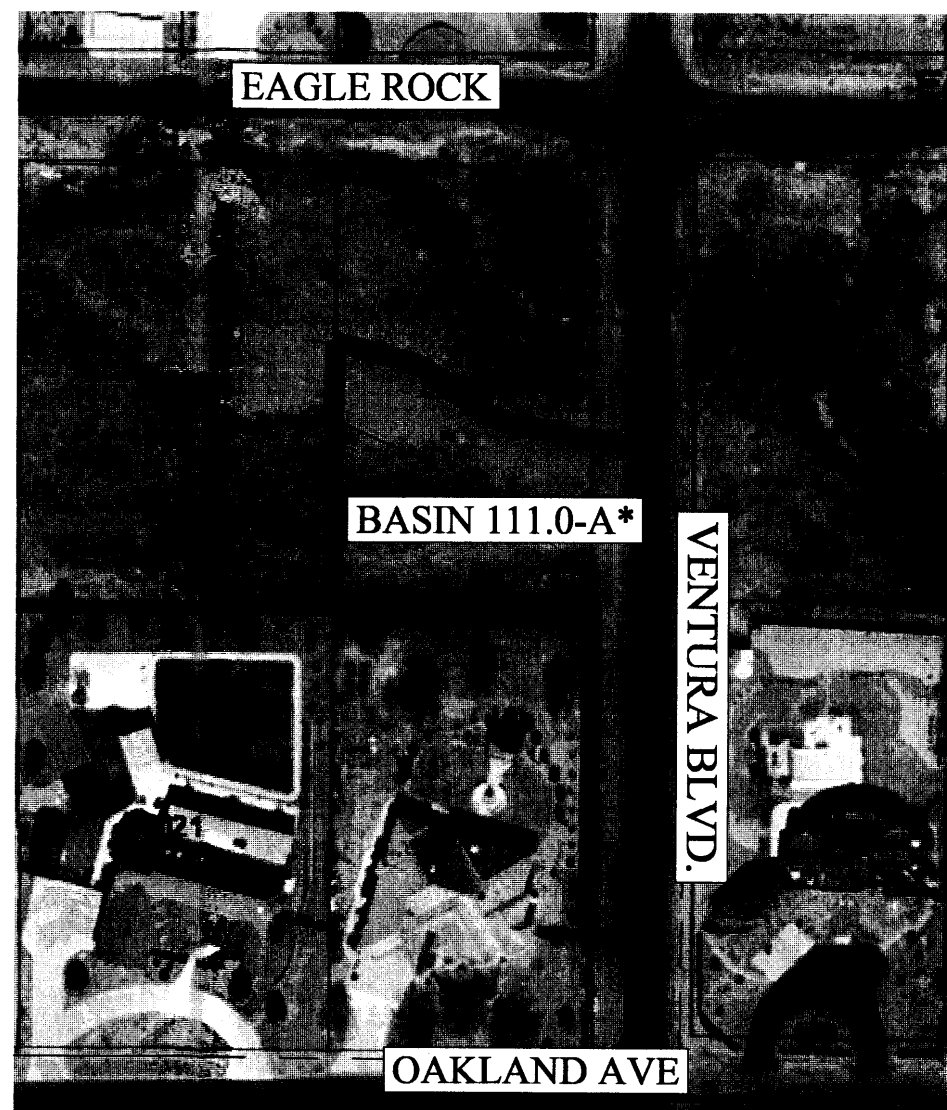
**Location**  
Lot 15 Block 2, Unit 3, Tract 3, North Albuquerque Acres is located south side of Eagle Rock and west of Ventura Boulevard contains +/- 0.89. See attached portion of the Vicinity Map for exact location.

**Purpose**  
The purpose of this drainage report is to present a grading and drainage solution for the proposed buildings.

**Existing Drainage Conditions**  
This site is undeveloped and falls within the NAA Master Drainage Plan prepared by RTI. The site is within Basin 111.0 of the RTI report and is subject to 108.83 cfs which passes through the lot at the northerly portion of the site. Another 1.71 cfs enters the mid portion of the lot from the east. Based on the FIRM Map 35001C0141G (revised September 26, 2008) the site does not fall within a 100-year floodplain.

**Proposed Conditions and On-Site Drainage Management Plan**  
The developed runoff generated from this site will have to comply with the land treatments set as part of the NAA Master Drainage Plan. Additional runoff volume generated by this development will be retained on site. Therefore, a retention pond with a volume of 2,467.38 cf is designed to retain the additional volume. The total retention volume required is only 2,395.08 cf. The offsite flow of 1.71 cfs will enter the site to a pond and then intercepted by the Beehive inlets and then discharged to the west via 10" pipe. The 108.83 cfs runoff from Basin 111.0, NAA Master Drainage Plan Basin #101.10 will be intercepted by 2-36" CMPs and will be carried across the property.

**Calculations**  
City of Albuquerque, Development Process Manual, Section 22.2, Hydrology Section, was used for runoff calculations. See this plan for AHYMO input and Summary output files.



\* PORTION OF BASIN 111.0 FROM RTI'S NAA MASTER DRAINAGE PLAN OFFSITE BASIN MAP

AHYMO PROGRAM SUMMARY TABLE (AHYMO\_97) - INPUT FILE = sont.txt

COMMAND	HYDROGRAPH IDENTIFICATION	FROM NO.	TO NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE
START RAINFALL TYPE=1										1
COMPUTE NM HYD	101.10	-	1	.00139	1.96	.059	.79828	1.500	2.213 PER IMP=	
START RAINFALL TYPE=1										
COMPUTE NM HYD	111.10	-	1	.00139	.71	.020	.26998	1.533	.796 PER IMP=	
START RAINFALL TYPE=1										
COMPUTE NM HYD	102.10	-	1	.00139	2.81	.094	1.27203	1.500	3.168 PER IMP=	
COMPUTE NM HYD	103.20	-	1	.00084	1.71	.057	1.27203	1.500	3.184 PER IMP=	
START RAINFALL TYPE=1										
COMPUTE NM HYD	112.10	-	1	.00139	1.44	.045	.61083	1.500	1.624 PER IMP=	
START RAINFALL TYPE=1										
COMPUTE NM HYD	101.20	-	1	.00139	3.87	.149	2.01759	1.500	4.367 PER IMP=	
START RAINFALL TYPE=1										
COMPUTE NM HYD	111.20	-	1	.00139	2.40	.087	1.18437	1.500	2.709 PER IMP=	
FINISH										

#### PIPE & GRATE CAPACITY CALCULATIONS

CALCULATING PIPE CAPACITY USING ORFICIE EQUATION:  $Q = CA(2gh)^{0.50}$

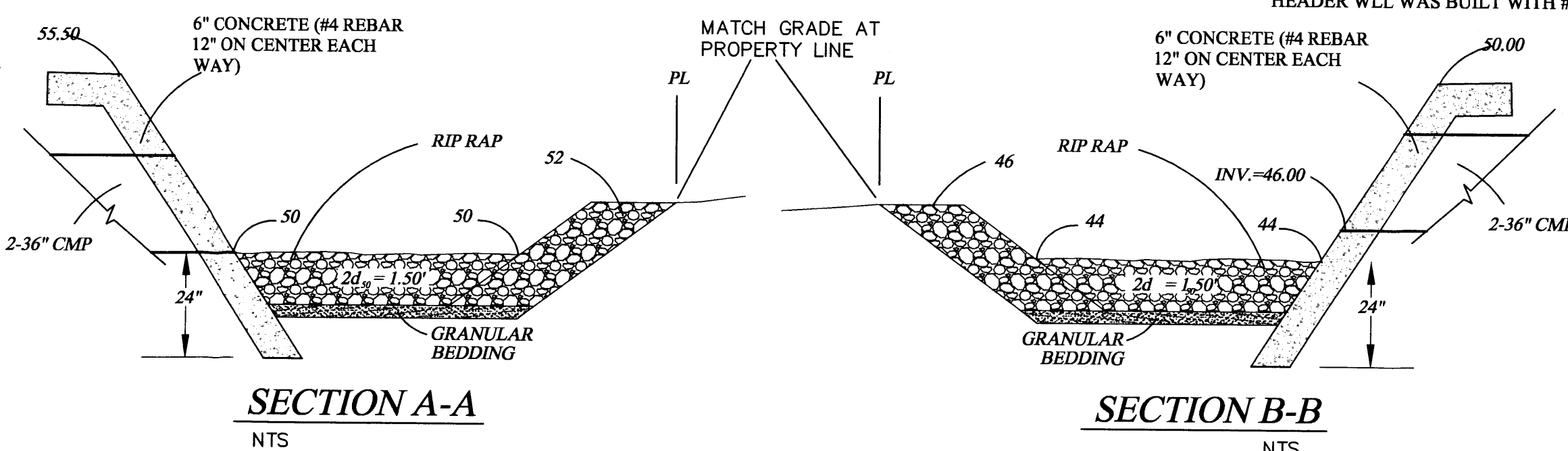
**NEENAH R-4350-1 BEEHIVE GRATE:**  
 $Q = 0.6 \times 0.30 (2 \times 32.2 \times 2.0)^{0.50} = 2.04 \text{ cfs}$

**NYLOPLAST 10" GRATE (7001-110-198):**  
 $Q = 0.6 \times 0.20 (2 \times 32.2 \times 1.0)^{0.50} = 0.95 \text{ cfs}$

**8" PVC:**  
 $Q = 0.6 \times 0.35 (2 \times 32.2 \times 1.50)^{0.50} = 2.06 \text{ cfs}$

**10" PVC:**  
 $Q = 2 \times 0.6 \times 0.55 (2 \times 32.2 \times 2.0)^{0.50} = 3.79 \text{ cfs}$

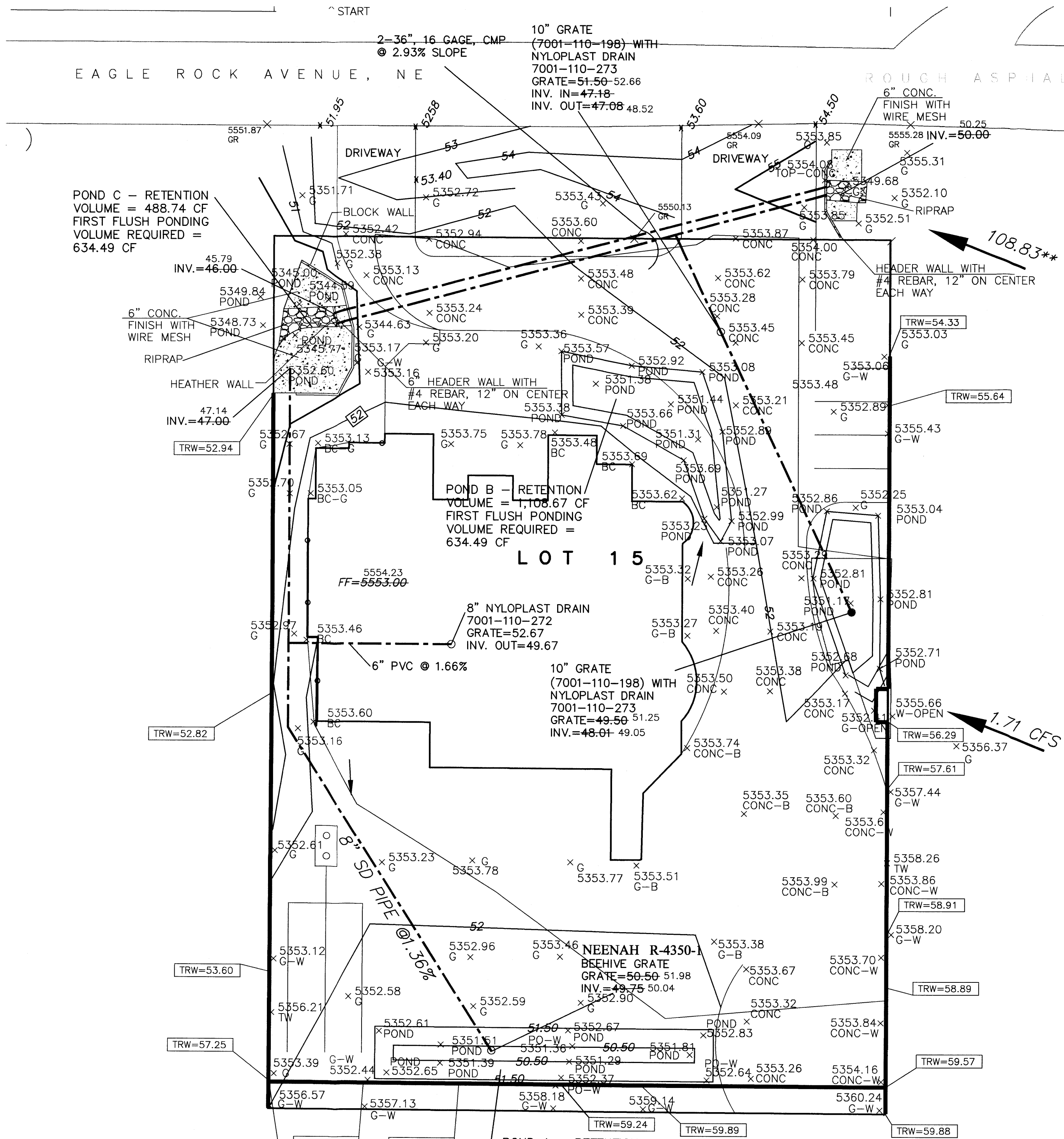
**2-36" PVC:**  
 $Q = 2 \times 0.6 \times 7.07 (2 \times 32.2 \times 4.0)^{0.50} = 136.07 \text{ cfs}$



#### \*\* BASIN 111.0 FROM RTI'S NAA MASTER DRAINAGE PLAN

##### NOTE:

ALL THE RETAINING WALLS THAT WAS CONSTRUCTED ON THIS SITE WERE PERMITTED AND INSPECTED. ALL THE REMAINING STRUCTURES AND CONCRETE WORK ARE ADEQUATE AND THE HEADER WALL WAS BUILT WITH #4 REBAR AND 6" CONCRETE.

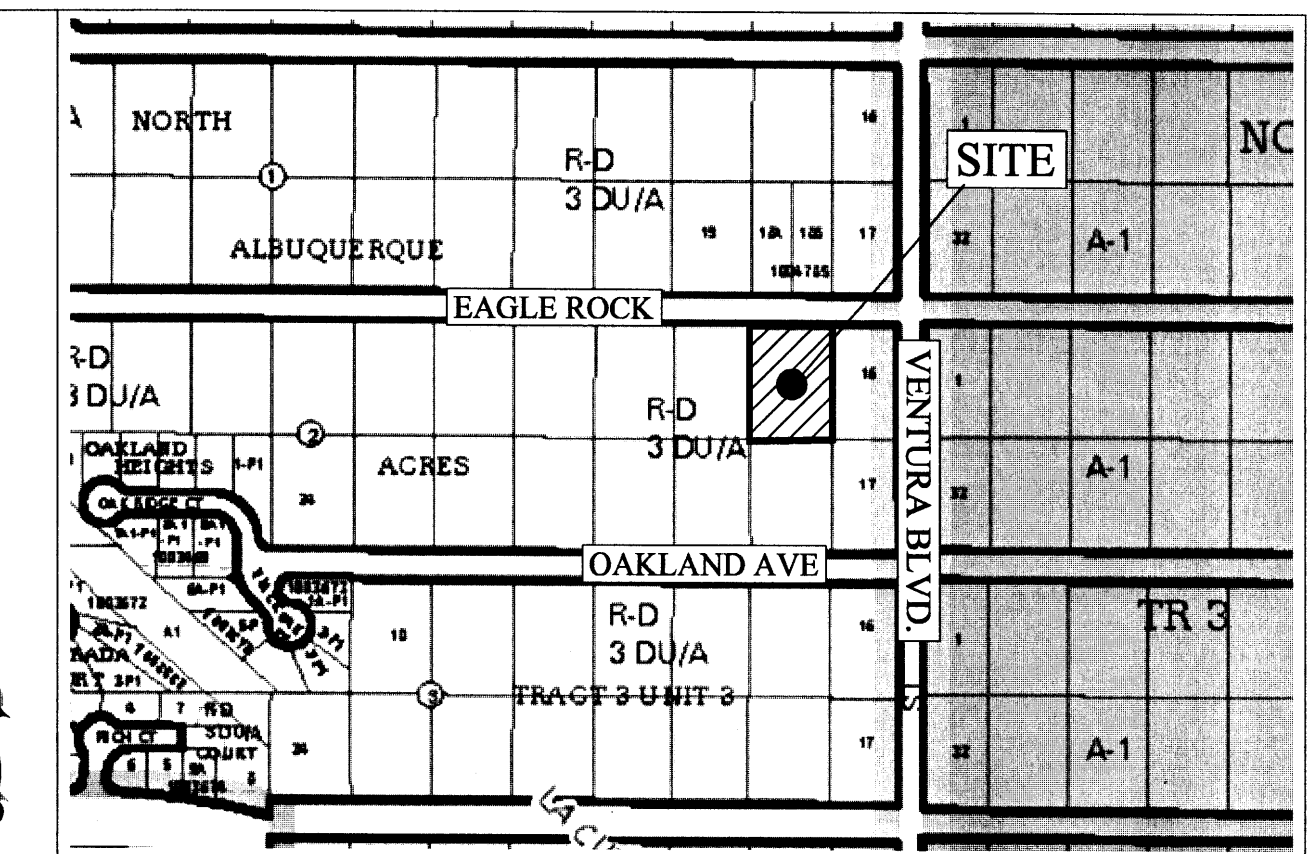


#### DRAINAGE CERTIFICATION

I, REZA AFAGHPOUR, NMPE 11814, OF SBS CONSTRUCTION AND ENGINEERING, LLC, HEREBY CERTIFY THAT THIS PROJECT HAS BEEN GRADED AND WILL DRAIN IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED 05-12-2015. THE RECORD INFORMATION EDITED ONTO THE ORIGINAL DESIGN DOCUMENT HAS BEEN OBTAINED BY NMPS 9801, OF SBS CONSTRUCTION AND ENGINEERING, LLC. I FURTHER CERTIFY THAT I HAVE PERSONALLY VISITED THE PROJECT SITE ON 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 FINAL CERTIFICATE OF OCCUPANCY.

THE RECORD INFORMATION PRESENTED HEREON IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE GRADING AND DRAINAGE ASPECTS OF THIS PROJECT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.

REZA AFAGHPOUR, NMPE 11814



#### VICINITY MAP:

##### LEGAL DESCRIPTION:

Lot 15 Block 2, Unit 3, Tract 3, North Albuquerque Acres BURG REPLAT, PERFECTO ARMIJO, CONTAINING 0.89 ACRE

##### BENCH MARK DESCRIPTION:

BM: 7\_B20  
X=1553078.775, Y=1524900.435, ELEV.=5566.658

##### GENERAL NOTES:

1. CONTOUR INTERVAL IS HALF (1.00) FOOT.
2. ELEVATIONS ARE BASED ON CITY OF ALBUQUERQUE CONTROL STATION 7\_B20, HAVING AN ELEVATION OF 5566.658 FEET ABOVE SEA LEVEL.
3. UTILITIES SHOWN HEREON ARE IN THEIR APPROXIMATE LOCATION BASED ONLY ON ABOVE GROUND EVIDENCE FOUND IN THE FIELD AND AS-BUILT INFORMATION PROVIDED BY THE CLIENT. UTILITIES SHOWN HEREON, WHETHER INDICATED AS ABANDONED OR NOT, SHALL BE VERIFIED BY OTHERS FOR EXACT LOCATION AND/OR DEPTH PRIOR TO EXCAVATION OR DESIGN CONSIDERATIONS.
4. THIS IS NOT A BOUNDARY SURVEY. BEARINGS ARE ASSUMED, DISTANCES AND FOUND PROPERTY CORNERS ARE FOR INFORMATIONAL PURPOSES ONLY.
5. SLOPES ARE AT 3:1 MAXIMUM.

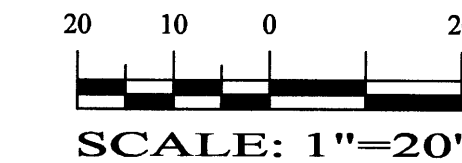
##### NOTICE TO CONTRACTORS

1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, 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.

##### LEGEND

- 5100--- EXISTING CONTOUR (MAJOR)
- 5102--- EXISTING CONTOUR (MINOR)
- BOUNDARY LINE
- X 85.46 PROPOSED SPOT ELEVATION
- 5265.16 EXISTING GRADE
- X 5284.43 EXISTING FLOWLINE ELEVATION
- X 5284.43 GR EXISTING GROUND ELEVATION
- PROPOSED RETAINING WALL
- BC=89.08 BOTTOM OF CHANEL
- TRW=91.50 TOP OF RETAINING WALL
- TF=88.00 TOP OF FOOTING
- HP HIGH POINT
- TRW=55.64 AS-BUILT RET. WALL
- X 5353.05 AS-BUILT GRADES

#### GRAPHIC SCALE



#### SBS CONSTRUCTION AND ENGINEERING, LLC

10209 SNOWFLAKE CT., NW  
ALBUQUERQUE, NEW MEXICO 87114  
(505) 899-3570

#### LOT 15, BLOCK 2, UNIT3, TRACT 3, NAA GRADING AND DRAINAGE PLAN

DRAWING:	DRAWN BY:	DATE:	SHEET #
201423-GR.DWG	SH-B	2-16-2015	1