

CITY OF ALBUQUERQUE



January 5, 2011

Daniel Aguirre, PE
Wilson & Co.
4900 Lang Ave NE
Albuquerque, NM 87109

Re: Unser Blvd, Universe to PdN Drainage Plan Interim Conditions
Engineer Stamp date 11-11-10 (B9/D00)

Dear Mr. Ashton,

Based on information provided in your submittal dated 11-16-10, the above referenced plan is approved for Change Order to the original Unser Work Order. Any minor comments on the project can be addressed at DRC.

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

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Sincerely,

Bradley L. Bingham
Bradley L. Bingham, PE
Principal Engineer, Planning Dept
Development and Building Services

C: file

WILSON & COMPANY

2600 THE AMERICAN ROAD SE, SUITE 100
RIO RANCHO, NEW MEXICO 87124
(505) 898-8021
FAX (505) 898-8501

TRANSMITTAL

Date:	November 16, 2010
Job No.:	08-400-10400
Re:	Unser Blvd Extension
	Drainage Report

To:

Attn: **Mr. Brad Bingham**

B-0912000

WE ARE SENDING YOU ☒ Attached ☐ Under Separate Cover

via Delivery the following items:

- | | | | | |
|---|--|--------------------------------|----------------------------------|---|
| ☐ Shop Drawings | ☒ Prints | ☐ Plans | ☐ Samples | ☐ Specifications |
| ☐ Copy of letter | ☐ Change order | ☐ | | |

Copies	Date	Pages/Sheets	Description
1		-	Unser Blvd Extension Interim Conditions Drainage Report

THESE ARE TRANSMITTED AS CHECKED BELOW:

- | | | |
|--|--|---|
| ☒ For approval/signature | ☐ Approved as submitted | ☐ Resubmit _____ copies for approval |
| ☒ For your use | ☐ Approved as noted | ☐ Submit _____ copies for distribution |
| ☐ As requested | ☐ Return _____ copy | ☐ Return _____ corrected prints |
| ☐ For review and comment | ☐ | |
| ☐ FOR BIDS DUE _____, 20____ ☐ PRINTS ON LOAN - RETURN TO WCEA AFTER BID | | |

Remarks:

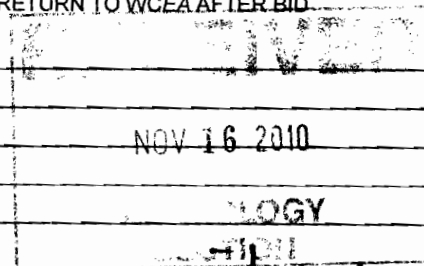
COPY TO: File

SIGNED:

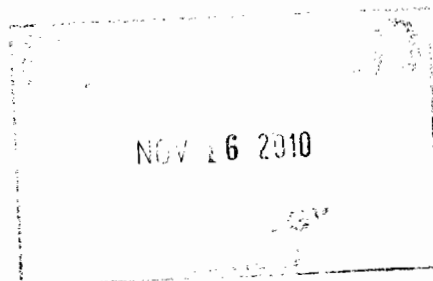
Maryam D Giahi, P.E.

RECEIVED BY:

DATE:



**UNSER BOULEVARD EXTENSION NW
CITY OF ALBUQUERQUE
INTERIM CONDITIONS DRAINAGE REPORT
NOVEMBER 2010**



Prepared For

City of Albuquerque
600 2nd street NW
Albuquerque, NM 87102
505-924-3860

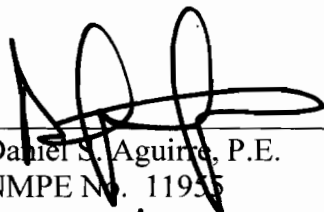
Prepared By

**WILSON
& COMPANY**

Wilson & Company, Inc., Engineers & Architects
2600 American Road, SE, Ste. 100
Rio Rancho, NM 87124
505-898-8021

**UNSER BOULEVARD EXTENSION NW
CITY OF ALBUQUERQUE
INTERIM CONDITIONS DRAINAGE REPORT
NOVEMBER 2010**

I, Daniel S. Aguirre, P.E., do hereby certify that this report was prepared by me or under my direction and that I am a duly registered Professional Engineer under the laws of the State of New Mexico



Daniel S. Aguirre, P.E.
NMPE No. 11955

11/11/10

Date

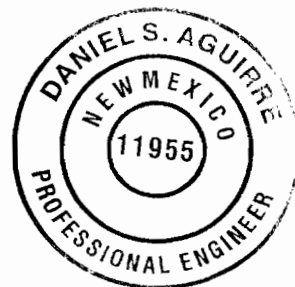


Table of Contents

	Page
I. Purpose	1
II. Introduction	1
III. Methodology	1
IV. Proposed Conditions	1
V. Conclusions	2

List of Tables

Table 1 – Precipitation Frequency estimates
Table 2 – Proposed Model Data
Table 3 – Pond Data

List of Plates

Plate 1 – Interim Conditions Basin Boundary Plan

Appendices

Appendix A – AHYMO Calculations
 10-year storm - Summary Table
 Input File
 100-year storm - Summary Table
 Input File
 Culvert Calculations
 Pond A outlet pipe
 Pond C outlet pipe

Appendix B – Plate 1 – Interim Basin Boundary Plan
 Unser Boulevard Extension NW, Roadway Plan & Profile
 Sheet 9 – Sta 15+00 to Sta 27+00
 Sheet 10 – Sta 27+00 to Sta 39+00
 Unser Boulevard – Boca Negra Dan to Paseo Del Norte Drainage
 Report and Basin Map

I. PURPOSE

The purpose of this change is to prevent the closure or disruption of Unser Boulevard traffic with the removal of the temporary culverts and the installation of the permanent drainage structures. An approved drainage study prepared by Wilson & Company Engineers and Architects dated April 2009 analyzed required temporary drainage structures to safely convey runoff under Unser Boulevard until the development of upstream properties. See Boca Negra Dam to Paseo Del Norte drainage report and basin map in Appendix B for location and size of these crossings. This report analyzes construction of temporary retention and detention ponds in place of temporary crossing culverts and releasing it into underground storm drain system until the construction of permanent drainage structures.

II. INTRODUCTION

This report analyzes construction of temporary ponds on the west side of Unser Boulevard in lieu of the temporary culverts. The ponds will be designed to retain up to the 10 year event with a spillway to the 54 inch pipe adjacent to Unser Boulevard for larger events. The 54 inch storm drain will provide an outlet to the Boca Negra Dam Arroyo below the escarpment with the construction of the Boca Negra Dam by AMAFCA.

III. METHODOLOGY

Arid-lands Hydrologic Model (AHYMO-97) was used to determine the flows for the given 100-year, 24-hour and 10 year, 24-hour storm events.

The precipitation inputs for the model are taken from NOAA Atlas 14. For this site the values are listed in Table 1.

Table 1 - Precipitation Frequency Estimates (inches)				
Storm Year	P_{15 min}	P_{1 hour}	P_{6 hour}	P_{24 hour}
10	0.63	1.05	1.40	1.69
100	1.01	1.70	2.21	2.51

IV. PROPOSED CONDITIONS

For the purpose of this report, the three basins from the approved report were matched in size and land treatments to generate the same runoff and to size the ponds to handle the same runoff volume. See AHYMO summary and Input files in Appendix A and Interim Condition Basin Boundary Plan in Appendix B. Basins 3, 4 and 5 are named 100A, 100B and 100C respectively. Three ponds were designed, one for each basin to detain the 100-year storm event. Each pond will retain 10-year storm event volume in order to maximize pond volumes. A rock weir will be utilized to retain the required runoff volume for 10-year storm and allow overflow for larger

events. This structure will serve as a water quality structure. See Table 2 for 10-year and 100-year model data.

Table 2 - Proposed Model Data				
Storm Year	Basin ID	Area (ac)	Q peak (cfs)	Runoff Volume (ac-ft)
10	100 A	60.00	8.12	0.48
	100 B	13.80	3.91	0.16
	100 C	40.50	6.96	0.41
100	100 A	60.00	43.91	2.28
	100 B	13.80	18.24	0.59
	100 C	40.50	44.80	2.20

Table 3 lists pond data. See Interim Basin Boundary Plan for pond location.

Table 3 - Pond Data					
Storm Year	Pond	Q _{In} (cfs)	Q _{Out} (cfs)	Volume (ac-ft)	WSEL (ft)
10	A	8.12	0.00	0.53*	5335.50
	B	3.91	0.00	0.14*	5330.00
	C	6.96	0.00	0.44*	5327.50
100	A	43.91	7.00	1.47	5336.83
	B	18.25	6.00	0.71	5331.83
	C	44.80	21.00	1.03	5328.98

* Indicates retained volume.

Ponds are connected to each other through riprap swales and culvert pipes. See culvert calculations in Appendix A.

IV. CONCLUSION

Pond A is designed to outlet through an 18" pipe to a riprap swale which terminates at Pond B. Pond B and Pond C are connected through a riprap swales except at the crossing of Almenda Place where an 18" pipe culvert will be installed. Pond C outfall will be connected into the underground storm drain system adjacent to Unser Boulevard being built with the Unser Boulevard extension project.

With the development of the upstream properties west of Unser Boulevard and the Unser storm drain, the temporary ponds will be eliminated and the allowable discharge as designed per the Master drainage report will be released into the system.

APPENDIX A

AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) -
 INPUT FILE = C:\PERSONAL\PDN\AHYMO\INTERI~2.WPD

AHYMO.SUM
 - VERSION: 1997.02c

RUN DATE (MON/DAY/YR) = 10/22/2010
 USER NO. = AHYMO-C-9803C01UNMLIB-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 =	NOTATION

*S	*****										
*S	10 YEAR 24 HOUR STORM - INTERIM RUNOFF ANALYSIS										
*S	RAINFALL DATA FROM NOAA ATLAS 14										
*S	*****										
*S	*****										
START	*****										
LOCATION	BERNALILLO COUNTY										
RAINFALL TYPE= 2	*****										
*S	*****										
*S	*****										
*S	BASIN 100A, AREA=60.0 AC										
*S	*****										
*S	COMPUTE BASIN "100A"										
COMPUTE NM HYD	1.10	-	1	.09375	8.12	.479	.09570	1.650	.135	PER IMP=	3.00
*S	*****										
*S	BASIN 100B, AREA=13.83 AC										
*S	*****										
*S	COMPUTE BASIN "100B"										
COMPUTE NM HYD	1.11	-	11	.02161	3.91	.158	.13742	1.500	.283	PER IMP=	6.00
*S	*****										
*S	BASIN 100C, AREA=60.47 AC										
*S	*****										
COMPUTE NM HYD	1.12	-	12	.09445	6.96	.412	.08180	1.650	.115	PER IMP=	2.00
*S	*****										
*S	*****										
FINISH	*****										

TIME= .00
 RAIN24= 1.690

```

                                INTERIM SAD 228 - 10 YR.WPD
* SAD 228 DRAINAGE ANALYSIS - OFFSITE DRAINAGE, WEST OF UNSER BLVD
* WILSON & COMPANY PROJECT 08-400-104-00
* INTERIM CONDITIONS MODEL
* 10 YR 24 HR STORM EVENT
* DATE: October 2010
* FILE: X:\Public\PROJECTS\0840010400\AE_DATA\AHYMO\INTERIM SAD 228-10 YR.WPD

*S*****
*S
*S      10 YEAR 24 HOUR STORM - INTERIM RUNOFF ANALYSIS
*S      RAINFALL DATA FROM NOAA ATLAS 14
*S*****

START          0.0 HOURS
LOCATION         BERNALILLO COUNTY
RAINFALL       TYPE=2  RAIN QUARTER=0.63 IN  RAIN ONE=1.05 IN
               RAIN SIX=1.40 IN  RAIN DAY=1.69 IN  DT=0.05 HR
*S*****

*S *****
*S BASIN 100A, AREA=60.0 AC
*S
*S COMPUTE BASIN "100A"
*

COMPUTE LT TP  LCODE=1 NK=3 ISLOPE=-1
               LENGTH=400 FT SLOPE=0.020 K=0.7
               LENGTH=1600 FT SLOPE=0.012 K=2.0
               LENGTH=700 FT SLOPE=0.012 K=3.0

COMPUTE NM HYD ID=1  HYD NO=1.1  DA=0.09375 SQ MI
               PER A=97  PER B=0  PER C=0  PER D=3
               TP=0.0  MASS RAIN=-1

PRINT HYD      ID=1  CODE=1

*S *****
*S
*S BASIN 100B, AREA=13.83 AC
*S
*S COMPUTE BASIN "100B"
*

COMPUTE LT TP  LCODE=1 NK=2 ISLOPE=-1
               LENGTH=400 FT SLOPE=0.025 K=0.7
               LENGTH=1060 FT SLOPE=0.0206 K=2.0

COMPUTE NM HYD ID=11  HYD NO=1.11  DA=0.02161 SQ MI
               PER A=94  PER B=0  PER C=0  PER D=6
               TP=0.0  MASS RAIN=-1

PRINT HYD      ID=11  CODE=1

*S *****
*S BASIN 100C, AREA=60.47 AC
*S

COMPUTE LT TP  LCODE=1 NK=3 ISLOPE=-1
               LENGTH=400 FT SLOPE=0.010 K=0.7
               LENGTH=1375 FT SLOPE=0.0189 K=2.0
               LENGTH=1375 FT SLOPE=0.0189 K=3.0

COMPUTE NM HYD ID=12  HYD NO=1.12  DA=0.09445 SQ MI
               PER A=98  PER B=0  PER C=0  PER D=2
               TP=0.0  MASS RAIN=-1

PRINT HYD      ID=12  CODE=1

*S *****
*S

FINISH

```


ROUTE RESERVOIR	PONDC	22	16	.20981	AHYNQ.SUM 20.93	4,342	.38805	2.050	.156 AC-FT=	1.035
-----------------	-------	----	----	--------	--------------------	-------	--------	-------	-------------	-------

*S
 *S
 *S
 *S

 FINISH

```
* INTERIM SAD 228.WPD
* SAD 228 DRAINAGE ANALYSIS
* WILSON & COMPANY PROJECT 08-400-104-00
* INTERIM CONDITIONS MODEL
* 100 YR 24 HR STORM EVENT
* DATE: October 2010
* FILE: X:\Public\PROJECTS\0840010400\AE_DATA\AHYMO\INTERIM SAD 228.WPD
* OFFSITE DRAINAGE, PONDS WEST OF UNSER BLVD.
```

```
START          0.0 HOURS
LOCATION        BERNALILLO COUNTY
RAINFALL      TYPE=2  RAIN QUARTER=1.01 IN    RAIN ONE=1.70 IN
              RAIN SIX=2.20 IN    RAIN DAY=2.51 IN    DT=0.05 HR
```

```

COMPUTE LT TP      LCODE=1 NK=3 ISLOPE=-1
                   LENGTH=400 FT  SLOPE=0.020  K=0.7
                   LENGTH=1600 FT  SLOPE=0.012  K=2.0
                   LENGTH=700 FT  SLOPE=0.012  K=3.0

```

```
*S
*S *****
*S ROUTE BASIN 100A THROUGH POND-100A (18"CMP W/ 15" ORIFICE PLATE)>>>>>>>
*S
```

```
*S
PRINT HYD      ID=14    CODE=10
*S
*S *****
*S BASIN 100B, AREA=13.83 AC,
*S
*S COMPUTE BASIN "100B"
*S
```

```
*****
*S ADD BASINS "100B" AND "OUTFLOW FROM POND 100A" *****
```

[illegible]

Page 1

INTERIM SAD 228.WPD		
0.00	0.0	5329
0.01	0.141	5330
5.23	0.437	5331
6.32	0.768	5332

```

*S
PRINT HYD      ID=15  CODE=10
*S
*S *****
*S BASIN 100C, AREA=60.47 AC,
*S
*S COMPUTE BASIN "100C"
*S

COMPUTE LT TP  LCODE=1 NK=3 ISLOPE=-1
                LENGTH=400 FT SLOPE=0.010 K=0.7
                LENGTH=1375 FT SLOPE=0.0189 K=2.0
                LENGTH=1375 FT SLOPE=0.0189 K=3.0

COMPUTE NM HYD ID=12  HYD NO=1.12  DA=0.09445 SQ MI
                PER A=98  PER B=0  PER C=0  PER D=2
                TP=0.0  MASS RAIN=-1

PRINT HYD      ID=12  CODE=1

*S *****
*S ADD BASINS "100C" AND "OUTFLOW FROM POND 100B"  ++++++
ADD HYD        ID=22  HYD NO=1.14  ID I=15 ID II=12
PRINT HYD      ID=22  CODE=1
*S
*S *****
*S ROUTE BASIN 100C THROUGH POND-100C (30" RCP W/ 21" ORIFICE PLATE)>>>>>>
*S

ROUTE RESERVOIR      ID=16  HYD=PONDC  INFLOW ID=22 CODE=10
                     OUTFLOW (CFS)  STORAGE  (AC-FT) ELEV (FT)
                     0              0              5326
                     0.01            0.292          5327
                     17              0.638          5328
                     21              1.042          5329

*S
PRINT HYD      ID=16  CODE=10
*S
*S *****
FINISH

```

Culvert Calculator Report

POND A TO POND B

Solve For: Discharge

Culvert Summary			
Allowable HW Elevation	5,337.00 ft	Headwater Depth/Height	2.40
Computed Headwater Elev.	5,337.00 ft	Discharge	7.17 cfs
Inlet Control HW Elev.	5,336.54 ft	Tailwater Elevation	5,332.00 ft
Outlet Control HW Elev.	5,337.00 ft	Control Type	Outlet Control

Grades			
Upstream Invert	5,334.00 ft	Downstream Invert	5,332.00 ft
Length	68.00 ft	Constructed Slope	0.029412 ft/ft

Hydraulic Profile			
Profile	CompositeM2PressureProfile	Depth, Downstream	1.07 ft
Slope Type	Mild	Normal Depth	N/A ft
Flow Regime	Subcritical	Critical Depth	1.07 ft
Velocity Downstream	6.41 ft/s	Critical Slope	0.039095 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.024
Section Material	CMP	Span	1.25 ft
Section Size	15 inch	Rise	1.25 ft
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	5,337.00 ft	Upstream Velocity Head	0.53 ft
Ke	0.90	Entrance Loss	0.48 ft

Inlet Control Properties			
Inlet Control HW Elev.	5,336.54 ft	Flow Control	Submerged
Inlet Type	Projecting	Area Full	1.2 ft²
K	0.03400	HDS 5 Chart	2
M	1.50000	HDS 5 Scale	3
C	0.05530	Equation Form	1
Y	0.54000		

Culvert Calculator Report

POND C OUTLET

Solve For: Discharge

Culvert Summary			
Allowable HW Elevation	5,329.00 ft	Headwater Depth/Height	4.00
Computed Headwater Elev.	5,329.00 ft	Discharge	20.47 cfs
Inlet Control HW Elev.	5,326.02 ft	Tailwater Elevation	5,326.00 ft
Outlet Control HW Elev.	5,329.00 ft	Control Type	Outlet Control

Grades			
Upstream Invert	5,322.00 ft	Downstream Invert	5,319.00 ft
Length	78.60 ft	Constructed Slope	0.038168 ft/ft

Hydraulic Profile			
Profile	PressureProfile	Depth, Downstream	7.00 ft
Slope Type	N/A	Normal Depth	1.04 ft
Flow Regime	N/A	Critical Depth	1.61 ft
Velocity Downstream	8.51 ft/s	Critical Slope	0.014492 ft/ft

Section			
Section Shape	Circular	Mannings Coefficient	0.013
Section Material	Concrete	Span	1.75 ft
Section Size	21 inch	Rise	1.75 ft
Number Sections	1		

Outlet Control Properties			
Outlet Control HW Elev.	5,329.00 ft	Upstream Velocity Head	1.13 ft
Ke	0.50	Entrance Loss	0.56 ft

Inlet Control Properties			
Inlet Control HW Elev.	5,326.02 ft	Flow Control	Submerged
Inlet Type	Square edge w/headwall	Area Full	2.4 ft ²
K	0.00980	HDS 5 Chart	1
M	2.00000	HDS 5 Scale	1
C	0.03980	Equation Form	1
Y	0.67000		

APPENDIX B

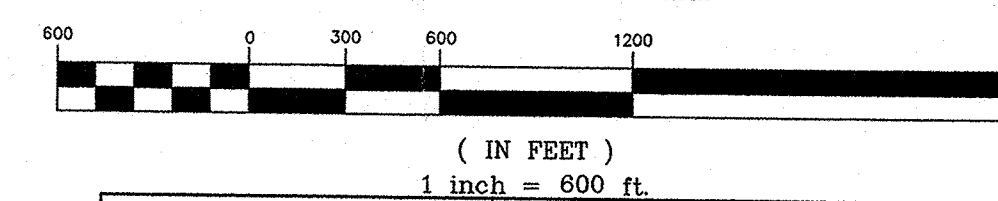


LEGEND

- BASIN ID
- BASIN BOUNDARY
- PETROGLYPH NATIONAL MONUMENT BOUNDARY
- FLOW DIRECTION
- LA CIENTISTA SUBDIVISION
- PROPOSED SAD 228
- ADJACENT PROPERTIES
- INDEX CONTOUR
- INTERMEDIATE CONTOUR



GRAPHIC SCALE



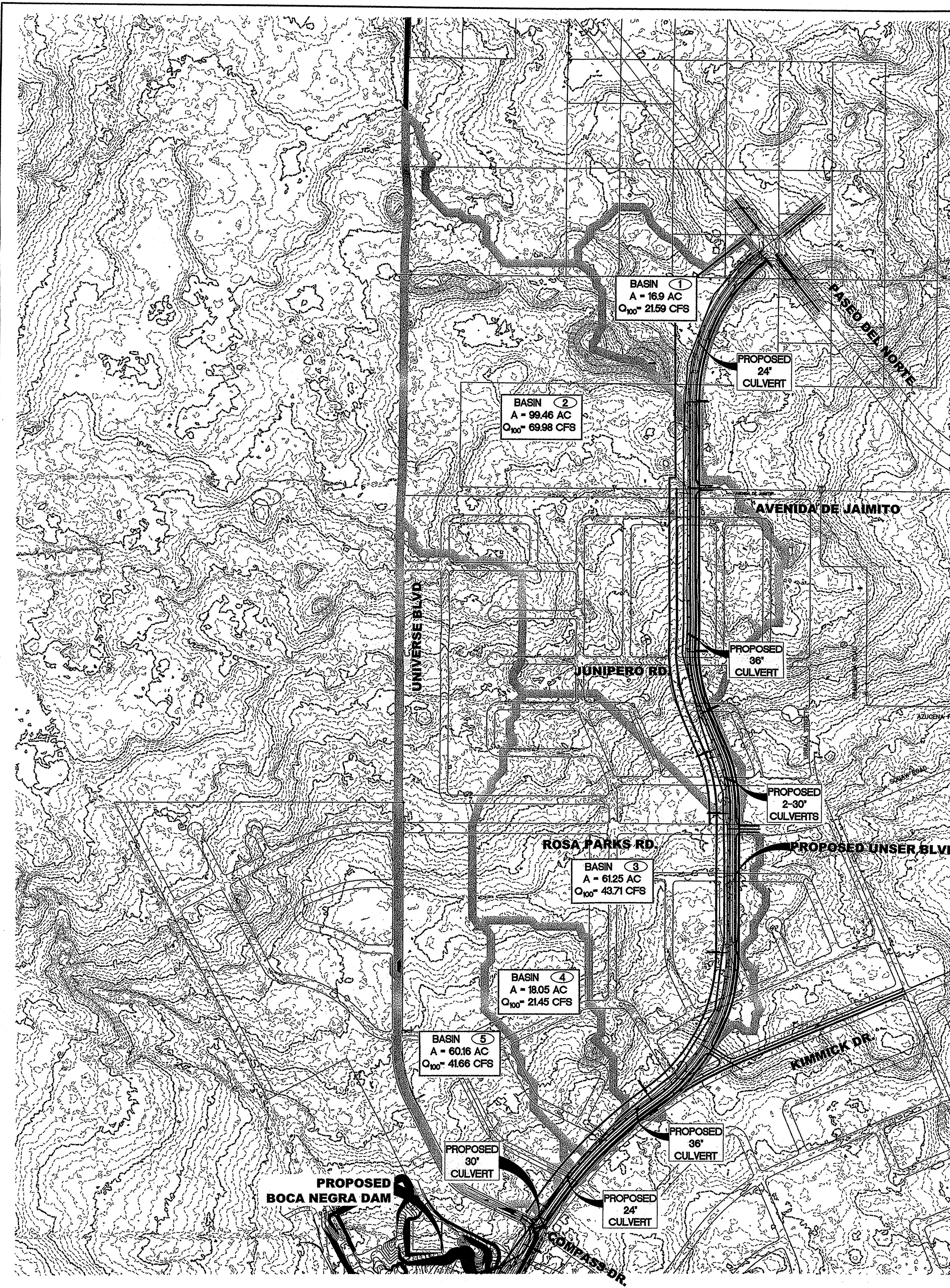
**WILSON
& COMPANY**
2600 THE AMERICAN ROAD S.E.
SUITE 100
RIO RANCHO, NEW MEXICO
87124
(505) 898-8021

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING GROUP

SAD 228
PRELIMINARY DRAINAGE REPORT
INTERIM BASIN BOUNDARY PLAN

PLATE 1

MA:TRN-08-100-200-19\CD\705004\Proposed\Drainage\Basin Map_PRRP.dwg 4/9/2009 11:06 PM MDT



DRAINAGE REPORT

SITE LOCATION: THE PROPOSED UNSER BOULEVARD (BOCA NEGRA DAM TO PASEO DEL NORTE) IS BOUNDED BY THE BOCA NEGRA DAM (AT UNIVERSE BLVD.) AND PASEO DEL NORTE. ITS HORIZONTAL ALIGNMENT IS BASED ON THE VOLCANO HEIGHTS SECTOR PLAN AND SAD 228 PLAN. THE ALIGNMENT IS PROPOSED TO IMPACT APPROXIMATELY FIFTY FOUR (54) PARCELS SOUTH OF PASEO DEL NORTE.

METHODOLOGY: SECTION 22.2 OF THE CITY OF ALBUQUERQUE DEVELOPMENT PROCESS MANUAL (DPM) WAS USED IN THE HYDROLOGY ANALYSIS OF THE SITE. A PRINCIPAL DESIGN STORM OF 100-YEAR, 6-HOUR STORM EVENT WAS USED AS DEFINED BY THE NOAA ATLAS 2, PRECIPITATION-FREQUENCY ATLAS OF THE WESTERN UNITED STATES, VOL. IV-NEW MEXICO. THE ARID-LANDS HYDROLOGIC MODEL(AHYMO) WAS USED TO CALCULATE RUNOFF AMOUNTS.

UNDEVELOPED CONDITIONS:

THE EXISTING CONDITIONS CONSISTS OF UNDEVELOPED LAND USE WITH NATIVE VEGETATION AND MINIMAL DISTURBANCE TO GRADING, GROUND COVER, AND INFILTRATION CAPACITY. KIMMICK ROAD IS CURRENTLY BUILT WHICH MAKES UP ABOUT HALF A MILE OF THE PROPOSED UNSER BLVD. ALIGNMENT.

THE EXISTING TERRAIN IN THE AREA GENERALLY VARIES FROM ABOUT ONE TO FIVE PERCENT. THE EXISTING WATERSHEDS ARE BOUNDED BY UNIVERSE BLVD. TO THE WEST AND HISTORICALLY FLOW SOUTHEAST. THERE ARE APPROXIMATELY FIVE WATERSHEDS WHICH DRAIN TOWARD THE PROPOSED UNSER BLVD. ALIGNMENT FROM UNIVERSE BLVD. AND OUTLET INTO THE BOCA NEGRA ARROYO. UNIVERSE BLVD. IS CURRENTLY BUILT AS A TWO-LANE FACILITY WITH NO SHOULDERS AND CURRENT DIVERTS ALL RUNOFF FLOW FLOWS FROM THE WEST. DRAINAGE IS CARRIED SOUTH ALONG THE WEST SIDE OF UNIVERSE CURRENTLY.

THE PROJECT AREA IS LOCATED IN PRECIPITATION ZONE 1, WEST OF RIO GRANDE, ACCORDING TO THE CITY OF ALBUQUERQUE'S DEVELOPMENT PROCESS MANUAL (DPM). TABLE 1 SUMMARIZES THE CONDITIONS OF THE EXISTING SITE.

TABLE 1
EXISTING CONDITIONS

Basin ID	Area (ac)	%A	%B	%C	%D	Q100(cfs)
1	16.9	100	0	0	0	21.59
2	99.46	100	0	0	0	69.6
3	61.25	100	0	0	0	39.49
4	18.05	100	0	0	0	20.45
5	60.16	100	0	0	0	38.89

DEVELOPED CONDITIONS:

THE PROPOSED CONDITIONS FOR THE UNSER BLVD. (BOCA NEGRA DAM TO PASEO DEL NORTE) FOR THIS PROJECT IS THE INTERIM BUILD OUT FOR THIS PROJECT. THE PROPOSED CONSTRUCTION FOR THE INTERIM PROJECT INCLUDES TWO - 12' PAVED LANES, TWO - 5' SHOULDERS, AND CURB AND GUTTER ON THE EAST SIDE. THE PROPOSED ROADWAY IS APPROXIMATELY 6500 FEET IN LENGTH AND WILL DRAIN TO THE WEST. VARIOUS PIPE CROSSINGS WILL CONVEY FLOW FROM THE WEST SIDE TO THE EAST SIDED. A SWALE HAS BEEN DESIGNED TO CAPTURE DRAINAGE ON THE EAST SIDE OF THE ROADWAY UNTIL THE FUTURE BUILD OUT OF UNSER BLVD. IS CONSTRUCTED. LAND USE FOR THE THIS PROJECT CONSISTS OF IMPERVIOUS ASPALT PAVED LAND TREATMENT AND UNDEVELOPED LAND USE UNTIL FUTURE DEVELOPMENT INSTALLS THE PERMANENT STORM DRAIN.

TABLE 2 SUMMARIZED THE PROPOSED CONDITIONS.

TABLE 2
PROPOSED CONDITIONS

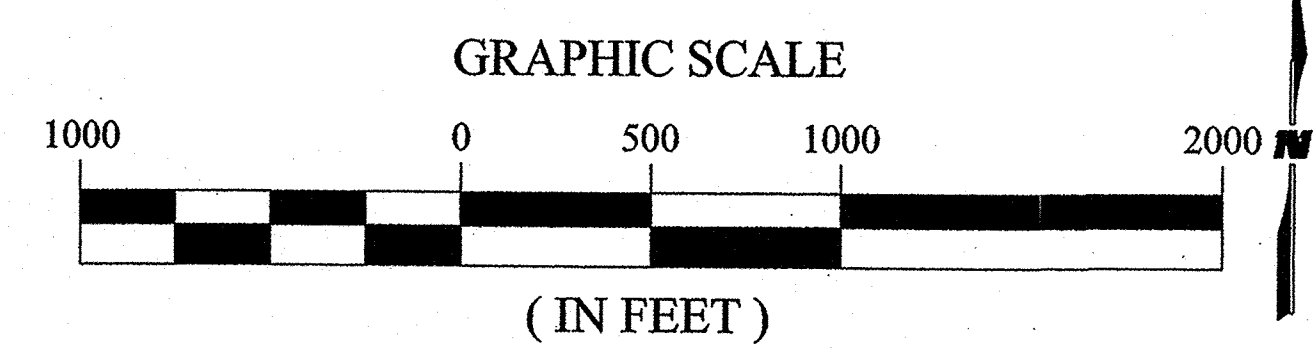
Basin ID	Area (ac)	%A	%B	%C	%D	Q100(cfs)
1	16.9	100	0	0	0	21.59
2	99.46	98	0	0	2	69.98
3	61.25	97	0	0	3	43.71
4	18.05	98	0	0	2	21.45
5	60.16	98	0	0	2	41.66

CONCLUSION:

THE PROPOSED UNSER BLVD. (BOCA NEGRA DAM TO PASEO DEL NORTE) WILL INCREASE RUNOFF BY APPROXIMATELY 12.37 CFS IN THE 100-YEAR 6 HOUR FLOOD EVENT. THE PROPOSED IMPROVEMENTS MAKE UP LESS THAN 10 ACRES OF THE TOTAL AREA. WITH THE PROPOSED PIPE CROSSINGS RUNOFF WILL STILL FOLLOW IN A HISTORICAL DIRECTION. THEREFORE, THE PROPOSED PROJECT WILL HAVE MINIMAL EFFECTS TO THE CURRENT DRAINAGE PATTERNS.

LEGEND

- 5070 EXISTING INTERMEDIATE CONTOUR
- 5071 EXISTING INDEX CONTOUR
- BASIN (X) BASIN ID
- EXISTING BASIN BOUNDARY



WCI 08-100-200-19
FEBRUARY 2009

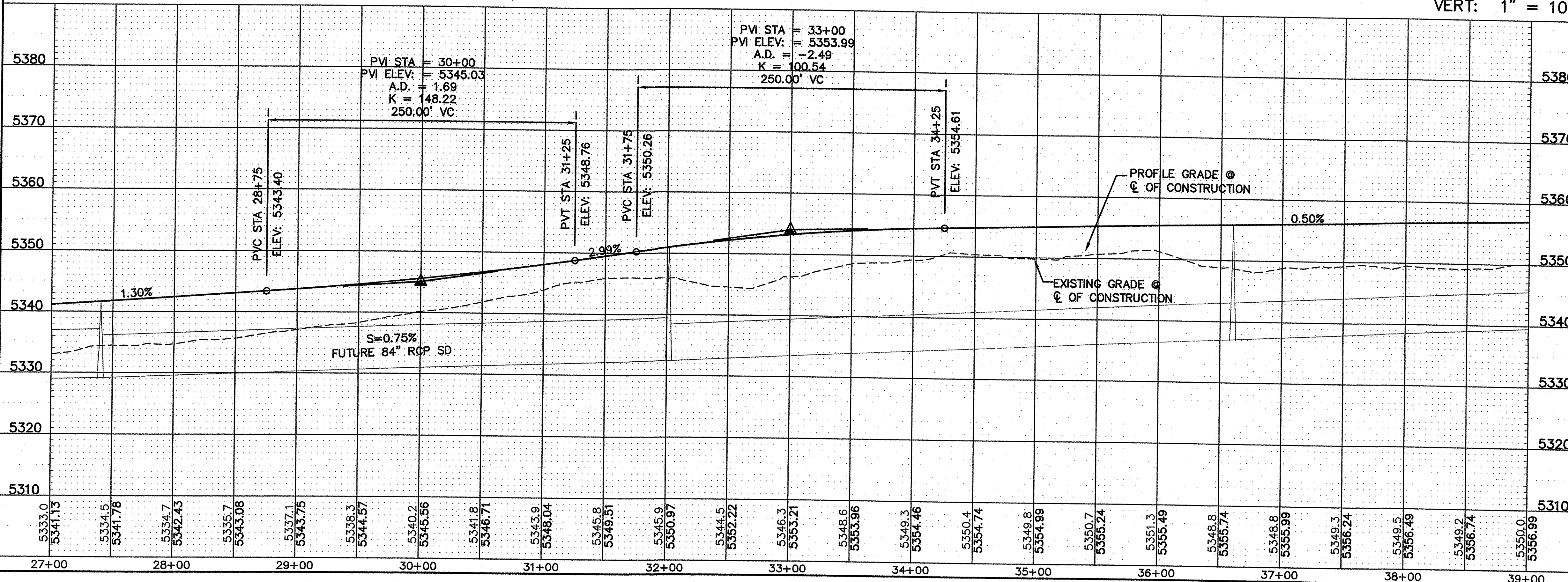
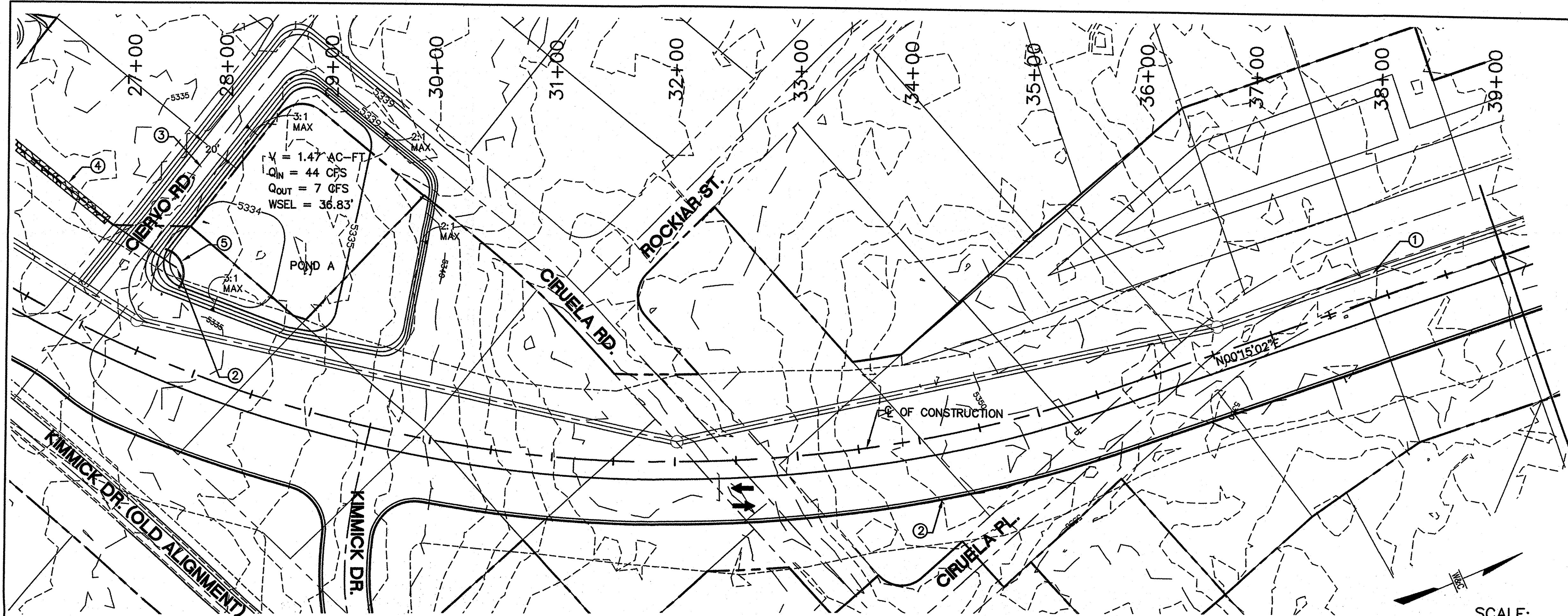
WILSON & COMPANY
4900 LANG AVE. NE
ALBUQUERQUE, NM 87109
(505) 348-4000

CITY OF ALBUQUERQUE
DEPARTMENT OF MUNICIPAL DEVELOPMENT
ENGINEERING DIVISION

**UNSER BOULEVARD
BOCA NEGRA DAM TO PASEO DEL NORTE
DRAINAGE REPORT AND BASIN MAP
COA PROJECT NO. 705004**



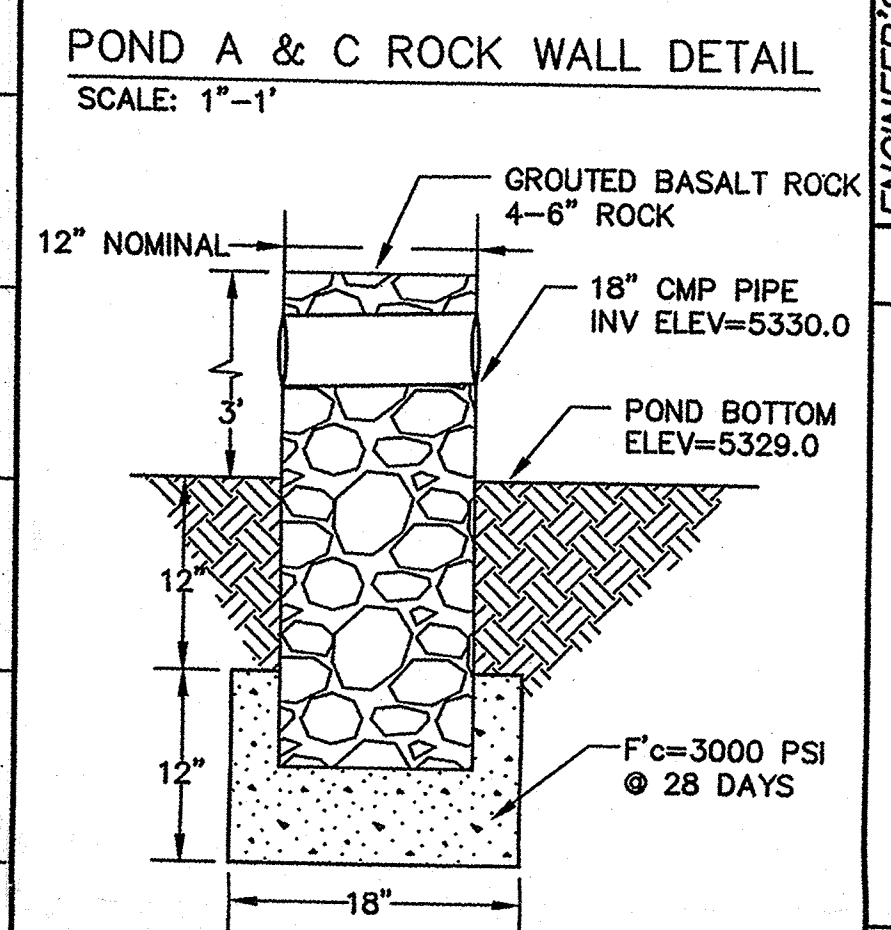
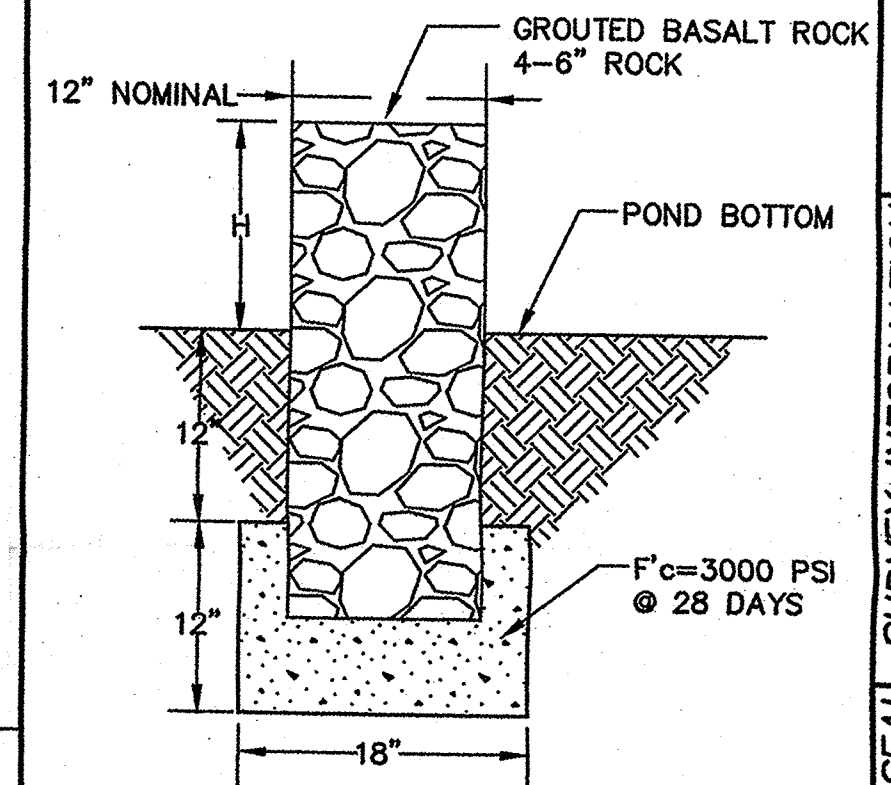
RECEIVED
NOV 16 2009
HYDROLOGY
SECTION



KEYED NOTES:

- ① FUTURE STORM DRAIN.
- ② 68 LF CMP PIPE WITH 15" ORIFICE PLATE AND END SECTION, S=2.94% INV UP=5334.0, INV DOWN=5332.0
- ③ 20' WIDE ACCESS ROAD.
- ④ 150 LF RIPRAP SWALE. S=1.33%. SEE SHEET 9 FOR RIPRAP SWALE DETAIL.
- ⑤ 1' THICK BLACK ROCK WALL. SEE ROCK WALL DETAIL THIS SHEET AND TABLE BELOW FOR WALL HEIGHT.

POND	H
A	1.5'
B	3.0'
C	1.5'



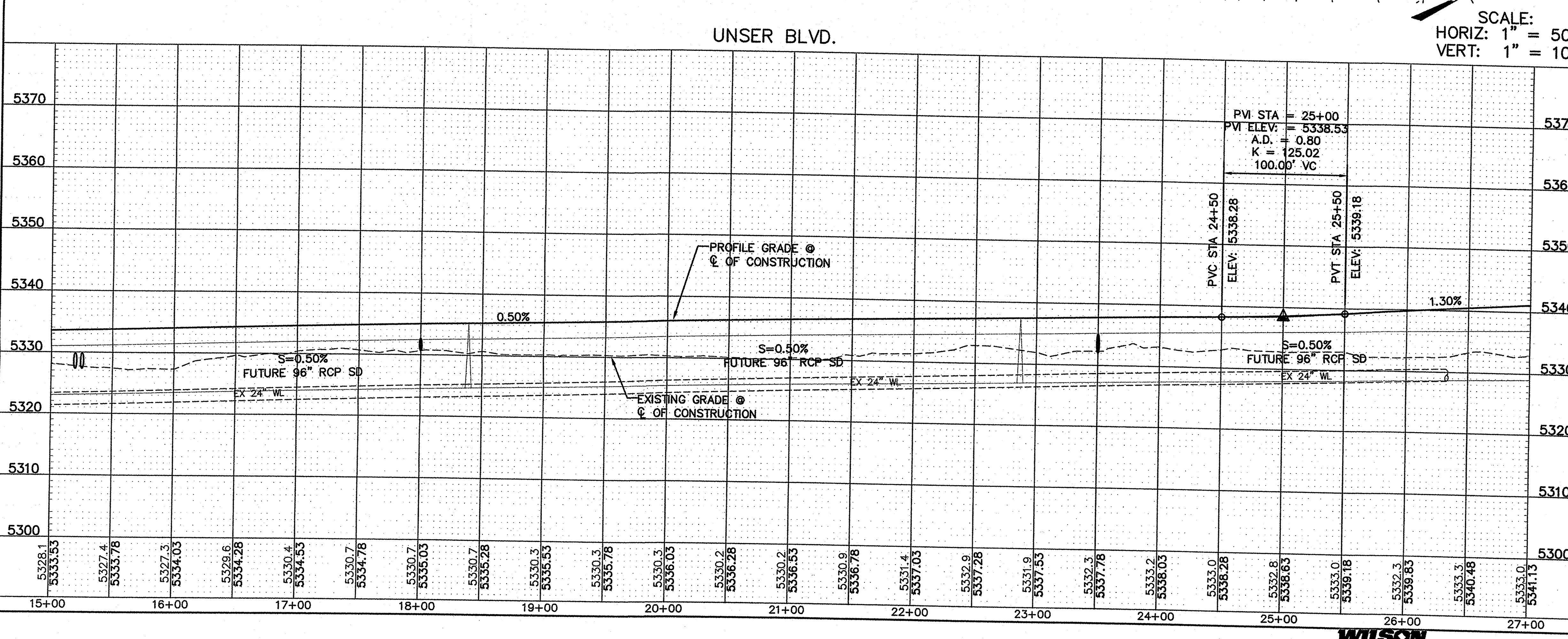
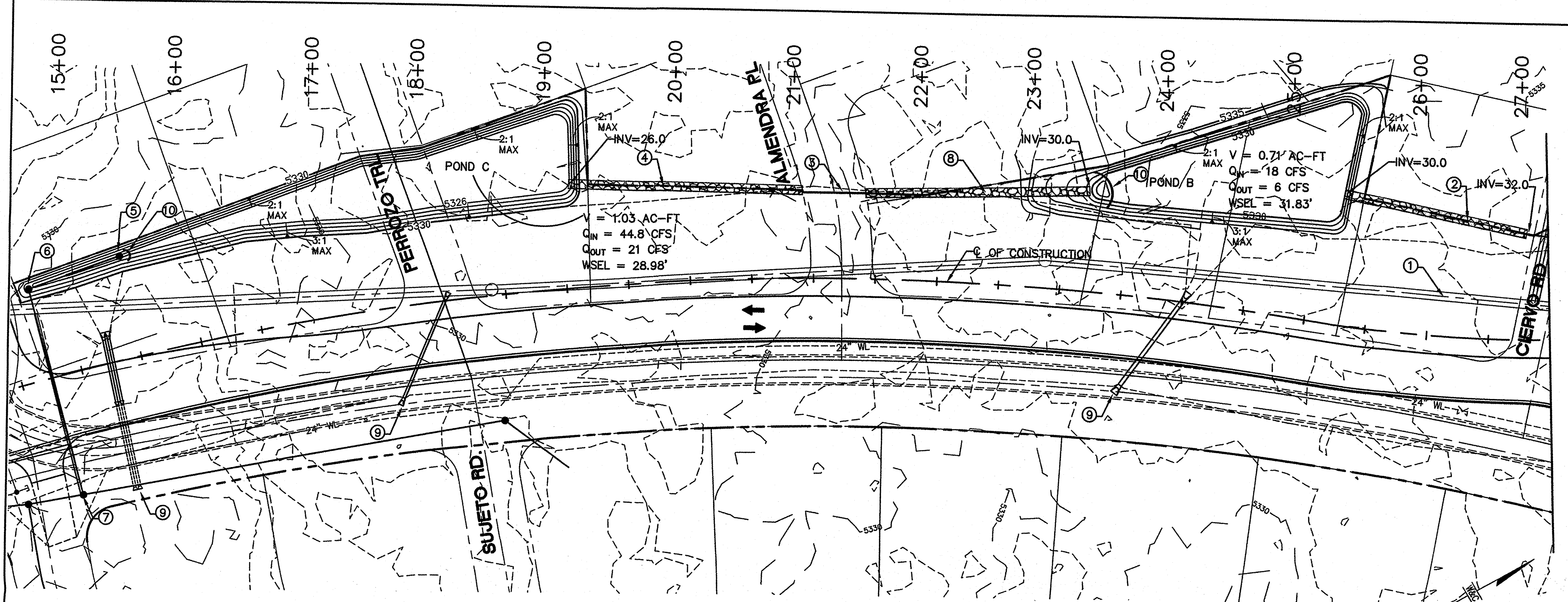
POND B ROCK WALL DETAIL

CITY OF ALBUQUERQUE DEPARTMENT OF MUNICIPAL DEVELOPMENT ENGINEERING DIVISION	
UNSER BOULEVARD EXTENSION NW ROADWAY PLAN & PROFILE STA 27+00 TO STA 39+00	
Design Review Committee	City Engineer Approval
Mo./Day/Yr.	Mo./Day/Yr.
City Project No.	Zone Map No.
705004	C-10, D-10
Sheet	10 of

AS-BUILT INFORMATION	
CONTRACTOR	NO.
DATE	DATE
BENCH MARKS	
THE STA. IS A 3" ALUMINUM CAP STAMPED 'ACS 1-C11' LOCATED 6.85 MI. N.W. OF D.T. ALBQ. TO REACH THE STA. FROM I-40 & COORS RD., GO N. ON COORS 3.25 MI. TO MONTANO RD., TURN W. ON MONTANO AND GO 0.5 MI. TO TAYLOR RANCH DR., TURN N. & GO 1.5 MI. TO NORTEÑA, TURN W.-N.W. & GO 0.1 MI. TO RIDGEWAY DR., THE STA. IS N.E. OF THIS POINT.	
ELEVATION = 5272.34' (NAVD 29)	
SURVEY INFORMATION	
FIELD NOTES	NO.
DATE	DATE
BY	BY
ENGINEER'S SEAL	
SALVA GARCIA REGISTERED PROFESSIONAL ENGINEER 16020	
REVISIONS	BY
NO.	DATE
DESIGNED BY	DATE
DRAWN BY	DATE
CHECKED BY	DATE

RECEIVED
NOV 18 2010
00:29
SECTION

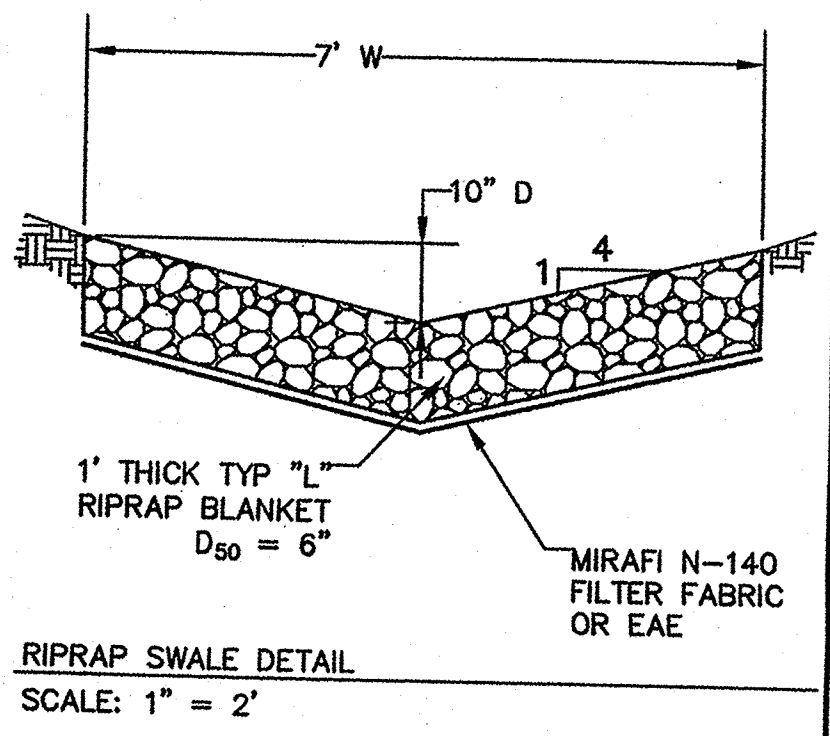
MA:TRN 08-100-200-19\CD\705004\Plans\Sect 3\UnserRIPs.dwg 11/5/2010 2:52:29 PM MDT



KEYED NOTES:

- FUTURE STORM DRAIN.
- 150 LF RIPRAP SWALE. S=1.33% SEE RIPRAP SWALE DETAIL THIS SHEET.
- 50 LF 12" CMP WITH END SECTIONS. S=0.70% INV UP=5327.68, INV DOWN=5327.33
- INSTALL 190 LF RIPRAP SWALE, S=0.70% SEE RIPRAP SWALE DETAIL THIS SHEET.
- STA 15+50, 82' LT. INSTALL 6" DIA TYPE 'E' MH WITH NEENAH BEEHIVE GRATE MODEL R-2560-E MODEL OR ENGINEER APPROVED EQUAL AND RIPRAP. RIM EL=5326.00' INV EL=5322.00'.
- STA 14+75, 74' LT. INSTALL 6" DIA TYPE 'E' MH. RIM EL=5328.00' INV EL=5319.00'. 78.6 LF 30" RCP, S=3.82
- STA 14+75, 97' RT. INSTALL 6" DIA TYPE 'E' MH. RIM EL=5325.00' INV EL=5312.50'. 171 LF 36" RCP, S=3.80%
- INSTALL 182 LF RIPRAP SWALE, S=1.27% SEE RIPRAP SWALE DETAIL THIS SHEET.
- REMOVE & RELOCATE CULVERTS TO WEST PONDS AS SHOWN ON PLAN.
- 1' THICK BLACK ROCK WALL. SEE ROCK WALL DETAIL ON SHEET 10 AND TABLE BELOW FOR WALL HEIGHT.

POND	H
A	1.5'
B	3.0'
C	1.5'



CITY OF ALBUQUERQUE DEPARTMENT OF MUNICIPAL DEVELOPMENT ENGINEERING DIVISION	
UNSER BOULEVARD EXTENSION NW ROADWAY PLAN & PROFILE STA 15+00 TO STA 27+00	
Design Review Committee	City Engineer Approval
City Project No.	Zone Map No.
705004	C-10, D-10
Sheet	9 of

BENCH MARKS		AS-BUILT INFORMATION	
CONTRACTOR	INSPECTOR'S	DATE	DATE
THE STA. IS A 3" ALUMINUM CAP STAMPED 'ACS 1-C11	LOCATED 6.85 MI. N.W. OF D.T. ALBO. TO REACH THE STA	DATE	DATE
FROM 1-40 & COORS RD., GO N. ON COORS 3.25 MI. TO	MONTANO RD., TURN W. ON MONTANO AND GO 0.5 MI. TO	DATE	DATE
TAYLOR RANCH DR., TURN N. & GO 1.5 MI. TO CALLE	NORTENA, TURN W.-N.W. & GO 0.1 MI. TO RIDGEWAY DR.,	DATE	DATE
THE STA. IS N.E. OF THIS POINT.	ELEVATION = 5272.34 (NAD 28)	DATE	DATE

SURVEY INFORMATION	
FIELD NOTES	BY
NO.	

ENGINEER'S SEAL	
DATE	BY
NO.	REMARKS
DATE	REVISIONS
DATE	WILSON & COMPANY, ENGINEERS & ARCHITECTS
DATE	DESIGNED BY
DATE	DRAWN BY
DATE	CHECKED BY

NOTES
SECTION
C-10, D-10