118th St Powerline Ponds

118TH Street Powerline Ponds

Revisions to Ponds #5 and #6

MARK GOODWIN & ASSOCIATES
CONSULTING ENGINEERS

CITY OF ALBUQUERQUE

November 29, 2007

Diane Hoelzer, PE
Mark Goodwin & Associates
P.O. Box 90606,
Albuquerque, NM 87199

Re: Anderson Heights 118th St. Ponds Revision Drainage Report
Engineer's Stamp dated [redacted]07, (P8/D3)
10-25-07

Dear Ms. Hoelzer,

Based upon the information provided in your submittal dated 10-26-07, the above referenced report is approved for Work Order. Any minor comments can be addressed at DRC.

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

Sincerely,

Bradley L. Bingham

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

C: file

P.O. Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

118TH Street Powerline Ponds

Revisions to Ponds #5 and #6

Prepared for

KB HOME New Mexico, Inc.
6330 Riverside Plaza Lane NW, Suite 200
Albuquerque, NM 87120
(505) 353-5300

Prepared by

Mark Goodwin & Associates, PA
P.O. Box 90606
Albuquerque, NM 87199
(505) 828-2200

DIANE HOBELSER
NEW MEXICO
11967
LICENSED PROFESSIONAL ENGINEER
10-25-07

October 2007

RECEIVED
OCT 26 2007
HYDROLOGY SECTION

118th Street Powerline Ponds

Table of Contents

I. Introduction

II. Existing Drainage Plan

III. Revised Interim Drainage Plan

IV. Summary and Conclusions

Appendix A - Approved 118th St. Ponds Grading and Drainage Plan (8-7-06)

Appendix B - 118TH St. Ponds Survey As-builts

Appendix C – Hydrology

Summary Table 1 - 100 yr 24 hr Flow Rate and Volumes
Summary Table 2 – Pond Volumes
AHYMO Printouts

Appendix D - Hydraulics

Summary Table 1 – HECRAS Results for Diversion Channel
HEC RAS Input and Output
48" Pipe Calculations

Appendix E – Permanent Easement

Appendix F - Right of Entry Agreement

Pocket 1 - Exhibit 1 Amole Hubbell Drainage Basin Map

Pocket 2 - Exhibit 2 HEC RAS Map Diversion Channel West and North
- Exhibit 3 HEC RAS Map Diversion Channel South

Pocket 3 – 118th Street Pond Revisions (shts 18.1 thru 18.4)

I. Introduction

In April of 2004, the preliminary plat was approved for Anderson Heights Unit 1. As part of that approval a large portion of the master planned 118th Street Powerline Detention Ponds (AMAFCA, 1998) were to be designed and constructed. Prior to constructing the ponds, public drainage easement(s) were required from the underlying property owner(s). An easement document was obtained and recorded in April 2005 at which time, the construction of Unit 1 infrastructure and the 118th Street ponds commenced, extending from Dennis Chavez on the south and northward along the westside of the powerlines approximately 4,000 feet. The ponds were completed and grading as-builts were obtained on October 19, 2006. In December of 2006, it was brought to the City's attention that the portion of the public drainage easement underlying Ponds #5 and #6 was improperly represented and recorded. After exhaustive negotiations between SunCal and KB Home to try and acquire a legal and proper easement under these ponds, it was finally decided that ponds #5 and #6 would be filled in and the grades on SunCals property returned to approximate "existing conditions" prior to the construction of the ponds. When Suncal decides to develop at a later date, they will be required to reconstruct pond(s) to complete the "118th Street Powerline Master Drainage Plan" as set forth by AMAFCA in their 1998 Amole-Hubbell Drainage Management Plan. For the interim, a temporary drainage solution is being presented in this report to handle the offsite flows coming from the west in the area of Pond # 5 and # 6 that will protect the development to the east known as Anderson Heights.

II. Existing Drainage Plan

The 118th Street powerline ponds #2, #3A, #3B, #4A, #4B, #5 and #6 and appurtenances were constructed in accordance with City approved plans (CPN 753981) in May 2005 and as modified in September 2005 and revised in August of 2006. A copy of the final revised plans that were used for construction are shown in Appendix A and the as-built survey is shown in Appendix B. In accordance with AMAFCA and the City this series of detention ponds were built to intercept the 100 year "developed conditions" flows from the west and convey them south to Dennis Chavez Blvd. and then east in a 48" and 54" storm drain before ultimately discharging into the existing Rio Bravo Channel located on the north side of Dennis Chavez Blvd. With the construction of these ponds all of the land area to the east of these ponds was to be permanently removed from the 100 year FEMA floodplain.

III. Revised Interim Drainage Plan

Filling in the existing Ponds #5 and #6 on the Suncal property, necessitated the development of an alternative "interim" drainage plan that would divert the flows approaching 118th street from the Suncal property on the west and modify the use of the detention ponds to the north. This 'interim' plan and the required modifications and revised hydrology and hydraulic analysis are presented in this report and in the appendices.

A temporary 10' wide diversion berm located within a 156' public drainage easement (future 118th street) will divert the "Suncal" property flows to the north or the south. Flows that are diverted south will be intercepted by a new 48" storm pipe that will connect directly to the existing 48" storm pipe that drains east and parallels Dennis Chavez Blvd. This storm pipe ultimately discharges into the Rio Bravo Channel. Flows that are diverted north will be intercepted by a new temporary retention pond # 5A. This pond is located on property owned by KB Home and Westpac. A recorded Permanent Easement has been acquired from the owners and can be found in Appendix E.

Temporary Pond #5A was designed to retain the 'existing conditions' 100-year 24 hour runoff volumes from sub-basins 5A, 5B, and 5C. (Refer to Exhibit 1 Revised Amole Hubbell Drainage Basin Map). Runoff from sub-basin 5A will flow east along its natural drainage path into Pond #5A. 'Diversion Channel West' will divert flow from sub-basin 5B into Pond #5A and the temporary diversion berm/channel will divert flows from sub-

basin 5C into Pond #5A. (Refer to Exhibit 2 HEC-RAS Map Diversion Channel West and North).

Flows from sub-basin 6B and 6C will be diverted south by the temporary diversion berm/channel and into a new 48" storm drain that will connect to the existing 10' diameter storm manhole located in the Dennis Chavez ROW. (Refer to Exhibit 3 HEC-RAS Map Diversion Channel South). The original 100 year discharge from Pond #6 for the fully 'developed conditions' and into this manhole was 187 cfs. The revised 100 year 'existing conditions' discharge was determined to be 68 cfs. As a result of the reduced flow in the overall system, the downstream storm drain and channel is not expected to be adversely impacted over the previous design, therefore no additional analysis was done downstream of this manhole in Dennis Chavez.

In addition to these revisions, the temporary loss of the use of detention ponds #5 and #6 in the ultimate drainage plan requires that all the upstream detention ponds be converted to temporary retention ponds. The existing sub basin boundaries were modified slightly and available pond volume capacities were verified and the maximum WSEL were determined for in the ponds for runoff from the 'existing conditions' 100 year 24 hour storm event. This was verified and the summary tables and AHYMO files are found in Appendix C.

A HEC-RAS model was developed to analyze the channel hydraulics for the two channels diverting flow into Pond #5A, and the channel diverting flow south into the 48" pipe. Flow depths are generally less than 1-foot, with the majority being under 0.5-feet. The top elevation of the diversion berm is significantly higher than the 100-year water surface elevations, as shown on the revised grading and infrastructure plans located in the back pocket of this report. The diversion channel west conveying flow from sub-basin 5B between HEC-RAS stations 50 and 40 will be lined with shotcrete from the rundowns that are to be removed and broken into 8"-12" pieces. These will be used to line both the channel bottom and side slopes as shown on the plans. The remaining shotcrete will be used at the end of the diversion channel south adjacent to the 48" storm pipe. Results of the HEC-RAS model and calculations are included in Appendix C. The HEC RAS Maps are in one of the pockets in this report.

IV. Summary and Conclusions

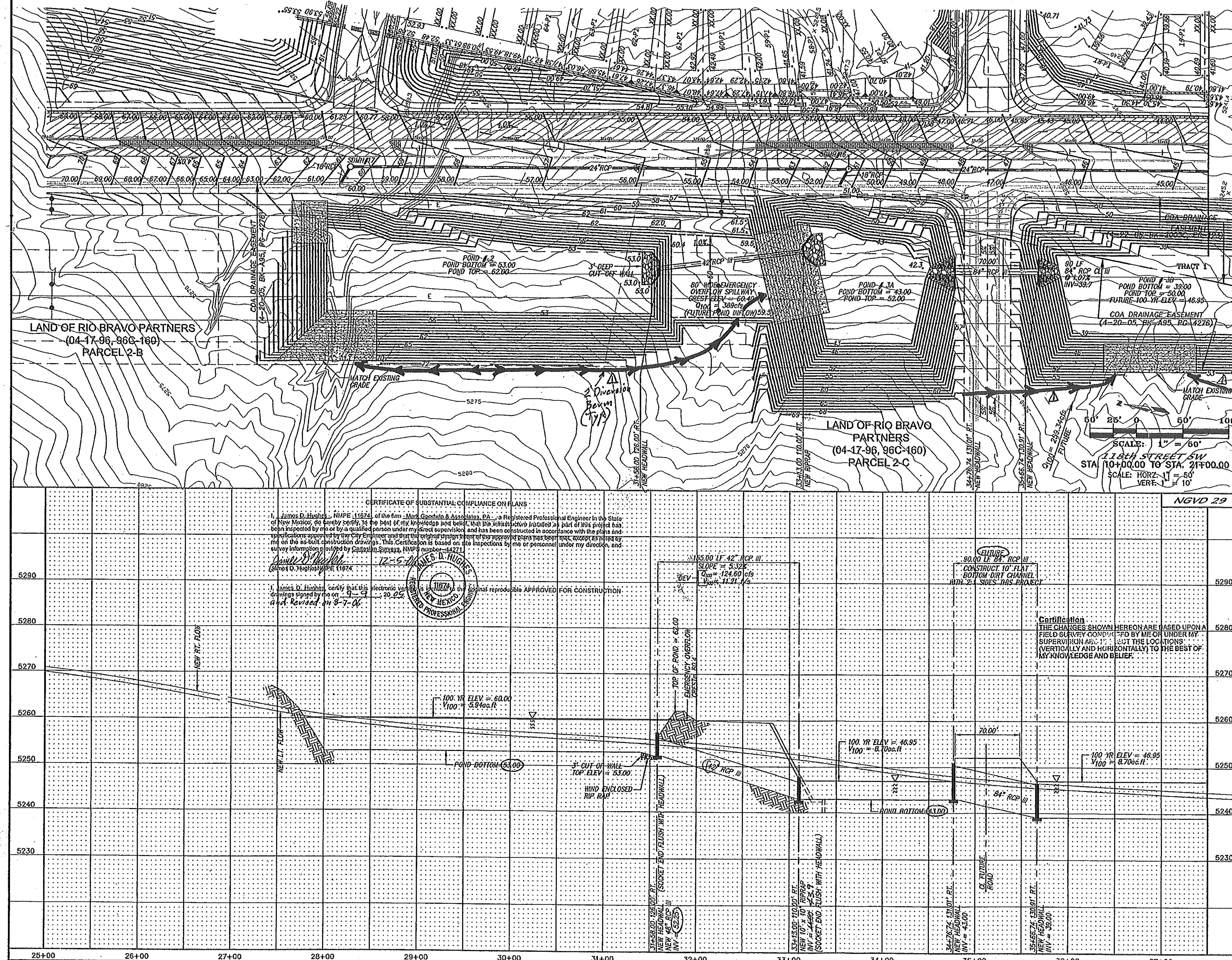
The master planned South Powerline Channel/Detention Project for fully developed conditions was coordinated, approved and built with the Anderson Heights development. That master plan was revised to fill in and remove Ponds #5 and #6 from the system at the request of the underlying property owners. The loss of these ponds necessitated the development of an 'interim' drainage plan.

This 'interim' plan involves the construction of a temporary retention pond # 5A, diversion berm and diversion channels. All of the upstream detention ponds #2, #3A, #3B, #4A, #4B, designed and built for the ultimate fully developed drainage conditions, will be turned into temporary retention ponds that contain 'existing conditions' flows for the 100 year 24 hour storm event. Minor modifications to these ponds made this conversion by plugging the outfalls from pond #2, #3B and #4B. The 10' wide diversion berm in the 118th street public drainage easement will direct flows from the Suncal property either north to the temporary pond #5A or south to the existing storm system located in the Dennis Chavez right-of-way.

This interim drainage plan was designed to handle the 'existing conditions' flows only. When the Suncal property develops in the future and a new pond configuration is designed and constructed on their property, the new pond(s) will need to accept the fully developed flows from Pond #4B and all of the upstream temporary retentions ponds will need to be unplugged and converted back into detention ponds.

APPENDIX A
118TH STREET PONDS
GRADING AND DRAINAGE PLAN

RECORD DRAWINGS



CERTIFICATE OF SUBSTANTIAL COMPLIANCE ON PLANS

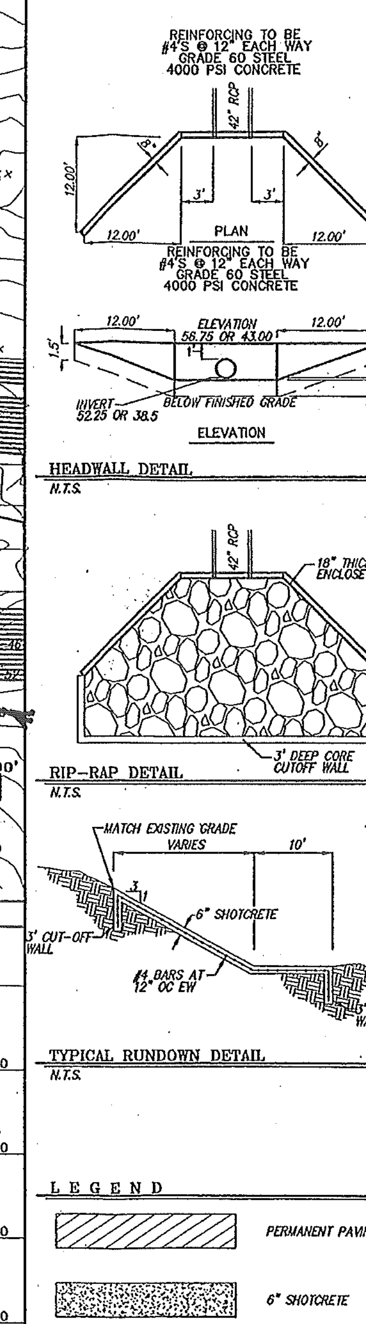
I, James D. Hughes, NMPE 11674, of the firm Mark Goodwin & Associates, PA, a Registered Professional Engineer in the State of New Mexico, do hereby certify, to the best of my knowledge and belief, that the infrastructure installed as part of this project has been inspected by me or by a qualified person under my direct supervision, and has been constructed in accordance with the plans and specifications approved by the City Engineer and that the original design intent of the approved plans has been met, except as noted by me on the as-built construction drawings. This Certification is based on site inspections by me or personnel under my direction, and survey information provided by Cartesian Surveys, NMPS number 14271.

James D. Hughes, NMPE 11674 — 12-5-06

I, James D. Hughes, certify that this electronic version is identical to the original reproducible APPROVED FOR CONSTRUCTION drawings signed by me on 9-9, 2005 and Revised on 8-7-06

Certification:
THE CHANGES SHOWN HEREON ARE BASED UPON A FIELD SURVEY CONDUCTED BY ME OR UNDER MY SUPERVISION AND REFLECT THE LOCATIONS (VERTICALLY AND HORIZONTALLY) TO THE BEST OF MY KNOWLEDGE AND BELIEF.

NOTES



ENGINEER'S SEAL

SURVEY INFORMATION — FIELD NOTES

NO.	DATE

BENCH MARKS

STATION "3-P10" IS LOCATED 5.9 MI. SW OF DOWNTOWN ALBUQUERQUE TO REACH STATION FROM INT. OF COORS AND DENNIS CHAVEZ BLVD. (FORMERLY RIO BRAVO), GO S. ON COORS BLVD. 0.62 MI. TO THE STATION WHICH IS ON AN EARTHEN BERM 162.2; WEST OF THE CENTERLINE OF COORS BLVD. THE STATION IS A STANDARD ACS 3 1/4" ALUMINUM CAP RIVITTED TO A PIPE 0.25' ABOVE THE GROUND AND IS STAMPED "3-P10, 1998". X=360733.56, Y=1462437.48 (NAD 27), ELEV=4935.735 (SLD 29)

AS BUILT INFORMATION

CONTRACTOR		
WORK STAKED BY	Cartesian Surveys Inc.	DATE APR 06
INSPECTOR'S ACCEPTANCE BY		DATE
FIELD VERIFICATION BY	Cartesian Surveys Inc.	DATE APR 06
DRAWINGS CORRECTED BY		DATE

MICRO-FILM INFORMATION

RECORDED BY	DATE
NO.	

NO.	DATE	REMARKS
1	8-7-06	Berms Added

REVISIONS

DESIGN		
DESIGNED BY	GJK	DATE 02/04
DRAWN BY	MJR	DATE 02/04
CHECKED BY	DMG	DATE 02/04

BY: JDH

MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505) 828-2200, FAX (505) 797-9539

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

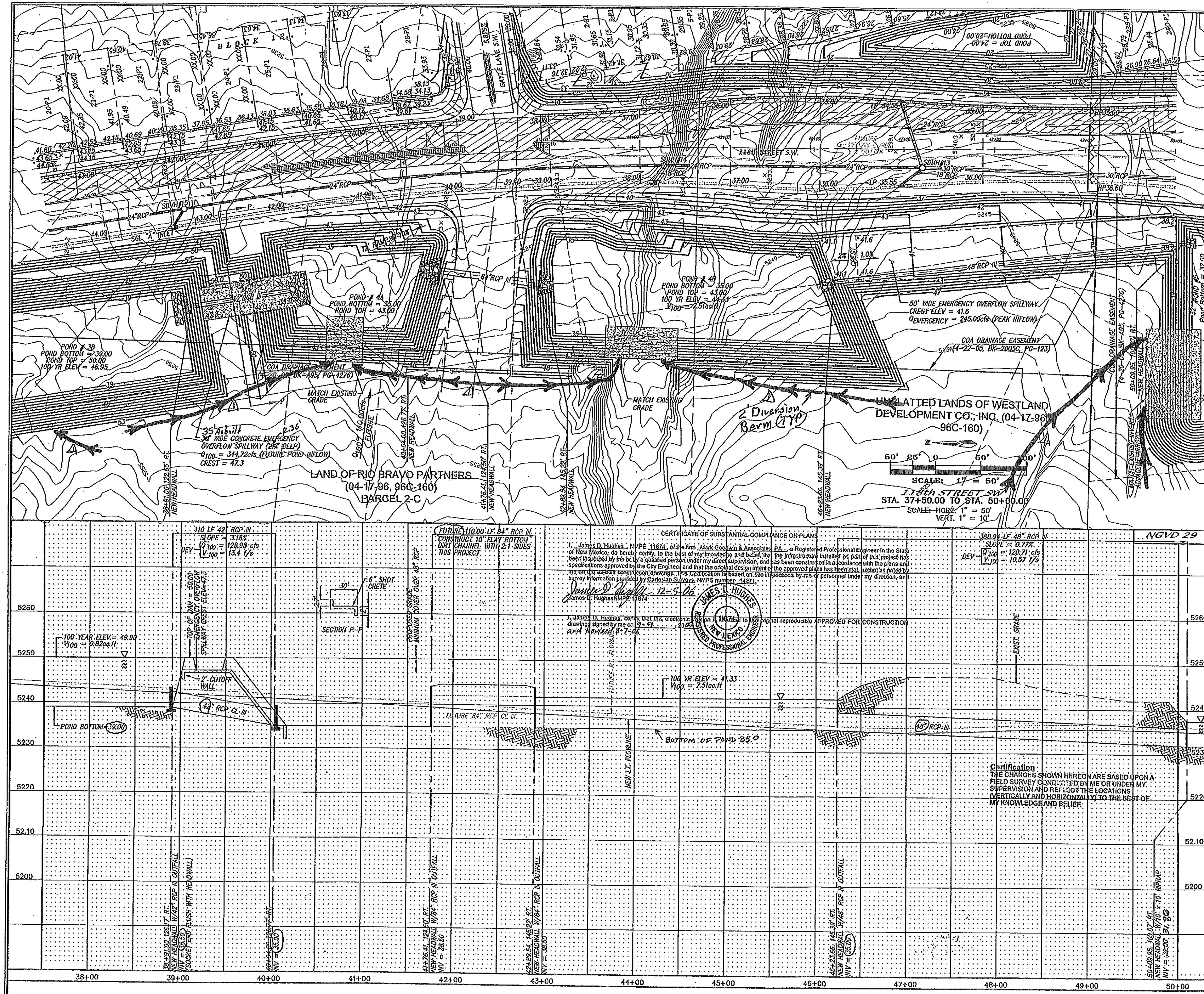
TITLE: *ANDERSON HEIGHTS - UNIT 1*
118th STREET S.W.
GRADING & DRAINAGE PLAN

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.

A03080AH/118th-GIBSON\PLANS\118th-PP3A-GD.DWG\09-09-05\ MJR ACH GJK SLV DER

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
	N-8/P-8	1	4

RECORD DRAWINGS



CERTIFICATE OF SUBSTANTIAL COMPLIANCE ON PLANS

I, James D. Hughes, NMPE 11674, of the firm Mark Goodwin & Associates, PA, a Registered Professional Engineer in the State of New Mexico, do hereby certify, to the best of my knowledge and belief, that the infrastructure installed as part of this project has been inspected by me or by a qualified person under my direct supervision, and has been constructed in accordance with the plans and specifications approved by the City Engineer and that the original design intent of the approved plans has been met, except as noted by me on the as-built construction drawings. This Certification is based on site inspections by me or personnel under my direction, and survey information provided by Cartesian Surveys, NMPS number 14271.

James D. Hughes 12-5-06

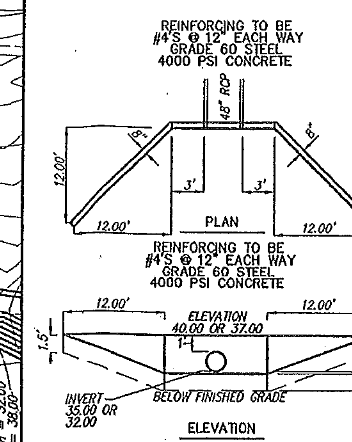
James D. HughesNMPE 11674

I, James D. Hughes, certify that this electronic version is identical to the original reproducible APPROVED FOR CONSTRUCTION drawings signed by me on 9-9, 2005 and Revised 8-7-06

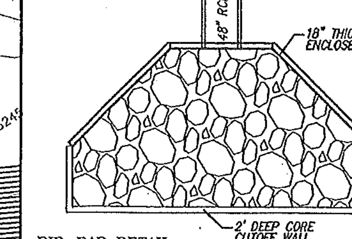
Certification:
THE CHANGES SHOWN HEREON ARE BASED UPON A FIELD SURVEY CONDUCTED BY ME OR UNDER MY SUPERVISION AND REFLECT THE LOCATIONS (VERTICALLY AND HORIZONTALLY) TO THE BEST OF MY KNOWLEDGE AND BELIEF.

NOTES

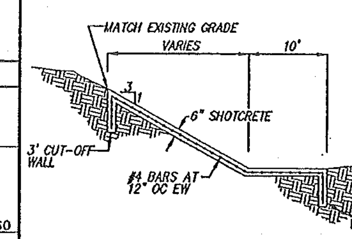
1. ALL STATIONING IS CENTERLINE STATIONING.



HEADWALL DETAIL
N.T.S.



RIP-RAP DETAIL
N.T.S.



TYPICAL RUNDOWN DETAIL
N.T.S.

LEGEND

PERMANENT PAVING

6" SHOTCRETE

MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505) 828-2200, FAX (505) 797-9539

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

TITLE: ANDERSON HEIGHTS UNIT -1
118th STREET S.W.
GRADING & DRAINAGE PLAN

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.

CITY PROJECT NO.	ZONE MAP NO.	SHEET 2 OF 4
	N-8/P-8	

AS BUILT INFORMATION

CONTRACTOR
STAKED BY Cartesian Surveys Inc. DATE APR 06
INSPECTOR'S ACCEPTANCE BY DATE
VERIFICATION BY Cartesian Surveys Inc. DATE APR 06
DRAWINGS CORRECTED BY DATE

MICRO-FILM INFORMATION

RECORDED BY DATE
NO.

BENCH MARKS

STATION "3-P10" IS LOCATED 5.9 MI. SW OF DOWNTOWN ALBUQUERQUE TO REACH STATION FROM INT. OF COORS AND DENNIS CHAVEZ BLVD (FORMERLY RIO BRAVO), GO S. ON COORS BLVD 0.62 MI. TO THE STATION WHICH IS ON AN EARTHEN BERM 162.2 WEST OF THE CENTERLINE OF COORS BLVD. THE STATION IS A STANDARD ACS 3 1/4" ALUMINUM CAP RIVITTED TO A PIPE 0.25' ABOVE THE GROUND AND IS STAMPED "3-P10, 1998".
X=360733.56, Y=1462437.48 (NAD 27) ELEV=4935.735 (SLD 29)

SURVEY INFORMATION

FIELD NOTES		
NO.	BY	DATE

ENGINEER'S SEAL

JAMES D. HUGHES 11674 NEW MEXICO REGISTERED PROFESSIONAL ENGINEER
9-9-05
Rev 8-7-06

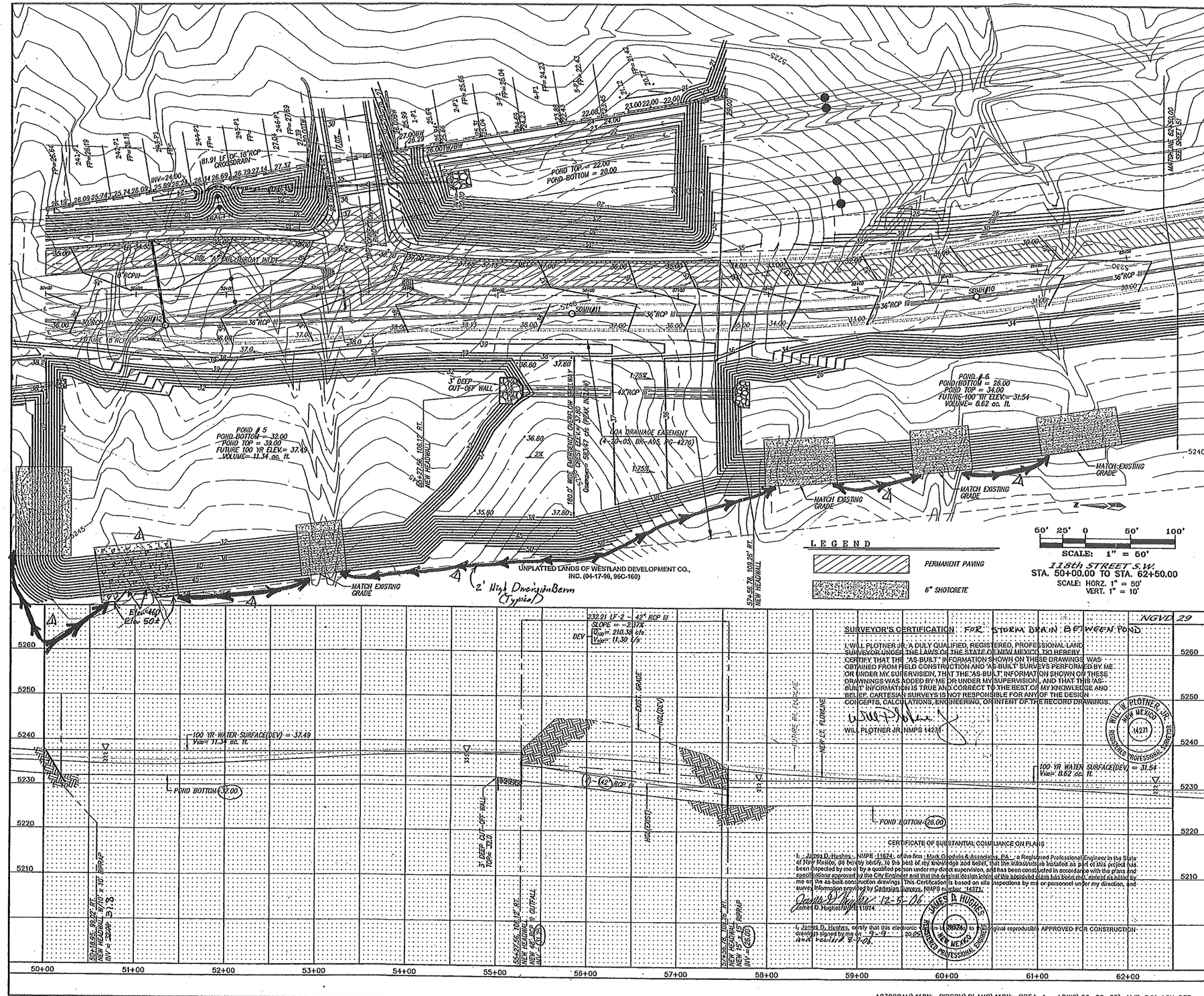
NO.	DATE	REMARKS	BY
Δ	8-7-06	Berms Added	JDH

REVISIONS

DESIGN			
DESIGNED BY	GJK	DATE	02/04
DRAWN BY	MJR	DATE	02/04
CHECKED BY	DMG	DATE	02/04

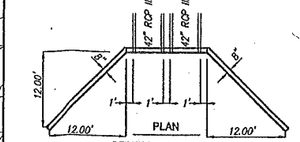
A03080AH\118th-GIBSON\PLANS\118th-PP4A-gd.DWG\09-09-05\ MJR GJK ACH SLV DER

RECORD DRAWINGS

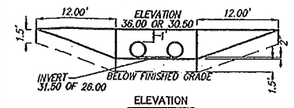


NOTES

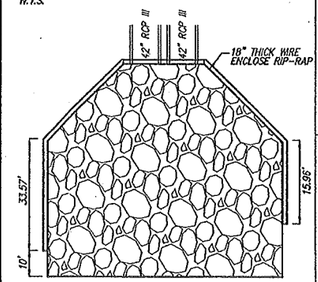
REINFORCING TO BE #4'S @ 12" EACH WAY
GRADE 60 STEEL
4000 PSI CONCRETE



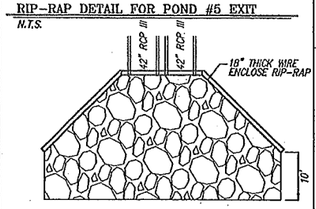
REINFORCING TO BE #4'S @ 12" EACH WAY
GRADE 60 STEEL
4000 PSI CONCRETE



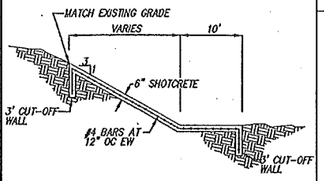
HEADWALL DETAIL
N.T.S.



RIP-RAP DETAIL FOR POND #5 EXIT
N.T.S.



RIP-RAP DETAIL
N.T.S.



TYPICAL RUNDOWN DETAIL
N.T.S.

AS BUILT INFORMATION
CONTRACTOR
WORK Cartesian Surveys Inc. DATE APR 06
INSPECTORS ASSISTANCE BY Cartesian Surveys Inc. DATE APR 06
VERIFICATION BY DATE
CORRECTIONS CORRECTED BY DATE
MICRO-FILM INFORMATION
RECORDED BY DATE
NO.

BENCH MARKS
STATION "5-P10" IS LOCATED 5.9 MI. SW OF DOWNTOWN ALBUQUERQUE, TO REACH STATION FROM INT. OF COORS AND DENNIS CHAVEZ BLVD. (FORMERLY RIO BRAVO), GO S. ON COORS BLVD. 0.62 MI. TO THE STATION WHICH IS ON AN EARTHEN BERM 192± WEST OF THE CENTERLINE OF COORS BLVD. THE STATION IS A "STANDARD ACS 3 1/4" ALUMINUM CAP PINTITED TO A PIPE 0.25" ABOVE THE GROUND AND IS STAMPED, "5-P10, 1998". X=350733.56, Y=1462437.48 (NAD 27) ELEV=4935.735 (GLD 29)

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL
JAMES D. HUGHES 11674 NEW MEXICO REGISTERED PROFESSIONAL ENGINEER
Rev 9-7-06

NO.	DATE	REMARKS	BY
1	8-7-06	Berm & Rundown added	JDH

REVISIONS

DESIGN		DATE
DESIGNED BY	GJK	02/04
DRAWN BY	MJR	02/04
CHECKED BY	DMG	02/04

dmg MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505) 828-2200, FAX (505) 797-9539

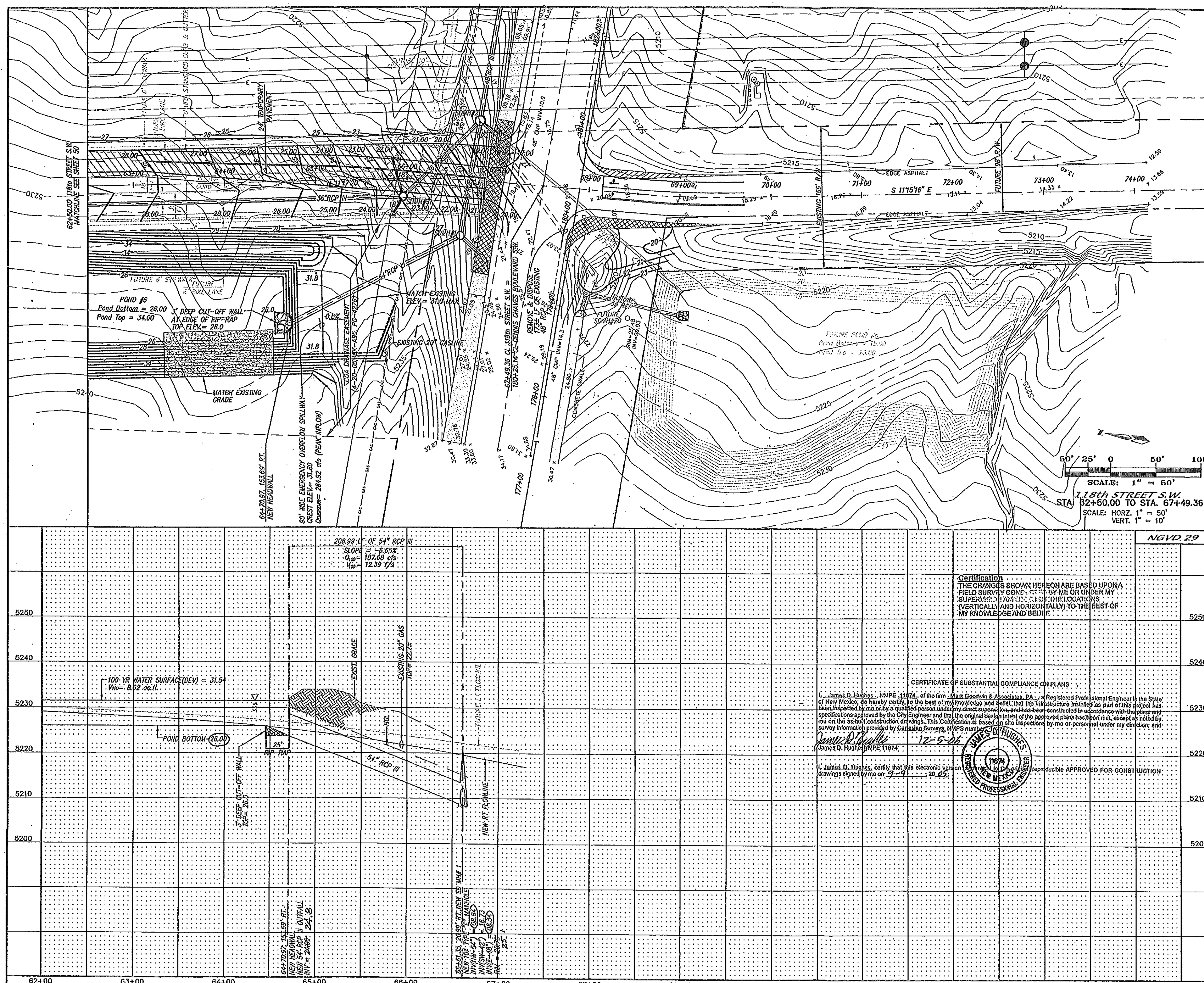
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

TITLE: ANDERSON HEIGHTS - UNIT I
118th STREET S.W.
GRADING & DRAINAGE PLAN

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
	N-8/P-8	3	4

RECORD DRAWINGS



Certification

THE CHANGES SHOWN HEREON ARE BASED UPON A FIELD SURVEY CONDUCTED BY ME OR UNDER MY SUPERVISION AND CERTIFY THE LOCATIONS (VERTICALLY AND HORIZONTALLY) TO THE BEST OF MY KNOWLEDGE AND BELIEF.

CERTIFICATE OF SUBSTANTIAL COMPLIANCE ON PLANS

I, James D. Hughes, NMPE 11674, of the firm Mark Goodwin & Associates, PA, a Registered Professional Engineer in the State of New Mexico, do hereby certify, to the best of my knowledge and belief, that the infrastructure installed as part of this project has been inspected by me or by a qualified person under my direct supervision, and has been constructed in accordance with the plans and specifications approved by the City Engineer and that the original design intent of the approved plans has been met, except as noted by me on the as-built construction drawings. This Certification is based on site inspections by me or personnel under my direction, and survey information provided by Cartesian Surveys, NMPS number 1627.

James D. Hughes 12-5-06

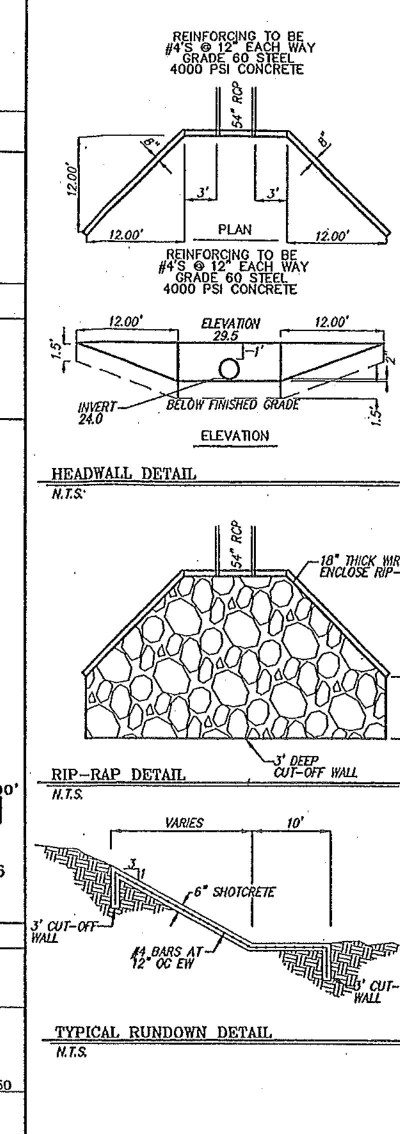
James D. Hughes, NMPE 11674

I, James D. Hughes, certify that this electronic version is identical to the original reproducible APPROVED FOR CONSTRUCTION drawings signed by me on 9-9, 2005.

(Seal: JAMES D. HUGHES, 11674, NEW MEXICO, REGISTERED PROFESSIONAL ENGINEER)

NOTES

1. ALL STATIONING IS CENTERLINE STATIONING.



LEGEND

- PERMANENT PAVEMENT (THIS PROJECT)
- TEMP. PAVEMENT (THIS PROJECT)
- 6" SHOTCRETE
- REMOVAL

AS BUILT INFORMATION

CONTRACTOR		
WORK STAKED BY	Cartesian Surveys Inc.	DATE APR 06
INSPECTOR'S ACCEPTANCE BY		DATE
FIELD VERIFICATION BY	Cartesian Surveys Inc.	DATE APR 06
DRAWINGS CORRECTED BY		DATE

MICRO-FILM INFORMATION

RECORDED BY	DATE
NO.	

BENCH MARKS

STATION "3-P10" IS LOCATED 5.9 MI. SW OF DOWNTOWN ALBUQUERQUE TO REACH STATION FROM INT. OF COORS AND DENNIS CHAVEZ BLVD. (FORMERLY RIO BRAVO), GO S. ON COORS BLVD. 0.62 MI. TO THE STATION WHICH IS ON AN EARTHEN BERM 162.2; WEST OF THE CENTERLINE OF COORS BLVD. THE STATION IS A STANDARD ACS 3 1/4" ALUMINUM CAP RIVITTED TO A PIPE 0.25' ABOVE THE GROUND AND IS STAMPED "3-P10, 1998", X=360733.56, Y=1462437.48 (NAD 27). ELEV=4935.735 (SLD 29)

SURVEY INFORMATION

FIELD NOTES		
NO.	BY	DATE

ENGINEER'S SEAL

(Seal: JAMES D. HUGHES, 11674, NEW MEXICO, REGISTERED PROFESSIONAL ENGINEER) 9-9-05

NO.	DATE	REVISIONS	BY

DESIGNED BY	GJK	09/04
DRAWN BY	MJR	09/04
CHECKED BY	DMG	09/04

MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505) 828-2200, FAX (505) 797-9539

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

TITLE: ANDERSON HEIGHTS - UNIT 1
118th STREET S.W.
GRADING & DRAINAGE PLAN

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.

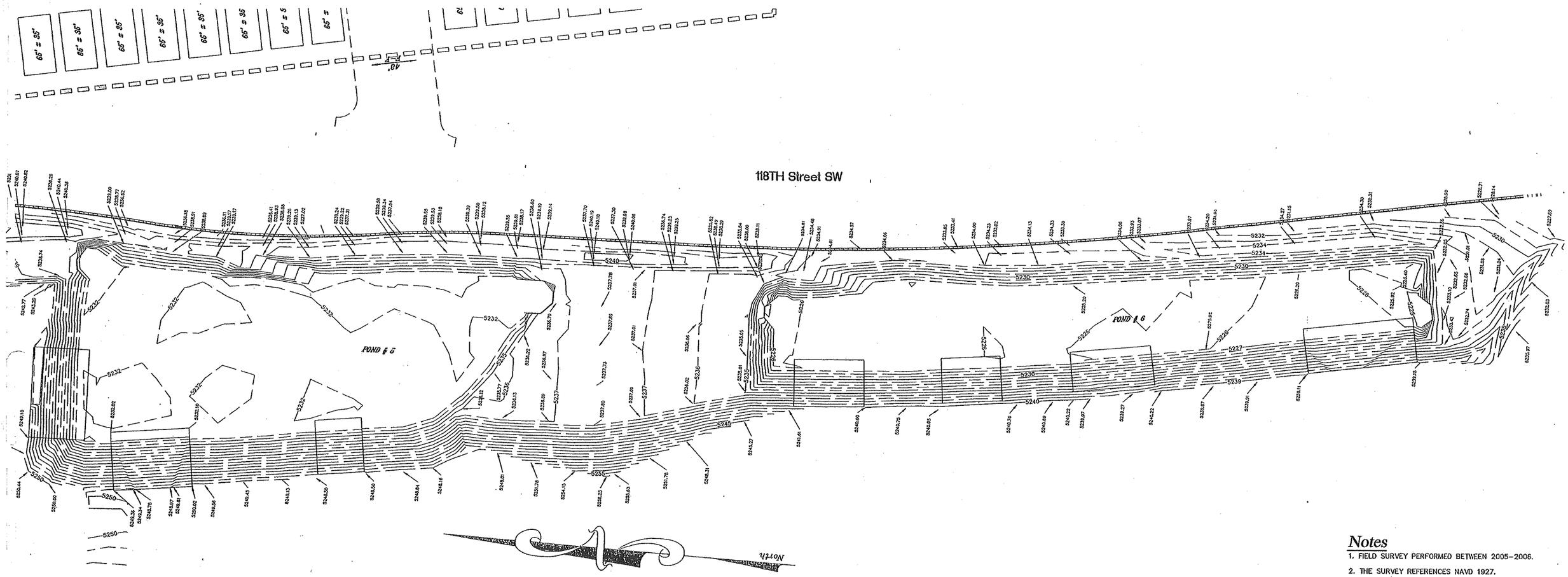
CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
	N-8/P-8	4	4

A03080AH\118th-GIBSON\PLANS\118th-PP6-gd.DWG\09-09-05\ MJR NHE ACH DER

APPENDIX B
118TH STREET PONDS
SURVEY AS-BUILTS

THIS IS NOT A BOUNDARY SURVEY, APPARENT PROPERTY CORNERS ARE SHOWN FOR ORIENTATION ONLY. BOUNDARY DATA SHOWN IS FROM PREVIOUS SURVEY REFERENCED HEREON.

Topographic Map
for
Ponds 2, 3A, 3B, 4A, 4B, 5 and 6
Anderson Heights
City of Albuquerque
Bernalillo County, New Mexico
October 2006



Notes
1. FIELD SURVEY PERFORMED BETWEEN 2005–2006.
2. THE SURVEY REFERENCES NAVD 1927.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

Surveyor's Certificate
I, WILL PLOTNER JR., A NEW MEXICO REGISTERED PROFESSIONAL LAND SURVEYOR DO HEREBY CERTIFY THAT THE TOPOGRAPHIC MAP SHOWN HEREON MEETS NATIONAL MAPPING STANDARDS AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEFS.

10/19/06

WILL PLOTNER JR.
N.M.P.S. No. 14271

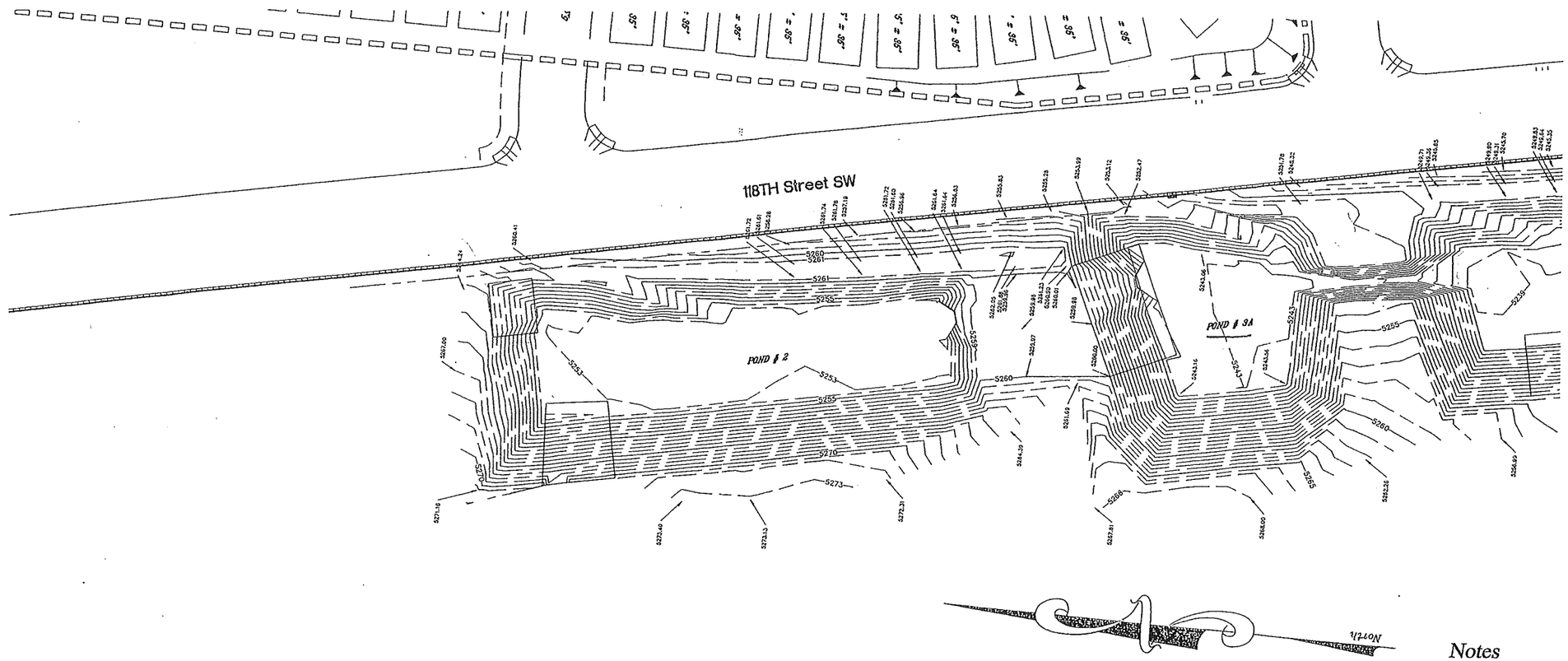
DATE

WILL W. PLOTNER JR. NEW MEXICO No. 14271 REGISTERED PROFESSIONAL SURVEYOR

CARTESIAN SURVEYS INC.
P.O. BOX 44414 RIO RANCHO, N.M. 87174
Phone (505) 896-3050 Fax (505) 891-0244

THIS IS NOT A BOUNDARY SURVEY, APPARENT PROPERTY CORNERS ARE SHOWN FOR ORIENTATION ONLY. BOUNDARY DATA SHOWN IS FROM PREVIOUS SURVEY REFERENCED HEREON.

Topographic Map
for
Ponds 2, 3A, 3B, 4A, 4B, 5 and 6
Anderson Heights
City of Albuquerque
Bernalillo County, New Mexico
October 2006



Notes
1. FIELD SURVEY PERFORMED BETWEEN 2005–2006.
2. THE SURVEY REFERENCES NAVD 1927.

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

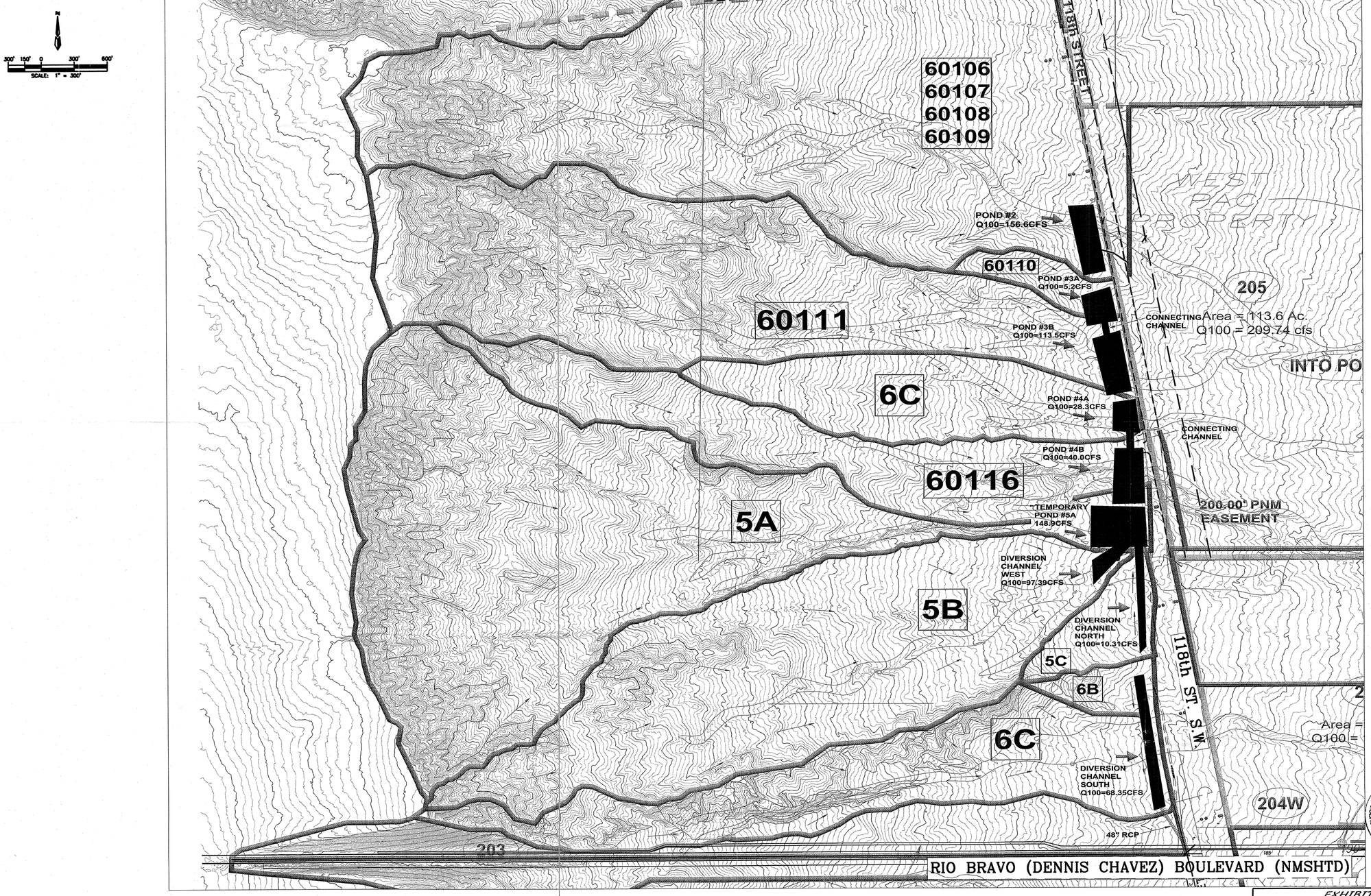
Surveyor's Certificate
I, WILL PLOTNER JR., A NEW MEXICO REGISTERED PROFESSIONAL LAND SURVEYOR HEREBY CERTIFY THAT THE TOPOGRAPHIC MAP SHOWN HEREON MEETS NATIONAL MAPPING STANDARDS AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEFS.

Will Plotner 10/19/06
WILL PLOTNER JR. DATE
N.M.P.S. No. 14271

WILL W. PLOTNER NEW MEXICO No. 14271 REGISTERED PROFESSIONAL SURVEYOR

CARTESIAN SURVEYS INC.
P.O. BOX 44414 RIO RANCHO, N.M. 87174
Phone (505) 896-3050 Fax (505) 891-0244

Sheet 3 o
042391 Pon



DIANE HOELZER
NEW MEXICO
11957
LICENSED PROFESSIONAL ENGINEER
10-25-07

LEGEND

SUB-BASIN BOUNDARY

6B SUB-BASIN ID

NOTE: ALL FLOWS SHOWN HEREON ARE FOR EXISITING CONDITIONS AND INCLUDE 3% FOR SEDIMENT BULKING

EXHIBIT 1

REVISED AMOLE HUBBELL

DRAINAGE BASIN MAP

dmg MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505)828-2200, FAX (505)797-9539

Designed: DMG	Drawn: NHE	Checked: DMG	Sheet 1 of 1
Scale: 1" = 200'	Date: 10-16-07	Job: A07010	

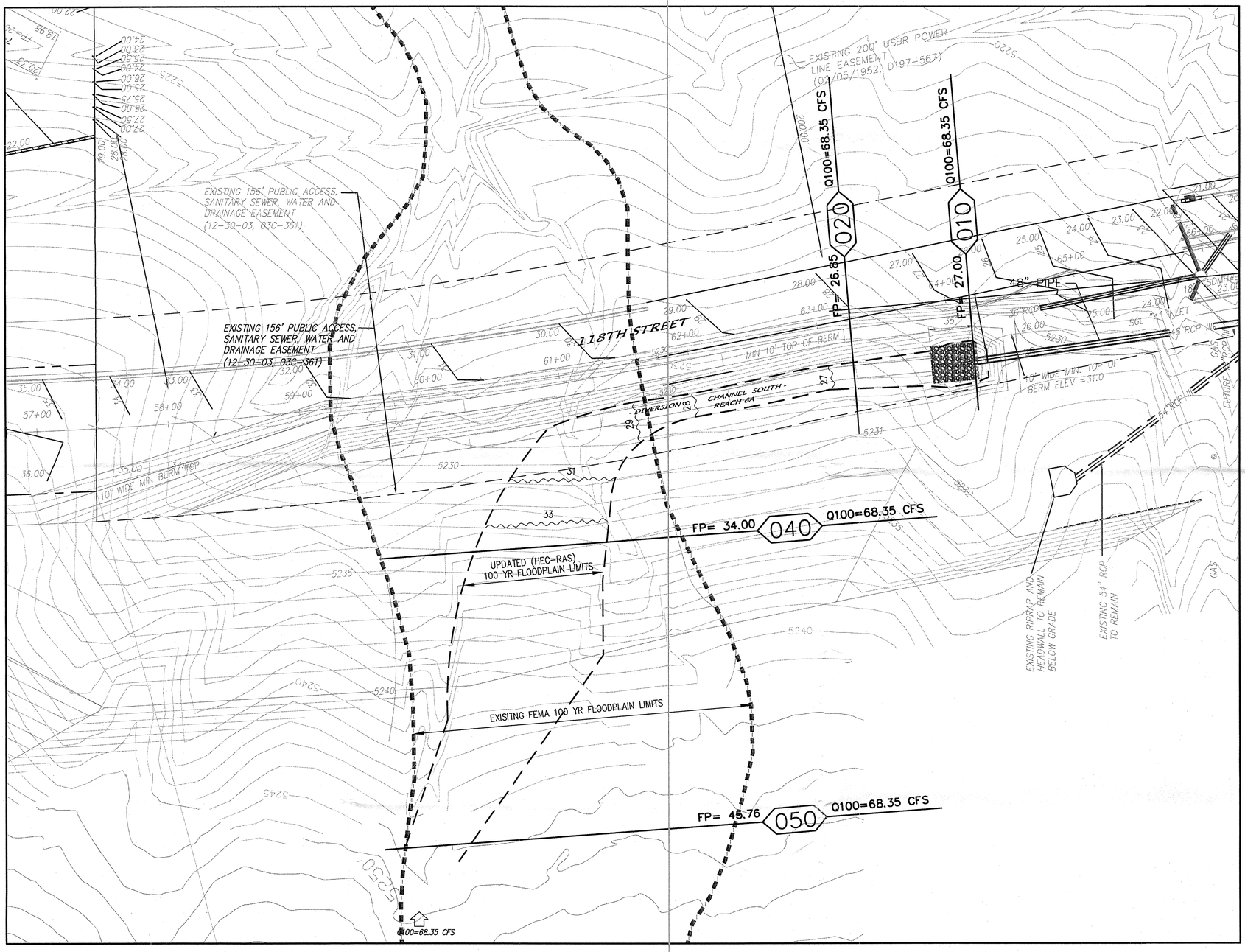
A3108AHH/DWG/HYDROLOGY/NEWBASIN_MAP2.DWG 9-19-05 DCR SLV

LEGEND

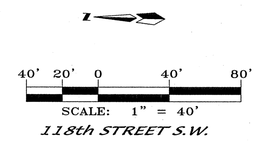
FP= 36.34 — 017 — Q100=10.31 CFS — HEC-RAS CROSS-SECTION ID

39 — APPROXIMATE 100-YEAR WATER SURFACE ELEVATION

100-YEAR FLOODPLAIN LIMITS



DIVERSION CHANNEL SOUTH



DIANE HOELZER NEW MEXICO 11667 LICENSED PROFESSIONAL ENGINEER 10-25-07

EXHIBIT 3			
HEC-RAS MAP			
DIVERSION CHANNEL SOUTH			
dmg MARK GOODWIN & ASSOCIATES, P.A. CONSULTING ENGINEERS P.O. BOX 90606 ALBUQUERQUE, NEW MEXICO 87199 (505)828-2200, FAX (505)797-9539			
Designed: DMC	Drawn: NHE	Checked: DMC	Sheet 2 of 2
Scale: 1" = 40'	Date: 10-25-07	Job: A07010	

A2106ANH/DWG/HYDROLOGY/NEWBASIN_MAP2.DWG 9-19-05 DER SLV

LEGEND

FP= 36.34 — 017 — Q100=10.31 CFS — HEC-RAS CROSS-SECTION ID

39 — APPROXIMATE 100-YEAR WATER SURFACE ELEVATION

100-YEAR FLOODPLAIN LIMITS

40' 20' 0 40' 80'

SCALE: 1" = 40'

118th STREET S.W.

DIVERSION CHANNEL WEST, DIVERSION CHANNEL NORTH

DUANE HOELZER NEW MEXICO 11967 LICENSED PROFESSIONAL ENGINEER 10-25-07

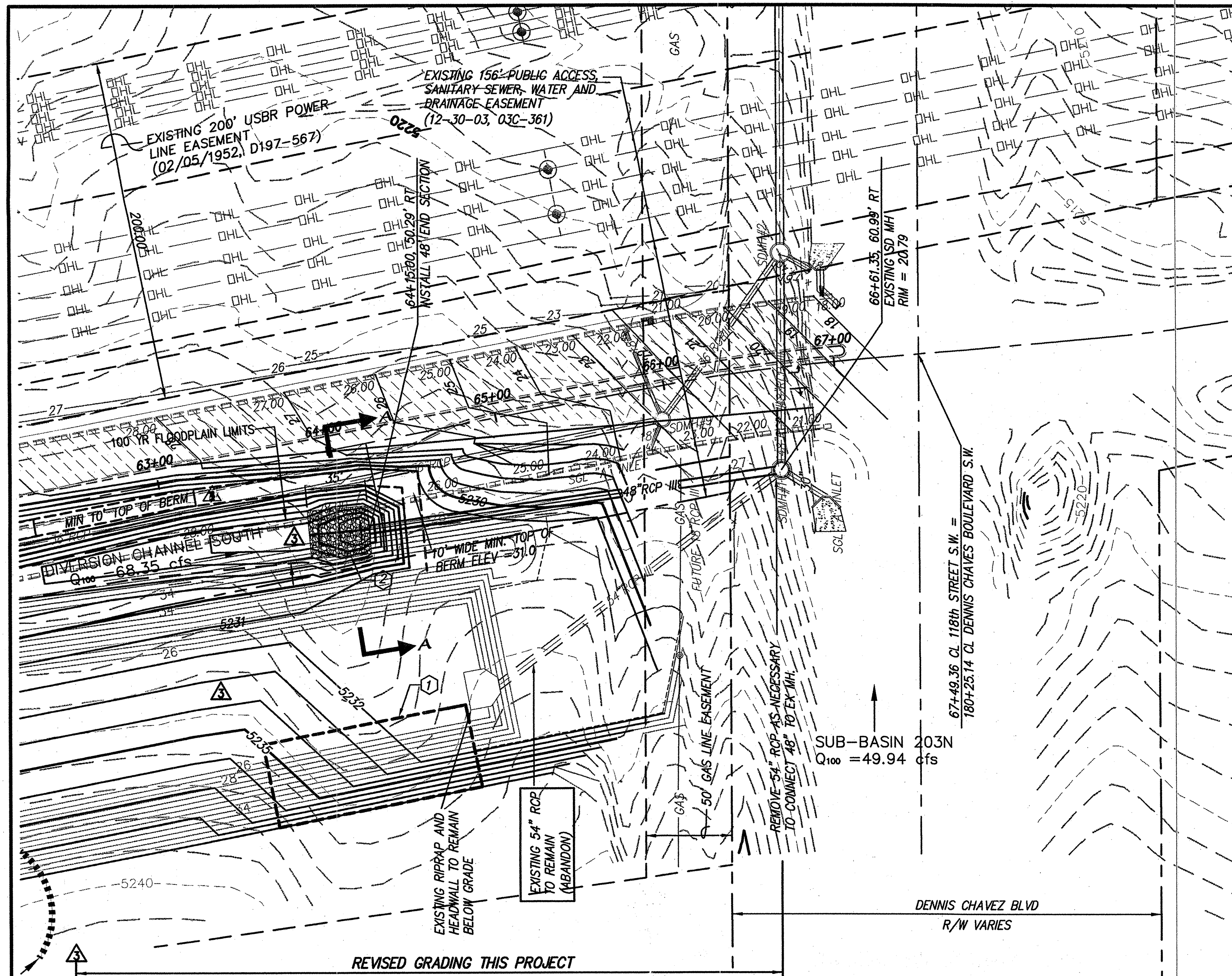
EXHIBIT 2
HEC-RAS MAP
DIVERSION CHANNEL WEST & NORTH

dmg MARK GOODWIN & ASSOCIATES, P.A. CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505)828-2200, FAX (505)797-9539

Designed: DMG	Drawn: NHE	Checked: DMG	
Scale: 1" = 40'	Date: 10-25-07	Job: A07010	Sheet 1 of 2

A2106ANH/DWG/HYDROLOGY/NEWBASIN_MAP2.DWG 9-19-05 DER SLV

SEE SHEET 18.3

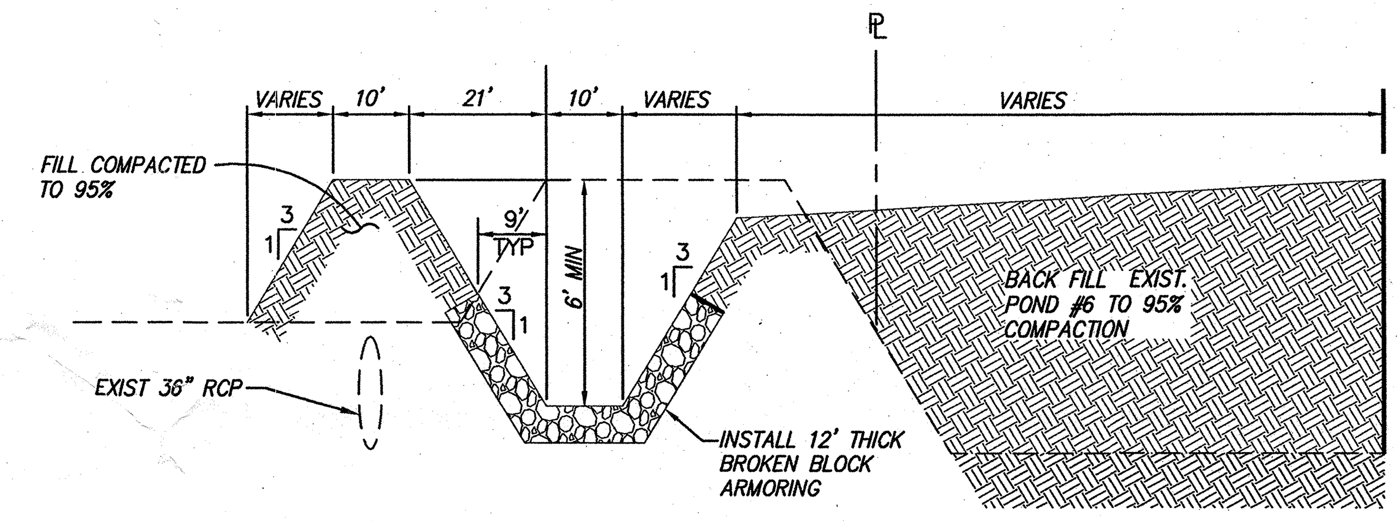


NOTES

1. ALL STATIONING IS CENTERLINE STATIONING.

KEYED NOTES

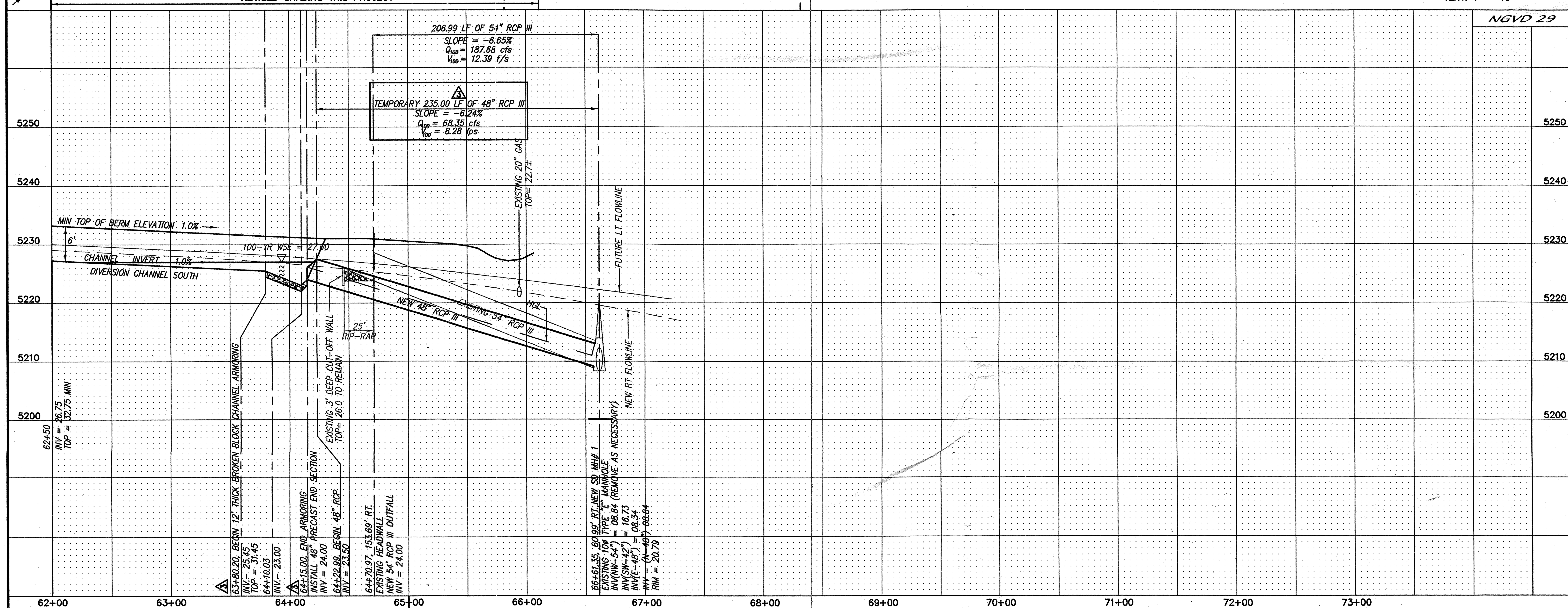
1. EXISTING SHOTCRETE RUNDOWN TO BE REMOVED AND BROKEN IN 8" TO 12" BLOCK FOR USE AS CHANNEL ARMORING.
2. INSTALL 12" THICK BROKEN BLOCK CHANNEL ARMORING.

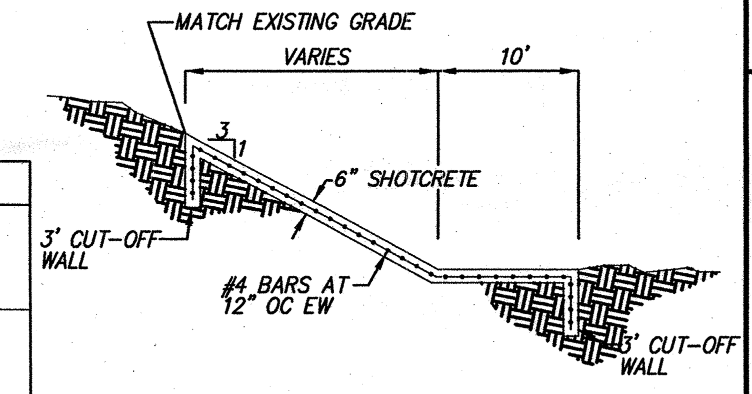


SECTION A–A
N.T.S.

SCALE: 1" = 50'

118th STREET S.W.
STA. 62+50.00 TO STA. 67+49.36
SCALE: HORZ. 1" = 50'
VERT. 1" = 10'





TYPICAL RUNDOWN DETAIL
N.T.S.

LEGEND

	6" SHOTCRETE
	PERMANENT PAVING

AS BUILT INFORMATION

CONTRACTOR	DATE
WORK	
INSPECTOR'S ACCEPTANCE BY	DATE
FIELD VERIFICATION BY	DATE
DRAWINGS CORRECTED BY	DATE

MICRO-FILM INFORMATION

RECORDED BY	DATE
NO.	

BENCH MARKS

STATION "3-P10" IS LOCATED 5.9 MI. SW OF DOWNTOWN ALBUQUERQUE. TO REACH STATION FROM INT. OF COORS AND DENNIS CHAVEZ BLVD. (FORMERLY RIO BRAVO), GO S. ON COORS BLVD. 0.62 MI. TO THE STATION WHICH IS ON AN EARTHEN BERM (6.2' WEST OF THE CENTERLINE OF COORS BLVD. THE STATION IS A STANDARD ACS 3 1/4" ALUMINUM CAP RIVITTED TO A PIPE 0.25' ABOVE THE GROUND AND IS STAMPED "3-P10, 1998".
X=360233.56, Y=1462437.48 (NAD 27), ELEV=4935.735 (SLD 29)

SURVEY INFORMATION

FIELD NOTES		
NO.	BY	DATE

ENGINEER'S SEAL

NO.	DATE	REMARKS	BY
1	10-09-07	CONSTRUCT DIVERSION CHANNEL SOUTH, DIVERSION BERM, 48" PIPE INSTALLED, FILL IN POND #6 REMOVE AND REVISE SHOTCRETE RUNDOWNS	DLH

REVISIONS

DESIGN

DESIGNED BY	GJK/TG	DATE	10/07
DRAWN BY	RDQ	DATE	10/07
CHECKED BY	DMG	DATE	10/07

MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505) 828-2200, FAX (505) 797-9539

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

TITLE: ANDERSON HEIGHTS - UNITS 7 & 8
118th STREET S.W. PONDS
GRADING & INFRASTRUCTURE REVISIONS

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	MO./DAY/YR.	MO./DAY/YR.

LAST DESIGN UPDATE

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
753987	N-8/P-8	18.4	18

F:\A07JOBS\A07010 118st St\dwg\C3D\A07010-GDPOND-2.dwg

F:\A07JOBS\A07010 118st St\dwg\C3D\A07010-GDPOND-2.dwg, 10/26/2007 4:05:21 PM, PLOTTED BY RDQ

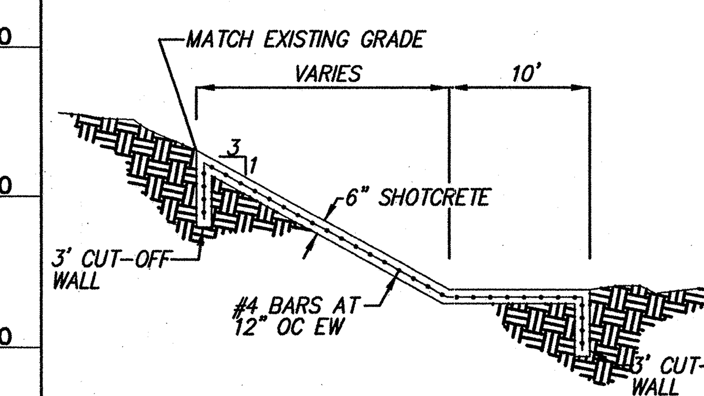
NOTES

1. ALL STATIONING IS CENTERLINE STATIONING.

KEYED NOTES

(1) EXISTING SHOTCRETE RUNDOWN TO BE REMOVED AND BROKEN INTO 8" TO 12" BLOCK FOR USE AS CHANNEL ARMORING.

(2) INSTALL 12" THICK BROKEN BLOCK CHANNEL ARMORING.



TYPICAL RUNDOWN DETAIL

N.T.S.

AS BUILT INFORMATION: CONTRACTOR; WORK — DATE; INSPECTOR'S ACCEPTANCE BY — DATE; FIELD VERIFICATION BY — DATE; DRAWINGS CORRECTED BY — DATE

MICRO-FILM INFORMATION: RECORDED BY — DATE; NO.

BENCH MARKS: STATION "3-P10" IS LOCATED 5.9 MI. SW OF DOWNTOWN ALBUQUERQUE TO REACH STATION FROM INT. OF COORS AND DENNIS CHAVEZ BLVD. (FORMERLY RIO BRAVO), GO S. ON COORS BLVD. 0.62 MI. TO THE STATION WHICH IS ON AN EARTHEN BERM 162.2; WEST OF THE CENTERLINE OF COORS BLVD. THE STATION IS A STANDARD ACS 3 1/4" ALUMINUM CAP RIVITTED TO A PIPE 0.25' ABOVE THE GROUND AND IS STAMPED "3-P10 1998" X=360733.56, Y=1462437.48 (NAD 27), ELEV=4935.735 (SLD 29)

SURVEY INFORMATION: FIELD NOTES — NO. | BY | DATE

ENGINEER'S SEAL

NO.	DATE	REMARKS	BY
3	10-09-07	CONSTRUCT DIVERSION CHANNELS WEST, NORTH, AND SOUTH, 10' WIDE DIVERSION BERM, FILL IN PONDS #5 & #6, REMOVE & REVISE SHOTCRETE RUNDOWNS	DLH

REVISIONS

DESIGN		DATE
DESIGNED BY	GJK	10/07
DRAWN BY	MJR	10/07
CHECKED BY	DMG	10/07

MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505) 828-2200, FAX (505) 797-9539

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

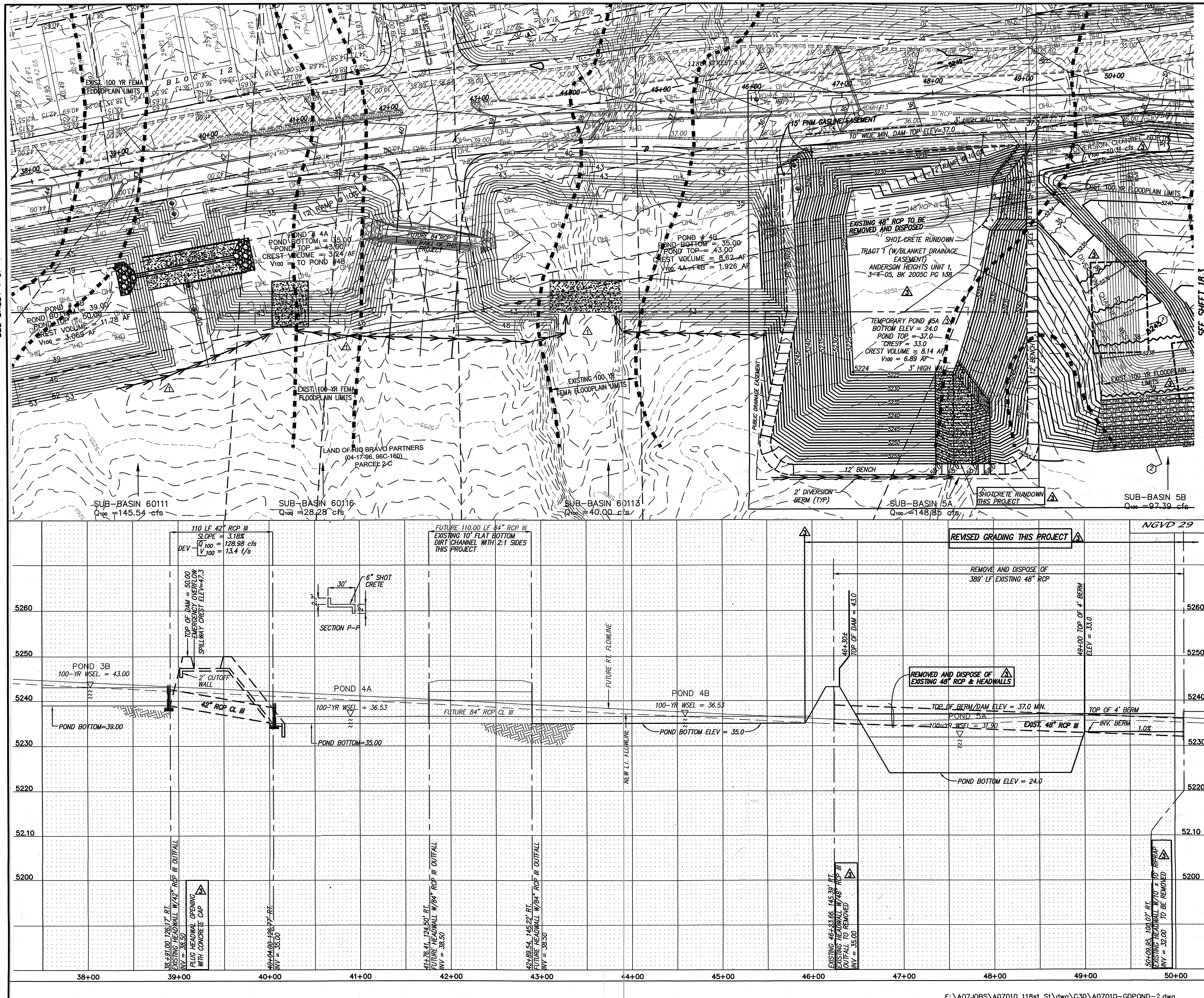
TITLE: ANDERSON HEIGHTS - UNITS 7 & 8
118th STREET S.W. PONDS
GRADING & INFRASTRUCTURE REVISIONS

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
753987	N-8/P-8	18.3	18

F:\A07JOBS\A07010 118st St\dwg\C3D\A07010-GDPOND-2.dwg

F:\A07JOBS\A07010 118st St\dwg\C3D\A07010-GDPOND-2.dwg, 10/26/2007 3:46:23 PM, PLOTTED BY RDQ



NOTES

1. ALL STATIONING IS CENTERLINE STATIONING.

KEYED NOTES

1. EXISTING SHOTCRETE RUNDOWN TO BE REMOVED AND BROKEN INTO 8" TO 12" BLOCK FOR USE AS CHANNEL ARMORING.
2. INSTALL 12" THICK BROKEN BLOCK CHANNEL ARMORING.

SCALE: 1" = 50'

118th STREET S.W.
STA. 38+00.00 TO STA. 50+00.00
SCALE: HORZ. 1" = 50'
VERT. 1" = 10'

LEGEND

6" SHOTCRETE

PERMANENT PAVING

TYPICAL RUNDOWN DETAIL
N.T.S.

AS BUILT INFORMATION

CONTRACTOR — DATE
WORK — DATE
INSPECTOR'S ACCEPTANCE BY — DATE
FIELD VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE

MICRO-FILM INFORMATION

RECORDED BY — DATE
NO.

BENCH MARKS

STATION "3-P10" IS LOCATED 5.9 MI. SW OF DOWNTOWN ALBUQUERQUE TO REACH STATION FROM INT. OF COORS AND DENNIS CHAVEZ BLVD. (FORMERLY RIO BRAVO), GO S. ON COORS BLVD. 0.62 MI. TO THE STATION WHICH IS ON AN EARTHEN BERM 162.2' WEST OF THE CENTERLINE OF COORS BLVD. THE STATION IS A STANDARD ACS 3 1/4" ALUMINUM CAP RIVITED TO A PIPE 0.25' ABOVE THE GROUND AND IS STAMPED "3-P10, 1998". X=360733.56, Y=1462437.48 (NAD 27), ELEV=4935.735 (SLD 29)

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

DIANE HOELZER, NEW MEXICO, 11987, LICENSED PROFESSIONAL ENGINEER

REVISIONS

NO.	DATE	REMARKS	BY
1	10-25-07	DELETED POND #5, BUILD POND #5A, DIVERSION CHANNEL WEST, DIVERSION BERM	
2	3-12-07	POND 5 MOVED, POND 6 DELETED	
3	8-07-08	BERMS ADDED	

DESIGN		
DESIGNED BY	G/K	DATE 10/07
DRAWN BY	MJR	DATE 10/07
CHECKED BY	DMG	DATE 10/07

MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505) 828-2200, FAX (505) 797-9539

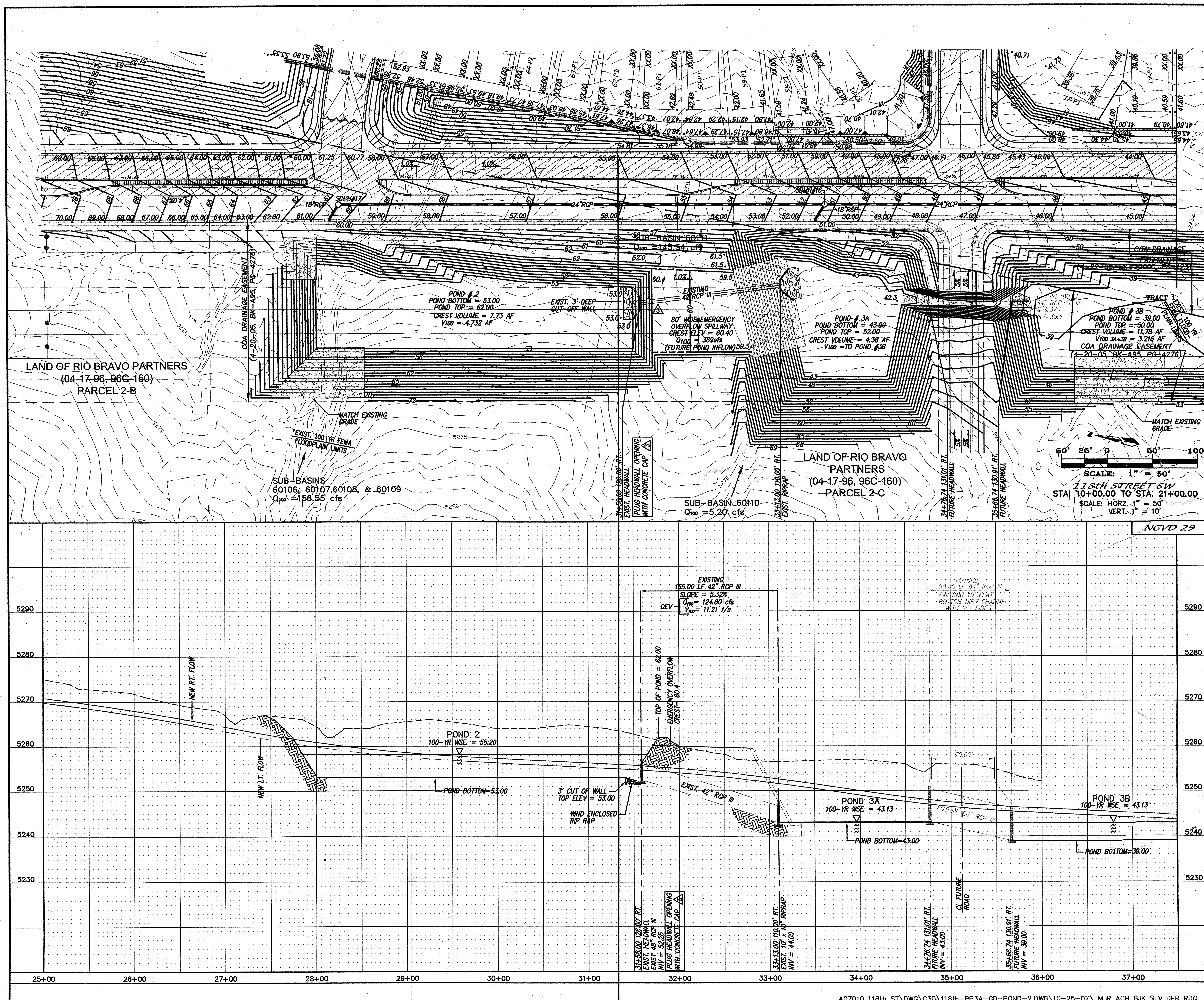
CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT

TITLE: ANDERSON HEIGHTS - UNITS 7 & 8
118th STREET S.W. PONDS
GRADING & INFRASTRUCTURE REVISIONS

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	MO./DAY/YR.	MO./DAY/YR.
		LAST DESIGN UPDATE	

CITY PROJECT NO.	ZONE MAP NO.	SHEET OF
753987	N-8/P-8	18.2 18

F:\A07JOBS\A07010 118st Stdwg\C3D\A07010-GDPOND-2.dwg, 10/25/2007 2:54:50 PM, PLOTTED BY RDO



SEE SHEET 18.2

A07010 118th ST\DWG\C3D\118th-PP3A-GD-POND-2.DWG\10-25-07\ MJR ACH GJK SLV DER RDQ

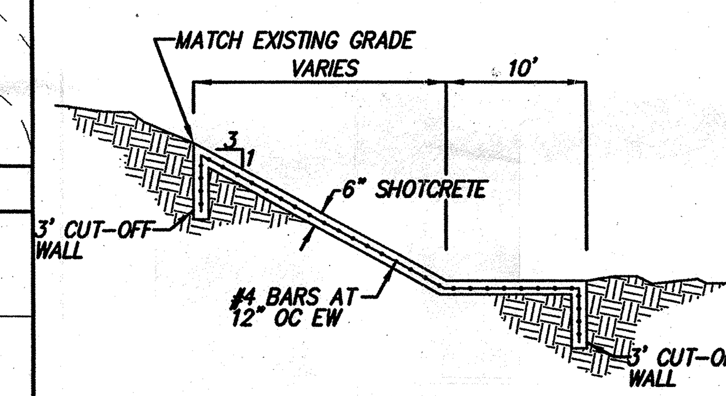
NOTES

1. ALL STATIONING IS CENTERLINE STATIONING.

KEYED NOTES

(1) EXISTING SHOTCRETE RUNDOWN TO BE REMOVED AND BROKEN INTO 8" TO 12" BLOCK FOR USE AS CHANNEL ARMORING.

(2) INSTALL 12" THICK BROKEN BLOCK CHANNEL ARMORING.



TYPICAL RUNDOWN DETAIL
N.T.S.

LEGEND

(hatched)	PERMANENT PAVING
(stippled)	6" SHOTCRETE

MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505) 828-2200, FAX (505) 797-9539

SURVEY INFORMATION

NO.	FIELD NOTES	DATE

BENCH MARKS

STATION "3-P10" IS LOCATED 5.9 MI. SW OF DOWNTOWN ALBUQUERQUE TO REACH STATION FROM INT. OF COORS AND DENNIS CHAVEZ BLVD. (FORMERLY RIO BRAVO), GO S. ON COORS BLVD. 0.62 MI. TO THE STATION WHICH IS ON AN EARTHEN BERM 162.2; WEST OF THE CENTERLINE OF COORS BLVD. THE STATION IS A STANDARD ACS 3 1/4" ALUMINUM CAP RIVITTED TO A PIPE 0.25' ABOVE THE GROUND AND IS STAMPED "3-P10, 1998". X=360733.56, Y=1462437.48 (NAD 27), ELEV=4935.735 (SLD 29)

AS BUILT INFORMATION

CONTRACTOR	
WORK STAKED BY	DATE
INSPECTOR'S ACCEPTANCE BY	DATE
FIELD VERIFICATION BY	DATE
DRAWINGS CORRECTED BY	DATE

MICRO-FILM INFORMATION

RECORDED BY	DATE
NO.	

ENGINEER'S SEAL

REVISIONS

NO.	DATE	REMARKS	BY
3	10-25-07	PLUG POND # 2 OUTFALL	

DESIGN

DESIGNED BY	GJK	DATE	10/07
DRAWN BY	MJR	DATE	10/07
CHECKED BY	DMG	DATE	10/07

CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT

TITLE: *ANDERSON HEIGHTS - UNIT 7 & 8*
118th STREET S.W. PONDS
GRADING & INFRASTRUCTURE REVISIONS

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
753987	N-8/P-8	18.1	18

F:\A07\JOBS\A07010 118st St\dwg\C3D\118th-PP3A-GDPOND-2.dwg, 10/25/2007 2:28:23 PM, PLOTTED BY RDQ