

CITY OF ALBUQUERQUE



December 1, 2015

Fred Arfman, PE
ISAACSON & ARFMAN, P.A.
128 Monroe Street NE
Albuquerque, NM 87108

Richard J. Berry, Mayor

RE: Westgate Heights Park Addition, Unit 2 (File: M09D008B)
8810 Sonya Ave. SW
Grading Plan and Drainage Plan
Engineer's Stamp Date – No Stamp

Dear Mr. Arfman:

Based upon the information provided in your submittal received 10-15-15, the above referenced Grading Plan and Drainage Plan cannot be approved for Grading Permit and Paving Permit until the following comments are addressed.

- Delineate drainage basins to clearly identify flow patterns directed to onsite water harvesting ponds. Tabulate basin flows and water harvesting pond volumes.
- Include total discharge to 86th Street through existing sidewalk culvert.
- General Note "Z" on the Grading General Notes and Details sheet states that a SWPPP is not required. The total project area of disturbance appears to exceed 1 acre. Adjust note to include plans for a SWPPP.
- Based on spot elevations shown, the open area at the northwest corner of the project appears to be at the same elevation. Adjust grades in this area to ensure positive drainage is met.
- Provide existing flow line, top of curb and sidewalk elevations at all proposed drivepad and ADA ramp locations.
- The parking area near the intersection of Sonya Ave. and Sapphire Road appears to direct parking lot and field flows to a point location, discharging to the harvesting and first flush ponds. Consider the use of valley gutters in this area to ensure positive drainage is met.
- Specify curb cuts within the parking lot at all point discharge locations to a pond.
- Provide emergency outfall information for all water harvesting and first flush ponds.
- When specifying the City of Albuquerque sidewalk culvert detail, ensure a supplemental note is provided for the bolts to be tack welded to the plate.
- Identify the limits of pavement and sidewalk removal needed for proposed improvements.

PO Box 1293

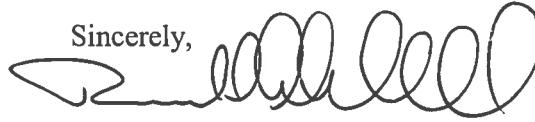
Albuquerque

New Mexico 87103

www.cabq.gov

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

Sincerely,

A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke.

Rudy Archuleta, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf Addressee via Email



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: Westgate Heights Park Building Permit #: _____ City Drainage #: M-9 D008B
DRB#: _____ EPC#: _____ Work Order#: _____
Legal Description: Westgate Heights Park Addition, Unit 2
City Address: 8810 Sonya Ave. SW

Engineering Firm: Isaacson & Arfman, P.A. Contact: Fred C. Arfman
Address: 128 Monroe Street NE - Albuquerque, NM 87108
Phone#: (505) 268-8828 Fax#: _____ E-mail: freda@iacivil.com

Owner: City of Albuquerque Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

Architect: Morrow Reardon Wilkinson Miller, Ltd. Contact: _____
Address: 210 La Veta Dr. NE - Albuquerque, NM 87108
Phone#: (505) 268-2266 Fax#: _____ E-mail: _____

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

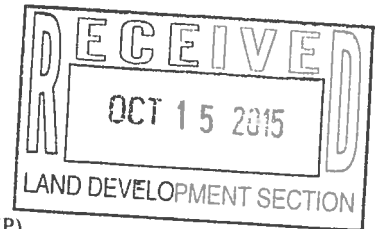
Contractor: _____ Contact: _____
Address: _____
Phone#: _____ Fax#: _____ E-mail: _____

TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
☒ DRAINAGE PLAN 1st SUBMITTAL
☐ DRAINAGE PLAN RESUBMITTAL
☒ CONCEPTUAL G & D PLAN
☐ GRADING PLAN
☐ EROSION & SEDIMENT CONTROL PLAN (ESC)
☐ ENGINEER'S CERT (HYDROLOGY)
☐ CLOMR/LOMR
☐ TRAFFIC CIRCULATION LAYOUT (TCL)
☐ ENGINEER'S CERT (TCL)
☐ ENGINEER'S CERT (DRB SITE PLAN)
☐ ENGINEER'S CERT (ESC)
☐ SO-19
☐ OTHER (SPECIFY) _____

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- ☐ SIA/FINANCIAL GUARANTEE RELEASE
☐ PRELIMINARY PLAT APPROVAL
☐ S. DEV. PLAN FOR SUB'D APPROVAL
☐ S. DEV. FOR BLDG. PERMIT APPROVAL
☐ SECTOR PLAN APPROVAL
☐ FINAL PLAT APPROVAL
☐ CERTIFICATE OF OCCUPANCY (PERM)
☐ CERTIFICATE OF OCCUPANCY (TCL TEMP)
☐ FOUNDATION PERMIT APPROVAL
☐ BUILDING PERMIT APPROVAL
☒ GRADING PERMIT APPROVAL
☒ PAVING PERMIT APPROVAL
☐ WORK ORDER APPROVAL
☐ GRADING CERTIFICATION
☐ SO-19 APPROVAL
☐ ESC PERMIT APPROVAL
☐ ESC CERT. ACCEPTANCE
☐ OTHER (SPECIFY) _____



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

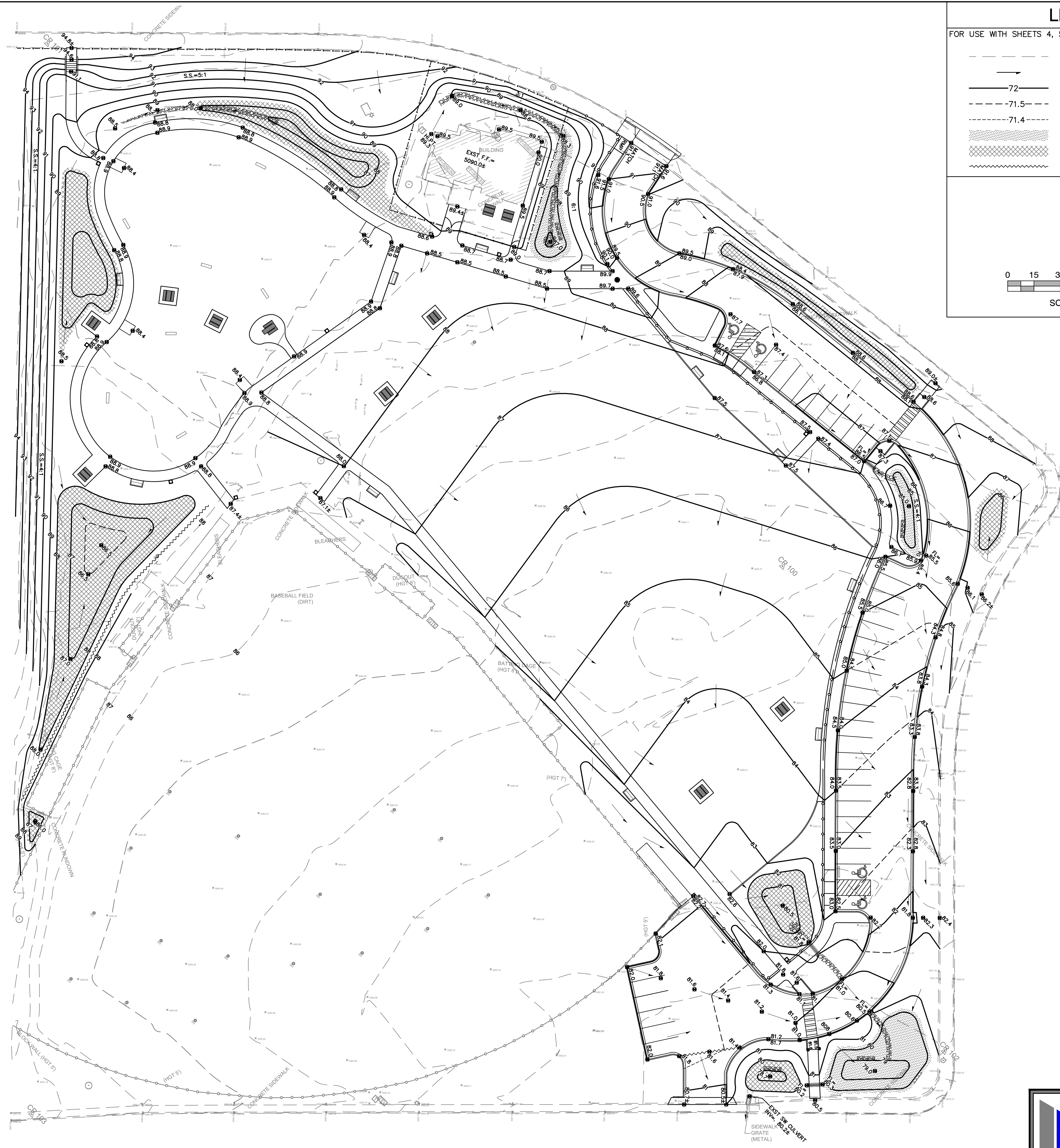
DATE SUBMITTED: October 15, 2015

By: Fred C. Arfman

Isaacson & Arfman, P.A.

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, and scope to the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres
3. **Drainage Report:** Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development



LEGEND

FOR USE WITH SHEETS 4, 5, 6 AND 7

EXISTING CONTOUR (1' INCREMENT)

FLOW DIRECTION

PROPOSED CONTOUR (1' INCREMENT)

PROPOSED CONTOUR (0.5' INCREMENT)

PROPOSED CONTOUR (0.1' INCREMENT)

FIRST FLUSH RETENTION POND

WATER HARVESTING

GRADE BREAK

0

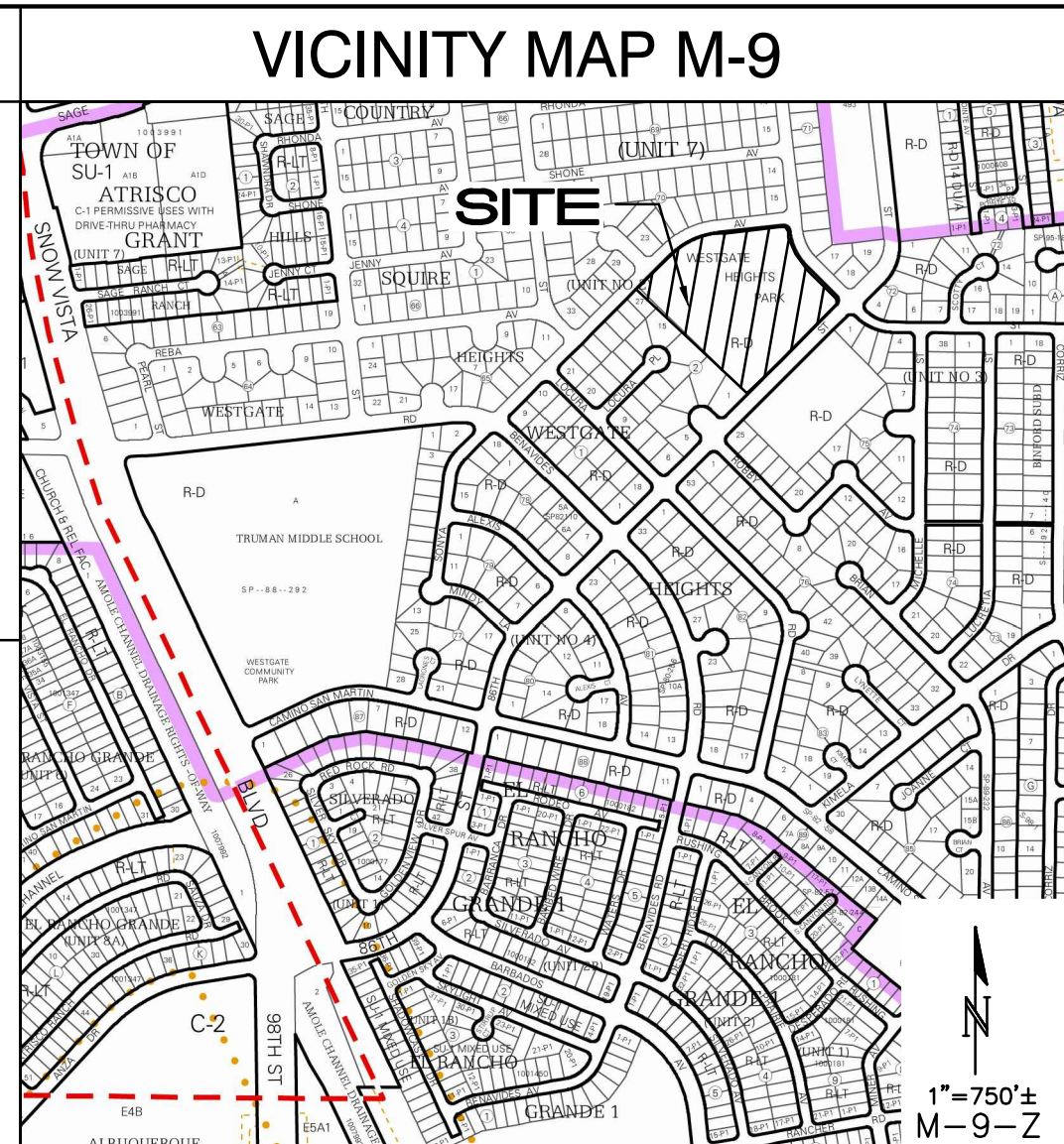
15

30

60

90

SCALE 1"=30'



PROJECT DATA

PROPERTY: THE SITE IS A DEVELOPED LITTLE LEAGUE PARK. PROPERTY LOCATED WITHIN C.O.A. VICINITY MAP M-9 THE SITE IS BOUND TO THE NORTHEAST BY SAPPHIRE STREET, TO THE SOUTHEAST BY 86TH STREET, TO THE NORTH / NORTHWEST BY SONYA AV. AND TO THE SOUTHWEST BY DEVELOPED RESIDENTIAL PROPERTIES.

PROPOSED IMPROVEMENTS: THE PROPOSED IMPROVEMENTS INCLUDE NEW PLAYGROUND AND SPORTS FIELD WITH ASSOCIATED ASPHALT PAVED ACCESS, PARKING, LANDSCAPING AND DRAINAGE IMPROVEMENTS.

LEGAL: WESTGATE HEIGHTS PARK ADD'N, UNIT 2. ALBUQ., NM

ADDRESS: 8810 SONYA AVE. SW

OFF-SITE: NO OFF-SITE DRAINAGE IMPACTS THIS PROPERTY.

FLOOD HAZARD: PER BERNALILLO COUNTY FIRM MAP NUMBER FM35001C0336H, DATED AUGUST 16, 2012, THE SITE IS LOCATED WITHIN FLOODZONE 'X' DESIGNATED AS AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOODPLAIN.

DRAINAGE PLAN CONCEPT: FIRST FLUSH RETENTION BASINS WILL BE CONSTRUCTED ADJACENT TO IMPERMEABLE PAVEMENT AS SHOWN. THE PROPERTY WILL CONTINUE TO DISCHARGE TO 98TH STREET AT THE EXISTING COVERED SIDEWALK CULVERT TO FOLLOW EXISTING FLOWPATHS. IN ADDITION TO FIRST FLUSH RETENTION, WATER HARVESTING BASINS WILL BE PROVIDED THROUGHOUT THE PROPERTY.

THE ADDITION OF FIRST FLUSH STORMWATER RETENTION PONDS, INCREASED GRASS AREA, SELF PONDING PLAYGROUND AREA AND WATER HARVESTING WITHIN LANDSCAPING WILL HELP TO REDUCE THE OVERALL DISCHARGE FROM THE PROPERTY.

CALCULATIONS

CALCULATIONS: 2096 - Westgate Heights Park : August 28, 2015

Based on Drainage Design Criteria for City of Albuquerque Section 22.2, DPM, Vol 2, dated Jan., 1993

ON-SITE			
AREA OF SITE:	297732.6	SF	= 6.84
100-year, 6-hour			
DEVELOPED FLOWS:			
EXCESS PRECIP:			
Treatment SF		Precip. Zone	
Area A	= 0	0%	E _A = 0.44
Area B	= 59546.52	20%	E _B = 0.67
Area C	= 178639.56	60%	E _C = 0.99
Area D	= 59546.52	20%	E _D = 1.97
Total Area	= 297732.6	100%	
On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)			
Weighted E = $\frac{E_A A_A + E_B A_B + E_C A_C + E_D A_D}{A_A + A_B + A_C + A_D}$			
Historic E	= 1.12 in.	Developed E	= 1.06 in.
On-Site Volume of Runoff: V ₃₆₀ = $\frac{E \cdot A}{12}$			
Historic V ₃₆₀	= 27838	CF	Developed V ₃₆₀ = 26250 CF
On-Site Peak Discharge Rate: Q _p = $\frac{Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D}{43,560}$			
For Precipitation Zone 1			
Q _{pA}	= 1.29	Q _{pC}	= 2.87
Q _{pB}	= 2.03	Q _{pD}	= 4.37
Historic Q _p	= 20.5 CFS	Developed Q _p	= 19.4 CFS

ISAACSON & ARFMAN, P.A.

Consulting Engineering Associates

128 Monroe Street N.E.

Albuquerque, New Mexico 87108

Ph. 505-268-8828 www.iacivil.com

2096 CO-101.dwg Oct 15, 2015

MRWM

LANDSCAPE ARCHITECTS

Morrow Reardon Wilkinson Miller, Ltd.

mrwmia.com 505 268 2266

CITY OF ALBUQUERQUE

STRATEGIC PLANNING AND DESIGN

PARKS AND RECREATION DEPARTMENT

WESTGATE HEIGHTS PARK

OVERALL GRADING AND DRAINAGE PLAN

Design Review Committee

City Engineer Approval

City Project No. 632792

Zone Map No. M-9

Sheet 4 of 18

ENGINEER'S SEAL										SURVEY INFORMATION		BENCH MARKS		AS-BUILT INFORMATION	
95% SUBMITTAL										FIELD NOTES		"ACS 8. M9" A CITY OF ALBUQUERQUE 3-1/4" ALUMINUM DISC STAMPED "8-M9 2002", THE STATION IS LOCATED 5.25 MILES SOUTHWEST OF DOWNTOWN ALBUQUERQUE.		CONTRACTOR	
										NO.	BY				
										DATE					
										DATE					
REVISIONS										NO.		DATE		DATE	
REMARKS										BY		DATE		DATE	
DESIGNED BY: BJB										DATE		10/15/15		DATE	
DRAWN BY: BJB										DATE		10/15/15		DATE	
CHECKED BY: FCA										DATE		10/15/15		DATE	
Mo./Day/Yr.										Mo./Day/Yr.		Mo./Day/Yr.		Mo./Day/Yr.	
Sheet 4 of 18															

FOR REVIEW SUBMITTAL

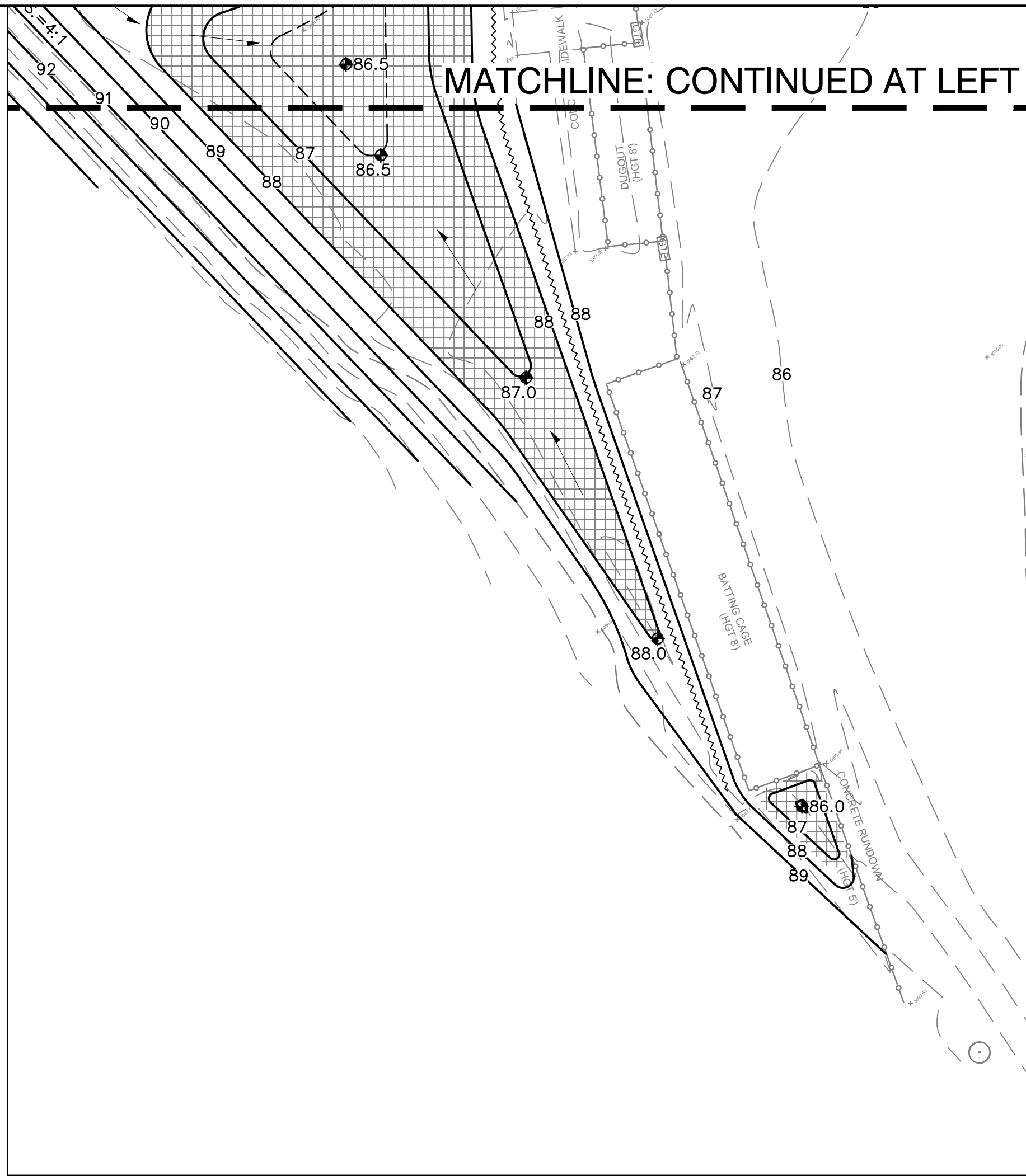
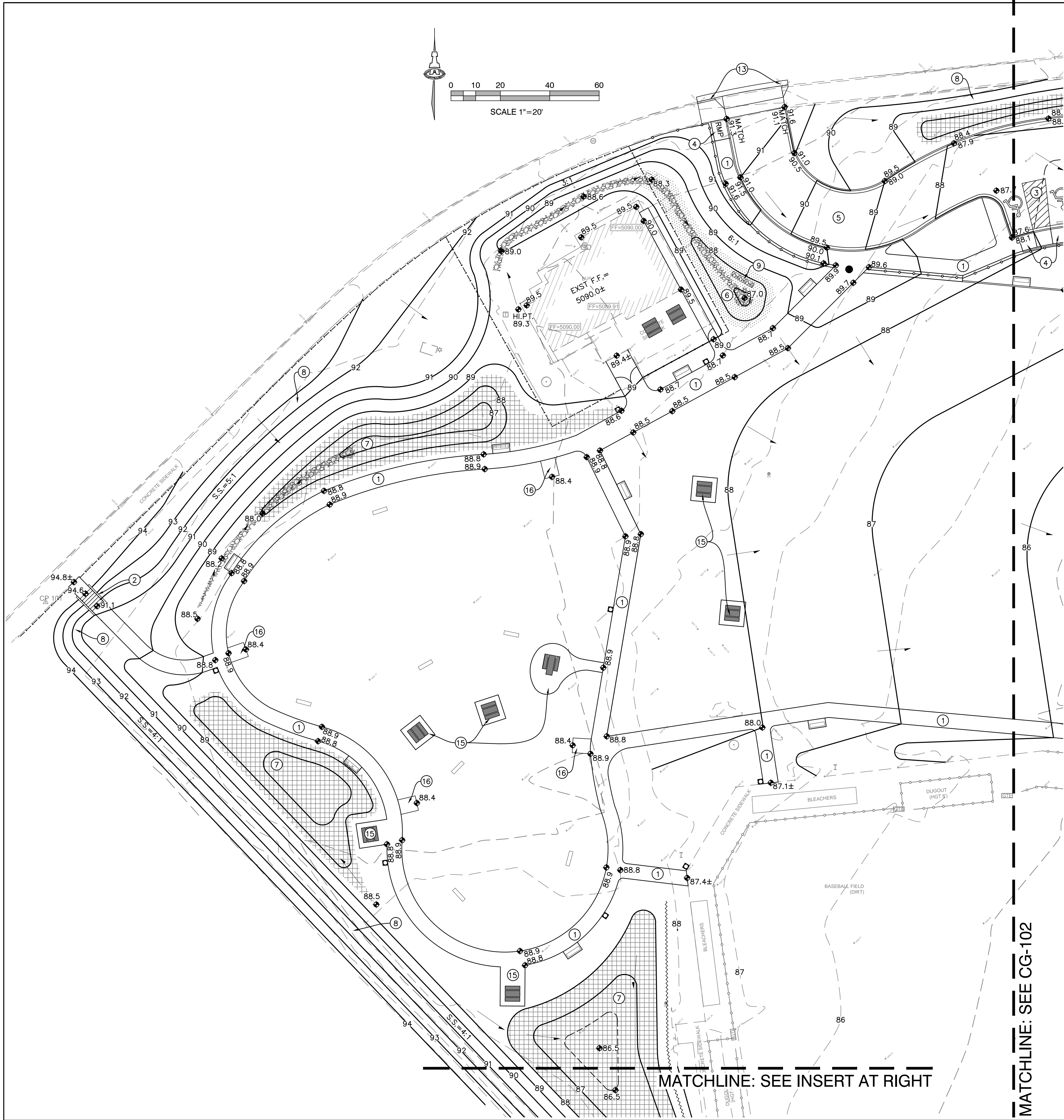
DATE: AUGUST 28, 2015

WESTGATE HEIGHTS PARK

PROJECT# 632792

RECORD DRAWINGS

DATE: XX/XX/2015



- KEYED NOTES**
- THESE KEYED NOTES ARE FOR USE ON GRADING AND DRAINAGE PLANS (NORTH AND SOUTH). NOT ALL NOTES ARE USED ON EACH SHEET.
1. CONSTRUCT PEDESTRIAN WALK AT ELEVATIONS SHOWN. ALL WALKS TO BE ADA ACCESSIBLE (5% MAX. SLOPE, 2% MAX. CROSS-SLOPE) UNLESS NOTED.
 2. STEPS WITHIN WALK REQUIRED TO ACHIEVE GRADE DIFFERENCE SHOWN.
 3. SLOPES WITHIN HANDICAP PARKING AREA TO MEET ADA REQUIREMENTS. MAX. SLOPE = 2% IN ANY DIRECTION.
 4. CONSTRUCT ADA COMPLIANT RAMP. MAX. 1:12 SLOPE, 2% MAX. CROSS-SLOPE.
 5. NEW ASPHALT PAVEMENT WITH CONCRETE CURB AND GUTTER AT ELEVATIONS SHOWN.
 6. CONSTRUCT FIRST FLUSH RETENTION POND AT ELEVATIONS SHOWN. INSTALL ANGULAR ROCK TO DEFINE PERIMETER. SEE SHEET 7 OF 15 FOR ADDITIONAL INFORMATION.
 7. CONSTRUCT WATER HARVESTING BASIN AT ELEVATIONS SHOWN.
 8. TRANSITION SLOPES TO ACHIEVE GRADE DIFFERENCES SHOWN. MAXIMUM SLOPE = 4:1.
 9. INSTALL PERCOLATION TRENCH WITHIN EACH FIRST FLUSH RETENTION POND. SEE 7 OF 15 FOR DETAIL.
 10. CONSTRUCT 1.0' WIDE CURB OPENING TO PASS CONCENTRATED FLOW. SEE SHEET 7 OF 15 FOR DETAIL.
 11. CONSTRUCT 1.0' WIDE CONCRETE SIDEWALK CULVERT AT RIM/FLOWLINE ELEVATIONS SHOWN PER C.O.A. STD. DWG. 2236. SEE SHEET 7 OF 15 FOR ADDITIONAL CONSTRUCTION INFORMATION.
 12. CONTRACTOR TO CLEAN EXISTING COVERED SIDEWALK CULVERT.
 13. CONSTRUCT NEW ENTRANCE DRIVE WITH ADA ACCESSIBLE CROSSING. SEE CONSTRUCTION PLAN SHEET 8 FOR ADDITIONAL INFORMATION REGARDING IMPROVEMENTS WITHIN THE R.O.W..
 14. NEW ADA ACCESSIBLE CROSSING ADJACENT TO EXISTING DRIVE PAD. SEE CONSTRUCTION PLAN SHEET 8.
 15. CONSTRUCT CONCRETE PADS WITH 1% SLOPE TO DRAIN (TYPICAL ALL BENCHES, TABLES).
 16. CONSTRUCT RAMP TO PLAY AREA.

MRWM
LANDSCAPE ARCHITECTS
Morrow Reardon Wilkinson Miller, Ltd.
mrwmla.com 505 268 2266

CITY OF ALBUQUERQUE
STRATEGIC PLANNING AND DESIGN
PARKS AND RECREATION DEPARTMENT

WESTGATE HEIGHTS PARK
DRAINAGE AND GRADING PLAN 1 OF 2

Design Review Committee

City Engineer Approval

Last Design Update

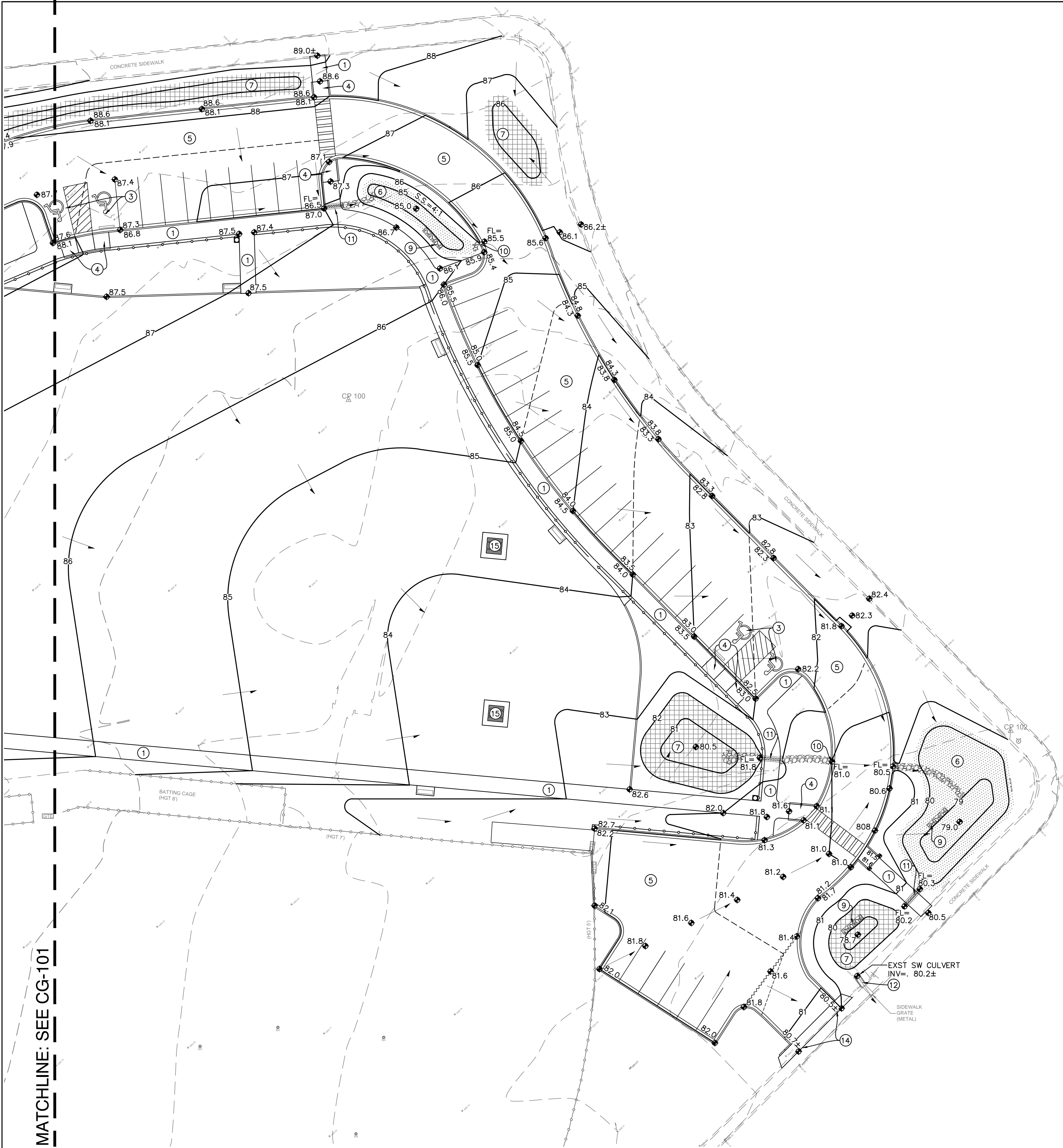
City Project No.
632792

Zone Map No.
M-9

Sheet
5 of 18

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque, New Mexico 87108
Ph. 505-268-8828 www.iacivil.com
2096 CG-101.dwg Oct 15, 2015

ENGINEER'S SEAL		REVISIONS		BENCH MARKS		SURVEY INFORMATION		AS-BUILT INFORMATION	
						FIELD NOTES		CONTRACTOR	
						NO.		BY	
						DATE		DATE	
						DATE		DATE	
						DATE		DATE	
						DATE		DATE	
						DATE		DATE	
						DATE		DATE	
						DATE		DATE	
95% SUBMITTAL		NO. DATE		BY		NO.		BY	
DESIGNED BY: BJB		DATE		10/15/15		MICRO-FILM INFORMATION		RECORDED BY	
		DRAWN BY: BJB		DATE		10/15/15		NO.	
		CHECKED BY: FCA		DATE		10/15/15			
DATE OF DESIGN DEPARTMENT									
MARK									
PLAN 1 OF 2		Mo./Day/Yr.				Mo./Day/Yr.			
Sheet		5		of		18			



KEYED NOTES

THESE KEYED NOTES ARE FOR USE ON GRADING AND DRAINAGE PLANS (NORTH AND SOUTH). NOT ALL NOTES ARE USED ON EACH SHEET.

1. CONSTRUCT PEDESTRIAN WALK AT ELEVATIONS SHOWN. ALL WALKS TO BE ADA ACCESSIBLE (5% MAX. SLOPE, 2% MAX. CROSS-SLOPE) UNLESS NOTED.

2. STEPS WITHIN WALK REQUIRED TO ACHIEVE GRADE DIFFERENCE SHOWN.

3. SLOPES WITHIN HANDICAP PARKING AREA TO MEET ADA REQUIREMENTS. MAX. SLOPE = 2% IN ANY DIRECTION.

4. CONSTRUCT ADA COMPLIANT RAMP. MAX. 1:12 SLOPE, 2% MAX. CROSS-SLOPE.

5. NEW ASPHALT PAVEMENT WITH CONCRETE CURB AND GUTTER AT ELEVATIONS SHOWN.

6. CONSTRUCT FIRST FLUSH RETENTION POND AT ELEVATIONS SHOWN. INSTALL ANGULAR ROCK TO DEFINE PERIMETER. SEE SHEET 7 OF 15 FOR ADDITIONAL INFORMATION.

7. CONSTRUCT WATER HARVESTING BASIN AT ELEVATIONS SHOWN.

8. TRANSITION SLOPES TO ACHIEVE GRADE DIFFERENCES SHOWN. MAXIMUM SLOPE = 4:1.

9. INSTALL PERCOLATION TRENCH WITHIN EACH FIRST FLUSH RETENTION POND. SEE 7 OF 15 FOR DETAIL.

10. CONSTRUCT 1.0' WIDE CURB OPENING TO PASS CONCENTRATED FLOW. SEE SHEET 7 OF 15 FOR DETAIL.

11. CONSTRUCT 1.0' WIDE CONCRETE SIDEWALK CULVERT AT RIM/FLOWLINE ELEVATIONS SHOWN PER C.O.A. STD. DWG. 2236. SEE SHEET 7 OF 15 FOR ADDITIONAL CONSTRUCTION INFORMATION.

12. CONTRACTOR TO CLEAN EXISTING COVERED SIDEWALK CULVERT.

13. CONSTRUCT NEW ENTRANCE DRIVE WITH ADA ACCESSIBLE CROSSING. SEE CONSTRUCTION PLAN SHEET 8 FOR ADDITIONAL INFORMATION REGARDING IMPROVEMENTS WITHIN THE R.O.W..

14. NEW ADA ACCESSIBLE CROSSING ADJACENT TO EXISTING DRIVE PAD. SEE CONSTRUCTION PLAN SHEET 8.

15. CONSTRUCT CONCRETE PADS WITH 1% SLOPE TO DRAIN (TYPICAL ALL BENCHES, TABLES).

16. CONSTRUCT RAMP TO PLAY AREA.

REVISIONS

NO.

DATE

BY

REMARKS

ENGINEER'S SEAL

95% SUBMITTAL

SURVEY INFORMATION

FIELD NOTES

NO.

DATE

BY

BENCH MARKS

"ACS 8_M9"

A CITY OF ALBUQUERQUE 3-1/4" ALUMINUM DISC

STAMPED "8-M9 2002", THE STATION IS LOCATED 5.25 MILES SOUTHWEST OF DOWNTOWN ALBUQUERQUE.

AS-BUILT INFORMATION

CONTRACTOR

DATE

INSPECTOR'S

DATE

ACCEPTANCE BY

DATE

DRAWING

DATE

VERIFICATION BY

DATE

MICRO-FILM INFORMATION

RECORDED BY

DATE

NO.

MRWM

LANDSCAPE ARCHITECTS

Morrow Reardon Wilkinson Miller, Ltd.

mrwmla.com 505 268 2266

CITY OF ALBUQUERQUE

STRATEGIC PLANNING AND DESIGN

PARKS AND RECREATION DEPARTMENT

WESTGATE HEIGHTS PARK

DRAINAGE AND GRADING PLAN 2 OF 2

Design Review Committee

City Engineer Approval

Last Design Update

City Project No.

632792

Zone Map No.

M-9

Sheet

6 of 18

Mo./Day/Yr.

Mo./Day/Yr.

ISAACSON & ARFMAN, P.A.

Consulting Engineering Associates

128 Monroe Street N.E.

Albuquerque, New Mexico 87108

Ph. 505-268-8828 www.iacivil.com

2096 CG-101.dwg Oct 15, 2015

RECORD DRAWINGS

DATE: XX/XX/2015

PROJECT# 632792

WESTGATE HEIGHTS PARK

FOR REVIEW SUBMITTAL

DATE: AUGUST 28, 2015

GENERAL NOTES

- A. ALL WORK DETAILED ON THESE PLANS AND PERFORMED UNDER THIS CONTRACT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT. WHERE APPLICABLE, CITY OF ALBUQUERQUE STANDARDS APPLY.
- B. THE CONTRACTOR SHALL ABIDE BY ALL STATE, LOCAL, AND FEDERAL LAWS, CODES, RULES AND REGULATIONS WHICH APPLY TO THE CONSTRUCTION OF THESE IMPROVEMENTS, INCLUDING EPA AND ADA REQUIREMENTS.
- C. ALL SUBGRADE, OVEREXCAVATION, BACKFILL, AND FILL SHALL BE PLACED AND / OR COMPACTED PER THE GEOTECHNICAL REPORT AND CITY OF ALBUQUERQUE SPECIFICATIONS.
- D. COORDINATE WORK WITH SITE PLAN, PAVING PLAN, DEMOLITION PLAN, AND LANDSCAPE PLAN.
- E. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING OBSTRUCTIONS, AND CONDITION OF ALL EXISTING INFRASTRUCTURE PRIOR TO CONSTRUCTION. REPORT ALL DISCREPANCIES TO THE LANDSCAPE ARCHITECT AND VERIFY THE INTENT BEFORE PROCEEDING.
- F. CONTRACTOR SHALL OBTAIN ALL REQUIRED INSPECTIONS OF THE WORK.
- G. CONSTRUCTION ACTIVITY SHALL BE LIMITED TO THE PROPERTY AND/OR PROJECT LIMITS. ANY DAMAGE TO ADJACENT STRUCTURES RESULTING FROM THE CONSTRUCTION PROCESS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL BE RESPONSIBLE FOR DOCUMENTING EXISTING CONDITIONS PRIOR TO CONSTRUCTION.

- H. CONSTRUCTION EQUIPMENT SHALL NOT OBSTRUCT DRIVEWAYS. EQUIPMENT SHALL ONLY OBSTRUCT DESIGNATED TRAFFIC LANES IF APPROPRIATE BARRICADING PERMITS HAVE BEEN OBTAINED.
- I. THE CONTRACTOR SHALL MAINTAIN ALL BARRICADING AND CONSTRUCTION SIGNING AT ALL TIMES. THE CONTRACTOR SHALL VERIFY THE PROPER LOCATION OF ALL BARRICADING AT THE END AND BEGINNING OF EACH DAY.
- J. PAVEMENT GRADES IN MARKED HANDICAPPED PARKING AREAS SHALL NOT EXCEED 2.0% IN ANY DIRECTION. FOR ALL ACCESSIBLE ROUTES, MAXIMUM ALLOWABLE CROSS SLOPE IS 2.0% AND MAXIMUM LONGITUDINAL SLOPE WITHOUT RAMP IS 5.0%. FOLLOW ALL ADA ACCESSIBILITY GUIDELINES OR CITY CODES, WHICHEVER IS MORE STRINGENT.
- K. ALL TRASH, DEBRIS, & SURFACE VEGETATION SHALL BE CLEARED AND LEGALLY DISPOSED OF OFFSITE.
- L. PROPOSED SPOT AND CONTOUR ELEVATIONS SHOWN REPRESENT TOP OF FINISH MATERIAL (I.E. TOP OF CONCRETE, TOP OF CONCRETE BUILDING PAD, TOP OF PAVEMENT MATERIAL, TOP OF LANDSCAPING MATERIAL, ETC.). CONTRACTOR SHALL GRADE, COMPACT SUBGRADE AND DETERMINE EARTHWORK ESTIMATES BASED ON ELEVATIONS SHOWN MINUS' FINISH MATERIAL THICKNESSES.
- M. MAXIMUM UNPROTECTED SLOPES SHALL BE 4:1.
- N. EXISTING UTILITY LINES ARE SHOWN IN AN APPROXIMATE MANNER ONLY AND MAY BE INCOMPLETE OR OBSOLETE. SUCH LINES MAY OR MAY NOT EXIST WHERE SHOWN OR NOT SHOWN. CONTRACTOR SHALL CONTACT NM-811 FOR UTILITY LINE SPOTS TWO WORKING DAYS PRIOR TO CONDUCTING SITE FIELD WORK.

- CONTRACTOR SHALL FIELD VERIFY AND LOCATE ALL UTILITIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF NECESSARY DRY UTILITY ADJUSTMENTS.
- O. A CURRENT STORMWATER CONTROL PERMIT, INCLUDING AN EROSION SEDIMENT CONTROL PLAN (E.S.C.) FOR EROSION AND SEDIMENT CONTROL IS REQUIRED FOR ALL CONSTRUCTION, DEMOLITION CLEARING, AND GRADING OPERATIONS THAT DISTURB THE SOIL ON ONE ACRE OR MORE OF LAND. OWNER WILL COORDINATE.
- P. POST-CONSTRUCTION MAINTENANCE FOR STORMWATER FACILITIES WILL BE THE RESPONSIBILITY OF THE FACILITIES OWNER. PERIODIC INSPECTION AND CERTIFICATIONS OF THE FACILITIES MAY BE REQUIRED BY THE CITY ENGINEER.
- Q. STORMWATER CONTROL MEASURES SHOWN ON THIS PLAN ARE REQUIRED TO PROVIDE MANAGEMENT OF "FIRST FLUSH" (DEFINED AS THE 90TH PERCENTILE STORM EVENT OR 0.44" OF STORMWATER WHICH DISCHARGES DIRECTLY TO A PUBLIC STORM DRAINAGE SYSTEM).
- R. ADJUST ANY RIMS OF EXISTING UTILITY FEATURES AS NECESSARY TO MATCH NEW GRADES. UTILITIES IN PAVED AREAS SHALL BE HS-25 TRAFFIC RATED.
- S. PAVING AND ROADWAY GRADES SHALL BE ±0.1' FROM PLAN ELEVATIONS.
- T. WHERE GRADES BETWEEN NEW AND EXISTING ARE SHOWN AS 'MATCH' OR '±', TRANSITIONS SHALL BE SMOOTH.

- U. ALL EROSION PROTECTION TO BE FRACTURED FACE ROCK (F.F. ROCK) DEFINED AS 6" AVG. DIA. ANGULAR FACED ROCK PLACED OVER GEOTEX 501 NON-WOVEN GEOTEXTILE (O.E.). NOTE: IF OWNER DOES NOT WANT LOOSE ROCK, GROUTED ROCK OR WIRE ENCLOSED ROCK MAY BE SUBSTITUTED AT ALL AREAS REFERENCING F.F. ROCK EROSION PROTECTION. OWNER'S OPTION.
- V. CONTRACTOR SHALL COMPLY WITH LOCAL REGULATIONS FOR RESEEDING OF DISTURBED AREAS. RESEEDING INSPECTION IS NOT INCLUDED AS PART OF ENGINEER'S CERTIFICATION OF SUBSTANTIAL COMPLIANCE.
- W. POND AND STORM DRAIN DESIGN PARAMETERS (TOP OF POND, BOTTOM OF POND, RIMS, INVERTS, PIPE SIZES, AREA OF POND, ETC.) TO BE STRICTLY ADHERED TO.
- X. ENGINEER RECOMMENDS THAT OWNER MAINTAIN EROSION PROTECTION ELEMENTS. ENGINEER RECOMMENDS THAT OWNER INSPECT SITE YEARLY AND AFTER EACH RAINFALL TO IDENTIFY NEW AREAS OF EROSION AND INSTALL ADDITIONAL EROSION PROTECTION AS NEEDED BASED ON ACTUAL OCCURRENCES.
- Y. MEASURES REQUIRED FOR EROSION AND SEDIMENT CONTROL SHALL BE INCIDENTAL TO THE PROJECT COST.
- Z. IF THE SITE IS SMALL ENOUGH NOT TO REQUIRE A SWPPP/NPDES PERMIT (LESS THAN ONE ACRE), THE CONTRACTOR SHALL STILL BE RESPONSIBLE FOR USING EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMP'S) TO ENSURE THAT NO SOIL ERODES FROM THE SITE ONTO ADJACENT PUBLIC RIGHT-OF-WAY.

OVERALL SITE CALCULATIONS

CALCULATIONS: 2096 - Westgate Heights Park : August 28, 2015			
Based on Drainage Design Criteria for City of Albuquerque Section 22.2, DPM, Vol 2, dated Jan., 1993			
ON-SITE			

AREA OF SITE:	297732.6	SF	=	6.84
100-year, 6-hour				
HISTORIC FLOWS:				
	Treatment SF	%		
Area A	=	0	0%	
Area B	=	59546.52	20%	
Area C	=	178639.56	60%	
Area D	=	59546.52	20%	
Total Area	=	297732.6	100%	
DEVELOPED FLOWS:				
	Treatment SF	%		
Area A	=	0	0%	
Area B	=	119093	40%	
Area C	=	119093	40%	
Area D	=	59547	20%	
Total Area	=	297732.6	100%	
EXCESS PRECIP:				
			Precip. Zone	1
			E _A	= 0.44
			E _B	= 0.67
			E _C	= 0.99
			E _D	= 1.97

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)				
Weighted E = $\frac{E_A A_A + E_B A_B + E_C A_C + E_D A_D}{A_A + A_B + A_C + A_D}$				
Historic	E	=	1.12 in.	Developed E = 1.06 in.

On-Site Volume of Runoff: V ₃₆₀ = E*A / 12				
Historic	V ₃₆₀	=	27838 CF	Developed V ₃₆₀ = 26250 CF

On-Site Peak Discharge Rate: Q _p = Q _{pA} A _A +Q _{pB} A _B +Q _{pC} A _C +Q _{pD} A _D / 43,560				
For Precipitation Zone 1				
	Q _{pA}	=	1.29	Q _{pC} = 2.87
	Q _{pB}	=	2.03	Q _{pD} = 4.37
Historic	Q _p	=	20.5 CFS	Developed Q _p = 19.4 CFS

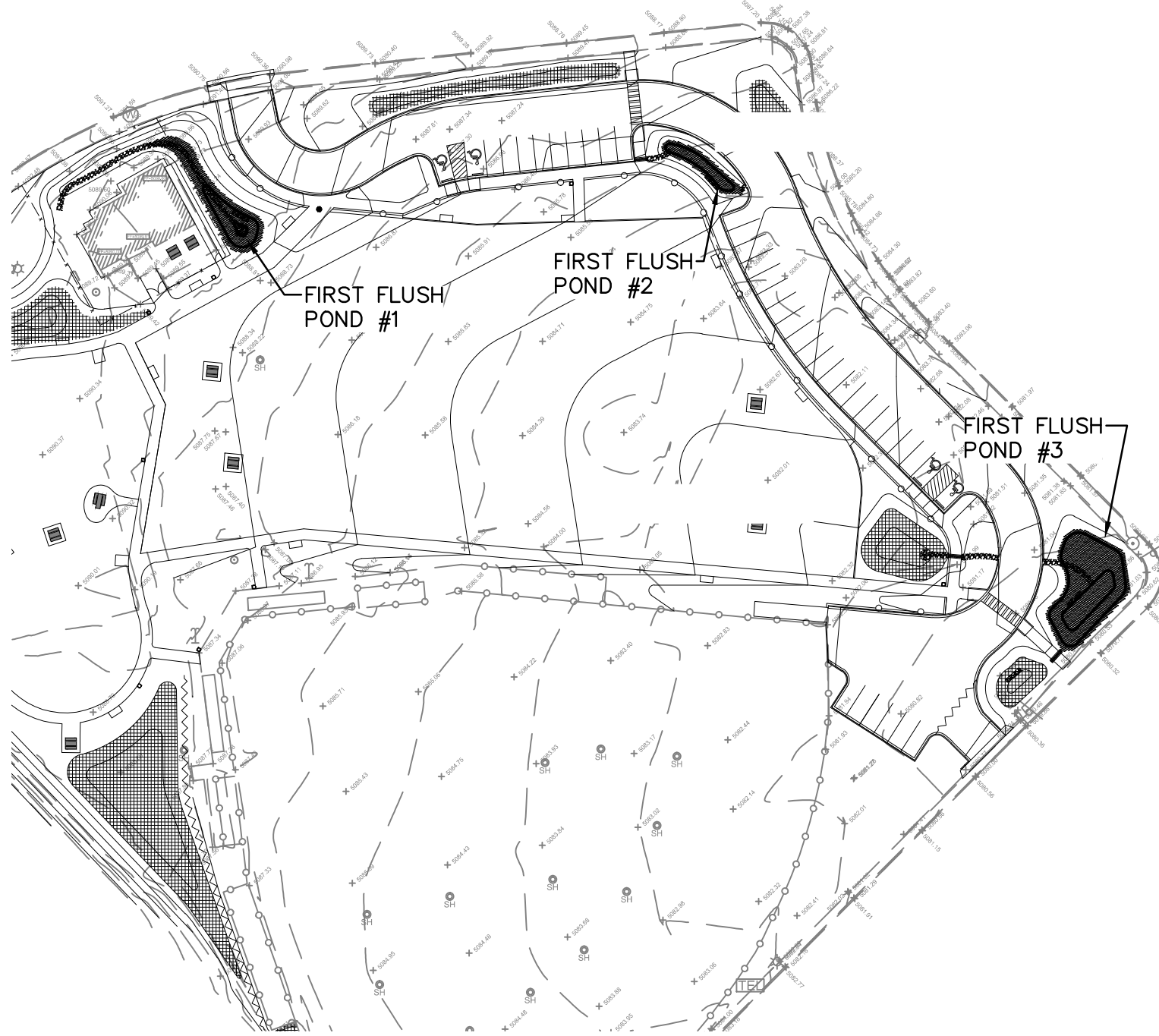
REQUIRED FIRST FLUSH RETENTION VOLUME = (59547 SF * 0.34" / 12 = 1688 CF

FIRST FLUSH POND #1		
Contour	Area	Volume
5088.50	1051	811 CF
5087.00	30	
TOTAL VOL.		811 CF

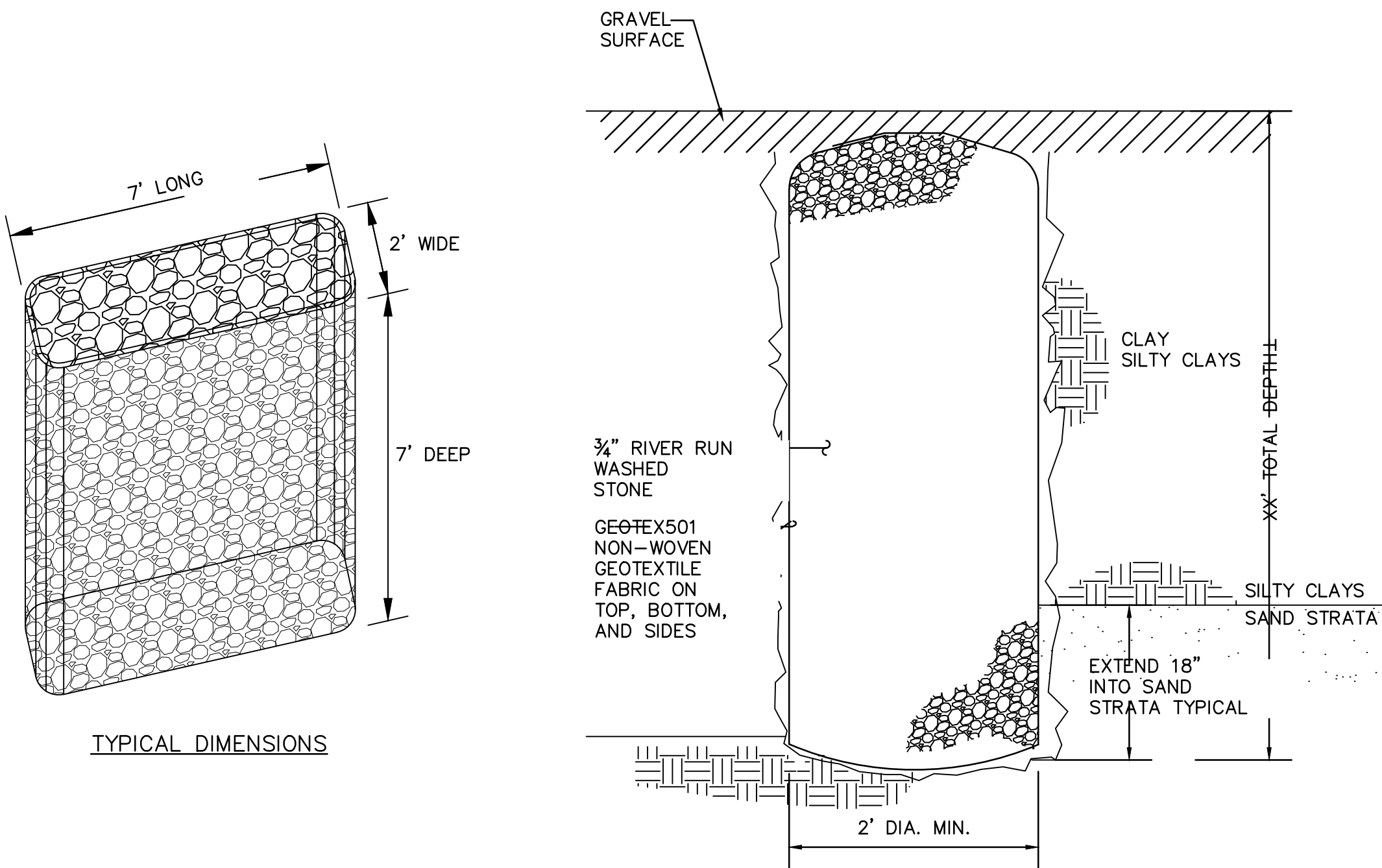
FIRST FLUSH POND #2		
Contour	Area	Volume
5085.50	445	135 CF
5085.00	94	
TOTAL VOL.		135 CF

FIRST FLUSH POND #3		
Contour	Area	Volume
5080.30	1965	1525 CF
5079.00	381	
TOTAL VOL.		1525 CF

REQUIRED FIRST FLUSH RETENTION POND VOLUME = 1688 CF
PROVIDED FIRST FLUSH RETENTION POND VOLUME = 2471 CF



FIRST FLUSH RETENTION PONDS



PERCOLATION TRENCH

LOCATE CLAY LAYER BELOW SURFACE GRADE. MAY VARY BASED ON LOCATION OF INFILTRATION PIT.

SCALE: N.T.S.

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque, New Mexico 87108
Ph. 505-268-8828 www.iacivil.com
2096 CG-101.dwg Oct 15, 2015

MRWM
LANDSCAPE ARCHITECTS
Morrow Reardon Wilkinson Miller, Ltd.
mrwmla.com 505 268 2266

CITY OF ALBUQUERQUE
STRATEGIC PLANNING AND DESIGN
PARKS AND RECREATION DEPARTMENT

WESTGATE HEIGHTS PARK
GRADING GENERAL NOTES AND DETAILS

Design Review Committee

City Engineer Approval

Last Design Update

City Project No.
632792

Zone Map No.
M-9

Sheet
7 of 18

Mo./Day/Yr.

Mo./Day/Yr.

AS-BUILT INFORMATION			
CONTRACTOR	DATE	INSPECTOR'S	DATE
SIGNED BY		APPROVED BY	
VERIFICATION BY	DATE	DRAWINGS	DATE
BY		BY	
MICRO-FILM INFORMATION			
RECORDED BY	DATE		
NO.			

BENCH MARKS			
"ACS 8.19"	DATE	A CITY OF ALBUQUERQUE 3-1/4" ALUMINUM DISC	
NO.	BY	STAMPED "8-M9 2002", THE STATION IS LOCATED	
		5.25 MILES SOUTHWEST OF DOWNTOWN ALBUQUERQUE.	

SURVEY INFORMATION			
FIELD NOTES	NO.	BY	
ENGINEER'S SEAL	95% SUBMITTAL		

REVISIONS			
REMARKS			
NO. DATE			
DESIGNED BY:	BUB	DATE	10/15/15
DRAWN BY:	BUB	DATE	10/15/15
CHECKED BY:	FCA	DATE	10/15/15

FOR REVIEW SUBMITTAL
DATE: AUGUST 28, 2015

WESTGATE HEIGHTS PARK

PROJECT# 632792

RECORD DRAWINGS
DATE: XX/XX/2015