CITY OF ALBUQUERQUE

Richard J. Berry, Mayor

June 19, 2017

Fred C. Arfman, P.E.
Isaacson & Arfman, P.A.
128 Monroe St. N.E
Albuquerque, NM, 87108

RE: McMahon Market Place Lots 9C&D
Grading and Drainage Plan
Stamp Date: 6/13/17
Hydrology File: A11D011F

Dear Mr. Arfman:

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

Based upon the information provided in your submittal received 6/16/2017, the Grading and Drainage Plan **is not** approved for Grading and Paving Permits. The following comments need to be addressed for approval of the above referenced project:

1. More than 1 acre of disturbance is proposed, therefore an Erosion and Sediment Control Plan is required and is to be submitted to the storm water quality engineer (Curtis Cherne, PE, ccherne@cabq.gov). An approval for this must be given prior to Hydrology's approval.

2. On Sheet C-1. On the Vicinity Map, please show the site area from the Taco Bell site to Fineland Drive.

3. On Sheet C-1. Please show the existing Taco Bell development, about 25 feet min. into the site. Please show the existing retaining wall with top of wall and bottom spot elev., existing sidewalk, curb, and hatch the existing pavement.

4. On Sheet C-1. Please provide a cross section of the retaining wall. This section should include the existing block wall along the property line, the proposed drive, and the proposed grades on the other side of the drive.

5. On Sheet C-1. It appears that the proposed retaining wall is taller than 8 feet high in a spot. The maximum height for a retaining wall is 8 feet without an approved variance. This can be handled with changing the spot elevation at the bottom of the wall so it does not go past the 8 feet height maximum. Please clarify.

Orig: Drainage File

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6. On Sheet C-1. At both of the proposed curb cuts, there appears to be patch of rip rap or gravel. If so, then please label it and give an area for them.

7. On Sheet C-2. Please label both of the basins in the Drainage Basin Map.

8. On Sheet C-2. Please enlarge both basins' ponding charts so that it is legible. These also should be place adjacent to the Basin Map.

9. On Sheet C-2. Please show the basins' calculations for the 100 year 6 hour storm along with the overall development calculations which you provided.

If you have any questions, please contact me at 924-3995 or rbrissette@cabq.gov.

Sincerely,

Renee C. Brissette

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

Reneé C. Brissette, P.E.
Senior Engineer, Hydrology
Planning Department

Orig: Drainage File

PROJECT DATA

PROPERTY: THE SITE IS A PORTION OF UNDEVELOPED COMMERCIAL PROPERTY WITHIN C.O.A. VICINITY MAP A-11. THE SITE IS BOUND TO THE EAST BY RIO DEL SOLE COURT, TO THE SOUTH BY FULLY DEVELOPED RESIDENTIAL, TO THE WEST BY COMMERCIAL (UNDER CONSTRUCTION) AND TO THE NORTH BY UNDEVELOPED MCMAHON MARKETPLACE.

SITE AREA: 1 ACRE

PROPOSED IMPROVEMENTS: THE PROPOSED IMPROVEMENTS INCLUDE PEDESTRIAN ACCESS (ADA COMPLIANT) FROM THE EXISTING CUL-DE-SAC, PAVED ACCESS FROM FINELAND DRIVE (EAST) TO THE EXISTING PAVEMENT (WEST) PUBLIC UTILITY IMPROVEMENTS (BY SEPARATE PUBLIC WORK ORDER) AND ASSOCIATED ON-SITE PARKING AND LANDSCAPING.

LEGAL: A PORTION OF LOT 9, MCMAHON MARKETPLACE, CITY OF ALBUQUERQUE, NEW MEXICO.

BENCHMARK: VERTICAL DATUM IS BASED UPON THE ALBUQUERQUE CONTROL SURVEY MONUMENT "9-A11", ELEVATION = 5301.647 (NAVD 1988)

OFF-SITE: NO OFF-SITE DRAINAGE WILL IMPACT THIS PROPERTY.

FLOOD HAZARD: PROPERTY IS LOCATED WITHIN ZONE X, DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 100-YEAR FLOOD PLAIN ACCORDING TO THE FLOOD INSURANCE RATE MAP, BERNALILLO COUNTY, NEW MEXICO AND INCORPORATED AREAS MAP NO. 35001C0104H, MAP REVISED AUGUST 16, 2012.

DRAINAGE PLAN CONCEPT: THIS SITE IS ANALYZED AS PART OF THE MCMAHON MARKETPLACE DRAINAGE MANAGEMENT PLAN (DMP) DATED 05/07/10 PREPARED BY BOHANNAN-HUSTON INC. THE SITE IS CURRENTLY UNDEVELOPED. PER THE DMP, THE OVERALL MCMAHON MARKETPLACE PROPERTY IS PERMITTED 41.55 CFS DISCHARGE. THIS PROPERTY WILL DISCHARGE AFTER FIRST FLUSH RETENTION IS ACHIEVED. REQUIRED MCMAHON MARKETPLACE DETENTION WILL BE PROVIDED AS PART OF THE UPCOMING DEVELOPMENT OF LOTS 5 AND 6A WHICH WILL PROVIDE THE DETENTION TO LIMIT OVERALL DISCHARGE TO 41.55 CFS.

STORMWATER CONTROL MEASURES ARE REQUIRED TO PROVIDE MANAGEMENT OF 'FIRST FLUSH' DEFINED AS THE 90TH PERCENTILE STORM EVENT OR 0.34" [0.44" LESS 0.1" FOR INITIAL ABSTRACTION] OF STORMWATER WHICH DISCHARGES DIRECTLY TO A PUBLIC STORM DRAINAGE SYSTEM.

TEMPORARY FIRST FLUSH RETENTION PONDS WILL BE CONSTRUCTED WITHIN THE UNDEVELOPED PORTIONS OF LOT 9. STORM WATER FROM THE IMPERVIOUS AREAS SHALL BE DIRECTED TO THESE AREAS. STORMWATER WILL THEN FREE DISCHARGE TO FOLLOW THE HISTORIC FLOWPATHS.

ENGINEER: FRED C. ARFMAN, NMPE 7322
ISAACSON & ARFMAN, PA
128 MONROE NE, 87111
TELEPHONE: (505) 268-8828

SURVEYOR: RUSS P. HUGG, NMPS NO. 9750
SURV-TEK, INC.
9384 VALLEY VIEW DR. NW, 87114
TELEPHONE: (505) 897-3366

LEGEND

× 5303.01	EXISTING SPOT ELEVATION
— — 5303 — —	EXISTING CONTOUR
——02——	PROPOSED CONTOUR (1' INCREMENT)
02.3	PROPOSED SPOT ELEVATION
→	FLOW ARROW
	PROPOSED WATER HARVESTING / FIRST FLUSH PONDING AREA
	LIMITS OF EROSION CONTROL

CONSTRUCTION STAKING / LAYOUT

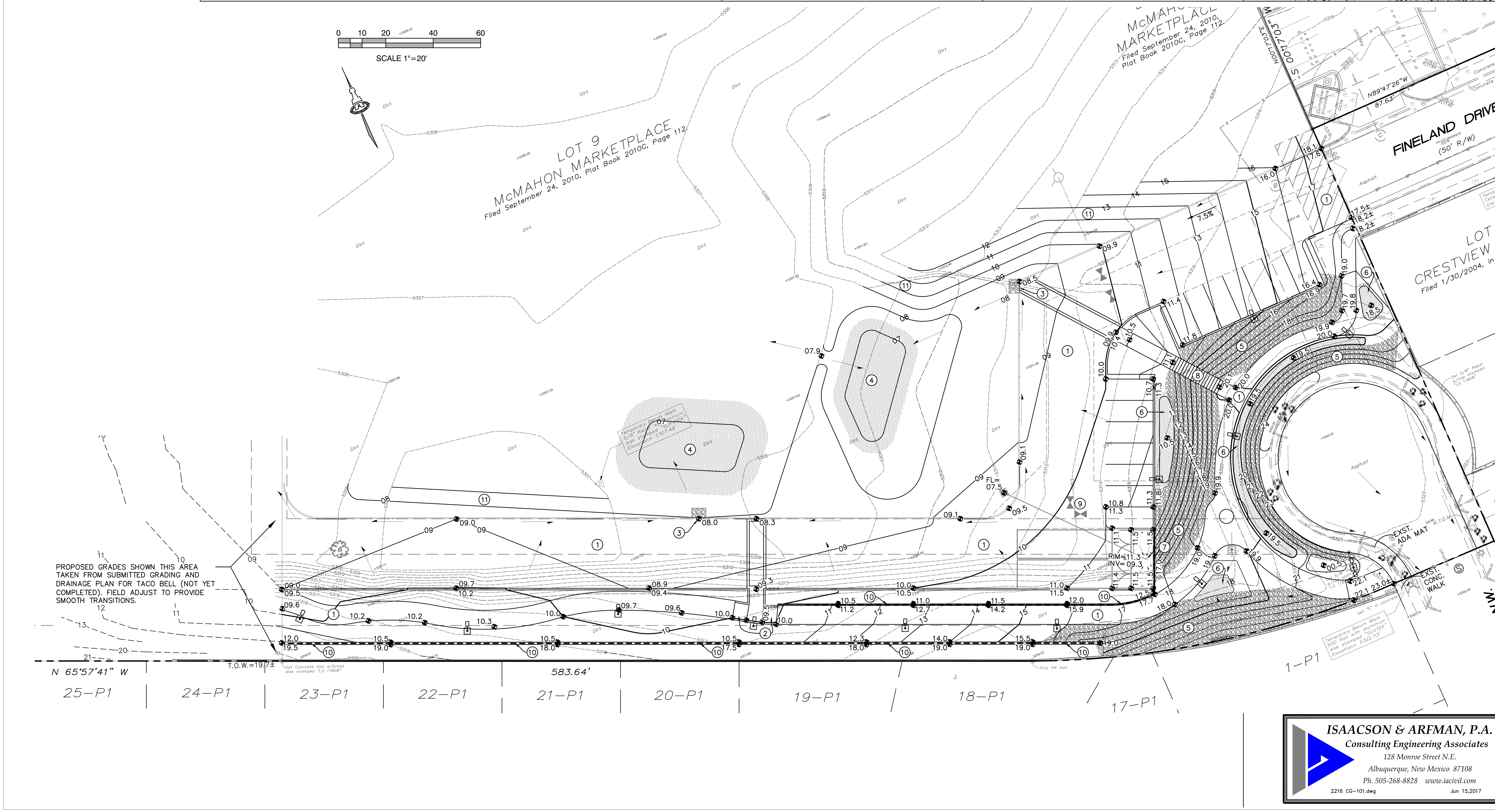
UPON WRITTEN REQUEST COORDINATED THROUGH THE PROJECT ARCHITECT, THE ELECTRONIC FILE OF THE GRADING AND DRAINAGE WILL BE PROVIDED TO THE CONTRACTOR FOR VERTICAL CONTROL. DO NOT USE THIS PLAN FOR PROJECT STAKING.

SITE CONSTRUCTION LAYOUT / STAKING SHALL BE COORDINATED WITH THE ARCHITECT USING THE ARCHITECT PROVIDED SITE PLAN.

KEYED NOTES

1. CONSTRUCT PROPOSED PAVING / WALKS / CURB AND GUTTER TO ELEVATIONS SHOWN. SEE PAVING PLAN FOR PAVEMENT MATERIAL, EXTENTS, SECTIONS, PARKING LAYOUT, DIMENSIONS, STRIPING, ETC.
2. CONSTRUCT ADA COMPLIANT HANDICAP ACCESS RAMP. MAX. 1:12 SLOPE, MAX. 2% CROSS-SLOPE. SEE ARCHITECTURAL FOR ADDITIONAL INFORMATION.
3. PROVIDE 4' WIDE CURB OPENING (ASPHALT CURB) AT LOWPOINT SHOWN. CONSTRUCT 6' WIDE X 4' LONG X 1' DEEP EROSION PROTECTION AT OUTFALL.
4. TEMPORARY 'FIRST FLUSH' RETENTION PONDING AREA.
5. INSTALL 3" AVG. DIA. ANGULAR ROCK EROSION PROTECTION TO EXTENTS SHOWN AND ALL SLOPES >3:1. SEE CG-2 FOR ADDITIONAL INFORMATION.
6. DEPRESS LANDSCAPE FOR WATER HARVESTING.
7. INSTALL 6" FLOOR DRAIN IN DUMPSTER PAD AT LOCATION / RIM / INVERT ELEVATIONS SHOWN. EXTEND 4"ø DISCHARGE (FOR FUTURE GREASE TRAP INSTALLATION). DISCHARGE TO 1 CY WRAPPED GRAVEL AT INVERT ELEVATION SHOWN..
8. CONSTRUCT STEPS TO ACHIEVE GRADE TRANSITION SHOWN. SEE ARCHITECTURAL FOR DETAILS.
9. EXISTING WATER LINE THIS AREA TO BE RELOCATED (VERTICAL AND HORIZONTALLY) BY PUBLIC WORK ORDER.
10. CONSTRUCT RETAINING WALL LINE TO ACHIEVE GRADE TRANSITIONS SHOWN. GRADES PROVIDED EACH SIDE REFLECT FINISH GRADES. SEE ARCHITECTURAL FOR INFORMATION RE: STRUCTURAL DESIGN, GUARDRAILS, ADDITIONAL WALL HEIGHT, CONSTRUCTION DETAILS, ETC.
11. TRANSITION TO EXISTING GRADES @ 5:1 MAX. SLOPE.

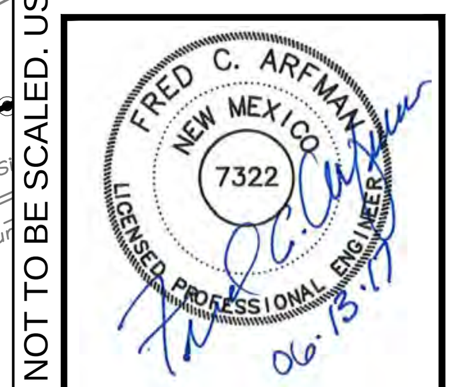
VICINITY MAP



ALL DIMENSIONS ARE TO BE FIELD VERIFIED. IF THERE ARE DISCREPANCIES, PLEASE NOTIFY THE ARCHITECT. DRAWINGS ARE NOT TO BE SCALED. USE DIMENSIONS FOR ACCURACY.

MARTIN FM GRUMMER ARCHITECT
331 WELLESLEY PLACE NE
ALBUQUERQUE, NEW MEXICO 87106
(505) 265-2507

PETERSON PROPERTIES



McMAHON MARKET PLACE
LOTS 9c&d
McMAHON BLVD & UNSER BLVD NW
ALBUQUERQUE, NM 87114
GRADING & DRAINAGE PLAN

LOT 9 C&D

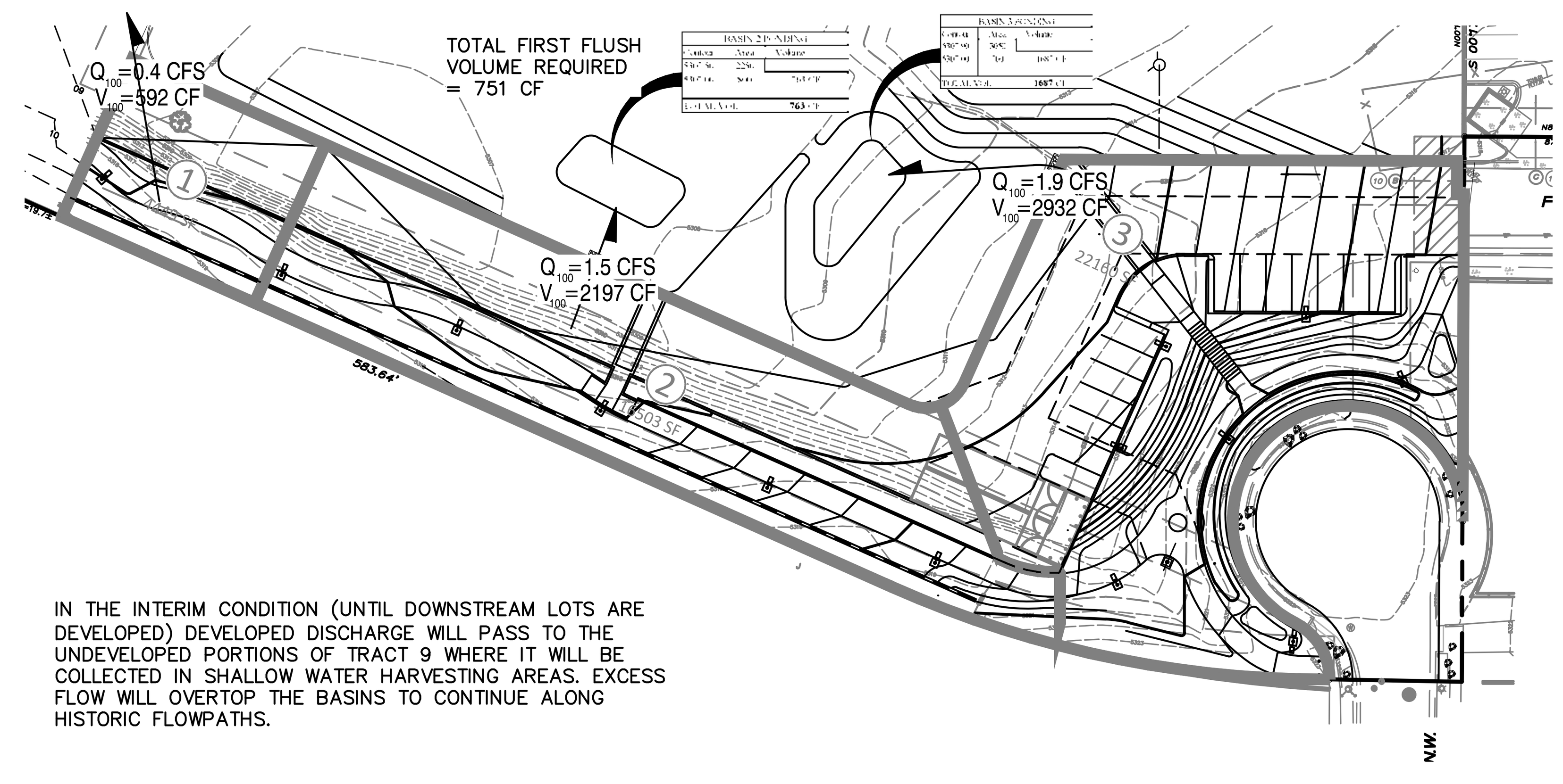
DATE:
DRAWN BY: BJB
CHECKED BY: FCA
VERIFIED BY:

REVISIONS

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque, New Mexico 87108
Ph. 505-268-8828 www.iacivil.com
2216 CG-101.dwg Jun 15,2017

SHEET NO: C-1

DRAINAGE BASINS



IN THE INTERIM CONDITION (UNTIL DOWNSTREAM LOTS ARE DEVELOPED) DEVELOPED DISCHARGE WILL PASS TO THE UNDEVELOPED PORTIONS OF TRACT 9 WHERE IT WILL BE COLLECTED IN SHALLOW WATER HARVESTING AREAS. EXCESS FLOW WILL OVERTOP THE BASINS TO CONTINUE ALONG HISTORIC FLOWPATHS.

GENERAL GRADING AND STORM DRAIN NOTES

A. 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.

B. IF FIELD GRADE ADJUSTMENTS ARE REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT FOR INSTRUCTIONS.

C. THE ENVIRONMENTAL PROTECTION AGENCY (EPA) AND THE CITY OF ALBUQUERQUE REQUIRE A STORM WATER POLLUTION PREVENTION PLAN (SWPPP), AN NDPES PERMIT, AND AN EROSION AND SEDIMENT CONTROL (ESC) PERMIT FOR PROJECTS WHERE CONSTRUCTION ACTIVITIES MEET THE EPA THRESHOLD. (SWPPP, NPDES PERMIT, AND ESC PLAN BY OTHERS.) A CURRENT CITY-APPROVED ESC PERMIT MUST BE INCLUDED WITH THE CONTRACTOR'S SUBMITTAL FOR A ROUGH GRADING, GRADING, PAVING, BUILDING, OR WORK ORDER PERMIT. CONTRACTOR SHALL COORDINATE WITH OWNER TO DETERMINE WHO WILL PREPARE SWPPP AND INSPECT REQUIRED ELEMENTS.

D. 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.

E. MEASURES REQUIRED FOR EROSION AND SEDIMENT CONTROL SHALL BE INCIDENTAL TO THE PROJECT COST.

F. WHERE GRADES BETWEEN NEW AND EXISTING ARE SHOWN AS 'MATCH' OR '±', TRANSITIONS SHALL BE SMOOTH.

G. 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.

H. ALL EROSION PROTECTION TO BE INSTALLED AS 3" AVG. DIA. ANGULAR FACED ROCK (F.F. ROCK) PLACED OVER GEOTEX 501 NON-WOVEN GEOTEXTILE (O.E.).

I. SIDESLOPES STEEPER THAN 3:1 BUT LESS THAN 2:1 MUST HAVE PERMANENT EROSION PROTECTION INSTALLED, TYPICAL. NO SLOPE SHALL BE STEEPER THAN 2:1.

J. FIRST FLUSH BASIN DESIGN PARAMETERS AND STORMWATER CONTROL MEASURES SHOWN ON THIS PLAN TO BE STRICTLY ADHERED TO FOR CERTIFICATION PURPOSES.

K. POST-CONSTRUCTION MAINTENANCE FOR PRIVATE STORMWATER FACILITIES WILL BE THE RESPONSIBLITY OF THE FACILITIES OWNER. PERIODIC INSPECTION AND CERTIFICATIONS OF THE FACILITIES MAY BE REQUIRED BY THE CITY ENGINEER. 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.

L. FOR ENGINEER'S CERTIFICATION OF SUBSTANTIAL COMPLIANCE (FOR CERTIFICATE OF OCCUPANCY) CONTRACTOR SHALL PROVIDE AN AUTOCAD FORMAT AS-BUILT SURVEY PREPARED BY A LICENSED SURVEYOR WHICH INCLUDES:

M. AS-BUILT SPOT ELEVATIONS AT EACH DESIGN SPOT ELEVATION SHOWN ON THE APPROVED PLAN;

N. TOP AND BOTTOM ELEVATIONS AS REQUIRED TO DEFINE THE PERIMETER OF PONDS (TO BE USED BY ENGINEER TO CALCULATE AS-BUILT VOLUME PROVIDED);

O. ALL CONSTRUCTION, INCLUDING DRAIN INLETS, PIPES AND PONDS SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED PLAN IN ORDER TO RECEIVE ENGINEER'S CERTIFICATION.

P. GRADING OF FIRST FLUSH BASINS WILL BE INSPECTED AS PART OF ENGINEER'S CERTIFICATION FOR CERTIFICATE OF OCCUPANCY. DURING LANDSCAPING, FIRST FLUSH BASINS WILL BE SMOOTHLY INTEGRATED INTO LANDSCAPING WHILE MAINTAINING REQUIRED TOP AND BOTTOM ELEVATION, VOLUME AND INLET / OVERFLOW ELEVATIONS.

Q. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE INSTALLATION OF ALL WORK RELATED TO PROPOSED STORM DRAINS SHOWN ON THIS PLAN INCLUDING: TRENCHING, BACKFILL, SUPPORTS, INLETS, WATER QUALITY FEATURES, EROSION CONTROL FEATURES, TESTING AND CLEANING. ANY WORK NOT ACCEPTED BY THE ARCHITECT OR ENGINEER DUE TO IMPROPER WORKMANSHIP OR LACK OF PROPER COORDINATION SHALL BE REMOVED AND CORRECTLY INSTALLED AT THE CONTRACTOR'S EXPENSE, AS DIRECTED.

R. MINIMUM COVER FOR STORM DRAIN PIPES SHALL BE 12", UNLESS OTHERWISE NOTED.

S. STORM DRAINS SHALL BE INSTALLED PRIOR TO SURFACE IMPROVEMENTS SUCH AS PAVEMENT, SIDEWALKS, AND LANDSCAPING.

T. CONTRACTOR SHALL BE RESPONSIBLE FOR CONNECTIONS TO ROOF DOWNSPOUTS AND ALL NECESSARY FITTINGS. FITTING COSTS SHALL BE INCIDENTAL.

U. TRENCHING, BORING, AND JACKING SHALL BE CONSTRUCTED IN ACCORDANCE WITH COA SPEC. SECT. 700. ALL BACKFILL SHALL BE COMPACTED TO A MINIMUM 95% DENSITY PER ASTM D-1557.

V. ALL INLET AND AREA DRAIN RINGS & GRATES, MANHOLE RINGS & COVERS, AND OTHER SURFACE FEATURES SHALL BE ADJUSTED TO FINISHED GRADE, UNLESS OTHERWISE NOTED ON THE PLANS.

W. ALL STORM DRAIN CROSSINGS OF WATER AND SEWER LINES SHALL HAVE 18" MIN CLEARANCE. IF 18" CLEARANCE IS NOT POSSIBLE, CONTACT THE ENGINEER AND / OR ARCHITECT IMMEDIATELY.

X. HDPE PIPE SHALL BE ADS N-12 (WATERTIGHT) OR ENGINEER APPROVED EQUIVALENT. HDPE PIPE SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

Y. PVC PIPES SHALL BE PVC SDR-35, INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

Z. STORM DRAINS SHALL BE INSTALLED AT INVERTS AND SLOPES SPECIFIED ON THE PLANS. THE PIPE SHALL DRAIN AT A CONSTANT SLOPE BETWEEN FITTINGS AND MANHOLES. THE PIPE SHALL DRAIN TOWARD THE OUTLET AT ALL LOCATIONS.

BASIN CALCULATIONS

THE DEVELOPED AREA WILL DISCHARGE 3.8± CFS DURING A 100-YEAR 6-HOUR STORM.

BASIN 1: APPROXIMATELY 0.4 CFS WILL DISCHARGE FROM THE PROPOSED PARKING TO THE EXISTING WEST PAVEMENT.

BASIN 2:: APPROXIMATELY 1.5 CFS WILL DISCHARGE FROM THE PROPOSED PAVEMENT VIA A 4' WIDE OPENING AT THE CENTER PAVEMENT LOWPOINT.

BASIN 3: APPROXIMATELY 1.9 CFS WILL DISCHARGE FROM THE PROPOSED PAVEMENT VIA A 4' WIDE OPENING AT THE EAST PAVEMENT LOWPOINT.

BASIN NO. 1	DESCRIPTION		
Area of basin flows = 4449 SF	= 0.1 Ac.		
The following calculations are based on Treatment areas as shown in table to the right		LAND TREATMENT	
Sub-basin Weighted Excess Precipitation (see formula above)		A =	0%
Weighted E = 1.60 in.		B =	0%
Sub-basin Volume of Runoff (see formula above)		C =	38%
V_{360} = 592 CF		D =	62%
Sub-basin Peak Discharge Rate: (see formula above)		FIRST FLUSH VOL.	
Q_P = 0.4 cfs			78 CF

BASIN NO. 2	DESCRIPTION		
Area of basin flows = 16503 SF	= 0.4 Ac.		
The following calculations are based on Treatment areas as shown in table to the right		LAND TREATMENT	
Sub-basin Weighted Excess Precipitation (see formula above)		A =	0%
Weighted E = 1.60 in.		B =	0%
Sub-basin Volume of Runoff (see formula above)		C =	38%
V_{360} = 2197 CF		D =	62%
Sub-basin Peak Discharge Rate: (see formula above)		FIRST FLUSH VOL.	
Q_P = 1.4 cfs			290 CF

BASIN NO. 3	DESCRIPTION		
Area of basin flows = 22160 SF	= 0.5 Ac.		
The following calculations are based on Treatment areas as shown in table to the right		LAND TREATMENT	
Sub-basin Weighted Excess Precipitation (see formula above)		A =	0%
Weighted E = 1.59 in.		B =	0%
Sub-basin Volume of Runoff (see formula above)		C =	39%
V_{360} = 2932 CF		D =	61%
Sub-basin Peak Discharge Rate: (see formula above)		FIRST FLUSH VOL.	
Q_P = 1.9 cfs			383 CF

100-YEAR 6-HOUR STORM CALCULATIONS

CALCULATIONS: McMahon Marketplace - South Access : June 7, 2017

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

ON-SITE

AREA OF SITE: 43112 SF = 0.99

100-year, 6-hour

DEVELOPED FLOWS:

		Treatment SF	%
Area A	=	0	0%
Area B	=	6898	16%
Area C	=	4311	10%
Area D	=	31903	74%
Total Area	=	43112	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)

$$\text{Weighted } E = \frac{E_A A_A + E_B A_B + E_C A_C + E_D A_D}{A_A + A_B + A_C + A_D}$$

Developed E = 1.66 in.

On-Site Volume of Runoff: V360 = E*A / 12

Developed V_{360} = 5978 CF

On-Site Peak Discharge Rate: $Qp = Q_{pA}A_A+Q_{pB}A_B+Q_{pC}A_C+Q_{pD}A_D / 43{,}560$

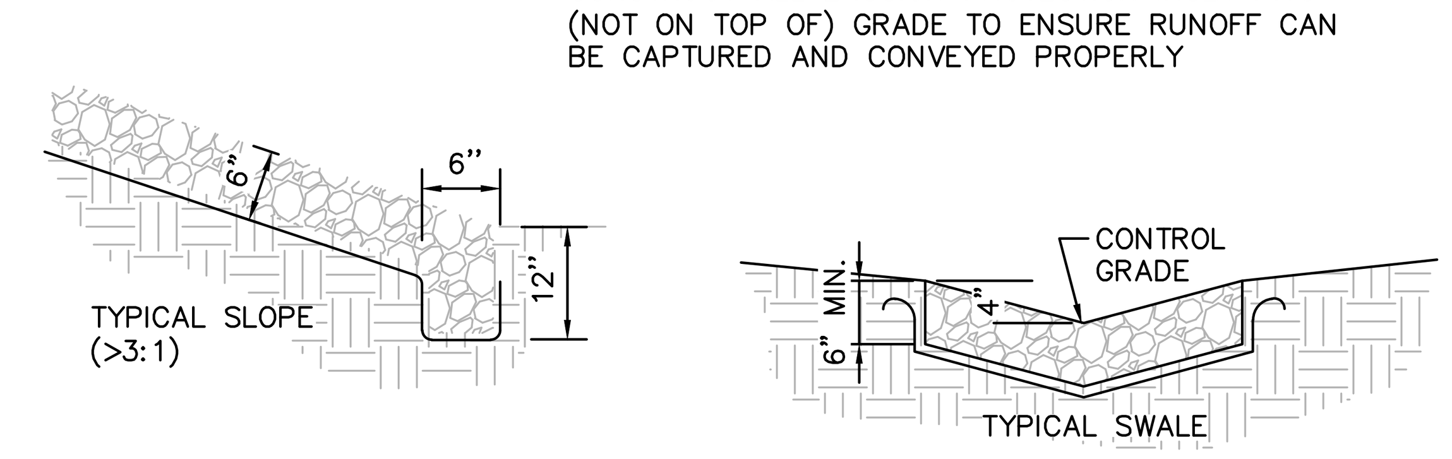
For Precipitation Zone 1

Q_{pA} = 1.29 Q_{pC} = 2.87

Q_{pB} = 2.03 Q_{pD} = 4.37

Developed Q_p = 3.8 CFS

- 2" AVG. DIA. ANGULAR ROCK (1"-3")
- PLACE GEOTEX 501 NON-WOVEN GEOTEXTILE (O.E.) BENEATH ALL EROSION PROTECTION
- CONSTRUCT ALL EROSION PROTECTION INSET INTO (NOT ON TOP OF) GRADE TO ENSURE RUNOFF CAN BE CAPTURED AND CONVEYED PROPERLY



ROCK EROSION PROTECTION

SCALE: N.T.S.

ALL DIMENSIONS ARE TO BE FIELD VERIFIED. IF THERE ARE DISCREPANCIES, PLEASE NOTIFY THE ARCHITECT. DRAWINGS ARE NOT TO BE SCALED. USE DIMENSIONS FOR ACCURACY.

MARTIN FM GRUMMER ARCHITECT
331 WELLESLEY PLACE NE
ALBUQUERQUE, NEW MEXICO 87106
(505) 265-2507

PETERSON PROPERTIES

FRED C. ARFMAN
NEW MEXICO
7322
LICENSED PROFESSIONAL ENGINEER
06-15-17

McMAHON MARKET PLACE
LOTS 9c&d
McMAHON BLVD & UNSER BLVD NW
ALBUQUERQUE, NM 87114

GRADING & DRAINAGE DETAILS

LOT 9 C&D

DATE:

DRAWN BY: BJB

CHECKED BY: FCA

VERIFIED BY:

REVISIONS

SHEET NO: C-2

ISAACSON & ARFMAN, P.A.
Consulting Engineering Associates
128 Monroe Street N.E.
Albuquerque, New Mexico 87108
Ph. 505-268-8828 www.iacivil.com

2216 CG-101.dwg Jun 15,2017