

F.I.R.M. 129 OF 825
SCALE: 1"=500' AUGUST 16, 2012

PROJECT BENCHMARK

A NMSHC BRASS DISK STAMPED "NMSHC 1-25-11" SET FLUSH ON THE TOP OF A CONCRETE POST 0.75 MILES NORTH ON THE EAST FRONTAGE ROAD FROM THE INTERSECTION OF I-25 AND ALAMEDA BOULEVARD N.E. ELEVATION = 5209.62 FEET (NAVD 1988)

TEMPORARY BENCHMARK #1 (T.B.M.)

A #5 REBAR W/CAP STAMPED "NMP5 CONTROL NMPS 11184" SET IN A GRADED VACANT LOT IN THE SOUTHERN PORTION OF LOT 30, AS SHOWN ON THIS SHEET. ELEVATION = 5161.51 FEET (NAVD 1988)

TEMPORARY BENCHMARK #2 (T.B.M.)

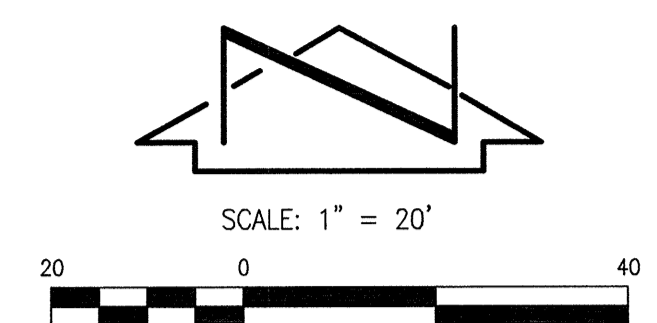
A MAG NAIL SET IN ASPHALT PARKING LOT ENTRANCE IN THE SOUTHEAST PORTION OF LOT 29, AS SHOWN ON THIS SHEET. ELEVATION = 5164.78 FEET (NAVD 1988)

TEMPORARY BENCHMARK #3 (T.B.M.)

A MAG NAIL SET IN ASPHALT PARKING LOT IN THE NORTHEAST PORTION OF LOT 29, AS SHOWN ON THIS SHEET. ELEVATION = 5164.73 FEET (NAVD 1988)

RECORD UTILITY KEYED NOTE

② APPROXIMATE LOCATION OF WATER VALVE BOX AS DEPICTED ON THE INFORMATION PROVIDED BY ABCWUA FOR THIS PROJECT, NO SURFACE EVIDENCE FOUND.



CALCULATIONS

I. SITE CHARACTERISTICS

A. PRECIPITATION ZONE = 3

B. $P_{100, 6\text{ HR}} = P_{360} = 2.6\text{ IN}$

C. TOTAL PROJECT AREA (A_T) = 77,284 SF
1.77 AC

D. LAND TREATMENTS

1. EXISTING LAND TREATMENT

TREATMENT	AREA (SF/AC)	%
A	38,638 SF	50
B	0.89 AC	
C	4,590 SF	6
D	0.11 AC	
	34,057 SF	
	0.78 AC	44

2. DEVELOPED LAND TREATMENT

TREATMENT	AREA (SF/AC)	%
A		
B		
C	12,212 SF	16
D	0.28 AC	
	65,072 SF	
	1.49 AC	84

II. HYDROLOGY

A. EXISTING CONDITION 100 YEAR

1. 100-YR STORM

a. VOLUME 100-YR, 6-HR
 $E_w = (E_{A_A} + E_{B_A} + E_{C_A} + E_{D_A})/A_T$
 $E_w = (0.66 \cdot 0.89) + (0.92 \cdot 0.00) + (1.29 \cdot 0.11) + (2.36 \cdot 0.78)/1.77 = 1.45\text{ IN}$
 $V_{100, 6\text{ HR}} = (E_w/12)A_T = (1.45/12)1.77 = 0.2144\text{ AC-FT} = 9,340\text{ CF}$

b. VOLUME 100-YR, 24-HR
 $V_{100, 24\text{ HR}} = V_{6\text{ HR}} \cdot A_D \cdot (P_{24\text{ HR}}/P_{6\text{ HR}})^{1/2}$
 $= 0.21 \cdot 1.49 \cdot (3.10 \cdot 2.60/12)^{1/2} = 0.2470\text{ AC-FT} = 10,760\text{ CF}$

c. PEAK DISCHARGE
 $Q_p = Q_{p_A} + Q_{p_B} + Q_{p_C} + Q_{p_D}$
 $Q_p = (1.87 \cdot 0.89) + (2.60 \cdot 0.00) + (3.45 \cdot 0.11) + (5.02 \cdot 0.78) = 5.9\text{ CFS}$

B. DEVELOPED CONDITION

1. 100-YR STORM

a. VOLUME
 $E_w = (E_{A_A} + E_{B_A} + E_{C_A} + E_{D_A})/A_T$
 $E_w = (0.66 \cdot 0.00) + (0.92 \cdot 0.00) + (1.29 \cdot 0.28) + (2.36 \cdot 1.49)/1.77 = 2.19\text{ IN}$
 $V_{100, 6\text{ HR}} = (E_w/12)A_T = (2.19/12)1.77 = 0.3238\text{ AC-FT} = 14,100\text{ CF}$

b. VOLUME 100-YR, 24-HR
 $V_{100, 24\text{ HR}} = V_{6\text{ HR}} \cdot A_D \cdot (P_{24\text{ HR}}/P_{6\text{ HR}})^{1/2}$
 $= 0.32 \cdot 1.49 \cdot (3.10 \cdot 2.60/12)^{1/2} = 0.3860\text{ AC-FT} = 16,820\text{ CF}$

c. PEAK DISCHARGE
 $Q_p = Q_{p_A} + Q_{p_B} + Q_{p_C} + Q_{p_D}$
 $Q_p = (1.87 \cdot 0.00) + (2.60 \cdot 0.00) + (3.45 \cdot 0.28) + (5.02 \cdot 1.49) = 8.5\text{ CFS}$

C. COMPARISON 100 YEAR

1. 100-YR STORM

a. VOLUME 100-YR, 6-HR
 $\Delta V_{100, 6\text{ HR}} = 14100 - 9340 = 4,760\text{ CF (INCREASE)}$

b. VOLUME 100-YR, 24-HR
 $\Delta V_{100, 24\text{ HR}} = 16820 - 10760 = 6,060\text{ CF (INCREASE)}$

c. PEAK DISCHARGE
 $\Delta Q_{100} = 8.5 - 5.9 = 2.6\text{ CFS (INCREASE)}$

D. FIRST FLUSH CALCULATIONS

1. RETENTION REQUIREMENT

a. VOLUME
 $V_{RQ} = ((P_{FF} - I_{A0})/12)A_D$
 $V_{RQ} = ((0.44 - 0.10)/12)(65072.45) = 1,840\text{ CF}$

LEGEND

- AR ASPHALT RAMP
- ASPH ANTI-SIPHON VALVE
- ASV LANDSCAPING BLOCK WALL
- BLW BUILDING OVERHANG
- BOH CONCRETE BLOCK WALL
- BW CURB AND GUTTER
- C&G COMMUNICATION LINE BY PAINT MARK
- C/PM CONCRETE CURB
- CCAB COMMUNICATION CABINET
- CF LANDSCAPING CRUSHER FINES
- CLD CENTERLINE DOOR
- CLF CHAIN LINK FENCE
- CND ELECTRIC CONDUIT
- CO CLEANOUT
- CONC CONCRETE
- COP CONCRETE CURB OPENING
- CR COMMUNICATION RISER
- CSW CONCRETE SIDEWALK
- DCO DOUBLE CLEANOUT
- DYS PAINTED DOUBLE YELLOW TRAFFIC STRIPE
- E/PM ELECTRIC LINE BY PAINT MARK
- EA EDGE OF ASPHALT
- EDC ELECTRIC DISCONNECT BOX
- EM ELECTRIC METER
- EO ELECTRIC OUTLET
- EP ELECTRIC PANEL BOX
- EH FIRE HYDRANT
- FL FIBER OPTIC LINE BY PAINT MARK
- FO/S FIBER OPTIC WARNING SIGN
- FOPB FIBER OPTIC PULLBOX
- G/PM GAS LINE BY PAINT MARK
- GM GAS METER
- GRV LANDSCAPING GRAVEL
- GS GAS SERVICE
- GS/M GAS SERVICE NO METER
- GW HIGH DENSITY POLYETHYLENE PIPE
- HOPE PIPE INVERT
- INV IRRIGATION VALVE BOX
- MB MANHOLE
- MH METAL LIGHT POLE ON CONCRETE BASE
- OH(2) OVERHEAD ELECTRIC (# OF LINES)
- OH(4) OVERHEAD ELECTRIC (# OF LINES)
- PI CONCRETE WHEEL STOP
- PB PAINTED PARKING LOT ISLAND
- PI/B PAINTED PARKING LOT ISLAND AT BUILDING
- PPS PAINTED PARKING SPACE
- PVC POLYVINYL CHLORIDE PIPE
- PVP ASPHALT PAVING PATCH
- RD BUILDING ROOF DRAIN
- RR ROLL UP GARAGE DOOR
- RRL LANDSCAPING RIVER ROCK
- RRT LANDSCAPING RAILROAD TIES
- RS ROCK SIGN
- RV POLYVINYL CHLORIDE PIPE RISER/VENT
- SAS SANITARY SEWER
- SCB STEEL GUARD BAR
- SCP STEEL GUARD POST
- SP STEEL POST
- SWS PAINTED SINGLE WHITE TRAFFIC STRIPE
- TA TOP OF ASPHALT
- TC TOP OF CURB
- TCO TOP OF CONCRETE
- TE TRASH DUMPSTER ENCLOSURE
- TP TOP OF PIPE
- TRN ELECTRIC TRANSFORMER
- TYP TYPICAL
- W WATER LINE
- WCR CONCRETE WHEEL CHAIR RAMP
- WFT LANDSCAPING WATER FOUNTAIN
- WPP WOOD POWER POLE
- WVB WATER VALVE BOX
- WTB TREE TRUNK DIAMETER

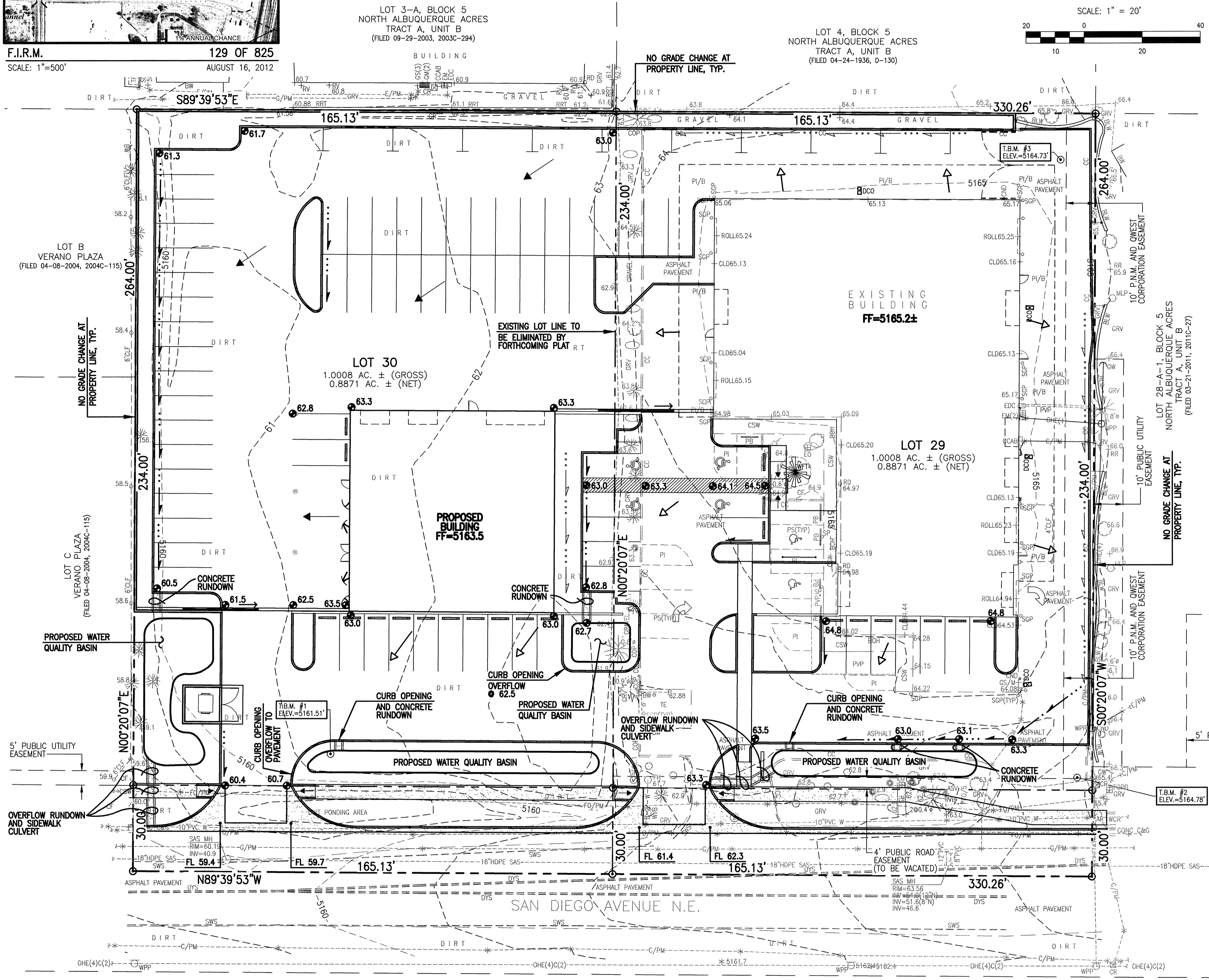
CONCEPTUAL GRADING AND DRAINAGE PLAN NARRATIVE

THIS PROJECT, LOCATED IN THE NORTH ALBUQUERQUE ACRES PORTION OF THE I-25 SECTOR DEVELOPMENT PLAN, REPRESENTS A MODIFICATION TO AN EXISTING SITE WITHIN AN INFILL AREA WITH. THE PROPOSED DEVELOPMENT IS COMPRISED OF A PARTIAL RECONSTRUCTION OF AN EXISTING COMMERCIAL SITE WITH EXPANSION TO THE EXISTING UNDEVELOPED LOT TO THE WEST OF THE EXISTING SITE. THE TWO LOTS WILL BE COMBINED VIA FORTHCOMING PLATTING ACTION, AND PUBLIC STREET PAVING IMPROVEMENTS WILL BE CONSTRUCTED IN THE PROJECT FRONTAGE WHICH CURRENTLY HAS TEMPORARY PAVING IN THE FRONTAGE OF THE UNDEVELOPED LOT. THE UPSTREAM AND DOWNSTREAM PAVING AND UTILITY INFRASTRUCTURE, INCLUDING DOWNSTREAM STORM DRAINAGE IMPROVEMENTS, IS ALREADY IN PLACE FROM PREVIOUS PROJECTS. THE DRAINAGE CONCEPT FOR THIS PROJECT WILL BE THE CONTINUED FREE DISCHARGE OF DEVELOPED RUNOFF TO THE ADJACENT PUBLIC STREET, SAN DIEGO AVENUE N.E. THIS SUBMITTAL IS MADE IN SUPPORT OF SITE DEVELOPMENT PLAN APPROVAL WITHIN THE JURISDICTION OF THE CITY OF ALBUQUERQUE.

AS SHOWN BY PANEL 129 OF 825 OF THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAPS PUBLISHED BY FEMA FOR BERNALILLO COUNTY, NEW MEXICO, REVISED AUGUST 16, 2012, THIS SITE DOES NOT LIE WITHIN A DESIGNATED FLOOD HAZARD ZONE. THIS SITE IS SITUATED ACROSS THE STREET FROM THE AMAFCA NORTH LA CUEVA CHANNEL WHERE ZONE "A" FLOODING IS CONFINED TO THE CONSTRUCTED CHANNEL.

THE EXISTING SITE GENERALLY SLOPES DOWNHILL FROM EAST TO WEST, WITH AN AVERAGE GRADE OF 1.5%. THERE ARE NO PROPOSED RETAINING WALLS OR GRADE CHANGES AT THE PERIMETER OF THE SITE. SURFACE RUNOFF FROM PAVED AREAS WILL BE DIRECTED TO DEPRESSED LANDSCAPING AREAS TO MEET CITY STORMWATER QUALITY REQUIREMENTS. ALL RUNOFF WILL BE MANAGED AS SURFACE FLOW, THERE WILL NOT BE ANY PRIVATE OR PUBLIC STORM DRAINS.

THE CALCULATIONS CONTAINED HEREON ANALYZE THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100-YEAR, 6-HOUR RAINFALL EVENT. THE PROCEDURE FOR 40 ACRE AND SMALLER BASINS, AS SET FORTH IN THE REVISION OF SECTION 22.2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL, VOLUME 2, DESIGN CERTIFICATION, DATED JANUARY 1993, HAS BEEN USED TO QUANTIFY THE PEAK RATE OF DISCHARGE AND VOLUME OF RUNOFF GENERATED. AS DEMONSTRATED BY THESE CALCULATIONS, THE PROPOSED IMPROVEMENTS WILL RESULT IN AN INCREASE IN DEVELOPED RUNOFF ATTRIBUTABLE TO THE DEVELOPMENT OF THE CURRENTLY UNDEVELOPED PROPERTY.



NOTE:
THIS IS NOT A BOUNDARY SURVEY; DATA IS SHOWN FOR ORIENTATION ONLY. THE BOUNDARY INFORMATION DEPICTED BY THIS PLAN IS BASED UPON AN BOUNDARY SURVEY PREPARED BY HIGH MESA CONSULTING GROUP, NMPS 11184, DATED 03-10-2016 (2016.015.1). THE TOPOGRAPHIC INFORMATION DEPICTED HEREON IS BASED UPON THE TOPOGRAPHIC AND UTILITY SURVEY PREPARED BY HIGH MESA CONSULTING GROUP, NMPS NO. 11184, DATED 03-10-2016 (2016.015.1).

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CONCEPTUAL GRADING PLAN

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