

## PROJECT SCOPE

THE SITE IS A PARTIALLY DEVELOPED PROPERTY LOCATED WITHIN C.O.A. VICINITY MAP M-18. THE SITE IS BOUND TO THE EAST, SOUTH AND WEST BY CITY PROPERTY CURRENTLY UNDER DEVELOPMENT (ACCESS ROADS, PARK) AND TO THE NORTH BY RIDGECREST DR. S.E.

PROPOSED IMPROVEMENTS: THE PROPOSED IMPROVEMENTS INCLUDE TWO NEW BUILDINGS WITH ASSOCIATED ASPHALT PAVED ACCESS, PEDESTRIAN WALKS, COURTYARD, PARKING, AND

SITE

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



architecture

interiors landscape

planning

7601 Jefferson NE Suite 100 Albuquerque, NM 87109 505 761-9700 fax 761-4222

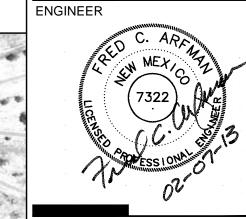
dps@dpsdesign.org

ARCHITECT

## FEMA MAP 35001C0362H

- A. COORDINATE WORK WITH SITE PLAN, UTILITY PLAN, DEMOLITION PLAN, AND LANDSCAPE PLAN.
- B. ALL TRASH, DEBRIS, & SURFACE VEGETATION SHALL BE CLEARED AND LEGALLY DISPOSED OF OFFSITE.
- C. FINAL GRADES 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 ELÉVATIONS SHOWN MINUS FINISH MATERIAL THICKNESSES.
- D. 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.
- E. THE ENVIRONMENTAL PROTECTION AGENCY AND THE CITY OF ALBUQUERQUE REQUIRE A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR PROJECTS WHERE CONSTRUCTION ACTIVITIES (INCLUDING OTHER LAND-DISTURBING ACTIVITIES) DISTURB ONE ACRE OR MORE (BY OTHERS). A SWPPP MUST BE INCLUDED WITH THE CONTRACTOR'S SUBMITTAL FOR A ROUGH GRADING, GRADING, PAVING OR BUILDING PERMIT. THE SWPPP MUST BE IN PDF OR MS WORD FORMAT ON A CD.
- F. ADJUST RIMS OF EXISTING UTILITY FEATURES AS NECESSARY TO MATCH NEW GRADES, TYPICAL.
- G. PROPOSED SPOT ELEVATIONS SHOWN AS 'MATCH' OR '±' INDICATE TRANSITIONS BETWEEN EXISTING AND PROPOSED IMPROVEMENTS. ALL TRANSITIONS SHALL BE SMOOTH AND LEVEL.
- H. ALL EROSION PROTECTION TO BE FRACTURED FACE ROCK (F.F. ROCK) = 6" AVG. DIA. ANGULAR FACED ROCK PLACED OVER GEOTEX 50 NON-WOVEN GEOTEXTILE (O.E.).
- I. ALL AREAS DISTURBED BY CONSTRUCTION (OUTSIDE PROPOSED TURF AREA) SHALL BE RESEEDED WITH NATIVE GRASS AS SPECIFIED ON THE LANDSCAPE PLAN.
- J. POND DESIGN PARAMETERS (TOP OF POND, BOTTOM OF POND, INLET RIM AND INVERT ELEVATIONS, AREA OF POND. ETC.) TO BE STRICTLY ADHERED TO FOR CERTIFICATION PURPOSES. SEE DETAIL SHEET FOR ADDITIONAL INFORMATION.
- K. 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.

East side of property



PROJECT

SE 871 Expansi gecrest sew Mexico New Day 2820 Rid ouquerque,

## DRAINAGE CONCEPT

UNDEVELOPED CONDITIONS CALCULATED USING LAND TREATMENTS OF 50% A AND 50% B PROVIDE FOR AN ALLOWABLE HISTORIC DISCHARGE RATE OF 5.6 CFS. THE DEVELOPED CONDITION CAN BE DIVIDED INTO THREE DRAINAGE BASINS.

BASIN 1 IS A 0.2 ACRE UNDEVELOPED, SELF-PONDING DEPRESSION TO THE EAST OF THE EXISTING BUILDING. THIS WILL GENERATE 0.6 CFS DURING THE 100-YEAR, 6-HOUR STORM EVENT.

BASIN 2 INCLUDES THE NORTHERN PORTION OF THE PROPERTY INCLUDING PARKING, LANDSCAPE AND APPROXIMATELY 25% OF THE PROPOSED BUILDING ADDITION. THIS BASIN WILL GENERATE APPROXIMATELY 3.9 CFS (6203 CF VOLUME) DURING THE 100-YEAR 6-HOUR STORM. ALL OF BASIN 2 DISCHARGE WILL BE PASSED TO THE PROPOSED NORTH DETENTION POND (AVAILABLE VOLUME = 7,743 CF PROVIDING ADDITIONAL CAPACITY FOR FUTURE DEVELOPMENT). THIS POND WILL DRAIN TO BULLHEAD PARK VIA THE PROPOSED 6" STORM DRAIN.

BASIN 3 CONSISTS OF THE MAJORITY OF THE EXISTING FACILITY AND APPROXIMATELY 75% OF THE PROPOSED BUILDING ADDITION. THIS BASIN WILL GENERATE APPROXIMATELY 4.8 CFS DURING THE 100-YEAR 6-HOUR STORM EVENT. STORMWATERS PASS THROUGH A WATER HARVESTING BASIN AT THE SOUTHWEST PORTION OF THE PROPERTY WITH EXCESS FLOW ALLOWED TO FREE DISCHARGE TO THE PARKING / ACCESS DRIVE(S) CURRENTLY UNDER CONSTRUCTION TO THE WEST.

TOTAL DISCHARGE FROM THE PROPERTY = BASIN 1 = 0 CFS (SELF POND) BASIN 2 = 0.8 CFS (DETENTION) BASIN 3 = 4.8 CFS (FREE DISCHARGE)

TOTAL = 5.6 CFSALLOWABLE = 5.6 CFS

CALCULATIONS: New Day Expansion IA#1949: 11-21-12 Based on Drainage Design Criteria for City of Albuquerque Section 22.2, DPM, Vol 2, dated Jan., 1993 ON-SITE AREA OF SITE: 108932 SF 2.5 acres 100-year, 6-hour HISTORIC FLOWS: DEVELOPED FLOWS: EXCESS PRECIP: Treatment SF % Treatment SF % Precip. Zone 54466 10893  $E_A = 0.66$ Area A Area A 54466 Area B 21786  $E_B = 0.92$ Area B 0% 32680 30%  $E_{\rm C} = 1.29$ Area C Area C 43573  $E_{\rm D} = 2.36$ Area D Area D 40%

Total Area

108932

 $E_A A_A + E_B A_B + E_C A_C + E_D A_D$ Weighted E =  $A_A + A_B + A_C + A_D$ 0.79 in. Developed E 1.58 in. Historic E

100%

108932

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

On-Site Volume of Runoff: V360 = E\*A / 12 Historic V<sub>360</sub> = 7171 CF Developed V<sub>360</sub> 14352 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 3  $Q_{pA} = 1.87$  $Q_{pC} = 3.45$ 

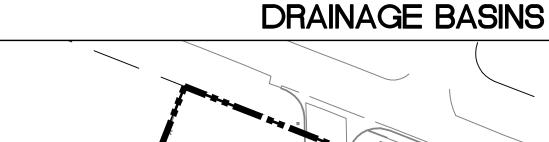
 $Q_{\rm pD} = 5.02$  $Q_{pB} = 2.60$ Historic Qp 5.6 CFS Developed Q<sub>p</sub> 9.4 CFS

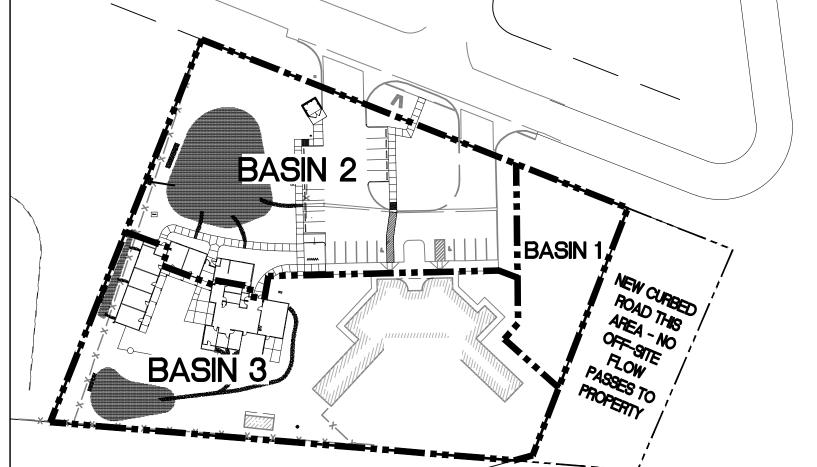
> ORIFICE EQUATION - MAIN POND BLEEDER PIPE The Orifice Equation is used to calculate the Flow at the opening of a Channel  $Q = C*A*(2*g*h) ^0.5$ Where 0.8 cfs 0.6 0.19635 sq.ft.

> > 0.75 ft

(indicating that the opening will function at 60% capacity) 6" DIA. PIPE 32.2 ft/sec^2

depth of flow at opening from the center of culvert





**REVISIONS** 

DRAWN BY	BJB
REVIEWED BY	FCA
DATE	
PROJECT NO.	11-0116

DRAWING NAME GRADING AND

**DRAINAGE DETAILS** 

SHEET NO.

CG-501

**CALCULATIONS** BASIN NO. Area of basin flows =

> 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 = B = 100%0.92 in. Sub-basin Volume of Runoff (see formula above) C = 0%824 CF D = 0%Sub-basin Peak Discharge Rate: (see formula above)  $Q_p =$ 0.6 cfs BASIN NO. DESCRIPTION North Basin draining to main detention pond Area of basin flows = 44440 SF The following calculations are based on Treatment areas as shown in table to the right LAND TREATMENT A = 15% Sub-basin Weighted Excess Precipitation (see formula above) Weighted E = B = 15%1.68 in. Sub-basin Volume of Runoff (see formula above) C = 20%6203 CF D = 50% $V_{360} =$ Sub-basin Peak Discharge Rate: (see formula above)  $Q_p =$ 3.9 cfs BASIN NO.

DESCRIPTION

10743 SF

DESCRIPTION South basin draining to south desiltation pond Area of basin flows = 53748 SF LAND TREATMENT The following calculations are based on Treatment areas as shown in table to the right Sub-basin Weighted Excess Precipitation (see formula above) A = 7%Weighted E = B = 9%1.64 in. C = 44%Sub-basin Volume of Runoff (see formula above)

D = 40%7348 CF Sub-basin Peak Discharge Rate: (see formula above)  $Q_p =$ 4.8 cfs

ISAACSON & ARFMAN, P.A.

Consulting Engineering Associates 128 Monroe Street N.E.

5361.50 8345 5361.00 6700 3761 CF 5360.00 3980 3982 CF

TOTAL VOL.

Contour Area

POND

Volume

7743 CF

Total Area

1949 CG-101.dwg Feb 07,2013

Albuquerque, New Mexico 87108 Ph. 505-268-8828 www.iacivil.com