

CITY OF ALBUQUERQUE



October 16, 2015

Philip W. Clark, PE
Clark Consulting Engineers
19 Ryan Rd
Edgewood, NM 87015

**Re: Signal Pointe Subdivision
Signal/Ventura
Grading and Drainage
Engineers Stamp Date 9/15/2015 (C20D070)**

Dear Mr. Clark,

Based upon the information provided in your submittal received with Engineer's Stamp Date 9/15/2015, the above referenced Grading and Drainage Plan is approved based on the following conditions:

PO Box 1293

Albuquerque

New Mexico 87103

- The wall should remain in place once the erosion occurs. Please design the flood control structures accordingly. The wall detail/calculations/specifications must be clearly shown on the DRC plans.
- Provide plan and profile sheets for the flood control structure including the top and bottom elevations and Stationing.
- Grading Certification will be required prior to release of Financial Guarantee, Workorder and building permits.

If you have any questions, you can contact me at 924-3999.

www.cabq.gov

Sincerely,

Shahab Biazar, P.E.
City Engineer, Planning Dept.
Development Review Services

C: email

GRADING & DRAINAGE PLAN

THE RESIDENTIAL HOME PROJECT IS LOCATED IN UNIT 3 OF NORTH ALBUQUERQUE ACRES APPROXIMATELY 11 MILES FROM THE DOWNTOWN CORE OF ALBUQUERQUE, NM. THE GRADING AND DRAINAGE SCHEME HEREIN IS IN COMPLIANCE WITH THE BERNALILLO COUNTY FLOOD ORDNANCE. THE PLAN IS REQUIRED IN ORDER TO FACILITATE THE OWNER'S REQUEST FOR BUILDING PERMIT. THE PLAN SHOWS:

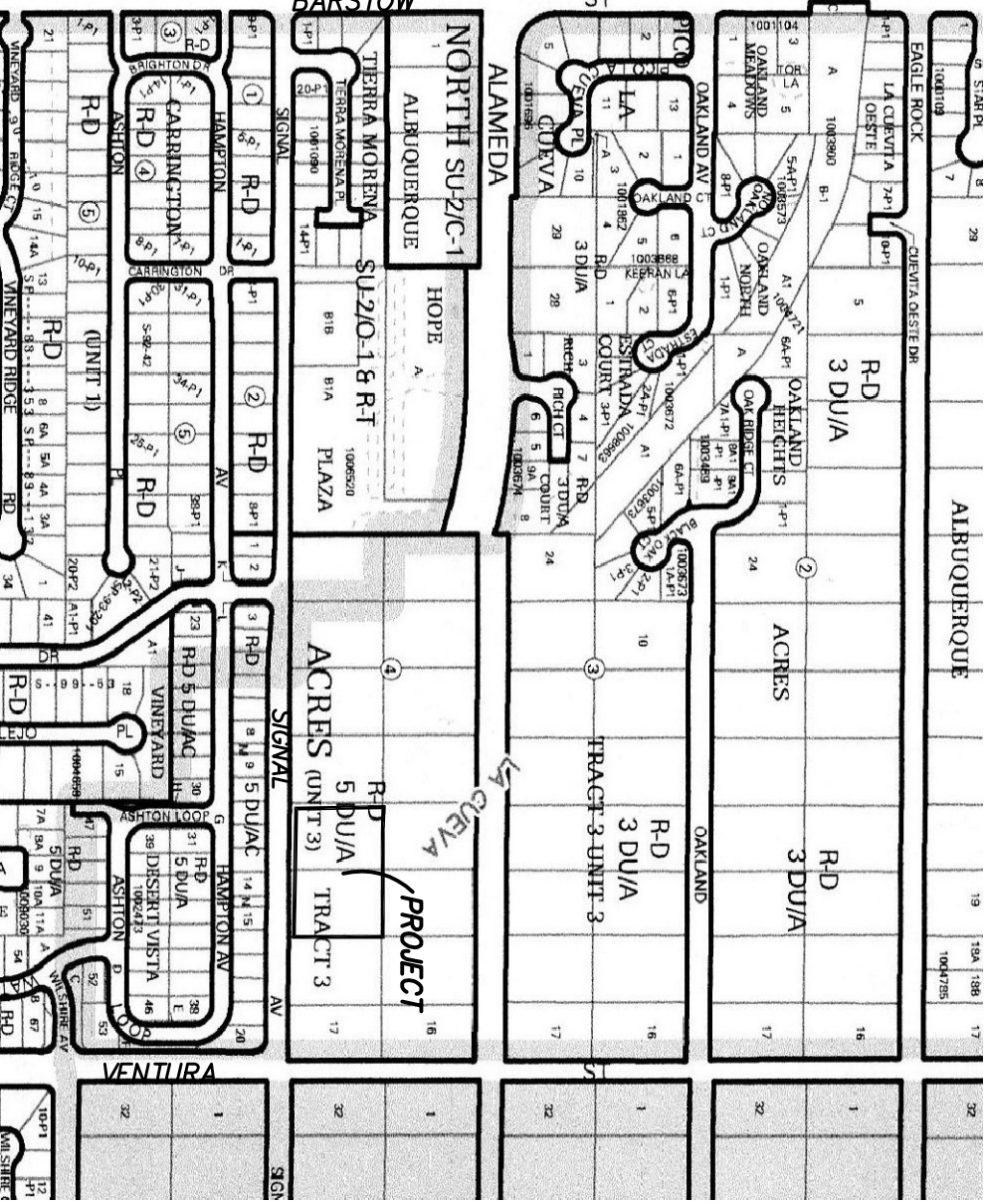
- 1. EXISTING CONDITIONS, SPOT ELEVATIONS, AND EXISTING DRAINAGE PATTERNS.
 - 2. PROPOSED IMPROVEMENTS: 8 RESIDENTIAL HOME PAD SITES, NEW PERIMETER SOLID WALL, CONCRETE DRIVEWAYS, AND NEW GRADE ELEVATIONS.
 - 3. QUANTIFICATION OF UPSTREAM OFFSITE FLOWS WHICH CONTRIBUTE TO THE DEVELOPED FLOWS GENERATED BY THE IMPROVEMENTS ANALYSIS AS TO WATER SURFACE MODEL AND EROSION SETBACK.
- THE PURPOSE OF THE PLAN IS TO ESTABLISH CRITERIA FOR DRAINAGE IMPROVEMENTS AND TO PROVIDE A BASIS FOR THE ALLOWING HISTORIC FLOWS TO CONTINUE TO DRAIN THROUGH THE PROPERTY. PRESENTLY, THE SITE IS BOUNDED ON THE EAST, WEST AND NORTH BY UNDEVELOPED PROPERTY, SIGNAL AVENUE ON THE SOUTH IS THE SITE GENERALLY FALLS FROM EAST TO WEST AT APPROX 3.3 PERCENT. ALL OFFSITE FLOWS ARE QUANTIFIED ON THE PLAN, AND ADDRESSED IN THE CALCULATIONS.
- A PORTION OF THE SITE IS ENGINEERED BY A DESIGNATED FEMA FLOODPLAIN.
- HISTORICAL SITE RUNOFF OUTFALL LOCATIONS WILL REMAIN UNCHANGED IN DEVELOPMENT. SINCE SIGNAL AVE IS IMPROVED MINIMAL GRADING IS PROPOSED WITHIN THE CITY R.O.W. FREE DISCHARGE OR DEVELOPED FLOW IS ACCEPTABLE SINCE DOWNSTREAM CAPACITY (LA CUEVA CHANNEL) EXISTS.

NOTES

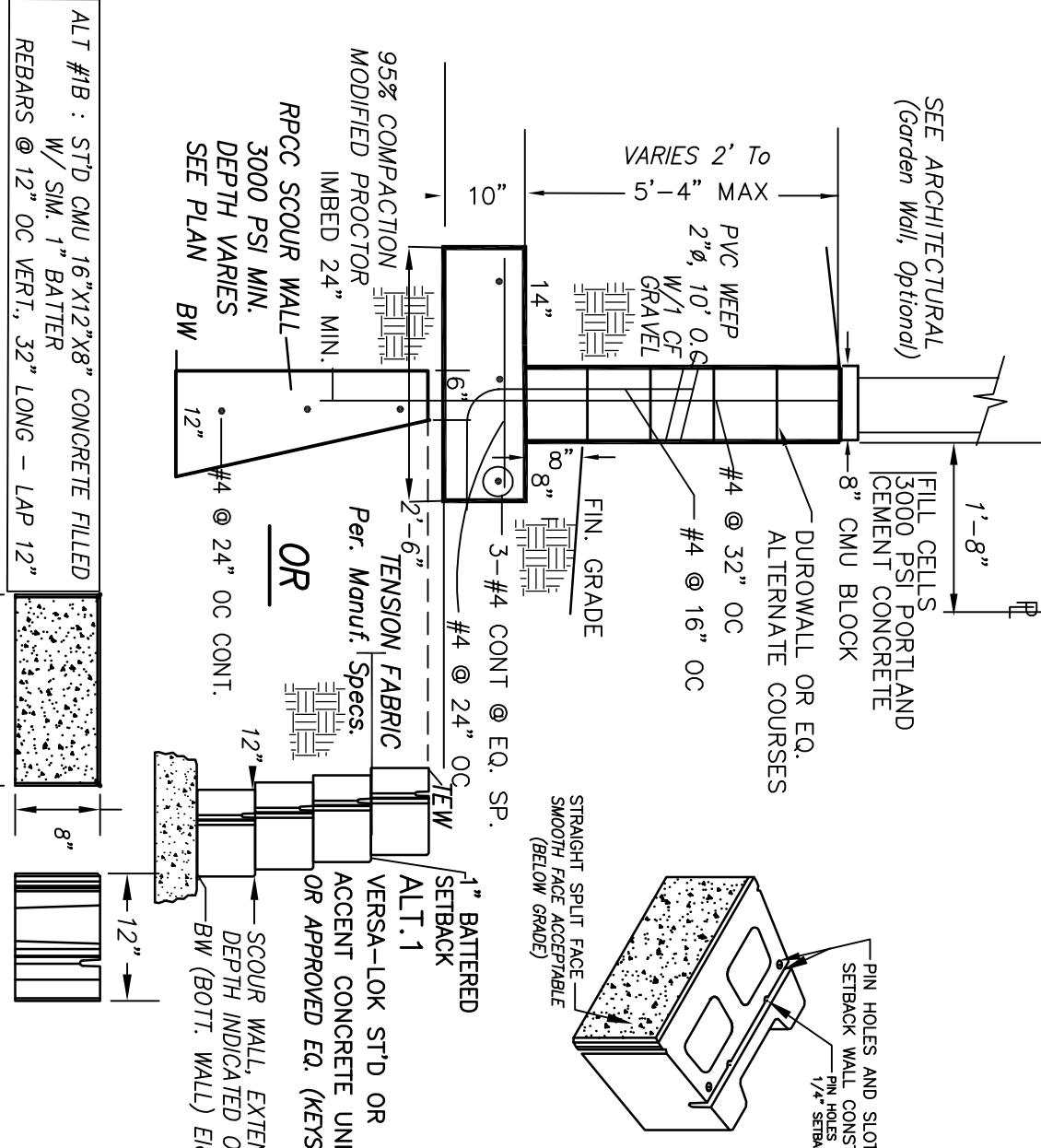
1. ALL WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, W/ 8 UPDATES.
2. AN EXCAVATION/CONSTRUCTION PERMIT IS REQUIRED BEFORE BEGINNING ANY WORK WITHIN WORK AREA. AN APPROVED COPY OF THIS PLAN MUST BE SUBMITTED AT THE TIME OF APPLICATION.
3. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES, AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
4. CONTRACTOR SHALL ENSURE THAT NO SITE SOILS/SEDIMENT OR SILT ENTER THE RIGHT-OF-WAYS DURING CONSTRUCTION.
5. AREAS DISTURBED DUE TO CONSTRUCTION PER CITY OF ALBUO. SPEC. 1012 NAYIVE SEED MIX.
6. MAXIMUM SITE GRADING WITHOUT EROSION PROTECTION: 3' HORIZONTAL TO 1' VERTICAL. 3:1 ALL DIMENSIONS TO FACE OF CURB, UNLESS NOTED OTHERWISE.

BLOCK 4, TRACT 3, UNIT 3
NORTH ALBUQUERQUE ACRES
09-10-31; D-131

VICINITY MAP



ZONE C-20



CMU RETAINING WALL / SCOUR WALL SECT. A

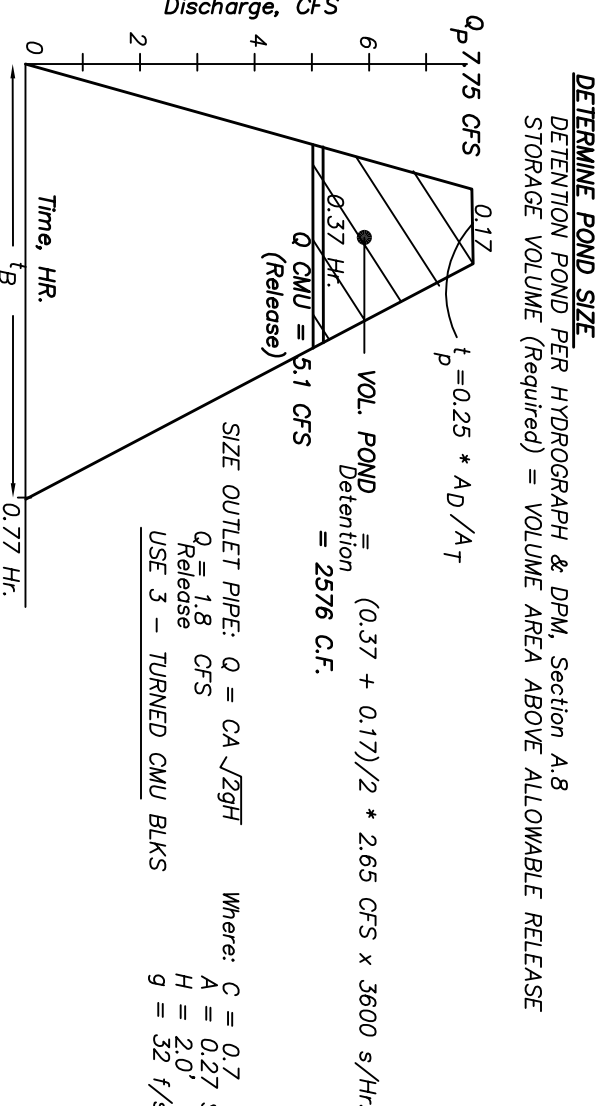
DESIGN CRITERIA
HYDROLOGIC METHODS PER SECTION 22.2 HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL (DPM) REWISED JANUARY 1993 FOR CITY OF ALBUQUERQUE, ADOPTED BY THE COUNTY OF BERNALILLO
DISCHARGE RATE: Q=PEAK x AREA, "Peak Discharge Rates for Small Watersheds"
VOLUMETRIC DISCHARGE: VOLUME = EWeighted x AREA
P100 = 2.60 inches, Zone 3
DESIGN STORM: 100-YEAR/6-HOUR, 10-YEAR/6-HOUR [] = 10 YEAR VALUES
HISTORIC CONDITIONS PER EXIST. LOT
100% A
PROJECT AREA = 0.89 ACRES, WHERE EXCESS PRECIP. Weighted = 0.66 in. [0.19]
PEAK DISCHARGE, Q100 = 1.8 CFS [1.06] WHERE UNIT PEAK DISCHARGE Y_a = 1.9 CFS/AC. [0.60]
THEREFORE: VOLUME 100 = 2132 CF [614]
DEVELOPED CONDITIONS DETERMINE LAND TREATMENTS, PEAK DISCHARGE AND VOLUMETRIC DISCHARGE FOR STUDY AREA

AREA	LAND TREATMENT	Q Peak	E
UNDEVELOPED	0.29 AC	1.67(0.36)	0.66(0.19)
LANDSCAPING	0.29 AC (17%) B	2.60(1.91)	0.92(0.36)
COMPACTED SOIL & Slopes >	1.20 AC (6.7%) D	5.02(3.39)	2.36(1.50)
ROOF - PAVEMENT	1.78 AC		

THEREFORE: E_{Weighted} = 1.95 in. [1.16] & VOLUME 100 = 12800 CF
Q100 = 7.75 CFS
Q10 = 5.0 CFS
UNIT DISCHARGE = 7.75 CFS/1.78 AC. = 4.35 CFS/AC.

CALC. 1ST FLUSH, P4-6MO) = 0.6" Per Table 2 Water Qual. Storm PRO-RATE 7/20=0.35 x 0.09 = 0.03+0.27 = 0.3 INCHES x 1.78 (4360/12) = 1838 CF ON THE WITH CITY HYDROLOGY (Ref. C-20/D35)
PER R1 STUDY, Q100 = 3090 CFS AT VENTURA ST. (SEE LOMR2012)
EROSION SET BACK ANALYSIS - PER SEDIMENT EROSION DESIGN GUIDE (ESDG)
Q₁₀₀ = 3090 CFS...LA CUEVA ARROYO
Q₁₀ = 618 CFS W₁₀ = 4.66' ± 60 FEET
Q₁₀ = 0.20' ± 100
LANDU = [0.8 + 41.0(0.3)] W₁₀ = 718 FEET BANK SETBACK = LANDU/4 = 179 FEET
CENTER LINE SETBACK = 858 + W₁₀/2 = 190 FEET
THEREFORE: EROSION CONTROL IMPROVEMENTS REQUIRED - PER DISCUSSION WITH CITY AND AMFCA CONSTRUCT SCOUR WALL ON EAST/NORTH SIDES OF DEVELOPMENT

DESIGNATION	AREA (AC)	PERCENT	Q ₁₀₀ (CFS)	Q ₁₀ (CFS)
RESIDENTIAL	0.89	9	1.67	0.66
LANDSCAPING	0.29	4	2.60	0.92
COMPACTED SOIL	1.20	2	5.02	2.36
ROOF - PAVEMENT	1.78	4		



DETERMINE POND SIZE
DETERMIN FLOOD PER HYDROGRAPH & PMP Section A.8
STORMAGE VOLUME (Required) = VOLUME AREA ABOVE ALLOWABLE RELEASE
Q₁₀ = 0.20' ± 100
LANDU = [0.8 + 41.0(0.3)] W₁₀ = 718 FEET
CENTER LINE SETBACK = 858 + W₁₀/2 = 190 FEET
THEREFORE: EROSION CONTROL IMPROVEMENTS REQUIRED - PER DISCUSSION WITH CITY AND AMFCA CONSTRUCT SCOUR WALL ON EAST/NORTH SIDES OF DEVELOPMENT

LEGEND

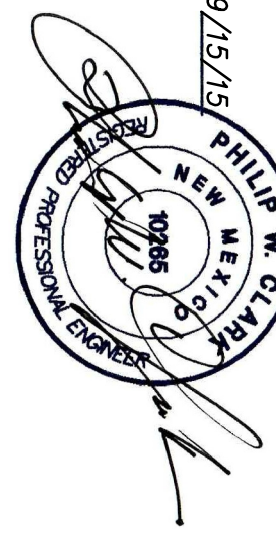
- EXIST. SPOT ELEVATION TW
- EXIST. CONTOUR
- NEW SPOT ELEVATION
- NEW CONTOUR
- NEW CURB & GUTTER
- NEW SWALE
- NEW P.C.C. CONCRETE
- NEW RIPRAP, BURIED

KEYED NOTE(S)

1. NEW PCC SOAK PER COA STD 2430.
2. NEW STD CURB/GUTTER PER COA STD 2415A.
3. NEW ROL CURB PER COA STD 2415A.
4. BUILD NEW PRIVATE ENTRANCE PER COA STD 2420 AND 2026.
5. NEW PCC WHEEL CHAIR RAMP PER COA STD 2441.
6. PROVIDE 3" WIDE ADA PATHWAY, 2% MAX. CROSS SLOPE W/ TRUNCATED DOMES.

PROJECT DATA

LEGAL DESCRIPTION
LOTS 19, 20, BLOCK 4, TRACT 3, UNIT 3
NORTH ALBUQUERQUE ACRES, ALBUQUERQUE, NEW MEXICO
PROJECT BENCHMARK
THE BASIS OF ELEVATIONS FOR THIS SURVEY IS ACS BENCHMARK 7-C18, ELEVATION OF WHICH IS 5465.72. BENCHMARK IS LOCATED AT THE INTERSECTION OF BARSTOW ST AND MONROE AVE.
9/5/75
COMPILED BY CLARK CONSULTING ENGINEERS FROM DESIGN SURVEY BY PHILIP W. CLARK, FIDUCIARY F-23, DATED JULY 2014



APPROVED FOR ROUGH GRADING ONLY

Clark Consulting Engineers	13 Ryan Road Edgewood, New Mexico 87015	TEL: (505) 281-2444 FAX: (505) 281-2444
DATE	6/12/15	ADDS. CITY ENGR.
COMMENTS	(2/9/2015)	ADDS. R.R. # W.O.
DESIGNED BY: PWC	DRAWN BY: COE	JOB #: Subpointe
CHECKED BY: PWC	DATE: 2/26/15	FILE #: S/D
Grading & Drainage Plan		SHEET 1 OF 1