

CITY OF ALBUQUERQUE



March 24, 2016

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

**Re: Signal Pointe Subdivision at Signal/Ventura (C20D070)
Grading and Drainage Engineers Stamp Date 9/15/2015
Engineer's Certification of Scour Wall dated 3-17-16**

Dear Mr. Clark,

Based upon the Certification received 3/18/2016, the As-Built Certification of the scour wall is not accepted for the following reasons:

- Approval of the Grading Plan was conditional upon you providing wall details, calculations, and specifications. Only wall sections were submitted to Hydrology.
 - Wall sections do not show the scour line limits
 - The key has no reinforcing and with the 2' length dimension shown, significant reinforcing would be expected in a key of that length.
 - **Structural Calculations for the wall need to be provided.**
- Site inspection shows that the middle portion of the wall along the northern boundary is incomplete. Furthermore, there were 16" pilaster blocks sitting on top of 12 in wide CMU blocks with cells open to the dirt. **Structural Engineer responsible for the wall design should perform a site visit and provide an Engineer's Certification of the wall (not the Civil Engineer)**
- Fill and CMU debris were in the natural channel.

If you have any questions, you can contact me at 924-3695 ~~1244~~.

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

C: email



City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 1/2016)

Project Title: _____ **Building Permit #:** _____ **Hydrology File #:** _____

DRB#: _____ **EPC#:** _____ **Work Order#:** _____

Legal Description: _____

City Address: _____

Applicant: CLARK CONSULTING ENGINEERS **Contact:** Philip Clark

Address: 19 Ryan Road Edgewood, NM 87015

Phone#: 281.2444 **Fax#:** _____ **E-mail:** CCEalbq@aol.com

Other Contact: _____ **Contact:** _____

Address: _____

Phone#: _____ **Fax#:** _____ **E-mail:** _____

Check all that Apply:

DEPARTMENT:

- ☐ HYDROLOGY/ DRAINAGE
- ☐ TRAFFIC/ TRANSPORTATION
- ☐ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

- ☐ AS-BUILT CERTIFICATION
- ☐ CONCEPTUAL G & D PLAN
- ☐ GRADING PLAN
- ☐ DRAINAGE MASTER PLAN
- ☐ DRAINAGE REPORT
- ☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT (TCL)
- ☐ TRAFFIC IMPACT STUDY (TIS)
- ☐ NEIGHBORHOOD IMPACT ASSESMENT (NIA)
- ☐ EROSION & SEDIMENT CONTROL PLAN (ESC)
- ☐ OTHER (SPECIFY) _____

TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- ☐ BUILDING PERMIT APPROVAL
- ☐ CERTIFICATE OF OCCUPANCY
- ☐ GRADING/ESC PERMIT APPROVAL
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ SITE PLAN FOR SUB'D APPROVAL
- ☐ SITE PLAN FOR BLDG. PERMIT APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ SIA/ RELEASE OF FINANCIAL GUARANTEE
- ☐ FOUNDATION PERMIT APPROVAL
- ☐ SO-19 APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ GRADING/ PAD CERTIFICATION
- ☐ WORK ORDER APPROVAL
- ☐ CLOMR/LOMR
- ☐ PRE-DESIGN MEETING?
- ☐ OTHER (SPECIFY) _____

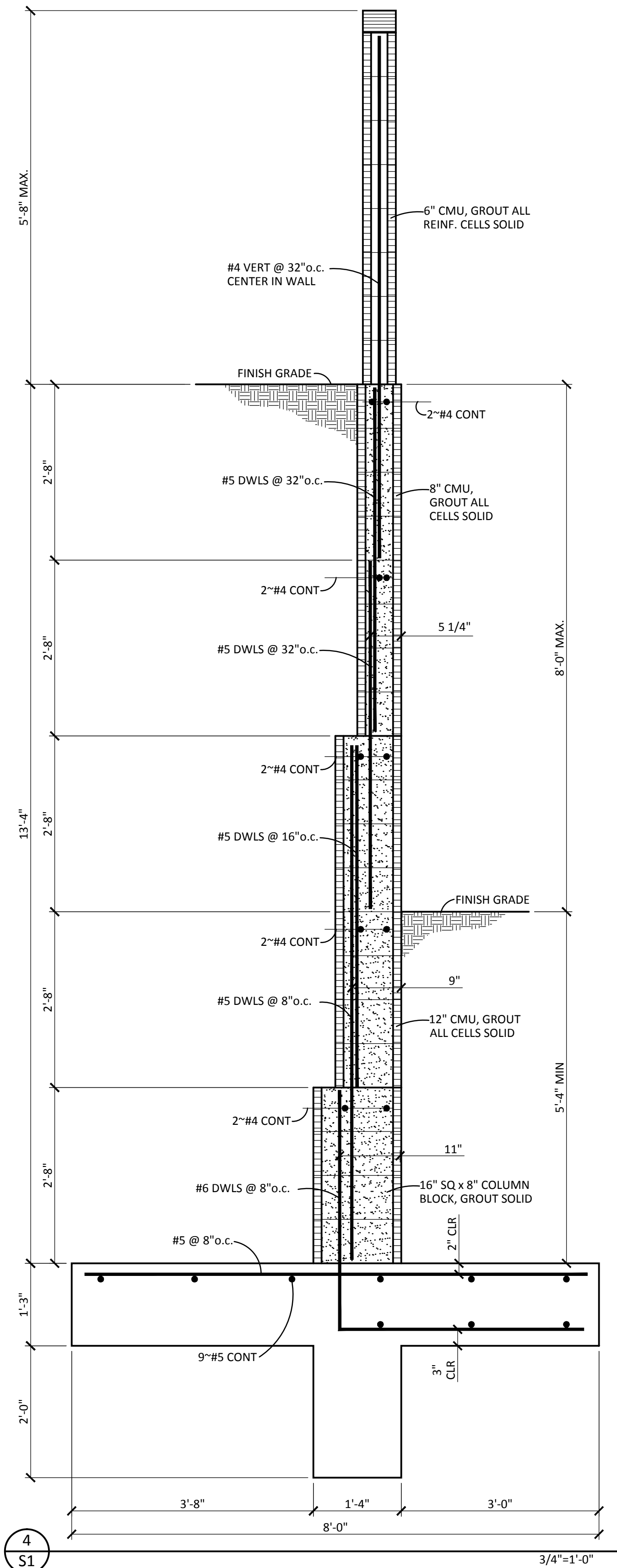
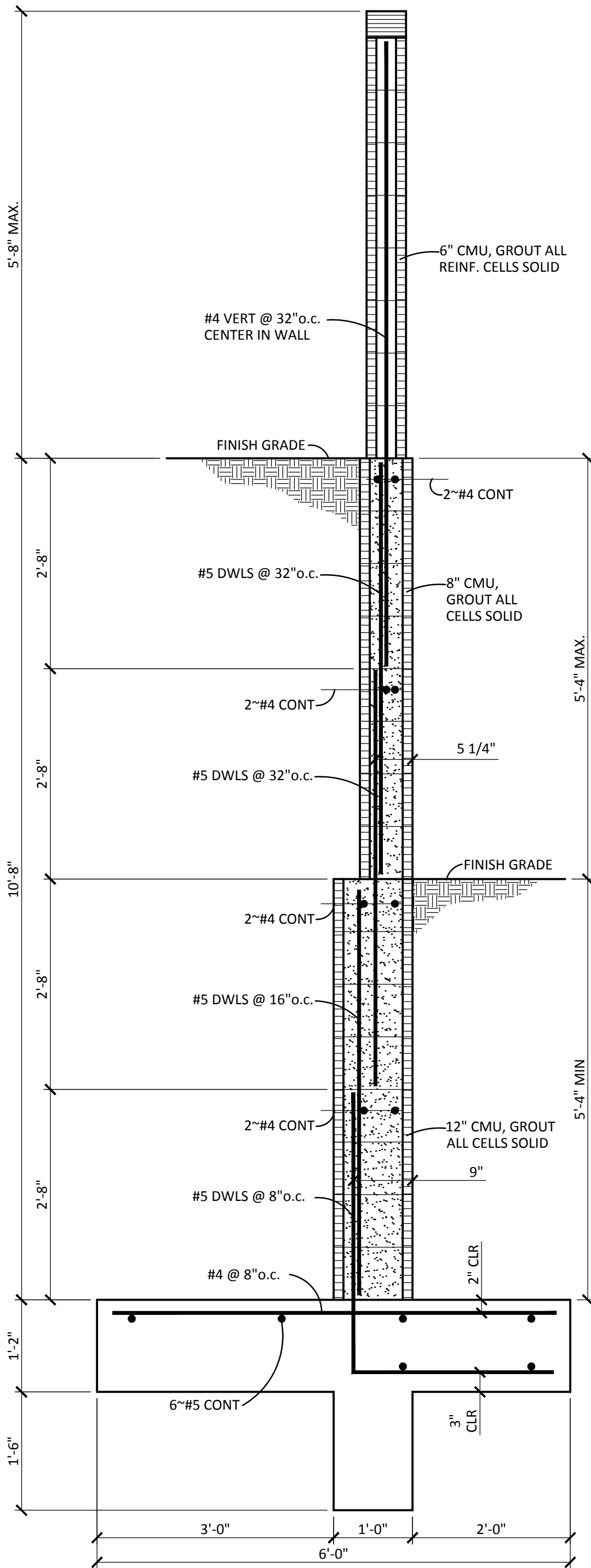
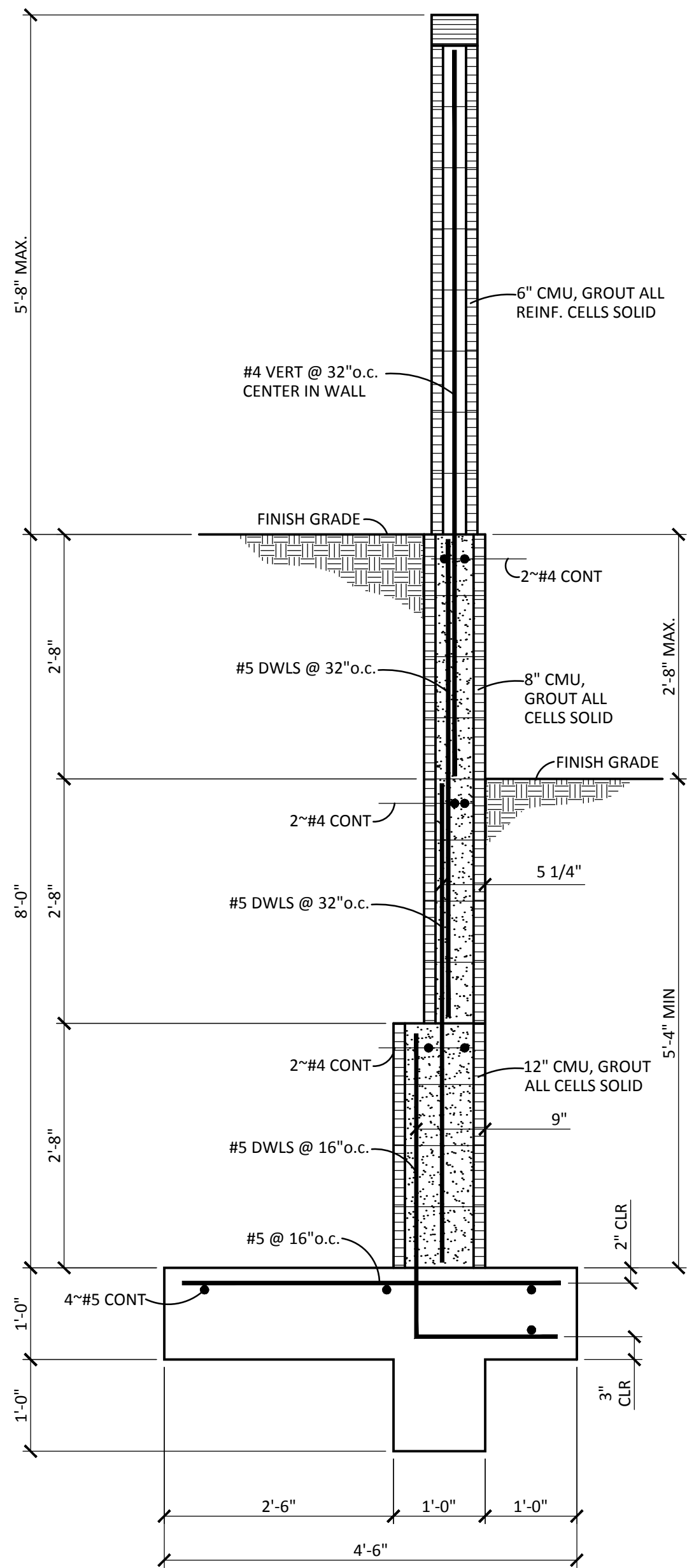
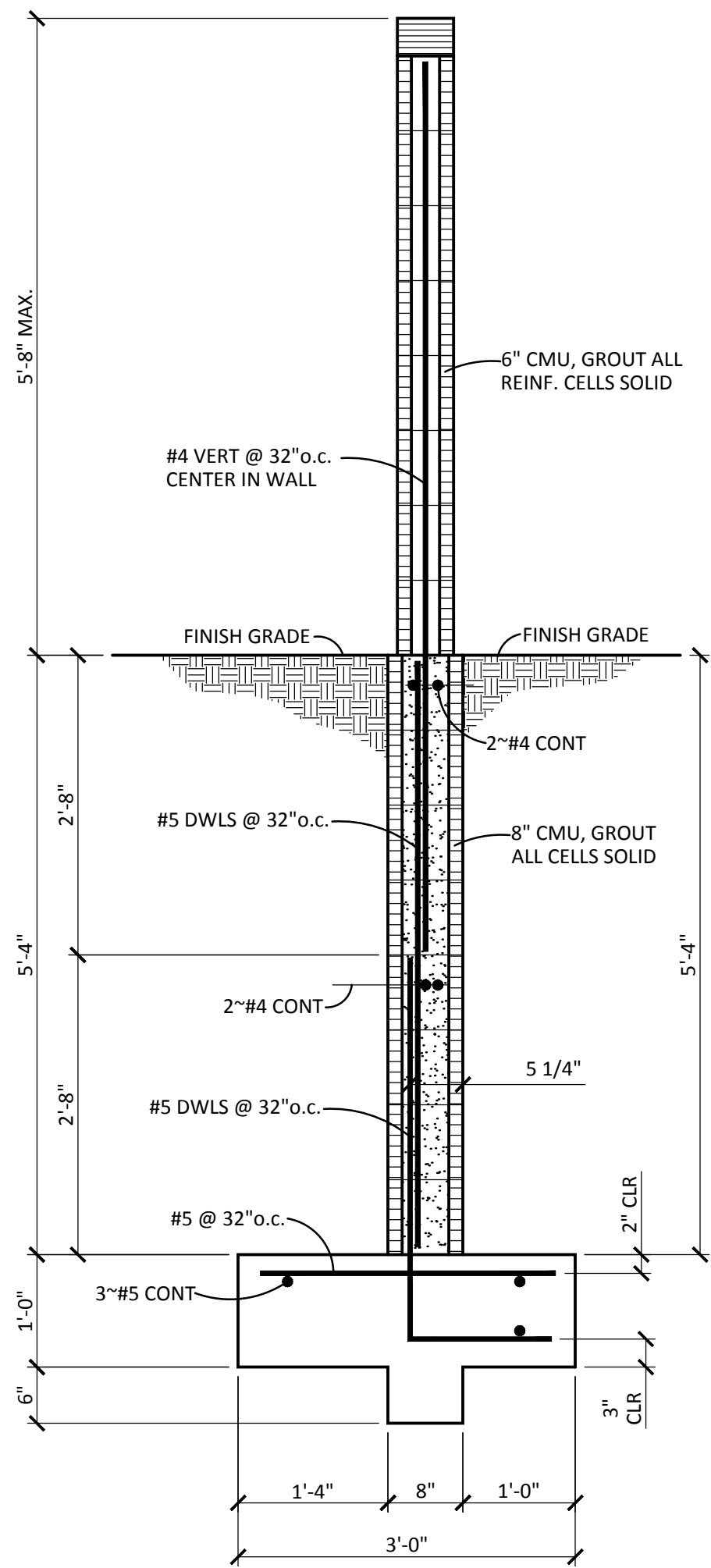
IS THIS A RESUBMITTAL?: ☐ Yes ☐ No

DATE SUBMITTED: _____ **By:** _____

COA STAFF: _____ **ELECTRONIC SUBMITTAL RECEIVED:** _____

FEE RECEIVED: _____

PROVIDE MASONRY CONTROL JOINTS
AT 14'-0" o.c. MAXIMUM



GENERAL STRUCTURAL NOTES

- CODES AND MANUALS:
International Building Code, 2009 Edition
ACI 318-05
- DESIGN LOADS:
A. Equivalent Fluid Pressure = 35 pc/ft
B. Maximum allowable soil bearing pressure: 2,00psf
- GENERAL:
A. The Contractor shall verify all dimensions in the field.
B. The Contractor shall be responsible for providing safe and adequate shoring for all parts of the structure during construction.
- MATERIALS:
A. Cast-in-place Concrete:
1. All concrete shall conform to the Specifications for Structural Concrete, ACI 301
2. Normal Weight Concrete:
a. 3,000 psi @ 28 days
3. The sides of all footings shall be FORMED. The use of earth forms is NOT allowed.
B. Reinforcing Steel:
1. All reinforcing steel shall conform to ASTM A615 Grade 60.
2. Reinforcing steel shall be fabricated and placed in accordance with the Building Code Requirements for Reinforced Concrete ACI 318 and the Standard Manual ACI 315.
3. Bar supports and spacers for rebar shall be provided in accordance with ACI 315.
4. Where lapped splices in reinforcing occur, the minimum lap shall be made as follows:
a. Vertical reinforcing: 40 bar dia. or 24" minimum.
b. Horizontal reinforcing: 30 bar dia. or 18" minimum.
c. Horizontal corner bars: 30 bar dia. or 18" minimum.
5. Concrete cover for reinforcing shall be as follows:
a. Concrete cast against and permanently exposed to earth.....3"
b. Concrete exposed to earth or weather
1. Bars larger than No. 52"
2. Bars No. 5 or smaller1 1/2"
6. The Contractor shall be responsible to see that all rebar is properly aligned and tied in place before placing concrete. All wall dowels and vertical steel shall be accurately located and secured in place so that it remains in the position during the concrete placing operation. Any rebar found to be improperly installed shall be removed and replaced at no additional cost to the Owner.
C. Masonry:
1. All masonry units shall have an average compressive strength of 1500 psi @ 28 days.
2. All mortar shall be Type S with a strength of 2000 psi at 28 days.
3. Grout shall have a minimum compressive strength of 2000 psi at 28 days.
4. All hollow masonry to be reinforced shall be marked with keel at the bottom of the wall at the cells where dowels occur or rebar is to be placed and grouted.
5. Cells containing rebar shall be grouted solid from the bottom to the top of the wall in accordance with IBC regulations. Cleanouts shall be provided at the bottom of walls at all cells to be grouted where the grout pour exceeds 4' in height.
6. Lap all bars 40 diameters or 2'-0" minimum unless otherwise noted.
- SITE GRADING AND EARTHWORK
A. Foundation Preparation:
Building areas shall be completely stripped of vegetation, existing construction and debris, and soft or muddy areas.
B. Foundations:
Over excavate beneath bottom elevation of all footings a minimum of three feet. The excavation shall extend a minimum of three feet laterally beyond the edge of all footings.
The bottoms of excavations shall be scarified to a depth of 8", moistened within optimum moisture, +/- 3%, and compacted to a minimum of 95% of standard proctor as determined by ASTM D698. The structural fill shall be thoroughly mixed within optimum moisture, +/- 3%, placed in thin horizontal lifts, 8" max. loose depth, and compacted to a minimum of 95% of standard proctor as determined by ASTM D698.
C. Backfills:
All backfills should be thoroughly mixed within optimum moisture, +/- 3%, placed in thin horizontal lifts, 8" max. loose depth, and compacted to a minimum of 95% of standard proctor, ASTM D698.
D. Site Drainage:
Provide positive surface drainage away from foundation excavations during construction.

1
S1

3/4"=1'-0"

2
S1

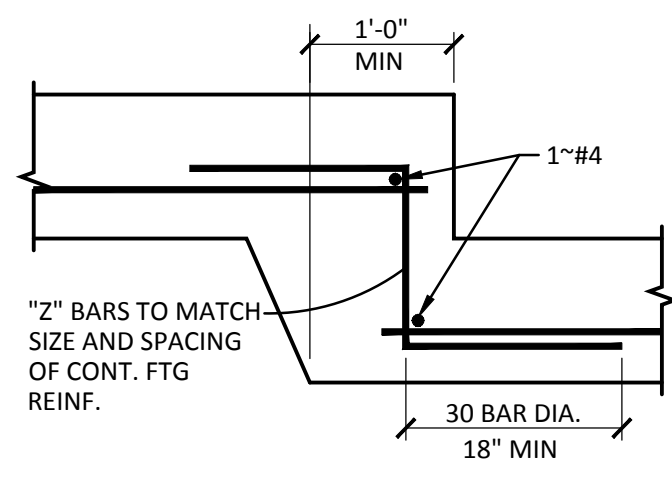
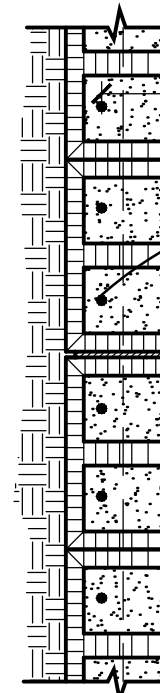
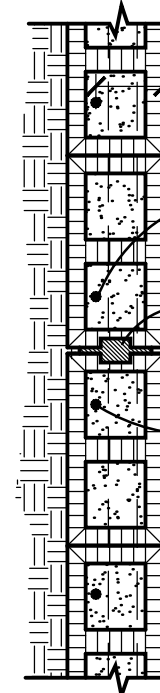
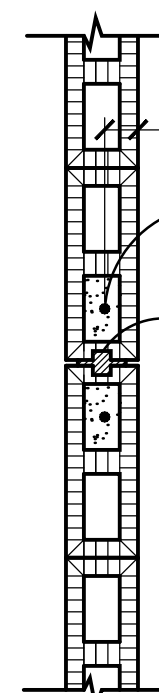
3/4"=1'-0"

3
S1

3/4"=1'-0"

4
S1

3/4"=1'-0"



ENGINEER'S CERTIFICATION

I, PHILIP W. CLARK, REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF NEW MEXICO,
DO HERBY CERTIFY THAT THE SCOUR WALL WAS CONSTRUCTED IN SUBSTANTIAL COMPLIANCE
WITH THE APPROVED PLANS DATED, 10/26/15.



MaccORNACK ENGINEERING

2001 Carlisle Blvd. NE, STE. C
ALBUQUERQUE, NEW MEXICO

CLIENT: **RBK REALTY INC**
8830 Keeran Lane NE
Albuquerque, New Mexico

PROJECT: **SIGNAL POINTE SUBDIVISION**
North Albuquerque Acres
Albuquerque, New Mexico

DRAWING: **RETAINING WALL SECTIONS AND GENERAL
STRUCTURAL NOTES**

JOB NO: R37-001
DATE: 10/26/15
SHEET NO: **S1**

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 ORDINANCE. THE PLAN IS REQUIRED IN ORDER TO FACILITATE THE OWNER'S REQUEST FOR BUILDING PERMIT. THE PLAN SHOWS:

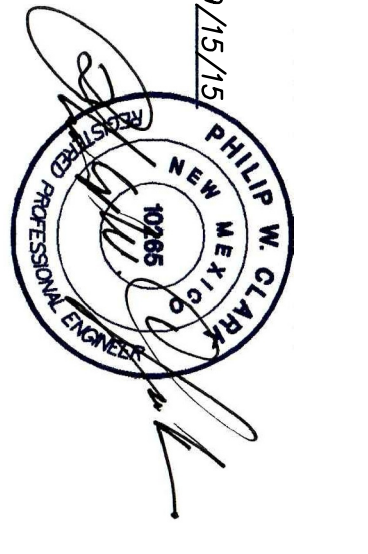
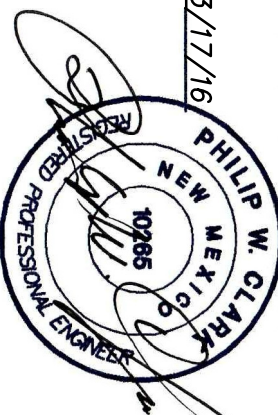
- 1. EXISTING CONDITIONS, SPOT ELEVATIONS, AND EXISTING DRAINAGE PATTERNS.
 - 2. PROPOSED IMPROVEMENTS: 8 RESIDENTIAL HOME PAD SITES, NEW PERIMETER SOLID WALL, CONCRETE DRIVEWAYS, AND NEW GRADE ELEVATIONS.
 - 3. QUANTIFICATION AND ACCEPTANCE OF UPSTREAM OFFSITE FLOWS WHICH CONTRIBUTE TO THE DEVELOPED FLOWS GENERATED BY THE IMPROVEMENTS, ANALYSIS AS TO WATER SURFACE MODEL AND EROSION SETBACK.
- THE PURPOSE OF THE PLAN IS TO ESTABLISH CRITERIA FOR CONTROLLING STORMWATER AND PREVENTING FLOODING. 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 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 ALBUQ. SPEC. 1012 NATIVE 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.

AS-CONSTRUCTED
SCOUR WALL ONLY

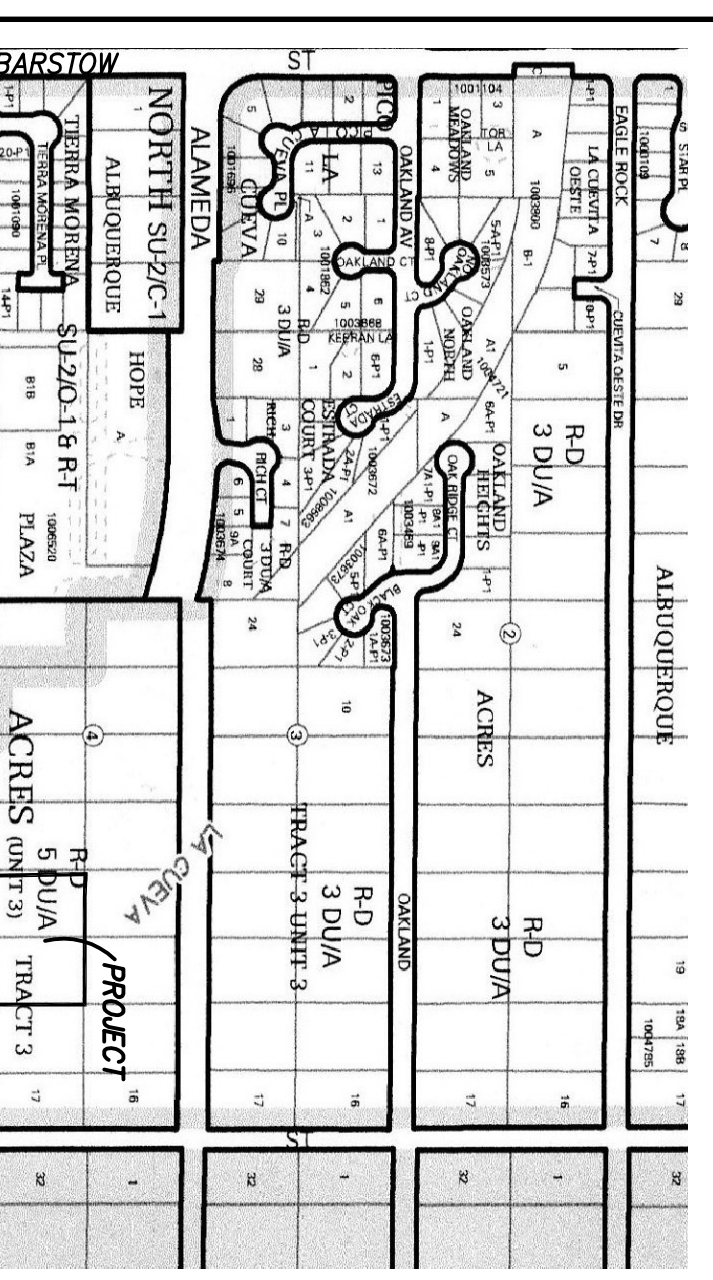
PHILIP W. CLARK, PROFESSIONAL ENGINEER, REGISTERED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW MEXICO, CERTIFY THAT THE SCOUR WALL IMPROVEMENTS INDICATED ON THE PLAN WERE CONSTRUCTED AS SHOWN, AND IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED PLAN AND SECTIONS DATED 10/28/15.



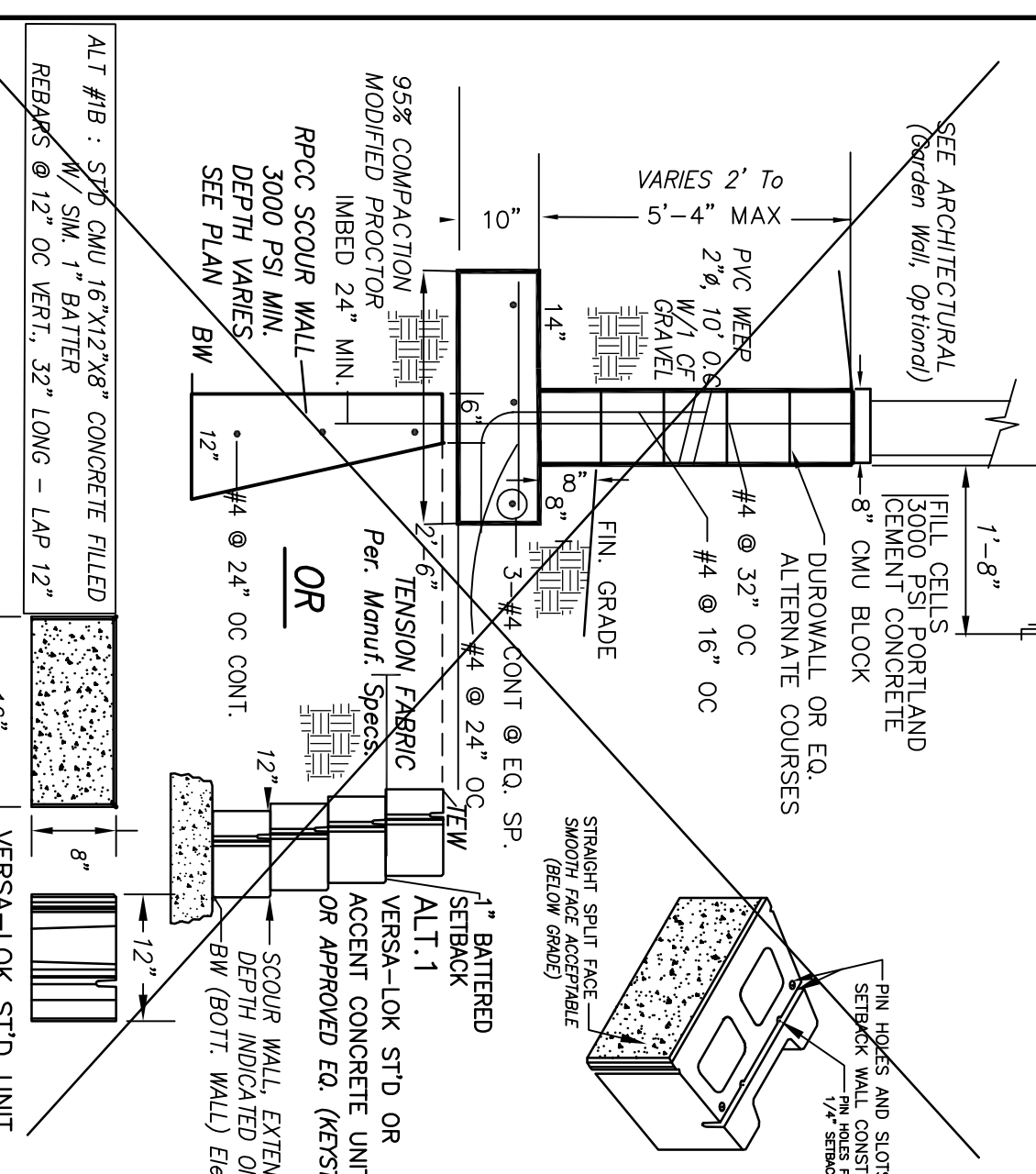
Clark Consulting Engineers

Tel: (505) 281-2444		Edgewood, New Mexico 87015		Fax: (505) 281-2444	
DATE	REVISION	LOTS 19 & 20, BLK. 4, TR. 3, UNIT 3			
6/12/15	ADDS CITY ENGR.	NORTH ALBUQ. ACRES ALBUQ. NEW MEX			
2/20/15	COMMENTS	SIGNAL POINTE SUBDIVISION			
9/15/15	ADDS R.R. # 10.0.				
3/17/16	AS-BUILT SCOUR WALL				

DESIGNED BY: PWC DRAINAGE BY: COE JOB #: SignalPointe SHEET: 1 OF 1
CHECKED BY: PWC DATE: 2/28/15 FILE #: S/G/D



VICINITY MAP



CMU RETAINING WALL / SCOUR WALL SECT. A

DESIGN CRITERIA
HYDROLOGIC METHODS PER SECTION 22.2 HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL (DPH) REJECTED JANUARY 1993 FOR CITY OF ALBUQUERQUE, ADOPTED BY THE COUNTY OF BERNALILLO DISCHARGE RAINFALL: Q=PEAK x AREA, "Peak Discharge Rates for Small Watersheds" VOLUMETRIC DISCHARGE: VOLUME = ElWeighted x AREA P100 = 2.60 inches, Zone 3 Time of Concentration, TC = 10 Minutes DESIGN STORM: 100-YEAR/6-HOUR, 10-YEAR/6-HOUR [] = 10 YEAR VALUES

HISTORIC CONDITIONS PER EXIST. LOT
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 $\gamma_u = 1.9$ 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 [0.86]	0.66 [0.19]
LANDSCAPING	0.29 AC (17%) B	2.60 [1.9]	0.92 [0.36]
COMPACTED SOIL & Slopes >	1.20 AC (6.7%) C	1.29 [0.62]	1.29 [0.62]
ROOF - PAVEMENT	1.78 AC	5.02 [3.39]	2.36 [1.50]

THEREFORE: $E_{weighted} = 1.95$ in. [1.16] & VOLUME 100 = 12800 CF
Q100 = 7.75 CFS VOLUME 10 = 7495 CF
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 HYDROLOGIST (Ref: C-20/D35) (REVISED 11.8.12)

UPSTREAM ANALYSIS - SET HEC-RAS WATER SURFACE MODEL OF LA CUEVA, PER R1 STUDY, Q100 = 3090 CFS AT VENTURA ST. (SEE LOMR2012)

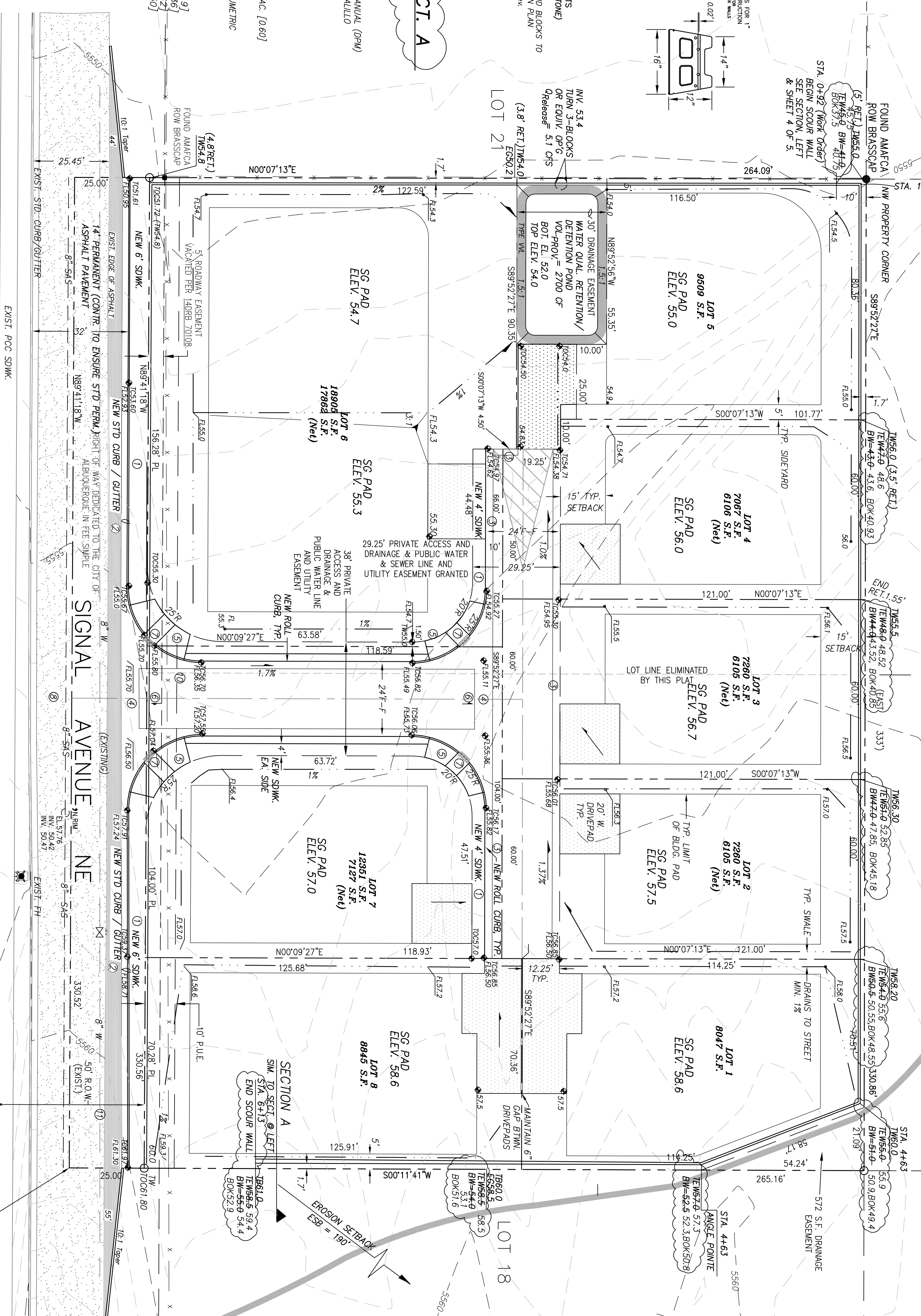
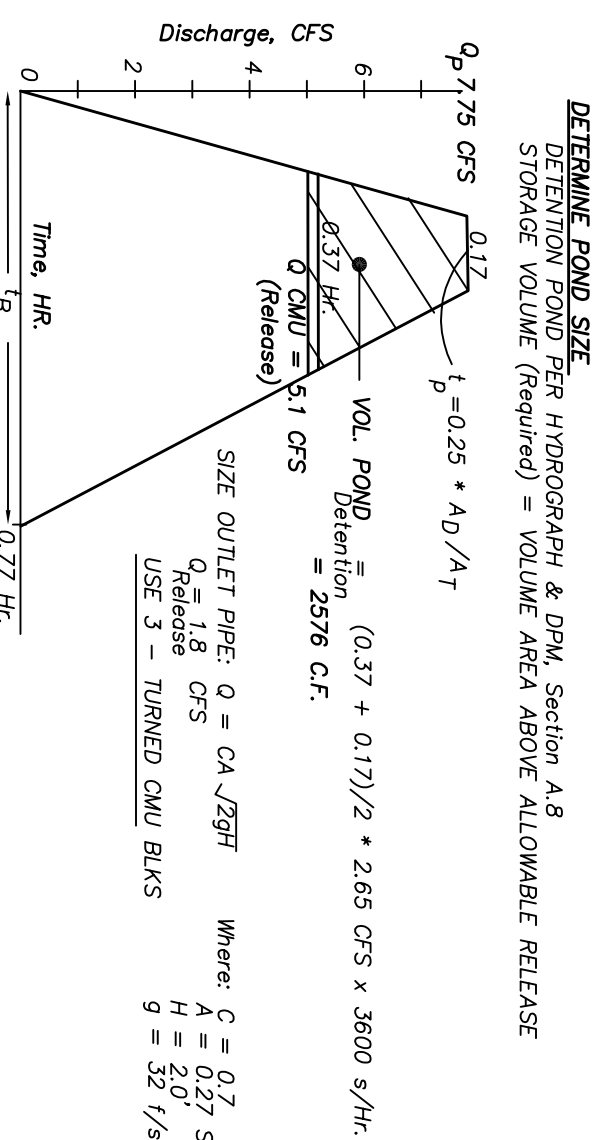
EROSION SET BACK ANALYSIS - PER SEDIMENT EROSION DESIGN GUIDE (SEDO) $Q_{0.07} = 3090$ CFS...LA CUEVA ARROYO $Q_u = 0.20 = 618$ CFS $W_u = 4.6$ ft ± 60 FEET

$\gamma_u = [0.8 + 41.0(0.3)] W_u^{0.718}$ BANK SETBACK = LANDU/4 = 179 FEET CENTER LINE SETBACK = $BSB + W_u/2 = 190$ 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 Peak	E
EXISTING	1.78	100%	5.02	2.36
NEW	1.78	100%	5.02	2.36

CLASSIFICATION AND GRADATION OF RIPRAP

TYPE	WE	WE	WE	WE
70-100	35-50	2-10	9	4



LEGEND

- EXIST. SPOT ELEVATION
 - EXIST. CONTOUR
 - NEW SPOT ELEVATION
 - NEW CONTOUR
 - EXIST. CURB & GUTTER
 - NEW SWALE
 - DRAINAGE DIRECTION
 - NEW P.C.C. CONCRETE
 - NEW RIPRAP, BURIED
- TOP OF WALL, BEGINNING
TOP OF EROSION WALL
BOTTOM ELEV. OF SCOUR WALL
BOT. OF KEY (SEE SH. S1)
BASE FLOOD ELEVATION (SEE FEMA
REVISED MAP NOV. 08, 2012)
- NEW PCC WHEEL CHAIR RAMP PER COA STD 2441
PROVIDE 3" WIDE ADA PATHWAY, 2% MAX. CROSS
SLOPE W/ TRUNCATED DOMES

KEYED NOTE(S)

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

PROJECT DATA

LEGAL DESCRIPTION
LOTS 19, 20, BLK. 4, TRACT 3, UNIT 3
NORTH ALBUQUERQUE ACRES, ALBUQUERQUE, NEW MEXICO

PROJECT BENCHMARK
THE BASIS OF ELEVATIONS FOR THIS SURVEY IS A.S. BENCHMARK 7-C18, ELEVATION OF WHICH IS 5463.72. BENCHMARK IS LOCATED AT THE INTERSECTION OF BARSTOW ST. AND MONTEZUMA AVE.

TOPOGRAPHIC DESIGN SURVEY
COMPLETED BY CLARK CONSULTING ENGINEERS FROM DESIGN SURVEY BY PHILIP W. CLARK, DATED JULY 2014