

CITY OF ALBUQUERQUE



Aug. 14, 2017

Philip Clark
Clark Consulting Engineers
19 Ryan Road
Edgewood, NM 87015

RE: **Premier M.H Display Yard**
Grading Plan
Engineer's Stamp Date 8/4/17
Hydrology File: M14D012C2

Dear Mr. Clark:

Based on the information provided in the submittal received on 8/7/17 the above-referenced Grading Plan cannot be approved for Building Permit until the following are addressed:

1. The Grading and Drainage Plan notes should start by stating the drainage management plan for the site. The drainage management plan for this site was established when this property was subdivided in 1997. This site will ultimately be allowed free discharge after downstream storm drains are constructed, but until then this site must retain all of the runoff from the 100 year 10 day storm. Storm drain in Bethel Ave is required infrastructure to be constructed by this development as frontage improvements prior to allowing free discharge from this site. AMAFCA's 2018 Project Schedule identifies additional projects to provide an adequate outfall south of Bethel.
2. Drainage problems along Arno and Broadway are still unresolved, so temporary onsite retention is still required.
3. The drainage infrastructure in San Jose Ave. and Broadway Blvd. is not designed to receive any drainage from this lot, so drainage will not be allowed to discharge to either of those two streets. The statement in the Grading and Drainage Plan that says "The current pond will be removed since upstream detention has been provided with development" is unfounded and should be deleted unless that analysis is added to this project in the form of a report.
4. Offsite basins, lot 1A-1, must be clearly shown on the plan (or on a separate basin map) using a base map that includes property lines contours, and all storm drains, roads, C&G, ditches, and berms as necessary to support the chosen location of the basin boundaries. Flow arrows should be shown on the map indicating concentrated flow paths especially at the point of discharge from each of the basins.
5. If this project does not provide a report to demonstrate the adequacy of the San Jose and Broadway storm drains then all of the runoff from the 100 year 10 day storm

PO Box 1293

Albuquerque

New Mexico 87103

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must be retained onsite including the runoff from lot 1A-1 east of this site. Runoff from the slopes on the south and west sides of the site should also be retained. The emergency overflow spillway needs to be sized to pass the peak inflow with 1' of freeboard,

6. If capacity is demonstrated in San Jose and a detention pond is to remain part of the drainage management plan then Additional detail is required for the pond outfall. The pond hydrograph calculations state two 4x5" openings will be used but no details are provided.
7. The topography certification can be removed sense that is a Bernalillo county requirement and not a City of Albuquerque requirement. Instead please add a note identifying the source of the topographic information including the surveyor's name and professional registration number.
8. The floodplain note should include the flood insurance rate map number and the effective date. This note should be included in rest of the drainage notes on the sheet rather than being randomly placed on the sheet.
9. The Statement "A Former Approved and Graded Site" is inappropriate as a title to the 4 notes that follow the statement.
10. Provide cross lot drainage and access easements for lots 1A-1 and 1A-2.
11. A Drainage Covenant will be required for the new pond.
12. Written approval must be obtained from PNM to move their guy wires and work in their easement.
13. Written approval must be obtained from the owners of lot 1A-2 to remove their wall.
14. The new driveway entrance off San Jose cannot be placed over the transition slab for the existing inlet. The d
15. An approved ESC Plan is required for this site.

If you have any questions, I can be contacted at 924-3986 or jhughes@cabq.gov.

Sincerely,



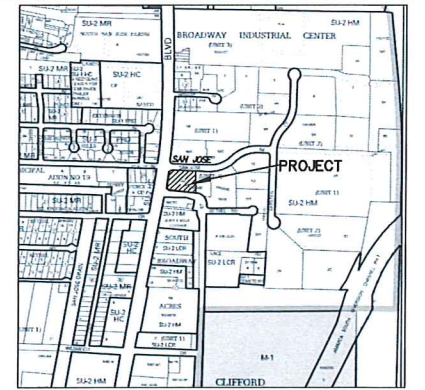
James D. Hughes P.E.
Principal Engineer, Planning Dept.
Development Review Services

ECT IS LOCATED IN THE BROADWAY
QUERQUE APPROXIMATELY 2 MILES SOUTH OF
QUERQUE, NM. THE GRADING &
IN COMPLIANCE WITH THE BERN-
ORDINANCE, NO.88-46, AND THE
NCE. THE PLAN IS REQUIRED IN
IER'S REQUEST FOR BUILDING

SAN JOSE AVE & BETHEL AVE ON THE NORTH AND SOUTH ARE PAVED WITH CURB AND GUTTER, AND MAINTAINED BY THE CITY OF ALBUQUERQUE. THE SITE CURRENTLY DRAIPS AT 1-2' FROM EAST TO WEST. HISTORICAL SITE RUNOFF OUTFALL LOCATIONS WERE AT THE UNCHANGED CURB AND GUTTER STRIPS. IMPROVEMENTS ONLY TO THE GRADING (CONSTR-N) IS PROPOSED WITHIN THE CITY R.O.W. THE CURRENT POND WILL BE REMOVED SINCE UPSTREAM DETENTION HAS BEEN PROVIDED WITH DEVELOPMENT. THE SITE IS NOT IMPACTED ADVERSELY BY ANY OFF-SITE DRAINAGE (CONSTR-N) OF THE IMPERVIOUS (BOT-N, 0.2 AC.) 0.65 INCH SIGNAL. THE EAST IS CONVEYED TO THE NEW WATER QUALITY RETENTION POND, AND IS INCLUDED IN THE CALCULATIONS.

Scale: 1" = 20'

PANEL # 342 G



ZONE M-14

1. ALL WORK WITHIN THE RIGHT-OF-WAY SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE STANDARD SPECS. FOR PUBLIC WORKS CONSTRUCTION, 1986, 9TH UPDATE.
2. AN EXCAVATION/CONSTRUCTION PERMIT IS REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY R.O.W. 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. ALL LANDSCAPING AREA SHALL BE SOFT-LINED WITH NATIVE VEGETATION AND/OR GRASS. ASPHALT PARKING AREA SHALL DRAIN DIRECTLY TO CURB CUT OR SDWV CULVERT.
5. CONTRACTOR SHALL ENSURE THAT NO SITE SOILS/SEDIMENT OR SILT ENTER THE RIGHT-OF-WAYS DURING CONSTRUCTION.
6. REVEGETATE ALL AREAS DISTURBED DUE TO CONSTRUCTION PER CITY OF ALBUQ. SPEC. 1012, NATIVE SEED MIX.
7. MAXIMUM SITE GRADING WITHOUT EROSION PROTECTION: 3:1 HORIZONTAL TO 1 VERTICAL, 3:1. ALL DIMENSIONS TO FACE OF CURB, UNLESS NOTED OTHERWISE. LANDSLOPES OF DETENTION/WATER QUALITY POND WITH BURIED RIPRAP SIMILAR TO SPECIFIED COBBLES OF SWALE SECTION.

EXIST. SPOT ELEVATION	+24.0
EXIST. CONTOUR	10
NEW SPOT ELEVATION	24.0
NEW CONTOUR	12
NEW SWALE	
DRAINAGE DIRECTION, EXISTING	
TOP OF CURB, EXISTING	TC
FLOWLINE	FL
EXISTING POWER POLE	o
FACE OF CURB/FACE OF CURB	F-F

LEGAL DESCRIPTION
LOT 1A-1, BROADWAY INDUSTRIAL CENTER, UNIT 2
ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO

AREA OF SITE: 1.0, 0.85 AC. DISTURBED

ZONING: SU-2 HM (MANUFACTURING)

MINIMUM SETBACKS: 5' FRONT AND SIDE LINES

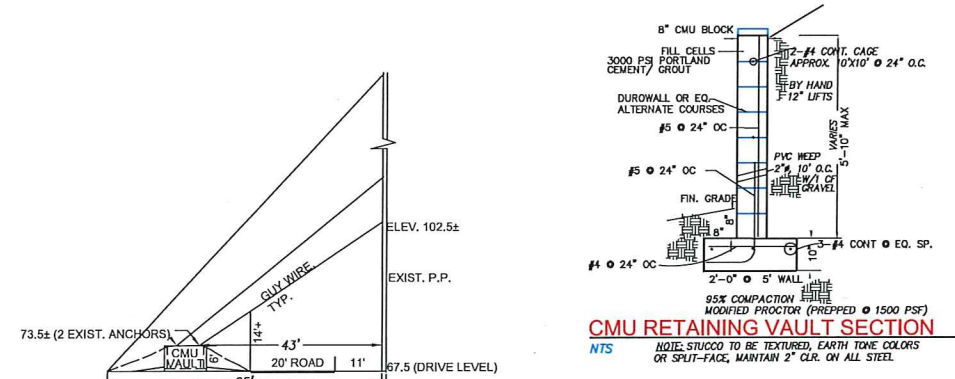
PARKING REQUIREMENTS
PROVIDED AND EXISTING FOR OFFICE ON ADJACENT LOT 1A-2, 11 SPACES

LANDSCAPE REQUIREMENTS
SEE PROFESSIONAL LANDSCAPE PLAN PROVIDED BY HILLTOP LANDSCAPE
ARCHITECTS & CONTRACTORS.

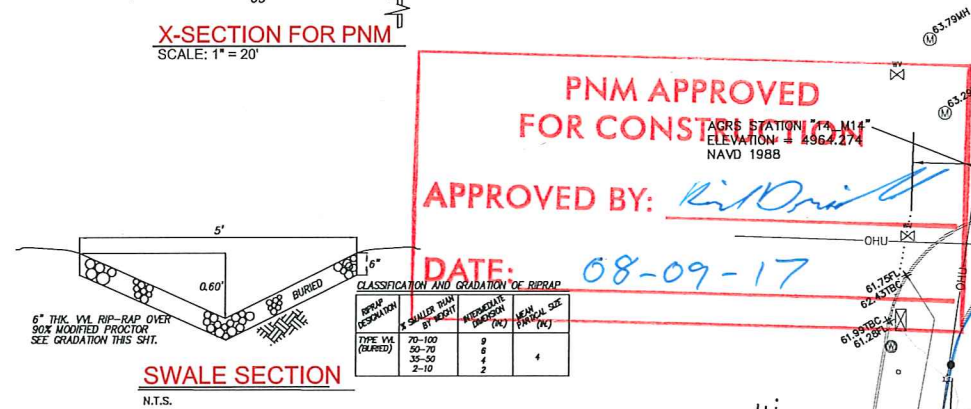
SOLID WASTE - REFUSE COLLECTION
ROLL-OFF SERVICE AND/OR AGREEMENT PROVIDED BY SOLID WASTE DEPT.
FOR OFFICE FROM LOT A1-2 (ADJACENT ON THE EAST)

PROJECT BENCHMARK
TOP OF AGRS MONUMENT AT THE PROJECT NORTHWEST CORNER / ESE
CURB RETURN MSL ELEVATION = 4964.27, SEE PLAN.

TOPOGRAPHIC DESIGN SURVEY
PROVIDED BY ALPHA PRO SURVEYING, LLC. DATED 2015



X-SECTION FOR PNM
SCALE: 1" = 20'



DETERMINE POND SIZE

DETENTION POND PER HYDROGRAPH AND DPM, Section A.8
STORAGE VOLUME (Required) = VOLUME AREA ABOVE ALLOWABLE RELEASE

TOTAL FOR BOTH SITES

Discharge, CFS

Time, Hr.

$t_p = 0.25 \times A_D / A_T$

VOL. POND Detention = $(0.45 + 0.11)/2 \times 3.1 \text{ CFS} \times 3600 \text{ s/Hr.}$
= 3125 C.F.

SIZE OUTLET : $Q = CA\sqrt{2gh}$ Where: $C = 0.7$
 $Q_o = 2.5 \text{ CFS}$ $A_o = 0.29 \text{ SF (1 CMU or EQUIV.)}$
 $H = 2.5'$
 $g = 32 \text{ ft/s}^2$

USE 2-4XS OPENINGS

$t_d = 2.107^*E^{*A_T}/Q_o - .25^*A_D/A_T$

HYDROLOGIC METHODS PER SECTION 22.2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL (DPM)
REVISED JANUARY 1993 FOR CITY OF ALBUQUERQUE ADOPTED BY THE COUNTY OF BERNALILLO
DISCHARGE RATE: $Q = OPEAK \times AREA$, "Peak Discharge Rates For Small Watersheds"
VOLUMETRIC DISCHARGE: $VOLUME = EWeighted \times AREA$
 $P100 = 2.35$ Inches, Zone 2 Time of Concentration, $TC = 10$ Minutes
DESIGN STORM: 100-YEAR/6-HOUR, 10-YEAR/6-HOUR [J] = 10 YEAR VALUES

TOTAL AREA = 1.0 ACRES, WHERE EXCESS PRECIP. 'C' = 1.13 in. [0.52]
PEAK DISCHARGE, $Q_{100} = 3.1$ CFS [1.7], WHERE UNIT PEAK DISCHARGE 'W' = 3.1 CFS/AC. [1.7]
THEREFORE: VOLUME 100 = 4102 CF [1888]

DETERMINE LAND TREATMENTS, FOR STUDY AREA	AREA	LAND TREATMENT	PEAK DISCHARGE Q peak	VOLUMETRIC DISCHARGE E
UNDEVELOPED	0.16 AC. (16%)	A	1.56[0.38]	0.53[0.13]
LANDSCAPING	0.15 AC. (15%)	B	2.28[0.95]	0.78[0.28]
GRAVEL & COMPACTED SOIL	0.25 AC. (25%)	C	3.14[1.71]	1.13[0.52]
ROOF - PAVEMENT	0.44 AC. (44%)	D	4.70[3.14]	2.12[1.34]
	1.0 AC.			

THEREFORE: $E_{\text{Weighted}} = 1.41 \ln[x.x]$ & $\text{VOLUME } 100 = 5118 \text{ CF}$
 $Q_{100} = 3.4 \text{ CFS}$
 $Q_{10} = 2.0 \text{ CFS}$

RECOMMEND : 1.) ROUTE DEVELOPED RUNOFF THROUGH EXISTING/UPGRADED SOFT LANDSCAPING INCLUDING DEPRESSED LANDSCAPING

2.) WATER QUALITY POND SHALL RETAIN THE "FIRST FLUSH" VOLUME OF;
 0.34 INCHES X IMPERVIOUS AREA (SF)/12 (FROM LOT 1A-2) +
 0.34"/12 X 0.44 AC. X 43560 SF = 543 CF (FROM LOT 1A-1)
 0.25 AC. X 0.34"/12 X 43560 SF = 309 CF (LOT 1A-2)] = 852 CF TOTAL

RIPRAP OUTFALL

Given Input Data:	Computed Results:	
Flowrate	Fluxrate	3.1532E 03
Transpoidal	Velocity	2.512E 05
Solving for	Full Transpoidal	2.512E 05
0.0200 ft	Flow area	2.042E 02
Manning's n	Flow perimeter	6.175E 02
0.0050	Flow radius	0.338E 01
Depth	Top width	2.830E 02
0.5000 ft	Perimeter	7.245E 02
Height	Left slope	2.045E 01
0.7000 ft	Right slope	0.2300 ft (V/H)
Bottom width		
1.0000 ft		
Left slope		
2.2300 ft (V/H)		
Right slope		
0.2300 ft (V/H)		

3.) RECOMMEND PEAK SHAVING DETENTION
 OR BOTH LOGS 1+1 AND -2.
 DET. HISTORIC RELEASE
 70% A, 10% B, 20% C ASSUMED
 THEREFORE, THEIR UNIT DISCHARGE =
 $Q_p = 3.153 \text{ CFS PER AC}$
 0.2 AC @ 1.5 AC, X2 = 3.2 CFS
 PER DISC. WITH SR. HYDROL. COA
 0.2 AC, TO BETHEL, @ 3.1 CFS = 0.6 CFS.

I, PHILIP W. CLARK, A PROFESSIONAL ENGINEER LICENSED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW MEXICO, DO HEREBY CERTIFY THAT I HAVE VISITED THE SITE SHOWN HEREON, AND THAT THE CONTOURS SHOWN REPRESENT THE EXISTING GROUND CONDITIONS, AND DO FURTHER CERTIFY THAT NO EARTHWORK OF ANY KIND, NOR ANY DISTURBANCE OF THE EXISTING GROUND HAS OCCURRED ON THIS SITE SINCE THE CONTOURS WERE DETERMINED.

PHILIP W. CLARK NMPE #10265