CITY OF ALBUQUERQUE

Richard J. Berry, Mayor

November 21, 2017

Jonathan Niski, P.E.
Tierra West, LLC
5571 Midway Park Place NE
Albuquerque, NM, 87109

RE: Coronado Village – Water Tank
Grading and Drainage Plan
Stamp Date: 11/21/17
Hydrology File: C18D017

Dear Mr. Niski:

Based upon the information provided in your re-submittal received 11/21/2017, the Grading and Drainage Plan is approved for Foundation Permit.

As a reminder once the foundation is poured, please provide Hydrology with an Elevation Certificate.

If you have any questions, please contact me at 924-3995 or rbrissette@cabq.gov.

Sincerely,

Renée C. Brissette

Renée C. Brissette, P.E. CFM
Senior Engineer, Hydrology
Planning Department

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

Orig: Drainage File

Albuquerque - Making History 1706-2006

TIERRA WEST, LLC

5571 Midway Park Place NE Albuquerque, NM 87109
(505) 858-3100 Fax (505) 858-1118 1-800-245-3102
tierrawestllc.com

November 20, 2017

Renèe C. Brissette, P.E. CFM
Senior Engineer Hydrology
PO Box 1293
Albuquerque, NM 87103

RE: CORONADO VILLAGE-WATER TANK
GRADING AND DRAINAGE PLAN
STAMP DATE 11/16/17
HYDROLOGY FILE: C18D017

Dear Ms. Brissette:

Please find the following responses addressing your comments listed below:

1. Please show and label the flood plain "AO" on the Grading Plan.
   The flood plain as it is currently shown on the FIRM map is identified on the Grading Plan

2. Please provide the benchmark information for the survey contour information provided.
   The benchmark information is now shown on the Grading Plan.

3. Please relocate the first flush pond. It needs to be directly downslope of the proposed tank so that the runoff goes into it prior to running down the concrete channel rundown to the North Diversion Channel.
   We would agree with this statement under normal circumstances, however because this is a water tank the New Mexico Environmental Department will not allow a pond next to the tank. To account for the amount of water that needs to be retained we proposed a first flush pond at the end of the roadway that does drain to the same location as the tank and would retain the same amount of flow that is required.

4. Please either relocate the proposed new tank out of the "AO" flood plain or raise the pad elevation one foot above the 100 year elevation for this "AO" flood plain. This 100 year elevation may have to be calculated.
   We have added a Basin Map to the Sheet showing the area that drains to the channel. This area generates a total 100 yr flow of 12.63 cfs. Without the tank in that location that would amount to a depth of 0.19 feet which does not meet the definition of a flood plain. However the tank elevation is one foot above that elevation at that specific location

5. If the location of the proposed new tank is to remain, then please create a diversion swale around the tank to allow the existing runoff flow the concrete channel rundown to the North Diversion Channel and not have the proposed new tank be a blockage for the existing drainage flow.
   As mentioned above the amount of flow around the tank is 12.63 cfs. As shown on the cross-section there is room for all of that water to travel around the tank and only obtain a depth of 0.50 feet.

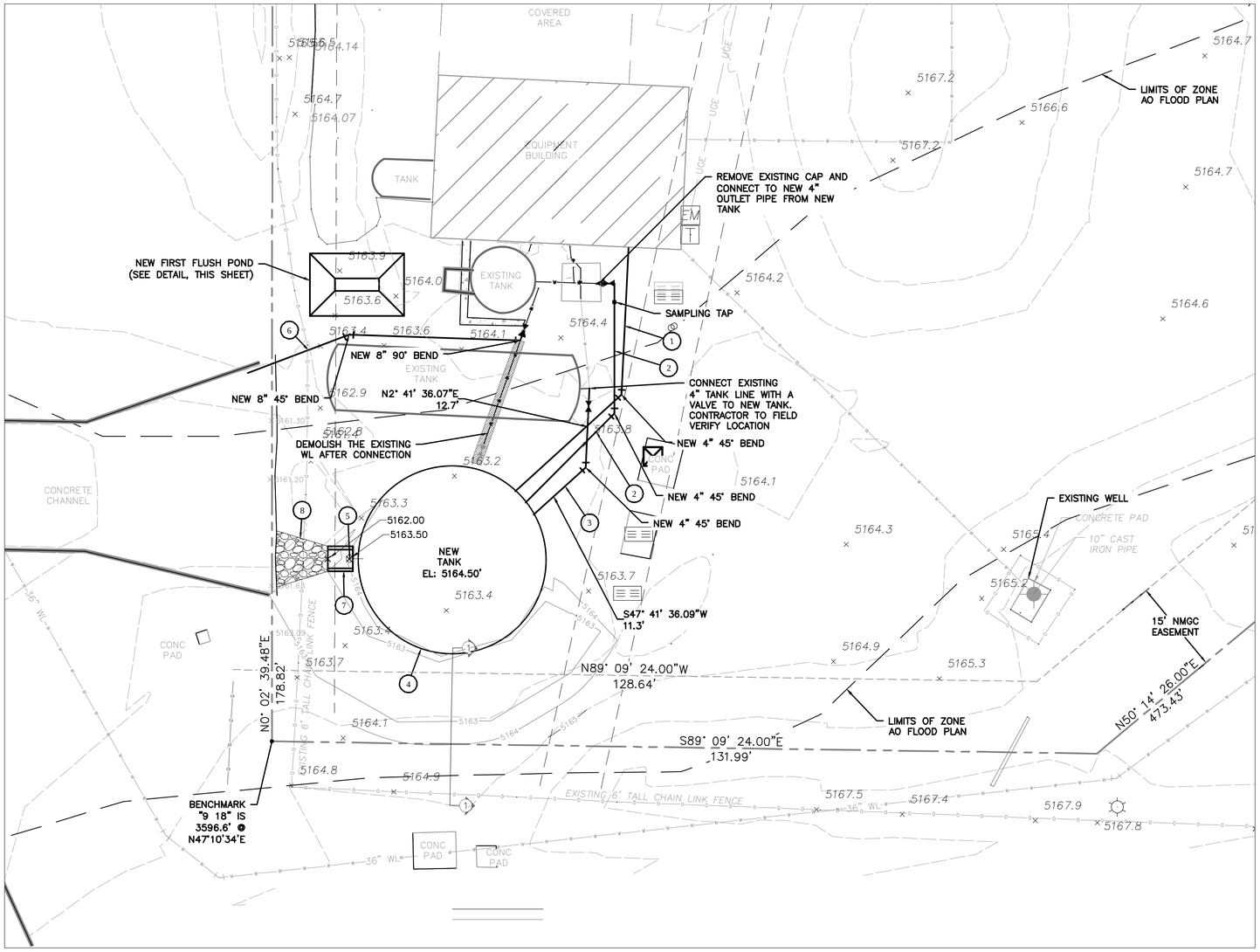
If you have any questions or need additional information regarding this matter, please do not hesitate to contact me.

Sincerely,

Ronald R. Bohannan, P.E.

JN: 2014034

RRB/jn/kw

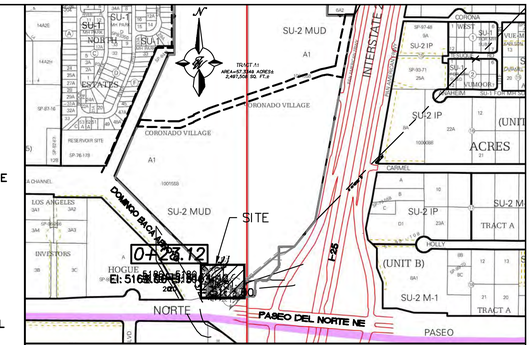


LEGEND

- EXISTING BOUNDARY LINE
- EXISTING EASEMENT
- EXISTING FLOOD ZONE
- RIGHT-OF-WAY
- EXISTING 6' TALL CHAIN LINK FENCE
- EXISTING CURB & GUTTER
- EXISTING BUILDING
- EXISTING SIDEWALK
- 5164 EXISTING CONTOUR
- EXISTING WATER LINE
- UGE EXISTING UNDERGROUND ELECTRICAL
- GAS EXISTING GAS LINE
- EXISTING STREET LIGHTS
- EM EXISTING ELECTRIC METER
- EXISTING ELECTRIC PULLBOX
- EXISTING TRANSFORMER
- T EXISTING TELEPHONE PEDESTAL
- PROPOSED WATER LINE
- PROPOSED CONTOUR MAJOR
- PROPOSED CONTOUR MINOR

KEYED NOTES

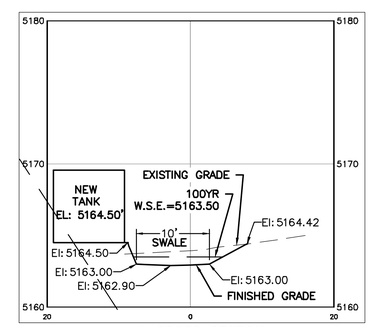
1. 1-1/4" CONDUIT FOR PRE-WIRED FLOAT SWITCH (LOW WATER FIRE PUMP CUTOFF)
2. 4" COATED STEEL OUTLET PIPE
3. 4" COATED STEEL FILL LINE
4. 1/4" STEEL RING (30' DIA)
5. 8" STEEL OUTFLOW PIPE
6. 8" COATED STEEL DISCHARGE PIPE
7. 3'-0" WIDE CONCRETE CHANNEL (SEE DETAIL, THIS SHEET)
8. RIPRAP (SEE DETAIL, THIS SHEET)



VICINITY MAP: C-17/C-18

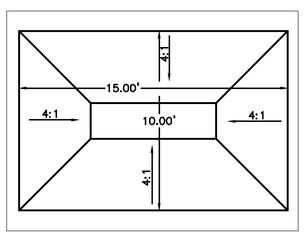
FIRM MAP: 35001C0138H

A.C.S. MONUMENT "9 18" STANDARD ALUMINUM DISC (FOUND IN PLACE)
NEW MEXICO STATE PLANE COORDINATES (CENTRAL ZONE-N.A.D. 1983)
N= 1,521,497.624
E= 1,542,501.428
PUBLISHED EL=5232.470
GROUND TO GRID FACTOR=0.999664563
DELTA ALPHA ANGLE=-0°11'19.69"



A-CROSS SECTION
SCALE: 1"=10'

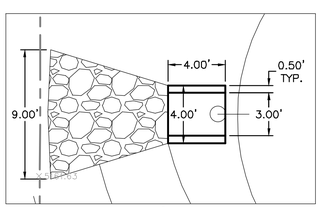
CAUTION:
ALL EXISTING UTILITIES SHOWN WERE OBTAINED FROM RESEARCH, AS-BUILTS, SURVEYS OR INFORMATION PROVIDED BY OTHERS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO AND INCLUDING ANY EXCAVATION, TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS, PRIOR TO STARTING THE WORK. ANY CHANGES FROM THIS PLAN SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.



CALCULATION

FIRST FLUSH CALCULATION: 2221 SF (TANK AREA) X 0.028 FT (INITIAL RAINFALL) = 63 CUBIC FEET REQUIRED (82 CUBIC FEET PROVIDED)

FIRST FLUSH POND DETAIL
SCALE: 1"=4'



RUNDOWN/RIPRAP DETAIL
SCALE: 1"=5'

EXISTING DRAINAGE:

THIS IS IS WITHIN THE SOUTHWEST CORNER OF THE EXISTING CORONADO VILLAGE MOBILE HOME PARK. CORONADO VILLAGE IS LOCATED IN THE NORTHWEST QUADRANT AT THE INTERSECTION OF I-25 AND PASEO DEL NORTE. CONTAINING APPROXIMATELY 58 ACRES. IN THIS PARTICULAR AREA THERE IS AN EXISTING PRIVATE WELL AND WATER TREATMENT FACILITY WITH STORAGE TANKS THAT PROVIDES POTABLE WATER TO CORONADO VILLAGE. THE SITE CURRENTLY DRAINS FROM EAST TO WEST AND INTO A SERIES OF DROP INLETS WITHIN THE STREETS WHERE THE FLOW IS THEN CONVEYED TO THE DOMINGO BACA ARROYO CHANNEL. THERE WILL BE NO CHANGES TO THE EXISTING DRAINAGE PATTERN.

THE SITE WHERE THE TANK IS LOCATED IS CURRENTLY SHOWN TO BE IN A DESIGNATED AO FLOOD ZONE OF A DEPTH NOT MORE THAN A FOOT. THIS IS SHOWN ON FIRM MAP #35001C0137H. IT SHOULD BE NOTED THAT WITH THE REDEVELOPMENT OF THE PASEO DEL NORTE INTERCHANGE THIS FLOOD ZONE WAS EFFECTIVELY CUT OFF. CORONADO VILLAGE MAY PROCESS A LETTER OF MAP REVISION (LOMR) AT SOME POINT IN THE FUTURE.

PROPOSED DRAINAGE:

THIS PROJECT WILL DRAIN IN THE SAME PATTERN THAT CURRENTLY EXISTS. THE NEW TANK WILL BE PLACED ADJACENT TO THE EXISTING STORAGE TANKS AND THE FINISHED FLOOR ELEVATION WILL BE JUST OVER ONE FOOT ABOVE THE EXISTING GROUND. ANY WATER THAT DRAINS FROM THAT AREA WILL STILL DRAIN TO AN EXISTING CONCRETE CHANNEL THAT IS CONNECTED TO THE DOMINGO BACA ARROYO CHANNEL.

TO MEET THE FIRST FLUSH REQUIREMENT, THE AREA OF THE TANK (2,221 SF) WAS MULTIPLIED BY THE INITIAL RAINFALL OF 0.34 INCHES (0.028 FT) RESULTING IN A REQUIRED RETENTION VOLUME OF 63 CUBIC FEET. AS THE TANK IS NEAR THE CHANNEL AND THERE IS NO ROOM FOR PONDING AREA DOWNSTREAM OF THE TANK A SMALL PONDING AREA WAS PLACED AT THE END OF THE ACCESS ROAD BEHIND THE TREATMENT BUILDING. THE POND IS SIZED TO HOLD 82 CUBIC FEET OF VOLUME AT A DEPTH OF NO MORE THAN ONE FOOT.

N

GRAPHIC SCALE
10 5 0 5 10
SCALE: 1"=10'

ROUGH GRADING APPROVAL — DATE

ENGINEER'S SEAL
RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER
11/21/2017
RONALD R. BOHANNAN P.E. #7868

CORONADO VILLAGE
ALBUQUERQUE, NM

NEW STORAGE TANK GRADING PLAN

TIERRA WEST, LLC
5571 MIDWAY PARK PLACE NE
ALBUQUERQUE, NM 87109
(505) 858-3100
www.tierrawestllc.com

DRAWN BY	JJG
DATE	11/21/17
	2014034_UTILITY PLAN-NMED
SHEET #	C1
JOB #	2014034

LEGEND

BASIN

Channel Capacity

Weir Equation:

$$Q = CLH^{3/2}$$

Q= Flow
C = 2.95
L= Length of weir
H = Height of Weir

Existing Flood Plain as shown on FIRM Map

$$12.63 = 2.95 * 50 * H^{3/2}$$

H=0.19'
With the existing Q=12.63 cfs since there is no drainage from the new interchange, the current depth of the flood plain is 0.19'

Depth of channel between proposed tank and property line

$$12.63 = 2.95 * 12.5 * H^{3/2}$$

H = 0.50'
Even after the tank is constructed the flood plain is only 0.5' deep and is confined to an area outside of the tank foundation.

Weighted E Method

On-Site Basins

Basin	Area (sf)	Area (acres)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	100-Year Weighted E (ac-ft)	100-Year Volume (ac-ft)	100-Year Flow cfs	10-Year Weighted E (ac-ft)	10-Year Volume (ac-ft)	10-Year Flow cfs
1	303.877	6.98	85%	5.957552	0%	0.00	13%	0.91	2%	0.10	0.631	0.367	12.63	0.199	0.116	4.14

Equations:

Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed*Ad / (Total Area)

Volume = Weighted D * Total Area

Flow = Qa * Aa + Qb * Ab + Qc * Ac + Qd * Ad

Excess Precipitation, E (inches)		
Zone 2	100-Year	10 - Year
E_a	0.53	0.13
E_b	0.78	0.28
E_c	1.13	0.52
E_d	2.12	1.34

Peak Discharge (cfs/acre)		
Zone 2	100-Year	10 - Year
Q_a	1.56	0.38
Q_b	2.28	0.95
Q_c	3.14	1.71
Q_d	4.70	3.14

ENGINEER'S SEAL

RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER

11/21/2017

RONALD R. BOHANNAN
P.E. #7868

CORONADO VILLAGE
ALBUQUERQUE, NM

NEW STORAGE TANK DRAINAGE PLAN

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DRAWN BY JJG

DATE 11/21/2017

2014034_UTILITY PLAN-NMED

SHEET # C2

JOB # 2014034