CITY OF ALBUQUERQUE

Richard J. Berry, Mayor

January 11, 2016

Ronald R. Bohannan
Tierra West, LLC
5571 Midway Park Pl, NE
Albuquerque, NM, 87109

RE: Westgate Mobile Home Park
Site Plan for Building Permit / Drainage Supplement
Engineer's Stamp Date 12-28-2015 (File: L09D44)

Dear Mr. Bohannan:

Based upon the information provided in your submittal received 12-30-2015, the above-referenced plan is approved for Grading Permit. The Grading and Drainage Plan for this project was approved by the City in 2000, and still appears to be appropriate for this site.

Please ensure to coordinate the need for an approved Erosion and Sediment Control Plan from the Stormwater Engineer prior to any earthwork.

The supplemental drainage submittal and Grading/Drainage plan satisfies Hydrology's requirement from the Development Review Board hearing of 12-9-2015. The condition of final (Site Plan for Building Permit) sign off from Planning was to show the layout of the first flush ponds on the site plan.

If you have any questions, you can contact me at 924-3986.

Sincerely,

Abiel Carrillo, P.E.
Principal Engineer, Planning Dept.
Development Review Services

Orig: Drainage file

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: West Gate Mobile Home Park Building Permit #: _____ City Drainage #: L09D44

DRB#: 1010551 15DRB-7034 EPC#: _____ Work Order#: _____

Legal Description: TR2-A WestGate Mobile Home Park Add Redivision of TR 2 and Port of Unplat,TRS 1&3 Unplatted Land Snow Vista w/n Sec 33 T10N R2E Exc Nely

City Address: Port of TR 1, TR of Land Being Nely Port of TR 1 Unplatted Land Snow Vista within Sec 33 T10N R2E

Engineering Firm: Tierra West, LLC Contact: Ronald R. Bohannan

Address: 5571 Midway Park Place NE Albuquerque NM 87109

Phone#: 505-858-3100 Fax#: 505-858-1118 E-mail: rrb@tierrawestllc.com

Owner: Deemer Properties NM LLC Contact: _____

Address: 2455 Roop Rd Gilroy CA 95020

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

Architect: _____ Contact: _____

Address: _____

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

Other Contact: _____ Contact: _____

Address: _____

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

Check all that Apply:

DEPARTMENT:

X HYDROLOGY/ DRAINAGE

_____ TRAFFIC/ TRANSPORTATION

_____ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

_____ ENGINEER/ ARCHITECT CERTIFICATION

_____ CONCEPTUAL G & D PLAN

_____ GRADING PLAN

_____ DRAINAGE MASTER PLAN

X DRAINAGE REPORT

_____ CLOMR/LOMR

_____ TRAFFIC CIRCULATION LAYOUT (TCL)

_____ TRAFFIC IMPACT STUDY (TIS)

_____ EROSION & SEDIMENT CONTROL PLAN (ESC)

X OTHER (SPECIFY) Modification of Approved Drainage Rpt

1st Flush, Referencing Drainage Plan L9/D25

Stamped 12/26/2000

IS THIS A RESUBMITTAL?: _____ Yes _____ No

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

_____ BUILDING PERMIT APPROVAL

_____ CERTIFICATE OF OCCUPANCY

_____ 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

X GRADING PERMIT APPROVAL

_____ SO-19 APPROVAL

_____ PAVING PERMIT APPROVAL

_____ GRADING/ PAD CERTIFICATION

_____ WORK ORDER APPROVAL

_____ CLOMR/LOMR

_____ PRE-DESIGN MEETING

_____ OTHER (SPECIFY) _____

DATE SUBMITTED: 12/29/2015 By: Ronald R. Bohannan

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

DRAINAGE MANAGEMENT PLAN

For

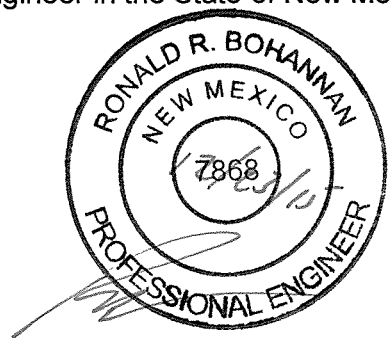
Westgate Mobile Home Park
First Flush Retention

Prepared by:

Tierra West, LLC
5571 Midway Park Place NE
Albuquerque, New Mexico 87109

December 28, 2015

I certify that this report was prepared under my supervision, and I am a registered professional engineer in the State of New Mexico in good standing.



Ronald R. Bohannan
PE # 7868

Job No. 2015099

Westgate Mobile Home Park – First Flush Retention

The purpose of this submittal is to adjust the outfall ponds for the mobile home park located at the northwest corner of 98th Street and Sage Road. The adjustment of the ponds is to retain the first flush elevation onsite before outfalling to the storm drain on 98th Street.

The mobile home park consists of 13 drainage basins that surface flow to a drainage pond within its respective area and outfalls from the pond to the storm drain located on 98th Street. Although there are a series of ponds onsite, two of the ponds act as the outfall for the drainage. Basins 1 thru 6 are directed towards the excess pond located within the public right-of-way, the outfall of the pond connects to the back of a catch basin underneath 98th street. Basins 7 thru 13 are directed towards a series of ponds that eventually makes its way towards Pond F. Like the public right-of-way pond, Pond F connects to the back of a catch basin underneath 98th Street.

The concept of capturing the first flush for water quality retention is the same for both ponds; keep both pond grades as-is and raise the pond outfall inverts high enough to maintain the required volume of retention below the outfall. The grades, invert elevations, and drainage basins were referenced from the approved grading and drainage plan stamped 12/26/2000 (L9/D25).

Pond F:

The pond has an average bottom elevation of 5158.36 and slopes towards the outfall which has an elevation of 5158.0. The volume of raising the outfall invert elevation was calculated and can be found on the following page. The total first flush retention required for the impervious area of Basins 1 thru 6 is 9768 cubic feet. In order to meet this capacity, the invert of the pond outfall needs to be raised 1 foot from the existing elevation.

Excess ROW Pond:

The pond has an average bottom of elevation of 5143.5 and has a Single D drop inlet for the outfall. The volume of raising the outfall invert elevation was calculated and can be found on the following page. The total first flush retention required for the impervious area of Basins 7 thru 13 is 7993.9 cubic feet. In order to meet this capacity, the invert of the pond outfall needs to be raised 0.22 feet above the existing inlet grate elevation.

RETENTION VOLUME CALCULATIONS

ROW POND (Basins 1 thru 6):

Impervious Area = 6.477 ac = 282,138.12 ft^2

Retention Volume Required = (0.44”-0.1”) * 282138.12 ft^2 = 7993.9 ft^3

Raise Inlet Grate 0.22 ft:

Pond Area $_{BOP}$ = 37884.3 ft^2

Pond Area $_{New\ Inlet\ Elev.}$ = 38095.8 ft^2

Retention Volume = (37884.3 + 38095.8) / 2 * 0.22 = 8357.8 ft^3

Retention Volume > Volume Required Therefore, OK

POND F (Basins 7 thru 13):

Impervious Area = 7.915 ac = 344,777.4 ft^2

Retention Volume Required = (0.44”-0.1”) * 344777.4 ft^2 = 9768.7 ft^3

Raise Outfall Invert 1 ft:

Pond Area $_{BOP}$ = 9054.9 ft^2

Retention Volume $_{from\ BOP\ to\ existing\ invert}$ = (9054.9 / 2) * 0.36 = 1630 ft^3

Pond Area $_{New\ Invert\ Elev.}$ = 16376 ft^2

Retention Volume $_{from\ new\ invert\ to\ BOP}$ = (16376 + 9054.9 / 2) * 0.64 = 8138 ft^3

Total Retention Volume = 1630 + 8138 = 9768 ft^3

Retention Volume = Volume Required Therefore, OK

WEIGHTED E TABLE FROM DRAINAGE REPORT DATED 10-23-2000

Sage Mobile Home park
Weighted E Method
Zone No. 1

ON-SITE - DEVELOPED CONDITIONS

												100-Year				
Basin	Area	Area	Area	Treatment A		Treatment B		Treatment C		Treatment D		Weighted E	V 360	V 1440	V 10 day	Flow
	(sf)	(acres)	(sq. miles)	%	(acres)	%	(acres)	%	(acres)	%	(acres)	(ac-ft)	(ac-ft)	(ac-ft)	(ac-ft)	cfs
1	37612	0.863	0.001349145	0%	0	7%	0.057	49%	0.427014	44%	0.380	1.400	0.101	0.115	0.147	3.00
2	144554	3.319	0.005185161	0%	0	3%	0.092	28%	0.944358	69%	2.282	1.655	0.458	0.545	0.737	12.87
3	16901	0.388	0.00060624	0%	0	0%	0.000	0%	0	100%	0.388	1.970	0.064	0.079	0.111	1.70
4	172194	3.953	0.00617661	0%	0	3%	0.133	34%	1.347997	63%	2.472	1.592	0.524	0.619	0.827	14.94
5	59704	1.371	0.002141586	0%	0	4%	0.055	43%	0.583489	53%	0.732	1.501	0.171	0.199	0.261	4.99
6	36765	0.844	0.001318763	0%	0	23%	0.191	51%	0.431263	26%	0.222	1.176	0.083	0.091	0.110	2.60
7	263739	6.055	0.009460335	0%	0	8%	0.488	34%	2.063073	58%	3.503	1.531	0.773	0.907	1.202	22.22
8	94982	2.180	0.00340701	0%	0	23%	0.492	22%	0.489323	55%	1.199	1.457	0.265	0.311	0.412	7.64
9	57944	1.330	0.002078455	0%	0	0%	0.000	52%	0.69171	48%	0.639	1.460	0.162	0.186	0.240	4.78
10	59427	1.364	0.00213165	0%	0	24%	0.324	37%	0.503747	39%	0.537	1.300	0.148	0.168	0.214	4.45
11	25521	0.586	0.00091544	0%	0	39%	0.228	38%	0.221932	23%	0.136	1.092	0.053	0.059	0.070	1.69
12	49380	1.134	0.001771264	0%	0	0%	0.000	38%	0.426506	62%	0.707	1.601	0.151	0.178	0.238	4.31
13	28439	0.653	0.001020109	0%	0	0%	0.000	35%	0.228504	65%	0.424	1.627	0.089	0.105	0.141	2.51
14	60000	1.377	0.002152204	0%	0	0%	0.000	44%	0.607441	56%	0.770	1.538	0.176	0.206	0.271	5.11
Totals	1107162.00	25.42	0.039713972										3.217	3.769	4.980	92.80

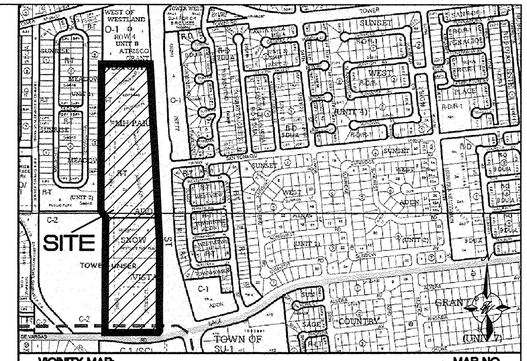
Equations:

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

V 360 = Weighted E * Total Area

V 1440 = V360 + Ad(P1440 - P 360)/12

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



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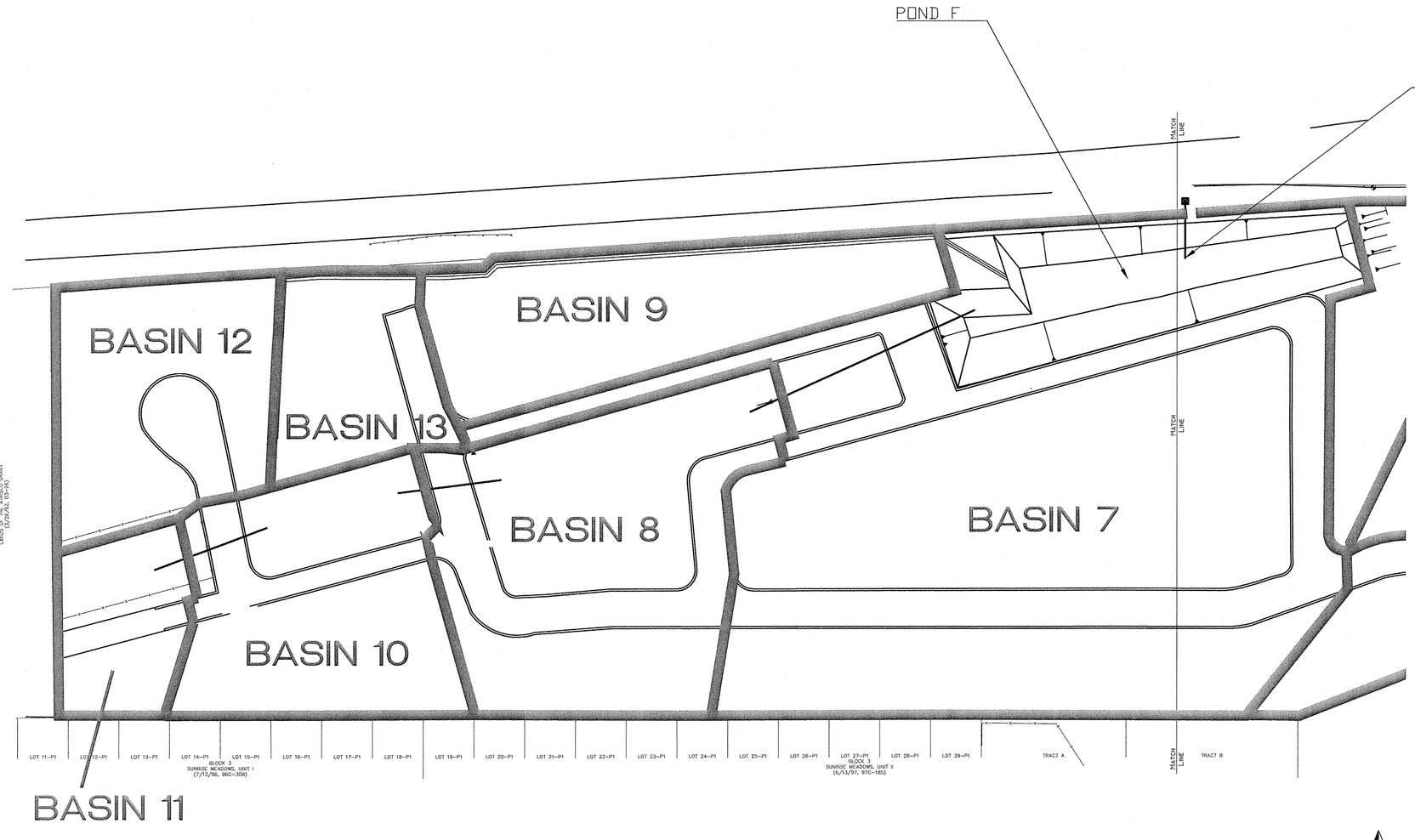
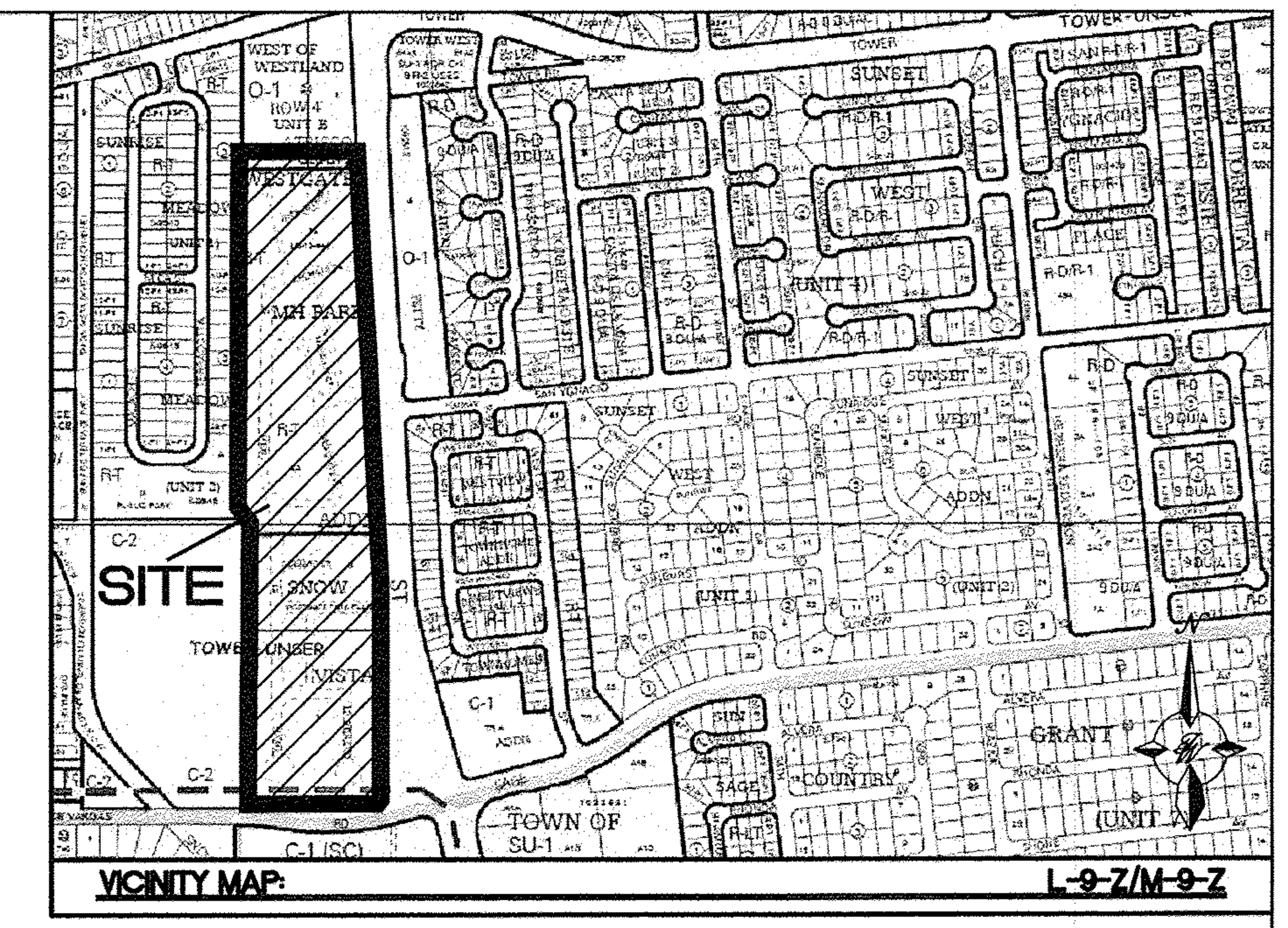


GRAPHIC SCALE

50 25 0 25 50

SCALE: 1"=50'

ENGINEER'S SEAL RONALD R. BOHANNAN NEW MEXICO 7868 PROFESSIONAL ENGINEER RONALD R. BOHANNAN P.E. #7868	WESTGATE MOBILE HOME PARK DRAINAGE BASIN MAP	DRAWN BY vp DATE 12/23/15 2015099 BASE-GR SHEET # C1
TIERRA WEST, LLC 5571 MIDWAY PARK PLACE NE ALBUQUERQUE, NM 87109 (505) 858-3100 www.tierrawestllc.com		JOB # 2015099



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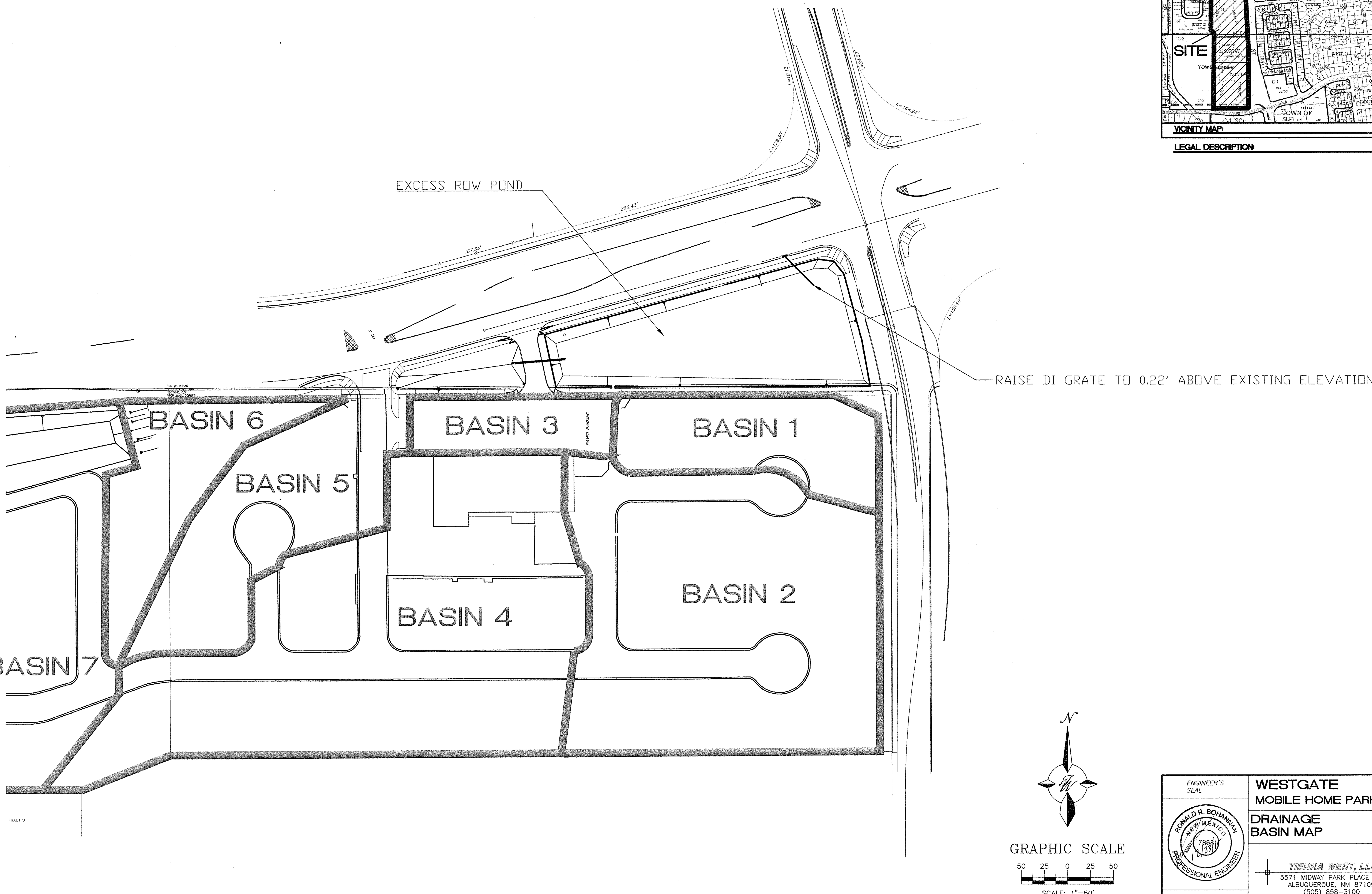

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RONALD R. BOHANNAN P.E. #7868		JOB # 2015099