

DRAINAGE AND TRANSPORTATION SHEET

(REV. 1/28/2003rd)

2011010
Drainage

PROJECT TITLE: Caliber's Shooting Range
DRB #: _____ EPC #: _____

ZONE MAP/DRG. FILE # H-17-Z
WORK ORDER #: _____

LEGAL DESCRIPTION: Tract B-1-F Netherwood Park
CITY ADDRESS: Southwest Corner of Cutler Avenue and Washington Street

ENGINEERING FIRM: Tierra West, LLC
ADDRESS: 8509 Jefferson NE
CITY, STATE: Albuquerque, NM

CONTACT: Jonathan Niski
PHONE: (505) 858-3100
ZIP CODE: 87113

OWNER: De Ponte Investments, Inc.
ADDRESS: P. O. Box 9304 AMS
CITY, STATE: Albuquerque, NM

CONTACT: Brent De Ponte
PHONE: 505-884-7077
ZIP CODE: 87119

ARCHITECT: Aria Architects
ADDRESS: 227 Jefferson St. NE
CITY, STATE: Albuquerque, NM

CONTACT: Daniel Puzak
PHONE: 505-506-2314
ZIP CODE: 87108

SURVEYOR: TBD
ADDRESS: _____
CITY, STATE: _____

CONTACT: _____
PHONE: _____
ZIP CODE: _____

CONTRACTOR: TBD
ADDRESS: _____
CITY, STATE: _____

CONTACT: _____
PHONE: _____
ZIP CODE: _____

CHECK TYPE OF SUBMITTAL:

- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN 1st SUBMITTAL, **REQUIRES TCL or equal**
- ☐ DRAINAGE PLAN RESUBMITTAL
- ☐ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☒ ENGINEER'S CERTIFICATION (HYDROLOGY)
- ☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT (TCL)
- ☐ ENGINEERS CERTIFICATION (TCL)
- ☐ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ☐ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SIA / FINANACIAL GUARANTEE RELEASE
- ☐ PRELIMINARY PLAT APPROVAL
- ☐ S. DEV. PLAN FOR SUB'D. APPROVAL
- ☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☐ FINAL PLAT APPROVAL
- ☐ FOUNDATION PERMIT APPROVAL
- ☐ BUILDING PERMIT APPROVAL
- ☐ CERTIFICATE OF OCCUPANCY (PERM.)
- ☒ CERTIFICATE OF OCCUPANCY (TEMP.)
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ WORK ORDER APPROVAL
- ☐ SO-19

WAS A PRE-DESIGN CONFERENCE ATTENDED:

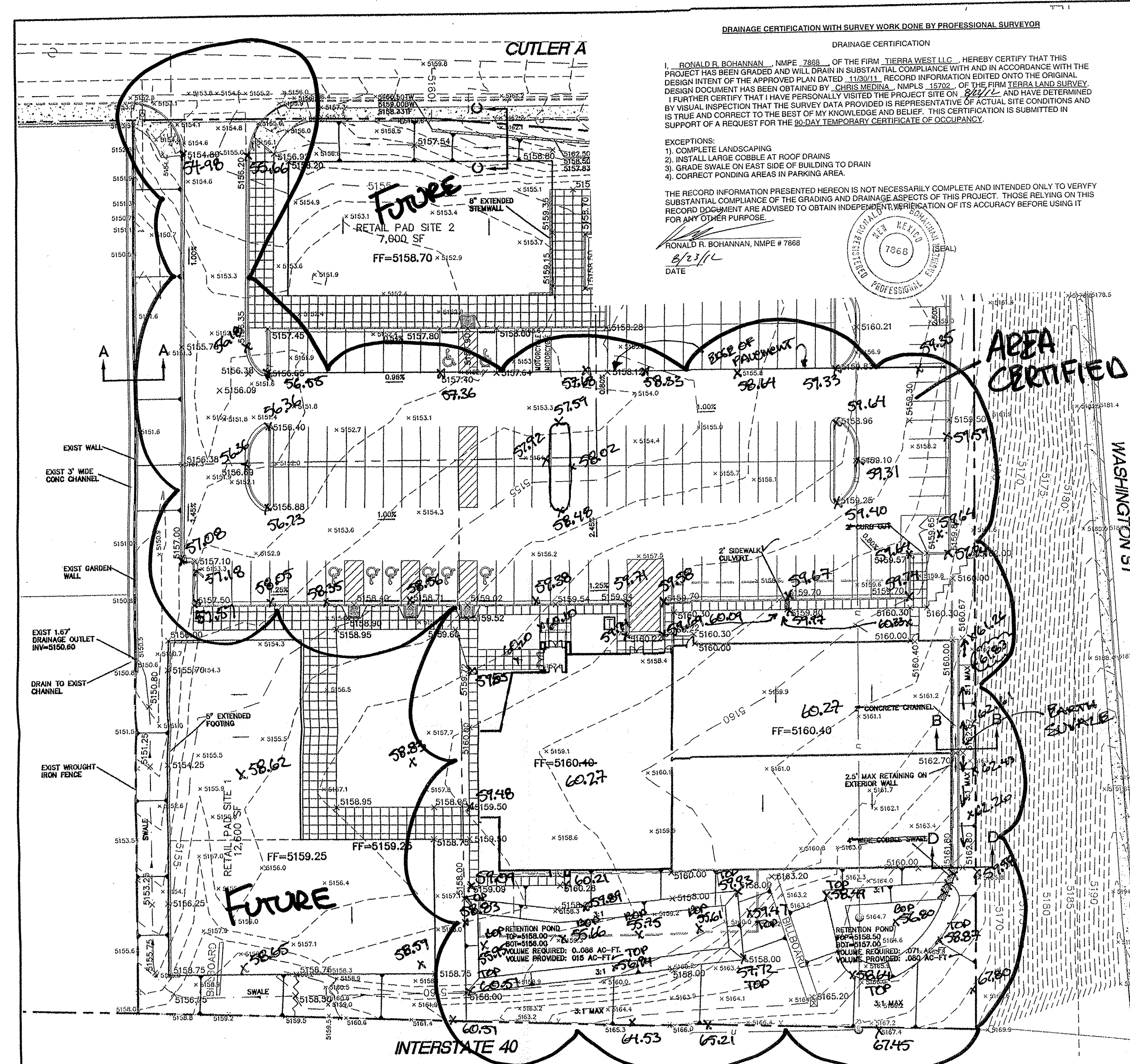
- ☐ YES
- ☐ NO
- ☐ COPY PROVIDED

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AUG 23 2012

DATE SUBMITTED: 8/22/2012 BY: Jonathan D. Niski, P.E.

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope of the proposed development defines the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plans:** Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.
2. **Drainage Plans:** Required for building permits, grading permits, paving permits and site plans less than five (5) acres.
3. **Drainage Report:** Required for subdivisions containing more than ten (10) lots or constituting five (5) acres or more.



Weighted E Method

Developed Flows

Basin	Area (sf)	Area (acres)	Treatment A		Treatment B		Treatment C		Treatment D		100-Year			10-Year			Flow (cfs)
			% (acres)	% (acres)	% (acres)	% (acres)	% (acres)	% (acres)	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Weighted E (ac-ft)	Volume (ac-ft)				
1	99,411	2.28	0%	0	20%	0.46	0%	0.00	80%	1.83	1.852	0.352	9.62	1.128	0.215	6.17	
2	See Retention Pond Spreadsheet																
3	See Retention Pond Spreadsheet																
4	13,239	0.30	0%	0	33%	0.10	0%	0.00	67%	0.20	1.678	0.042	1.19	0.990	0.025	0.73	
5	4,281	0.10	0%	0	100%	0.10	0%	0.00	0%	0.00	0.780	0.006	0.22	0.280	0.002	0.09	
OS-1	9,073	0.21	0%	0	0%	0.00	100%	0.21	0%	0.00	1.130	0.020	0.65	0.520	0.009	0.36	
OS-2	See Retention Pond Spreadsheet																
OS-3	See Retention Pond Spreadsheet																
OS-4	1,554	0.04	0%	0	0%	0.00	100%	0.04	0%	0.00	1.130	0.003	0.11	0.520	0.002	0.08	
													11.80				

Equations:

$$\text{Weighted E} = E_a A_a + E_b A_b + E_c A_c + E_d A_d \text{ (Total Area)}$$

$$\text{Volume} = \text{Weighted E} \times \text{Total Area}$$

$$\text{Flow} = Q_a A_a + Q_b A_b + Q_c A_c + Q_d A_d$$

Excess Precipitation, E (inches)

Zone	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	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

Undeveloped flows

Basin	Area (sf)	Area (acres)	Treatment A		Treatment B		Treatment C		Treatment D		100-Year			10-Year			Flow (cfs)
			% (acres)	% (acres)	% (acres)	% (acres)	% (acres)	% (acres)	Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs	Weighted E (ac-ft)	Volume (ac-ft)				
1	99,411	2.28	0%	0	100%	2.28	0%	0.00	0%	0.00	0.780	0.148	5.20	0.280	0.053	2.17	
2	10,758	0.25	0%	0	100%	0.25	0%	0.00	0%	0.00	0.780	0.016	0.56	0.280	0.008	0.23	
3	24,059	0.55	0%	0	100%	0.55	0%	0.00	0%	0.00	0.780	0.038	1.26	0.280	0.013	0.52	
4	13,239	0.30	0%	0	100%	0.30	0%	0.00	0%	0.00	0.780	0.020	0.68	0.280	0.007	0.29	
5	4,281	0.10	0%	0	100%	0.10	0%	0.00	0%	0.00	0.780	0.008	0.22	0.280	0.002	0.09	
OS-1	9,073	0.21	0%	0	0%	0.00	100%	0.21	0%	0.00	1.130	0.020	0.65	0.520	0.009	0.36	
OS-2	17,458	0.40	0%	0	0%	0.00	100%	0.40	0%	0.00	1.130	0.038	1.26	0.520	0.017	0.69	
OS-3	5,159	0.12	0%	0	0%	0.00	100%	0.12	0%	0.00	1.130	0.011	0.37	0.520	0.005	0.20	
OS-4	1,554	0.04	0%	0	0%	0.00	100%	0.04	0%	0.00	1.130	0.003	0.11	0.520	0.002	0.08	
													10.34				

DRAINAGE CERTIFICATION WITH SURVEY WORK DONE BY PROFESSIONAL SURVEYOR

DRAINAGE CERTIFICATION

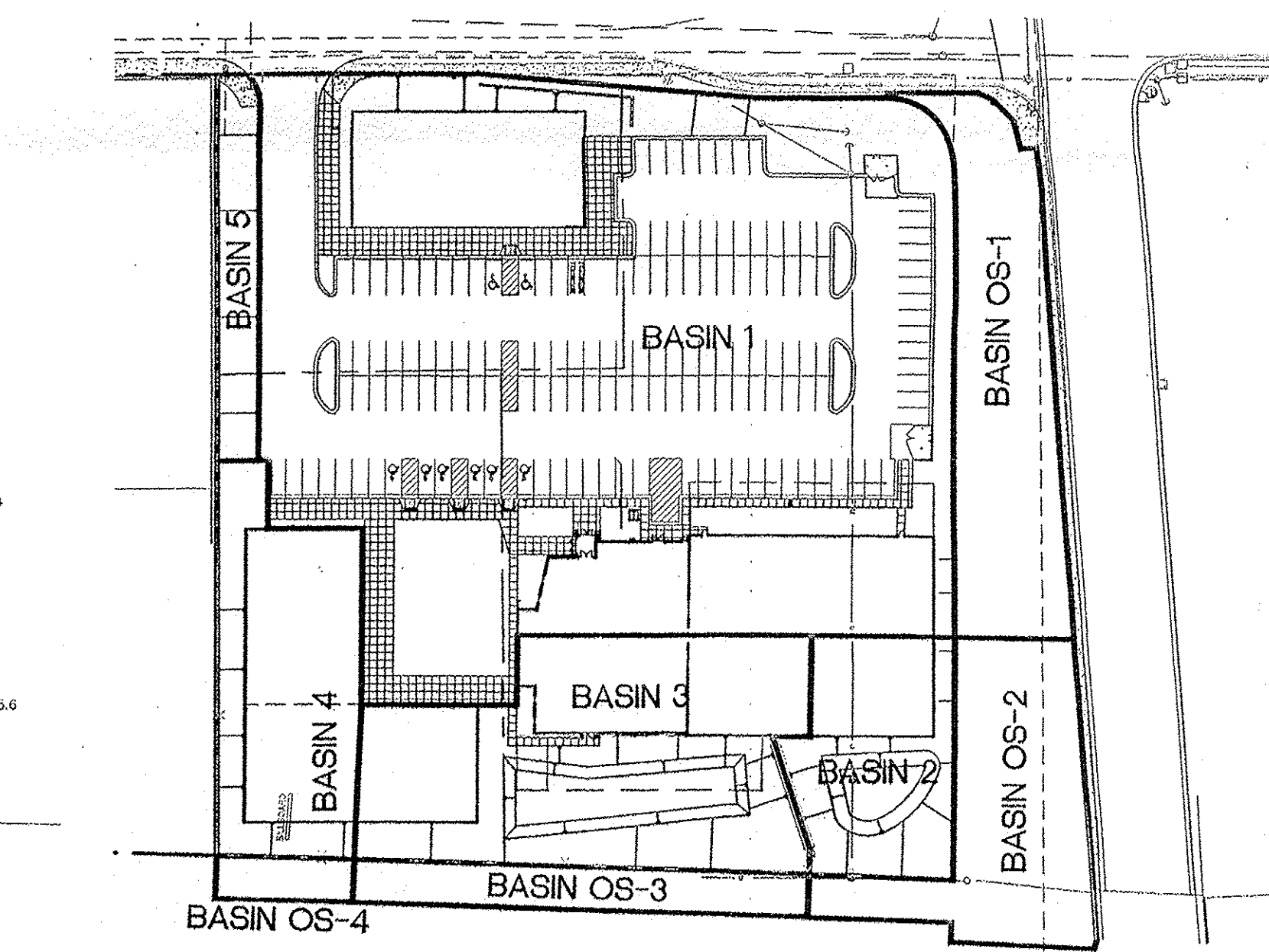
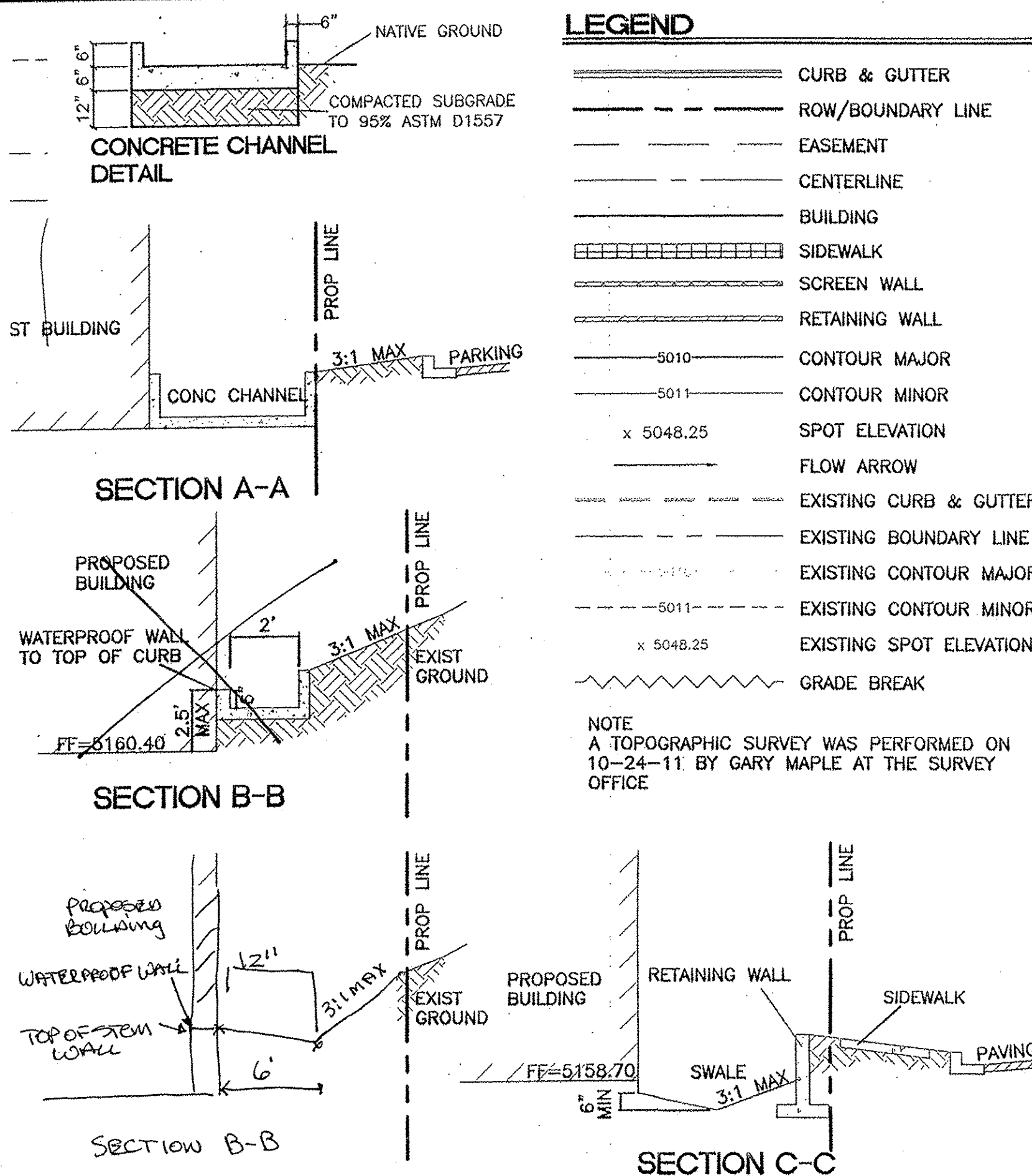
I, RONALD R. BOHANNAN, NMPE #7868, OF THE FIRM TIERRA WEST LLC, HEREBY CERTIFY THAT THIS PROJECT HAS BEEN GRADED AND WILL DRAIN IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED 11/30/11. RECORD INFORMATION EDITED ONTO THE ORIGINAL DESIGN INTENT OF THE APPROVED PLAN DATED 11/30/11. OF THE FIRM TIERRA WEST LLC, I HAVE DETERMINED THAT THE SURVEY DATA PROVIDED IS REPRESENTATIVE OF ACTUAL SITE CONDITIONS AND BY VISUAL INSPECTION THAT THE SURVEY DATA PROVIDED IS REPRESENTATIVE OF ACTUAL SITE CONDITIONS AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF A REQUEST FOR THE 30-DAY TEMPORARY CERTIFICATE OF OCCUPANCY.

EXCEPTIONS:

1. COMPLETE LANDSCAPING
2. INSTALL LARGE COBBLE AT ROOF DRAINS
3. GRADE SWALE ON EAST SIDE OF BUILDING TO DRAIN
4. CORRECT PONDING AREAS IN PARKING AREA

THE RECORD INFORMATION PRESENTED HEREON IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE GRADING AND DRAINAGE ASPECTS OF THIS PROJECT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.

RONALD R. BOHANNAN, NMPE #7868
DATE 8/23/12

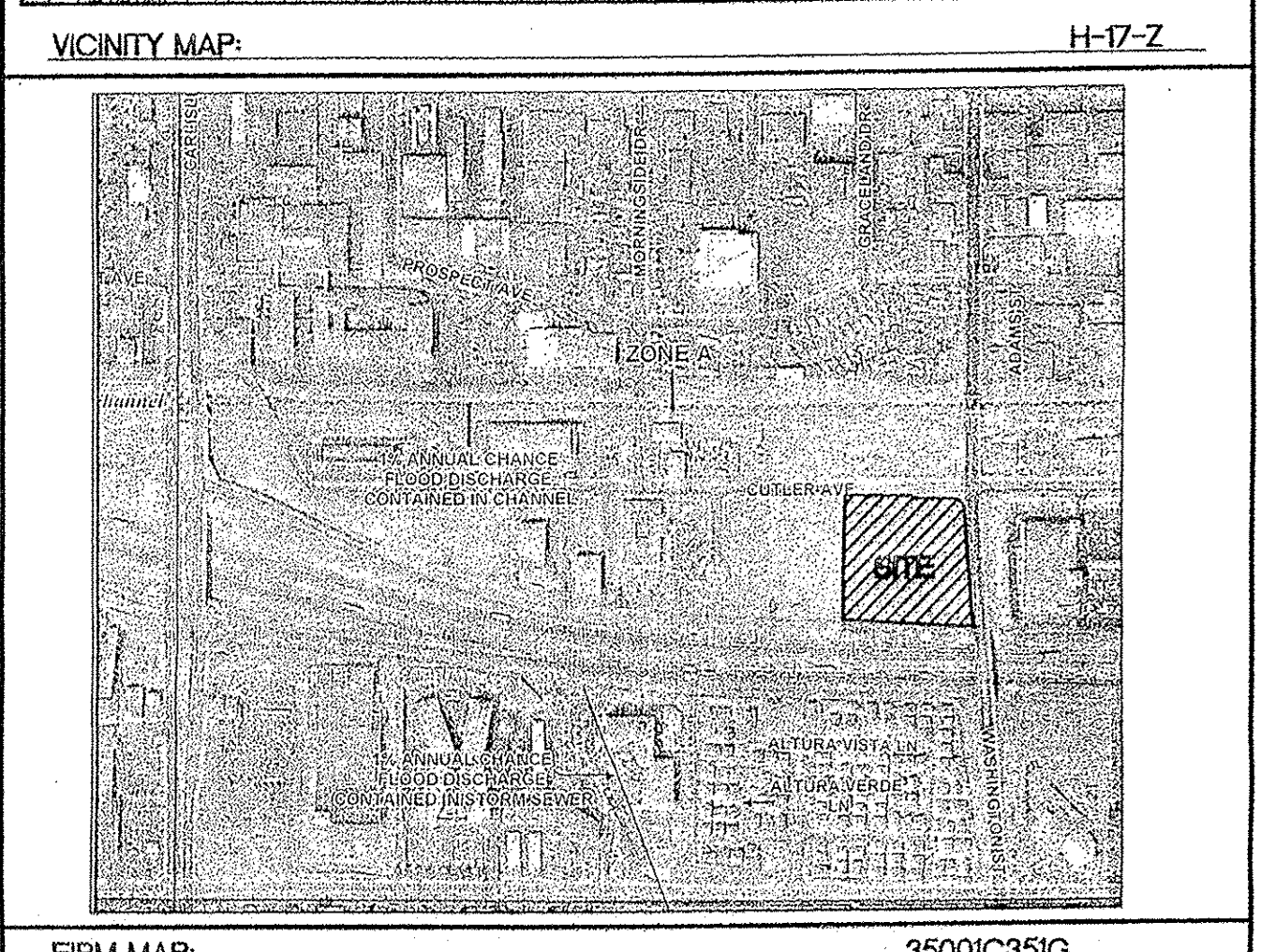
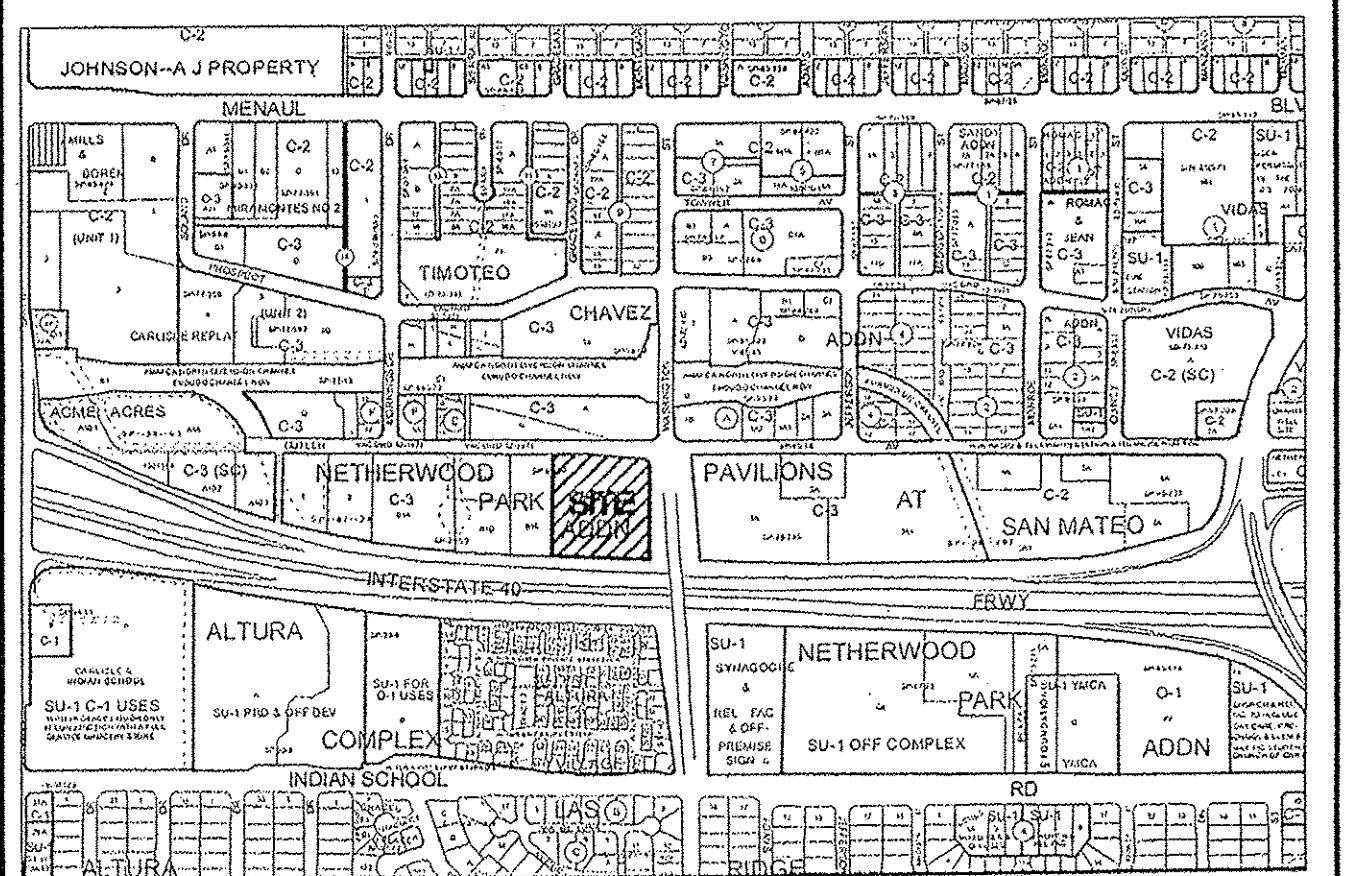


EXISTING DRAINAGE:

THE SITE IS LOCATED AT THE SOUTHEAST CORNER OF WASHINGTON STREET AND CUTLER AVENUE AND IS CURRENTLY VACANT AND LOCATED IN ZONE X ON THE FIRM MAP. IT IS BOUNDED ON THE NORTH BY CUTLER AVE, ON THE EAST BY WASHINGTON ST, ON THE SOUTH BY INTERSTATE 40 AND ON THE WEST BY AN EXISTING BUILDING AND IS APPROXIMATELY 3.48 ACRES. THE SITE DOES ACCEPT SOME OFFSITE FLOWS FROM THE SLOPE ALONG WASHINGTON ST. AND FROM THE LANDSCAPED AREA ALONG INTERSTATE 40. THE SITE CURRENTLY SLOPES FROM EAST TO WEST WITH SOME LOCALIZED PONDING. THE TOTAL DISCHARGE IS 10.34 CFS THROUGH AN OPENING IN THE EXISTING WALL ALONG THE WEST PROPERTY LINE AS WELL AS INTO THE EXISTING DRAINAGE CHANNEL ALONG THE SOUTH PROPERTY LINE. A DRAINAGE REPORT COMPLETED BY MARK GOODWING & ASSOCIATES (H17/D100) DETERMINED THAT 9.43 CFS DISCHARGED FROM THIS SITE TO THE ONE ON THE WEST. THESE FLOWS PASS THROUGH THE PROPERTY TO THE WEST AND THEN DOWN CUTLER TO AN EXISTING DRAINAGE CHANNEL AT THE END OF THE CUL-DE-SAC.

Retention Pond Calculations

Basin	Area (sf)	Area (acres)	Treatment				100-Year		10-Year			
			%	Volume (ac-ft)	%	Volume (ac-ft)	Weighted E (ac-ft)	Flow (cfs)	Weighted E (ac-ft)	Flow (cfs)		
2	10,758	0.25	0%	0.00	0%	0.00	1.182	0.074	0.74	0.898	0.012	0.40
OS-2	17,459	0.40	0%	0.00	0%	0.00	1.130	0.038	1.26	0.520	0.017	0.69
3	24,059	0.55	0%	0.00	0%	0.00	1.182	0.054	1.65	0.598	0.028	0.89
OS-3	5,159	0.12	0%	0.00	0%	0.00	1.130	0.011	0.37	0.520	0.005	0.20



LEGAL DESCRIPTION:

LOT 81F NETHERWOOD PARK ADDITION

NOTICE TO CONTRACTORS

1. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONNECTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
7. WORK ON ARTERIAL STREETS SHALL BE PERFORMED ON A 24-HOUR BASIS.

EROSION CONTROL NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.
2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.
4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL (CITY) ACCEPTANCE OF ANY PROJECT.

ENGINEER'S SEAL

CALIBER'S ALBUQUERQUE, NM

GRADING PLAN

5571 MIDWAY PARK PL NE
ALBUQUERQUE, NEW MEXICO 87109
(505) 858-3100
www.tierrawestllc.com

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1 AUG 23 2012