

VICINITY MAP
ZONE MAP PAGE 1-16-Z

LEGAL DESCRIPTION
TRACT 1-A2, 1B-10, AND 1B-1E OF RENAISSANCE CENTER

- LEGEND**
- PROPERTY LINE
 - RETAINING WALL
 - EXISTING CONTOUR
 - PROPOSED INDEX CONTOUR
 - PROPOSED INTERMEDIATE CONTOUR
 - EXISTING SPOT ELEVATION
 - PROPOSED SPOT ELEVATION
 - FL = FLOORLINE
 - TS = TOP OF SIDEWALK
 - FSH = FINISHED GROUND HIGH SIDE
 - FLS = FINISHED GROUND LOW SIDE
 - DIRECTION OF FLOW
 - SLOPE SYMBOL
 - EXISTING WATERLINE W/ HYDRANT & VALVE
 - EXISTING SAS W/ MANHOLE
 - PROPOSED SAS
 - PROPOSED CLEANOUT
 - PROPOSED WATERLINE
 - PROPOSED METER
 - PROPOSED VALVE
 - PROPOSED REDUCER
 - PROPOSED FIRE LINE
 - PROPOSED HYDRANT
 - PROPOSED STORM DRAIN
 - EXISTING STORM DRAIN & MANHOLE

DRAINAGE MANAGEMENT PLAN

Site location and background information

The purpose of this submission is to present a conceptual drainage and grading plan for the proposed First Family Church at Renaissance Center located on Union Way Drive between Renaissance and Alexander Blvd. The site is in rainfall zone 2 as defined by Figure A-1 of the DPM section 22. The existing legal description of the site is Tract 1-A2, 1B-10, and 1B-1E of Renaissance Center. Please see the vicinity map on this sheet for a graphic depiction of the site location. This conceptual grading and drainage plan is submitted in support of Site Development Plan approval at DRB.

The guiding master drainage report for this area is entitled Renaissance Center Drainage Master Plan. (Hereafter called Master Plan). This submission is in compliance with the guidance and recommendations set forth in that report. In addition, Tract 1-A2 of this site was analyzed in the approved drainage management plan "Tract 1A of Renaissance Center Apartment Complex (P16/P15)" as Phase 2 of the apartment complex, however this first phase will not be constructed for the apartment complex.

Floodplain

In accordance with FEMA community map #55002 panel 16 the site is not located within a 100yr floodplain.

Existing Conditions

This site is approximately 12.56 acres and is currently vacant with relatively flat terrain. The site slopes from north to south at 1.0 to 1.5%. The west edge of the site contains a steep drop-off to the older, developed, county residential lands to the west. There are two small ponds on the site. These ponds contain runoff from the undeveloped land and from the existing apartment complex to the northeast. In accordance with the methodology outlined in the DPM Section 22.2, the 100yr peak discharge is 34,474 cfs. The land treatment under the existing conditions is approximately 75% treatment C and 25% treatment A.

Proposed Conditions

Under proposed conditions, this site will have one onsite basin. In accordance with the methodology outlined in the DPM section 22.2 the proposed 100yr peak discharge is 54,038 cfs with associated land treatments of 10% treatment A, 10% treatment C and 80% treatment D.

There is a very small strip located at the western edge of the site that will drain via surface flow into the Muscatel Ave. right-of-way. This small area will not be developed; therefore minimal runoff will be generated resulting in no significant impact on the downstream drainage in Muscatel Ave.

According to the approved Master Plan the site is required to discharge only 0.1 cfs/acre resulting in ponding on-site. A new large pond is proposed for the south end of the site that is sized to accommodate the runoff from the First Family Church site as well as runoff from the adjacent apartment complex. According to the approved Drainage report for "Tract 1A of Renaissance Center Apartment Complex (P16/P15)" the proposed 100yr, 24hr runoff volume of runoff from the apartment complex is 0.083 acre-ft. The total 100yr, 24hr runoff generated from the First Family Church site is equal to 2.33 acre-ft (See Basin Data Table-Proposed Conditions). Therefore the required pond volume is 3.21 acre-ft (2.31+0.90). The actual volume of the pond is approximately 3.35 acre-ft which is 0.04 acre-ft larger than required.

The pond will drain to an existing pipe onsite which is connected to the North Renaissance Detention Pond. The allowable discharge from this onsite pond is approximately 1.8 cfs in accordance with the Master Plan (Total of 18 acres at 0.1 cfs/acre). A 6" pipe will regulate the outflow of this pond to this allowable discharge. (See POND CALCULATIONS TABLE-Outflow)

There is an existing cross-lot drainage easement between the apartment complex and the First Family Church site which allows the apartment complex to drain across the site. The peak discharge generated on this site as well as in the apartment complex will be contained on site and discharged at a controlled rate per the approved Master Plan. As a result of this detention on site, there will not be negative impacts on the drainage system downstream.

Conclusions

This conceptual drainage submitted has been prepared in accordance with City of Albuquerque requirements, and complies with Renaissance Drainage Master Plan. This plan clearly demonstrates the proposed grading and drainage concepts. The implementation of these concepts would result in the safe passage of the 100 yr storm event. With this submission we are seeking DRB site plan approval and building permit approval.

BASIN DATA TABLE

This table is based on the OPM Section 22.2, Zone 12												
BASIN	Area	Area	Land Treatment Percentages				Q(100)	Q(100)	WT E	V(100) ₁₀₀	V(100) ₁₀₀	V(100) ₁₀₀
ID	(SQ. FT)	(AC.)	A	B	C	D	(cfs/ac)	(cfs)	(inches)	(°F)	(CF)	(Acre-Ft)
EXISTING	547034	12.56	25.0%	0.0%	75.0%	0.0%	2.75	34.47	0.98	44.74	44574	1.03
PROPOSED	547034	12.56	0.0%	10.0%	10.0%	80.0%	4.30	54.03	1.89	77.79	100699	2.31
OFFSITE (APART. CPLX)	229573	5.20	0.0%	10.0%	10.0%	80.0%	4.30	23.68	1.89	37.73	44061	1.01**
TOTAL	776607	17.76						77.89*		12.884	144870	3.32

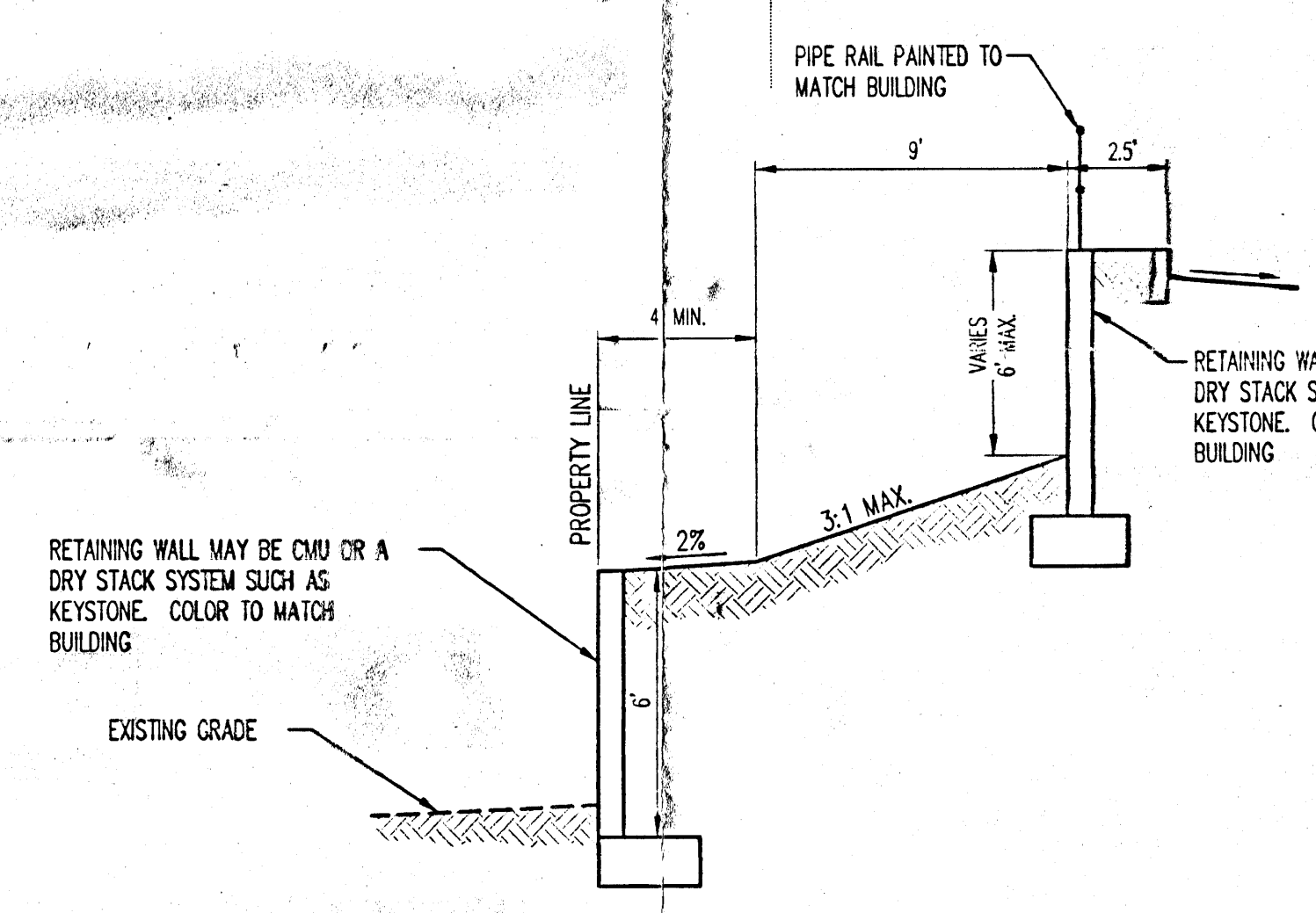
* Allowable 100yr peak discharge per approved Renaissance Drainage Master Plan is = 0.1cfs/acre
Allowable = 0.1 cfs/acre x 18.06 acres = 1.81 cfs

** According to the approved drainage report for "Tract 1A of Renaissance Center Apartment Complex (P15/D15)" the 100yr, 24hr volume is 0.083acre-ft

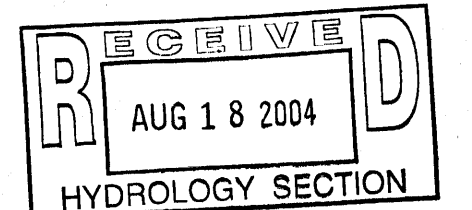
POND CALCULATIONS TABLE

Outflow (cfs)	Storage Volume (cu-ft)	Storage Volume (acre-ft)	Elev.	Head (ft)
0.000	0	0.0000	29.00	0.00
0.010	20823	0.4780	30.00	0.75
1.292	44358	1.0102	31.00	1.75
1.600	86650	1.9802	32.00	2.75
1.892	167798	3.8521	33.00	3.75

Peak Q = 1.81 cfs at WSEL of 32.70



RETAINING WALL SECTION "A"



Botanman & Huston
Engineers & Architects
1700 University Ave. NE
Albuquerque, NM 87106-4800
Tel: 505-241-1111
Fax: 505-241-1112

CENTURY
THE EXCITEMENT IS BUILDING
1700 UNIVERSITY AVE. NE, SUITE 1000
ALBUQUERQUE, NM 87106-4800
TEL: 505-241-1111
FAX: 505-241-1112

Professional Engineer Seal for the State of New Mexico, No. 14263, dated August 18, 2004.

FIRST FAMILY CHURCH
ALBUQUERQUE, NEW MEXICO

SITE DEVELOPMENT PLAN FOR BUILDING PERMIT

CONCEPTUAL DRAINAGE MANAGEMENT PLAN

JOB NO. 050017
DATE 08/16/04
DRAWN RWB
CHECKED BUS
EPC SUBMITTAL SET

SHEET 0A

I, RONALD BOHANNAN, NEW MEXICO REGISTERED PROFESSIONAL ENGINEER NO. 7868, DO HEREBY STATE THAT I HAVE PERSONALLY MADE AN ON-SITE FIELD INSPECTION OF THE SUBJECT PROPERTY, AND HAVE FOUND THAT NO RECENT GRADING, FILLING, OR CUTTING HAD TAKEN PLACE ON SAID SITE PRIOR TO THE PREPARATION OF THE TOPOGRAPHY SURVEY SHOWN ON THE PLAN HEREON.

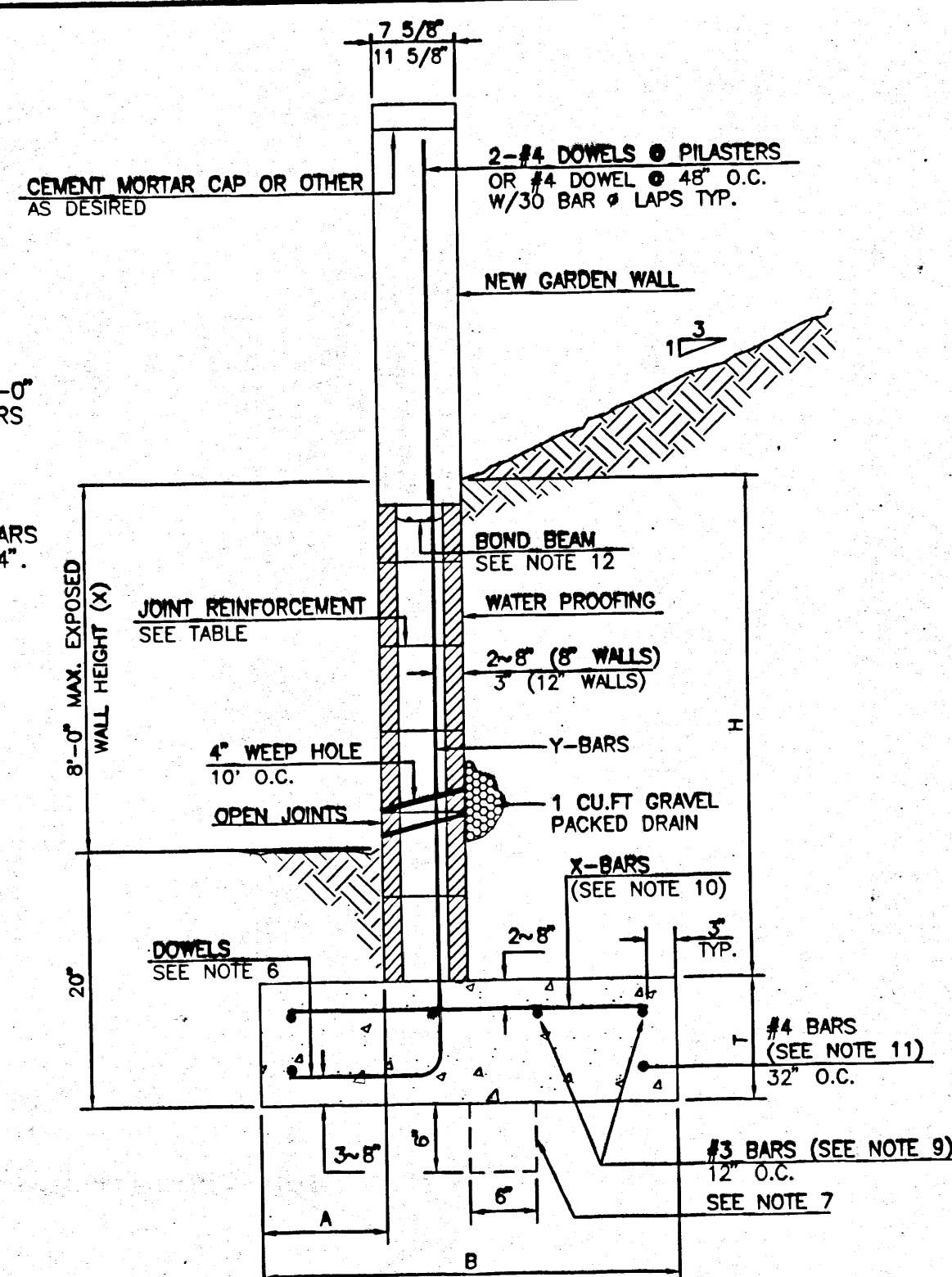
SIGNATURE _____ DATE _____

1. SEE DRAINAGE REPORT FOR SUPPLEMENTARY CALCULATIONS.
2. IT IS THE RESPONSIBILITY OF FUTURE LOT OWNERS TO MAKE SURE THAT GRADES AROUND THE PADS WILL DRAIN THE RUN-OFFS TO THE POND.

1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.
2. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT OUT OF EXISTING RIGHT-OF-WAY.
3. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL STORM RUN OFF ON SITE.
4. REPAIR OF DAMAGED FACILITIES AND CLEAN-UP OF SEDIMENT ACCUMULATION 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 ACCEPTANCE OF ANY PROJECT.

RECORD DRAWING	
DATE: 2-5-99 1-27-99	DRAFTED BY: RJ TIERRA WEST DEV
<p>THESE RECORD DRAWINGS HAVE BEEN PREPARED, IN PART, ON THE BASIS OF INFORMATION COMPLIED AND FURNISHED BY OTHERS. THE ENGINEER WILL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WHICH HAVE BEEN INCORPORATED INTO THE DOCUMENT AS A RESULT.</p>	

1. ALL CONCRETE IS TO BE 4000 PSI @ 28 DAYS.
2. MINIMUM COMPACTION UNDER FOOTINGS IS TO BE 95% PER ASTM 1557 FOR A DEPTH OF 12" MOISTURE CONTENT IS TO BE \pm 2.0%.
3. BACK FILL AGAINST WALLS IS TO BE HAND-PLACED AND COMPACTED.
4. ALL BARS ARE TO BE GRADE 60, ASTM 615.
5. TRUSS TYPE DUR-O-WALL EVERY OTHER COURSE.
6. DOWELS SHALL BE AT LEAST EQUAL IN SIZE AND SPACING TO V-BARS, SHALL PROTECT A MINIMUM OF 30 BAR DIA. INTO THE FILLED BLOCK CORES, AND SHALL EXTEND THE TOP OF THE FOOTING.
7. PROVIDE KEY FOR 8" AND 12" WALLS WHERE H EXCEEDS 6'-0"
8. USE EITHER EXPANSION JOINTS ON 20' CENTERS OR PILASTERS EVERY 16'.
9. #3 BARS TO BE USED ON WALLS EXCEEDING 2'-8" HEIGHT
10. X BARS TO BE USED ON WALLS EXCEEDING 2'-8" HEIGHT
11. #4 BARS TO BE USED FOR WALLS UNDER 5'-4", 2-#4 BARS
12. BOND BEAM, 4-#4 BARS FOR WALLS UNDER 5'-4", 2-#4 BARS FOR WALLS OVER 5'-4".



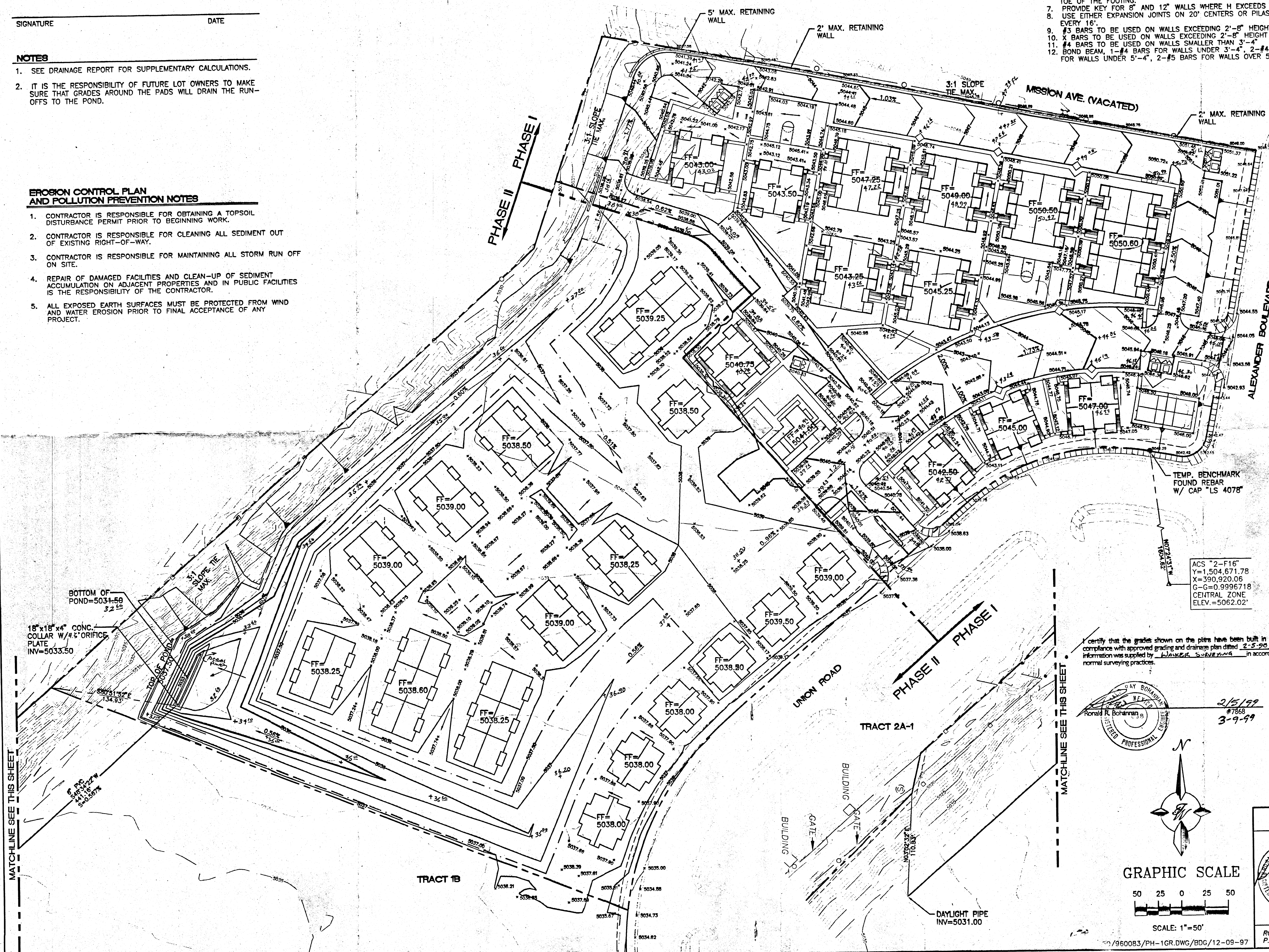
RETAINING WALL DETAIL
NOT TO SCALE

8 INCH REINFORCED CONCRETE MASONRY WALL							
H	X	A	B	T	Y-BARS		X-BARS
ft.-in.	ft.-in.	in.	ft.-in.	in.			
2'-0"	1'-1"	8"	2'-4"	9"	#3	0.32	O.C.
2'-0"	1'-9"	8"	2'-9"	9"	#4	0.32	O.C.
3'-4"	2'-5"	8"	3'-4"	9"	#3	0.32	O.C.
4'-0"	3'-0"	10"	4'-0"	9"	#4	0.32	O.C.
5'-0"	3'-10"	12"	5'-0"	10"	#5	0.32	O.C.
5'-4"	4'-6"	14"	5'-8"	10"	#4	0.16	O.C.
6'-0"	5'-3"	16"	6'-4"	12"	#6	0.24	O.C.

12 INCH REINFORCED CONCRETE MASONRY WALL													
H		X		A		B		T		Y-BARS		X-BARS	
ft.-in.		ft.-in.		in.		ft.-in.		in.					
5'-4"	4'-8"	14"	3'-8"	10"	#4	24"	O.C.	#3	30"	O.C.			
5'-4"	5'-4"	15"	4'-2"	12"	#4	16"	O.C.	#4	25"	O.C.			
5'-8"	6'-0"	16"	4'-6"	12"	#6	24"	O.C.	#4	22"	O.C.			
7'-4"	6'-8"	18"	4'-10"	12"	5	16"	O.C.	5	26"	O.C.			
8'-0"	7'-4"	20"	5'-4"	12"	#7	24"	O.C.	#5	21"	O.C.			
8'-8"	8'-0"	20"	5'-8"	12"	#7	16"	O.C.	5	21"	O.C.			

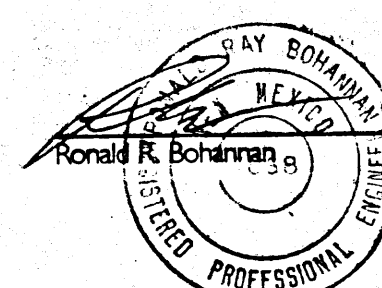
EXISTING CURB & GUTTER
 EXISTING CONTOUR (MAJOR)
 EXISTING CONTOUR (MINOR)
 BOUNDARY LINE
 EASEMENT
 PROPOSED SIDEWALK
 PROPOSED SPOT ELEVATION @ FL
 PROPOSED SD LINE
 PROPOSED SD INLET
 PROPOSED MAJOR CONTOUR
 PROPOSED MINOR CONTOUR

ROUGH GRADING APPROVAL _____ DATE _____



ACS "2-F16"
Y=1,504,671.78
X=390,920.06
G-G=0.9996711
CENTRAL ZONE
ELEV.=5062.02'

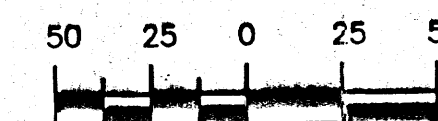
I certify that the grades shown on the plans have been built in substantial compliance with approved grading and drainage plan dated 2-5-90. Survey information was supplied by WALKER SURVEYING in accordance with normal surveying practices.



2/5/99
#7868
3-9-99



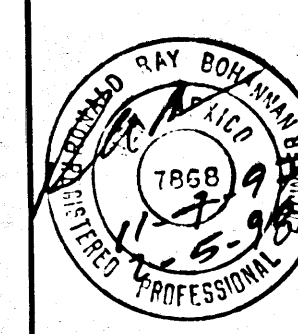
GRAPHIC SCALE



SCALE: 1"=50'

50/960083/PH-1GR.DWG/BDG/12-09-97

**ENGINE
SEAL**



RONALD R. BOHANNAN
P.F. #7868

TRACT 1A
NORTH RENAISSANCE
APARTMENTS

**GRADING AND DRAINAGE PLAN
PHASE I**

TIERRA WEST, LLC
4421 McLEOD ROAD, N.E., SUITE
ALBUQUERQUE, NEW MEXICO 87
(505)883-7592

DRAWN
BY BDG

DATE
11-06-97

PH-1GR.DWG

SHEET #

5 OF 8

ICB 1

JOB #
960083