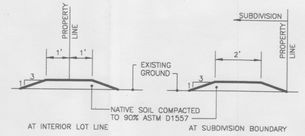
BUILD EARTH BERM w/ 2' WIDE TOP AND 3:1 SIDESLOPES ON REAR AND SIDE PROPERTY LINES OF TRACTS. TOP OF BERM TO BE AT ELEVATION SHOWN ON GRADING PLAN. COMPACT BERM TO 90% ASTM D1557.



TYPICAL EARTH BERM SECTIONS

LEGAL DESCRIPTION

TRACTS 90A, 90B AND 90C, MRGCD MAP NO. 35

PERMANENT BENCHMARK

ACS 7-H13B ELEVATION 4964.227

GRADING CERTIFICATION

I, Jean J. Bordenave, New Mexico Professional Engineer and Land Surveyor No. 5110, hereby certify that I have personally inspected the property shown hereon and that it appears that no grading, filling or excavation has occurred thereon since the contour map shown hereon was prepared.

Jean J. Bordenave , NM PE & PS No. 5110

GENERAL NOTES

1. THIS GRADING AND DRAINAGE PLAN IS BEING PREPARED AS A REQUIREMENT OF THE DRB FOR REPLATTING PURPOSES.

2. THERE ARE 2 EXISTING RESIDENCES WITH A NUMBER OF OUT BUILDINGS ASSOCIATED WITH ONE OF THE RESIDENCES.

3. THE SITE IS BEING DESIGNED AS A FLAT GRADING SCHEME WITH PROPERTY LINE BERMS FOR THE EXISTING SITES AND GRADED WITH SWALES AND SHALLOW (<1') RETENTION PONDS FOR THE NEW SITE.

THERE IS NO OFFSITE DRAINAGE ENTERING THE SITE AND NO DRAINAGE IS ALLOWED TO LEAVE THE SITE.

DRAINAGE VOLUME CALCULATIONS ARE SHOWN FOR THE 100 YEAR 6 HOUR AND 100 YEAR 24 HOUR STORMS.

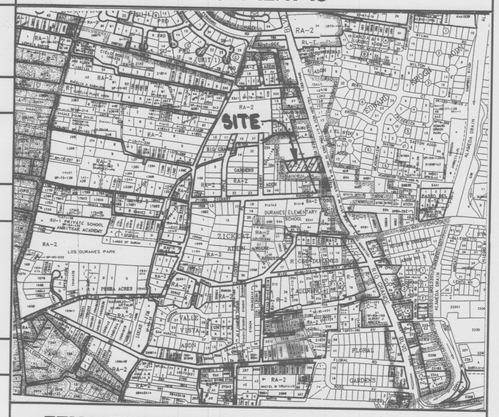
4. YARD WALLS/FENCES ARE ACCEPTABLE. SOLID WALLS (CMU OR SIMILAR) ARE PREFERRED AS THEY WOULD BE AN IMPROVEMENT OVER THE EARTH BERMS (MORE STABLE). CARE SHALL BE TAKEN IN CONSTRUCTING FENCES TO SEE THAT THE INTEGRITY OF THE EARTH BERMS IS MAINTAINED.

5. IF 'SOUTHWEST' LANDSCAPING IS USED ON THE SITES NO SOLID PLASTIC SHEETING SHALL BE ALLOWED UNDER SURFACE MATERIALS.

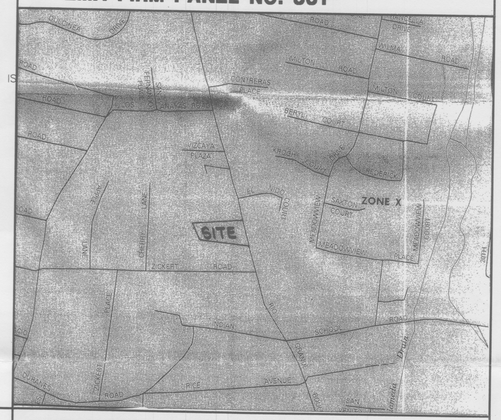
6. IF IMPERVIOUS SURFACES (CONCRETE, ASPHALT, BRICK PAVERS, ROOFS) ARE ADDED TO THE SITES THE IMPACT SHALL BE OFFSET BY INCREASING RUNOFF STORAGE CAPACITY ON LOTS 90-B AND 90-C. ON LOT 90-B A POND SHALL BE CREATED TO INTERCEPT RUNOFF FROM THE NEW CONSTRUCTION. THE CUBIC FOOT VOLUME OF THE POND SHALL BE THE PRODUCT OF THE IMPERVIOUS CONSRUCTION SURFACE AND THE VALUE 0.229. ON LOT 90-C THE AFFECTED POND SHALL BE INCREASED BY THE VALUE CALCULATED IN THE PREVIOUS SENTENCE.

7. TRACT 90-A HAS A BLANKET DRAINAGE EASEMENT FOR THE BENEFIT OF TRACTS 90-B AND 90-C.

VICINITY MAP NO.H-12/H-13



FEMA FIRM PANEL NO. 331



LEGEND

TBM	TEMPORARY BENCHMARK
G	EXISTING GROUND
FF	FINISH FLOOR
FG	FINISH GRADE
FL	FLOWLINE
TA	TOP OF ASPHALT
TCP	TOP OF CONCRETE
TC	TOP OF CURB
TP	TOP OF EARTH PAD
TS	TOP OF SIDEWALK
TW	TOP OF WALL
TB	TOP OF BERM
FH	FIRE HYDRANT
WM	WATER METER
WV	WATER VALVE
MH	MANHOLE
CB	CATCH BASIN GRATE
GM	GAS MATER
GV	GAS VALVE
LP	LIGHT POLE
PP	POWER POLE
GW	GUY WIRE
PED	ELEC. OR TEL. PEDESTAL
RD	ROOF DRAINAGE POINT
	FEMA FLOODPLAIN BOUNDARY
	DRAINAGE BASIN BOUNDARY
	EROSION SETBACK LINE
	EXISTING CONTOUR
	PROPOSED CONTOUR
XX.XX	EXISTING SPOT ELEVATION
•XX.XX	PROPOSED SPOT ELEVATION
~~XX.XX~~ XX.XX	RECORD SPOT ELEVATION

GRADING NOTES

1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT THE NEW MEXICO ONE CALL SYSTEM AT 260-1990 FOR LOCATION OF EXISTING UTILITIES.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
3. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE FEDERAL,STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.

EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE ONTO PUBLIC RIGHT-OF-WAY OR PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY THE CONSTRUCTION OF TEMPORARY SOIL BERMS OR SILT FENCES AT PROPERTY LINES AND BY SOIL TO PREVENT IT FROM BLOWING.
2. THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET.
3. THE CONTRACTOR SHALL SECURE A 'TOPSOIL DISTURBANCE PERMIT" PRIOR TO BEGINNING CONSTRUCTION.

no.	date	remarks	by

REVISIONS

DRAINAGE DATA

CONDITION	BASIN	STORM RETURN PERIOD	TREATMENT TYPE (table 4)	TREATMENT AREA	EXCESS PRECIPITATION (table 8)	PEAK RUNOFF (table 9)	RUNOFF VOLUME	RUNOFF RATE
-	-	year	-	sq. ft.	in.	cfs/acre	cu. ft.	cfs
EXISTING	90A	10	A	0	0.13	0.38	0	0.00
			B	48674	0.28	0.95	1136	1.06
			C	11440	0.52	1.71	496	0.45
			D	7932	1.34	3.14	886	0.57
			TOTAL	68046			2517	2.08
		100	A	0	0.53	1.56	0	0.00
			B	48674	0.78	2.28	3164	2.55
			C	11440	1.13	3.14	1077	0.82
			D	7932	2.12	4.7	1401	0.86
			TOTAL	68046			5642	4.23
DEVELOPED	90A	10	A	0	0.13	0.38	0	0.00
			B	48674	0.28	0.95	1136	1.06
			C	11440	0.52	1.71	496	0.45
			D	7932	1.34	3.14	886	0.57
			TOTAL	68046			2517	2.08
		100	A	0	0.53	1.56	0	0.00
			B	48674	0.78	2.28	3164	2.55
			C	11440	1.13	3.14	1077	0.82
			D	7932	2.12	4.7	1401	0.86
			TOTAL	68046			5642	4.23

CONDITION	BASIN	STORM RETURN PERIOD	TREATMENT TYPE (table 4)	TREATMENT AREA	EXCESS PRECIPITATION (table 8)	PEAK RUNOFF (table 9)	RUNOFF VOLUME	RUNOFF RATE
-	-	year	-	sq. ft.	in.	cfs/acre	cu. ft.	cfs
EXISTING	90B	10	A	0	0.13	0.38	0	0.00
			B	5474	0.28	0.95	128	0.12
			C	1184	0.52	1.71	51	0.05
			D	4321	1.34	3.14	483	0.31
			TOTAL	10979			662	0.48
		100	A	0	0.53	1.56	0	0.00
			B	5474	0.78	2.28	356	0.29
			C	1184	1.13	3.14	111	0.09
			D	4321	2.12	4.7	763	0.47
			TOTAL	10979			1231	0.84
DEVELOPED	90B	10	A	0	0.13	0.38	0	0.00
			B	5474	0.28	0.95	128	0.12
			C	1184	0.52	1.71	51	0.05
			D	4321	1.34	3.14	483	0.31
			TOTAL	10979			662	0.48
		100	A	0	0.53	1.56	0	0.00
			B	5474	0.78	2.28	356	0.29
			C	1184	1.13	3.14	111	0.09
			D	4321	2.12	4.7	763	0.47
			TOTAL	10979			1231	0.84

CONDITION	BASIN	STORM RETURN PERIOD	TREATMENT TYPE (table 4)	TREATMENT AREA	EXCESS PRECIPITATION (table 8)	PEAK RUNOFF (table 9)	RUNOFF VOLUME	RUNOFF RATE
-	-	year	-	sq. ft.	in.	cfs/acre	cu. ft.	cfs
EXISTING	90C	10	A	0	0.13	0.38	0	0.00
			B	14260	0.28	0.95	333	0.31
			C	0	0.52	1.71	0	0.00
			D	0	1.34	3.14	0	0.00
			TOTAL	14260			333	0.31
		100	A	0	0.53	1.56	0	0.00
			B	14260	0.78	2.28	927	0.75
			C	0	1.13	3.14	0	0.00
			D	0	2.12	4.7	0	0.00
			TOTAL	14260			927	0.75
DEVELOPED	90C	10	A	0	0.13	0.38	0	0.00
			B	7678	0.28	0.95	179	0.17
			C	2866	0.52	1.71	124	0.11
			D	3716	1.34	3.14	415	0.27
			TOTAL	14260			718	0.55
		100	A	0	0.53	1.56	0	0.00
			B	7678	0.78	2.28	499	0.40
			C	2866	1.13	3.14	270	0.21
			D	3716	2.12	4.7	656	0.40
			TOTAL	14260			1425	1.01

100 YEAR, 10 DAY RUNOFF VOLUME

$V_{2400} = V_{360} + A_E(P_{14400} - P_{360})/12$

LOT 90A

$V_{2400} = 5642 + 7932(3.95 - 2.75)/12 = 6435$ C.F.

LOT 90B

$V_{2400} = 1231 + 4321(3.95 - 2.75)/12 = 1663$ C.F.

LOT 90C

$V_{2400} = 1425 + 3716(3.95 - 2.75)/12 = 1797$ C.F.

APPROXIMATE 10 DAY MAXIMUM POND DEPTH

$D = V_{2400}/POND\ AREA_{AVE}$

LOT 90A

$D = 6435/17600 = 0.4$ FT.

LOT 90B

$D = 1663/5470 = 0.3$ FT.

LOT 90C

$D = 1797/3020 = 0.6$ FT.

RECEIVED
JUL 07 2005
HYDROLOGY SECTION

REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR NO. 5110 NEW MEXICO JEAN J. BORDENAVE 06/22/05

project title
TRACTS 90-A, 90-B & 90-C, MRGCD MAP NO. 35 RIO GRANDE BLVD. NW, ALBUQUERQUE, NM

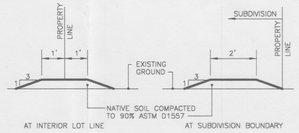
sheet title
GRADING & DRAINAGE PLAN

sheet date	design by	project no.
06/02/99	JJB	0509

sheet of

BORDENAVE DESIGNS
P.O. BOX 91194, ALBUQUERQUE, NM 87199
(505)823-1344 FAX (505)821-9105

BUILD EARTH BERM w/ 2' WIDE TOP AND 3:1 SIDESLOPES ON REAR AND SIDE PROPERTY LINES OF TRACTS. TOP OF BERM TO BE AT ELEVATION SHOWN ON GRADING PLAN. COMPACT BERM TO 90% ASTM D1557.



TYPICAL EARTH BERM SECTIONS

SCALE 1 INCH = 30 FEET

30 15 0 15 30 60 90

LEGAL DESCRIPTION

TRACTS 90A, 90B AND 90C, MRGCD MAP NO. 35

PERMANENT BENCHMARK

ACS 7-H13B ELEVATION 4964.227

GRADING CERTIFICATION

I, Jean J. Bordenave, New Mexico Professional Engineer and Land Surveyor No. 5110, hereby certify that I have personally inspected the property shown hereon and that it appears that no grading, filling or excavation has occurred thereon since the contour map shown hereon was prepared.

04/22/05

Jean J. Bordenave , NM PE & LS No. 5110

GENERAL NOTES

1. THIS GRADING AND DRAINAGE PLAN IS BEING PREPARED AS A REQUIREMENT OF THE DRB FOR REPLATTING PURPOSES.

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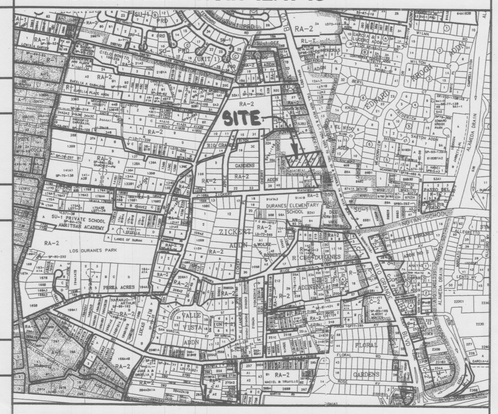
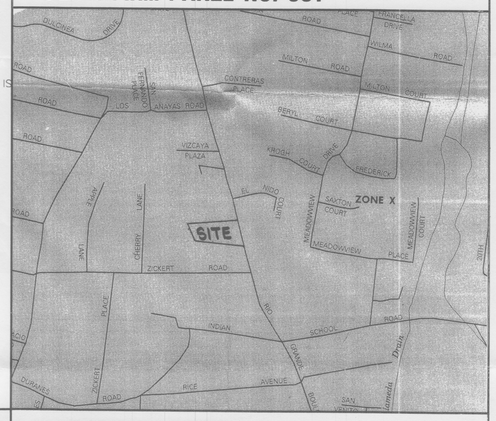
VICINITY MAP NO.H-12/H-13



FEMA FIRM PANEL NO. 331



LEGEND

TBM	TEMPORARY BENCHMARK
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FF	FINISH FLOOR
FG	FINISH GRADE
FL	FLOWLINE
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TCP	TOP OF CONCRETE
TC	TOP OF CURB
TP	TOP OF EARTH PAD
TS	TOP OF SIDEWALK
TW	TOP OF WALL
TB	TOP OF BERM
FH	FIRE HYDRANT
WM	WATER METER
WV	WATER VALVE
MH	MANHOLE
CB	CATCH BASIN GRATE
GM	GAS MATER
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LP	LIGHT POLE
PP	POWER POLE
GW	GUY WIRE
PED	ELEC. OR TEL. PEDESTAL
RD	ROOF DRAINAGE POINT
	FEMA FLOODPLAIN BOUNDARY
	DRAINAGE BASIN BOUNDARY
	EROSION SETBACK LINE
	EXISTING CONTOUR
	PROPOSED CONTOUR
XX.XX	EXISTING SPOT ELEVATION
•XX.XX	PROPOSED SPOT ELEVATION
~~XX.XX~~ XX.XX	RECORD SPOT ELEVATION

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DRAINAGE DATA

CONDITION	BASIN	STORM RETURN PERIOD	TREATMENT TYPE (table 4)	TREATMENT AREA sq. ft.	EXCESS PRECIPITATION (table 8) in.	PEAK RUNOFF (table 9) cfs/acre	RUNOFF VOLUME cu. ft.	RUNOFF RATE cfs
-	-	year	-	sq. ft.	in.	cfs/acre	cu. ft.	cfs
EXISTING	90A	10	A	0	0.13	0.38	0	0.00
			B	48674	0.28	0.95	1136	1.06
			C	11440	0.52	1.71	496	0.45
			D	7932	1.34	3.14	886	0.57
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		100	A	0	0.53	1.56	0	0.00
			B	48674	0.78	2.28	3164	2.55
			C	11440	1.13	3.14	1077	0.82
			D	7932	2.12	4.7	1401	0.86
			TOTAL	68046			5642	4.23
DEVELOPED	90A	10	A	0	0.13	0.38	0	0.00
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			C	11440	0.52	1.71	496	0.45
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			C	11440	1.13	3.14	1077	0.82
			D	7932	2.12	4.7	1401	0.86
			TOTAL	68046			5642	4.23

CONDITION	BASIN	STORM RETURN PERIOD	TREATMENT TYPE (table 4)	TREATMENT AREA sq. ft.	EXCESS PRECIPITATION (table 8) in.	PEAK RUNOFF (table 9) cfs/acre	RUNOFF VOLUME cu. ft.	RUNOFF RATE cfs
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EXISTING	90B	10	A	0	0.13	0.38	0	0.00
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			C	1184	0.52	1.71	51	0.05
			D	4321	1.34	3.14	483	0.31
			TOTAL	10979			662	0.48
		100	A	0	0.53	1.56	0	0.00
			B	5474	0.78	2.28	356	0.29
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			TOTAL	10979			1231	0.84
DEVELOPED	90B	10	A	0	0.13	0.38	0	0.00
			B	5474	0.28	0.95	128	0.12
			C	1184	0.52	1.71	51	0.05
			D	4321	1.34	3.14	483	0.31
			TOTAL	10979			662	0.48
		100	A	0	0.53	1.56	0	0.00
			B	5474	0.78	2.28	356	0.29
			C	1184	1.13	3.14	111	0.09
			D	4321	2.12	4.7	763	0.47
			TOTAL	10979			1231	0.84

CONDITION	BASIN	STORM RETURN PERIOD	TREATMENT TYPE (table 4)	TREATMENT AREA sq. ft.	EXCESS PRECIPITATION (table 8) in.	PEAK RUNOFF (table 9) cfs/acre	RUNOFF VOLUME cu. ft.	RUNOFF RATE cfs
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			C	0	0.52	1.71	0	0.00
			D	0	1.34	3.14	0	0.00
			TOTAL	14260			333	0.31
		100	A	0	0.53	1.56	0	0.00
			B	14260	0.78	2.28	927	0.75
			C	0	1.13	3.14	0	0.00
			D	0	2.12	4.7	0	0.00
			TOTAL	14260			927	0.75
DEVELOPED	90C	10	A	0	0.13	0.38	0	0.00
			B	7678	0.28	0.95	179	0.17
			C	2866	0.52	1.71	124	0.11
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			TOTAL	14260			718	0.55
		100	A	0	0.53	1.56	0	0.00
			B	7678	0.78	2.28	499	0.40
			C	2866	1.13	3.14	270	0.21
			D	3716	2.12	4.7	656	0.40
			TOTAL	14260			1425	1.01

100 YEAR, 24 HOUR RUNOFF VOLUME

$V_{1440} = V_{360} + A_B(P_{1440} - P_{360})/12$

LOT 90A
V1441 = 5642 + 7932(2.75 -2.35)12 = 5906 C.F.

LOT 90B
V1441 = 1231 + 4321(2.75 -2.35)12 = 1375 C.F.

LOT 90C
V1441 = 1425 + 3716(2.75 -2.35)12 = 1549 C.F.

APPROXIMATE AVERAGE WATER DEPTH

$D = 2V/A_B$

LOT 90A
D = (2)(5906)/48674 = 0.25 FT.

LOT 90B
D = (2)(1375)/5474 = 0.5 FT.

$D = V/A_{POND}$
LOT 90C
V1441 = 1549/2453 = 0.6 FT.

no.	date	remarks	by

REVISIONS

project title
TRACTS 90-A, 90-B & 90-C, MRGCD MAP NO. 35 RIO GRANDE BLVD. NW ALBUQUERQUE, NM

sheet title
GRADING & DRAINAGE PLAN

sheet date	design by	project no.
06/02/99	JJB	0509

sheet of

BORDENAVE DESIGNS
P.O. BOX 91194, ALBUQUERQUE, NM 87199
(505)823-1344 FAX (505)821-9705

REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR NO. 5110 JEAN J. BORDENAVE STATE OF NEW MEXICO 04/22/05

RECEIVED MAY 09 2005 HYDROLOGY SECTION