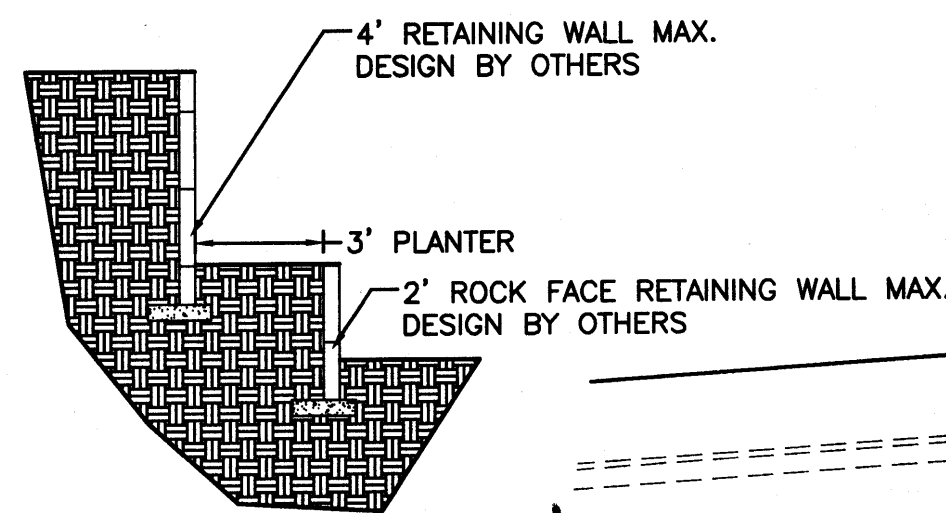
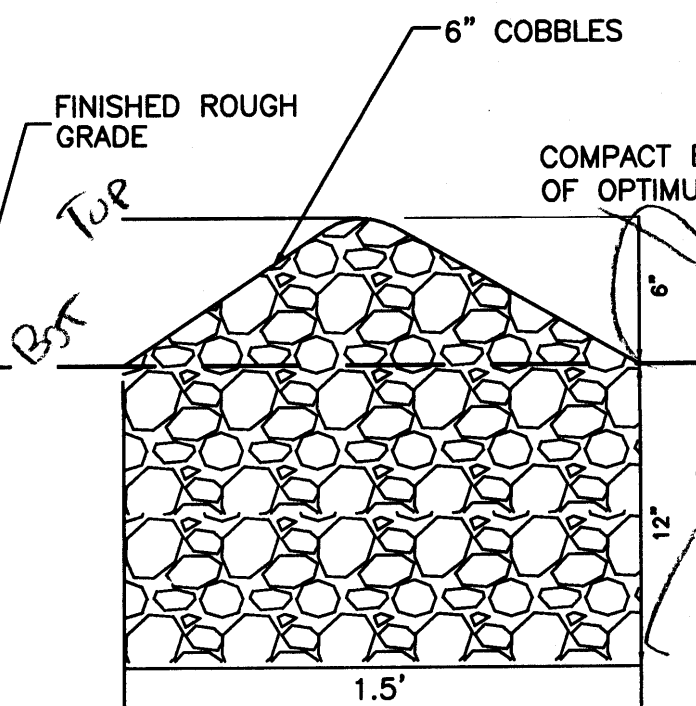




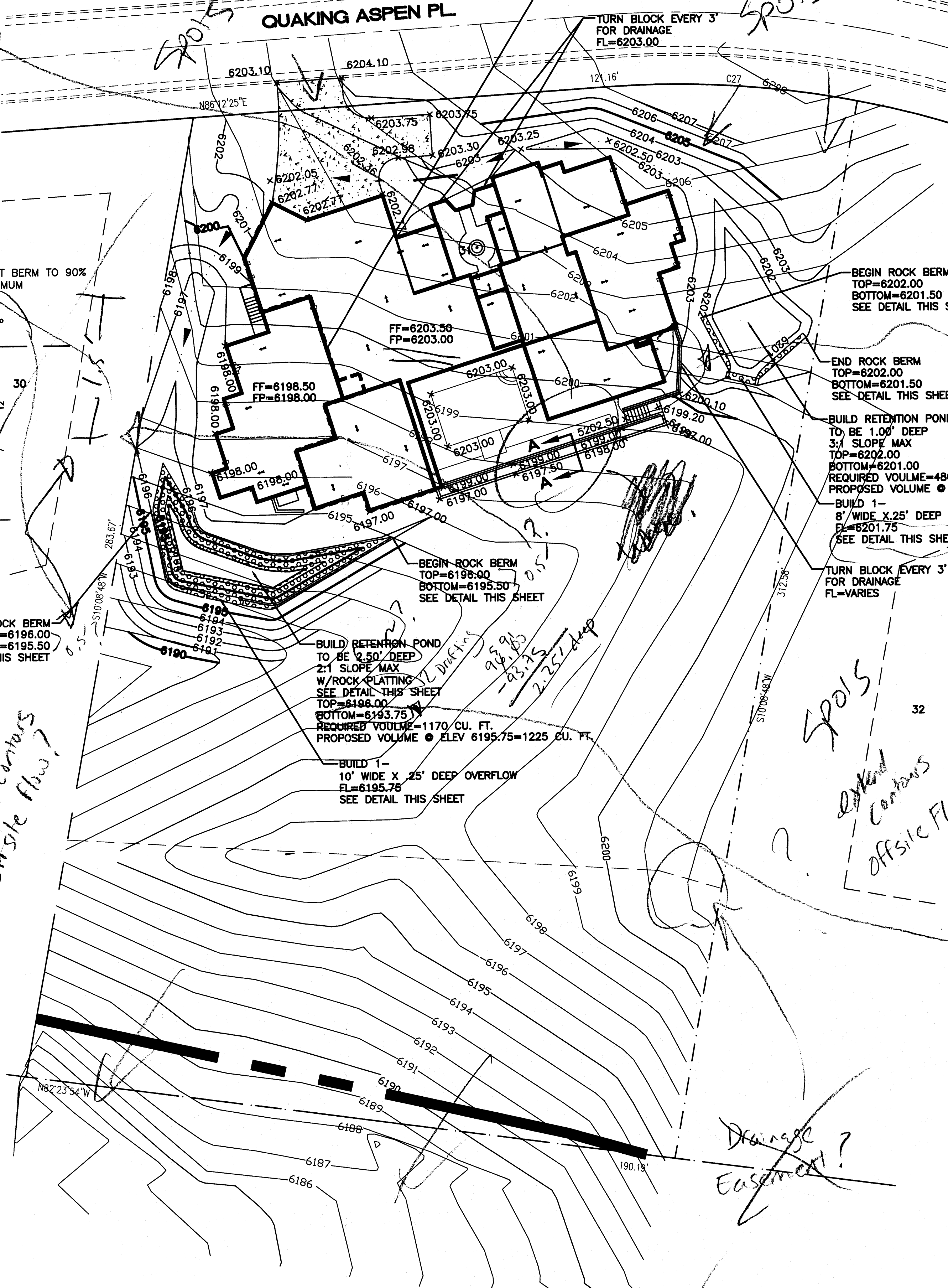
SECTION A-A

NTS



BERM DETAIL

NTS



Weighted E Method

per city of Albuquerque Development Process Manual-chapter 22

SITE HYDROLOGY

Existing Developed Basins

Basin	Area (sf)	Area (acres)	Treatment A %	Treatment B %	Treatment C %	Treatment D %	100-Year, 6-hr. Weighted E (ac-ft)	Volume (ac-ft)	Flow cfs
BASIN A	5320.00	0.122	0%	0%	0.000	0%	0.122	2.840	0.027
BASIN B	2180.00	0.050	0%	0%	0.000	0%	0.050	2.840	0.011
REMAINING SITE	48835.00	1.144	75%	0.858040634	7%	0.080	10.0%	0.11441	8%
NATIVE	57335.00	1.316	80%	1.052984388	10.0%	0.132	10.0%	0.13162	0%

Equations:

Weighted E = $E_a \cdot A_a + E_b \cdot A_b + E_c \cdot A_c + E_d \cdot A_d$ / (Total Area)

Volume = Weighted E * Total Area

Flow = $Q_a \cdot A_a + Q_b \cdot A_b + Q_c \cdot A_c + Q_d \cdot A_d$

Where for 100-year, 6-hour storm

$E_a = 0.8$
 $E_b = 1.08$
 $E_c = 1.46$
 $E_d = 2.84$

Area = 1.32 ac according to DMP
Cannot tell which basin is which?

HARVESTING POND A
HARVESTING POND B

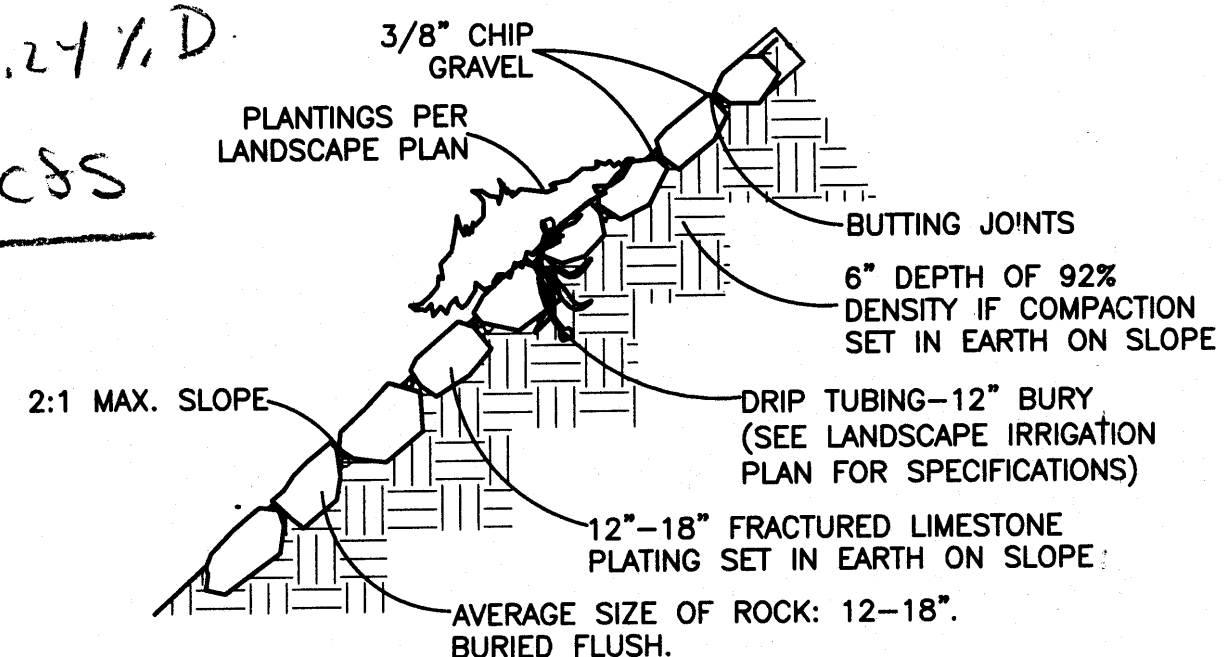
0.027 AC-FT
0.011 AC-FT

1170.40
479.80

Basin A comprises of the portion of home and driveway draining to west and captured by pond A
Basin B comprises of the portion of the home draining to the east and captured by pond B
Site discharges 3.03 cfs in developed condition and 3.19 in native. Master drainage study accounted for discharge of impervious areas within building envelope so proposed solution provides for significantly less flow than allowed for in Master Drainage Plan

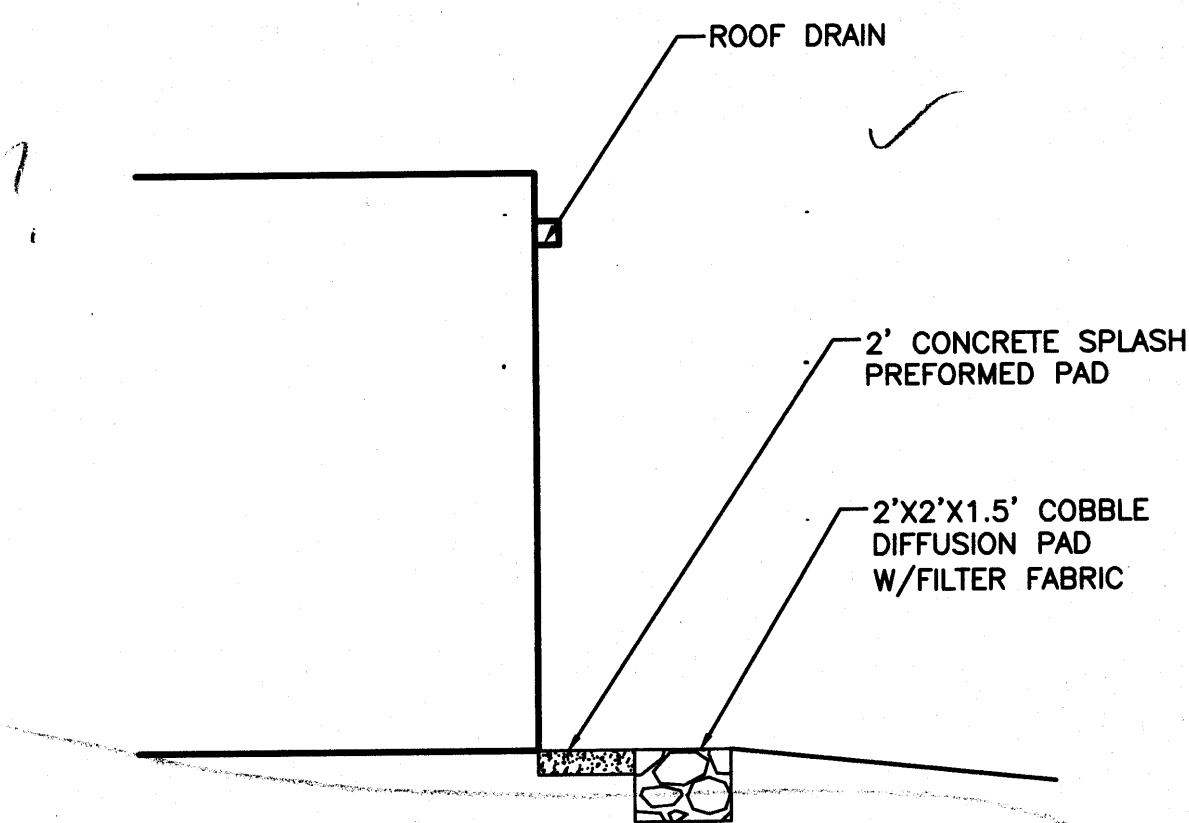
Dev. DMP: 79.131 A
5.441 B
0% C
15.241 D
3.4 cfs

Legend?



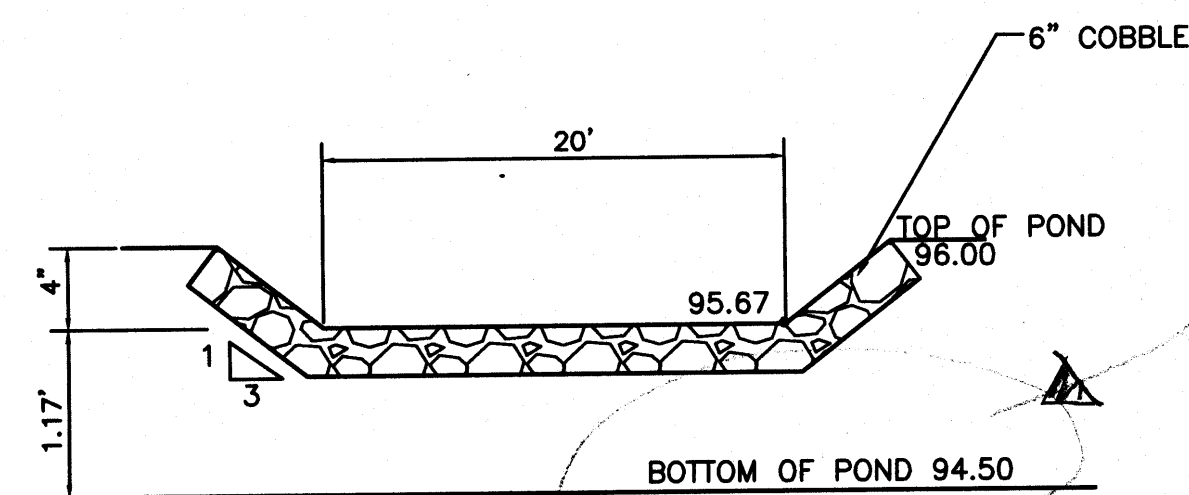
ROCK PLATING DETAIL

NTS



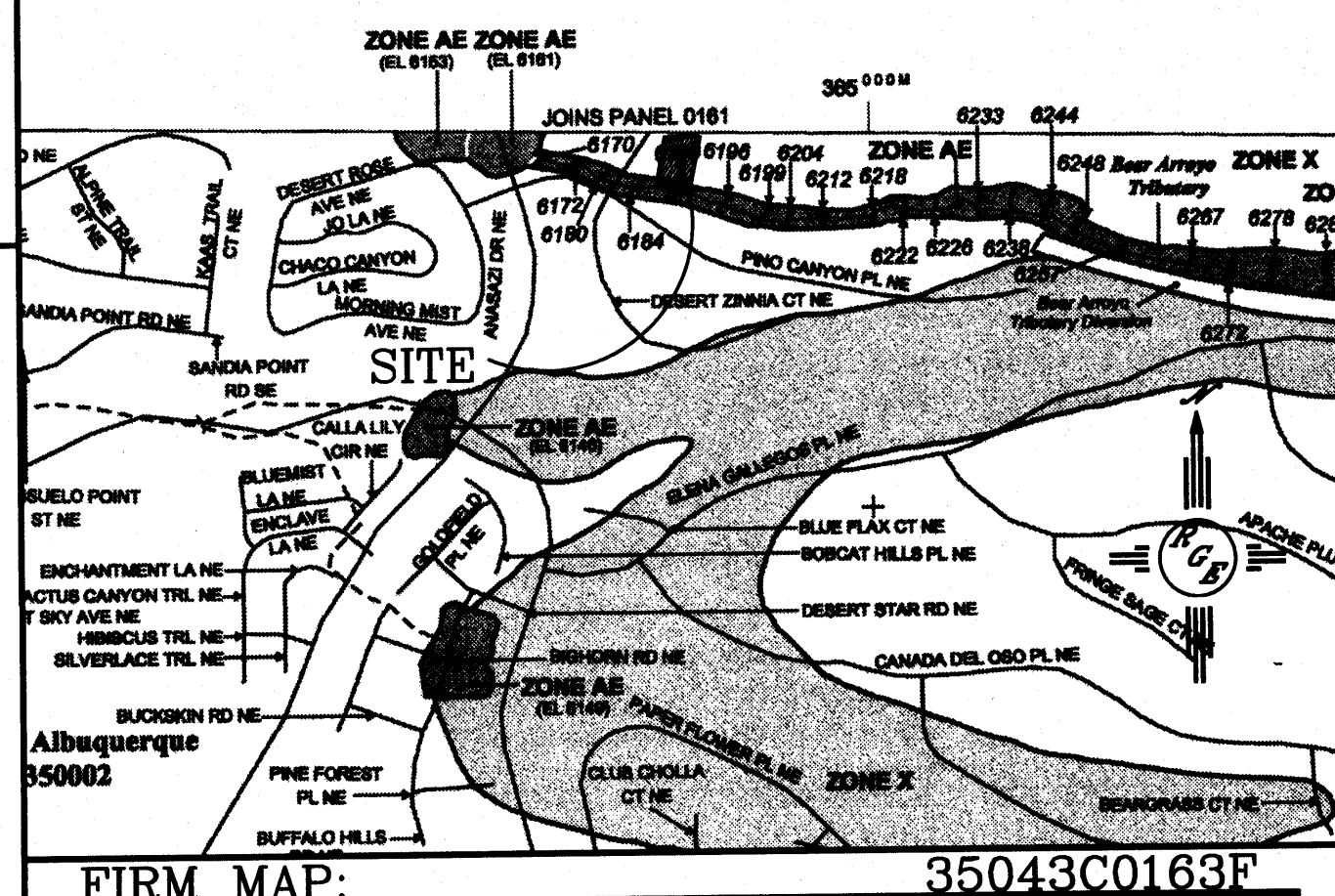
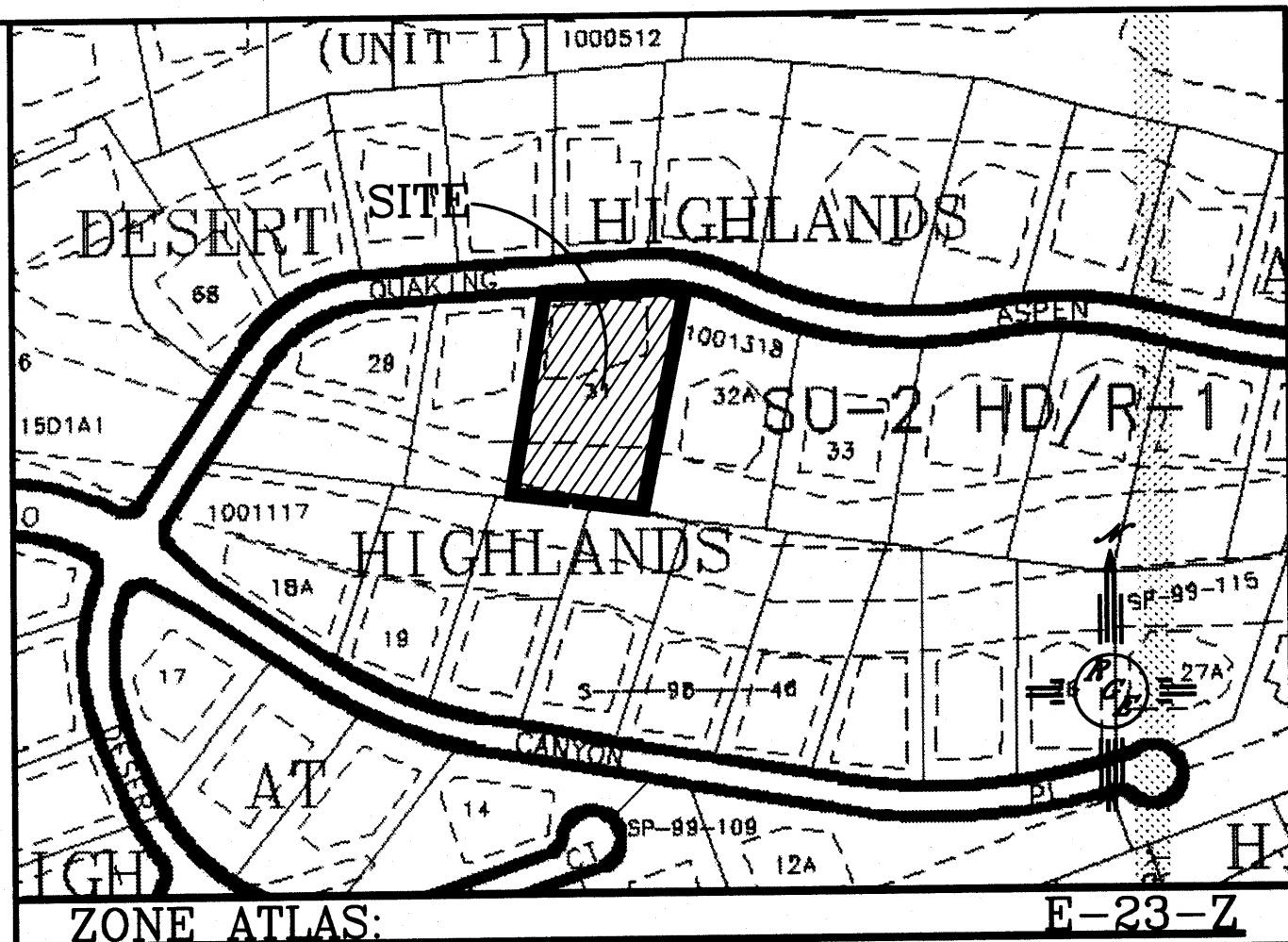
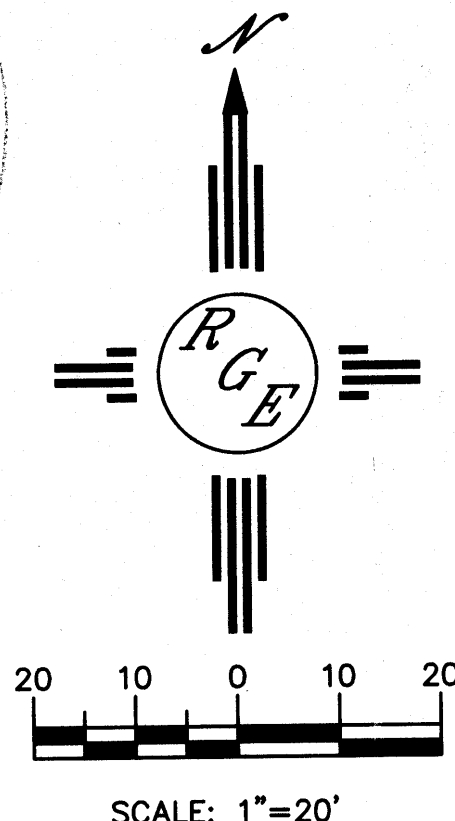
ROOF DRAIN SPLASH PAD DETAIL

NTS



OVERFLOW DETAIL

NTS



LEGAL DESCRIPTION:

LOT 31, DESERT HIGHLANDS AT HIGH DESERT

NOTES:

- ALL PROPOSED SPOT ELEVATIONS AND CONTOURS REPRESENT FLOWLINE ELEVATION UNLESS OTHERWISE NOTED.
- ALL ROOF DRAINS SHALL HAVE 2' WIDE X 2' LONG COBBLE SWALE AT OUTLET OF DRAIN. (SEE DETAIL THIS SHEET)

LEGEND

- 5414 EXISTING CONTOUR
- 5415 EXISTING INDEX CONTOUR
- 5414 PROPOSED CONTOUR
- 5415 PROPOSED INDEX CONTOUR
- SLOPE TIE
- 4048.25 EXISTING SPOT ELEVATION
- 4048.25 PROPOSED SPOT ELEVATION
- BOUNDARY
- LOT LINE
- EXISTING CURB AND GUTTER
- FLOODPLAIN
- EASEMENT

EROSION CONTROL NOTES:

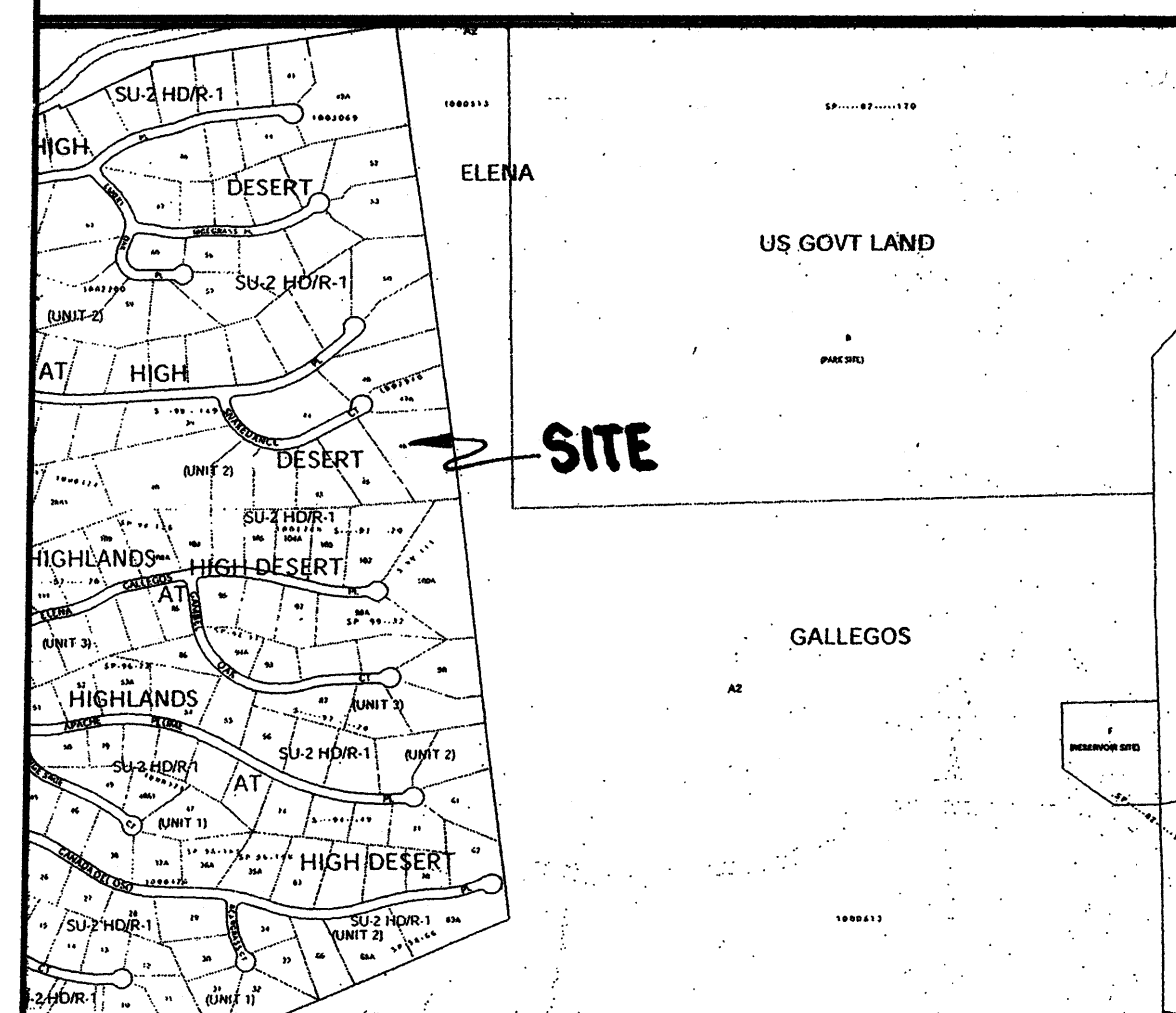
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.
- CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.
- REPAIR OF DAMAGED FACILITIES AND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

ENGINEER'S SEAL	13408 QUACKING ASPEN	DRAWN BY WCWJ
DAVID SOULE P.E. #14522	GRADING AND DRAINAGE PLAN	DATE 11-13-12
	Rio Grande Engineering 1806 CENTRAL AVENUE SE ALBUQUERQUE, NM 87106 (505) 872-0899	21223-LAYOUT-6-12-12
		SHEET #
		JOB # 21223

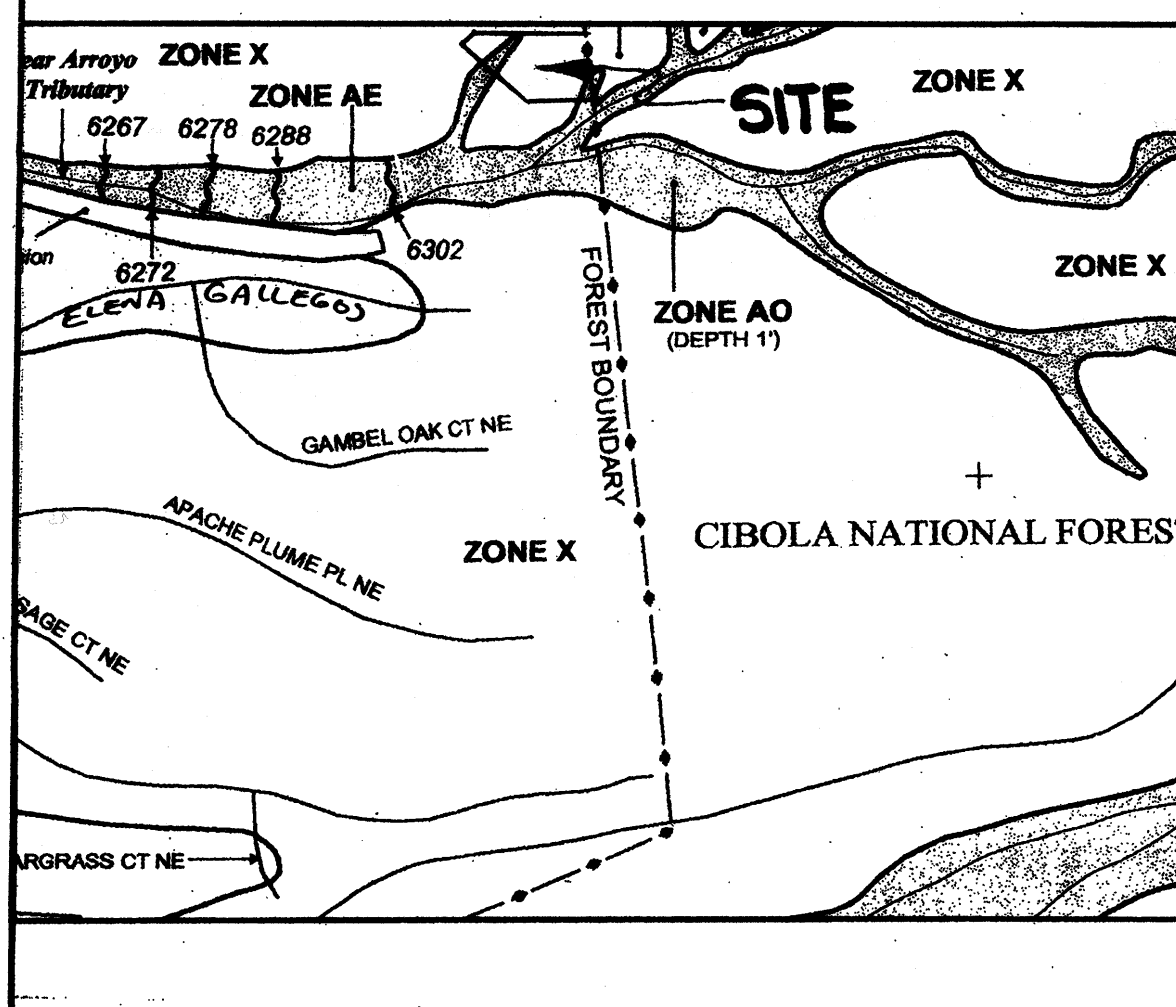
CAUTION:
EXISTING UTILITIES ARE NOT SHOWN.
IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO ANY EXCAVATION TO DETERMINE THE ACTUAL LOCATION OF UTILITIES & OTHER IMPROVEMENTS.

Requires approval from High Desert New Landscaping Committee

VICINITY MAP NO. E-24



FEMA FIRM PANEL NO. 163



NOTES:

1. DRY STREAMS FROM SCUPPERS TO MAIN STREAM SHALL BE 6" WIDE.
2. EXISTING GROUND ELEVATIONS SHALL REMAIN UNALTERED EXCEPT WHERE SHOWN TO BE ADJUSTED ON THE GRADING PLAN.
3. SURFACE OF ROCKS IN EROSION CONTROL FACILITIES SHALL BE FLUSH WITH ADJACENT EARTH SURFACES.
4. THE LANDSCAPING PLAN SHALL ADDRESS EROSION CONTROL WITHIN WALLED YARDS.

SCALE 1 INCH = 20 FEET

DRAINAGE DATA

CONDITION	STORM RETURN PERIOD	TREATMENT TYPE	TREATMENT AREA	EXCESS PRECIPITATION	PEAK RUNOFF	RUNOFF VOLUME	RUNOFF RATE
		(table 4)	(table 5)	(table 6)	(table 7)	(table 8)	(table 9)
	year		sq. ft.	in.	cfs/acre	cu. ft.	cfs
EXISTING	10	A	102404	0.87	2389	2,05	0.00
		B	0	0.46	1.45	0	0.00
		C	0	0.73	2.26	0	0.00
		D	0	1.09	3.57	0	0.00
		TOTAL	102404			2389	2.05
DEVELOPED	2	A	102404	0.80	2,20	6827	5.17
		B	0	1.08	2.92	0	0.00
		C	0	1.46	3.73	0	0.00
		D	0	2.54	5.25	0	0.00
		TOTAL	102404			6827	5.17
DEVELOPED	10	A	86824	0.02	0.05	145	0.10
		B	3206	0.11	0.36	29	0.03
		C	3025	0.27	0.89	69	0.07
		D	9355	1.01	2.17	787	0.47
		TOTAL	102404			1029	0.66
DEVELOPED	100	A	86824	0.28	0.97	2026	1.73
		B	3206	0.46	1.45	123	0.11
		C	3025	0.73	2.26	184	0.16
		D	9355	1.69	3.57	1317	0.77
		TOTAL	102404			3650	2.76
DEVELOPED	100	A	86824	0.80	2.20	5788	4.39
		B	3206	1.08	2.92	29	0.03
		C	3025	1.46	3.73	368	0.26
		D	9355	2.54	5.25	2058	1.53
		TOTAL	102404			5507	5.99

LEGEND

TBM	TEMPORARY BENCHMARK
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
FH	FIRE HYDRANT
WM	WATER METER
WV	WATER VALVE
MH	MANHOLE
CB	CATCH BASIN GRATE
GM	GAS METER
GV	GAS VALVE
LP	LIGHT POLE
PP	POWER POLE
GW	GUY WIRE
PED	ELEC. OR TEL. PEDESTAL
RD	ROOF DRAINAGE POINT

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.

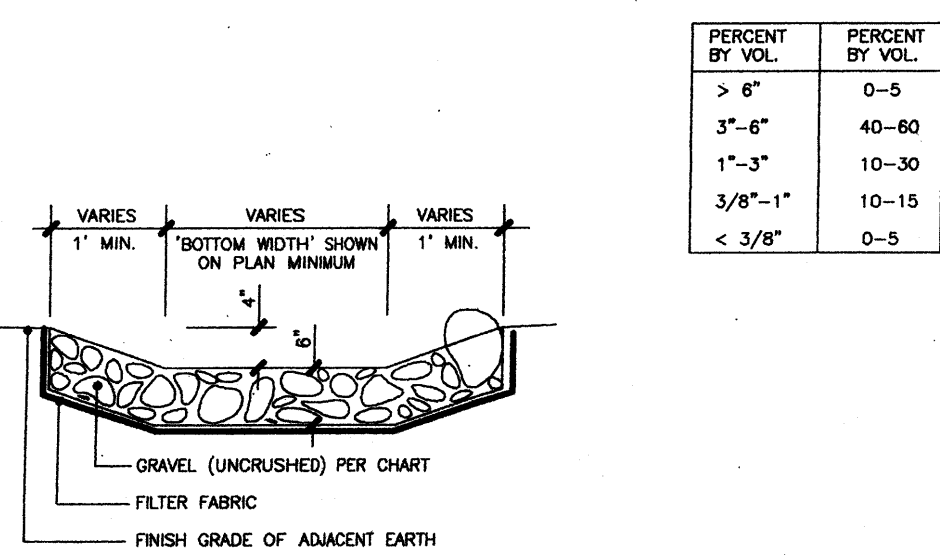
no.	date	remarks	by
2	01/29/06	RETAINING WALL AT ENTRY, ADD STORM DRAINS	JJB
1	01/17/06	REDUCE CULVERT SIZE, REALIGN DRIVEWAY	JJB

REVISIONS			
project title			
PORTER RESIDENCE			
SUNDANCE COURT NE			
ALBUQUERQUE, NM			
sheet title			
GRADING & DRAINAGE PLAN			
sheet date	design by	project no.	
12/02/05	JJB	0534	
sheet			

BORDENAVE DESIGNS
P.O. BOX 91194, ALBUQUERQUE, NM 87199-1194
(505)823-1344 FAX (505)823-9105

FEB 15 2006
HYDROLOGY SECTION

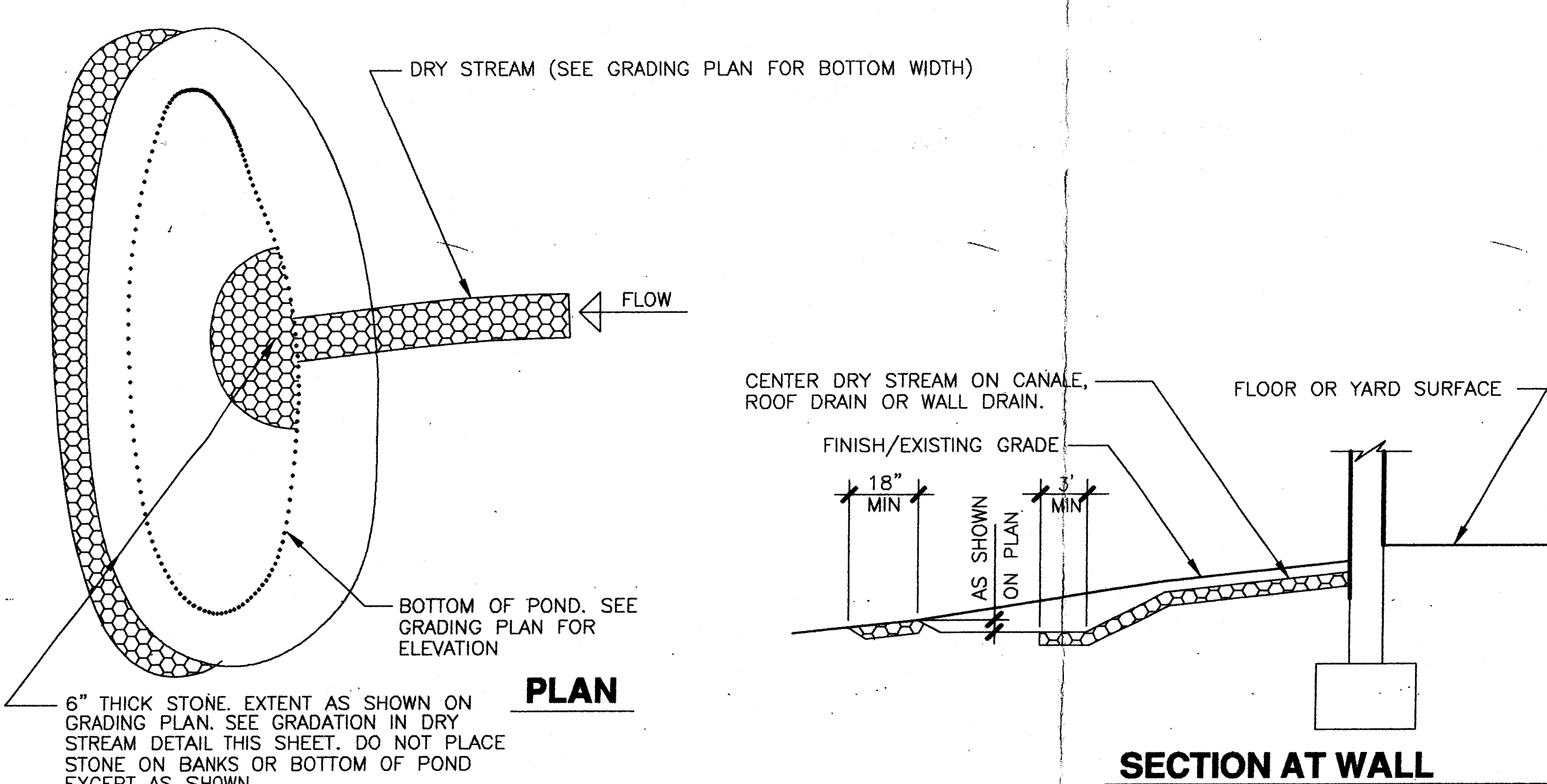
DRY STREAM



PERCENT OF VUL.	PERCENT OF VUL.
> 6"	0-5
3"-6"	40-60
1"-3"	10-30
3/8"-1"	10-15
< 3/8"	0-5

CONSTRUCTION NOTES:
BOTTOM AND BANK WIDTHS SHALL VARY TO SIMULATE A NATURAL STREAM. STONES GREATER THAN 6" SHALL BE LIMITED TO BANK AREA.

WATER HARVESTING POND

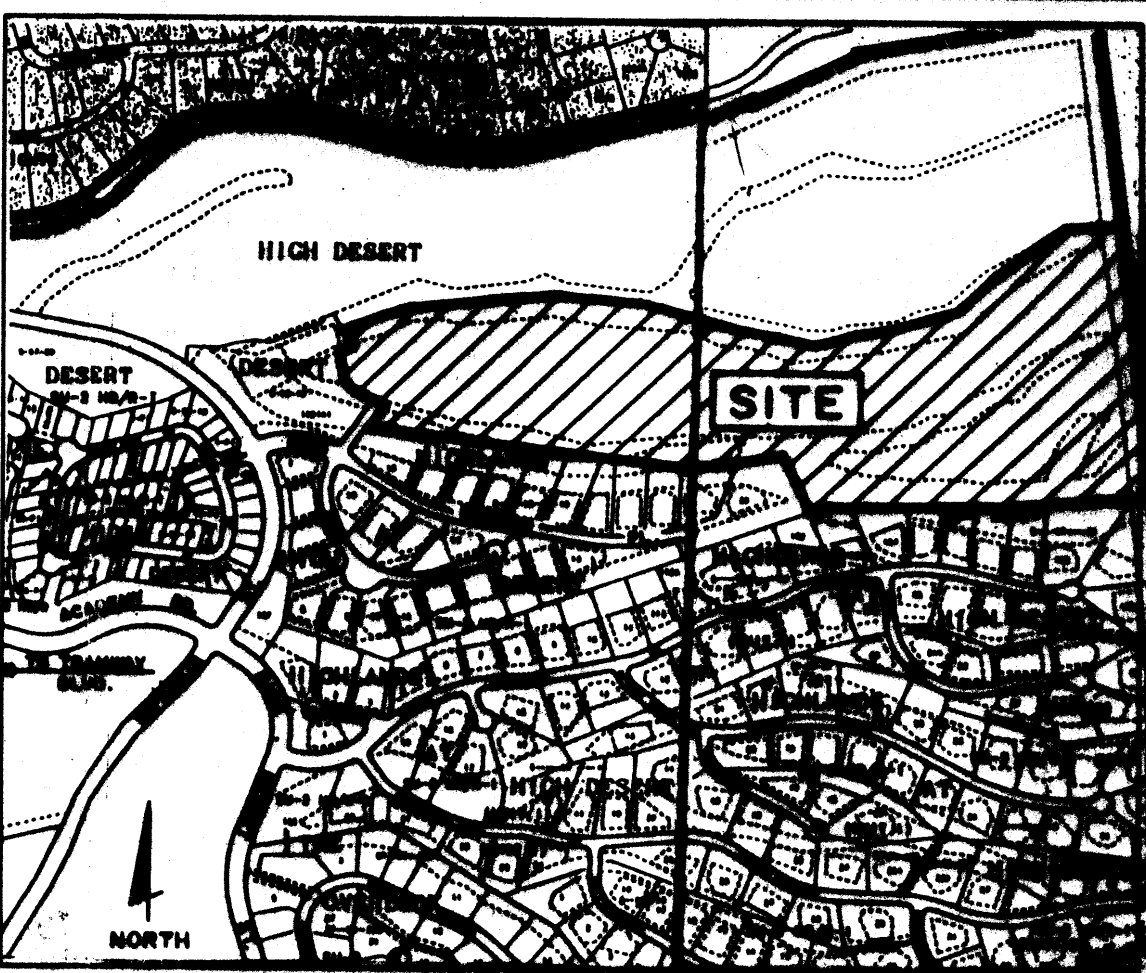
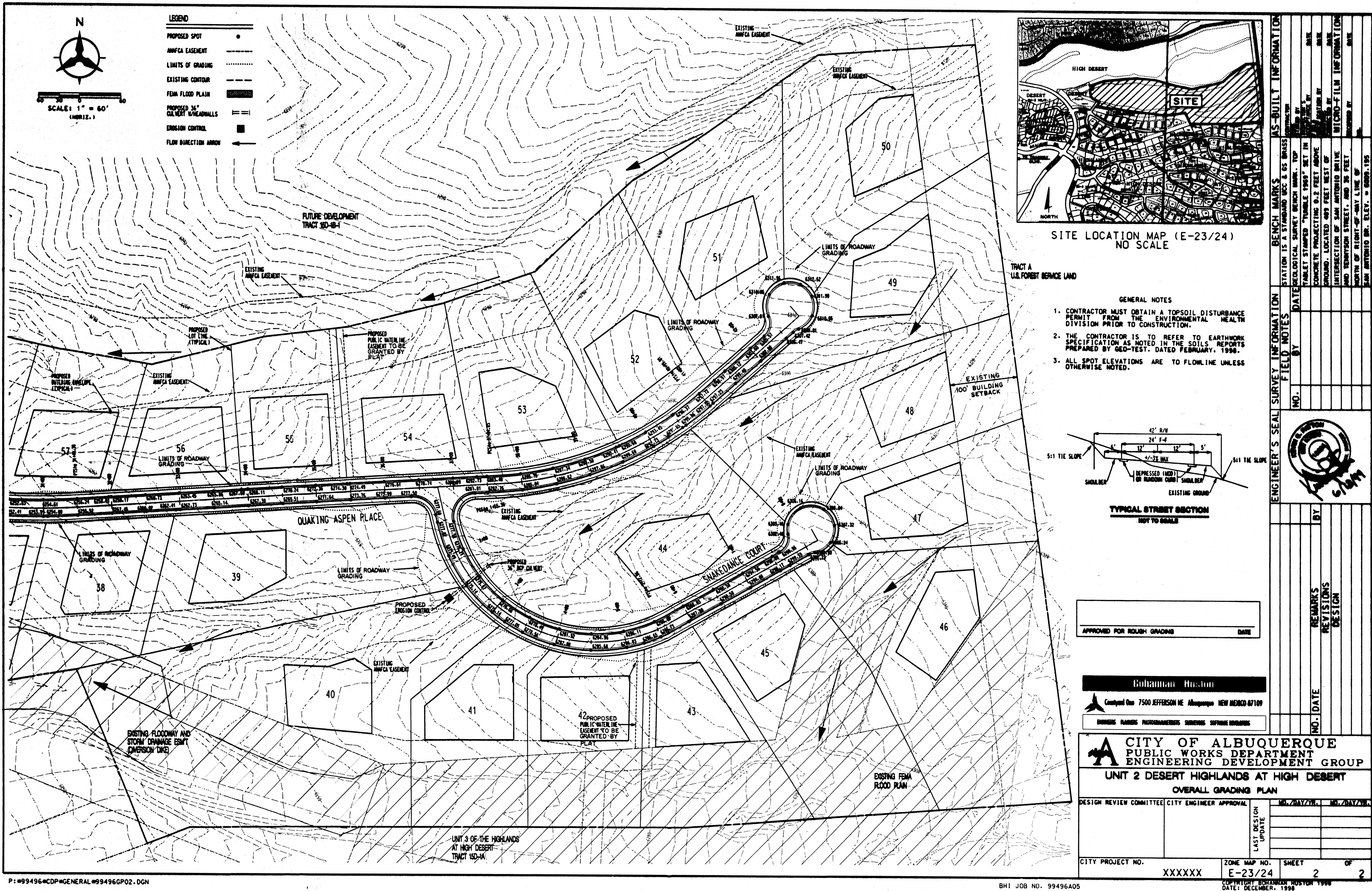


LEGAL DESCRIPTION

LOT 46-A, UNIT 2, DESERT HIGHLANDS AT HIGH DESERT

PERMANENT BENCHMARK

ACS 7-E24 ELEVATION 6333.296 (NGVD1929)

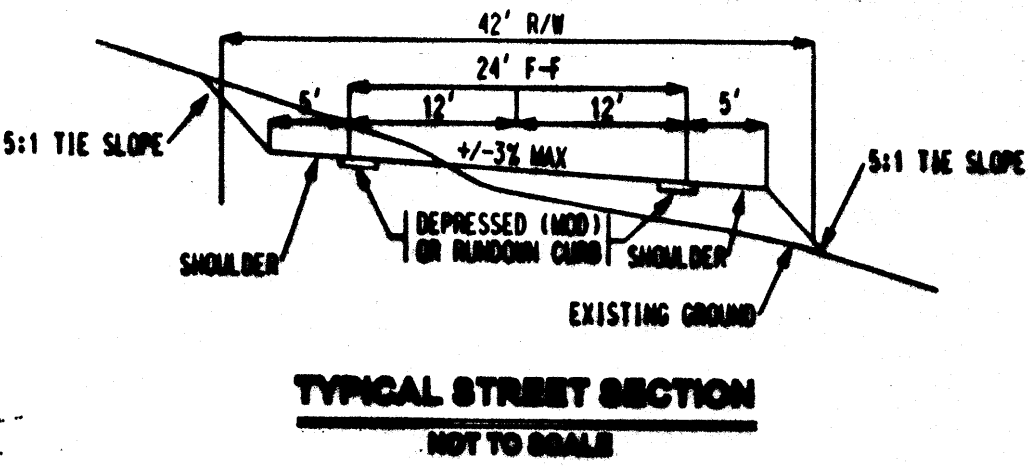


SITE LOCATION MAP (E-23/24)
NO SCALE

TRACT A
U.S. FOREST SERVICE LAND

GENERAL NOTES

- 1. CONTRACTOR MUST OBTAIN A TOPSOIL DISTURBANCE PERMIT FROM THE ENVIRONMENTAL HEALTH DIVISION PRIOR TO CONSTRUCTION.
- 2. THE CONTRACTOR IS TO REFER TO EARTHWORK SPECIFICATION AS NOTED IN THE SOILS REPORTS PREPARED BY GEO-TEST, DATED FEBRUARY, 1998.
- 3. ALL SPOT ELEVATIONS ARE TO FLOWLINE UNLESS OTHERWISE NOTED.

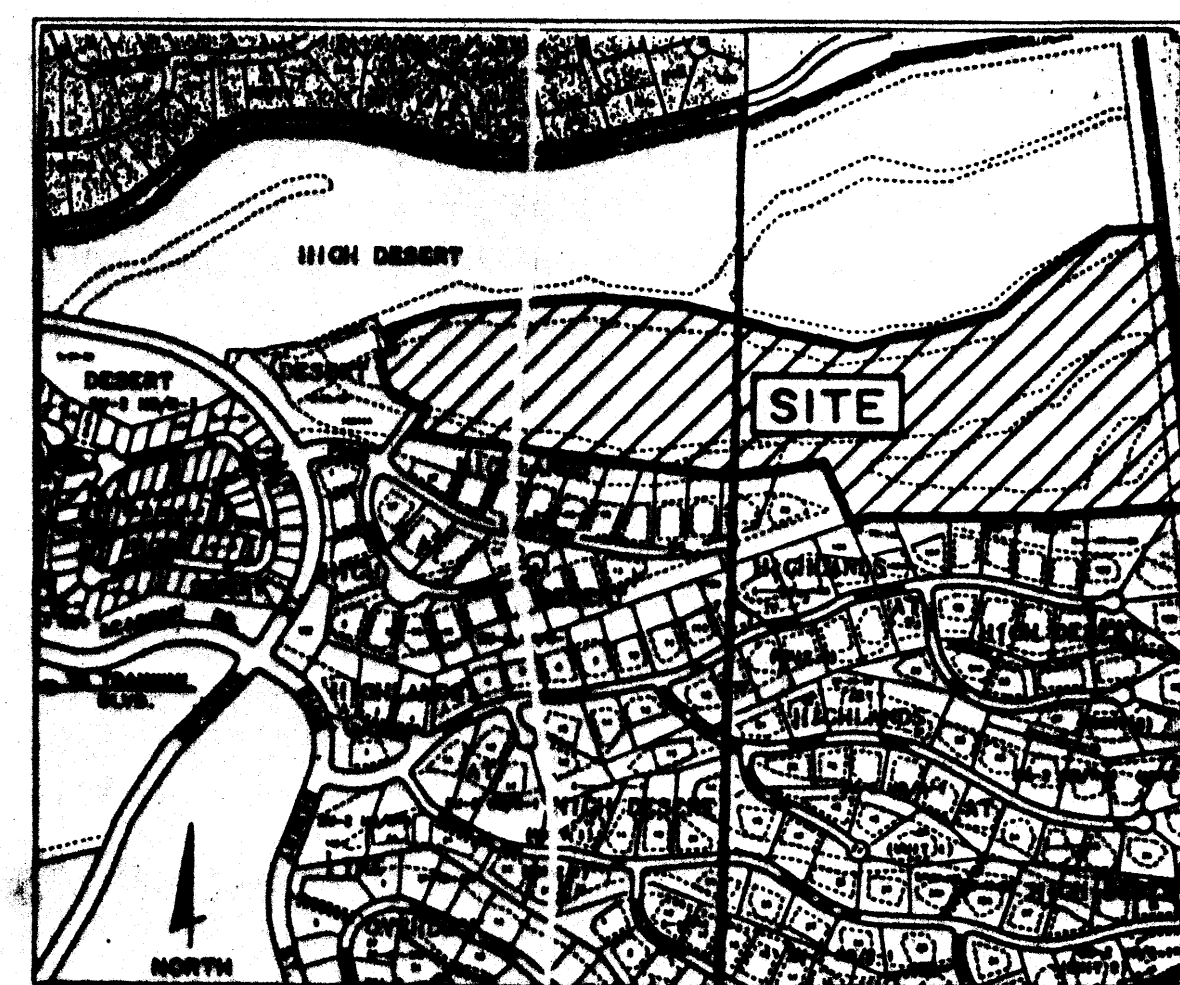


TYPICAL STREET SECTION
NOT TO SCALE

APPROVED FOR ROUGH GRADING _____ DATE _____

Coltman Houston
Consulting Eng. 7500 JEFFERSON NE Albuquerque, NEW MEXICO 87109
ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE ENGINEERS

CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT ENGINEERING DEVELOPMENT GROUP	
UNIT 2 DESERT HIGHLANDS AT HIGH DESERT OVERALL GRADING PLAN	
DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL
CITY PROJECT NO. XXXXXX	ZONE MAP NO. E-23/24
SHEET 2 OF 2	
DATE: DECEMBER, 1998	



LEGEND	
PROPOSED SPOT	●
EXISTING SPOT	○
ANAFCA EASEMENT	-----
LIMITS OF GRADING	
EXISTING CONTOUR	----
FEMA FLOOD PLAIN	
FLOW DIRECTION ARROW	

APPROVED FOR ROUGH GRADING _____ DATE _____

Bohannon Huston

 County One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87106
 ENGINEERS PLANNERS PROGRAMMANAGERS SURVEYORS SOFTWARE DEVELOPERS

A CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP
UNIT 2 DESERT HIGHLANDS AT HIGH DESERT

OVERALL GRADING PLAN					
DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.	
CITY PROJECT NO.	XXXXXX	ZONE MAP NO.	E-23/24	SHEET	OF
			1	2	

COPYRIGHT BOHANNAN HUSTON 1998
DATE: DECEMBER, 1998

ENGINEER'S SEAL						SURVEY INFORMATION		BENCH MARKS		AS-BUILT INFORMATION	
						FIELD NOTES		STATION IS A STANDARD MCC & GS BRASS CONSTRUCTION			
						NO.	BY	DATE			
									GEOLOGICAL SURVEY BENCH MARK, TOP		MEASURED BY DATE
									TABLET STAMPED "TUMBLE 1989" SET IN CONCRETE PROJECTING 0-2 FEET ABOVE GROUND.		LOCATED BY DATE
									GROUND, LOCATED 400 FEET WEST OF INTERSECTION OF SAN ANTONIO BRINE AND TEMMYSON STREET, AND 35 FEET NORTH OF RIGHT-OF-WAY LINE OF		MEASURED BY DATE
									MICRO-FILM INFORMATION		FILED BY DATE