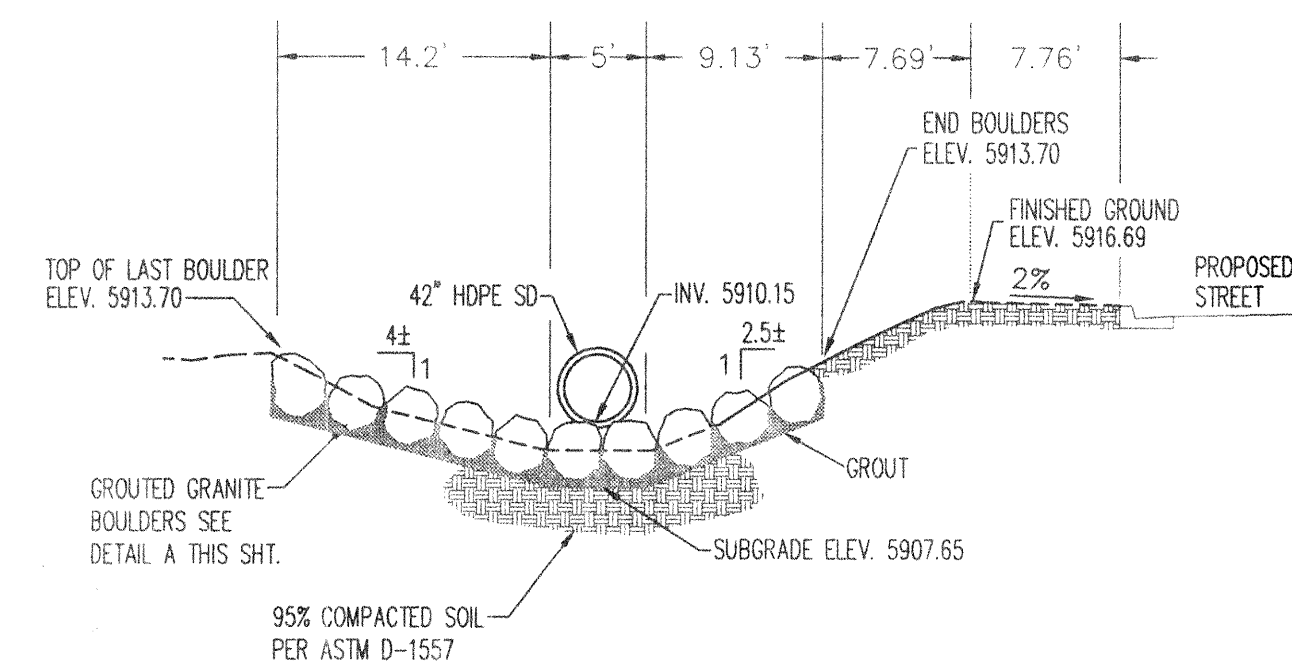
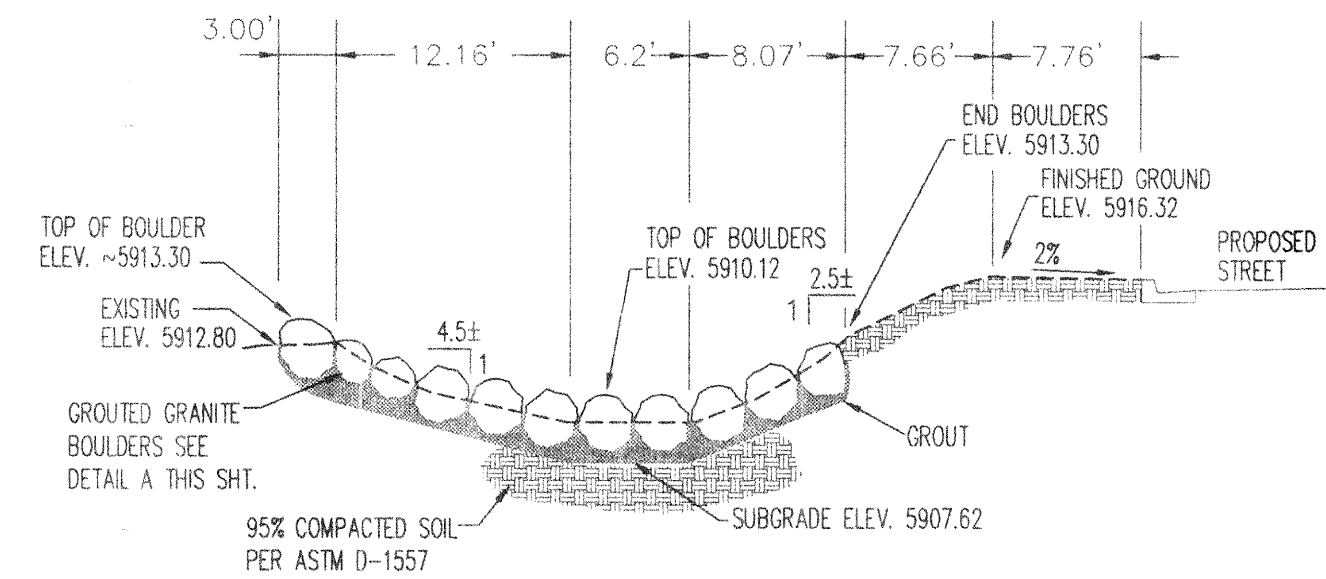


CHANNEL DISSIPATOR



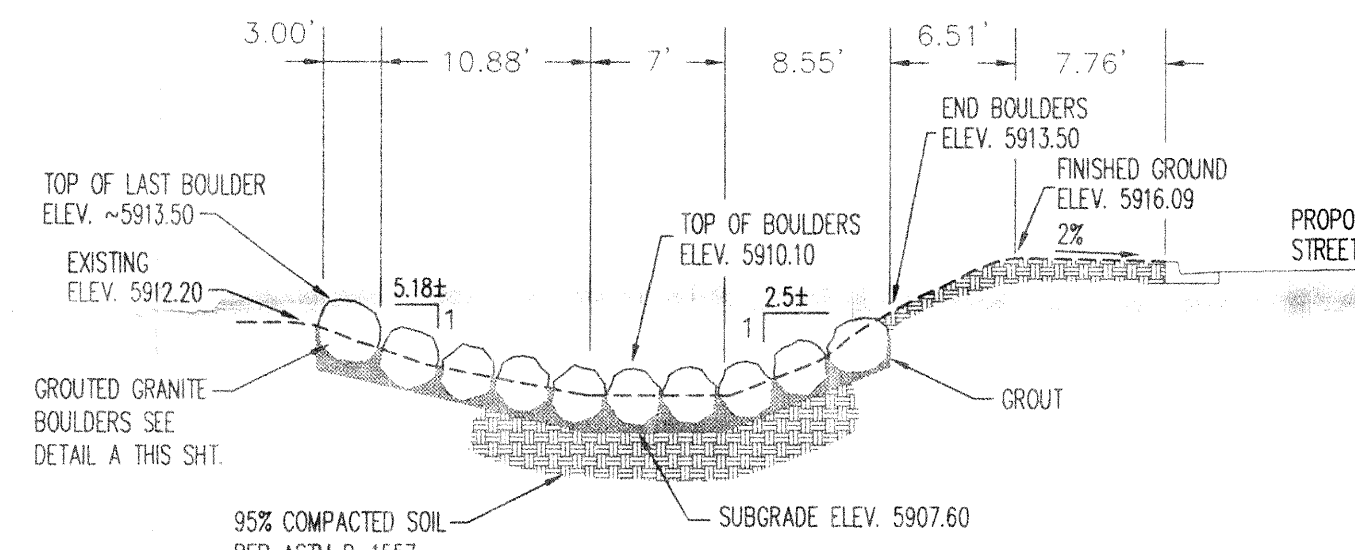
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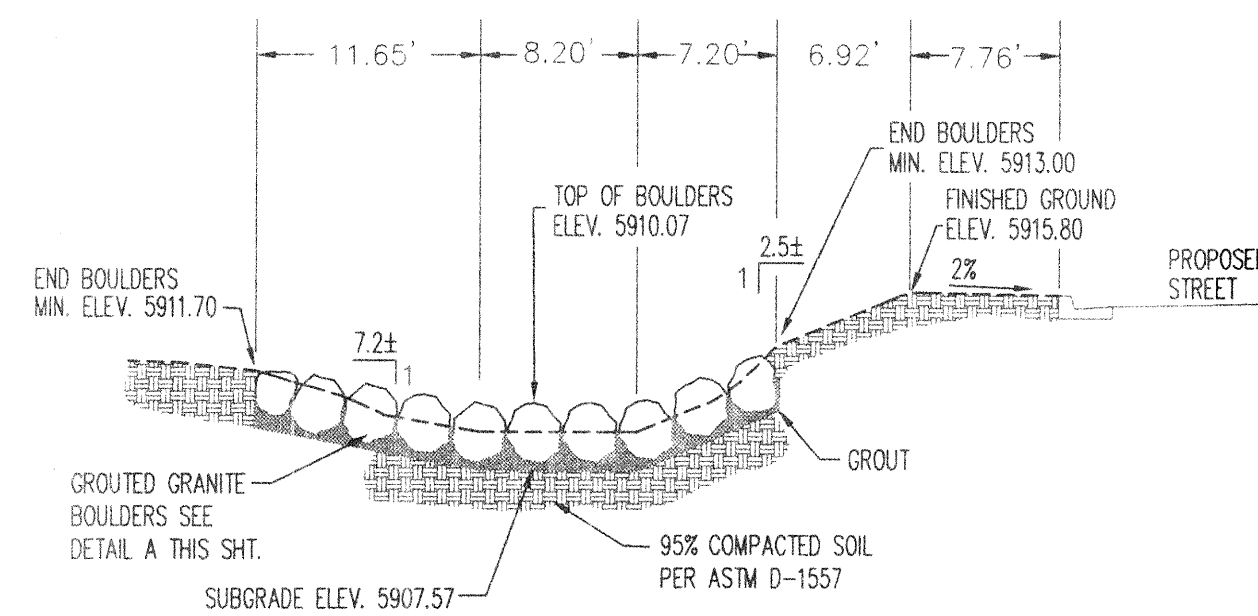
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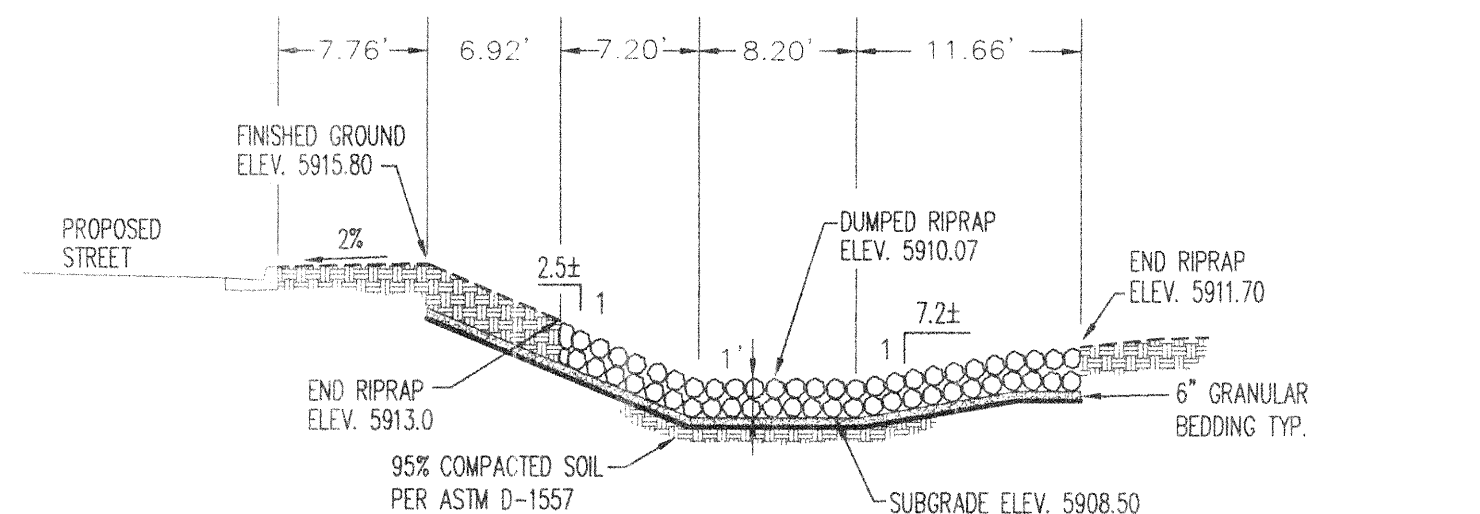
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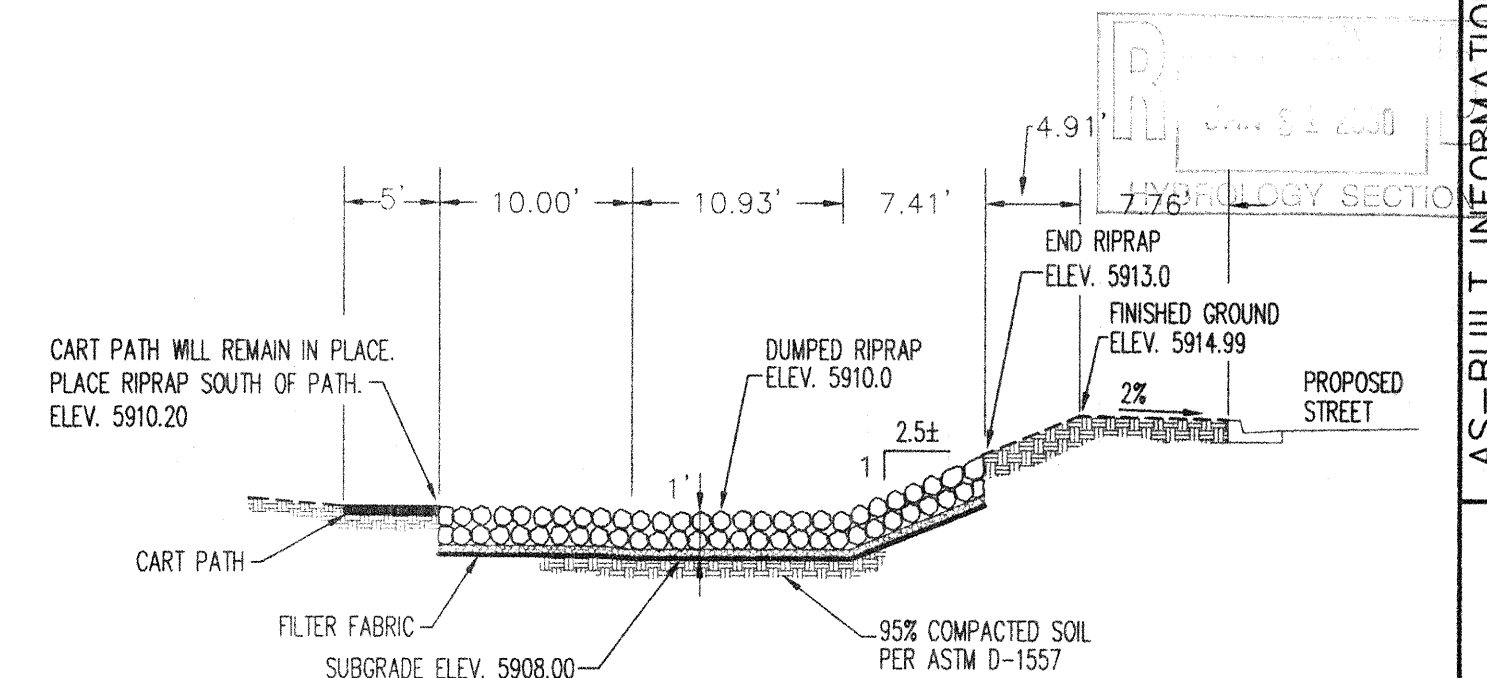
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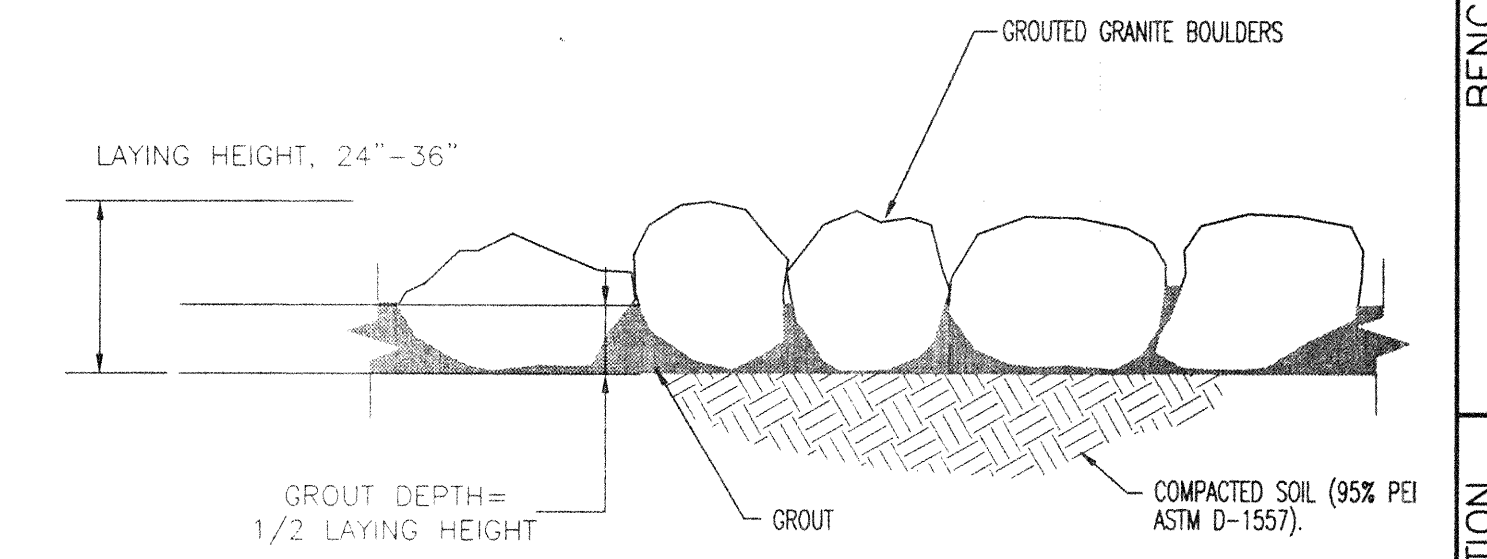
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N.T.S.



SECTION "F-F" STA. 1+00.00

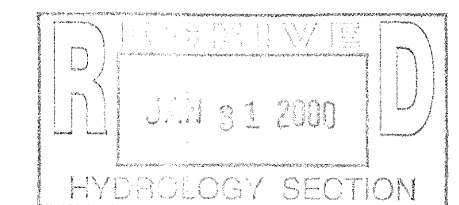
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DETAIL A GROUTED BOULDERS

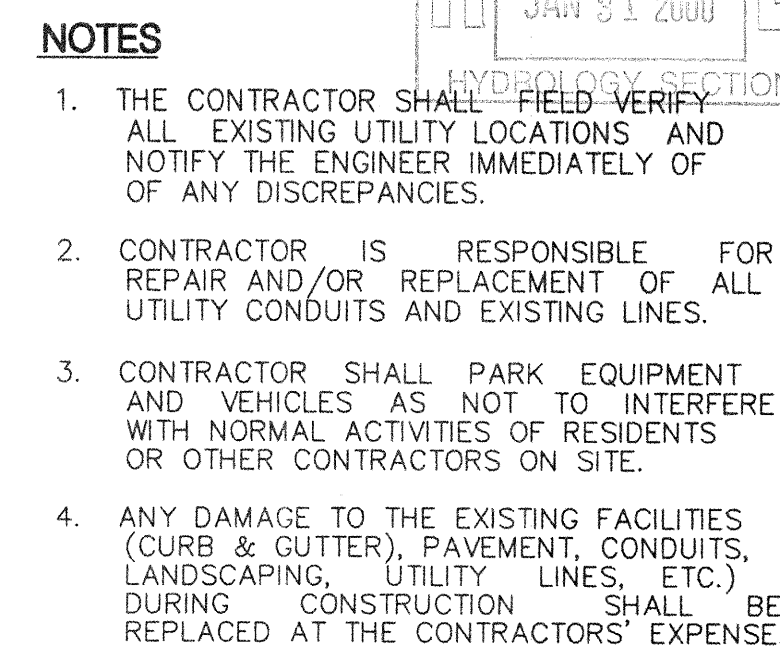
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NOTE: RIPRAP CLASSIFICATION IS TYPE VL TYPICAL SIZE = 6".

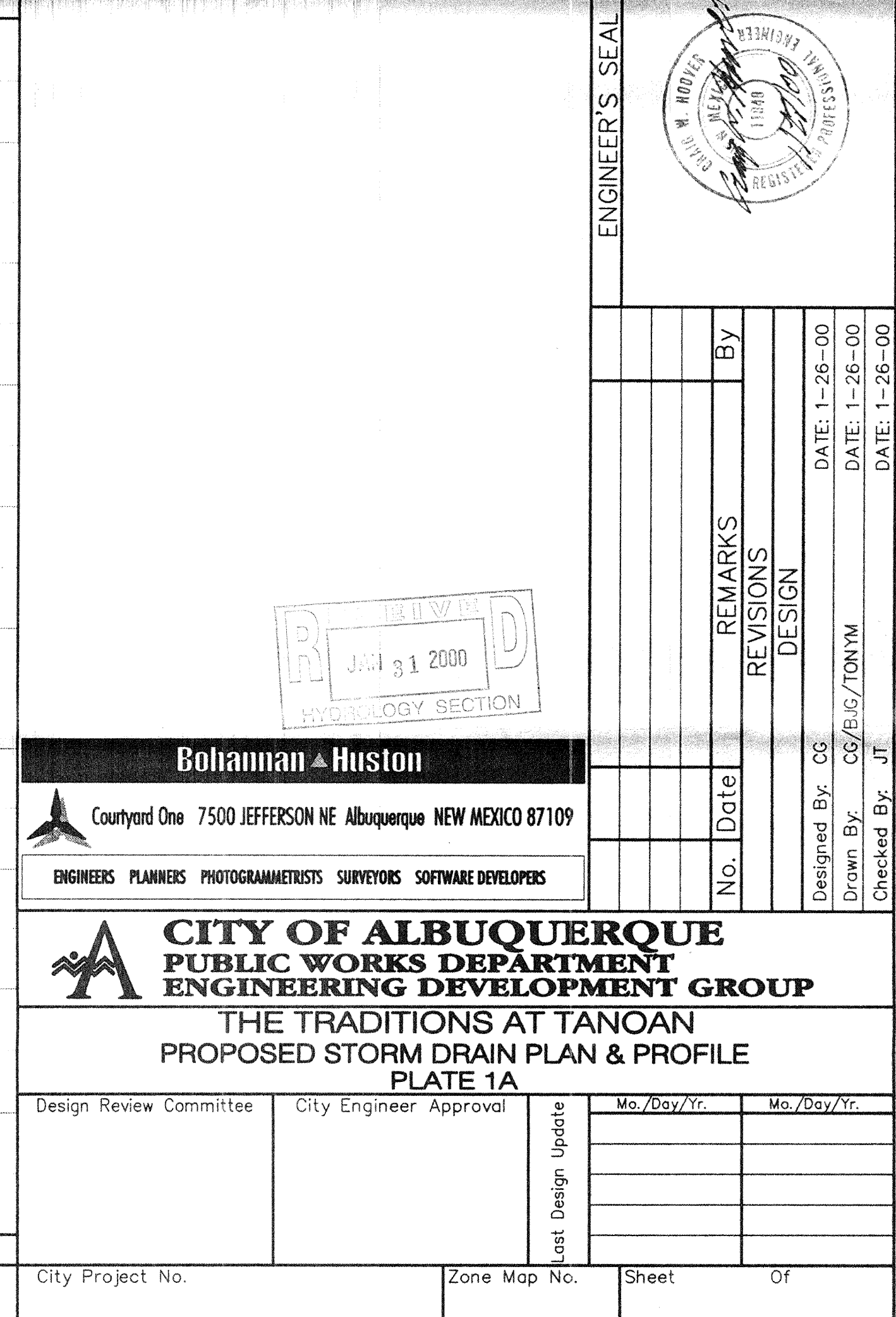


Bohannon & Huston
 Courtyard One 7500 JEFFERSON NE ALBUQUERQUE NEW MEXICO 87109
 ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT ENGINEERING DEVELOPMENT GROUP THE TRADITIONS AT TANOAN DISSIPATOR CHANNEL PLATE 1B		Design Review Committee City Engineer Approval City Project No.	Mo./Day/Yr. Mo./Day/Yr. Sheet 2 Of
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	-----------------------------------------------------------------------	------------------------------------------



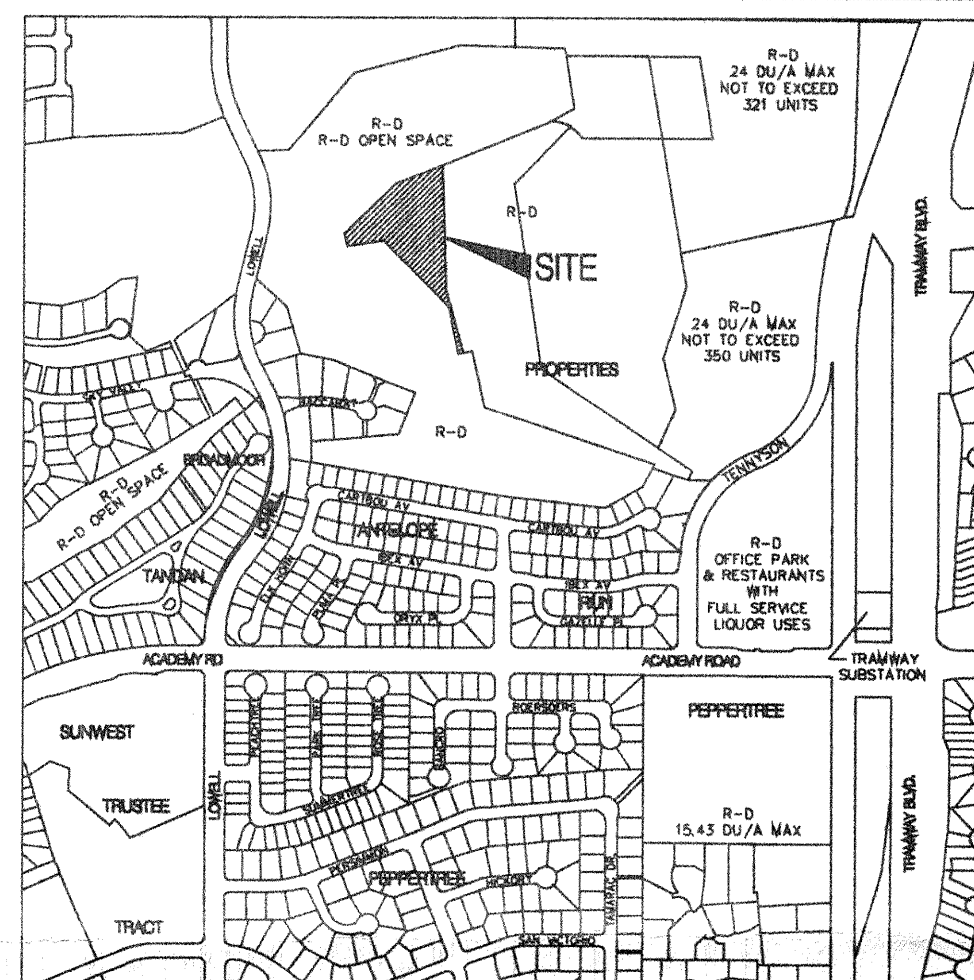
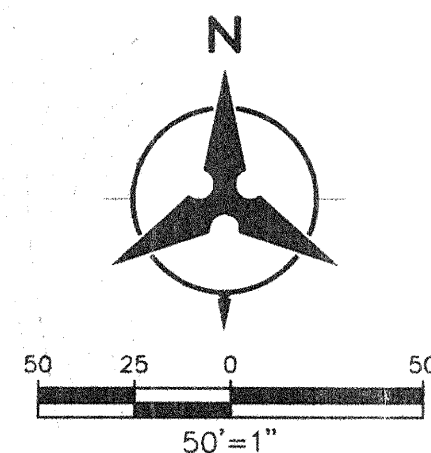
SD TANGENT DATA		
NUMBER	BEARING	DISTANCE
T1	N69°31'49"E	24.78'
T2	S45°22'13"E	345.46'
T3	S88°23'44"E	130.68'
T4	N80°37'22"E	41.03'



TANOAN GOLF COURSE (GRASSED)

- NOTES:
1. LOTS 1 AND 4 MAY DISCHARGE SHEET FLOW (UNCONCENTRATED) FLOWS TO THE GOLF COURSE. ALL OTHER FLOWS SHALL BE DISCHARGED TO TRADITION LANE.
 2. MINOR GRADING ON LOTS 2, 3, AND 4 SHOWN ONLY TO PROVIDE FILL MATERIAL FOR ROAD CONSTRUCTION. CONTRACTOR SHALL WORK WITH OWNER PRIOR TO & DURING CONSTRUCTION (TO MINIMIZE UNNECESSARY GROUND DISTURBANCE).
 3. HOME CONSTRUCTION SHALL CONFORM TO THE INTENT OF THIS PLAN. BOHANNAN HUSTON SHALL PROVIDE DRAINAGE PLAN REVIEW PRIOR TO BUILDING PERMIT SUBMITTAL TO ENSURE COMPLIANCE. DRAINAGE CERTIFICATION SHALL BE PROVIDED TO THE CITY UPON HOME COMPLETION OF LOTS 1, 2, 3 AND 4.
 4. LOTS 2, 3, & 4 SHALL ACCEPT/COLLECT RUNOFF FROM THE PINO DAM'S SLOPE & DISCHARGE THESE FLOWS TO THE STREET (TRADITION LANE) IN AN ACCEPTABLE MANNER.

HV-8
5983.31



VICINITY MAP

ZONE ATLAS MAP No. E-22-Z

CURRENT LEGAL DESCRIPTION: TRACT N-6-B, TANOAN PROPERTIES

LEGEND

- | | |
|---------|--------------------------------------------------|
| --- | PROPERTY LINE |
| - - - - | EXISTING CONTOUR |
| - - - - | EXISTING SWALE |
| - - - - | EXISTING SPOT ELEVATION |
| - - - - | EXISTING EASEMENT |
| - - - - | EXISTING SANITARY SEWER |
| - - - - | EXISTING SANITARY SEWER MH |
| - - - - | EXISTING WATER LINE |
| - - - - | EXISTING VALVE |
| - - - - | EXISTING FIRE HYDRANT |
| - - - - | PROPOSED FIRE LINE |
| - - - - | PROPOSED HYDRANT |
| - - - - | PROPOSED FIRE DEPARTMENT CONNECTION |
| - - - - | PROPOSED STORM DRAIN |
| - - - - | PROPOSED STORM DRAIN MH |
| - - - - | PROPOSED CLEANOUT (CO) |
| - - - - | PROPOSED STORM DRAIN INLET |
| - - - - | PROPOSED SPOT ELEVATION |
| - - - - | TC=TOP OF CURB, FL=FLOW LINE |
| - - - - | TW=TOP OF WALL, BW=BOTTOM OF WALL |
| - - - - | EX=EXISTING, TP=TOP OF PAVEMENT, TG=TOP OF GRADE |
| - - - - | PROPOSED RETAINING WALL |
| - - - - | TRACT NAME LOT # |

DRAINAGE CERTIFICATION

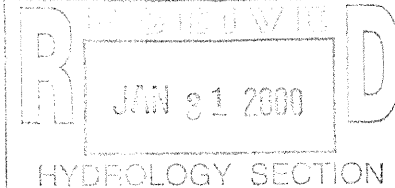
AS-BUILT ELEVATIONS ARE SHOWN ON THE PLAN IN LOCATIONS WHERE THE ORIGINAL DESIGN ELEVATION HAS BEEN CROSSED OUT AND THE NEW ELEVATION IS LISTED. ELEVATIONS WERE PROVIDED BY BOHANNAN HUSTON INC., PROFESSIONAL LAND SURVEYOR.

NOTES:

I, JAMES R. TOPMILLER, OF BOHANNAN HUSTON INC., A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF NEW MEXICO, DO HEREBY CERTIFY THAT THE DRAINAGE IMPROVEMENTS HAVE BEEN CONSTRUCTED IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED DRAINAGE PLAN, TO THE BEST OF MY KNOWLEDGE AND BELIEF.

JAMES R. TOPMILLER, P.E.
N.M.P.E. NO. 9354

DATE



CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
ENGINEERING DEVELOPMENT GROUP

GRADING / DRAINAGE PLAN

TRADITIONS AT TANOAN

Design Review Committee	City Engineer Approval	Mo./Day/Yr.	Mo./Day/Yr.
City Project No.	Zone Map No.	Sheet	Of
	E-22-Z		

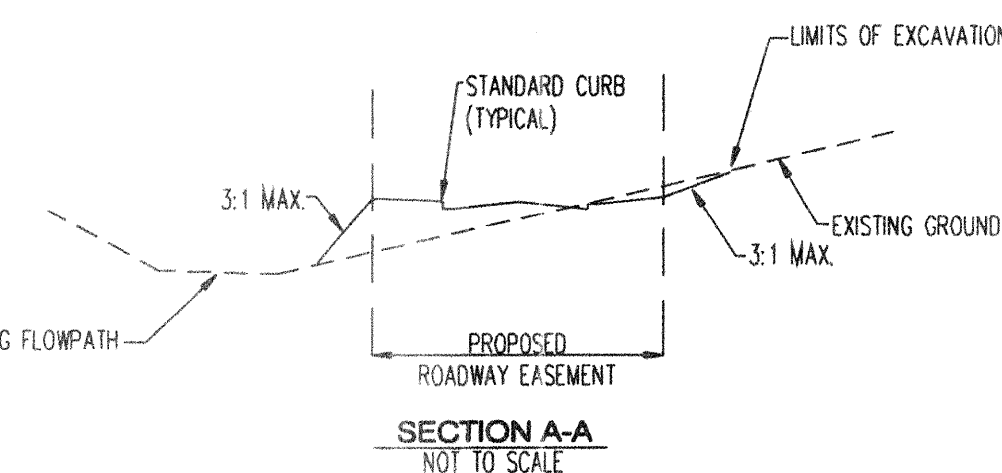
GRADING NOTES

1. EXCEPT AS PROVIDED HEREIN, GRADING SHALL BE PERFORMED AT THE ELEVATIONS AND IN ACCORDANCE WITH THE DETAILS SHOWN ON THIS PLAN.
2. CONTRACTOR SHALL OBTAIN AND ABIDE BY A TOPSOIL DISTURBANCE PERMIT FROM THE CITY OF ALBUQUERQUE. THE COST FOR REQUIRED CONSTRUCTION DUST AND EROSION CONTROL MEASURES SHALL BE INCIDENTAL TO THE PROJECT COST.
3. ALL WORK RELATIVE TO FOUNDATION CONSTRUCTION, SITE PREPARATION, AND PAVEMENT INSTALLATION, AS SHOWN ON THIS PLAN, SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE "GEOTECHNICAL INVESTIGATION," AS PROVIDED BY THE ARCHITECT OR OWNER. ALL OTHER WORK SHALL, UNLESS OTHERWISE STATED OR PROVIDED FOR HEREON, BE CONSTRUCTED IN ACCORDANCE WITH THE PROJECT (FIRST PRIORITY) SPECIFICATIONS, AND/OR THE CITY OF ALBUQUERQUE (CDA) STANDARD SPECIFICATIONS FOR PUBLIC WORKS (SECOND PRIORITY).
4. EARTH SLOPES SHALL NOT EXCEED 3 HORIZONTAL TO 1 VERTICAL UNLESS SHOWN OTHERWISE.
5. IT IS THE INTENT OF THESE PLANS THAT THIS CONTRACTOR SHALL NOT PERFORM ANY WORK OUTSIDE OF THE PROPERTY BOUNDARIES EXCEPT AS REQUIRED BY THIS PLAN.
6. THE CONTRACTOR IS TO ENSURE THAT NO SOIL ERODES FROM THE SITE ONTO ADJACENT PROPERTY OR PUBLIC RIGHT-OF-WAY. THIS SHOULD BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AT THE PROPERTY LINES PER DETAIL ON SHEET C-4 AND WETTING THE SOIL TO PROTECT IT FROM WIND EROSION.
7. A DISPOSAL SITE FOR ALL EXCESS EXCAVATION MATERIAL, AND UNSUITABLE MATERIAL SHALL BE OBTAINED BY THE CONTRACTOR IN COMPLIANCE WITH APPLICABLE ENVIRONMENTAL REGULATIONS AND APPROVED BY THE OBSERVER. ALL COSTS INCURRED IN OBTAINING A DISPOSAL SITE AND HAUL THERE TO SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT AND NO SEPARATE MEASUREMENT OR PAYMENT SHALL BE MADE.
8. PAVING AND ROADWAY GRADES SHALL BE +/- 0.1' FROM PLAN ELEVATIONS. PAD ELEVATION SHALL BE +/- 0.05' FROM BUILDING PLAN ELEVATION.
9. ALL PROPOSED CONTOURS REFLECT TOP OF PAVEMENT ELEVATIONS IN THE PARKING AREA AND ARE ADJUSTED FOR CURBS, MEDIANS AND ISLANDS.
10. ALL WORK DETAILED ON THESE PLANS AND PERFORMED UNDER THIS CONTRACT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND THE PROJECT GEOTECHNICAL REPORT, WHERE APPLICABLE, CITY OF ALBUQUERQUE PUBLIC WORKS STANDARDS SHALL APPLY.
11. THE CONTRACTOR SHALL ABIDE BY ALL LOCAL, STATE, AND FEDERAL LAWS, RULES AND REGULATIONS WHICH APPLY TO THE CONSTRUCTION OF THESE IMPROVEMENTS.
12. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION OBSERVER OR ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.

GENERAL NOTES

GENERAL NOTES

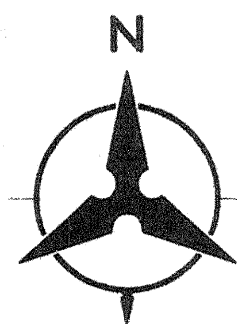
1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL CONTACT LINE LOCATING SERVICE FOR LOCATION OF EXISTING UTILITIES.
2. ALL ELECTRICAL, TELEPHONE, CABLE TV, GAS AND OTHER UTILITY LINES, CABLES, AND APPURTENANCES ENCOUNTERED DURING CONSTRUCTION THAT REQUIRE RELOCATION, SHALL BE COORDINATED WITH THAT UTILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL NECESSARY UTILITY ADJUSTMENTS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR DELAYS OR INCONVENIENCES CAUSED BY UTILITY COMPANY WORK CREWS. THE CONTRACTOR MAY BE REQUIRED TO RESCHEDULE HIS ACTIVITIES TO ALLOW UTILITY CREWS TO PERFORM THEIR REQUIRED WORK.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITY LINES WITHIN THE CONSTRUCTION AREA. ANY DAMAGE TO EXISTING FACILITIES CAUSED BY CONSTRUCTION ACTIVITY SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE AND APPROVED BY THE CONSTRUCTION OBSERVER. CONSTRUCTION ACTIVITY SHALL BE LIMITED TO THE PROPERTY AND/OR PROJECT LIMITS. ANY DAMAGE TO ADJACENT PROPERTIES RESULTING FROM THE CONSTRUCTION PROCESS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
4. OVERNIGHT PARKING OF CONSTRUCTION EQUIPMENT SHALL NOT OBSTRUCT DRIVEWAYS OR DESIGNATED TRAFFIC LANES. THE CONTRACTOR SHALL NOT STORE ANY EQUIPMENT OR MATERIAL WITHIN THE PUBLIC RIGHT-OF-WAY.
5. THE CONTRACTOR SHALL OBTAIN ALL THE NECESSARY PERMITS FOR THE PROJECT PRIOR TO COMMENCING CONSTRUCTION (I.E., BARRICADING, TOPSOIL DISTURBANCE, EXCAVATION PERMITS, ETC.).
6. ALL PROPERTY CORNERS DESTROYED DURING CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. ALL PROPERTY CORNERS MUST BE RESET BY A REGISTERED LAND SURVEYOR.
7. THE CONTRACTOR SHALL PREPARE A CONSTRUCTION TRAFFIC CONTROL AND SIGNING PLAN AND OBTAIN APPROVAL OF SUCH PLAN FROM THE CITY OF ALBUQUERQUE, TRAFFIC ENGINEERING DEPARTMENT, PRIOR TO BEGINNING ANY CONSTRUCTION WORK ON OR ADJACENT TO EXISTING STREETS.
8. ALL BARRICADES AND CONSTRUCTION SIGNING SHALL CONFORM TO APPLICABLE SECTIONS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD), US DEPARTMENT OF TRANSPORTATION, LATEST EDITION.
9. THE CONTRACTOR SHALL MAINTAIN ALL CONSTRUCTION BARRICADES AND SIGNING AT ALL TIMES. THE CONTRACTOR SHALL VERIFY THE PROPER LOCATION OF ALL BARRICADING AT THE END AND BEGINNING OF EACH DAY.



GRADING AND DRAINAGE CONCURRENCE:

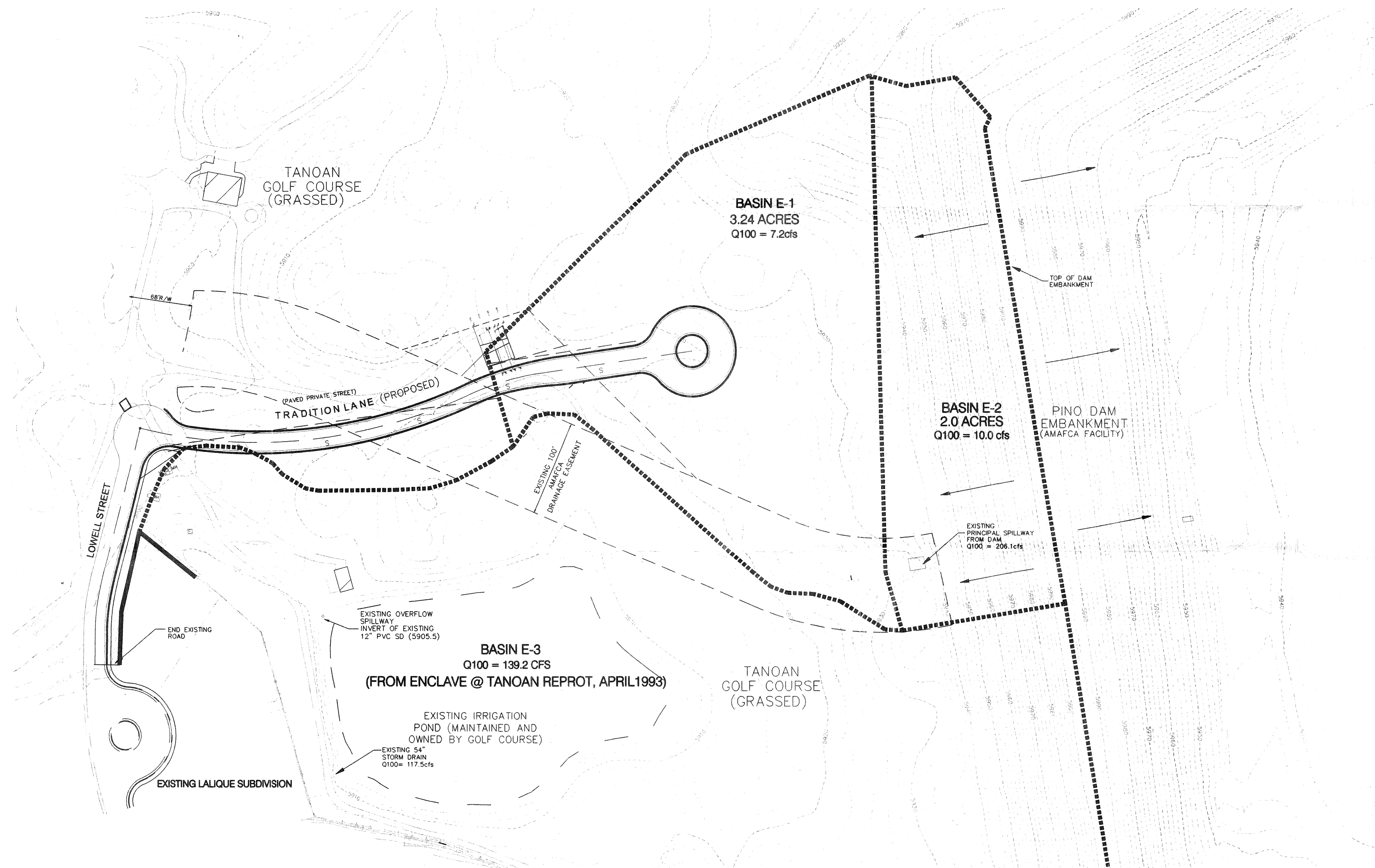
JOE LONG, TANOAN GOLF COURSE

DATE



50 25 0 50
1" = 50'

R 31 2000 D
HYDROLOGY SECTION



TRADITIONS AT TANOAN DRAINAGE BASIN MAP EXISTING CONDITIONS

LEGEND

- PROPOSED BASIN BOUNDARY
- DRAINAGE EASEMENT
- PROPERTY LINES

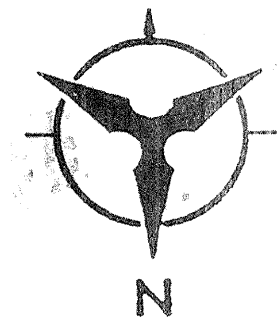
R 31 2000 D
JAN 31 2000
HYDROLOGY SECTION

Bohannon & Huston

Courtyard One 7500 JEFFERSON NE ALBUQUERQUE NEW MEX
ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS S00*

SAN ANTONIO

TANOAN
GOLF
COURSE



1" = 100'

EXISTING
LOWELL
STREET
R/W

FLOWPATH

EXISTING
ACCESS
EASEMENT

TRACT
N-6-A

PROPOSED
AMAFCA EASEMENT

PROPOSED
STORM DRAIN LINE

EXISTING AMAFCA
OUTLET STRUCTURE

POND

EXISTING
100' AMAFCA
EASEMENT

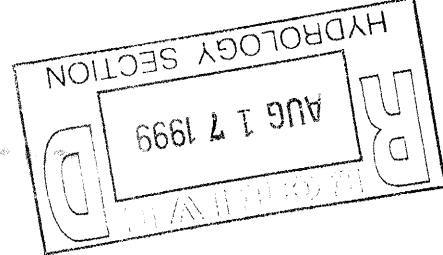
LALIQUE

SUBDIVISION

LOWELL
ST.

TYPICAL SECTOR
PLAN LINES

AMAFCA
PINO DAM



DRAINAGE INFORMATION SHEET

PROJECT TITLE: TRADITIONS@TANOAN ZONE ATLAS/DRNG. FILE # E-22 20DRB #: 97-437 EPC #: _____ WORK ORDER #: _____LEGAL DESCRIPTION: TRACT N-6-A, TANOAN PROPERTIES

CITY ADDRESS: _____

ENGINEERING FIRM: BOHANNAN-HUSTON INC.ADDRESS: 7500 JEFFERSON NE, ALB. NM 87109

OWNER: _____

ADDRESS: _____

ARCHITECT: _____

ADDRESS: _____

SURVEYOR: _____

ADDRESS: _____

CONTRACTOR: _____

ADDRESS: _____

CONTACT: James TopmillerPHONE: (505) 823-1000

CONTACT: _____

PHONE: _____

CONTACT: _____

PHONE: _____

CONTACT: _____

PHONE: _____

CONTACT: _____

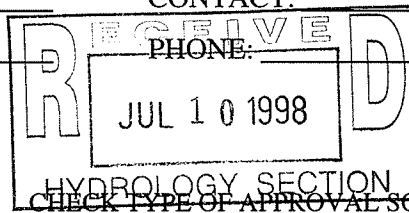
PHONE: _____

TYPE OF SUBMITTAL:

- ☒ DRAINAGE REPORT
☐ DRAINAGE PLAN
☒ FINAL GRADING & DRAINAGE PLAN
☐ GRADING PLAN
☐ EROSION CONTROL PLAN
☐ ENGINEER=S CERTIFICATION
☐ OTHER

PRE-DESIGN MEETING:

- ☒ YES
☒ NO
☐ COPY PROVIDED

DATE SUBMITTED: 7/10/98BY: James Topmiller

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ SKETCH PLAT APPROVAL
☒ 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 APPROVAL
☐ GRADING PERMIT APPROVAL
☐ PAVING PERMIT APPROVAL
☐ S.A.D. DRAINAGE REPORT
☐ DRAINAGE REQUIREMENTS
☒ OTHER WORK ORDER (SPECIFY)



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

April 17, 2000

James Topmiller, P.E.
Bohannon-Huston Inc.
7500 Jefferson NE
Albuquerque, New Mexico 87109

RE: Grading and Drainage Plan for Traditions at Tanoan (E22/D20) Submitted for Preliminary and Final Plat Approval and Grading Permit Release, Engineer's Stamp Dated 4/3/00.

Dear Mr. Topmiller:

Based on the information provided, the above referenced plan is approved for Preliminary Plat action by the DRB. The above referenced plan is also approved for Rough Grading permit release provided that it is first approved by the DRB.

On the Infrastructure List, please add the note stating that the storm drain includes manholes, the outfall structure and appurtenances. Also note that the Letter of Map Revision (LOMR) must be obtained from FEMA prior to release of the financial guarantees. Since mass grading is not proposed, and since the grading for each lot will be certified after it is developed, the grading and drainage certification requirement on the Infrastructure List for the release of financial guarantees may not be required.

Prior to Final Plat sign-off, please provide a note on the Plat stating that AMAFCA will maintain the proposed 48" storm drain pipe within their easement.

If you have any questions, please call me at 924-3982.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Lisa Ann Manwill, P.E., Albuquerque Metropolitan Arroyo Flood Control Authority
File

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III. METHODOLOGIES AND REFERENCES	1
IV. SUMMARY OF RELATED PLATTING/SITE DEVELOPMENT PLAN ACTION(S)	2
V. SITE LOCATION AND CHARACTERISTICS	2
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A. Proposed Development Scheme	4
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FIGURE 1: VICINITY MAP

APPENDICES

APPENDIX A: EXISTING CONDITION HYDROLOGIC CALCULATIONS

APPENDIX B: PROPOSED CONDITION HYDROLOGIC CALCULATIONS

- ONSITE BASINS
- OFFSITE BASINS

APPENDIX C: PROPOSED CONDITION HYDRAULIC CALCULATIONS

- STORM DRAIN AND DISSIPATOR CHANNEL
- STREET FLOW, CULVERT CROSSING, AND ASPHALT SPILLWAY
- EXCERPTS FROM "APPLICATION FOR CLOMR FOR ARROYO DEL PINO, APRIL 1993" BY BOHANNAN HUSTON, INC.

APPENDIX D: PROPOSED INFRASTRUCTURE LIST



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PLATES

PLATE 1:	GRADING AND DRAINAGE PLAN
PLATE 1A:	STORM DRAIN DESIGN PLAN AND PROFILE
PLATE 1B:	DISSIPATOR CHANNEL PLANS
PLATE 2:	TRADITION LANE STREET PLAN AND PROFILE
PLATE 3:	EXISTING CONDITION BASIN MAP
PLATE 4:	PROPOSED CONDITION BASIN MAP
PLATE 5:	PRELIMINARY PLAT
PLATE 6:	FEMA MAP

I. INTRODUCTION

This report presents the revised drainage management plan for preliminary and final plat (and work order) approval for the development of a residential subdivision called "Traditions at Tanoan Subdivision", on Tract N-6-A, of Tanoan Properties. The property is 2.76 acres, zoned R-D and proposed for development of four detached, single-family residential lots and the related private and public streets, and infrastructure. As is shown on the Drainage Basin Maps, Tramway Dam bounds the property on the east, and Tanoan Golf Course on the west, north and south.

This report has been revised from previously submitted reports to show an alternative handling of the dam's principal spillway discharge, i.e.; the discharge will be piped to a location that drains away from the existing irrigation pond (not to the pond).

II. PURPOSE OF REPORT

This report outlines the hydrological methods used, and summarizes the existing and proposed drainage conditions. Calculations and supporting data are presented in the appendices. Drainage basin maps, a grading plan, storm drain plans, profiles, details, street profiles, and a copy of the preliminary plat are included at the end of this report. The purpose of this report is to obtain a drainage report approval for the preliminary and final plat (and work order) from AMAFCA and the City of Albuquerque.

From previous conversations with Mr. Fred Aguirre (COA Hydrology) and Lisa Manwill (AMAFCA), AMAFCA will take part in the hydrological/hydraulic review of this plan.

III. METHODOLOGIES AND REFERENCES

Existing undeveloped conditions and proposed developed conditions were analyzed for an approximate 100-year, 6-hour storm event consistent with the City of Albuquerque Design Process Manual (DPM), including the January, 1997 revision of Chapter 22 Drainage, Flood Control, and Erosion Control, Section A.6. The analysis also references, and is consistent with, the previously submitted and approved report named "Application for CLOMR for Arroyo del Pino Arroyo, Adjacent to the Enclave at Tanoan Subdivision," dated April 1993, by Bohannon Huston, Inc.



Street hydraulics were analyzed using Manning's equation with the "n" values suggested in the DPM. Rating tables for streets are provided in the appendices along with hydrologic and hydraulic calculations. Streets are designed to convey the energy grade line of the design storm event within the right-of-way. Normal flow depth is confined to the top of the curb. The culvert calculations used inlet control conditions and are analyzed by nomographs in Appendix C.

IV. SUMMARY OF RELATED PLATTING/SITE DEVELOPMENT PLAN ACTION(S)

This report requests preliminary and final plat (and public work order) approval. Final grading plans and work order construction plans will be submitted and approved by the City and AMAFCA in the near future.

V. SITE LOCATION AND CHARACTERISTICS

This site currently consists of undeveloped vacant land with slopes ranging from 3% to 9% generally downhill in a westerly direction. Soils are highly absorptive sandy soils with occasional clay lenses. Vegetation is light, consisting of grasses and small sagebrush.

The site is to be accessed from Lowell Street by a private road crossing adjacent golf course lands. The golf course lands have pop-up sprinklers and paved golf course paths. The Lowell Street Right of Way has existing wet and dry utilities, and irrigated grasses on the surface.

A portion of the site is found within a FEMA floodplain, as shown on the floodplain map provided in the rear of this report.

VI. EXISTING HYDRAULIC AND HYDROLOGIC CONDITIONS

The existing drainage conditions are shown graphically on the Existing Drainage Conditions Basin Map and are summarized as follows (calculations are also shown in the Appendix):

The bulk of the existing site is treated as a single basin, Basin E-1, for comparison purposes to the developed condition.

A. Onsite Conditions

Basin E-1 consists of the site itself, Tract N-6-A. Existing conditions generate 7.2 cfs for an approximate 100-year 6-hour storm event. The runoff flows to a shallow swale and is conveyed offsite and into the Tanoan Golf Course.

The Pino Dam principal spillway outlets near the southern reach of Lot 4. The 100-year, 6-hour discharge from the outlet is 206.1 cfs, as described in the "CLOMR Application for Arroyo del Pino" report. (See Appendix.) The discharge from the Dam proceeds at first westerly, and then is diverted by Golf Course berms to the north across Lot 4 before flowing out onto the Golf Course.

B. Offsite Conditions

Basin E-2 is made up of the western sloped side of the dam, immediately upstream of the site, and generates 10.0 cfs peak in the 100-year 6-hour storm event. The runoff from this basin travels in sheet flow in a westerly sheet flow manner across the site into the Golf Course or the existing irrigation pond.

Basin E-3 consists of the area draining to the proposed road crossing of the irrigation pond spillway swale. This basin includes the 100 year discharge of 117.5 cfs from the existing 54" storm drain exiting the Lalique Subdivision. The discharge from the basin is 139.2 cfs. (obtained from the "Enclave at Tanoan Drainage Report, April 1993).

C. Management of Offsite Drainage Basin Flows

The following describes how the basins' flows are to be managed and integrated within site development.

Historically, flows of 10.0 cfs run off the western slope of the dam embankment (E-2), drained over the site. Proposed conditions allow for historical flows to pass through the lots into Tradition Lane. Future homeowners of the lots are to allow flows to pass through their property via turned blocked and/or swales designed by the engineer on a lot by lot basis. The Pino Dam out fall flows for the 100 year storm are 206.1 cfs. These flows will be intercepted by a new 36" RCP and pass through an underground storm drain system to the north side of Tradition Lane. Dissipation of flow energy will occur in a riprap lined channel extending from the pipe end. See appendix C for hydraulic calculations and Plate 1A for the storm drain design plans. The flows will then continue down historical AMAFCA drainage easement paths.

The 206.1 cfs discharged from the dam's 36" principal spillway pipe shall be collected and conveyed via a new storm drain pipe to a discharge point located just west of Lot 1. The pipe will be of a material such as HDPE, as acceptable by AMAFCA and will be owned and maintained by AMAFCA. A new easement will be granted to AMAFCA covering the pipe. A dissipation channel of designed riprap shall be located at the new pipe's outlet. Calculations for both the pipe's hydraulics and the dissipation channel are located in Appendix C of this report.

A significant drainage structure proposed is **the multiple-culvert crossing on Tradition Lane** at the existing spillway swale from the irrigation pond. The culverts are identified as Analysis Point # 2, with a 100-year flow of 139.2 cfs. City Ordinance requires an all-weather access to proposed subdivisions so accordingly, the full flow must be passed under the road in the proposed culverts. Calculations provided in the Appendix result in the installation of three (3) 24"x38" oval RCP pipes to pass the required flow. Headwater requirements at the culvert entrances will place the culvert inverts at least 3.5' below the



road elevation. Minor regrading at the culvert outlets will produce a sloped swale that returns the flows in a low velocity manner to the Golf Course in its historical, pre-development alignment. Maintenance of the road and the drainage crossing will be provided by the Tanoan Homeowner's Association, which provides this service for all the Tanoan residential development.

Offsite Basin 1 (OFF-1) is the basin covering the proposed Lowell Street extension to Tradition Lane. It is generating approximately 9.1 cfs in the 100-year storm event. These flows will be discharged westerly onto the Golf Course, in a semi-sheet flow manner, by sloping the road at a 3% gradient to the west. Since no curb (or an asphalt curb with spaced curb openings) will be constructed on the road's west side, flows will not be concentrated, and flow depths and velocities will be minimized to the point there will be no adverse impacts.

The existing FEMA floodplain on proposed Lot 4 and Tradition Lane shall be removed at a future date by CLOMR/LOMR submittal to the City and FEMA (by separate submittal).

AMAFCA will be provided a revised Filing Sheet for the Pino Dam Facility to reflect the new storm drain pipe extension and verification of no impact to the storm event water surface elevations in the dam.

VIII. CONCLUSION

The drainage management plan presented in this report for Traditions at Tanoan (formerly Tanoan Properties Tract N-6-A) provides a workable solution to the drainage issues created by the development of this property and should be approved as satisfying the requirements for Preliminary Plat, Final Plat and Work Order Approval.

EXISTING DRAINAGE / BASIN E-1

TANOAN: TRACT N-6-A ON-SITE, EXISTING DRAINAGE BASINS Qmax CALCULATIONS

Source: DPM

Zone 3: Between San Mateo and Eubank, North of I-40; and between San Mateo and the East boundary of Range 4 East, South of I-40

Treatments:

- A. Soil uncompacted by human activity with 0 to 10% slopes. native grasses, weeds and shrubs in typical densities with minimal disturbance to grading, ground cover and infiltration capacity.
- B. Irrigated lawns, parks, and golf courses with 0 to 10% slopes. Native grasses, weeds, and shrubs and soil uncompacted by human activity with slopes greater than 10% and less than 20%.
- C. Soil compacted by human activity. Minimal vegetation. Unpaved parking, roads, trails. Most vacant lots. Gravel or rock on plastic. Irrigated lawns and parks with slopes greater than 10% and < 20%.
- D. Impervious areas, pavement and roofs.

TABLE A-6: $Q_{max} = (Q_{max1} \cdot A_1) + (Q_{max2} \cdot A_2) + (Q_{max3} \cdot A_3) \dots$

Basin and Treatment Disbursement	Area (acres)	% of Total	Treatment	Q/ACRE peak
E-1	3.24			
native grasses w/ slopes <10%		50	A	1.87
irrigated lawns w/ slopes < 10%		50	B	2.60

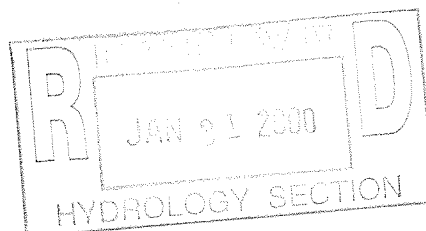
Peak Discharge (CFS):

Table A-9

$$1.87 \cdot (0.5 \cdot 3.24) + 2.60 \cdot (0.5 \cdot 3.24)$$

Qmax (CFS)
BASIN E-1 7.2 cfs

* % Treatment D = $7 \cdot ((N \cdot N) + (5 \cdot N))^{.5}$
where N = units/acre = 1.98
% Treatment D = 26



A-1/2

EXISTING DRAINAGE BASIN E-2

TANOAN: TRACT N-6-A
OFF-SITE, EXISTING DRAINAGE BASINS
Qmax CALCULATIONS

Source: DPM

Zone 3: Between San Mateo and Eubank, North of I-40; and between San Mateo and the East boundary of Range 4 East, South of I-40

Treatments:

- A. Soil uncompacted by human activity with 0 to 10% slopes. native grasses, weeds and shrubs in typical densities with minimal disturbance to grading, ground cover and infiltration capacity.
- B. Irrigated lawns, parks, and golf courses with 0 to 10% slopes. Native grasses, weeds, and shrubs and soil uncompacted by human activity with slopes greater than 10% and less than 20%.
- C. Soil compacted by human activity. Minimal vegetation. Unpaved parking, roads, trails. Most vacant lots. Gravel or rock on plastic. Irrigated lawns and parks with slopes greater than 10% and < 20%.
- D. Impervious areas, pavement and roofs.

TABLE A-6: $Q_{max} = (Q_{max1} \cdot A_1) + (Q_{max2} \cdot A_2) + (Q_{max3} \cdot A_3) \dots$

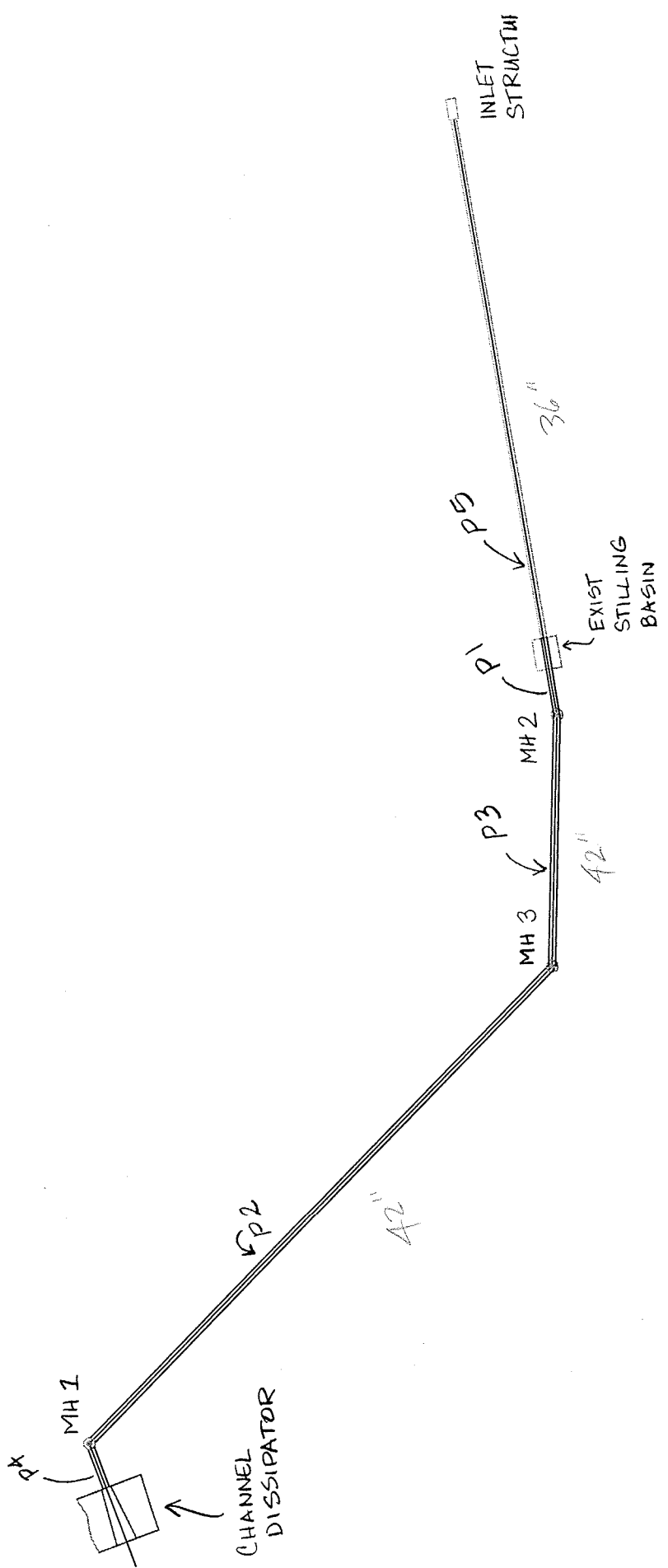
Area and Treatment Disbursement	Area (acres)	Treatment	Q/ACRE peak
E-2: Dam Run-Off Above Subdivision	2	D	5.02

Peak Discharge:

Table A-6

5.02*2.0 BASIN E-2 Qmax (CFS)
10.0

STORM DRAIN SYSTEM



STORM DRAIN SIZING & ANALYSIS CALCULATIONS

dsgnl_27_00.txt

Table A:

Struct ID	D (in)	Q (cfs)	L (ft)	V (ft/s)	d (ft)	V ² /2g (ft)	Sf (ft/ft)	Dnstrm Soffit (ft)	EGLdn (ft)	HGLdn (ft)	Tot Loss (ft)	EGLup (ft)	HGLup (ft)	Rim Elev. (ft)
Outfall P4	42	206.00	24.78	21.41	-	7.12	0.0204	5913.65	5920.77	5913.65	0.50	5921.28	5914.15	-
MH1	-	-	-	-	-	-	-	-	5921.28	5914.15	5.22	5926.50	5919.38	5917.11***
Surcharged *** P2	42	206.00	345.48	21.41	-	7.12	0.0304	5913.75	5926.50	5919.38	10.51	5937.02	5929.89	-
MH3	-	-	-	-	-	-	-	5937.02	5929.89	5937.02	7.77	5944.78	5937.66	5920.50***
Surcharged *** P3	42	206.00	131.06	21.41	-	7.12	0.0304	5917.30	5944.78	5937.66	3.99	5948.77	5941.65	-
MH2	-	-	-	-	-	-	-	5948.77	5941.65	5941.65	4.72	5953.49	5946.37	5927.40***
Surcharged *** P1	36	206.00	41.12	29.14	-	13.20	0.0692	5926.50	5953.49	5946.37	2.85	5956.34	5943.14	-
Junction P5	36	206.00	273.36	29.14	-	13.20	0.0967	5929.00	5956.36	5943.17	0.02	5956.36	5943.17	-
									5956.36	5943.17	26.44	5982.80	5969.60	-

Table B:

Str ID	Hf	Hb	Hstr	Losses	He	Hj	Total	Dstr	Ko	CD	Loss Coefficients	Cd	Cq	Cp	Cb
Outfall P4	0.50	-	-	-	-	-	0.50	-	-	-	-	-	-	-	-
MH1	-	-	-	-	-	-	5.22	4.00	1.353	1.000	0.542	1.000	1.000	1.000	0.733
P2	10.51	-	5.22	-	-	-	10.51	-	-	-	-	-	-	-	-
MH3	-	-	7.77	-	-	-	7.77	16.19	1.090	1.000	1.000	1.000	1.000	1.000	1.090
P3	3.99	-	-	-	-	-	3.99	-	-	-	-	-	-	-	-
MH2	-	-	4.72	-	-	-	4.72	18.25	0.418	1.588	1.000	1.000	1.000	1.000	0.663
P1	2.85	-	-	-	-	-	2.85	-	-	-	-	-	-	-	-
Junction P5	26.44	0.02	-	-	-	-	26.44	-	-	-	-	-	-	-	-

16L
reservoir < 5975.67
existing system
K 46L
0.849

dsgnl_27_00.txt
Headloss: See_Below
Flow Regime: SuperCritical

Velocity: 36.1630 ft/s
Froude Number: 4.9726

Designing manhole MH3

Results:
Total Flow: 206.0000 cfs
Status: Fixed
Chamber Width: 6.0000 ft
Headloss: See Below
Flow From: Upstream
Chamber Length: 6.0000 ft

Designing pipe P2

Results:
Total Flow: 206.0000 cfs
Status: Fixed
Pipe Width: 42.0000 in
Depth of Flow: 3.5000 ft
Critical Depth: 3.4600 ft
Velocity: 21.4112 ft/s
Froude Number: 0.0000
Flow From: Upstream
Slope: 0.0101 ft/ft
Pipe Height: 42.0000 in
Flow Status: Full
Capacity: 119.7798 cfs
Headloss: See Below
Flow Regime: Subcritical

Designing manhole MH1

Results:
Total Flow: 206.0000 cfs
Status: Fixed
Chamber Width: 5.0000 ft
Headloss: See Below
Flow From: Upstream
Chamber Length: 5.0000 ft

Designing pipe P4

Results:
Total Flow: 206.0000 cfs
Status: Fixed
Pipe Width: 42.0000 in
Depth of Flow: 3.5000 ft
Critical Depth: 3.4600 ft
Velocity: 21.4112 ft/s
Froude Number: 0.0000
Flow From: Upstream
Slope: 0.0001 ft/ft
Pipe Height: 42.0000 in
Flow Status: Full
Capacity: 14.5325 cfs
Headloss: See Below
Flow Regime: Subcritical

HGL/EGL Computations:
...Warning: System surcharged at MH1.***
...Warning: System surcharged at MH3.***
...Warning: System surcharged at MH2.***

This is a pressurized system with vented MH correct
Page 2

This is based on remaining equation only; not HGL

DISSIPATOR CHANNEL DESIGN CALCULATIONS

HEC-RAS Plan: Plan 01 River: CHANNEL Reach: FIRST

Station	Flow (cfs)	Velocity (fps)	Depth (ft)	Width (ft)	Area (sq ft)	Perimeter (ft)	Hydraulic Radius (ft)	Wetted Perimeter (ft)	Channel Slope (ft/ft)	Bank Slope (ft/ft)	Freeboard (ft)
208.00	5910.15	5911.40	5912.45	5918.13	0.442951	17.48	11.80	13.88	3.34		
208.00	5910.14	5911.47	5912.39	5915.05	0.306853	15.18	13.57	15.07	2.82		
208.00	5910.13	5911.53	5912.32	5914.33	0.228664	13.45	15.32	16.27	2.44		
208.00	5910.12	5911.59	5912.28	5913.77	0.187834	11.87	17.38	17.88	2.11		
208.00	5910.11	5911.73	5912.24	5913.34	0.108149	10.20	20.20	18.50	1.72		
208.00	5910.10	5911.93	5912.22	5913.03	0.082283	8.41	24.50	19.72	1.33		
208.00	5910.09	5911.52	5911.94	5912.88	0.075399	9.32	22.10	20.78	1.59		
208.00	5910.08	5911.27	5911.72	5912.70	0.093798	9.59	21.48	22.92	1.75		
208.00	5910.07	5911.14	5911.55	5912.45	0.095140	9.19	22.43	25.89	1.74		
208.00	5910.08	5911.07	5911.42	5912.22	0.089578	8.60	23.95	29.24	1.67		
208.00	5910.05	5911.02	5911.32	5912.01	0.080783	7.97	25.86	32.83	1.58		
208.00	5910.04	5911.01	5911.23	5911.82	0.087284	7.21	28.58	38.74	1.44		
208.00	5910.03	5911.01	5911.18	5911.68	0.054675	6.50	31.71	40.88	1.30		
208.00	5910.02	5911.38	5911.10	5911.59	0.012910	3.89	54.08	74.94	0.67		
208.00	5910.01	5911.40		5911.55	0.007798	3.12	66.04	83.43	0.52		
208.00	5910.00	5911.41	5911.10	5911.52	0.005000	2.54	77.25	91.64	0.42		

Free board calcs :

Based on DPM requirements.

For flow rates ≥ 100 cfs and average flow velocity of 35 fps or greater :

$$\text{Freeboard (ft)} = 0.7 (2.0 + 0.025 V d^{1/3})$$

A 4 sections-

$$\text{STA } 1+30.00: V = 17.46, d = 1.25$$

$$\text{Frbd} = 0.7 (2.0 + 0.025 (17.46) (1.25)^{1/3})$$

$$= 1.08$$

$$\text{STA } 1+24.00: V = 11.87, d = 1.47$$

$$\text{Frbd} = 0.7 (2.0 + 0.025 (11.87) (1.47)^{1/3})$$

$$= 1.64$$

$$\text{STA } 1+20.00: V = 8.41, d = 1.83$$

$$\text{Frbd} = 0.7 (2.0 + 0.025 (8.41) (1.83)^{1/3})$$

$$= 1.58$$

$$\text{STA } 1+00.00: V = 2.54, d = 1.41$$

$$\text{Frbd} = 0.7 (2.0 + 0.025 (2.54) (1.41)^{1/3})$$

$$= 1.45$$

$$\text{STA } 1+14: V = 9.19, d = 1.07$$

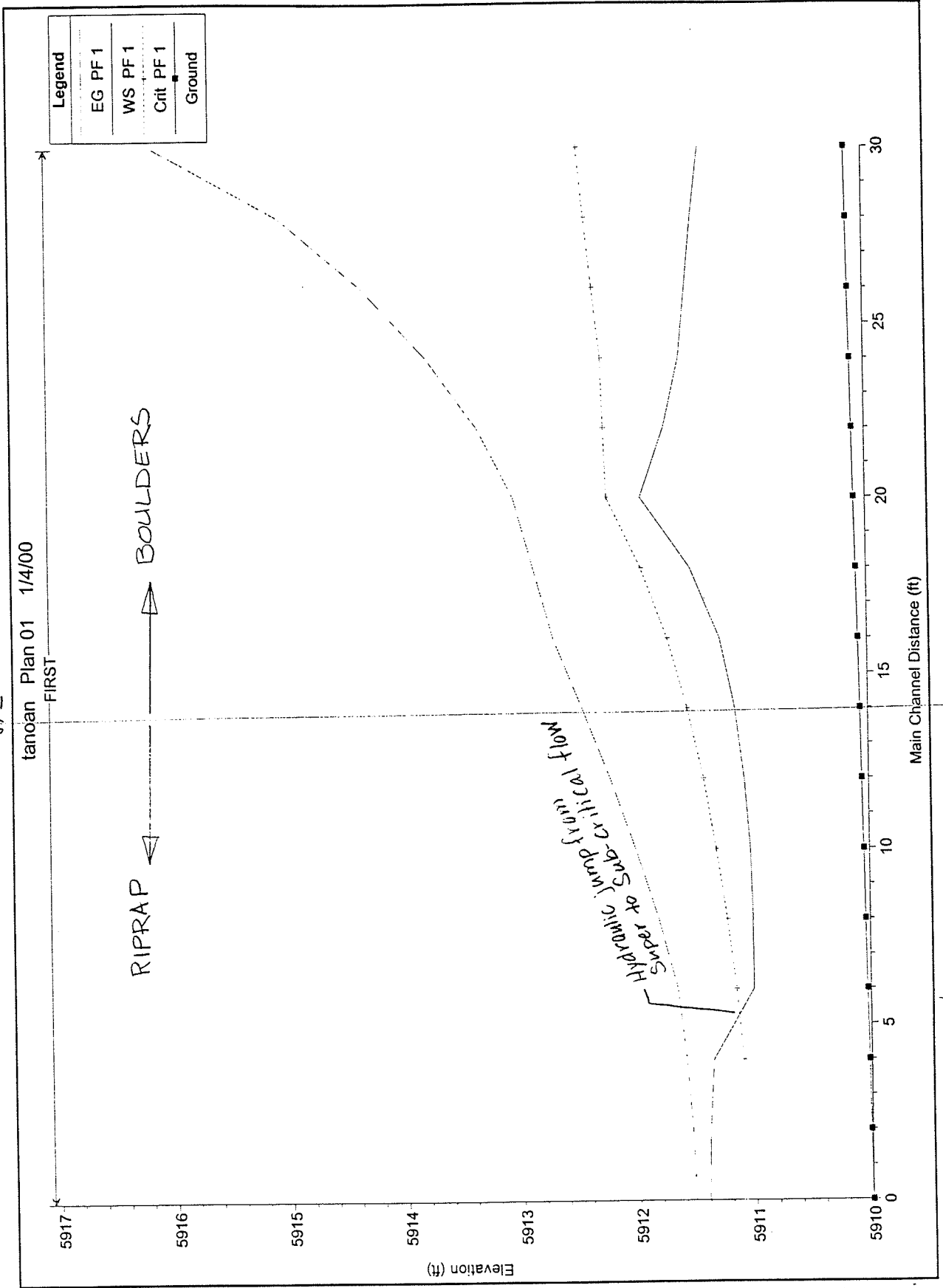
$$\text{Frbd} = 0.7 (2.0 + 0.025 (9.19) (1.07)^{1/3})$$

$$= 1.56$$

1/00

EGL/SURFACE TYPE DIAGRAM

STA 1+4.00



Street Flow Calculations

Tradition Lane

Q₁₀₀ at intersection w/ Lowell = 18.0 cfs

MANNING'S N= .013 SLOPE= .04

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.82	5	19.33	0.19	9	35.00	0.82
2	7.66	0.67	6	28.33	0.01	10	0.00	0.00
3	8.33	0.00	7	30.33	0.00	11	0.00	0.00
4	10.33	0.01	8	31.00	0.67	12	0.00	0.00

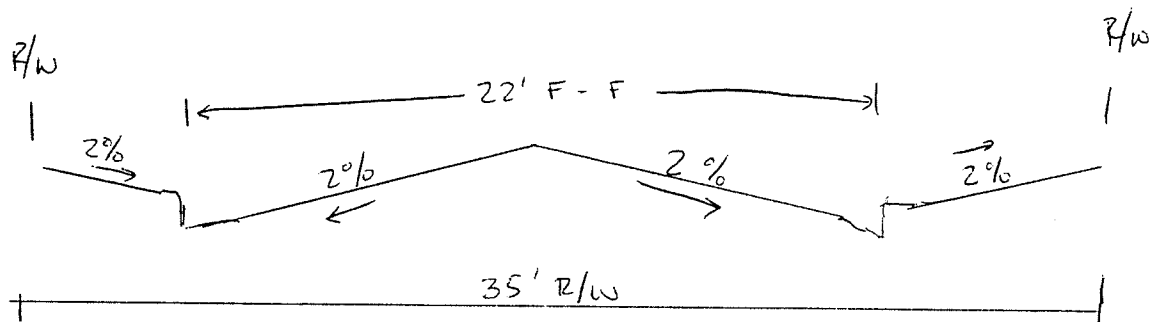
WSEL	DEPTH	FLOW	FLOW	WETTED	FLOW	TOPWID	VEL	ENERGY
(FT)	INC	AREA	RATE	PER	VEL	(FT)	HEAD	HEAD
(FT)	(FT)	SQ.FT.	(CFS)	(FT)	(FPS)	(FT)	(FT)	(FT)
0.05	0.05	0.26	0.6	8.14	2.32	8.10	0.08	0.13
0.10	0.10	0.80	2.8	13.28	3.50	13.20	0.19	0.29
0.15	0.15	1.58	7.0	18.43	4.45	18.30	0.31	0.46
0.20	0.20	2.62	14.3	22.57	5.44	22.40	0.46	0.66
0.25	0.25	3.74	25.7	22.71	6.87	22.50	0.73	0.98
0.30	0.30	4.87	39.7	22.85	8.16	22.60	1.03	1.33
0.35	0.35	6.00	56.1	22.99	9.34	22.70	1.35	1.70
0.40	0.40	7.14	74.5	23.14	10.44	22.80	1.69	2.09
0.45	0.45	8.28	95.1	23.28	11.48	22.90	2.05	2.50
0.50	0.50	9.43	117.6	23.42	12.47	23.00	2.41	2.91
0.55	0.55	10.58	141.9	23.56	13.41	23.10	2.79	3.34
0.60	0.60	11.74	168.0	23.70	14.31	23.20	3.18	3.78
0.65	0.65	12.90	195.9	23.84	15.18	23.30	3.58	4.23
0.70	0.70	14.10	213.2	26.23	15.12	25.67	3.55	4.25
0.75	0.75	15.48	227.2	30.12	14.67	29.56	3.34	4.09
0.80	0.80	17.06	246.2	34.01	14.43	33.45	3.23	4.03
0.82	0.82	17.74	255.2	35.56	14.38	35.00	3.21	4.03

Q₁₀₀ =18.0 cfs

Depth =0.22'

Vel. Head =5.90'

Energy Head =0.76' < 0.82' (R/W Height) ✓ OK!

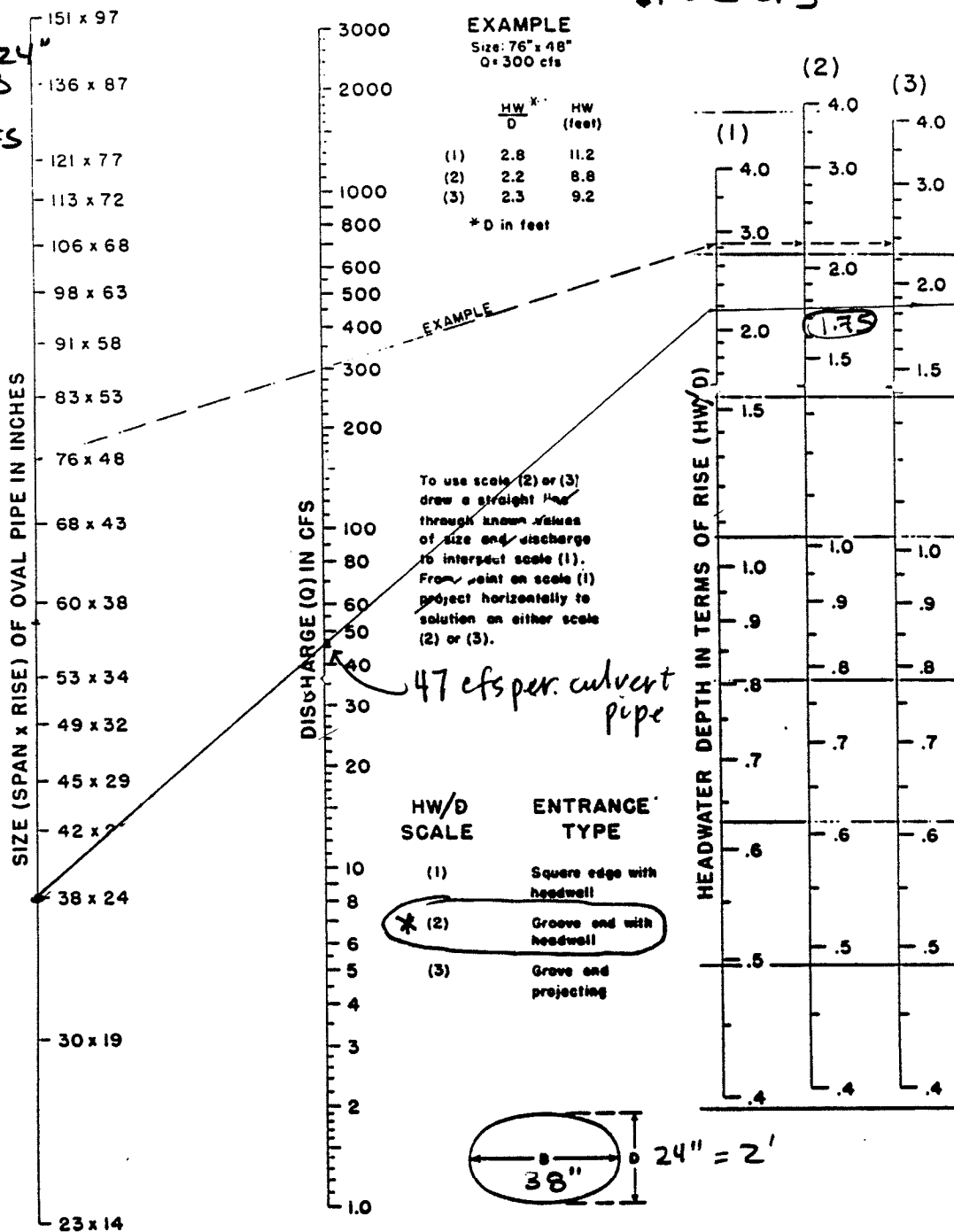


CULVERT DESIGN @ TRADITION / LOWELL INTERSECTION CHART 3

Q100 FROM POND & SURROUNDING BASINS = 142.2 CFS

TRY (3) 38" x 24" PIPES

Q EACH = 46.4 CFS



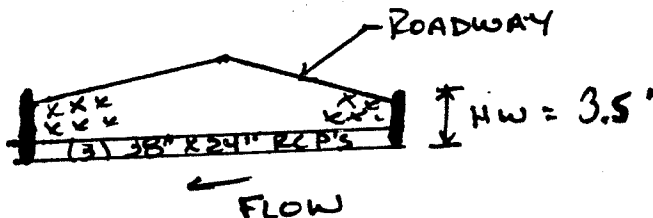
HEADWATER DEPTH FOR
OVAL CONCRETE PIPE CULVERTS
LONG AXIS HORIZONTAL
WITH INLET CONTROL

BUREAU OF PUBLIC ROADS JAN. 1963

$$\frac{HW}{D} = 1.4$$

$$HW = (2') \times (1.75) = 2.8'$$

USE:



Aphalt Rundown (SPILLWAY)

At Intersection of Lowell and Tradition Lane

Releases flows from ON-1 & ON-2 to existing Golf Course drainage swale

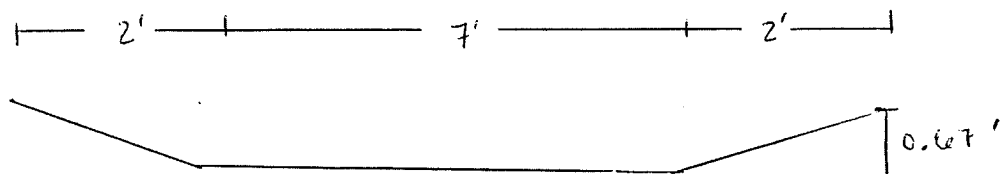
$Q_{100} = 18.0$ cfs

Designed for 2 x the 100 year storm = 36.0 cfs

MANNING'S N= .013 SLOPE= .02

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.67	3	7.00	0.00			
2	2.00	0.00	4	9.00	0.67			

WSEL	DEPTH	FLOW	FLOW	WETTED	FLOW	TOPWID	VEL	ENERGY
(FT)	INC	AREA	RATE	PER	VEL	(FT)	HEAD	HEAD
	(FT)	SQ.FT.	(CFS)	(FT)	(FPS)		(FT)	(FT)
0.05	0.05	0.26	0.6	5.31	2.15	5.30	0.07	0.12
0.10	0.10	0.53	1.8	5.63	3.34	5.60	0.17	0.27
0.15	0.15	0.82	3.5	5.94	4.31	5.90	0.29	0.44
0.20	0.20	1.12	5.7	6.26	5.13	6.19	0.41	0.61
0.25	0.25	1.44	8.4	6.57	5.86	6.49	0.53	0.78
0.30	0.30	1.77	11.5	6.89	6.53	6.79	0.66	0.96
0.35	0.35	2.12	15.1	7.20	7.14	7.09	0.79	1.14
0.40	0.40	2.48	19.1	7.52	7.71	7.39	0.92	1.32
0.45	0.45	2.85	23.5	7.83	8.25	7.69	1.06	1.51
0.50	0.50	3.25	28.4	8.15	8.75	7.99	1.19	1.69
0.55	0.55	3.65	33.7	8.46	9.23	8.28	1.32	1.87
0.60	0.60	4.07	39.5	8.78	9.69	8.58	1.46	2.06
0.65	0.65	4.51	45.7	9.09	10.13	8.88	1.59	2.24
0.67	0.67	4.69	48.3	9.22	10.30	9.00	1.65	2.32



PROPOSED DRAINAGE

TANOAN: TRACT N-6-A ON-SITE, PROPOSED DRAINAGE BASINS Q 100 CALCULATIONS

Source: Per DPM Requirements

Zone 3: Between San Mateo and Eubank, North of I-40; and between San Mateo and the East boundary of Range 4 East, South of I-40

Treatments:

- A. Soil uncompacted by human activity with 0 to 10% slopes. Native grasses, weeds and shrub: in typical densities with minimal disturbance to grading, ground cover and infiltration capacity
- B. Irrigated lawns, parks, and golf courses with 0 to 10% slopes. Native grasses, weeds, and shrub: and soil uncompacted by human activity with slopes greater than 10% and less than 20%
- C. Soil compacted by human activity. Minimal vegetation. Unpaved parking, roads, trails. Most vacant lots. Gravel or rock on plastic. Irrigated lawns and parks with slopes greater than 10% and < 20%
- D. Impervious areas, pavement and roofs.

TABLE A-6: $Q_{100} = (Q_{100}' \times A_1) + (Q_{100}'' \times A_2) + (Q_{100}''' \times A_3) \dots$

Basin and Treatment Disbursement	Area (acres)	Treatment	Q/ACRE peak
ON-1: 30' Easement to Culverts	0.48		
Paving	0.16 <i>33%</i>	D	5.02
Grass to the south of Tradition Lane	0.32 <i>67%</i>	C	3.45
ON-2:	4.71		
Lots: pavement and roofs*	0.63 <i>13%</i>	D	5.02
Lots: irrigated lawns w/ slopes < 10%	1.86	B	2.60
Cul de Sac and Street to 30' Easement	0.27 <i>6%</i>	D	5.02
Dam run-off above subdivision	1.95	C	3.45

39% B
19% D
42% C

Peak Discharge (CFS):

$$5.02 \times (0.16) + 3.45 \times (0.32)$$

$$0.63 \times (5.02) + 1.86 \times (2.6) + 0.27 \times (5.02) + 1.95 \times (3.45)$$

$$Q_{\max} \text{ ON-1} = 1.9 \text{ CFS}$$

$$Q_{\max} \text{ ON-2} = 16.1 \text{ CFS}$$

$$Q_{100} \text{ Onsite Basins} = 18.0 \text{ CFS}$$

$$\text{Total from ON-1, ON-2}$$

$$* \% \text{ Treatment D} = 7 \times ((N \times N) + (5 \times N))^{.5}$$

$$\text{where } N = \text{units/acre} = 1.98$$

$$\% \text{ Treatment D} = 26\% = 0.63 \text{ acres}$$

TANOAN: TRACT N-6-A
OFF-SITE, PROPOSED DRAINAGE BASINS
Qmax CALCULATIONS

Source: Per DPM Requirements

Zone 3: Between San Mateo and Eubank, North of I-40; and between San Mateo and the East boundary of Range 4 East, South of I-40

Treatments:

- A. Soil uncompacted by human activity with 0 to 10% slopes. native grasses, weeds and shrubs in typical densities with minimal disturbance to grading, ground cover and infiltration capacity.
- B. Irrigated lawns, parks, and golf courses with 0 to 10% slopes. Native grasses, weeds, and shrubs and soil uncompacted by human activity with slopes greater than 10% and less than 20%.
- C. Soil compacted by human activity. Minimal vegetation. Unpaved parking, roads, trails. Most vacant lots. Gravel or rock on plastic. Irrigated lawns and parks with slopes greater than 10% and < 20%.
- D. Impervious areas, pavement and roofs.

TABLE A-6: $Q_{100} = (Q_{100}' \times A_1) + (Q_{100}'' \times A_2) + (Q_{100}''' \times A_3) \dots$

Area and Treatment Disbursement	Area (acres)	Treatment	Q/ACRE peak
E-3: Pond and Surrounding Area*			
OFF-1: Drainage from Lowell	1.81	D	5.02

* Source = Arroyo Del Pino Adjacent to the Enclave at Tanoan Subdivision, May 1993

Case No: 93-06-288R, Report # D-20, HYMO SUMMARY and Pino Arroyo Drainage Map (Exhibit 2)

Basin 206 less Sub-Basin 106 and Pino Dam Spillway: $Q_{max} = 366.8 \text{ CFS} - (21.5 + 206.1 \text{ CFS}) = 139.2 \text{ CFS}$

Peak Discharge (CFS):

Table A-6

	BASIN	Q100 (CFS)
* 366.8 - 21.5-206.1	E-3	139.2
5.02 x (1.81)	OFF-1	9.1

COPY
w/ enclosures



August 19, 1998

BOHANNAN HUSTON

Courtyard One

7500 JEFFERSON NE

Albuquerque

NEW MEXICO 87109

voice 505.823.1000

fax 505.821.0892

Ms. Lisa Manwill
Development Review Engineer
Albuquerque Metropolitan Arroyo Flood Control Authority
2600 Prospect NE
Albuquerque, NM 87107

Re: Response to Comments Dated July 29, 1998 – The Traditions at Tanoan Subdivision

Dear Lisa:

Mike Adams and I appreciate meeting with you last week to discuss in detail and more comprehensively your comments to the drainage report for The Traditions at Tanoan Subdivision. It was extremely helpful to us to get a feel for your concerns and to be able to discuss them.

The purpose of this letter is to respond to your comments in light of the meeting we held with you. We address the comments below in the order that your letter presented them. We are enclosing a revised infrastructure list and grading/drainage plan.


1. **Discharge from the Dam Outlet.** The report stated that under existing conditions, any discharge from the dam exits the outlet and then immediately is diverted northerly by earth mounds constructed with the golf course construction. Under this subdivision's proposed conditions, minimal grading would occur near the outlet to return the flow to its original discharge pattern (in a roughly southwest direction), complying with the original 1977 dam construction plans (see Exhibit A).

2. **History.** With regard to the flood plain history, the flood plain identified on the current FEMA maps show a northerly direction of flow upon leaving the outlet. From as-built records of the dam (excerpts enclosed), this was not the original direction under which the dam was constructed. We believe that the diversion to the north occurred when the golf course was constructed, a year or two ahead of the FEMA mapping.

With regard to the existing 100' drainage easement, the easement was created in 1978 for the future construction of a storm drain or channel within that alignment. The easement, in various documents, ultimately extends to Wyoming Blvd.

With regard to the proposed "realigned" course for discharge, we believe it should be considered not the new course, but the original approved course (when the dam was constructed). We have discussed this drainage realignment with Golf Course officials and have their concurrence.

COPY

- 
3. **LOMR.** As discussed, it is our intention to add the LOMR to the infrastructure list for the project. Actual performance calculations and submittal to FEMA will occur at a future date, but prior to release of the LOMR financial guarantee based on the infrastructure list. The LOMR will identify the course of dam outlet discharges in accordance with the grading proposed by this subdivision.
 4. **Encroachment Agreement.** Enclosed is the plat sheet from the Tanoan Properties replat that identifies the corridor for access over the drainage easement. With this documentation, we are hopeful that we satisfy AMAFCA's requirements with respect to encroachment and will not be required to take this to the Board.
 5. **Drainage Easement.** As discussed at length in our meeting, a blanket drainage easement exists over the golf course property which allows and accepts flows from multiple City and private subdivision facilities, including AMAFCA facilities. We are proposing no change in the concept of dam outlet discharge concepts for flow down the Pino Arroyo and through the golf course. The concept remains exactly as it has been for many years and through many downstream developments similar to our own. Enclosed is a copy of the easement to Tanoan Land Company, which is the documentation which we have been able to obtain to date.
 6. **Pond Southwest of Subdivision.** The existing pond identified southwest of The Traditions Subdivision is an irrigation pond owned and maintained by the Golf Course. We have revised the grading plan to identify additional elevations around the pond and a clearer identification of the approximate flood plain that occurs after the development of this subdivision. The elevation of the pond bottom is unknown. Spillway calculations were provided in the appendix of the submitted report that provides a clearer picture of the spillway and how it works.
 7. **Pond and Culvert Crossing.** Flows leave the pond through the natural-grassed spillway located in the northwest corner of the pond. They are discharged down a natural and graded swale to the proposed culverts under Tradition Lane. Once passed through the culverts, flows reenter the previous flood plain path in the vicinity of the undeveloped Lowell right-of-way.
 8. **Culvert Elevations.** We have provided additional invert information on the drainage/grading plan regarding inverts of the culverts and top of pavement elevations above the culverts. This information is also found in appendix of the report.
 9. **Additional Information.** As requested, we have provided additional information on the drainage/grading plan.
 10. **Flood Plain on Lots 1 and 4.** The preliminary plat, and eventually the final plat, as necessary, will be modified to identify the flood plain crossing Lots 1, 4 and 5.
 11. **Swale Below Dam Face.** A section is identified on the plan showing a cross-section of the proposed swale. With regard to authorization for grading of the swale, the owners of The Traditions at Tanoan also own the property of Tract N-6-B. It would be my interpretation that the swale may be graded with the concurrence of AMAFCA that there is no damage to the integrity of the dam. Given the very light flows and the very pervious nature of the soil/surface conditions within the basin that drains to the swale, there will be infrequent concentrated flows within this swale, and large storms are successfully passed, as identified in the appendix calculations, when they occur.

Ms. Lisa Manwill
August 19, 1998
Page 3

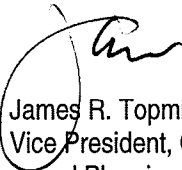


12. **AMAFCA/City Coordination.** As you are aware, we are coordinating with both of these agencies during this review and approval process.

With the response letter and the enclosures, and with the understandings reached in our meetings with you and City staff, we are hopeful that we have met your concerns and provided sufficient justification for your approval of this plan.

If I can answer any questions, please feel free to contact me at any time.

Sincerely,
Bohannon Huston



James R. Topmiller, P.E.
Vice President, Community Development
and Planning Group

JRT/am
Enclosures

cc: Mike Adams, Brown & Associates
Susan Calongne, City of Albuquerque
David Reynolds, Tucker & Booker, Inc.

DRAINAGE INFORMATION SHEET

PROJECT TITLE: TRADITIONS @ TANOAN ZONE ATLAS/DRNG. FILE # E 22/D20
 DRB #: 97-437 EPC #: _____ WORK ORDER #: _____
 LEGAL DESCRIPTION: TRACT N-6-A
 CITY ADDRESS: ACADEMY & LOWELL

ENGINEERING FIRM: BOHANNAN-HUSTON INC.
 ADDRESS: 7500 JEFFERSON NE. ALB. NM 87109
 OWNER: BROWN & ASSOCIATES
 ADDRESS: 3400 CANDARIA
 ARCHITECT: _____
 ADDRESS: _____
 SURVEYOR: _____
 ADDRESS: _____
 CONTRACTOR: _____
 ADDRESS: _____

CONTACT: COLLEEN GARCIA
 PHONE: (505) 823-1000
 CONTACT: MIKE ADAMS
 PHONE: _____
 CONTACT: _____
 PHONE: _____
 CONTACT: _____
 PHONE: _____
 CONTACT: _____
 PHONE: _____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT
 ____ DRAINAGE PLAN
X FINAL GRADING & DRAINAGE PLAN
 ____ GRADING PLAN
 ____ EROSION CONTROL PLAN
 ____ ENGINEER'S CERTIFICATION
 ____ OTHER

PRE-DESIGN MEETING:

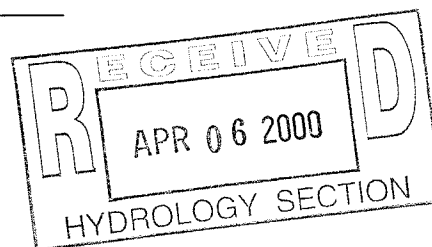
____ YES
 ____ NO
 ____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL
X PRELIMINARY PLAT APPROVAL
 ____ S. DEV. PLAN FOR SUB&D. APPROVAL
 ____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
 ____ SECTOR PLAN APPROVAL
X FINAL PLAT APPROVAL
 ____ FOUNDATION PERMIT APPROVAL
 ____ BUILDING PERMIT APPROVAL
 ____ CERTIFICATE OF OCCUPANCY APPROVAL
X GRADING PERMIT APPROVAL
 ____ PAVING PERMIT APPROVAL
 ____ S.A.D. DRAINAGE REPORT
 ____ DRAINAGE REQUIREMENTS
 ____ SUBDIVISION CERTIFICATION
 ____ OTHER _____ (SPECIFY)

DATE SUBMITTED: 4-6-00
 BY: Colleen Garcia

Revised 02/98



April 17, 2000

James Topmiller, P.E.
Bohannon-Huston Inc.
7500 Jefferson NE
Albuquerque, New Mexico 87109

RE: Grading and Drainage Plan for Traditions at Tanoan (E22/D20) Submitted for Preliminary and Final Plat Approval and Grading Permit Release, Engineer's Stamp Dated 4/3/00.

Dear Mr. Topmiller:

Based on the information provided, the above referenced plan is approved for Preliminary Plat action by the DRB. The above referenced plan is also approved for Rough Grading permit release provided that it is first approved by the DRB.

On the Infrastructure List, please add the note stating that the storm drain includes manholes, the outfall structure and appurtenances. Also note that the Letter of Map Revision (LOMR) must be obtained from FEMA prior to release of the financial guarantees. Since mass grading is not proposed, and since the grading for each lot will be certified after it is developed, the grading and drainage certification requirement on the Infrastructure List for the release of financial guarantees may not be required.

Prior to Final Plat sign-off, please provide a note on the Plat stating that AMAFCA will maintain the proposed 48" storm drain pipe within their easement.

If you have any questions, please call me at 924-3982.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Lisa Ann Manwill, P.E., Albuquerque Metropolitan Arroyo Flood Control Authority
File

May 31, 2000

Chairman Chuck Gara
Environmental Planning Commission
City of Albuquerque
P. O. Box 1293
Albuquerque, NM 87103

BOHANNAN-HUSTON, INC.

Re: Appeal of Traditions at Tanoan Subdivision
DRB Case No. 97-4-437, Appeal No. 00136-00000-00639, Project No. 1000519

Courtyard One

Dear Chairman Gara:

7500 JEFFERSON NE

We are in receipt of the application and attachment to the Notice of Appeal from Mr. Michael Allison, representing Mark and Maura Dahrling. After reviewing the reasons for appeal, we feel it important to respond to the points presented in that attachment, many of which have little or no substance, nor correct understanding. I respond below in the order the points were presented in that attachment, as submitted with the appeal application.

Albuquerque

NM 87109-4335

voice 505.823.1000

- 1.a. **Existing Flood Control Interference.** Mr. Allison states that the residence will be "located literally beneath an operative dam." While it is true that this site lies downstream to an operative dam, it is also true that thousands of similar residences are located below dams of this nature, including much of Tanoan and the appellant's home. The dam is an AMAFCA-operated facility, under the ultimate review of the State Engineer's Office, and has been designed according to all current required standards. AMAFCA has reviewed and approved the Drainage Report and associated hydraulic calculations that were prepared by Bohannon Huston, Inc. with this subdivision action. We, the City Engineer, and AMAFCA believe that the Traditions subdivision is adequately protected.

fax 505.821.0892

Additionally, it is stated that the applicants will "force substantial amounts of storm water beneath existing development." In actuality, storm water will be diverted away from the development and underneath an existing golf course, thereby providing maximum protection to the proposed subdivision. In fact, these new drainage improvements will also afford greater protection to the appellant's home.

A "50-year event" is also referenced. This reference is misrepresented, since all dams are designed for 100-year storm events and greater, providing even further protection to the subdivision above that suggested by Mr. Allison.

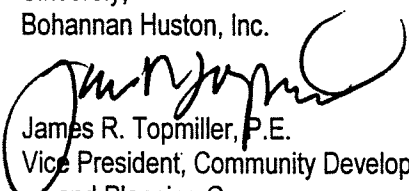
Mr. Allison also states that proposed homes would be "vulnerable to errant golf balls." While this is true, it can also be said for most of the homes lying adjacent to the Tanoan Golf Course. We have worked extremely closely with the Golf Course management on this project and have their approval of the proposed subdivision plans.

Finally, under paragraph 1.a., it is stated that a dangerous precedent is being established with the development of land within "drainage facilities and flood paths." We respond that land development occurs on a regular basis within the arroyos and flood paths of the Albuquerque area. Providing that acceptable engineering measures are employed to address all relevant drainage issues, this practice produces no dangerous precedence.

- 1.b. **Open Space Displacement.** The Traditions site has never been public nor private open space. It has been privately-owned land. Accordingly, there has been no displacement of any officially designated open space. For information, the required open space for the overall Tanoan master planned community (in which Traditions is located) is overwhelmingly supplied by the Golf Course.
- 1.c. **Vehicular Traffic Increase.** Mr. Allison states that the subdivision will "markedly increase traffic and noise along Lowell Boulevard." Most of the Lowell Boulevard reach, north of Academy Road, serves many existing residences. We do not believe that four additional residences will create a marked increase in traffic and noise. Using typical City guidelines for peak-hour traffic, these four residences will put only four more cars on Lowell during peak hour or, essentially, one car every 15 minutes (in rough terms).
- 1.d. **Cul-de-Sac.** The appellant states that a "dangerously long cul-de-sac" would be created. In response, the cul-de-sac presented under the subdivision plan provides for standard City pavement widths in a semi-circular cul-de-sac at the middle and end of the access roadway. There will be adequate emergency access available to the subdivision. The Development Review Board has reviewed and approved the cul-de-sac and roadway as proposed.
- 1.e. **View Impairment.** It is stated that the Traditions at Tanoan Subdivision proposal damages views of the adjacent Lalique lots. In response, we are unsure of what views are being impaired, since the proposed subdivision is nestled below the dam embankment and, for the most part, is quite unable to impair views of horizon, skyline or mountains. However, and perhaps most importantly, we cannot be held responsible for representations made by other developers who did not own the property of this proposed subdivision.
2. **Arbitrary Action by DRB.** The appellant finally states that the DRB "abused its discretion" by refusing to grant a deferral to allow professional review of the planned drainage. When this request was offered at the DRB hearing, we responded with the fact that professional engineers at both AMAFCA and City of Albuquerque have reviewed and approved the drainage plan, which drainage plan was also originally prepared by a professional engineering firm. Immediately following the DRB approval action, the appellant was provided a copy of the Drainage Report and offered assistance in reading and understanding its contents. In the just-under two weeks prior to the appellant's submitting his appeal, no communication was received from the appellant regarding the report.

In summary, after careful review of the appellant's reasons for appeal, we strongly believe there is little substance and understanding in their comments. We believe that the City of Albuquerque's Development Review Board acted in a responsible and professional manner in approving the Traditions at Tanoan Subdivision request and accordingly, we request your denial of this appeal.

Sincerely,
Bohannon Huston, Inc.



James R. Topmiller, P.E.
Vice President, Community Development
and Planning Group

JRT/kc

cc: Ron Brown, Brown & Associates
Mike Adams, Brown & Associates
Janet Stephens, COA DRB Chair

85 1759

245

DEDICATION DEED
(LOWELL STREET)

AND

GRANTS OF EASEMENT

AMERIWEST CORPORATION, A New Mexico Corporation

("AMERIWEST" which term includes its successors and assigns) for good and sufficient consideration grants to the CITY OF ALBUQUERQUE ("CITY") whose address is P.O. Box 1293, Albuquerque, New Mexico 87103, that certain real property situate in Bernalillo County, New Mexico, more particularly described in Exhibit "A" attached hereto and incorporated herein by reference, ("PROPERTY").

AMERIWEST hereby reserves a temporary easement (the "TEMPORARY EASEMENT") for full and exclusive possession and control of the PROPERTY subject to any public utility purposes needed by the CITY. This TEMPORARY EASEMENT shall continue in force until such time as the CITY makes a formal determination (the "DETERMINATION") that it is necessary for the public health and safety to construct and open a public street over the PROPERTY. The DETERMINATION shall be made after a public hearing at which the public has had any opportunity to be heard. Notice of the public hearing shall be given in the manner then prescribed by the CITY'S subdivision ordinance for a public hearing. Additionally the CITY shall give notice to PRICE and AMERIWEST. The DETERMINATION shall not be deemed made until a final decision has

EXHIBIT

1A-6

been entered by the CITY'S governing body, if appealed to that body by a party of interest in accordance with the CITY'S then existing procedures. The TEMPORARY EASEMENT shall terminate upon the DETERMINATION being final. Any expenses associated with relocation or removal of guard stations or other appurtenances associated with a private street shall be borne by AMERIWEST.

THIS CONVEYANCE IS FURTHER SUBJECT TO: reservations, restrictions, and easements of record, including a drainage easement in favor of AMAFCA which is in existence and shall survive this conveyance and an easement which has been granted to AMERIWEST for passage of pedestrians across the PROPERTY and ad valorem taxes for 1984 and thereafter.

AMERIWEST agrees that it shall indemnify the CITY and hold the CITY harmless from claims or damages resulting from the use of the TEMPORARY EASEMENT, except when such claim or damage results from the negligence of the CITY. The CITY agrees that it shall indemnify and hold AMERIWEST harmless from claims or damages resulting from the use of the TEMPORARY EASEMENT which result from the CITY's negligence.

All provisions of this instrument, including the benefits and burdens, run with the land and are binding upon and inure to the heirs, assigns, successors and personal representatives of the parties hereto.

Notices required to be given by this conveyance are to be given at the following addresses unless written notice of change of address has been lodged with the other parties:

247

Ameriwest Corporation
6400 Uptown Boulevard, N.E.
Suite 300-East
Albuquerque, New Mexico 87110

David and Dallas Price
c/o American Golf and Tennis Corp.
641 Sepulveda Boulevard
Los Angeles, California 90049

WITH SPECIAL WARRANTY COVENANTS.

Executed the 31st day of December 1984.

ACCEPTED:

CITY OF ALBUQUERQUE,
a municipal corporation

AMERIWEST CORPORATION, a New
Mexico corporation

Frank G. Hunking
14417
APPROVED.

By Mark L. Kretzel
Its Vice President

Stef K.B.
ASSISTANT CITY ATTORNEY

Approved As To Form
John Alford
City Attorney
Date: 12/21/84

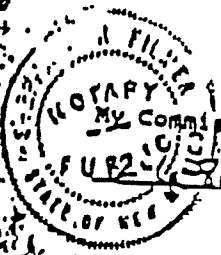
Robert A. Farnough
TRAFFIC ENGINEER

ATTEST
Carlyle J. Davis
City Clerk

STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) ss.

The foregoing instrument was duly acknowledged before me this 21st day of December, 1984, by Allan L. Whitesell Vice President of AMERIWEST CORPORATION, a New Mexico corporation on behalf of said corporation.

Isaac H. Tiner
Notary Public



STATE OF NEW MEXICO)
COUNTY OF BERNALILLO) ss.

The foregoing instrument was acknowledged before me this 31st day of December, 1984, by Frank A. Kleinhenz, Chief Administrative Officer of the City of Albuquerque, a municipal corporation on behalf of said corporation.

Isaac H. Tiner
Notary Public



12/18/86

DESCRIPTION

240

A certain tract of land situate within projected Section 27, T18N, R22E, N.M.P.M., within the Elena Callesco Grant, City of Albuquerque, Bernalillo County, New Mexico, being a portion of Tracts "D" and "E" and a portion of Cerra 880015 as the same is shown and designated on the plat of T1804N PROPERTIES filed in the office of the County Clerk of Bernalillo County, New Mexico on June 25, 1982 and being more particularly described by plat bearings and ground distances as follows:

BEGINNING at the northeast corner of the tract herein described, said corner being a point on the northerly boundary of said Tract "D" and also being a point on the southerly right-of-way of San Antonio Drive thence the projected Section Corner common to projected Sections 22, 23, 36, and 37 as shown on said plat of T1804N PROPERTIES bears S89°36'20"E, 3606.00 feet and from said point of beginning running thence along the easterly boundary of the tract herein described, S00°23'40"W, 154.68 feet to a point of curvature; thence, S58.47 feet along the arc of a curve to the left having a radius of 346.00 feet and a chord bearing S12°41'17"E, 256.23 feet to a point of tangency; thence, S24°4'13"E, 251.54 feet to a point of curvature; thence, S32.90 feet along the arc of a curve to the right having a radius of 446.00 feet and a chord bearing S00°08'41"E, 318.65 feet to a point of reverse curvature; thence, S10.09 feet along the arc of a curve to the left having a radius of 416.00 feet and a chord bearing S03°32'53"W, 310.77 feet to a point of tangency; thence, S10°23'00"E, 272.09 feet to a point of curvature; thence, S61.78 feet along the arc of a curve to the right having a radius of 438.00 feet and a chord bearing S10°36'56"W, 514.74 feet to a point of reverse curvature; thence, S64.38 feet along the arc of a curve to the left having a radius of 346.00 feet and a chord bearing S18°54'43"W, 399.38 feet to the southeast corner of the tract herein described, said corner being a point on the southerly boundary of said Tract "E" and also being a point on the northerly right-of-way of Academy Road, whence the southeast corner of said Tract "E" bears S89°36'55"E, 1027.11 feet; thence continuing along said southerly boundary and said northerly right-of-way, S89°36'55"W, 48.00 feet to the southwest corner of the tract herein described; thence leaving the southerly boundary of said Tract "E" and the northerly right-of-way of Academy Road and continuing along the westerly boundary of the tract herein described, S54.94 feet along the arc of a curve to the right having a radius of 638.00 feet and a chord bearing S19°03'31"E, 445.25 feet to a point of reverse curvature; thence, S12.96 feet along the arc of a curve to the left having a radius of 346.00 feet and a chord bearing N10°36'56"E, 548.60 feet to a point of tangency; thence, S18°23'00"W, 252.09 feet to a point of curvature; thence, S70.55 feet along the arc of a curve to the right having a radius of 446.00 feet and a chord bearing S03°32'53"E, 361.56 feet to a point of reverse curvature; thence, S12.11 feet along the arc of a curve to the left having a radius of 416.00 feet and a chord bearing S00°08'41"W, 359.83 feet to a point of tangency; thence, S25°46'13"W, 257.54 feet to a point of curvature; thence, S89.52 feet along the arc of a curve to the right having a radius of 438.00 feet and a chord bearing S12°41'17"W, 287.01 feet to a point of tangency; thence, S00°23'40"E, 154.68 feet to the northwest corner of the tract herein described, a point on the northerly boundary of said Tract "D" and also being a point on the southerly right-of-way of San Antonio Drive thence continuing along said northerly boundary and said southerly right-of-way, S89°36'20"E, 68.00 feet to the point and place of beginning.

Tract contains 4.2529 acres, more or less.

Bohannon-Hutton Inc.
8125 Carlisle Blvd., N.E.
Albuquerque, NM 87107

December 13, 1984
Job No. 82390

[Signature]
L. Duane Hutton
N.M.P.L.S. No. 6588



EXHIBIT 'A'

COMMENTS TO THE DEVELOPMENT REVIEW BOARD
RE: THE PROPOSED TRADITIONS SUBDIVISION AT TANOAN
ATT'N: KIM DICOME, RICHARD DOURTE, ROGER GREEN, DEBBIE STOVER,
FRED AGUIRRE AND LISA MANWILL
AUGUST 25, 1998

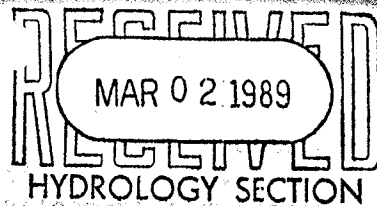
As to changing the drainage to dump storm water into the existing golf course pond:

It is common knowledge that Tanoan has historically had very serious dewatering problems. The homes adjacent to the pond experienced severe problems which were the subject of numerous law suits. After great expenditure of time and effort, these problems have for the most part been handled to the satisfaction of all involved. Dumping storm water into the pond will create new problems or renew old ones. Therefore, the homeowners adjacent to the pond strongly oppose any drainage plan that would dump water into the pond.

Additionally, we have seen no easements which would allow the dumping of storm water across the golf course. They may exist, but the developers were unable to provide them as of a few weeks ago.

As to Lowell Street, we are concerned that the City is not being given the full picture by the developers on this project, whose actions and words do not match up. On the one hand, they are claiming that Lowell is going to be paved by the City and that therefore they should not have to worry about building Lowell to standard City widths, or put in sidewalks, since, they say, it will be torn up anyway when the City puts Lowell through. On the other hand, they tell us that the administrative procedures are already being implemented which would remove Lowell from the City's master street plan, and that thereafter procedures will be implemented to vacate Lowell right of way North of the proposed Tradition Lane. It is our position that this preliminary plat should not be approved unless and until we know whether the Lowell right of way is being vacated. Otherwise, you will be approving a plat based on conditions which even now are in the process of being changed by the City government.

6516 LOWELL NE
Don & Carolyn Burch 6524 Lowell NE
11801 Buccarett Ln NE
Barbara & Frank Mares 11805 Buccarett Ln NE
6520 Lowell N.E 87111
11735 Skyway Way N.E. 87111



GRANT OF EASEMENT
(Multiple Uses)

THIS GRANT OF EASEMENT made this 25 day of June, 1982, by and between TANOAN ENTERPRISES, INC., a New Mexico corporation (hereinafter called the "Grantor"), and TANOAN LAND COMPANY, INC., a New Mexico corporation, and AFFILIATED MORTGAGE AND DEVELOPMENT COMPANY, a New Mexico corporation (hereinafter collectively called the "Grantee"),

WITNESSETH:

That for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Grantor has this day bargained and sold and by these presents does sell, convey, and deliver unto Grantee, its assigns and successors in interest, a permanent easement over and across the property described in Exhibit "A" ("Easement Property") attached hereto and incorporated herein, for the purposes specified hereinbelow, all in accordance with the terms and conditions hereof.

This easement shall be appurtenant to, benefit, burden, and run with the properties of Grantee situate in Albuquerque, Bernalillo County, New Mexico, and situate north of Academy Road, N.E., east of Ventura Street, N.E., west of Tramway Boulevard, N.E., and south of the southern boundary of North Albuquerque Acres.

To have and hold the said right and easement for the uses and purposes as specified herein, unto Grantee, its successors and assigns, in perpetuity, unless sooner abandoned or the uses and purposes as specified herein are no longer served hereby.

1. Drainage Easement: Grantee shall, from time to time and during the existence of the term of this easement, have the right to discharge surface drainage water over, upon, and onto the Easement Property, which surface waters are generated or originate on Grantee's properties, or waters which Grantee must accept onto its property from adjoining properties pursuant to approved drainage plans or by operation of law. Grantee shall use reasonable efforts to assure that the volume and manner of discharge of such waters onto the Easement Property is done in such a manner and in such volumes and at such velocities as will not cause permanent damage to the Easement Property and to improvements located within the Easement Property. However, it is recognized that all or a portion of the Easement Property is designated by the Albuquerque Metropolitan Arroyo Flood Control Authority as an area which must accept and convey surface drainage waters from a wide area, in excess of the properties owned by Grantee, and Grantee's only liability or responsibility with regard to damage of the Easement Property shall be to comply in good faith with the provisions of this paragraph. In no event shall Grantee be liable for any damages of any kind or nature covered by flood or other insurance under any policy of insurance carried by Grantor or any other party maintaining insurance on the Easement Property.

2. Open Space: Grantee shall have the exclusive right, from time to time, to grant and place restrictive covenants on the Easement Property, in accordance with that Agreement with the City of Albuquerque dated the 2nd day of July, 1979, a copy of which is attached hereto as Exhibit "B" and incorporated herein by reference. Grantee shall have the exclusive right to any credits for open space acquired as a result of the filing of such covenants, and Grantor shall have no right or interest therein.

3. Underground Utilities: Grantee shall have the right at any time and from time to time to construct and locate underground utilities across the Easement Property as may be reasonably necessary for development and improvement of Grantee's property adjacent to or located in the vicinity of the Easement Property. Grantee shall have the right to grant or dedicate easements to public utilities or other such entities which may require easements for the servicing and maintenance of such utility lines. In the exercise of Grantee's rights hereunder, it is agreed as follows:

a. Any construction within the easement will be done in such manner and at such times as will cause no unreasonable interference with the play of golf on the surface area or with Grantor's operations and use of the Easement Property.

b. All cost of installation of the utilities and the restoring of the surface area to the condition in which it was found prior to the installation thereof shall be at the sole cost and expense of Grantee.

c. Grantee shall cooperate with Grantor prior to the location, installation, and/or construction of any utilities so as not to unreasonably interfere with Grantor's operations or with its use of the Easement Property, and in all cases shall give Grantor not less than ten (10) days prior written notice of its intent to commence construction so as to allow Grantor to post proper notices or advise its members as to the project.

d. Grantee shall hold harmless and indemnify Grantor from any cost for repairing the surface area of and improvements on the Easement Property as to any damage caused by the maintenance of the utility lines or other structures placed within the easement area.

e. The scope of this easement for utilities shall be interpreted so as to give Grantee, or its assigns, the normal and customary rights generally granted to public utility companies or the City of Albuquerque for the installation of underground utilities within the City of Albuquerque.

Notwithstanding anything herein to the contrary, Grantor expressly retains the right to use the Easement Property for purposes of a golf course and related activities of its country club operations. As part of the consideration for this grant, the Grantee does hereby agree to release, defend, protect, indemnify, and hold Grantor harmless from any and all claims for damages, including reasonable attorney's fees, to third persons for whatever cause incidental to the exercise of Grantee's rights granted herein.

IN WITNESS WHEREOF, the parties have set their hands and seals the day and year first written above.

The foregoing instrument was duly acknowledged by CHARLES A. HAEGELIN, Esq., on the day of June, 1982, by CHARLES A. HAEGELIN, Esq., as Attorney-in-Fact for MORTGAGE AND DEVELOPMENT COMPANY, a New Mexico corporation.

TANOAN ENTERPRISES, INC.,
a New Mexico corporation

By Charles A. Haegelin
Its Charles V. P.

TANOAN LAND COMPANY, INC.,
a New Mexico corporation

By Charles A. Haegelin
Its Charles V. P.

My commission expires:

May 6, 1984

THE JONES LAW FIRM, P. C.

320 GOLD AVE., S. W., SUITE 1415

P. O. BOX 1727

ALBUQUERQUE, NEW MEXICO 87103

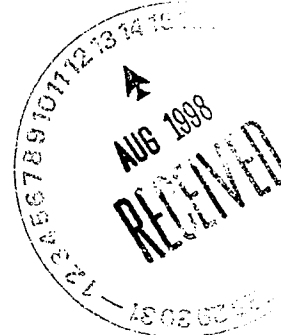
DONALD L. JONES
ATTORNEY AT LAW

TELEPHONE (505) 843-9292
FAX (505) 843-9293

August 12, 1998

Robert M. Adams
and Ronald D. Brown
c/o B & A Development Corp.
3411 Candelaria Rd. NE
Albuquerque, NM 87107

COPY



Re: Amended and Restated Perpetual Easement for Private Access and Utilities (the "Restated Easement") and Vacation of Prior Perpetual Private Access Easement (the "Vacation of Easement") from Lowell Street to Tract N-6-A of Tanoan Properties, in Albuquerque, New Mexico

Dear Mike and Ron:

Enclosed are the original Amended and Restated Perpetual Easement for Private Access and Utilities dated July 29, 1998 (the "Restated Easement"), and the Vacation of Perpetual Private Access Easement dated July 29, 1998, which were filed for record on August 11, 1998, as Document Numbers 1998100738 and 1998100739, respectively, in the Office of the Clerk of Bernalillo County, New Mexico.

We also are transmitting a copy of each of the enclosed documents, with a copy of this letter, to Carol Reed in the Legal Department of American Golf Corporation, and to Kevin J. Curran, Assistant City Attorney for The City of Albuquerque (the "City"), for their files on this matter.

As you requested, I am in the process of preparing a draft of the proposed Sub-Easement to the City according to the terms of Paragraph 4 of the Restated Easement and will send a draft of the Sub-Easement to Kevin Curran, Carol Reed and you for your review and approval or comments as soon as possible. Best regards.

Sincerely,

THE JONES LAW FIRM, P.C.

By Donald L. Jones
Donald L. Jones

DLJ:dj

Enclosures

cc w/enc: Kevin J. Curran, Esq.
Carol Reed

**AMENDED AND RESTATED PERPETUAL EASEMENT
FOR PRIVATE ACCESS AND UTILITIES**

This Amended and Restated Perpetual Easement for Private Access and Utilities (this "Easement") is made as of July 29, 1998 by and among NATIONAL GOLF OPERATING PARTNERSHIP, L.P., a Delaware limited partnership ("Grantor"), Ronald D. Brown, Jo Ann V. Brown, Robert M. Adams and Jenny M. Adams (sometimes referred to singularly as "Grantee" and collectively as "Grantees"), and B & A DEVELOPMENT CORP., a New Mexico corporation ("B & A Development"). In consideration of the promises set forth in this Easement and other valuable consideration, the receipt and adequacy of which are acknowledged by the undersigned parties, Grantor, Grantees, and B & A Development agree:

1. Recitals. The parties make the following recitals with respect to this Easement:

1.1 Grantor is the fee owner of certain real property located in the City of Albuquerque, New Mexico, which Grantor leases to American Golf Corporation, a California corporation ("AGC"), for use as a private golf course and country club facility known as Tanoan Country Club (referred to collectively as the "Golf Course Property"). The Golf Course Property is managed and operated by AGC.

1.2 Grantor has granted to B & A Development a Perpetual Private Access Easement, dated as of December 19, 1994 (the "Original Easement"), upon, over, under and across a portion of the Golf Course Property which is described on an exhibit attached to the Original Easement (the "Original Easement Parcel"). The Original Easement was filed for record on June 4, 1995, in Book 95-1, at Pages 2132 - 2139, as Document No. 95001099, in the records of the County Clerk of Bernalillo County, New Mexico, and was for the benefit of a tract of land known as Tract N-6 of TANOAN PROPERTIES, a subdivision of land in the City of Albuquerque, New Mexico, which land is more specifically described on an exhibit attached to the Original Easement.

1.3 Tract N-6 of TANOAN PROPERTIES has been subdivided by a plat titled "Plat of Tracts N-6-A and N-6-B, TANOAN PROPERTIES, Albuquerque, New Mexico March 1995" which plat was filed for record on November 20, 1995, in Map Book 95C, at Folio 422, in the records of the County Clerk of Bernalillo County, New Mexico (the "Replat").

1.4 As of the date of this Easement, Grantees are the fee owners of Tract N-6-A of TANOAN PROPERTIES ("Tract N-6-A"), and B & A Development is the fee owner of Tract N-6-B of TANOAN PROPERTIES ("Tract N-6-B"), which tracts are shown and designated on the Replat.

1.5 Grantor also is the fee owner of a new easement parcel more specifically described and shown on the attached Exhibit A (the "Easement Parcel"), which is a part of the Golf Course Property and the subject of this Easement.



Judy D. Woodward

Bern. Co.

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1.6 The Parties now want to amend and restate the Original Easement, in its entirety, as set forth in this Easement.

2. Grant of Easement. Grantor grants to Grantees the following easement:

A perpetual, exclusive easement upon, over, under and across that portion of Grantor's property described as the Easement Parcel on the attached Exhibit A for the following uses:

The construction, installation, maintenance, repair, modification, replacement and operation of a private street, landscaping, drainage improvements and public utilities, including, without limitation, electric power, gas, water, sewer, telephone, cable television, and related improvements; and

Pedestrian and vehicular access from Lowell Street N.E. to and from the Tract N-6-A, more specifically described on the attached Exhibit B, for the use and benefit of (i) Grantees and their respective employees, contractors, suppliers, invitees, licensees, tenants and subtenants, and (ii) public emergency vehicles, United States Postal Service delivery and other delivery services;

SUBJECT TO all reservations, restrictions and encumbrances of record as of the date this Easement is filed for record in the records of the County Clerk of Bernalillo County, New Mexico, and all terms and conditions set forth in this Easement.

3. Construction and Maintenance of Improvements; Conditions. Grantees, and the agents, employees, contractors and subcontractors of Grantees, will have the right to construct, install, maintain, repair, modify, replace and operate, at the expense of Grantees, a private street, landscaping, public utilities and related improvements (referred to collectively as the "Easement Improvements") upon, over, under and across the Easement Parcel, subject to the following conditions:

3.1 Grantees will comply with all applicable restrictive covenants, ordinances, regulations, rules, orders and laws with respect to any such construction, installation, maintenance, repair, modification, replacement or operation of the Easement Improvements.

3.2 All of the Easement Improvements constructed or installed by Grantees upon, over, under or across the Easement Parcel will be consistent with, and the least intrusive upon, the aesthetics and use of Grantor's property adjacent to the Easement Parcel, to the extent permitted by law and the land use policies the City of Albuquerque, New Mexico (the "City of Albuquerque").

3.3 Grantees will coordinate with the appropriate officers or employees of AGC to locate any irrigation lines, pipes and underground equipment that may be affected by any work of Grantees, or of any agents, employees, contractors or subcontractors of Grantees, within the Easement Parcel. Grantees will be responsible for keeping all of Grantor's lines, pipes and underground equipment throughout the construction or installation of any of the Easement Improvements in or on the Easement Parcel, and Grantees will restore the same to their prior operating condition after such construction or installation has been completed.

3.4 Grantees will maintain, or cause to be maintained, at the expense of Grantees, the Easement Improvements in good order, condition and repair.

3.5 Grantees will take all reasonable measures and exercise Grantees' best efforts to prevent damage to the Golf Course Property and, at Grantees' sole expense, will promptly restore all turf, trees and other landscaping improvements and irrigation facilities within the Golf Course Property damaged by Grantees, or any agents, employees, contractors or subcontractors of Grantees, in connection with any work on or use of the Easement Parcel under the terms of this Easement, to the same or better condition as such improvements and facilities existed immediately prior to the activity resulting in the disturbance of the affected Golf Course Property. Specifically, Grantees' personnel will be responsible for all grading work necessary to re-establish the contouring of the Golf Course Property as a result of any activities on the Easement Parcel, including, but not limited to, the re-establishment of any mounds, tees and flow lines on the Golf Course Property that may be damage as a result of any such activities.

4. Grantees' Right to Grant or Dedicate Sub-easements to The City of Albuquerque or a Utility Company for Utilities. Grantees will have the right to grant or dedicate a sub-easement or sub-easements upon, over, under and across the Easement Parcel to the City of Albuquerque and/or to any public or private utility company for the construction, installation, maintenance, repair, modification, replacement and/or operation of utility facilities including, without limitation, electric power, gas, water, sewer, telephone, cable television, and related improvements, subject to Grantor's consent to the terms and conditions of the proposed grant or dedication of any such sub-easement, which consent will not be unreasonably withheld or delayed. Grantor will be deemed to have consented to any such proposed sub-easement unless Grantor provides written notice to Grantees of any objections of Grantor within 15 days after Grantor receives a copy of the proposed sub-easement from Grantees. If required to do so by Grantees, the City of Albuquerque, or any public or private utility company, Grantor will evidence Grantor's consent to the grant or dedication of any such sub-easement by having the proposed sub-easement signed by an authorized officer, agent or employee of Grantor; provided Grantor consents to the proposed sub-easement and is not be required to agree to any financial or indemnity obligations with respect to any such grant or dedication.



Judy D. Woodward

Bern. Co. EASE

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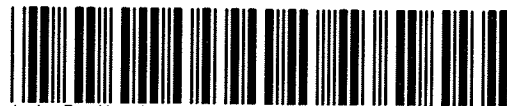
5. Grantor's Right of Access. Grantor, its licensees, members, successors and assigns will retain an irrevocable right of access to and over the Easement Parcel granted in this Easement for the purposes of using and maintaining Grantor's property adjacent to the Easement Parcel for the best and highest use of Grantor's property.

6. Grantees' Assumption of Risks and Indemnity Obligations. Grantees covenant and agree that Grantor and AGC will be free from liability and claims of damages by reason of any injury to any person or persons whomsoever (including Grantees and any of their respective agents, officers, employees, contractors or invitees) or to any property of any kind whatsoever which results from or is in any way connected with any construction or installation on, or any use of, the Easement Parcel by Grantees or by any of Grantees' respective agents, officers, employees, contractors or invitees, or the exercise of any rights of Grantees pursuant to this Easement, and Grantees assume all risks related to any such activities. Grantees and Grantees' successors and assigns covenant and agree to defend, indemnify and hold harmless Grantor and AGC, on demand, from any and all liability, loss, costs, damages, obligations, or reasonable, actual attorneys' fees that may be sustained or incurred by Grantor, with respect to Grantees' exercise of their rights under this Easement or any activities of Grantees or of any of their respective agents, officers, employees, contractors or invitees on the Easement Parcel, including without limitation, liability relating to personal injury and property damage incurred by Grantees, or by any officers, employees, agents, contractors or invitees of Grantees, resulting from such activities or from the flight of golf balls or other activities conducted on the Golf Course Property (subject to the limitations of such indemnity obligations as set forth in Section 8 of this Easement).

7. Restrictive Covenant and Equitable Servitude Which Run with the Land. Grantees' agreement to defend, indemnify and hold harmless Grantor, any successor in interest of Grantor, or any other person or entity, as set forth in this Easement, and Grantees' agreement to maintain the Easement Parcel in good repair as fully set forth in Sections 3.1 through 3.5 of this Easement, will now and forever constitute a restrictive covenant which will run with the land as to the Easement Parcel and as to Tract N-6-A, as well as an equitable servitude which will hereby attach to, run with, and burden the land now known as Tract N-6-A, with all benefits thereof flowing to Grantor, Grantees and their respective successors and assigns.

8. Limitation on Indemnity Obligations. Despite any provision in this Easement to the contrary, the obligation of Grantees, and any successor in interest of any of the Grantees, to defend, indemnify, and hold harmless Grantor, any successor in interest of Grantor, or any other person or entity as set forth in this Easement, is subject to the following limitations:

8.1 Any such indemnity obligation is limited by and specifically subject to the provisions of Section 56-7-1, New Mexico Statutes Annotated (1978), as amended, if and to the extent that such statute is applicable to any indemnity provision of this Easement.



Judy D. Woodward

Bern. Co.

EASE

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8.2 Each of the Grantees and any successor in interest of any of the Grantees will only be obligated to indemnify, hold harmless and defend Grantor, any successor in interest of Grantor, or any other person or entity as set forth in this Easement, as to any claims, liens, actions, proceedings, lawsuits, liabilities, losses, costs, damages and/or judgments which may be asserted, filed or entered with respect to any acts or omissions which occur during the time that such Grantee, or the successor in interest of such Grantee, as the case may be, owns all or any part of Tract N-6-A.

8.3 Neither the City of Albuquerque, nor any public or private utility company, will be obligated to defend, indemnify, or hold harmless Grantor, any successor in interest of Grantor, or any other person or entity as set forth in this Easement with respect to any sub-easement that may be granted or dedicated by Grantees upon, over, under and across the Easement Parcel for utility facilities, unless the City of Albuquerque, or the public or private utility company, as the case may be, expressly assumes or agrees, in writing, to any such indemnity obligations.

9. Filing and Notice of Easement. Grantees will file and record, at the expense of Grantees, this Easement in the office of the County Clerk of Bernalillo County, New Mexico, within 30 days after the fully-signed original of this Easement has been delivered to Grantees, so as to put all the world on notice of this Easement and of the restrictive covenants and equitable servitude set forth in this Easement.

10. Implementation. Grantor and Grantees, without need of further consideration, will take whatever steps are reasonable and necessary to implement their mutual intent and the terms of this Easement.

11. Authority of Signatories. By signing this Easement, the signatories represent and warrant that (i) they have the authority to bind all persons, entities and associations they claim to represent to the terms and conditions of this Easement, and (ii) they have the approval and authority of any and all property owners, homeowners' associations, or boards necessary to effect the terms of this Easement now and forever.

12. Miscellaneous. The following general provisions will apply to this Easement:

12.1 Notices and Addresses. All notices, demands, requests or replies (referred to collectively in this section as "notice") required or permitted with respect to this Easement will be in writing and may be delivered by any of the following methods: (i) by personal delivery with receipt acknowledged in writing; (ii) by deposit with the United States Postal Service as certified or registered mail, return receipt requested, and all required postage prepaid; or (iii) by deposit with an overnight express delivery service with receipt acknowledged in writing and all required charges prepaid. Notice by personal delivery will be effective on the date delivered. Notice by deposit with the United States Postal Service will be effective as of the date the return receipt is signed. Notice by overnight express delivery service will be effective as of the date that receipt is acknowledged in writing. Notices given with respect to this Easement will be addressed to Grantor, Grantees, or



B & A Development at the addresses set forth below unless any of such parties specifies another address by written notice to the other parties to this Easement:

Notices to Grantor:

National Golf Operating Partnership, L.P.
c/o National Golf Properties
Office of the General Counsel
2951 - 28th Street
Santa Monica, California 90405

With a copy to:

American Golf Corporation
Attn: Legal Department
2951 - 28th Street
Santa Monica, California 90405

Notices to Grantees:

Ronald D. Brown
and Robert M. Adams
B & A Development Corp.
3411 Candelaria Rd. N.E.
Albuquerque, New Mexico 87107

Or to the same Addressees at:

P. O. Box 3617
Albuquerque, New Mexico 87197

12.2 Governing Law; Interpretation. This Easement will be governed by and construed in accordance with the laws of the state of New Mexico.

12.3 Jurisdiction. In any suit, action or proceeding arising out of or relating to this Easement, any party now or hereafter bound by or subject to this Easement irrevocably submits to the jurisdiction of either the District Court of Bernalillo County, New Mexico, or the United District Court for the District of New Mexico, depending on where any such action is filed, and waives any and all objections to jurisdiction that such party may have under the laws of either the state of New Mexico or the United States of America.

12.4 Waiver. The failure of any party to exercise any right given under this Easement or to insist on strict compliance with any term, condition or agreement set forth in this Easement, will not constitute a waiver of such party's right in the future to exercise such right or to demand strict compliance with any such term, condition or agreement under this Easement.



12.5 Disputes and Reimbursement of Expenses. If any party now or hereafter bound by or subject to this Easement files an action against any other party bound by or subject to this Easement (i) to enforce any of the provisions of this Easement, (ii) to protest any other party's interest under this Easement, or (iii) to recover damages for any breach of this Easement, and a final order or judgment is ultimately entered in the action (the finality of which is not legally contested), then the party that does not prevail in the action will reimburse the prevailing party for all expenses and costs, including, without limitation, all discovery and court costs and the reasonable, actual attorney fees, incurred by the prevailing party with respect to the action. If the action is not prosecuted to a final order or judgment, then the party bringing the action will reimburse the party or parties against whom the action was brought (referred to collectively as the "Defending Party") for all expenses and costs, including, without limitation, all discovery and court costs and the reasonable, actual attorney fees, incurred by the Defending Party, unless the parties otherwise agree, in writing.

12.6 Counterparts. This Easement may be executed in any number of counterparts, each of which when so executed will be deemed to be an original and all of which when taken together will constitute one and the same Easement.

12.7 Severability. Each and every provision of this Easement is severable, and if any provision, or the application of any provision to any person or circumstance, is held to be invalid, illegal or unenforceable, then the validity of the remainder of this Easement, or the application of such provision to persons or circumstances other than to those which are held to be invalid, illegal or unenforceable, will not be affected by any such holding.

12.8 Easement and Covenants Run With Land; Constructive Notice. This Easement and all covenants set forth in this Easement will run with the land and will be binding on and inure to the benefit of Grantor, Grantees, and their respective successors and assigns. When this Easement has been filed for record in the records of the County Clerk of Bernalillo County, New Mexico, every person or entity which has or hereafter acquires any right, title, estate or interest in or to all or any portion of either the Easement Parcel or the Tract N-6-A will be conclusively deemed to have consented and agreed to all of the terms, conditions and agreements set forth in this Easement, regardless of whether any reference to this Easement is set forth in the instrument by which such person or entity acquires its interest in any such real property.

12.9 Modification; Termination. This Easement may not be modified, amended or terminated except by an instrument, in writing, signed by or on behalf of all parties who have an ownership interest of record in all or any part of the Easement Parcel or Tract N-6-A.

12.10 Entire Agreement. This Easement, including the attached Exhibit A and Exhibit B which are made a part of this Easement by reference, comprises the entire understanding and agreement among Grantor, Grantees and B & A Development with respect to the subject matter of this Easement, and this Easement supersedes and replaces all prior or contemporaneous



agreements, understandings, representations and statements, whether oral or written, among Grantor, Grantees and B & A Development with respect to the subject matter of this Easement, including the Original Easement.

Dated as of the date set forth in the first sentence of this Easement.

GRANTOR:

NATIONAL GOLF OPERATING
PARTNERSHIP, L.P.,
A Delaware Limited Partnership

By: National Golf Properties, Inc.,
A Maryland Corporation,
Its General Partner

By: Scott S. Thompson
Scott S. Thompson,
Vice President and
General Counsel

GRANTEES:

Ronald D. Brown
RONALD D. BROWN

Jo Ann V. Brown
JO ANN V. BROWN

Robert M. Adams
ROBERT M. ADAMS

Jenny M. Adams
JENNY M. ADAMS

B & A DEVELOPMENT CORP.,
A New Mexico Corporation

By: Robert M. Adams
Robert M. Adams,
Its Vice President

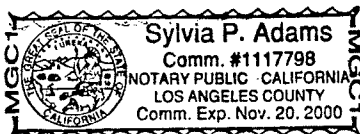
STATE OF CALIFORNIA)
) ss.
COUNTY OF LOS ANGELES)

On August 10, 1998, before me, Sylvia P. Adams, personally appeared SCOTT S. THOMPSON, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument, the person or entity on behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Sylvia P. Adams
NOTARY PUBLIC

My commission expires:
November 20, 2000
(Seal or Stamp)



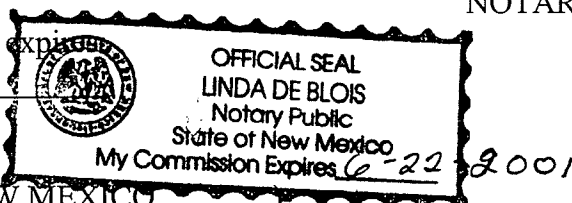
STATE OF NEW MEXICO)
COUNTY OF BERNALILLO)

This instrument was acknowledged before me on July 29, 1998 by Ronald D. Brown and Jo Ann V. Brown, husband and wife.

Linda De Blois
NOTARY PUBLIC

My commission expires

(Seal or Stamp)

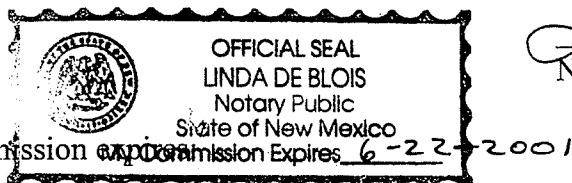


STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

This instrument was acknowledged before me on July 29, 1998 by Robert M. Adams and Jenny M. Adams, husband and wife.

Yvonne De Blois
NOTARY PUBLIC

My commission expires



(Seal or Stamp)

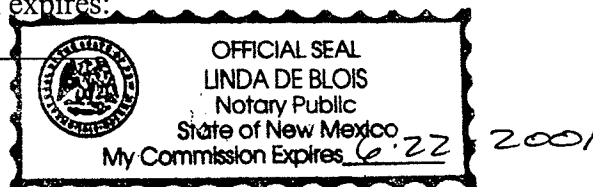
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This instrument was acknowledged before me on July 29, 1998 by Robert M. Adams, as Vice President of B & A Development Corp., a New Mexico corporation, of behalf of the corporation.

Linda De Blois
NOTARY PUBLIC

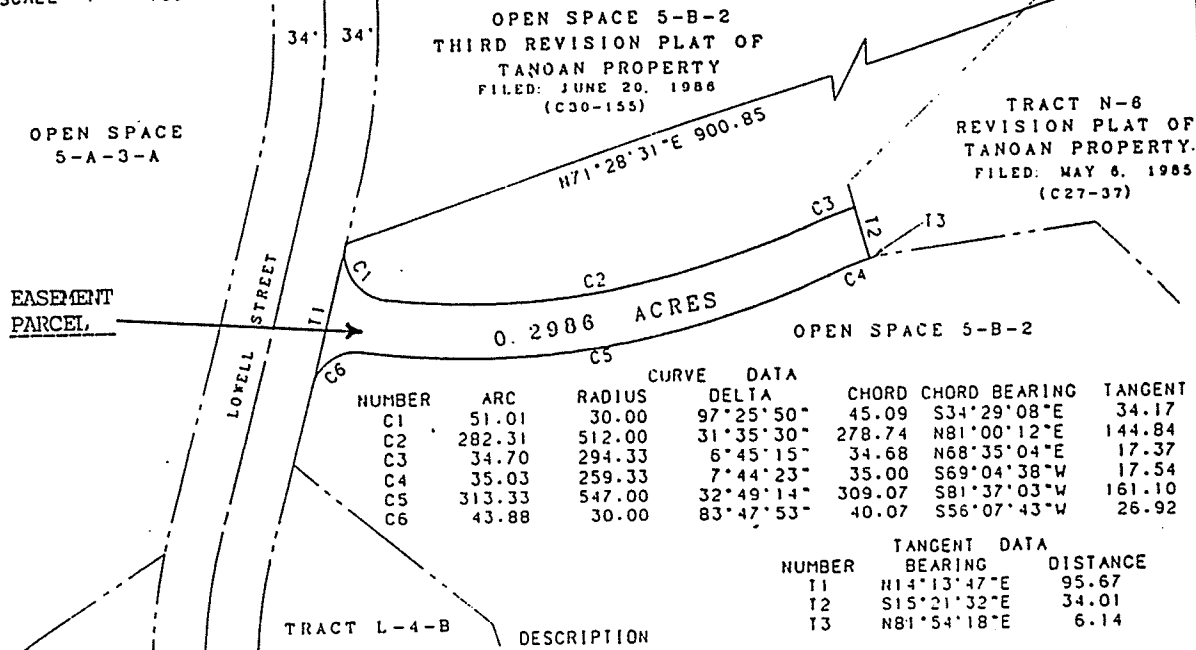
My commission expires:

(Seal or Stamp)



ACS Brass tablet stamped "7-E22"
 N.M. State Plane Coordinates (Central Zone)
 X= 424.431.28 Y= 1.512.773.86 (NAD 1927)
 Ground-to-Grid Factor = 0.9996199
 Δα = -00°08'44"
 Trig. Elev. = 5993

SCALE: 1" = 100'



A certain tract of land situate within the Elena Gallegos Grant, and also within the northeast one-quarter of projected Section 27, T11N, R4E, N.M.P.M., Bernalillo County, New Mexico. Said tract being a portion of OPEN SPACE 5-B-2, THIRD REVISION PLAT OF TANOAN PROPERTIES, as the same is shown and designated on the plat filed in the office of the County Clerk of Bernalillo County, New Mexico on June 20, 1986 in Volume C30, folio 155, and being more particularly described by New Mexico State Plane Grid Bearings (Central Zone) and ground distances as follows:

Beginning at the northwest corner of the tract herein described, said point also being a point on the easterly right-of-way line of Lovell Street, whence the City of Albuquerque survey monument "7-E22", having New Mexico State Plane Grid Coordinates for the Central Zone: X=424.431.28, Y=1.512.773.86, bears N71°28'31"E a distance of 900.85 feet; and from said point of beginning running along the northerly boundary line of the tract herein described, 51.01 feet along the arc of a curve to the left having a radius of 30.00 feet and a chord bearing S34°29'08"E a distance of 45.09 feet to a point of compound curvature; thence, 282.31 feet along the arc of a curve to the left having a radius of 512.00 feet and a chord bearing N81°00'12"E a distance of 278.74 feet to a point of reverse curvature; thence, 34.70 feet along the arc of a curve to the right having a radius of 294.33 feet and a chord bearing N68°35'04"E a distance of 34.67 feet to a point on the westerly boundary line of TRACT N-6, REVISION PLAT OF TANOAN PROPERTIES, as the same is shown and designated on the plat filed in the office of the County Clerk of Bernalillo County, New Mexico on May 6, 1985 in Volume C27, folio 37; thence running along said westerly boundary line and the easterly boundary line of the tract herein described, S15°21'32"E a distance of 34.01 feet to an angle point on the said westerly boundary line of said TRACT N-6; thence continuing along said westerly boundary line and the easterly boundary line of the tract herein described, N81°54'18"E a distance of 6.14 feet to the southeast corner of the tract herein described; thence running along the southerly boundary line of the tract herein described, 35.03 feet along the arc of a curve to the left having a radius of 259.33 feet and a chord bearing S69°04'38"W a distance of 35.00 feet to a point of reverse curvature; thence, 313.33 feet along the arc of a curve to the right having a radius of 547.00 feet and a chord bearing S81°37'03"W a distance of 309.07 feet to a point of reverse curvature; thence, 43.88 feet along the arc of a curve to the left having a radius of 30.00 feet and a chord bearing S56°07'43"W a distance of 40.07 feet to a point on the said easterly right-of-way line of Lovell Street; thence running along said easterly right-of-way line, N14°13'47"E a distance of 95.67 feet to the point and place of beginning.

This tract contains 0.2986 of an acre, more or less.

SURVEYOR'S CERTIFICATION

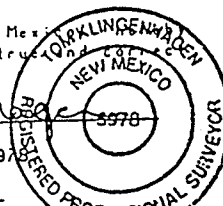
I, Thomas G. Klingenhagen, a registered land surveyor in the State of New Mexico, certify that the above description and site map was prepared by me and is true and correct to the best of my knowledge and belief.

BOHANNAN HUSTON INC.
 Courtyard I
 7500 Jefferson St. NE
 Albuquerque, NM 87109
 (505) 823-1000

EXHIBIT A

Thomas G. Klingenhagen
 New Mexico Surveyor No. 5970

DATE: 7-15-98



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 569499
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 BX-9813 Pg-8994



TRACT N-6-A

Tract N-6-A of TANOAN PROPERTIES, Albuquerque, New Mexico, as the same is shown and designated on the plat of said addition filed in the office of the County Clerk of Bernalillo County, New Mexico, on November 20, 1995, in Map Book 95C, Folio 422.

EXHIBIT B



Judy D. Woodward

Bern. Co.

EASE

R 27.00

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Bk-9813 Pg-8994

VACATION OF PERPETUAL PRIVATE ACCESS EASEMENT

NATIONAL GOLF OPERATING PARTNERSHIP, L.P., a Delaware limited partnership ("Grantor"), B & A DEVELOPMENT CORP., a New Mexico corporation ("Grantee"), and Ronald D. Brown, Jo Ann V. Brown, Robert M. Adams and Jenny M. Adams, successors-in-interest of Grantee, hereby terminate and vacate that certain Perpetual Private Access Easement dated as of December 19, 1994, between Grantor and Grantee, which was filed for record on January 4, 1995, in Book 95-1, at Page 2132, as Document No. 95001099, in the records of the County Clerk of Bernalillo County, New Mexico.

DATED AS OF: July ~~27~~²⁹, 1998.

NATIONAL GOLF OPERATING
PARTNERSHIP, L.P., A Delaware
Limited Partnership

By: National Golf Properties, Inc.,
A Maryland Corporation,
Its General Partner

By: Scott S. Thompson
Scott S. Thompson,
Its Vice President and
General Counsel

B & A DEVELOPMENT CORP.,
A New Mexico Corporation

By: Robert M. Adams
Robert M. Adams,
Its Vice President

Ronald D. Brown
RONALD D. BROWN

Jo Ann V. Brown
JO ANN V. BROWN

Robert M. Adams
ROBERT M. ADAMS

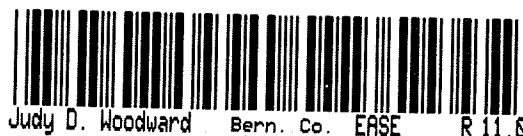
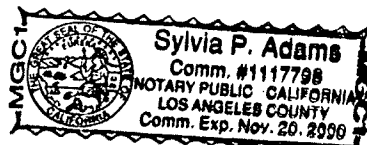
Jenny M. Adams
JENNY M. ADAMS

STATE OF CALIFORNIA)
) ss.
COUNTY OF LOS ANGELES)

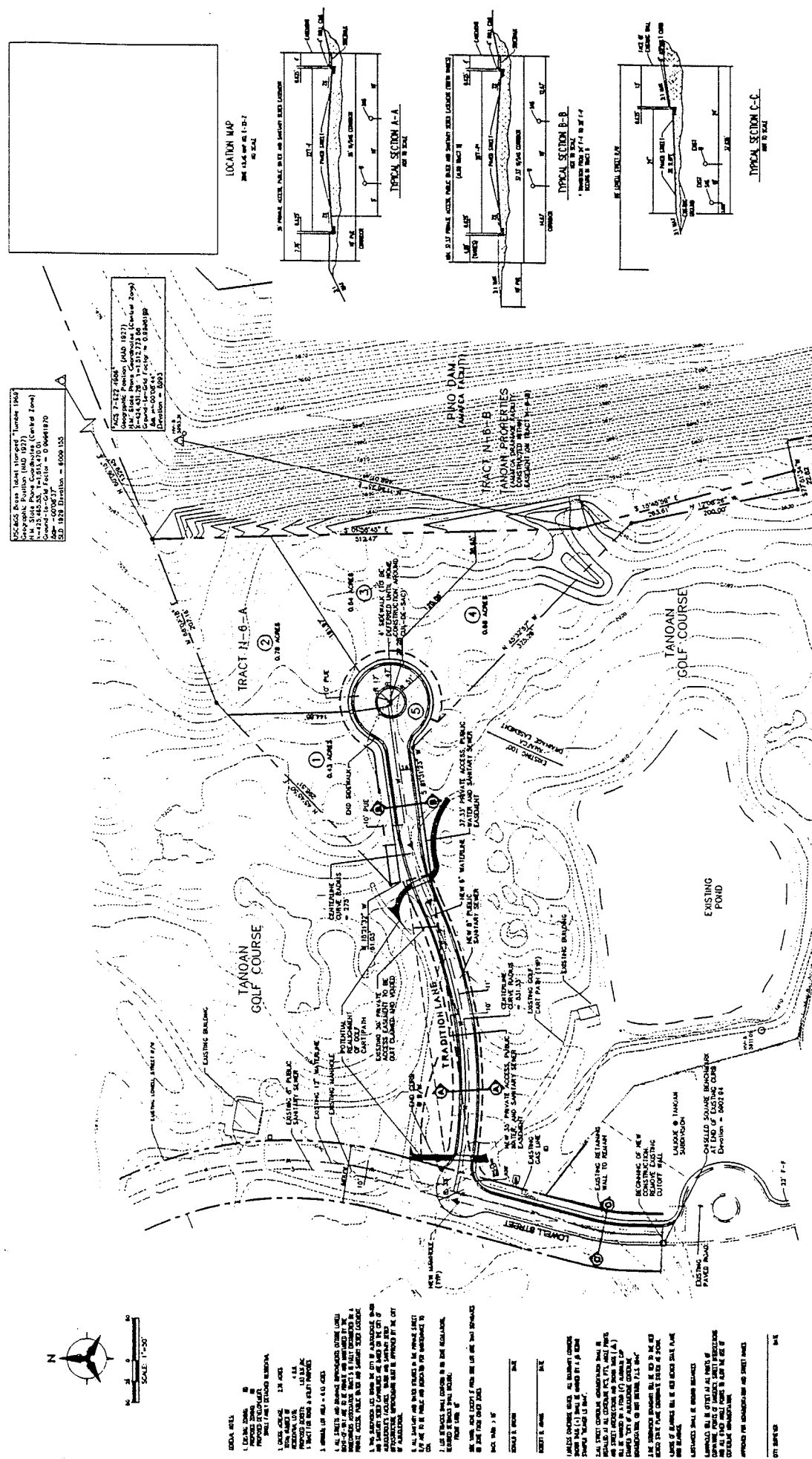
On August 10, 1998, before me, Sylvia P. Adams, personally appeared SCOTT S. THOMPSON, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument, the person or entity on behalf of which the person acted, executed the instrument. WITNESS my hand and official seal.

Sylvia P. Adams
NOTARY PUBLIC

My commission expires:
November 20, 2000
(Seal or Stamp)



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PRELIMINARY PLAT
THE TRADITIONS AT TANOAN,
(FORMERLY TRACT N-6-A, TANOAN PROPERTIES)
ALBUQUERQUE, NEW MEXICO
JULY, 1998

740.262 ACKE PARCEL
SITUATE WITHIN
THE ELENA CALLEGOS GRANT
AND WITHIN
PROJECTED SECTIONS 26, 27, 28, AND 29
TOWNSHIP 11 NORTH, RANGE 4 EAST
NEW MEXICO PRINCIPAL MERIDIAN
BERNALILLO COUNTY, NEW MEXICO
7/10/78

That certain parcel of land situate within the Elena Callegos Grant and situate within projected sections 26, 27, 28, and 29, Township 11 North, Range 4 East, New Mexico Principal Meridian, Bernalillo County, New Mexico, which is more particularly described by notes and bounds as follows:

Beginning at the Northeast Corner of the parcel herein described at the point of intersection of the West Right-of-Way Line of Tramway Boulevard, N.E., and the Section Line common to Sections 23 and 26, T11N, R4E, NMPN whence, the City of Albuquerque Monument designated "TUNDEL" (having New Mexico State Plane Coordinates, Central Zone of X=425,465.550 feet and Y=1,513,470.010 feet) bears N 05° 08' 17" W, 030.59 feet; thence,

ALONG THE WEST RIGHT-OF-WAY LINE OF TRAMWAY BOULEVARD N.E.:

S 19° 31' 04" W, 728.11 feet to a point of curvature; thence, Southwesterly 745.97 feet along the arc of a curve bearing to the left (said arc having a radius of 2,191.85 feet and a long chord which bears S 09° 46' 04" W, 742.38 feet) to a point of tangency; thence,

S 00° 01' 04" W, 1,219.00 feet to the Southeast Corner of the parcel herein described at the point of intersection of the West Right-of-Way Line of Tramway Boulevard N.E. and the Centerline of Academy Road, N.E., whence the City of Albuquerque Monument designated "2-E22" (having New Mexico State Plane Coordinates, Central Zone of X=425,462.462 feet and Y=1,511,537.434 feet) bears N 30° 47' 02" W, 900.94 feet; thence leaving the West Right-of-Way Line of Tramway Boulevard, N.E.;

ALONG THE CENTERLINE OF ACADEMY ROAD, N.E.:

N 89° 36' 56" W, 2,709.12 feet to a point of curvature; thence, Southwesterly 1,000.00 feet along the arc of a curve bearing to the left (said arc having a radius of 1,412.40 feet and a long chord which bears S 70° 23' 04" W, 979.82 feet) to a point of Reverse Curvature; thence,

Southwesterly 715.12 feet along the arc of a curve bearing to the right (said arc having a radius of 1,006.16 feet and a long chord which bears S 70° 44' 45" W, 700.16 feet) to a point of tangency; thence,

N 80° 53' 35" W, 877.80 feet to a point of curvature; thence, Northwesterly 976.50 feet along the arc of a curve bearing to the right (said arc having a radius of 1,432.40 feet and a long chord which bears N 69° 21' 43" W, 957.70 feet) to a point of tangency; thence,

Exhibit "A"

EXHIBIT "A"

Those certain five (5) parcels of land designated as "Open Space-1" through "Open Space-5" inclusive, as the same are shown and designated on Sheets 2, 3, 4, and 5, of the Amended Summary Plat of TANOAN PROPERTIES, Albuquerque, New Mexico, containing Sheets 1 through 5, inclusive, filed in the office of the County Clerk of Bernalillo County, New Mexico, on June 25, 1982, as Document No. 82-33172.

N 49° 49' 48" N, 910.70 feet to a point of Curvature; thence,
Northwesterly 1,000.00 feet along the arc of a curve bearing
to the left (said arc having a radius of 1,432.40 feet and a
long chord which bears N 69° 49' 40" W, 979.82 feet) to a
point of Tangency; thence,

N 89° 49' 40" W, 2,257.44 feet to a point of Curvature; thence,
Southwesterly 572.40 feet along the arc of a curve bearing to
the left (said arc having a radius of 798.70 feet and a long
chord which bears S 69° 38' 21" W, 560.23 feet) to a point of
Tangency; thence,

S 49° 06' 30" W, 838.23 feet to a point of Curvature; thence,
Southwesterly 893.15 feet along the arc of a curve bearing
to the right (said arc having a radius of 1,295.97 feet and
a long chord which bears S 68° 51' 06" W, 875.56 feet) to a
point of Tangency; thence,

S 88° 35' 42" W, 498.50 feet to the Southwest Corner of the
parcel herein described at the point of intersection of the
centerline of Academy Road, N.E. and the centerline of Layton
Avenue, N.E. (also known as Ventura Street, N.E.); thence
leaving the centerline of Academy Road, N.E.,

ALONG THE CENTERLINE OF LAYTON AVENUE, N.E. (ALSO KNOWN AS THE CENTER-
LINE OF VENTURA STREET, N.E.);

N 01° 24' 52" W, 1,145.08 feet to a point of Curvature; thence,
Northwesterly 395.74 feet along the arc of a curve bearing to
the left (said arc having a radius of 500.00 feet and a long
chord which bears N 24° 05' 19" W, 385.49 feet) to a point of
Tangency; thence,

N 46° 45' 46" W, 418.43 feet to a point of Curvature; thence,
Northwesterly 211.85 feet along the arc of a curve bearing to
the right (said arc having a radius of 400.00 feet and a long
chord which bears N 31° 35' 23" W, 209.39 feet) to a point of
Tangency; thence,

N 16° 25' 01" W, 91.59 feet to the most Westerly Corner of the
parcel herein described at the point of intersection of the
centerline of Layton Avenue, N.E. (Ventura Street, N.E.) and
a projection of the South Right-of-Way line of Harper Road, N.E.;
thence leaving the centerline of Layton Avenue, N.E. (Ventura
Street, N.E.);

N 73° 34' 59" E, 44.00 feet along the projected South Right-of-
Way line of Harper Road, N.E. to the point of intersection with the
East Right-of-Way line of Layton Avenue N.E. (Ventura Street, N.E.);
thence,

N 16° 25' 01" W, 43.00 feet along the East Right-of-Way line
of Layton Avenue, N.E. (Ventura Street, N.E.) to the point of inter-
section of the East Right-of-Way line of Layton Road, N.E. and the
Projected centerline of Harper Road, N.E.; thence,

N 73° 34' 59" E, 279.54 feet to a point of curvature; thence,

Northeasterly 316.61 feet along the arc of a curve bearing to the right (said arc having a radius of 2,325.00 feet and a long chord which bears N 77° 29' 04" E, 316.37 feet) to a point of Normalcy; thence,

N. 00° 36' 52" W, 336.73 feet to a point of curvature thence.

Northwesterly 175.00 feet along the arc of a curve bearing to the right (said arc having a radius of 1,115.00 feet and a long chord which bears N 04° 06' 58" N, 174.90 feet) to a point of tangency; thence, N 00° 22' 57" E, 292.58 feet to a point on the Section Line common to Sections 20 and 29, T11N, R4E, N4PM; thence,

S 89°.37' 54" E, 2,029.12 feet along the Section Line common to Sections 20 and 29, T11N, R4E, N1/4 to the Section Corner common to Sections 20, 21, 28, and 29, T11N, R4E, N1/4 (City of Albuquerque Monument designated "1-D21" with New Mexico State Plane Coordinates, Central zone of X=415,462.45 feet and Y=1,513,473.51 feet); thence,

S 89° 36' 36" E, 5,267.46 feet along the Section line common to Sections 21 and 20, T11N, R4E, NPM to the Section Corner common to Sections 21, 22, 27, and 20, T11N, R4E, NPM (City of Albuquerque Monument designated "1-D22" with New Mexico State Plane Coordinates, Central zone of x=430,727.66 feet and y=1,513,437.66 feet); thence,

S 89° 36' 42" E, 2,643.98 feet along the Section Line common to Sections 22 and 27, T11N, R4E, NNPM to the Quarter Corner common to Sections 22 and 27, T11N, R4E, NNPM (2 1/2" pipe designated "C"); thence,

S 89° 36' 20" E, 2,653.40 feet continuing along the Section Line common to Sections 22 and 27, T11N, R4E, NPPH to the Section Corner common to Sections 22, 23, 26, and 27, T11N, R4E, NPPH (projected), thence,

S 89° 36' 20" E, 269.78 feet along the Section Line common to Sections 23 and 26, T11N, R4E, N4PM to the Northeast Corner and place of beginning of the parcel herein described at the intersection of the West Right-of-Way Line of Tramway Boulevard, N.E. and the Section Line common to Sections 23 and 26, T11N, R4E, N4PM.

Said parcel contains 748.262 acres, more or less.

NOTE: All bearings of the preceding description are based on the New Mexico State Plane Grid, Central Zone (Mean Delta Alpha = $-00^{\circ} 09' 21''$) and all distances are ground distances.

I, Cliff A. Spirock, New Mexico Registered Land Surveyor No. 4972 hereby certify that the above description was prepared by me and is true and correct to the best of my knowledge and belief.

CLIFF A. SPIROCK
M.M.I.S. 44972
COMMUNITY SCIENCES CORPORATION
Coronado, New Mexico



OPEN-SPACE AGREEMENT

THIS AGREEMENT ENTERED into this 2nd day of Dec, 1979, by and between AFFILIATED MORTGAGE & DEVELOPMENT COMPANY ("AMDEC") and TANQAN LAND COMPANY ("TANQAN") (hereinafter called "Owners") and the CITY OF ALBUQUERQUE, a municipal corporation formed pursuant to the laws of the State of New Mexico (hereinafter called "City").

WHEREAS, the Owners are owners of certain property located in Bernalillo County, New Mexico, the legal description of which is attached hereto as Exhibit "A" and incorporated herein by reference, and which property lies within the platting and planning jurisdiction of City, and

WHEREAS, Owners and City are desirous of completing the over-all planning for such area under the sector development plan officially labeled the Eubank/Tramway/Academy Sector Development Plan and hereinafter referred to as the "Sector Development Plan", and

WHEREAS, City and Owners are desirous of entering into an agreement whereby the open-space requirements of Owner can be established in advance of the final approval and filing of plats for different areas within the sector plan and further to establish the text of the legal documents required to be filed to preserve open space in accordance with Section 40(h)(1) of the Comprehensive Zoning Code of the City of Albuquerque,

NOW, THEREFORE, IN CONSIDERATION OF THE MUTUAL COVENANTS AND AGREEMENTS OF THE PARTIES HEREIN CONTAINED, IT IS HEREBY AGREED AS FOLLOWS:

1. That the property upon annexation to the City will be appropriately zoned so as to permit residential and related uses with open-space requirements of not more than 6,000 square feet of open space per dwelling unit, which requirement may be met by the following alternatives, the choice to be by Owners.

a. Of the total 6,000 square feet, the following minimum amount of usable open space shall be on the lot with the dwelling; 200 square feet for each efficiency or one-bedroom dwelling, 250 square feet for each two-bedroom dwelling, and 300 square feet for each dwelling containing three or more bedrooms.

b. Owners may elect to meet the requirement for open space in excess of that met on the lot upon which the dwelling unit is constructed by executing and delivering to the City an instrument in form and substance identical to the document entitled "Open Space Restrictive Covenants" attached hereto as Exhibit "B" which is incorporated herein by reference. Such detached open space need not be accessible to the residents of the related dwelling units or to the general public.

2. It is agreed that City will not change or amend, with regard to Owners' property, the requirements for open space as set out herein for the uses thereof as allowed by the present zoning ordinance] as to any and all lands owned by Owners and located within the Sector Development Plan.

3. Upon application to the City for final plat approval as to any property within the Sector Plan, Owners or their respective assignees, shall present to the City a calculation of the open-space requirements for that particular plat. Such calculation shall specify the open space which will be located on the residential lot and the amount of open space which will be detached open space pursuant to Section 40(h) of the Zoning Ordinance. Owner shall further provide to City at the time of the application for final plat approval an executed copy of the restrictive covenants as attached hereto, describing the property.

which in size and location meet the present requirements of Section 40(h) of the Zoning Code.

4. Upon verification of the City of the mathematical correctness of the calculations and regarding the location of the attached open space, the restrictive covenants shall be filed together with the final plat and upon such filing, Owners obligation with regard to open space pursuant to Section 18(f) and Section 40(h) of the Zoning Code shall be deemed fulfilled and completed.

5. It is understood and agreed that development of all property of Owners within the Sector Development Plan will not be accomplished immediately and will take place over several years after the date of execution of this Agreement. However, because of the substantial expenditure of monies in the planning and development, and improvement of the open-space area, Owners have acquired a "vested interest" in the plan for open space and provisions of Sections 18(f) and 40(h) of the Zoning Code, City agrees that such conditions, terms or requirements will not be changed or modified so as to adversely affect the interest of Owners as to any property within the Sector Development Plan.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the day and year first written above.

AFFILIATED MORTGAGE &
DEVELOPMENT COMPANY

By Charles A. Thoburn
its President V.P.

TANDAN LAND COMPANY

By James A. Thoburn
its Vice President

CITY OF ALBUQUERQUE

By Samuel D. Brumfield
its Chief Administrative Officer

ATTEST:

Chela Loria
City Clerk/Recorder

REVIEWED BY LEGAL DEPARTMENT:

Laura P. Allen

RESTRICTIVE COVENANTS
FOR OPEN SPACE

WHEREAS, _____ is the owner of all real estate situate in Bernalillo County, New Mexico (hereinafter called "the Property"):

WHEREAS, Owner has established the general plan for the improvement and development of surrounding properties owned by it which require "detached open space" pursuant to the ordinances of the City of Albuquerque, and

WHEREAS, such ordinances require that the owner "forfeit permanently to the City of Albuquerque by deed or other suitable legal instrument the right to use or develop such land other than as specified in said ordinance,

NOW, THEREFORE, the Property is hereby made subject to the following restrictive covenants, conditions and reservations which shall run with the land in perpetuity and shall be binding upon the owners, their successors and assigns. Such restrictions shall be for the benefit of the City of Albuquerque in that they further and carry out the intent, purpose and requirements of the Comprehensive Zoning Code of the City of Albuquerque and of the Albuquerque/Bernalillo County Comprehensive Plan and the owners of all the surrounding properties within the Sector Development Plan and they labeled the _____ Sector Development Plan and they shall run in favor of the City of Albuquerque and any or all of the aforementioned land owners. The City and any or all of the aforementioned land owners shall be entitled to prosecute any proceedings at law or in equity against the person or persons violating any of these covenants and either to prevent him from doing so or to recover damages for such violation or both. It is the intent of this paragraph to make the City of Albuquerque, together with a group composed of all of the aforementioned property owners from the parties entitled to release any property described herein from the effects of such covenants, and change of the character or other similar defenses to the enforcement of Restrictive Covenants shall not apply as to these covenants. Any action in derogation of these covenants by any of the aforementioned land owners shall not constitute a waiver by the City of said covenants or estop the City from enforcing the covenants. The restrictive covenants, conditions and reservations placed upon the above-described real property are in consideration for the restrictive covenants, conditions and reservations placed upon the property of the aforementioned land owners lying within the _____ Sector Development Plan.

Land Use: All property described above is hereby declared to be reserved and restricted and preserved for the following purposes:

- a. Active and passive outdoor recreation.
- b. Agricultural (outdoor) and pasturing animals.
- c. Botanical Parks open to the general public.
- d. Lakes, waterways, flood water storage areas and other public facilities for handling flood water.
- e. Land maintained in its natural state or being returned to a natural state.
- f. Structures and facilities incidental to the above uses.

IN WITNESS WHEREOF, the parties hereto have executed this instrument on the _____ day of _____, 1979.

By _____

Its _____

OWNER

STATE OF NEW MEXICO
COUNTY OF BERNALILLO
FILED FOR RECORD

'82 JUN 29 P3:12

EK. _____
TERRY J. _____
CO. CLERK OF DISTRICT CLERK
OFFICE