City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

October 13, 2000

Richard v. Hall, P.E.
Hall Engineering
1116 2nd Street NW
Albuquerque, NM 87102

RE: TRACT 493, UNIT 7, TOWN OF ATRISCO GRANT (M9-D22). GRADING AND DRAINAGE PLAN FOR PRELIMINARY PLAT APPROVAL AND FOR GRADING PERMIT APPROVAL. ENGINEER'S STAMP DATED SEPTEMBER 21, 2000.

Dear Mr.Hall:

This is to confirm the approval of this submittal by the City/County Floodplain Administrator on September 21, 2000. Thank you for your assistance. The conditions cited in that approval remain in tack.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,

John P. Murray, P.E.
Hydrology

c: Whitney Reierson
File

DRAINAGE INFORMATION SHEET

PROJECT TITLE: TRACT 493 Subdivision ZONE ATLAS/DRNG. FILE #: M9 / D22

LEGAL DESCRIPTION: TRACT 493 Unit 7 Town of Atrisco Grant

CITY ADDRESS: VACANT LAND

ENGINEERING FIRM: HALL Engineering CONTACT: Richard Hall

ADDRESS: 1116 2nd ST NW PHONE: 8487822

OWNER: Kirk Wesselink CONTACT:

ADDRESS: PHONE:

ARCHITECT: N/A CONTACT:

ADDRESS: PHONE:

SURVEYOR: HALL Engineering CONTACT:

ADDRESS: PHONE:

CONTRACTOR: N/A CONTACT:

ADDRESS: PHONE:

PRE-DESIGN MEETING:

____ YES

__X__ NO

____ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. 99-321 (old File)

EPC NO.

PROJ. NO. 1000460

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

__X__ DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAINAGE PLAN

____ GRADING PLAN

____ EROSION CONTROL PLAN

____ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL

__X__ PRELIMINARY PLAT APPROVAL

____ SITE DEVELOPMENT PLAN APPROVAL

____ FINAL PLAT APPROVAL

____ BUILDING PERMIT APPROVAL

____ FOUNDATION PERMIT APPROVAL

____ CERTIFICATE OF OCCUPANCY APPROVAL

____ ROUGH GRADING PERMIT APPROVAL

__X__ GRADING/PAVING PERMIT APPROVAL

____ OTHER (SPECIFY)

RECEIVED
SEP 27 2000
HYDROLOGY SECTION

DATE SUBMITTED: Sept 27, 2000

BY: Richard V Hall

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

September 21, 2000

Richard V. Hall, P.E.
Hall Engineering
1116 2nd Street, NW
Albuquerque, New Mexico 87102

RE: Grading and Drainage Plan for Tract 493, Unit 7, Town of Atrisco Grant (M9/D22), Submitted for Preliminary Plat Approval and Grading Permit Approval, Engineer's Stamp Dated 9/21/00.

Dear Mr. Hall:

Based on the information provided, the above referenced Grading and Drainage Plan dated September 21, 2000 is approved for Preliminary Plat action by the DRB.

The above referenced plan is also approved for Rough Grading permit release after it is approved by DRB. The topsoil disturbance permit must be obtained prior to any grading on this site.

The Subdivision Improvements Agreements (SIA), or financial guarantees, must be in place prior to Final Plat sign-off. The grading and Drainage Certification is required prior to release of the SIA or financial guarantees. As you are aware, the certification must verify that the retaining walls have been constructed in compliance with this approved plan.

If you have any questions or if I may be of further assistance to you, please call me at 924-3982.

Sincerely,

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

c: Kirk Wesselink, Owner
DRB 1000460
File

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

January 8, 2003

Joe Kelley
JC Engineering
1924 Roanoke Dr. NE
Rio Rancho, New Mexico 87124

RE: Grading and Drainage Plan for Tract 493, Unit 7, Town of Atrisco Grant (M9-D22)
Dated January 8, 2003

Dear Mr. Kelley:

The above referenced drainage plan is approved for Building Permit. The drainage plan approval is only for the 2400 s.f. metal building and the 12-foot wide gravel driveway. Upon completion of the project please certify the project per the DPM for Certificate of Occupancy release. If you have any questions please call me at 924-3982.

Sincerely,

Carlos A. Montoya
City Floodplain Administrator

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/11/2002)

PROJECT TITLE Tract 493, Unit 7, Town of Atrisco Grant ZONE MAP/DRG. FILE #: M-9/D-22
DRB#: _____ EPC#: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: Tract 493, Unit 7, Town of Atrisco Grant
CITY ADDRESS: 1119 86th St. SW

ENGINEERING FIRM: JC Engineering CONTACT: Joe Kelley, P.E.
ADDRESS: 1924 Roanoke Dr. NE PHONE: 269-1936
CITY, STATE: Rio Rancho, NM ZIP CODE: 87144-5532

OWNER: Kirk Wesselink CONTACT: Kirk Wesselink
ADDRESS: 1119 86th St. SW PHONE: 831-4118
CITY, STATE: Albuquerque, NM ZIP CODE: 87121

ARCHITECT: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

SURVEYOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

CONTRACTOR: _____ CONTACT: _____
ADDRESS: _____ PHONE: _____
CITY, STATE: _____ ZIP CODE: _____

TYPE OF SUBMITTAL:

_____ DRAINAGE REPORT
_____ DRAINAGE PLAN
_____ CONCEPTUAL GRADING & DRAINAGE PLAN
X GRADING PLAN
_____ EROSION CONTROL PLAN
_____ ENGINEER'S CERTIFICATION (HYDROLOGY)
_____ CLOMR/LOMR
_____ TRAFFIC CIRCULATION LAYOUT (TCL)
_____ ENGINEERS CERTIFICATION (TCL)
_____ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
_____ OTHER

CHECK TYPE OF APROVAL SOUGHT:

_____ SIA/FINANCIAL GUARANTEE RELEASE
_____ PRELIMNIARY PLAT APPROVAL
_____ S. DEV. PLAN FOR SUB'D. APPROVAL
_____ S. DEV. PLAN FOR BLDG. PRMT. APPROVAL
_____ SECTOR PLAN APPROVAL
_____ FINAL PLAT APPROVAL
_____ FOUNDATION PERMIT APPROVAL
X BUILDING PERMIT APPROVAL
_____ CERTIFICATE OF OCCUPANCY (PERM.)
_____ CERTIFICATE OF OCCUPANCY (TEMP.)
_____ GRADING PERMIT APPROVAL
_____ PAVING PERMIT APPROVAL
_____ WORK ORDER APPROVAL
_____ OTHER_____(SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

_____ YES
X NO
_____ COPY PROVIDED

DATE SUBMITTED: Jan. 8, 2003 BY: Joe P. Kelley, P.E.

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

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

JC Engineering

1924 Roanoke Dr. NE Rio Rancho, NM 87144-5532
Tel(505)269-1936 Fax(505)867-9304 www.jcengineering.com

January 8, 2003

Mr. Carlos Montoya, P.E.
City of Albuquerque Hydrology Dept.
Plaza del Sol Building, 2nd Floor
600 2nd Street NW
Albuquerque, NM 87102

RE: Tract 493, Unit 7, town of Atrisco Grant
Drainage File M9/D22

Dear Carlos:

The attached grading plan has been revised per our short discussion yesterday. I deleted the four houses and lot lines that had been indicated as future south of the existing house because, as you said, the platting had never been completed, and the lots do not exist. You don't want anyone to be confused and think that they do exist. I also revised keyed note no. 4 accordingly.

Thank you for your timely review and approval.

Best regards,

JC Engineering

Joe P. Kelley, P.E.

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 1/11/2002)

M-9/D22

PROJECT TITLE: Tract 493, Unit 7, Town of Atrisco Grant
ZONE MAP/DRG. FILE #: M-9
DRB#: _____ EPC#: _____
WORK ORDER #: _____

LEGAL DESCRIPTION: Tract 493, Unit 7, Town of Atrisco Grant
CITY ADDRESS: 1119 86th St. SW

ENGINEERING FIRM: JC Engineering — CONTACT: Joe Kelley, P.E.
ADDRESS: 1924 Roanoke Dr. NE — PHONE: 269-1936
CITY, STATE: Rio Rancho, NM — ZIP CODE: 87144-5532

OWNER: Kirk Wesselink — CONTACT: Kirk Wesselink
ADDRESS: 1119 86th St. SW — PHONE: 831-4118
CITY, STATE: Albuquerque, NM — ZIP CODE: ##

ARCHITECT: _____ — CONTACT: _____
ADDRESS: _____ — PHONE: _____
CITY, STATE: _____ — ZIP CODE: _____

SURVEYOR: _____ — CONTACT: _____
ADDRESS: _____ — PHONE: _____
CITY, STATE: _____ — ZIP CODE: _____

CONTRACTOR: _____ — CONTACT: _____
ADDRESS: _____ — PHONE: _____
CITY, STATE: _____ — ZIP CODE: _____

TYPE OF SUBMITTAL:

- X DRAINAGE REPORT
- ___ DRAINAGE PLAN
- ___ CONCEPTUAL GRADING & DRAINAGE PLAN
- X GRADING PLAN
- ___ EROSION CONTROL PLAN
- ___ ENGINEER'S CERTIFICATION (HYDROLOGY)
- ___ CLOMR/LOMR
- ___ TRAFFIC CIRCULATION LAYOUT (TCL)
- ___ ENGINEERS CERTIFICATION (TCL)
- ___ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ___ OTHER

CHECK TYPE OF APROVAL SOUGHT:

- ___ SIA/FINANCIAL GUARANTEE RELEASE
- ___ PRELIMNIARY PLAT APPROVAL
- ___ S. DEV. PLAN FOR SUB'D. APPROVAL
- ___ S. DEV. PLAN FOR BLDG. PRMT. APPROVAL
- ___ SECTOR PLAN APPROVAL
- ___ FINAL PLAT APPROVAL
- ___ FOUNDATION PERMIT APPROVAL
- X BUILDING PERMIT APPROVAL
- ___ CERTIFICATE OF OCCUPANCY (PERM.)
- ___ CERTIFICATE OF OCCUPANCY (TEMP.)
- ___ GRADING PERMIT APPROVAL
- ___ PAVING PERMIT APPROVAL
- ___ WORK ORDER APPROVAL
- ___ OTHER_____(SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ___ YES
- X NO
- ___ COPY PROVIDED

RECEIVED
DEC 10 2002
HYDROLOGY SECTION

DATE SUBMITTED: Dec. 10, 2002

BY: Joe Kelley, P.E.

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

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

JC Engineering

1924 Roanoke Dr. NE Rio Rancho, NM 87144-5532
Tel(505)269-1936 Fax(505)867-9304 www.jcengineering.com

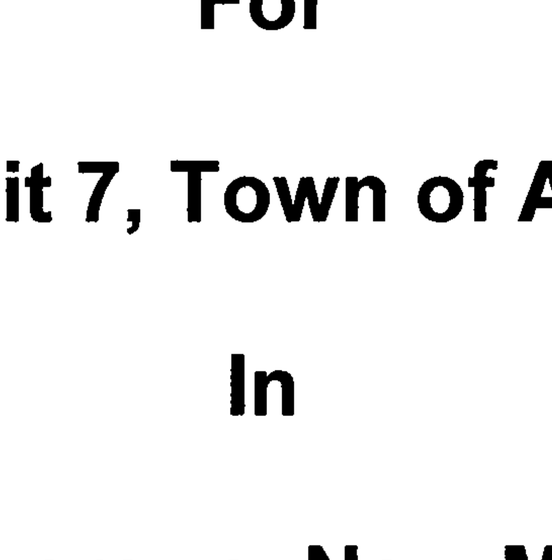
Drainage Report

For

Tract 493, Unit 7, Town of Atrisco Grant

In

Albuquerque, New Mexico



December, 2002

Table of Contents

Appendices

Attachments in Back Pocket

Purpose
This grading and drainage plan provides the hydrologic rationale for the interim development of this site, in accordance with City of Albuquerque requirements.

Area Description and Existing Conditions
This site is located on the southwest corner of Sage and 86th Street, SW. The adjacent land to the west and south is a fully-developed residential area. The land across the road from the site on the east and north sides is vacant, although the area further away is developing residentially. The site itself consists of 4.85 acres that have been partially developed. There is an existing house in the middle of the site, with a ponding area behind it. No grading or development has been performed north of the house, and that area is covered with desert vegetation—sparse brush and grass. South of the house the land has been filled and graded to drain to 86th Street, while retaining walls have been constructed along the south and west property lines.

Related Reports
The *Grading and Drainage Plan for Tract 493, Unit 7, Town of Atrisco Grant*, dated Sept. 21, 2000 by Hall Engineering, provides the hydrologic justification for the eventual full build-out of the site. That plan also indicated a grading scheme and public infrastructure construction that were never fully enacted. Existing conditions that were constructed in accordance with that plan include the rear ponding area, the perimeter retaining walls, and the grading of the site south of the existing house. Portions of the Hall plan that have not been constructed include the grading of the site north of the existing building, and construction of perimeter public infrastructure.

The Hall plan indicates that this site is Drainage Area 300.1 of Subbasin 33D that discharges to the Amole detention basin, as shown on the *Arenal/Unser Drainage Management Plan* by Isaacson and Arfman, dated June 23, 1997 (City file no. M10/D-10). The Hall plan computed the discharges allowed from this site based on the Arfman plan. The allowable treatment types and discharges from the Arfman plan are:

Description	Amount
Treatment Type A	0%
Treatment Type B	29%
Treatment Type C	29%
Treatment Type D	42%
Allowable Design Discharge	15.86 cfs

Flood Hazard Zones
Per FIRM map 35001C0336, September 1996, there is a floodplain adjacent to this site in Sage Road. However, none of the floodplain encroaches on this site. Under existing conditions, a portion of this site discharges into Sage Road. Under fully developed conditions, none of the site runoff will discharge into Sage Road.

Developed Conditions
This site is being developed in phases.

Phase 1. The grading for the Phase 1 houses has been performed in accordance with the Hall plan, though none of the houses have been constructed. The existing ponding area at the rear of the existing house is contained primarily by dirt, although there are retaining walls that contain the dirt on-site.

Phase 2. Phase 2 is the current building construction, which is a 2400 s.f. garage space/building shell. It will be a simple metal building with pitched roofs. Some of the runoff from phase 2 will discharge to the existing ponding area, and some will discharge towards 86th Street.

The computation of the runoff to the perimeter streets is indicated on page A-2 as 9.57 cfs, which includes the future house lots on the south side of the site as developed. This is much less than the allowed discharge of 15.86 cfs. So under interim conditions, discharge from the site is within allowable limits.

Phase 3. Phase 3 will include the build-out of the north portion of the site at some future date. The exact nature of that development is not known at this time, but the drainage will be designed to discharge within the above-cited constraints.

Appendix

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□(s16.67h8.5v0T□&l8D

        AHYMO PROGRAM (AHYMO_97) -                          - Version:  1997.02d
             RUN DATE (MON/DAY/YR) = 12/10/2002
             START TIME (HR:MIN:SEC) = 12:32:58    USER NO.= AHYMO-I-9702c01000S33-AH
             INPUT FILE = C:\DOCUME~1\ALLUSE~1\DOCUME~1\JCEng\Projects\86THST~1\HYDROL~1\86TH-A~1.DTA

    *S                    .     JC ENGINEERING
□□□
    *S**************************************************************************
    *S DEVELOPMENT ON SW CORNER OF SAGE AND 86TH ST.
    *S PARTIALLY-DEVELOPED LAND
    *S AHYMO HYDROLOGIC ANALYSIS
    *S 100-YEAR, 6-HOUR STORM
    *S
    START               TIME=0.0   CODE 0     LINES -6
    LOCATION            ALBUQUERQUE
         City of Albuquerque soil infiltration values (LAND FACTORS) used for computations.
         Land Treatment     Initial Abstr.(in)     Unif. Infilt.(in/hour)
               A            0.65                   1.67
               B            0.50                   1.25
               C            0.35                   0.83
               D            0.10                   0.04

    RAINFALL            TYPE=-1 RAIN QUARTER=0.0 RAIN ONE=1.90
                        RAIN SIX=2.23 RAIN DAY=2.69 DT=0.033333

                   COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
                   DT =     .033333 HOURS       END TIME =     5.999940 HOURS
    *S THE 6-HOUR STORM EVENT WILL BE COMPUTED, FOR RETENTION POND VOLUME CALCS.
□□□
    *S**************************************************************************
    *S COMPUTE THE RUNOFF FROM THE DRAINAGE BASIN THAT DISCHARGES TO THE REAR OF
    *S THE LOT.  THE PERCENT OF IMPERVIOUS AREA WAS COMPUTED BASED DIRECTLY ON
    *S THE MEASUREMENT OF THE EXISTING CONTRIBUTING ROOF AND PAVED AREAS, PLUS THE
    *S ADDITIONAL PLANNED ROOF AREA.
    COMPUTE NM HYD      ID=1  HYD=PONDING-AREA DA=0.00191 SQ MI
                        PER A=0 PER B=93 PER C=0 PER D=7 TP=-.1333
                        MASS RAINFALL=-1

         K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
         UNIT PEAK =   .52785    CFS   UNIT VOLUME =    .9786       B =   526.28      P60 = 1.9000
         AREA =      .000134 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
         RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333


         K =   .130761HR    TP =   .133300HR    K/TP RATIO =   .980950     SHAPE CONSTANT, N =  3.599930
         UNIT PEAK =   4.3648    CFS   UNIT VOLUME =    .9973       B =   327.55      P60 = 1.9000
         AREA =      .001776 SQ MI    IA =    .50000 INCHES    INF =   1.25000 INCHES PER HOUR
         RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033333

    PRINT HYD           ID=1    CODE=1

                                        HYDROGRAPH FROM AREA PONDING-AREA


        RUNOFF VOLUME =      .78135 INCHES     =        .0796 ACRE-FEET
        PEAK DISCHARGE RATE =       2.76 CFS  AT   1.500 HOURS   BASIN AREA =    .0019 SQ. MI.


    *S COMPUTE THE RUNOFF FROM THE REST OF THE BASIN, THAT WILL DISCHARGE TO THE
    *S PERIMETER STREETS.  INCLUDE THE PROPOSED HOUSES ON THE SOUTH SIDE OF THE
    *S SITE IN THIS CALCULATION.
    COMPUTE NM HYD      ID=2  HYD=TO-STREETS DA=0.00567 SQ MI
                        PER A=0 PER B=46 PER C=47 PER D=7 TP=-.1333
                        MASS RAINFALL=-1

         K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
         UNIT PEAK =   1.5670    CFS   UNIT VOLUME =    .9922       B =   526.28      P60 = 1.9000
         AREA =      .000397 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
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```
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033333


     K =    .118351HR     TP =    .133300HR     K/TP RATIO =    .887854      SHAPE CONSTANT, N =  3.995309
     UNIT PEAK =    14.037     CFS    UNIT VOLUME =     .9995        B =    354.86       P60 = 1.9000
     AREA =       .005273 SQ MI     IA =     .42419 INCHES     INF =   1.03774 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .033333

PRINT HYD           ID=2     CODE=1

                                        HYDROGRAPH FROM AREA TO-STREETS


    RUNOFF VOLUME =       .92296 INCHES      =         .2791 ACRE-FEET
    PEAK DISCHARGE RATE =        9.57 CFS  AT    1.500 HOURS    BASIN AREA =    .0057 SQ. MI.


FINISH

    NORMAL PROGRAM FINISH              END TIME (HR:MIN:SEC) = 12:32:58
□(s0p10h4099T□&16D□□
```

Retention Pond Volume

The required volume for the retention pond is the volume of the 100-year, 10-day storm. Compute this volume in accordance with equations a-9 and c-9 of chapter 22.2 of the DPM.

Eq'n c-9: $P_{10days} = 10.0 - (24.9 / (P_{1440})^{1.4})$

P_{1440} = 2.69 inches, from figure C-3

Compute P_{10days} = 3.77 inches, from eq'n c-9

Eq'n a-9: $V_{10days} = V_{360} + A_D * (P_{10days} - P_{360}) / 12$ in/ft

V_{360} = 0.0796 ac-ft, from Ahymo run.

A_D = 0.086 ac

P_{360} = 2.23 inches, from figure C-2

Compute V_{10days} = **0.09** ac-ft, from eq'n a-9

= **3,948** cu. ft.

This volume will fit into the existing ponding area, at about 1' depth.

Project No. 1000460
DRC Project No.___
Date Submitted:
Preliminary Plat Approved_____

Figure 12

INFRASTRUCTURE LIST

EXHIBIT "A"
TO SUBDIVISION IMPROVEMENTS AGREEMENT
DEVELOPMENT REVIEW BOARD (D.R.B.) REQUIRED INFRASTRUCTURE LIST

TRACT 493, UNIT 7, TOWN OF ATRISCO GRANT

Following is a summary of Public/Private Infrastructure required to be constructed or financially guaranteed to be constructed for the above development. This summary is not necessarily a complete listing. During the design process, if the City determines that appurtenant items have not been included in the summary, those items will be included in the listing and related financial guarantee, if the items normally are Subdivider responsibility. In addition, any unforeseen items which arise during construction which are necessary to complete the project and which normally are the Subdivider's responsibility are the responsibility of the Subdivider and will be included in the financial guarantee provided to the City.

Size	Type Improvement	Location	From	To
PUBLIC IMPROVEMENTS				
PAVING				
24' F.-EDGE	STANDARD COLLECTOR PVMT. PCC C&G, W. SIDE ONLY SIDEWALK, W. SIDE ONLY 10' TEMP.ASPH. PVMT. ADJ. TO E. EDGE STD.PVMT.	86TH ST. SW	EXISTING TERMINUS E. SIDE WESTGATE HEIGHTS UNIT NO. 2	SAGE ROAD, SW
25' F.-EDGE	STANDARD COLLECTOR PVMT. PCC C&G, S. SIDE ONLY SIDEWALK, S. SIDE ONLY MEDIAN CURB ADJ. TO N. EDGE	SAGE RD. SW	EXISTING TERMINUS AT NE COR., WESTGATE HEIGHTS UNIT NO. 2	86TH STREET
SANITARY SEWER				
8" DIA	SEWERLINE W/MH AND SERVICES	PRIVATE CUL-DE-SAC	EXISTING MH STUB IN 86TH ST.	CUL-DE-SAC TERMINUS

8" DIA	SEWERLINE W/MH'S	86TH STREET	550'N. OF END OF EXIST. STREET IMPROVEMENTS	CENTERLINE OF SAGE ROAD
WATER				
6" DIA	WATERLINE W/FIRE HYDRANT	PRIVATE CUL-DE-SAC	86TH STREET	CUL-DE-SAC TERMINUS
STORM SEWER				
60" DIA RCP	STORM SEWER/MH	SAGE RD.	W. LINE OF PROPERTY (@EXIST.MH)	INTERSECTION OF SAGE RD. AND 86TH ST.

PRIVATE IMPROVEMENTS

SURFACING				
24'WIDTH, 45'RAD.BULB	6" THK. CRUSHED GRAVEL	PRIVATE CUL-DE-SAC	86TH STREET	CUL-DE-SAC TERMINUS
RETAINING WALLS				
8" CMU X 192 LF		1'INSIDE SOUTH LOT LINE	86TH ST.R.O.W	NW COR., TR.493
8" CMU X 434 LF		1'INSIDE WEST LOT LINE	SW COR. TR.493	NORTHWARD TO TERMINUS

Prepared by: _____
Print Hame: E. W. KIESS
Firm: Hall Engineering, Inc.

****

Development Review Board Member Approval

Transportation Development	Date	Utility Development	Date	Design Development, CIP	Date
City Engineer/AMAFCA	Date	DRB Chair	Date		

RECEIVED
SEP 27 2000
HYDROLOGY SECTION

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Wesselink Tract 493 ZONE ATLAS/DRNG. FILE #: M9/D22

LEGAL DESCRIPTION: Tract 493, Unit 7, Town of Atrisco Grant

CITY ADDRESS: 1119 86th Street, SW

ENGINEERING FIRM: Hall Engineering CONTACT: Richard Hall

ADDRESS: 1116 2nd Street, NW PHONE: 848-7822

OWNER: Kirk Wesselink CONTACT:

ADDRESS: 1119 86th Street, SW PHONE: 831-4119

ARCHITECT: N/A CONTACT:

ADDRESS: PHONE:

SURVEYOR: Hall Engineering CONTACT: Richard Hall

ADDRESS: 1116 2nd Street, NW PHONE: 848-7822

CONTRACTOR: TBA CONTACT:

ADDRESS: PHONE:

PRE-DESIGN MEETING:

____ YES

____ NO

____ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. _____

EPC NO. _____

PROJ. NO. 1000460

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

xx DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAINAGE PLAN

xx GRADING PLAN

____ EROSION CONTROL PLAN

____ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL

xx PRELIMINARY PLAT APPROVAL

____ SITE DEVELOPMENT PLAN APPROVAL

____ FINAL PLAT APPROVAL

____ BUILDING PERMIT APPROVAL

____ FOUNDATION PERMIT APPROVAL

____ CERTIFICATE OF OCCUPANCY APPROVAL

xx ROUGH GRADING PERMIT APPROVAL

____ GRADING/PAVING PERMIT APPROVAL

____ OTHER _____ (SPECIFY)

RECEIVED
AUG 24 2000
HYDROLOGY SECTION

DATE SUBMITTED: August 24, 2000

BY: _____

HALL ENGINEERING COMPANY INC

ENGINEERING - SURVEYING - PLANNING- CONSTRUCTION

1116 2ND ST., NW, ALBUQUERQUE, NM 87102

PHONE: (505) 848-7822 FAX: (505) 848-7825

August 23, 2000

Susan M. Calongne, P.E.
City/County Floodplain Administrator
Public Works Department
Albuquerque, NM 87102

RE: GRADING AND DRAINAGE PLAN, TR. 493, UNIT 7, TOWN OF ATRISCO GRANT (M9/D22)

Dear Ms. Calongne:

In response to the comments in your letter dated July 11, 2000, we have added the following information and amendments to the above-referenced plan:

1. The vicinity map has been added to the original drawing.

2. The limit of the 100-year floodplain has been shown and the portion of FEMA panel 336 has been added to the Grading Plan sheet. This design is intended to drain to the south, away from Sage Road. 86th Street currently drains to the south and this plan does not alter that existing condition.

3. Please see the HYMO calculations copied from the Arenal/Unser master drainage plan and included with this letter. In that study, adequacy of street capacity has been demonstrated. Flows are intercepted at the intersection of 86th Street and Sapphire Street and flow east to the constructed basin located southeast of the intersection of Arenal Road and Unser Boulevard.

4. Offsite elevations and existing contours at 1-foot intervals have been added. Block 71 of Westgate Heights Unit 2 drains to the west and south into Sapphire Street. Tract 493 is currently contributory to some of those rear yards, notably lots 5 through 17.

5. Curb and flowline elevations and grades on both 86th Street and Sage Road are proposed and are on preliminary plan and profile sheets for both frontages. The 60" RCP storm sewer line proposed for Sage Road per the Tower/Sage Drainage Master Plan has been shown along with the 54" capped main and 36" capped feeder lines. The 60" line has been added to the infrastructure list, a copy of which is included with this letter.

6. Existing elevations along the edge of the proposed street improvements in 86th Street have been added.

7. We agree that drainage should be positive to public rights-of-way, but in this instance, for proposed Lot 493-B, this just isn't possible. We are dealing with an existing situation in which the rear yard of this lot is lower than the fronting 86th Street and at this time drains into the rear yards of adjoining Lots 12 and 13 of Westgate Heights. The main floor of the existing house is elevated and the in-grade lower floor is fenestrated with light wells. By setting grades on the adjacent lots to the south high

enough to achieve drainage to the street, we essentially isolate this lot hydrologically. Although ponding does not yet occur on this lot, without adversely affecting the neighbors on the west there is no possible natural release route from this area to a public right-of-way. Section 22.2 of the D.P.M. states that "allowance for backyard ponding will not be considered for new developments". While we do concede that the proposed plan for the bulk of this Tract does constitute a new development, we still had to consider the existing house and the grades of the land around it and to the south. No credit for dimished volume or rate from the area contributory to the pond was assumed in the discharge computations. Is there any other possible way, within the letter of Section 22.2, of addressing a situation such as this?

8. The developed land treatments were derived from the Unser/Arenal master drainage plan and apparently already give weight to streets and potential impervious and semi-pervious areas within individual areas and subareas. Gravel surfacing for private streets serving fewer than 8 dwellings is acceptable under Section 23 of the D.P.M. (See included copy of DRB comment sheet). Lot 493-A is intended for future use by a church and its incidental facilities, assuming a zone change. At this time there are no specific plans for the site and the abstractions from the Arenal/Unser plan were used.

9. A cross-section of 86th Street has been added to the second sheet. Calculations for street flow are for the proposed improvements (W.1/2) of 86th. Downstream capacity was demonstrated in the Arenal/Unser plan. The pages containing those figures are included with this letter.

10. Wall details with footing and top elevations are provided on second sheet.

Copies of the plat and the DRB Infrastructure List have been included with this submittal.

The owner wants to have this plan considered for rough grading approval at this time. As can be seen on the existing topo, there are two rather large piles of material on the site (one immediately south of the house and the other on the north side of the tract) that he wants to either have leveled out or, in the event they may be debris-filled, removed.

Sincerely,

Richard V. Hall

Richard V. Hall, P.E.

981611.dr2

RUNOFF VOLUME = .97974 INCHES = 13.4550 ACRE-FEET
PEAK DISCHARGE RATE = 385.67 CFS AT 1.567 HOURS BASIN AREA = .2575 SQ. MI.

*S BASIN 300.1 IS CURRENTLY UNDEVELOPED, ASSUME FUTURE DEVELOPMENT WILL BE @
*S A DENSITY OF 4 DU/AC
COMPUTE NM HYD ID=16 HYD NO=300.1 AREA=0.0156 SQ MI
PER A=0 PER B=29 PER C=29 PER D=42
TP=-0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 25.868 CFS UNIT VOLUME = .9989 B = 526.28 P60 = 1.8700
AREA = .006552 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .118429HR TP = .133300HR K/TP RATIO = .888442 SHAPE CONSTANT, N = 3.992480
UNIT PEAK = 24.074 CFS UNIT VOLUME = .9999 B = 354.67 P60 = 1.8700
AREA = .009048 SQ MI IA = .42500 INCHES INF = 1.04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=16 CODE=1

HYDROGRAPH FROM AREA 300.10

RUNOFF VOLUME = 1.29860 INCHES = 1.0804 ACRE-FEET
PEAK DISCHARGE RATE = 32.45 CFS AT 1.500 HOURS BASIN AREA = .0156 SQ. MI.

*S ROUTE THE FLOW IN AN EXISTING RESIDENTIAL STREET-86TH ST. (ASSUME 28'F-F)
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEG=1 MIN EL=100.00 MAX EL=101.00
CH SLOPE=0.02 FP SLOPE=0.02 N=0.017 DIST=48.0

DIST	ELEV	DIST	ELEV	DIST	ELEV	DIST	ELEV
0	101.00	10.0	100.67	10.1	100.00	24.0	100.28
38.0	100.00	38.1	100.67	48.0	101.00		

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	TOP WIDTH FT
100.00	.00	.00	.00
100.05	.14	.15	5.26
100.11	.55	.95	10.52
100.16	1.25	2.80	15.78
100.21	2.22	6.03	21.04
100.26	3.46	10.94	26.30
100.32	4.92	18.84	27.99
100.37	6.39	29.08	28.01
100.42	7.87	41.00	28.03
100.47	9.34	54.46	28.04
100.53	10.82	69.37	28.06
100.58	12.30	85.66	28.07
100.63	13.78	103.24	28.09
100.68	15.26	119.89	28.96
100.74	16.87	132.52	32.13
100.79	18.64	147.34	35.31

100.84	20.59	164.39	38.48
100.89	22.69	183.72	41.66
100.95	24.97	205.41	44.83
101.00	27.41	229.56	48.00

COMPUTE TRAVEL TIME ID=17 REACH NO=1 NO VS=1 L=357 FT SLP=0.02

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.053	.138	.15	.0917
.105	.554	.95	.0578
.158	1.246	2.80	.0441
.211	2.215	6.03	.0364
.263	3.461	10.94	.0314
.316	4.920	18.84	.0259
.368	6.394	29.08	.0218
.421	7.869	41.00	.0190
.474	9.344	54.46	.0170
.526	10.821	69.37	.0155
.579	12.298	85.66	.0142
.632	13.776	103.24	.0132
.684	15.261	119.89	.0126
.737	16.869	132.52	.0126
.790	18.644	147.34	.0125
.842	20.586	164.39	.0124
.895	22.695	183.72	.0122
.947	24.971	205.41	.0121
1.000	27.414	229.56	.0118

ROUTE ID=17 HYD NO=300.15 INFLOW ID=16 DT=0.0
PRINT HYD ID=17 CODE=1

HYDROGRAPH FROM AREA 300.15

RUNOFF VOLUME = 1.29861 INCHES = 1.0804 ACRE-FEET
PEAK DISCHARGE RATE = 32.38 CFS AT 1.533 HOURS BASIN AREA = .0156 SQ. MI.

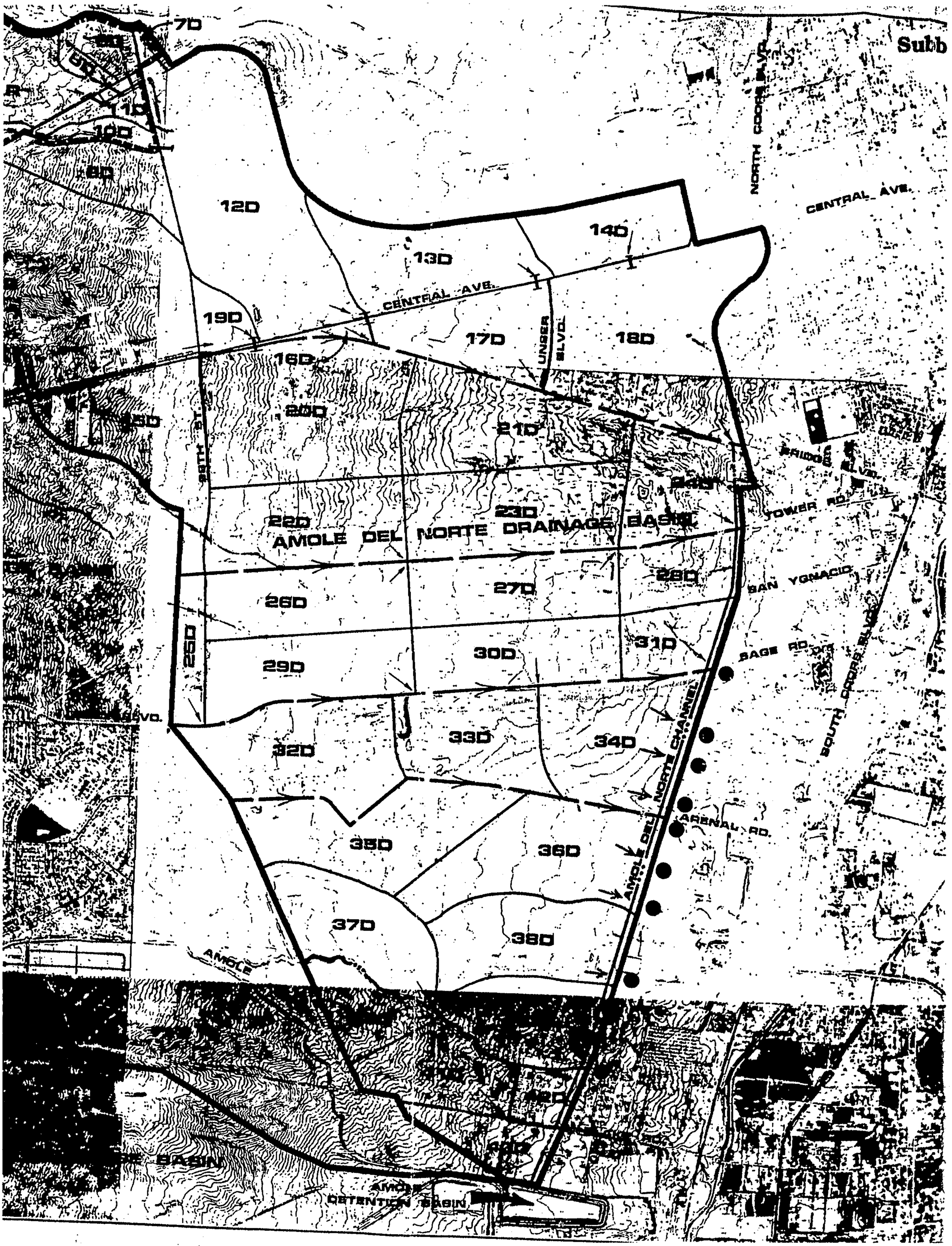
*S ADD HYDROGRAPH NOs. 105.2 AND 300.15 TOGETHER
ADD HYD ID=18 HYD NO=105.3 ID=15 ID=17
PRINT HYD ID=18 CODE=1

PARTIAL HYDROGRAPH 105.30

RUNOFF VOLUME = .99795 INCHES = 14.5354 ACRE-FEET
PEAK DISCHARGE RATE = 416.92 CFS AT 1.533 HOURS BASIN AREA = .2731 SQ. MI.

*S ROUTE THE FLOW IN AN EXISTING 28' F-F STREET-SAPPHIRE ST.
COMPUTE RATING CURVE CID=1 VS NO=1 NO SEG=1 MIN EL=100.00 MAX EL=101.00
CH SLOPE=0.02 FP SLOPE=0.02 N=0.017 DIST=48.0
DIST ELEV DIST ELEV DIST ELEV DIST ELEV


TOWN OF
TURN OF
ATRISCO GRANT
R-D
9 DU/A
(UNIT 7)
R-D
9 DU/A
ATR SCO GRANT
A-1
UNIT
ATRISCO
OF
TOWN
GRANT
GRANT
104
(UNIT 7)
300.1
300.2
400.2
UNIT 7
WESTGATE
HEIGHTS
105
2)
401.12
401.13
106
UNIT NO
SUNRISE
401.14
ESTGATE
103
202
202.05
201
HEIGHTS
200
404
PRESLEY


7D
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AMOLE DEL NORTE DRAINAGE BASIN
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34D
35D
36D
37D
38D
CENTRAL AVE.
UNSER BLVD.
NORTH COORS BLVD.
TOWER RD.
SAN YGNACIO
SAGE RD.
SOUTH COORS BLVD.
ARENAL RD.
AMOLE DEL NORTE CHANNEL
AMOLE
DETENTION BASIN

CITY OF
Albuquerque

DEVELOPMENT REVIEW BOARD

TRANSPORTATION DEVELOPMENT

Standard Comment Sheet

DRB-98-303 Item No. 18 Zone Atlas M-9

DATE ON AGENDA 9-01-98

INFRASTRUCTURE REQUIRED (?)YES ( )NO

CROSS REFERENCE: _____

_____

TYPE OF APPROVAL REQUESTED:

(x)SKETCH PLAT ( )PRELIMINARY PLAT ( )FINAL PLAT

( )SITE PLAN REVIEW AND COMMENT ( )SITE PLAN FOR SUBDIVISION

( )SITE PLAN FOR BUILDING PERMIT

No.	Comment
1.	What is proposed?
2.	Residential lots are not to front on 86th Street, a collector.
3.	Dedication of right-of-way and infrastructure construction is required for 86th and for Sage.

If you have any questions or comments please call Richard Dourte at 924-3990. Meeting notes:

Gravel Drive Private access easement

54 ft from center less than 8 units

TABLE A-5. PERCENT TREATMENT D (Impervious)	
Land Use	**Percent**
Commercial*	90
Single Family Residential* N=units/acre, N≤6	$7*\sqrt{((N*N)+(5*N))}$ (a-4)
Multiple Unit Residential Detached* Attached*	 60 70
Industrial Light* Heavy*	 70 80
Parks, Cemeteries	7
Playgrounds	13
Schools	50
Collector & Arterial Streets	90
* Includes local streets	

TABLE A-5 does not provide areal percentages for land treatments A, B and C. Use of TABLE A-5 will require additional analysis to determine the appropriate areal percentages of these land treatments.

Backyard retention ponds, and other small on-site ponding, may have the effect of reducing runoff from impervious areas. Where it can be clearly demonstrated that backyard and small on-site retention ponding currently exist, impervious areas which drain to such ponds may be considered to be in land treatment A. Application of backyard ponding is not normally applicable to more than 35 percent of the area in land treatment D (impervious). Allowance for backyard ponding will not be considered for new developments and future development.

A.4 ABSTRACTIONS

Initial abstraction is the precipitation depth which must be exceeded before direct runoff begins. Initial abstraction may be intercepted by vegetation, retained in surface depressions, or absorbed on the watershed surface. Initial abstractions are shown in TABLE A-6.

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

September 21, 2000

Richard V. Hall, P.E.
Hall Engineering
1116 2nd Street, NW
Albuquerque, New Mexico 87102

RE: Grading and Drainage Plan for Tract 493, Unit 7, Town of Atrisco Grant (M9/D22), Submitted for Preliminary Plat Approval and Grading Permit Approval, Engineer's Stamp Dated 9/21/00.

Dear Mr. Hall:

Based on the information provided, the above referenced Grading and Drainage Plan dated September 21, 2000 is approved for Preliminary Plat action by the DRB.

The above referenced plan is also approved for Rough Grading permit release after it is approved by DRB. The topsoil disturbance permit must be obtained prior to any grading on this site.

The Subdivision Improvements Agreements (SIA), or financial guarantees, must be in place prior to Final Plat sign-off. The grading and Drainage Certification is required prior to release of the SIA or financial guarantees. As you are aware, the certification must verify that the retaining walls have been constructed in compliance with this approved plan.

If you have any questions or if I may be of further assistance to you, please call me at 924-3982.

Sincerely,

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

c: Kirk Wesselink, Owner
DRB 1000460
File

HALL ENGINEERING COMPANY INC

ENGINEERING - SURVEYING - PLANNING- CONSTRUCTION

1116 2ND ST., NW, ALBUQUERQUE, NM 87102

PHONE: (505) 848-7822 FAX: (505) 848-7825

September 21, 2000

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

Re: Grading & Drainage Plan for Tract 493, Unit 7, Town of Atrisco Grant (M9/D22)

Dear Ms. Calongne:

Per your request, Hall Engineering has made all changes and re-certified the Grading and Drainage Plan for the above referenced project.

Please review and contact me at the above number if you have any questions.

Sincerely,

Richard Hall

Richard Hall

City of Albuquerque

July 11, 2000

Richard V. Hall, P.E.
Hall Engineering
1116 2nd Street, NW
Albuquerque, New Mexico 87102

RE: Grading and Drainage Plan for Tract 493, Unit 7, Town of Atrisco Grant (M9/D22), Submitted for Preliminary Plat Approval and Grading Permit Approval, Engineer's Stamp Dated 6/21/00.

Dear Mr. Hall:

Prior to Preliminary Plat approval of the above referenced subdivision, please revise the plan to address the following comments:

1. The engineer's stamp, signature and date must be provided on the original plan so that it is reproducible. The vicinity map should also be on the original plan.

2. The plan states that this site is not within a 100-year floodplain, however, there is an existing floodplain within Sage Road. Please show the floodplain limits on the plan and show how you propose to mitigate it. Also provide a copy of the portion of FEMA panel 336 with your site delineated on it on the plan.

3. Downstream capacity was not addressed. Please provide the pertinent information from the Arenal/Unser master drainage plan to verify the allowable discharge from your site. Where is the runoff from this site intercepted?

4. The plan did not address off-site flows. Provide existing off-site spot elevations and topography around the perimeter of the site to verify that off-site runoff does not enter your site.

5. Provide the ultimate street grades for both Sage Road and 86th Street. Identify any storm drainage improvements that are required in Sage. These must be included on the Infrastructure list and may be bonded with this project.

6. Provide elevations for the tract on the east side of 86th Street to show how the proposed street grades compare with the existing ground.

7. Typically, developed lots are designed to drain to the public right-of-way, per the City drainage Ordinance. The rear ponding area may not be used as a permanent drainage solution.

8. Do the developed land treatments account for the cul-de-sac and 86th Street? Is crushed gravel surfacing allowed on the cul-de-sac? Provide the calculations to show how the land treatment percentages were determined. What type of development is proposed for Lot 493-A? It appears that the same land treatment percentages were used, however, no proposed development was shown.

9. Provide the cross-section for 86th Street. Are standard curbs proposed? Are the street calculations for the existing or the proposed street? Provide street capacity calculations for the road downstream of this site to verify the downstream capacity.

10. Provide top and bottom of wall elevations for the proposed retaining walls. These walls must be constructed and certified prior to release of the financial guarantees for this subdivision.

Typically, comprehensive drainage reports are submitted for preliminary plat approval. The above referenced plan did not include the proposed Plat and Infrastructure List. Please provide copies of these items with the resubmittal.

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

Sincerely,

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

c: Kirk Wesselink, Owner
DRB 1000460
File

City of Albuquerque

July 11, 2000

Richard V. Hall, P.E.
Hall Engineering
1116 2nd Street, NW
Albuquerque, New Mexico 87102

RE: Grading and Drainage Plan for Tract 493, Unit 7, Town of Atrisco Grant (M9/D22), Submitted for Preliminary Plat Approval and Grading Permit Approval, Engineer's Stamp Dated 6/21/00.

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Sincerely,

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

c: Kirk Wesselink, Owner
DRB 1000460
File

DRAINAGE INFORMATION SHEET

M-9/D022

APPLICANT'S NAME KIRK WESSELINK ZONEATLAS/DRNG.FILE# ~~M10/D-10~~

DRB# 1000460 EPC# WORK ORDER#

LEGAL DESCRIPTION TRACT 493, UNIT 7, TOWN OF ATRISCO GRANT

CITY ADDRESS 1119 86TH STREET, SW

ENGINEERING FIRM: HALL ENGINEERING CONTACT: RICK HALL

ADDRESS: 1116 2ND STREET, NW 87102 PHONE: 848-7822

OWNER: KIRD WESSELINK CONTACT:

ADDRESS: 1119 86TH ST. SW PHONE: 831-4119

ARCHITECT: N/A CONTACT:

ADDRESS: PHONE:

SURVEYOR: HALL ENGINEERING CONTACT:

ADDRESS: PHONE:

CONTRACTOR: TBD CONTACT:

ADDRESS: PHONE:

TYPE OF SUBMITTAL:
___ DRAINAGE REPORT
XX DRAINAGE PLAN
___ CONCEPTUAL GRADING & DRAINAGE PLAN
XX GRADING PLAN
___ EROSION CONTROL PLAN
___ ENGINEER'S CERTIFICATION
___ OTHER

PRE-DESIGN MEETING:
___ YES
___ NO
___ COPY PROVIDED

infrastructure list? proposed plat?

CHECK TYPE OF APPROVAL SOUGHT:
___ SKETCH PLAT APPROVAL
XX PRELIMINARY PLAT APPROVAL
___ S.DEV. PLAN FOR SUB'D APPROVAL
___ S.DEV. PLAN FOR BUILDING PERMIT
___ SECTOR PLAN APPROVAL
___ FINAL PLAT APPROVAL
___ FOUNDATION PERMIT APPROVAL
___ BUILDING PERMIT APPROVAL
___ CERTIFICATE OF OCCUPANCY APPROVAL
XX GRADING PERMIT APPROVAL
___ PAVING PERMIT APPROVAL
___ S.A.D.DRAINAGE REPORT
___ DRAINAGE REQUIREMENTS
___ SUBDIVISION CERTIFICATION
___ OTHER

DATE SUBMITTED: JUNE 23, 2000

BY: E W KIESS

RECEIVED
JUN 23 2000
HYDROLOGY SECTION