

- CONSTRUCTION NOTES:**
1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR SHALL CONTACT LOCAL UTILITY AGENCIES TO LOCATE EXISTING UTILITIES.
 2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
 3. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
 4. ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.
 5. IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS, THEY ARE SHOWN IN AN APPROXIMATE MANNER ONLY, AND SUCH LINES MAY EXIST WHERE SHOWN ARE SHOWN. IF ANY SUCH EXISTING LINES ARE SHOWN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF THE LINES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF THE LINES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF THE LINES.

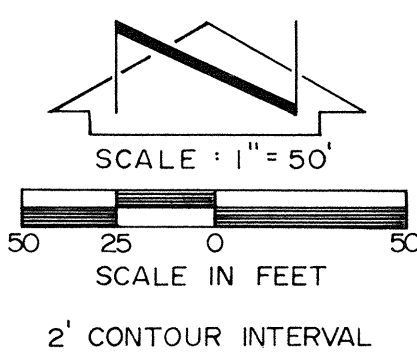
- EROSION CONTROL MEASURES**
1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR INTO PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BARRIERS AT THE PROPERTY LINE AND MATTING THE SOIL TO KEEP IT FROM BLOWING.
 2. THE CONTRACTOR SHALL PROMPTLY CLEAR UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET.
 3. THE CONTRACTOR SHALL SECURE "TOPSOIL" DISTURBED PRIOR TO BEGINNING CONSTRUCTION.

PROJECT BENCHMARK

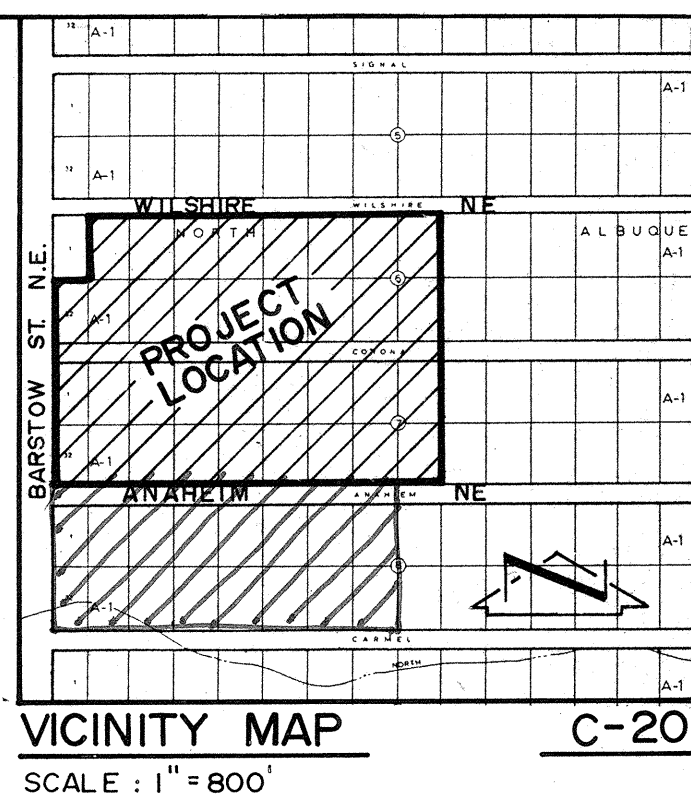
STATION IS A STANDARD ACS ALUMINUM CAP STAMPED "6-218" SET ON AN ALUMINUM TUBE WITH THE CAP PROJECTION 0.15 FT. ABOVE THE GROUND. STATION IS IN THE QUADRANT OF THE INTERSECTION OF BARSTOW STREET N.E. AND PASEO DEL NORTE N.E.

LEGAL DESCRIPTION

LOTS 1-9, 24-32, BLOCKS 6 AND 7, NORTH ALBUQUERQUE ACRES, TRACT 3, UNIT 1.



- LEGEND**
- PROPOSED SPOT ELEVATION
 - EXISTING SPOT ELEVATION
 - PROPOSED CONTOUR
 - PROPERTY LINE
 - PROPOSED CONCRETE
 - PROPOSED ASPHALT
 - PROPOSED 3:1 SLOPE
 - DRAINAGE BASIN BOUNDARY
 - RIP-RAP



GRADING NOTES:

1. HOMES WILL BE CUSTOM. ZONING IS R-D FOR R-T USE. SETBACKS ARE GOVERNED BY SECTION 11.E OF THE ZONING ORDINANCE.
2. FINE GRADING SHALL BE ACCOMPLISHED BY HOME BUILDER. LOTS SHALL GENERALLY BE GRADED TO DRAIN TO THE STREET. HOWEVER, BACKYARD PONDING MAY BE UTILIZED. VOLUME OF POND SHALL BE 325 CF MINIMUM, ASSUMING ONE-HALF OF THE LOT IS DIRECTED TO THE POND. PONDS SHALL BE 15' FROM THE PROPERTY LINE AND FROM STRUCTURES. NO CROSS-LOT DRAINAGE SHALL BE ALLOWED.
3. PADS SHALL BE COMPACTED TO 95% OF ASTM D1557.
4. FINISHED FLOOR ELEVATIONS WILL VARY FROM 4" TO 12" ABOVE PAD ELEVATION DEPENDING UPON DRAINAGE REQUIREMENTS AND HOUSE LAYOUT.
5. RETAINING WALLS MAY BE UTILIZED AT SIDE YARD PROPERTY LINE, AND WOULD BE CONSTRUCTED BY HOME BUILDER.
6. MAXIMUM GROUND SLOPE SHALL BE 3:1 EXCEPT AT SIDEYARDS BETWEEN PADS, WHERE A 1:1 SLOPE CAN BE UTILIZED.

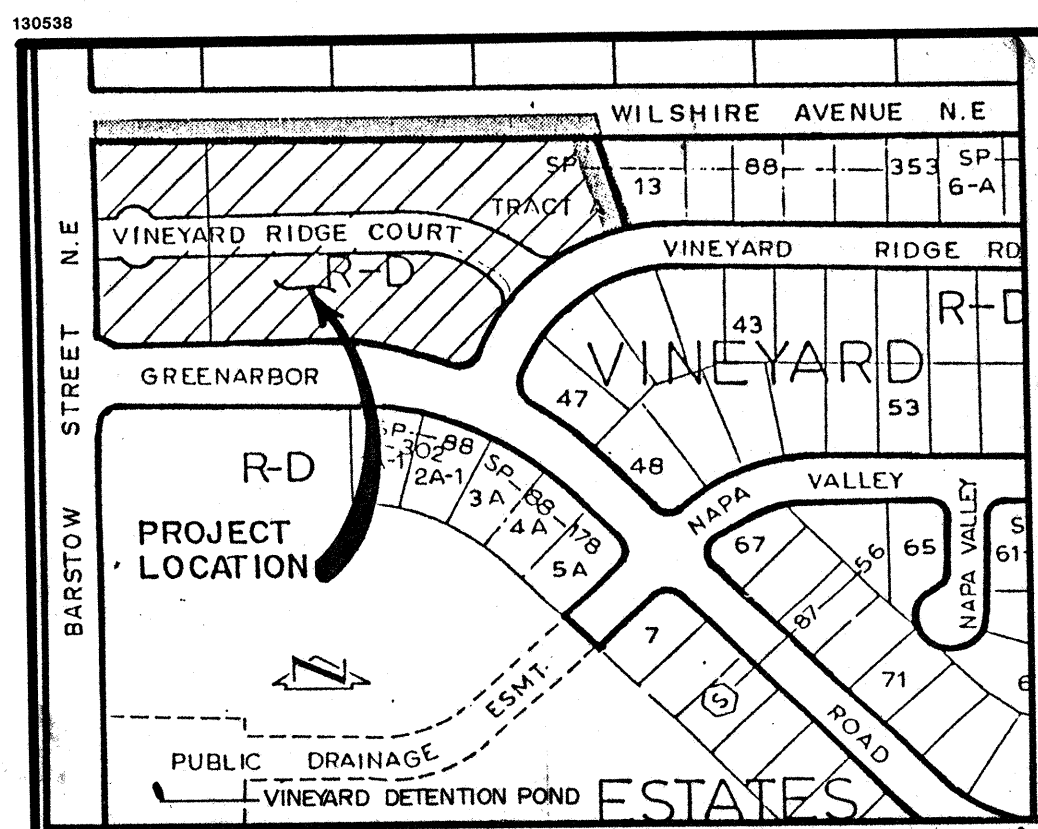
NO.	DATE	BY	REVISIONS (CONT.)
1	11-18-88	ADD LOTS 1-14, TRACT A, AND GRADE SLOPES AND CAPACITY - CARRIES 100' CFS	

APPROVED FOR OFF-SITE GRADING
FEB 21 1989
DATE 12-16-89
REVISIONS (CONT.)

CONCRETE CHANNEL, SIDEWALK CULVERT, SPILLWAY, CMP, AND RIP-RAP ARE ALL WORK ORDER ITEMS. ALL GRADING OPERATIONS, INCLUDING STREET GRADING, ARE NON-WORK ORDER ITEMS.

NOTE: OWNERSHIP OF LOTS 10 & 23, BLOCK 7 & LOT 10, BLOCK 6, IS SAME AS VINEYARD ESTATES SUBDIVISION

PROJECT NO.	3391		
TITLE	VINEYARD ESTATES GRADING AND DRAINAGE PLAN		
NO.	DATE	BY	REVISIONS
1	11-18-88	J.M.	ADD LOTS 1-14, TRACT A, AND GRADE SLOPES AND CAPACITY - CARRIES 100' CFS
2	12-16-89	J.M.	REVISE POND TO ACCOMMODATE OFF-SITE FLOWS, STREET GRADES - EAST END GREENARBOR RD.
3	12-16-89	J.M.	REVISE FOR LOTS 1-6 TO LOTS 1-4 THRU 5-A PER REVISION
DESIGNED BY:	S.K.S.	61713	JOB NO.
DRAWN BY:	C.V.M.	DATE	9-1987
APPROVED:	J.G.M.	SHEET	1 OF 5



VICINITY MAP
N.T.S.

PROJECT BENCHMARK

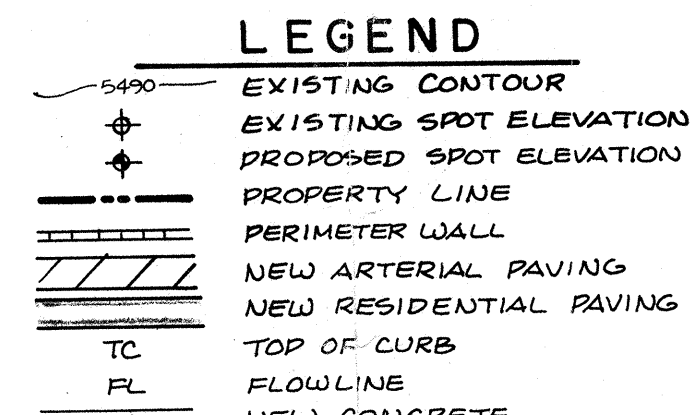
A STANDARD BRASS TABLET STAMPED "1-CIN N.A.A. LOT 32, BLK. 10" SET IN TOP OF A CONCRETE POST FLUSH WITH THE GROUND, LOCATED AT THE INTERSECTION OF LOUISIANA BLVD. N.E. & LOS ANGELES DR. N.E. IN THE NORTHEAST QUADRANT, 50' NORTH OF THE NORTHWEST CORNER OF A CHAINLINK FENCE AROUND THE F.A.A. AIR TRAFFIC CONTROL CENTER ELEVATION = 5518.195 FEET (M.S.L.D.)

T. B. M.

TOP OF CURB ELEVATION LOCATED AT THE N.E. CURB RETURN OF THE INTERSECTION OF GREENARBOR RD. N.E. AND BARSTOW ST. N.E. AS SHOWN ON THE DRAWING BELOW. ELEVATION = 5478.90 FEET (M.S.L.D.)

LEGAL DESCRIPTION

LOTS 14-A AND LOTS 15-27 OF TRACT A, VINEYARD ESTATES



DRAINAGE PLAN

The following items concerning the Vineyard Estates - Phase II Drainage Plan are contained hereon:
1. Vicinity Map 2. Calculations 3. Grading Notes 4. Grading Plan 5. Sections & Details

As shown by the Vicinity Map, the site is located at the northeast corner of the intersection of Barstow Street N.E. and Greenarbor Road N.E. The site lies immediately adjacent to the first phase of Vineyard Estates which is presently constructed. The area is currently undeveloped, residentially making this somewhat of an infill site. The site was previously left vacant when the initial planning and construction of Vineyard Estates occurred. The proposed development of this phase will consist of 14 residential lots which will front onto a new cul-de-sac. This cul-de-sac will be a public street to be constructed by City Work Order. Future public infrastructure, such as the half-width paving of Barstow Street adjacent to the project and proposed public storm drain improvements are also addressed as part of this plan.

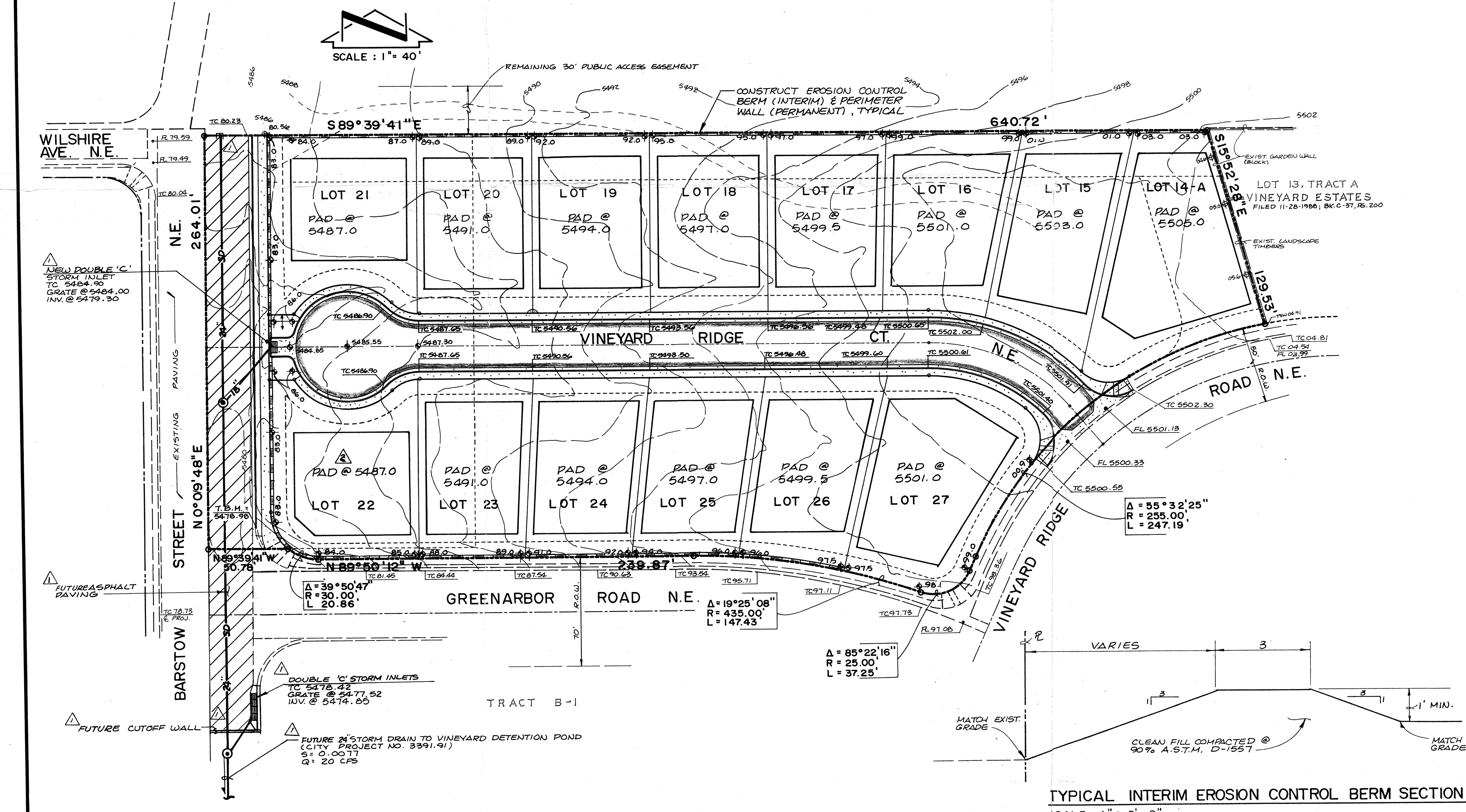
As shown by Panel 10 of 50 of the National Flood Insurance Program Flood Boundary and Floodway Maps for the City of Albuquerque, New Mexico, this site does not lie within a designated flood hazard zone. This site presently drains from east to west with its runoff outfalling into the North Arroyo De Domingo Baca Baca.

As shown by the Grading Plan, the project consists of the development of 14 residential lots. These lots will be considered to drain all of their runoff to the street, Vineyard Ridge Court N.E. Vineyard Ridge Court N.E. drains from east to west to the back-of-ball of the cul-de-sac. At this point, a concrete apron will be constructed which will drain into a Double "C" storm inlet. The Double "C" storm inlet will connect to a public storm drain in Barstow Street N.E. which will discharge to the Vineyard Detention Pond (City Project 3391.91). As previously stated, the improvements to Barstow Street N.E. will be deferred to be constructed at a later date and hence have been identified as "future". Runoff conveyed by Vineyard Ridge Court N.E. will be accepted at its westerly terminus by the Double "C" storm inlet previously referenced. Runoff collected by the storm inlet will then be discharged to the permanent public storm drain in Barstow Street N.E.

The calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The peak rate of discharge has been quantified using the Rational Method while the volume of runoff generated has been quantified using the SCS Method. Both Methods have been used in accordance with the City of Albuquerque Development Process Manual, Volume II, the SCS Method. Both Methods have been used in accordance with the City of Albuquerque Development Process Manual, Volume II, the SCS Method. Both Methods have been used in accordance with the City of Albuquerque Development Process Manual, Volume II, the SCS Method. Both Methods have been used in accordance with the City of Albuquerque Development Process Manual, Volume II, the SCS Method.

Vineyard Ridge Road N.E. lies along the north boundary of the site, Greenarbor Road N.E. lies along the south boundary of the site, and Barstow Street N.E. lies along the west boundary of the site. Due to the development of these adjacent public streets, no offsite flows are anticipated from any of these directions. The land to the north of the site is topographically lower than the site hence offsite flows from the north are also not anticipated.

Typical lot grading details sections and notes have been provided to supplement this submittal. Key points of interest are that no cross-lot drainage will be allowed and no runoff will be allowed to drain through any wall which does not abut public right-of-way. Furthermore, nuisance flows will not be permitted to discharge into the public right-of-way. The notes and details go further to identify directions of runoff and compaction requirements. These grading notes shall serve as guidelines for the development of these custom residential lots.



GRADING NOTES:

- ALL FILL SHALL BE COMPACTED TO A MINIMUM OF 90% ASTM D-1557; HOUSE PADS SHALL BE COMPACTED AT 95% ASTM D-1557.
- THE PAD ELEVATIONS SHOWN HEREON ARE FOR ROUGH GRADING PURPOSES.
- FINISHED FLOOR ELEVATIONS MAY VARY FROM THE PAD ELEVATIONS AND WILL BE DETERMINED AS A FUNCTION OF INDIVIDUAL HOUSE DESIGN.
- FINISHED FLOOR ELEVATIONS SHOULD BE ESTABLISHED AT A MINIMUM OF 6 INCHES ABOVE PAD ELEVATIONS; DEVIATIONS FROM THESE GUIDELINES MUST BE BASED ON THE RECOMMENDATIONS AND/OR DESIGN OF A COMPETENT DESIGN PROFESSIONAL.
- NO CROSS-LOT DRAINAGE WILL BE ALLOWED.
- PERIMETER WALLS SHALL BE CONSTRUCTED BY THE DEVELOPER.
- YARD (GARDEN) WALLS SHALL BE CONSTRUCTED BY THE LOT OWNER OR ITS BUILDER.
- THE FINISHED GRADING OF EACH LOT SHALL BE ACCOMPLISHED BY THE LOT OWNER OR ITS BUILDER. RUNOFF SHOULD BE DIRECTED TO THE STREETS OR SAFELY RETAINED ONSITE, IF NECESSARY. REAR YARD PONDING MAY BE UTILIZED PROVIDED THAT ALL OVERFLOW RUNOFF IS CONVEYED BY THE SIDEYARD TO THE FRONT OF THE LOT FROM WHENCE IT WILL FLOW TO THE STREET.
- MAXIMUM SLOPES SHALL BE 3:1; MINIMUM SLOPES SHALL BE 1%.
- LOTS 14A AND 15 THROUGH 20, INCLUSIVE, ARE "UPHILL" LOTS. LOTS 21 THROUGH 27, INCLUSIVE, ARE "DOWNHILL" LOTS.
- "DOWNHILL" LOTS MAY DISCHARGE OVERFLOW THROUGH WEEDHOLES IN THE PERIMETER WALL ONTO PUBLIC RIGHT-OF-WAY; NUISANCE FLOWS, HOWEVER, MUST BE RETAINED ONSITE IN ACCORDANCE WITH THE CITY OF ALBUQUERQUE WATER WASTE ORDINANCE.
- TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL SYSTEM, 260-1990, FOR LOCATION OF EXISTING UTILITIES.
- IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS, THEY ARE SHOWN IN AN APPROXIMATE MANNER ONLY, AND SUCH LINES MAY EXIST WHERE NONE ARE SHOWN. IF ANY SUCH EXISTING LINES ARE SHOWN, THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE OWNER OF SAID UTILITY, AND THE INFORMATION MAY BE INCOMPLETE, OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES. THE ENGINEER HAS CONDUCTED ONLY PRELIMINARY INVESTIGATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES. THIS INVESTIGATION IS NOT CONCLUSIVE, AND MAY NOT BE COMPLETE, THEREFORE, MAKES NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES. IN PLANNING AND CONDUCTING EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS, IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.
- THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AT THE PROPERTY LINES AND WETTING THE SOIL TO KEEP IT FROM BLOWING.
- THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET.
- THE CONTRACTOR SHALL SECURE "TOPSOIL DISTURBANCE PERMIT" PRIOR TO BEGINNING CONSTRUCTION.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey, Plate 11: Etc - Embudo Tijeras Complex Hydrologic Soil Group: B
Existing Pervious CN = 70 (DPM Plate 22.2 C-2)
Pasture or Range Land: fair condition)
Developed Pervious CN = 61 (DPM Plate 22.2 C-2)
Open Space: good condition)

Time of Concentration/Time to Peak

$T_c = 0.0078 L^{.77} / S^{.385}$ (Kirpich Equation)

$T_p = T_c + 10$ min.

Point Rainfall

$P_6 = 2.4$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: $Q = C i A$

where C varies
 $i = P_6 (6.84) T_c^{-0.51} = 5.07$ in/hr
 $P_6 = 2.4$ in (DPM Plate 22.2D-1)
 $T_c = 10$ min (minimum)
 $A =$ area, acres

SCS Method

Volume: $V = 3630 (DRO) A$

Where DRO = Direct runoff in inches
 $A =$ area, acres

Existing Condition

$A_{total} = 164,000$ sf = 3.7650 Ac
Paved area = 3000 sf (0.02)
Unpaved area = 161,000 sf (0.98)
 $C = 0.41$ (Weighted average per Emergency Rule, 1/14/86)
 $Q_{100} = C i A = 0.41 (5.07) (3.7650) = 7.8$ cfs
% impervious = 2 %
Composite CN = 71 (DPM Plate 22.2 C-2)
DRO = 0.5 in (DPM Plate 22.2 C-4)
 $V_{100} = 3630 (DRO) A = 6830$ cf

Developed Condition

$A_{total} = 164,000$ sf = 3.7650 Ac
Roof area = 42,000 sf (0.26)
Paved area = 41,000 sf (0.25)
Landscape area = 81,000 sf (0.49)
 $C = 0.59$ (Weighted average per Emergency Rule, 1/14/86)
 $Q_{100} = C i A = 0.59 (5.07) (3.7650) = 11.3$ cfs
% impervious = 51 %
Composite CN = 80 (DPM Plate 22.2 C-2)
DRO = 0.82 in (DPM Plate 22.2 C-4)
 $V_{100} = 3630 (DRO) A = 11,200$ cf

Comparison

$\Delta Q_{100} = 11.3 - 7.8 = 3.5$ cfs (increase)
 $\Delta V_{100} = 11,200 - 6,830 = 4,370$ cf (increase)