

DRAINAGE AND GRADING PLAN FOR CREAMLAND DAIRIES LOTS 1-12, BLOCK 2 ALVARADO MATTHEW ADDITION

DRAINAGE PLAN

THE FOLLOWING ITEMS CONCERNING A NEW SUBDIVISION FOR LOTS 1 - 12, BLOCK 2, ALVARADO MATTHEW ADDITION, ALBUQUERQUE, NEW MEXICO, GRADING AND DRAINAGE PLAN ARE CONTAINED HEREON:

1. DRAINAGE CALCULATIONS
2. VICINITY MAP (H-14)
3. FLOOD INSURANCE RATE MAP 35001C0332D, SEPTEMBER 20, 1996
4. GRADING PLAN

EXISTING CONDITIONS

AS SHOWN BY THE VICINITY MAP, THE SITE CONTAINS APPROXIMATELY 1.944 ACRES AND IS LOCATED BETWEEN 3rd and 4th STREETS AND BETWEEN ASPEN AVENUE AND HANNETT AVENUE (SEE ATTACHED VICINITY MAP H-14). THIS DEVELOPMENT IS CLASSIFIED AS AN INFILL SITE, PER CITY CRITERIA, SINCE THE SURROUNDING AREA IS COMPLETELY DEVELOPED.

THE TOPOGRAPHY OF THE SITE SLOPES FROM GENERALLY THE CENTER OF THE PROPERTY OUT IN EACH DIRECTION TO THE IMMEDIATE ADJACENT. THE SITE CURRENTLY HAS A LARGE WARE HOUSE AND 2 SMALLER BUILDINGS ARE ON THE SITE. THERE IS A RECENTLY CONSTRUCTED SLAB ALONG THE WEST SIDE OF THE WAREHOUSE, EXISTING BROKEN SLABS ARE SCATTERED THROUGHOUT THE SITE AND THE REMAINING IS COMPACTED EARTH, SEE GRADING PLAN. BASED ON REVIEWS OF A 1999 DIGITAL AERIAL PHOTOGRAPH THERE WERE AT LEAST 3 ADDITIONAL BUILDINGS THAT EXISTED ON THIS SITE, WHICH HAVE SINCE BEEN REMOVED.

ACCORDING TO THE FLOOD INSURANCE RATE MAP, PANEL 35001C0332 D, DATED SEPTEMBER 20, 1996, THE MAJORITY OF THIS SITE LIES IN ZONE "X" (AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOODPLAIN). IT APPEARS THAT ALONG THE 3rd STREET FRONTAGE OF THIS SITE THIS IS IN A DESIGNATED FLOODPLAIN, THE FLOODZONE IS DESIGNATED AO (DEPTH 1). SEE ATTACHED FLOODPLAIN MAP.

PROPOSED CONDITIONS

AS SHOWN BY THE PLAN, THE PROJECT CONSISTS OF PROVIDING ASPHALT PAVING AND CONCRETE PADS FOR PROVIDING PARKING FOR LARGE SEMI-TRUCKS THAT ARE USED BY THE CREAMLAND DAIRY.

THE PLAN SHOWS THE PROPOSED ELEVATIONS REQUIRED TO PROPERLY GRADE THE REQUIRED ASPHALT PAVING IMPROVEMENTS IN ORDER TO TRY AND ACCOMMODATE POSITIVE DRAINAGE OFF THE SITE.

THE CALCULATIONS WHICH APPEAR HEREON, ANALYZE BOTH THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100-YEAR, 6 HOUR RAINFALL RUNOFF FOR PEAK FLOWS AND STORM DURATION FOR VOLUME REQUIREMENTS. THE PROCEDURE FOR 40 ACRE AND SMALLER BASINS AS SET FORTH IN THE REVISION OF SECTION 22.7 HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL, VOLUME 2, DESIGN CRITERIA, DATED JANUARY 1993. THIS D.P.M. PROCEDURE IS USED FOR ANALYZING ONSITE FLOWS.

DOWNSTREAM CAPACITY

THERE ARE EXISTING INLETS AT ALL FOUR CORNERS OF THE STREET INTERSECTIONS ADJACENT TO THIS SITE, SEE GRADING PLAN FOR LOCATIONS. IT APPEARS THAT ALL OF THE SURROUNDING AREAS CURRENTLY FREE DISCHARGE INTO THE STREETS. THE DRAINAGE PATTERN FOR THE PROPOSED CONDITIONS WILL BE THE SAME AS PRE-EXISTING CONDITIONS WHEN THERE WAS MORE EXISTING BUILDINGS ON THIS SITE. SINCE THIS AN INFILL SITE IT WOULD BE CONSERVATIVE TO SAY THAT THE DEVELOPED DISCHARGE FROM THIS SITE WOULD HAVE MINIMAL IMPACT TO THE SURROUNDING AREA; THEREFORE, IT APPEARS THAT FREE DISCHARGE IS APPROPRIATE.

EROSION CONTROL

TEMPORARY EROSION CONTROL WILL BE REQUIRED DURING THE CONSTRUCTION PHASE TO PROTECT DOWNSTREAM PROPERTY AND IMPROVEMENTS FROM SEDIMENT AND UNCONTROLLED RUNOFF. THE CONTRACTOR SHALL INCLUDE TEMPORARY EARTH BERMING ALONG THE EDGE OF THE NEW ASPHALT PAVING PROPOSED IMMEDIATELY ADJACENT TO THE STREET FRONTAGE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROPERLY MAINTAIN THESE FACILITIES DURING THE CONSTRUCTION PHASE OF THE PROJECT.

OFFSITE FLOWS

BASED ON THE FLOOD INSURANCE RATE MAPS IT APPEARS THAT THE LOT FRONTAGE ALONG 3rd STREET IS THE ONLY AREA THAT COULD EXPERIENCE STREET FLOODING DURING A 100-YEAR EVENT OR LARGER; OTHERWISE, IT DOES NOT APPEAR THAT OFFSITE FLOODING IS ENTERING THIS SITE.

DRAINAGE CALCULATIONS

1. PRECIPITATION ZONE = 2
2. DESIGN STORM = DEPTH (INCHES) AT 100-YEAR STORM
6-HOUR = 2.35 INCHES
10 DAY = 3.95 INCHES
3. PEAK DISCHARGE (CFS/ACRE) FIR 100-YEAR, ZONE 2, TABLE A-9:
 $Q = 1.56$ CFS/ACRE SOIL UNCOMPACTED "A"
 $Q = 2.28$ CFS/ACRE LANDSCAPED "B"
 $Q = 3.14$ CFS/AC COMPACTED SOIL "C"
 $Q = 4.70$ CFS/ACRE IMPERVIOUS AREA "D"
FOR WATERSHEDS LESS THAN OR EQUAL TO 40 ACRES

4. EXCESS PRECIPITATION, E (INCHES), 6 HOUR STORM, ZONE 2, TABLE A-8:
 $E = 0.53$ INCHES SOIL UNCOMPACTED "A"
 $E = 0.78$ INCHES LANDSCAPED "B"
 $E = 1.13$ INCHES COMPACTED SOIL "C"
 $E = 2.12$ INCHES IMPERVIOUS AREA "D"

5. EXISTING CONDITIONS ONSITE:

TREATMENT	AREA(ACRES)
A	0
B	0
C	0.68 (COMPACTED EARTH DUE TO TRUCK PARKING)
D	1.26 (INCLUDES EXISTING BLDGS, CONCRETE, & PAVING)

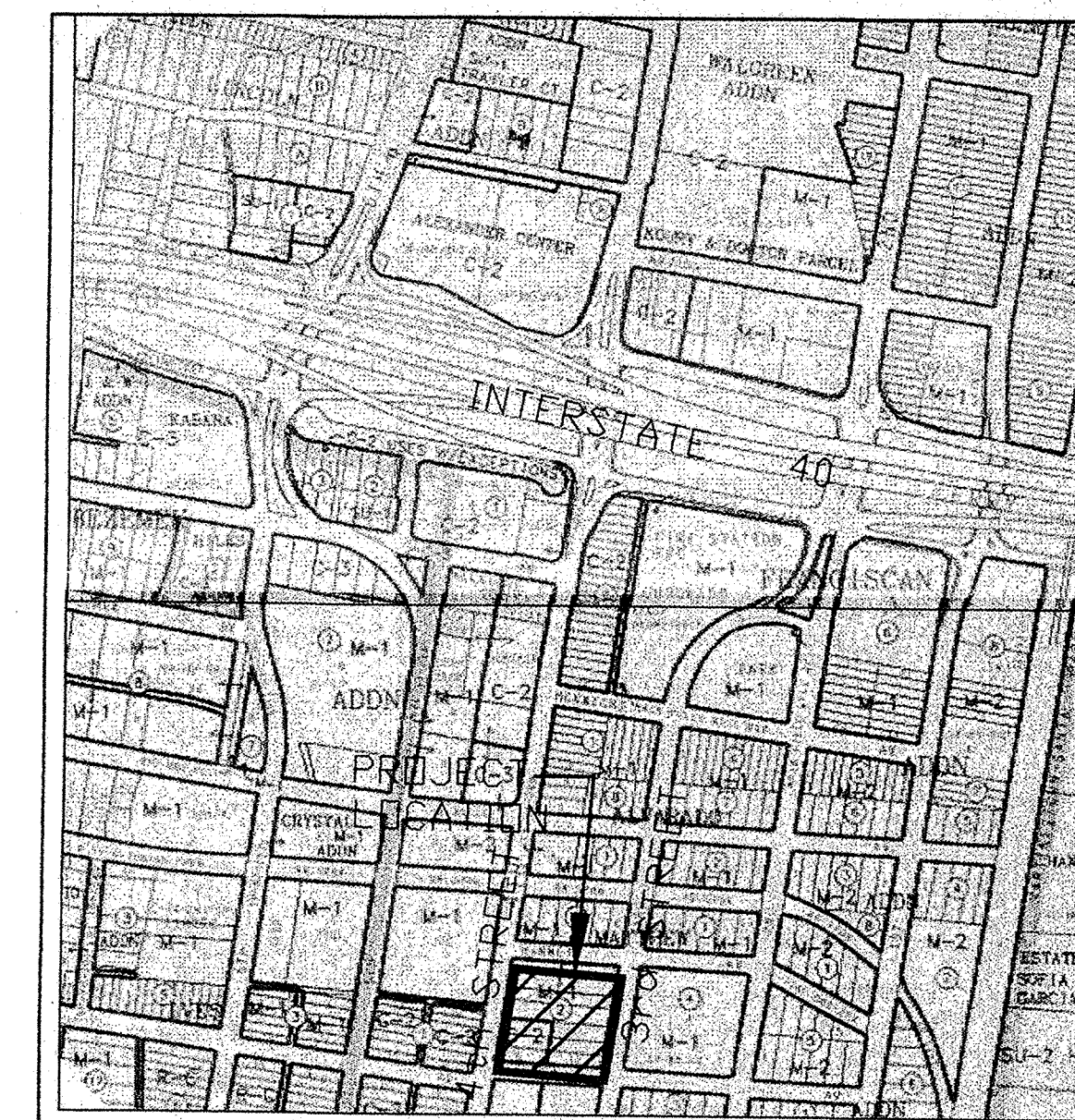
$$Q(\text{EXISTING}) = (3.14 \times 0.68) + (4.70 \times 1.26) = 8.1\text{CFS EXISTING ONSITE FLOW}$$
$$V(\text{EXISTING}-6\text{HR}) = ((1.13 \times 0.68) + (2.12 \times 1.26)) / 12 \times 43,560 = 12,486\text{CF}$$
$$= 0.29\text{AC}-\text{FT EXISTING RUNOFF VOLUME}$$

5. PROPOSED CONDITIONS ONSITE:

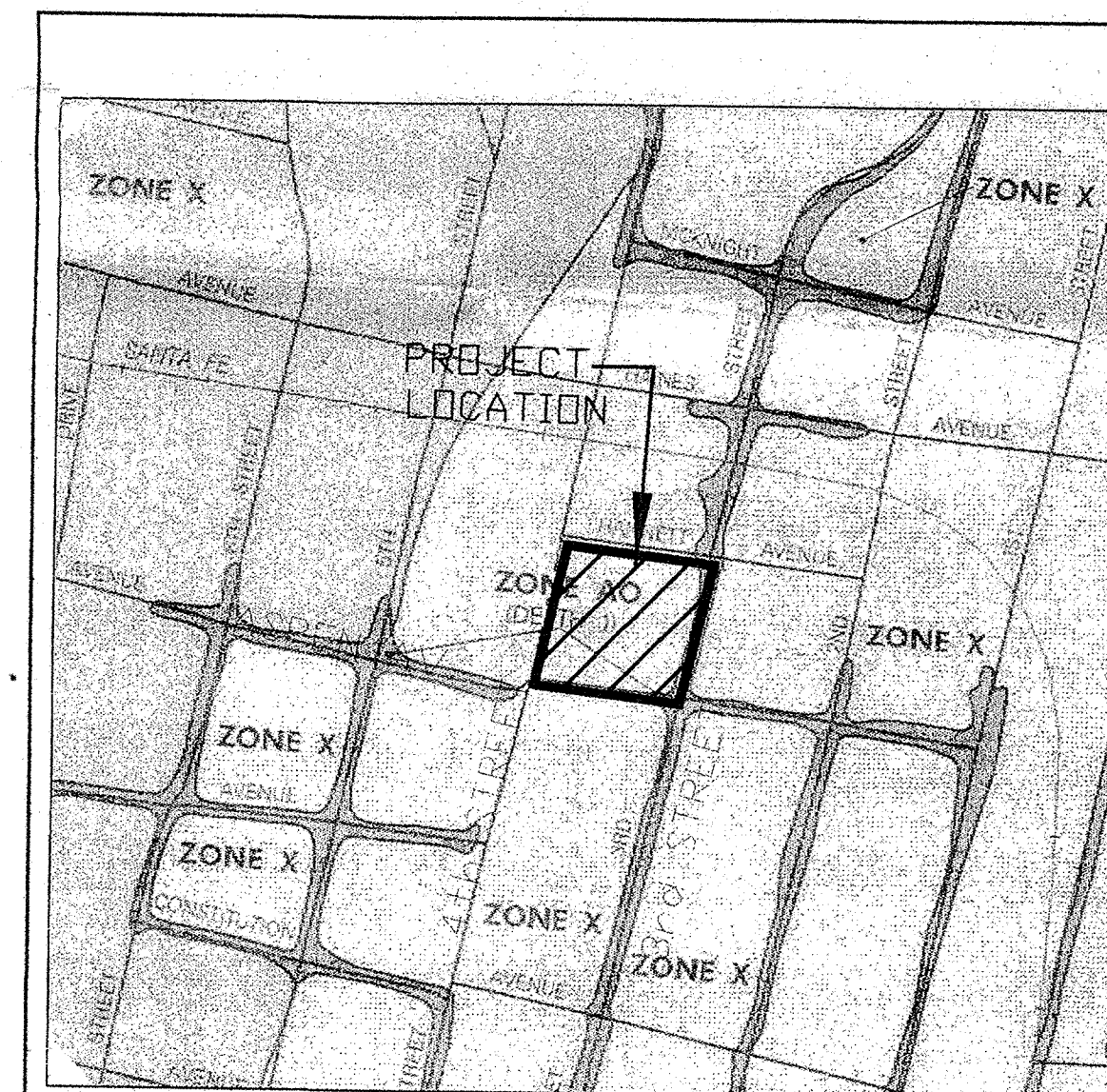
TREATMENT	AREA(ACRES)
A	0
B	0
C	0.12 (REMAINING COMPACTED EARTH)
D	1.66 (INCLUDES EXISTING BLDGS, CONCRETE, & NEW ASPHALT PAVING)

$$Q(\text{PROPOSED}-6\text{HR}) = (3.14 \times 0.12) + (4.70 \times 1.82) = 8.9\text{CFS EXISTING ONSITE FLOW}$$
$$V(\text{PROPOSED}-6\text{HR}) = ((1.13 \times 0.12) + (2.12 \times 1.82)) / 12 \times 43,560 = 14,498\text{CF}$$
$$= 0.33\text{AC}-\text{FT EXISTING RUNOFF VOLUME}$$

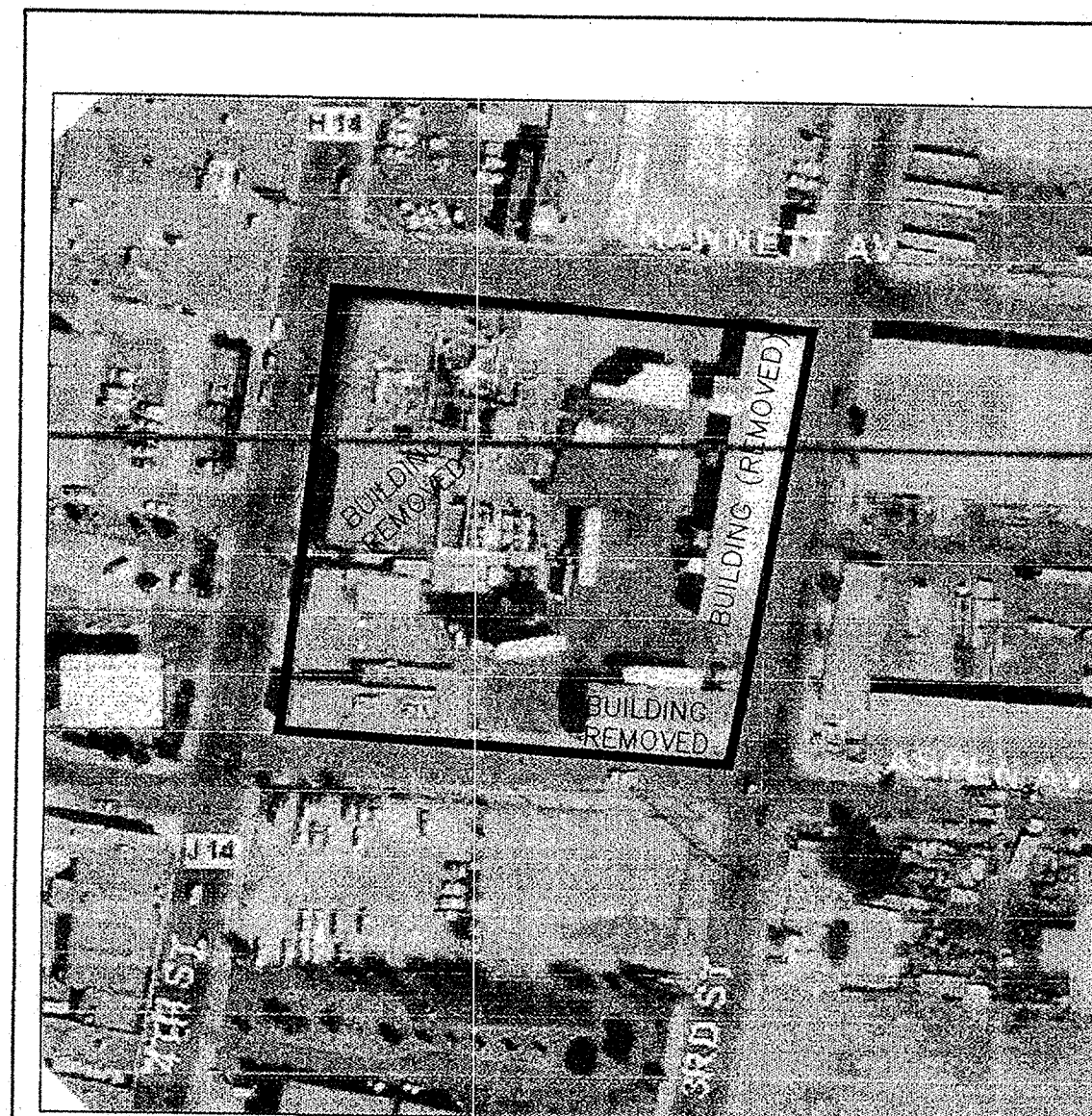
$$Q(\text{INCREASE}) = 8.7 - 8.1\text{CFS} = 0.60\text{CFS (DUE TO ADDITIONAL ASPHALT PAVING - 7\% INCREASE, THIS SHOULD BE INSIGNIFICANT TO DOWNSSTREAM CAPACITY)}$$
$$V(\text{INCREASE}) = 0.33 - 0.29\text{AC}-\text{FT} = 0.04\text{AC}-\text{FT (DUE TO ADDITIONAL ASPHALT PAVING - 7\% INCREASE, THIS SHOULD BE INSIGNIFICANT TO DOWNSSTREAM CAPACITY)}$$



VICINITY MAP H-14



FIRM MAP 35001C0332 D



1999 DIGITAL PHOTO

FILE: 020502 - Creamland Dairy Calcs.dwg	DRAINAGE CALCULATIONS FOR CREAMLAND DAIRIES LOTS 1-12, BLOCK 2 ALVARADO MATTHEW ADDITION	DATE/REVISIONS:
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