FILE COPY

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Ken Schultz
Mayor

UTILITY DEVELOPMENT DIVISION
HYDROLOGY SECTION
(505) 768-2650

January 28, 1987

Douglas N. Copeland, P.E.
Easterling & Associates, Inc.
5643 Paradise Boulevard, NW
Albuquerque, New Mexico 87114

RE: CONCEPTUAL DRAINAGE PLAN SUBMITTAL OF INTERSTATE INDUSTRIAL TRACT, UNIT 5, TRACT 4, RECEIVED JANUARY 13, 1987 FOR FINAL PLAT APPROVAL (D-17/D61)

Dear Doug:

The above referenced submittal, revised January 12, 1987, is approved for Platting purposes.

Subsequent development of each new tract will require an approved detailed Grading and Drainage Plan consistant with this approved plan.

If you have any questions, call me at 768-2650.

Cordially,

Roger A. Green, PE

Roger A. Green, P.E.
C.E./Hydrology Section

cc: Robert Kasting

RAG/bsj

Ace

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Interstate Ind. Tract, Unit 5 Tracts 4A, 4B, 4C Conceptual Drainage Plan ZONE ATLAS/DRNG. FILE #: D-17/D61

LEGAL DESCRIPTION: Interstate Industrial Tract, Unit 5, Tract 4

CITY ADDRESS: South of Ellison, West of I-25, East of Jefferson

ENGINEERING FIRM: Easterling & Associates, Inc CONTACT: Douglas W. Copeland

ADDRESS: 5643 Paradise Blvd., NW PHONE: 898-8021

OWNER: Jack Clifford & Company CONTACT: Robert Kastning

ADDRESS: 2400 Louisiana Blvd., NE PHONE: 881-0900

ARCHITECT: Not applicable CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: Bohannan-Huston, Inc. CONTACT: Tom Klingenhagen

ADDRESS: 7500 Jefferson, NE PHONE: 823-1000

CONTRACTOR: Not applicable CONTACT: _____

ADDRESS: _____ PHONE: _____

RECEIVED
DEC 19 1986
HYDROLOGY SECTION

PRE-DESIGN MEETING:

X YES

X NO

X COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. DRB-86-808

EPC NO. _____

PROJ. NO. _____

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

___ DRAINAGE PLAN

X CONCEPTUAL ~~GRADING &~~ DRAINAGE PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

___ SITE DEVELOPMENT PLAN APPROVAL

X FINAL PLAT APPROVAL DRB Mtg. 12/23/86

___ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER _____ (SPECIFY)

DATE SUBMITTED: Dec 19, 1986

BY: Douglas W. Copeland

Douglas W. Copeland

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Conceptual Drainage Plan ZONE ATLAS/DRNG. FILE #: D-17/D2

LEGAL DESCRIPTION: Interstate Industrial Tract, Unit 5, Tract 4

CITY ADDRESS: South of Ellison, West of I-25, East of Jefferson

ENGINEERING FIRM: Easterling & Associates, Inc CONTACT: Douglas W. Copeland

ADDRESS: 5643 Paradise Blvd., NW PHONE: 898-8021

OWNER: Jack Clifford & Company CONTACT: Robert Kastning

ADDRESS: 2400 Louisiana Blvd., NE PHONE: 881-0900

ARCHITECT: Not applicable CONTACT:

ADDRESS: PHONE:

SURVEYOR: Bohannan-Huston, Inc. CONTACT: Tom Klingenhagen

ADDRESS: 7500 Jefferson, NE PHONE: 823-1000

CONTRACTOR: Not applicable CONTACT:

ADDRESS: PHONE:

RECEIVED JAN 13 1987 HYDROLOGY SECTION

PRE-DESIGN MEETING:

X YES

___ NO

X COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. DRB-86-808

EPC NO.

PROJ. NO.

TYPE OF SUBMITTAL:

- ___ DRAINAGE REPORT
- ___ DRAINAGE PLAN
- ___ CONCEPTUAL GRADING & DRAINAGE PLAN
- ___ GRADING PLAN
- ___ EROSION CONTROL PLAN
- ___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

- ___ SKETCH PLAT APPROVAL
- ___ PRELIMINARY PLAT APPROVAL
- ___ SITE DEVELOPMENT PLAN APPROVAL
- X FINAL PLAT APPROVAL DRB Mtg. 12/23/86
- ___ BUILDING PERMIT APPROVAL
- ___ FOUNDATION PERMIT APPROVAL
- ___ CERTIFICATE OF OCCUPANCY APPROVAL
- ___ ROUGH GRADING PERMIT APPROVAL
- ___ GRADING/PAVING PERMIT APPROVAL
- ___ OTHER ___ (SPECIFY)

DATE SUBMITTED: JAN. 12, 1987

BY: [signature]
Douglas W. Copeland

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION/DESIGN HYDROLOGY SECTION

CONFERENCE RECAP

DRAINAGE FILE/ZONE ATLAS PAGE NO.: D-17 DATE: 12/17/86

PLANNING DIVISION NOS: EPC: DRB:

SUBJECT: MASSEY MAZDA - CAR PARK

STREET ADDRESS (IF KNOWN): ELLISON STREET

SUBDIVISION NAME: TRACT 4C INTERSTATE INDUSTRIAL TRACT UNIT 5

APPROVAL REQUESTED:

- X PRELIMINARY PLAT
- ___ SITE DEVELOPMENT PLAN
- ___ OTHER
- X FINAL PLAT
- X BUILDING PERMIT
- ___ ROUGH GRADING

ATTENDANCE: WHO	REPRESENTING
Doug Copeland	Easterling & Assoc.
Roger Green	City Hydrology

FINDINGS:

(1) An approved Conceptual Grading & Drainage Report is required with enough detail to identify required drainage infrastructures and Drainage scheme, for Preliminary & Final Plat approval at DRB. Include proposed Tract 4B and 4C

(2). A detailed Grading and Drainage Report is required for Building Permit approval on Tract 4C.

(3) Proposed Plat must include the entire legal Tract and can not be "portions of" even though Highway Department was deeded a piece of property.

(4) Free discharge allowed to the concrete lined channel. Any discharge to streets or storm drains need capacity analysis.

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED: Roger A. Green SIGNED: Douglas W. Copeland

TITLE: Civil Engineer TITLE: CIVIL ENGR.

DATE: 12/17/86 DATE: 12/17/86

NOTE PLEASE PROVIDE A COPY OF THIS RECAP WITH THE DRAINAGE SUBMITTAL

EXISTING

The property in question is an 18.77 acre tract, bounded on the north by Ellison Street, NE, on the south by concrete lined Pino Channel, on the east by I-25 frontage road, and on the west by Jefferson Street, NE. The property is legally described as Interstate Industrial Tract, Unit 5, Tract 4. It is proposed that Tract 4 be subdivided into 3 separate tracts, Tract 4A, 4B, and 4C.

The property has an abrupt 12-foot rise at the northeastern corner and slopes down to the west at approximately a 2% gradient. There are no developments on the site presently.

A 42" RCP storm drain runs in Ellison Street to the middle of Tract 4B where it has a 90° bend and discharges into an open channel running through Tract 4B. This channel is constructed with natural side slopes and bottom. The channel flows in a southerly direction through Tract 4B and discharges into the Pino Channel through a 45' length of 42" RCP. This facility was constructed in a temporary easement under private agreement between Jack M. Clifford & Company and the State of New Mexico Highway Department, dated May 14, 1984. This drainage plan ignores this facility in so much as a separate analysis to determine its capacity under existing conditions has not been performed. It is assumed that on-site flows from Tracts 4B and 4C will not flow into or out of this facility.

An on-site inspection of the site indicates that there are no off-site flows passing through the site with the exception of the drainage channel described above and the Pino Channel.

PROPOSED

This Conceptual Grading and Drainage Plan is prepared for the sole purpose of demonstrating that it is feasible to subdivide Unit 5, Tract 4 into 3 separate tracts, and that the vacation of existing drainage easements and dedication of new drainage easements will not require public infrastructure improvements prior to subdivision plat approval. In order that the greatest amount of latitude may be reserved for future grading and drainage design, the worst case scenario is assumed for the site. The following assumptions were used in preparing this Grading and Drainage Plan:

1. Tract 4A is not included in the analysis as it has multiple drainage opportunities to discharge into public street and Pino Channel. On-site inspection indicates that Tract 4A is sloping down at 1-2% east to west. Tract 4A can be easily graded to drain into the Pino Channel. No infrastructure improvements are foreseen.
2. Tracts 4B and 4C are assumed to be paved (100% impervious) for worst case analysis.
3. Tracts 4B and 4C are graded in such a manner that all on-site surface runoff is directed into the Pino Channel where free discharge is allowed.
4. Existing concrete run-downs constructed into Pino Channel will receive surface runoff by on-site collection scheme or through conveyance channel in private drainage easement in Tract 4B. Conveyance channel will be a private infrastructure improvement and listed as such when Tracts 4C and 4B enter into the development phase.
5. An additional concrete run-down into the Pino Channel is proposed for surface runoff from a portion of Tract 4B west of the existing natural channel (Area 4B-4). This is also a private infrastructure improvement and addressed as part of the final Grading and Drainage Plan for Tract 4B.

The plan on sheet 2 of 2, demonstrates how the drainage patterns could be controlled and directed in the manner described above. The following hydraulic calculations illustrate how the 100 year design flows will be accommodated. The typical channel and run-down cross-sections shown on this sheet were used in the hydraulic calculations.

DESIGN FLOW REQUIREMENTS

Q100 for Tracts 4B and 4C are conveyed to the Pino Channel via one of the run-downs as identified below.

Run-down No. 1 (proposed)	Area 4B-4	9.33 CFS
Run-down No. 2 (existing)	Area 4B-2	5.06 CFS
	4B-3	9.01 CFS
	4C-1	22.13 CFS
	Total	**36.2 CFS**
Run-down No. 3 (existing)	Area 4B-1	6.82 CFS

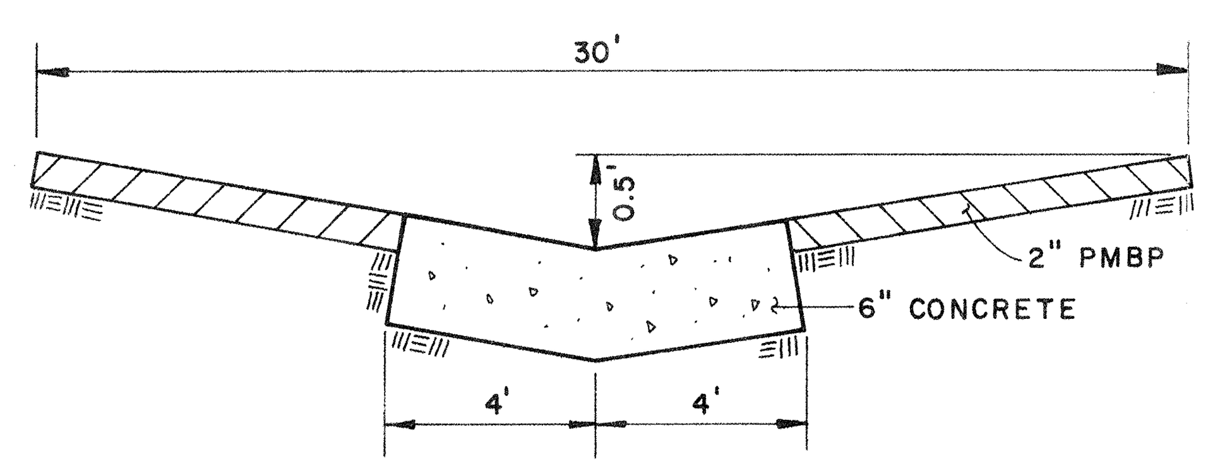
HYDRAULIC CALCULATIONS
(For Variable Channel Slopes)

Channel X-Section	Flow Depth (Ft)	Area (Ft^2)	Wetted Perimeter (Ft)	Hydraulic Radius (Ft)	Channel Slope (Ft/Ft)	Manning's Roughness Formula	Velocity (Ft/sec)	Flow (CFS)
Channel A	0.5	7.5	30.0	0.25	0.001	0.017	1.10	8.2
	0.5	7.5	30.0	0.25	0.01	0.017	3.48	26.1
	0.5	7.5	30.0	0.25	0.02	0.017	4.92	36.9*
	0.5	7.5	30.0	0.25	0.03	0.017	6.02	45.2
Typical	1.5	22.50	30.2	0.75	0.001	0.017	2.29	51.48
Run-down	1.5	22.50	30.2	0.75	0.005	0.017	5.12	115.11

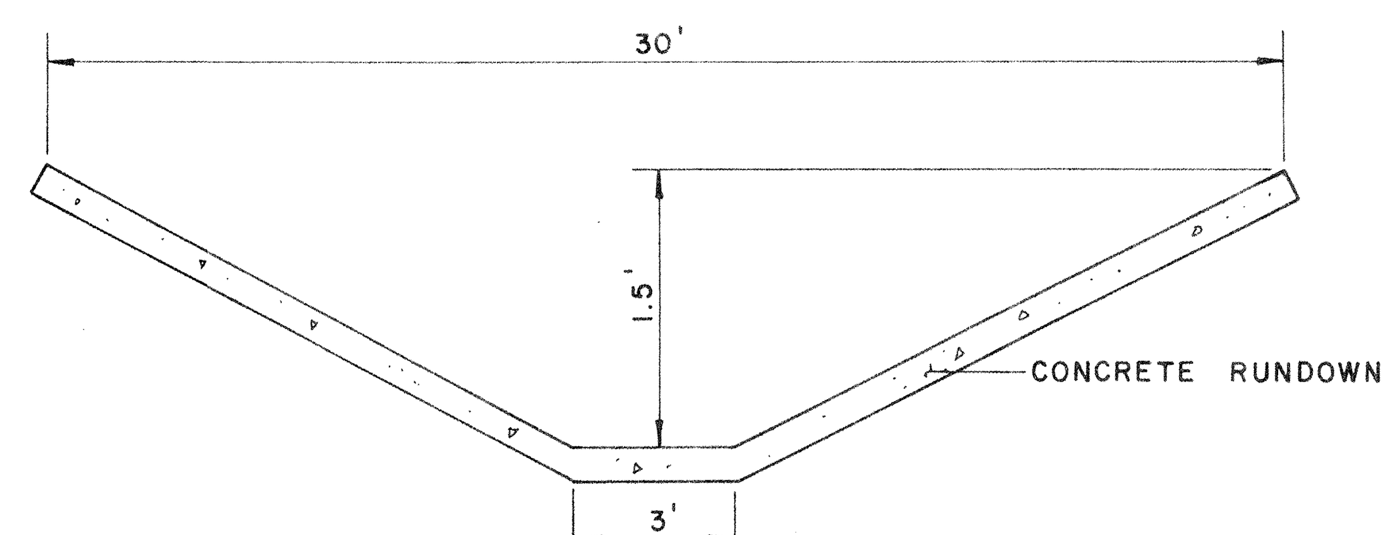
*This channel configuration will serve the 100 year runoff for Areas 4B-2, 4B-3, and 4C-1 with a design discharge of 36.9 CFS. Private drainage channel to be re-evaluated during final grading and drainage design.

CONCLUSION

By assuming that Tracts 4B and 4C are paved and therefore 100% impervious, on-site surface runoff from the 100 year event can be easily accommodated by developing a very minimal drainage channel within the 30' wide private drainage easement running from the southwest corner of Tract 4C to Run-down No. 2. This does not preclude further analysis of peak flows and conveyance schemes.
Tract 4A was not considered in the analysis because it lies downstream of Tracts 4B and 4C, in addition to the fact that it has multiple drainage options. Tract 4A is bounded on the South by a concrete lined channel, and on the north and west by developed public streets where on-site flows can be discharged easily.



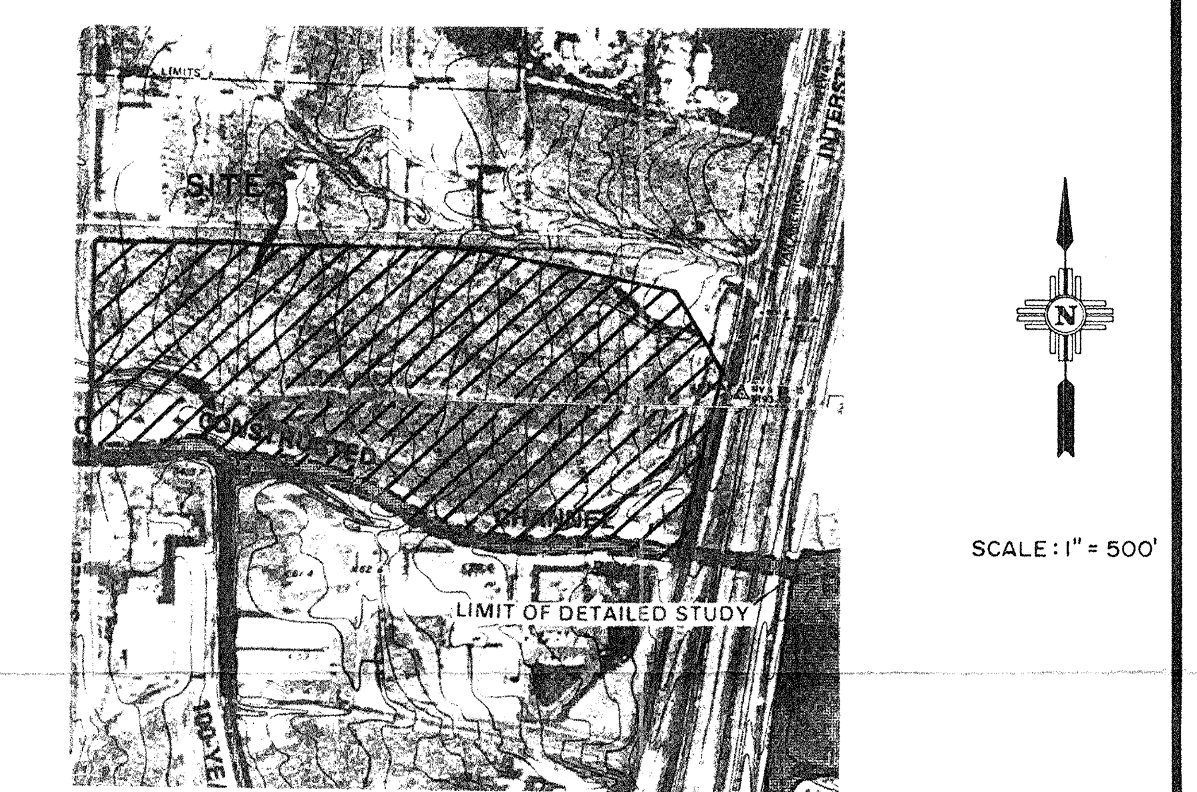
(A) X-SECTION CHANNEL A
NOT TO SCALE



(B) X-SECTION TYPICAL RUNDOWN
NOT TO SCALE

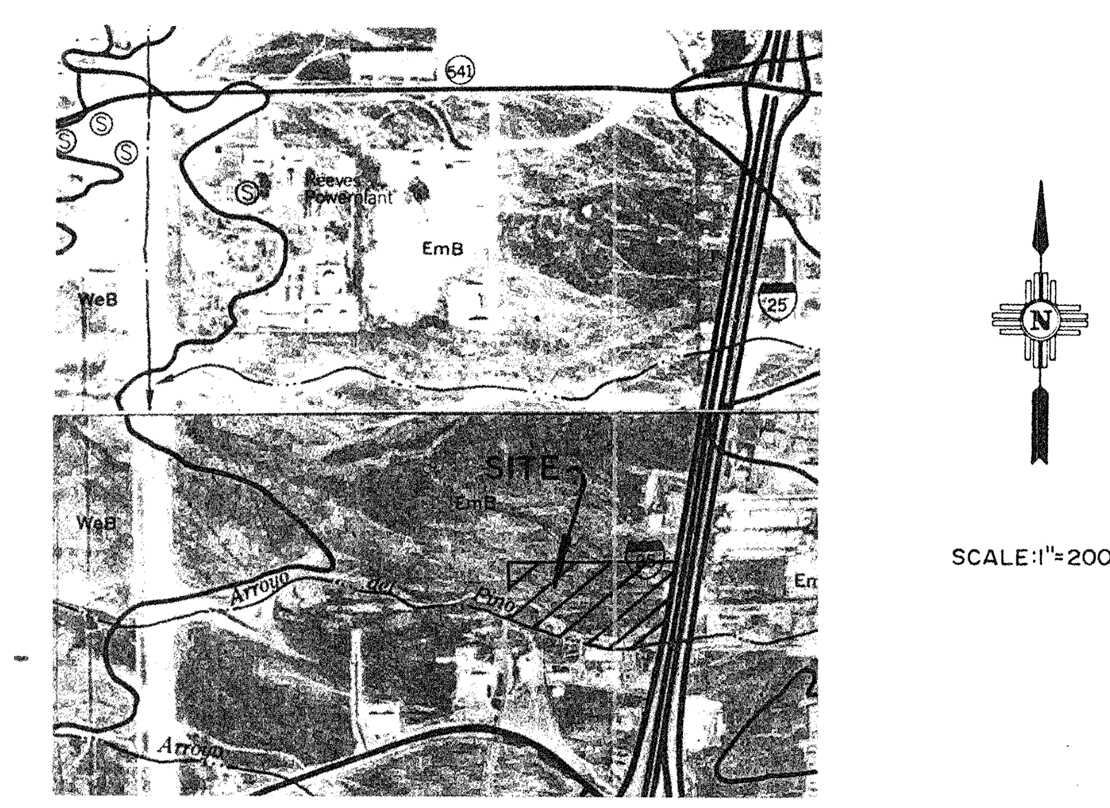
VICINITY MAP ZONE ATLAS MAP NO. D-17-Z & E-17-Z

FLOOD HAZARD MAP & OFFSITE FLOWS FROM F.E.M.A. MAP NO. 16 & 9 OF 50



SCALE: 1" = 500'

SOILS MAP FROM SOIL SURVEY, BERN. CO. U.S.D.A., S.C.S. NO. 21 & 11



SCALE: 1" = 2000'

HYDROLOGY

	A.P. #	D.A. AC.	H. FT	S FT/FT	L FT.	Tc MIN.	SOIL TYPE	% IMP	C.N	C	P_2 IN	P_{10} IN	P_{100} IN	I_2 IN./HR	I_{10} IN./HR	I_{100} IN./HR	VOL.2 C.F.	VOL 10 C.F.	VOL.100 C.F.	Q_2 C.F.S.	Q_{10} C.F.S	Q_{100} C.F.S.
EXISTING (sum all areas)		11.49	23	0.0256	900	10 *1	B	0	70	0.40	0.979	1.445	2.200	2.056	3.150	4.796	0	2,920	13,346	9.45	14.47	22.04
	4B-1	1.497	13	0.0295	440			100 *2	98	0.95							4,293	6,684	10,705	2.92	4.48	6.82
	4B-2	1.110	15	0.0326	4.60												3,183	4,961	7,945	2.17	3.32	5.06
	4B-3	1.978	10	0.0156	640												5,672	8,832	14,145	3.86	5.92	9.01
	4B-4	2.049	7.5	0.0134	560												5,876	9,149	14,653	4.00	6.13	9.33
	4C-1	4.858	23'	0.0256	900												13,931	21,690	34,740	9.49	14.53	22.13

*1 - TC = 10 MIN. USED IN ANALYSIS (CALCULATED TC > 10 MIN.)
*2 - ASSUME WORST CASE AND ANALYZE ALL AREAS AS 100% IMPERVIOUS (i.e. PAVED)

SOILS INFORMATION FROM SOIL SURVEY, BERNALILLO CO. U.S.D.A., S.C.S.

SOIL SERIES AND MAP SYMBOLS	DEGREE AND KIND OF LIMITATIONS FOR: SEPTIC TANK ABSORPTION FIELDS	SEWAGE LAGOONS	SHALLOW EXCAVATIONS	DWELLINGS WITHOUT BASEMENTS	SANITARY LANDFILL (TRENCH TYPE)	LOCAL ROAD AND STREETS	SUITABILITY AS SOURCE OF —: ROAD FILL	SAND	GRAVEL	TOPSOIL	SOIL FEATURES AFFECTING —: POND RESERVOIR AREAS	DIKES, LEVEES, AND OTHER EMBANKMENTS	HYDROLOGIC SOIL GROUP
*Embudo: EmB, EtC. For Tijeras part of EtC, see Tijeras series.	Slight [2]	Severe: seepage.	Moderate: [2] small stones.	Slight [3]	Severe: seepage.	Slight	Good	Poor: excess fines.	Poor: excess fines.	Poor: small stones.	Seepage	Piping; compressible	B

EmB—Embudo gravelly fine sandy loam, 0 to 5 percent slopes. This level to gently sloping soil is on the East Mesa. It has the profile described as representative of the series. Included in mapping are areas around Central Avenue and Tramway Road in Albuquerque where the surface layer is thick and slightly darker than is typical and the substratum is limy and cobbly. Also included are areas of Tijeras, Millett, and Tesajo soils.
Runoff is medium, and the hazard of water erosion is moderate.

This soil is used for watershed, wildlife habitat, community development, and range. It is subject to periodic flooding. Control of moisture is needed for proper compaction. Dryland capability subclass VIIe; native plant community 4.

NO.	REVISIONS	BY	DATE

INTERSTATE INDUSTRIAL TRACT
UNIT 5 - TRACTS 4A, 4B & 4C
CONCEPTUAL GRADING & DRAINAGE PLAN

REV. 1/12/87

DOUGLAS W. COPELAND NEW MEXICO 9438 REGISTERED PROFESSIONAL ENGINEER

EASTERLING & ASSOCIATES, INC.
CONSULTING ENGINEERS
5643 Paradise Blvd. N.W.
Albuquerque, New Mexico 87114

Designed: DWC Drawn: BRG Checked: DLS Sheet 1 of 2

Job No: 503507 Date: DEC. 1986

NO.	REVISIONS	BY	DATE

INTERSTATE INDUSTRIAL TRACT
UNIT 5-TRACTS 4A, 4B & 4C
CONCEPTUAL GRADING & DRAINAGE PLAN
DRB-86-808

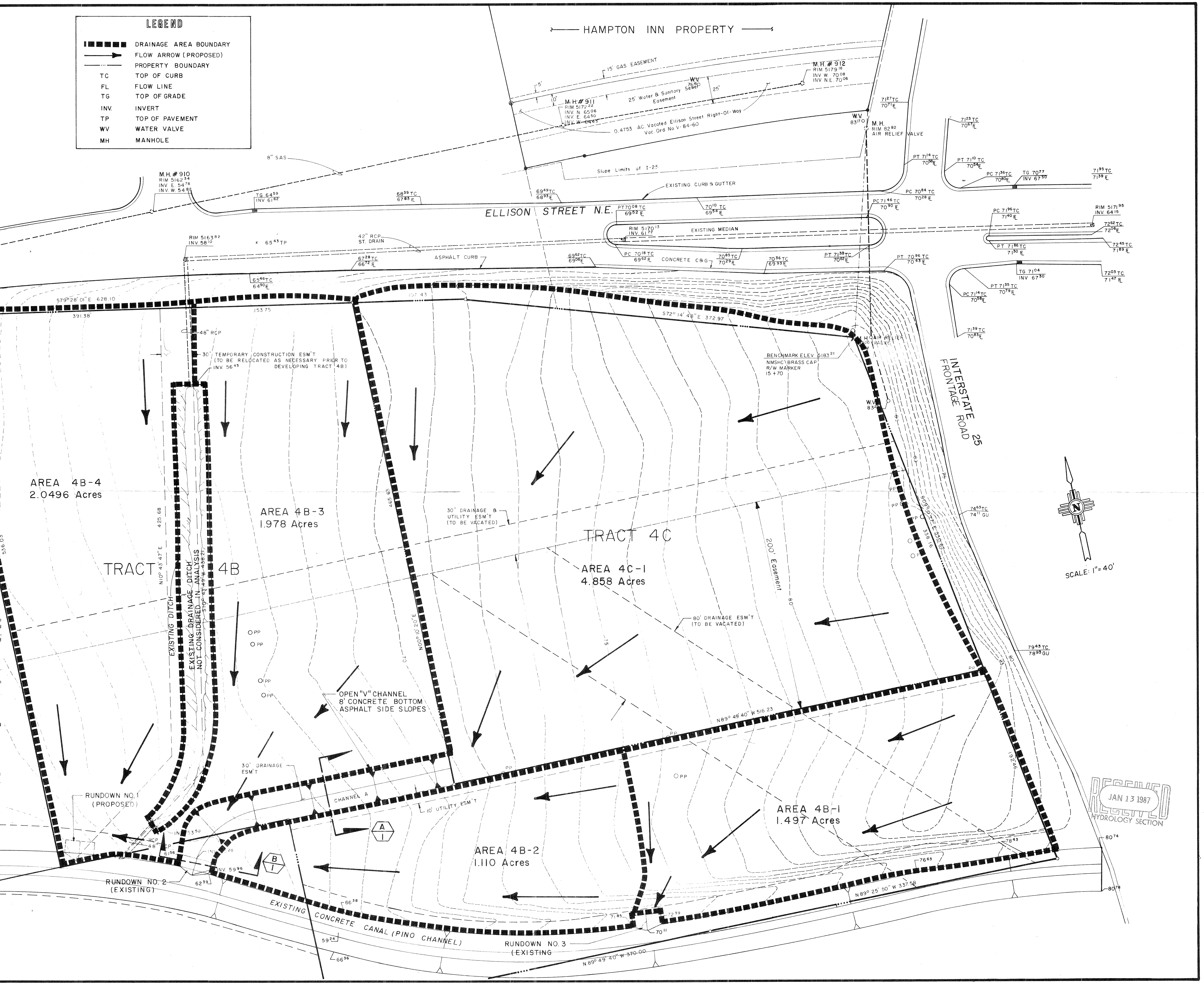
Rev. 1/12/87

EASTERLING & ASSOCIATES, INC.
CONSULTING ENGINEERS
5643 Paradise Blvd. N.W.
Albuquerque, New Mexico 87114
DOUGLAS W. COPELAND, NEW MEXICO REGISTERED PROFESSIONAL ENGINEER

Designed DWC	Drawn BRG	Checked DLS	Sheet 2
Job No. 503507	Date DEC. 1986		of 2

LEGEND

▪▪▪▪	DRAINAGE AREA BOUNDARY
→	FLOW ARROW (PROPOSED)
—	PROPERTY BOUNDARY
TC	TOP OF CURB
FL	FLOW LINE
TG	TOP OF GRADE
INV.	INVERT
TP	TOP OF PAVEMENT
WV	WATER VALVE
MH	MANHOLE



HAMPTON INN PROPERTY
15' GAS EASEMENT
M.H.# 912
M.H.# 911
25' Water & Sanitary Sewer Easement
0.4753 AC. Vacated Ellison Street Right-Of-Way Vac. Ord No. V-84-60
Slope Limits of I-25
EXISTING CURB & GUTTER
ELLISON STREET N.E.
EXISTING MEDIAN
AIR RELIEF VALVE
M.H.# 910
M.H.# 909
42" RCP ST. DRAIN
ASPHALT CURB
CONCRETE C&G
48" RCP
30' TEMPORARY CONSTRUCTION ESM'T (TO BE RELOCATED AS NECESSARY PRIOR TO DEVELOPING TRACT 4B)
BENCHMARK ELEV 5183.21 NMSHC BRASS CAP R/W MARKER 15+70
INTERSTATE 25 FRONTAGE ROAD
AREA 4B-4 2.0496 Acres
AREA 4B-3 1.978 Acres
TRACT 4B
EXISTING DITCH
EXISTING DRAINAGE DITCH NOT CONSIDERED IN ANALYSIS
30' DRAINAGE & UTILITY ESM'T (TO BE VACATED)
TRACT 4C
AREA 4C-1 4.858 Acres
200' Easement
80' DRAINAGE ESM'T (TO BE VACATED)
OPEN "V" CHANNEL 8' CONCRETE BOTTOM ASPHALT SIDE SLOPES
30' DRAINAGE ESM'T
CHANNEL A
10' UTILITY ESM'T
RUNDOWN NO. 1 (PROPOSED)
RUNDOWN NO. 2 (EXISTING)
RUNDOWN NO. 3 (EXISTING
AREA 4B-2 1.110 Acres
AREA 4B-1 1.497 Acres
EXISTING CONCRETE CANAL (PINO CHANNEL)
SCALE: 1"=40'
RECEIVED JAN 13 1987 HYDROLOGY SECTION

ASSUME:

1. AREAS 4B-1,2,3,&4 AND 4C-1 TO BE PAVED (100% IMPERVIOUS) TO SIMULATE WORST CASE.
2. ALL SITES TO BE GRADED TO DRAIN AS INDICATED BY FLOW DIRECTION ARROWS.

TRACT 4A

TOPOGRAPHY DATA NOT GATHERED. PROPERTY SLOPES DOWN @ 1-2% EAST TO WEST. MULTIPLE GRADING AND DRAINING OPPORTUNITIES AVAILABLE. NO INFRASTRUCTURE IMPROVEMENTS NECESSARY PRIOR TO SUBDIVISION PLAT APPROVAL.

LEGAL DESCRIPTION

A certain tract of land in Sections 23 and 24, T11N, R4E, within the Elena Gallegos Grant, Bernalillo County, New Mexico, said tract being identical to TRACT 4, as the same TRACT 4 is shown and designated on the plat Interstate Industrial Tract Unit V, filed in the office of the County Clerk of Bernalillo County, New Mexico on August 5, 1977, and being more particularly described by said plat bearings and ground distances as follows:

BEGINNING at the southwest corner of the tract herein described; thence,
N00°03'20"W, 534.18 feet along the east right-of-way of Jefferson Street to a point of curvature; thence,
39.37 feet along the arc of a curve to the right having a radius of 25.00 feet and a chord bearing
N45°03'30"E, 35.43 feet to a point of tangency; thence, S89°49'40"E, 1138.13 feet along the south right-of-way of Ellison Street to a point of curvature; thence,
432.40 feet along the arc of a curve to the right having a radius of 2412.45 feet and a chord bearing
S84°41'35"E, 431.82 feet to a point of tangency; thence,
S79°33'30"E, 49.97 feet to a point of curvature; thence,
78.54 feet along the arc of a curve to the right having a radius of 50.00 feet and a chord bearing
S34°33'30"E, 70.71 feet to a point on the westerly right-of-way of Interstate 25, thence continuing along Interstate 25, S10°26'30"W, 66.56 feet to a point; thence,
S10°52'40"W, 164.36 feet to a point; thence,
N83°39'50"W, 7.78 feet to a point; thence,
S13°09'30"W, 133.42 feet to a point; thence,
S13°33'18"W, 244.53 feet to a point; thence,
N81°06'52"W, 32.61 feet to a point; thence,
S10°18'28"W, 55.49 feet to the southeast corner of the tract herein described, thence continuing along the southerly boundary of the tract herein described, N89°25'50"W, 371.10 feet to a point; thence,
N89°49'40"W, 370.00 feet to a point; thence,
N00°03'20"W, 187.56 feet to a point; thence,
N89°49'40"W, 760.00 feet to the point and place of beginning.

Tract contains 24.2459 acres, more or less.