HYDROLOGY M15/D4A 6 PLANS 1 of 2

M15/D4A

Le Plans

CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO

MIS-08

INTER-OFFICE CORRESPONDENCE January 4, 1982 REF. NO._____

TO: Lenora Chavez, Master Scheduler

FROM: Brian G. Burnett, Civil Engineer/Hydrology BGB

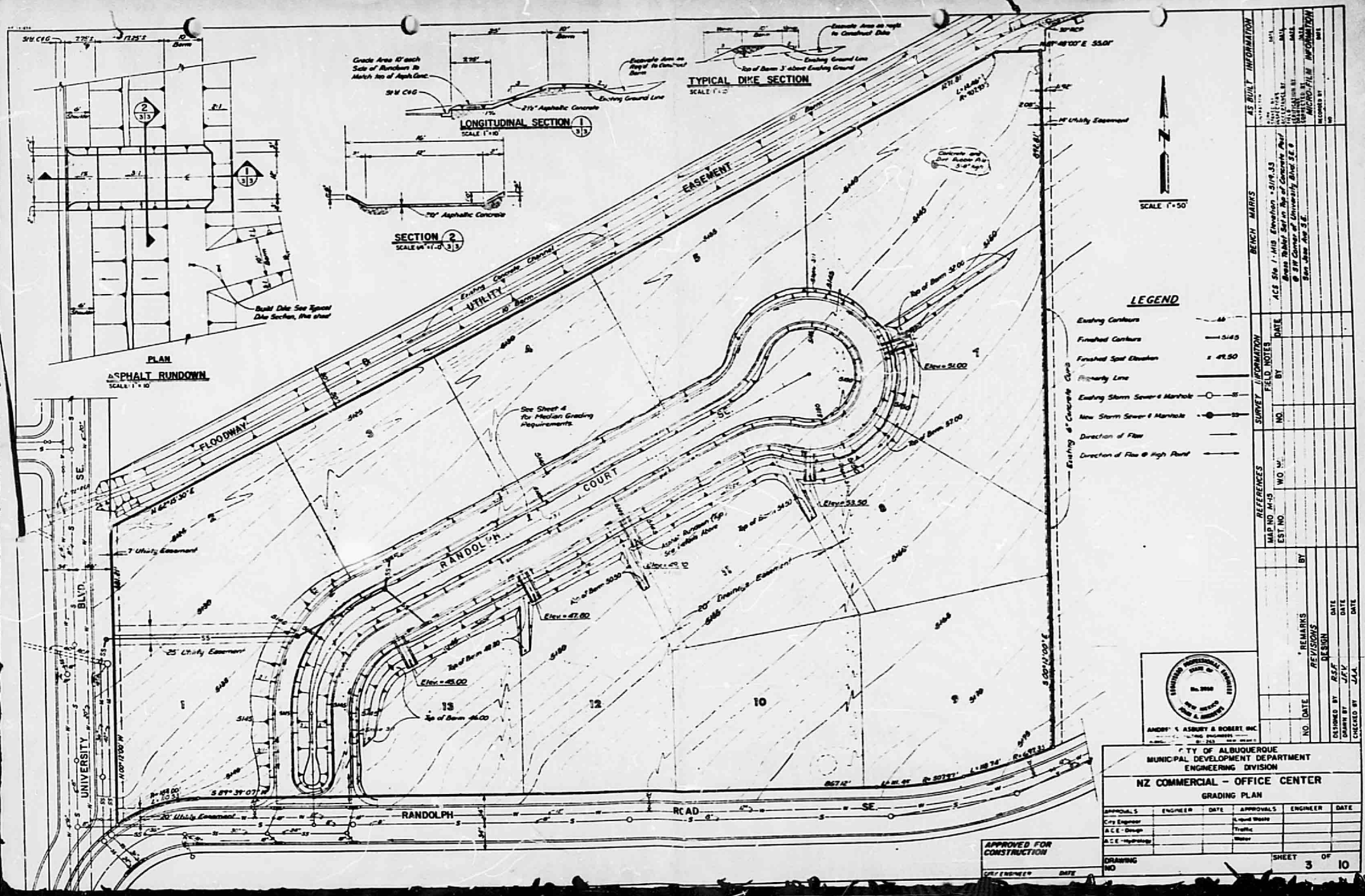
SUBJECT: HYDROLOGY COMMENTS FOR NZ COMMERCIAL SITE CONSTRUCTION PLANS

1. Concrete rundowns should be used in lieu of the proposed asphalt structures. This office feels that for permanent facilities concrete is more durable and requires less maintenance. (See City Specs. Dwg. K-10)

2. The approved drainage report calls for small sedimentation basins as a means of erosion control. In addition to these basins, we request that if the entire site is to be graded and construction on a particular lot does not begin within 30 days, the enclosed erosion control plan be implemented. The plan should be indicated on the construction drawings. This added measure assures that sediment remains out of the street and storm sewer system.

3. The drainage report did not indicate the location of the rundowns. The structures for lots 11 and 8 are not contained within the 20 ft. drainage easement. What type of conveyance channel is to be used in the easement and can the channel be connected to the rundown and remain within the easement boundaries? The berms may have to be centered along the property line to insure that all runoff conveyance can take place in the easement.

BGB/tsl


PLAN
ASPHALT RUNDOWN
SCALE: 1" = 10'
LONGITUDINAL SECTION
SCALE 1" = 10'
SECTION
TYPICAL DIKE SECTION
SCALE 1" = 50'
LEGEND
Existing Contours
Finished Contours
Finished Spot Elevation
Property Line
Existing Storm Sewer & Manhole
New Storm Sewer & Manhole
Direction of Flow
Direction of Flow @ High Point
FLOODWAY
EASEMENT
UTILITY
RANDOLPH
COURT
RANDOLPH
ROAD
SE.
UNIVERSITY
BLVD.
See Sheet 4 for Median Grading Requirements
Existing 6" Concrete Curb
7' Utility Easement
25' Utility Easement
20' Utility Easement
20' Drainage Easement
Elev. = 51.00
Elev. = 53.50
Elev. = 47.00
Elev. = 45.00
Top of Berm 57.00
Top of Berm 57.00
Top of Berm 50.50
Top of Berm 48.50
Top of Berm 46.00
Asphalt Rundown (Typ.) See Details Above
Concrete and Curb Rubble Pile 3-4' high
AS BUILT INFORMATION
BENCH MARKS
SURVEY INFORMATION
FIELD NOTES
REFERENCES
MAP NO. M-13
EST NO.
WO NO.
REMARKS
REVISIONS
DESIGN
DESIGNED BY R.S.F.
DRAWN BY J.F.V.
CHECKED BY J.A.A.
ANDREW S. ASBURY & ROBERT INC.
CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION
NZ COMMERCIAL - OFFICE CENTER
GRADING PLAN
APPROVALS
ENGINEER
DATE
City Engineer
A.C.E. - Design
A.C.E. - Hydrology
Liquid Waste
Traffic
Water
DRAWING NO
SHEET 3 OF 10
APPROVED FOR CONSTRUCTION
CITY ENGINEER
DATE

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

M15 - D4A

November 16, 1981

Mr. John Roberts
Andrews, Asbury & Robert
401 San Pedro Dr. N.E.
Albuquerque, N.M. 87108

RE: NZ COMMERCIAL MASTERPLAN DRAINAGE REPORT

Dear John:

The referenced drainage report is approved based on your submittal of November 13, 1981. Be advised that each site developer must submit drainage and grading plans in substantial compliance with the approved master plan.

Very truly yours,

Brian G. Burnett
Civil Engineer/Hydrology

BGB/tal

ANDREWS, ASBURY & ROBERT, INC.
Consulting Engineers
401 San Pedro, NE, Albuquerque, New Mexico 87108
(505) 265-6631

John A. Andrews, P.E.
Charles T. Asbury, P.E.
John B. Robert, P.E. & L.S.

November 13, 1981

Mr. Brian Burnett
City of Albuquerque
Post Office Box 1293
Albuquerque, New Mexico 87103

SUBJECT: DRAINAGE REPORT - NZ COMMERCIAL-OFFICE CENTER

Dear Mr. Burnett:

Pursuant to our conversation this morning, we have prepared a supplemental drainage report for the NZ Commercial-Office Center in which we have indicated the method and the responsibility of the individual land owners to handle their drainage problems at the time of development.

The restrictive covenants I handed you today should be placed in your Drainage - Development file and become a part of the development plan.

Your early approval letter which we need to incorporate as a part of the construction plan submittal will be greatly appreciated.

Very truly yours,

John B. Robert

JOHN B. ROBERT. P.E. & L.S.

JBRmt

Enclosure

ADDENDUM NO. 1

DRAINAGE REPORT

FOR

NZ COMMERCIAL-OFFICE CENTER

November 13, 1981

In the developed state the individual lots within NZ Commercial-Office Center Subdivision shall discharge storm water runoff as follows:

Lot 1 - Direct discharge to University Boulevard N.E., through sidewalk drain or other such device.

Lot 2 - Direct discharge to existing 60' floodway and utility easement through a pipe or concrete side channel inlet

Lot 3 - Same as Lot 2

Lot 4 - Same as Lot 2

Lot 5 - Same as Lot 2

Lot 6 - Same as Lot 2

Lot 7 - Direct discharge to cul de sac (Randolph Court S.E.) through a sidewalk drain or drive pad.

Lot 8 - Same as Lot 7

Lot 9 - Indirect discharge to cul d sac through a private 20' drainage easement permanently assigned to Lot 8 by means of a pipe or lined channel. Maintenance of the facility will be permanently assigned to Lot 9.

Lot 10 - Indirect discharge to cul de sac through 20' drainage easement permanently assigned to Lot 11. Maintenance of the facility will be permaently assigned to Lot 10.

Lot 11 - Same as Lot 7

Lot 12 - Same as Lot 7

Lot 13 - Same as Lot 7

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Lot 12 - Same as Lot 7

Lot 13 - Same as Lot 7

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

DRAINAGE REPORT INFORMATION SHEET

PROJECT TITLE NZ COMMERCIAL OFFICE CENTER

ZONE ATLAS PAGE NO. M-15 CITY ADDRESS 1701 Randolph Road S.E.

LEGAL ADDRESS TRACT 3, NEWPORT INDUSTRIAL PARK-WEST, UNIT 1

ENGINEERING FIRM ANDREWS, ASBURY & ROBERT, INC. CONTACT John Robert

ADDRESS 401 San Pedro NE PHONE 265-6631

OWNER NZ LAND COMPANY CONTACT W. M. Kelley

ADDRESS 1614 E. Indian School Road Phoenix, Arizona 85016 PHONE 602/266-5455

~~ARCHITECT~~/SURVEYOR Andrews, Asbury & Robert, Inc. CONTACT Gayle Jewell

ADDRESS 401 San Pedro N.E. PHONE 265-6631

DATE SUBMITTED October 23, 1981

BY ANDREWS, ASBURY & ROBERT, INC.

DECLARATION OF RESTRICTIONS
NZ COMMERCIAL-OFFICE CENTER

This declaration made this _____ day of _ _____, 1981, by NZ DEVELOPMENT CORPORATION, an Arizona corporation, being the owner in fee, herein referred to as "Declarant" or "Developer".

WITNESSETH:

WHEREAS, Declarant is the owner of the real property set forth and described in that certain plat entitled NZ Commercial-Office Center, a subdivision of Bernalillo County, New Mexico, which plat is recorded in the records of Bernalillo County, New Mexico, a copy of which is attached hereto, and

WHEREAS, the real property described in the plat has been subdivided into numbered parcels identified on the plat as lots, and

WHEREAS, Declarant is about to sell and convey certain of said lots and, before doing so, desires to subject and impose upon said lots mutual and beneficial restrictions, covenants, conditions, development standards and charges, hereinafter collectively referred to as "Restrictions", under a general plan of improvement for the benefit and complement of said lots and the future owners of said lots;

NOW, THEREFORE, Declarant hereby declares for and on behalf of itself and subsequent owners that all lots within NZ Commercial-Office Center are held and shall be acquired, held, conveyed, hypothecated or encumbered, leased, rented, used, occupied and improved subject to the following Restrictions, all of which are declared and agreed to be in furtherance of a plan for the subdivision, improvement and sale of said lots and are established and agreed upon for the purpose of enhancing and protecting the value, desirability and attractiveness of the said lots and of the Center as a whole. All of the Restrictions shall run with the land and shall be binding upon all parties having or acquiring any right, title or interest in and to the real property or any part of parts thereof subject to such other instrument by which title to a lot is acquired.

ARTICLE I
TERM; PURPOSE; PROPERTY OWNERS ASSOCIATION

1.01. APPLICABILITY. These Restrictions shall apply to Lots 1 - 13 inclusive.

1.02. TERM. These Restrictions shall affect and run with the land and shall exist and be binding upon all owners and all persons claiming under them for a period of twenty (20) years after which time the same shall be extended for successive

periods of ten (10) years each, unless an instrument of cancellation signed by the owners of not less than sixty percent (60%) of the lots has been recorded.

1.03. AMENDMENT. During the first twenty (20) years of the term hereof, the Declaration may be amended by an instrument signed by the owners of not less than seventy-five percent (75%) of the lots. After the expiration of the first twenty (20) years of the term hereof, the Declaration may be amended by an instrument signed by the owners of not less than sixty percent (60%) of the lots. Any amendment must be recorded to be valid.

1.04. DEVELOPMENT CONTROL COMMITTEE. A Development Control Committee is established to perform the functions set forth in these Restrictive Covenants. Each Owner will be a member of the Control Committee; each corporate Owner will designate an officer as its representative on the Control Committee. Until over 50% of the property is owned by other than NZ Development Corporation, NZ Development Corporation will have two members on the Control Committee, one member until all of the property is sold, and none thereafter. An Owner may transfer to the lessee of any of the Owner's property the right to be a member of the Control Committee and to vote the leased acreage for Control Committee action. A majority in interest of percentage ownership of the Property will be the decision of the Control Committee. Any matter submitted to the Control Committee for approval must be approved or denied and the applicant notified within thirty (30) days after submission. Any matter submitted and not approved or denied with notification within the thirty (30) days will be deemed approved and equal to written approval. Written approval by the Control Committee shall be proof of compliance with these covenants.

ARTICLE II
PERMITTED USES

2.01. INTENT OF USE. It is the intent of this section to allow offices, service industries, and light commercial or industrial uses which do not cause smoke, soot, dust, fumes or other gases, noise or vibration to be exhausted or emitted into the air beyond the industrial premises wherein such use is located, or such uses which are not detrimental because of latent explosion danger or from radiation, or do not endanger surrounding neighborhoods.

2.02. USE OF PREMISES. All light manufacturing activities are to be confined within a building or buildings, except that minor ancillary activities associated with the manufacturing process may be located outside a building provided screening requirements, as set forth in this document, are observed.

2.03. EXTERIOR EQUIPMENT. Testing facilities may be located outside of a building, provided it can be demonstrated that it is in the interest of safety or health of employees and

that screening requirements are observed.

2.04. CARETAKER QUARTERS. Living quarters may be included in the building site development but only for occupancy by the family of a caretaker or operator employed on the premise.

2.05. COMMERCIAL USE. Any commercial uses made of the properties under this section must be in accordance with the Albuquerque Zoning Ordinance then in effect for Industrial Parks.

2.06. SERVICE INDUSTRIES. Service industries allowed are those industries providing a service as opposed to the manufacture of a specific product, such as repair and maintenance of appliances, tooling, printers, small machine shops, testing shops, and the repair, maintenance and servicing of items, excluding automobile repair or auto body shops.

2.07. BUSINESS BUILDINGS. Administrative, professional and business offices as allowed by Albuquerque Zoning Ordinance are permitted.

2.08. DEVELOPMENT STANDARDS. All uses listed hereunder are subject to the Development Standards listed under Article III.

2.09. USES NOT PERMITTED. The following uses will not be permitted, even though allowed by the Albuquerque Zoning Ordinance:

- Any use not allowed by Albuquerque Building Department
- Plating Shops
- Sheet Metal Fabrication
- Building Construction Equipment and Material Storage
- Butane Distributors
- Paint and Varnish Bulk Warehouse Storage
- Motor Repairing and Rewinding
- Motor Freight Company Warehouse
- Radio Transmitter Towers
- Meat Packing, or Smoking, or Processing
- Welding Shops
- Transfer Company-Trucking Terminal
- Any use reasonably determined by Developer to be detrimental to other property owners or contrary to the general plan of development for which these restrictions are declared.

ARTICLE III
DEVELOPMENT STANDARDS

3.01. CONSTRUCTION GUIDELINES. Absolutely no

construction or development may proceed on any lot in this subdivision until all the following applicable procedures have been complied with and approval in writing from the Development Committee has been issued. Approval within these guidelines will not be unreasonably withheld.

3.02. TYPES OF CONSTRUCTION. All buildings, except caretaker's quarter, must be constructed of reinforced concrete or masonry walls, or other materials approved by Development Committee. No trailer-type mobile modular units shall at any time be used except during contstruction of approved developments.

3.03. EXTERIOR DESIGN. No part of the roof may project above the parapet, except where such slope is a convincing aspect of the building design. All exterior wall elevations of buildings facing streets shall have approved architectural treatment.

3.04. APPROVAL OF PLANS. Two sets of plans are to be submitted to the Development Committee, c/o NZ Development Corporation, 1614 East Indian School Road, Phoenix, Arizona 85016. One set will be returned with comments.

ARTICLE IV
DESIGN GUIDELINES

4.01. BUILDING SITE COVERAGE. Maximum building coverage of fifty percent (50%) is allowed. Parking shelters shall not be calculated as building area.

4.02. FENCED ENCLOSURE. All exterior storage areas and service yards, loading docks and ramps, electrical cage enclosures and storage tanks are to be screened from view from access streets, and adjacent properties by a fence, wall or mature landscaping.

4.03. COLOR COORDINATION. Colors, materials and finishes are to be coordinated on all exterior elevations of the buildings to achieve total continuity of design.

4.04. EXTERIOR LIGHTING. Parking lot lighting fixtures, if used, are to have a maximum height of sixteen (16) feet. Walkway lighting fixtures are to have a maximum height of twelve (12) feet. Security lighting fixtures are not to project above the fascia or roof line of the building and are to be shielded from direct street view. Shields shall be painted to match the surface to which attached.

4.05. ROOF MOUNTED EQUIPMENT. All roof mounted equipment projecting more than two feet above the roof is not to extend more than six inches above a wall parapet or is to be screened by an enclosure which is to be designed and painted consistent with building. All roof mounted equipment and ventilators not screened shall be painted consistent with the

color scheme of the building.

4.06. WALL MOUNTED EQUIPMENT. No mechanical equipment is to be exposed on the front or side wall surface of a building.

4.07. MISCELLANEOUS EQUIPMENT. Gutters and downspouts are to be painted to match the surface to which attached unless used as a major design element.

Roof mounted ventilators are to be a maximum of two feet above point where attached and painted or prefinished with the color scheme of the building.

Vents, louvers, flashings, tanks, stacks, overhead doors or other similar items are to be painted consistent with the color scheme of the building.

4.08. CARETAKER QUARTERS. If attached to the building, such facility shall be of consistent design and construction as the building.

If detached, such facility may be of such design and materials as is appropriate but must be coordinated into the overall site design of the premises. Approved mobile modular units, not less than ten (10) feet wide, are allowed; however, travel-trailer type units shall not be acceptable.

4.09. PARKING - GENERAL. Adequate off-street parking shall be provided to accomodate all parking needs for the site. The intent is to eliminate the need for any on-street parking. Parking areas and maneuvering areas for access thereto may not be located in the required front yard. All driveways and parking areas must be paved with concrete or hot asphalt paving. So-called "armor coat" topping will not be approved. Parking facilities need not be located in one consolidated area of a particular site, but may be separated by landscaping and building elements; however, size of spaces, drives and aisle widths, etc., must conform to the minimum established requirements of the Albuquerque Zoning Ordinance.

4.10. PARKING - SPACE CALCULATIONS. The following is a guide to determine minimum parking requirements; however, in addition, requirements of any governmental regulations shall be adhered to.

Office Buildings -
One space per 200 square feet of gross area

Commercial Use -
Same as offices

Manufacturing Plant -
Two spaces for each three employees but in no case less than one space for each 500 feet of gross floor area plus one space for each vehicle operated from and stored at the subject site.

Warehouses -
Two spaces for each three employees but in no

case less than one space for each 1,000 square feet of gross floor area for the first 20,000 square feet additional gross floor area.

Parking - Doubles Shifts
If there is more than one shift, the number of employees on the largest shift shall be used in determining the parking requirements, plus 25% of the greater of the preceding or following shift requirements.
Parking - Mixed Uses
In case of mixed uses, the total requirement shall be the sum of the requirements of the various uses computed separately and the off-street parking spaces for one use shall not be considered as providing the required off-street parking for any other use.

Parking Shelter Structures
Canopy or shade type open parking structures
where permitted by Albuquerque Code, may be installed in approved parking areas; however, such structures may not be located nearer a street than the allowed building line; and said shelters shall be used only for the parking of company vehicles and employee's or visitor's vehicles.

4.11. LOADING AREAS. Truck loading and unloading areas shall be designed and maintained so as to not needlessly detract from the premises. Proper space shall be provided for all truck vehicles to maneuver within premises and only drive forward when entering or leaving premises. All loading shall be from the rear or side not fronting on a dedicated street. Loading areas shall be screened from view or, at a minimum, have the view from streets adjacent to said loading areas broken up, utilizing landscaping and/or fencing material.

4.12. STORAGE AREAS. No storage shall be permitted between a frontage street and the building line. All outdoor storage shall be visually screened from access streets and adjoining property. Said screening shall form a complete opaque screen up to eight (8) feet in height. No products, stored merchandise or racks shall extend above the fence height. All company owned and operated motor vehicles and equipment, with exception of passenger vehicles, shall be stored in an approved and screened outdoor storage area.

4.13. REFUSE HANDLING REQUIREMENTS. All refuse shall be accumulated in an approved container provided by licensed refuse services. No refuse collection area shall be permitted between frontage street and the building line. All outdoor refuse collection areas shall be visually screened from access streets, freeways and adjoining property by a complete opaque screen.

4.14. UTILITY SERVICE LINES. All electric power and telephone service lines into a building shall be underground.

4.15. NUISANCES. No portion of the property shall be used in such a manner as to create a nuisance to adjacent sites, such as, but not limited to, vibration, sound, electromechanical

disturbances, r. .ation, electromagnetic d urbances, air and water pollution, dust, and emission of odorous, toxic or noxious matter.

ARTICLE V
LANDSCAPING

5.01. GENERAL LANDSCAPING GUIDELINES. It is the objective of the landscaping guidelines to integrate the physical architectural element with the streetscape requirements of master plan, and to visually screen undesirable elements such as parking, storage, loading, refuse collection and similar areas from view of access streets, freeways and adjacent properties.

5.02. GENERAL CRITERIA. A framework of landscaping element has been conceived for the park based upon a total design concept. Individual expression, as related to the landscape design of each site, is encouraged and will be based upon the following criteria:

(a) Landscape elements shall be of the "long lived" variety. Short lived materials are to be utilized only as a supplement to longer lived elements.

(b) Landscape elements shall relate to architectural design elements and should reflect the physical functional and esthetic qualities of the site.

(c) Simple palettes of material in simple compositions are recommended to achieve park-like design quality.

(d) Expansive horizontal and vertical surfaces comprised of singular materials of buildings or walls shall be modulated or interrupted by foliage masses.

(e) Trees, both lines and masses, shall be utilized to enclose and subdivide exterior spaces relative to individual sites.

(f) Complete landscape and sprinkler plans are required for plan review.

5.03. FRONT YARD AND STREET SIDE YARD. The front yard is considered to consist of the entire area between the face of curb and the building line (includes street side yard of corner lots). Front yard landscaping shall consist of the following:

A. Street trees and lawn areas and planting around buildings.

B. Screening of areas utilized for parking, storage and loading from view of access streets through means of screening, modulating or interrupting by one of the following techniques:

(a) Lineal masses of shrubs, using shrubs that will achieve a height of 4 to 6 feet within three years. Minimum planting size of 5 gallon plants.

(b) Lineal or grouped masses of major scale trees, requiring use of trees that

shall ultimately provide foliage that is visible above the roof line from within the total site.

(c) Lineal or grouped masses of smaller trees, requiring use of trees that shall ultimately provide foliage or shade patterns on either horizontal or vertical planes.

C. Property line trees using the equivalent of one tree per each 30 lineal feet of interior property line. Minimum size of 5 gallon at planting.

D. Parking lot trees equal in number to one per each ten car stalls. Minimum size 5 gallon at planting.

E. Ground cover shall be planted on all unpaved areas within parking and water retention areas.

F. Where desert type landscaping is desired, there shall be a minimum of 15 feet of green-type landscaping adjoining the street curb. The 15 feet may be of average or sculptural design line and may be grass or ground cover.

G. All vacant or undeveloped lots and expansion areas for future development shall be kept in a weed free condition. The 15-foot wide area adjoining streets may be required to be planted with appropriate ornamentals, trees or ground cover.

5.04. SIDE AND REAR YARDS.

A. Trees or grouping of large shrubs shall be planted adjacent to structures on site where needed to break up the wall lines. There shall be a minimum of one tree for each 30 feet of combined rear and both side wall dimensions. Minimum planting size of 5 gallon at planting.

B. Landscaping for screening, property line trees, parking lot trees, and expansion areas shall have same standards as for front yards.

ARTICLE VI
SIGNS

6.01. GENERAL SIGN CRITERIA. All signing shall be in accord with the Albuquerque Zoning Ordinance as it shall then be in effect. In addition to said zoning regulations, certain criteria are hereafter set forth and shall apply to all building development.

6.02. SPECIAL PURPOSE SIGNS. Only one single-faced or double-faced identification sign shall be permitted per street frontage for such development as shopping center, office buildings, and multiple tenant industrial developments. This sign shall identify the name of the building complex or a major tenant.

6.03. IDENTIFICATION GROUND SIGNS. All identification ground signs shall not exceed four feet above grade in vertical height. Also, such ground signs shall not be erected in the first four feet as measured from the property line of any street

front or side setback area.

6.04. IDENTIFICATION WALL SIGNS. Such wall signs shall not comprise more than ten percent (10%) of the area of the elevation upon which the sign is located. Said signs shall be fixture signs; signs painted directly on the surface of the wall shall not be permitted. No sign shall extend above the roof or parapet wall.

In the instance of a multiple tenancy building, each individual tenant may have a wall sign near the entrance to identify the tenant. Said sign area shall be limited to a total of twenty (20) square feet, and signs shall be designed to concept established by the Development Committee.

6.05. MULTI-TENANCY DIRECTORY SIGN. One directory sign listing only the names of the on-site firms or businesses will be allowed per site. Said sign shall be located even with or in back of the required building setback line and shall be located in the parking area or on any access drive to the parking area. This sign shall be limited to four feet high and eight feet wide set not to exceed six-foot maximum height. This sign may be double-faced and shall be in addition to identification signs allowed hereunder.

6.06. REAL ESTATE SIGNS. For individual sites for sale or resale or for lease, the Albuquerque Zoning Ordinance restriction shall apply; except that no individual signs for such use shall exceed six square feet.

ARTICLE VII
GRANTEE'S ACCEPTANCE

The Grantee of any lot subject to the coverage of this Declaration, by acceptance of a deed conveying title thereto or the execution of a contract for the purchase thereof, whether from Declarant or a subsequent owner of such lot, shall accept such deed or contract upon and subject to each and all of these Restrictions and the agreements herein contained, and also the jurisdiction, rights and powers of Declarant and, by such acceptance, shall for himself, his heirs, personal representatives, successors and assigns covenant, consent and agree to and with Declarant and to and with the grantees and subsequent owners of each of the applicable lots within the Park to keep, observe, comply with and perform said Restrictions and agreements.

ARTICLE VIII
SEVERABILITY

Every one of the Restrictions is hereby declared to be independent of and severable from the rest of the Restrictions, and of and from every other one of the Restrictions, and of and from every combination of the Restrictions. Therefore, if any of

the Restrictions shall be held to be invalid or to be unenforceable or to lack the quality of running with the land, that holding shall be without effect upon the validity, enforceability or "running" quality of any other one of the Restrictions.

ARTICLE IX
CAPTIONS

The capitalized captions preceding the various paragraphs and subparagraphs of these Restrictions are for the convenience of reference only and none of them shall be used as an aid to the construction of any provision of the Restrictions. Wherever and whenever applicable, the singular form of any word shall be taken to mean or apply to the plural, and the masculine form shall be taken to mean or apply to the feminine or to the neuter.

IN WITNESS WHEREOF, Declarant has executed this Declaration on the day and year first written above.

NZ DEVELOPMENT CORPORATION
an Arizona corporation

by _____
D. J. Tea, Vice President

STATE OF ARIZONA)
) ss.
COUNTY OF MARICOPA)

The foregoing instrument was acknowledged before me this ____ day of _____, 1981, by D. J. Tea, Vice President of NZ Development Corporation, an Arizona corporation, on behalf of said corporation.

My Commission Expires: _____
Notary Public

ANDREWS, ASBURY & ROBERT, INC.
Consulting Engineers
401 San Pedro, NE, Albuquerque, New Mexico 87108
(505) 265-6631

John A. Andrews, P.E.
Charles T. Asbury, P.E.
John B. Robert, P.E. & L.S.

October 23, 1981

Mr. Richard Heller
City of Albuquerque
Post Office Box 1293
Albuquerque, New Mexico 87103

SUBJECT: NZ COMMERCIAL OFFICE CENTER

Dear Mr. Heller:

Transmitted herewith are two (2) copies of the drainage report for subject project for your review and approval.

Your earliest attention to this report will be appreciated.

Very truly yours,

JOHN B. ROBERT, P.E. & L.S.

JBRmt

Enclosures (2)

cc: Mr. Robert L. Menk, NZ Properties Inc.

RECEIVED
OCT 23 1981
ENGINEERING

PHONE MESSAGES

Hydrology # _____ Project Name _____

Date _____ Time _____ Contact _____

Message: _____

Date _____ Time _____ Contact _____

Message: _____

PHONE MESSAGES

Hydrology # _____ Project Name _____

Date _____ Time _____ Contact _____

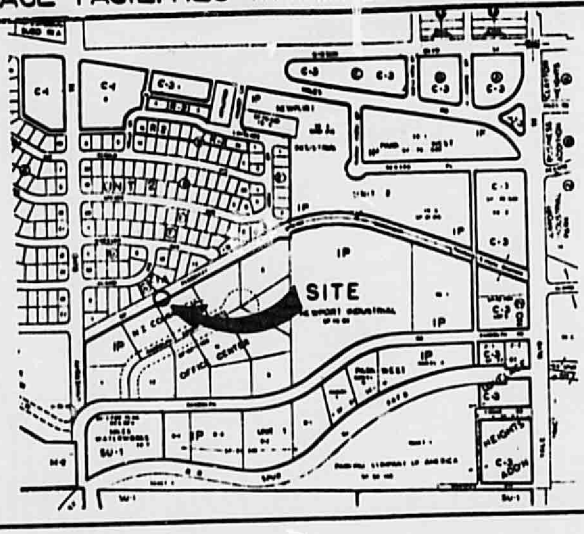
Message: _____

Date _____ Time _____ Contact _____

Message: _____

CITY OF ALBUQUERQUE Deck

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



VICTOR J. CHAVEZ
STATE OF NEW MEXICO
NO.
REGISTERED PROFESSIONAL ENGINEER

Rev 6/12/85
Rev. 6/20/85

OWNER:

N.Z. COMMERCIAL OFFICE CENTER

LEGAL:

LOT 4 OF N.Z. COMMERCIAL OFFICE CENTER, A REPLAT OF TRACT 3, NEWPORT INDUSTRIAL PARK—WEST, UNIT 1, OCT. 1981.

B.M.—ACS STA. I-M15 EL. 5119.33, 2.3 MILES SOUTHEAST OF DOWNTOWN ABQ. NEAR THE NORTHEAST CORNER OF KIRTLAND PARK (CITY).

M15-D4A

NOTICE TO CONTRACTOR

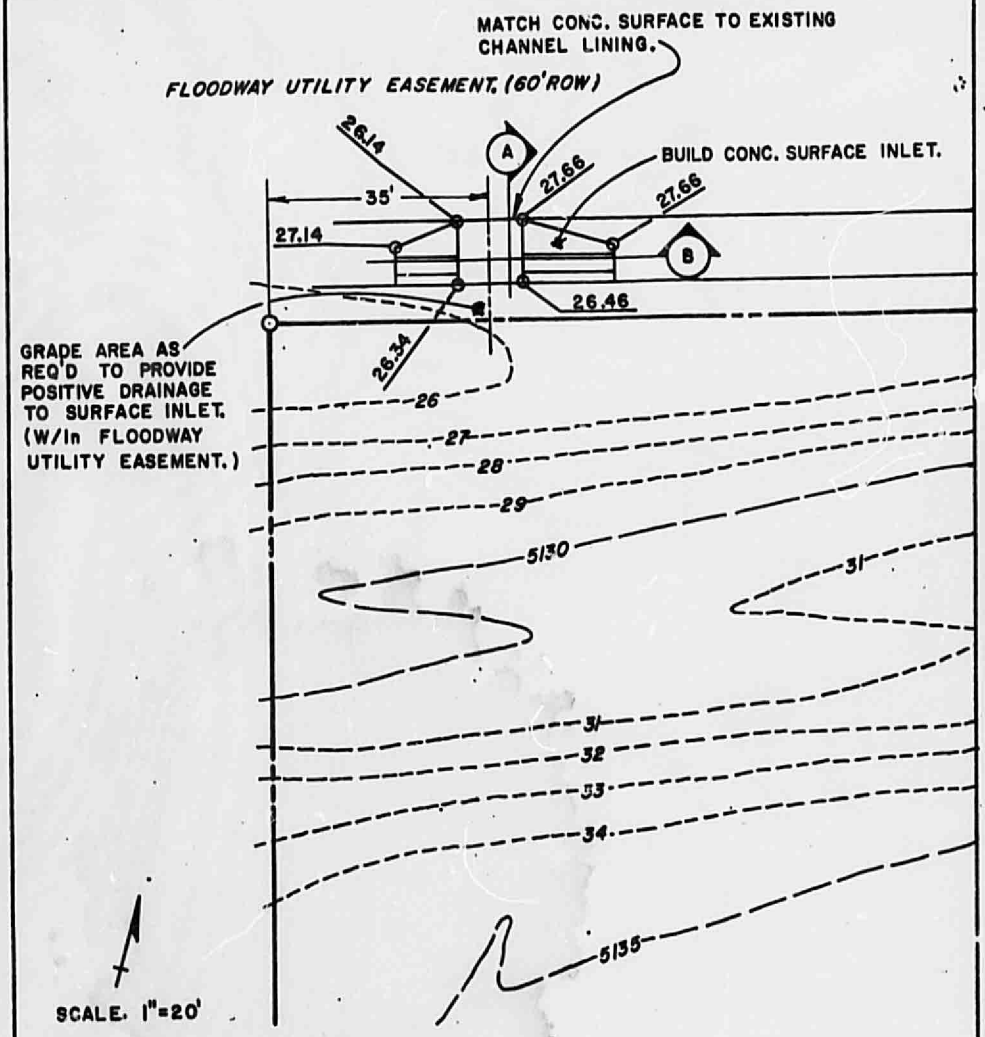
1. An excavation/construction permit will be required before beginning any work within City right-of-way. An approved copy of these plans must be submitted at the time of application for this permit.
2. All work detailed on these plans to be performed, except as otherwise stated or provided hereon, shall be constructed in accordance with Public Works Contract No. 85-1.
3. Two working days prior to any excavation, contractor must contact Line Locating Service, 765-1234, for location of existing utilities.
4. Prior to construction, the contractor shall excavate and verify the horizontal and vertical locations of all obstructions. Should a conflict exist, the contractor shall notify the engineer so that the conflict can be resolved with a minimum amount of delay.
5. Backfill compaction shall be according to N/A street use.

E-72

APPROVALS	NAME	DATE	TITLE: 1701 Randolph Ct. S.E. LOT 4 OF N.Z. COMMERCIAL OFFICE CENTER (CONCRETE INLET)	
A.C.E./DESIGN	HLOtero	6/20/85		
INSPECTOR			PERMIT NO.	MAP NO. M-15-Z
A.C.E./FIELD			SHEET 1 OF 3	

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



LEGEND

DESCRIPTION	EXISTING	NEW
GRADE	---30---	
PROPERTY CORNER		
SPOT ELEVATION		

VICTOR J. CHAVEZ
STATE OF NEW MEXICO
5713
REGISTERED PROFESSIONAL ENGINEER

6/4/85

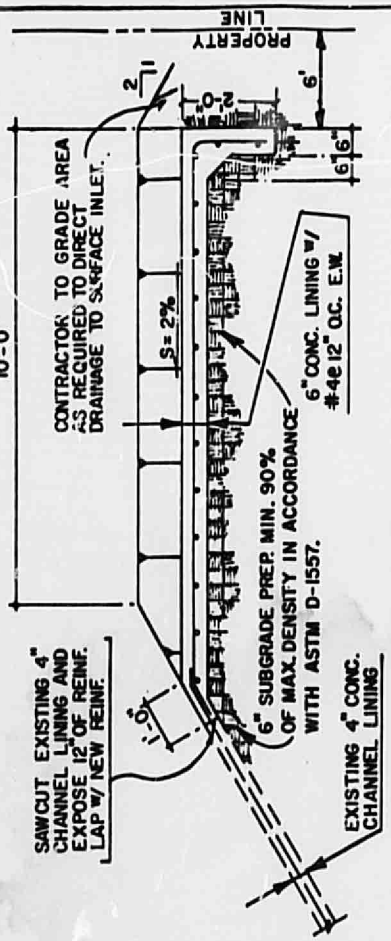
E-72

Rev 6/17/85
Rev 6/26/85

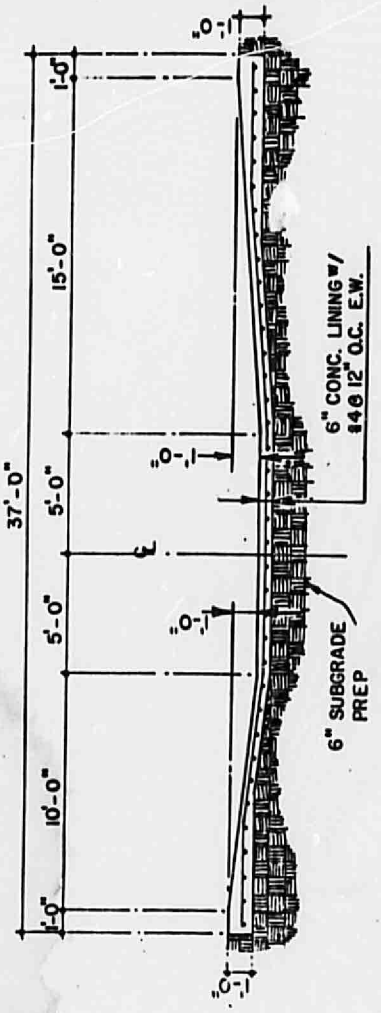
APPROVALS	NAME	DATE	TITLE: 1701 Randolph Ct. S.E. LOT 4 OF N.Z. COMMERCIAL OFFICE CENTER (CONCRETE INLET)	
A.C.E./DESIGN	[illegible]	6-26-85		
INSPECTOR			PERMIT NO. SHEET 2 OF 3	MAP NO. M-15-Z
A.C.E./FIELD				

CITY OF ALBUQUERQUE

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY



DETAIL - A
N.T.S.



DETAIL - B
N.T.S

VICTOR J. CHAVEZ
STATE OF NEW MEXICO
REGISTERED PROFESSIONAL ENGINEER

E-72

APPROVALS	NAME	DATE
A.C.E./DESIGN	[illegible]	6-26-85
INSPECTOR		
A.C.E./FIELD		

TITLE: 1701 Randolph Ct. S.E.
LOT 4 OF N.Z. COMMERCIAL OFFICE CENTER
(CONCRETE INLET)

PERMIT NO.
SHEET 3 OF 3

MAP NO. M-15-Z

[illegible] to [illegible]

[illegible]

[illegible]

[illegible]

NZ LAND COMPANY
Albuquerque, New Mexico

Drainage Report
for
NZ COMMERCIAL-OFFICE CENTER

October, 1981

REGISTERED PROFESSIONAL ENGINEER
STATE OF
No. 3950
NEW MEXICO
JOHN A. ANDREWS

RECEIVED
OCT 23 1981
ENGINEERING

Prepared by:
Andrews, Asbury & Robert, Inc.
Consulting Engineers
Albuquerque, New Mexico 87108

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I

INTRODUCTION

NZ Land Company proposes to improve an 18.01 acre tract of land designated as NZ Commercial-Office Center and is presently known as Tract 3 of Newport Industrial Park-West, Unit 1. The tract of land is located within the southeast quadrant of Albuquerque, New Mexico, and being situate in the northeast quarter (NE¼) of Section 33, Township 10 North, Range 3 East, N.M.P.M. (See enclosed Location Map No. 1, Zone Atlas Map M-15.)

The ultimate type of development proposed for this tract is light commercial and will consist of office buildings and small manufacturing companies. (See City of Albuquerque, Planning Department, Notification of Decision enclosed.) As an initial construction project, it is proposed to construct improvements to provide access to the land, utility services, and drainage facilities to control storm water runoff.

It is the intent of this report to provide an acceptable method of developing the subject property for the initial phase of construction without appreciably effecting the present storm

drainage patterns. This report considers the storm drainage requirements for the initial construction phase, i.e. paved access, utility service and related storm drainage facilities for improvement of the roadway. At a future date, when each lot or building site is improved, it will be necessary to analyze the drainage requirement of each lot on an individual basis.

Guidelines for the analysis are based on the Albuquerque Metropolitan Arroyo Flood Control Authority's Drainage Resolution 1980-15 and the City of Albuquerque Drainage Ordinances and Interim Drainage Guidelines.

II

EXISTING CONDITIONS

A. General

The subject property is presently undeveloped with a slope from southeast to northwest of approximately 5 percent. The tract is bounded on the south by Randolph Road S.E. and on the west by University Boulevard S.E., both of which are improved roadways with pavement and curb and gutter.

A Floodway and Utility Easement bounds the property on the north. The Floodway and Utility Easement is improved with a concrete lined channel.

The area to the east of the property is presently developed. An existing six (6) inch curb is constructed on the east boundary that outlines an existing asphalt parking area.

Delineation of the site on Soil Conservation Service soils maps indicate that the soil groups in the area are of the Bluepoint Association (BCC and BKD) which belong to hydrologic soil group A. (See enclosed Map No. 2.)

Delineation of the site on the City of Albuquerque, Flood Hazard Boundard Maps prepared by the Department of Housing and Urban Development dated 1977, indicate that a portion of the subject property is in Flood Hazard Zone A (see enclosed Map No. 3). However, subsequent to the preparation of the above mentioned flood maps, site grading operations in this area have altered the natural configuration to such an extent that the Flood Hazard Maps and 1" = 200' scale orthophoto topographic maps do not adequately represent the existing conditions and no flood hazard exists at the present time.

Reference is hereby made to the approved drainage report for this area entitled "Drainage Report for Newport Industrial Park-West, Unit No. 1 Site Improvements, Revised February 7, 1979" and to construction plans for this area entitled "Newport Industrial Park-West, Unit 1, Site Improvements Phase I dated March 12, 1979 and Phase II dated July 13, 1979" (all of which were prepared by Andrews, Asbury & Robert, Inc., and are available for inspection upon request) do adequately represent the existing conditions and are hereby incorporated into this report by reference.

B. Off Site Drainage

Due to the existing facilities bounding the subject property, drainage areas external to the subject property do not discharge onto the site.

Presently drainage areas to the south of the subject property discharge onto Randolph Road S.E. The storm flows are then conveyed to an existing concrete lined channel, west of University Boulevard S.E. by an existing storm sewer system constructed in Randolph Road and University Boulevard. (See enclosed capacity flow depth calculations entitled "Storm Drainage Design Analysis for Newport Industrial Park-West, Unit 1, Phase I - Randolph Road" dated March 16, 1979.)

The existing parking area to the east of the subject property prevents storm water from entering the property from the east.

C. On Site Drainage

Presently, a small portion of the area under consideration discharges across the western boundary as sheet flow and is intercepted by University Boulevard S.E. (See enclosed Map No. 4 - Existing Conditions.)

Storm runoff from the remainder of the site flows to the north, is collected in an existing swale located south of the existing concrete lined channel, and is then carried west and discharges into the concrete lined channel at the northwest corner of the subject property.

III

DEVELOPED CONDITIONS

This subdivision is to be developed as an Industrial-Commercial Park; however, it is not known at the time of the writing of this report what the actual type, size or location of the buildings will be or the actual type of ground cover proposed in the ultimate development of the site. The intent of this report is to establish the major drainage patterns and flows of the on site drainage. In addition, this report will serve as a guide for the preparation of drainage plans on an individual basis when actual construction of buildings and associated facilities is to occur.

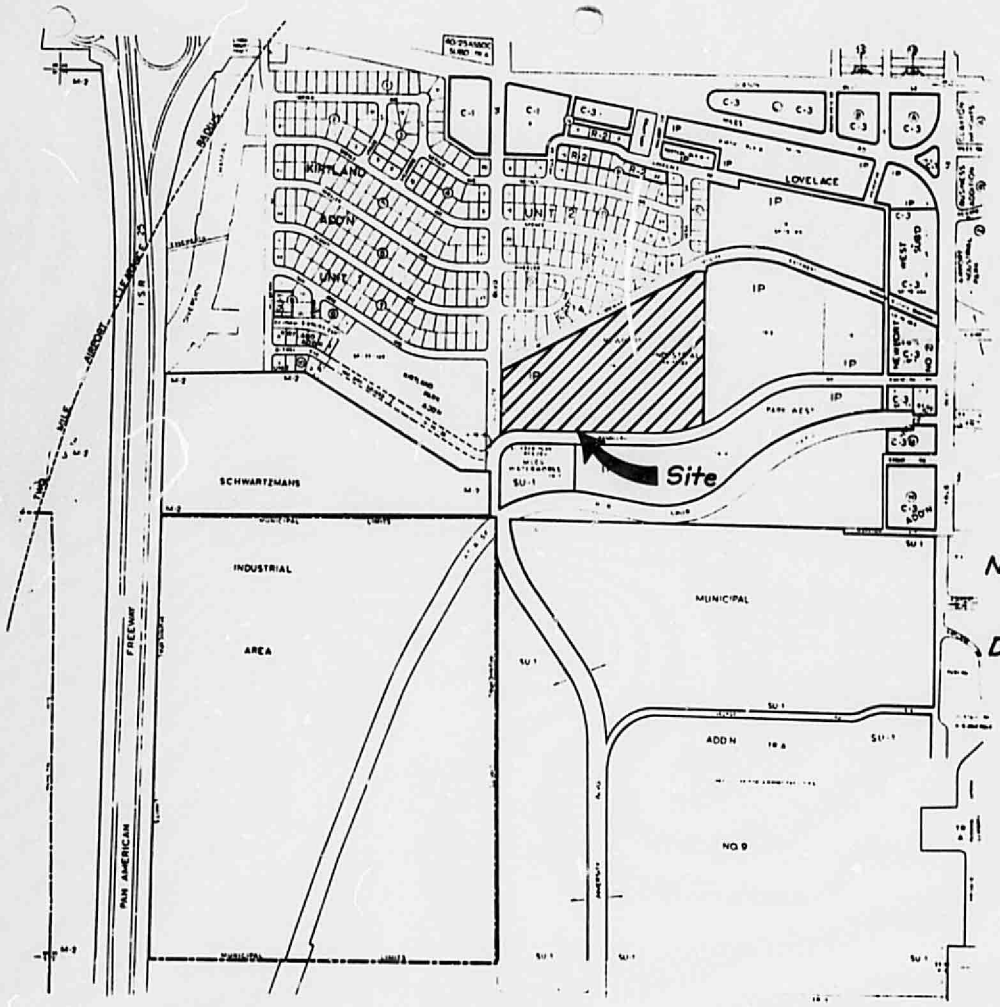
As an initial construction project, it is proposed to construct improvements to provide access to the subdivision, utility service and drainage facilities to control storm water runoff.

Drainage improvements to be constructed under the initial construction phase will consist of a storm sewer network that will collect and convey the storm flows, generated from the improvement of the access easement (Randolph Court) and areas located south of such easement, to the existing storm sewer

system in University Boulevard. (See Map No. 5 - Developed Conditions and Street and Storm Sewer plan and profile.)

No changes in the existing drainage pattern for the remainder of the area are proposed.

In an effort to control erosion throught the development of the subdivision, small sedimentation basins will be constructed south of the access easement.

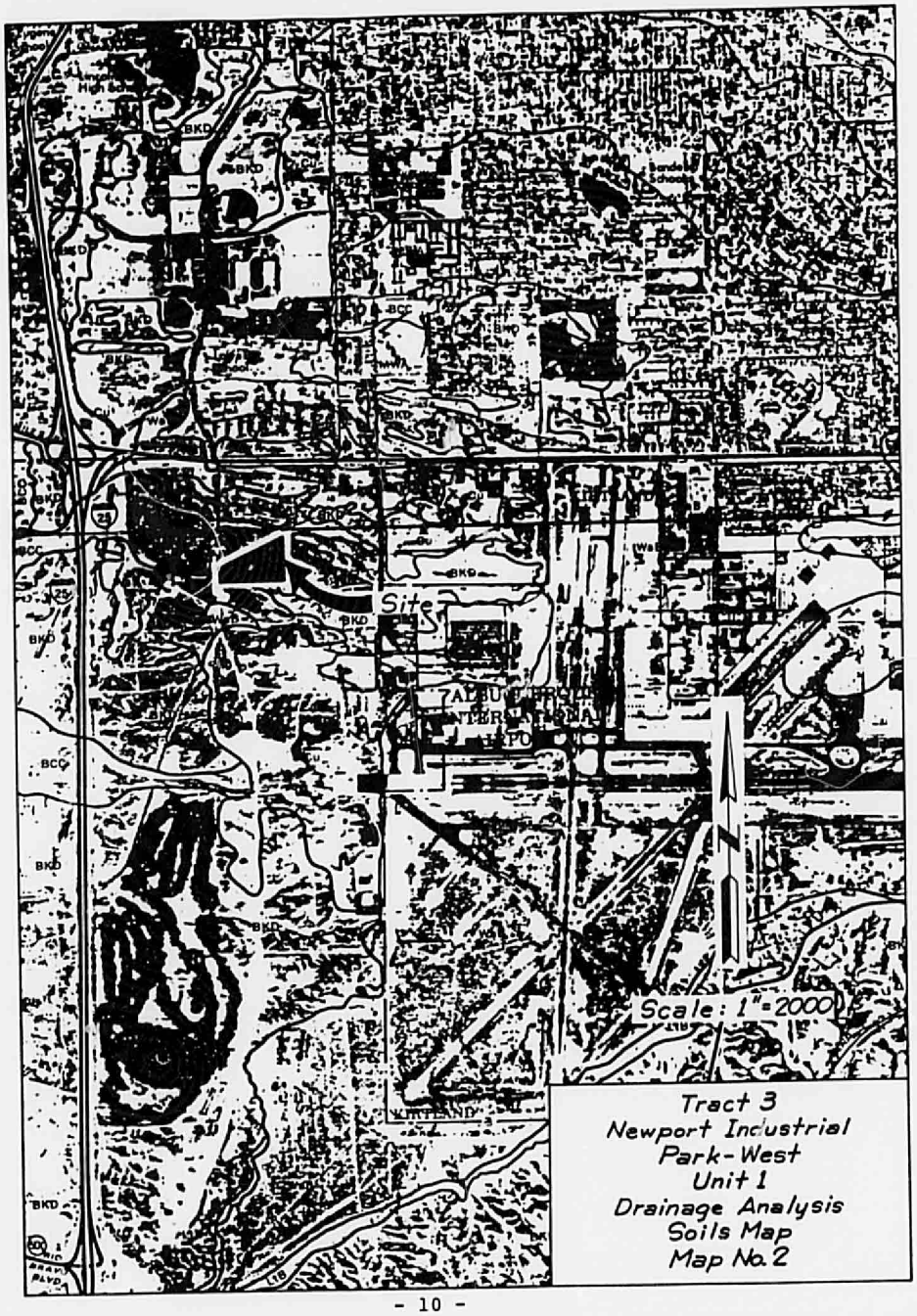


Tract 3
Newport Industrial
Park - West
Unit 1
Drainage Analysis

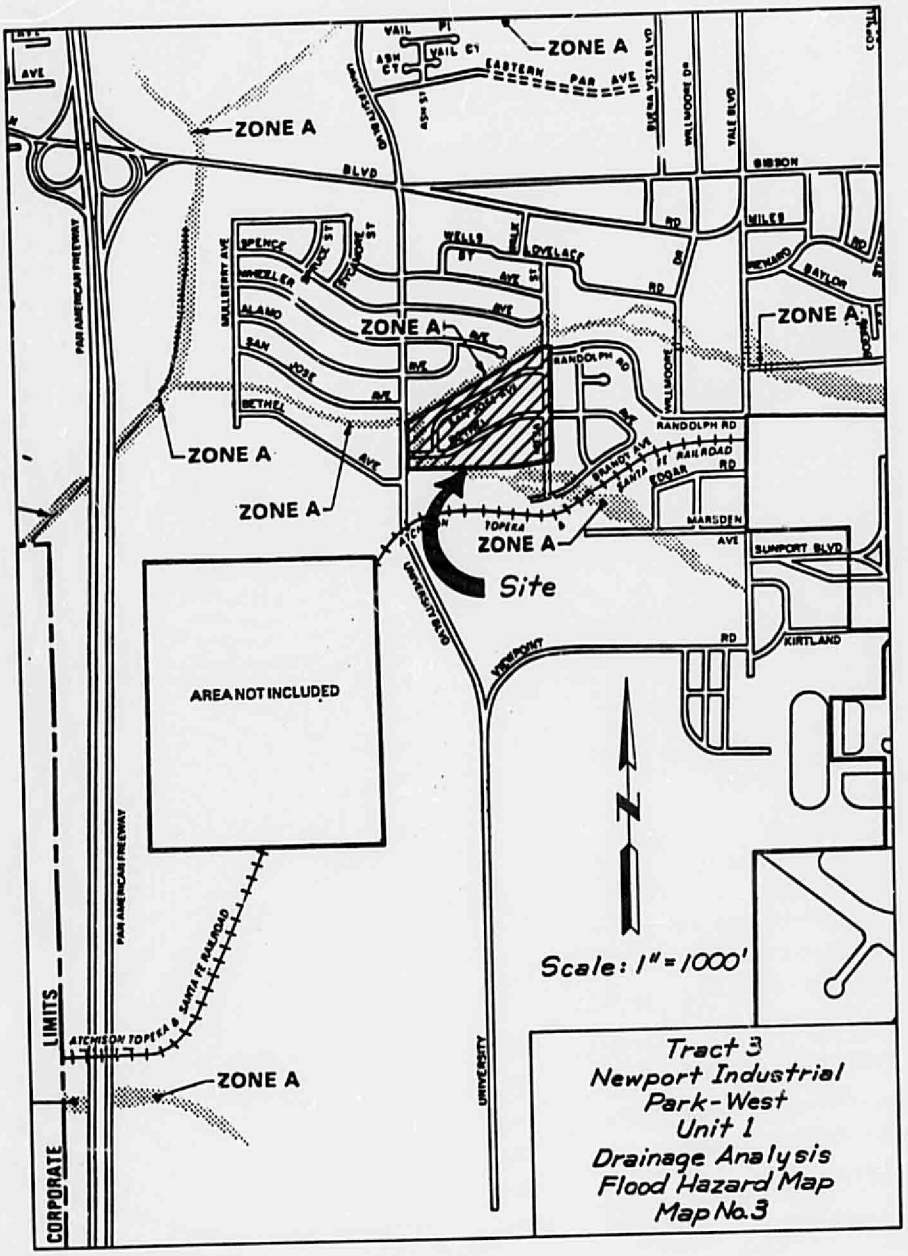
Location Map

M·15·Z

Map No. 1



Tract 3
Newport Industrial
Park-West
Unit 1
Drainage Analysis
Soils Map
Map No. 2


ZONE A
ZONE A
ZONE A
ZONE A
ZONE A
ZONE A
ZONE A
ZONE A
Site
AREA NOT INCLUDED
Scale: 1" = 1000'
Tract 3
Newport Industrial
Park-West
Unit 1
Drainage Analysis
Flood Hazard Map
Map No. 3
PAN AMERICAN FREEWAY
UNIVERSITY BLVD
UNIVERSITY
VAIL PL
VAIL CT
ASH CT
EASTERN PAR AVE
BUENA VISTA BLVD
VALLMOORE DR
YALE BLVD
GIBSON
WILES
BAYLOR
SPENCE
WHEELER
ALAMO
SAN JOSE
BETHEL
MULBERRY AVE
WELLS
LOVELACE
RANDOLPH RD
BRANDY AVE
SANTA FE RAILROAD
EDGAR RD
MARSDEN AVE
SUNPORT BLVD
KIRTLAND
VERMONT
ATCHISON TOPEKA & SANTA FE RAILROAD
CORPORATE LIMITS

OFFICIAL NOTICE

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
PLANNING DIVISION
P.O. Box 1293, Albuquerque, New Mexico 87103

John Roberts
Azbury & Robert, Inc.
401 San Pedro, N.E.
Albuquerque, NM 87108

DATE: August 26, 1981

NOTIFICATION OF DECISION

File: Z-75-131-4
Location: Development Plan for Tract 3, Newport Industrial Park West, Unit 1.

On August 20, 1981, the Environmental Planning Commission approved the above-mentioned request, based on the following Findings:

1. A drainage plan report, subject to City Engineer's approval, is required.
2. A plat indicating as a matter of record that the maintenance of the median on Randolph Street is the responsibility of the adjacent property owners.
3. Street trees will be planted in accordance with the Street Tree Ordinance.
4. A summary plat is required prior to final approval.
5. The general provisions of IP zoning must be met.
6. Extension of water and sewer lines will be at the developer's expense.
7. The development of the site cannot proceed until the drainage facilities that are indicated in the drainage report are in place.

If you wish to appeal this decision, you must do so by 9-4-81 in the manner described below. A non-refundable filing fee of $40 is required at the time the appeal is filed.

Appeal to the City Council. Any person aggrieved with any determination of the Environmental Planning Commission acting under this ordinance may file an appeal to the City Council by submitting written application on the Planning Division form to the Planning Division within 15 days of the Planning Commission's decision. The date the determination in question is issued is not included in the 15-day period for filing an appeal, and if the fifteenth day falls on a Saturday, Sunday or holiday as listed in the Merit System Ordinance, the next working day is considered as the deadline for filing the appeal. The City Council may decline to hear the appeal if it finds that all City plans, policies and ordinances have been properly followed. If it decides that all City plans, policies and ordinances have not been properly followed, it shall hear the appeal. Such appeal, if heard, shall be heard within 60 days of its filing.

You will receive notice if any other person files an appeal. If there is no appeal you can receive building permits any time after the appeal deadline quoted above provided all conditions imposed at the time of approval have been met. Successful applicants are reminded that other regulations of the City must be complied with, even after approval of the referenced application(s).

IF YOU RECEIVE APPROVAL FOR ANY REQUEST WHICH REQUIRES A SITE DEVELOPMENT PLAN, SEE ATTACHED SHEET FOR FURTHER INFORMATION.

Sincerely,

Elizabeth Marquez

Elizabeth Marquez
Secretary

Letter of Advice

cc: N-Z Development Corporation, 1614 E. Indian School Road, Phoenix, AZ

ZIA PUERTO - JOINT VENTURE
ALBUQUERQUE, NEW MEXICO

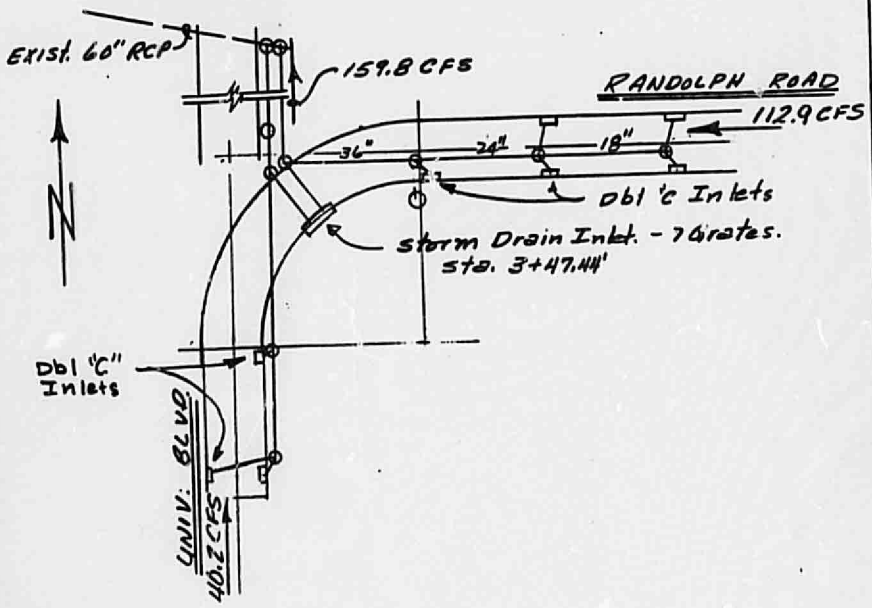
STORM DRAINAGE DESIGN ANALYSIS FOR NEWPORT INDUSTRIAL PARK-WEST, UNIT 1 PHASE I - RANDOLPH ROAD

MARCH 16, 1979

ANDREWS, ASBURY & ROBERT, INC.
Consulting Engineers
401 San Pedro,NE
Albuquerque, New Mexico 87108

ANDREWS, ASBURY & ROBERT, INC. CONSULTING ENGINEERS 401 San Pedro, NE., Albuquerque, N.M. 87108 Telephone (505) 265-6631	Project Newport Industrial Park-West, Unit 1	Sheet 1 of 9
	By JA Chk'd ✓	Job No. 129
		Date 3-8-79

DRAINAGE- Randolph Road.-Univ. Blvd



CRITERIA

TOTAL FLOW TO BE COLLECTED IN STORM SEWER.. - 160 CFS.

FLOWS SHOWN ARE FROM DRAINAGE REPORT- REVISED Feb. 6, 1979.

ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
401 San Pedro, NE., Albuquerque, N.M. 87108
Telephone (505) 265-6631

Flow - Randolph Road.

$Q = 112.9$ CFS

Roadway = Slope = 3.2%

48' wide w/ 6" Crown.

Assume depth of flow = 0.55'

$n = 0.015$

$Area = (.05)(48) + (.50)(24) = 14.4'$

$WP = 48 + 1.10 = 49.1$

$R = \frac{14.4}{49.1} = 0.293$

$V = \frac{1.486}{0.015}(.293)^{2/3}(.032)^{1/2}$

$V = 7.82$ fps

$Q = AV = (14.40)(7.82) = 112.6$ CFS OK

$V \cdot D = (7.82)(0.55) = 4.3$

Assume - OK -

Collect. Flow in Storm Sewer.

ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
401 San Pedro, NE., Albuquerque, N.M. 87108
Telephone (505) 255-6631

Storm Runoff Collection

Randolph Road & Univ. Blvd.

Total Flow to be Collected = 160 CFS

Assume Dbl. "C" Inlet Capacity on Roadway-grade = 2 CFS Ea.

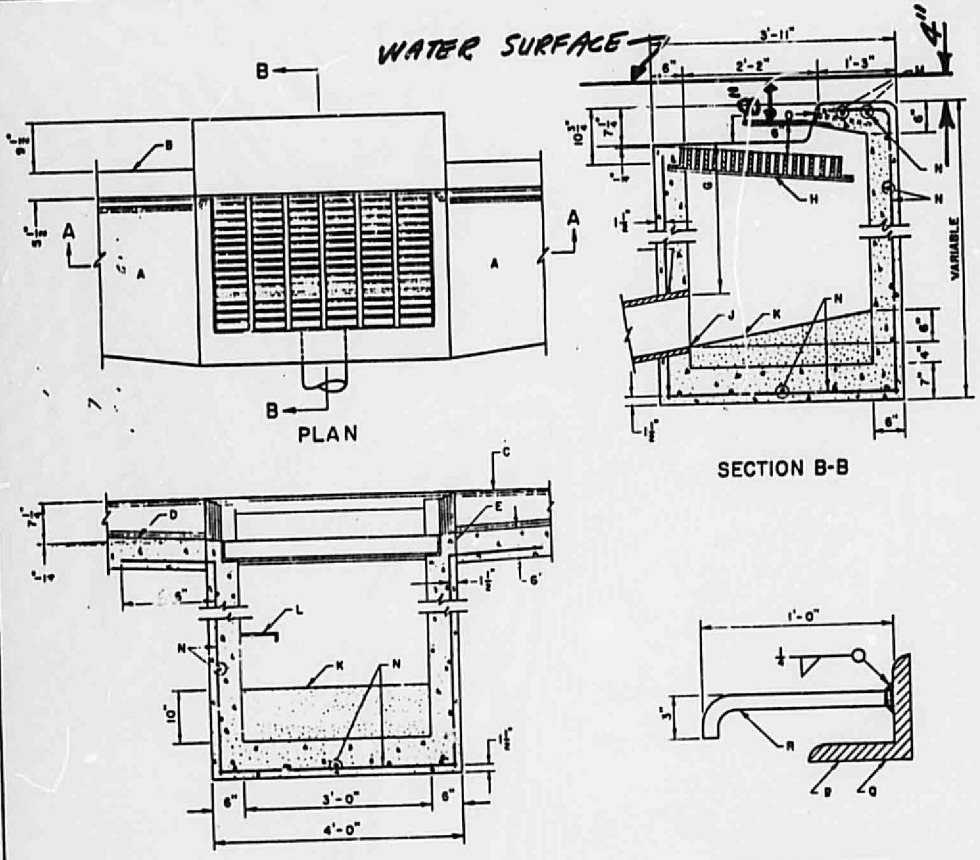
Use - 3 Inlets - So. of Curve on Univ. Blvd. = 6 CFS

Use - 5 Inlets - East of Curve on Randolph Rd. = 10 CFS.

Required Flow to be collected by Inlet at Low Pt. = 160 - 16 CFS
= 144 CFS

Capacity of Type C Inlet with 1.0 feet maximum depth above Curb Flowline
= 22.87 CFS
(see Sheet-4- Following)

Number of Type C Inlet Grates reqd
$= \frac{144}{22.87} = 6.3$ - Use - 7 Grates



GENERAL NOTES:

I. OUTLET PIPE SIZE PER DESIGN REQUIREMENT.

CONSTRUCTION NOTES:

A. FOR GUTTER TRANSITION SEE DWG. S-15 DROP INLET LOCATION.
B. BACK OF CURB.
C. TOP OF CURB.
D. GUTTER LINE.
E. CONSTRUCTION JOINT.
F. NORMAL GUTTER LINE.
G. 1'-10" MIN. UNLESS OTHERWISE DIRECTED.
H. SEE DWG. S-16 FOR FRAME AND GRATING DETAILS.
J. INVERT.
K. GROUT.
L. USE STANDARD MH STEPS, SEE DWG. S-9. FIRST STEP SHALL BE 18" FROM TOP OF GRATE AND SHALL PROTRUDE 7", SPACING AT 12" O.C. LAST STEP 18" MAX. FROM BOTTOM.
M EXTEND NO. 4 REBARS 18" INTO CURB ON EACH SIDE OF INLET.
N. NO. 4 BARS AT 6" O.C EACH WAY.
O. SEE ANCHOR DETAIL, THIS DWG.
P. ∠ 3½" X 3½" X ⅜" X 4'-0" FOR SINGLE GRATE C INLET.
Q. ∠ 3½" X 3½" X ⅜" X 7'-6" FOR DOUBLE GRATE C INLET.
R. NO. 4- 1'-3" ANCHOR AT 1'-9" O.C.

NEWPORT INDUSTRIAL PARK-WEST, UNIT 1
DRAINAGE ANALYSIS

Sheet 3A of 9

CITY OF ALBUQUERQUE
SEWER
DROP INLET SINGLE "C"
DWG. S-12

ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
401 San Pedro, NE., Albuquerque, N.M. 87108
Telephone (505) 265-6631

Capacity of Drop Inlet @ Low Point

CITY OF ALBUQUERQUE SINGLE "C"

THROAT

Equation $Q_t = \frac{2}{3} L \sqrt{2g} \left(h_2^{3/2} - h_1^{3/2}\right)$

Ref Orifices under Low Heads - King & Brater, p. 4-5 Handbook of Hydraulics

Water Surface - 4" above top of curb.

$h_1 = 8" = 0.67$ feet
$h_2 = 14" = 1.167$ feet
$L = 3.50$ feet
} See City Std. Dwg.

$Q_t = \frac{2}{3}(3.50)\sqrt{2(32.2)}\left(1.167^{3/2} - 0.67^{3/2}\right)$

$Q_t = 13.34$ CFS.

GRATE

Equation $Q = CA\sqrt{2gh}$ $C = 0.60$

Area = 14 Spaces @ 1" x 3.0' Lg = 3.50
Less straps = 3/4" x 5 x 1'-10" = - 0.55
2.95 ft^2

Assume 50% Clogged - $A = 1.98 ft^2$

$Q = (0.60)(1.98)\sqrt{64.4(1)} = 9.53$

TOTAL - THROAT PLUS GRATE

$Q_T = 13.34 + 9.53 = \underline{\underline{22.87 \text{ CFS}}}$.

ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
401 San Pedro, NE., Albuquerque, N.M. 87108
Telephone (505) 265-6631

Outlet Pipes from 7-Grate Inlet

Use - 1-36" Dia. RCP
1-24" Dia. RCP.

Assume. 36" pipe Carries - 100CFS
24" pipe Carries - 44CFS

Slope of 36" pipe Req'd = 3.0% min.
$v = 14.5$ fps.

Slope of 24" pipe Req'd = 5.0% min.
$v = 14$ fps.

Depth of Inlet -

Allow for Velocity Head $= \frac{(14.5)^2}{64.4} = 3.26$.

Entrance $H_L = 0.2 \times 3.26 = \quad = 0.65$

3.91'

Depth of Inlet = 3.0' + 3.91' = 6.91'

Use - 7.0' depth.

ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
401 San Pedro, NE., Albuquerque, N.M. 87108
Telephone (505) 265-6631

Storm Sewer Analysis

The following 3 sheets - Storm Drainage Design Summary. Show the tabulation of computations & data for determining the Energy Grade Line of the Storm Sewers to be installed with this project.

In addition to the storm runoff, allowance has been made for conveyance of 30 MGD - of drain water from the Miles Waterworks Storage Reservoir. It is noted that this is not a definite requirement of water resources however, this flow has been included in computing the energy grade line.

Two separate Lines are to be constructed and are designated as Line A & Line B. Both of these lines are discharged into the existing 60" RCP in place under University Blvd.

Attached to this Analysis are two prints of the Contract drawings - Sheet 9 & 10 on which the Energy Grade line is Shown.

A conservative approach was taken in performing the computation for development of the Energy Grade Line Shown.

NEWPORT INDUSTRIAL PARK-WEST, UNIT 1

PHASE I, RANDOLPH ROAD

—Storm-Drainage Design Summary—

LINE "A" - Reinforced Concrete Pipe n=0.015

Line	Location	Type Structure	Pipe Diam (in.)	Length (ft)	Invert Slope, S_o	Invert Elev. (ft) (IN)	Invert Elev. (ft) (OUT)	Approx. Surface Elev. (ft)	Runoff, Design Flow, Q (cfs)	Full at Invert Slope: Cap., Q_f (cfs)	Full at Invert Slope: Vel., $V_f = \frac{Q_f}{A_f}$ (fps)	Design Conditions: Depth of Flow, z (ft)	Vel., $V = \frac{Q}{A}$ (fps)	Vel. Head $h_v = \frac{V^2}{2g}$ (ft)	Slope of Energy Gradient, S_e	Head Losses: Friction, h_f (ft)	Shock or Form: Coef. K	Shock or Form: Δh (ft)	Grade Line Elev.: Energy (ft)	Grade Line Elev.: Piezometric or Water Surface (ft)
	6+40	MH-A-1					41.10	47.47												
									4.0			0.45	6.81	0.72			0.2	0.14	42.41	
	RAND.	Pipe	18	100'	.032					16	9.2					1.74				
																	0.4	0.29	40.67	
																			40.38	
	5+40	MH-A-2				37.90	37.40	44.27												
									8.0			0.60	10	1.55			0.2	0.31	39.86	
	RAND	Pipe	24	104	.050					42	13.5					2.66				
																	0.4	0.62	37.20	
																			36.57	
	4+36	MH-A-3				32.20	31.20	40.97												
									52			Full 1.33	7.36	0.84			0.2	0.17	35.21	Δ 34.15
	RAND	Pipe	36	96.32	.0498					125	18.0					0.78				
																	0.4	0.34	34.43	35.37
																			34.37	35.03
	3+41.68	MH-A-4				26.50	25.00	41.15												
									156			~~Full 1.6~~	16.21	4.08			0.6	2.45	35.03	
	LATER.	Pipe	42	217.97	.0368					170	18.0					6.96			28.07	
																	0.4	1.63	26.44	

NEWPORT INDUSTRIAL PARK-WEST, UNIT 1
PHASE I, RANDOLPH ROAD

—Storm-Drainage Design Summary—

LINE "A"

Line	Location	Type Structure	Pipe Diam (in.)	Length (ft)	Invert Slope, S_o	Invert Elev. (ft) (IN)	Invert Elev. (ft) (OUT)	Approx. Surface Elev. (ft)	Runoff, Design Flow, Q (cfs)	Full at Invert Slope: Cap., Q_f (cfs)	Full at Invert Slope: Vel., $V_f = \frac{Q_f}{A_f}$ (fps)	Design Conditions: Depth of Flow, d (ft)	Vel., $V = \frac{Q}{A}$ (fps)	Vel. Head $h_v = \frac{V^2}{2g}$ (ft)	Slope of Energy Gradient, S_e	Head Losses: Friction, h_f (ft)	Shock or Form: Coef. K	Shock or Form: Δh (ft)	Grade Line Elev.: Energy (ft)	Grade Line Elev.: Piezometric or Water Surface (ft)
4	UNIV.						4.00													
	2+76	MH A-5				17.00	15.50	26.10	232				11.[illegible]	2.19				1.52		
									206			Full 2.75	10.49	1.71			0.6	1.03	23.24	rise 0.50'
	UNIV.	Pipe	60	64	.0474					500	25.2					0.53				
	EX.																0.4	0.68	22.71	
							Dwl.												22.03	
	UNIV.	MH-A-6				12.20	04.32	24.40												
	EX.																			

NEWPORT INDUSTRIAL PARK-WEST, UNIT 1

PHASE I, RANDOLPH ROAD

—Storm-Drainage Design Summary—

LINE "E" Reinforced Concrete Pipe n=0.015

Line	Location	Type Structure	Pipe Diam (in.)	Length (ft)	Invert Slope, S_o	Invert Elev. (ft) (IN)	Invert Elev. (ft) (OUT)	Approx. Surface Elev. (ft)	Runoff, Design Flow, Q (cfs)	Full at Invert Slope: Cap., Q_f (cfs)	Full at Invert Slope: Vel., $V_f = \frac{Q_f}{A_f}$ (fps)	Design Conditions: Depth of Flow, d (ft)	Vel., $V = \frac{Q}{A}$ (fps)	Vel. Head $h_v = \frac{V^2}{2g}$ (ft)	Slope of Energy Gradient, S_e	Head Losses: Friction, h_f (ft)	Shock or Form: Coef. K	Shock or Form: Δh (ft)	Grade Line Elev.: Energy (ft)	Grade Line Elev.: Piezometric or Water Surface (ft)
	7+30.25	MH-B-1					42.00	48.27												
									4.0			0.42	8.7	1.17			0.2	0.23	43.82	
		Pipe	18	100	.060					24	12.5					2.84				
																	0.4	0.47	40.98	
																			40.51	
	6+30.25	MH-B-2					36.00	42.80												
									6.0			0.52	10.0	1.55			0.2	0.31	38.38	
		Pipe	18	127.72	.060					24	12.5					4.80				
																	0.4	0.62	33.58	
																			32.96	
	5+02.53	MH-B-3				28.34	26.00	41.49												
									50			2.13	9.18	1.31			0.2	0.26	29.70	
		Pipe	36	82.53	.010					58	8.2					1.04				
																	0.4	0.52	28.66	28.55 0'
																			28.14	
	4+20	MH-B-4				25.16	26.70	33.00												
									50			~~Full +3.5~~	7.07	0.78			0.2	0.16	28.64	
	Exist.	Pipe	36	145'	.0442					120	17.5					1.08				
																	0.4	0.31	27.56	
																			27.25	
	Exist.	MH-B-5				18.29														

IV

DRAINAGE ANALYSIS

Following is the Drainage Analysis (computations) for the subject property, for both the existing and developed conditions.

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DRAINAGE ANALYSIS

CRITERIA

Design Storm - 100 yr frequency

AMAFCA Drainage Resolution - 1980-15

City of Albuquerque Drainage Ordinance & Interim Drainage Guidelines

REFERENCE MATERIAL

1. 100 year - 6 hr. precipitation, Rainfall Frequency Map, U.S. Weather Bureau.
2. Time of concentration Nomograph, p. 2, Kirpich
3. Drainage Report for Newport Industrial Park-West, Unit No. 1 Site Improvements, Revised Feb. 6, 79 and approved Feb. 15, 79

DESIGN PARAMETERS

Peak runoff rate - Rational Formula; Q = CIA

Runoff Volume = V = Runoff coefficient × rainfall × Area

Runoff Coefficients

Existing Ground Surface	= 0.40
Paved Areas	= 0.92
Open Areas	= 0.40

Refer to Maps 4 & 5 for Drainage Area designations for existing & developed conditions respectively.

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Project NZ Commercial Sheet 2 of 7
Tract 9, NPIP Job No. 267
By BF Chk'd. M Date 8/5/81

Existing Conditions - Onsite

Peak Flows & Volumes

Drainage Area E-1

A = 16.79 ac.
H = 5175 - 5120 = 55 ft
L = 1740 ft
C = 0.40

T.C. = 9 mins < 10 use 10 mins

I_{100} = 5.4 in/hr.

Q_{100} = CIA = 0.4 × 5.4 × 16.79 = 32.27 cfs

V_{100} = 0.4 × 2.4"/12 × 16.79 = 1.343 ac-ft

Flow is collected in a swale constructed on the north boundary of the property, adjacent to the existing conc. channel & is discharged into the concrete channel at the northwest corner of the property.

Drainage Area E-2

A = 1.22 ac.
H = 5152 - 5120 = 32 ft
L = 400 ft
C = 0.40

TC = 2 mins < 10 use 10 mins

I_{100} = 5.4 in/hr.

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Project NE Commercial Tract 3 NPIP | Sheet 3 of 7 | Job No. 267 | By RF | Chk'd M | Date 8/5/81

DRAINAGE AREA E-2. CONT'D

$Q_{100} = CIA = 0.4 \times 5.4 \times 1.22 = 2.64$ cfs

$V_{100} = .4 \times 2.4''/12 \times 1.22 = 0.098$ AC-FT

Discharge occurs as sheet flow across the west boundary of the subject property and flows in to University Blvd. S.E.

SUMMARY - EXISTING CONDITIONS - ONSITE

AREA	Q_{100} (cfs)	V_{100} (AC-FT)
E-1	32.27	1.343
E-2	2.64	0.098
TOTAL	34.91	1.441

Developed Conditions - Onsite

Peak Flows & Volumes

Opening Area	Total Area (ac)	Paved Area (ac)	Open Area (ac)	Combined	H (ft)	L (ft)	T.C. (mins)	I_{100} (in/hr)	Q_{100} (cfs)	V_{100} (ac-ft)
D-1	6.09	0	6.09	0.40	30	1280	8min < 10 use 10	5.4	13.15	0.487
D-2	1.01	0	1.01	0.40	17	240	use 10	5.4	2.18	0.081
D-3	3.10	0.87	2.23	0.55	28	825	use 10	5.4	7.21	0.341
D-4	7.67	0.51	7.16	0.43	33	1060	use 10	5.4	17.31	0.660
D-5	0.14	0.04	0.10	0.55	1.5	65	use 10	5.4	0.42	0.015

fully developed watershed ?
RAB 10/96

TOTAL Q_{100} = 42.77 cfs
V_{100} = 1.584 ac-ft.

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Project NZ Commercial Tract 3 MPIP
Sheet 4 of 7
Job No. 267
By EF Chk'd JA Date 8/5/81

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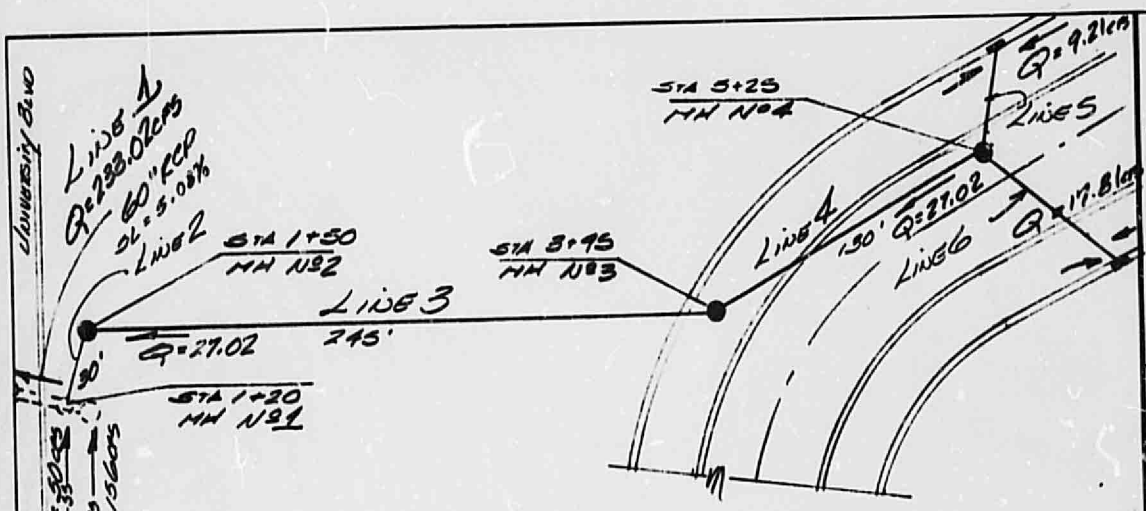
Storm Sewer Analysis

In the developed state, it is proposed to convey the storm water runoff generated from drainage areas D-3 & D-4, to the existing storm sewer system in University Blvd, by constructing a new storm sewer system. (See Map No 5 for location & Sh. 2 of 2 for profile.)

Therefore, due to the small travel times involved for Drainage Areas D-3 & D-4 the storm sewer will be design to carry the peak runoff from both D-3 & D-4.

$\therefore Q = 9.21 + 17.81 = 27.02$ cfs (A)



Storm Sewer Schematic

Refer to Sh. 2 of 2 for storm sewer profile.

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Project: NZ Commercial
Tract 3, NCIP
Sheet 6 of 7
Job No. 267
By: BF
Chk'd: JA
Date: 8/5/81

HYDROLOGY M15/D4A 6 PLANS 2 of 2

—Storm-Drainage Design Summary—

Line	Location	Type Structure	Pipe Diam (in.)	Length (ft)	Invert Slope, S_o %	Invert Elev. (ft) (IN)	Invert Elev. (ft) (OUT)	Approx. Surface Elev. (ft)	Runoff, Design Flow, Q (cfs)	Full at Invert Slope: Cap., Q_f (cfs)	Full at Invert Slope: Vel., $V_f = \frac{Q_f}{A_f}$ (fps)	Design Conditions: Depth of Flow, d (ft)	Vel., $V = \frac{Q}{A}$ (fps)	Vel. Head $h_v = \frac{V^2}{2g}$ (ft)	Slope of Energy Gradient, S_e	Head Losses: Friction, h_f (ft)	Shock or Form: Coef. K	Shock or Form: Δh (ft)	Grade Line Elev.: Energy (ft)	Grade Line Elev.: Piezometric or Water Surface (ft)
	5+25	MH				32.12	31.97	38				Full	8.6	1.15						
									27.02			~~1.44~~	~~11.13~~	~~1.92~~		2.43	.2	.23 ~~.38~~	35.41	35.35
4		RCP	24"	128	2.5					37.93	9.55					~~5.17~~			~~37.58~~	32.92
																	.4	.46 ~~.77~~	~~31.95~~	32.46
	3+26.84	MH				28.77	28.57	40				Full	8.6	1.15						
									27.02			~~1.52~~	~~12.03~~	~~2.25~~		4.64	.2	.23 ~~.45~~	~~32.59~~	31.95
3		RCP	24"	245	3.02					34.04	10.84					~~7.41~~			~~25.16~~	27.31
																	.4	.46 ~~.90~~	~~24.28~~	26.85
	1+51.82	MH				21.17	21.02	26.5				Full	8.6	1.15						
									27.02			~~1.52~~	12.03	2.25			.2	.23 ~~.45~~	~~25.04~~	24.40
2		RCP	24"	50	3.02					34.04	10.84					~~.97~~ ~~.91~~			~~24.13~~	23.82
																	.4	.46 ~~.90~~	~~23.23~~	23.37
	1+20.86	EXIST MH				20.12	14.88	25.49				Full	11.09	2.19						
									233			~~2.58~~	~~25.5~~	~~10.08~~			.2	.44 ~~.02~~	~~22.26~~	22.51
1		RCP	60"	64'	5.08					509	26.13									