HYDROLOGY K21/D16A 2. PLANS

K21/D16A

2 Plans

NEW MEXICO STATE HIGHWAY
AND TRANSPORTATION DEPARTMENT
AN EQUAL OPPORTUNITY EMPLOYER
DISTRICT III

GARREY CARRUTHERS
GOVERNOR

COMMISSION
Willie Ortiz
Chairman, Santa Fe
J.V. "Ray" Curtis
Vice-Chairman, Clovis
Emerenda De Baca
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Jack Westman
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Dr. Donald Reif
Member, Clayton
Mary Jean Smith-Christensen
Member, Gallup

DEPARTMENT
Secretary
Dewey Lonsberry
General Office
P.O. Box 1149
Santa Fe, N.M.
87504-1149
505-827-5100
District One Office
P.O. Box 231
Deming, N.M.
88031-0231
505-546-2837
District Two Office
P.O. Box 1457
Roswell, N.M.
88202-1457
505-624-3000
District Three Office
P.O. Box 3708
Station D
Albuquerque, N.M.
87190-3708
505-841-2700
District Four Office
P.O. Box 30
Las Vegas, N.M.
87701-0030
505-425-7527
District Five Office
P.O. Box 4127
Coronado Station
Santa Fe, N.M.
87502-4127
505-827-9500
District Six Office
P.O. Box G
Moriarty, N.M.
87035
505-285-3213

July 28, 1987

K-21/D16 A

Mr. Curt Smith, Superintendent
Jaynes Corporation General Contractors
2906 Broadway NE
P.O. Box 26841
Albuquerque NM 87125

SUBJECT: Utility Permit No. 311983
Grading and Rip-Rap on I-40 Right of Way

Gentlemen:

On July 27, 1987, Mr. Paul Myers and myself inspected drainage work involved with the construction of the parking lot of the Builders Square building.

The following work within I-40 was found to be in substantial compliance with the plans and specifications submitted with the permit application:

1 - Grading of the drainage area east of the 48-inch pipe

2 - Wire enclosed rip-rap at the inlet of the 48-inch pipe

3 - Dry rip-rap at two outlet locations along the fence line

Sincerely,

D. G. ARP
District Highway Engineer

By: Fred C. Torrez
Fred C. Torrez
District Traffic Engineer

FCT:cgf

xc: Paul Myers
Roger A. Green, City of Albuquerque

PROJECT TITLE: BUILDERS SQUARE ZONE ATLAS/DRNG. FILE #: K21 /D16A

LEGAL DESCRIPTION: TRACT 4C1 HORNE DEVELOPMENT ADDN

CITY ADDRESS: 45 HOTEL CIRCLE NE

ENGINEERING FIRM: ESPEY HUSTON & ASSOC CONTACT: D. LORENZ

ADDRESS: 317 COMMERCIAL NE PHONE: 242-1909

OWNER: BUILDERS SQUARE CONTACT: G. RAINHART

ADDRESS: 700 LOMAS NE PHONE: 842 9500

ARCHITECT: DE LA TORRE RAINHART CONTACT: G. RAINHART

ADDRESS: 700 LOMAS NE PHONE: 842 9500

SURVEYOR: ESPEY HUSTON & ASSOC CONTACT: T. ALDRICH

ADDRESS: SAME PHONE: 242 1909

CONTRACTOR: NA CONTACT: —

ADDRESS: — PHONE: —

PRE-DESIGN MEETING:

___ YES

✓ NO

___ COPY OF CONFERENCE RECORD SHEET PROVIDED

RECEIVED FEB 19 1987 HYDROLOGY SECTION

DRB NO. _____

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

___ FINAL PLAT APPROVAL

✓ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER _____ (SPECIFY)

DATE SUBMITTED: 2-19-87

BY: D. LORENZ

7352

FORM NO. M-202
Rev. 9-11-78

APPLICATION FOR PERMIT TO INSTALL UTILITY FACILITIES WITHIN PUBLIC RIGHT OF WAY

TO: NEW MEXICO STATE HIGHWAY DEPARTMENT
P. O. BOX 1149
SANTA FE, NEW MEXICO 87503

RECEIVED
FEB 19 1987
HYDROLOGY SECTION

Permit No. 311983
- [x] New Installation
- [ ] Renewal Permit
- [ ] Relocation
- [ ] Remain in Place

1. Pursuant to New Mexico Statutes Annotated, 1953 Compilation, Sections 55-7-19 and 55-2-7, the undersigned Espey, Huston and Associates, Inc. agent for - Builders Square

Address: 317 Commercial Street N.E. Albuquerque, New Mexico 87102

herein makes application to use highway rights of way to install:

Size and Type of Facility grading and replacement of rip-rap rock as shown on attachment

in the following location: N. M. Project No. I-040-3(20) 167, S. R. No. I-40 westbound,

Hwy. Station 308+00 to Hwy. Station 312+50, Bernalillo

County, Section 21, Township 10 north, Range 4 east

2. For the purpose of this application "within" shall be construed as meaning "on, over, under, across or along."

a. "Engineer" shall be construed as meaning the District Highway Engineer of the New Mexico State Highway Department or his representative.

b. "Applicant" shall be construed as meaning the individual, firm, corporation, association, governmental subdivision, or other organization making application, or the successors of any of the above.

c. "Facility" shall be construed as meaning, but not limited to, and publicly, privately, cooperatively, municipally or governmentally owned facility used for carriage, distribution or transmission of water, gas or electricity, oil and products derived therefrom, sewage, steam or other projects carried by means of pipelines, conduits, wires, culverts, ditches, conveyors or other methods.

d. If application is for a parallel installation, justification as to why private right may not be utilized must be furnished.

3. Applicant proposes to relocate, install or leave facility 80± feet within the north right of way line. The proposed installation shall be:

crossing	surface	n/a
(Crossing or Parallel)	(Subsurface or Overhead)	(Boring, Jacking or Pavement Cut)

a. If Applicant requests installation by pavement cut, complete justification therefore shall be submitted by attachment.

b. Where application for pavement cut is justified, the application may be held in abeyance pending receipt of cash bond in an amount to be fixed by the Engineer.

4. There is attached hereto a diagrammatic dimensioned drawing showing the location of existing and/or proposed installation referenced to roadway and right of way, right of way lines, any access control lines, distance of proposed installation above or below grade, highway stationing, identification of materials to be used and any other pertinent data. If application is for parallel installation, nature of adjacent land use shall be shown. Proposed installations on or in bridges or other structures, or for the installation of any structures, will require detailed structural drawings.

5. Applicant desires this permit to be in affect for 25 years. Permit will not be issued for a period longer than 25 years, must be renewed upon expiration and the burden of timely renewal is on the Applicant. The Applicant shall formally notify the engineer of actual commencement and completion of construction of the installation. The Applicant shall also formally notify the Engineer of removal or abandonment of the facility, or relinquishment of the permit.

6. The signing of the application by the Engineer and returning it to the Applicant shall validate this application as a permit. The granting of this permit shall not be construed as granting any easement or property right.

7. Servicing of facilities will not be permitted within the access control lines on any controlled access project. Should an emergency occur, the Applicant shall notify the Engineer and shall provide such flagmen, flashers, warning or other safety devices as required by the Engineer. All routine maintenance shall be performed from outside any access control lines.

8. The relocation or installation of facilities within public right of way shall be in strict conformance with all provisions of this application, drawing and the Instructions for Utility Permits, as they may be modified by the Engineer, and no departure therefrom may be made without the written consent of the Engineer. All facilities shall be so placed that they will not interfere with nor endanger any roadway features nor other existing facilities. All construction of facilities shall be subject to the inspection and approval of the Engineer. All such work shall be performed so that danger, inconvenience and delay to the traveling public will be held to a minimum. Protection and handling of traffic during the installation are the responsibility of the Applicant and must be approved by the Engineer.

9. The Applicant will, except as otherwise ordered by the Engineer, restore the public right of way, and all bridges or other structures thereon or adjacent thereto which have been altered or affected by facility installation performed hereunder, in accordance with sound construction practices and the Engineer's specifications, and shall cause the work to be done in a workmanlike manner. If any damage is caused to the highway right of way or to any bridge, structure or improvement thereon or adjacent thereto by reason of the installation, maintenance, alteration or removal of such facilities or other appurtenances, the Applicant will reimburse the Engineer the full amount thereof promptly upon demand by the Engineer; provided, however, that the obligation imposed under this paragraph shall not apply in the event the damage resulted from causes beyond the control of

the Applicant. All such facilities located within the right of way shall at all times be kept in such repair so as not to damage the highway, inconvenience or endanger the traveling public and shall be kept free from advertisement, posters and the like.

10. The Applicant will at all times indemnify and save harmless the Engineer from any and all claims of every kind of character caused by or incident to the installation, alteration, removal or condition of these facilities in the right of way and will promptly reimburse the Engineer for any and all expenses incurred by the Engineer in resisting any such claim or claims. Nothing herein shall be construed to mean that the Applicant hereunder will indemnify and save harmless the Engineer from any claim caused by or incident to any neglect, carelessness or breach of duty on the part of the Engineer.

11. Should the Applicant at any time fail to promptly and fully perform any of the obligations imposed hereby and after thirty (30) days written notice thereof, the Engineer may, at his option (a) cause the obligations to be fully carried out and performed, and the Applicant will promptly reimburse the Engineer for all costs and expenses incident thereto, (b) may summarily order the removal of such facility and if the Applicant fails to comply within a reasonable time, the Engineer may direct the removal of the facility with all costs and expenses thereto to be borne by Applicant.

12. If by reason of any change in the location, construction, grade or by any other matter affecting the highway upon which any facility is located because of changing traffic conditions or otherwise, it shall become advisable in the opinion of the Engineer that said facility be removed, relocated or otherwise modified, the Applicant, upon written notice from the Engineer, shall remove, relocate or modify such facility without undue delay in such manner as the Engineer may direct or approve, at the Applicant's expense and at no cost to the Engineer. All facilities located on public right of way under the dual jurisdiction of the State and a subordinate governmental entity shall comply with all applicable rules and regulations of such entity properly and lawfully in force and including but not limited to provisions of local franchises not in conflict with the rules and regulations of the Engineer. The Engineer makes no warranty either express or implied as to the continued existence of any highway in any particular location and expressly assumes no obligation with regard to the facility upon change, vacation or abandonment of any highway or portions thereof.

13. Neither the making of this application nor anything herein contained shall constitute a waiver on the part of the Applicant of any rights or claims had or made by some with respect to the occupancy of the streets and highways under the Constitution and Laws of the State of New Mexico, nor shall anything herein contained in anywise prejudice or impair any rights or claims existing independent of this application with respect to the construction, operation and maintenance of the Applicant's facilities in the State of New Mexico

14. Each copy of the application must be signed by the Applicant as an individual owner or by any official designated to execute such documents.

This application is hereby granted subject to all provisions herein and to the following special provisions, changes or amendments:

All work performed on State Right-of-Way shall meet the Standard Specifications for Road and Bridge Construction (Edition of 1984).

Traffic Control shall be in accordance with Manual on Uniform Traffic Control Devices for Streets and Highways.

The State Right-of-Way must be restored to its original condition or better.

This office will make a final inspection after the project has been completed.

Removal & Replacing of fence, RW markers, or monuments if any shall be the responsibility of the permittee & shall be done under the direction of a licensed Surveyor or Engineer.

APPROVED
Federal Highway Admin.
Date JAN 2 0 1987
CARL S. ARMBRISTER
Field Operations Engineer

Applicant Espey, Huston and Associates (AGENT)

By Dennis A. Lorenz, P.E.

Title Engineering Manager

Approval of this permit is hereby given this 16th day of January, 19 87

NEW MEXICO STATE HIGHWAY DEPARTMENT

By Paul Myers

ESPEY,
HUSTON &
ASSOCIATES, INC.
Engineering & Environmental Consultants

311983

December 29, 1986

Mr. Paul Myers
District 3 Permit Section
New Mexico State Highway Department
P.O. Box 3768, Station D
Albuquerque, New Mexico 87190

SUBJECT: Builders Square
Permit to install facilities within public right-of-way.
EH&A Job No. 7352

Dear Paul:

Enclosed for your approval please find 4 executed copies of the subject permit, 4 copies of Construction Plans, Sheets C-2 and C-3, detailing the proposed improvements, and 4 copies of the drainage calculations. We are requesting permit approval for a total of four (4) items:

1. Construction of an Earthen Berm at Station 308+00±.

2. Installation of wire enclosed Rip-Rap for erosion control at the existing 48-inch pipe (Structure No. 16) at Station 308+00±.

3. Installation of Rip-Rap Erosion Control Pads at Stations 308+75± and 312+50±.

These improvements are intended to help mitigate the erosive effect caused by releasing developed stormwater from Tracts 4C1 and 4C2, Horne Development Addition, into the I-40 right-of-way and drainage facilities.

Construction is scheduled within 60 days of this letter. If you have any questions regarding this request, please call.

Sincerely,

Dennis A. Lorenz, P.E.
Engineering Manager

RECEIVED
DEC 30 1 05 PM '86
N.M. STATE HWY. DEPT.
DISTRICT 3

317 Commercial N.E. • Albuquerque, New Mexico 87102 • (505) 242-1909

NEW MEXICO STATE HIGHWAY DEPARTMENT

FORM A 267

CONFERMEMO

311983

TO Ron Gaines DATE January 7, 1987

Ron: I had Dennis Lorenz contact you briefly last month. Here is his final request. Please review and return with your concurrance for my processing to FHWA.

Thank you,

Paul Myers

SIGNED Paul Myers

PLEASE REPLY HERE

TO Mr. Paul Myers DATE January 12, 1987

As per your request, I have reviewed the final submittal on the subject permit request, prepared by Espey, Hutson & Associates, Inc., and I found the design to be acceptable as submitted. In addition, I am returning all of the information herewith.

If I can be of further service, please let me know.

Sincerely,

Ronald E. Gaines

Ronald E. Gaines
Drainage Engineer

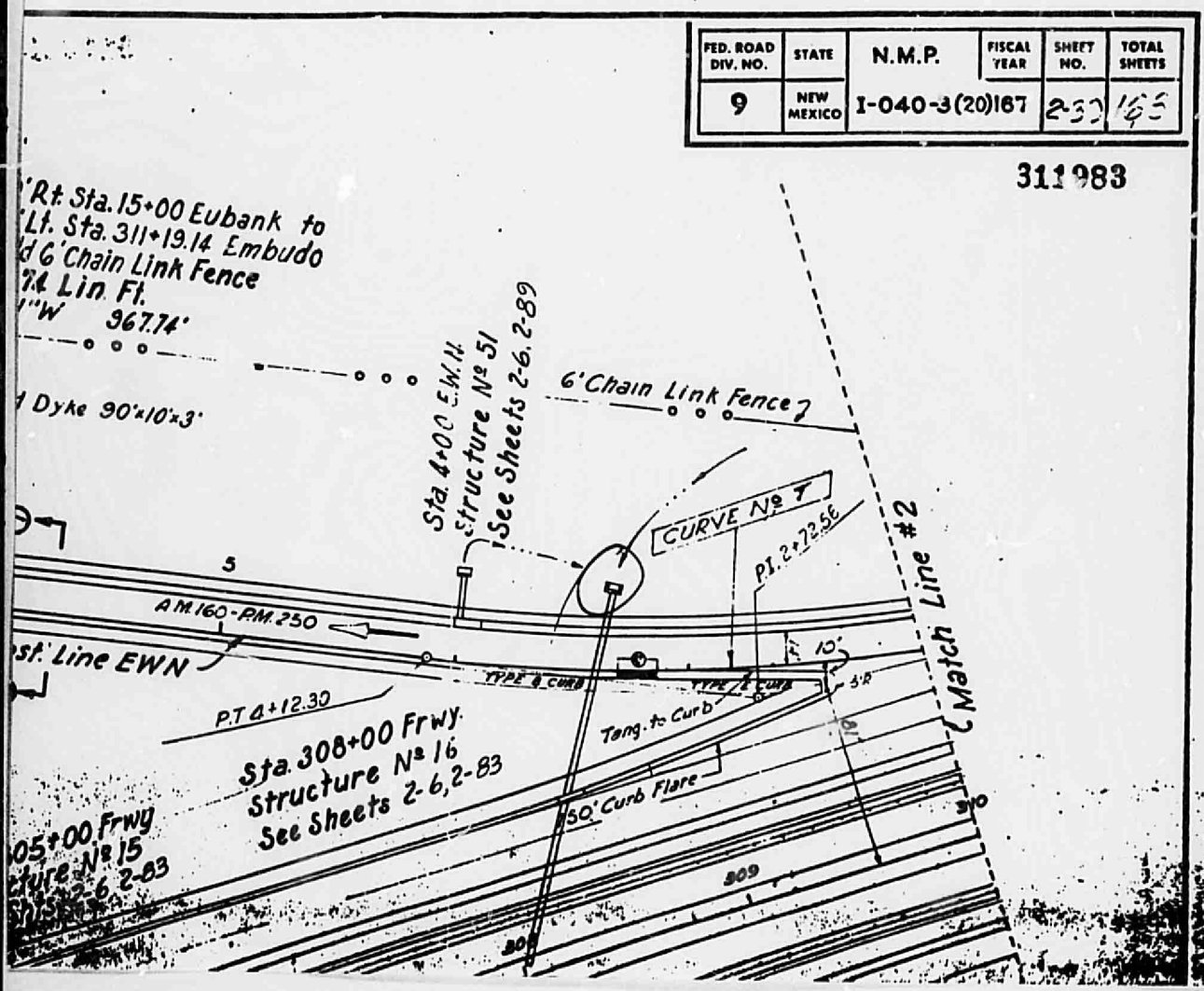
CC: Hector Chavira

SIGNED

NOTE: INDIVIDUAL ORIGINATING CONFERMEMO RETAINS YELLOW COPY, FORWARDING FIRST AND TRIPLICATE INTACT WITH CARBONS, ADDRESSEE REPLIES, EXTRACTS CARBON RETAINS TRIPLICATE RETURNING FIRST PART TO ORIGINATOR OF CONFERMEMO

FED. ROAD DIV. NO.	STATE	N.M.P.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
9	NEW MEXICO	I-040-3(20)167		230	165

311983



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

Ken Schultz
Mayor

UTILITY DEVELOPMENT DIVISION
HYDROLOGY SECTION
(505) 768-2650

February 26, 1987

Dennis Lorenz, P.E.
Espey, Huston & Associates, Inc.
317 Commercial Avenue, NE
Albuquerque, New Mexico 87103

RE: GRADING & DRAINAGE PLAN RESUBMITTAL OF BUILDER'S SQUARE
RECEIVED FEBRUARY 19, 1987 FOR BUILDING PERMIT APPROVAL
(K-21/D16A)

Dear Dennis:

The above referenced submittal revised February 18, 1987, is approved for Building Permit sign-off by Hydrology. Include these approved plans with the construction sets routed for sign-off.

Prior to Certificate of Occupancy approval by Hydrology, the final inspection and acceptance must also be made by the Highway Department for the work within their R.O.W.

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: George Rainhart

RAG/bej

ESPEY,
HUSTON &
ASSOCIATES, INC.
Engineering & Environmental Consultants

February 19, 1987

Mr. Roger Green, P.E.
City Engineer
Hydrology Section
City of ALbuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

RECEIVED
FEB 19 1987
HYDROLOGY SECTION

SUBJECT: Builder's Square Update (K21/D16A)
EH&A Job No. 7352

Dear Roger:

Enclosed please find one (1) copy of the referenced plan update for your review and approval. The following is an itemized response to your Janury 22, 1987 letter:

1. The replat of the Horne Development Addition is in review process and is anticipated to be filed within 60 days. In lieu of the replat, approval was obtained from Walt Nickerson to build over the abandoned 36-inch waterline. Documentation was forwarded to you on February 12, 1987 by Jon Ertsgaard. PNM has abandoned the underground line located at this site. PNM stated that they have no easement rights and, therefore, no approval is necessary.

2. One copy of the permit to construct drainage facilities within NMSHD right-of-way is provided for your record.

? 3. Tract 4-C presently exists as one (1) tract of land, therefore, no construction or access easements are required. All necessary easements required by future subdivisions will be provided by the replat.

The updated plan was revised to include construction detail required by the client. No changes were made that affected the drainage scheme.

If you have any questions please call.

Sincerely,

Dennis A. Lorenz
Engineering Manager

/arp

317 Commercial N.E. • Albuquerque, New Mexico 87102 • (505) 242-1909

ESPEY,
HUSTON &
ASSOCIATES, INC.
Engineering & Environmental Consultants

K-21/D16A

RECEIVED
FEB 11 1987
ENGINEERING DIVISION

February 11, 1987

Mr. Walter Nickerson
City Engineer
Utility Development Division
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

RECEIVED
FEB 12 1987
HYDROLOGY SECTION

Subject: Waterline Easement Vacation
Tract 4-C, Horne Development Addition
DRB 86-637
EH&A Job No. 7352

Dear Walt:

Pursuant to the approval of the Site Development Plan for Market Centre East, Tract 4-C is allowed to be developed with a major retail facility as shown by the enclosed Grading and Drainage Plan. As a requirement of this development, the existing 36-inch waterline was relocated around the southern portion of the proposed building (City Project No. 2838). Subsequent to construction, the abandoned portions of the waterline easements were approved for vacation by the DRB at the October 7, 1986 hearing. Final disposition of these easements is contingent upon recordation of a replat of Tract 4-C.

Unfortunately, schedules do not allow us to wait until the replat is filed to begin construction. We request, as agent for Builder's Square, that permission be granted to begin construction over these vacated easements prior to recordation of a replat. The owners are pursuing replat approval and recordation as soon as possible. We expect plat approval within 60 days of this letter.

I have enclosed copies of 1) the Preliminary Replat of the Horne Development Addition, 2) Grading and Drainage Plan for Builder's Square, and 3) the Findings and Conditions of the Easement Vacation Request. If you approve our request, please acknowledge by signing on the appropriate space below.

Sincerely,

Dennis A. Lorenz, P.E.
Engineering Manger

for Jon E. Ertsgaard 2/12/87
Date
Walter Nickerson
City Engineer
Utility Development Division

317 Commercial N.E. • Albuquerque, New Mexico 87102 • (505) 242-1909

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 22, 1987

Dennis Lorenz
Espey Huston & Associates, Inc.
317 Commercial Street, NE
Albuquerque, New Mexico 87103

RE: GRADING & DRAINAGE PLAN SUBMITTAL OF BUILDERS SQUARE RECEIVED DECEMBER 30, 1986 FOR BUILDING PERMIT APPROVAL (K-21/D15A)

Dear Dennis:

The above referenced submittal dated December 15, 1986 can be approved for Building Permit sign-off by Hydrology after the following items are provided to this office:

1. Documentation that the access, drainage, and waterline easements have been vacated by the D.R.B. and a replat filed.

2. Copies of construction permits from the State Highway Department for construction of the rundowns.

3. A construction easement from the owners of Tract 4-C2 allowing construction of the diversion berm.

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: George Rainhart

RAG/bsj

PROJECT TITLE: BUILDERS SQUARE ZONE ATLAS/DRNG. FILE #: K21/D16A NEW

LEGAL DESCRIPTION: TRACT 4C1 HORNE DEVELOPMENT ADDN

CITY ADDRESS: 45 HOTEL CIRCLE NE

ENGINEERING FIRM: ESPEY HUSTON & ASSOC CONTACT: D. LORENZ

ADDRESS: 317 COMMERCIAL NE PHONE: 242-1909

OWNER: BUILDERS SQUARE CONTACT: G. RAINHART

ADDRESS: 700 LOMAS NE PHONE: 842 9500

ARCHITECT: DE LA TORRE RAINHART CONTACT: G. RAINHART

ADDRESS: 700 LOMAS NE PHONE: 842 9500

SURVEYOR: ESPEY HUSTON & ASSOC CONTACT: T. ALDRICH

ADDRESS: SAME PHONE: 242 1909

CONTRACTOR: NA CONTACT: —

ADDRESS: — PHONE: —

PRE-DESIGN MEETING:

___ YES

✓ NO

___ COPY OF CONFERENCE RECORD SHEET PROVIDED

DRB NO. _____

EPC NO. _____

PROJ. NO. _____

RECEIVED DEC 30 1986 HYDROLOGY SECTION

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

___ FINAL PLAT APPROVAL

✓ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

___ OTHER _____ (SPECIFY)

DATE SUBMITTED: DEC. 29, 1986

BY: D. LORENZ

ESPEY, HUSTON & ASSOCIATES INC.
Engineering & Environmental Consultants

SUBJECT CALCULATIONS

BUILDERS SQUARE

SHEET 1 OF 7 BY DL
DATE 12-26-86 CK BY RAS

I. DESIGN CRITERIA

A. RAINFALL

$P_{100} = 2.45''$ $P_{10} = 1.61''$

B. SOILS

TgB - TIJERAS - SOIL GROUP "B"

C. RATIONAL "C" FACTOR (RATIONAL METHOD)

EXISTING UNDEVELOPED SOIL : C = 0.34

~~DEVELOPED AREAS~~ : C DETERMINED BY DPM PLATE 22.2 C-1 not used

D. RUNOFF CURVE NUMBER (SCS METHOD)

EXISTING UNDEVELOPED SOIL : CN = 70

DEVELOPED AREAS: CN DETERMINED BY DPM PLATE 22.2 C-2.

E. TIME OF CONCENTRATION

$t_c = 0.0078\, L^{0.77} / S^{0.385}$

F. RAINFALL INTENSITY

$i = P(6.84)\, t_c^{-0.51}$

RECEIVED
DEC 30 1986
HYDROLOGY SECTION

G. RUNOFF

$Q = CiA$ RATIONAL METHOD IS USED TO BE CONSISTENT WITH APPROVED CONCEPTUAL PLAN

H. VOLUME

$V = \frac{AR}{12}(43560)$ SCS METHOD USED TO BE CONSISTENT WITH APPROVED CONCEPTUAL PLAN

II. DRAINAGE BASIN DESCRIPTIONS

A. BASINS 'A' & 'B'

THESE BASINS REPRESENT THE BUILDERS SQUARE SITE (TRACT 4-C1)

B. BASIN 'C'

THIS BASIN REPRESENTS TRACT 4-C2 LOCATED ADJACENT TO BUILDERS SQUARE ON THE EAST.

C. BASIN 'D'

THIS BASIN REPRESENTS THE PORTION OF I-40 R.O.W. THAT DRAINS TO ANALYSIS POINT 4.

D. BASIN 'E'

THIS BASIN REPRESENTS THE TOMASITA ELEMENTARY SCHOOL SITE.

E. PHASE I

PHASE I IS USED TO DESCRIBE THE DRAINAGE CONDITION AFTER DEVELOPMENT OF BUILDERS SQUARE. BASIN 'C' REMAINS UNDEVELOPED, WITH FLOWS DIVERTED AROUND BUILDERS SQUARE. THE DIVERSION OF BASIN 'E' TO THE I-40 CHANNEL IS NOT IMPLEMENTED WITH PHASE I.

F. PHASE II

PHASE II REPRESENTS THE ULTIMATE DEVELOPMENT OF THE DRAINAGE BASIN IMPACTING ANALYSIS POINT 4. BASIN 'C' IS FULLY DEVELOPED AND DRAINS THRU BASIN 'B' TO ANALYSIS POINT 2. BASIN 'E' IS DIVERTED TO THE I-40 CHANNEL AS OUTLINED IN THE CONCEPTUAL REPORT.

III CALCULATIONS

HYDROLOGIC CALCULATIONS.														
AP	BASIN	AREA	L	H	t_c	i_{100}	C	CN	R_{100}	R_{10}	Q_{100}	Q_{10}	V_{100}	V_{10}
					— EXISTING —									
4	A	3.3	600	22	10	5.18	0.34	70	0.50	0.15	5.8	3.8	5,990	1795
4	B	4.3	900	23	10	5.18	0.34	70	0.50	0.15	7.6	5.0	7,805	2340
4	C	10.2	1650	46	10	5.18	0.34	70	0.50	0.15	18.0	11.8	18,515	5,555
4	D	2.3	1400	32	10	5.18	0.52	81	0.85	0.30	6.2	4.1	7,095	2,505
4	E	22.1	2600	60	14	4.36	0.42	75	0.70	0.20	40.4	26.6	52,145	20,055
4	ABC DE	42.2	2600	60	14	4.36	0.39	73	0.70	0.20	71.6	47.0	107,230	30,635
					— DEVELOPED —									
1	A	20.1 3.3	560	23	10	5.18	0.92	95	1.90	1.10	15.7	10.3	22,760	13,175
2	B	4.3	1000	28	10	5.18	0.92	95	1.90	1.10	20.5	13.4	29,655	17,170
3	C	10.2	1030	24	10	5.18	0.92	95	1.90	1.10	48.6	31.9	70,350	40,730
4	D	2.3	1400	32	10	5.18	0.52	81	0.85	0.30	6.2	4.1	7,095	2,505
5	E	22.1	1700	30	10	5.18	0.42	75	0.70	0.20	48.1	31.6	52,145	20,055
4	PHASE I	42.2	2600	60	14	4.36	0.49	77	0.75	0.25	90.2	59.2	114,890	38,295
4	PHASE II	20.1	1800	46	10	5.18	0.87	93	1.70	1.00	90.6	59.5	124,035	72,965
2	B+C	14.5	600	14	10	5.18	0.92	95	1.90	1.10	69.0	45.3	100,000	57,895

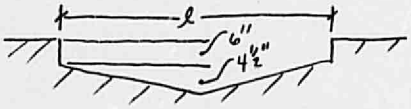
ESPEY, HUSTON & ASSOCIATES INC.
Engineering & Environmental Consultants

BUILDERS SQUARE

SUBJECT CALCULATIONS
SHEET 4 OF 7
DATE 12-23-86 BY DL
CK BY

IV RUNDOWN DESIGN AT AP #2

Q_{100} (ULTIMATE) = 69.0 CFS



USE $Q = 3.33 \ell h^{3/2}$ WHERE $Q = 69.0$, $h = 0.88'$

$$\ell = \frac{69}{3.33(.83)^{3/2}}$$

$\underline{\underline{\ell = 25'}}$ USE 25' CURB OPENNING WITH RIP RAP OUTFALL PER NMSHD STDS. SEE DETAIL 'G' SHEET C3

V CHECK EXISTING 48" RCP FOR INLET CONTROL AT AP#4

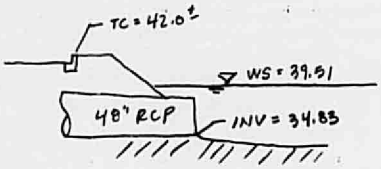
PER BPR FIGURE 309.4H (SEE ATTACHED)

Q_{100} (ULTIMATE) = 90.6 CFS

PIPE DIA = 48"

FIND HW REQ'D ⇒ CONDITION 3

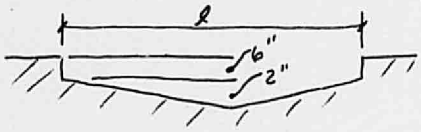
$\frac{HW}{D} = 1.17$ $HW = 48(1.17) = 56.2"$
$= 4.68'$



PER AS-BUILT INFORMATION, ADEQUATE HEADWATER CAN EASILY BE PROVIDED. AN EARTHEN BERM (SEE PLAN) WILL BE CONSTRUCTED TO CREATE A PONDING AREA. EROSION CONTROL WILL BE PROVIDED AT THE 48" RCP INLET PER NMSHD STDS.

VI RUNDOWN DESIGN AT AP # 1

$Q_{100} = 15.7$ CFS

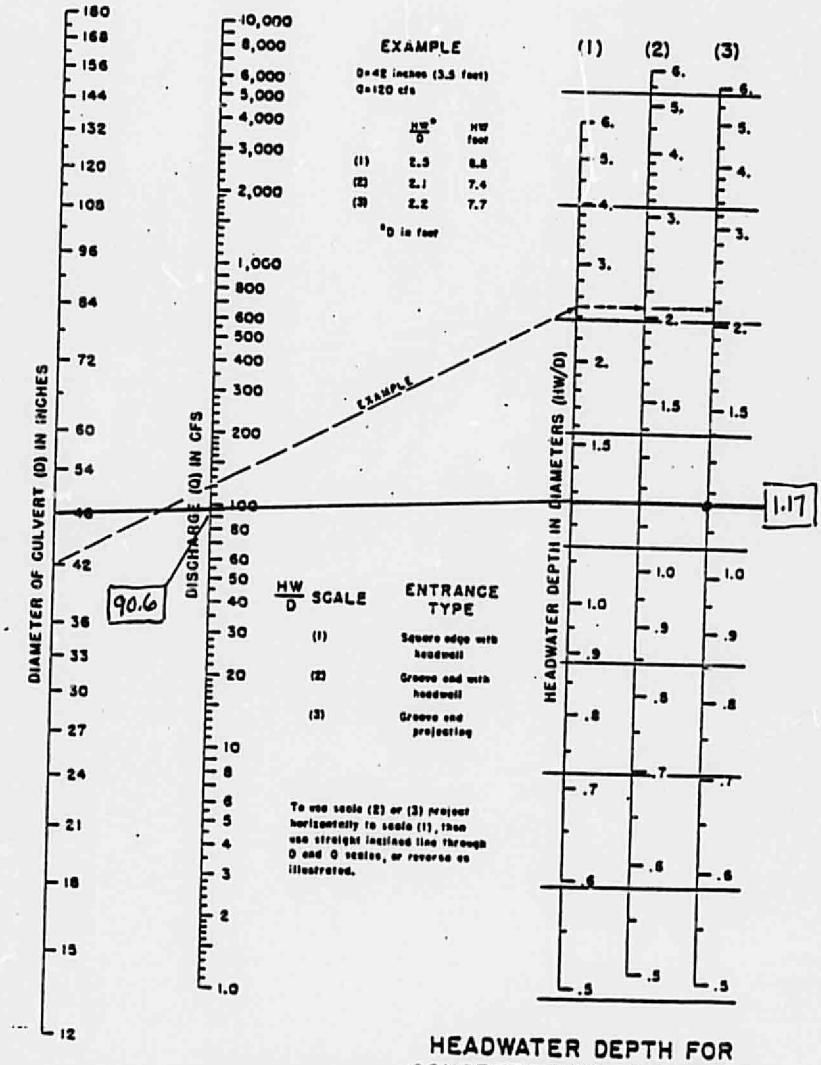


USE $Q = 3.33\, l\, h^{3/2}$ WHERE: $Q = 15.7$, $h = 0.67'$

$$l = \frac{15.7}{3.33(.67)^{3/2}}$$

$l = 7'$ USE 7' CURB OPENNING WITH RIP RAP OUTFALL PER NMSHD STDS. SEE DETAIL 'H' SHEET C3

FIGURE 309.4H



HEADWATER SCALES 2&3
REVISED MAY 1964

BUREAU OF PUBLIC ROADS JAN. 1963

HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL