

TACO BELL, COORS  
 PROJECT TITLE: AND HANOVER ZONE ATLAS/DRNG. FILE #: J-11/D-17A

LEGAL DESCRIPTION: Lot A1A, Block D, Glenrio Heights

CITY ADDRESS: \_\_\_\_\_

ENGINEERING FIRM: Lovelady & Associates CONTACT: Frank D. Lovelady

ADDRESS: 7408 Morrow Ave. NE 87110 PHONE: 883-7973

OWNER: Alvarado Construction CONTACT: Robert Alvarado

ADDRESS 1266 Santa Fe Drive, Denver Co 80204 PHONE: 303-629-0783

ARCHITECT: Rick Bennett CONTACT: Rick Bennett

ADDRESS: 1118 Park Ave. S.W. PHONE: 242-1859

SURVEYOR: Alpha Surveying Group CONTACT: Gary Gritsko

ADDRESS: 623 Amherst Dr. NE PHONE: 265-5538

CONTRACTOR: Ventura Construction CONTACT: Robert Alvarado

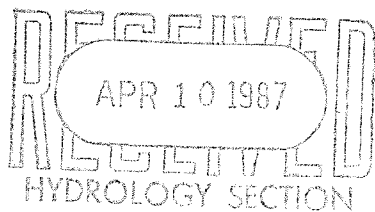
ADDRESS: 1266 Santa Fe Drive, Denver Co 80204 PHONE: 303 629-0783

PRE-DESIGN MEETING:

X YES

       NO

X COPY OF CONFERENCE RECAP  
 SHEET PROVIDED



DRB NO. \_\_\_\_\_

EPC NO. \_\_\_\_\_

PROJECT NO. \_\_\_\_\_

TYPE OF SUBMITTAL:

       DRAINAGE REPORT

X DRAINAGE PLAN

       CONCEPTUAL GRADING & DRAIN. 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

X BUILDING PERMIT APPROVAL

X FOUNDATION PERMIT APPROVAL

       CERTIFICATE OF OCCUPANCY APPROVAL

       ROUGH GRADING PERMIT APPROVAL

DATE SUBMITTED: April 8, 1987

       GRADING/PAVING PERMIT APPROVAL

BY: Frank D. Lovelady  
 Frank D. Lovelady, P.E.

OTHER \_\_\_\_\_ (SPECIFY)

FILE COPY



# City of Albuquerque

P.O. BOX 1293. ALBUQUERQUE, NEW MEXICO 87103

Ken Schultz  
Mayor

UTILITY DEVELOPMENT DIVISION  
HYDROLOGY SECTION  
(505) 768-2650

April 23, 1987

Frank Lovelady  
Lovelady & Associates  
7408 Morrow Avenue, NE  
Albuquerque, New Mexico 87110

RE: REVISED DRAINAGE PLAN FOR TACO BELL @ COORS & HANOVER  
(J-11/D17A) REVISION DATE APRIL 9, 1987

Dear Frank:

Based on the information provided on your resubmittal of April 10, 1987,  
the above referenced plan is approved for Building and Foundation Permit.

Please be advised that upon completion, we will need certification of the  
finish floor elevation.

Also, a separate permit for construction within City Right-of-Way is  
required.

Please attach a copy of this plan to the construction sets prior to  
sign-off by Hydrology.

If I can be of further assistance, please feel free to call me at  
768-2650.

Cordially,

Bernie J. Montoya, C.E.  
Engineering Assistant

cc: Becky Sandoval

BJM/bsj

PUBLIC WORKS DEPARTMENT

Walter Nickerson, P.E., City Engineer

ENGINEERING GROUP

Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER

FILE COPY



# City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Ken Schultz  
Mayor

UTILITY DEVELOPMENT DIVISION  
HYDROLOGY SECTION  
(505) 768-2650

June 4, 1987

Frank Lovelady  
Lovelady & Associates  
7408 Morrow Avenue, NE  
Albuquerque, New Mexico 87110

RE: REVISED DRAINAGE PLAN FOR TACO BELL @ COORS & HANOVER  
(J-11/D17A) REVISION DATE OF MAY 14, 1987

Dear Frank:


Based on the information provided on your resubmittal of May 27, 1987, the revisions as indicated are acceptable for Building Permit approval.

Please be advised that a separate permit for construction within City right-of-way is required.

Please attach a copy of this plan to the construction sets prior to sign-off by Hydrology.

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

  
Bernie J. Montoya, C.E.  
Engineering Assistant

BJM/bsj

PUBLIC WORKS DEPARTMENT

Walter Nickerson, P.E., City Engineer

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AN EQUAL OPPORTUNITY EMPLOYER

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

CONFERENCE RECAP

DRAINAGE FILE/ZONE ATLAS PAGE NO.: J-11 DATE: 2/27/87 @ 11:00  
PLANNING DIVISION NOS: EPC: \_\_\_\_\_ DRB: \_\_\_\_\_  
SUBJECT: Taco Bell - Coors & Hanover  
STREET ADDRESS (IF KNOWN): \_\_\_\_\_  
SUBDIVISION NAME: Glenrio Heights; BIK ~~B~~ Lot A-1-A

APPROVAL REQUESTED:

_____ PRELIMINARY PLAT	_____ FINAL PLAT
_____ SITE DEVELOPMENT PLAN	<u>X</u> BUILDING PERMIT
_____ OTHER	_____ ROUGH GRADING

WHO	REPRESENTING
ATTENDANCE: <u>Frank Lovelady</u>	<u>Lovelady &amp; Associates</u>
<u>Bernie Montoya</u>	<u>Hydrology Section</u>

FINDINGS:

1. Approved Drainage and Grading plan required for Building Permit sign-off by Hydrology.
2. Site is encroached by a flood plain.
3. Finish Floor elevation must be at 5097. Engineer must certify upon completion.
4. Copy of replat required.
5. Existing catch basin on Southwest corner of Coors & Hanover
6. Controlled release into back of catchbasin is appropriate.
7. 42" RCP on Coors Blvd.
8. SCS method appropriate to evaluate the required volume to be ponded.
9. Catchbasin tap is handled by S.O. 19 process which is included with drainage plan submitted.
10. \_\_\_\_\_

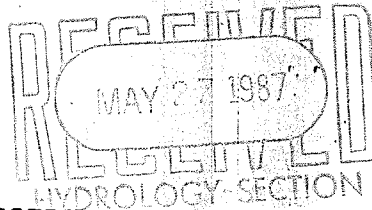
The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED: Bernie Montoya  
TITLE: Engineering Assistant  
DATE: 2/27/87

SIGNED: Frank Lovelady  
TITLE: \_\_\_\_\_  
DATE: Feb 27, 1987

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

08739240



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DECLARATION OF RESTRICTIVE COVENANTS AND EASEMENTS

WHEREAS, ARTHUR DOW and MARY L. DOW, husband and wife (hereinafter DOWS) are the owners of the following described real property located in the County of Bernalillo, State of New Mexico, and more particularly described as follows, to-wit:

Lot A-1-A and Lot A-2-A Block "D" of the Replat of Lots A-1 and A-2, Block "D", GLENRIO HEIGHTS, as the same are shown and designated on the Plat thereof, filed in the Office of the County Clerk of Bernalillo County, New Mexico, on April 16, 1987, in Vol. C33, Folio 97.

(hereinafter LOT A-1-A and LOT A-2-A)

Lot A-3, Block "D", GLENRIO HEIGHTS, an Addition to the City of Albuquerque, New Mexico, as the same is shown and designated on the Replat thereof filed in the Office of the County Clerk of Bernalillo County, New Mexico on November 30, 1982 in Volume B20, Folio 37.

(hereinafter LOT A-3); and

WHEREAS, DOWS desire to create easements, restrictive covenants and maintenance requirements which will benefit all three lots in the development thereof; and

WHEREAS, DOWS shall sell LOT A-1-A to ROBERT L. ALVARADO and LINDA G. ALVARADO, husband and wife, after the filing of this Declaration.

ALBUQUERQUE  
CODE ADMIN.

NOW THEREFORE:

APR 30 1987

U.B.C.

PLAN CHECK  
SECTION

1. Building Restrictions. DOWS shall not build or maintain, or permit to be built or maintained, any structures on LOT A-1-A, LOT A-2-A and LOT A-3 to the West of a building set-back line delineated on Exhibit "A" which is attached hereto and incorporated herein. This restriction shall not

apply to landscaping, pavement, lighting, signing, fences, gates or other similar structures, which at the time of the erection thereof are usual and customary in connection with the operation of a commercial center parking lot and the advertisement for any such center.

2. Reciprocal Access Easements. DOWS declare that reciprocal, mutual, non-exclusive easements shall exist for the benefit of, and appurtenant to, LOT A-1-A, LOT A-2-A and LOT A-3 for a right-of-way for access for motor vehicle and pedestrian traffic of the owners, tenants, licensees and invitees of said Lots. The access easements over LOT A-1-A are designated as Access Easement 1 and Access Easement 2, respectively on Exhibit "B" which is attached hereto and incorporated herein. The access easements across LOT A-2-A and LOT A-3 shall be undefined but shall provide access to and from Coors Boulevard NW for all three Lots. The access easement across each such Lot shall be defined prior to the construction of any improvements thereon. The access easements to be defined in the future shall be approved by the owners of the other Lots to be benefitted by said easements, which approval shall not be unreasonably withheld.

ALBUQUERQUE  
CODE ADMIN.

APR 30 1987

3. Reciprocal Parking Easements. DOWS declare that reciprocal, mutual, non-exclusive easements shall exist for the benefit of, and appurtenant to, LOT A-1-A, LOT A-2-A and LOT A-3 for the purpose of parking vehicles of the owners, tenants, licensees and invitees of each Lot upon the other Lots; said easements shall be limited to purposes connected

PLAN CHECK  
SECTION

with or incidental to any use being made of all or any portion of said Lots. The parking easements shall only include portions of each Lot designated for parking.

4. Reciprocal Pedestrian Easements. DOWS declare that reciprocal, mutual, non-exclusive easements shall exist for the benefit of, and appurtenant to, LOT A-1-A, LOT A-2-A and LOT A-3 for the purpose of pedestrian traffic of the owners, tenants, licensees and invitees of each Lot across the other Lots, which easements shall be limited to purposes connected with or incidental to any use being made of all or any portion of said Lots.

5. Reciprocal Drainage Easements. DOW hereby declares that reciprocal, mutual, non-exclusive drainage easements shall exist for the benefit of, and appurtenant to LOT A-1-A, LOT A-2-A and LOT A-3 for the purpose of surface drainage of all water from each such Lot across the other Lots.

6. Maintenance and Operation of Parking Areas. The owners of LOT A-1-A, LOT A-2-A and LOT A-3 shall be responsible for the maintenance and operation of the designated parking areas on their respective Lots by:

a. Maintaining the asphalt surfaces in a level and smooth condition;

b. Removing all paper, debris, filth, refuse, snow and ice and sweeping said areas to the extent reasonably necessary to keep such areas in a clean and orderly condition;

c. Placing, keeping in repair and replacing any necessary or appropriate directional signs, markers and striping lines;

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CODE AD-111

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U.B.C.  
PLAN CHECK  
SECTION

d. Keeping in repair and replacing, where necessary, artificial lighting standards, fixtures and facilities as shall be reasonably required to keep the parking areas adequately lighted at night;

e. Maintaining all landscaped areas and replacing scrubs and other landscaping as is necessary;

f. Maintaining and repairing any and all walls, curbs, sidewalks, fences, bumper-curbs and common or shared drainage easements.

In the event any owner of one of the above-described Lots fails to maintain and operate the parking areas as required herein, the remaining owner or owners of the other Lot(s) shall have the right to specifically enforce this covenant by legal process and the defaulting party shall pay all costs and legal fees incurred in enforcing the covenants provided for herein. Notwithstanding the provisions of this paragraph, the owner(s) of LOT A-2-A and LOT A-3 shall not be required to pave, landscape, light or otherwise improve LOT A-2-A and LOT A-3 until such time as permanent commercial improvements are constructed upon said Lots. Pending said improvements LOT A-2-A and LOT A-3 may remain in their natural state.

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7. Prohibited Commercial Activity. A restaurant or other eating establishment which serves as its primary fare, Mexican food of a nomenclature or type similar to that served by Taco Bell, shall not be operated upon LOT A-2-A and LOT A-3. This restriction shall terminate at such time as LOT A-1-A is

UBC  
PLAN CHECK  
SECTION



no longer used for a Taco Bell restaurant or similar mexican food outlet.

8. Term. This Declaration shall continue in full force and effect for a term of 40 years from the date hereof, and shall only be modified by written agreement signed by all owners of LOT A-1-A, LOT A-2-A and LOT A-3.

9. Covenants Running With The Land. The easements hereby declared and the restrictions and requirements hereby imposed shall be easements, restrictions and covenants running with the land and shall inure to the benefit of, and be binding upon, DOWS and their respective heirs, personal representatives, and assigns, including, but without limitation, all subsequent owners of LOT A-1-A, LOT A-2-A and LOT A-3 and all persons claiming under them.

IN WITNESS WHEREOF, the undersigned have set their hands and seals this 13<sup>th</sup> day of April, 1987.

Arthur Dow  
Arthur Dow

Mary L. Dow  
Mary L. Dow

APPROVED:

Robert L. Alvarado  
Robert L. Alvarado

Linda G. Alvarado  
Linda G. Alvarado

ALBUQUERQUE  
CODE ADMIN.

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U.B.C.

PLAN CHECK  
SECTION

STATE OF NEW MEXICO )  
 ) ss.  
COUNTY OF BERNALILLO )

13<sup>th</sup> The foregoing instrument was acknowledged before me this day of April, 1987, by Arthur Dow and Mary L. Dow, husband and wife.

MY COMMISSION EXPIRES:

3/12/88

Marilyn L. Little  
NOTARY PUBLIC

OFFICIAL SEAL

MARYANN H. LITTLE

NOTARY PUBLIC - STATE OF NEW MEXICO


My Commission Expires 3/12/88

STATE OF ~~NEW MEXICO~~ <sup>COLORADO</sup> )  
~~DENVER~~ ) ss.  
 COUNTY OF ~~BERNALILLO~~ )

The foregoing instrument was acknowledged before me this 9 day of April, 1987, by Robert L. Alvarado and Linda G. Alvarado, husband and wife.

MY COMMISSION EXPIRES:

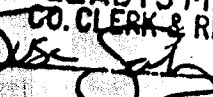
My Commission expires November 21, 1987

  
 NOTARY PUBLIC

ALBUQUERQUE  
 CODE ADMIN.  
 APR 30 1987  
 U.B.C.  
 PLAN CHECK  
 SECTION

STATE OF NEW MEXICO  
 COUNTY OF BERNALILLO  
 FILED FOR RECORD

87 APR 16 PM 3:23

BY Ms476A PG 1-8  
 GLADYS M. DAVIS  
 CO. CLERK & RECORDER  
 DEPUTY

DESCRIPTION - Building Set-back line

20- 7  
A building set-back line has been established within Lots A-1, A-2 and A-3 in Block D, GLENRIO HEIGHTS, an Addition to the City of Albuquerque, New Mexico, as the same are shown and designated on the Replat thereof filed in the office of the County Clerk of Bernalillo County, New Mexico on November 30, 1982 in Vol. B20, Folio 37. This set-back line requires that no building shall be constructed on said Lots West of the line more particularly described as follows:

Beginning at the Northerlymost point of the line herein described, being a point on the North boundary of said Lot A-1, from whence the Northeast corner of said Lot A-1 bears S.  $89^{\circ}19'00''$  E., 76.13 feet distant; Thence,

S.  $00^{\circ}41'00''$  W., 96.60 feet to an angle point on said set-back line, being a point on the boundary between Lots A-1 and A-2; Thence

S.  $37^{\circ}23'14''$  W., 289.97 feet to a point where said set-back line intersects the East right-of-way line of Coors Blvd. NW, being a point on the West boundary of said Lot A-3.

CLIENT: Dow/ Alvarado A-12-19-86

Date: February 25, 1987



EXHIBIT A

ALBUQUERQUE  
CODE ADMIN.  
APR 30 1987  
U.B.C.  
PLAN CHECK  
SECTION

## DESCRIPTION - Access Easement 1

A certain tract of land for an access easement within Lot A-1, Block D, GLENRIO HEIGHTS, an Addition to the City of Albuquerque, New Mexico, as the same is shown and designated on the Replat thereof filed in the office of the County Clerk of Bernalillo County, New Mexico on November 30, 1982, in Vol. B20, Folio 37. Said access easement being more particularly described as follows:

Beginning at the Northeast corner of the easement herein described, whence the Northeast corner of said Lot A-1 bears S. 89° 19' 00" E., 44.81 feet distant; Thence,

S. 19° 04' 40" W., 101.80 feet to the Southeast corner of the easement herein described; Thence,

N. 89° 19' 00" W., 25.29 feet to the Southwest corner of the easement herein described; Thence,

N. 19° 04' 40" E., 101.80 feet to the Northwest corner of the easement herein described; Thence,

S. 89° 19' 00" E., 25.29 feet to the point of beginning.

## DESCRIPTION - Access Easement 2

A certain tract of land for an access easement within Lot A-2, Block D, GLENRIO HEIGHTS, an Addition to the City of Albuquerque, New Mexico, as the same is shown and designated on the Replat thereof filed in the office of the County Clerk of Bernalillo County, New Mexico November 30, 1982 in Vol. B20, Folio 37. Said access easement being more particularly described as follows:

Beginning at the Northeast corner of the easement herein described, whence the Northeast corner of said Lot A-2 bears S. 89° 19' 00" E., 5.00 feet distant; Thence,

S. 00° 41' 00" W., 134.00 feet to the Southeast corner of the easement herein described; Thence,

N. 89° 19' 00" W., 85.00 feet to a point

N. 89° 19' 00" W., 85.00 feet to the Southwest corner of the easement herein described; Thence,

N. 00° 41' 00" E., 24.00 feet to a point; Thence,

S. 89° 19' 00" E., 61.00 feet to a point; Thence,

N. 00° 41' 00" E., 110.00 feet to the Northwest corner of the easement herein described; Thence,

S. 89° 19' 00" E., 24.00 feet to the point of beginning.

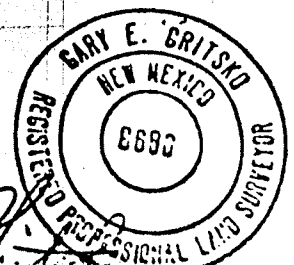
ALBUQUERQUE

CODE ADMIN.

APR 30 1987

U.B.C.

PLAN CHECK

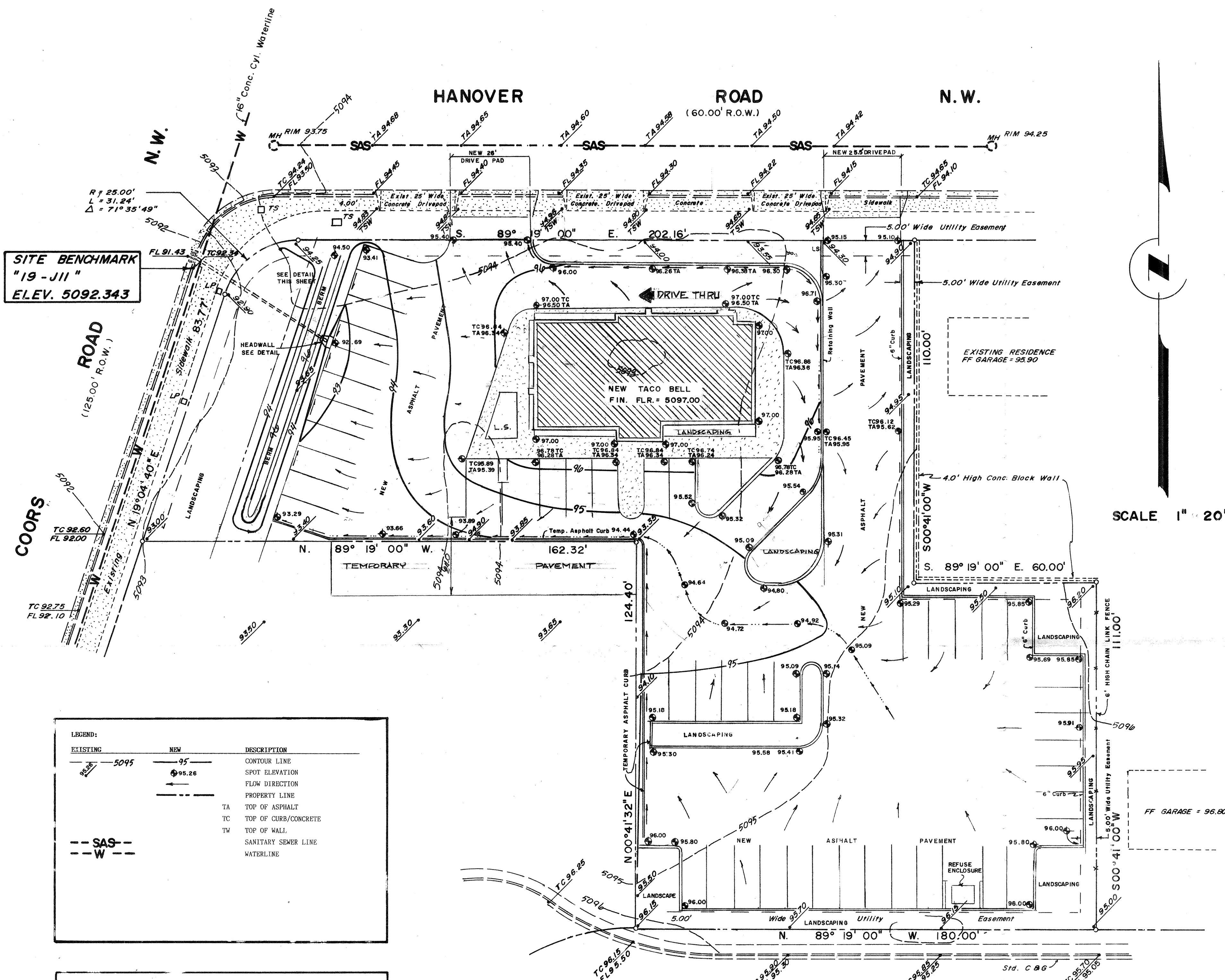


CLIENT: DOW/ Alavarado (A-12-19-86)

Date: February 24, 1987 Amended #1 4/3/87

*James E. Britsko*





**SITE BENCHMARK**  
"19-J11"  
ELEV. 5092.343

**LEGEND:**

EXISTING	NEW	DESCRIPTION
---	---	CONTOUR LINE
•	•	SPOT ELEVATION
---	---	FLOW DIRECTION
---	---	PROPERTY LINE
TA	TA	TOP OF ASPHALT
TC	TC	TOP OF CURB/CONCRETE
TW	TW	TOP OF WALL
---	---	SANITARY SEWER LINE
---	---	WATERLINE

**CITY OF ALBUQUERQUE**  
**DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY**  
**NOTICE TO CONTRACTOR**

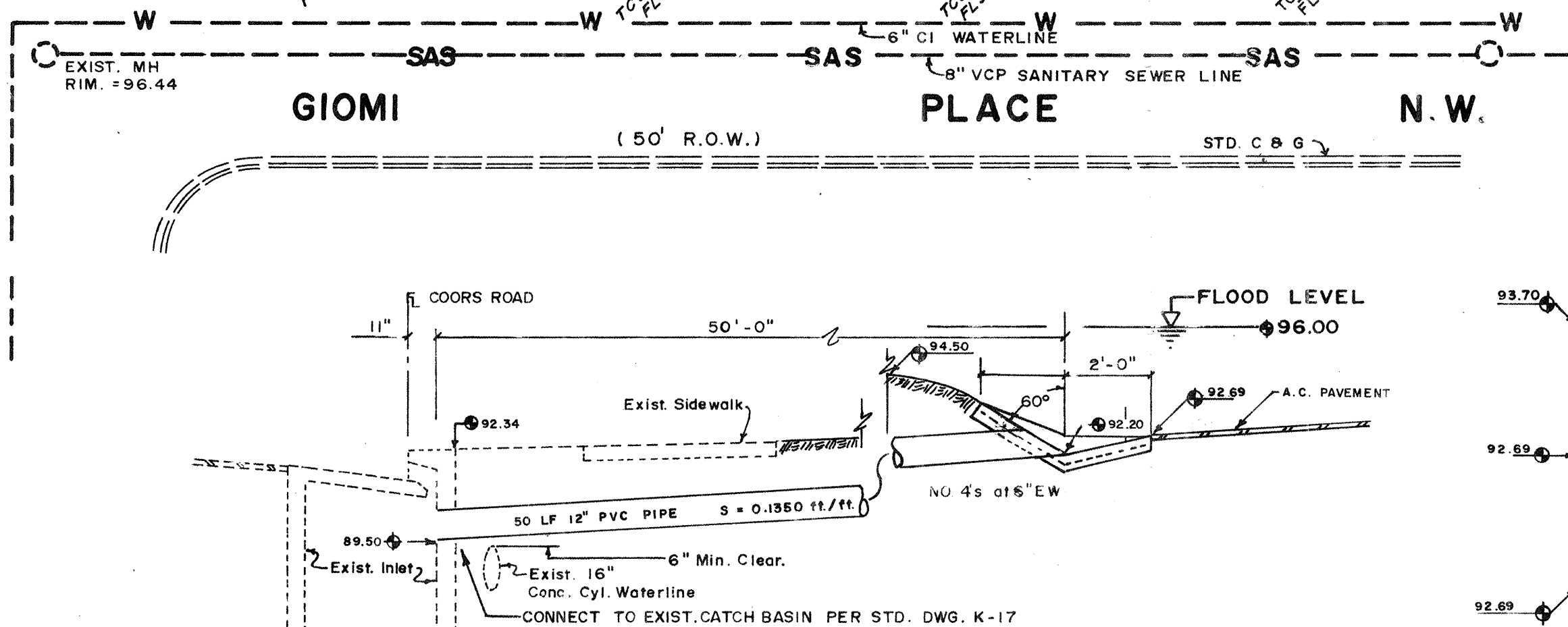
- AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY. AN APPROVED COPY OF THESE PLANS MUST BE SUBMITTED AT THE TIME OF APPLICATION FOR THIS PERMIT.
- ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED UNDER CONTRACT, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH INTERIM SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 1985.
- TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 765-1234, FOR LOCATION OF EXISTING UTILITIES.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL CONSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
- BACKFILL AND COMPACTION SHALL BE ACCORDING TO **ARTERIAL STREET USE**.
- MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
- THIS ADDRESS OF THE PROPERTY SERVED IS:

**APPROVALS:**

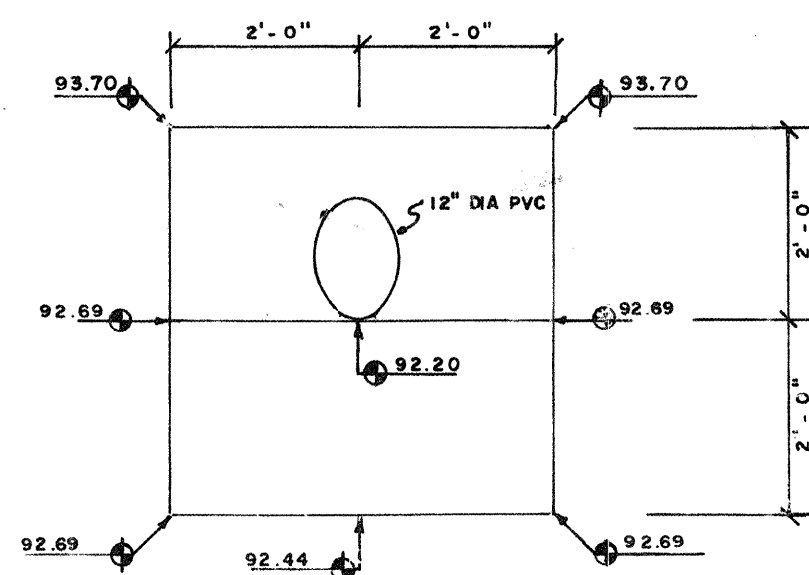
DESIGN APPROVAL: *[Signature]* DATE: 9/7/87

INSPECTION APPROVAL: \_\_\_\_\_ DATE: \_\_\_\_\_

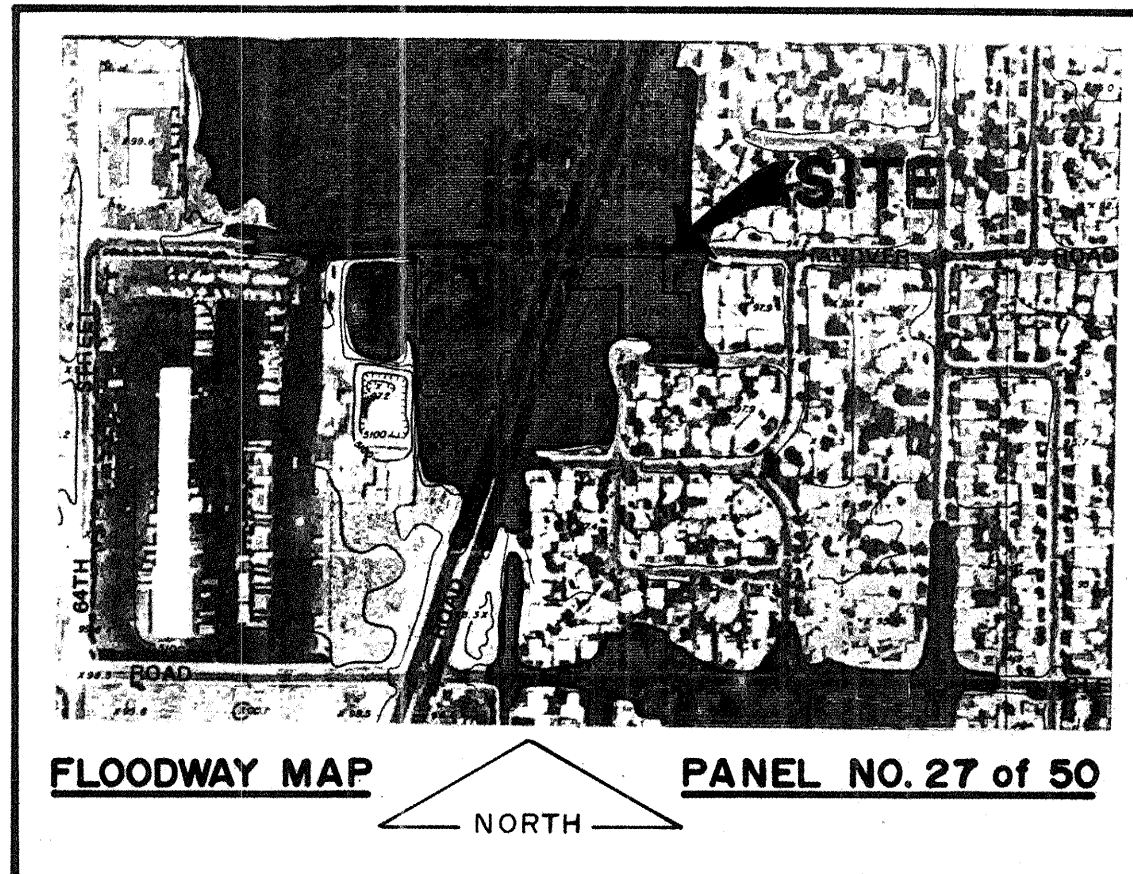
ACCEPTANCE: \_\_\_\_\_ DATE: \_\_\_\_\_



**DRAINAGE OUTFALL CONNECTION TO EXISTING INLET**  
1/4" = 1' - 0"



**PLAN VIEW - CONC. HEADWALL**  
1/2" = 1' - 0"



- PRE-DESIGN CONFERENCE FINDINGS:**
- APPROVED GRADING AND DRAINAGE PLAN REQUIRED FOR BUILDING PERMIT SIGN-OFF BY HYDROLOGY.
  - SITE IS ENCLOSED BY A FLOOD PLAIN.
  - FINISH FLOOR ELEVATION MUST BE AT 5097. ENGINEER MUST CERTIFY UPON COMPLETION.
  - COPY OF REPEAT REQUIRED.
  - EXISTING CATCH BASIN ON SOUTHEAST CORNER OF COORS AND HANOVER.
  - CONTROLLED RELEASE INTO BACK OF CATCH BASIN IS APPROPRIATE.
  - 42" RCP ON COORS BLVD. (48" RCP DOWNSTREAM FROM SITE.)
  - S.C.S. METHOD APPROPRIATE TO EVALUATE THE REQUIRED VOLUME OF PONDING.
  - CATCH BASIN TAP IN HANDLED BY S.O. 19 PROCESS WHICH IS INCLUDED WITH DRAINAGE PLAN SUBMITTAL.

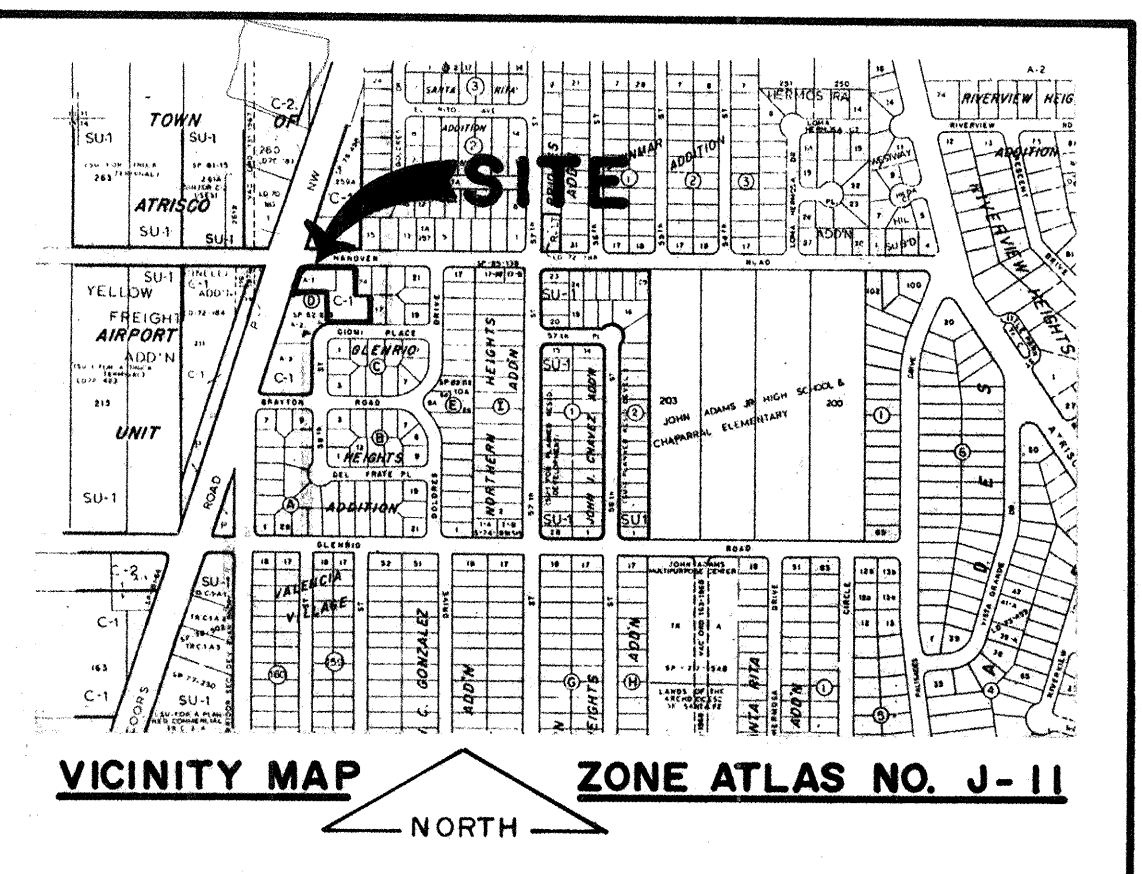
- DRAINAGE COMMENTS:**
- THE SITE IS ENCLOSED BY A FLOOD PLAIN. THE ELEVATION IS 5096 FEET.
  - THE BUILDING FINISH FLOOR ELEVATION HAS BEEN SET AT 5097, 1.0' ABOVE FLOOD PLAIN.
  - A REPEAT IS BEING PREPARED. A COPY OF THE PROPOSED REPEAT IS SUBMITTED WITH THIS PLAN.
  - THE SITE RUNOFF WILL BE DISCHARGED INTO THE BACK OF THE EXISTING CATCH BASIN. SEE S.O. 19 APPROVAL BLOCK THIS SHEET.
  - THERE IS NO OFF-SITE FLOW.

**BENCH MARK:**  
A.C.S. STATION "19-J11" LOCATED AT THE INTERSECTION OF COORS ROAD AND HANOVER ROAD, N.W. STATION IS LOCATED IN THE S.E. QUADRANT OF THE INTERSECTION, 48' EAST FROM CENTERLINE OF COORS ROAD AND 36' SOUTH FROM CENTERLINE OF HANOVER ROAD. STATION IS AN A.C.S. BRASS CAP SET FLUSH WITH SIDEWALK AND STAMPED "19-J11". ELEVATION 5092.434 FEET.  
NO TEMPORARY BENCH MARK IS REQUIRED SINCE THE B.M. IS ADJACENT TO THE SITE.

- GENERAL NOTES:**
- SEE SITE PLAN FOR PARKING LOT LAYOUT AND BUILDING DIMENSIONS.
  - NO SEARCH HAS BEEN MADE FOR EASEMENTS OF RECORD OTHER THAN THOSE SHOWN ON THE PLAT OF RECORD.

**EROSION CONTROL PLAN:**  
ALL SITE DRAINAGE IS TO BE PONDED ON SITE UNTIL ALL PAVING IS COMPLETED AND THE CONNECTION TO THE CATCH BASIN HAS BEEN MADE.

**LEGAL DESCRIPTION:**  
LOT A1A, BLOCK D, GLENHILL HEIGHTS, CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO.



**DRAINAGE CALCULATIONS**

**I. REFERENCES:**

- CITY OF ALBUQUERQUE DEVELOPMENT PROCESS MANUAL (DPM) VOLUME 2, DESIGN CRITERIA, CHAPTER 22.
- FLOODWAY MAP, PANEL 27 OF 50, (FEMA), OCTOBER 14, 1983.
- SOIL SURVEY OF BERNALILLO COUNTY, NEW MEXICO, U.S. SOIL CONSERVATION SERVICE, JUNE, 1977.

**II. ON-SITE RUNOFF CHARACTERISTICS:**

**A. UNDEVELOPED RUNOFF COEFFICIENT:**

TYPE OF SURFACE	AREA	"C" VALUE	AREA ("C")
STREETS, DRIVES, WALKS			
ROOFS			
LANDS & LANDSCAPING			
UNDEVELOPED	40615		
TOTAL AREA	40615 SF	0.9324 AC	
WEIGHTED "C" VALUE	0.40		
PERCENT IMPERVIOUS	0%		

**B. DEVELOPED RUNOFF COEFFICIENT:**

TYPE OF SURFACE	AREA	"C" VALUE	AREA ("C")
STREETS, DRIVES, WALKS	32626	0.95	30995
ROOFS	2384	0.90	2146
LANDS & LANDSCAPING	5605	0.25	1401
UNDEVELOPED			
TOTAL AREA	40615		34542
WEIGHTED "C" VALUE	34542 / 40615 = 0.85		
PERCENT IMPERVIOUS	86%		

**C. RAINFALL, 100-YR., 6-HR. (REF. A., PLATE 22.2 D-1)**  
 $R_6 = 2.2$  INCHES

**D. TIME OF CONCENTRATION: TEN (10) MINUTES:**

**E. RAINFALL INTENSITY, I (REF. A., PLATE 22.2 D-2)**  
 $I = 6.184(10)^{-0.51} (2.2)^{6.84(10)^{-0.51} - 4.65} \text{ IN/HR}$

**F. SOIL TYPE (REF. I.C., SHEET NO. 30) SOIL IS MNA, MADUREZ WINK ASSOCIATION, HYDROLOGIC SOIL GROUP "B".**

**G. RUNOFF CURVE NUMBER (CN) (REF. I.A., PLATE 22.2 C-2)**  
UNDEVELOPED LAND USE: PASTURE, POOR  
UNDEVELOPED CN = 79  
DEVELOPED LAND USE: BUSINESS, 85% IMPERVIOUS  
DEVELOPED CN = 92

**H. DIRECT RUNOFF,  $Q_0$ , INCHES (REF. I.A., PL. 22.2 C-4)**  
UNDEVELOPED  $Q_0 = 0.65$  IN. DEVELOPED  $Q_0 = 1.40$  IN.

**III. ON-SITE PEAK DISCHARGE BY RATIONAL EQUATION:**

**A. EXISTING CONDITIONS:**  
 $Q_{100} = 0.40 \times 4.65 \times 1.9324 = 1.73$  CFS  
 $Q_{10} = 0.657 \times 1.73 = 1.14$  CFS

**B. DEVELOPED CONDITIONS:**  
 $Q_{100} = 0.85 \times 4.65 \times 0.9324 = 3.69$  CFS  
 $Q_{10} = 0.657 \times 3.69 = 2.42$  CFS

**IV. ON-SITE VOLUME BY S.C.S. METHOD:**

**A. EXISTING CONDITIONS:**  
 $V_{100} = \text{AREA } (Q_0/12) = 40615 (0.65/12) = 2200$  CF  
 $V_{10} = 0.657 \times 2200 = 1445$  CF

**B. DEVELOPED CONDITIONS:**  
 $V_{100} = \text{AREA } (Q_0/12) = 40615 (1.40/12) = 4738$  CF  
 $V_{10} = 0.657 \times 4738 = 3113$  CF

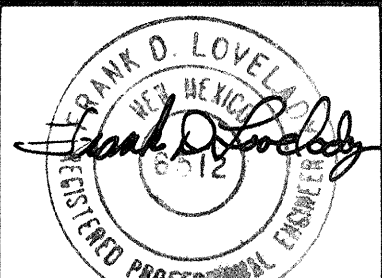
**V. ANALYSIS OF DOWNSTREAM CONDITIONS:**  
THE SITE LIES WITHIN AN A-2 FLOOD ZONE. THE FLOOD INSURANCE RATE MAP (FIRM) SHOWS THE FLOOD ELEVATION AS 5096 FEET. THERE IS A 48-INCH STORM SEWER IN COORS ROAD WHICH HAS A SLOPE OF 0.0150 FEET/FOOT. THE SITE WILL DISCHARGE TO THIS STORM SEWER. THE STORM SEWER OUTFALLS INTO A CONCRETE "Y" DITCH PARALLELING I-40. THE OUTFALL IS 2414 FEET FROM THE MANHOLE AT COORS AND HANOVER. THE DISCHARGE OF THE STORM SEWER IS TABULATED BELOW FOR VARIOUS DEPTHS AND FLOW TIMES TO THE OUTFALL.

DEPTH (d/D)	DISCHARGE (CFS)	VELOCITY	TIME TO OUTFALL
1.0 (FULL)	170 CFS	13.6 FPS	2.96 MIN.
0.5	70 CFS	11.0 FPS	3.66 MIN.
0.3	27 CFS	8.3 FPS	4.85 MIN.
0.2	12 CFS	6.7 FPS	6.00 MIN.

THE ABOVE TABULATION ILLUSTRATES THAT SITE DRAINAGE WOULD REACH THE OUTFALL IN ONLY 3 TO 6 MINUTES, OR 13 TO 16 MINUTES AFTER THE STORM BEGAN. THE AREA CONTRIBUTING TO FLOODING IS QUITE EXTENSIVE AND A COMPLETE ANALYSIS OF THE STORM SEWER CANNOT BE JUSTIFIED FOR SUCH A SMALL SITE. HOWEVER IT IS ESTIMATED THAT THE STORM SEWER WILL NOT REACH CAPACITY UNTIL 30 TO 45 MINUTES AFTER THE BEGINNING OF THE STORM. THEREFORE, FREE DISCHARGE IS DESIRABLE IN THAT THE SITE RUNOFF CAN BE QUICKLY DISCHARGED SO THAT IT WILL NOT ADD TO THE FLOODING WHEN IT OCCURS. IF THE SITE RUNOFF IS PONDING AND DISCHARGED SLOWLY, MOST OF THE WATER WILL STILL BE ON SITE WHEN THE FLOODING OCCURS AND WILL, THEREFORE, ADD TO THE FLOODING. THIS IS SO BECAUSE THE FLOOD ELEVATION IS WELL ABOVE THE CURB SO THAT THE FLOOD WATERS WOULD FILL ANY PONDING AREA THAT WAS ON THE SITE.

**VI. CONNECTION TO EXISTING CATCH BASIN:**  
A 12-INCH DIAMETER PIPE CONNECTED TO THE BACK OF THE STORM SEWER INLET WILL HAVE A CAPACITY OF OVER 4 CFS IF PLACED ON A SLOPE OF 1.5% (ARMY SLOPE PIPE CALCULATOR). IF DESIGN HEAD IS 1.0 FOOT ABOVE SPONGELINE, THE INLET CAPACITY WOULD BE 3.78 CFS (BY ORIFICE EQUATION)  
 $Q = CA(2gh)^{1/2} = 0.6 \times 0.7854 (2 \times 32.2 \times 1.0)^{1/2} = 3.78$  CFS

REVISED MAY 14, 1987  
REVISED APRIL 9, 1987



**GRADING AND DRAINAGE PLAN**  
**TACO BELL**  
**COORS ROAD AND HANOVER ROAD**  
**ALBUQUERQUE, NEW MEXICO**