City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

November 4, 1993

Jeff Mortensen, P.E.
Jeff Mortensen & Assoc.
6010-B Midway Park Blvd NE
Albuquerque, N.M. 87109

RE: ENGINEER'S CERTIFICATION FOR TVI TRADES PARKING LOT (K-15/D55)
RECEIVED OCTOBER 12, 1993 FOR DRAINAGE REQUIREMENTS
ENGINEER'S STAMP DATED 10-11-93

Dear Mr. Mortensen:

Based on the information included in the submittal referenced above, City Hydrology accepts the Engineer's Certification. Thank you for fulfilling the drainage requirements for this project.

If I can be of further assistance, you may contact me at 768-2727.

Sincerely,

John P. Curtin, P.E.
Civil Engineer/Hydrology

xc: Alan Martinez

WPHYD/7673/jpc

DRAINAGE INFORMATION SHEET

PROJECT TITLE: T-VI TRADES PARKING LOT ZONE ATLAS/DRNG. FILE #: K15 D055

DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: UNPLATTED LANDS OF T-VI

CITY ADDRESS: 525 BUENA VISTA SE

ENGINEERING FIRM: JEFF MORTENSEN & ASSOC. CONTACT: JEFF MORTENSEN

ADDRESS: 6010-B MIDWAY PARK BLVD NE PHONE: 345-4250

OWNER: T-VI CONTACT: DAVID GRIEGO VIGIL

ADDRESS: 525 BUENA VISTA SE PHONE: 224-4547

ARCHITECT: N/A CONTACT: _____

ADDRESS: _____ PHONE: _____

SURVEYOR: JEFF MORTENSEN & ASSOC. CONTACT: JEFF MORTENSEN

ADDRESS: 6010B MIDWAY PARK BLVD NE PHONE: 345-4250

CONTRACTOR: ALBUQUERQUE ASPHALT CONTACT: BOB WOOD

ADDRESS: 200 94TH STREET SW PHONE: 831-7311

TYPE OF SUBMITTAL:

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

PRE-DESIGN MEETING:

___ YES
_X_ NO
___ COPY PROVIDED

RECEIVED
OCT 12 1993
HYDROLOGY DIVISION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL
___ PRELIMINARY PLAT APPROVAL
___ S. DEV. PLAN FOR SUB'D. APPROVAL
___ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
___ SECTOR PLAN APPROVAL
___ FINAL PLAT APPROVAL
___ FOUNDATION PERMIT APPROVAL
___ BUILDING PERMIT APPROVAL
___ CERTIFICATE OF OCCUPANCY APPROVAL
___ GRADING PERMIT APPROVAL
___ PAVING PERMIT APPROVAL
___ S.A.D. DRAINAGE REPORT
_X_ DRAINAGE REQUIREMENTS
___ OTHER _____ (SPECIFY)

DATE SUBMITTED: 10/12/93

BY: GARY R. BITTNER

CITY OF
Albuquerque

June 16, 1998

John Andrews, P.E.
AAR Larkin Group
8500 Menaul Blvd., NE, Suite A440
Albuquerque, NM 87112

RE: TVI BUILDING RELOCATION (K15-D55). ENGINEER'S CERTIFICATION FOR CERTIFICATE OF OCCUPANCY APPROVAL. ENGINEER'S CERTIFICATION DATED MAY 15, 1998.

Dear Mr. Andrews:

Based on the information provided on your May 15, 1998 submittal, the above referenced project is approved for Certificate of Occupancy.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,

John P. Murray, P.E.
Hydrology

c: Andrew Garcia
File

DRAINAGE INFORMATION SHEET

PROJECT TITLE: TVI Building Relocation ZONE ATLAS/DRNG. FILE #: K15-D55

DRB #: N/A EPC #: N/A WORK ORDER #3: N/A

LEGAL DESCRIPTION: TVI - Main Campus - University Blvd / Coal Ave. SE

CITY ADDRESS: TVI - Main Campus - @ University Blvd / Coal Ave SE

ENGINEERING FIRM: AAR - The Larkin Group Inc CONTACT: John Andrews

ADDRESS: 8500 MENAUL BLVD. NE Suite A-440 Albuquerque, NM - 87112 PHONE: 505-275-7500

OWNER: Albuquerque - TVI CONTACT: Lyle Brown

ADDRESS: 525 Buena Vista, SE - Albq. NM 87106-4096 PHONE: 505-224-4560

ARCHITECT: OWNER - CONTACT:

ADDRESS: PHONE:

SURVEYOR: AAR - The Larkin Group, Inc CONTACT: Gayle Jewell

ADDRESS: 8500 MENAUL BLVD. NE Suite A-440 Albuquerque, NM 87112 PHONE: 505-275-7500

CONTRACTOR: — CONTACT:

ADDRESS: PHONE:

TYPE OF SUBMITTAL:

- ____ DRAINAGE REPORT
- X DRAINAGE PLAN
- ____ CONCEPTUAL GRADING & DRAINAGE PLAN
- X GRADING PLAN
- ____ EROSION CONTROL PLAN
- ____ ENGINEER'S CERTIFICATION
- ____ OTHER
- ____

PRE-DESIGN MEETING:

- ____ YES
- ____ NO
- ____ COPY PROVIDED

RECEIVED
MAY 15 1998
HYDROLOGY SECTION

CHECK TYPE OF APPROVAL SOUGHT:

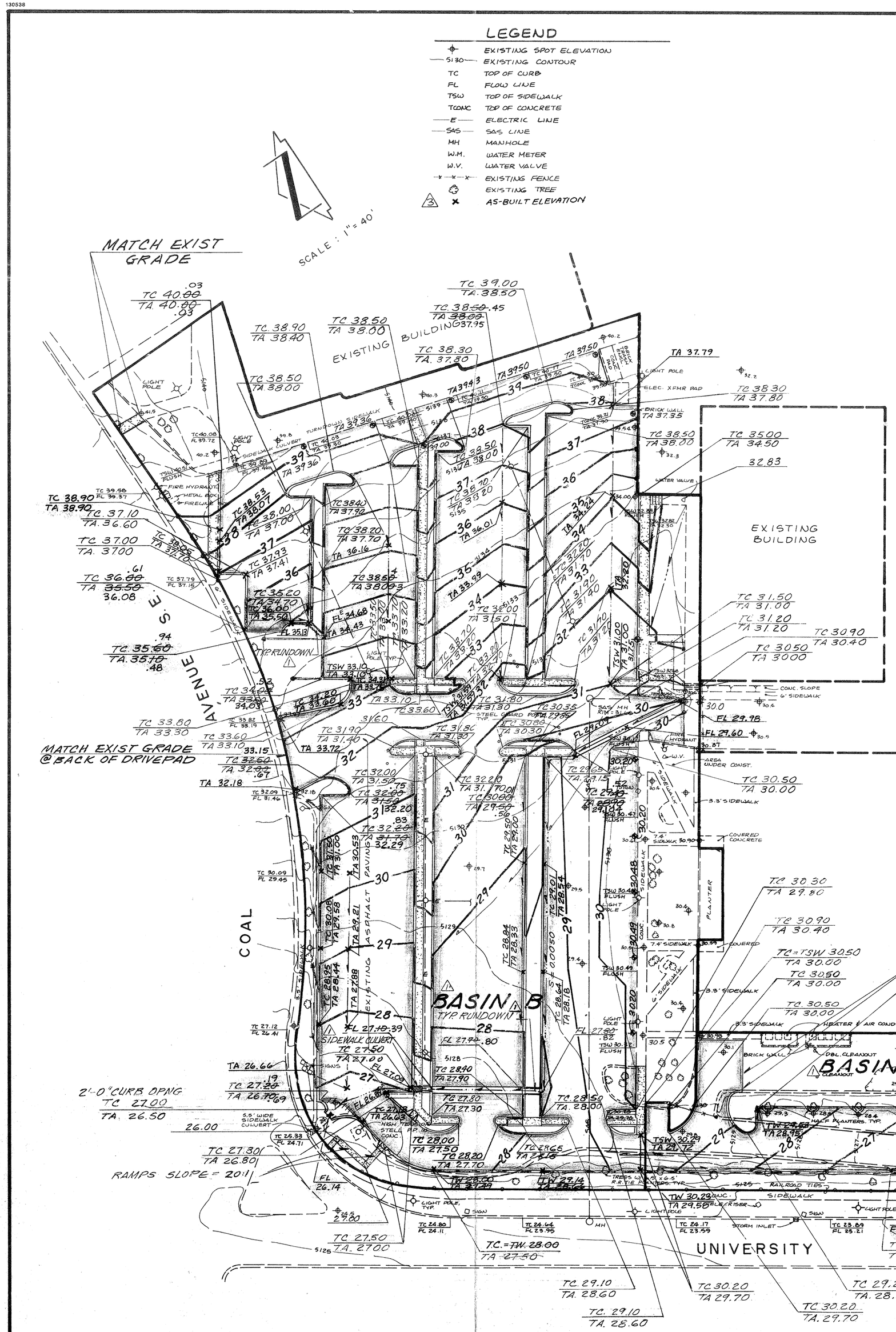
- ____ SKETCH PLAT APPROVAL
- ____ PRELIMINARY PLAT APPROVAL
- ____ S. DEV. PLAN FOR SUB'D. APPROVAL
- ____ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ____ SECTOR PLAN APPROVAL
- ____ FINAL PLAT APPROVAL
- ____ FOUNDATION PERMIT APPROVAL
- ____ BUILDING PERMIT APPROVAL
- X CERTIFICATE OF OCCUPANCY APPROVAL
- ____ GRADING PERMIT APPROVAL
- ____ PAVING PERMIT APPROVAL
- ____ S.A.D. DRAINAGE REPORT
- ____ DRAINAGE REQUIREMENTS
- ____ OTHER ____ (SPECIFY)

DATE SUBMITTED: May 15, 1998

BY: John D. Andrews

d:\forms\3\drainage.frm

130538



CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey,
Plate 31: BKD - Bluepoint-Kokan Association
Hydrologic Soil Group: A
Existing Pervious CN = 49 (DPM Plate 22.2 C-2
Open Spaces: fair condition)
Developed Pervious CN = 39 (DPM Plate 22.2 C-2
Pasture or Range Land:

Time of Concentration/Time to Peak

$T_c = 0.0078\ L^{0.77}/S^{0.385}$ (Kirpich Equation)

$T_p = T_c = 10$ min.

Point Rainfall

$P_6 = 2.31$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: $Q = CiA$

Where C varies
$i = P_6(6.84)T_c^{-0.51} = 4.88$ in/hr
$P_6 = 2.31$ in (DPM Plate 22.2D-1)
$T_c = 10$ min (minimum)
A = area, acres

SCS Method

Volume: $V = 3630(DRO)A$

Where DRO = Direct runoff in inches
A = area, acres

Existing Condition

1. Basin A
A_{total} = 31,650 sf = 0.73 Ac
Roof area = -0- sf (-0-)
Paved area = 20,990 sf (66%)
Landscaped area = 10,660 sf (34%)
C = 0.71 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CiA = 0.71(4.88)(0.73) = 2.5$ cfs
% impervious = 66 %
Composite CN = 81 (DPM Plate 22.2 C-3)
DRO = 0.75 in (DPM Plate 22.2 C-4)
$V_{100} = 3630$ (DRO)A = 1,990 cf

2. Basin B
A_{total} = 153,750 sf = 3.53 Ac
Roof area = -0- sf (-0-)
Paved area = 140,430 sf (91%)
Landscaped area = 13,320 sf (09%)
C = 0.89 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CiA = 0.89(4.88)(3.53) = 15.3$ cfs
% impervious = 91 %
Composite CN = 93 (DPM Plate 22.2 C-3)
DRO = 1.6 in (DPM Plate 22.2 C-4)
$V_{100} = 3630$ (DRO)A = 20,500 cf

Developed Condition

1. Basin A
A_{total} = 31,650 sf = 0.73 Ac
Roof area = -0- sf (-0-)
Paved area = 24,290 sf (77%)
Landscaped area = 7,360 sf (23%)
C = 0.79 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CiA = 0.79(4.88)(0.73) = 2.8$ cfs
% impervious = 71%
Composite CN = 81 (DPM Plate 22.2 C-3)
DRO = 0.75 in (DPM Plate 22.2 C-4)
$V_{100} = 3630$ (DRO)A = 1,990 cf

2. Basin B
A_{total} = 153,750 sf = 3.53 Ac
Roof area = -0- sf (-0-)
Paved area = 123,310 sf (80%)
Landscaped area = 30,440 sf (20%)
C = 0.81 (Weighted average per Emergency Rule, 1/14/86)
$Q_{100} = CiA = 0.81(4.88)(3.53) = 14.0$ cfs
% impervious = 80%
Composite CN = 86 (DPM Plate 22.2 C-3)
DRO = 1.1 in (DPM Plate 22.2 C-4)
$V_{100} = 3630$ (DRO)A = 14,100 cf

Comparison

1. Basin A
$\Delta Q_{100} = 2.8 - 2.5 = 0.3$ cfs (increase)
$\Delta V_{100} = 1990 - 1990 = 0$ cf (no change)

2. Basin B
$\Delta Q_{100} = 15.3 - 14.0 = 1.3$ cfs (decrease)
$\Delta V_{100} = 20,500 - 14,100 = 6,400$ cf (decrease)

3

DRAINAGE CERTIFICATION

As indicated by the as-built elevations shown hereon, the parking facilities have been constructed in substantial conformance with the approved Grading and Drainage Plan.

Jeffrey G. Mortensen, NMPE 8547 — Date 10-11-93

JEFFREY G. MORTENSEN NEW MEXICO 8547 REGISTERED PROFESSIONAL ENGINEER

DRAINAGE PLAN

The following items concerning the T-VI Trades Parking Lot Drainage Plan are contained in this set of plans:

1. Vicinity Map
2. Existing Conditions
3. Topographic Survey
4. Demolition Plan
5. Site Plan
6. Grading Plan
7. Sections & Details
8. Calculations

As shown by the Vicinity Map, the site is located at the southeast corner of the intersection of University Boulevard S.E. and Coal Avenue S.E. At present, the site is developed as an existing parking lot for the T-VI Trades Building. It is the purpose of this plan set to reconstruct the parking lot. The reconstructed parking lot will consist of new asphalt paving and additional landscaped areas. No buildings are proposed as part of this project.

As shown by Panel 29 of 50 of the National Flood Insurance Program Flood Insurance Rate Maps for the City of Albuquerque, dated October 14, 1983, this site does not lie within a designated flood hazard zone. Further review of this map and the adjoining Map 35 does not indicate that the site contributes runoff to an existing downstream flood hazard zone. Much of the surrounding area is already developed making this a modification to an existing site within an infill area. Further review of the scope of this project indicates that no additional paving area is being created and that the runoff generated by this site is actually being decreased due to a reduction in overall paved surface area. Existing drainage patterns will not be altered by this plan.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 1'0" intervals. 2) the limit and character of the existing improvements, 3) the limit and character of the proposed improvements, and 4) continuity between existing and proposed grades. As shown by this plan, the project consists of the demolition of existing paving, regrading and compacting the existing subgrade/subbase, constructing new asphalt paving, and constructing new landscaped planter areas. The construction of the new landscaping will be accomplished by separate project and is not part of this contract. At present, the site slopes from southeast to northwest to discharge to University Boulevard S.E. via an existing private drainage rundown. From that point, it appears that the runoff will flow in a southerly direction within University Boulevard S.E. The regrading of the site will primarily provide for positive drainage in and around the new planter areas. The point of discharge will remain at the northwest corner of the site at the existing private drainage rundown. The existing drainage pattern of the site will not be altered.

The calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The Rational Method has been used to calculate the peak rate of discharge, while the SCS Method has been used to compute the volume of runoff generated. Both Methods have been used in accordance with the City of Albuquerque Development Process Manual, Volume 2, combined with the Mayor's Emergency Rule dated January 14, 1986. As shown by these calculations, the proposed improvements will represent a slight decrease in the runoff generated by this site. In view of this reduction, the fact that is a modification to an existing site within an infill area, that the existing drainage patterns are being preserved, and that the site does not appear to contribute runoff to a downstream flood hazard zone, the continued free discharge of this site is appropriate.

RECEIVED OCT 12 1993 HYDROLOGY DIVISION

JEFFREY G. MORTENSEN NEW MEXICO 8547 REGISTERED PROFESSIONAL ENGINEER 3-30-94

04-1-94

jma JEFF MORTENSEN & ASSOCIATES, INC.
6010-B MIDWAY PARK BLVD. N.E.
ALBUQUERQUE NEW MEXICO 87109
ENGINEERS (505) 345-4250

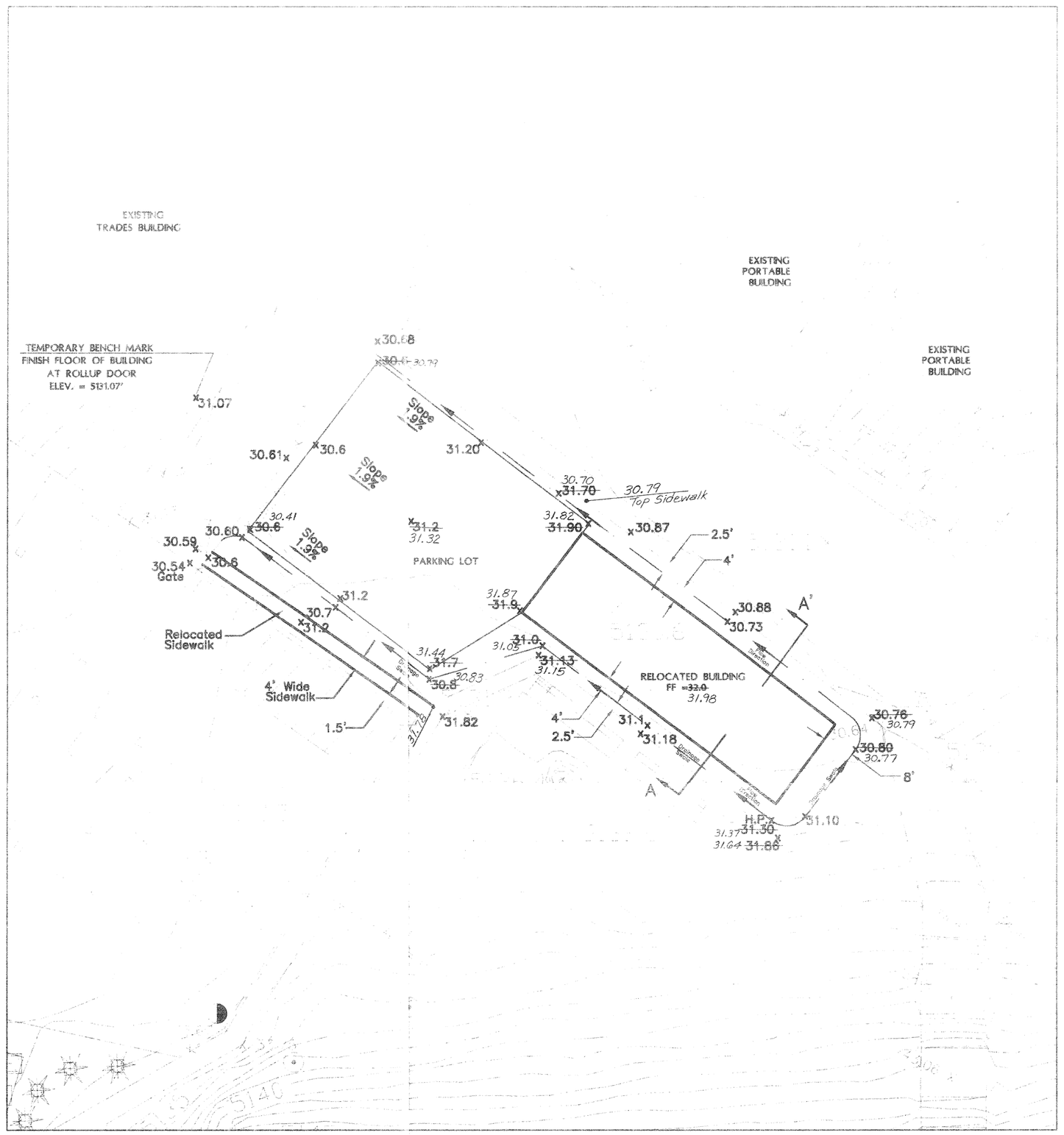
GRADING & DRAINAGE PLAN

T-VI TRADES PARKING LOT

DESIGNED BY JGM/TEW
DRAWN BY S.G.H.
APPROVED BY J.G.M.

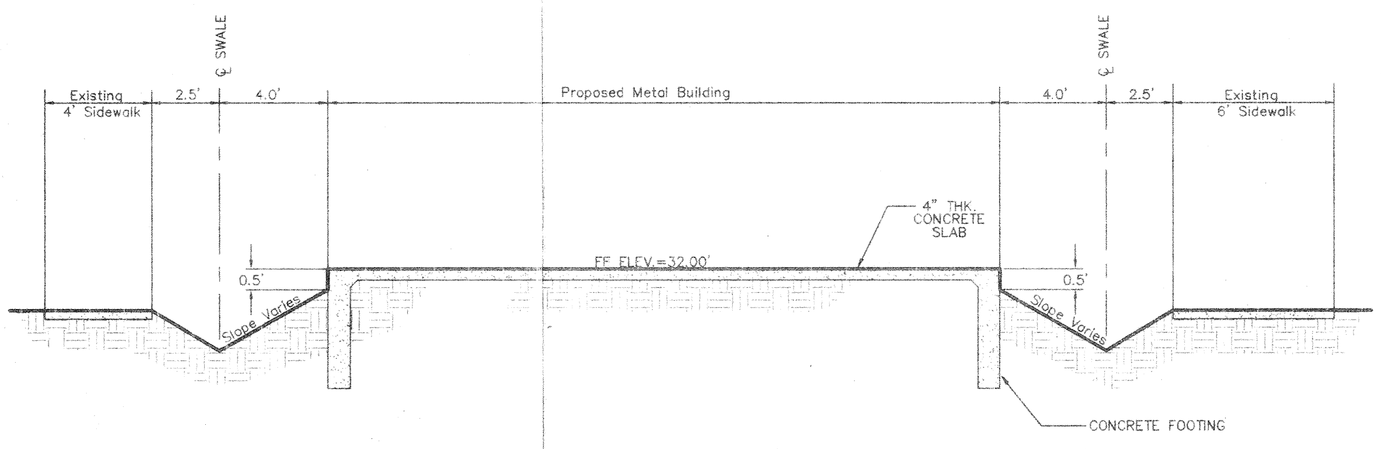
NO.	DATE	BY	REVISIONS
1	04/93	GM	IDENTIFY DRAINAGE BASIN, CALLOUT RUNDOWNS & SIDEWALK CULVERTS
2	10/93	GB	AS-BUILT & CERTIFY

JOB NO. 901801
DATE 12-1992
SHEET 6 OF 9



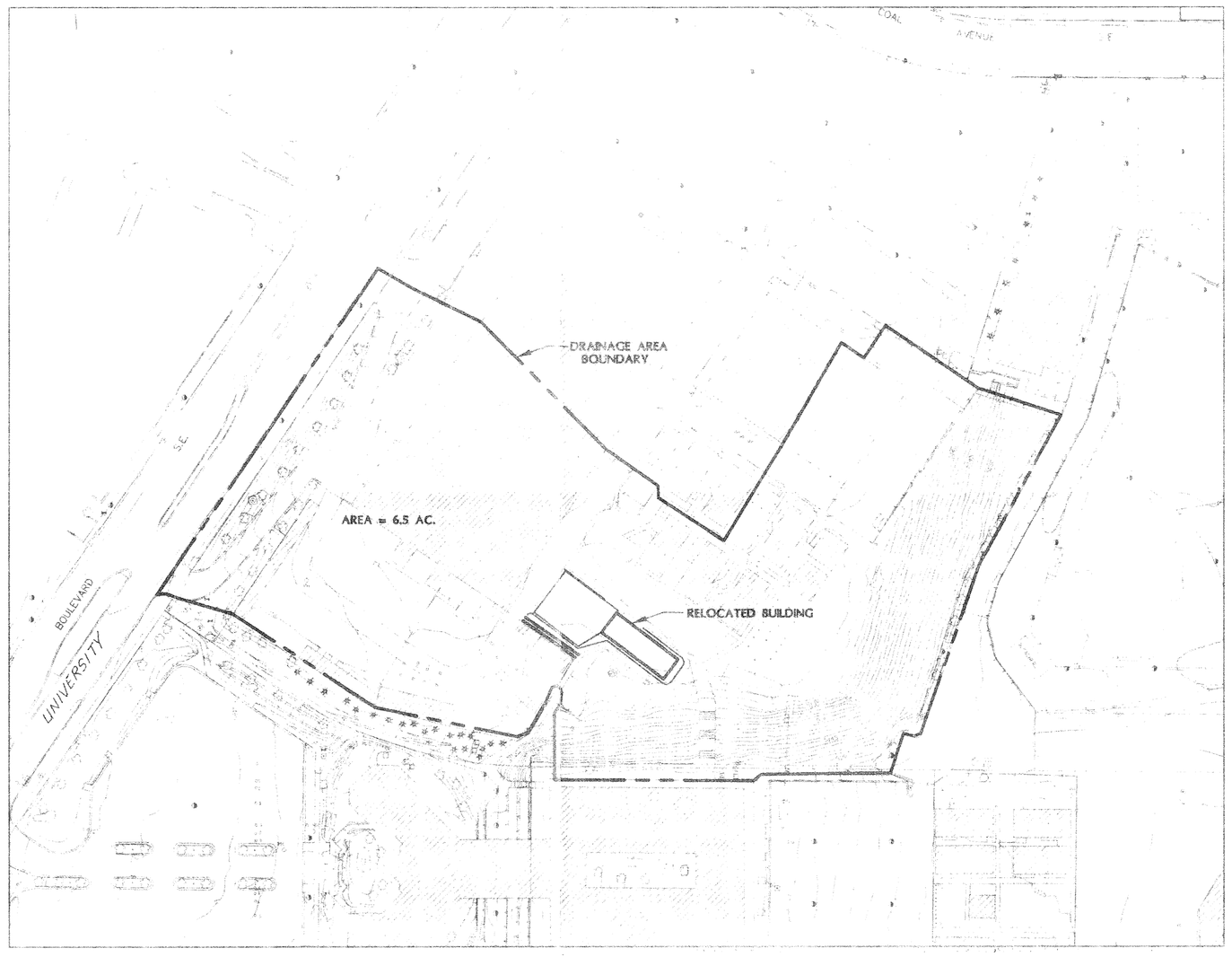
GRADING AND DRAINAGE

1"=20'



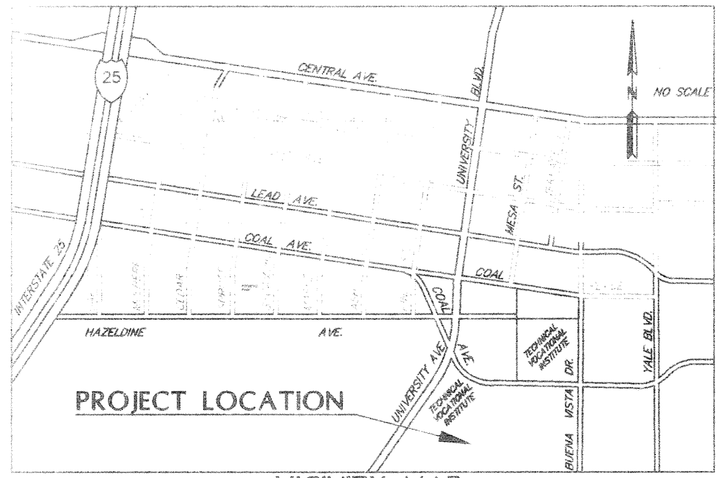
SECTION A-A'

NOT TO SCALE



DRAINAGE BASIN MAP

1"=100'



VICINITY MAP

ZONE ATLAS MAP K-15-Z

LEGEND

HORIZONTAL & VERTICAL CONTROL POINT	BUILDING
INDEX CONTOUR	POST
INTERMEDIATE CONTOUR	SIGN
DEPRESSION CONTOUR	TRAFFIC SIGNAL
SPOT ELEVATION	LIGHT POLE
SPOT ELEVATION	POWER POLE
SPOT ELEVATION	GUY ANCHOR
TOP OF CURB FLOWLINE	WATER VALVE
TOP OF WALL FLOWLINE	TRANSFORMER
TOP OF WALL FLOWLINE	CATCH INLET
WHEELCHAIR RAMP	FIRE HYDRANT
CURB & GUTTER SIDEWALK	ELECTRIC BOX
CONCRETE LINED DITCH	GAS VALVE
FENCE	CONTROL PEDESTAL
WALL	SHRUBBERY
RETAINING WALL	CONIFEROUS
GUARDRAIL	
CULVERT	
PROPERTY LINE	
31.82	AS BUILT SPOT ELEVATION

GRADING CONSTRUCTION NOTES

1. CONTRACTOR SHALL CLEAR, GRUB AND STRIP SITE OF ALL OBJECTIONABLE MATERIAL PRIOR TO COMMENCING GRADING OPERATIONS. ALL OBJECTIONABLE MATERIAL, TRASH AND DEBRIS SHALL BE REMOVED AND HAULED FROM THE SITE.
2. CONTRACTOR SHALL SCARIFY, PROCESS AND COMPACT AREAS TO RECEIVE FILLS TO A DEPTH OF 6" PRIOR TO PLACING SUCH FILLS. COMPACTION SHALL BE 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D-1557. MOISTURE SHALL BE OPTIMUM ± 2%.
3. ALL EMBANKMENT AND FILLS SHALL BE PLACED WITH MOISTURE AND DENSITY CONTROL. COMPACTION SHALL BE 90% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D-1557. MOISTURE SHALL BE OPTIMUM ± 2%.
4. UNLESS OTHERWISE SHOWN OR CALLED FOR HEREON ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE CITY OF ALBUQUERQUE INTERIM STANDARD SPECIFICATIONS-PUBLIC WORKS CONSTRUCTION - 1986, UPDATE No. 6.
5. SPOT ELEVATIONS SHOWN ARE TO TOP OF FINISHED SURFACE AND TO FLOWLINE UNLESS OTHERWISE INDICATED.
6. ALL BACKFILL MATERIAL SHALL CONFORM TO SPECIFICATIONS AS SHOWN IN "STRUCTURAL EARTHWORK NOTES" ON SHEET S-1 OF THIS PLAN SET.
7. CONTRACTOR SHALL FIELD LOCATE ALL UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION AND IS RESPONSABLE FOR THEIR SAFETY DURING CONSTRUCTION.

EROSION CONTROL NOTES

1. CONTRACTOR SHALL PROVIDE DUST CONTROL BY WATERING DURING CONSTRUCTION.

PROJECT

PROJECT CONSIST OF RELOCATING A PRE-FABRICATED METAL BUILDING FROM A LOCATION ON THE TVI CAMPUS TO THIS LOCATION SHOWN HEREON.

THE EFFECT ON DRAINAGE WITHIN THE DRAINAGE BASIN IN WHICH THE BUILDING IS TO BE RELOCATED IS AS FOLLOWS:

DRAINAGE CALCULATIONS

Drainage Basin Treatment "C" = 1.5 AC
Drainage Basin Treatment "D" = 5.0 AC
Area Altered ≈ 0.13 AC
Runoff Coefficient for Land Treatment C = 0.64
Runoff Coefficient for Land Treatment D = 0.93
For 100 Year Event Zone 3 I = 5.38 IN/HR

Q Existing = (C1A)C + (C1A)D
Q Existing = [(0.64)(5.38)(1.5)] + [(0.93)(5.38)(5.0)]
Q Existing = 5.1648 + 25.017
Q Existing = 30.18 CFS
Q Revised = (C1A)C + (C1A)D
Q Revised = [(0.64)(5.38)(1.37)] + [(0.93)(5.38)(5.13)]
Q Revised = 4.7172 + 25.6674
Q Revised = 30.38 CFS

∴ Because the Q revised is only 0.2 CFS larger than Q existing = 0.7% larger, the existing facilities need not be altered.

RECEIVED
MAY 15 1998
HYDROLOGY SECTION

REGISTERED PROFESSIONAL ENGINEER
STATE OF NEW MEXICO
No. 9960
JOHN A. ANDREWS
3-26-98

I, JOHN A. ANDREWS, A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF NEW MEXICO, DO HEREBY CERTIFY THAT THE CONSTRUCTIOIN IS IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED DRAINAGE PLAN FOR THIS PROJECT AND WILL FUNCTION AS INTENDED.

26 MARCH 1998

AS BUILT

REGISTERED PROFESSIONAL ENGINEER
STATE OF NEW MEXICO
No. 9960
JOHN A. ANDREWS
3-26-98

ALBUQUERQUE TECHNICAL VOCATIONAL INSTITUTE
ALBUQUERQUE, NEW MEXICO

RELOCATION OF METAL PRE-ENGINEERED BUILDING - MAIN CAMPUS
GRADING AND DRAINAGE PLAN

ANDREWS, ASBURY & ROBERT, INC.
CONSULTING ENGINEERS
ALBUQUERQUE NEW MEXICO AL98-0008

FILE No.	DRAWN	CHECKED	DATE	SHEET
TVI-MBUILD.DWG	JDM	JAA	3/26/1998	C2