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

July 16, 1991

Jeff Mortensen
Jeff Mortensen & Associates, Inc.
6010-B Midway Park Boulevard, NE
Albuquerque, New Mexico 87109

RE: DRAINAGE PLAN FOR B.H.I. PHASE II (L-21/D4)
ENGINEER'S STAMP DATED JUNE 22, 1991

Dear Mortensen:

Based on the information provided on your submittal of June 26, 1991, the above referenced plan is approved for Building Permit.

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

All underground systems must be certified prior to Certificate of Occupancy release.

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

Cordially,

Bernie J. Montoya

Bernie J. Montoya, C.E.
Engineering Assistant

xc: Alan Martinez

BJM/bsj
(WP+1732)

DRAINAGE INFORMATION SHEET

900122

PROJECT TITLE: B.H.I- PHASE II ZONE ATLAS/DRNG. FILE #: L21/D4

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

LEGAL DESCRIPTION: LOTS 1-8, BLK B, E. CENTRAL BUSINESS ADDN

CITY ADDRESS: 11600 COCHITI RD SE

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

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

OWNER: B. H. I. CONTACT: _____

ADDRESS: 11600 COCHITI RD SE PHONE: 293-3843

ARCHITECT: ERNEST ULIBARRI & ASSOC CONTACT: JEFF NEWMAN

ADDRESS: _____ PHONE: 242-1552

SURVEYOR: JEFF MORTENSEN & ASSOC CONTACT: JEFF MORTENSEN

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

CONTRACTOR: ENTERPRISE BUILDERS 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
X NO
___ COPY PROVIDED

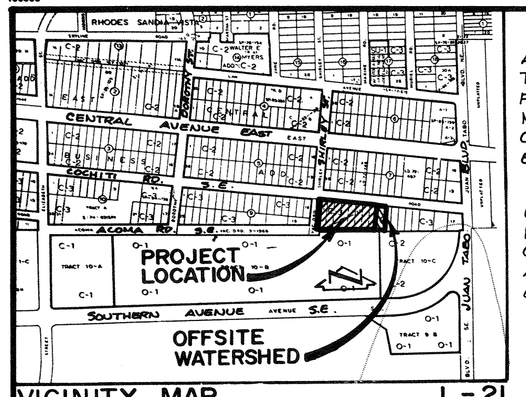
CHECK TYPE OF APPROVAL SOUGHT:

___ 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
X BUILDING PERMIT APPROVAL
___ CERTIFICATE OF OCCUPANCY APPROVAL
___ GRADING PERMIT APPROVAL
___ PAVING PERMIT APPROVAL
___ S.A.D. DRAINAGE REPORT
___ DRAINAGE REQUIREMENTS
___ OTHER _____ (SPECIFY)

DATE SUBMITTED: 06-26-91

BY: JEFFREY G. MORTENSEN

130538



VICINITY MAP L-21

SCALE : 1"= 800'

PROJECT BENCHMARK

A.C.S. STATION "I-L 21" RESET, 1974". A BRASS TABLET, STAMPED "I-L21, RESET, 1974 "SET FLUSH ON TOP OF CONC. CURB OF THE WEST MEDIAN STRIP LOCATED AT THE INTERSECTION OF CENTRAL AVE. AND JUAN TABO BLVD. ELEVATION = 5534.543 FEET (M.S.L.D.)

T. B. M.

EXISTING SANITARY SEWER MANHOLE RIM LOCATED AT THE INTERSECTION OF COCHITI RD. SE. AND SHIRLEY ST. S.E. AS SHOWN HEREON. ELEVATION = 5523.69 FEET (M.S.L.D.)

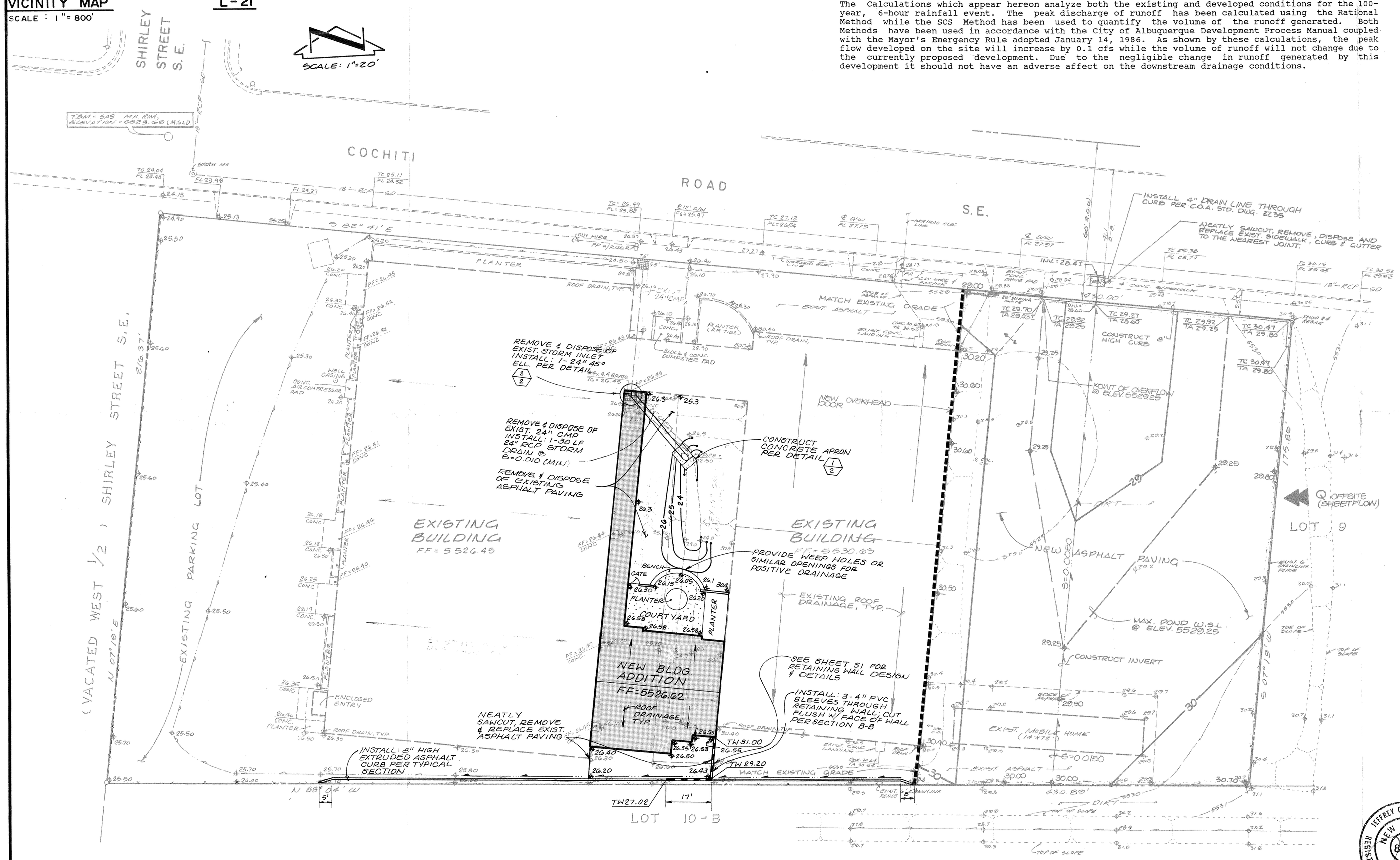
LEGAL DESCRIPTION

LOTS 1-B, BLOCK B, EAST CENTRAL BUSINESS CENTER & THE EAST HALF OF VACATED SHIRLEY STREET S.E.

LEGEND

- 5524 EXISTING SPOT ELEVATION
- 5530 PROPOSED SPOT ELEVATION
- 5530 EXISTING CONTOUR
- 30 PROPOSED CONTOUR
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- DRAINAGE BASIN BOUNDARY

SCALE: 1"=20'



DRAINAGE PLAN

The following items concerning the B.H.I. Phase II Drainage Plan are contained hereon:
1. Vicinity Map 2. Grading Plan 3. Calculations

As shown by the Vicinity Map, the site is located on the south side of Cochiti Road S.E. immediately to the south and east of the intersection of Cochiti Road S.E. and Shirley Street S.E. The site is currently developed as an office/warehouse facility. Previous drainage plans have been developed and approved for the site. The most recent of these previous plans is dated February 1990.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contour lines at 1'-0" intervals, 2) the limit and character of the existing and proposed improvements, and 3) the continuity between the existing and proposed grades. As shown on the plan, the proposed improvements include the demolition of existing asphalt paving, the construction of a building addition to the existing office/warehouse and adjacent paving and landscaping.

The Calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The peak discharge of runoff has been calculated using the Rational Method while the SCS Method has been used to quantify the volume of the runoff generated. Both Methods have been used in accordance with the City of Albuquerque Development Process Manual coupled with the Mayor's Emergency Rule adopted January 14, 1986. As shown by these calculations, the peak flow developed on the site will increase by 0.1 cfs while the volume of runoff will not change due to the currently proposed development. Due to the negligible change in runoff generated by this development it should not have an adverse affect on the downstream drainage conditions.

Construction Notes:

1. Two (2) working days prior to any excavation, contractor must contact New Mexico One Call System, 260-1990, for location of existing utilities.
2. Prior to construction, the contractor shall excavate and verify the horizontal and vertical location of all potential obstructions. Should a conflict exist, the contractor shall notify the engineer so that the conflict can be resolved with a minimum amount of delay.
3. All work on this project shall be performed in accordance with applicable federal, state and local laws, rules and regulations concerning safety and health.
4. All construction within public right-of-way shall be performed in accordance with applicable City of Albuquerque Standards and Procedures.
5. If any utility lines, pipelines, or underground utility lines are shown on these drawings, they are shown in an approximate manner only, and such lines may exist where none are shown. If any such existing lines are shown, the location is based upon information provided by the owner of said utility, and the information may be incomplete, or may be obsolete by the time construction commences. the engineer has undertaken no field verification of the location, depth, size, or type of existing utility lines, pipelines, or underground utility lines, makes no representation pertaining thereto, and assumes no responsibility or liability therefor. The contractor shall inform itself of the location of any utility line, pipeline, or underground utility line in or near the area of the work in advance of and during excavation work. The contractor is fully responsible for any and all damage caused by its failure to locate, identify and preserve any and all existing utilities, pipelines, and underground utility lines. In planning and conducting excavation, the contractor shall comply with state statutes, municipal and local ordinances, rules and regulations, if any, pertaining to the location of these lines and facilities.
6. The design of planters and landscaped areas is not part of this plan. All planters and landscaped areas adjacent to the building(s) shall be provided with positive drainage to avoid any ponding adjacent to structures. For construction details, refer to landscaping plan.

Erosion Control Measures:

1. The contractor shall ensure that no soil erodes from the site into public right-of-way or onto private property. This can be achieved by constructing temporary berms at the property lines and wetting the soil to keep it from blowing.
2. The contractor shall promptly clean up any material excavated within the public right-of-way so that the excavated material is not susceptible to being washed down the street.
3. The contractor shall secure "topsoil disturbance permit" Prior to beginning construction.

JEFFREY G. MORTENSEN NEW MEXICO 8547 REGISTERED PROFESSIONAL ENGINEER

06-22-91

RECEIVED JUN 26 1991

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

GRADING & DRAINAGE PLAN

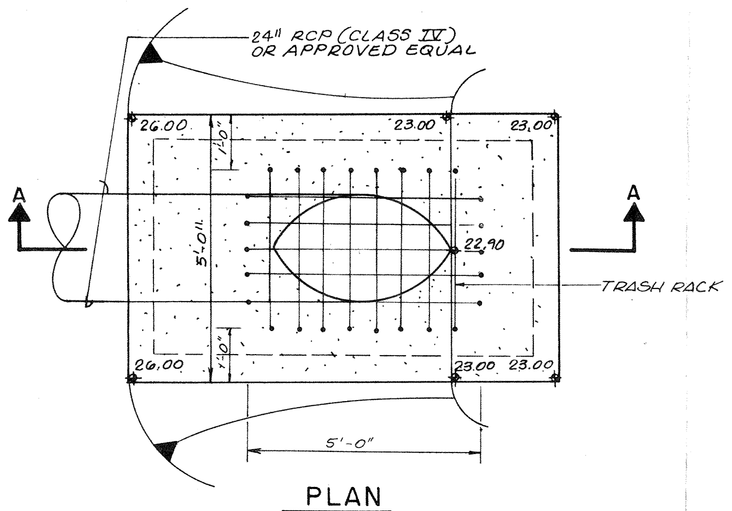
B.H.I. - PHASE II

DESIGNED BY VSF
DRAWN BY MJT
APPROVED BY JGM

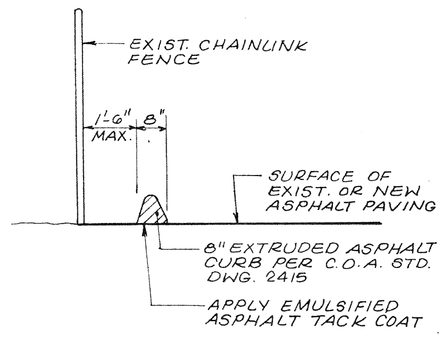
NO.	DATE	BY	REVISIONS

JOB NO. 900122
DATE 05/91
SHEET 1 OF 2

142347

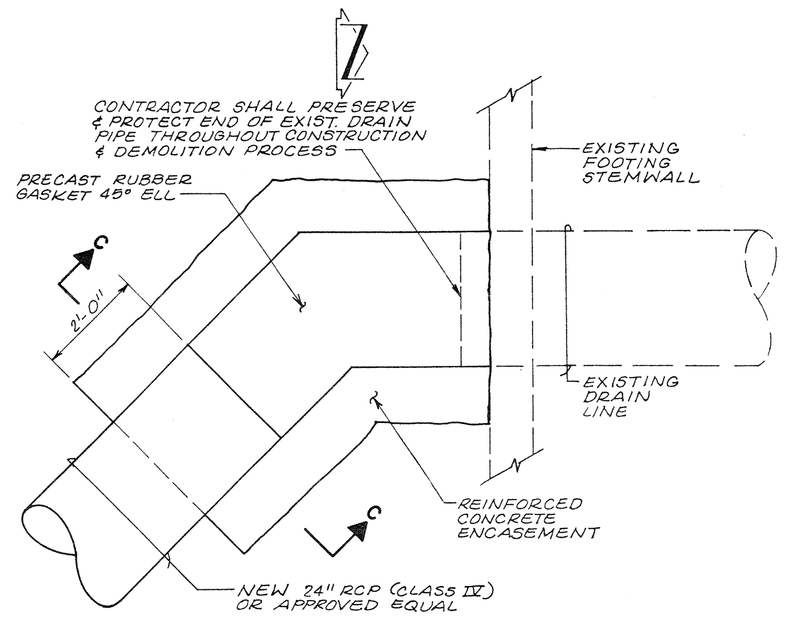


PLAN



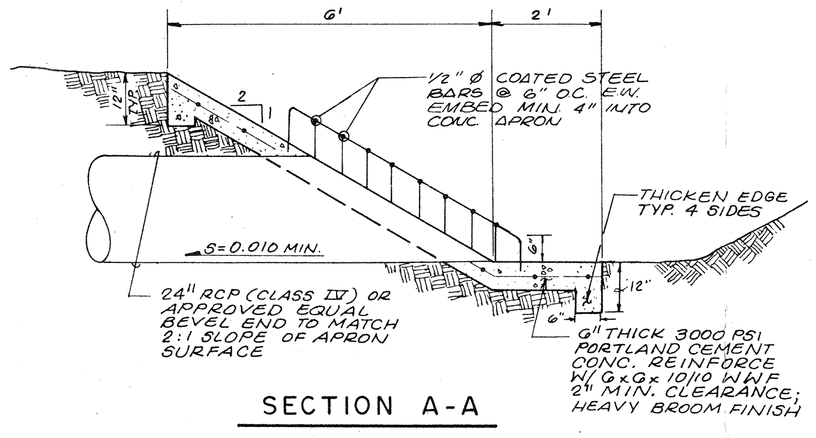
TYPICAL ASPHALT CURB SECTION

SCALE: 1"=3'-0"

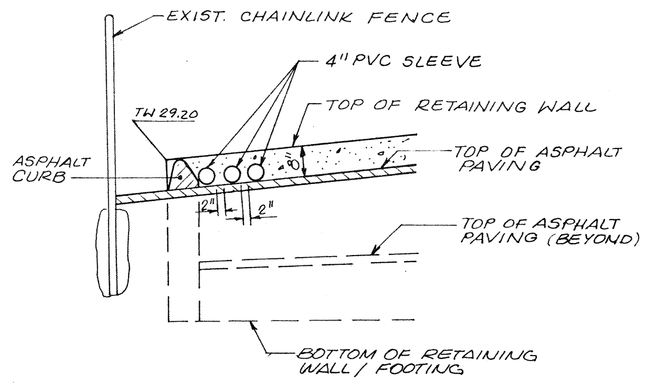


DETAIL 2/1

SCALE: 1"= 2'-0"



SECTION A-A

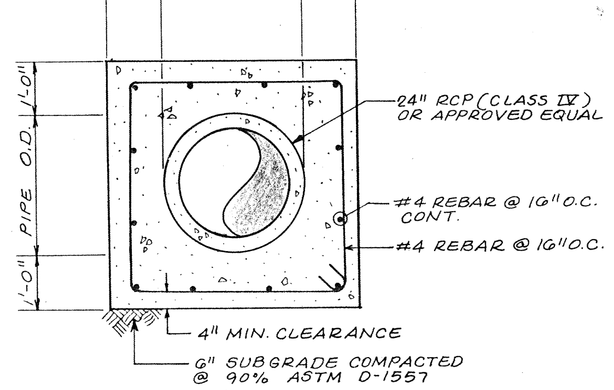


SECTION B-B

SCALE: 1"=3'-0"

CONCRETE APRON DETAIL 1/1

SCALE: 1"=2'-0"



SECTION C-C

SCALE: 1"=2'-0"

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey,
Plate 32: TgB - Tijeras (Gravelly fine sandy loam & sand clay loam)
Hydrologic Soil Group: B
Existing Pervious CN = 85 (DPM Plate 22.2 C-2
Streets and Roads: Gravel)
Developed Pervious CN = 85 (DPM Plate 22.2 C-2
Streets and Roads: Gravel)

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

$P_6 =$ 2.45 in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: Q = CiA

where C varies
$i = P_6\ (6.84)\ T_C^{-0.51} = 5.18$ in/hr
$P_6 =$ 2.45 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

A_{total} = 62,400 sf = 1.43 Ac
Roof area = 30,850 sf (0.49)
Paved area = 26,850 sf (0.43)
Landscaped area = 1,000 sf (0.02)
Undeveloped area = 3,700 sf (0.06)
C = 0.88 (Weighted average per Emergency Rule, 1/14/86)
Q_{100} = CiA = 0.88(5.18)(1.43) = 6.5 cfs
A_{imp} = 57,700 sf; % impervious = 92 %
Composite CN = 97 (DPM Plate 22.2 C-2)
DRO = 2.15 in (DPM Plate 22.2 C-4)
V_{100} = 3630 (DRO)A = 7,805 cf

Developed Condition

A_{total} = 62,400 sf = 1.43 Ac
Roof area = 33,620 sf (0.54)
Paved area = 24,950 sf (0.40)
Landscaped area = 2,080 sf (0.03)
Undeveloped area = 1,750 sf (0.03)
C = 0.89 (Weighted average per Emergency Rule, 1/14/86)
Q_{100} = CiA = 0.89(5.18)(1.43) = 6.6 cfs
A_{imp} = 58,570 sf; % impervious = 94 %
Composite CN = 97 (DPM Plate 22.2 C-2)
DRO = 2.15 in (DPM Plate 22.2 C-4)
V_{100} = 3630 (DRO)A = 7,805 cf

Comparison

ΔQ_{100} = 6.6 - 6.5 = 0.1 cfs (increase)
ΔV_{100} = 7,805 - 7,805 = 0 cf (no change)

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DETAILS AND CALCULATIONS

B.H.I. - PHASE II

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NO.	DATE	BY	REVISIONS

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SHEET 2 OF 2