PUBLIC WORKS/HYDROLOGY
E10/D2E

VICINITY MAP

SCALE : 1" = 800'

E-10

PROJECT BENCHMARK

PROJECT BENCHMARK IS A GALVAN. B. CYLINDRICAL DAY TOP OF CONCRETE CURB AT THE EAST CURB RETURN LOCATED AT THE INTERSECTION OF UNSER BLVD. (FORMERLY - ATRISCO AVE) AND BOGART AVE. ALONG THE NORTHERN BOUNDARY OF THE PROPERTY.

ELEVATION = 6,319.58 FEET (NAVD 88)

T.B.M. = PROJECT BENCHMARK

LEGAL DESCRIPTION

TRACTS 6-A, 7-A, 7-B, 8 AND 9, SAUTA FE VILLAGE UNIT 2

LEGEND

- 6100 — MAJOR CONTOUR
- 6095 — MINOR CONTOUR
- EXISTING CURB
- PROPOSED CURB
- EXISTING CURB BLUNT
- PROPOSED CURB BLUNT
- PROPOSED CONCRETE
- PROPOSED SNOW DRAIN LINE
- 6000 — EXISTING GRAY ELEVATION
- 6000 — PROPOSED GRAY ELEVATION
- FL — FLOW LINE ELEVATION
- TC — TOP OF CURB ELEVATION
- PROPOSED ASPHALT PAVING
- BASIN BOUNDARY
- 5 — ANALYSIS POINT

DRAINAGE PLAN

The following items concerning the Westside Library Drainage Plan are contained herein:

1. Vicinity Map
2. Existing Plan
3. Calculations

As shown by the Vicinity Map, the site is located on the west side of Unser Boulevard N.W. between Montano Road N.W. and Bogart Street N.W. At present, the site is undeveloped. Much of the surrounding area is partially developed residentially. As shown by Panel 4 of the Flood Insurance Rate Map, the site is not within a designated flood hazard zone. Downstream flooding is not apparent, and therefore does this site does not lie within a regional flood hazard zone. Downstream flooding is not apparent, and therefore does this site does not lie within a regional flood hazard zone. Generally, the site drains from west to east to an existing surface channel located within the Unser Blvd. right-of-way. The channel is part of a drainage system that extends from Montano Road to the Tower Pond. Tower Pond is one of the project sites, which is now partially fed by this channel. Some flow from the project site. Offsite flows enter the east and south property lines along the existing channel. Two 60" RCP pipes, and one 48" RCP pipe which will be removed and replaced with the project site. The offsite runoff has been determined based on a previous drainage report (E10/D3) prepared by DMJM.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 1'0" intervals, 2) continuity between existing and proposed grades, and 3) the limit and extent of the proposed improvements. As shown by this plan, the proposed facility will be located in the center of the site, and will be surrounded by landscaping. Runoff from most of the facility will be routed from west to east to the aforementioned channel. The proposed improvements to the existing channel are limited to the area between the proposed building and Unser Blvd. Within this area, the existing channel are lined with 3" and 6" thick grouted rip rap. Runoff from the parking lot will be routed to the existing channel by curb cuts. The curb cuts will be reinforced with concrete to prevent erosion. The existing channel will be regraded to accept flows entering the channel from the existing culverts located at Montano Road N.W. This regraded, a decrease in runoff and the capacity of downstream facilities, the free discharge of runoff by this site is appropriate.

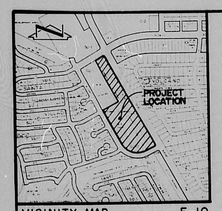
The Calculations which appear herein analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The Rational Method for both Basins 1 and 2 and the SCS Method for the Basin 2 have been used to quantify the volume of runoff. The Rational Method for both Basins 1 and 2 has been used in accordance with the City of Albuquerque Development Process Manual, Volume 2, and the Bernalillo County Drainage Ordinance. The SCS Method for Basin 2 has been used in accordance with the Bernalillo County Drainage Ordinance. As shown by these calculations, the proposed improvements will result in a decrease of runoff discharged by this site. The decrease in runoff generated due to the proposed improvements will be approximately 4.2 cfs.

EROSION CONTROL MEASURES

1. THE CONTRACTOR SHALL PROVIDE THE OWNER'S REPRESENTATIVE WITH A WRITTEN EROSION CONTROL PLAN AND SHALL REVISE PLAN AS NECESSARY TO ADDRESS ANY EROSION PROBLEMS ARISING DURING THE CONSTRUCTION OF THE PROJECT LINES AND WITHIN THE BOUNDARIES OF THE PROJECT.
2. THE EROSION CONTROL PLAN SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING: SILT FENCE, HAY BALES, SEDIMENT BASINS, SEDIMENT TRAPS, AND TEMPORARY SEEDING.
3. THE CONTRACTOR SHALL REVIEW THE EROSION CONTROL PLAN WITH THE OWNER'S REPRESENTATIVE ON A WEEKLY BASIS.
4. THE CONTRACTOR SHALL ADJUST THE EROSION CONTROL PLAN AS NECESSARY TO ADDRESS CONDITIONS.

CONSTRUCTION NOTES:

1. THE CITY IN CONJUNCTION WITH PRIOR TO ANY CONSTRUCTION, CONTRACTOR MUST POSTPONE LOCATION REPORT TOGETHER, FOR LOCATION OF UNDERGROUND UTILITIES.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL ESTABLISH HORIZONTAL AND VERTICAL CONTROL SUFFICIENT TO ENSURE THE CONSTRUCTION OF THE PROJECT IS WITHIN THE LINES AND GRADES SHOWN ON THE PLAN. THE CONTRACTOR MUST ALSO BE ENGAGED WITH A LICENSED SURVEYOR.
3. ALL WORK ON UNDERGROUND UTILITIES SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND SPECIFICATIONS.
4. ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS.
5. IF ANY UTILITY LOCATIONS, ELEVATIONS, OR DIMENSIONS ARE DIFFERENT FROM THOSE SHOWN ON THE PLAN, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY. IF THE CONTRACTOR DOES NOT NOTIFY ENGINEER PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL COSTS ASSOCIATED WITH THE CHANGE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES AND STRUCTURES ON THE PROJECT SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE TO UTILITIES OR STRUCTURES RESULTING FROM THE CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL NOTIFY THE UTILITY OWNERS AT LEAST 48 HOURS PRIOR TO THE CONSTRUCTION OF THE UTILITIES TO ALLOW FOR THE LOCATION OF ANY UTILITIES THAT MAY BE IN CONFLICT WITH THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF REPAIRING ANY UTILITIES DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF ANY UTILITIES ARE DAMAGED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLACEMENT OF BARRICADES, SIGNS, FLAGS, LIGHTS, ETC. AS NECESSARY TO PROTECT THE PUBLIC DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL PROPERTY CORNERS, MONUMENTS, AND OTHER SURVEY MARKERS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF ANY PROPERTY CORNERS, MONUMENTS, AND OTHER SURVEY MARKERS DISTURBED DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL UTILITIES AND STRUCTURES ON THE PROJECT SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES AND STRUCTURES



VICINITY MAP E-10

SCALE 1" = 800'

PROJECT BENCHMARK

PROJECT BENCHMARK IS A SQUARE, 8" CONCRETE ON TOP OF CONCRETE CURB AT THE EAST CURB RETURN, LOCATED AT THE JUNCTION OF UNSER BLVD. (FORMERLY ATRUCO RD.) & TOM DEE DR. (FACE NO. 11) IN THE DIRECTIONAL ROUNDABOUT OF THE INTERSECTION.
ELEVATION = 5108.88 FEET (M.S.L.D.)
(STATION NO. = 23 ON AS-BUILT)

T.B.M. = PROJECT BENCHMARK

LEGEND

- CONTOUR CONTROL
- PROPOSED CONTOUR
- EXISTING GRADE
- PROPOSED GRADE
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- FLOW LINE ELEVATION
- TC TOP OF CURB ELEVATION
- PROPOSED ASPHALT PAVING
- BASIN BOUNDARY
- ANALYSIS POINT

LEGAL DESCRIPTION

TRACTS G-A, T-A, T-B, B AND 9, SANTA FE VILLAGE UNIT 2

DRAINAGE PLAN

The following items concerning the Westside Library 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 west side of Unser Boulevard N.W. between Montano Road N.W. and Bogart Street N.W. At present, the site is undeveloped. North of the surrounding area is partially developed residentially. As shown by Panel 14 of the Floodway Boundary and Floodway Maps, the Bernalillo County Soil Survey, and the site visit, the site does not lie within a designated Flood Hazard Zone. However, Bilisoly's Ark apparent, and therefore does not appear to be a problem. At present, the site drains east to an existing earthen channel located within Tract 7 of the project site, which is the outlet for this site. No offsite flows enter the site along the west, east and south properties. Onsite flows are routed through a route runoff away from the project site. Offsite flows enter the site from the south and northwest via the existing concrete runoff, two 60" R.C.P. pipes, and one 48" RCP pipe which will be intercepted and conveyed through the project site. The offsite runoff has been determined based on a previous drainage report (510/D2) prepared by DMJM.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 1'0" intervals, 2) continuity between existing and proposed grades, and 3) the limit and character of the proposed improvements. As shown by the Grading Plan the proposed improvements consist of the construction of a new library along with adjacent paving and landscaping. Runoff generated by Basin 1 will be routed from west to east to the existing earthen channel. Runoff generated by Basin 2 will be routed from west to east to the aforementioned channel. The proposed improvements to the existing channel are located within Tract 7-B. The channel will be routed through a new underground storm drain system from the existing headwall located at the northeast property corner to an existing concrete box culvert located at the southeast property corner. Also, the existing channel will be regraded to accept flows entering the southeast corner. The existing culverts located at Montano Road N.W. This pattern is consistent with existing site drainage and based upon the fact that this site is located at the bottom of the watershed, a decrease in runoff and the proximity of downstream facilities, the free discharge of runoff by this site is appropriate.

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 quantify the peak rate of discharge and the SCS Method has been used to quantify the volume of runoff. Both Methods have been used in accordance with the City of Albuquerque Development Process Manual, Volume II; and the Mayor's Emergency Rule signed 24 ... 1986. As shown by these calculations, the proposed improvements will result in a decrease of runoff discharged ... this site. The decrease in runoff generated due to the proposed improvements will be approximately 4.2 cfs.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey,
Plate: 23 - MOA - Madurez, 10% Association
Hydrologic Soil Group: B
Existing Pervious CN = 78 (DPM Plate 22.2 C-2)
Pasture or Range Land: fair condition)
Developed Pervious CN = 61 (DPM Plate 22.2 C-2)

Time of Concentration/Time to Peak

$T_t = 0.0078\,[L^{0.77}/s^{0.385}$ (Kirpich Equation)

$T_p = T_c + 10$ min.

Point Rainfall

$P_6 = 2.2$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: Q = CiA

where C varies
$i = P_6\,(6.84)\,T_c^{-0.51} = 4.65$ in/hr
P_6 = 2.2 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

Basin 1
Area = 497,070 sf = 11.41 Ac
CN = 61 (weighted average per Emergency Rule, 1/14/86)
Q100 = CiA = (0.49)(4.65)(11.41) = 25.2 cfs
Aimp = 0 sf; % impervious = 0% %
Composite CN = 78 (DPM Plate 22.2 C-3)
DRO = 0.35 in (DPM Plate 22.2 C-4)
V100 = 3630 (DRO)A = 14,503 cf

Developed Condition

Basin 1
Area = 56,710 sf = 1.30 Ac
Roof area = 7,150 sf (0.12)
Paved area = 32,130 sf (0.57)
Landscaped area = 17,430 sf (0.31)
C = 0.61 (weighted average per Emergency Rule, 1/14/86)
Q100 = CiA = (0.71)(4.65)(1.30) = 4.0 cfs
Aimp = 39,280 sf; % impervious = 69 %
Composite CN = 87 (DPM Plate 22.2 C-3)
DRO = 1.11 in (DPM Plate 22.2 C-4)
V100 = 3630 (DRO) A = 5,195 cf

Channel Capacity (Manning's Equation)

$Q = 1.49\,AR^{2/3}/^{1/2} = 61$ cfs > Q100
n

Where n = 0.013
A = 25 sf
S = .016 (Average)
R = A/ = 2 = 0.50
wp 4

Basin 2
Area = 440,360 sf = 10.11 Ac
Roof area = 7,150 sf (0.01)
Paved area = 7,855 sf (0.02)
Landscaped area = 425,355 sf (0.97)
C = 0.61 (weighted average per Emergency Rule, 1/14/86)
Q100 = CiA = (0.27)(4.65)(10.11) = 12.7 cfs
Aimp = 15,005 sf; % impervious = 03 %
Composite CN = 62.5 (DPM Plate 22.2 C-3)
DRO = 0.18 in (DPM Plate 22.2 C-4)
V100 = 3630 (DRO) A = 6,605 cf

Offsite Flows

Analysis Point 1
Area = 114,630 sf = 3.09 Ac
C = 0.61 (weighted average per Emergency Rule, 1/14/86)
Q100 = CiA = (0.40)(4.65)(3.09) = 5.8 cfs
Aimp = -0- sf; % impervious = -0- %
Composite CN = 78 (DPM Plate 22.2 C-3)
DRO = 0.35 in (DPM Plate 22.2 C-4)
V100 = 3630 (DRO)A = 3,925 cf

Analysis Point 2

Q100 = 56 cfs (Previous Drainage Report by DMJM - 510/D2)

Analysis Point 3

Q10 = 155 cfs (Previous Drainage Report by DMJM - 510/D2)

Analysis Point 4

Q100 = 275 cfs (Previous Drainage Report by DMJM - 510/D2)

Summation
Q100 = 22.2 - (5.6 + 12.7) = 2.9 cfs (decrease)
V100 = 5,500 - (5,195 + 6,605) = 2,705 cf (decrease)

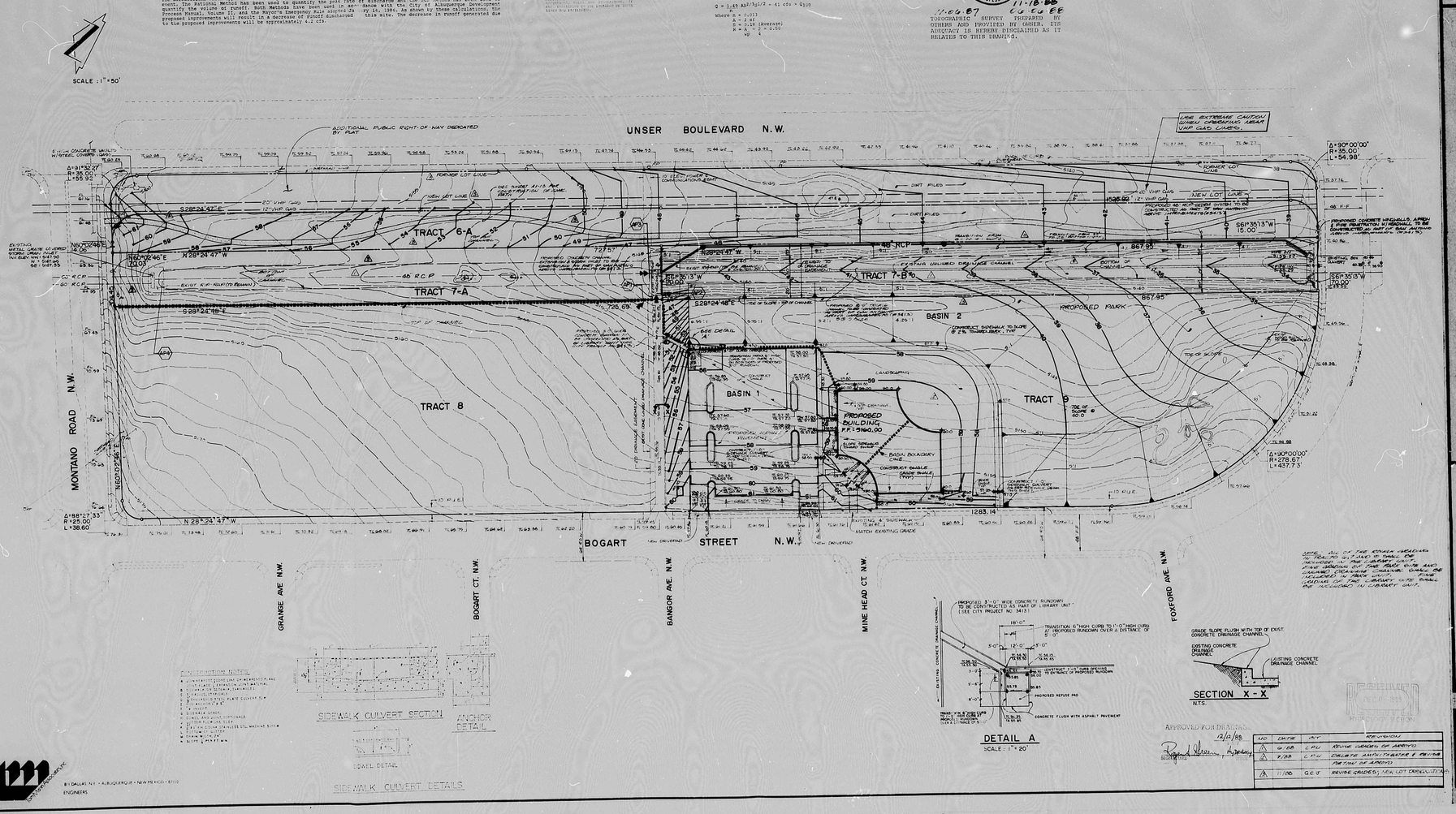
GRADING AND DRAINAGE PLAN PREPARED UNDER THE SUPERVISION OF

STATE OF NEW MEXICO JEFFREY S. MORTENSEN 9547 REGISTERED PROFESSIONAL ENGINEER

11-18-88

11-6-87 11-18-88
CC CU EE

TOPOGRAPHIC SURVEY PREPARED BY OTHERS AND PROVIDED BY OWNER. ITS ADEQUACY IS HEREBY DISCLAIMED AS IT RELATES TO THIS DRAWING.



NO	DATE	INIT	REVISION
1	6/88	CPU	REVISE GRADES OF AREYO
2	7/88	CPU	CALCULATE ANTICIPATED & REVISE FOR FINAL SF AREYO
3	11/88	GCJ	REVISE GRADES, NEW LOT DESIGNATIONS

STATE OF NEW MEXICO HARVEY E. ROUNDUP NO. 5211 REGISTERED ARCHITECT

Harvey Hoehour / Architect / Ltd.
210 Coal Avenue, S.W. / Albuquerque, New Mexico 87102 / Telephone (505) 842-9000

TAYLOR RANCH BRANCH LIBRARY
SANTA FE VILLAGE PARK
SAN ANTONIO AREYO IMPROVEMENTS
5700 BOGART STREET, NW

GRADING & DRAINAGE PLAN

AUGUST 17, 1988

A1-6

PLAN SHOT TWICE
ONCE ON LIGHT
ONCE ON DARK

CITY OF ALBUQUERQUE
THIS MICROIMAGE IS THE BEST POSSIBLE REPRODUCTION DUE TO THE POOR QUALITY OF THE ORIGINAL DOCUMENT.

R# 25 DATE 3-15-92 OP

CITY OF ALBUQUERQUE
This microimage is certified to be a complete and accurate copy of the original as it appears in the files of the Public Works Department and was created in the normal course of business.
The photographic process used meets the Basic Microfilm Standards of the National Micrographics Association (MS115-1977)

DIRECTOR 11-15-92

NOTARY PUBLIC
OFFICIAL SEAL
Roberta Duran
NOTARY PUBLIC
STATE OF NEW MEXICO
My Commission Expires 2/28/92

E 30 D 24 C 20 B 16 A 12

CITY OF ALBUQUERQUE

C D F