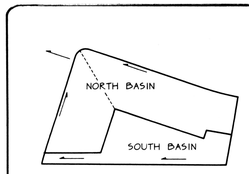
AREAS OF MODIFICATION BETWEEN APPROVED DRAINAGE GRADING PLAN AND ACTUAL AS-BUILT

1. Parking Island / Landscaped area not constructed. Does not affect Drainage / Grading.
2. High point in paved area moved south. Very flat grades. Minimal slope to drain this area.
3. Landscaped area configuration not constructed per plan. Does not affect Drainage / Grading.

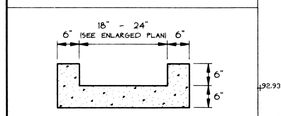
I, Christopher L. Weiss, P.E. hereby certify that the as-built information shown is in substantial compliance with the approved drainage / grading plan.

Christopher L. Weiss, P.E. (N.M.P.E. #6653) — Date: 11-8-96

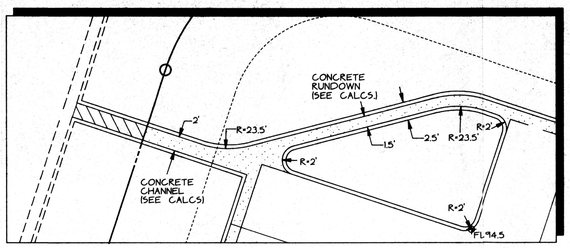
As-Built Survey provided by E. Maxwell Doak NMPS#8127 • 11-96



BASIN KEY



CONCRETE RUNDOWN / CHANNEL N.T.S.



CONCRETE RUNDOWN
1" = 10'

NOTICE TO CONTRACTOR

1. 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.
2. ALL WORK DETAILED ON THESE PLANS TO BE PERFORMED, EXCEPT AS OTHERWISE STATED OR PROVIDED HEREON, SHALL BE CONSTRUCTED IN ACCORDANCE WITH ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE, 260-1234, FOR LOCATION OF EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATIONS OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITHIN A MINIMUM AMOUNT OF DELAY.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO COLLECTOR STREET USE.
6. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY SERVED.
7. CONTRACTOR IS RESPONSIBLE FOR OBTAINING EXCAVATION PERMIT FOR SIDEWALK CULVERT/DRAIN.
8. PROOF OF ACCEPTANCE WILL BE REQUIRED PRIOR TO SIGN OFF FOR CERTIFICATE OF OCCUPANCY (C.O.)

DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY

DESIGN APPROVAL:	HYDROLOGY SECTION	DATE
INSPECTION APPROVAL:	CONSTRUCTION SECTION	DATE
ACCEPTANCE:	CONSTRUCTION SECTION/PERMITS	DATE

BDA ARCHITECTURE
Wayne Usiak & Associates
6000 UPTOWN BLVD. N.E.
SUITE #314 (505)266-0593
ALBUQUERQUE, NM 87110

PROJECT: OFFICE WAREHOUSE FACILITY
LOCATION: COLUMBINE AVE. NE, ALBUQUERQUE, NM
OWNER: **JOHN MECHENBIER**

KEYED NOTES

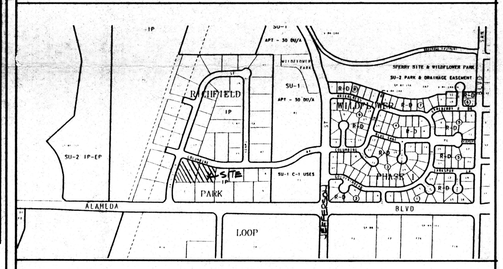
1. CONSTUCT DRIVE ENTRANCE. PROVIDE SMOOTH RIDING TRANSITION. SEE ARCHITECTURAL FOR DIMENSIONS.
2. CONSTRUCT STANDARD CURB AND GUTTER.
3. CONSTRUCT 6" CONCRETE CURB.
4. CONCRETE DUMPSTER PAD.
5. OFFICE ROOF FLOWS TO DRAIN THROUGH PIPES UNDER WALKS WITH OUTLET LOCATIONS AS SHOWN THIS PLAN. SEE ARCHITECTURAL FOR ADDITIONAL INFO.
6. WAREHOUSE ROOF FLOWS TO DRAIN AT CANALE LOCATIONS AS SHOWN ON THIS PLAN. SEE ARCHITECTURAL FOR ADDITIONAL INFO.
7. CONSTRUCT CONCRETE RUNDOWN / UNDERWALK DRAIN THIS AREA. SEE ENLARGED DETAIL AT LEFT.
8. ALL SPOT ELEVATIONS REFERENCE TOP OF ASPHALT UNLESS NOTED OTHERWISE. ADD 0.5 FOR TOP OF CURB / TOP OF WALK.
9. CONSTRUCT ASPHALT WATERBLOCK THIS AREA TO PREVENT FLOWS FROM ENTERING DOCK AREA.
10. 3'X3'X3' CONCRETE BLOCK VAULT WITH SEALED CONDUIT STUB-IN FOR WIRING AND 5" STUB OUT FOR 2" OUTLET PIPE. HYDROMATIC SK50IA 0.4 HP SUBMERSIBLE PUMP OR EQUIVALENT. NEENAH R-4808 24"X24" HEAVY DUTY GRATE WITH R-4899 ANGLE FRAME. 2" SCHEDULE 40 PVC DISCHARGE LINE FROM SUMP THRU VAULT WALL. PROVIDE WATERTIGHT GROUT SEAL. EXTEND DISCHARGE PIPE UP TO EXIT TO ASPHALT DRIVE AT FLOWLINE.
11. LANDSCAPED AREA DRAINS TO STREET (TOTAL AREA = 9500 SF)

GENERAL NOTES:

1. BASED ON THE MASTER DRAINAGE STUDY FOR RICHFIELD PARK SUBDIVISION, FREE DISCHARGE TO WASHINGTON STREET IS PERMITTED.
2. ALTHOUGH THE FEMA MAP INSERT INDICATES THE PRESENCE OF A 100 YEAR FLOOD BOUNDARY THROUGH A PORTION OF THIS PROPERTY, THE INFRASTRUCTURE CONSTRUCTED IN THIS AREA HAVE DIVERTED THESE FLOWS. NO ADDITIONAL METHODS OF FLOOD PROOFING WERE IMPLEMENTED. UNTIL FEMA MAP REVISIONS ARE MADE, THIS PROPERTY MAY BE SUBJECT TO FLOOD INSURANCE.

VICINITY MAP C-17

1" = 800'



FEMA MAP #9

1" = 500'

DRAINAGE / GRADING PLAN

DATE: 2/28/95 DRAWN: BJB CHECKED: CLW
APPROVED: _____ PROJECT NO. 9436

REVISIONS: _____

ARCH. SEAL

ENGR. SEAL

SHEET: C-1

4 OF 5

RECEIVED
NOV 25 1996
HYDROLOGY DIV.

SCOPE
The proposed improvements include an approximately 23,000 SF (footprint) building area with adjacent concrete and asphalt paved walkways / parking areas, general site work and site regrading.

The present site is an undeveloped commercial property which grades at appx. 2% to the west. Columbine Ave. N.E. abuts the property to the north. Washington St. N.E. abuts the property to the west, the lands to the south and east are undeveloped commercial properties.

The intent of this plan is to show:

- Grading relationships between the existing ground elevations and proposed finished elevations in order to facilitate positive drainage to designated discharge points.
- The extent of proposed site improvements, including buildings, walks and pavement.
- The flow rate/volume of rainfall runoff across or around these improvements and methods of handling these flows to meet City of Albuquerque requirements for drainage management.
- The relationship of on-site improvements with existing neighboring property to insure an orderly transition between proposed and surrounding grades.

DRAINAGE PLAN CONCEPT: All flows will free discharge to Washington St. N.E. as they do currently. Approximately 1/2 of the flows will exit to Washington at the drive entrance while the remaining 1/2 will drain by means of a concrete channel / underwalk drain to the street.

GENERAL NOTES:
LEGAL: Lots 10 and 11, Richfield Park Subdivision, Albuquerque, New Mexico.

SURVEYOR: Forstbauer Surveying Co. - Ron Forstbauer, 1100 Alvarado Dr. NE, Albuq. 87110 - December 1994

B.M.: City of Albuquerque Brass Cap NDC 7 located at the southwest quadrant of the intersection of Alameda Blvd. and AMAFCA NDC - elevation = 5062.60 (M.S.L.D.)

T.B.M.: '+' at Top of curb near northeast property corner (see plan) . Elevation = 5096.20 (M.S.L.D.)

SOILS: SCS Soil Survey of Bernalillo County indicates that the soil is Embudo (EmB): Hydrologic Soil Group 'B'.

FLOOD HAZARD: Per FEMA Boundary Map #9, the property is shown within a flood zone. However, this area has been developed with streets and other drainage infrastructure improvements and the site is no longer impacted by the aforementioned floodzone.

OFF-SITE DRAINAGE: There is minimal off-site drainage onto this site (approx. 1/4 acre from the east).

EROSION CONTROL: The contractor is responsible for retaining on-site all sediment generated during construction by means of temporary earth berms or silt fences at the low points on the west property line.

CALCULATIONS:
Calculations are based on the Drainage Design Criteria for Albuquerque, New Mexico, Section 22.2, DPM, Vol 2, dated Jan., 1993

AREA OF SITE: 77565 SF = 1.78 Ac.

ON-SITE

HISTORIC FLOWS:		DEVELOPED FLOWS:		EXCESS PRECIPITATION:	
On-Site Land Condition		On-Site Historic Flow Rate		Precip. Zone	2
Area a =	0 SF	Area a =	0 SF	Ea =	0.53
Area b =	0 SF	Area b =	0 SF	Eb =	0.78
Area c =	77565 SF	Area c =	11000 SF	Ec =	1.13
Area d =	0 SF	Area d =	66565 SF	Ed =	2.12
Total Area =	77565 SF	Total Area =	77565 SF		

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)
Weighted E = EaAa + EbAb + EcAc + EdAd / Aa + Ab + Ac + Ad

Historic E =	1.19 in.	Proposed E =	1.98 in.
On-Site Volume of Runoff: V360 =	(E*A)/12		
Historic V360 =	7304 CF	Proposed V360 =	12796 CF

On-Site Peak Discharge Rate: Qp = QpaAa + QpbAb + QpcAc + QpdAd / 43,560
For Precipitation Zone 2

Qpa =	1.56	Qpc =	3.14
Qpb =	2.28	Qpd =	4.70
Historic Qp =	5.6 CFS	Proposed Qp =	8.0 CFS

to discharge to Washington St. NE

AREA DRAINING TO DRIVE ENTRANCE

Area to Drive Entrance 26800.0 SF = 0.61 Ac.
The following calculations are based on Treatment areas as shown in table to the right.
Weighted Excess Precipitation (see formula above)
Weighted E = 2.12 in.
Volume of Runoff (see formula above)
V360 = 4699 CF
Peak Discharge Rate: (see formula above)
Qp = 2.9 cfs

TREATMENT	
A =	0%
B =	0%
C =	0%
D =	100%

WEST AREA DRAINING TO UNDERWALK DRAIN

Area to underwalk drain 17926.0 SF = 0.41 Ac.
The following calculations are based on Treatment areas as shown in table to the right.
Weighted Excess Precipitation (see formula above)
Weighted E = 2.07 in.
Volume of Runoff (see formula above)
V360 = 3093 CF
Peak Discharge Rate: (see formula above)
Qp = 1.9 cfs

TREATMENT	
A =	0%
B =	0%
C =	5%
D =	95%

NORTH AREA DRAINING TO UNDERWALK DRAIN THRU CONCRETE CHANNEL

Area to underwalk drain 23539.0 SF = 0.54 Ac.
The following calculations are based on Treatment areas as shown in table to the right.
Weighted Excess Precipitation (see formula above)
Weighted E = 2.07 in.
Volume of Runoff (see formula above)
V360 = 4061 CF
Peak Discharge Rate: (see formula above)
Qp = 2.5 cfs

TREATMENT	
A =	0%
B =	0%
C =	5%
D =	95%

CAPACITY OF CONCRETE CHANNEL

Per the calculations above, the concrete channel will carry 2.5 cfs

Bottom Width =	1.5'	Channel Slope =	0.0100	OK	Total Depth Required = 0.41'
n =	0.0150	Discharge =	2.5 cfs		Total Depth Provided = 0.50'

CAPACITY OF CONCRETE RUNDOWN

Per the calculations above, the concrete channel will carry 4.4 cfs

Bottom Width =	2.0'	Channel Slope =	0.0467	OK	Total Depth Required = 0.28'
n =	0.0150	Discharge =	4.4 cfs		Total Depth Provided = 0.50'

CAPACITY OF UNDERWALK DRAIN

Per the calculations above, the concrete channel will carry 4.4 cfs

Bottom Width =	2.0'	Channel Slope =	0.0200	OK	Total Depth Required = 0.37'
n =	0.0150	Discharge =	4.4 cfs		Total Depth Provided = 0.50'

SUMP PUMP

Area to underwalk drain 1000.0 SF = 0.02 Ac.
The following calculations are based on Treatment areas as shown in table to the right.
Weighted Excess Precipitation (see formula above)
Weighted E = 2.12 in.
Volume of Runoff (see formula above)
V360 = 177 CF
Peak Discharge Rate: (see formula above)
Qp = 0.1 cfs

TREATMENT	
A =	0%
B =	0%
C =	0%
D =	100%

Based on Manufacturer's pump curves for specified pump, pump volume rate: 75-100 gpm < 0.25 hour to pump peak volume.
Volume of dock area = 177 CF = (7.5 gal / cf) * 177 cf = 1330 gal. In case of pump failure, flows will be contained in dock area.
Volume of dock area = 20' wide x 24' long (to 95 contour) x 4' deep / 2 = 960 CF < 177 CF OK

LEGEND

	SIDEWALK, CURB AND GUTTER (EXISTING, PROPOSED)
	PROPOSED PAVED DRIVE
	BUILDING (EXISTING, PROPOSED)
	PROPERTY LINE
x 65.7	EXISTING SPOT ELEVATION
90	EXISTING CONTOUR
◆ 75.2	PROPOSED SPOT ELEVATION
90	PROPOSED CONTOUR
	SURFACE FLOW DIRECTION (EXISTING, PROPOSED)
LA	LANDSCAPED AREA
TGW	TOP OF GRADE WALL < 18" HIGH
TRW	TOP OF RETAINING WALL > 18" HIGH
TA	TOP OF ASPHALT
TC	TOP OF CURB
FL	FLOW LINE
FF	FINISHED FLOOR
R/W	RIGHT OF WAY
PL	PROPERTY LINE
⊙	POWER POLE
+(XX.X)	AS-BUILT INFORMATION

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