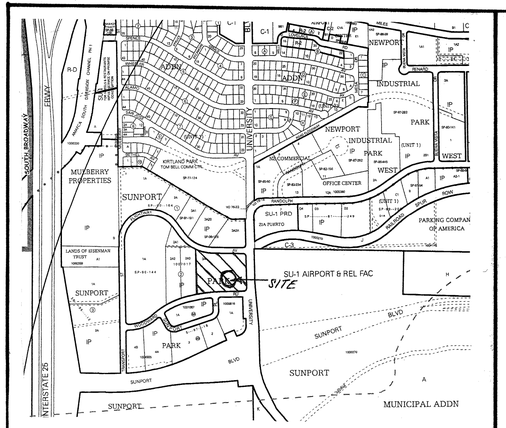
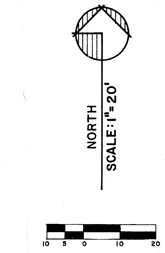
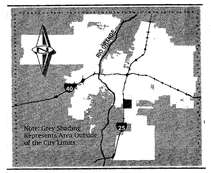
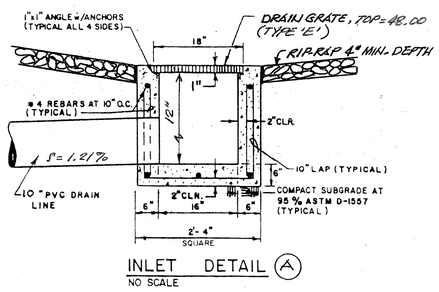


VICINITY MAP **M-15-Z**

0 750 Feet 1,500







** ORIFICE EQUATION FOR ONSITE STORM INLET :

$Q = A\ (Cv)\ (\text{sq. ft. } (2gh))$
$Q = (1.77)(0.60)\sqrt{64.4(1.08)}$
$Q = (1.06)\ (8.34)$
$Q = 8.85$ cfs capacity

10 inch pipe
Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\lilanita.fm2
Worksheet	Little Anitas Expansion
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Mannings Coefficient	0.012	
Channel Slope	1.2100	%
Depth	0.67	ft
Diameter	10.00	in

Results		
Discharge	2.55	cfs
Flow Area	0.47	ft²
Wetted Perimeter	1.85	ft
Top Width	0.67	ft
Critical Depth	0.71	ft
Percent Full	80.00	
Critical Slope	0.010893	ft/ft
Velocity	5.46	ft/s
Velocity Head	0.46	ft
Specific Energy	1.13	ft
Froude Number	1.15	
Maximum Discharge	2.81	cfs
Full Flow Capacity	2.61	cfs
Full Flow Slope	0.011561	ft/ft
Flow is supercritical.		

LEGAL DESCRIPTION: SOUTHERLY PORTION OF LOT 3-A, BLOCK 2, SUNPORT PARK, ALBUQUERQUE, NEW MEXICO.

BENCH MARK REFERENCE: CITY OF ALBUQUERQUE STATION NO. "24-L16", ELEVATION = 5191.306 (NAVD 1988).

DRAINAGE COMMENTS:

AS SHOWN ON THE VICINITY MAP HEREON, THE SUBJECT SITE IS LOCATED AT THE NORTHWEST CORNER OF UNIVERSITY BLVD. S.E. AND WOODWARD ROAD S.E., ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO.

THE SUBJECT SITE IS PRESENTLY A DEVELOPED PROPERTY; THE PROPOSED PLAN AS SHOWN HEREON IS TO CONSTRUCT A NEW 100'X120' METAL BUILDING ADDITION TO THE EXISTING BUILDING STRUCTURE THEREON.

THE SUBJECT SITE, 1.) DOES NOT LIE WITHIN A DESIGNATED FLOODPLAIN, (RE: F.E.M.A. FIRM PANEL 35001C0342G, EFFECTIVE SEPTEMBER 26, 2008), 2.) DOES NOT ACCEPT OFFSITE FLOWS FROM ADJACENT PROPERTIES, 3.) DOES NOT CONTRIBUTE OFFSITE FLOWS TO ADJACENT PROPERTIES, 4.) WILL PROVIDE A RETENTION POND FOR THE " FIRST FLUSH" STORM VOLUME.

DRAINAGE CALCULATIONS ARE PER SECTION 22.2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL, VOLUME 2, DESIGN CRITERIA FOR THE CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO.

A.1 PRECIPITATION ZONES

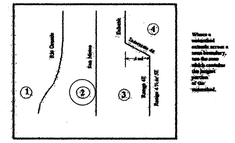
Bernalillo County's four precipitation zones are indicated in TABLE A-1 and on FIGURE A-1.

TABLE A-1. PRECIPITATION ZONES

ZONE	LOCATION
1	West of the Rio Grande
(2)	Between the Rio Grande and San Mateo
3	Between San Mateo and Eubank, North of Interstate 40; and between San Mateo and the East boundary of Range 4 East, South of Interstate 40
4	East of Eubank, North of Interstate 40; and East of the East boundary of Range 4 East, South of Interstate 40

TABLE A-10. PEAK INTENSITY (IN/HR at t=6.2 hour)

Zone	Intensity (2-YR, 10-YR)
1	4.70 (1.84, 3.14)
(2)	5.05 (2.04, 3.41)
3	5.38 (2.21, 3.65)
4	5.61 (2.34, 3.83)



Where a watershed contains a mixture of precipitation zones, use the zone which contributes the largest portion of the watershed.

TABLE A-4. LAND TREATMENTS

Treatment	Land Condition
A	Soil uncompacted by human activity with 0 to 10 percent slopes. Native grasses, weeds and shrubs in typical densities with minimal disturbance to grading, groundcover and infiltration capacity. Croplands. Unlined Arroyos.
B	Irrigated lawns, parks and golf courses with 0 to 10 percent slopes. Native grasses, weeds and shrubs, and soil uncompacted by human activity with slopes greater than 10 percent and less than 20 percent.
C	Soil uncompacted by human activity. Minimal vegetation. Unpaved parking, roads, trails. Most vacant lots. Gravel or rock on plastic (desert landscaping). Irrigated lawns and parks with slopes greater than 10 percent. Native grasses, weeds, and shrubs, and soil uncompacted by human activity with slopes at 20 percent or greater. Native grass, weed and shrub areas with clay or clay loam soils and other soils of very low permeability as classified by SCS Hydrologic Soil Group D.
D	Impervious areas, pavement and roofs.

Most watersheds contain a mix of land treatments. To determine proportional treatments, measure respective subareas. In lieu of specific measurement for treatment D, the areal percentages in TABLE A-5 may be employed

TABLE A-9. PEAK DISCHARGE (cfs/acre)

Zone	Treatment 100-YR (2-YR, 10-TR)			
	A	B	C	D
1	1.29 (0.00, 0.24)	2.03 (0.33, 0.76)	2.87 (0.47, 1.49)	4.37 (1.69, 2.89)
(2)	1.56 (0.00, 0.38)	2.28 (0.08, 0.95)	3.14 (0.60, 1.71)	4.70 1.86, 3.14)
3	1.87 (0.00, 0.58)	2.60 (0.21, 1.19)	3.45 (0.78, 2.009)	5.02 (2.04, 3.39)
4	2.20 (0.05, 0.87)	2.92 (0.38, 1.45)	3.73 (1.00, 2.26)	5.25 (2.17, 3.57)

EROSION CONTROL MEASURES:

THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR MANAGEMENT OF STORM RUNOFF DURING CONSTRUCTION; HE SHALL ENSURE THAT THE FOLLOWING MEASURES ARE TAKEN:

1) **ADJACENT PROPERTY SHALL BE PROTECTED AT ALL TIMES BY CONSTRUCTION OF BERMS, DIKES, SWALES, PONDS, AND OTHER TEMPORARY GRADING AS REQUIRED TO PREVENT STORM RUNOFF FROM LEAVING THE SUBJECT SITE AND ENTERING ADJACENT PROPERTIES.**

2) **ADJACENT PUBLIC RIGHT-OF-WAYS SHALL BE PROTECTED AT ALL TIMES FROM STORM WATER RUNOFF FROM THE SUBJECT SITE. NO SEDIMENT BEARING WATER SHALL BE PERMITTED TO ENTER PUBLIC STREET RIGHT-OF-WAYS.**

3) **THE CONTRACTOR SHALL IMMEDIATELY AND THOROUGHLY REMOVE ANY AND ALL SEDIMENT FROM PUBLIC STREETS THAT HAS BEEN ERODED FROM THE SUBJECT SITE AND DEPOSITED THEREON.**

CONSTRUCTION NOTES:

1) **TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE AT 260-1990 FOR THE ACTUAL FIELD LOCATION OF THE EXISTING SURFACE OF SUB-SURFACE UTILITIES.**

2) **PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION(S) OF ALL POTENTIAL OBSTRUCTIONS; SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM OF DELAY.**

3) **ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.**

4) **ALL CONSTRUCTION WITHIN PUBLIC STREET RIGHT-OF-WAY(S) SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE/BERNALILLO COUNTY STANDARDS AND PROCEDURES.**

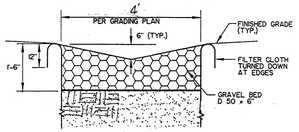
GENERAL NOTES:

1) **NO PERIMETER BOUNDARY CORNERS HAVE BEEN FIELD ESTABLISHED PER THIS SURVEY OF THE SUBJECT PROPERTY.**

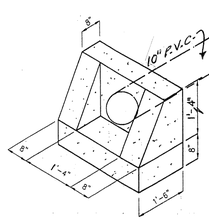
2) **NO SEARCH HAS BEEN MADE FOR EASEMENTS OF RECORD OTHER THAN SHOWN HEREON.**

LEGEND:

TOP OF CURB ELEVATION = TC = 42.35
CURB FLOWLINE ELEVATION = FE = 41.00
EXISTING SPOT ELEVATION = + 45.81
EXISTING CONTOUR ELEVATION = 42.0
PROPOSED SPOT ELEVATION = + 45.95
PROPOSED CONTOUR ELEVATION = 45.0
PROPOSED OR EXISTING CONCRETE SURFACE =
EXISTING FENCE LINE = x x x

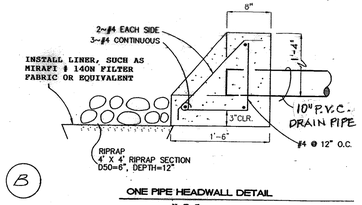


TYPICAL GRAVEL BED SECTION
NOT TO SCALE

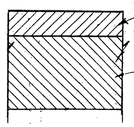


CONSTRUCTION NOTES

1. PLACE RIPRAP ON FABRIC WITHOUT PUNCTURING FABRIC
2. COMPACT BOTTOM OF EXCAVATION AND BACKFILL TO 90% ASTM D-1557.
3. USE GR. 60 REBAR
4. USE 4000 PSI PCC @ 28 DAYS.

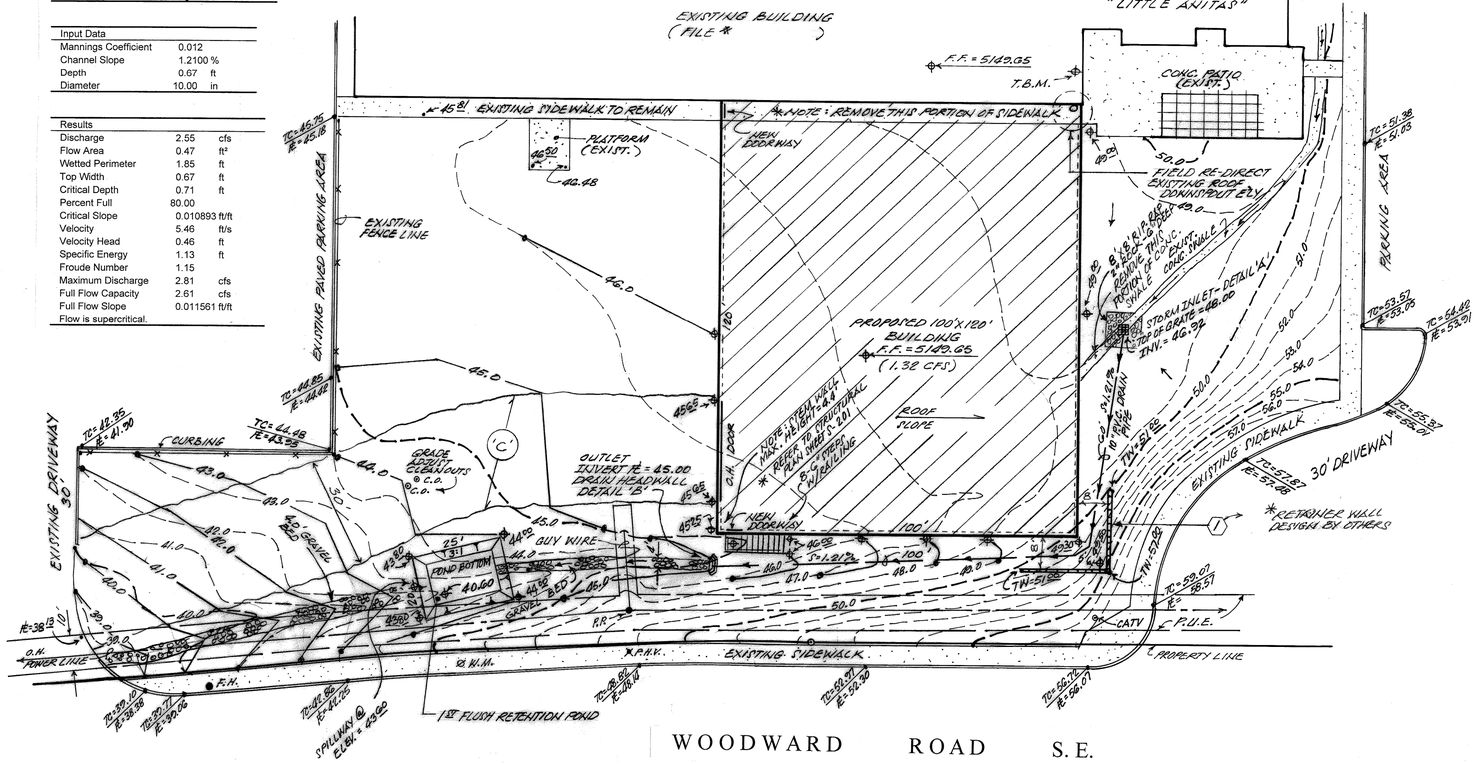


(B) ONE PIPE HEADWALL DETAIL
N.T.S.



(C) 6" COMPACTED AGGREGATE BASE COURSE MIN. 95% OF MODIFIED PROCTOR DENSITY (ASTM D-1557).

12" COMPACTED SUBGRADE MIN. 95% OF MAX. DENSITY IN ACCORDANCE W/ ASTM D-1557.



PROPOSED BUILDING AREA : 100' x 120' = 12,000.0 sq. ft. = 0.28 acre

SITE AREA = 0.28 ACRE ZONE: TWO (2)
PRECIPITATION: 360 = 2.35 in.
1440 = 2.75 in.
10day = 3.95 in.

EXCESS PRECIPTATION: PEAK DISCHARGE:

TREATMENT A	0.53 in.	1.56 cfs/ac.
TREATMENT B	0.78 in.	2.28 cfs/ac.
TREATMENT C	1.13 in.	3.14 cfs/ac.
TREATMENT D	2.12 in.	4.70 cfs/ac.

EXISTING CONDITIONS:	PROPOSED CONDITIONS:
AREA	AREA
TREATMENT A 0.00 ac.	0.00 ac.
TREATMENT B 0.00 ac.	0.00 ac.
TREATMENT C 0.27 ac.	0.00 ac.
TREATMENT D 0.01 ac.	0.28 ac.

EXISTING EXCESS PRECIPITATION:

Weighted E= (0.53)x(0.00)+(0.78)x(0.00)+(1.13)x(0.27)+(2.12)x(0.01)/0.28 = 1.18 in.
V100-360= (1.18)x(0.28)/ 12 = 0.02753 ac-ft = 1,199.2 cf

EXISTING PEAK DISCHARGE:

Q100= (1.56)x(0.00)+(2.28)x(0.00)+(3.14)x(0.27)+(4.70)x(0.01) = 1.18 cfs

PROPOSED EXCESS PRECIPITATION:

Weighted E= (0.53)x(0.00)+(0.78)x(0.00)+(1.13)x(0.00)+(2.12)x(0.28)/0.28 = 2.12 in
V100-360= (2.12)x(0.28)/ 12.0 = 0.04947 ac-ft = 2,154.8 cf

V100-1440= (0.05)+(0.28)x(2.75 - 2.35)/12 = 0.059333 ac-ft = 2,584.6 cf

V100-10day= (0.05)+(0.28)x(3.95 - 2.35)/12 = 0.087333 ac-ft = 3,804.2 cf

PROPOSED PEAK DISCHARGE:

Q100= (1.56)x(0.00)+(2.28)x(0.00)+(3.14)x(0.00)+(4.70)x(0.28) = 1.32 cfs

INCREASE: Q100 = 0.14 CFS V100-360 = 955.6 CU. FT.

NOTE : 1st FLUSH RETENTION POND VOLUME:
0.34" (0.03') x 12,000.0 SQ. FT. = 360.0 CU.FT.

RETENTION POND PROVIDED : 20.0' x 25.0' x3.0' depth (with 3:1 slopes).

(mean dimensions) 11.0' x 16.0' x 3.0' depth = 528.0 cu. ft. (provided)

LEVI J. VALDEZ NEW MEXICO 5693 REGISTERED PROFESSIONAL ENGINEER
10-16-15
10-26-15
ENGINEER'S SEAL

GRADING AND DRAINAGE PLAN

A PROPOSED
GRADING AND DRAINAGE PLAN
FOR A 100'X120' BUILDING ADDITION TO
FOODS OF NEW MEXICO FACILITY
3041 UNIVERSITY BLVD. S.E.
ALBUQUERQUE, NEW MEXICO
SEPTEMBER, 2015

CITY OF ALBUQUERQUE

Planning Department
Suzanne Lubar, Director

Mayor Richard J. Berry

October 27, 2015

Levi J. Valdez, PE
George T Rodriguez-Development Consultant
12800 San Juan Rd. SE
Albuquerque, NM 87123

Re: Foods of New Mexico
3041 University SE
Grading & Drainage Plan
Engineer's Stamp dated: 10-26-15 (M15D023C)

Dear Mr. Valdez,

Based on the information provided in your submittal received 10/26/2015, this plan is approved for building Permit.

Please attach a copy of this approved plan, dated 10-26-15, to the construction sets in the permitting process prior to sign-off by Hydrology.

Prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

If you have any questions, you can contact me at 924-3695 or Rudy Rael at 924-3977.

Sincerely,

Shahab Biazar, P.E.
City Engineer, COA
Planning Department

RR/SB
C: email

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New Mexico 87103
www.cabq.gov