## CITY OF ALBUQUERQUE



September 15, 2014

Mr. Dennis Lorenz Lorenz Design & Consulting Suite A 2501 Rio Grande Blvd NW Albuquerque, NM 87104

Re: Anthea – 4<sup>th</sup> at Granite

**Grading and Drainage Plan** 

Engineer's Stamp Date 9-12-14 (J14D171)

Dear Mr. Lorenz,

Based upon the information provided in your submittal received 9-12-14, the above referenced plan is approved for Building Permit and SO#19 Permit. This permit is required for construction within City Right of Way. A copy of this approval letter must be on hand when applying for the Excavation Permit. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

PO Box 1293

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 924-3994.

Albuquerque

New Mexico 87103

www.cabq.gov

Sincerely,

Amy L. D. Niese, P.E. / Senior Engineer, Hydrology

Planning Department

C: e-mail

## AHYMO.OUT

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START TIME (HR:MIN:SEC) = 14:21:30 USER NO.= AHYMO_Temp_User:20122010 INPUT FILE = P:\14-009 - 4th & Granite\Drainage\ANTHEA.DAT
                                                                                                                                                                                                                                                                                                                                                PROJECT HYDROLOGY
                                                                                                                                                                                                                                           - Rel: 01a
- Version: S4.01a
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   AHYMO PROGRAM (AHYMO-S4)
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RAINFALL
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DEVELOPED SITE COMPUTE NM HYD PRINT HYD ID=1 CODE=20

# HYDROGRAPH FROM AREA DEV-SITE

FLOW	CFS	0.0	0.0	
TIME	HRS	4.000	4.666	0.0013 SQ. MI.
FLOW	CFS	0.0	0.0	E-FEET BASIN AREA =
TIME	HRS	7.666	3.333	0.1400 ACR .500 HOURS
FLOW	CFS	1.1	9.0	= AT 1
TIME	HRS	1.333	2.000	1.95278 INCHES = 0.1400 ACRE-FEET E = 3.96 CFS AT 1.500 HOURS BASIN AREA = 0.0013 SQ. MI.
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L 2 1-		HKS	5.999	

\* DEVELOPED BASIN A - 0.82 ACRES
COMPUTE NM HYD ID=2 HYD NO=DEV-SITE DA=0.001281 SQ MI
PER A=0 PER B=6 PER C=9 PER D=85
TP=0.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428 UNIT PEAK = 4.2988 CFS UNIT VOLUME = 0.9965 B = 526.28 P60 = 2.0100 AREA = 0.001089 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033330 0.545000

PRINT HYD

ID=2 CODE=20

# HYDROGRAPH FROM AREA DEV-SITE

# AHYMO.OUT

МС	CFS	0.0	0.0	
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FLOW	CFS	0.0	0.0	E-FEET SASIN AREA =
TIME	HRS	2.666	3,333	0.1334 ACRE-FEET 1.500 HOURS BASIN AREA = 0.0013 SO. MI.
FLOW	CFS	H.	0.5	<b>"</b> ∀
TIME	HRS	1.333	2.000	1.95278 INCHES = 3.78 CFS
FLOW	CFS	0.0	0.0	RUNOFF VOLUME = PEAK DISCHARGE RATE
TIME FI OW	HRS	0.000 0.000	0.0	RUNOFF VO PEAK DISC
TTME		HRS	5.333	) ) )

- 0.04 ACRES ID=3 HYD NO=DEV-SITE DA=0.000063 SQ MI PER A=0 PER B=6 PER C=9 PER D=85 TP=0.1333 HR MASS RAIN=-1 \* DEVELOPED BASIN B COMPUTE NM HYD

K = 0.117303HR TP = 0.133300HR K/TP RATIO = 0.879990 SHAPE CONSTANT, N = 4.033584 UNIT PEAK = 0.25337E-01CFS UNIT VOLUME = 0.8775 B = 357.40 P60 = 2.0100 AREA = 0.000009 SQ MI IA = 0.41000 INCHES INF = 0.99800 INCHES PER HOUR RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033330

ID=3 CODE=20 PRINT HYD

# HYDROGRAPH FROM AREA DEV-SITE

FLOW	CFS	0.0	
TIME	HRS	2.000	0.0001 SQ. MI.
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TIME	HRS	1.333	0.0066 ACRE-FEET 1.500 HOURS BASIN AREA
FLOW	CFS	0.0	= TA
TIME	HRS	0.667	1.95278 INCHES = 0.20 CFS
FLOW	CFS	0.0	RUNOFF VOLUME = PEAK DISCHARGE RATE
TIME FI OW	HRS	0.000	RUNOFF V PEAK DIS
TTMF	1 0	CALL	

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	PIPE) ******
	EN A (10" PIPE)
HYMO.OUT	3LE DISCHARGE IS 2.75 CFS/AC OR 2.22 CFS FOR BASIN A
A	OR 2.22 CF
	5 CFS/AC ( *******
	3E IS 2.7
	E DISCHAR(
	* ALLOWABLE ********
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" PIPE) *******				0.02222000	U. U.J.J.J.JUHKJ	
SIN A (10) ********* CODE=10	(FT) .00 .35 .70			R 1.67	 	
AHYMO.OUT 2.22 CFS FOR BAS ************************************	_		4c 4c	OUTFLOW (CFS)	0.00 0.00 0.00 0.00 0.04 0.057 1.27 1.27 1.27 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.0	TINCINEILINION
2.75 CFS/AC OR 2.2 ***********************************	SIOKAGE (AC 0 0.02617 0.05234	4c 4c 4c 4c	VOLUME (AC-FT)	0.000000000000000000000000000000000000	į	
IS **** D=4 UT (		4¢ 4¢ 4¢	ELEV (FEET)	57.00 57.00 57.00 57.00 57.00 57.00 57.00 57.00 57.00 57.00 57.00 57.00 57.00 57.00	• (	
	22.0	4c 4c 4c	INFLOW (CFS)	0.00 0.00 0.00 0.13 1.06 2.15 0.54 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.0		
* ALLOWABLE ********** ROUTE RESER\		** ** **	TIME (HRS)	0.00 0.33 0.67 1.00 1.00 2.33 2.67 2.67 2.67 4.00 4.00 6.00 6.00 MAXIMUM WAT	)	

ID=4 CODE=20 PRINT HYD

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	TIME	HRS	4.000	4.666	
OND-A-OUT	FLOW	CFS	0.1	0.0	
HYDROGRAPH FROM AREA POND-A-OUT	TIME	HRS	5.666	3.333	4
HYDROGRAPH	FLOW	CFS	9.0	1.3	Page ,
	TIME	HRS	1.333	2.000	
	FLOW	CFS	0.0	0.0	
	TIME FI OW	HRS	0.000	0.667	
	TIME	H Y	5,333		

AHYMO.OUT

0.0

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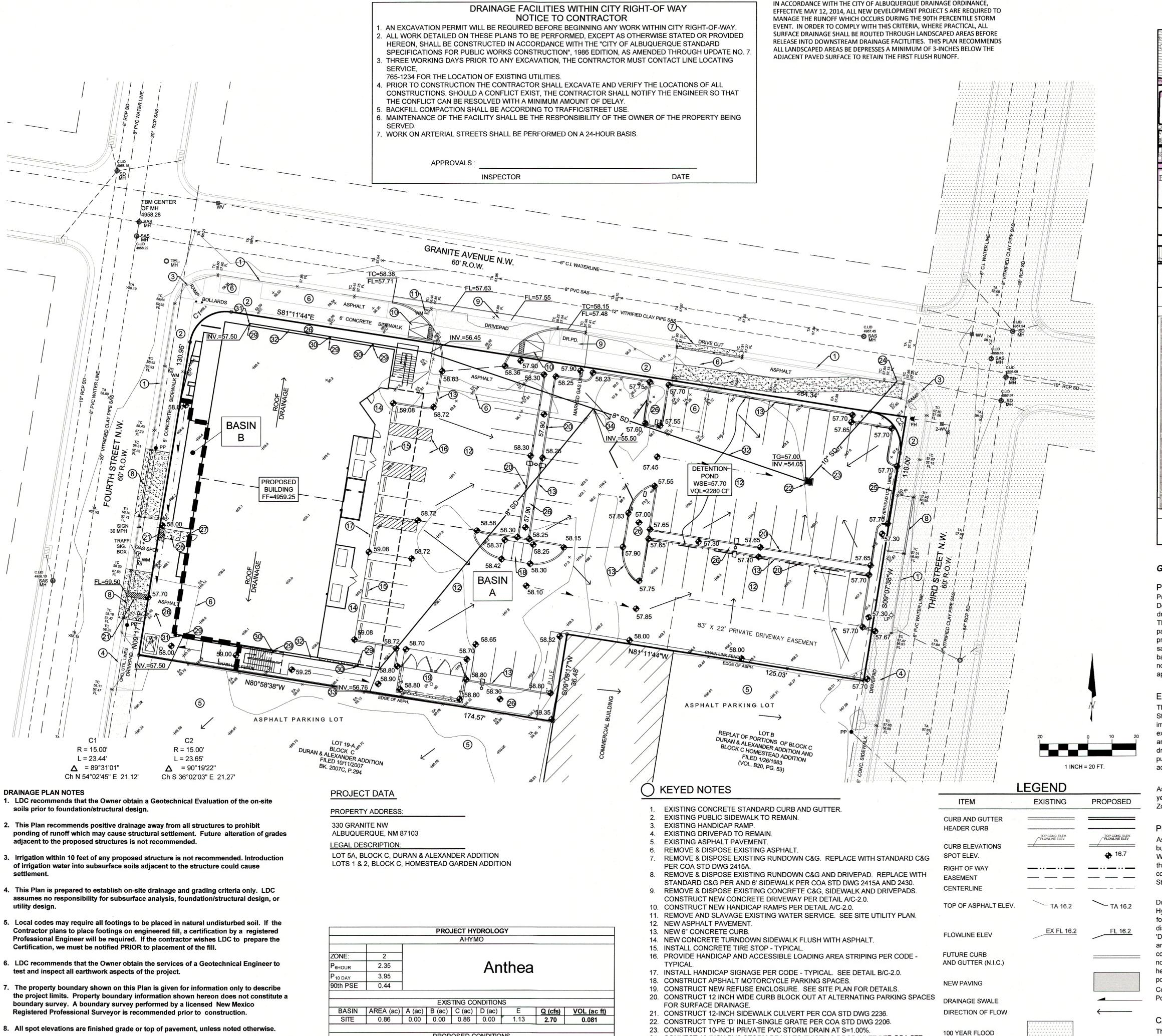
RUNOFF VOLUME = 1.95254 INCHES = 0.1334 ACRE-FEET
PEAK DISCHARGE RATE = 2.14 CFS AT 1.667 HOURS BASIN AREA = 0.0013 SQ. MI.

FINISH

NORMAL PROGRAM FINISH

END TIME (HR:MIN:SEC) = 14:21:30

Page 5



24. CONNECT 10-INCH PVC STORM DRAIN TO EXISTING DROP INLET PER COA STD

25. CONSTRUCT POND OVERFLOW WEIR. SEE DETAIL D/C-2-0

26. NEW LANDSCAPING. SEE LANDSCAPÉ PLAN.

30. 6"x6" PVC DOWNSPOUT ADAPTER WITH 8"x8"x8" TEE. 31. 6"x6"x8" PVC DOWNSPOUT ADAPTER WITH 8"-90° BEND.

DWG 2237. INV. = 4953.5±

27. 4'x4' LANDING AT MANDOOR.

34. 8" PVC TEE AND 8"-22 1/2" PVC BEND.

28. 4' ADA RAMP AT 1:12 MAX. 29. 6"x6" DOWNSPOUT (TYP.).

32. 8" PVC STORM DRAIN. 33. 8"-60° PVC BEND

HAZARD ZONE

STORM INLET

DRAINAGE BASIN DIVIDE

PROPOSED CONDITIONS

BASIN AREA (ac) A (ac) B (ac) C (ac) D (ac) E Q (cfs) VOL (ac ft)

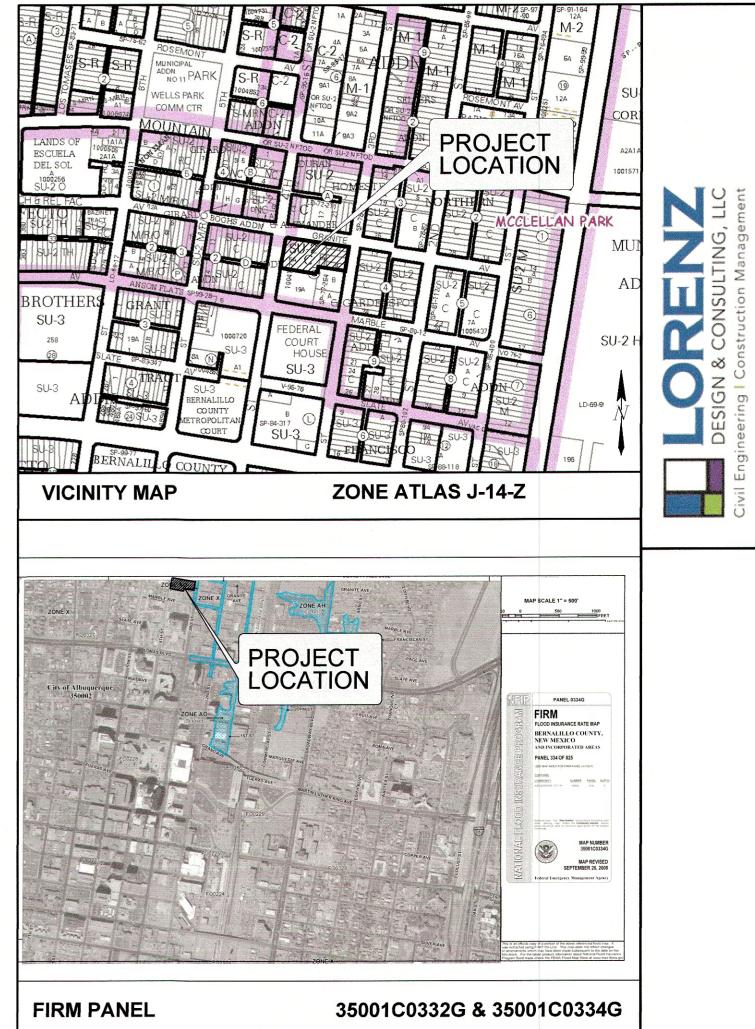
SITE 0.86 0.00 0.07 0.07 0.72 1.93 **3.76 0.138** 

A 0.82 0.00 0.07 0.04 0.71 1.96 **3.62 0.134** 

B 0.04 0.00 0.00 0.03 0.01 1.38 **0.14 0.005** 

9. The City of Albuquerque has received its EPA MS4 Permit for stormwater quality with

an effective date of March 1, 2012.



#### GRADING AND DRAINAGE PLAN

#### PURPOSE AND SCOPE

Pursuant to the Drainage Ordinance for the City of Albuquerque and the Development Process Manual, this Grading and Drainage Plan outlines the drainage management criteria for controlling developed runoff from the project site. The project consists of the construction of an 29,600 square foot building with paving, landscaping, utility, grading, and drainage improvements to support the project. The scope of this plan is to present grading and drainage criteria for the safe management of excess runoff impacting the site from upstream drainage basins, and controlling excess runoff from the project site in a well-managed, non-erosive manner. The purpose of this plan is to support building permit application.

### **EXISTING CONDITIONS**

The property is located at 330 Granite Avenue NW, between Third and Fourth Streets NW. The site is presently utilized as a parking lot. Existing site improvements consist of gravel surfacing. No buildings or permanent structures exist on the property. The site is extremely flat, with very little positive drainage in any direction. Excess runoff generally flows to the perimeter streets. Public storm drains exist in Third and Fourth Streets. The site is surrounded on three sides by public roadways. A paved parking lot and commercial development are located adjacent to the property on the south. No significant off-site flows impact the site.

As shown by the attached FIRM Panel, the site does not lie within a mapped 100 year Flood Zone. Portions of Third Street adjacent to the site are mapped as a Zone AO depth 1' Floodzone.

### PROPOSED IMPROVEMENTS

As stated above, the project consists of the construction of an 29,600 square foot building with paving, landscaping, utility, grading, and drainage improvements. Where practical all developed runoff will be routed through landscaping to capture the first flush before release into the perimeter streets. All excess runoff will be collected by the existing public storm drain system located in Third and Fourth

Due to limited capacity of the existing public storm drainage system the City Hydrology Department has established a 2.75 cfs per acre maximum discharge rate for this site. Therefore, the site will implement detention ponding to limit developed discharge to 2.36 cfs for the project. This will be accomplished by utilizing a Type 'D' inlet in the parking lot near the northeast corner of the site. The inlet will drain to an existing public inlet located in Granite Avenue. An 10-inch drainline will be connected to the existing public inlet, restricting discharge to 2.36 cfs. The northeast corner of the proposed parking lot will serve as a detention pond for during heavy rains. A curb blokout will be provided at Third Street as a spillway should the

Construction will disturb an area of less than 1.0 acres, therefore a Storm Water Pollution Prevention Plan should not be required.

#### CALCULATIONS

The calculations shown hereon define the 100-year/6 hour design storm falling within the project area under existing and proposed conditions. The hydrology is per "Section 22.2, Part A, Development Process Manual, Vol 2", dated June 1997.

ANTHEA 4TH AND (GRADING AND AND DRA REVISION DATE 1 09/03/2014 ♠ COA COMMENTS 09/12/2014

GRANITE AINAGE PI

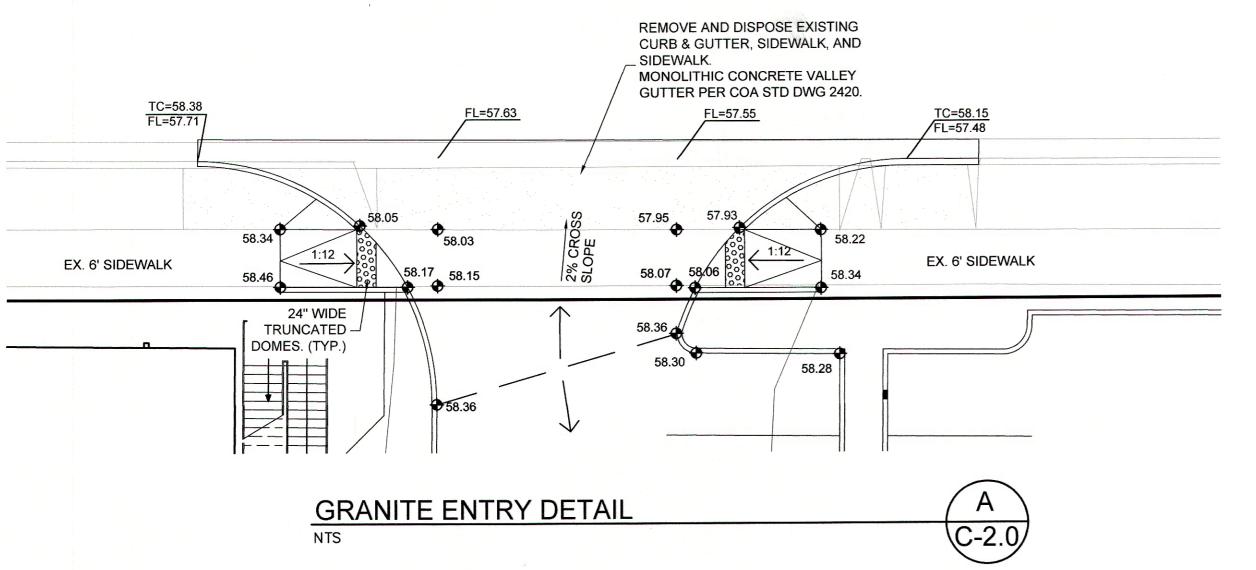


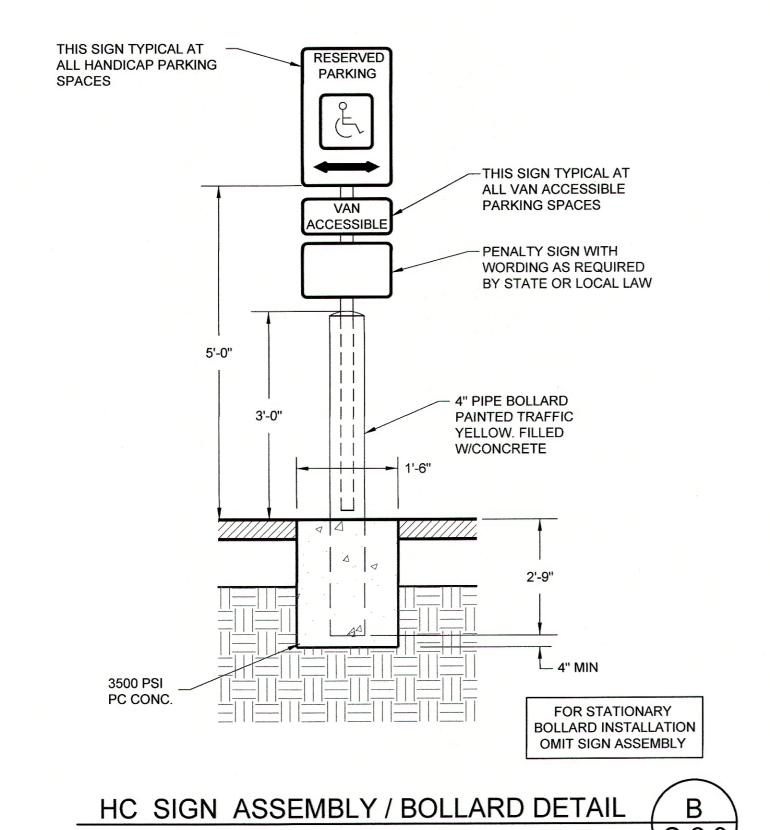
09/12/2014

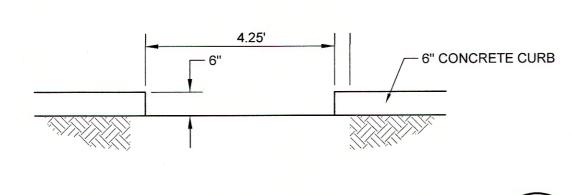
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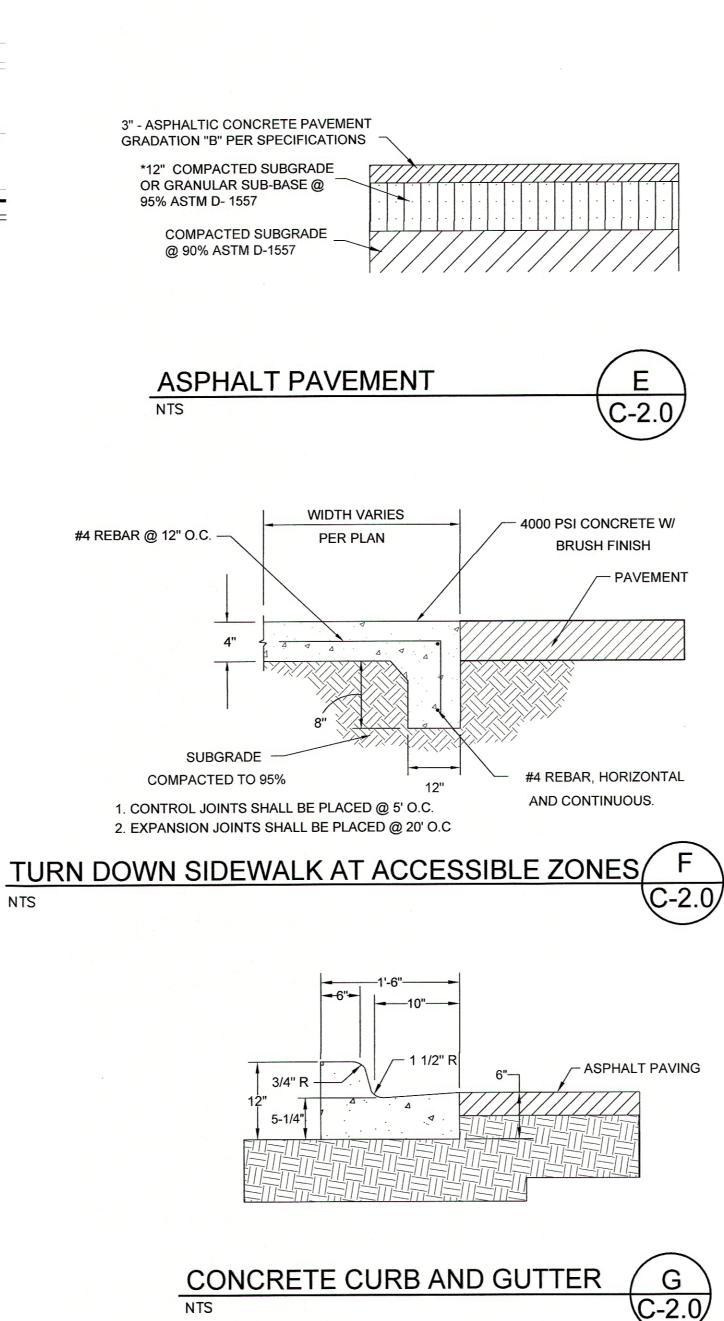
## GRANITE AVENUE N.W. 60' R.O.W.

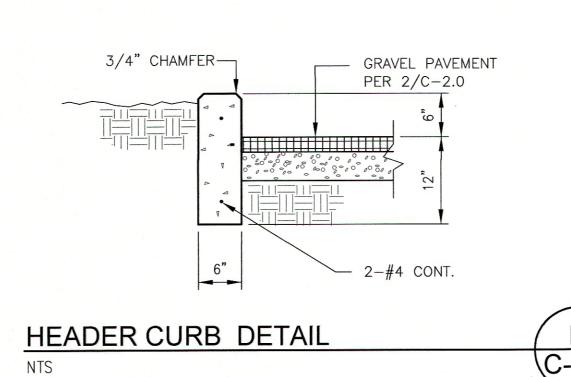


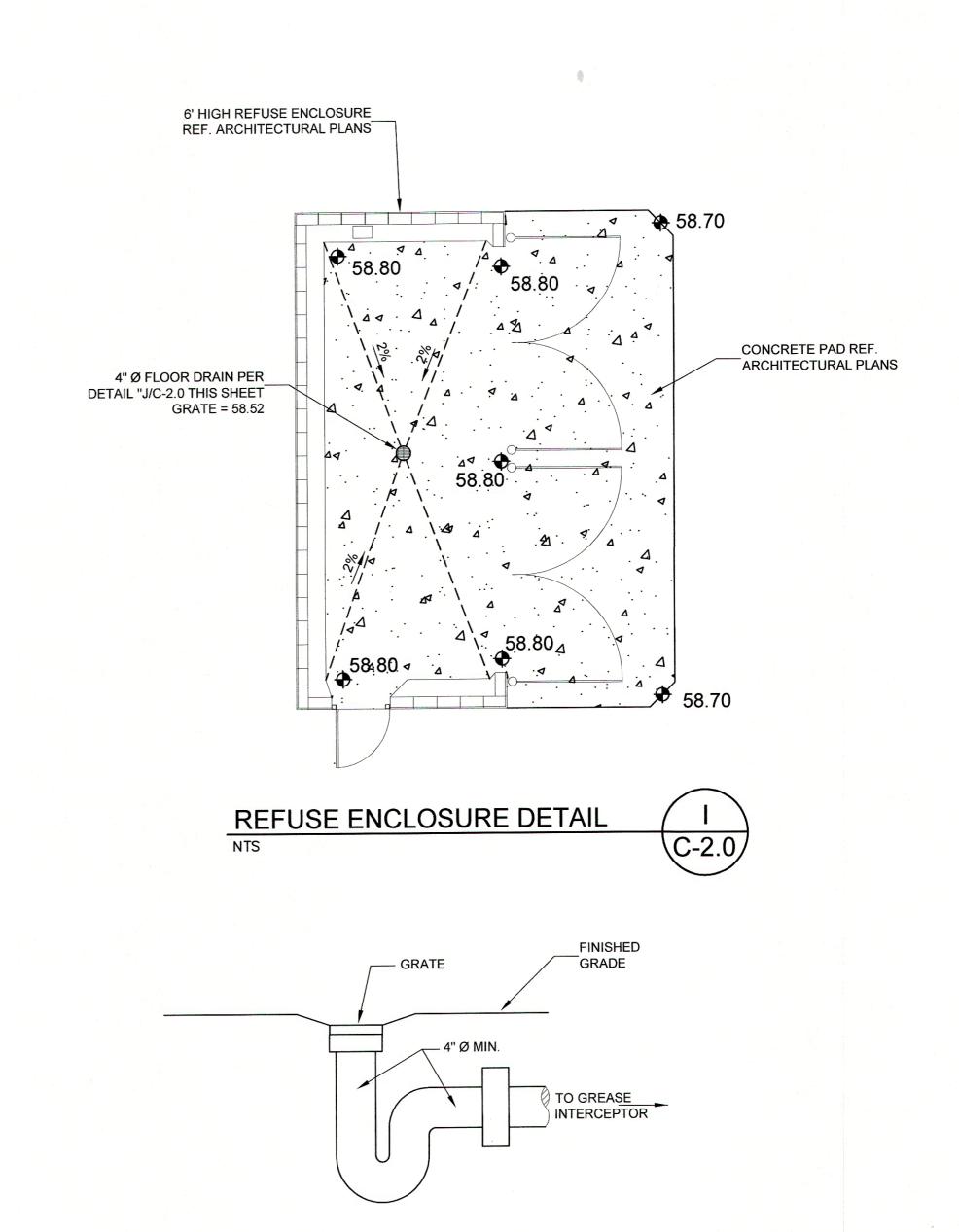












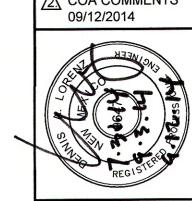
4" SANITARY SEWER DRAIN

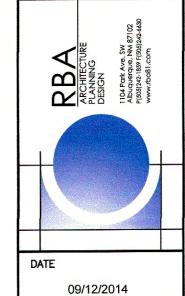
C-2.0

FOR REFUSE ENCLOSURE









SHEET NUMBER

C-2.0