HYDROLOGY

L16/D13

L16/D13

NATIONAL
SELF STORAGE

1 PLAN

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

HYDROLOGY SECTION PROJ. NO. L-16 DATE: 2/7/84

PLANNING DIVISION NO. _____

RECEIVED
JUN 05 1984
RECEIVED

CONFERENCE RECAP

SUBJECT: Girard Mini-Warehouses

WHO	REPRESENTING
ATTENDANCE: Dave Alonzo	
Billy Gootsby	

FINDINGS: ① Drainage Plan per MPM
② Discharge rate and location to be same as existing if possible.
③ Erosion Control Plan for period of construction required.

Provide copy of this recap with submittal

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED: Billy A Gootsby SIGNED: David Alonzo

TITLE: Consulting Engr TITLE: C.O.

DATE: 2/7/84 DATE: 2/7/84

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

INFORMATION SHEET

PROJECT TITLE National Self Storage TYPE OF SUBMITTAL Grading & Drainage Plan

ZONE ATLAS PAGE NO. L-16 D13 CITY ADDRESS 2000 Girard SE

LEGAL DESCRIPTION Tract D-2 Lands of Pierce & Pace

ENGINEERING FIRM DMJM CONTACT J. J. Bordenave

ADDRESS 4055 Montgomery NE PHONE 881-1808

OWNER National Self Storage CONTACT

ADDRESS 1161 El Dorado Pl, Tuc, Az PHONE

ARCHITECT J. Burwinkle & Assoc. CONTACT J. Burwinkle

ADDRESS 3209 Siver SE PHONE 268-9987

SURVEYOR DMJM CONTACT W. T. Richards

ADDRESS 4055 Montgomery NE PHONE 881-1808

CONTRACTOR — CONTACT

ADDRESS PHONE

PRE-DESIGN MEETING:

X YES
___ NO
X COPY OF CONFERENCE RECAP SHEET PROVIDED

PLEASE CHECK TYPE OF APPROVAL EXPECTED WITH THIS SUBMITTAL:

___ SKETCH PLAT APPROVAL
___ PRELIMINARY PLAT APPROVAL
___ SITE DEVELOPMENT PLAN APPROVAL
___ FINAL PLAT APPROVAL
X BUILDING PERMIT APPROVAL
___ CERTIFICATE OF OCCUPANCY APPROVAL
___ ROUGH GRADING PERMIT APPROVAL
___ GRADING/PAVING PERMIT APPROVAL
___ OTHER _____ (SPECIFY)

DATE SUBMITTED: 6/5/84

BY: Jean F Bardrove

RECEIVED
JUN 05 1984
RECEIVED

CONVERSATION BY PHone

1. Unable to understand View H and section H-H — DID EXPLAIN

2. Drainage plan refers to pts A-E. Need to be identify on drawing. RESUBMITTED

3. Is Columbia Drive a developed road. DEVELOPED

4. Need spot elevations on the driveway on Girard Boulevard. RESUBMITTED

5. Need to input "Q" from off-site areas. DID INPUT

Notified J. J. Bordenava of DMJM that he needs to identify pts. A-E on the drawing. He said he would input the drawing

Carlos A T Monty
7-18-84

Received resubmitted drawing 26 July 1984.

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

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

July 26, 1984

Mr. J.J. Bordenava
D.M.J.M.
4055 Montgomery NE
Albuquerque, New Mexico 87109

REF: GRADING & DRAINAGE PLAN FOR NATIONAL SELF STORAGE (L-16 D-13)
RECEIVED JUNE 5, 1984.

Dear Mr. J.J. Bordenava:

The above referenced plan, dated June 5, 1984 is approved.

Please attach a copy of this approved plan to the construction set prior to issuance of the building permit.

If I can be of further assistance, please contact me at 766-7644.

Sincerely,

Carlos Montoya
Civil Engineer/Hydrology

CM/cl

DMJM / AHA ALBUQUERQUE	PROJECT NATIONAL SELF STORAGE GIRARD @ GIBSON	PROJECT NO A	PAGE 1/6
		BY: JJB DATE: 6/3/04	
SUBJECT DRAINAGE			

OFFSITE AREAS

All offsite areas are undeveloped (t_c from DPM Pt. 22.2 B-1)

OSA1	13,900 #	length = 240'	slope = 0.040%	t_c = 3.5
OSA2	34,000 #	300'	= 0.040%	4.3
OSA3	27,600 #	360'	= 0.047%	5.2
OSA4	5,600 #	160'	= 0.038%	2.3
OSA5	20,200 #	320'	= 0.059%	4.4
	101,300 #			

ONSITE DRAINAGE (use C = 0.97 onsite, 0.40 offsite)

Swale @ Bldgs 1 & 2

contributing area 64 #/lin.ft, SS left 10:1

i = 4.9 in/hr, SS right 6.5:1

Pt A.

length = 140' assume 1 fps ∴ t_c = 10 min.

area = (140)(64) = 8960 #

Q = (0.97)(4.9)(8960/43560) = 1.0 cfs

S = 0.028%, n = 0.021

V = 2.6 fps

d = 0.21 ft d_c = 0.25 ft.

Pt B

length = 360' use 2 fps ∴ t_c = 10 min.

area = (360)(64) = 23,040 #

Q = (0.97)(4.9)(23,040/43560) = 2.5 cfs

S = 0.016%, n = 0.021

V = 2.7 fps

d = 0.33 ft. d_c = 0.36 ft

Pt C

length = 440' use 2 fps ∴ t_c = 10 min

area = (440)(64) = 28,160 #

Q = (0.97)(4.9)(28,160/43560) = 3.1 cfs

S = 0.022%, n = 0.021

V = 3.2 fps

DMJM / AHA ALBUQUERQUE	PROJECT NATIONAL SELF STORAGE GIRARD @ GIBSON	PROJECT NO		PAGE 2/6
		BY: JJB	DATE: 6/3/84	
SUBJECT DRAINAGE				

ONSITE DRAINAGE

Pt D

length = 540' use 2 fps ∴ t_c = 10 min
area = (540)(64) = 34,560 ft²
Q = (0.97)(4.9)(34,560/43,560) = 3.8 cfs
S = 0.058 %, n = 0.021
V = 4.9 fps
d = 0.31 ft d_c = 0.42 ft

Pt E

length = 700' use 2 fps ∴ t_c = 10 min
area = (700)(64) = 44,800 ft²
Q = (0.97)(4.9)(44,800/43,560) = 4.9 cfs
S = 0.035 %, n = 0.021
V = 4.2 fps
d = 0.37 ft d_c = 0.47 ft

Swale Bldgs 2 & 3

contributing area 64 ft²/lin ft + OSA 1 ss left 10:1
ss right 6.5:1

Pt A

length = 200' assume 2 fps t_c = 1.7 + 3.5 use 10
area = (200)(64) + (13,900)(0.41) = 18,499
Q = (0.97)(4.9)(18,499/43560) = 2.0 cfs
S = 0.018 %, n = 0.021
V = 2.7 fps
d = 0.30 ft d_c = 0.33 ft

Pt B

length = 320' use 2.5 fps, t_c = 2.1 + 3.5 use 10
area = (320)(64) + (13,900)(0.41) = 26,179
Q = (0.97)(4.9)(26,179/43560) = 2.9 cfs
S = 0.016 %, n = 0.021
V = 2.8 fps
d = 0.35 ft d_c = 0.38

DMJM / AHA ALBUQUERQUE	PROJECT National Self Storage GIRARD & GIBSON	PROJECT NO.		PAGE 3/6
		BY: JJB	DATE: 6/3/84	
SUBJECT DRAINAGE				

ONSITE DRAINAGE

Pt C

length = 400' use 2.5 fps, t_c = 2.7 + 3.5 use 10
area = (400)(64) + (13,900)(0.41) = 31,299 ft
Q = (0.97)(4.9)(31,299/43560) = 3.4 cfs
S = 0.022 %, n = 0.021
V = 3.3 fps
d = 0.35 ft d_c = 0.40 ft

Pt D

length = 460' use 2.5 fps, t_c = 3.0 + 3.5 use 10
area = (460)(64) + (13,900)(0.41) = 35,139 ft
Q = (0.97)(4.9)(35,139/43560) = 3.8 cfs
S = 0.071 %, n = 0.021
V = 5.3 fps
d = 0.30 ft d_c = 0.42 ft

Pt E

length = 660' use 2.5 fps, t_c = 4.4 + 7.5 use 10
area = (660)(64) + (13,900)(0.41) = 47,939
Q = (0.97)(4.9)(47,939/43560) = 5.2 cfs
S = 0.015 %, n = 0.021
V = 3.2 fps
d = 0.45 ft d_c = 0.48 ft

SWALE BLDGS 3 & 4

contributing area 40 ft/lin ft + OSA 2, ss left 7:1
i = 4.9 in/hr, ss right 7:1

Pt A

length = 220' use 2.0 fps, t_c = + 4.3 use 10
area = (220)(40) + (34,000)(0.41) = 22,740 ft
Q = (0.97)(4.9)(22,740/43,560) = 2.5 cfs
S = 0.018, n = 0.021
V = 2.9 fps
d = 0.35 ft d_c = 0.38 ft

DMJM / AHA ALBUQUERQUE	PROJECT National Self Storage Girard & Gibson	PROJECT NO		PAGE 4/6
		BY: NB	DATE: 6/3/84	
SUBJECT Drainage				

ONSITE DRAINAGE

Pt B

length = 340' use 2.5 fps, t_c = +4.3 use 10

area = (340)(40) + (34,000)(0.41) = 27,540 ⌗

Q = (0.97)(4.9)(27,540/43,560) = 3.0 cfs

s = 0.016, n = 0.021

V = 2.95 fps

d = 0.38 ft d_c = 0.41 ft

Pt C

length = 420' use 2.5 fps, t_c = 2.8 + 4.3 use 10

area = (420)(40) + (34,000)(0.41) = 30,740 ⌗

Q = (0.97)(4.9)(30,740/43,560) = 3.4 cfs

s = 0.022, n = 0.021

V = 3.4 fps

d = 0.38 ft d_c = 0.43 ft

Pt. D

length = 480' use 2.5 fps, t_c = 3.2 + 4.3 use 10

area = (480)(40) + (34,000)(0.41) = 33,140 ⌗

Q = (0.97)(4.9)(33,140/43,560) = 3.6 cfs

s = 0.071, n = 0.021

V = 5.4 fps

d = 0.31 ft d_c = 0.44 ft

Pt E

length = 680' use 2.5 fps, t_c = 4.5 + 4.3 use 10

area = (680)(40) + (34,000)(0.41) = 41,140 ⌗

Q = (0.97)(4.9)(41,140/43,560) = 4.5 cfs

s = 0.015, n = 0.021

V = 3.2 fps

d = 0.45 ft d_c = 0.48 ft

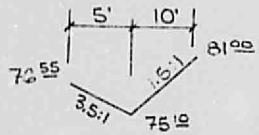
DMJM / AHA ALBUQUERQUE	PROJECT National Self Storage Guard @ Gibson	PROJECT NO.		PAGE 5/6
		BY JB	DATE 6/3/84	
SUBJECT DRAINAGE				

ONSITE DRAINAGE require off-site input Q

Swale south of Bldg 4

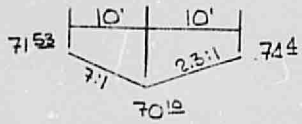
Contributing area variable + OSA as varies
each section will be analyzed as if it were a constant section

Pt A



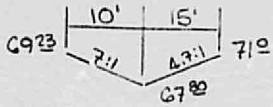
area = (5)(150) + (27,600)(0.41) = 12,066 ft² use t_c = 10
Q = (0.97)(4.9)(12,066/43,560) = 1.3 cfs
S = 0.018% , n = 0.021
V = 3.1 fps
d = 0.41 ft d_c = 0.44 ft

Pt B



area = (10)(220) + (27,600 + 5,600)(0.41) = 15,812 ft² use t_c = 10
Q = (0.97)(4.9)(15,812/43,560) = 1.7 cfs
S = 0.071 % , n = 0.021
V = 4.9 fps
d = 0.27 ft d_c = 0.38 ft

Pt C

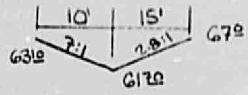


area = (12.5)(275) + (27,600 + 5,600)(0.41) = 17,049 ft² use t_c = 10
Q = (0.97)(4.9)(17,049/43560) = 1.9 cfs
S = 0.038% , n = 0.021
V = 1.47 fps
d = 0.07 ft d_c = 0.08 ft

DMJM / AHA ALBUQUERQUE	PROJECT National Self Storage Gizard & Gibson	PROJECT NO		PAGE 6/6
		BY: JJB	DATE: 6/3/84	
SUBJECT Drainage				

ONSITE DRAINAGE

Pt D



area = (12.5)(275) + (170)(25) + (27,600 + 5,600 + 20,200) 0.41

= 29,582 ft² use $t_c = 10$

Q = (0.97)(4.9)(29582/43560) = 3.2 cfs

S = 0.038%, n = 0.021

V = 4.5 fps

d = 0.38 ft $d_c = 0.48$ ft

TOTAL SITE

Area = (740)(197) - (47)(565)(0.5) + (101,300)(0.41) = 174,036 $t_c = 10$

Q = (0.97)(4.9)(174,036/43,560) = 19.0 cfs

Outlet thru drivepad 30' wide

using weir equation

$Q = (2.6)(30)(0.5)^{3/2}$

= 28 cfs > 19 cfs