CITY OF ALBUQUERQUE

September 3, 2015

Diane Hoelzer, PE
Mark Goodwin & Associates, PA.
PO Box 90606
Albuquerque, NM 87199

Re: The Carlisle
SW Corner of Carlisle/Central
Grading and Drainage Plan
Engineer's Stamp dated: 9/1/2015 (K17D69)

Dear Ms. Hoelzer,

Based on the information provided in your submittal received 9/1/2015, the above referenced Grading and Drainage Plan cannot be approved for Grading Permit or Building Permit until the following comments are addressed.

- Provide the type of surface in the storage tank (Impervious concrete, bitumen).
- Provide what the existing drives will be replaced with (Walkway, landscape).
- Provide what is in the areas to the north and west of the building.
- Provide a keyed note for the sidewalk culvert mentioning the city spec.

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

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Hydrology
Planning Department

RR/RH
C: email

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

N

SCALE: 1" = 5'

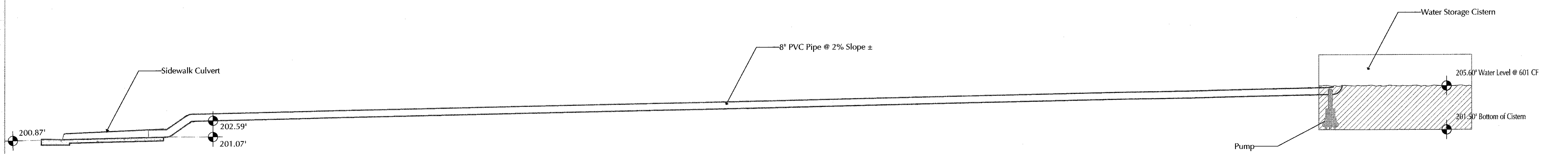
A15013 CARLISLE CONDOMINIUMS\GRADE & DRAIN\A15013-GRADING-50\08-31-15\DLH

CARLISLE CONDOMINIUMS

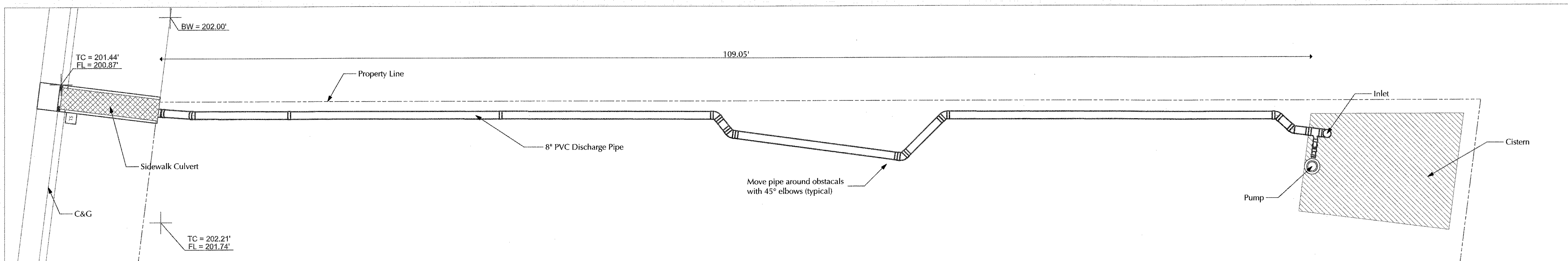
BUILDING ELEVATION PLAN

dmg
MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505)828-2200, FAX (505)797-9539

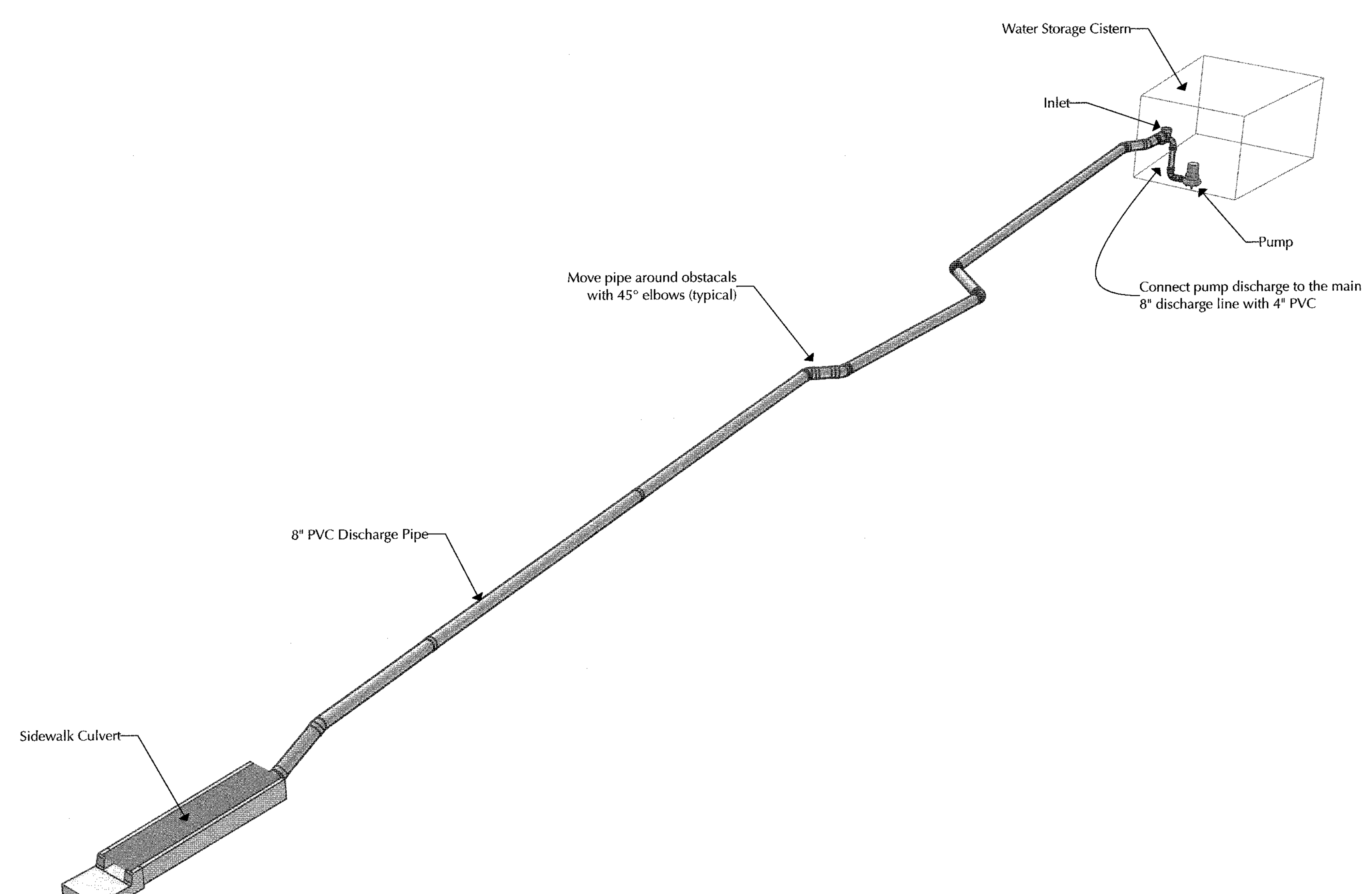
Designed: DMG	Drawn: ACH	Checked: DMG	Sheet C-3
Scale: 1" = 10'	Date: 06-03-15	Job: A15013	



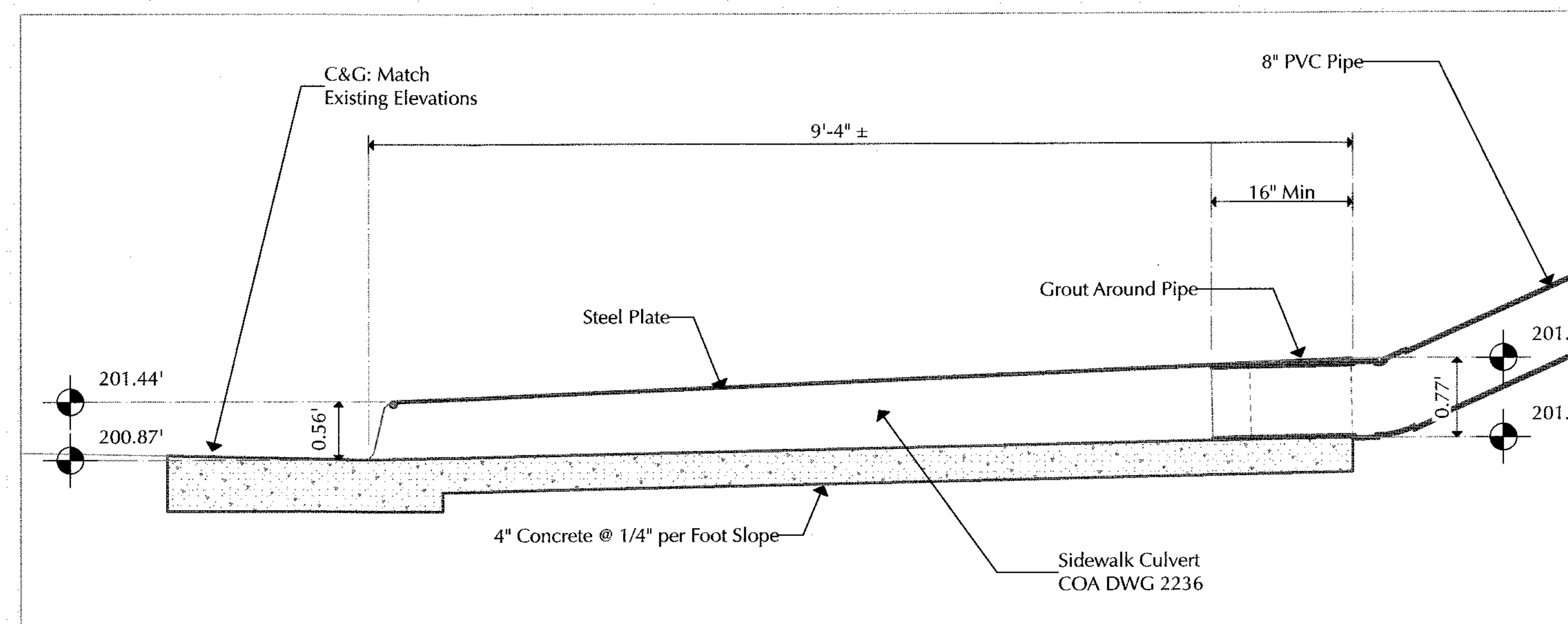
1 Drainage Pipe Overall Section
Scale: 3/16" = 1'-0"



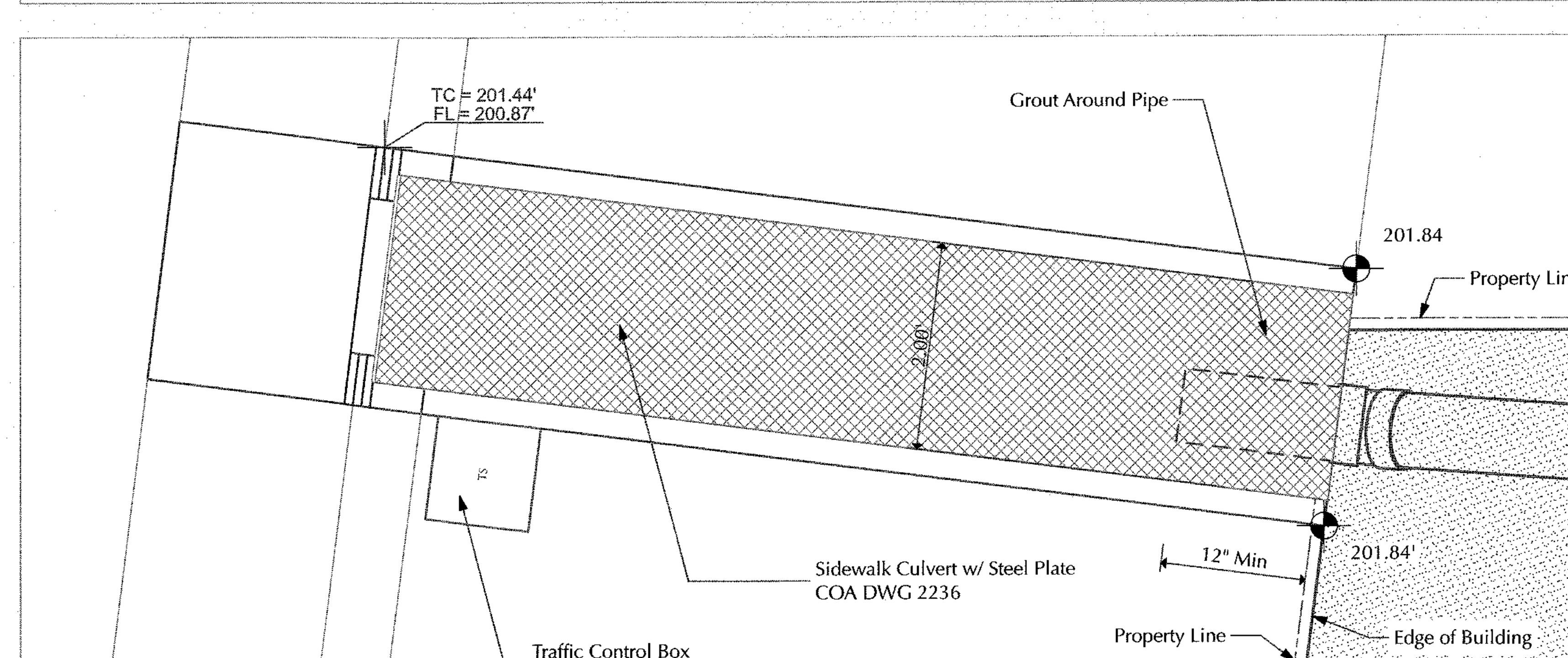
2 Drainage Pipe Overall Plan
Scale: 3/16" = 1'-0"



3 3D View Of System
Not To Scale



4 Drainage Pipe Overall Section
Scale: 3/4" = 1'-0"



5 Culvert Plan
Scale: 3/4" = 1'-0"

Code Review Process
City Of Albuquerque

James C Lewis • Architect
General Design, Inc.
904 Princeton SE
Albuquerque • NM • 87106
505-247-1529 • gdi@mac.com

Notes

PROJECT NUMBER
1505

ISSUE DATE
08/10/15

REVISIONS △
1
2
3
4
5
6
7

Building Permit

The Carlisle
3600 Central Ave. SE
Albuquerque • New Mexico • 87106

Drainage Details

SHEET
C
1 OF 1

DRAINAGE REPORT

For

Carlisle Condominium Project

DIANE HOELZER
NEW MEXICO
11967
LICENSED PROFESSIONAL ENGINEER

9-1-15

Prepared by
Mark Goodwin & Associates, P.A.

September 1, 2015

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D. Mark Goodwin & Associates, P.A.
Consulting Engineers
P.O. BOX 90606, ALBUQUERQUE,NM 87199
(505) 828-2200 FAX 797-9539

September 1, 2015

Ms. Rita Harmon, PE
Hydrology Division, Planning Dept.
Development and Building Services
City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

Re: The Carlisle
Engineers stamp date 9-1-15 (K17 / D69)

Dear Ms. Harmon;
In response to your comment letter dated 7-2-15, your comments are addressed below:

1. *It is not possible to route the first flush through a pond or landscape area. The first flush will be directed to a detention storage tank before being pumped out to Central after a 24 hour detention period.*
2. *FIRM panel attached.*
3. *The word "Conceptual" has been removed,*
4. *Yes,*
5. *A "Table" has been added to plan,*
6. *The finished floor elevation for the underground garage is shown on the grading plan (52101.7) but it varies some to allow for drainage to a low spot. The finished floor elevations for the other floor elevations is shown on the building elevation plan.*
7. *Roof flows were already provided on the plan under SUMMARY OF HYDROLOGY,*
8. *The Alley is not part of this project and is considered offsite flows. The existing alley way according to the plans appears to be at elevation 5210.00. These flows do not enter our site. Our project is not changing the existing offsite conditions. Flows from the alley exit to either Carlisle or Hermosa Drive.*
9. *This project does not include any work in the alley way. The alley way is not paved. There will be no drainage into the alley way.*
10. *This is incorrect. The bus stop encroaches into our private property. I have been told that the City has an encroachment agreement.*
11. *Rainwater does not enter the garage side walls. Any nuisance flows will be collected in a sump and pumped to the sanitary sewer in Central Avenue.*

Please call me if you have any questions.

Sincerely,

MARK GOODWIN & ASSOCIATES, P.A.

Diane Hoelzer

Diane Hoelzer, PE
Senior Engineer

DLH/dlh
f:\\15013 /Carlisle Condo\ HYDRO_LTR_15013.docx

CARLISLE CONDOMINIUM PROJECT

PROJECT DESCRIPTION: This 0.48 acre site is proposed to be developed into a 36 unit multi-level condominium complex with an underground parking garage.

EXISTING CONDITIONS: The project site is bounded by Carlisle Blvd. and Central Avenue on the west and north side of the property. Runoff from Carlisle is conveyed northerly as street flow then eastward at the intersection with Central Avenue. The east property boundary has a block wall that serves as a divide line between the existing restaurant outdoor patio and this project site. The south boundary consists of a gravel road that serves as access for the adjacent residences and church to the south. This project will have only one access location off of Central Avenue. No offsite flows enter this site under existing conditions.

PROPOSED CONDITIONS: Runoff from the roof will be directed to the "first flush' runoff storage tank located in the underground parking garage southeast corner. The tank will detain the required "first flush" runoff volume of 601 cu.ft. for 24 hours. After this detention time, the first flush volume will be pumped at a rate not to exceed 2.35 cfs through the 8" outfall discharge pipe to Central Avenue.

During any storm event when the first flush runoff volume is exceeded, the excess runoff will spill through a 10" diameter PVC pipe that serves as a spillway weir, into an 8" PVC pipe that conveys the runoff as gravity flow to a 24" sidewalk culvert and into Central Avenue.

Summary of Hydrology

To analyze and size the discharge pipe from the "first flush" storage tank, the "Water Surface Pressure Gradient Package" WSPGW was used to develop a rating table to be used in the AHYMO program that determined the maximum water surface elevation and peak discharge for the 100 year 6 hour storm event.

PROCEDURE: The peak discharge for the 100 year 6 hours storm event from the roof is 2.35 cfs. A rating table for peak discharge versus hydraulic head from the storage tank was developed for 2.1, 2.2, 2.3, 2.4, 2.5 cfs. These results along with the volume of storage calculated at the head elevations determined from the WSPGW program were inserted into the AHYMO program to determine the maximum WSEL and peak discharge for the 100 year 6 hour storm event.

SUMMARY OF WSPGW PROGRAM: RATING TABLE

DISCHARGE (cfs)	ELEVATION (ft.)
2.1	5206.28
2.2	5206.61
2.3	5206.96
2.4	5207.32
2.5	5207.69

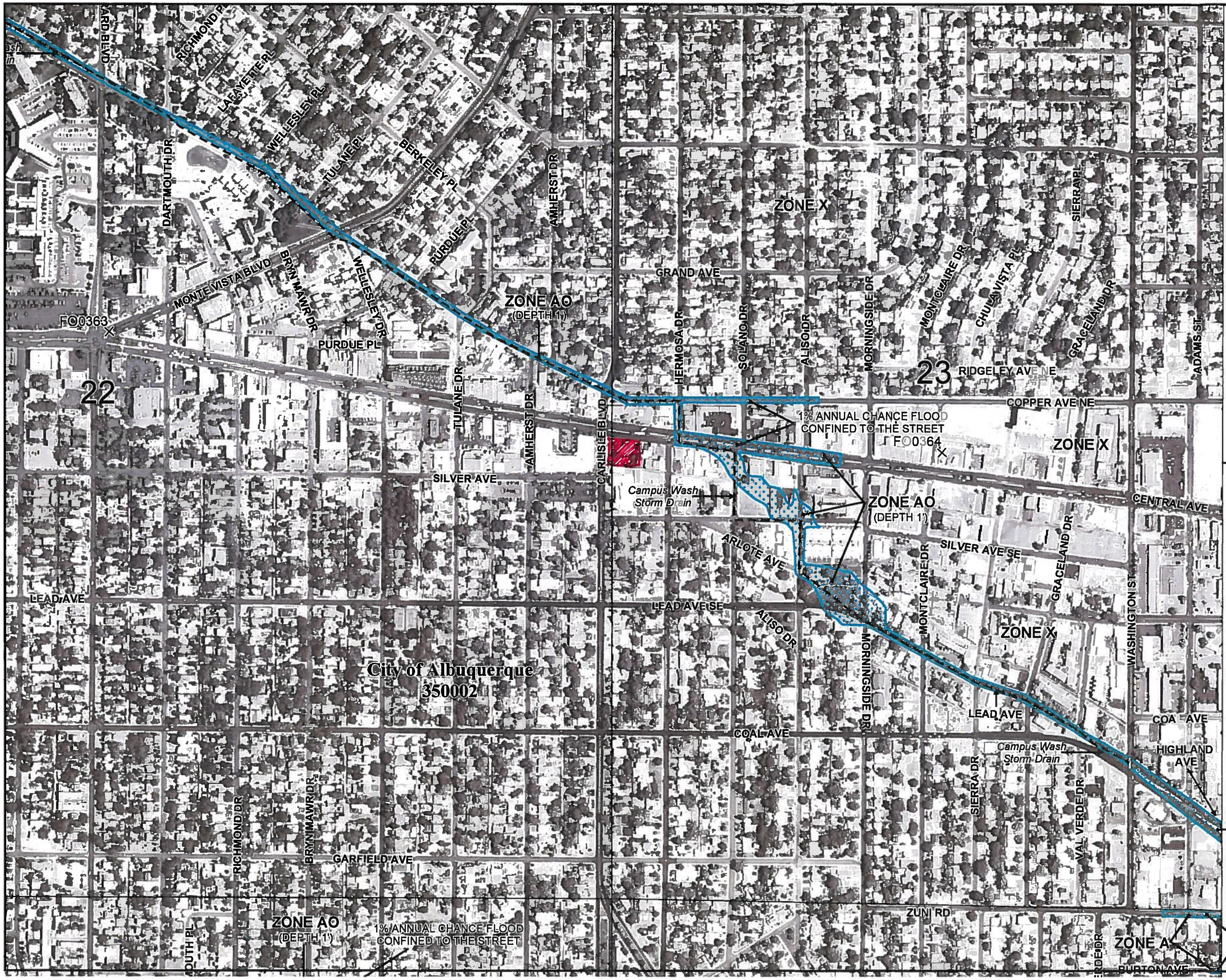
SUMMARY OF AHYMO RATING TABLE:

OUTFLOW (cfs)	STORAGE (Ac.Ft.)	ELEVATION (Feet)
0.00	0.013797	5205.60
2.10	0.016227	5206.29
2.20	0.017394	5206.62
2.30	0.018596	5206.96
2.40	0.019869	5207.32
2.50	0.027117	5207.69

SUMMARY OF AHYMO RESULTS:

PEAK Q=2.19 cfs
MAXIMUM WSEL=5206.60
MAXIMUM STORAGE VOLUME=0.0173 AC.FT.

The input and output results from these two programs are attached.



MAP SCALE 1" = 500'

0 500 1000 FEET

NFIP — NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0353H

FIRM

FLOOD INSURANCE RATE MAP

BERNALILLO COUNTY, NEW MEXICO AND INCORPORATED AREAS

PANEL 353 OF 825

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ALBUQUERQUE, CITY OF	350002	0353	H

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
35001C0353H

MAP REVISED
AUGUST 16, 2012

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

CITY OF ALBUQUERQUE
PLANNING DEPARTMENT

HYDROLOGY DEVELOPMENT SECTION
DEVELOPMENT REVIEW SERVICES

GENERAL HYDROLOGY CRITERIA:

- All new development projects shall manage the runoff from precipitation which occurs during the 90th Percentile Storm Events, referred to as the "first flush." The Site Plan/Drainage Plan must indicate all areas and mechanisms intended to capture the first flush. For volume calculations, the 90th Percentile storm event is 0.44 inches. For Land Treatment D the initial abstraction is 0.1", therefore the first flush volume should be based on 0.44"-0.1"=0.34" and only consider the impervious areas.

- The applicant may request a pre-design meeting with the Hydrology Section. First submit a Conceptual Grading and Drainage plan, and indicate on the DTIS sheet (in large bold letters at the top) that a pre-design conference is requested (DTIS sheet is the information sheet required for all Hydrology and Transportation submittals). The reviewer will contact the applicant to set up a meeting.
    - The engineer should research the Master Drainage Plan and/or adjacent sites – essentially practice due diligence prior to meeting. Conceptual Grading and Drainage plans should reference the master drainage plan or other sources that indicate the intended drainage for that area. **<u>The applicant should provide excerpts from the supporting documents and/or grading plans.</u>**
    - Final Drainage Reports should have an appendix with all supporting documentation
    - Note: Please

NSW EPA

Healthy Environment, Healthy Community, Healthy Business

Stormwater first flush pollution

See also

The EPA's Stormwater homepage

Contents

Aim of this document

This document describes what first flush is, situations in which it is likely to occur and how it can be managed. It identifies factors and criteria that should be considered in the design of first flush stormwater pollution control systems.

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What is first flush?

Pollutants deposited on to exposed areas can be dislodged and entrained by the rainfall-runoff process. Usually the stormwater that initially runs off an area will be more polluted than the stormwater that runs off later, after the rainfall has 'cleansed' the catchment. The stormwater containing this high initial pollutant load is called the 'first flush'.

The existence of this first flush of pollutants provides an opportunity for controlling stormwater pollution from a broad range of land uses. First flush collection systems are employed to capture and isolate this most polluted runoff, with subsequent runoff being diverted directly to the stormwater system.

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Does first flush always happen?

The existence of first flush should not be assumed in all cases. Intensive monitoring of stormwater runoff from some (usually larger) catchments has failed to observe this phenomenon. Clearly the existence or non-existence of first flush is critical in the design of stormwater pollution controls.

First flush may not be observed for one or more of the following reasons:

- The drainage characteristics of the catchment may prevent it. Particularly in large catchments, initial runoff from the most distant parts of the catchment may not reach the catchment outlet for some time after a storm starts. This time lag is rarely an issue for smaller, individual premises.
- The pollutants may not be very mobile. Rainfall does not remove some pollutants, like oils and greases, as easily or as quickly as soluble materials and fine dusts. Bare soils or vegetated surfaces are generally not 'cleansed' as easily or effectively as sealed surfaces.
- Pollutant sources that are effectively continuous may exist within the catchment. First flush is generally seen only where the supply of pollutants is limited. Sediment generated from soil erosion, for example, will not give a first flush because the supply of soil particles is (for all practical purposes) unlimited. In cases like this, on-line, flow-through pollution controls will be needed. In urban catchments during large storms, continuous discharges from sewer overflows may mask any first flush associated with stormwater runoff.

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Pollutants found in first flush

A broad range of pollutants can be found in stormwater runoff. The nature of these pollutants depends strongly on the land use and the activities carried out on the site or catchment.

Pollutants can come from atmospheric fallout, accidental spills, leakages, materials handling practices, or the application of chemicals (including fertilisers) or wastes to land.

The appropriateness of first flush containment depends primarily on the nature and source of the pollution, in terms of the drainage hydrology, pollutant mobility and pollutant supply.

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How to control stormwater pollution from individual premises

First flush is most readily observed on small catchments or individual premises, particularly if a high proportion of the catchment is impervious (such as paved surfaces and roads). In such cases, the first flush collection system can form an integral part of the stormwater pollution control system.

The first flush containment system also acts as an emergency backup if there is a chemical spill or similar incident. This reduces the risk of pollution and subsequent prosecution.

The following principles are a general guide to controlling stormwater pollution from individual premises.

- Minimise the availability of pollutants to be entrained by stormwater runoff.

Isolate areas that pose a clear pollution risk so they do not drain into the stormwater system. This can be carried out by roofing the area (for example, a vehicle wash bay) or by using bunding and drainage to a collection point for re-use, treatment or disposal (see below). Ideally, all potentially polluting activities at industrial premises should be done in covered or (less preferably) bunded areas.

- Install a first flush collection system and associated drainage works to capture the most polluted portion of the site's stormwater runoff.

More than one first flush pit may be needed, depending on the drainage needs of the site (for example, there may be multiple discharge points).

- Re-use or dispose of first flush water quickly and properly.

It is important that, after it rains, the stormwater captured in the first flush collection pit is promptly re-used or disposed of before the catchment becomes re-contaminated.

Explore every opportunity to re-use the collected first flush water, so that it does not have to be put into the environment and potable water sources are conserved. Alkaline first flush water has been successfully re-used at concrete batching plants for many years. More recently, collected stormwater has been employed at a hot-mix bitumen emulsion plant and intensive horticultural premises.

First flush systems installed as recirculation dams at intensive agricultural sites like market gardens and nurseries clearly have the potential to re-use nutrient-rich stormwater for irrigation.

If it is not practicable to re-use the water beneficially it will have to be disposed of. The most acceptable disposal means are land application (in accordance with the DEC's Environmental Guidelines: Use of Effluent by Irrigation), or disposal into sewers in accordance with a Trade Waste Agreement with the local sewerage authority. Some pre-treatment may be necessary in each of these cases.

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Designing first flush systems

The following points should be considered in the design of a first-flush system. Some of these are illustrated in the "Typical First Flush Collection Pit" diagram.

- Barriers such as 'speed humps' may be used to isolate the surface area that is to drain to the first flush system. This will prevent the relatively uncontaminated water from 'clean' areas entering the first-flush system, and thereby keep the required volume of the pit to a minimum.
- To ensure contaminated first flush water is directed to the collection and subsequent clean runoff water is diverted to the stormwater system via the clean runoff bypass

channel once the first flush collection pit is full, either (a) a low weir across the entrance to the clean runoff bypass channel; or (b) the inlet channel leading to the collection pit slopes towards the collection pit so that the bottom of this channel is lower than the bottom of the clean runoff bypass channel.

- There must be adequate separation distance between the collected first flush water and the bypass channel, to minimise entrainment of captured stormwater by bypass flows. This is particularly important where hazardous materials are involved, including acid and alkaline materials.
- The volume of the collection pit must be big enough to capture most of the pollutant load expected from the catchment. The volume will be a function of the nature of the catchment surface (pervious or impervious) and the nature of the pollutant(s) expected. Unfortunately limited information on the amount of rainfall necessary to cleanse polluted surfaces is available. However, Table 1 below may help.
- A marker should be provided on the wall of the tank to indicate the level to which collected water needs to be pumped down to to ensure the required capacity is available for the next rain event. Additional volume will be required if it is expected that contaminants will accumulate at the bottom of the pit. As a guide, an additional depth of 500 mm or an additional volume of 30% of the required capacity should be provided.

Connect

Feedback

Web support
Public consulta

If a below ground tank or pit is not feasible, an alternative solution may be to use a collection sump with a pump and float switch together with an above ground tank storage tank. A method for removing any contaminants that accumulate at the bottom of the tank would need to be provided. An existing stormwater pit could be used as a collection sump providing the outlet to stormwater in the pit is a suitable distance above the bottom of the pit.

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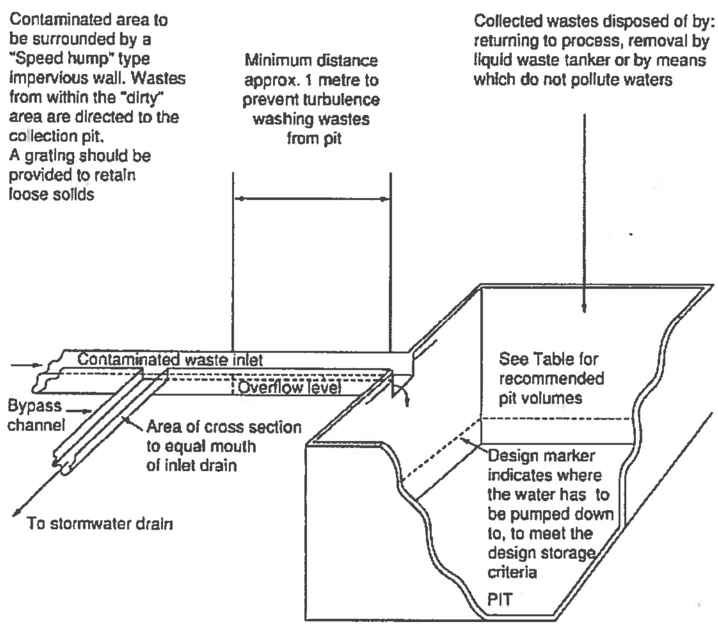
Typical First Flush Collection Pit



**First flush pit should have design capacity available at all times during periods of dry weather

Table 1: Design criteria for first flush containment systems

Pollutants	**Catchment surface**	**Examples of industries**	**Rainfall level to be contained**
Substances easily mobilised, such as soluble materials, fine dusts and silts	Impervious: concrete, cement, bitumen	Concrete batching plants	10 mm

Substances that are more difficult to mobilise, such as oil, grease and other non-volatile hydrocarbons	Impervious: concrete, cement, bitumen	Petrochemical plants, motor vehicle courtyards, chemical manufacturers, hot mix bitumen emulsion plants, roadways	15 mm
All types of pollutant	Pervious surfaces (including natural ground surface) that are not as easily cleansed of deposited pollutants	Market gardens, nurseries	20 mm

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Pollute waters

It is an offence under the section 120 of the Protection of the Environment Operations Act to pollute waters.

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Summary

First flush systems play an important role in the control of stormwater pollution, particularly if the drainage area is small and large parts of the catchment are impervious.

Wherever possible, first flush water should be re-used on site as make-up water or similar. Discharging treated first flush water to sewers or stormwater, usually after pre-treating it, is a less preferable means of disposal.

For first flush systems to work properly they must be properly designed and installed, and captured stormwater must be removed quickly before the source catchment becomes recontaminated with pollutants.

Officers should be aware of these design criteria so they can incorporate them into development controls.

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Further reading

For Authorised Officers:

Domestic wastewater and septic systems

EPA's Stormwater homepage

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Page last updated: 25 June 2013

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T1 CARLISLE CONDO                                                                 0
T2 FIRST FLUSH TANK TO CENTRAL
T3 (1) 8" PVC PIPE OUTFALL UPPER
SO   1000.0005200.900  1                         5201.210
R    1009.0005201.000  1       .014                                  .000
JX   1009.5005201.100  2       .013
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R    1078.8005203.700  2       .013                                  .000  45.000 0
R    1084.1005203.810  2       .013                                  .000  45.000 0
R    1117.1005204.500  2       .013                                  .000    .000 0
SH   1117.1005204.500  2                         5205.600
CD   1  2   0     .000    .500    2.000  .000  .000   .00
CD   2  4   1     .000    .670     .000  .000  .000   .00
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Q              2.200   .0
Q              2.300   .0
Q              2.400   .0
Q              2.500   .0
```

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch

FILE: carl_8.WSW

W S P G W - CIVILDESIGN Version 14.05

Program Package Serial Number: 1454

WATER SURFACE PROFILE LISTING

PAGE 1

Date: 8-28-2015 Time: 2:53:38

CARLISLE CONDO
FIRST FLUSH TANK TO CENTRAL
(1) 8" PVC PIPE OUTFALL UPPER

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1000.000	5200.900	.148	5201.048	2.10	7.11	.78	5201.83	.00	.32	2.00	.500	2.000	.00	0 .0
.789	.0111					.0729	.06	.15	3.26	.27	.014	.00	.00	RECTANG
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1.075	.0111					.0830	.09	.14	3.43	.27	.014	.00	.00	RECTANG
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1.006	.0111					.0966	.10	.14	3.68	.27	.014	.00	.00	RECTANG
1002.870	5200.932	.130	5201.062	2.10	8.09	1.02	5202.08	.00	.32	2.00	.500	2.000	.00	0 .0
.943	.0111					.1124	.11	.13	3.95	.27	.014	.00	.00	RECTANG
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.781	.0111					.1774	.14	.11	4.90	.27	.014	.00	.00	RECTANG
1006.311	5200.970	.107	5201.077	2.10	9.78	1.49	5202.56	.00	.32	2.00	.500	2.000	.00	0 .0
.735	.0111					.2066	.15	.11	5.26	.27	.014	.00	.00	RECTANG
1007.046	5200.978	.102	5201.081	2.10	10.26	1.64	5202.72	.00	.32	2.00	.500	2.000	.00	0 .0
.691	.0111					.2408	.17	.10	5.65	.27	.014	.00	.00	RECTANG
1007.737	5200.986	.098	5201.083	2.10	10.76	1.80	5202.88	.00	.32	2.00	.500	2.000	.00	0 .0
.651	.0111					.2806	.18	.10	6.07	.27	.014	.00	.00	RECTANG
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Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
.612	.0111					.3272	.20	.09	6.52	.27	.014	.00	.00	RECTANG
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JUNCT STR	.2002					.2004	.10	.09	7.01		.013	.00	.00	RECTANG
WARNING - Junction Analysis - Change in Channel Type														
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.226	.4799					.0936	.02	.35	3.67	.23	.013	.00	.00	PIPE
1009.726	5201.208	.362	5201.570	2.10	10.78	1.81	5203.38	.00	.63	.67	.670	.000	.00	1 .0
.380	.4799					.0849	.03	.36	3.52	.23	.013	.00	.00	PIPE
1010.106	5201.390	.376	5201.766	2.10	10.28	1.64	5203.41	.00	.63	.66	.670	.000	.00	1 .0
.331	.4799					.0750	.02	.38	3.27	.23	.013	.00	.00	PIPE
1010.437	5201.549	.391	5201.940	2.10	9.80	1.49	5203.43	.00	.63	.66	.670	.000	.00	1 .0
.289	.4799					.0663	.02	.39	3.03	.23	.013	.00	.00	PIPE
1010.726	5201.688	.407	5202.095	2.10	9.35	1.36	5203.45	.00	.63	.65	.670	.000	.00	1 .0
.252	.4799					.0587	.01	.41	2.81	.23	.013	.00	.00	PIPE
1010.979	5201.809	.424	5202.233	2.10	8.91	1.23	5203.47	.00	.63	.65	.670	.000	.00	1 .0
.220	.4799					.0521	.01	.42	2.60	.23	.013	.00	.00	PIPE
1011.199	5201.915	.442	5202.356	2.10	8.50	1.12	5203.48	.00	.63	.63	.670	.000	.00	1 .0
.191	.4799					.0463	.01	.44	2.40	.23	.013	.00	.00	PIPE
1011.390	5202.006	.461	5202.467	2.10	8.10	1.02	5203.49	.00	.63	.62	.670	.000	.00	1 .0
.163	.4799					.0413	.01	.46	2.21	.23	.013	.00	.00	PIPE
1011.553	5202.085	.482	5202.567	2.10	7.72	.93	5203.49	.00	.63	.60	.670	.000	.00	1 .0
.138	.4799					.0369	.01	.48	2.03	.23	.013	.00	.00	PIPE
1011.692	5202.151	.505	5202.656	2.10	7.36	.84	5203.50	.00	.63	.58	.670	.000	.00	1 .0
.118	.4799					.0332	.00	.51	1.85	.23	.013	.00	.00	PIPE
1011.809	5202.208	.529	5202.737	2.10	7.02	.77	5203.50	.00	.63	.55	.670	.000	.00	1 .0

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
.092	.4799					.0300	.00	.53	1.67	.23	.013	.00	.00	PIPE
1011.902	5202.252	.557	5202.810	2.10	6.70	.70	5203.51	.00	.63	.50	.670	.000	.00	1 .0
.067	.4799					.0275	.00	.56	1.49	.23	.013	.00	.00	PIPE
1011.969	5202.285	.590	5202.875	2.10	6.38	.63	5203.51	.00	.63	.43	.670	.000	.00	1 .0
.031	.4799					.0259	.00	.59	1.29	.23	.013	.00	.00	PIPE
1012.000	5202.300	.634	5202.934	2.10	6.08	.57	5203.51	.00	.63	.30	.670	.000	.00	1 .0
2.525	.0210					.0259	.07	.63	1.00	.67	.013	.00	.00	PIPE
1014.525	5202.353	.670	5203.023	2.10	5.96	.55	5203.57	.00	.63	.00	.670	.000	.00	1 .0
46.475	.0210					.0279	1.30	.67	.00	.67	.013	.00	.00	PIPE
1061.000	5203.330	1.060	5204.390	2.10	5.96	.55	5204.94	.00	.63	.00	.670	.000	.00	1 .0
2.300	.0174					.0294	.07	1.06	.00	.67	.013	.00	.00	PIPE
1063.300	5203.370	1.169	5204.539	2.10	5.96	.55	5205.09	.00	.63	.00	.670	.000	.00	1 .0
15.500	.0213					.0294	.46	1.17	.00	.67	.013	.00	.00	PIPE
1078.800	5203.700	1.376	5205.077	2.10	5.96	.55	5205.63	.00	.63	.00	.670	.000	.00	1 .0
5.300	.0207					.0294	.16	1.38	.00	.67	.013	.00	.00	PIPE
1084.100	5203.810	1.504	5205.314	2.10	5.96	.55	5205.87	.00	.63	.00	.670	.000	.00	1 .0
33.000	.0209					.0294	.97	1.50	.00	.67	.013	.00	.00	PIPE
1117.100	5204.500	1.785	5206.285	2.10	5.96	.55	5206.84	.00	.63	.00	.670	.000	.00	1 .0
1000.000	5200.900	.151	5201.050	2.20	7.30	.83	5201.88	.00	.33	2.00	.500	2.000	.00	0 .0
.428	.0111					.0733	.03	.15	3.32	.27	.014	.00	.00	RECTANG
1000.428	5200.905	.148	5201.053	2.20	7.43	.86	5201.91	.00	.33	2.00	.500	2.000	.00	0 .0
1.122	.0111					.0815	.09	.15	3.41	.27	.014	.00	.00	RECTANG
1001.550	5200.917	.141	5201.059	2.20	7.80	.94	5202.00	.00	.33	2.00	.500	2.000	.00	0 .0
1.050	.0111					.0948	.10	.14	3.66	.27	.014	.00	.00	RECTANG

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1002.600	5200.929	.135	5201.063	2.20	8.18	1.04	5202.10	.00	.33	2.00	.500	2.000	.00	0 .0
.984	.0111					.1102	.11	.13	3.93	.27	.014	.00	.00	RECTANG
1003.585	5200.940	.128	5201.068	2.20	8.58	1.14	5202.21	.00	.33	2.00	.500	2.000	.00	0 .0
.924	.0111					.1283	.12	.13	4.22	.27	.014	.00	.00	RECTANG
1004.509	5200.950	.122	5201.072	2.20	9.00	1.26	5202.33	.00	.33	2.00	.500	2.000	.00	0 .0
.868	.0111					.1494	.13	.12	4.53	.27	.014	.00	.00	RECTANG
1005.376	5200.960	.117	5201.077	2.20	9.43	1.38	5202.46	.00	.33	2.00	.500	2.000	.00	0 .0
.816	.0111					.1739	.14	.12	4.87	.27	.014	.00	.00	RECTANG
1006.192	5200.969	.111	5201.081	2.20	9.90	1.52	5202.60	.00	.33	2.00	.500	2.000	.00	0 .0
.767	.0111					.2026	.16	.11	5.23	.27	.014	.00	.00	RECTANG
1006.959	5200.978	.106	5201.083	2.20	10.38	1.67	5202.76	.00	.33	2.00	.500	2.000	.00	0 .0
.722	.0111					.2360	.17	.11	5.62	.27	.014	.00	.00	RECTANG
1007.681	5200.985	.101	5201.086	2.20	10.88	1.84	5202.93	.00	.33	2.00	.500	2.000	.00	0 .0
.679	.0111					.2750	.19	.10	6.03	.27	.014	.00	.00	RECTANG
1008.361	5200.993	.096	5201.089	2.20	11.42	2.02	5203.11	.00	.33	2.00	.500	2.000	.00	0 .0
.639	.0111					.3206	.20	.10	6.48	.27	.014	.00	.00	RECTANG
1009.000	5201.000	.092	5201.092	2.20	11.97	2.23	5203.32	.00	.33	2.00	.500	2.000	.00	0 .0
JUNCT STR	.2002					.1971	.10	.09	6.96		.013	.00	.00	RECTANG
-------------------- WARNING - Junction Analysis - Change in Channel Type --------------														
1009.500	5201.100	.365	5201.465	2.20	11.19	1.94	5203.41	.00	.64	.67	.670	.000	.00	1 .0
.374	.4799					.0915	.03	.37	3.63	.23	.013	.00	.00	PIPE
1009.874	5201.280	.378	5201.658	2.20	10.72	1.78	5203.44	.00	.64	.66	.670	.000	.00	1 .0
.369	.4799					.0814	.03	.38	3.40	.23	.013	.00	.00	PIPE
1010.243	5201.457	.393	5201.850	2.20	10.22	1.62	5203.47	.00	.64	.66	.670	.000	.00	1 .0
.322	.4799					.0720	.02	.39	3.15	.23	.013	.00	.00	PIPE

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth / Type Ch	Prs/Pip
1010.566	5201.612	.409	5202.021	2.20	9.75	1.47	5203.50	.00	.64	.65	.670	.000	.00	1	.0
.281	.4799					.0637	.02	.41	2.92	.23	.013	.00	.00	PIPE	
1010.847	5201.747	.426	5202.173	2.20	9.29	1.34	5203.51	.00	.64	.64	.670	.000	.00	1	.0
.245	.4799					.0565	.01	.43	2.70	.23	.013	.00	.00	PIPE	
1011.092	5201.864	.444	5202.309	2.20	8.86	1.22	5203.53	.00	.64	.63	.670	.000	.00	1	.0
.214	.4799					.0503	.01	.44	2.49	.23	.013	.00	.00	PIPE	
1011.306	5201.967	.463	5202.430	2.20	8.45	1.11	5203.54	.00	.64	.62	.670	.000	.00	1	.0
.183	.4799					.0448	.01	.46	2.30	.23	.013	.00	.00	PIPE	
1011.489	5202.055	.484	5202.539	2.20	8.05	1.01	5203.55	.00	.64	.60	.670	.000	.00	1	.0
.156	.4799					.0401	.01	.48	2.10	.23	.013	.00	.00	PIPE	
1011.645	5202.129	.507	5202.637	2.20	7.68	.92	5203.55	.00	.64	.57	.670	.000	.00	1	.0
.131	.4799					.0361	.00	.51	1.92	.23	.013	.00	.00	PIPE	
1011.777	5202.192	.532	5202.725	2.20	7.32	.83	5203.56	.00	.64	.54	.670	.000	.00	1	.0
.107	.4799					.0326	.00	.53	1.73	.23	.013	.00	.00	PIPE	
1011.883	5202.244	.560	5202.804	2.20	6.98	.76	5203.56	.00	.64	.50	.670	.000	.00	1	.0
.077	.4799					.0300	.00	.56	1.54	.23	.013	.00	.00	PIPE	
1011.961	5202.281	.594	5202.875	2.20	6.66	.69	5203.56	.00	.64	.42	.670	.000	.00	1	.0
.039	.4799					.0284	.00	.59	1.33	.23	.013	.00	.00	PIPE	
1012.000	5202.300	.640	5202.939	2.20	6.34	.62	5203.56	.00	.64	.28	.670	.000	.00	1	.0
1.386	.0210					.0285	.04	.64	1.00	.67	.013	.00	.00	PIPE	
1013.386	5202.329	.670	5202.999	2.20	6.24	.60	5203.60	.00	.64	.00	.670	.000	.00	1	.0
47.614	.0210					.0306	1.46	.67	.00	.67	.013	.00	.00	PIPE	
1061.000	5203.330	1.206	5204.536	2.20	6.24	.60	5205.14	.00	.64	.00	.670	.000	.00	1	.0
2.300	.0174					.0323	.07	1.21	.00	.67	.013	.00	.00	PIPE	
1063.300	5203.370	1.330	5204.700	2.20	6.24	.60	5205.30	.00	.64	.00	.670	.000	.00	1	.0

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
15.500	.0213					.0323	.50	1.33	.00	.67	.013	.00	.00	PIPE
1078.800	5203.700	1.590	5205.290	2.20	6.24	.60	5205.89	.00	.64	.00	.670	.000	.00	1 .0
5.300	.0207					.0323	.17	1.59	.00	.67	.013	.00	.00	PIPE
1084.100	5203.810	1.740	5205.550	2.20	6.24	.60	5206.15	.00	.64	.00	.670	.000	.00	1 .0
33.000	.0209					.0323	1.07	1.74	.00	.67	.013	.00	.00	PIPE
1117.100	5204.500	2.115	5206.615	2.20	6.24	.60	5207.22	.00	.64	.00	.670	.000	.00	1 .0
1000.000	5200.900	.153	5201.053	2.30	7.51	.88	5201.93	.00	.35	2.00	.500	2.000	.00	0 .0
.106	.0111					.0743	.01	.15	3.38	.28	.014	.00	.00	RECTANG
1000.106	5200.901	.153	5201.053	2.30	7.54	.88	5201.94	.00	.35	2.00	.500	2.000	.00	0 .0
1.164	.0111					.0809	.09	.15	3.40	.28	.014	.00	.00	RECTANG
1001.270	5200.914	.145	5201.060	2.30	7.91	.97	5202.03	.00	.35	2.00	.500	2.000	.00	0 .0
1.089	.0111					.0940	.10	.15	3.65	.28	.014	.00	.00	RECTANG
1002.359	5200.926	.139	5201.065	2.30	8.29	1.07	5202.13	.00	.35	2.00	.500	2.000	.00	0 .0
1.021	.0111					.1094	.11	.14	3.92	.28	.014	.00	.00	RECTANG
1003.380	5200.938	.132	5201.070	2.30	8.70	1.17	5202.24	.00	.35	2.00	.500	2.000	.00	0 .0
.958	.0111					.1272	.12	.13	4.21	.28	.014	.00	.00	RECTANG
1004.339	5200.948	.126	5201.074	2.30	9.12	1.29	5202.37	.00	.35	2.00	.500	2.000	.00	0 .0
.900	.0111					.1481	.13	.13	4.53	.28	.014	.00	.00	RECTANG
1005.239	5200.958	.120	5201.079	2.30	9.57	1.42	5202.50	.00	.35	2.00	.500	2.000	.00	0 .0
.846	.0111					.1724	.15	.12	4.86	.28	.014	.00	.00	RECTANG
1006.086	5200.968	.115	5201.083	2.30	10.03	1.56	5202.65	.00	.35	2.00	.500	2.000	.00	0 .0
.796	.0111					.2008	.16	.11	5.22	.28	.014	.00	.00	RECTANG
1006.882	5200.977	.109	5201.086	2.30	10.52	1.72	5202.81	.00	.35	2.00	.500	2.000	.00	0 .0

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
.749	.0111					.2339	.18	.11	5.61	.28	.014	.00	.00	RECTANG
1007.631	5200.985	.104	5201.089	2.30	11.04	1.89	5202.98	.00	.35	2.00	.500	2.000	.00	0 .0
.705	.0111					.2725	.19	.10	6.03	.28	.014	.00	.00	RECTANG
1008.336	5200.993	.099	5201.092	2.30	11.58	2.08	5203.17	.00	.35	2.00	.500	2.000	.00	0 .0
.664	.0111					.3176	.21	.10	6.47	.28	.014	.00	.00	RECTANG
1009.000	5201.000	.095	5201.095	2.30	12.14	2.29	5203.38	.00	.35	2.00	.500	2.000	.00	0 .0
JUNCT STR	.2002					.1959	.10	.09	6.95		.013	.00	.00	RECTANG
-------------------- WARNING - Junction Analysis - Change in Channel Type --------------														
1009.500	5201.100	.375	5201.475	2.30	11.32	1.99	5203.47	.00	.64	.67	.670	.000	.00	1 .0
.123	.4799					.0953	.01	.38	3.61	.24	.013	.00	.00	PIPE
1009.623	5201.159	.379	5201.538	2.30	11.17	1.94	5203.47	.00	.64	.66	.670	.000	.00	1 .0
.411	.4799					.0881	.04	.38	3.53	.24	.013	.00	.00	PIPE
1010.034	5201.356	.394	5201.750	2.30	10.65	1.76	5203.51	.00	.64	.66	.670	.000	.00	1 .0
.358	.4799					.0779	.03	.39	3.28	.24	.013	.00	.00	PIPE
1010.392	5201.528	.410	5201.938	2.30	10.15	1.60	5203.54	.00	.64	.65	.670	.000	.00	1 .0
.313	.4799					.0690	.02	.41	3.04	.24	.013	.00	.00	PIPE
1010.705	5201.678	.427	5202.105	2.30	9.68	1.45	5203.56	.00	.64	.64	.670	.000	.00	1 .0
.273	.4799					.0612	.02	.43	2.81	.24	.013	.00	.00	PIPE
1010.978	5201.809	.445	5202.254	2.30	9.23	1.32	5203.58	.00	.64	.63	.670	.000	.00	1 .0
.236	.4799					.0545	.01	.45	2.59	.24	.013	.00	.00	PIPE
1011.214	5201.922	.465	5202.388	2.30	8.80	1.20	5203.59	.00	.64	.62	.670	.000	.00	1 .0
.205	.4799					.0486	.01	.47	2.38	.24	.013	.00	.00	PIPE
1011.418	5202.021	.486	5202.507	2.30	8.39	1.09	5203.60	.00	.64	.60	.670	.000	.00	1 .0
.175	.4799					.0435	.01	.49	2.18	.24	.013	.00	.00	PIPE
1011.593	5202.104	.509	5202.614	2.30	8.00	.99	5203.61	.00	.64	.57	.670	.000	.00	1 .0

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth / Type Ch	Prs/Pip
.148	.4799					.0391	.01	.51	1.99	.24	.013	.00	.00	PIPE	
1011.742	5202.176	.534	5202.710	2.30	7.63	.90	5203.61	.00	.64	.54	.670	.000	.00	1	.0
.120	.4799					.0355	.00	.53	1.80	.24	.013	.00	.00	PIPE	
1011.861	5202.233	.563	5202.796	2.30	7.27	.82	5203.62	.00	.64	.49	.670	.000	.00	1	.0
.093	.4799					.0325	.00	.56	1.60	.24	.013	.00	.00	PIPE	
1011.954	5202.278	.596	5202.874	2.30	6.93	.75	5203.62	.00	.64	.42	.670	.000	.00	1	.0
.046	.4799					.0310	.00	.60	1.37	.24	.013	.00	.00	PIPE	
1012.000	5202.300	.644	5202.944	2.30	6.61	.68	5203.62	.00	.64	.26	.670	.000	.00	1	.0
.855	.0210					.0312	.03	.64	1.00	.67	.013	.00	.00	PIPE	
1012.855	5202.318	.670	5202.988	2.30	6.52	.66	5203.65	.00	.64	.00	.670	.000	.00	1	.0
1061.000	5203.330	1.356	5204.686	2.30	6.52	.66	5205.35	.00	.64	.00	.670	.000	.00	1	.0
2.300	.0174					.0353	.08	1.36	.00	.67	.013	.00	.00	PIPE	
1063.300	5203.370	1.495	5204.865	2.30	6.52	.66	5205.53	.00	.64	.00	.670	.000	.00	1	.0
15.500	.0213					.0353	.55	1.50	.00	.67	.013	.00	.00	PIPE	
1078.800	5203.700	1.810	5205.510	2.30	6.52	.66	5206.17	.00	.64	.00	.670	.000	.00	1	.0
5.300	.0207					.0353	.19	1.81	.00	.67	.013	.00	.00	PIPE	
1084.100	5203.810	1.985	5205.795	2.30	6.52	.66	5206.46	.00	.64	.00	.670	.000	.00	1	.0
33.000	.0209					.0353	1.16	1.99	.00	.67	.013	.00	.00	PIPE	
1117.100	5204.500	2.459	5206.959	2.30	6.52	.66	5207.62	.00	.64	.00	.670	.000	.00	1	.0
1000.000	5200.899	.156	5201.056	2.40	7.68	.92	5201.97	.00	.36	2.00	.500	2.000	.00	0	.0
.955	.0111					.0805	.08	.16	3.43	.29	.014	.00	.00	RECTANG	
1000.955	5200.910	.150	5201.061	2.40	7.98	.99	5202.05	.00	.36	2.00	.500	2.000	.00	0	.0
1.133	.0111					.0923	.10	.15	3.63	.29	.014	.00	.00	RECTANG	
1002.089	5200.923	.143	5201.066	2.40	8.37	1.09	5202.16	.00	.36	2.00	.500	2.000	.00	0	.0

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/ Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1.063	.0111					.1073	.11	.14	3.90	.29	.014	.00	.00	RECTANG
1003.151	5200.935	.137	5201.071	2.40	8.78	1.20	5202.27	.00	.36	2.00	.500	2.000	.00	0 .0
.997	.0111					.1248	.12	.14	4.19	.29	.014	.00	.00	RECTANG
1004.149	5200.946	.130	5201.076	2.40	9.21	1.32	5202.39	.00	.36	2.00	.500	2.000	.00	0 .0
.937	.0111					.1453	.14	.13	4.50	.29	.014	.00	.00	RECTANG
1005.086	5200.956	.124	5201.080	2.40	9.66	1.45	5202.53	.00	.36	2.00	.500	2.000	.00	0 .0
.881	.0111					.1691	.15	.12	4.83	.29	.014	.00	.00	RECTANG
1005.967	5200.966	.118	5201.084	2.40	10.13	1.59	5202.68	.00	.36	2.00	.500	2.000	.00	0 .0
.829	.0111					.1969	.16	.12	5.19	.29	.014	.00	.00	RECTANG
1006.795	5200.975	.113	5201.088	2.40	10.63	1.75	5202.84	.00	.36	2.00	.500	2.000	.00	0 .0
.780	.0111					.2293	.18	.11	5.57	.29	.014	.00	.00	RECTANG
1007.575	5200.984	.108	5201.091	2.40	11.15	1.93	5203.02	.00	.36	2.00	.500	2.000	.00	0 .0
.734	.0111					.2671	.20	.11	5.99	.29	.014	.00	.00	RECTANG
1008.309	5200.992	.103	5201.095	2.40	11.69	2.12	5203.22	.00	.36	2.00	.500	2.000	.00	0 .0
.691	.0111					.3113	.22	.10	6.43	.29	.014	.00	.00	RECTANG
1009.000	5201.000	.098	5201.098	2.40	12.26	2.33	5203.43	.00	.36	2.00	.500	2.000	.00	0 .0
JUNCT STR	.2002					.1932	.10	.10	6.91		.013	.00	.00	RECTANG
-------------------- WARNING - Junction Analysis - Change in Channel Type --------------														
1009.500	5201.101	.385	5201.485	2.40	11.46	2.04	5203.52	.00	.65	.66	.670	.000	.00	1 .0
.306	.4799					.0935	.03	.38	3.59	.24	.013	.00	.00	PIPE
1009.806	5201.247	.395	5201.642	2.40	11.08	1.91	5203.55	.00	.65	.66	.670	.000	.00	1 .0
.398	.4799					.0842	.03	.40	3.41	.24	.013	.00	.00	PIPE
1010.203	5201.438	.411	5201.849	2.40	10.56	1.73	5203.58	.00	.65	.65	.670	.000	.00	1 .0
.347	.4799					.0746	.03	.41	3.16	.24	.013	.00	.00	PIPE
1010.550	5201.604	.428	5202.033	2.40	10.07	1.58	5203.61	.00	.65	.64	.670	.000	.00	1 .0

Station L/Elem	Invert Elev Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head SF Ave	Energy Grd.El. HF	Super Elev SE Dpth	Critical Depth Froude N	Flow Top Width Norm Dp	Height/ Dia.-FT "N"	Base Wt or I.D. X-Fall	ZL ZR	No Wth Prs/Pip Type Ch
.303	.4799					.0662	.02	.43	2.92	.24	.013	.00	.00	PIPE
1010.853	5201.750	.446	5202.196	2.40	9.60	1.43	5203.63	.00	.65	.63	.670	.000	.00	1 .0
.262	.4799					.0589	.02	.45	2.69	.24	.013	.00	.00	PIPE
1011.115	5201.875	.466	5202.341	2.40	9.16	1.30	5203.64	.00	.65	.62	.670	.000	.00	1 .0
.228	.4799					.0525	.01	.47	2.48	.24	.013	.00	.00	PIPE
1011.342	5201.984	.487	5202.472	2.40	8.73	1.18	5203.66	.00	.65	.60	.670	.000	.00	1 .0
.195	.4799					.0470	.01	.49	2.27	.24	.013	.00	.00	PIPE
1011.538	5202.078	.510	5202.588	2.40	8.32	1.08	5203.66	.00	.65	.57	.670	.000	.00	1 .0
.164	.4799					.0423	.01	.51	2.06	.24	.013	.00	.00	PIPE
1011.702	5202.157	.536	5202.693	2.40	7.94	.98	5203.67	.00	.65	.54	.670	.000	.00	1 .0
.138	.4799					.0384	.01	.54	1.86	.24	.013	.00	.00	PIPE
1011.840	5202.223	.564	5202.787	2.40	7.57	.89	5203.68	.00	.65	.49	.670	.000	.00	1 .0
.103	.4799					.0353	.00	.56	1.66	.24	.013	.00	.00	PIPE
1011.943	5202.272	.599	5202.872	2.40	7.22	.81	5203.68	.00	.65	.41	.670	.000	.00	1 .0
.057	.4799					.0339	.00	.60	1.42	.24	.013	.00	.00	PIPE
1012.000	5202.300	.648	5202.948	2.40	6.88	.73	5203.68	.00	.65	.24	.670	.000	.00	1 .0
.566	.0210					.0341	.02	.65	1.00	.67	.013	.00	.00	PIPE
1012.566	5202.312	.670	5202.981	2.40	6.81	.72	5203.70	.00	.65	.00	.670	.000	.00	1 .0
48.434	.0210					.0364	1.76	.67	.00	.67	.013	.00	.00	PIPE
1061.000	5203.330	1.512	5204.842	2.40	6.81	.72	5205.56	.00	.65	.00	.670	.000	.00	1 .0
2.300	.0174					.0384	.09	1.51	.00	.67	.013	.00	.00	PIPE
1063.300	5203.370	1.667	5205.038	2.40	6.81	.72	5205.76	.00	.65	.00	.670	.000	.00	1 .0
15.500	.0213					.0384	.60	1.67	.00	.67	.013	.00	.00	PIPE
1078.800	5203.700	2.040	5205.740	2.40	6.81	.72	5206.46	.00	.65	.00	.670	.000	.00	1 .0

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
5.300	.0207					.0384	.20	2.04	.00	.67	.013	.00	.00	PIPE
1084.100	5203.810	2.240	5206.050	2.40	6.81	.72	5206.77	.00	.65	.00	.670	.000	.00	1 .0
33.000	.0209					.0384	1.27	2.24	.00	.67	.013	.00	.00	PIPE
1117.100	5204.500	2.818	5207.318	2.40	6.81	.72	5208.04	.00	.65	.00	.670	.000	.00	1 .0
1000.000	5200.900	.159	5201.059	2.50	7.88	.96	5202.02	.00	.36	2.00	.500	2.000	.00	0 .0
.683	.0111					.0814	.06	.16	3.48	.30	.014	.00	.00	RECTANG
1000.683	5200.908	.155	5201.062	2.50	8.09	1.02	5202.08	.00	.36	2.00	.500	2.000	.00	0 .0
1.171	.0111					.0917	.11	.15	3.63	.30	.014	.00	.00	RECTANG
1001.854	5200.921	.147	5201.068	2.50	8.48	1.12	5202.19	.00	.36	2.00	.500	2.000	.00	0 .0
1.098	.0111					.1066	.12	.15	3.90	.30	.014	.00	.00	RECTANG
1002.952	5200.933	.140	5201.074	2.50	8.90	1.23	5202.30	.00	.36	2.00	.500	2.000	.00	0 .0
1.031	.0111					.1240	.13	.14	4.18	.30	.014	.00	.00	RECTANG
1003.983	5200.944	.134	5201.078	2.50	9.33	1.35	5202.43	.00	.36	2.00	.500	2.000	.00	0 .0
.969	.0111					.1443	.14	.13	4.49	.30	.014	.00	.00	RECTANG
1004.952	5200.955	.128	5201.083	2.50	9.79	1.49	5202.57	.00	.36	2.00	.500	2.000	.00	0 .0
.911	.0111					.1679	.15	.13	4.83	.30	.014	.00	.00	RECTANG
1005.863	5200.965	.122	5201.087	2.50	10.27	1.64	5202.72	.00	.36	2.00	.500	2.000	.00	0 .0
.857	.0111					.1955	.17	.12	5.18	.30	.014	.00	.00	RECTANG
1006.720	5200.975	.116	5201.091	2.50	10.77	1.80	5202.89	.00	.36	2.00	.500	2.000	.00	0 .0
.806	.0111					.2277	.18	.12	5.57	.30	.014	.00	.00	RECTANG
1007.526	5200.984	.111	5201.095	2.50	11.29	1.98	5203.07	.00	.36	2.00	.500	2.000	.00	0 .0
.759	.0111					.2652	.20	.11	5.98	.30	.014	.00	.00	RECTANG
1008.285	5200.992	.106	5201.098	2.50	11.84	2.18	5203.28	.00	.36	2.00	.500	2.000	.00	0 .0
.715	.0111					.3089	.22	.11	6.42	.30	.014	.00	.00	RECTANG

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1009.000	5201.000	.101	5201.101	2.50	12.42	2.40	5203.50	.00	.36	2.00	.500	2.000	.00	0 .0
JUNCT STR	.2002					.1923	.10	.10	6.90		.013	.00	.00	RECTANG
				-------------------- WARNING - Junction Analysis - Change in Channel Type ---------------										
1009.500	5201.100	.394	5201.495	2.50	11.58	2.08	5203.58	.00	.65	.66	.670	.000	.00	1 .0
.058	.4799					.0973	.01	.39	3.57	.25	.013	.00	.00	PIPE
1009.558	5201.128	.396	5201.524	2.50	11.52	2.06	5203.58	.00	.65	.66	.670	.000	.00	1 .0
.440	.4799					.0910	.04	.40	3.54	.25	.013	.00	.00	PIPE
1009.998	5201.339	.412	5201.751	2.50	10.98	1.87	5203.62	.00	.65	.65	.670	.000	.00	1 .0
.384	.4799					.0806	.03	.41	3.28	.25	.013	.00	.00	PIPE
1010.382	5201.523	.429	5201.953	2.50	10.47	1.70	5203.65	.00	.65	.64	.670	.000	.00	1 .0
.335	.4799					.0715	.02	.43	3.03	.25	.013	.00	.00	PIPE
1010.717	5201.684	.447	5202.131	2.50	9.98	1.55	5203.68	.00	.65	.63	.670	.000	.00	1 .0
.290	.4799					.0636	.02	.45	2.79	.25	.013	.00	.00	PIPE
1011.007	5201.823	.467	5202.291	2.50	9.52	1.41	5203.70	.00	.65	.62	.670	.000	.00	1 .0
.253	.4799					.0567	.01	.47	2.57	.25	.013	.00	.00	PIPE
1011.259	5201.944	.488	5202.433	2.50	9.08	1.28	5203.71	.00	.65	.60	.670	.000	.00	1 .0
.217	.4799					.0508	.01	.49	2.35	.25	.013	.00	.00	PIPE
1011.477	5202.049	.511	5202.560	2.50	8.65	1.16	5203.72	.00	.65	.57	.670	.000	.00	1 .0
.184	.4799					.0457	.01	.51	2.14	.25	.013	.00	.00	PIPE
1011.660	5202.137	.537	5202.674	2.50	8.25	1.06	5203.73	.00	.65	.53	.670	.000	.00	1 .0
.153	.4799					.0415	.01	.54	1.93	.25	.013	.00	.00	PIPE
1011.813	5202.210	.566	5202.776	2.50	7.87	.96	5203.74	.00	.65	.49	.670	.000	.00	1 .0
.121	.4799					.0382	.00	.57	1.71	.25	.013	.00	.00	PIPE
1011.934	5202.268	.600	5202.868	2.50	7.50	.87	5203.74	.00	.65	.41	.670	.000	.00	1 .0
.066	.4799					.0368	.00	.60	1.47	.25	.013	.00	.00	PIPE

Station / L/Elem	Invert Elev / Ch Slope	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head / SF Ave	Energy Grd.El. / HF	Super Elev / SE Dpth	Critical Depth / Froude N	Flow Top Width / Norm Dp	Height/ Dia.-FT / "N"	Base Wt or I.D. / X-Fall	ZL / ZR	No Wth Prs/Pip / Type Ch
1012.000	5202.300	.651	5202.951	2.50	7.15	.79	5203.74	.00	.65	.22	.670	.000	.00	1 .0
.392	.0210					.0371	.01	.65	1.00	.67	.013	.00	.00	PIPE
1012.392	5202.308	.670	5202.978	2.50	7.09	.78	5203.76	.00	.65	.00	.670	.000	.00	1 .0
48.608	.0210					.0395	1.92	.67	.00	.67	.013	.00	.00	PIPE
1061.000	5203.330	1.674	5205.004	2.50	7.09	.78	5205.78	.00	.65	.00	.670	.000	.00	1 .0
2.300	.0174					.0417	.10	1.67	.00	.67	.013	.00	.00	PIPE
1063.300	5203.370	1.846	5205.216	2.50	7.09	.78	5206.00	.00	.65	.00	.670	.000	.00	1 .0
15.500	.0213					.0417	.65	1.85	.00	.67	.013	.00	.00	PIPE
1078.800	5203.700	2.278	5205.978	2.50	7.09	.78	5206.76	.00	.65	.00	.670	.000	.00	1 .0
5.300	.0207					.0417	.22	2.28	.00	.67	.013	.00	.00	PIPE
1084.100	5203.810	2.504	5206.314	2.50	7.09	.78	5207.10	.00	.65	.00	.670	.000	.00	1 .0
33.000	.0209					.0417	1.38	2.50	.00	.67	.013	.00	.00	PIPE
1117.100	5204.500	3.190	5207.690	2.50	7.09	.78	5208.47	.00	.65	.00	.670	.000	.00	1 .0

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AHYMO PROGRAM (AHYMO-S4)                     - Version: S4.01a - Rel: 01a
     RUN DATE (MON/DAY/YR) = 08/17/2015
     START TIME (HR:MIN:SEC) = 11:01:16     USER NO.= M-GoodwinNMSiteA90075759
     INPUT FILE = C:\Program Files (x86)\AHYMO-S4\CCONDO.DAT

*S************************************************************
*S
*S                   CARLISLE CONDOMINIUMS
*S                   100 YEAR 6 HOUR STORM EVENT
*S
*S                   FILE: CCONDO.DAT
*S                   LAST REVISED: 6-16-15
*S                   NOAA ATLAS 2, VOL IV ZONE N 9
START                TIME=0.0 HR PUNCH CODE=0 PRINT LINES=-6
LOCATION             NEW MEXICO
     State of New Mexico soil infiltration values (LAND FACTORS) used for computations.
     Land Treatment     Initial Abstr.(in)     Unif. Infilt.(in/hour)
           A            0.65                   1.67
           B            0.50                   1.25
           C            0.35                   0.83
           D            0.10                   0.04

RAINFALL             TYPE=1 RAIN QUARTER=0.0
                     RAIN ONE=2.00 IN RAIN SIX=2.30 IN
                     RAIN DAY=2.65 IN DT=0.0333 HRS

               6-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONVECTIVE AREAS (NM & AZ) - D1
               DT =    0.033300 HOURS       END TIME =     5.994000 HOURS
                 0.0000  0.0013  0.0027  0.0041  0.0056  0.0070  0.0087
                 0.0104  0.0121  0.0140  0.0159  0.0199  0.0239  0.0282
                 0.0328  0.0373  0.0423  0.0472  0.0523  0.0576  0.0628
                 0.0683  0.0738  0.0796  0.0858  0.0920  0.0990  0.1061
                 0.1189  0.1381  0.1574  0.1830  0.2088  0.2395  0.2756
                 0.3117  0.3653  0.4195  0.4919  0.5856  0.6792  0.9223
                 1.1717  1.3702  1.5085  1.6467  1.7193  1.7887  1.8466
                 1.8903  1.9340  1.9651  1.9954  2.0221  2.0443  2.0665
                 2.0836  2.1004  2.1127  2.1193  2.1259  2.1317  2.1376
                 2.1429  2.1477  2.1524  2.1568  2.1611  2.1654  2.1696
                 2.1738  2.1759  2.1780  2.1800  2.1820  2.1839  2.1858
                 2.1876  2.1894  2.1912  2.1930  2.1947  2.1964  2.1981
                 2.1997  2.2013  2.2029  2.2044  2.2060  2.2075  2.2090
                 2.2105  2.2119  2.2133  2.2147  2.2161  2.2175  2.2189
                 2.2202  2.2215  2.2228  2.2241  2.2254  2.2266  2.2279
                 2.2291  2.2303  2.2316  2.2328  2.2340  2.2351  2.2363
                 2.2375  2.2386  2.2398  2.2409  2.2420  2.2431  2.2443
                 2.2453  2.2464  2.2475  2.2486  2.2497  2.2507  2.2518
                 2.2528  2.2538  2.2549  2.2559  2.2569  2.2579  2.2589
                 2.2599  2.2609  2.2618  2.2628  2.2638  2.2647  2.2657
                 2.2666  2.2675  2.2685  2.2694  2.2703  2.2712  2.2721
                 2.2730  2.2739  2.2748  2.2757  2.2766  2.2774  2.2783
                 2.2792  2.2800  2.2809  2.2817  2.2826  2.2834  2.2842
                 2.2850  2.2859  2.2867  2.2875  2.2883  2.2891  2.2899
                 2.2907  2.2915  2.2923  2.2930  2.2938  2.2946  2.2953
                 2.2961  2.2969  2.2976  2.2984  2.2991  2.3000
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*S*************************************************************
*** *************************
*S  CARLISLE CONDOMINIUM ROOF
*S  TOTAL PROPERTY BOUNDARY
*** *************************
*** AREA = 0.4877 ACRES
*** AREA = 21,244.2 SF
*** ******************
COMPUTE NM HYD       ID=1  HYD NO=100 AREA= 0.000762 SQ MI
                     PER A=0  PER B=0  PER C=0  PER D=100
                     TP=-.1333 HR  MASS RAIN=-1

     K =  0.072649HR    TP =  0.133300HR    K/TP RATIO =  0.545000     SHAPE CONSTANT, N =  7.106428
     UNIT PEAK =   3.0084    CFS   UNIT VOLUME =   0.9955        B =   526.28      P60 = 2.0000
     AREA =     0.000762 SQ MI    IA =   0.10000 INCHES     INF =   0.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =  0.033300

PRINT HYD            ID=1 CODE=1

                                    PARTIAL HYDROGRAPH   100.00


    RUNOFF VOLUME =     2.05566 INCHES     =       0.0835 ACRE-FEET
    PEAK DISCHARGE RATE =       2.35 CFS  AT   1.499 HOURS   BASIN AREA =  0.0008 SQ. MI.



*s********************
*s* ROUTE THRU FIRST FLUSH POND
*s***********************************************************************
ROUTE RESERVOIR      ID=12  HYD=POND.12   INFLOW=1   CODE=5
                     OUTFLOW(CFS)   STORAGE(ACFT)     ELEV(FT)
                     0.00               0.013797       5205.60
                     2.10          0.016227       5206.29
                     2.20          0.017394       5206.62
                     2.30          0.018596       5206.96
                     2.40          0.019869       5207.32
                     2.50               0.021177       5207.69

  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
```

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	5205.60	0.014	0.00
0.17	0.00	5205.60	0.014	0.00
0.33	0.00	5205.60	0.014	0.00
0.50	0.00	5205.60	0.014	0.00
0.67	0.00	5205.60	0.014	0.00
0.83	0.00	5205.60	0.014	0.00
1.00	0.06	5205.61	0.014	0.04
1.17	0.30	5205.69	0.014	0.28
1.33	0.70	5205.81	0.015	0.65
1.50	2.35	5206.39	0.017	2.13

1.67	1.34	5206.07	0.015	1.43
1.83	0.65	5205.83	0.015	0.69
2.00	0.36	5205.72	0.014	0.38
2.16	0.16	5205.66	0.014	0.17
2.33	0.09	5205.63	0.014	0.09
2.50	0.04	5205.61	0.014	0.04
2.66	0.02	5205.61	0.014	0.02
2.83	0.01	5205.60	0.014	0.01
3.00	0.00	5205.60	0.014	0.01
3.16	0.00	5205.60	0.014	0.00

PEAK DISCHARGE = 2.195 CFS - PEAK OCCURS AT HOUR 1.57
MAXIMUM WATER SURFACE ELEVATION = 5206.604
MAXIMUM STORAGE = 0.0173 AC-FT INCREMENTAL TIME= 0.033300HRS

PRINT HYD ID=12 CODE=50

HYDROGRAPH FROM AREA POND.12

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
0.000	0.0	1.332	0.6	2.664	0.0	3.996	0.0	5.328	0.0
0.666	0.0	1.998	0.4	3.330	0.0	4.662	0.0	5.994	0.0

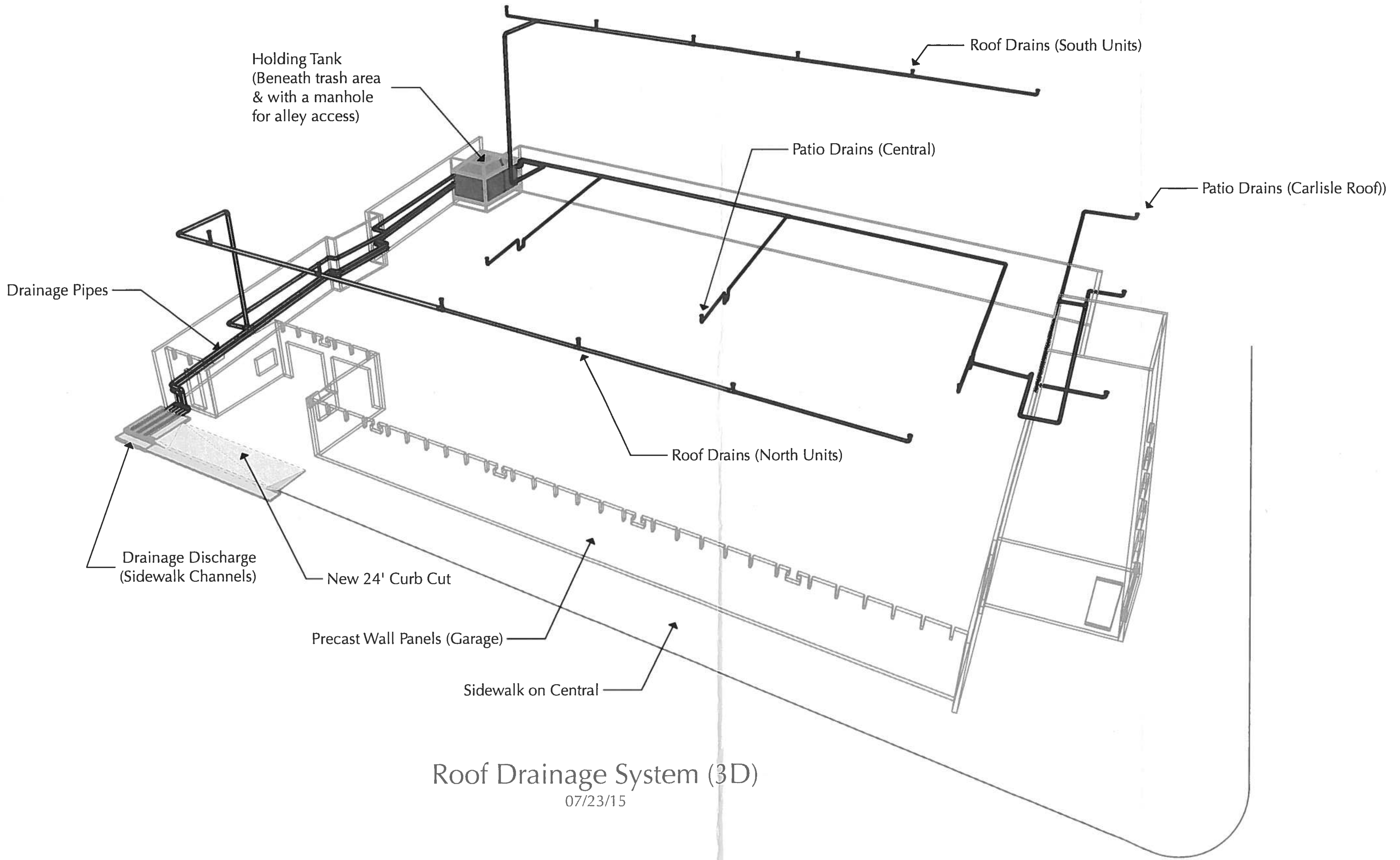
RUNOFF VOLUME = 2.05526 INCHES = 0.0835 ACRE-FEET
PEAK DISCHARGE RATE = 2.19 CFS AT 1.565 HOURS BASIN AREA = 0.0008 SQ. MI.

*** **
FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 14:23:50

```
1*********************************************                    ****************************************
 *  HEC-2 WATER SURFACE PROFILES             *                    *  U.S. ARMY CORPS OF ENGINEERS        *
 *                                           *                    *  HYDROLOGIC ENGINEERING CENTER       *
 *  Version   4.6.2;  May 1991               *                    *  609 SECOND STREET, SUITE D          *
 *                                           *                    *  DAVIS, CALIFORNIA 95616-4687        *
 *  RUN DATE    30JUL15    TIME   14:25:41   *                    *         (916) 756-1104               *
 *********************************************                    ****************************************

                                             X     X  XXXXXXX   XXXXX             XXXXX
                                             X     X  X        X     X           X     X
                                             X     X  X        X                       X
                                             XXXXXXX  XXXX     X          XXXXX   XXXXX
                                             X     X  X        X                 X
                                             X     X  X        X     X           X
                                             X     X  XXXXXXX   XXXXX            XXXXXXX
THIS RUN EXECUTED 30JUL15    14:25:41
 ************************************
  HEC-2 WATER SURFACE PROFILES
  Version   4.6.2;  May 1991
 ************************************

 T1          CHANNEL CAPACITY CALCULATIONS
 T2          CARLISLE CONDO FIRST FLUSH SWALE TO CENTRAL
 T3

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

        0         2         0         0      .005         0         0         0         0         0

 J3  VARIABLE CODES FOR SUMMARY PRINTOUT

      38        43         1         2        26         4        68         3

 NC     .017      .017      .017        .1        .3
 QT        2      2.35      2.35
 X1        1         4         0       3.1         0         0         0         0         0         0
 GR      0.5         0         0        .1        .0        3.       0.5       3.1

     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

 *PROF 1

 CCHV=     .100 CEHV=     .300
 *SECNO 1.000
 2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
      1.000       .31       .31       .00       .00       .41       .10       .00       .00       .50
        2.3        .0       2.3        .0        .0        .9        .0        .0        .0       .50
```

```
        .00        .00       2.53        .00       .000       .017       .000       .000        .00        .04
    .004986         0.         0.         0.          0          0          5        .00       3.03       3.06

T1
T2 SPILLWAY
T3 SWALE

J1  ICHECK     INQ       NINV       IDIR       STRT       METRIC     HVINS      Q          WSEL       FQ

       0          3          0          1       .005

J2  NPROF      IPLOT     PRFVS      XSECV      XSECH      FN         ALLDC      IBW        CHNIM      ITRACE

       2          0         -1          0          0          0          0          0          0          0

    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA        R-BANK ELEV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

*PROF 2

CCHV=     .100 CEHV=     .300
*SECNO 1.000
2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
3720 CRITICAL DEPTH ASSUMED
      1.000        .27        .27        .27        .00        .40        .13        .00        .00        .50
        2.3         .0        2.3         .0         .0         .8         .0         .0         .0        .50
        .00        .00       2.94        .00       .000       .017       .000       .000        .00        .05
    .007963         0.         0.         0.          0          8          5        .00       3.01       3.05
THIS RUN EXECUTED 30JUL15    14:25:41
 *************************************
  HEC-2 WATER SURFACE PROFILES
  Version   4.6.2;  May 1991
 *************************************

 NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST
SUMMARY PRINTOUT

       SECNO        Q        CWSEL      CRIWS       VCH      TOPWID      FRCH       EG

        1.000      2.35        .31        .00      2.53       3.03        .80       .41
 *      1.000      2.35        .27        .27      2.94       3.01       1.01       .40

  SUMMARY OF ERRORS AND SPECIAL NOTES

 CAUTION SECNO=      1.000   PROFILE=  2  CRITICAL DEPTH ASSUMED
```



Roof Drainage System (3D)
07/23/15

CARLISLE CONDOMINIUM PROJECT

PROJECT DESCRIPTION: This 0.48 acre site is proposed to be developed into a 36 unit multi-level condominium complex with an underground parking garage.

EXISTING CONDITIONS: The project site is bounded by Carlisle Blvd. and Central Avenue on the west and north side of the property. Runoff from Carlisle is conveyed northerly as street flow then eastward at the intersection with Central Avenue. The east property boundary has a block wall that serves as a divide line between the existing restaurant outdoor patio and this project site. The south boundary consists of a gravel road that serves as access for the adjacent residences and church to the south. This project will have only one access location off of Central Avenue. No offsite flows enter this site under existing conditions.

PROPOSED CONDITIONS: Runoff from the roof will be directed to the "first flush' runoff storage tank located in the underground parking garage southeast corner. The tank will detain the required "first flush" runoff volume of 601 cu.ft. for 24 hours. After this detention time, the first flush volume will be pumped at a rate not to exceed 2.35 cfs through the 8" outfall discharge pipe to Central Avenue.

During any storm event when the first flush runoff volume is exceeded, the excess runoff will spill through a 10" diameter PVC pipe that serves as a spillway weir, into an 8" PVC pipe that conveys the runoff as gravity flow to a 24" sidewalk culvert and into Central Avenue.

SUMMARY OF HYDROLOGY

PROJECT AREA = 0.4877 ACRES = .000762 SQ. MI.
LAND TREATMENT = 100% D (FROM ROOF ONLY)
P (60) = 2.00"
P (6HR) = 2.30"
P (24HR) = 2.65"
Q_{100} = 2.35cfs (ROOF)
V_{100} = 0.0835 AC. FT. = 3637 CU. FT. (ROOF)

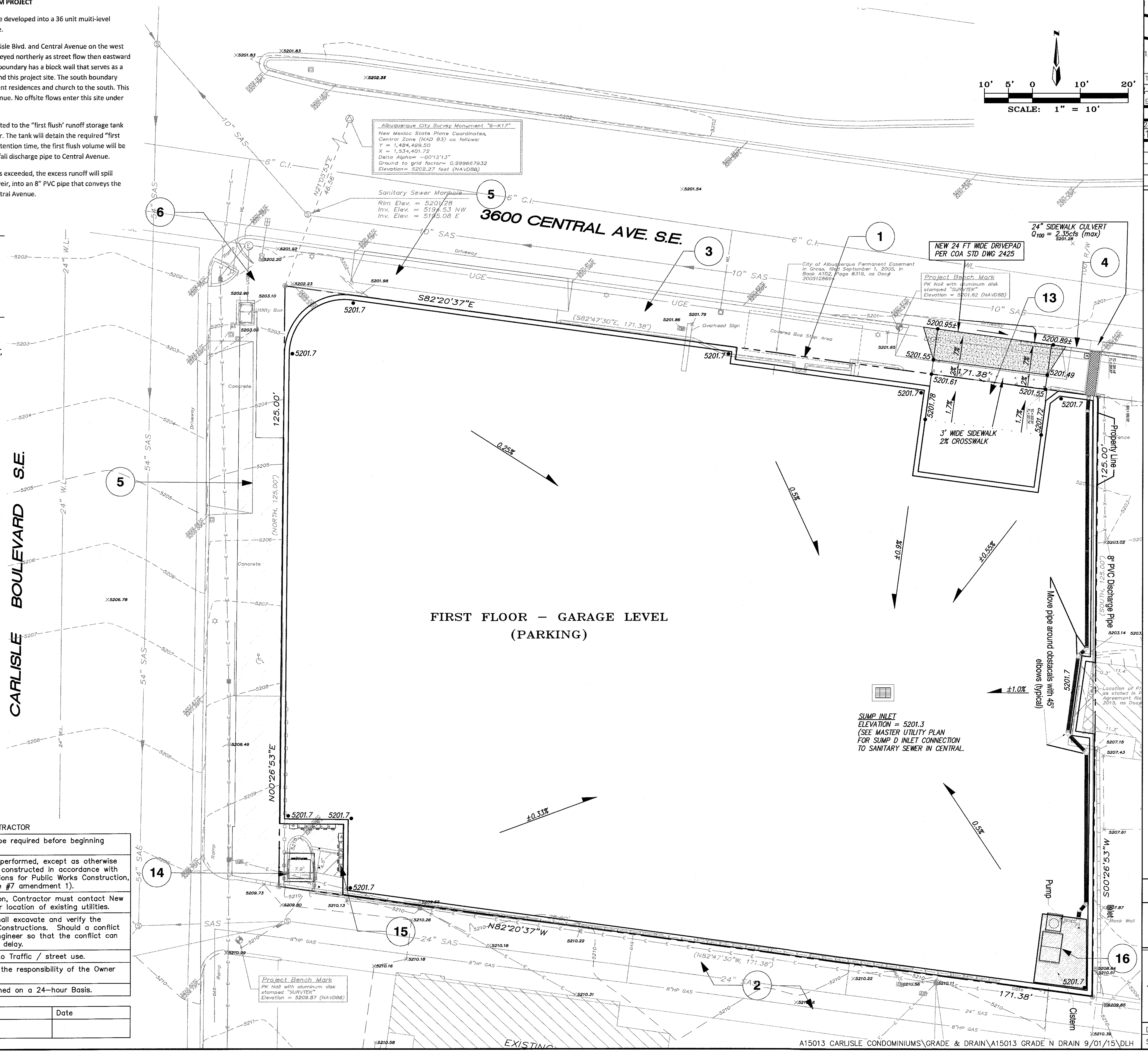
FIRST FLUSH CALCULATION

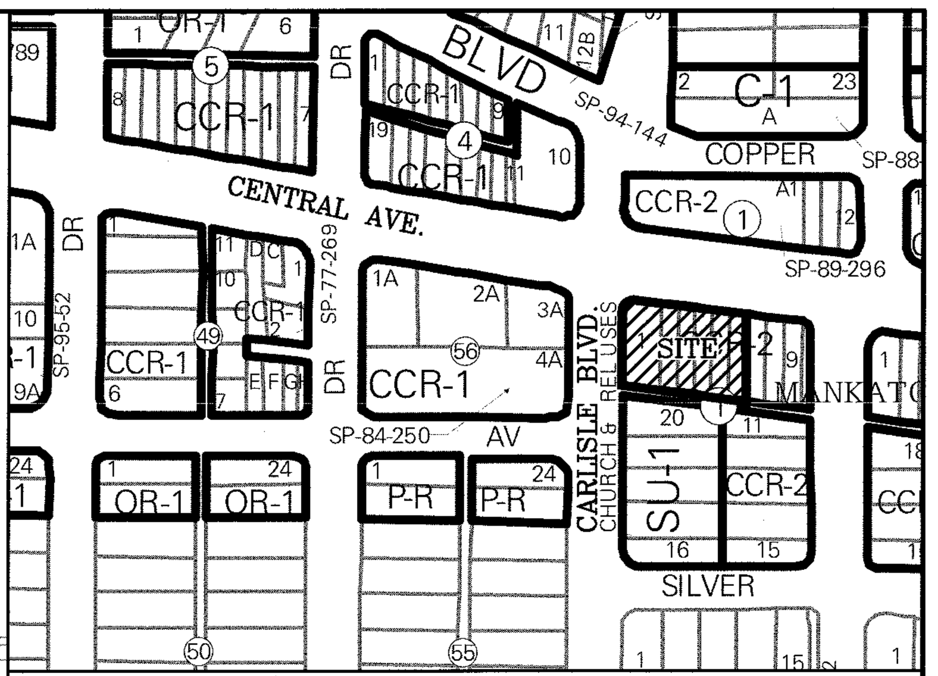
(0.34"/12)x(21,244 SF) = 601.CU.FT.
LAND TREATMENT = 100% D (FROM ROOF ONLY)

SINCE ROOF TAKES UP 99.9% OF ENTIRE PROJECT SITE, AND EXISTING SITE IS 100% IMPERVIOUS, EXISTING RUNOFF=ROOF RUNOFF=2.35 cfs

KEYED NOTES

① EXISTING PROPERTY LINE
② EXISTING ALLEY
③ EXISTING PUBLIC SIDEWALK
④ EXISTING CURB
⑤ EXISTING DRIVE CUT SHALL BE REMOVED
⑥ EXISTING RAMP
⑦ EXISTING OUTSIDE BUILDINGS
⑬ PROPOSED ENTRANCE FOR ENCLOSED GARAGE
⑭ PROPOSED TRANSFORMER
⑮ PROPOSED ELECTRIC BANK METERS
⑯ PROPOSED TRASH COMPACTOR





VICINITY MAP ZONE ATLAS: K-16-Z

T B M (TEMPORARY BENCHMARK)

PK NAIL WITH ALUMINUM DISK
STAMPED "SURVTEK"
ELEVATION = 5209.87 (NAVD88)

LEGAL DESCRIPTION

LOTS NUMBERED ONE (1), TWO (2), THREE (3), FOUR (4), FIVE (5), AND SIX (6), IN BLOCK NUMBERED ONE (1) REPLAT OF MANKATO PLACE, AS THE SAME ARE SHOWN AND DESIGNATED ON THE REPLAT OF SAID BLOCK ONE (1), FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO, ON SEPTEMBER 4, 1929, IN PLAT BOOK B, FOLIO 45.

LEGEND

EXISTING TELEPHONE PEDESTAL
EXISTING CABLE PEDESTAL
EXISTING WALL
EXISTING ELECTRIC METER
EXISTING ELECTRIC PEDESTAL
EXISTING WATER METER
EXISTING CONCRETE AREA
EXISTING LIGHT POLE
EXISTING POWER POLE
EXISTING POWER POLE WITH FEED
EXISTING GUY-WIRE ANCHOR
EXISTING HYDRANT
EXISTING SEWER CLEANOUT
EXIST. SANITARY SEWER MANHOLE
EXISTING WROUGHT IRON FENCE
EXISTING ELECTRIC TRANSFORMER
EXISTING BOLLARD
EXISTING WATER VALVE
EXISTING OVERHEAD UTILITY LINE
UGE — EXISTING UNDERGROUND ELECTRIC LINE
WL — EXISTING WATER LINE
GAS — EXISTING GAS LINE
SAS — EXISTING SANITARY SEWER LINE
EXISTING TRAFFIC SIGNAL BOX
EXISTING CONCRETE CURB & GUTTER
EXISTING ELECTRIC MANHOLE
EXISTING TRAFFIC SIGNAL
EXISTING HANDICAP PARKING SPACE
EXISTING ELECTRIC BOX
EXISTING GAS METER
NEW WATERBLOCK
±1.0% NEW FLOW
NEW SIDEWALK
NEW SUMP INLET

DIANE HOELZER NEW MEXICO 11987 LICENSED PROFESSIONAL ENGINEER
9-1-15

NOTICE TO CONTRACTOR

1.	An excavation/construction permit will be required before beginning any work within City right of way.
2.	All work detailed on these plans to be performed, except as otherwise stated or provided for hereon, shall be constructed in accordance with City of Albuquerque Standard Specifications for Public Works Construction, (1986 Edition as revised through update #7 amendment 1).
3.	Two working days prior to any excavation, Contractor must contact New Mexico One Call system, (260–1990) for location of existing utilities.
4.	Prior to construction, the Contractor shall excavate and verify the horizontal and vertical locations of all Constructions. Should a conflict exist, the Contractor shall notify the Engineer so that the conflict can be resolved with a minimum amount of delay.
5.	Backfill compaction shall be according to Traffic / street use.
6.	Maintenance of these facilities shall be the responsibility of the Owner of the property served.
7.	Work on Arterial Street shall be Performed on a 24–hour Basis.

Approval	Name	Date
Inspector		

CARLISLE CONDOMINIUMS

GRADING & DRAINAGE PLAN

dmg MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505)828–2200, FAX (505)797–9539

Designed: DMG	Drawn: ACH	Checked: DMG	Sheet C-2
Scale: 1" = 10'	Date: 06–03–15	Job: A15013	

A15013 CARLISLE CONDOMINIUMS\GRADE & DRAIN\A15013 GRADE N DRAIN 9/01/15\DLH