

AREA 1

WATER IN THIS AREA FLOWS EAST TO EXISTING CURB AND GUTTER AND THEN FLOWS NORTH TOWARDS 900 SOUTH STREET. THE WATER IS DISCHARGED INTO AN EXISTING IRRIGATION DITCH THAT FLOWS EAST ALONG 900 SOUTH.

AREA 2

WATER IN THIS AREA FLOWS NORTH TOWARDS A CATCH BASIN NEAR THE ENTERANCE FROM 900 SOUTH STREET. NO STORM DRAIN PIPES ARE VISIBLE ENTERING OR EXISTING THE BOX. THIS IS ASSUMED TO BE A SUMP, ALLOWING THE STORM WATER TO PERCOLATE OUT OF THE BOX.

AREA 3

WATER IN THIS AREA IS CONTAINED ATOP THE EARTH UNTIL IT PERCOLATES INTO THE GROUND NATURALLY. THIS AREA AS AN AVERAGE STORAGE CAPACITY OF 5.12" OF WATER BEFORE SPILLING OVER THE CURB WALL INTO THE SHOULDER OF 4100 WEST STREET.

AREA 4

WATER IN THIS AREA FLOWS TO WATERWAYS WHICH DIRECTS FLOW TOWARDS NEW CATCH BASINS. ALL NEW CATCH BASINS TIE TOGETHER AT THE SOUTHWEST END OF THE PARKING LOT. THE WATER IS DETAINED IN AN UNDERGROUND PIPE SYSTEM THAT WILL DISCHARGE WATER AT .1 CFS INTO A CATCH BASIN IN THE SHOULDER OF 4100 WEST STREET. THIS SYSTEM HAS BEEN DESIGNED TO DETAIN A 100 YEAR STORM. SEE THE STORM WATER CALCULATIONS ON THIS SHEET, AND SITE PLAN AND DETAILS FOR DESIGN OF THIS SYSTEM.

AVOID CUTTING UNDERGROUND UTILITIES. IT'S COSTLY.

Call Digs

1-800-662-4111

NOTICE!

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION, PROTECTION, AND RESTORATION OF ALL BURIED OR ABOVE GROUND UTILITIES, SHOWN OR NOT SHOWN ON THE PLANS.

DRAINAGE CALCULATIONS

Drainage Criteria:

Maximum Discharge	0.10 cfs/ft.
Design Storm	100 year
Using NOAA rainfall data for	41 2483 N 112.082 W

Storm water within the new parking area will sheet flow to a catch basin inlet that will be conveyed to the existing storm drain system on the west side of the property. The required capacity of the new parking area is 1,884 c.f. A new 1.39" orifice plate will control the release rate to .1 cfs/acre or 0.04 cfs.

Proposed Design:

Solution using Rational Formula:

Detention Calculations:

Q = CIA where
 C_{roof} =
 C_{paved} = 0.90
 C_{landscaped} = 0.15

I = Rainfall Intensity
 A = Tributary Area

Roof Area =	3,106
Paved Area =	86,303
Landscape Area =	5,133
Total Tributary Area =	44,542

Page 2 Weighted Coefficient (C) = 0.75
 C * A = 33,443

100 yr Storage Requirements:

Time (min)	Rate (in/hr)	Rainfall (Inches)	Accum. Flow (cu.ft.)	Discharge (cu.ft.)	Req'd Storage (cu.ft.)
15	4.08	1.02	2,843	92	2,751
30	2.76	1.38	3,846	184	3,662
60	1.70	1.70	4,738	368	4,370
120	0.93	1.85	5,156	736	4,420
180	0.63	1.90	5,295	1,104	4,191
360	0.35	2.11	5,880	2,209	3,672
720	0.22	2.58	7,190	4,417	2,773
1,440	0.12	2.84	7,915	8,835	0

Storage Required: 4,420
 Surface Storage: 0
 New Storage Available: 4,438
 Total storage: 4,438 **okay**

Restrictor Orifice Size:

Allowable Discharge (Q) =	0.10 cfs
Average Head (H) =	3.75 ft
Orifice Coefficient =	0.62
Orifice Diameter =	1.39 inches

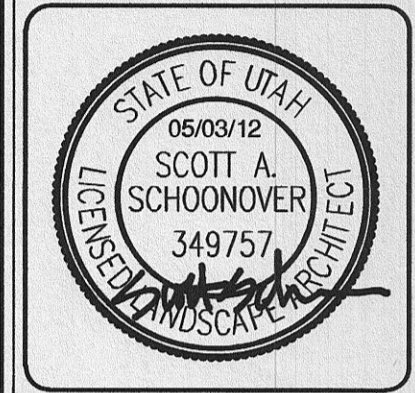
*where is the detention pond?
 where is the orifice plate?*



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**WEST WEBER 1, 2, 3, &
 The Church of JESUS CHRIST of Latter-Day Saints**

OGDEN UTAH WEBER NORTH STAKE
 4080 WEST 900 SOUTH
 WEST WEBER, UTAH

REVISIONS

REV	DATE	DESCRIPTION

PROJECT NO: 11358
 CAD DWG. FILE: 11358-site.dwg
 DRAWN BY: NMD/MGS
 PROPERTY NO: 502-2681
 DESIGNED BY: NMD
 FIELD CREW: NMD/MGS
 CHECKED BY: RJD
 DATE: MAY 2012

SHEET TITLE
STORM WATER STUDY

C1.02
 SHEET 4 OF 17