WHEN RECORDED, MAIL TO: Utah Department of Transportation Right of Way, Fourth Floor Box 148420 Salt Lake City, UT 84114-8240 12623123 9/25/2017 4:02:00 PM \$47.00 Book - 10602 Pg - 549-567 ADAM GARDINER Recorder, Salt Lake County, UT COTTONWOOD TITLE BY: eCASH, DEPUTY - EF 19 P.

UTAH DEPARTMENT OF TRANSPORTATION DRAINAGE AGREEMENT

Salt Lake \_ County

Tax ID No. 27-25-401-000

This Drainage Agreement made and entered into this day of complete the sequence of the control o

#### **RECITALS**

The Permittee (property owner) desires to construct a drainage system and a drainage connection within the Department Right of Way subject to the requirements and conditions described in the Permit.

Department's Policy 08A-06 requires the Permittee to sign the Drainage Agreement as part of the permitting process for a drainage connection.

The parties agree as follows:

and applicable state and federal statutes, regulations and rules. The Department may perform inspection of Permittee's drainage system to monitor compliance with the Permit and with state and federal statutes, regulations, and rules. Permittee grants the Department access to the Permittee's property for inspection or to perform any repairs to prevent damage to the Department's Right of Way. The Department's inspection does not relieve the Permittee of its responsibilities in meeting the Permit conditions. The Permittee is responsible for the Department's inspection costs. Permittee's responsibilities include:

Department Drainage Agreement (per UDOT Policy 08A-06) Page 1 of 5

- a) Permittee is responsible for repairing and restoring any portion of the Department Right of Way and drainage systems located therein that may be damaged as a result of making the drainage connection or as the result of any subsequent drainage originating from the Permittee's property.
- b) Permittee must not increase its drainage discharge into the Department's drainage system without the written permission of the Department.
- c) A bonded contractor must apply for the required permit to install drainage systems in the Department Right of Way prior to the commencement of any such work.
- d) The Permittee is responsible to obtain environmental clearances, permits, or other approvals from any other local, state or federal agency that may have regulatory jurisdiction or oversight.
- MAINTENANCE: Permittee's drainage system must at all times be maintained, repaired, constructed, and operated by and at the expense of the Permittee. The drainage system will be serviced without access from any interstate highway or ramp. The Department may notify the Permittee of any maintenance requirements if the Permittee fails to maintain the drainage system. The Department reserves the right, without relieving the Permittee of its obligations, to reconstruct or make repairs to the drainage system, as it may consider necessary, and the Permittee must reimburse the Department for its cost if the Permittee fails to comply with the Department's written notification and complete the required maintenance.
- (3) <u>FUTURE IMPACTS</u>: The Department has the right to change its drainage system for any future transportation project. If the Department's drainage system is reconstructed or modified, the Department reserves the right to hold the Permittee responsible for the cost to reconnect to the Department's drainage system. The Department is not responsible for any costs the Permittee incurs due to the drainage system being reconstructed or modified.
- (4) <u>LIABILITY:</u> Pursuant to R930-7-6(2)(b), the Permittee is required to guarantee satisfactory performance under this Permit. The Department may proceed against Permittee to recover all expenses incurred by the Department, its employees, or contractors in repairing the sections of roadway damaged by the Permittee or its drainage system, including the failure to restore the Right of Way to Department standards. The Permittee will be liable for all costs the Department incurs under this agreement.

The Permittee will indemnify, defend, and hold harmless the Department, its employees, and the State of Utah from responsibility for any damage or liability arising from Permittee's construction, maintenance, repair, or any other related operation of the drainage system pursuant to the Permit issued under this agreement.

The Permittee will not hold the Department liable for damages resulting from any backup or flow into the Permittee's drainage system or property. The Permittee accepts all risks associated with the connection to the Department's drainage system. The Permittee is responsible for all liability resulting from the discharge of pollutants into the Department's drainage system from its property or drainage system.

- comply with the terms and conditions set forth in the Permit or this Agreement may result in cancellation of the Permit. Failure of the Permittee to pay any sum of money for costs incurred by the Department in association with inspection, reconstruction, repair, or maintenance of the drainage system may also result in cancellation of the Permit. Non-compliance with either the Permit or Agreement may result in the Department removing the drainage system and restoring the highway and Right of Way at the sole expense of the Permittee. The Department will notify the Permittee in writing prior to any cancellation, setting forth the violations, and will provide the Permittee a reasonable time to correct the violations to the satisfaction of the Department. The Department may order the Permittee to remove its drainage system if the violations are not corrected.
- (6) <u>SUCCESSORS AND ASSIGNS:</u> All covenants, obligations and agreements will be binding upon the parties, their successors and assigns and run with the land as described in Exhibit A until the drainage connection is removed from the Department's Right of Way.

#### (7) MISCELLANEOUS:

- a) Each party agrees to undertake and perform all further acts that are reasonably necessary to carry out the intent and purpose of the Agreement at the request of the other party.
- b) This Agreement does not create any type of agency relationship, joint venture, or partnership between the Department and Permittee.
- c) The failure of either party to insist upon strict compliance of any of the terms and conditions, or failure or delay by either party to exercise any rights or remedies provided in this Agreement, or by law, will not release either party from any obligations arising under this Agreement.

Department Drainage Agreement (per UDOT Policy 08A-06) Page 3 of 5

- d) This Agreement shall be deemed to be made under and shall be governed by the laws of the State of Utah in all respects. Each person signing this Agreement warrants that the person has full legal capacity, power and authority to execute this Agreement for and on behalf of the respective party and to bind such party.
- e) If any portion of this Agreement is held to be invalid or unenforceable for any reason by a court of competent jurisdiction, such invalidity or unenforceability shall not affect any other provision, and this Agreement shall be construed as if such invalid or unenforceable provision had never been included.

IN WITNESS WEREOF, the parties hereto have executed this Agreement the day and year first above written.

**CURRENT PROPERTY OWNER/PERMITTEE** 

Name Printed:	Michael Bott	Signature:	Meho Bett
personally app acknowledged	y of Scotomber, in the yeared before me as the signer to me that he/she executed im/her as the current property al.	er of this agreer this agreement	ment, who duly pursuant to the authority property. Witness my hand
UTAH DEPAR	TMENT OF TRANSPORTA	ΓΙΟΝ – Region	Permits Officer
Name Printed:	JEFF LEWIS	Signature:	Jeff Soi
personally app acknowledged	It loke ) y of <u>September</u> , in the yea eared before me as the signe to me that he/she executed to im/her as the current property	er of this agreer this agreement	ment, who duly pursuant to the authority

COMM. EXP. 10/07/2019

### **EXHIBIT A (Legal Description of Permittee's Property)**

Exhibit "A" (Legal Description)

Beginning at a point 32 9/13 rods South from the Northwest corner of the Southeast quarter of Section 25, Township 3 South, Range 1 West, Salt Lake Meridian; and running thence South 32 4/13 rods; thence East 26 rods; thence North 32 4/13 rods; thence West 26 rods to the place of beginning.

Less and Excepting therefrom that property conveyed in warranty Deed recorded June 1, 1998, as Entry No. 6979534, in Book 7993, at Page 2447, as described as follows:

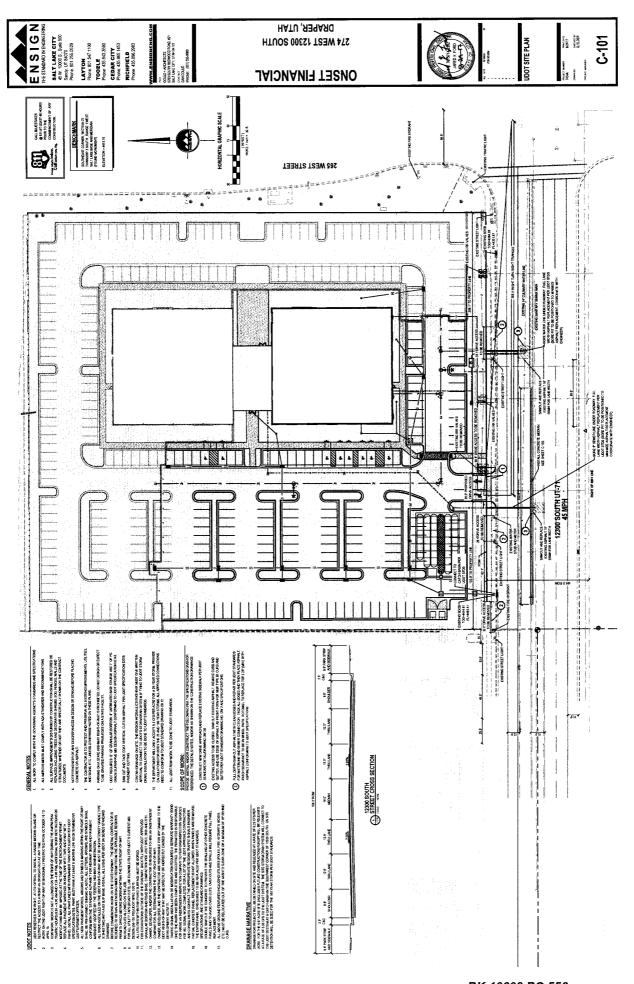
A parcel of land in fee for the widening of 12300 South Street, being part of an entire tract of property, situate in the Southeast quarter of Section 25, Township 3 South, Range 1 West, Salt Lake Base and meridian. The boundaries of said parcel of land are described as follows:

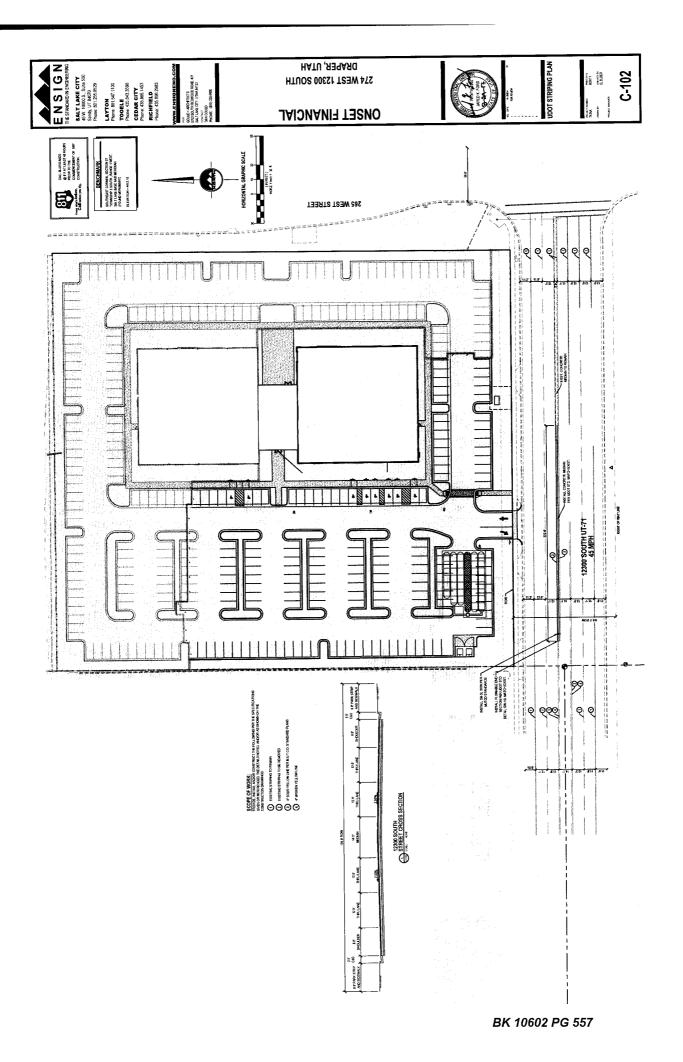
Beginning at the Southwest corner of said entire tract of property (recorded as Entry No. 3627200, in Book 5317, at Page 1210, in the office of the Salt Lake County Recorder), which point is South 539.42 feet (164.415 meters) and South 498.14 feet (151.833 meters) from the center of said Section 25; and running thence North 20.00 feet (6.096 meters) to a point 53 feet perpendicularly distant Northerly from the monumented centerline of 12300 South Street; thence South 89u2258'20" Eat 429.00 feet 130.759 meters) along a line parallel with said centerline to the Easterly boundary line of said entire tract; thence South 20.00 feet (6.096 meters) to the Southeast corner of said entire tract; thence North 89u2258'20" West 429.00 feet (130.759 meters) to the point of beginning.

Also Less and Excepting any portion lying within 12300 South Street.

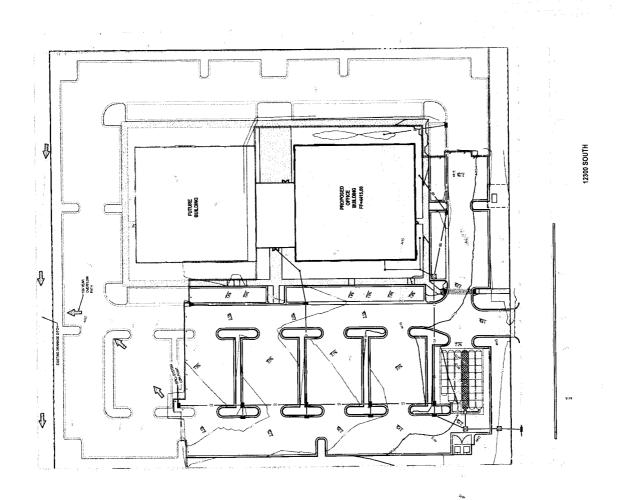
The following is shown for information purposes only: 27-25-401-002

XHIBIT B					
clude drainage plan s culations)	howing state route	e, mile post and	location of all dr	ainage systems	and drainage

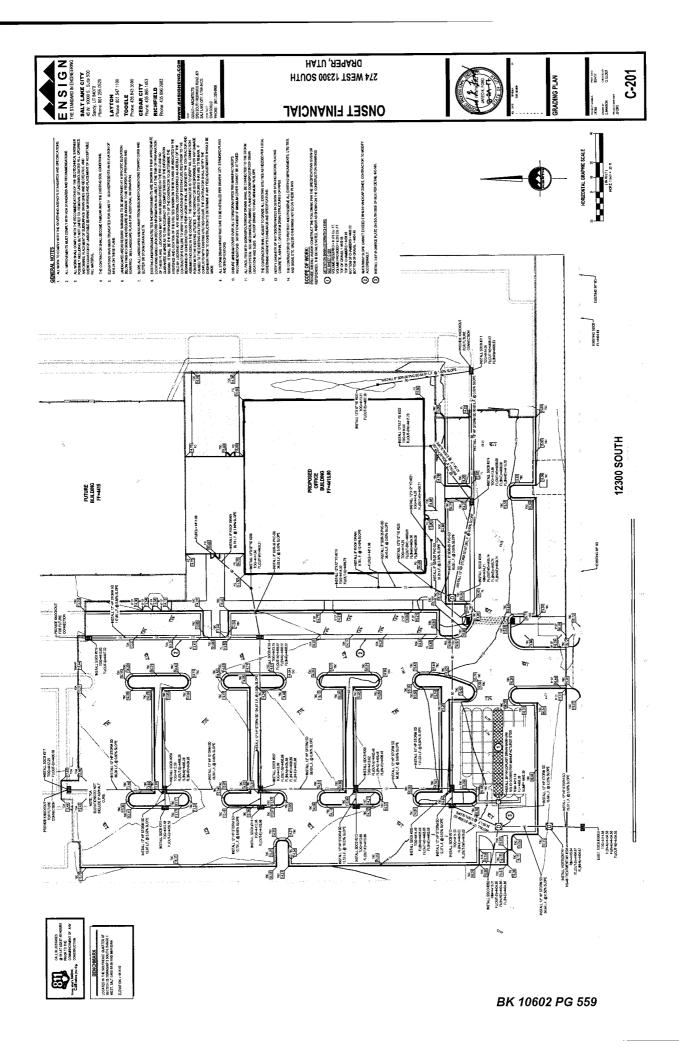


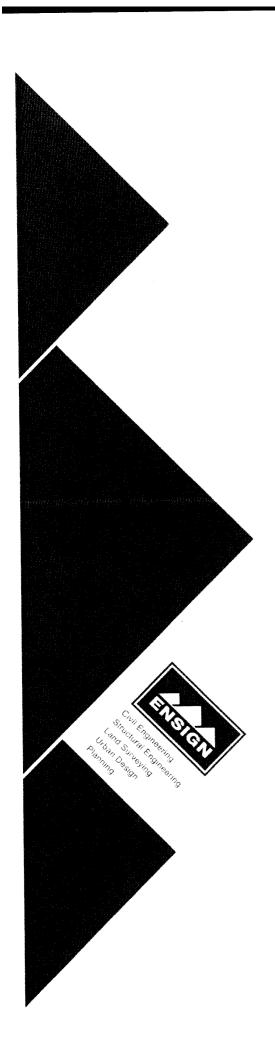












# **Drainage Narrative**

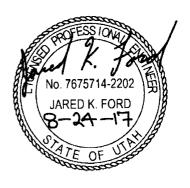
# **ONSET FINANCIAL**

274 WEST 12300 SOUTH DRAPER, UTAH

PREPARED FOR:
GOULD + ARCHITECTS
DAN GOULD
5763 SOUTH REDWOOD ROAD, #21
SALT LAKE CITY, UT 84123
(801) 335-9900

PREPARED BY:
ENSIGN ENGINEERING
JARED FORD
45 WEST 10000 SOUTH #500
SANDY, UT 84070
(801) 255-0529

JULY 31, 2017



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#### 1.0 PROJECT OVERVIEW/LOCATION

The proposed commercial office building is located in the Southeast quarter of Section 25, Township 3 South, Range 1 West, Salt Lake Base and Meridian in Draper City, Utah. The project is bounded by 12300 South to the South, 265 West to the east, commercial property to the West, and a combination of farm-land and commercial property to the North. This project will be constructed in two phases. This report will discuss phase 1, which includes the Southwest part of the property, and the Southern office building.

#### 2.0 EXISTING DRAINAGE CONDITIONS

The existing site generally flows towards the northeast corner of the property and the existing ground slopes run from approximately 0.5% to 5%.

### 3.0 DESIGN OBJECTIVES AND METHODOLOGY

The site drainage system will be designed to conform to the Utah Department of Transportation (UDOT) design requirements as stormwater from the project will discharge to 12300 South Street. This report will address the proposed drainage system, which is intended to both reduce the post developed peak runoff as well as reduce the impact of development on the environment. The proposed construction of this project will create an increase in the amount of impervious area on the site, which will increase the amount of site runoff.

Drainage calculations for the project were performed using rainfall data from NOAA Atlas 14, Volume 1, Version 5. The rational method was used to model the hydrology and detention requirements. The area associated with this phase of the project was assigned a runoff coefficient based on the ground cover, and impervious area. The coefficients used were analyzed appropriate for the area of this study. These coefficients can be seen in the table below:

**TABLE 3-1 RATIONAL CALCULATION RUNOFF COEFFICIENTS** 

自由中国的联合工作的Association和自由中国的企业企业主义	P. Barate Catalon, 40
Business: Downtown and neighborhood areas	0.75
Impervious Areas: parking lots, roads, etc.	0.90
Improved Open Space (lawns, parks, etc)	0.15

Design criteria include the following:

- The 100-year storm event was used to size the detention basin
- Underground conveyance systems were planned to safely pass the 10-year storm event
- Detain post-development site discharge to the allowable rate (0.2 cfs/acre)

The rainfall data can be seen in the appendix.

#### 4.0 PROPOSED DRAINAGE CONDITIONS

The proposed site is designed to direct runoff from paved and other hardscape areas into gutters and waterways which will be collected in catch basins. The site has been graded to allow stormwater to drain away from the building. Once stormwater has entered the pipe system, it will be conveyed to a detention basin located in the southwest corner of the project and will discharge into existing storm drain infrastructure in 12300 South. Two additional detention basins will be constructed with the second phase of this project, and will be designed to provide adequate storage for Phase 2 storm

water. The proposed phase 1 detention basin, therefore, has been designed to store only the required volume from this phase. The detention system shall be StormTech MC 3500 chambers or engineer approved equivalent, and the design volumes can be seen in the following table:

#### **TABLE 4-1 DETENTION VOLUMES**

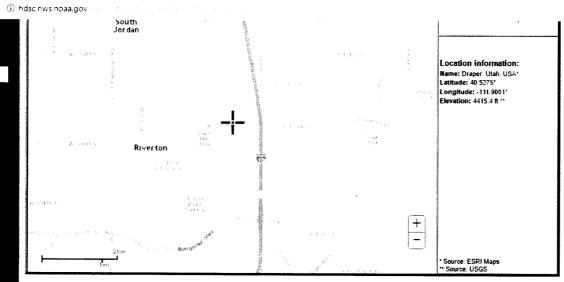
9,175	9,215

As per UDOT's standards and specifications, an allowable release rate of 0.2 cfs per Acre was used to calculate the size of the orifice plate. As runoff from the entire site (Phases 1 and 2) will pass through this orifice before entering into the existing storm drain system, the orifice plate has been sized for the total project area. The allowable release rate for the total project area is 0.93 cfs. The orifice plate will be installed on the South side of SDCO #202, and will have a diameter of 3.93 inches. All detention and release rate calculations have been included in the appendix, and the proposed infrastructure has been sized to safely convey the 10-year storm event.

#### 5.0 CONCLUSIONS

The proposed drainage system for the Onset Financial Office Building project has been sized to safely convey the 10-year storm event and detain the 25-year storm event.

## 6.0 APPENDIX



POINT PRECIPITATION FREQUENCY (PF) ESTIMATES WITH 90% CONFIDENCE INTERVALS AND SUPPLEMENTARY INFORMATION NOAA Atlas 14. Volume 1, Version 5

	PF tabular	PF gra	phical	Supplemen	tary information	1			🖹 Print page	,
e sent enquir-	P							rvals (in inc	hes) <sup>1</sup>	Madeira (1966 (See Assistant) (1964
Duration					Average recurrent					
200	. 1	2	5	19	25	50	100	200	500	1000
5-min	<b>0.127</b>	0.161	0.221	<b>0.276</b>	0.364	0.447	<b>0.543</b>	0.658	0.842	1.01
	(0.112-0.147)	0 142-0 186)	(0.193-0.256)	(0.238-0.321)	(0.307-0.427)	(0.365-0.529)	:0.430-0.551+	(0.500-0.803)	(0.805-1.05)	:0.594-13
10-mm	<b>0.194</b>	<b>0.245</b>	0.335	0.420	0.554	0.680	0.827	1,00	1.28	1.54
	(0.173-0.224)	(0.215-0.284)	(0.294-0.389)	(0.382-0.488)	(0.48T-0.850)	(0.556-0.805)	0.654-0.991,	(0.760-1.22)	© 922-1 81:	1.08-1.9
15-min	<b>0.240</b> (0.210-0.277)	<b>0.303</b> -0.257-0.351;	<b>0.416</b> :0.364-3.482)	0.520 0.449-0.6051	<b>0.687</b> (0.578-0.808)	0.843 0.889-0.998	1.02 (0 811-1 23)	1.24 10.943-1.521	1.59	1.91 11.31-2 4
30-min	<b>0.323</b> (0.283-0.373)	0.409 (0.380-3.473)	0.560 (0.490-0.849)	0.701 (0.805-0.815)	0.925 .0.779-1.09,	<b>1.14</b> (0.928-1.34)	<b>1.38</b> 1.09-1.66;	1.67	2.14 (1.54-2.53)	2.57 11.78-3.20
80-min	0.399	<b>0.506</b>	0.693	<b>0.867</b>	<b>1.14</b>	1.41	1.71	2.07	2.65	3.18
	(0.350-0.482)	(0.445-0.585)	(0.607-0.804)	(0.748-1-01)	0.984-1.34+ ;	.1.15-1.861	-1.35-2.35)	:1.57-2.53	(1.90-3.32)	;2 18-4.0
2-hr	0.498	<b>0.623</b>	0.810	0.990	1.28	<b>1.55</b>	1.86	2.24	<b>2.85</b>	3.40
	:0.451-0.564:	0.559-0.702)	(0.725-0.918)	(0.875-1 12)	(1.10-1.46)	1.30-1.78)	1.51-2.18	11.74-2.68	(2.09-3.50)	-2.39-4.2
3-m	<b>0.573</b>	<b>0.708</b>	<b>0.895</b>	1.07	1.34	<b>1.59</b>	1.89	<b>2.24</b>	2.88	3,44
	(0.523-0.539)	:0.848-0.788	:0.811-0.994)	(3.959-1 19)	-1.18-1.50)	.1.38-1.884	1 58-2.20+	-1.82-2.701	2.19-3.54	(2.50-4.3-
3-hr	0.741	<b>0.909</b>	<b>1.11</b>	<b>1.29</b>	<b>1.55</b>	<b>1.77</b>	<b>2.03</b>	2.33	2.90	<b>3,47</b>
	:0.888-0.808;	(0.840-0.991)	.1 02-1 21)	.1 18-1 40,	(1.40-1.70)	(1.57-1.96)	1 78-2 28)	(1.98-2.73)	2.38-3.57	(2,72-4,3)
12-nr	0.922	1.13	1.36	<b>1.57</b>	<b>1.86</b>	<b>2.11</b>	<b>2.37</b>	<b>2.66</b>	3.11	3.49
	0.852-1.00	-1.04-1.23 i	(1.28-1.49)	(1.44-1.71)	.1.89-2.05)	:1.88-2 34;	2.38-2.68;	(2.29-3.33)	(2.59-3.84)	2.84-4.4
2 <b>4-</b> hr	1,03	<b>1.26</b>	1.49	1.69	<b>1.96</b>	<b>2.16</b>	<b>2.38</b>	2.68	3.14	3.53
	(0.960-1.18	(1.17-1.35)	:1.49-1.60	(1.58-1.81)	:1.83-2.09;	.2.01-2.38	2.20-2.59+	(2.38-3.0 <del>0</del> )	(2.61-3.57)	(2.86 → 4)
2-day	1.19	1.45	1.71	1.93	2.22	<b>2.43</b>	<b>2.65</b>	2.86	3.16	3.56
	(1.11-1.28)	(1.35-1.55)	(1.80-1.83)	(1.81-2.05)	(2.07-2.38)	2.27-2.59	:2.48-2.82;	(2.85-3 (2)	(2.89-3.71)	3.38-4.5
3-day	1.27	1.55	<b>1.83</b>	2.06	2.38	<b>2.61</b>	<b>2.85</b>	3.09	3,42	3,75
	(1.19-1.35)	(1.45-1.05)	.1.72-1.95;	:1.94-2.19;	(2.23-2.52)	,2.44-2.78;	(2.68-3.04)	(2.87-3.32)	(5.14-3.82)	3,33-4,5
4-day	1.35	1,64	1.95	2.19	2.54	<b>2.80</b>	3.06	3.32	3.67	3.93
	(1.28-1.44)	:1 54-1.75	(1.83-2.97)	,2.08-2.33	(2.38-2.89)	(2.62-2.97)	:2.85-3.25+	3.38-3.54	13 38-3.93	3 80-4.56
~day	1.55 :1.48-1.88;	1.89 -1.78-2-92)	<b>2.23</b> 2 10-2 37	2.50 (2.36-2.85	<b>2,87</b> (2,70-3,03)	3,14 2,95-3 32;	<b>3.41</b> 3 19-3 60)	3.67 3 43-3 88	4.00 (3.72-4.25)	4.23



	STO	RM DRA	IN DETE	NTION	E	NSIGN
PROJECT TITLE:	1 1 0				PROJECT NUMBER:	
Preliminary Ca	lculation				DATE:	134A
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OWNER:					SHEET:	27/1/
					1 .	OF 1
DESIGNED BY:		CHECKED BY:	"	APPROVED BY:		
C. Hamer				J. Ford		
AREA	CALCUL					
		VIOUS AREA:		acres	runoff coeff. C:	0.90
		VIOUS AREA:	0.47	acres	runoff coeff. C:	0.15
		TOTAL AREA:	2.35	acres	WEIGHTED C:	0.75
RUNOF 25 Year Design	F CALCU	LATION	ΔΙΙ	owable Runoff	0.470884511	lofo
20 rear besig	iii Storiii			lowable runoff	0.470664511	ł - · · -
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Time (min)	[ CA (A arc = \]	Precipitation	Times (sec)			01 (83)
Time (min)	CA (Acres)	(in)	Time (sec)	Runoff (ft <sup>3</sup> )	(ft <sup>3</sup> )	Storage (ft <sup>3</sup> )
15	1.77	1.02	900	6,484	424	6,060
30	1.77	1.38	1,800	8,773	848	7,925
60	1.77	1.71	3,600	10,870	1,695	9,175
360	1.77	2.03	21,600	12,905	10,171	2,733
720		2.37	43,200	15,066	20,342	0
1440	1.77	2.38	86,400	15,130	40,684	0
				STORA	GE REQUIRED :	9,175
					ACRE-FT :	0.21



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 PROJECT NO.
 7434A

THE	STAND	ARD	IN	ENG	INFE	RING
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PROJECT: Onset Financial Office BY: J.
--

rd **DATE**: 6/8/2017

SUBJECT: \_\_\_\_\_ Detention Orifice CHKD. BY: DATE:

Equation:  $Q = CA\sqrt{2g(h_1 - h_2)}$ 

Where: for various shapes

Sharp Edged = 0.61 Rounded = 0.98 Short Tube = 0.8 Borda = 0.51  $\begin{array}{c|c}
 & \uparrow \\
 & h_1 \\
 & \downarrow \\
 & h_2 \\
 & \downarrow \\
 & h_3 \\
 & \downarrow \\
 & flow line
\end{array}$ 

Given Input Data:

Solve for Area or Diameter

 Flowrate, Q=
 0.9300 cfs

 Coefficient=
 0.6100

 Headwater, h=
 5.1000 ft

 Tailwater=
 0.0000 ft

Use 0.0 for free dischare condition

Computed Results:

 $\begin{array}{ccc} \text{Diameter} & 3.93 \text{ in} \\ \text{Area} & 12.11 \text{ in}^2 \\ \text{Velocity} & 11.05 \text{ fps} \end{array}$ 

