

**811** CALL BLUESTAKES @ 811 AT LEAST 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.  
Know what's below. Call before you dig.

**BENCHMARK**  
WEST 1/4 CORNER OF SECTION 23, TOWNSHIP 5 NORTH RANGE 1 WEST SALT LAKE BASE AND MERIDIAN  
ELEV = 4971.196'

**PROPERTY DESCRIPTION**  
ALL OF LOT 1 OF HIGHLAND BLUFF ESTATES SUBDIVISION, PART OF THE SOUTHWEST QUARTER CORNER OF SECTION 23, T. 5 N., R. 1 W., S.L.B. & M. WEBER COUNTY, UTAH

DATE \_\_\_\_\_ NAME \_\_\_\_\_  
License No. \_\_\_\_\_

**Detention Calculations (100-year storm)**

Basin Tributary Area	199,859 SF
Runoff coefficient C:	0.350
Release Rate	0.36 cfs/acre
Peak Release*	1,644 cfs

Time (min)	i(in/hr)	Cumulative Runoff to Basin (c.f.)	Net Allowed Basin** Discharge (c.f.)	Required Storage (c.f.)
5	7.37	3,551	493	3,057
10	5.60	5,396	986	4,409
15	4.63	6,692	1,480	5,212
30	3.12	9,018	2,959	6,059
60	1.93	11,157	5,918	5,239
120	1.12	12,950	11,837	1,113
180	0.77	13,337	17,755	(4,418)
360	0.43	14,915	35,510	(20,595)
720	0.27	18,661	71,021	(52,360)
1440	0.15	21,367	142,042	(120,675)
2880	0.09	25,529	284,083	(258,554)
Required Detention			6,059	
Provided Detention			9,801	

\*Peak release based on existing flow

**Study Summary Statistics**

Phase 1:

Area	C Value
Building Area	0.9
Total Hardscape	27.961
Landscaped Area	172.198
Total Area	199.859
Weighted Average C	0.254
Composite C	0.254

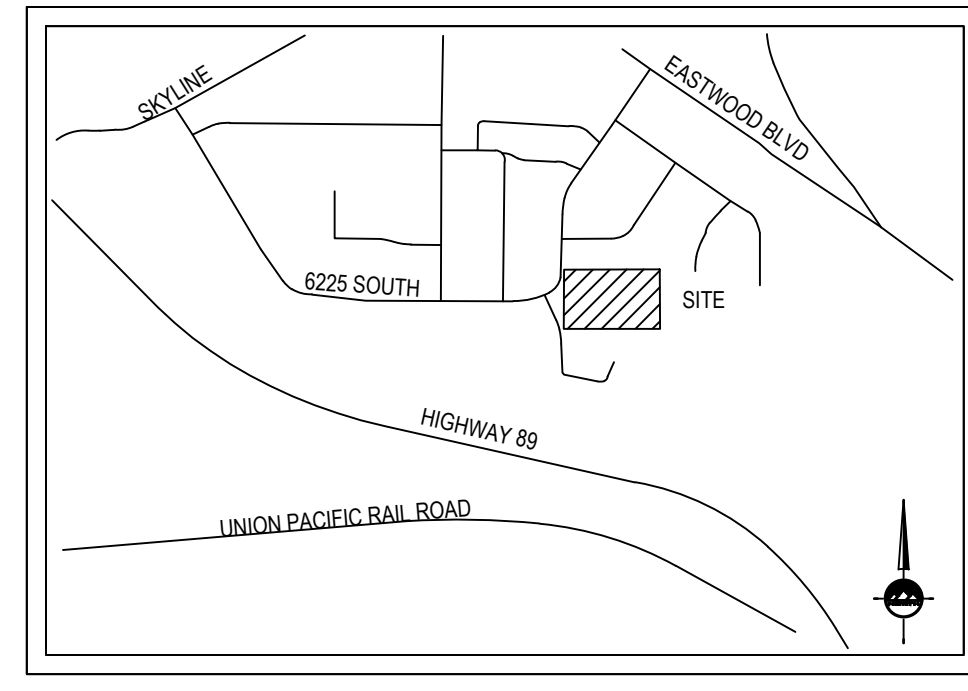
**Catchment Calculations (10-year storm)**

Time of Concentration: 15 min  
Rainfall Intensity I: 2.37 in/hr  
Manning's N: 0.013

Catchment	Area (SF)	C	Flow (CFS)	Destination
1	18,282	0.350	0.351	Offsite
2	76,334	0.350	1.466	SD-1
3	68,484	0.350	1.315	SD-1
4	19,532	0.350	0.375	Offsite
5	17,227	0.350	0.331	SD-2

**LEGEND**

- SECTION CORNER
- EXIST MONUMENT
- PRO MONUMENT
- EXIST REBAR AND CAP
- SET ENSIGN REBAR AND CAP
- EXIST WATER METER
- PRO WATER METER
- EXIST WATER MANHOLE
- PRO WATER MANHOLE
- EXIST WATER VALVE
- PRO WATER VALVE
- EXIST FIRE HYDRANT
- PRO FIRE HYDRANT
- EXIST SANITARY SEWER MANHOLE
- PRO SANITARY SEWER MANHOLE
- EXIST STORM DRAIN CLEAN OUT
- PRO STORM DRAIN CLEAN OUT
- EXIST STORM DRAIN CATCH BASIN
- PRO STORM DRAIN CATCH BASIN
- EXIST STORM DRAIN COMBO BOX
- PRO STORM DRAIN COMBO BOX
- MINOR CONTOURS 1' INCREMENT
- MAJOR CONTOURS 5' INCREMENT
- BUILDABLE AREA WITHIN SETBACKS
- PUBLIC DRAINAGE EASEMENT
- EXISTING 30" CURB AND GUTTER
- PROPOSED 30" CURB AND GUTTER
- EXIST FLOW LINE
- PRO FLOW LINE
- EXIST FENCE
- PRO FENCE
- EXIST EDGE OF ASPHALT
- PRO EDGE OF ASPHALT
- EXIST SANITARY SEWER
- PRO SANITARY SEWER LINE
- EXIST STORM DRAIN LINE
- PRO STORM DRAIN LINE
- EXIST WATER LINE
- PRO WATER LINE



**Without Bypass Flow**

**Orifice Calculations:  $Q=C_d A \sqrt{2gh}$**

High Water Elevation:	4,819.26 FT
Box Invert:	4,814.46 FT
Allowed Basin Discharge*	3.973 CFS
$C_d$ :	0.62
Orifice Area:	52.48 IN <sup>2</sup>
Orifice Diameter:	8.2 IN

\*2.329 cfs offsite peak release added to allowed basin discharge

**Pipe Design (10-year storm)**

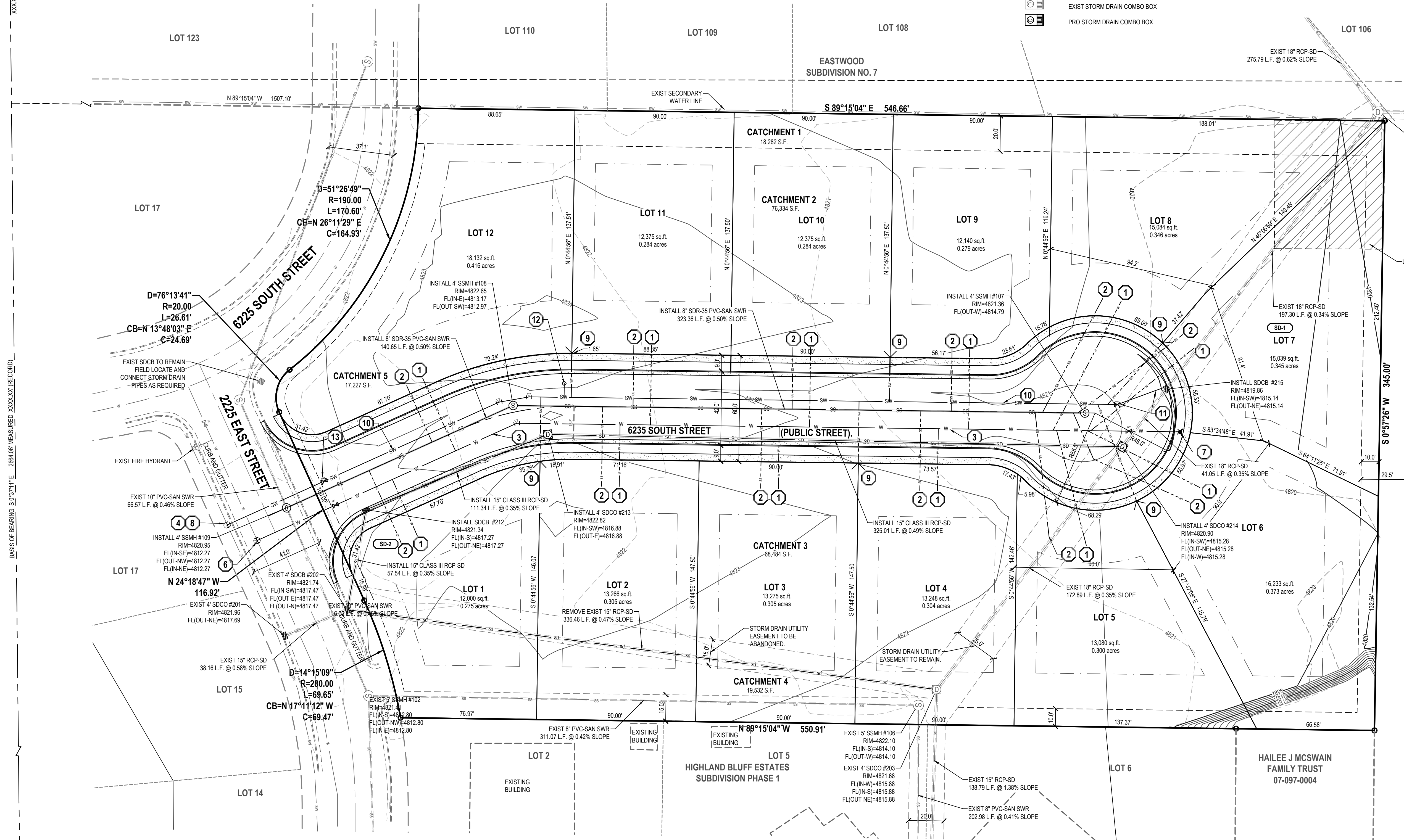
Manning's N (ADS): 0.011  
Manning's N (RCP): 0.013

Pipe	Tributary	Surface	Upstream	Pipe Flow Total	Pipe Diameter	Pipe Type	Full Flow	% of Full
SD-1	2.3	2.781	SD-2	3.111	18 RCP	6.231	49.9%	
SD-2	3	0.331	none	0.000	15 RCP	3.832	8.6%	

WEST QUARTER CORNER SECTION 23, TOWNSHIP 5 NORTH, RANGE 1 WEST, S.L.B. & M. (FOUND BRASS CAP MONUMENT)

**Offsite Existing Detention Calculations (100-year storm)**

Basin Tributary Area	507,238 SF
Runoff coefficient C:	0.350
Release Rate	0.20 cfs/acre
Peak Release*	2,329 cfs



- SCOPE OF WORK:**  
PROVIDE, INSTALL AND/OR CONSTRUCT THE FOLLOWING PER THE SPECIFICATIONS GIVEN OR REFERENCED, THE DETAILS NOTED, AND/OR AS SHOWN ON THE CONSTRUCTION DRAWINGS.
- 3/4" CULINARY WATER SERVICE W/ 3/4" WATER METER PER WEBER COUNTY STANDARDS.
  - 4" SDR-35 PVC SANITARY SEWER LATERAL @ 2.00% MINIMUM SLOPE.
  - 8" C900 PVC DR18 CULINARY WATERLINE PER WEBER COUNTY STANDARDS.
  - 6"x6"x6" TEE AND THRUST BLOCK.
  - 8" GATE VALVE.
  - FIELD LOCATE AND "HOT TAP" EXISTING CULINARY WATERLINE.
  - FIRE HYDRANT W/ VALVE COMPLETE PER APWA PLAN No. 511.
  - FIELD LOCATE AND CONNECT TO EXISTING SECONDARY WATERLINE PER WEBER BASIN WATER CONSERVANCY STANDARDS.
  - 1-1/2" DUAL TURNOUT SECONDARY WATER SERVICE PER WEBER BASIN WATER CONSERVANCY DISTRICT STANDARDS.
  - 8" C900 PVC DR14 SECONDARY WATERLINE PER WEBER BASIN WATER CONSERVANCY DISTRICT STANDARDS.
  - PLUG AND BLOCK END OF SWL WITH DRAIN TO EXISTING DRAINAGE DRAIN PER WEBER BASIN WATER CONSERVANCY DISTRICT STANDARDS.
  - AIR - VACUUM BREAKER PER WEBER BASIN WATER CONSERVANCY DISTRICT STANDARDS.
  - 8" GATE VALVE PER WEBER BASIN WATER CONSERVANCY DISTRICT STANDARDS.

**ENSIGN**  
THE STANDARD IN ENGINEERING

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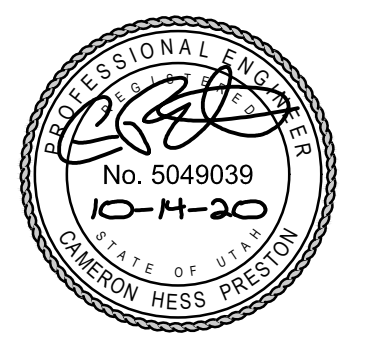
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FOR:  
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SANDY, UTAH 84092

CONTACT:  
CLIENT CONTACT  
PHONE: 801-000-0000

**HIGHLANDS BLUFF ESTATES SUBDIVISION**  
2225 EAST 6225 SOUTH  
WEBER COUNTY, UTAH



**PRELIMINARY PLAT**

PROJECT NUMBER: 9455  
PRINT DATE: 11/5/20  
DRAWN BY: JMOSS  
CHECKED BY: CPRESTON  
PROJECT MANAGER: CPRESTON

**1 OF 1**

