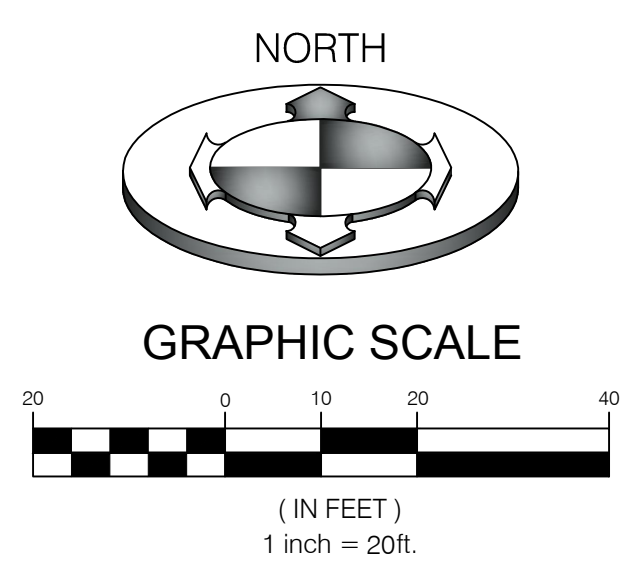


NOTE:
POTHOLE TO IDENTIFY ANY CONFLICTS BEFORE ANY PIPE INSTALLATION. CONTACT ENGINEER IF ANY CONFLICTS ARE IDENTIFIED.

NOTE:
PRIOR TO FABRICATION OR CONSTRUCTION, BEGIN AT THE LOW END OF ALL GRAVITY UTILITY LINES AND VERIFY THE INVERT ELEVATION OF THE POINT OF CONNECTION AND NOTIFY ENGINEER IF THIS POINT IS HIGHER THAN SHOWN ON THE PLANS FOR A REDESIGN.

NOTE:
PERC TEST FOUND 1.5 MIN/INCH. CALCULATIONS FOR RETENTION DISCHARGE RATE USED 10 MIN/INCH. ALL PONDS ARE GRADED TO OVERFLOW TO THE ROADWAY.



GRADING AND DRAINAGE KEY NOTES REFERENCE		
NO	DESCRIPTION	DETAIL
①	GRADE SITE TO ELEVATIONS SHOWN ON PLAN	

STORM DRAINAGE CALCULATIONS

Rational Method (Q=CIA)

Area Identification (A)	Rational Coefficient (C)	C*A
Roof = 3,032	0.9	2728.8 S.F.
Pavement = 0	0.9	0 S.F.
Landscaping = 3,218	0.2	643.6 S.F.
Sum: 6250 S.F.		Sum: 3372.4 S.F.

SANDY (10 YEAR STORM)					
Time (min)	Intensity (in/hr)	Rainfall (inches)	Rainfall Excess (cu.ft.)	Allowed Discharge (cu.ft.)	Volume to Detain (cu.ft.)
15	2.23	0.558	157	9	148
30	1.41	0.705	198	18	180
60	0.91	0.910	256	36	220
120	0.54	1.080	304	72	231
180	0.39	1.170	329	108	220

Detention Calculations
Pond Volume
 Pond 1 Civil 3D = 333 cf

Pipe Volume
 12 in. Pipe Length = 0 lf
 Volume = 0 cf

Is there adequate storage? Storage Provided = 333 cf
 Req. Storage = 231 cf **YES**

STORM DRAINAGE CALCULATIONS

Rational Method (Q=CIA)

Area Identification (A)	Rational Coefficient (C)	C*A
Roof = 4,528	0.9	4075.2 S.F.
Pavement = 0	0.9	0 S.F.
Landscaping = 4,677	0.2	935.4 S.F.
Sum: 9205 S.F.		Sum: 5010.6 S.F.

SANDY (10 YEAR STORM)					
Time (min)	Intensity (in/hr)	Rainfall (inches)	Rainfall Excess (cu.ft.)	Allowed Discharge (cu.ft.)	Volume to Detain (cu.ft.)
15	2.23	0.558	233	17	216
30	1.41	0.705	294	34	260
60	0.91	0.910	380	68	312
120	0.54	1.080	451	137	314
180	0.39	1.170	489	205	283

Detention Calculations
Pond Volume
 Pond 1 Civil 3D = 351 cf

Pipe Volume
 12 in. Pipe Length = 0 lf
 Volume = 0 cf

Is there adequate storage? Storage Provided = 351 cf
 Req. Storage = 314 cf **YES**

STORM DRAINAGE CALCULATIONS

Rational Method (Q=CIA)

Area Identification (A)	Rational Coefficient (C)	C*A
Roof = 4,296	0.9	3866.4 S.F.
Pavement = 0	0.9	0 S.F.
Landscaping = 4,445	0.2	889 S.F.
Sum: 8741 S.F.		Sum: 4755.4 S.F.

SANDY (10 YEAR STORM)					
Time (min)	Intensity (in/hr)	Rainfall (inches)	Rainfall Excess (cu.ft.)	Allowed Discharge (cu.ft.)	Volume to Detain (cu.ft.)
15	2.23	0.558	221	16	205
30	1.41	0.705	279	33	247
60	0.91	0.910	361	65	296
120	0.54	1.080	428	130	298
180	0.39	1.170	464	195	269

Detention Calculations
Pond Volume
 Pond 1 Civil 3D = 351 cf

Pipe Volume
 12 in. Pipe Length = 0 lf
 Volume = 0 cf

Is there adequate storage? Storage Provided = 351 cf
 Req. Storage = 298 cf **YES**

STORM DRAINAGE CALCULATIONS

Rational Method (Q=CIA)

Area Identification (A)	Rational Coefficient (C)	C*A
Roof = 2,926	0.9	2633.4 S.F.
Pavement = 0	0.9	0 S.F.
Landscaping = 2,926	0.2	585.2 S.F.
Sum: 5852 S.F.		Sum: 3218.6 S.F.

SANDY (10 YEAR STORM)					
Time (min)	Intensity (in/hr)	Rainfall (inches)	Rainfall Excess (cu.ft.)	Allowed Discharge (cu.ft.)	Volume to Detain (cu.ft.)
15	2.23	0.558	150	6	143
30	1.41	0.705	189	12	177
60	0.91	0.910	244	24	220
120	0.54	1.080	290	48	241
180	0.39	1.170	314	73	241

Detention Calculations
Pond Volume
 Pond 1 Civil 3D = 282 cf

Pipe Volume
 12 in. Pipe Length = 0 lf
 Volume = 0 cf

Is there adequate storage? Storage Provided = 282 cf
 Req. Storage = 241 cf **YES**

BENCHMARK:
 THE FOUND BRASS CAP IN THE INTERSECTION OF 8800 SOUTH AND 700 EAST STREETS.
 ELEVATION = 4512.72

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NO.	DATE	DESCRIPTION

SCALE MEASURES SHOWN ON ALL SIZE SHEETS
 AS SHOWN ACCORDING TO REQUESTED SIZE SHEETS

PROJECT NO. 1802023 SITE

DESIGNED BY: KAO
 CHECKED BY: LDM
 SURVEY DATE: 02/20/18
 DATE: 02/20/18
 FILE: 1802023_SITE

BENCHMARK
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 SANDY, UTAH

PROJECT NO. 1802023

**GRADING &
 DRAINAGE
 PLAN**

CGD.01
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