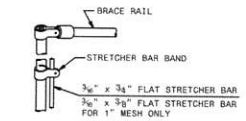
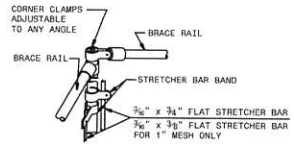
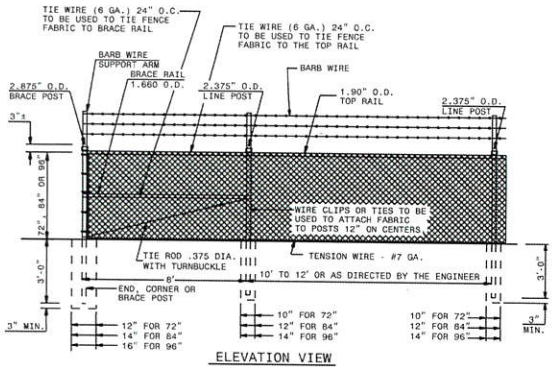


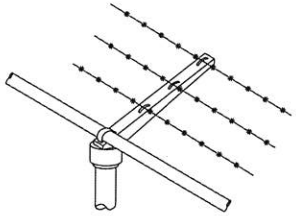

END, GATE OR BRACE POST
WITH STRETCHER BAR ATTACHMENT




CORNER WITH STRETCHER
BAR ATTACHMENT

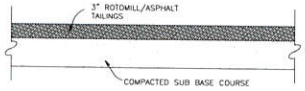



ELEVATION VIEW

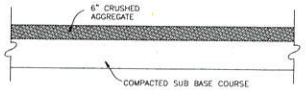


BARBED WIRE FENCE
SUPPORT ARM

Security Fence Detail
SCALE: NONE




Alternative Bid Detail
SCALE: NONE




Compacted Aggregate Detail
SCALE: NONE

## Storm Runoff Calculations

**Streamline RV & Boat Storage**

7/30/2020 TJH

The following runoff calculations are based on the Rainfall - Intensity - Duration Frequency Curve for the Ogden, UT area taken from the NOAA Atlas 14 database, using a 10-year storm for detentionrm water. Storm water runoff has been calculated for a fully developed site that combines the existing site and the new RV & Boat Storage and limited to a release rate of 0.1 cfs/acre.

The calculations are as follows:

**Drainage Area:**

| | | | |
|---|---|---|---|
| Total Area = | 4.03 acre or | 175,650 ft² | |
| Runoff Coefficients | | | |
| | Paved Area | 35,487 | C = 0.9 |
| | Roof | 25,030 | C = 0.9 |
| | Landscaped Area | 27,908 | C = 0.2 |
| | Gravel | 87,225 | C = 0.5 |
| Weighted Runoff Coefficient | | | C = 0.59 |

**Volume of Run-off for 10-year Storm Event:**

C = 0.59
I = See Below in/hr
A = 175650.00 ft²
Q(out) = 0.40 ft³/s (0.1 cfs per acre)

| time (min) | time (sec) | i (in./hr.) | Q (cfs) | Vol. in (cf) | Vol. out (cf) | Diffenance (cf) |
|---|---|---|---|---|---|---|
| 0 | 0 | 0.00 | 0.00 | 0 | 0 | 0 |
| 5 | 300 | 3.58 | 8.59 | 2577 | 121 | 2456 |
| 10 | 600 | 2.72 | 6.53 | 3916 | 242 | 3674 |
| 15 | 900 | 2.25 | 5.40 | 4859 | 363 | 4496 |
| 30 | 1800 | 1.51 | 3.62 | 6522 | 726 | 5796 |
| 60 | 3600 | 0.94 | 2.25 | 8094 | 1452 | 6642 |
| 120 | 7200 | 0.55 | 1.32 | 9485 | 2903 | 6582 |
| 180 | 10800 | 0.39 | 0.95 | 10210 | 4355 | 5855 |
| 360 | 21600 | 0.22 | 0.52 | 11195 | 8710 | 2485 |
| 720 | 43200 | 0.14 | 0.33 | 14201 | 17420 | -3218 |
| 1440 | 86400 | 0.10 | 0.23 | 20110 | 34840 | -14730 |

**Total required storage volume is 6642 cf**

**Orifice Sizing**

| | | | |
|---|---|---|---|
| Given: | Q = | 0.40 | cfs |
| | 2g = | 64.4 | ft/s² |
| | H = | 2.90 | ft |
| | Cd = | 0.62 | for circular openings |
| | R = | SQRT(Q/pi/(0.7*(64.4*H)^0.5)) | |
| | R = | 0.12 feet | |
| | | 1.48 inches | |
| | D = | 2.95 inches | |
| | A = | 6.86 inches ^2 | 0.0476 ft ^2 |

**Aboveground Basin Sizing**

| | |
|---|---|
| Length | 216 |
| Width | 25 |
| Depth | 2.9 |
| Top Area | 5400 |
| Bottom Area | 1509 |
| Average Area | 3455 |
| **Volume** | **10019 ft³** |

**SUMMARY:**

| | | |
|---|---|---|
| **The required storage volume is** | **6,642** | **cubic feet** |
| **Orifice size is** | **3.0** | **inches** |

NOTICE TO CONTRACTOR:
ON ALL SECTIONS, REFER TO THE SITE SPECIFIC GEOTECHNICAL REPORT, GEOTECHNICAL REPORT TO GOVERN & CONTROL.

HUNT ENGINEERING, LLC
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6619 Willow Creek Rd
Mountain Green, Utah 84050
PH (801) 664-4724

| No. | Revision/Issue | Date |
|---|---|---|
| | | |

PROFESSIONAL ENGINEER
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08.17.2020
STATE OF UTAH

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Civil Details

| | |
|---|---|
| Project No. #2018-25 | Date 7/21/2020 |
| | Scale 1" = 30' |
| Sheet No. C6 | |