

Storm Runoff Calculations Henry Flats Cluster Subdivision

11/18/2015 v.05
The following runoff calculations are based on the Rainfall - Intensity - Duration Frequency Curve for the Ogden Sugar Factory, UT area taken from data compiled by NOAA Atlas 14, using a 100 year storm.

Runoff storm water has been calculated for two different sets of conditions, one being the existing undeveloped land and the other with land fully improved. The difference between the two quantities will be detained in a holding pond. All water that runs off and over the property at present will be diverted into the holding pond and released at a reduced rate into the existing drainage system.

The calculations are as follows:

1. Runoff from the undeveloped existing land.

Acreage Q(out) = 0.2*ACRE A = 12.34 ACRES
2.47 CFS

2. Runoff from developed land

Runoff Coefficients
Paved Area 57619 C = 0.9
Landscaped Area 443973 C = 0.2
Roof 36000 C = 0.8

Weighted Runoff Coefficient C = 0.32

Rainfall Intensity i = varies with time
Runoff Quantity Q = CIA

3. Detention Basin

Volume in Q * t
Volume out 2.47 * t

The capacity of the detention basin is calculated as the maximum difference between the volume flowing in and the volume flowing out.

The outflow from the detention basin is limited to outflow if undeveloped.
Use 2.47 cfs for Q outflow

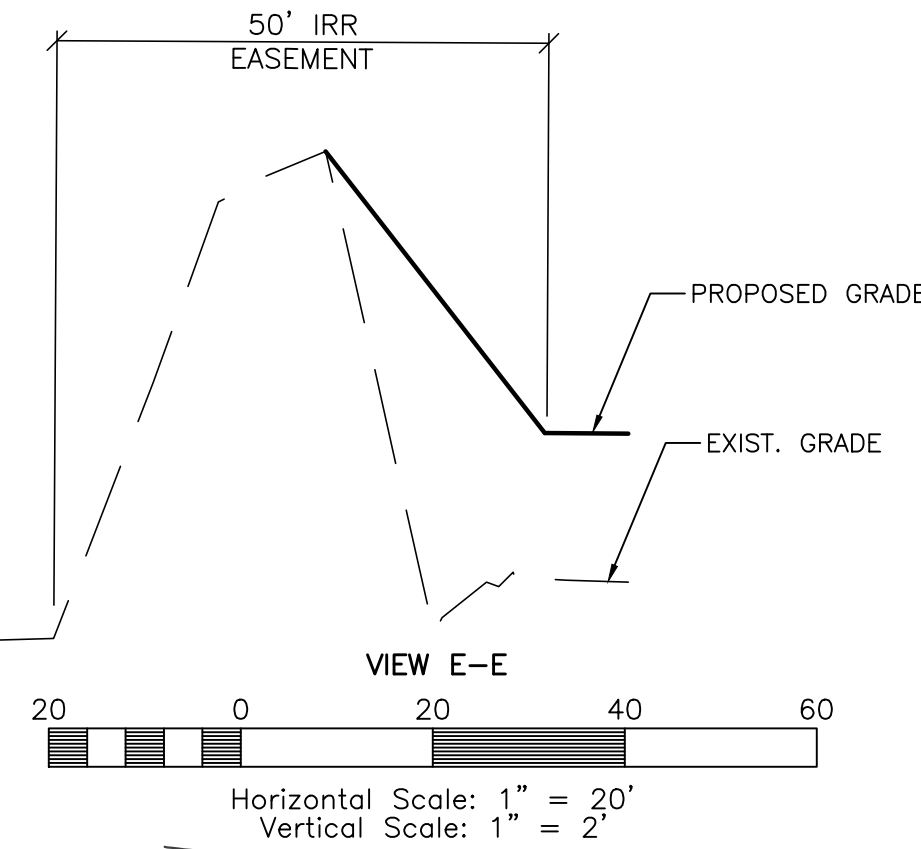
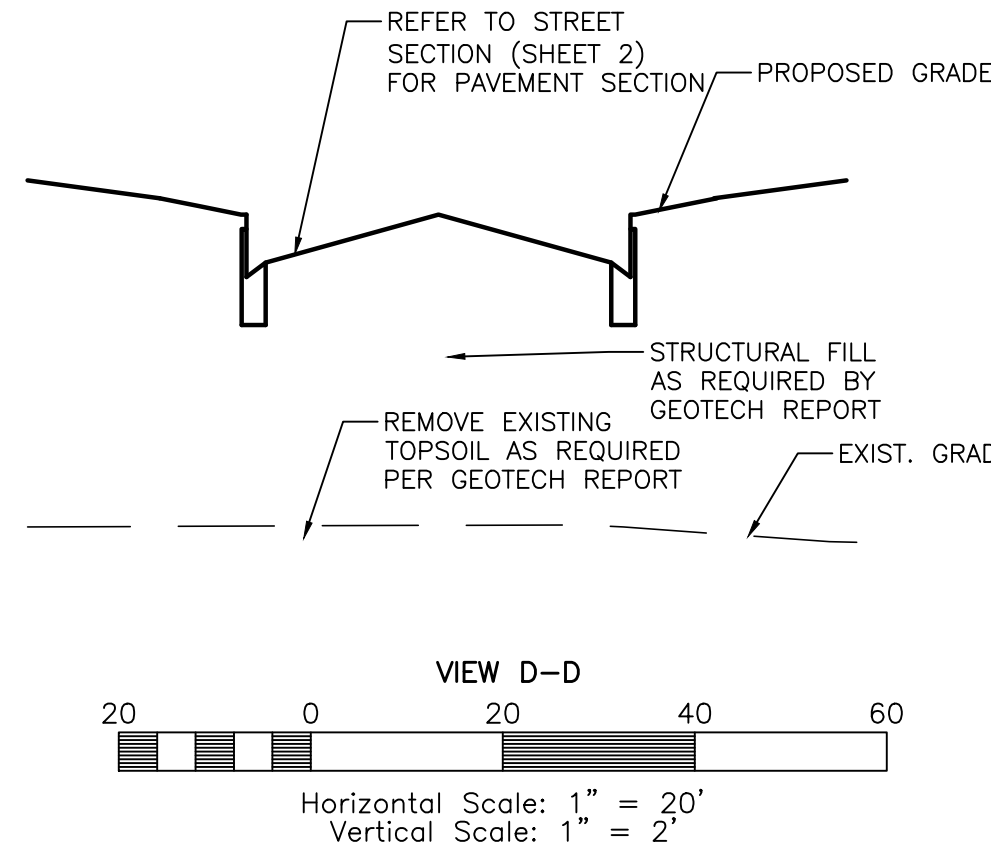
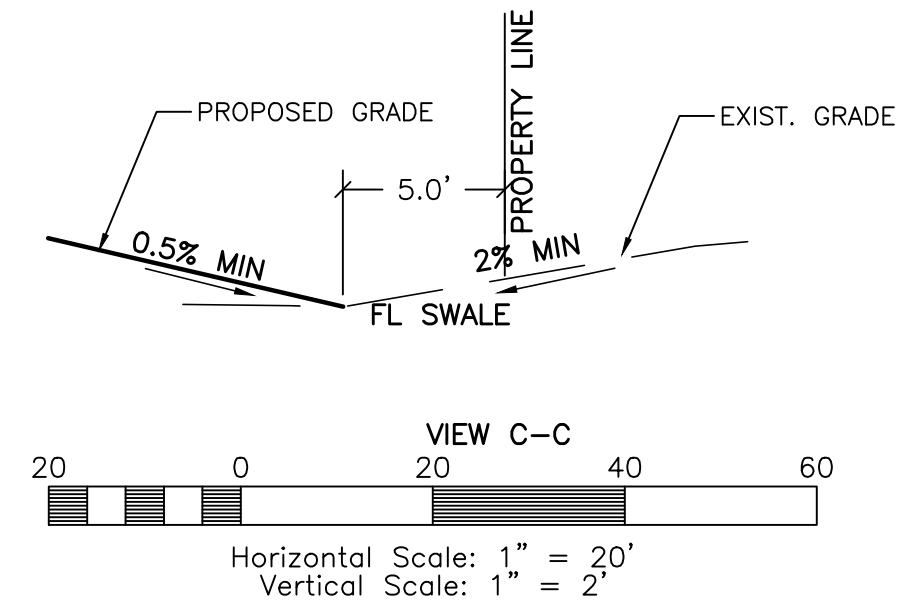
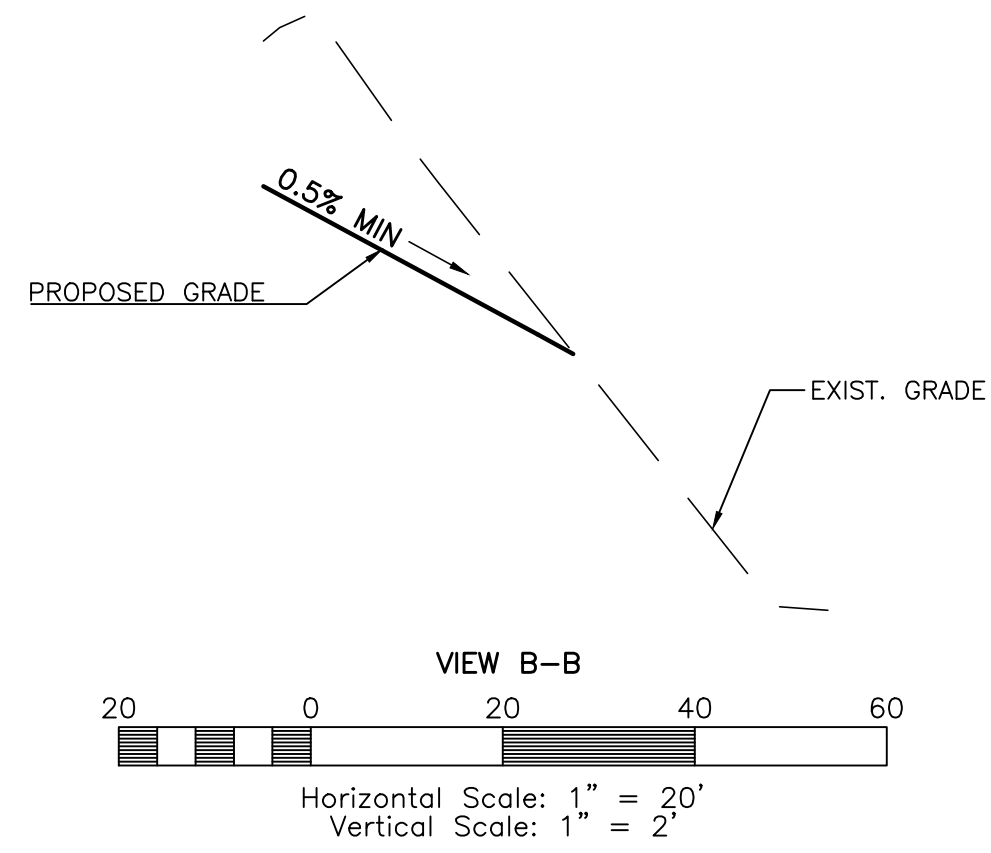
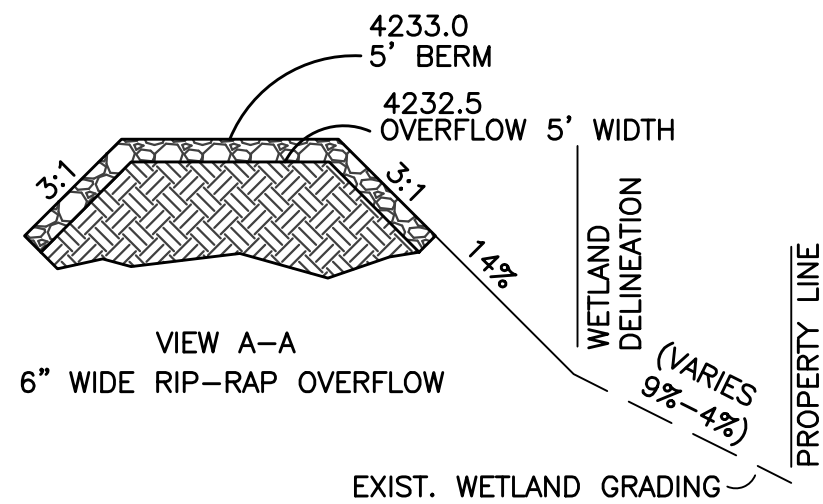
The required volume of the detention basin is 15,202 cubic feet

USE A 8.6 INCH DIAMETER ORIFICE AT OUTLET

REX B. HANCOCK
& W.F. SHARON
15-049-0011



Scale: 1" = 50'



| REVISIONS | DESCRIPTION |
|-----------|-------------|
| DATE | |



| | |
|----------------------|---------------------------------|
| Project Info. | |
| Engineer: | J. NATE REEVE |
| Drafter: | C. KINGSLEY |
| Begin Date: | NOVEMBER, 2015 |
| Name: | HENRY FLATS CLUSTER SUBDIVISION |
| Number: | 6272-01 |