

**WATER QUALITY CALCULATIONS:**

RAINFALL DEPTH, P: 0.75 IN.  
 DRAINAGE AREA, A: 13,100 SF (0.30 AC.)  
 IMPERVIOUS AREA: 8,700 SF (0.20 AC.)  
 IMPERVIOUS RATIO, I: 0.66  
 RUNOFF, C: 0.46  
 REQUIRED WATER QUALITY VOLUME, WQV: 0.0087 AC-FT (379 CF)

**SAND FILTER CALCULATIONS:**

WIDTH OF FILTER (Wf): = 3.42 FT  
 LENGTH OF FILTER (Lf): = 11.17 FT  
 DEPTH OF FILTER (df): = 1.42 FT  
 HYDRAULIC CONDUCTIVITY (K): = 3.5 FT/DAY  
 AVG HT OF HEAD ABOVE FILTER (hf): = 0.60 FT  
 DRAW DOWN TIME (tf): = 40 HOURS  
 REQUIRED FOOTPRINT OF FILTER MEDIA (Af):

$$A_f = \frac{WqV \times df}{K \times (hf + df) \times tf}$$

$$= 34.9 \text{ SF}$$

AVAILABLE FOOTPRINT = Wf x Lf x df  
 = 38.2 SF

**SEDIMENT TANK CALCULATIONS:**

WATER QUALITY VOLUME REQUIRED FOR SEDIMENTARY TANK:

$$V_s = 0.25 \times WQV$$

$$= 94.75 \text{ CF}$$

WATER QUALITY VOLUME PROVIDED IN SEDIMENT TANK ABOVE STATIC POOL:

$$V_s = 63 \text{ CF}$$

WATER QUALITY VOLUME PROVIDED ABOVE SAND FILTER:

$$V_s = 46 \text{ CF}$$

WATER QUALITY VOLUME PROVIDED IN PIPE STORAGE @ 1.20' HIGH AT 115' LONG:

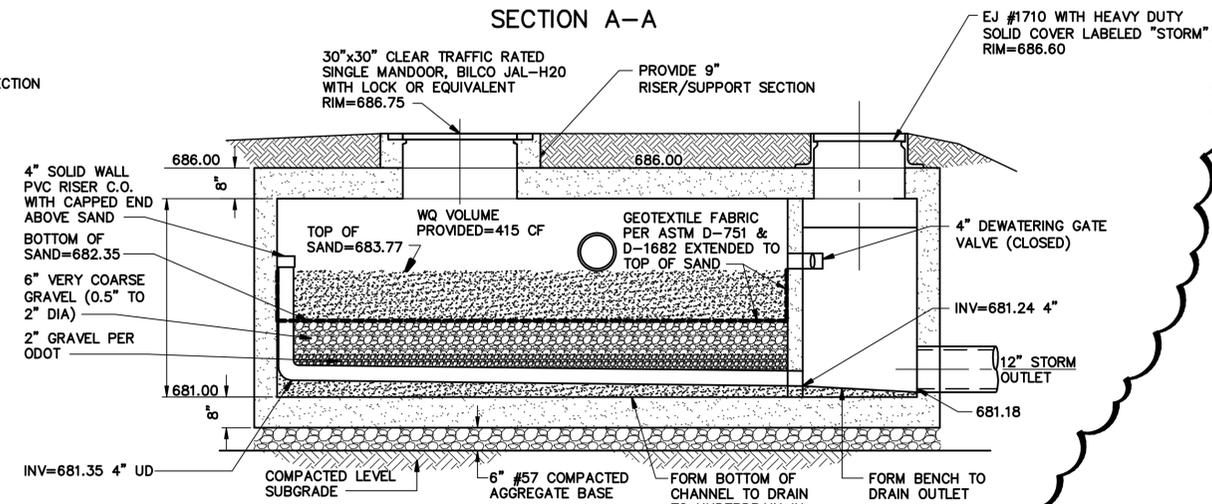
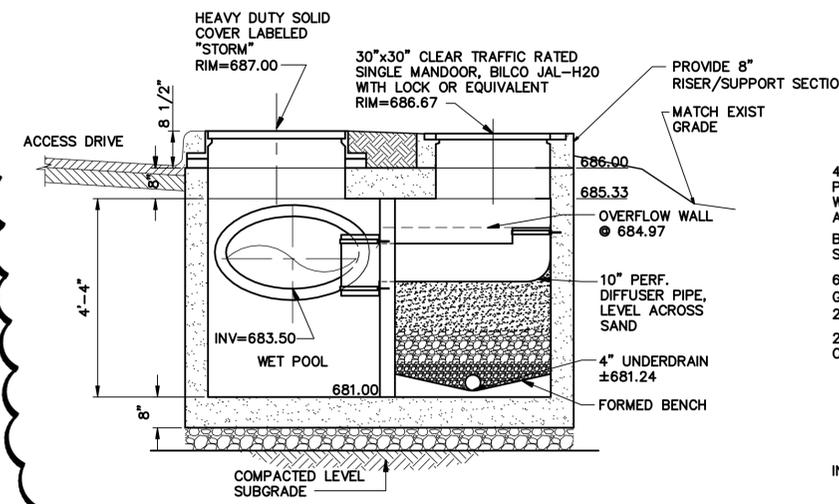
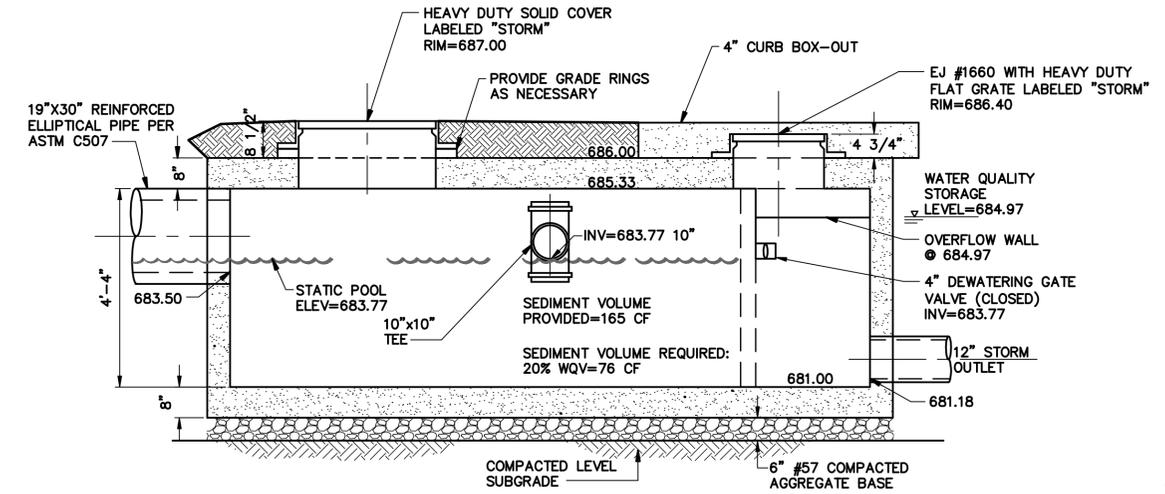
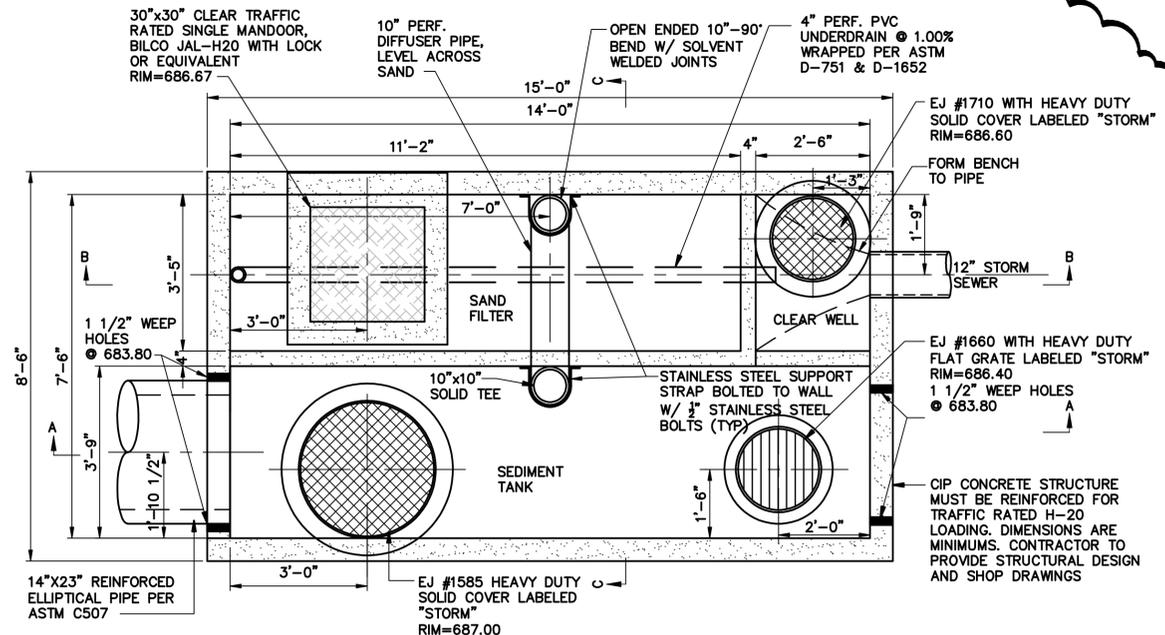
$$V_p = 306 \text{ CF}$$

19"x30" REINFORCED ELLIPTICAL PIPE



TOTAL WATER QUALITY VOLUME PROVIDED:

$$V_t = 63 + 46 + 306 = 415 \text{ CF}$$



SEDIMENT TANK AND SAND FILTER

DATE	DESCRIPTION
08-21-09	CCC
11-17-09	MODIFIED RIM ELEVATIONS
11-10-09	MISCELLANEOUS REVISIONS
11-04-09	BUILDING REVISIONS AND CITY COMMENTS
9-29-09	BLDG REVISIONS AND CITY COMMENTS
08-31-09	ORIGINAL ISSUE

DATE	BY	DESCRIPTION
08-21-09	CCC	CCC
09-21-09	SWPPP09	SWPPP09

KS Associates, Inc. 260 Burns Road, Suite 100 Elyria, OH 44035 P 440 365 4730 F 440 365 4790 www.ksassociates.com
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SWPPP NOTES AND DETAILS CITY CENTRE 2 PHASE 2 COUNTY OF LORAIN, STATE OF OHIO
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SHEET SW10 OF 29
JOB NO. 09217

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