

EROSION AND SEDIMENT CONTROL NOTES:

UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS IN THE ILLINOIS URBAN MANUAL, LATEST EDITION.

A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY BOONE COUNTY.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR SWEEPING PUBLIC & DEVELOPMENT STREETS WHEN DEBRIS HAS BEEN TRACKED AND/OR WASHED ON THEM. THE CONTRACTOR SHALL BE RESPONSIBLE TO SWEEP THE STREETS IF DIRECTED TO DO SO BY BOONE COUNTY. THE CONTRACTOR IS ALSO RESPONSIBLE TO CONTROL DUST ON THE SITE IN ACCORDANCE WITH PRACTICES IN THE ILLINOIS URBAN MANUAL.

ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AND STABILIZED PRIOR TO SITE CLEARING AND GRADING. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE MAINTAINED THROUGH THE DURATION OF THE PROJECT. ALL EROSION AND SEDIMENT CONTROL STRUCTURES SHALL BE INSPECTED WEEKLY AND AFTER EACH 1/2" RAINFALL EVENT AND AN INSPECTION RECORD SHALL BE MAINTAINED BY THE CONTRACTOR AT THE JOB SITE FOR THE DURATION OF THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM THESE INSPECTIONS AND TO MAINTAIN ALL EROSION AND SEDIMENT CONTROL DEVICES IN SUCH A MANNER THAT THEY CONTINUE TO FUNCTION FOR THE DURATION OF THEIR INTENDED USE. THE CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM ALL TEMPORARY SEEDING.

ALL DISTURBED AREAS SHALL BE STABILIZED WITH TEMPORARY SEEDING WITHIN 21 DAYS FOLLOWING THE END OF ACTIVE DISTURBANCE.

EROSION BLANKETS ARE TO BE INSTALLED ON ALL SLOPES STEEPER THAN 10%. IMMEDIATELY AFTER TOPSOILING, FERTILIZING, AND SEEDING ARE COMPLETE. EROSION BLANKETS WILL NOT BE REQUIRED IF SOIL IS USED. INSTALLATION OF EROSION BLANKETS SHALL BE ACCORDING TO THE RECOMMENDATIONS OF THE MANUFACTURER. EROSION BLANKETS SHALL BE INSPECTED PERIODICALLY AND AFTER EACH RAINFALL FOR DAMAGE OR DISPLACEMENT. DAMAGED OR DISPLACED EROSION BLANKETS SHALL BE REPAIRED OR REINSTALLED AS SOON AS POSSIBLE.

TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED VIA PERMANENT MEASURES. PERMANENT VEGETATION AND STRUCTURES SHALL BE INSTALLED AND FUNCTIONAL AS SOON AS PRACTICAL DURING DEVELOPMENT. PERMANENT SEEDING, SODDING, OR LANDSCAPING SHALL BE COMPLETED WITHIN 7 DAYS OF FINAL TOPSOIL RE-SPEAD.

ALL STOCKPILES ARE TO BE PLACED AT A LOCATION SPECIFIED BY THE ENGINEER. ALL STOCKPILES ARE TO BE PROTECTED BY SILT FENCE ALONG THE DOWN SLOPE SIDES OF THE STOCKPILE OR AROUND THE ENTIRE PERIMETER IF DIRECTED TO DO SO BY THE ENGINEER, BOONE COUNTY, OR THEIR REPRESENTATIVES. ANY STOCKPILES THAT WILL REMAIN UNDISTURBED FOR LONGER THAN THREE WEEKS SHALL BE PROTECTED BY TEMPORARY SEEDING. SOIL STORAGE PILES CONTAINING MORE THAN 10 CUBIC YARDS OF MATERIAL SHALL NOT BE LOCATED WITH A DOWN SLOPE DRAINAGE LENGTH OF LESS THAN 25 FEET TO A ROADWAY OR DRAINAGE CHANNEL. COST OF TEMPORARY SEEDING SHALL BE INCLUDED PRICE BID PER EROSION CONTROL LUMP SUM.

EROSION FABRIC IS NECESSARY FOR SILT TRAPS INSTALLED AT ALL STORM STRUCTURES WITH OPEN LIDS. ALL STORMWATER INLETS SHALL BE PROTECTED BY SILT TRAPS, STRAW BALE DIKES, EXCELSIOR LOGS, EROSION FABRIC, OR OTHER METHODS APPROVED BY BOONE COUNTY. AFTER EACH RAINFALL, EACH INLET SHALL BE INSPECTED. ANY INLET PROTECTION THAT HAS FAILED OR IS DAMAGED SHALL BE REPAIRED AS SOON AS POSSIBLE. SEDIMENT SHALL BE REMOVED AS NECESSARY TO PROVIDE FOR THE CONTINUED EFFECTIVENESS OF THE INLET PROTECTION TECHNIQUE IN USE.

DETECTION POND SPILLWAY CALCULATION

OFFSITE AREA TO SITE = 1.5 ACRES
 OFFSITE + SITE AREA = 6.371 ACRES
 C = 0.544
 I (30MIN) = 5.54 IN/HR

Q(a) = CIA = 19.20 c.f.s.

BROAD CRESTED WEIR SIZING

$$Q = C_s \cdot b \cdot H^{3/2}$$

$$b = Q / [C_s \cdot H^{3/2}]$$

Q(Allowable) = 19.20 c.f.s.
 C_s = 3.33 ft^{0.5}/sec
 Headwater = (Berm Elevation) - (Spillway Elevation) = 794.0-793.5 = 0.5 ft.

Solving for b: b = 16.31 ft

Design Width of Spillway = 17.00 feet

BOONE COUNTY ANIMAL

DETECTION POND CALCULATIONS FOR SITE

ITEM	TOTAL SF	"C"	C * A
TOTAL LOT AREA	212178		
BUILDING/PAVED AREA	90911	0.95	86365
GREEN AREA	121267	0.36	43656
NET C =	0.613		

ORIFICE SIZING

$$Q = C_d \cdot A \cdot \sqrt{2g \cdot H}$$

$$A = Q / [C_d \cdot \sqrt{2g \cdot H}]$$

Q(Allowable) = 19.20 c.f.s.
 C_d = 0.6
 Headwater = (Highwater Line) - (Centerline Elev of Outlet Pipe) = 793.5 - 790.45 = 3.05 ft.
 g = 32.2 ft/sec²

Solving for A: A = 0.12 sq. ft. = 3.14159 * r²
 Solve for r: r = 0.19 ft. = 2.30 inches
 d = 2 * r = 4.61 inches

USE 4" ORIFICE
 Q @ 4" PIPE = 0.73 CFS

DETECTION POND VOLUME SIZING

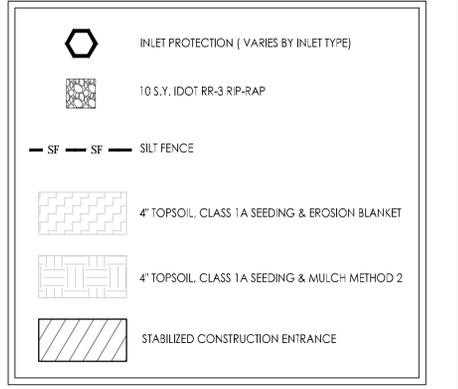
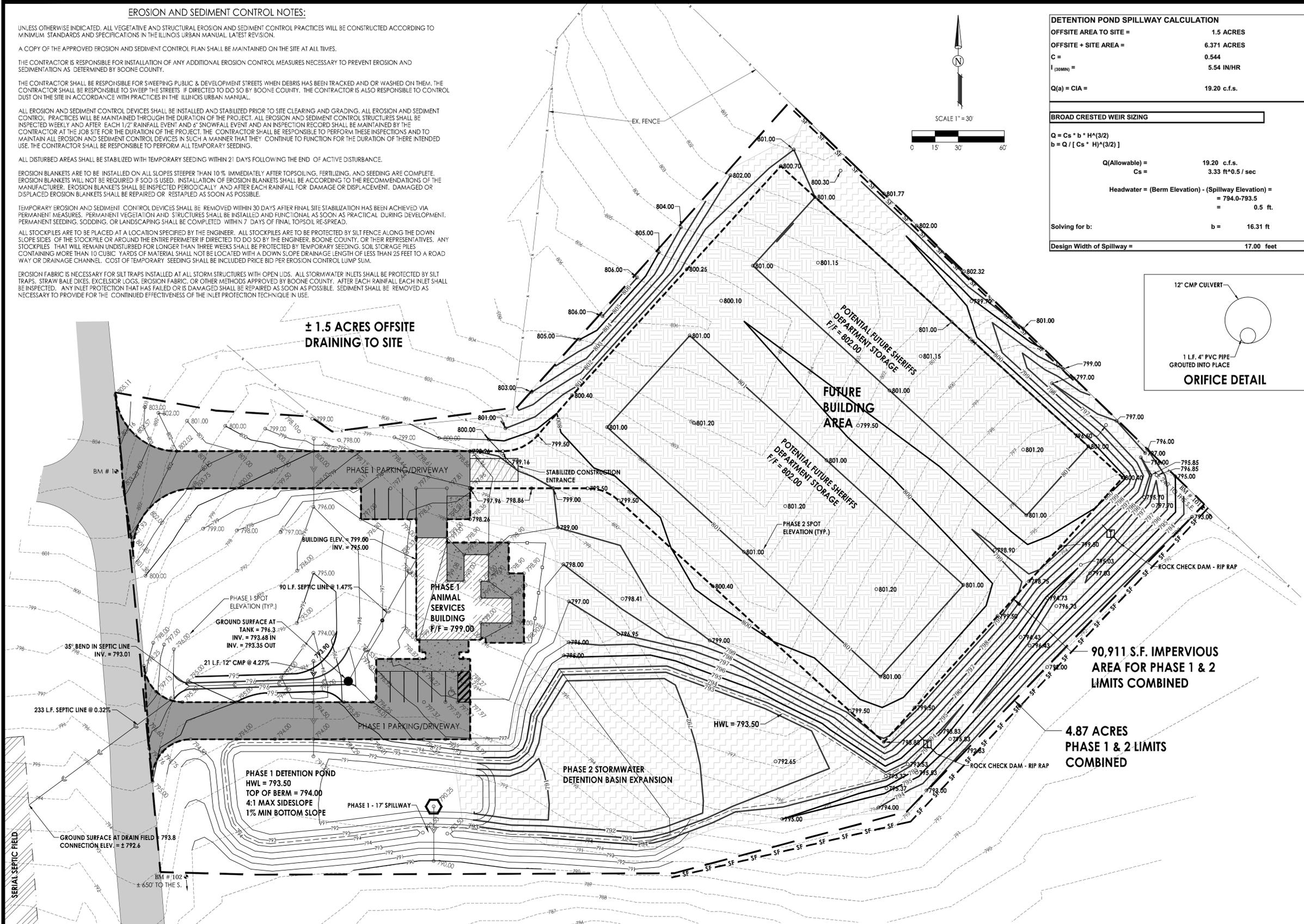
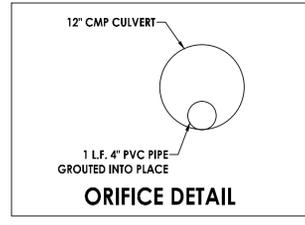
DURATION (HOURS)	100-YEAR INTENSITY (IN/HR)	C * X	INFLOW (CFS)	RELEASE ALLOWABLE (CFS)	STORAGE RATE (CFS)	REQ'D STORAGE (AC.FT.)
0.000	0.00	2.985	0	0.734	-0.73	0
0.167	0.72	2.985	29.91	0.734	29.28	0.395
0.333	0.90	2.985	29.60	0.734	18.66	0.547
0.500	0.94	2.985	16.54	0.734	15.80	0.823
0.666	4.60	2.985	13.73	0.734	13.00	0.715
0.833	4.00	2.985	11.94	0.734	11.21	0.771
1.000	3.31	2.985	10.48	0.734	9.74	0.805
1.500	2.70	2.985	8.06	0.734	7.33	0.906
2.000	2.24	2.985	6.69	0.734	5.95	0.984
3.000	1.62	2.985	4.84	0.734	4.10	1.077
4.000	1.30	2.985	3.88	0.734	3.15	1.040
5.000	1.10	2.985	3.28	0.734	2.55	1.054
6.000	0.97	2.985	2.90	0.734	2.16	1.072
7.000	0.85	2.985	2.54	0.734	1.80	1.043
24.000	0.307	2.985	0.92	0.734	0.18	0.362

MAX = 1.072 AC. FT.
 46889 CU. FT.

DETECTION POND CAPACITY USING FRUSTUM OF PYRAMID FORMULA

CONTOUR ELEV.	CONT. AREA SQ.FT.	ELEV. DIFF. FT.	INC. VOL. CU.FT.	CUM. VOL. CU.FT.
790.25	5	0.75	1212	1212
791.00	4891	1.00	10484	11696
792.00	17659	1.00	20254	37950
793.00	29700	1.00	29284	67234
793.50	29650	0.50	14081	47602
794.00	30284	0.50	14983	62785

Max Volume = 1.097 AC. FT.
 102% of Required Volume



Contours

Existing Minor _____
 Existing Major _____

Phase 1 Grading Minor _____
 Phase 1 Grading Major _____

Phase 2 Grading Minor _____
 Phase 2 Grading Major _____

CES CIVIL ENGINEERING SERVICES

700 WEST LOCUST ST., BELVIDERE, IL 61008
 (815) 517-8433 FAX: (815) 544-0421
 ILLINOIS DESIGN FIRM NO. 184-001260

Date: _____ Revision: _____ By: _____

Phase 2
 Boone County Animal Services & Adoption Center
 Grading & Stormwater Pollution Prevention Plan

CHECKED BY: KCB DATE: 10/7/15 DRAWN BY: JAB DATE: 10/7/15 SHEET 1 of 1
 3716_BASE SHERIFF BUILDING 2.dwg

CONFIRM DEPTH OF SEPTIC FIELD PRIOR TO CONSTRUCTION OF ANY SEPTIC LINES