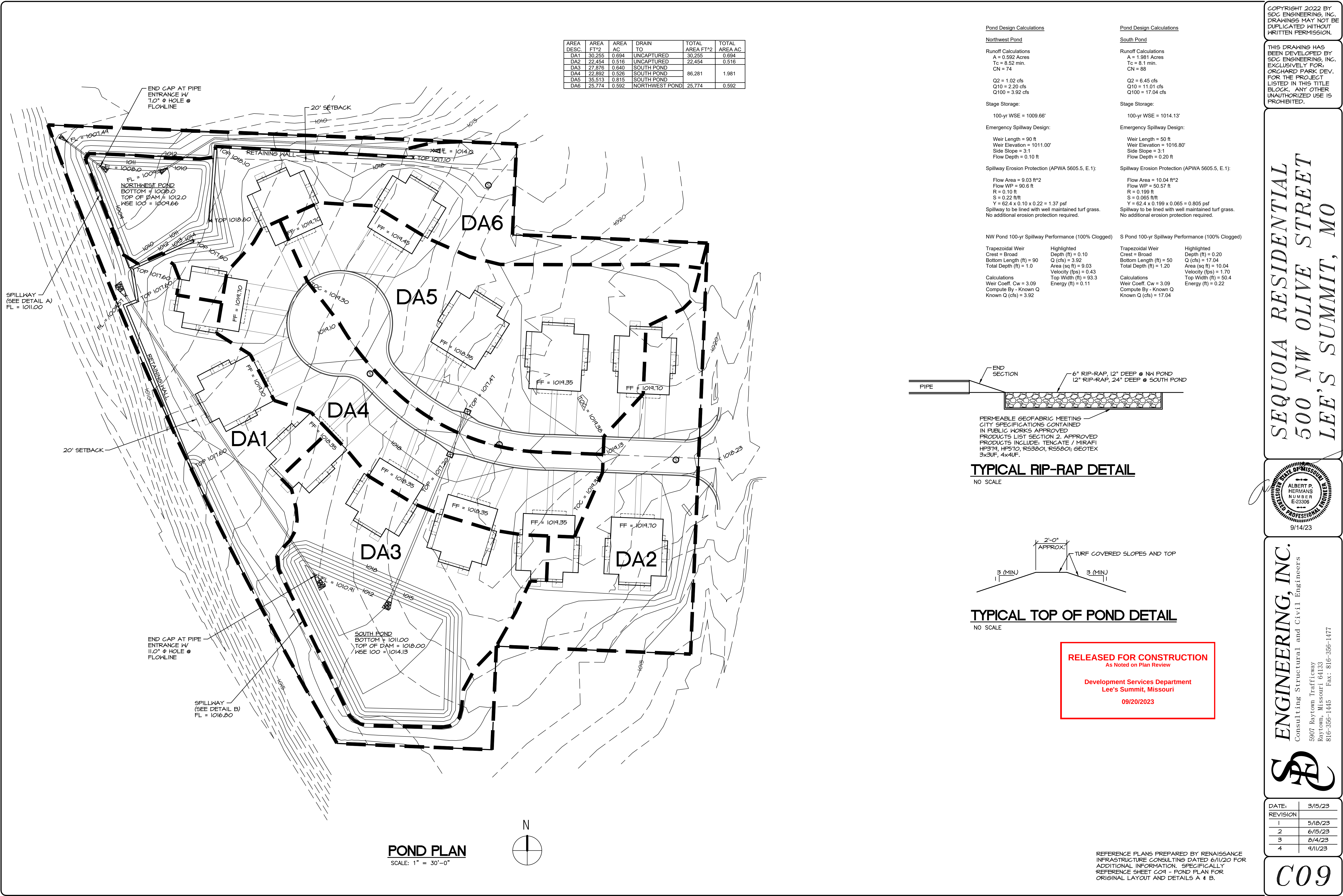




AREA DESC.	AREA FT^2	AREA AC	DRAIN TO	TOTAL AREA FT^2	TOTAL AREA AC
DA1	30.255	0.694	UNCAPTURED	30.255	0.694
DA2	22.454	0.516	UNCAPTURED	22.454	0.516
DA3	27.876	0.640	SOUTH POND		
DA4	22.892	0.526	SOUTH POND	86.281	1.981
DA5	35.513	0.815	SOUTH POND		
DA6	25.774	0.592	NORTHWEST POND	25.774	0.592

Pond Design Calculations

Northwest Pond

Runoff Calculations
A = 0.592 Acres
Tc = 8.52 min.
CN = 74

Q2 = 1.02 cfs
Q10 = 2.20 cfs
Q100 = 3.92 cfs

Stage Storage:

100-yr WSE = 1009.66'

Emergency Spillway Design:

Weir Length = 90 ft
Weir Elevation = 1011.00'
Side Slope = 3:1
Flow Depth = 0.10 ft

Spillway Erosion Protection (APWA 5605.5, E.1):

Flow Area = 9.03 ft^2
Flow WP = 90.6 ft
R = 0.10 ft
S = 0.22 ft/ft
Y = 62.4 x 0.10 x 0.22 = 1.37 psf
Spillway to be lined with well maintained turf grass.
No additional erosion protection required.

NW Pond 100-yr Spillway Performance (100% Clogged)

Trapezoidal Weir
Crest = Broad
Bottom Length (ft) = 90
Total Depth (ft) = 1.0

Calculations
Weir Coeff. Cw = 3.09
Compute By - Known Q
Known Q (cfs) = 3.92

Highlighted
Depth (ft) = 0.10
Q (cfs) = 3.92
Area (sq ft) = 9.03
Velocity (fps) = 0.43
Top Width (ft) = 93.3
Energy (ft) = 0.11

Pond Design Calculations

South Pond

Runoff Calculations
A = 1.981 Acres
Tc = 8.1 min.
CN = 88

Q2 = 6.45 cfs
Q10 = 11.01 cfs
Q100 = 17.04 cfs

Stage Storage:

100-yr WSE = 1014.13'

Emergency Spillway Design:

Weir Length = 50 ft
Weir Elevation = 1016.80'
Side Slope = 3:1
Flow Depth = 0.20 ft

Spillway Erosion Protection (APWA 5605.5, E.1):

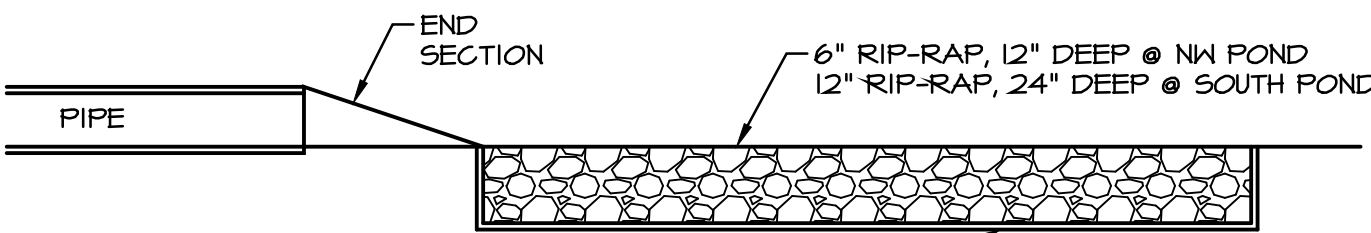
Flow Area = 10.04 ft^2
Flow WP = 50.57 ft
R = 0.199 ft
S = 0.065 ft/ft
Y = 62.4 x 0.199 x 0.065 = 0.805 psf
Spillway to be lined with well maintained turf grass.
No additional erosion protection required.

S Pond 100-yr Spillway Performance (100% Clogged)

Trapezoidal Weir
Crest = Broad
Bottom Length (ft) = 50
Total Depth (ft) = 1.20

Calculations
Weir Coeff. Cw = 3.09
Compute By - Known Q
Known Q (cfs) = 17.04

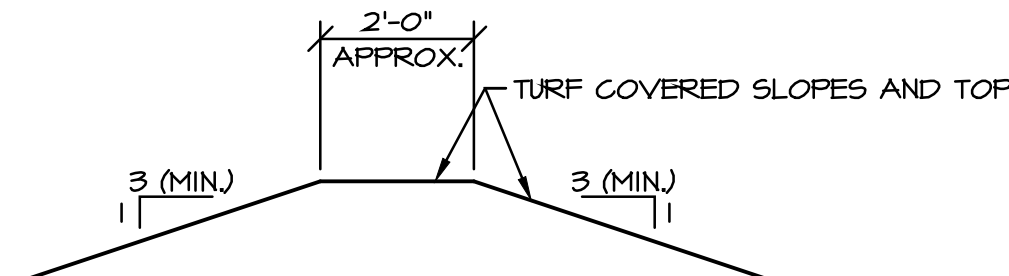
Highlighted
Depth (ft) = 0.20
Q (cfs) = 17.04
Area (sq ft) = 10.04
Velocity (fps) = 1.70
Top Width (ft) = 50.4
Energy (ft) = 0.22



PERMEABLE GEOFABRIC MEETING CITY SPECIFICATIONS CONTAINED IN PUBLIC WORKS APPROVED PRODUCTS LIST SECTION 2. APPROVED PRODUCTS INCLUDE: TENCATE / MIRAFI HP314, HP510, RS380I, RS580I; GEOTEX 3x3UF, 4x4UF.

TYPICAL RIP-RAP DETAIL

NO SCALE



TYPICAL TOP OF POND DETAIL

NO SCALE

RELEASED FOR CONSTRUCTION
As Noted on Plan Review

Development Services Department
Lee's Summit, Missouri

09/20/2023

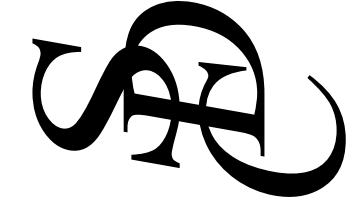
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LEE'S SUMMIT, MO



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816-356-1445 Fax: 816-356-1477



DATE:	3/15/23
REVISION	
1	5/18/23
2	6/15/23
3	8/4/23
4	9/11/23

C09

REFERENCE PLANS PREPARED BY RENAISSANCE INFRASTRUCTURE CONSULTING DATED 6/11/20 FOR ADDITIONAL INFORMATION. SPECIFICALLY REFERENCE SHEET C04 - POND PLAN FOR ORIGINAL LAYOUT AND DETAILS A & B.