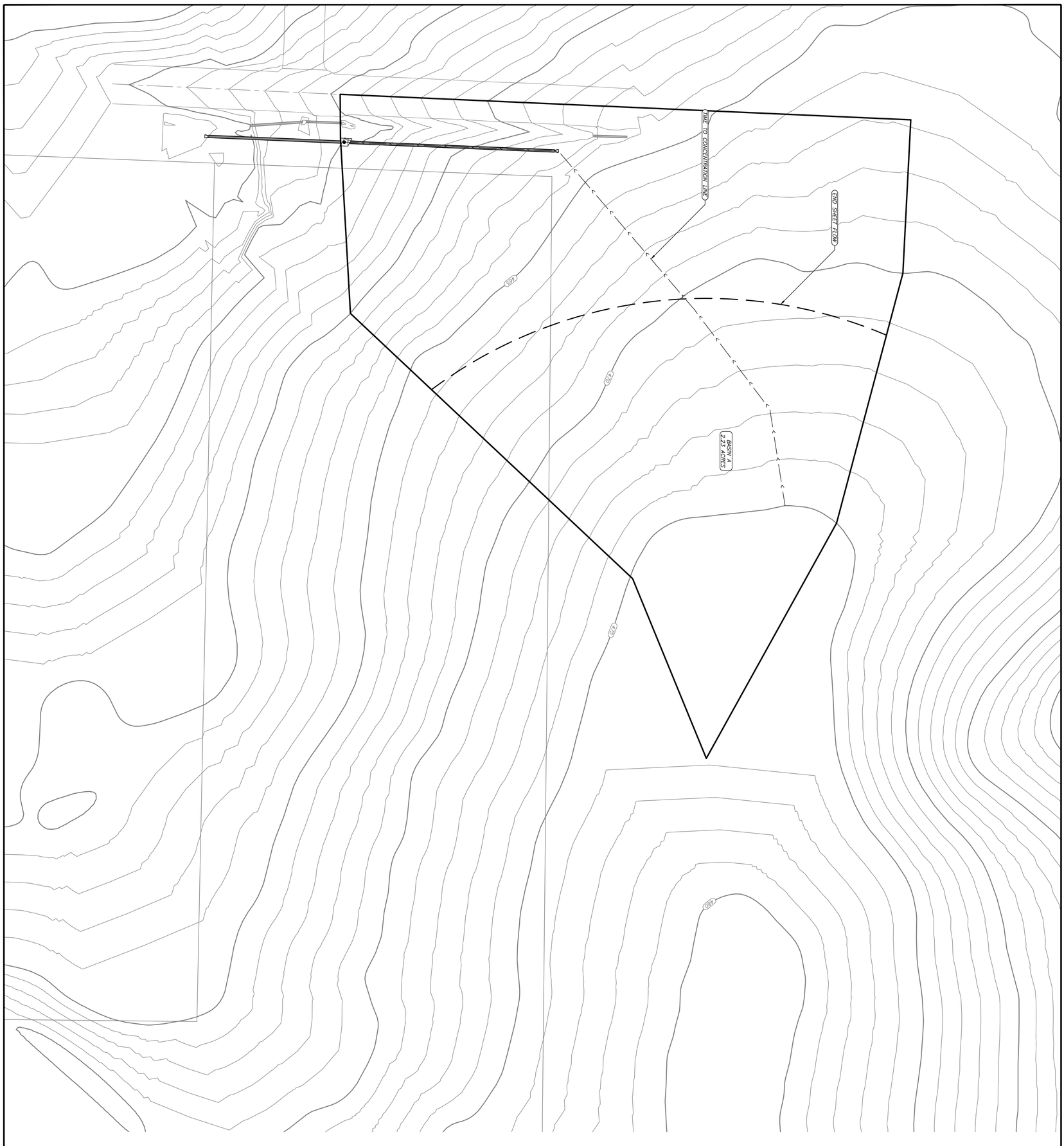


GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.
30 0 30 60 90

PROJECT #: 025-026	No. / Revisions / Date	Prepared For: STEPHEN NUCKOLS, 4910 SPRINGHILL RD, BRYANT,AR	STORM SEWER BASIN MAP CORNERSTONE MONTESSORI 4910 SPRINGHILL RD BRYANT, ARKANSAS
Scale: 1" = 30' Date: 8-20-2025			
Sheet: 1 of 1			

CERTIFICATE OF AUTHORIZATION
Richardson Engineering, PLLC
No. 2519
ARKANSAS

RICHARDSON ENGINEERING
Planning • Engineering • Development Consulting
325 W. SOUTH STREET, BENTON, AR 72015 (501)315-7225

RICHARDSON ENGINEERING
Planning ▪ Engineering ▪ Development Consulting

325 West South Street
Benton, AR 72015
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PROJECT Cornerstone Montessori DATE 9-4-25

Basin A

96,934 ft² ≈ 2.23 acres

18 inch Pipe Selected (1.5 ft)

TC = 20.46 min I = 6.08 in/hr

C = 0.40

Rational Method

$$Q = CIA$$

$$0.40(6.08 \text{ in/hr})\ 2.23 \text{ acres} = 5.42 \text{ cfs}$$

Minimum Pipe Diameter

$$D = \left[\frac{C_o\, Q\, n}{\sqrt{S}}\right]^{3/8}$$ (PE Civil Ref Handbook Version 2.0.2 pg 348)

C_o = 2.16 for USCS units Q = cfs n = manning roughness

S = slope (ft/ft) D = minimum pipe size in feet

$$\left[\frac{2.16\,(5.42 \text{ cfs})\,0.012}{\sqrt{0.0226}}\right]^{3/8} = 0.97 \text{ Feet} < 1.5 \text{ Feet}$$

minimum pipe selected pipe