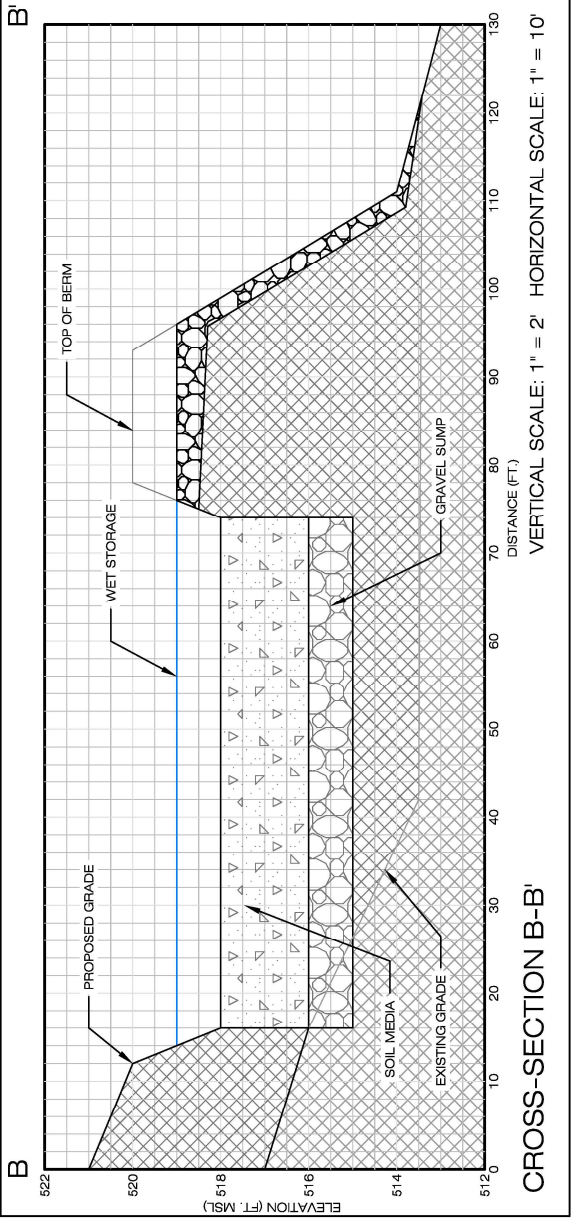
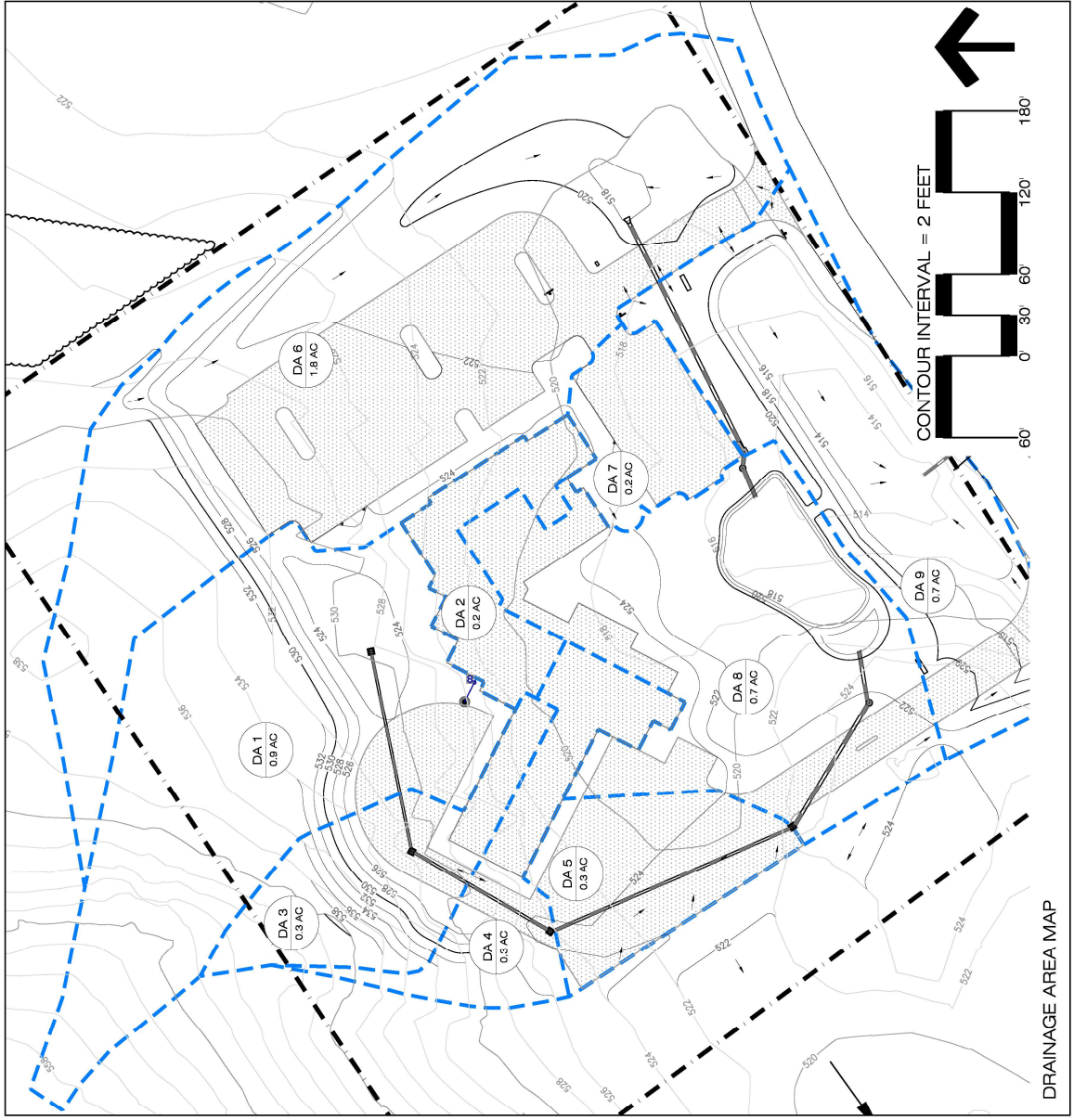


PROPOSED DRAINAGE AREA CHARACTERISTICS:
AREA = 4.67 ACRES
IMPERVIOUS ACREAGE = 1.90 ACRES
OPEN SPACE/ FOREST ACREAGE = 1.67 ACRES
MANAGED TURF ACREAGE = 1.10 ACRES
CURVE NUMBER: 83
TIME OF CONCENTRATION: 5 MINUTES
SITE CONDITIONS:
AREA = 6.7 ACRES
IMPERVIOUS ACREAGE = 1.95 ACRES
OPEN SPACE/ FOREST ACREAGE = 3.5 ACRES
MANAGED TURF ACREAGE = 1.25 ACRES

PHOSPHORUS REDUCTION CALCULATIONS:
POST DEVELOPMENT PHOSPHOROUS LOAD = 5.17 LB/YR
TOTAL LOAD REDUCTION REQUIRED = 2.42 LB/YR
RUNOFF REDUCTION BY PRACTICE = 2.972 C.F.
TOTAL LOAD REDUCTION BY PRACTICE = 2.56 LB/YR



SIZING CALCULATIONS, BIOPRETENTION LEVEL 1:
POST DEVELOPMENT BMP TREATMENT VOLUME REQUIRED BMP IV = 8,231 C.F.
SOIL MEDIA DEPTH = 24 IN
GRAVEL SUMP = 12 IN
WET STORAGE DEPTH = 12 IN
STORAGE DEPTH = DEPTH x VOID RATIO = (24x0.25)+(12x0.4)+(12x1) = 22.8 IN = 1.9 FT
BIOPRETENTION SURFACE AREA = TV/ STORAGE DEPTH = 4,345 S.F.
SURFACE AREA PROVIDED = 4,345 S.F.
TREATMENT VOLUME PROVIDED = 8,255 C.F.

SPILLWAY CALCULATIONS:
Q2 = 5.8 CFS, Q10 = 122 CFS
SLOPE = 33%
DIMENSIONS: BOTTOM WIDTH = 8 FT
SIDE SLOPES = 2:1
SHEAR STRESS = RH X SLOPE X SW WATER = 0.28 X 0.33 X 62.4 = 5.77 LB/SF
CLASS II RIPRAP FOR CHANNEL LINING

SMALTOWN, VIRGINIA	DEPARTMENT OF PUBLIC WORKS
SITE PLANNING DIVISION	EXERCISE 3
T&I COMMERCIAL DEVELOPMENT	DRAINAGE SCHEMATIC
DEQ TRAINING CASE STUDY	
APPROVED BY PUBLIC WORKS	BY
APPROVED	DATE
SCALE 1"=40'	DESIGNED BY: K. PROBST
CHECKED BY: J. SMITH	