Exercise 4 – Group Exercise

Given:

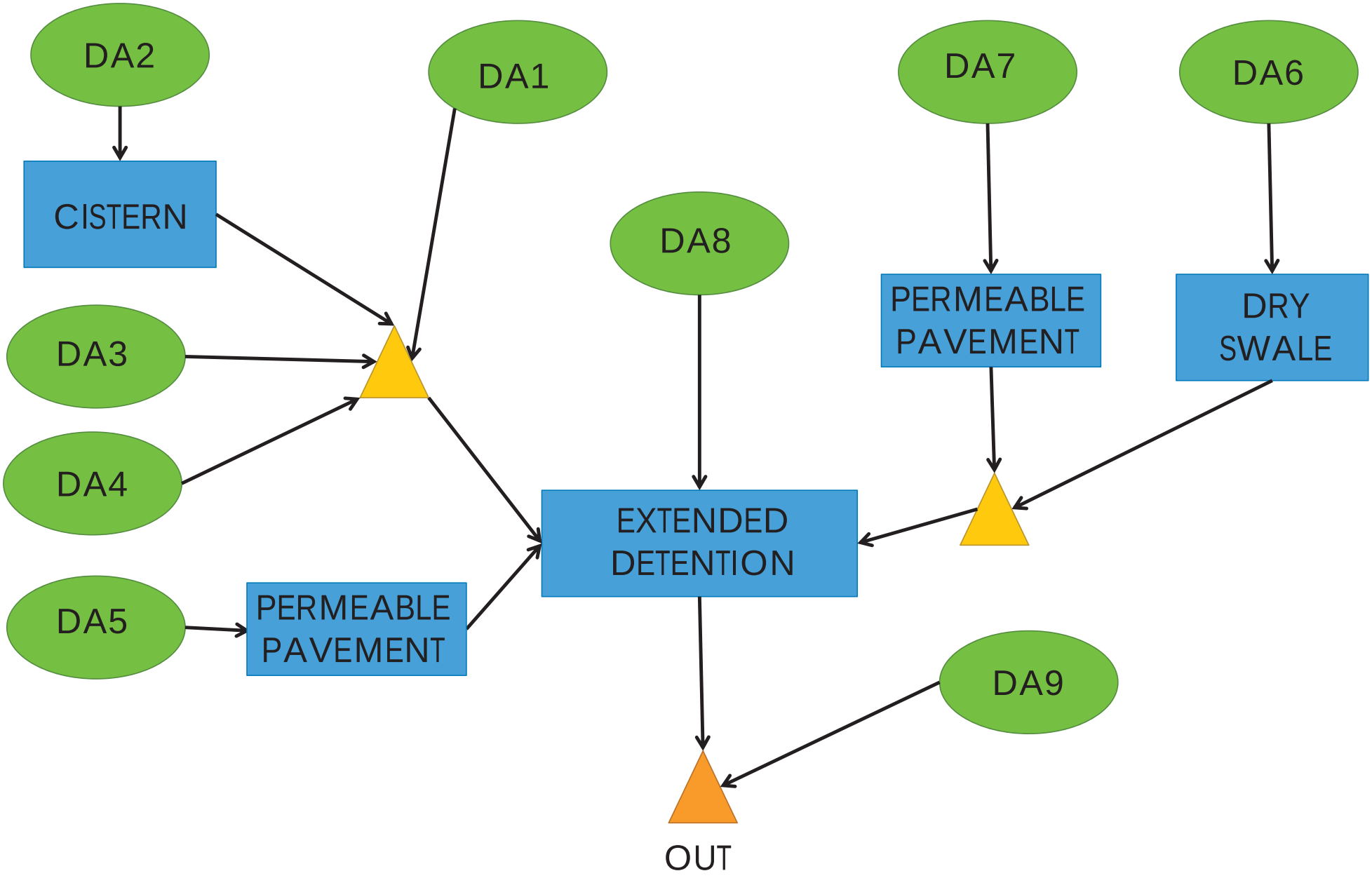
- The Drainage Schematic and Node Diagram Provided

Evaluate:

Can some drainage areas be grouped together? How?
How would you input the system into the Runoff Reduction Spreadsheet?
What is the total drainage area to BMP5 (Extended Detention)?
What is the Tv for BMP5 (reduced by upstream practices)?
Would the site satisfy the water quality requirements?

Helpful Hints:

1. *Use the skills you developed earlier.*
2. *Understand the difference between site area and drainage area data*
3. *Understand there are many different ways of entering a site drainage network into the spreadsheet*
4. *Use your time to do what you can. The instructor will walk through a solution following the group exercise.*


DA2
DA1
DA7
DA6
CISTERN
DA8
PERMEABLE PAVEMENT
DRY SWALE
DA3
DA4
EXTENDED DETENTION
DA5
PERMEABLE PAVEMENT
DA9
OUT

PROPOSED PROJECT AREA DATA:

PROJECT AREA	6.7 ACRES ±
OPEN SPACE (PROJECT LIMITS)	3.50 ACRES ±
MANAGED TURF (PROJECT LIMITS)	1.25 ACRES ±
IMPERVIOUS (PROJECT LIMITS)	1.95 ACRES ±
CURVE NUMBER	79

PROPOSED SITE DATA						
DA	AREA (AC)	TREATED IN DA?	TREATMENT	IMPERVIOUS AREA (AC)	OPEN SPACE (AC)	MANAGED TURF (AC)
1	0.9	NO	–	0.10	0.75	0.05
2	0.2	YES	CISTERN	0.20	0.00	0.00
3	0.3	NO	–	0.1	0.20	0.00
4	0.3	NO	–	0.15	0.07	0.05
5	0.3	YES	PERM . PAVEMENT	0.3	0.00	0.00
6	1.8	YES	DRY SWALE	0.65	0.65	0.50
7	0.2	YES	PERM. PAVEMENT	0.2	0.00	0.00
8	0.7	YES*	EXTENDED DETENTION	0.2	0.00	0.50
9	0.7	NO	–	0.05	0.46	0.15
TOTAL	5.4	–	–	1.95	2.13	1.25

NOTE: ASSUME 5 MINUTES FOR TIME OF CONCENTRATION FOR EACH WATERSHED. ASSUME ALL SOILS ARE "C."
*BIORETETNION IN DA 8 CAPTURES DRAINAGE FROM DA'S 1-7 AS WELL, THESE ADDITIONAL AREAS ARE NOT INCLUDED IN THE DA 8 AREA.

BMP LIST	
ID	TYPE
1	CISTERN
2	PERMEABLE PAVEMENT L1
3	DRY SWALE L2
4	PERMEABLE PAVEMENT L1
5	EXTENDED DETENTION L1

LEGEND:

- PROJECT LIMITS
- PROPOSED DRAINAGE AREA
- EXISTING CULVERT
- PROPOSED SITE BMP

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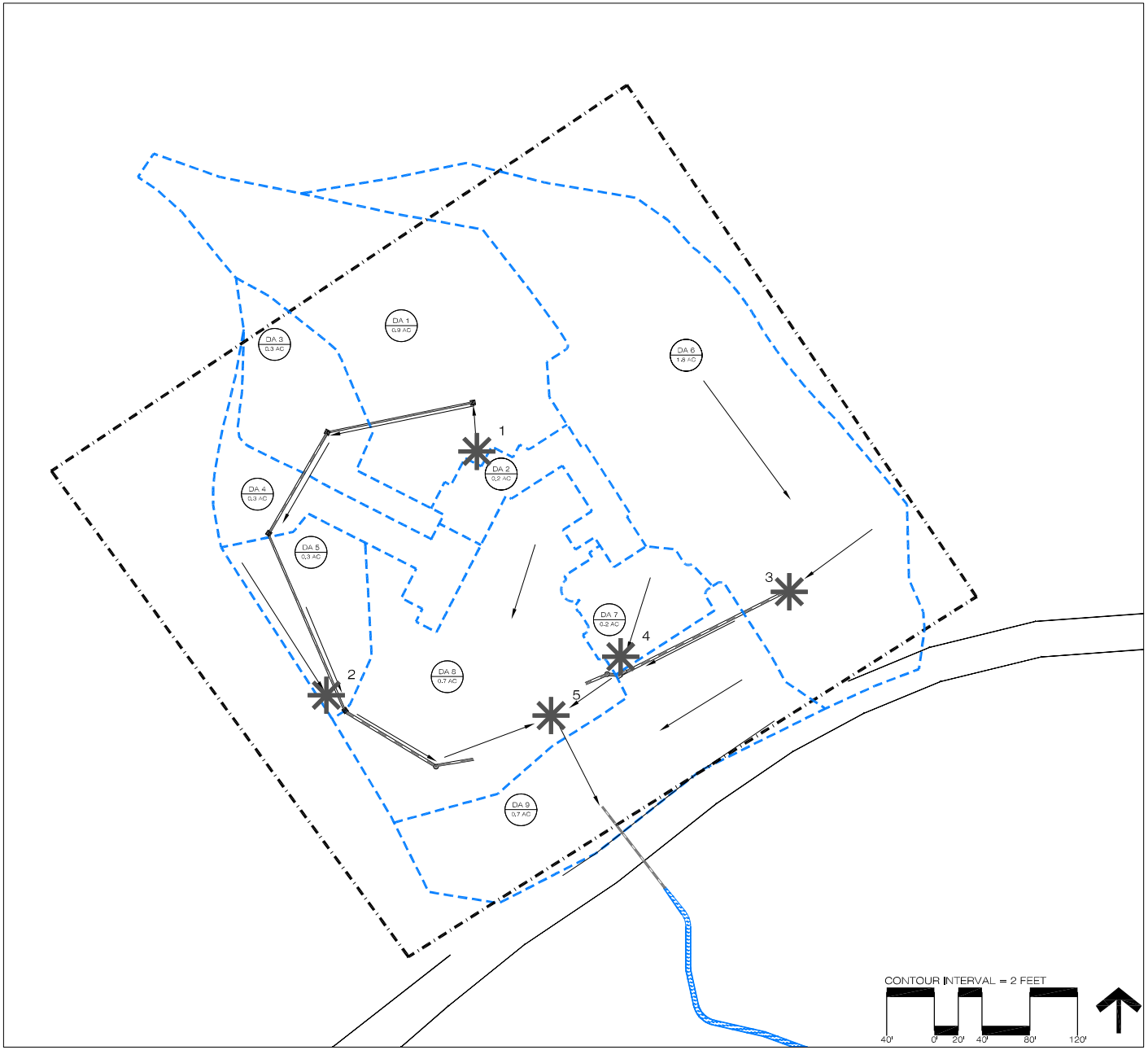

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

APRIL 2014

SMALLTOWN, VIRGINIA
DEPARTMENT OF PUBLIC WORKS AND ENVIRONMENTAL SERVICES

STORMWATER PLANNING DIVISION

T&L COMMERCIAL DEVELOPMENT
DRAINAGE SCHEMATIC

DEQ TRAINING CASE STUDY

REVISIONS	DESCRIPTION	BY	APPROVED	DATE
	APPROVED BY THE STORMWATER PLANNING DIVISION			

SCALE 1"=40'
DESIGNED BY: K PRIDPST
DRAFTED BY: K PRIDPST
CHECKED BY: J SMITH