Example summary storm water narrative for plan sheet – New connection to City system

The narrative is to be updated to be project specific, especially areas in yellow

STORM WATER NARRATIVE:

1. A NEW CONNECTION TO THE CITY STORM SEWER SYSTEM IS PROPOSED.
2. PROPOSED EARTH DISTURBANCE IS _____SF (_____ACRES.)
3. U-M NPDES PERMIT POST-CONSTRUCTION STORM WATER RAIN EVENT REQUIRES A MINIMUM USE OF THE RAIN DATA CONTAINED IN THE RAINFALL ATLAS OF THE MIDWEST, NOAA–1992. CALCULATIONS FOR THIS PROJECT *pick one* (ARE BASED ON THE RAINFALL ATLAS OR THE MIDWEST, NOAA-RAIN DATA) *or* (EXCEED THE PERMIT REQUIREMENT BY USING THE NOAA 2014 RAIN DATA)
4. EXISTING CONDITIONS STORM WATER SUMMARY (SEE SHEET CXX SUPPORTING CALCULATIONS):

   EXISTING DRAINAGE IS OVER LAND IN A NORTH AND WEST DIRECTION TOWARD THE NORTHWEST CORNER OF THE SITE. THE DRAINAGE FLOWS INTO THE RAILROAD DRAINAGE DITCH AND TO THE NORTH, WITH ULTIMATE DISCHARGE TO THE ALLENS CREEK DRAIN.

   EXISTING LAND USE SUMMARY

COVER TYPE	AREA (AC)	C	CN
GRAVEL PARKING	1.12	.85	85
OPEN SPACE (LAWN)	.88	.25	61
TOTAL	2.00	.59	74

   EXISTING RUNOFF VOLUME = 3,484 CF
   EXISTING PEAK RUNOFF RATE = 0.344 CFS
   (VOLUME AND RATE SHOWN FOR 2-YR/24-HR STORM PER U-M CALCS PROVIDED ON SHEET CXXX)

5. PROPOSED CONDITIONS STORM WATER SUMMARY (SEE SHEET CXX SUPPORTING CALCULATIONS):

   A NEW CONNECTION TO THE CITY STORM WATER SYSTEM IS PROPOSED. PROPOSED STORM DRAINAGE WILL BE DIRECTED INTO THE CITY'S STORM SEWER SYSTEM LOCATED IN THE NORTHEAST CORNER OF THE SITE BY CONNECTION TO THE EXISTING CITY STORM MAN HOLE. IN ACCORDANCE WITH U-M REQUIREMENTS, THE FIRST FLUSH VOLUME CALCULATED PER U-M NPDES PERMIT REQUIREMENTS WILL BE DISCHARGED THROUGH AND RETAINED IN AN INFILTRATION SYSTEM AT THE SOUTH END OF THE SITE. THIS FF VOLUME IS 6,647 CUBIC FEET AND EXCEEDS THE CITY'S FF REQUIREMENT OF 3,013 CF. WITH CITY FF REQUIREMENTS ACCOMMODATED WITHIN THE INFILTRATION SYSTEM, THE CITY'S DETENTION REQUIREMENTS WILL BE A TWO-STAGE SYSTEM, ACCOMMODATING THE BANKFULL AND DETENTION VOLUME REQUIREMENTS (LESS THE VOLUME ACCOMMODATED WITHIN THE INFILTRATION SYSTEM). THE PROPOSED STORM SYSTEM IS ROUTED THROUGH A TREATMENT UNIT AT THE NORTH END OF THE SITE PRIOR TO ENTERING THE UNDERGROUND DETENTION PIPING AND ULTIMATELY DISCHARGING INTO THE CITY STORM SEWER SYSTEM.

PROPOSED LAND USE SUMMARY

COVER TYPE	AREA (AC)	C	CN
PAVING/ROOF	1.12	.95	98
OPEN SPACE (LAWN)	.35	.25	61
TOTAL	2.00	.83	91

PROPOSED RUNOFF VOLUME = 10,091 CF
PROPOSED PEAK RUNOFF RATE = 0 CFS (INFILTRATION WITH NO DISCHARGE)
(VOLUME AND RATE SHOWN FOR 2 YR, 24-HR STORM PER U-M CALCS PROVIDED ON SHEET CXXX)

6. CHANNEL PROTECTION

U-M NPDES PERMIT
REQUIRED: 6,647 CF OF RETENTION
PROVIDED: 6,784 CF WILL BE PROVIDED WITHIN INFILTRATION CHAMBERS ON THE SOUTH END OF THE SITE
ELECTIVE: NOTE VOLUME AND LOCATION OF ANY ELECTIVE MEASAURES THAT EXCEED WHAT IS PROVIDED TO MEET REQUIRED VOLUME

CITY OF ANN ARBOR
REQUIRED:
100-YR DETENTION = 21,967 CF (SUBTRACT 6,784 CF OF RENTENTION PROVIDED) = 15,183 CF
BANKFULL FLOOD VOLUME = 13,558 CF (SUBTRACT 6,784 CF OF RENTENTION PROVIDED) = 6,774 CF
FIRST FLUSH (FF) VOLUME = 3,013 CF (SUBTRACT 6,784 CF OF RENTENTION PROVIDED) = NO FURTHER REQUIREMENTS
PEAK RUNOFF RATE = 0.30 CFS (0.15 CFS/ACRE FOR 2 ACRES)

PROVIDED:
RETENTION = 6,784 CF WILL BE PROVIDED WITHIN INFILTRATION CHAMBERS ON THE SOUTH END OF THE SITE
DETENTION = 15,168 CF WILL BE PROVIDED WITHIN DETENTION PIPING ON THE NORTH END OF THE SITE

ELECTIVE: ADDITIONAL NON-PERMIT REQUIRED INFILTRATION/DETENTION WILL BE PROVIDED WITHIN THREE INFILTRATION GARDENS LOCATED THROUGHOUT THE SITE, TREE WELLS ON THE EAST, AND A DETENTION POND ON THE NORTHWEST CORNER OF THE SITE. VOLUMES FOR THE 2 YEAR/24-HR STORM EVENT USING NOAA 2014 RAIN DATA FOR EACH ARE THE FOLLOWING:

Elective BMP #1, such as INFILTRATION GARDEN	XXXXX CF	INFILTRATION
Elective BMP #2 title	XXXXX CF	INFILTRATION
Elective BMP #3 title	XXXXX CF	INFILTRATION
Elective BMP #4 title	XXXXX CF	INFILTRATION
Elective BMP #5 title, such as DETENTION POND	XXXXX CF	DETENTION

7. MINIMUM TREATMENT VOLUME STANDARD – TSS REMOVAL

   THE MINUIMUM QUALITY TREATMENT IS DESIGNED TO REMOVE 80% OF THE TOTAL SUSPENDED SOLIDS (AS COMPARED TO UNCONTROLLED RUNOFF) FOR 90 % ANNUAL NON-EXCEEDENCE STORMS.

   REQUIRED: QUALITY TREATEMENT FOR ___CF OF WATER WITH ____ TIME OF CONCENTRATION AND PEAK DISCHARGE OF ___CFS.
   PROIVDED: TWO STORM WATER TREATMENT UNITS ARE PROPOSED AND WILL BE EITHER CONTECH CDS UNIT OR AQUASWIRL BY AQUASHIELD (MODEL TO BE DETERMINED). THE UNITS WILL BE SIZED TO MEET THE REMOVAL AND PEAK DISCHARGE FLOW CRITERIA.

8. THE PROJECT WILL BE DESIGNED TO MEET THE U-M POST CONSTRUCTION NPDES PERMIT if required (AND CITY or COUNTY STORM WATER) REQUIREMENTS.

9. CONSTRUCTION AND OPERATION OF THE STORM WATER INFILTRATION AND DETENTION POND (AND OTHER BMP'S) ARE IN COMPLIANCE WITH THE REQUIREMENTS OF STATE AND FEDERAL WATER POLLUTION CONTROL LAWS.