STORM WATER POLLUTION PREVENTION PLAN

PROJECT NAME AND LOCATION

BARREWOOD - Located in Section 20, T16N, R6W, Town of Barre, LaCrosse County, Wisconsin.

PROJECT DESCRIPTION AND CONSTRUCTION ACTIVITY

The project consists of construction of approximately 800 lineal feet of town road, including storm water drainage facilities and erosion control.

Soil disturbing activities will include: clearing and grubbing; installing perimeter and other erosion and sediment controls; excavation and grading for road and drainage facilities, construction and final site stabilization.

Detailed construction plans, grading plans, and project specifications are incorporated herein by reference.

Disturbances to the site will consist of approximately 2 acres, including grading of the road, ponds and drainage swales.

The Drainage Plan, delineates the project boundary, on-site and off-site tributary drainage areas, direction of flow for all pre-construction and post-construction storm water run-off drainage areas, impervious areas, and lot lines. Existing and final grades are detailed on the site grading plans for construction. The location and type of Best Management Practices (BMP) are also indicated on the construction plans.

POTENTIAL FOR DISCHARGE OF SEDIMENT AND/OR OTHER POLLUTANTS

Materials and substances listed below may be present on-site during construction and have the potential to be present in storm water run-off:

Concrete	Hydraulic Oil/Fluids	
Asphalt	Gasoline	Diesel Fuel
Pesticides	Kerosene	
Cleaning Solvents	Antifreeze/Coolant	
Fertilizers	Erosion	

BARREWOOD FINAL INPUT - InputData

Data file name: C:\Users\BERG\Desktop\BARREWOOD FINAL INPUT.mdb
WinSLAMM Version 10.1.0
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Date: 07-10-2014 Time: 21:54:57
Site information:

LU# 1 - Residential: Residential 1 Total area (ac): 36.300
1 - Roofs 1: 1.400 ac. Pitched Disconnected Normal Silty OD-CP#4
25 - Driveways 1: 0.400 ac. Connected Normal Silty OD-CP#5
37 - Streets 1: 1.300 ac. Intermediate Street Length = 0.766 curb-mi
Default St. Dirt Accum. Annual Winter Load = 2500 lbs OD-CP#6
51 - Small Landscaped Areas 1: 7.200 ac. Normal Silty
57 - Undeveloped Areas 1: 26.000 ac. Normal Silty OD-CP#7

LU# 2 - Other Urban: Other Urban 1 Total area (ac): 25.600
13 - Paved Parking 1: 0.600 ac. Disconnected Normal Silty OD-CP#8
45 - Large Landscaped Areas 1: 25.000 ac. Normal Silty OD-CP#9

LU# 3 - Residential: Residential 2 Total area (ac): 2.640
1 - Roofs 1: 0.270 ac. Pitched Disconnected Normal Silty
25 - Driveways 1: 0.130 ac. Connected Normal Silty
37 - Streets 1: 0.140 ac. Smooth Street Length = 0.089 curb-mi
Default St. Dirt Accum. Annual Winter Load = 2500 lbs
51 - Small Landscaped Areas 1: 2.100 ac. Normal Silty

LU# 4 - Residential: Residential 3 Total area (ac): 3.300
1 - Roofs 1: 0.350 ac. Pitched Disconnected Normal Silty
25 - Driveways 1: 0.150 ac. Connected Normal Silty
37 - Streets 1: 0.100 ac. Smooth Street Length = 0.063 curb-mi
Default St. Dirt Accum. Annual Winter Load = 2500 lbs
51 - Small Landscaped Areas 1: 2.700 ac. Normal Silty

LU# 5 - Residential: Residential 4 Total area (ac): 2.860
1 - Roofs 1: 0.270 ac. Pitched Disconnected Normal Silty
25 - Driveways 1: 0.130 ac. Connected Normal Silty
37 - Streets 1: 0.160 ac. Smooth Street Length = 0.102 curb-mi
Default St. Dirt Accum. Annual Winter Load = 2500 lbs
51 - Small Landscaped Areas 1: 2.300 ac. Normal Silty

LU# 6 - Residential: Residential 5 Total area (ac): 1.600
1 - Roofs 1: 0.350 ac. Pitched Disconnected Normal Silty
25 - Driveways 1: 0.150 ac. Connected Normal Silty
37 - Streets 1: 0.100 ac. Smooth Street Length = 0.063 curb-mi
Default St. Dirt Accum. Annual Winter Load = 2500 lbs
51 - Small Landscaped Areas 1: 1.000 ac. Normal Silty

Control Practice 1: Grass Swale CP# 1 (DS) - DS Grass Swales # 1
Total drainage area (acres)= 57.700
Fraction of drainage area served by swales (ac) = 1.00
Swale density (ft/ac) = 8.67
Total swale length (ft) = 500
Average swale length to outlet (ft)= 313
Typical bottom width (ft) = 6.0
Typical swale side slope (_H:1V) = 3.0
Typical longitudinal slope (ft.H/ft.V) = 0.010
Swale retardance factor: D
Typical grass height (in) = 6.0
Swale dynamic infiltration rate (in/hr)= 0.150
Typical swale depth (ft) for cost analysis (optional) = 3.0
Particle size distribution file name: Not needed - calculated by program
Use total swale length instead of swale density for infiltration calculations: True

Control Practice 2: Grass Swale CP# 2 (DS) - DS Grass Swales # 2
Total drainage area (acres)= 2.860
Fraction of drainage area served by swales (ac) = 1.00
Swale density (ft/ac) = 174.83
Total swale length (ft) = 500
Average swale length to outlet (ft)= 313
Typical bottom width (ft) = 6.0
Typical swale side slope (_H:1V) = 3.0
Typical longitudinal slope (ft.H/ft.V) = 0.010
Swale retardance factor: D
Typical grass height (in) = 0.0
Swale dynamic infiltration rate (in/hr)= 0.150
Typical swale depth (ft) for cost analysis (optional) = 2.0
Particle size distribution file name: Not needed - calculated by program
Use total swale length instead of swale density for infiltration calculations: True

Control Practice 3: Grass Swale CP# 3 (DS) - DS Grass Swales # 3
Total drainage area (acres)= 3.520
Fraction of drainage area served by swales (ac) = 1.00
Swale density (ft/ac) = 113.64
Total swale length (ft) = 400
Average swale length to outlet (ft)= 313
Typical bottom width (ft) = 6.0
Typical swale side slope (_H:1V) = 3.0
Typical longitudinal slope (ft.H/ft.V) = 0.010
Swale retardance factor: D
Typical grass height (in) = 0.0
Swale dynamic infiltration rate (in/hr)= 0.150
Typical swale depth (ft) for cost analysis (optional) = 2.0
Particle size distribution file name: Not needed - calculated by program
Use total swale length instead of swale density for infiltration calculations: True

Control Practice 4: Other Device CP# 1 (SA) - SA Device, LU# 1 ,SA# 1
Fraction of drainage area served by device (ac) = 1.00
Concentration reduction fraction = 1.00
Runoff volume reduction fraction = 0

Control Practice 5: Other Device CP# 2 (SA) - SA Device, LU# 1 ,SA# 25
Fraction of drainage area served by device (ac) = 1.00
Concentration reduction fraction = 1.00
Runoff volume reduction fraction = 0

Control Practice 6: Other Device CP# 3 (SA) - SA Device, LU# 1 ,SA# 37
Fraction of drainage area served by device (ac) = 1.00
Concentration reduction fraction = 1.00
Runoff volume reduction fraction = 0

Control Practice 7: Other Device CP# 4 (SA) - SA Device, LU# 1 ,SA# 57
Fraction of drainage area served by device (ac) = 1.00
Concentration reduction fraction = 1.00
Runoff volume reduction fraction = 0

Control Practice 8: Other Device CP# 5 (SA) - SA Device, LU# 2 ,SA# 13
Fraction of drainage area served by device (ac) = 1.00
Concentration reduction fraction = 1.00
Runoff volume reduction fraction = 0

Control Practice 9: Other Device CP# 6 (SA) - SA Device, LU# 2 ,SA# 45
Fraction of drainage area served by device (ac) = 1.00
Concentration reduction fraction = 1.00
Runoff volume reduction fraction = 0

Control Practice 10: Grass Swale CP# 4 (DS) - DS Grass Swales # 4
Total drainage area (acres)= 1.820
Fraction of drainage area served by swales (ac) = 1.00
Swale density (ft/ac) = 219.78
Total swale length (ft) = 400
Average swale length to outlet (ft)= 313
Typical bottom width (ft) = 6.0
Typical swale side slope (_H:1V) = 3.0
Typical longitudinal slope (ft.H/ft.V) = 0.010
Swale retardance factor: D
Typical grass height (in) = 6.0
Swale dynamic infiltration rate (in/hr)= 0.150
Typical swale depth (ft) for cost analysis (optional) = 2.0
Particle size distribution file name: Not needed - calculated by program
Use total swale length instead of swale density for infiltration calculations: True

Control Practice 11: Wet Detention Pond CP# 1 (DS) - DS Wet Pond # 1
Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft): 5
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered
Outlet Characteristics:
Outlet type: Orifice 1

BARREWOOD FINAL INPUT - InputData

1. Orifice diameter (ft): 36
2. Number of orifices: 2
3. Invert elevation above datum (ft): 6

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 50
2. Weir crest width (ft): 28
3. Height of weir opening (cfs): 1
4. Height from datum to bottom of weir opening: 10

Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.0200	0.00	0.00
2	1.00	0.0360	0.00	0.00
3	2.00	0.0530	0.00	0.00
4	3.00	0.0700	0.00	0.00
5	4.00	0.0900	0.00	0.00
6	5.00	0.1100	0.00	0.00
7	6.00	0.1800	0.00	0.00
8	7.00	0.2000	0.00	0.00
9	8.00	0.2300	0.00	0.00
10	9.00	0.2600	0.00	0.00
11	10.00	0.2900	0.00	0.00
12	11.00	0.3300	0.00	0.00

Control Practice 12: Grass Swale CP# 5 (DS) - DS Grass Swales # 5
Total drainage area (acres)= 65.900
Fraction of drainage area served by swales (ac) = 1.00
Swale density (ft/ac) = 2.28
Total swale length (ft) = 150
Average swale length to outlet (ft)= 150
Typical bottom width (ft) = 6.0
Typical swale side slope (_H:1V) = 3.0
Typical longitudinal slope (ft.H/ft.V) = 0.010
Swale retardance factor: D
Typical grass height (in) = 6.0
Swale dynamic infiltration rate (in/hr)= 0.150
Typical swale depth (ft) for cost analysis (optional) = 3.0
Particle size distribution file name: Not needed - calculated by program
Use total swale length instead of swale density for infiltration calculations: True

BARREWOOD FINAL INPUT - Output Summary

SLAMM for Windows Version 10.1.0

Data file name: C:\Users\BERG\Desktop\BARREWOOD FINAL INPUT.mdb
Data file description:
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Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
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Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Start of Winter Season: 12/02 End of Winter Season: 03/12
Model Run Start Date: 01/01/81 Model Run End Date: 12/31/81
Date of run: 07-10-2014 Time of run: 21:55:45
Total Area Modeled (acres): 72.300
Years in Model Run: 1.00

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Land Uses without Controls:	665938	-	156.6	6511	-
Outfall Total with Controls:	268655	59.66%	53.73	901.2	86.16%
Annualized Total After Outfall Controls:	269393			903.6	

STORM WATER POLLUTION PREVENTION PLAN – COORDINATOR AND DUTIES

The construction site Storm Water Pollution Prevention Plan (SWPPP) coordinator is the owner/developer or his designated representative.

The plan coordinators duties include the following:

- Implement the SWPPP.
- Oversee maintenance practices identified as BMP in the SWPPP.
- Implement and oversee training.
- Conduct or provide for inspection and monitoring activities.
- Identify other potential pollutant sources and make sure they are added to the plan by amendment.
- Identify any deficiencies in the SWPPP and make sure they are corrected.
- Ensure that any changes in the construction plans are addressed in the SWPPP.

The contractor and project engineer will aid in implementation of the SWPPP.

They will ensure that all housekeeping and monitoring procedures are implemented and that the integrity of the structural BMP is maintained.

The Town of Barre will be responsible for the long-term operation and maintenance of the road and storm water facilities upon completion, stabilization and acceptance.

BEST MANAGEMENT PRACTICES INSTALLATION SEQUENCE AND TIMING

Structural BMP will be coordinated with construction activities so the BMP is in place before construction begins. The general order of activities will be as follows:

1. Install temporary perimeter controls if needed (silt fence) prior to any clearing and grading.
2. Construct stabilized vehicle exit.
3. Install temporary controls if needed (silt fence) to delineate other areas not to be disturbed prior to beginning clearing and grading.
4. Clear and grub areas to be disturbed as necessary.
5. Stockpile topsoil and provide downslope temporary protection.
6. Grade road and adjoining storm water drainage facilities.

7. Stabilize disturbed areas and stockpiles with temporary erosion protection or permanent cover for exposed soil areas year-round per following table (maximum time an area can remain open when area is not being actively worked):

Exposed Area	Time
Stockpile	7 days
All other disturbed areas	14 days

8. Prepare and final grade road subgrade, apply aggregate base, install temporary erosion control protection where needed.
9. Complete grading and drainage swales. Install erosion control and permanent cover.
10. Complete road paving.
11. At completion of all construction activity and when site is stabilized, remove temporary perimeter controls. Reseed disturbed areas due to removal.

CONTROLS

EROSION PREVENTION AND SEDIMENT CONTROL BMP

Location and type of temporary and permanent erosion prevention and sediment control BMP's are included on the final plans and in the specifications, and include standard details or reference thereto.

Temporary Stabilization:

Topsoil stockpiles and disturbed portions of the project site, where construction activity temporarily ceases, shall be stabilized per Table in Item 7 under BMP Installation Sequence and Timing above. Temporary seed shall be rye (grain) applied at the rate of 200 pounds per acre. Prior to seeding, if the area is compacted or hardened, it must be loosened by disking, harrowing, or other means. After seeding, each area shall be mulched with 4,000 pounds per acre of straw mulch. Areas of the site that are to be paved will be temporarily stabilized by applying rock sub-base until bituminous pavement can be applied.

Permanent Stabilization:

Disturbed portions of the site, where construction activity permanently ceases, shall be stabilized with permanent seed as specified no later than the above referenced time table after the last construction activity. Prior to seeding, the area is to be fertilized as specified. After seeding, the area is to be mulched as specified and disk anchored if required.

STORM WATER MANAGEMENT

Storm water drainage will be conveyed by sheet flow and drainage swales. Disturbed areas not to be paved are to be permanently seeded. When construction is complete, stormwater will drain to ponding/infiltration areas as shown.

STORM WATER POLLUTION PREVENTION PLAN AMENDMENTS

Permittee(s) must amend this SWPPP as necessary to include additional requirements whenever:

- A change in design, construction, operation, maintenance, and weather or seasonal conditions has a significant effect on pollutant discharge to surface or underground waters.
- Inspections or investigations by contractor or agency officials indicate the SWPPP is not effective in eliminating or significantly minimizing pollutant discharge to surface waters or underground waters.
- SWPPP is not achieving objectives of controlling pollutant discharges, or is not consistent with this permit's terms and conditions.
- DNR, LaCrosse County or Town of Barre notification of non-compliance with above required control.

RECORD DETENTION

This SWPPP, all changes to it, and inspection and maintenance records must be kept at the site during construction by the contractor.

Owners must keep the SWPPP and the following additional records on file for three years after submittal of the Notification of Termination (NOT) at project completion:

- Any other permits required for the project.
- Records of all inspection and maintenance conducted during construction.
- All permanent operation and maintenance agreements that have been implemented, including right-of-way, contracts, covenants, and other binding requirements regarding perpetual maintenance.
- All required calculations for design of temporary and permanent Storm Water Management Systems.

WETLANDS

Wetlands are not present on the site.

CONSTRUCTION ACTIVITY REQUIREMENTS

The contractor must implement the requirements of this SWPPP, the General Permit and requirements stipulated by the Town of Barre and LaCrosse County, including the following requirements.

EROSION PREVENTION PRACTICES

- Plan and implement phasing and practices that minimize erosion. Appropriately delineate areas not to be disturbed before work begins.
- Provide temporary erosion protection or permanent cover within the allowable time frame.
- Wetted perimeter of drainage swales to be stabilized within 24 hours of connection to surface water.

SEDIMENT CONTROL PRACTICES

- Minimize sediment from entering surface waters.
- Establish control measures on down gradient perimeters before any upgradient activities begin.
- Sediment control practice may be adjusted to accommodate short-term activity, but must be installed immediately thereafter and prior to next precipitation event.
- Temporary soil stockpiles must have silt fence or other effective sediment controls.
- Minimize vehicle tracking from site. Sweep street if BMP not adequate.

INSPECTIONS AND MAINTENANCE

- Contractor must inspect the site once every seven days during active construction, and within 24 hours after a rainfall event greater than 0.5 inches in 24 hours.
- All inspections and maintenance must be recorded in writing and records retained to include:
    - Day and time of inspection.
    - Name of person(s) conducting inspection.
    - Findings, including corrective action recommendations.
    - Corrective actions taken (dates, times, party completing activities).

- Date and amount of rainfall events greater than 0.5 inch in 24 hours.
- Documentation of changes to SWPPP

- Inspection of parts of the site that have had final stabilization may be reduced to once a month.
- All erosion prevention and sediment control BMP must be inspected for integrity and effectiveness. Non-functional BMP must be repaired, replaced, or supplemented with functional BMP's.
- Contractor must comply with the following:
    a. All silt fences must be repaired, replaced, or supplemented when non-functional or sediment reaches 1/3 the height of the fence within 24 hours of discovery, or as soon as conditions permit.
    b. Surface waters, including ditches and conveyance systems, must be inspected for sediment deposition. Removal within 7 days is required, unless prohibited.
    c. Stabilized vehicle exit to be inspected for off-site tracking. Sediment to be removed from off-site pavement within 24 hours of discover, or sooner.
    d. Contractor is responsible for controls until another assumes control, or the site is final stabilized and a NOT submitted to DNR.
    e. All off-site accumulations of sediment must be removed in a manner and at frequency to minimize off-site impacts.

POLLUTION PREVENTION MANAGEMENT MEASURES

The contractor shall implement the following measures on-site:

Solid Waste:

Collected sediment, asphalt and concrete millings, floating debris, paper, plastic, fabric, construction and demolition debris, and other wastes must be disposed of properly and must comply with DNR disposal requirements.

Hazardous Materials:

Oil, gasoline, paint, and any hazardous substances must be properly stored, including secondary containment to prevent spills, leaks, or other discharge. Restricted access to storage areas must be provided to prevent vandalism. Storage and disposal of hazardous waste must be in compliance with DNR regulations.

Equipment Washing Waste:

External washing of trucks and other construction vehicles must be limited to a defined area of the site. Run-off must be contained and waste properly disposed of. No engine degreasing is allowed on-site.

FINAL STABILIZATION

Contractor must ensure final stabilization of site. Permittee(s) must submit NOT within 30 days after final stabilization is completed, or another owner/contractor has assumed control over areas that have not undergone final stabilization.

Final stabilization can be achieved as follows:

- Soil disturbing activities have been completed and all soils stabilized by uniform perennial vegetative cover with seventy percent (70%) density over entire pervious area, or other equivalent means to prevent soil erosion, and
  a. drainage ditches are complete and stabilized.
  b. all temporary BMP have been removed as part of final stabilization

Wis. Dept. of Safety and Professional Services
Division of Safety and Buildings

SOIL EVALUATION REPORT

in accordance with SPS 385, Wis. Adm. Code

Attach complete site plan on paper not less than 8 1/2 x 11 inches in size. Plan must include, but not limited to: vertical and horizontal reference point (BM), direction and percent slope, scale or dimensions, north arrow, and location and distance to nearest road.

Please print all information.

Personal information you provide may be used for secondary purposes (Privacy Law, s. 15.04 (1) (m)).

County	LACROSSE
Parcel I.D.	2-144-7
Reviewed by	Date

Property Owner	Property Location
KARL SCHILLING	Govt. Lot -- SW 1/4 SE 1/4 S 20 T 16 N R 6 ~~E(W)~~ W
Property Owner's Mailing Address	Lot # — / Block # — / Subd. Name or CSM# PRELIM. PLAT OF BARREWOOD
PO BOX 2132	☐ City ☐ Village ☒ Town / Nearest Road BARRE / COUNTY RD. O
City / State / Zip Code / Phone Number	
LACROSSE / WI / 54602 / (608) 317-4481	

☐ New Construction Use: ☐ Residential / Number of bedrooms _____ Code derived design flow rate _____ GPD

☐ Replacement ☐ Public or commercial - Describe: NA

Parent material ALLUVIUM Flood Plain elevation if applicable NA ft.

General comments and recommendations: RANDOM SOIL TESTS FOR PRELIMINARY PLAT.

1 Boring # ☐ Boring ☒ Pit Ground surface elev. 724.6 ft. Depth to limiting factor 30 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	Roots	Soil Application Rate GPD/ft² *Eff#1	*Eff#2
1	0-16	10YR 3/2	NONE	SiL	2MSbK	MFr	CS	2F	0.6	0.8
2	16-30	10YR 4/4	NONE	SiL	2MSbK	MFr	GS	1F	0.6	0.8
3	30-96	10YR 5/3	C2D 7.5YR 4/6	SiL	1FSbK	MFr	—	—	0.4	0.6

2 Boring # ☐ Boring ☒ Pit Ground surface elev. 724.2 ft. Depth to limiting factor 38 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	Roots	Soil Application Rate GPD/ft² *Eff#1	*Eff#2
1	0-12	10YR 3/2	NONE	SiL	2MSbK	MFr	CS	2F	0.6	0.8
2	12-38	10YR 4/4	NONE	SiL	2MSbK	MFr	GS	1F	0.6	0.8
3	38-96	10YR 5/3	C2D 7.5YR 4/6	SiL	1FSbK	MFr	—	—	0.4	0.6

* Effluent #1 = BOD ₅ > 30 ≤ 220 mg/L and TSS >30 ≤ 150 mg/L * Effluent #2 = BOD ₅ ≤ 30 mg/L and TSS ≤ 30 mg/L

CST Name (Please Print)	Signature	CST Number
RICHARD A. BERG	Richard A Berg	225761
Address	**Date Evaluation Conducted**	**Telephone Number**
PO BOX 625 HOLMEN, WI 54636	5-29-2014	608-526-9248

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3 Boring # ☐ Boring ☒ Pit Ground surface elev. 726.2 ft. Depth to limiting factor 60 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	Roots	Soil Application Rate GPD/ft ² *Eff#1	*Eff#2
1	0-14	10YR 3/2	NONE	SiL	2MSbK	MFr	CS	2F	0.6	0.8
2	14-48	10YR 4/4	NONE	SiL	2MSbK	MFr	GS	1F	0.6	0.8
3	48-60	10YR 5/4	NONE	SiL	1FSbK	MFr	GS	1F	0.4	0.6
4	60-78	10YR 5/2	NONE	SiL	OM	MFr	CW	—	0.0	0.2
5	78-92	10YR 6/4	NONE	fS	SG	MFr	—	—	0.5	1.0

4 Boring # ☐ Boring ☒ Pit Ground surface elev. 722.0 ft. Depth to limiting factor 40 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	Roots	Soil Application Rate GPD/ft ² *Eff#1	*Eff#2
1	0-6	10YR 3/3	NONE	SiL	2MSbK	MFr	CS	2F	0.6	0.8
2	6-40	10YR 4/4	NONE	SiL	2MSbK	MFr	CS	1F	0.6	0.8
3	40-76	10YR 5/3 5YR 4/6	—	SiLCL	OM	MFr	CS	—	0.0	0.0
4	76-96	10YR 6/4	NONE	fS	SG	MFr	—	—	0.5	1.0

5 Boring # ☐ Boring ☒ Pit Ground surface elev. 717.6 ft. Depth to limiting factor 66 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	Roots	Soil Application Rate GPD/ft ² *Eff#1	*Eff#2
1	0-45	10YR 3/2	NONE	SiL	2MSbK	MFr	CS	2F	0.6	0.8
2	45-66	10YR 4/4	NONE	SiL	2MSbK	MFr	—	1F	0.6	0.8
			HGW @ 66"							

* Effluent #1 = BOD_5 > 30 ≤ 220 mg/L and TSS >30 ≤ 150 mg/L

* Effluent #2 = BOD_5 ≤ 30 mg/L and TSS ≤ 30 mg/L

Property Owner KARL SCHILLING Parcel ID # 2-144-7 Page 3 of 4

6 Boring # ☐ Boring ☒ Pit Ground surface elev. 714.1 ft. Depth to limiting factor 60 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	Roots	Soil Application Rate GPD/ft² *Eff#1	*Eff#2
1	0-24	10YR 3/2	NONE	SiL	2MSbk	MFr	GS	2F	0.6	0.8
2	24-36	10YR 5/4	NONE	SiL	2MSbk	MFr	GS	2F	0.6	0.8
3	36-60	10 YR 5/3	NONE	SiL	1FSbk	MFr	—	—	0.4	0.6
			HGW @ 60"							

7 Boring # ☐ Boring ☒ Pit Ground surface elev. 714.0 ft. Depth to limiting factor 38 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	Roots	Soil Application Rate GPD/ft² *Eff#1	*Eff#2
1	0-33	10YR 3/2		SiL	2MSbk	MFr	GS	2F	0.6	0.8
2	33-38	10YR 4/4		SiL	2MSbk	MFr	GS	2F	0.6	0.8
3	38-60	10YR 5/3	C2D STREAKS 7.5YR 4/6	SiL	1FSbk	MFr	—	—	0.4	0.6
			HGW @ 60"							

8 Boring # ☐ Boring ☒ Pit Ground surface elev. 725.2 ft. Depth to limiting factor 38 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	Roots	Soil Application Rate GPD/ft² *Eff#1	*Eff#2
1	0-11	10YR 3/2	NONE	SiL	2MSbk	MFr	CS	2F	0.6	0.8
2	11-38	10YR 4/4	NONE	SiL	2MSbk	MFr	GS	1F	0.6	0.8
3	38-92	10YR 5/3	C2D SMOTS 7.5YR 4/6	SiL	1FSbk	MFr	—	—	0.4	0.6

* Effluent #1 = BOD_5 > 30 ≤ 220 mg/L and TSS >30 ≤ 150 mg/L * Effluent #2 = BOD_5 ≤ 30 mg/L and TSS ≤ 30 mg/L

Property Owner KARL SCHILLING Parcel ID # 2-144-7 Page 4 of 4

9 Boring # ☐ Boring ☒ Pit Ground surface elev. 721.0 ft. Depth to limiting factor 38 in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	Roots	Soil Application Rate GPD/ft² *Eff#1	*Eff#2
1	0-14	10YR 3/2	NONE	SiL	2MSBK	MFR	CS	2F	0.6	0.8
2	14-38	10YR 4/4	NONE	SiL	2MSBK	MFR	GS	1F	0.6	0.8
3	38-96	10YR 5/3	C2D 7.5YR 4/6	SiL	1FSBK	MFR	—	—	0.4	0.6

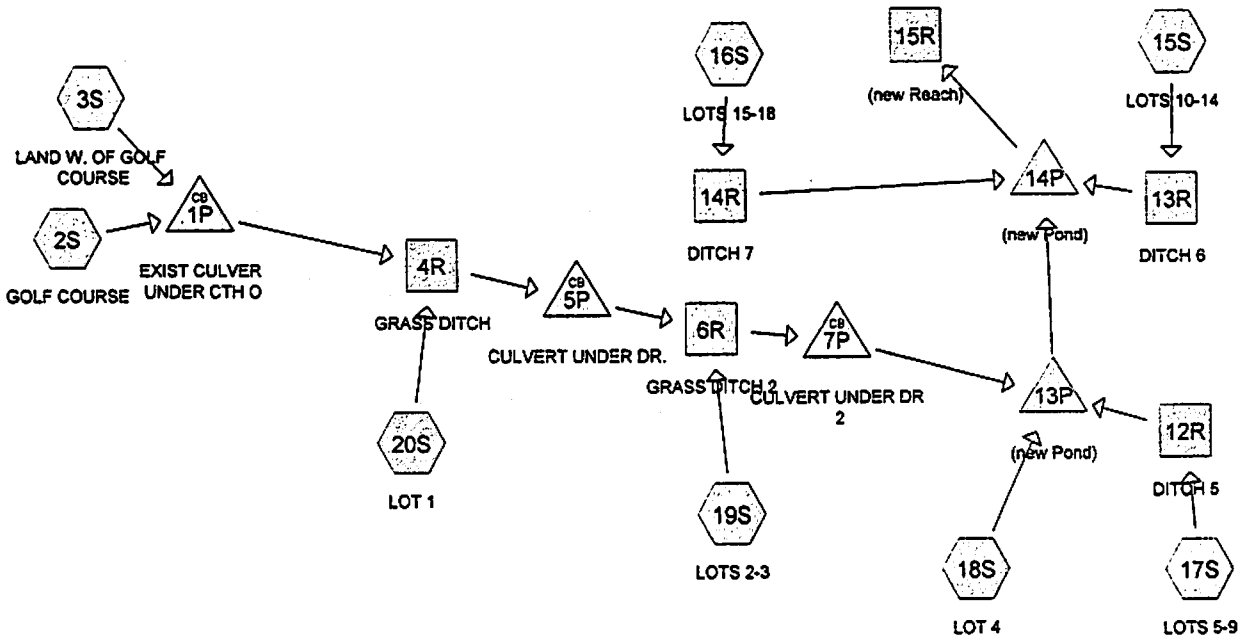
☐ Boring # ☐ Boring ☐ Pit Ground surface elev. _____ ft. Depth to limiting factor _____ in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	Roots	Soil Application Rate GPD/ft² *Eff#1	*Eff#2

☐ Boring # ☐ Boring ☐ Pit Ground surface elev. _____ ft. Depth to limiting factor _____ in.

Horizon	Depth in.	Dominant Color Munsell	Redox Description Qu. Sz. Cont. Color	Texture	Structure Gr. Sz. Sh.	Consistence	Boundary	Roots	Soil Application Rate GPD/ft² *Eff#1	*Eff#2

* Effluent #1 = BOD $_5$ > 30 ≤ 220 mg/L and TSS >30 ≤ 150 mg/L * Effluent #2 = BOD $_5$ ≤ 30 mg/L and TSS ≤ 30 mg/L



Subcat Reach Pond Link

Drainage Diagram for BARREWOOD FINAL DEVELOPED PLAT
Prepared by BERG ENTERPRISES, Printed 7/10/2014
HydroCAD® 9.10 s/n 06500 © 2010 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
13.000	55	Woods, Good, HSG B (3S)
33.100	61	>75% Grass cover, Good, HSG B (2S, 15S, 16S, 17S, 18S, 19S, 20S)
9.000	68	1 acre lots, 20% imp, HSG B (3S)
13.000	75	Row crops, SR + CR, Good, HSG B (3S)
1.300	89	Paved roads w/open ditches, 50% imp, HSG B (3S)
0.600	98	Paved parking, HSG B (2S)
0.500	98	Paved road, HSG B (15S, 16S, 17S, 18S, 19S, 20S)
0.400	98	drives & homes, HSG B (16S)
1.400	98	drives & houses, HSG B (15S, 17S, 18S, 19S, 20S)

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
72.300	HSG B	2S, 3S, 15S, 16S, 17S, 18S, 19S, 20S
0.000	HSG C	
0.000	HSG D	
0.000	Other	

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 2S: GOLF COURSE Runoff Area=25.600 ac 2.34% Impervious Runoff Depth>0.16"
Flow Length=2,740' Tc=108.2 min CN=62 Runoff=1.03 cfs 0.351 af

Subcatchment 3S: LAND W. OF GOLF Runoff Area=36.300 ac 6.75% Impervious Runoff Depth>0.30"
Flow Length=2,300' Tc=29.4 min CN=67 Runoff=7.35 cfs 0.914 af

Subcatchment 15S: LOTS 10-14 Runoff Area=1.600 ac 37.50% Impervious Runoff Depth>0.58"
Flow Length=125' Slope=0.0200 '/' Tc=12.3 min CN=75 Runoff=1.36 cfs 0.077 af

Subcatchment 16S: LOTS 15-18 Runoff Area=2.640 ac 20.45% Impervious Runoff Depth>0.36"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=69 Runoff=1.01 cfs 0.080 af

Subcatchment 17S: LOTS 5-9 Runoff Area=3.300 ac 18.18% Impervious Runoff Depth>0.33"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=68 Runoff=1.11 cfs 0.092 af

Subcatchment 18S: LOT 4 Runoff Area=0.640 ac 21.87% Impervious Runoff Depth>0.36"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=69 Runoff=0.25 cfs 0.019 af

Subcatchment 19S: LOTS 2-3 Runoff Area=1.250 ac 20.00% Impervious Runoff Depth>0.33"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=68 Runoff=0.42 cfs 0.035 af

Subcatchment 20S: LOT 1 Runoff Area=0.970 ac 17.53% Impervious Runoff Depth>0.30"
Flow Length=250' Tc=16.1 min CN=67 Runoff=0.30 cfs 0.025 af

Reach 4R: GRASS DITCH Avg. Flow Depth=0.42' Max Vel=2.47 fps Inflow=7.58 cfs 1.290 af
n=0.030 L=235.0' S=0.0100 '/' Capacity=330.06 cfs Outflow=7.50 cfs 1.284 af

Reach 6R: GRASS DITCH 2 Avg. Flow Depth=0.43' Max Vel=2.49 fps Inflow=7.71 cfs 1.319 af
n=0.030 L=160.0' S=0.0100 '/' Capacity=330.06 cfs Outflow=7.65 cfs 1.315 af

Reach 12R: DITCH 5 Avg. Flow Depth=0.13' Max Vel=1.21 fps Inflow=1.11 cfs 0.092 af
n=0.030 L=375.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=0.98 cfs 0.090 af

Reach 13R: DITCH 6 Avg. Flow Depth=0.14' Max Vel=1.30 fps Inflow=1.36 cfs 0.077 af
n=0.030 L=375.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=1.18 cfs 0.076 af

Reach 14R: DITCH 7 Avg. Flow Depth=0.12' Max Vel=1.13 fps Inflow=1.01 cfs 0.080 af
n=0.030 L=500.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=0.82 cfs 0.078 af

Reach 15R: (new Reach) Avg. Flow Depth=0.27' Max Vel=1.92 fps Inflow=3.61 cfs 1.202 af
n=0.030 L=200.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=3.60 cfs 1.196 af

Pond 1P: EXIST CULVER UNDER CTH O Peak Elev=724.08' Inflow=7.42 cfs 1.265 af
Outflow=7.42 cfs 1.265 af

Pond 5P: CULVERT UNDER DR. Peak Elev=720.54' Inflow=7.50 cfs 1.284 af
Outflow=7.50 cfs 1.284 af

Pond 7P: CULVERT UNDER DR 2 Peak Elev=718.45' Inflow=7.65 cfs 1.315 af
Outflow=7.65 cfs 1.315 af

Pond 13P: (new Pond) Peak Elev=716.92' Storage=0.395 af Inflow=8.60 cfs 1.425 af
Outflow=3.30 cfs 1.090 af

Pond 14P: (new Pond) Peak Elev=716.75' Storage=0.048 af Inflow=3.61 cfs 1.244 af
Outflow=3.61 cfs 1.202 af

Summary for Subcatchment 2S: GOLF COURSE

Runoff = 1.03 cfs @ 13.71 hrs, Volume= 0.351 af, Depth> 0.16"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.50"

Area (ac)	CN	Description
25.000	61	>75% Grass cover, Good, HSG B
0.600	98	Paved parking, HSG B
25.600	62	Weighted Average
25.000		97.66% Pervious Area
0.600		2.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0300	0.19		**Sheet Flow, sheet flow** Grass: Short n= 0.150 P2= 2.90"
99.4	2,640	0.0040	0.44		**Shallow Concentrated Flow, shallow** Short Grass Pasture Kv= 7.0 fps
108.2	2,740	Total			

Summary for Subcatchment 3S: LAND W. OF GOLF COURSE

Runoff = 7.35 cfs @ 12.31 hrs, Volume= 0.914 af, Depth> 0.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.50"

Area (ac)	CN	Description
9.000	68	1 acre lots, 20% imp, HSG B
13.000	55	Woods, Good, HSG B
13.000	75	Row crops, SR + CR, Good, HSG B
1.300	89	Paved roads w/open ditches, 50% imp, HSG B
36.300	67	Weighted Average
33.850		93.25% Pervious Area
2.450		6.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.2000	0.19		**Sheet Flow, SHEET FLOW** Woods: Light underbrush n= 0.400 P2= 2.90"
11.2	1,500	0.2000	2.24		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Woodland Kv= 5.0 fps
9.2	700	0.0200	1.27		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Cultivated Straight Rows Kv= 9.0 fps
29.4	2,300	Total			

Summary for Subcatchment 15S: LOTS 10-14

Runoff = 1.36 cfs @ 12.06 hrs, Volume= 0.077 af, Depth> 0.58"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.50"

	Area (ac)	CN	Description
	1.000	61	>75% Grass cover, Good, HSG B
*	0.500	98	drives & houses, HSG B
*	0.100	98	Paved road, HSG B
	1.600	75	Weighted Average
	1.000		62.50% Pervious Area
	0.600		37.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	125	0.0200	0.17		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"

Summary for Subcatchment 16S: LOTS 15-18

Runoff = 1.01 cfs @ 12.13 hrs, Volume= 0.080 af, Depth> 0.36"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.50"

	Area (ac)	CN	Description
	2.100	61	>75% Grass cover, Good, HSG B
*	0.400	98	drives & homes, HSG B
*	0.140	98	Paved road, HSG B
	2.640	69	Weighted Average
	2.100		79.55% Pervious Area
	0.540		20.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 17S: LOTS 5-9

Runoff = 1.11 cfs @ 12.14 hrs, Volume= 0.092 af, Depth> 0.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.50"

	Area (ac)	CN	Description
	2.700	61	>75% Grass cover, Good, HSG B
*	0.500	98	drives & houses, HSG B
*	0.100	98	Paved road, HSG B
	3.300	68	Weighted Average
	2.700		81.82% Pervious Area
	0.600		18.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 18S: LOT 4

Runoff = 0.25 cfs @ 12.13 hrs, Volume= 0.019 af, Depth> 0.36"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.50"

	Area (ac)	CN	Description
	0.500	61	>75% Grass cover, Good, HSG B
*	0.100	98	drives & houses, HSG B
*	0.040	98	Paved road, HSG B
	0.640	69	Weighted Average
	0.500		78.13% Pervious Area
	0.140		21.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 19S: LOTS 2-3

Runoff = 0.42 cfs @ 12.14 hrs, Volume= 0.035 af, Depth> 0.33"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.50"

	Area (ac)	CN	Description
	1.000	61	>75% Grass cover, Good, HSG B
*	0.200	98	drives & houses, HSG B
*	0.050	98	Paved road, HSG B
	1.250	68	Weighted Average
	1.000		80.00% Pervious Area
	0.250		20.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 20S: LOT 1

Runoff = 0.30 cfs @ 12.12 hrs, Volume= 0.025 af, Depth> 0.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-Year Rainfall=2.50"

	Area (ac)	CN	Description
	0.800	61	>75% Grass cover, Good, HSG B
*	0.100	98	drives & houses, HSG B
*	0.070	98	Paved road, HSG B
	0.970	67	Weighted Average
	0.800		82.47% Pervious Area
	0.170		17.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
2.5	150	0.0200	0.99		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
16.1	250	Total			

Summary for Reach 4R: GRASS DITCH

Inflow Area = 62.870 ac, 5.12% Impervious, Inflow Depth > 0.25" for 1-Year event
Inflow = 7.58 cfs @ 12.31 hrs, Volume= 1.290 af
Outflow = 7.50 cfs @ 12.36 hrs, Volume= 1.284 af, Atten= 1%, Lag= 2.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.47 fps, Min. Travel Time= 1.6 min
Avg. Velocity = 1.46 fps, Avg. Travel Time= 2.7 min

Peak Storage= 717 cf @ 12.33 hrs
Average Depth at Peak Storage= 0.42'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 330.06 cfs

6.00' x 3.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 24.00'
Length= 235.0' Slope= 0.0100 '/'
Inlet Invert= 722.00', Outlet Invert= 719.65'

‡

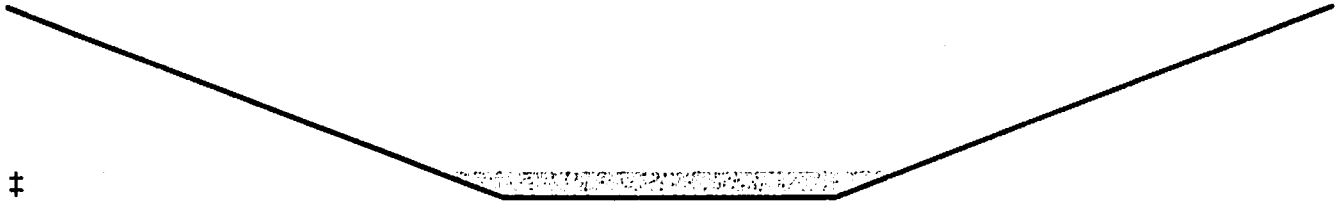
Summary for Reach 6R: GRASS DITCH 2

Inflow Area = 64.120 ac, 5.41% Impervious, Inflow Depth > 0.25" for 1-Year event
Inflow = 7.71 cfs @ 12.36 hrs, Volume= 1.319 af
Outflow = 7.65 cfs @ 12.39 hrs, Volume= 1.315 af, Atten= 1%, Lag= 1.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.49 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 1.46 fps, Avg. Travel Time= 1.8 min

Peak Storage= 495 cf @ 12.37 hrs
Average Depth at Peak Storage= 0.43'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 330.06 cfs

6.00' x 3.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 24.00'
Length= 160.0' Slope= 0.0100 '/'
Inlet Invert= 719.15', Outlet Invert= 717.55'



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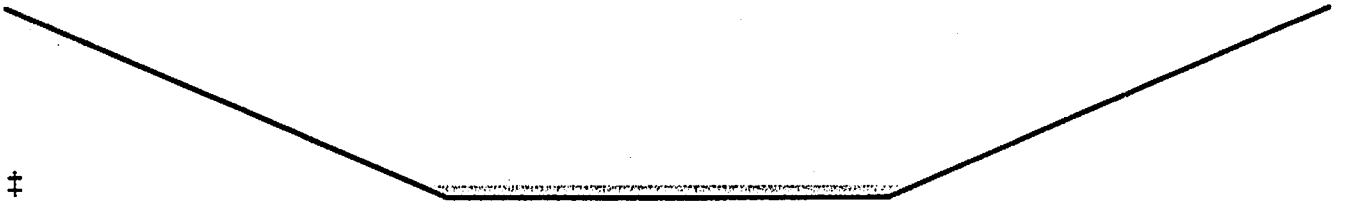
Summary for Reach 12R: DITCH 5

Inflow Area = 3.300 ac, 18.18% Impervious, Inflow Depth > 0.33" for 1-Year event
Inflow = 1.11 cfs @ 12.14 hrs, Volume= 0.092 af
Outflow = 0.98 cfs @ 12.29 hrs, Volume= 0.090 af, Atten= 12%, Lag= 9.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.21 fps, Min. Travel Time= 5.1 min
Avg. Velocity = 0.53 fps, Avg. Travel Time= 11.9 min

Peak Storage= 309 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.13'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 375.0' Slope= 0.0100 '/'
Inlet Invert= 722.50', Outlet Invert= 718.75'



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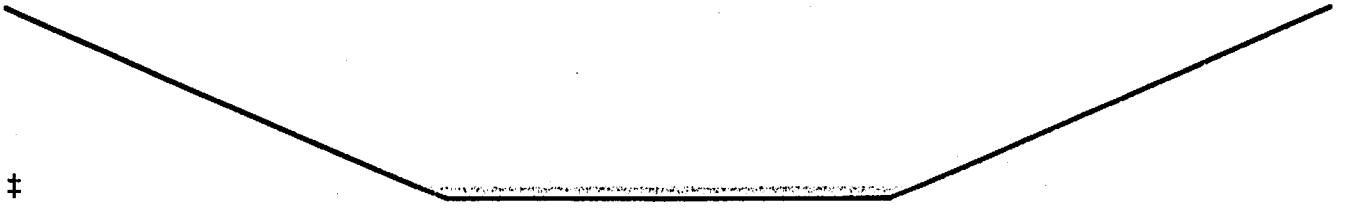
Summary for Reach 13R: DITCH 6

Inflow Area = 1.600 ac, 37.50% Impervious, Inflow Depth > 0.58" for 1-Year event
Inflow = 1.36 cfs @ 12.06 hrs, Volume= 0.077 af
Outflow = 1.18 cfs @ 12.19 hrs, Volume= 0.076 af, Atten= 14%, Lag= 8.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.30 fps, Min. Travel Time= 4.8 min
Avg. Velocity = 0.47 fps, Avg. Travel Time= 13.4 min

Peak Storage= 348 cf @ 12.11 hrs
Average Depth at Peak Storage= 0.14'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 375.0' Slope= 0.0100 '/'
Inlet Invert= 722.50', Outlet Invert= 718.75'



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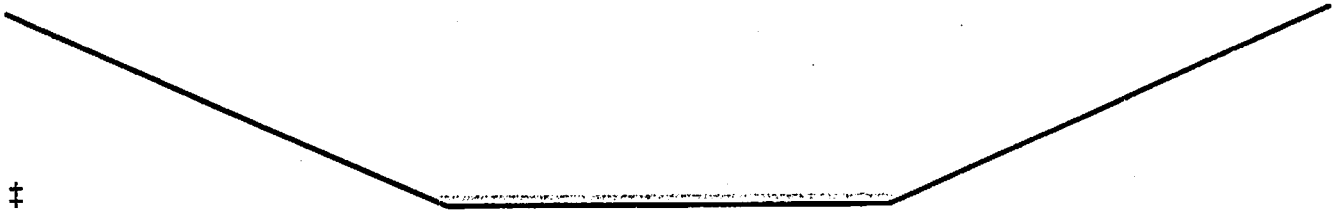
Summary for Reach 14R: DITCH 7

Inflow Area = 2.640 ac, 20.45% Impervious, Inflow Depth > 0.36" for 1-Year event
Inflow = 1.01 cfs @ 12.13 hrs, Volume= 0.080 af
Outflow = 0.82 cfs @ 12.35 hrs, Volume= 0.078 af, Atten= 19%, Lag= 13.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.13 fps, Min. Travel Time= 7.4 min
Avg. Velocity = 0.50 fps, Avg. Travel Time= 16.8 min

Peak Storage= 368 cf @ 12.22 hrs
Average Depth at Peak Storage= 0.12'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 500.0' Slope= 0.0100 '/'
Inlet Invert= 724.00', Outlet Invert= 719.00'



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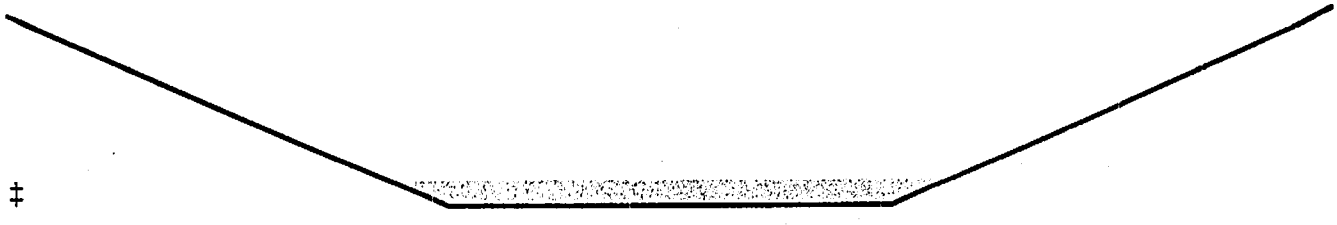
Summary for Reach 15R: (new Reach)

Inflow Area = 72.300 ac, 7.40% Impervious, Inflow Depth > 0.20" for 1-Year event
Inflow = 3.61 cfs @ 13.23 hrs, Volume= 1.202 af
Outflow = 3.60 cfs @ 13.28 hrs, Volume= 1.196 af, Atten= 0%, Lag= 3.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.92 fps, Min. Travel Time= 1.7 min
Avg. Velocity = 1.50 fps, Avg. Travel Time= 2.2 min

Peak Storage= 375 cf @ 13.25 hrs
Average Depth at Peak Storage= 0.27'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 200.0' Slope= 0.0100 '/'
Inlet Invert= 716.00', Outlet Invert= 714.00'



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Summary for Pond 1P: EXIST CULVER UNDER CTH O

Inflow Area = 61.900 ac, 4.93% Impervious, Inflow Depth > 0.25" for 1-Year event
Inflow = 7.42 cfs @ 12.32 hrs, Volume= 1.265 af
Outflow = 7.42 cfs @ 12.32 hrs, Volume= 1.265 af, Atten= 0%, Lag= 0.0 min
Primary = 7.42 cfs @ 12.32 hrs, Volume= 1.265 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 724.08' @ 12.32 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	723.27'	**71.0" W x 47.0" H, R=36.7"/110.2" Arch Culvert** L= 52.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 723.27' / 722.72' S= 0.0106 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	729.50'	**100.0' long x 24.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=7.37 cfs @ 12.32 hrs HW=724.08' (Free Discharge)
└**1=Culvert** (Inlet Controls 7.37 cfs @ 2.09 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 5P: CULVERT UNDER DR.

Inflow Area = 62.870 ac, 5.12% Impervious, Inflow Depth > 0.25" for 1-Year event
Inflow = 7.50 cfs @ 12.36 hrs, Volume= 1.284 af
Outflow = 7.50 cfs @ 12.36 hrs, Volume= 1.284 af, Atten= 0%, Lag= 0.0 min
Primary = 7.50 cfs @ 12.36 hrs, Volume= 1.284 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 720.54' @ 12.36 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	719.65'	**36.0" Round Culvert X 2.00** L= 50.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 719.65' / 719.15' S= 0.0100 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	722.60'	**3.0' long x 24.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=7.47 cfs @ 12.36 hrs HW=720.54' (Free Discharge)
└**1=Culvert** (Barrel Controls 7.47 cfs @ 3.18 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 7P: CULVERT UNDER DR 2

Inflow Area = 64.120 ac, 5.41% Impervious, Inflow Depth > 0.25" for 1-Year event
Inflow = 7.65 cfs @ 12.39 hrs, Volume= 1.315 af
Outflow = 7.65 cfs @ 12.39 hrs, Volume= 1.315 af, Atten= 0%, Lag= 0.0 min
Primary = 7.65 cfs @ 12.39 hrs, Volume= 1.315 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 718.45' @ 12.39 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	717.55'	**36.0" Round Culvert X 2.00** L= 50.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 717.55' / 717.05' S= 0.0100 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	720.50'	**3.0' long x 24.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=7.62 cfs @ 12.39 hrs HW=718.45' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 7.62 cfs @ 3.19 fps)
└—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 13P: (new Pond)

Inflow Area = 68.060 ac, 6.19% Impervious, Inflow Depth > 0.25" for 1-Year event
Inflow = 8.60 cfs @ 12.37 hrs, Volume= 1.425 af
Outflow = 3.30 cfs @ 13.24 hrs, Volume= 1.090 af, Atten= 62%, Lag= 52.3 min
Primary = 3.30 cfs @ 13.24 hrs, Volume= 1.090 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 716.92' @ 13.24 hrs Surf.Area= 0.208 ac Storage= 0.395 af

Plug-Flow detention time= 115.1 min calculated for 1.090 af (76% of inflow)
Center-of-Mass det. time= 52.2 min (934.8 - 882.7)

Volume	Invert	Avail.Storage	Storage Description
#1	714.50'	1.498 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
714.50	0.110	0.000	0.000
715.00	0.120	0.057	0.057
716.00	0.190	0.155	0.212
717.00	0.210	0.200	0.412
718.00	0.240	0.225	0.637
719.00	0.270	0.255	0.893
720.00	0.300	0.285	1.177
721.00	0.340	0.320	1.498

Device	Routing	Invert	Outlet Devices
#1	Primary	716.25'	**36.0" Round Culvert X 2.00** L= 50.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 716.25' / 716.00' S= 0.0050 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	720.00'	**50.0' long x 28.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=3.30 cfs @ 13.24 hrs HW=716.92' (Free Discharge)
└1=**Culvert** (Barrel Controls 3.30 cfs @ 2.13 fps)
└2=**Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 14P: (new Pond)

Inflow Area = 72.300 ac, 7.40% Impervious, Inflow Depth > 0.21" for 1-Year event
Inflow = 3.61 cfs @ 13.21 hrs, Volume= 1.244 af
Outflow = 3.61 cfs @ 13.23 hrs, Volume= 1.202 af, Atten= 0%, Lag= 1.4 min
Primary = 3.61 cfs @ 13.23 hrs, Volume= 1.202 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 716.75' @ 13.23 hrs Surf.Area= 0.042 ac Storage= 0.048 af

Plug-Flow detention time= 16.6 min calculated for 1.198 af (96% of inflow)
Center-of-Mass det. time= 7.5 min (931.3 - 923.8)

Volume	Invert	Avail.Storage	Storage Description
#1	715.00'	0.190 af	**6.00'W x 100.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	716.50'	**12.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=3.60 cfs @ 13.23 hrs HW=716.75' (Free Discharge)
└1=**Broad-Crested Rectangular Weir** (Weir Controls 3.60 cfs @ 1.20 fps)

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 2S: GOLF COURSE Runoff Area=25.600 ac 2.34% Impervious Runoff Depth>0.28"
Flow Length=2,740' Tc=108.2 min CN=62 Runoff=2.02 cfs 0.600 af

Subcatchment 3S: LAND W. OF GOLF Runoff Area=36.300 ac 6.75% Impervious Runoff Depth>0.46"
Flow Length=2,300' Tc=29.4 min CN=67 Runoff=12.89 cfs 1.400 af

Subcatchment 15S: LOTS 10-14 Runoff Area=1.600 ac 37.50% Impervious Runoff Depth>0.80"
Flow Length=125' Slope=0.0200 '/' Tc=12.3 min CN=75 Runoff=1.94 cfs 0.107 af

Subcatchment 16S: LOTS 15-18 Runoff Area=2.640 ac 20.45% Impervious Runoff Depth>0.54"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=69 Runoff=1.66 cfs 0.119 af

Subcatchment 17S: LOTS 5-9 Runoff Area=3.300 ac 18.18% Impervious Runoff Depth>0.50"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=68 Runoff=1.88 cfs 0.138 af

Subcatchment 18S: LOT 4 Runoff Area=0.640 ac 21.87% Impervious Runoff Depth>0.54"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=69 Runoff=0.40 cfs 0.029 af

Subcatchment 19S: LOTS 2-3 Runoff Area=1.250 ac 20.00% Impervious Runoff Depth>0.50"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=68 Runoff=0.71 cfs 0.052 af

Subcatchment 20S: LOT 1 Runoff Area=0.970 ac 17.53% Impervious Runoff Depth>0.47"
Flow Length=250' Tc=16.1 min CN=67 Runoff=0.52 cfs 0.038 af

Reach 4R: GRASS DITCH Avg. Flow Depth=0.58' Max Vel=2.97 fps Inflow=13.31 cfs 2.038 af
n=0.030 L=235.0' S=0.0100 '/' Capacity=330.06 cfs Outflow=13.18 cfs 2.031 af

Reach 6R: GRASS DITCH 2 Avg. Flow Depth=0.58' Max Vel=2.98 fps Inflow=13.53 cfs 2.083 af
n=0.030 L=160.0' S=0.0100 '/' Capacity=330.06 cfs Outflow=13.46 cfs 2.078 af

Reach 12R: DITCH 5 Avg. Flow Depth=0.18' Max Vel=1.48 fps Inflow=1.88 cfs 0.138 af
n=0.030 L=375.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=1.72 cfs 0.137 af

Reach 13R: DITCH 6 Avg. Flow Depth=0.18' Max Vel=1.50 fps Inflow=1.94 cfs 0.107 af
n=0.030 L=375.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=1.73 cfs 0.106 af

Reach 14R: DITCH 7 Avg. Flow Depth=0.16' Max Vel=1.39 fps Inflow=1.66 cfs 0.119 af
n=0.030 L=500.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=1.45 cfs 0.117 af

Reach 15R: (new Reach) Avg. Flow Depth=0.46' Max Vel=2.61 fps Inflow=8.93 cfs 2.076 af
n=0.030 L=200.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=8.89 cfs 2.069 af

Pond 1P: EXIST CULVER UNDER CTH O Peak Elev=724.38' Inflow=13.04 cfs 2.000 af
Outflow=13.04 cfs 2.000 af

Pond 5P: CULVERT UNDER DR. Peak Elev=720.85' Inflow=13.18 cfs 2.031 af
Outflow=13.18 cfs 2.031 af

Pond 7P: CULVERT UNDER DR 2

Peak Elev=718.76' Inflow=13.46 cfs 2.078 af
Outflow=13.46 cfs 2.078 af

Pond 13P: (new Pond)

Peak Elev=717.28' Storage=0.473 af Inflow=15.04 cfs 2.244 af
Outflow=8.17 cfs 1.897 af

Pond 14P: (new Pond)

Peak Elev=716.94' Storage=0.056 af Inflow=8.93 cfs 2.120 af
Outflow=8.93 cfs 2.076 af

Summary for Subcatchment 2S: GOLF COURSE

Runoff = 2.02 cfs @ 13.59 hrs, Volume= 0.600 af, Depth> 0.28"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.90"

Area (ac)	CN	Description
25.000	61	>75% Grass cover, Good, HSG B
0.600	98	Paved parking, HSG B
25.600	62	Weighted Average
25.000		97.66% Pervious Area
0.600		2.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0300	0.19		**Sheet Flow, sheet flow** Grass: Short n= 0.150 P2= 2.90"
99.4	2,640	0.0040	0.44		**Shallow Concentrated Flow, shallow** Short Grass Pasture Kv= 7.0 fps
108.2	2,740	Total			

Summary for Subcatchment 3S: LAND W. OF GOLF COURSE

Runoff = 12.89 cfs @ 12.29 hrs, Volume= 1.400 af, Depth> 0.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.90"

Area (ac)	CN	Description
9.000	68	1 acre lots, 20% imp, HSG B
13.000	55	Woods, Good, HSG B
13.000	75	Row crops, SR + CR, Good, HSG B
1.300	89	Paved roads w/open ditches, 50% imp, HSG B
36.300	67	Weighted Average
33.850		93.25% Pervious Area
2.450		6.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.2000	0.19		**Sheet Flow, SHEET FLOW** Woods: Light underbrush n= 0.400 P2= 2.90"
11.2	1,500	0.2000	2.24		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Woodland Kv= 5.0 fps
9.2	700	0.0200	1.27		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Cultivated Straight Rows Kv= 9.0 fps
29.4	2,300	Total			

Summary for Subcatchment 15S: LOTS 10-14

Runoff = 1.94 cfs @ 12.05 hrs, Volume= 0.107 af, Depth> 0.80"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.90"

	Area (ac)	CN	Description
	1.000	61	>75% Grass cover, Good, HSG B
*	0.500	98	drives & houses, HSG B
*	0.100	98	Paved road, HSG B
	1.600	75	Weighted Average
	1.000		62.50% Pervious Area
	0.600		37.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	125	0.0200	0.17		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"

Summary for Subcatchment 16S: LOTS 15-18

Runoff = 1.66 cfs @ 12.12 hrs, Volume= 0.119 af, Depth> 0.54"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.90"

	Area (ac)	CN	Description
	2.100	61	>75% Grass cover, Good, HSG B
*	0.400	98	drives & homes, HSG B
*	0.140	98	Paved road, HSG B
	2.640	69	Weighted Average
	2.100		79.55% Pervious Area
	0.540		20.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 17S: LOTS 5-9

Runoff = 1.88 cfs @ 12.12 hrs, Volume= 0.138 af, Depth> 0.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.90"

	Area (ac)	CN	Description
	2.700	61	>75% Grass cover, Good, HSG B
*	0.500	98	drives & houses, HSG B
*	0.100	98	Paved road, HSG B
	3.300	68	Weighted Average
	2.700		81.82% Pervious Area
	0.600		18.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 18S: LOT 4

Runoff = 0.40 cfs @ 12.12 hrs, Volume= 0.029 af, Depth> 0.54"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.90"

	Area (ac)	CN	Description
	0.500	61	>75% Grass cover, Good, HSG B
*	0.100	98	drives & houses, HSG B
*	0.040	98	Paved road, HSG B
	0.640	69	Weighted Average
	0.500		78.13% Pervious Area
	0.140		21.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 19S: LOTS 2-3

Runoff = 0.71 cfs @ 12.12 hrs, Volume= 0.052 af, Depth> 0.50"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.90"

	Area (ac)	CN	Description
	1.000	61	>75% Grass cover, Good, HSG B
*	0.200	98	drives & houses, HSG B
*	0.050	98	Paved road, HSG B
	1.250	68	Weighted Average
	1.000		80.00% Pervious Area
	0.250		20.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 20S: LOT 1

Runoff = 0.52 cfs @ 12.11 hrs, Volume= 0.038 af, Depth> 0.47"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-Year Rainfall=2.90"

	Area (ac)	CN	Description
	0.800	61	>75% Grass cover, Good, HSG B
*	0.100	98	drives & houses, HSG B
*	0.070	98	Paved road, HSG B
	0.970	67	Weighted Average
	0.800		82.47% Pervious Area
	0.170		17.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
2.5	150	0.0200	0.99		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
16.1	250	Total			

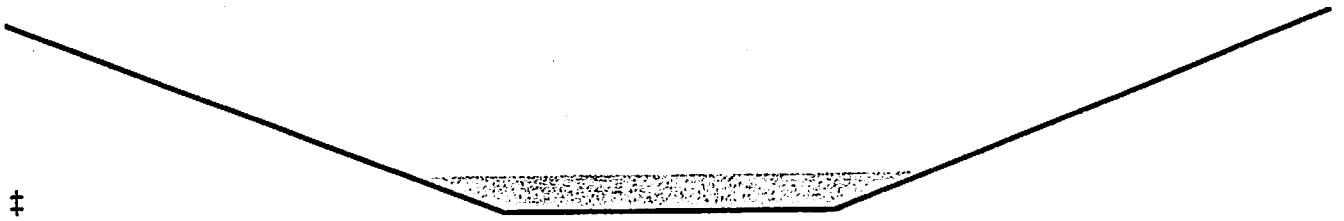
Summary for Reach 4R: GRASS DITCH

Inflow Area = 62.870 ac, 5.12% Impervious, Inflow Depth > 0.39" for 2-Year event
Inflow = 13.31 cfs @ 12.29 hrs, Volume= 2.038 af
Outflow = 13.18 cfs @ 12.33 hrs, Volume= 2.031 af, Atten= 1%, Lag= 2.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.97 fps, Min. Travel Time= 1.3 min
Avg. Velocity = 1.68 fps, Avg. Travel Time= 2.3 min

Peak Storage= 1,053 cf @ 12.31 hrs
Average Depth at Peak Storage= 0.58'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 330.06 cfs

6.00' x 3.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 24.00'
Length= 235.0' Slope= 0.0100 '/'
Inlet Invert= 722.00', Outlet Invert= 719.65'



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Summary for Reach 6R: GRASS DITCH 2

Inflow Area = 64.120 ac, 5.41% Impervious, Inflow Depth > 0.39" for 2-Year event
Inflow = 13.53 cfs @ 12.33 hrs, Volume= 2.083 af
Outflow = 13.46 cfs @ 12.35 hrs, Volume= 2.078 af, Atten= 1%, Lag= 1.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.98 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 1.69 fps, Avg. Travel Time= 1.6 min

Peak Storage= 725 cf @ 12.34 hrs
Average Depth at Peak Storage= 0.58'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 330.06 cfs

6.00' x 3.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 24.00'
Length= 160.0' Slope= 0.0100 '/'
Inlet Invert= 719.15', Outlet Invert= 717.55'

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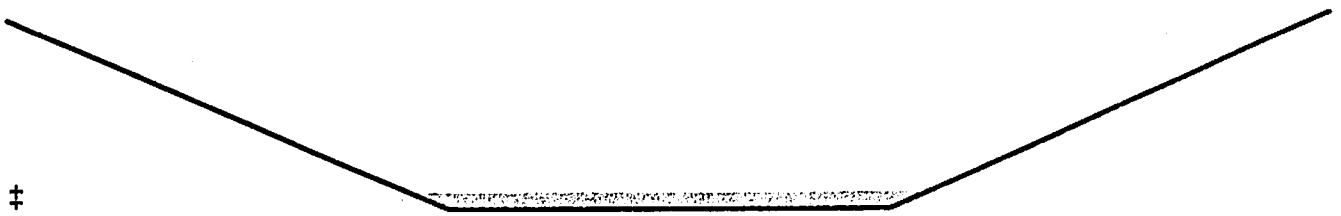
Summary for Reach 12R: DITCH 5

Inflow Area = 3.300 ac, 18.18% Impervious, Inflow Depth > 0.50" for 2-Year event
Inflow = 1.88 cfs @ 12.12 hrs, Volume= 0.138 af
Outflow = 1.72 cfs @ 12.25 hrs, Volume= 0.137 af, Atten= 9%, Lag= 7.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.48 fps, Min. Travel Time= 4.2 min
Avg. Velocity = 0.60 fps, Avg. Travel Time= 10.4 min

Peak Storage= 440 cf @ 12.18 hrs
Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 375.0' Slope= 0.0100 '/'
Inlet Invert= 722.50', Outlet Invert= 718.75'



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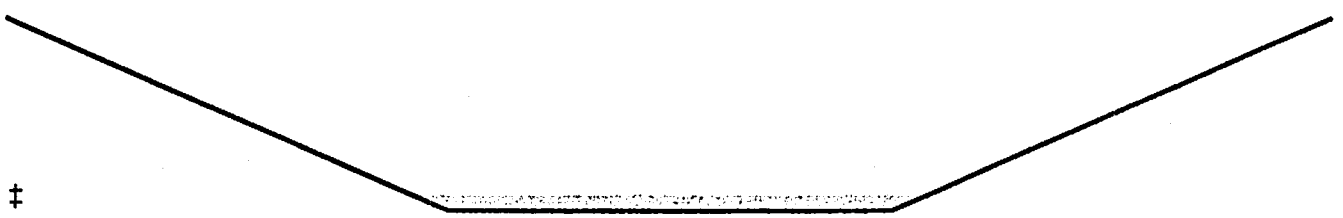
Summary for Reach 13R: DITCH 6

Inflow Area = 1.600 ac, 37.50% Impervious, Inflow Depth > 0.80" for 2-Year event
Inflow = 1.94 cfs @ 12.05 hrs, Volume= 0.107 af
Outflow = 1.73 cfs @ 12.17 hrs, Volume= 0.106 af, Atten= 11%, Lag= 6.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.50 fps, Min. Travel Time= 4.2 min
Avg. Velocity = 0.51 fps, Avg. Travel Time= 12.2 min

Peak Storage= 444 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.18'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 375.0' Slope= 0.0100 '/'
Inlet Invert= 722.50', Outlet Invert= 718.75'



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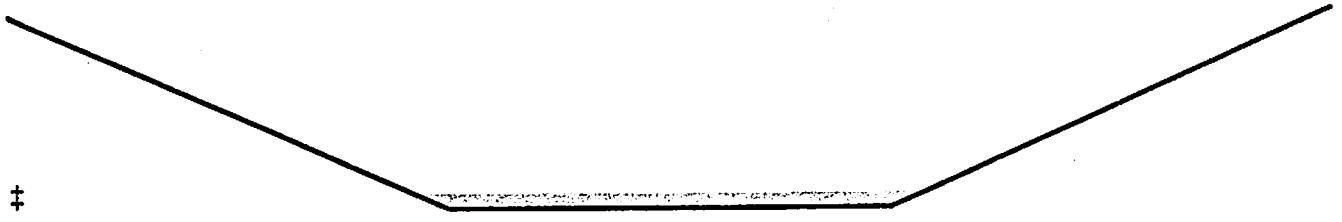
Summary for Reach 14R: DITCH 7

Inflow Area = 2.640 ac, 20.45% Impervious, Inflow Depth > 0.54" for 2-Year event
Inflow = 1.66 cfs @ 12.12 hrs, Volume= 0.119 af
Outflow = 1.45 cfs @ 12.30 hrs, Volume= 0.117 af, Atten= 13%, Lag= 10.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.39 fps, Min. Travel Time= 6.0 min
Avg. Velocity = 0.56 fps, Avg. Travel Time= 14.8 min

Peak Storage= 522 cf @ 12.20 hrs
Average Depth at Peak Storage= 0.16'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 500.0' Slope= 0.0100 '/'
Inlet Invert= 724.00', Outlet Invert= 719.00'



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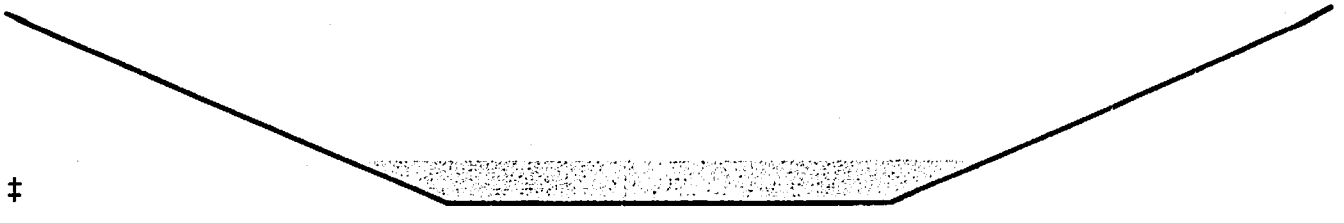
Summary for Reach 15R: (new Reach)

Inflow Area = 72.300 ac, 7.40% Impervious, Inflow Depth > 0.34" for 2-Year event
Inflow = 8.93 cfs @ 12.72 hrs, Volume= 2.076 af
Outflow = 8.89 cfs @ 12.76 hrs, Volume= 2.069 af, Atten= 0%, Lag= 2.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.61 fps, Min. Travel Time= 1.3 min
Avg. Velocity = 1.78 fps, Avg. Travel Time= 1.9 min

Peak Storage= 683 cf @ 12.73 hrs
Average Depth at Peak Storage= 0.46'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 200.0' Slope= 0.0100 '/'
Inlet Invert= 716.00', Outlet Invert= 714.00'



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Summary for Pond 1P: EXIST CULVER UNDER CTH O

Inflow Area = 61.900 ac, 4.93% Impervious, Inflow Depth > 0.39" for 2-Year event
Inflow = 13.04 cfs @ 12.30 hrs, Volume= 2.000 af
Outflow = 13.04 cfs @ 12.30 hrs, Volume= 2.000 af, Atten= 0%, Lag= 0.0 min
Primary = 13.04 cfs @ 12.30 hrs, Volume= 2.000 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 724.38' @ 12.30 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	723.27'	**71.0" W x 47.0" H, R=36.7"/110.2" Arch Culvert** L= 52.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 723.27' / 722.72' S= 0.0106 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	729.50'	**100.0' long x 24.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=13.02 cfs @ 12.30 hrs HW=724.38' (Free Discharge)
1=Culvert (Inlet Controls 13.02 cfs @ 2.48 fps)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 5P: CULVERT UNDER DR.

Inflow Area = 62.870 ac, 5.12% Impervious, Inflow Depth > 0.39" for 2-Year event
Inflow = 13.18 cfs @ 12.33 hrs, Volume= 2.031 af
Outflow = 13.18 cfs @ 12.33 hrs, Volume= 2.031 af, Atten= 0%, Lag= 0.0 min
Primary = 13.18 cfs @ 12.33 hrs, Volume= 2.031 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 720.85' @ 12.33 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	719.65'	**36.0" Round Culvert X 2.00** L= 50.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 719.65' / 719.15' S= 0.0100 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	722.60'	**3.0' long x 24.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=13.11 cfs @ 12.33 hrs HW=720.84' (Free Discharge)
1=Culvert (Barrel Controls 13.11 cfs @ 3.71 fps)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 7P: CULVERT UNDER DR 2

Inflow Area = 64.120 ac, 5.41% Impervious, Inflow Depth > 0.39" for 2-Year event
Inflow = 13.46 cfs @ 12.35 hrs, Volume= 2.078 af
Outflow = 13.46 cfs @ 12.35 hrs, Volume= 2.078 af, Atten= 0%, Lag= 0.0 min
Primary = 13.46 cfs @ 12.35 hrs, Volume= 2.078 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 718.76' @ 12.35 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	717.55'	**36.0" Round Culvert X 2.00** L= 50.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 717.55' / 717.05' S= 0.0100 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	720.50'	**3.0' long x 24.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=13.43 cfs @ 12.35 hrs HW=718.76' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 13.43 cfs @ 3.73 fps)
└—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 13P: (new Pond)

Inflow Area = 68.060 ac, 6.19% Impervious, Inflow Depth > 0.40" for 2-Year event
Inflow = 15.04 cfs @ 12.34 hrs, Volume= 2.244 af
Outflow = 8.17 cfs @ 12.72 hrs, Volume= 1.897 af, Atten= 46%, Lag= 23.1 min
Primary = 8.17 cfs @ 12.72 hrs, Volume= 1.897 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 717.28' @ 12.72 hrs Surf.Area= 0.219 ac Storage= 0.473 af

Plug-Flow detention time= 78.3 min calculated for 1.897 af (85% of inflow)
Center-of-Mass det. time= 33.9 min (904.8 - 870.8)

Volume	Invert	Avail.Storage	Storage Description
#1	714.50'	1.498 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
714.50	0.110	0.000	0.000
715.00	0.120	0.057	0.057
716.00	0.190	0.155	0.212
717.00	0.210	0.200	0.412
718.00	0.240	0.225	0.637
719.00	0.270	0.255	0.893
720.00	0.300	0.285	1.177
721.00	0.340	0.320	1.498

Device	Routing	Invert	Outlet Devices
#1	Primary	716.25'	**36.0" Round Culvert X 2.00** L= 50.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 716.25' / 716.00' S= 0.0050 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	720.00'	**50.0' long x 28.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=8.14 cfs @ 12.72 hrs HW=717.28' (Free Discharge)
└─**1=Culvert** (Barrel Controls 8.14 cfs @ 2.81 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 14P: (new Pond)

Inflow Area = 72.300 ac, 7.40% Impervious, Inflow Depth > 0.35" for 2-Year event
Inflow = 8.93 cfs @ 12.70 hrs, Volume= 2.120 af
Outflow = 8.93 cfs @ 12.72 hrs, Volume= 2.076 af, Atten= 0%, Lag= 0.9 min
Primary = 8.93 cfs @ 12.72 hrs, Volume= 2.076 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 716.94' @ 12.72 hrs Surf.Area= 0.045 ac Storage= 0.056 af

Plug-Flow detention time= 10.4 min calculated for 2.076 af (98% of inflow)
Center-of-Mass det. time= 4.4 min (901.9 - 897.5)

Volume	Invert	Avail.Storage	Storage Description
#1	715.00'	0.190 af	**6.00'W x 100.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	716.50'	**12.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=8.89 cfs @ 12.72 hrs HW=716.94' (Free Discharge)
└─**1=Broad-Crested Rectangular Weir** (Weir Controls 8.89 cfs @ 1.69 fps)

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 2S: GOLF COURSE Runoff Area=25.600 ac 2.34% Impervious Runoff Depth>0.58"
Flow Length=2,740' Tc=108.2 min CN=62 Runoff=4.82 cfs 1.242 af

Subcatchment 3S: LAND W. OF GOLF Runoff Area=36.300 ac 6.75% Impervious Runoff Depth>0.85"
Flow Length=2,300' Tc=29.4 min CN=67 Runoff=26.91 cfs 2.573 af

Subcatchment 15S: LOTS 10-14 Runoff Area=1.600 ac 37.50% Impervious Runoff Depth>1.31"
Flow Length=125' Slope=0.0200 '/' Tc=12.3 min CN=75 Runoff=3.22 cfs 0.175 af

Subcatchment 16S: LOTS 15-18 Runoff Area=2.640 ac 20.45% Impervious Runoff Depth>0.96"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=69 Runoff=3.19 cfs 0.211 af

Subcatchment 17S: LOTS 5-9 Runoff Area=3.300 ac 18.18% Impervious Runoff Depth>0.91"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=68 Runoff=3.73 cfs 0.250 af

Subcatchment 18S: LOT 4 Runoff Area=0.640 ac 21.87% Impervious Runoff Depth>0.96"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=69 Runoff=0.77 cfs 0.051 af

Subcatchment 19S: LOTS 2-3 Runoff Area=1.250 ac 20.00% Impervious Runoff Depth>0.91"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=68 Runoff=1.41 cfs 0.095 af

Subcatchment 20S: LOT 1 Runoff Area=0.970 ac 17.53% Impervious Runoff Depth>0.86"
Flow Length=250' Tc=16.1 min CN=67 Runoff=1.06 cfs 0.069 af

Reach 4R: GRASS DITCH Avg. Flow Depth=0.87' Max Vel=3.71 fps Inflow=27.88 cfs 3.884 af
n=0.030 L=235.0' S=0.0100 '/' Capacity=330.06 cfs Outflow=27.64 cfs 3.874 af

Reach 6R: GRASS DITCH 2 Avg. Flow Depth=0.88' Max Vel=3.74 fps Inflow=28.36 cfs 3.969 af
n=0.030 L=160.0' S=0.0100 '/' Capacity=330.06 cfs Outflow=28.22 cfs 3.963 af

Reach 12R: DITCH 5 Avg. Flow Depth=0.27' Max Vel=1.92 fps Inflow=3.73 cfs 0.250 af
n=0.030 L=375.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=3.56 cfs 0.247 af

Reach 13R: DITCH 6 Avg. Flow Depth=0.25' Max Vel=1.80 fps Inflow=3.22 cfs 0.175 af
n=0.030 L=375.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=2.98 cfs 0.173 af

Reach 14R: DITCH 7 Avg. Flow Depth=0.24' Max Vel=1.79 fps Inflow=3.19 cfs 0.211 af
n=0.030 L=500.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=2.89 cfs 0.209 af

Reach 15R: (new Reach) Avg. Flow Depth=0.84' Max Vel=3.66 fps Inflow=26.30 cfs 4.229 af
n=0.030 L=200.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=26.19 cfs 4.220 af

Pond 1P: EXIST CULVER UNDER CTH O Peak Elev=724.97' Inflow=27.32 cfs 3.814 af
Outflow=27.32 cfs 3.814 af

Pond 5P: CULVERT UNDER DR. Peak Elev=721.44' Inflow=27.64 cfs 3.874 af
Outflow=27.64 cfs 3.874 af

Pond 7P: CULVERT UNDER DR 2 Peak Elev=719.36' Inflow=28.22 cfs 3.963 af
Outflow=28.22 cfs 3.963 af

Pond 13P: (new Pond) Peak Elev=718.06' Storage=0.651 af Inflow=31.40 cfs 4.261 af
Outflow=24.21 cfs 3.892 af

Pond 14P: (new Pond) Peak Elev=717.37' Storage=0.078 af Inflow=26.38 cfs 4.275 af
Outflow=26.30 cfs 4.229 af

Summary for Subcatchment 2S: GOLF COURSE

Runoff = 4.82 cfs @ 13.43 hrs, Volume= 1.242 af, Depth> 0.58"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 5-Year Rainfall=3.70"

Area (ac)	CN	Description
25.000	61	>75% Grass cover, Good, HSG B
0.600	98	Paved parking, HSG B
25.600	62	Weighted Average
25.000		97.66% Pervious Area
0.600		2.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0300	0.19		**Sheet Flow, sheet flow** Grass: Short n= 0.150 P2= 2.90"
99.4	2,640	0.0040	0.44		**Shallow Concentrated Flow, shallow** Short Grass Pasture Kv= 7.0 fps
108.2	2,740	Total			

Summary for Subcatchment 3S: LAND W. OF GOLF COURSE

Runoff = 26.91 cfs @ 12.27 hrs, Volume= 2.573 af, Depth> 0.85"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 5-Year Rainfall=3.70"

Area (ac)	CN	Description
9.000	68	1 acre lots, 20% imp, HSG B
13.000	55	Woods, Good, HSG B
13.000	75	Row crops, SR + CR, Good, HSG B
1.300	89	Paved roads w/open ditches, 50% imp, HSG B
36.300	67	Weighted Average
33.850		93.25% Pervious Area
2.450		6.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.2000	0.19		**Sheet Flow, SHEET FLOW** Woods: Light underbrush n= 0.400 P2= 2.90"
11.2	1,500	0.2000	2.24		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Woodland Kv= 5.0 fps
9.2	700	0.0200	1.27		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Cultivated Straight Rows Kv= 9.0 fps
29.4	2,300	Total			

Summary for Subcatchment 15S: LOTS 10-14

Runoff = 3.22 cfs @ 12.05 hrs, Volume= 0.175 af, Depth> 1.31"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 5-Year Rainfall=3.70"

	Area (ac)	CN	Description
	1.000	61	>75% Grass cover, Good, HSG B
*	0.500	98	drives & houses, HSG B
*	0.100	98	Paved road, HSG B
	1.600	75	Weighted Average
	1.000		62.50% Pervious Area
	0.600		37.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	125	0.0200	0.17		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"

Summary for Subcatchment 16S: LOTS 15-18

Runoff = 3.19 cfs @ 12.11 hrs, Volume= 0.211 af, Depth> 0.96"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 5-Year Rainfall=3.70"

	Area (ac)	CN	Description
	2.100	61	>75% Grass cover, Good, HSG B
*	0.400	98	drives & homes, HSG B
*	0.140	98	Paved road, HSG B
	2.640	69	Weighted Average
	2.100		79.55% Pervious Area
	0.540		20.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 17S: LOTS 5-9

Runoff = 3.73 cfs @ 12.11 hrs, Volume= 0.250 af, Depth> 0.91"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 5-Year Rainfall=3.70"

	Area (ac)	CN	Description
	2.700	61	>75% Grass cover, Good, HSG B
*	0.500	98	drives & houses, HSG B
*	0.100	98	Paved road, HSG B
	3.300	68	Weighted Average
	2.700		81.82% Pervious Area
	0.600		18.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 18S: LOT 4

Runoff = 0.77 cfs @ 12.11 hrs, Volume= 0.051 af, Depth> 0.96"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 5-Year Rainfall=3.70"

	Area (ac)	CN	Description
	0.500	61	>75% Grass cover, Good, HSG B
*	0.100	98	drives & houses, HSG B
*	0.040	98	Paved road, HSG B
	0.640	69	Weighted Average
	0.500		78.13% Pervious Area
	0.140		21.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 19S: LOTS 2-3

Runoff = 1.41 cfs @ 12.11 hrs, Volume= 0.095 af, Depth> 0.91"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 5-Year Rainfall=3.70"

	Area (ac)	CN	Description
	1.000	61	>75% Grass cover, Good, HSG B
*	0.200	98	drives & houses, HSG B
*	0.050	98	Paved road, HSG B
	1.250	68	Weighted Average
	1.000		80.00% Pervious Area
	0.250		20.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 20S: LOT 1

Runoff = 1.06 cfs @ 12.10 hrs, Volume= 0.069 af, Depth> 0.86"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 5-Year Rainfall=3.70"

	Area (ac)	CN	Description
	0.800	61	>75% Grass cover, Good, HSG B
*	0.100	98	drives & houses, HSG B
*	0.070	98	Paved road, HSG B
	0.970	67	Weighted Average
	0.800		82.47% Pervious Area
	0.170		17.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
2.5	150	0.0200	0.99		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
16.1	250	Total			

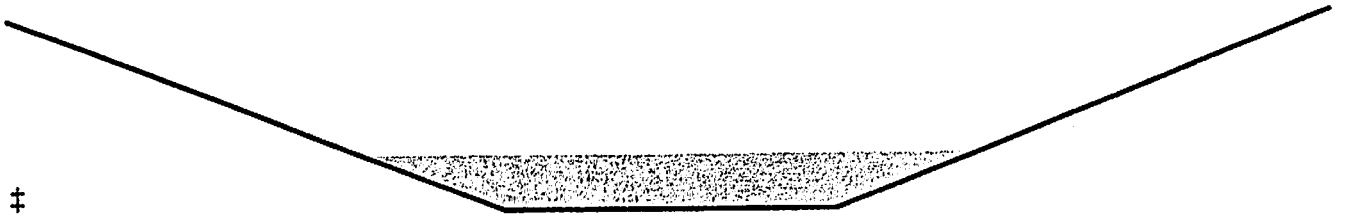
Summary for Reach 4R: GRASS DITCH

Inflow Area = 62.870 ac, 5.12% Impervious, Inflow Depth > 0.74" for 5-Year event
Inflow = 27.88 cfs @ 12.27 hrs, Volume= 3.884 af
Outflow = 27.64 cfs @ 12.30 hrs, Volume= 3.874 af, Atten= 1%, Lag= 2.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.71 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 2.02 fps, Avg. Travel Time= 1.9 min

Peak Storage= 1,757 cf @ 12.28 hrs
Average Depth at Peak Storage= 0.87'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 330.06 cfs

6.00' x 3.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 24.00'
Length= 235.0' Slope= 0.0100 '/'
Inlet Invert= 722.00', Outlet Invert= 719.65'



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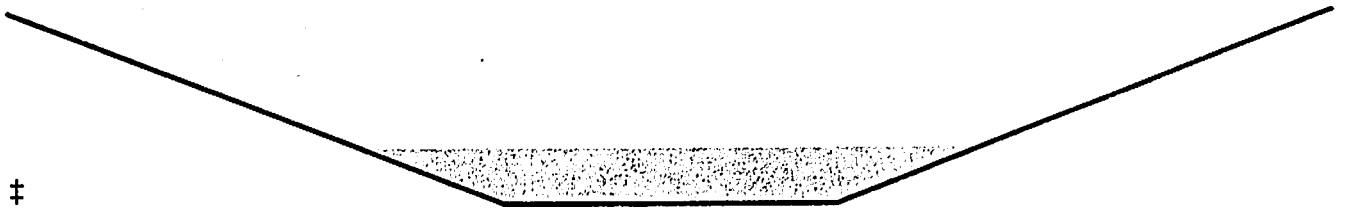
Summary for Reach 6R: GRASS DITCH 2

Inflow Area = 64.120 ac, 5.41% Impervious, Inflow Depth > 0.74" for 5-Year event
Inflow = 28.36 cfs @ 12.30 hrs, Volume= 3.969 af
Outflow = 28.22 cfs @ 12.32 hrs, Volume= 3.963 af, Atten= 0%, Lag= 1.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.74 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 2.02 fps, Avg. Travel Time= 1.3 min

Peak Storage= 1,213 cf @ 12.31 hrs
Average Depth at Peak Storage= 0.88'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 330.06 cfs

6.00' x 3.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 24.00'
Length= 160.0' Slope= 0.0100 '/'
Inlet Invert= 719.15', Outlet Invert= 717.55'



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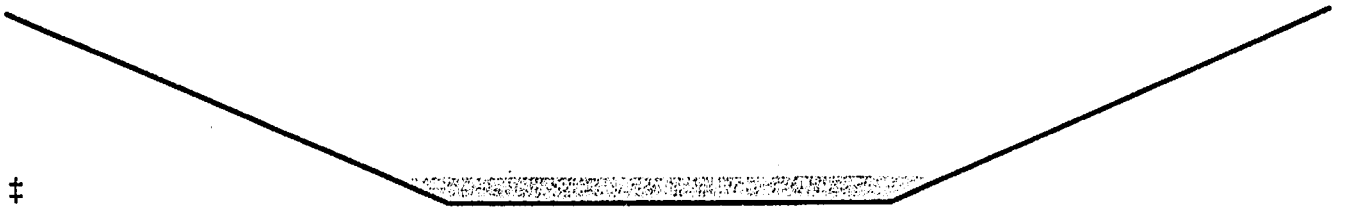
Summary for Reach 12R: DITCH 5

Inflow Area = 3.300 ac, 18.18% Impervious, Inflow Depth > 0.91" for 5-Year event
Inflow = 3.73 cfs @ 12.11 hrs, Volume= 0.250 af
Outflow = 3.56 cfs @ 12.21 hrs, Volume= 0.247 af, Atten= 5%, Lag= 5.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.92 fps, Min. Travel Time= 3.3 min
Avg. Velocity = 0.71 fps, Avg. Travel Time= 8.8 min

Peak Storage= 699 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.27'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 375.0' Slope= 0.0100 '/'
Inlet Invert= 722.50', Outlet Invert= 718.75'



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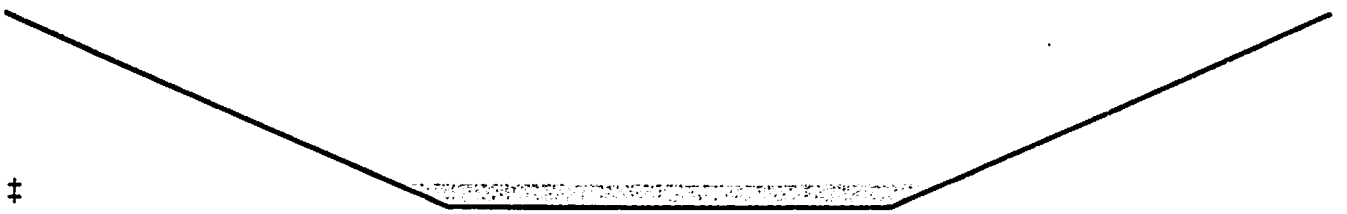
Summary for Reach 13R: DITCH 6

Inflow Area = 1.600 ac, 37.50% Impervious, Inflow Depth > 1.31" for 5-Year event
Inflow = 3.22 cfs @ 12.05 hrs, Volume= 0.175 af
Outflow = 2.98 cfs @ 12.14 hrs, Volume= 0.173 af, Atten= 7%, Lag= 5.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.80 fps, Min. Travel Time= 3.5 min
Avg. Velocity = 0.58 fps, Avg. Travel Time= 10.8 min

Peak Storage= 625 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.25'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 375.0' Slope= 0.0100 '/'
Inlet Invert= 722.50', Outlet Invert= 718.75'



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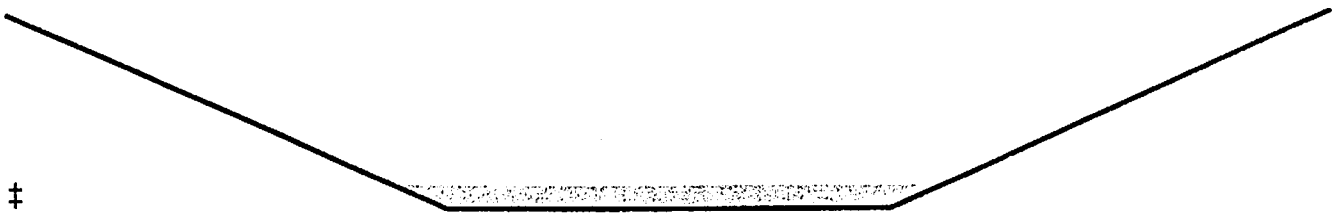
Summary for Reach 14R: DITCH 7

Inflow Area = 2.640 ac, 20.45% Impervious, Inflow Depth > 0.96" for 5-Year event
Inflow = 3.19 cfs @ 12.11 hrs, Volume= 0.211 af
Outflow = 2.89 cfs @ 12.25 hrs, Volume= 0.209 af, Atten= 9%, Lag= 8.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.79 fps, Min. Travel Time= 4.7 min
Avg. Velocity = 0.66 fps, Avg. Travel Time= 12.6 min

Peak Storage= 822 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.24'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 500.0' Slope= 0.0100 '/'
Inlet Invert= 724.00', Outlet Invert= 719.00'



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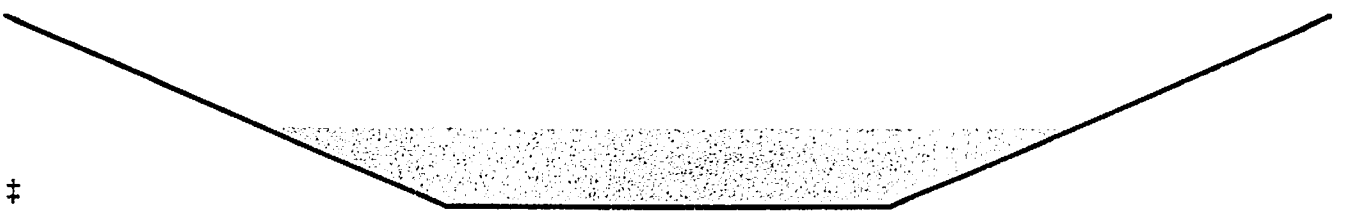
Summary for Reach 15R: (new Reach)

Inflow Area = 72.300 ac, 7.40% Impervious, Inflow Depth > 0.70" for 5-Year event
Inflow = 26.30 cfs @ 12.49 hrs, Volume= 4.229 af
Outflow = 26.19 cfs @ 12.52 hrs, Volume= 4.220 af, Atten= 0%, Lag= 1.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.66 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 2.20 fps, Avg. Travel Time= 1.5 min

Peak Storage= 1,438 cf @ 12.50 hrs
Average Depth at Peak Storage= 0.84'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 200.0' Slope= 0.0100 '/'
Inlet Invert= 716.00', Outlet Invert= 714.00'



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Summary for Pond 1P: EXIST CULVER UNDER CTH O

Inflow Area = 61.900 ac, 4.93% Impervious, Inflow Depth > 0.74" for 5-Year event
Inflow = 27.32 cfs @ 12.27 hrs, Volume= 3.814 af
Outflow = 27.32 cfs @ 12.27 hrs, Volume= 3.814 af, Atten= 0%, Lag= 0.0 min
Primary = 27.32 cfs @ 12.27 hrs, Volume= 3.814 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 724.97' @ 12.27 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	723.27'	**71.0" W x 47.0" H, R=36.7"/110.2" Arch Culvert** L= 52.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 723.27' / 722.72' S= 0.0106 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	729.50'	**100.0' long x 24.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=27.10 cfs @ 12.27 hrs HW=724.96' (Free Discharge)
└─**1=Culvert** (Inlet Controls 27.10 cfs @ 3.12 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 5P: CULVERT UNDER DR.

Inflow Area = 62.870 ac, 5.12% Impervious, Inflow Depth > 0.74" for 5-Year event
Inflow = 27.64 cfs @ 12.30 hrs, Volume= 3.874 af
Outflow = 27.64 cfs @ 12.30 hrs, Volume= 3.874 af, Atten= 0%, Lag= 0.0 min
Primary = 27.64 cfs @ 12.30 hrs, Volume= 3.874 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 721.44' @ 12.30 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	719.65'	**36.0" Round Culvert X 2.00** L= 50.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 719.65' / 719.15' S= 0.0100 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	722.60'	**3.0' long x 24.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=27.61 cfs @ 12.30 hrs HW=721.44' (Free Discharge)
└─**1=Culvert** (Barrel Controls 27.61 cfs @ 4.52 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 7P: CULVERT UNDER DR 2

Inflow Area = 64.120 ac, 5.41% Impervious, Inflow Depth > 0.74" for 5-Year event
Inflow = 28.22 cfs @ 12.32 hrs, Volume= 3.963 af
Outflow = 28.22 cfs @ 12.32 hrs, Volume= 3.963 af, Atten= 0%, Lag= 0.0 min
Primary = 28.22 cfs @ 12.32 hrs, Volume= 3.963 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 719.36' @ 12.32 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	717.55'	**36.0" Round Culvert X 2.00** L= 50.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 717.55' / 717.05' S= 0.0100 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	720.50'	**3.0' long x 24.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=28.04 cfs @ 12.32 hrs HW=719.35' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 28.04 cfs @ 4.54 fps)
└—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 13P: (new Pond)

Inflow Area = 68.060 ac, 6.19% Impervious, Inflow Depth > 0.75" for 5-Year event
Inflow = 31.40 cfs @ 12.30 hrs, Volume= 4.261 af
Outflow = 24.21 cfs @ 12.49 hrs, Volume= 3.892 af, Atten= 23%, Lag= 11.5 min
Primary = 24.21 cfs @ 12.49 hrs, Volume= 3.892 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 718.06' @ 12.49 hrs Surf.Area= 0.242 ac Storage= 0.651 af

Plug-Flow detention time= 46.8 min calculated for 3.879 af (91% of inflow)
Center-of-Mass det. time= 20.0 min (876.6 - 856.5)

Volume	Invert	Avail.Storage	Storage Description
#1	714.50'	1.498 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
714.50	0.110	0.000	0.000
715.00	0.120	0.057	0.057
716.00	0.190	0.155	0.212
717.00	0.210	0.200	0.412
718.00	0.240	0.225	0.637
719.00	0.270	0.255	0.893
720.00	0.300	0.285	1.177
721.00	0.340	0.320	1.498

Device	Routing	Invert	Outlet Devices
#1	Primary	716.25'	**36.0" Round Culvert X 2.00** L= 50.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 716.25' / 716.00' S= 0.0050 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	720.00'	**50.0' long x 28.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=24.13 cfs @ 12.49 hrs HW=718.05' (Free Discharge)
└1=**Culvert** (Barrel Controls 24.13 cfs @ 3.90 fps)
└2=**Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 14P: (new Pond)

Inflow Area = 72.300 ac, 7.40% Impervious, Inflow Depth > 0.71" for 5-Year event
Inflow = 26.38 cfs @ 12.47 hrs, Volume= 4.275 af
Outflow = 26.30 cfs @ 12.49 hrs, Volume= 4.229 af, Atten= 0%, Lag= 1.0 min
Primary = 26.30 cfs @ 12.49 hrs, Volume= 4.229 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 717.37' @ 12.49 hrs Surf.Area= 0.053 ac Storage= 0.078 af

Plug-Flow detention time= 5.8 min calculated for 4.215 af (99% of inflow)
Center-of-Mass det. time= 2.4 min (874.2 - 871.8)

Volume	Invert	Avail.Storage	Storage Description
#1	715.00'	0.190 af	**6.00'W x 100.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	716.50'	**12.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=26.21 cfs @ 12.49 hrs HW=717.37' (Free Discharge)
└1=**Broad-Crested Rectangular Weir** (Weir Controls 26.21 cfs @ 2.50 fps)

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 2S: GOLF COURSE Runoff Area=25.600 ac 2.34% Impervious Runoff Depth>0.86"
Flow Length=2,740' Tc=108.2 min CN=62 Runoff=7.54 cfs 1.826 af

Subcatchment 3S: LAND W. OF GOLF Runoff Area=36.300 ac 6.75% Impervious Runoff Depth>1.19"
Flow Length=2,300' Tc=29.4 min CN=67 Runoff=39.13 cfs 3.591 af

Subcatchment 15S: LOTS 10-14 Runoff Area=1.600 ac 37.50% Impervious Runoff Depth>1.73"
Flow Length=125' Slope=0.0200 '/' Tc=12.3 min CN=75 Runoff=4.25 cfs 0.231 af

Subcatchment 16S: LOTS 15-18 Runoff Area=2.640 ac 20.45% Impervious Runoff Depth>1.32"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=69 Runoff=4.48 cfs 0.290 af

Subcatchment 17S: LOTS 5-9 Runoff Area=3.300 ac 18.18% Impervious Runoff Depth>1.26"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=68 Runoff=5.30 cfs 0.345 af

Subcatchment 18S: LOT 4 Runoff Area=0.640 ac 21.87% Impervious Runoff Depth>1.32"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=69 Runoff=1.09 cfs 0.070 af

Subcatchment 19S: LOTS 2-3 Runoff Area=1.250 ac 20.00% Impervious Runoff Depth>1.26"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=68 Runoff=2.01 cfs 0.131 af

Subcatchment 20S: LOT 1 Runoff Area=0.970 ac 17.53% Impervious Runoff Depth>1.19"
Flow Length=250' Tc=16.1 min CN=67 Runoff=1.53 cfs 0.097 af

Reach 4R: GRASS DITCH Avg. Flow Depth=1.06' Max Vel=4.15 fps Inflow=40.66 cfs 5.513 af
n=0.030 L=235.0' S=0.0100 '/' Capacity=330.06 cfs Outflow=40.33 cfs 5.502 af

Reach 6R: GRASS DITCH 2 Avg. Flow Depth=1.07' Max Vel=4.18 fps Inflow=41.38 cfs 5.633 af
n=0.030 L=160.0' S=0.0100 '/' Capacity=330.06 cfs Outflow=41.20 cfs 5.626 af

Reach 12R: DITCH 5 Avg. Flow Depth=0.34' Max Vel=2.17 fps Inflow=5.30 cfs 0.345 af
n=0.030 L=375.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=5.11 cfs 0.343 af

Reach 13R: DITCH 6 Avg. Flow Depth=0.29' Max Vel=1.99 fps Inflow=4.25 cfs 0.231 af
n=0.030 L=375.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=4.00 cfs 0.229 af

Reach 14R: DITCH 7 Avg. Flow Depth=0.30' Max Vel=2.03 fps Inflow=4.48 cfs 0.290 af
n=0.030 L=500.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=4.14 cfs 0.287 af

Reach 15R: (new Reach) Avg. Flow Depth=1.08' Max Vel=4.19 fps Inflow=41.91 cfs 6.125 af
n=0.030 L=200.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=41.74 cfs 6.114 af

Pond 1P: EXIST CULVER UNDER CTH O Peak Elev=725.41' Inflow=39.86 cfs 5.417 af
Outflow=39.86 cfs 5.417 af

Pond 5P: CULVERT UNDER DR. Peak Elev=721.88' Inflow=40.33 cfs 5.502 af
Outflow=40.33 cfs 5.502 af

Pond 7P: CULVERT UNDER DR 2 Peak Elev=719.80' Inflow=41.20 cfs 5.626 af
Outflow=41.20 cfs 5.626 af

Pond 13P: (new Pond) Peak Elev=718.60' Storage=0.786 af Inflow=45.73 cfs 6.039 af
Outflow=38.62 cfs 5.656 af

Pond 14P: (new Pond) Peak Elev=717.70' Storage=0.096 af Inflow=42.02 cfs 6.172 af
Outflow=41.91 cfs 6.125 af

Summary for Subcatchment 2S: GOLF COURSE

Runoff = 7.54 cfs @ 13.37 hrs, Volume= 1.826 af, Depth> 0.86"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=4.30"

Area (ac)	CN	Description
25.000	61	>75% Grass cover, Good, HSG B
0.600	98	Paved parking, HSG B
25.600	62	Weighted Average
25.000		97.66% Pervious Area
0.600		2.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0300	0.19		**Sheet Flow, sheet flow** Grass: Short n= 0.150 P2= 2.90"
99.4	2,640	0.0040	0.44		**Shallow Concentrated Flow, shallow** Short Grass Pasture Kv= 7.0 fps
108.2	2,740	Total			

Summary for Subcatchment 3S: LAND W. OF GOLF COURSE

Runoff = 39.13 cfs @ 12.26 hrs, Volume= 3.591 af, Depth> 1.19"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=4.30"

Area (ac)	CN	Description
9.000	68	1 acre lots, 20% imp, HSG B
13.000	55	Woods, Good, HSG B
13.000	75	Row crops, SR + CR, Good, HSG B
1.300	89	Paved roads w/open ditches, 50% imp, HSG B
36.300	67	Weighted Average
33.850		93.25% Pervious Area
2.450		6.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.2000	0.19		**Sheet Flow, SHEET FLOW** Woods: Light underbrush n= 0.400 P2= 2.90"
11.2	1,500	0.2000	2.24		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Woodland Kv= 5.0 fps
9.2	700	0.0200	1.27		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Cultivated Straight Rows Kv= 9.0 fps
29.4	2,300	Total			

Summary for Subcatchment 15S: LOTS 10-14

Runoff = 4.25 cfs @ 12.05 hrs, Volume= 0.231 af, Depth> 1.73"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=4.30"

	Area (ac)	CN	Description
	1.000	61	>75% Grass cover, Good, HSG B
*	0.500	98	drives & houses, HSG B
*	0.100	98	Paved road, HSG B
	1.600	75	Weighted Average
	1.000		62.50% Pervious Area
	0.600		37.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	125	0.0200	0.17		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"

Summary for Subcatchment 16S: LOTS 15-18

Runoff = 4.48 cfs @ 12.11 hrs, Volume= 0.290 af, Depth> 1.32"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=4.30"

	Area (ac)	CN	Description
	2.100	61	>75% Grass cover, Good, HSG B
*	0.400	98	drives & homes, HSG B
*	0.140	98	Paved road, HSG B
	2.640	69	Weighted Average
	2.100		79.55% Pervious Area
	0.540		20.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 17S: LOTS 5-9

Runoff = 5.30 cfs @ 12.11 hrs, Volume= 0.345 af, Depth> 1.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=4.30"

	Area (ac)	CN	Description
	2.700	61	>75% Grass cover, Good, HSG B
*	0.500	98	drives & houses, HSG B
*	0.100	98	Paved road, HSG B
	3.300	68	Weighted Average
	2.700		81.82% Pervious Area
	0.600		18.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 18S: LOT 4

Runoff = 1.09 cfs @ 12.11 hrs, Volume= 0.070 af, Depth> 1.32"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=4.30"

	Area (ac)	CN	Description
	0.500	61	>75% Grass cover, Good, HSG B
*	0.100	98	drives & houses, HSG B
*	0.040	98	Paved road, HSG B
	0.640	69	Weighted Average
	0.500		78.13% Pervious Area
	0.140		21.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 19S: LOTS 2-3

Runoff = 2.01 cfs @ 12.11 hrs, Volume= 0.131 af, Depth> 1.26"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=4.30"

	Area (ac)	CN	Description
	1.000	61	>75% Grass cover, Good, HSG B
*	0.200	98	drives & houses, HSG B
*	0.050	98	Paved road, HSG B
	1.250	68	Weighted Average
	1.000		80.00% Pervious Area
	0.250		20.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 20S: LOT 1

Runoff = 1.53 cfs @ 12.10 hrs, Volume= 0.097 af, Depth> 1.19"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-Year Rainfall=4.30"

	Area (ac)	CN	Description
	0.800	61	>75% Grass cover, Good, HSG B
*	0.100	98	drives & houses, HSG B
*	0.070	98	Paved road, HSG B
	0.970	67	Weighted Average
	0.800		82.47% Pervious Area
	0.170		17.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
2.5	150	0.0200	0.99		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
16.1	250	Total			

Summary for Reach 4R: GRASS DITCH

Inflow Area = 62.870 ac, 5.12% Impervious, Inflow Depth > 1.05" for 10-Year event
Inflow = 40.66 cfs @ 12.26 hrs, Volume= 5.513 af
Outflow = 40.33 cfs @ 12.29 hrs, Volume= 5.502 af, Atten= 1%, Lag= 1.7 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.15 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 2.19 fps, Avg. Travel Time= 1.8 min

Peak Storage= 2,298 cf @ 12.27 hrs
Average Depth at Peak Storage= 1.06'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 330.06 cfs

6.00' x 3.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 24.00'
Length= 235.0' Slope= 0.0100 '/'
Inlet Invert= 722.00', Outlet Invert= 719.65'

‡

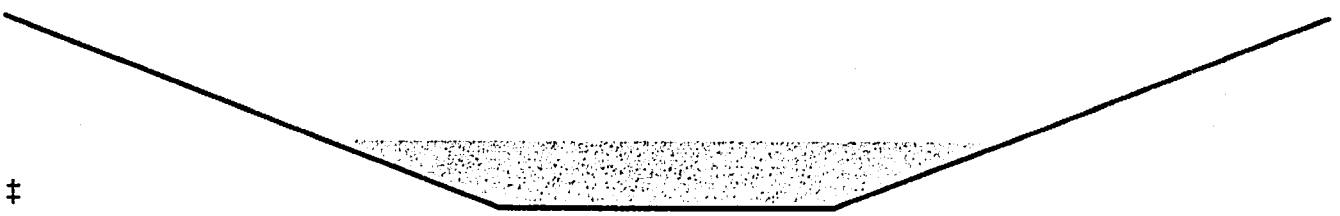
Summary for Reach 6R: GRASS DITCH 2

Inflow Area = 64.120 ac, 5.41% Impervious, Inflow Depth > 1.05" for 10-Year event
Inflow = 41.38 cfs @ 12.28 hrs, Volume= 5.633 af
Outflow = 41.20 cfs @ 12.30 hrs, Volume= 5.626 af, Atten= 0%, Lag= 1.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.18 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 2.17 fps, Avg. Travel Time= 1.2 min

Peak Storage= 1,585 cf @ 12.29 hrs
Average Depth at Peak Storage= 1.07'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 330.06 cfs

6.00' x 3.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 24.00'
Length= 160.0' Slope= 0.0100 '/'
Inlet Invert= 719.15', Outlet Invert= 717.55'



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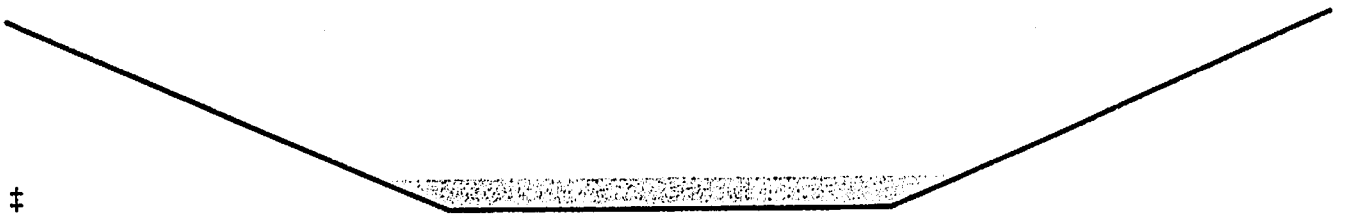
Summary for Reach 12R: DITCH 5

Inflow Area = 3.300 ac, 18.18% Impervious, Inflow Depth > 1.26" for 10-Year event
Inflow = 5.30 cfs @ 12.11 hrs, Volume= 0.345 af
Outflow = 5.11 cfs @ 12.19 hrs, Volume= 0.343 af, Atten= 4%, Lag= 5.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.17 fps, Min. Travel Time= 2.9 min
Avg. Velocity = 0.77 fps, Avg. Travel Time= 8.1 min

Peak Storage= 885 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.34'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 375.0' Slope= 0.0100 '/'
Inlet Invert= 722.50', Outlet Invert= 718.75'



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Summary for Reach 13R: DITCH 6

Inflow Area = 1.600 ac, 37.50% Impervious, Inflow Depth > 1.73" for 10-Year event
Inflow = 4.25 cfs @ 12.05 hrs, Volume= 0.231 af
Outflow = 4.00 cfs @ 12.13 hrs, Volume= 0.229 af, Atten= 6%, Lag= 5.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.99 fps, Min. Travel Time= 3.1 min
Avg. Velocity = 0.62 fps, Avg. Travel Time= 10.1 min

Peak Storage= 754 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 375.0' Slope= 0.0100 '/'
Inlet Invert= 722.50', Outlet Invert= 718.75'

‡

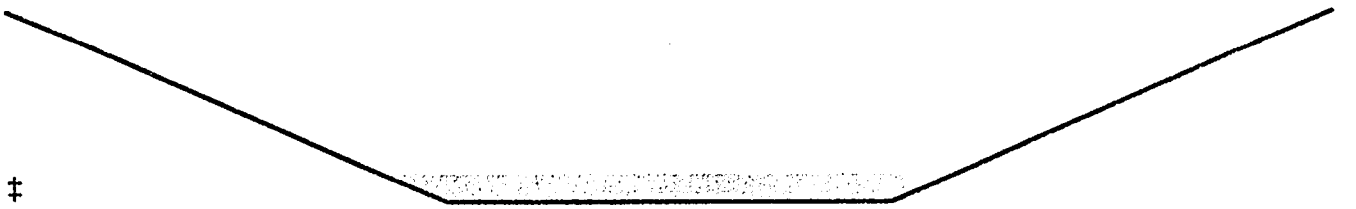
Summary for Reach 14R: DITCH 7

Inflow Area = 2.640 ac, 20.45% Impervious, Inflow Depth > 1.32" for 10-Year event
Inflow = 4.48 cfs @ 12.11 hrs, Volume= 0.290 af
Outflow = 4.14 cfs @ 12.22 hrs, Volume= 0.287 af, Atten= 8%, Lag= 7.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.03 fps, Min. Travel Time= 4.1 min
Avg. Velocity = 0.72 fps, Avg. Travel Time= 11.6 min

Peak Storage= 1,037 cf @ 12.16 hrs
Average Depth at Peak Storage= 0.30'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 500.0' Slope= 0.0100 '/'
Inlet Invert= 724.00', Outlet Invert= 719.00'



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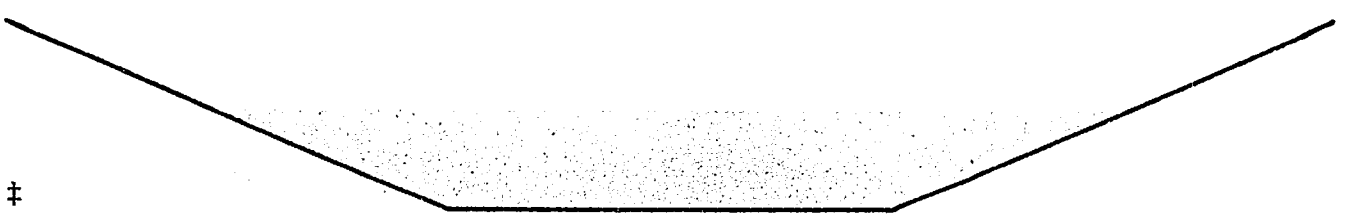
Summary for Reach 15R: (new Reach)

Inflow Area = 72.300 ac, 7.40% Impervious, Inflow Depth > 1.02" for 10-Year event
Inflow = 41.91 cfs @ 12.43 hrs, Volume= 6.125 af
Outflow = 41.74 cfs @ 12.45 hrs, Volume= 6.114 af, Atten= 0%, Lag= 1.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.19 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 2.45 fps, Avg. Travel Time= 1.4 min

Peak Storage= 1,999 cf @ 12.44 hrs
Average Depth at Peak Storage= 1.08'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 200.0' Slope= 0.0100 '/'
Inlet Invert= 716.00', Outlet Invert= 714.00'



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Summary for Pond 1P: EXIST CULVER UNDER CTH O

Inflow Area = 61.900 ac, 4.93% Impervious, Inflow Depth > 1.05" for 10-Year event
Inflow = 39.86 cfs @ 12.27 hrs, Volume= 5.417 af
Outflow = 39.86 cfs @ 12.27 hrs, Volume= 5.417 af, Atten= 0%, Lag= 0.0 min
Primary = 39.86 cfs @ 12.27 hrs, Volume= 5.417 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 725.41' @ 12.27 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	723.27'	**71.0" W x 47.0" H, R=36.7"/110.2" Arch Culvert** L= 52.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 723.27' / 722.72' S= 0.0106 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	729.50'	**100.0' long x 24.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=39.60 cfs @ 12.27 hrs HW=725.40' (Free Discharge)
└─**1=Culvert** (Inlet Controls 39.60 cfs @ 3.54 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 5P: CULVERT UNDER DR.

Inflow Area = 62.870 ac, 5.12% Impervious, Inflow Depth > 1.05" for 10-Year event
Inflow = 40.33 cfs @ 12.29 hrs, Volume= 5.502 af
Outflow = 40.33 cfs @ 12.29 hrs, Volume= 5.502 af, Atten= 0%, Lag= 0.0 min
Primary = 40.33 cfs @ 12.29 hrs, Volume= 5.502 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 721.88' @ 12.29 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	719.65'	**36.0" Round Culvert X 2.00** L= 50.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 719.65' / 719.15' S= 0.0100 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	722.60'	**3.0' long x 24.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=40.17 cfs @ 12.29 hrs HW=721.87' (Free Discharge)
└─**1=Culvert** (Barrel Controls 40.17 cfs @ 4.99 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 1P: EXIST CULVER UNDER CTH O

Inflow Area = 61.900 ac, 4.93% Impervious, Inflow Depth > 1.05" for 10-Year event
Inflow = 39.86 cfs @ 12.27 hrs, Volume= 5.417 af
Outflow = 39.86 cfs @ 12.27 hrs, Volume= 5.417 af, Atten= 0%, Lag= 0.0 min
Primary = 39.86 cfs @ 12.27 hrs, Volume= 5.417 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 725.41' @ 12.27 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	723.27'	**71.0" W x 47.0" H, R=36.7"/110.2" Arch Culvert** L= 52.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 723.27' / 722.72' S= 0.0106 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	729.50'	**100.0' long x 24.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=39.60 cfs @ 12.27 hrs HW=725.40' (Free Discharge)
└─**1=Culvert** (Inlet Controls 39.60 cfs @ 3.54 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 5P: CULVERT UNDER DR.

Inflow Area = 62.870 ac, 5.12% Impervious, Inflow Depth > 1.05" for 10-Year event
Inflow = 40.33 cfs @ 12.29 hrs, Volume= 5.502 af
Outflow = 40.33 cfs @ 12.29 hrs, Volume= 5.502 af, Atten= 0%, Lag= 0.0 min
Primary = 40.33 cfs @ 12.29 hrs, Volume= 5.502 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 721.88' @ 12.29 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	719.65'	**36.0" Round Culvert X 2.00** L= 50.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 719.65' / 719.15' S= 0.0100 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	722.60'	**3.0' long x 24.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=40.17 cfs @ 12.29 hrs HW=721.87' (Free Discharge)
└─**1=Culvert** (Barrel Controls 40.17 cfs @ 4.99 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 7P: CULVERT UNDER DR 2

Inflow Area = 64.120 ac, 5.41% Impervious, Inflow Depth > 1.05" for 10-Year event
Inflow = 41.20 cfs @ 12.30 hrs, Volume= 5.626 af
Outflow = 41.20 cfs @ 12.30 hrs, Volume= 5.626 af, Atten= 0%, Lag= 0.0 min
Primary = 41.20 cfs @ 12.30 hrs, Volume= 5.626 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 719.80' @ 12.30 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	717.55'	**36.0" Round Culvert X 2.00** L= 50.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 717.55' / 717.05' S= 0.0100 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	720.50'	**3.0' long x 24.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=41.13 cfs @ 12.30 hrs HW=719.80' (Free Discharge)
└─**1=Culvert** (Barrel Controls 41.13 cfs @ 5.02 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 13P: (new Pond)

Inflow Area = 68.060 ac, 6.19% Impervious, Inflow Depth > 1.06" for 10-Year event
Inflow = 45.73 cfs @ 12.28 hrs, Volume= 6.039 af
Outflow = 38.62 cfs @ 12.43 hrs, Volume= 5.656 af, Atten= 16%, Lag= 8.9 min
Primary = 38.62 cfs @ 12.43 hrs, Volume= 5.656 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 718.60' @ 12.43 hrs Surf.Area= 0.258 ac Storage= 0.786 af

Plug-Flow detention time= 36.2 min calculated for 5.656 af (94% of inflow)
Center-of-Mass det. time= 15.8 min (865.4 - 849.7)

Volume	Invert	Avail.Storage	Storage Description
#1	714.50'	1.498 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
714.50	0.110	0.000	0.000
715.00	0.120	0.057	0.057
716.00	0.190	0.155	0.212
717.00	0.210	0.200	0.412
718.00	0.240	0.225	0.637
719.00	0.270	0.255	0.893
720.00	0.300	0.285	1.177
721.00	0.340	0.320	1.498

Device	Routing	Invert	Outlet Devices
#1	Primary	716.25'	**36.0" Round Culvert X 2.00** L= 50.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 716.25' / 716.00' S= 0.0050 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	720.00'	**50.0' long x 28.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=38.44 cfs @ 12.43 hrs HW=718.59' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 38.44 cfs @ 4.47 fps)
└—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 14P: (new Pond)

Inflow Area = 72.300 ac, 7.40% Impervious, Inflow Depth > 1.02" for 10-Year event
Inflow = 42.02 cfs @ 12.41 hrs, Volume= 6.172 af
Outflow = 41.91 cfs @ 12.43 hrs, Volume= 6.125 af, Atten= 0%, Lag= 0.8 min
Primary = 41.91 cfs @ 12.43 hrs, Volume= 6.125 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 717.70' @ 12.43 hrs Surf.Area= 0.059 ac Storage= 0.096 af

Plug-Flow detention time= 4.3 min calculated for 6.105 af (99% of inflow)
Center-of-Mass det. time= 1.9 min (863.1 - 861.3)

Volume	Invert	Avail.Storage	Storage Description
#1	715.00'	0.190 af	**6.00'W x 100.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	716.50'	**12.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=41.72 cfs @ 12.43 hrs HW=717.69' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 41.72 cfs @ 2.92 fps)

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 2S: GOLF COURSE Runoff Area=25.600 ac 2.34% Impervious Runoff Depth>1.16"
Flow Length=2,740' Tc=108.2 min CN=62 Runoff=10.66 cfs 2.481 af

Subcatchment 3S: LAND W. OF GOLF Runoff Area=36.300 ac 6.75% Impervious Runoff Depth>1.55"
Flow Length=2,300' Tc=29.4 min CN=67 Runoff=52.38 cfs 4.702 af

Subcatchment 15S: LOTS 10-14 Runoff Area=1.600 ac 37.50% Impervious Runoff Depth>2.17"
Flow Length=125' Slope=0.0200 '/' Tc=12.3 min CN=75 Runoff=5.33 cfs 0.290 af

Subcatchment 16S: LOTS 15-18 Runoff Area=2.640 ac 20.45% Impervious Runoff Depth>1.71"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=69 Runoff=5.86 cfs 0.375 af

Subcatchment 17S: LOTS 5-9 Runoff Area=3.300 ac 18.18% Impervious Runoff Depth>1.63"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=68 Runoff=6.99 cfs 0.449 af

Subcatchment 18S: LOT 4 Runoff Area=0.640 ac 21.87% Impervious Runoff Depth>1.71"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=69 Runoff=1.42 cfs 0.091 af

Subcatchment 19S: LOTS 2-3 Runoff Area=1.250 ac 20.00% Impervious Runoff Depth>1.63"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=68 Runoff=2.65 cfs 0.170 af

Subcatchment 20S: LOT 1 Runoff Area=0.970 ac 17.53% Impervious Runoff Depth>1.56"
Flow Length=250' Tc=16.1 min CN=67 Runoff=2.03 cfs 0.126 af

Reach 4R: GRASS DITCH Avg. Flow Depth=1.24' Max Vel=4.52 fps Inflow=54.61 cfs 7.309 af
n=0.030 L=235.0' S=0.0100 '/' Capacity=330.06 cfs Outflow=54.18 cfs 7.296 af

Reach 6R: GRASS DITCH 2 Avg. Flow Depth=1.25' Max Vel=4.54 fps Inflow=55.69 cfs 7.467 af
n=0.030 L=160.0' S=0.0100 '/' Capacity=330.06 cfs Outflow=55.37 cfs 7.458 af

Reach 12R: DITCH 5 Avg. Flow Depth=0.40' Max Vel=2.38 fps Inflow=6.99 cfs 0.449 af
n=0.030 L=375.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=6.73 cfs 0.447 af

Reach 13R: DITCH 6 Avg. Flow Depth=0.33' Max Vel=2.15 fps Inflow=5.33 cfs 0.290 af
n=0.030 L=375.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=5.06 cfs 0.288 af

Reach 14R: DITCH 7 Avg. Flow Depth=0.35' Max Vel=2.23 fps Inflow=5.86 cfs 0.375 af
n=0.030 L=500.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=5.49 cfs 0.372 af

Reach 15R: (new Reach) Avg. Flow Depth=1.28' Max Vel=4.60 fps Inflow=58.26 cfs 8.211 af
n=0.030 L=200.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=58.09 cfs 8.198 af

Pond 1P: EXIST CULVER UNDER CTH O Peak Elev=725.84' Inflow=53.54 cfs 7.182 af
Outflow=53.54 cfs 7.182 af

Pond 5P: CULVERT UNDER DR. Peak Elev=722.33' Inflow=54.18 cfs 7.296 af
Outflow=54.18 cfs 7.296 af

Pond 7P: CULVERT UNDER DR 2 Peak Elev=720.27' Inflow=55.37 cfs 7.458 af
Outflow=55.37 cfs 7.458 af

Pond 13P: (new Pond) Peak Elev=719.13' Storage=0.927 af Inflow=61.49 cfs 7.995 af
Outflow=53.74 cfs 7.599 af

Pond 14P: (new Pond) Peak Elev=718.00' Storage=0.114 af Inflow=58.31 cfs 8.259 af
Outflow=58.26 cfs 8.211 af

Summary for Subcatchment 2S: GOLF COURSE

Runoff = 10.66 cfs @ 13.36 hrs, Volume= 2.481 af, Depth> 1.16"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-Year Rainfall=4.90"

Area (ac)	CN	Description
25.000	61	>75% Grass cover, Good, HSG B
0.600	98	Paved parking, HSG B
25.600	62	Weighted Average
25.000		97.66% Pervious Area
0.600		2.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0300	0.19		**Sheet Flow, sheet flow** Grass: Short n= 0.150 P2= 2.90"
99.4	2,640	0.0040	0.44		**Shallow Concentrated Flow, shallow** Short Grass Pasture Kv= 7.0 fps
108.2	2,740	Total			

Summary for Subcatchment 3S: LAND W. OF GOLF COURSE

Runoff = 52.38 cfs @ 12.26 hrs, Volume= 4.702 af, Depth> 1.55"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-Year Rainfall=4.90"

Area (ac)	CN	Description
9.000	68	1 acre lots, 20% imp, HSG B
13.000	55	Woods, Good, HSG B
13.000	75	Row crops, SR + CR, Good, HSG B
1.300	89	Paved roads w/open ditches, 50% imp, HSG B
36.300	67	Weighted Average
33.850		93.25% Pervious Area
2.450		6.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.2000	0.19		**Sheet Flow, SHEET FLOW** Woods: Light underbrush n= 0.400 P2= 2.90"
11.2	1,500	0.2000	2.24		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Woodland Kv= 5.0 fps
9.2	700	0.0200	1.27		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Cultivated Straight Rows Kv= 9.0 fps
29.4	2,300	Total			

Summary for Subcatchment 15S: LOTS 10-14

Runoff = 5.33 cfs @ 12.04 hrs, Volume= 0.290 af, Depth> 2.17"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-Year Rainfall=4.90"

	Area (ac)	CN	Description
	1.000	61	>75% Grass cover, Good, HSG B
*	0.500	98	drives & houses, HSG B
*	0.100	98	Paved road, HSG B
	1.600	75	Weighted Average
	1.000		62.50% Pervious Area
	0.600		37.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	125	0.0200	0.17		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"

Summary for Subcatchment 16S: LOTS 15-18

Runoff = 5.86 cfs @ 12.10 hrs, Volume= 0.375 af, Depth> 1.71"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-Year Rainfall=4.90"

	Area (ac)	CN	Description
	2.100	61	>75% Grass cover, Good, HSG B
*	0.400	98	drives & homes, HSG B
*	0.140	98	Paved road, HSG B
	2.640	69	Weighted Average
	2.100		79.55% Pervious Area
	0.540		20.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 17S: LOTS 5-9

Runoff = 6.99 cfs @ 12.11 hrs, Volume= 0.449 af, Depth> 1.63"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-Year Rainfall=4.90"

	Area (ac)	CN	Description
	2.700	61	>75% Grass cover, Good, HSG B
*	0.500	98	drives & houses, HSG B
*	0.100	98	Paved road, HSG B
	3.300	68	Weighted Average
	2.700		81.82% Pervious Area
	0.600		18.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 18S: LOT 4

Runoff = 1.42 cfs @ 12.10 hrs, Volume= 0.091 af, Depth> 1.71"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-Year Rainfall=4.90"

	Area (ac)	CN	Description
	0.500	61	>75% Grass cover, Good, HSG B
*	0.100	98	drives & houses, HSG B
*	0.040	98	Paved road, HSG B
	0.640	69	Weighted Average
	0.500		78.13% Pervious Area
	0.140		21.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 19S: LOTS 2-3

Runoff = 2.65 cfs @ 12.11 hrs, Volume= 0.170 af, Depth> 1.63"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-Year Rainfall=4.90"

	Area (ac)	CN	Description
	1.000	61	>75% Grass cover, Good, HSG B
*	0.200	98	drives & houses, HSG B
*	0.050	98	Paved road, HSG B
	1.250	68	Weighted Average
	1.000		80.00% Pervious Area
	0.250		20.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 20S: LOT 1

Runoff = 2.03 cfs @ 12.09 hrs, Volume= 0.126 af, Depth> 1.56"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 25-Year Rainfall=4.90"

	Area (ac)	CN	Description
	0.800	61	>75% Grass cover, Good, HSG B
*	0.100	98	drives & houses, HSG B
*	0.070	98	Paved road, HSG B
	0.970	67	Weighted Average
	0.800		82.47% Pervious Area
	0.170		17.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
2.5	150	0.0200	0.99		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
16.1	250	Total			

Summary for Reach 4R: GRASS DITCH

Inflow Area = 62.870 ac, 5.12% Impervious, Inflow Depth > 1.40" for 25-Year event
Inflow = 54.61 cfs @ 12.26 hrs, Volume= 7.309 af
Outflow = 54.18 cfs @ 12.28 hrs, Volume= 7.296 af, Atten= 1%, Lag= 1.5 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.52 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 2.31 fps, Avg. Travel Time= 1.7 min

Peak Storage= 2,838 cf @ 12.27 hrs
Average Depth at Peak Storage= 1.24'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 330.06 cfs

6.00' x 3.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 24.00'
Length= 235.0' Slope= 0.0100 '/'
Inlet Invert= 722.00', Outlet Invert= 719.65'

‡

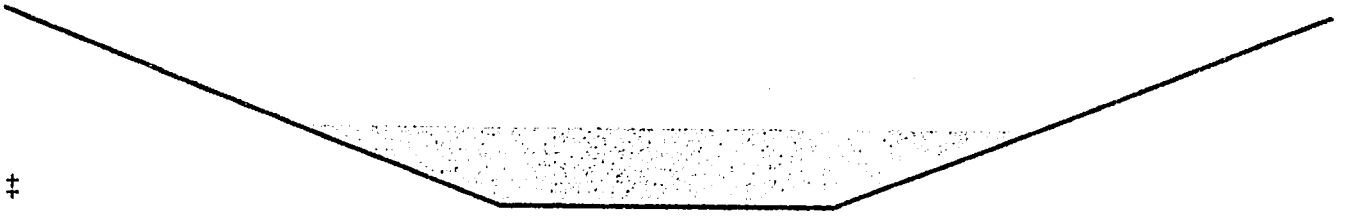
Summary for Reach 6R: GRASS DITCH 2

Inflow Area = 64.120 ac, 5.41% Impervious, Inflow Depth > 1.40" for 25-Year event
Inflow = 55.69 cfs @ 12.27 hrs, Volume= 7.467 af
Outflow = 55.37 cfs @ 12.29 hrs, Volume= 7.458 af, Atten= 1%, Lag= 1.2 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.54 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 2.31 fps, Avg. Travel Time= 1.2 min

Peak Storage= 1,958 cf @ 12.28 hrs
Average Depth at Peak Storage= 1.25'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 330.06 cfs

6.00' x 3.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 24.00'
Length= 160.0' Slope= 0.0100 '/'
Inlet Invert= 719.15', Outlet Invert= 717.55'



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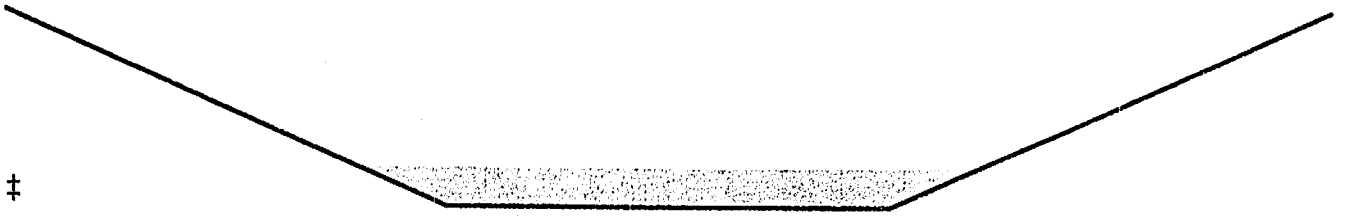
Summary for Reach 12R: DITCH 5

Inflow Area = 3.300 ac, 18.18% Impervious, Inflow Depth > 1.63" for 25-Year event
Inflow = 6.99 cfs @ 12.11 hrs, Volume= 0.449 af
Outflow = 6.73 cfs @ 12.18 hrs, Volume= 0.447 af, Atten= 4%, Lag= 4.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.38 fps, Min. Travel Time= 2.6 min
Avg. Velocity = 0.82 fps, Avg. Travel Time= 7.6 min

Peak Storage= 1,066 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.40'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 375.0' Slope= 0.0100 '/'
Inlet Invert= 722.50', Outlet Invert= 718.75'



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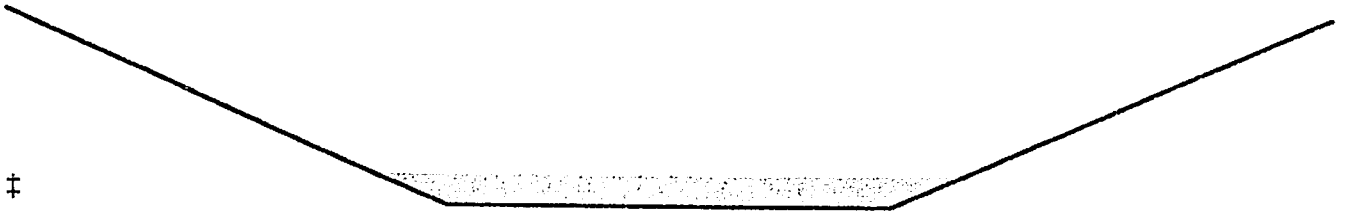
Summary for Reach 13R: DITCH 6

Inflow Area = 1.600 ac, 37.50% Impervious, Inflow Depth > 2.17" for 25-Year event
Inflow = 5.33 cfs @ 12.04 hrs, Volume= 0.290 af
Outflow = 5.06 cfs @ 12.12 hrs, Volume= 0.288 af, Atten= 5%, Lag= 4.8 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.15 fps, Min. Travel Time= 2.9 min
Avg. Velocity = 0.65 fps, Avg. Travel Time= 9.7 min

Peak Storage= 879 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.33'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 375.0' Slope= 0.0100 '/'
Inlet Invert= 722.50', Outlet Invert= 718.75'



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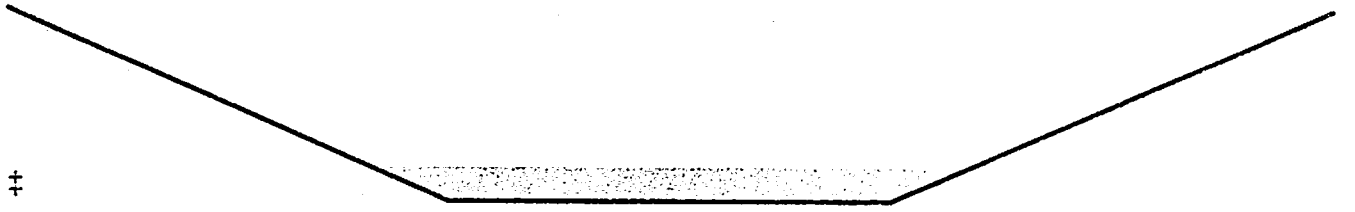
Summary for Reach 14R: DITCH 7

Inflow Area = 2.640 ac, 20.45% Impervious, Inflow Depth > 1.71" for 25-Year event
Inflow = 5.86 cfs @ 12.10 hrs, Volume= 0.375 af
Outflow = 5.49 cfs @ 12.21 hrs, Volume= 0.372 af, Atten= 6%, Lag= 6.4 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.23 fps, Min. Travel Time= 3.7 min
Avg. Velocity = 0.76 fps, Avg. Travel Time= 10.9 min

Peak Storage= 1,245 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.35'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 500.0' Slope= 0.0100 '/'
Inlet Invert= 724.00', Outlet Invert= 719.00'



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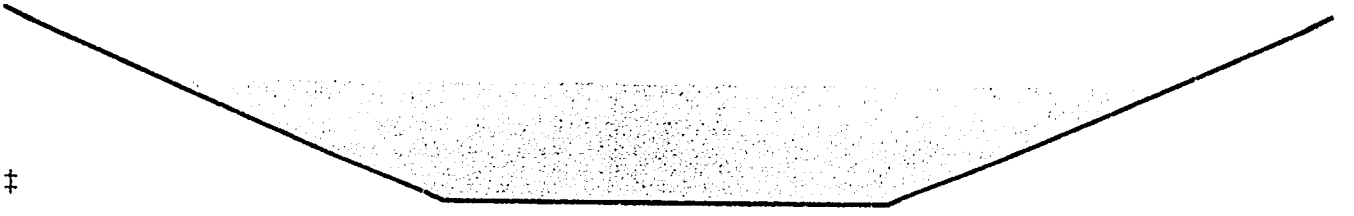
Summary for Reach 15R: (new Reach)

Inflow Area = 72.300 ac, 7.40% Impervious, Inflow Depth > 1.36" for 25-Year event
Inflow = 58.26 cfs @ 12.39 hrs, Volume= 8.211 af
Outflow = 58.09 cfs @ 12.41 hrs, Volume= 8.198 af, Atten= 0%, Lag= 1.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.60 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 2.65 fps, Avg. Travel Time= 1.3 min

Peak Storage= 2,531 cf @ 12.40 hrs
Average Depth at Peak Storage= 1.28'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 200.0' Slope= 0.0100 '/'
Inlet Invert= 716.00', Outlet Invert= 714.00'



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Summary for Pond 1P: EXIST CULVER UNDER CTH O

Inflow Area = 61.900 ac, 4.93% Impervious, Inflow Depth > 1.39" for 25-Year event
Inflow = 53.54 cfs @ 12.26 hrs, Volume= 7.182 af
Outflow = 53.54 cfs @ 12.26 hrs, Volume= 7.182 af, Atten= 0%, Lag= 0.0 min
Primary = 53.54 cfs @ 12.26 hrs, Volume= 7.182 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 725.84' @ 12.26 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	723.27'	**71.0" W x 47.0" H, R=36.7"/110.2" Arch Culvert** L= 52.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 723.27' / 722.72' S= 0.0106 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	729.50'	**100.0' long x 24.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=53.28 cfs @ 12.26 hrs HW=725.83' (Free Discharge)
1=Culvert (Inlet Controls 53.28 cfs @ 3.95 fps)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 5P: CULVERT UNDER DR.

Inflow Area = 62.870 ac, 5.12% Impervious, Inflow Depth > 1.39" for 25-Year event
Inflow = 54.18 cfs @ 12.28 hrs, Volume= 7.296 af
Outflow = 54.18 cfs @ 12.28 hrs, Volume= 7.296 af, Atten= 0%, Lag= 0.0 min
Primary = 54.18 cfs @ 12.28 hrs, Volume= 7.296 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 722.33' @ 12.28 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	719.65'	**36.0" Round Culvert X 2.00** L= 50.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 719.65' / 719.15' S= 0.0100 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	722.60'	**3.0' long x 24.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=53.88 cfs @ 12.28 hrs HW=722.32' (Free Discharge)
1=Culvert (Barrel Controls 53.88 cfs @ 5.38 fps)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 7P: CULVERT UNDER DR 2

Inflow Area = 64.120 ac, 5.41% Impervious, Inflow Depth > 1.40" for 25-Year event
Inflow = 55.37 cfs @ 12.29 hrs, Volume= 7.458 af
Outflow = 55.37 cfs @ 12.29 hrs, Volume= 7.458 af, Atten= 0%, Lag= 0.0 min
Primary = 55.37 cfs @ 12.29 hrs, Volume= 7.458 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 720.27' @ 12.29 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	717.55'	**36.0" Round Culvert X 2.00** L= 50.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 717.55' / 717.05' S= 0.0100 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	720.50'	**3.0' long x 24.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=55.23 cfs @ 12.29 hrs HW=720.26' (Free Discharge)
1=Culvert (Barrel Controls 55.23 cfs @ 5.42 fps)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 13P: (new Pond)

Inflow Area = 68.060 ac, 6.19% Impervious, Inflow Depth > 1.41" for 25-Year event
Inflow = 61.49 cfs @ 12.27 hrs, Volume= 7.995 af
Outflow = 53.74 cfs @ 12.40 hrs, Volume= 7.599 af, Atten= 13%, Lag= 7.8 min
Primary = 53.74 cfs @ 12.40 hrs, Volume= 7.599 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 719.13' @ 12.40 hrs Surf.Area= 0.274 ac Storage= 0.927 af

Plug-Flow detention time= 29.6 min calculated for 7.574 af (95% of inflow)
Center-of-Mass det. time= 13.4 min (857.8 - 844.4)

Volume	Invert	Avail.Storage	Storage Description
#1	714.50'	1.498 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
714.50	0.110	0.000	0.000
715.00	0.120	0.057	0.057
716.00	0.190	0.155	0.212
717.00	0.210	0.200	0.412
718.00	0.240	0.225	0.637
719.00	0.270	0.255	0.893
720.00	0.300	0.285	1.177
721.00	0.340	0.320	1.498

Device	Routing	Invert	Outlet Devices
#1	Primary	716.25'	**36.0" Round Culvert X 2.00** L= 50.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 716.25' / 716.00' S= 0.0050 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	720.00'	**50.0' long x 28.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=53.69 cfs @ 12.40 hrs HW=719.12' (Free Discharge)
└**1=Culvert** (Barrel Controls 53.69 cfs @ 4.94 fps)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 14P: (new Pond)

Inflow Area = 72.300 ac, 7.40% Impervious, Inflow Depth > 1.37" for 25-Year event
Inflow = 58.31 cfs @ 12.38 hrs, Volume= 8.259 af
Outflow = 58.26 cfs @ 12.39 hrs, Volume= 8.211 af, Atten= 0%, Lag= 0.9 min
Primary = 58.26 cfs @ 12.39 hrs, Volume= 8.211 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 718.00' @ 12.39 hrs Surf.Area= 0.065 ac Storage= 0.114 af

Plug-Flow detention time= 3.5 min calculated for 8.183 af (99% of inflow)
Center-of-Mass det. time= 1.6 min (855.6 - 854.0)

Volume	Invert	Avail.Storage	Storage Description
#1	715.00'	0.190 af	**6.00'W x 100.00'L x 4.00'H Prismatoid Z=3.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	716.50'	**12.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=58.14 cfs @ 12.39 hrs HW=718.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 58.14 cfs @ 3.24 fps)

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 2S: GOLF COURSE Runoff Area=25.600 ac 2.34% Impervious Runoff Depth>1.86"
Flow Length=2,740' Tc=108.2 min CN=62 Runoff=17.75 cfs 3.959 af

Subcatchment 3S: LAND W. OF GOLF Runoff Area=36.300 ac 6.75% Impervious Runoff Depth>2.36"
Flow Length=2,300' Tc=29.4 min CN=67 Runoff=81.13 cfs 7.136 af

Subcatchment 15S: LOTS 10-14 Runoff Area=1.600 ac 37.50% Impervious Runoff Depth>3.11"
Flow Length=125' Slope=0.0200 '/' Tc=12.3 min CN=75 Runoff=7.57 cfs 0.414 af

Subcatchment 16S: LOTS 15-18 Runoff Area=2.640 ac 20.45% Impervious Runoff Depth>2.55"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=69 Runoff=8.81 cfs 0.561 af

Subcatchment 17S: LOTS 5-9 Runoff Area=3.300 ac 18.18% Impervious Runoff Depth>2.46"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=68 Runoff=10.62 cfs 0.676 af

Subcatchment 18S: LOT 4 Runoff Area=0.640 ac 21.87% Impervious Runoff Depth>2.55"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=69 Runoff=2.13 cfs 0.136 af

Subcatchment 19S: LOTS 2-3 Runoff Area=1.250 ac 20.00% Impervious Runoff Depth>2.46"
Flow Length=250' Slope=0.0100 '/' Tc=17.2 min CN=68 Runoff=4.02 cfs 0.256 af

Subcatchment 20S: LOT 1 Runoff Area=0.970 ac 17.53% Impervious Runoff Depth>2.37"
Flow Length=250' Tc=16.1 min CN=67 Runoff=3.11 cfs 0.192 af

Reach 4R: GRASS DITCH Avg. Flow Depth=1.56' Max Vel=5.12 fps Inflow=85.23 cfs 11.286 af
n=0.030 L=235.0' S=0.0100 '/' Capacity=330.06 cfs Outflow=84.78 cfs 11.270 af

Reach 6R: GRASS DITCH 2 Avg. Flow Depth=1.58' Max Vel=5.14 fps Inflow=86.99 cfs 11.526 af
n=0.030 L=160.0' S=0.0100 '/' Capacity=330.06 cfs Outflow=86.51 cfs 11.516 af

Reach 12R: DITCH 5 Avg. Flow Depth=0.50' Max Vel=2.73 fps Inflow=10.62 cfs 0.676 af
n=0.030 L=375.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=10.27 cfs 0.673 af

Reach 13R: DITCH 6 Avg. Flow Depth=0.41' Max Vel=2.43 fps Inflow=7.57 cfs 0.414 af
n=0.030 L=375.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=7.20 cfs 0.412 af

Reach 14R: DITCH 7 Avg. Flow Depth=0.45' Max Vel=2.56 fps Inflow=8.81 cfs 0.561 af
n=0.030 L=500.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=8.41 cfs 0.557 af

Reach 15R: (new Reach) Avg. Flow Depth=1.65' Max Vel=5.26 fps Inflow=94.88 cfs 12.822 af
n=0.030 L=200.0' S=0.0100 '/' Capacity=140.65 cfs Outflow=94.33 cfs 12.807 af

Pond 1P: EXIST CULVER UNDER CTH O Peak Elev=726.77' Inflow=83.57 cfs 11.094 af
Outflow=83.57 cfs 11.094 af

Pond 5P: CULVERT UNDER DR. Peak Elev=723.29' Inflow=84.78 cfs 11.270 af
Outflow=84.78 cfs 11.270 af

Pond 7P: CULVERT UNDER DR 2 Peak Elev=721.25' Inflow=86.51 cfs 11.516 af
Outflow=86.51 cfs 11.516 af

Pond 13P: (new Pond) Peak Elev=720.21' Storage=1.240 af Inflow=95.83 cfs 12.324 af
Outflow=88.78 cfs 11.903 af

Pond 14P: (new Pond) Peak Elev=718.57' Storage=0.155 af Inflow=95.89 cfs 12.872 af
Outflow=94.88 cfs 12.822 af

Summary for Subcatchment 2S: GOLF COURSE

Runoff = 17.75 cfs @ 13.34 hrs, Volume= 3.959 af, Depth> 1.86"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=6.10"

Area (ac)	CN	Description
25.000	61	>75% Grass cover, Good, HSG B
0.600	98	Paved parking, HSG B
25.600	62	Weighted Average
25.000		97.66% Pervious Area
0.600		2.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	100	0.0300	0.19		**Sheet Flow, sheet flow** Grass: Short n= 0.150 P2= 2.90"
99.4	2,640	0.0040	0.44		**Shallow Concentrated Flow, shallow** Short Grass Pasture Kv= 7.0 fps
108.2	2,740	Total			

Summary for Subcatchment 3S: LAND W. OF GOLF COURSE

Runoff = 81.13 cfs @ 12.25 hrs, Volume= 7.136 af, Depth> 2.36"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=6.10"

Area (ac)	CN	Description
9.000	68	1 acre lots, 20% imp, HSG B
13.000	55	Woods, Good, HSG B
13.000	75	Row crops, SR + CR, Good, HSG B
1.300	89	Paved roads w/open ditches, 50% imp, HSG B
36.300	67	Weighted Average
33.850		93.25% Pervious Area
2.450		6.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	100	0.2000	0.19		**Sheet Flow, SHEET FLOW** Woods: Light underbrush n= 0.400 P2= 2.90"
11.2	1,500	0.2000	2.24		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Woodland Kv= 5.0 fps
9.2	700	0.0200	1.27		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Cultivated Straight Rows Kv= 9.0 fps
29.4	2,300	Total			

Summary for Subcatchment 15S: LOTS 10-14

Runoff = 7.57 cfs @ 12.04 hrs, Volume= 0.414 af, Depth> 3.11"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=6.10"

	Area (ac)	CN	Description
	1.000	61	>75% Grass cover, Good, HSG B
*	0.500	98	drives & houses, HSG B
*	0.100	98	Paved road, HSG B
	1.600	75	Weighted Average
	1.000		62.50% Pervious Area
	0.600		37.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	125	0.0200	0.17		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"

Summary for Subcatchment 16S: LOTS 15-18

Runoff = 8.81 cfs @ 12.10 hrs, Volume= 0.561 af, Depth> 2.55"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=6.10"

	Area (ac)	CN	Description
	2.100	61	>75% Grass cover, Good, HSG B
*	0.400	98	drives & homes, HSG B
*	0.140	98	Paved road, HSG B
	2.640	69	Weighted Average
	2.100		79.55% Pervious Area
	0.540		20.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 17S: LOTS 5-9

Runoff = 10.62 cfs @ 12.10 hrs, Volume= 0.676 af, Depth> 2.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=6.10"

	Area (ac)	CN	Description
	2.700	61	>75% Grass cover, Good, HSG B
*	0.500	98	drives & houses, HSG B
*	0.100	98	Paved road, HSG B
	3.300	68	Weighted Average
	2.700		81.82% Pervious Area
	0.600		18.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 18S: LOT 4

Runoff = 2.13 cfs @ 12.10 hrs, Volume= 0.136 af, Depth> 2.55"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=6.10"

	Area (ac)	CN	Description
	0.500	61	>75% Grass cover, Good, HSG B
*	0.100	98	drives & houses, HSG B
*	0.040	98	Paved road, HSG B
	0.640	69	Weighted Average
	0.500		78.13% Pervious Area
	0.140		21.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 19S: LOTS 2-3

Runoff = 4.02 cfs @ 12.10 hrs, Volume= 0.256 af, Depth> 2.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=6.10"

	Area (ac)	CN	Description
	1.000	61	>75% Grass cover, Good, HSG B
*	0.200	98	drives & houses, HSG B
*	0.050	98	Paved road, HSG B
	1.250	68	Weighted Average
	1.000		80.00% Pervious Area
	0.250		20.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
3.6	150	0.0100	0.70		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
17.2	250	Total			

Summary for Subcatchment 20S: LOT 1

Runoff = 3.11 cfs @ 12.09 hrs, Volume= 0.192 af, Depth> 2.37"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-Year Rainfall=6.10"

	Area (ac)	CN	Description
	0.800	61	>75% Grass cover, Good, HSG B
*	0.100	98	drives & houses, HSG B
*	0.070	98	Paved road, HSG B
	0.970	67	Weighted Average
	0.800		82.47% Pervious Area
	0.170		17.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	100	0.0100	0.12		**Sheet Flow, SHEET FLOW** Grass: Short n= 0.150 P2= 2.90"
2.5	150	0.0200	0.99		**Shallow Concentrated Flow, SHALLOW CONCENTRATED** Short Grass Pasture Kv= 7.0 fps
16.1	250	Total			

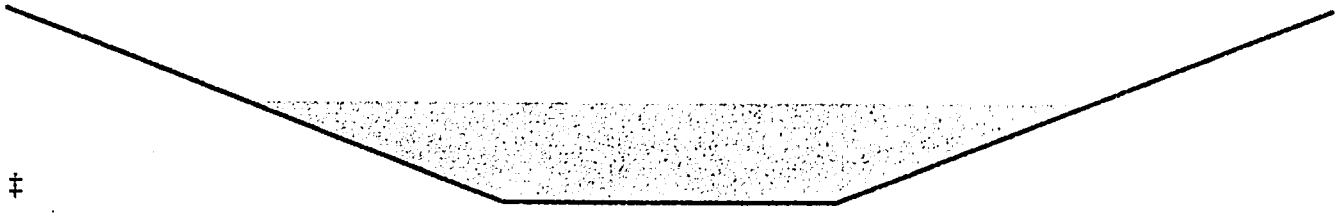
Summary for Reach 4R: GRASS DITCH

Inflow Area = 62.870 ac, 5.12% Impervious, Inflow Depth > 2.15" for 100-Year event
Inflow = 85.23 cfs @ 12.25 hrs, Volume= 11.286 af
Outflow = 84.78 cfs @ 12.27 hrs, Volume= 11.270 af, Atten= 1%, Lag= 1.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.12 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 2.50 fps, Avg. Travel Time= 1.6 min

Peak Storage= 3,914 cf @ 12.26 hrs
Average Depth at Peak Storage= 1.56'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 330.06 cfs

6.00' x 3.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 24.00'
Length= 235.0' Slope= 0.0100 '/'
Inlet Invert= 722.00', Outlet Invert= 719.65'



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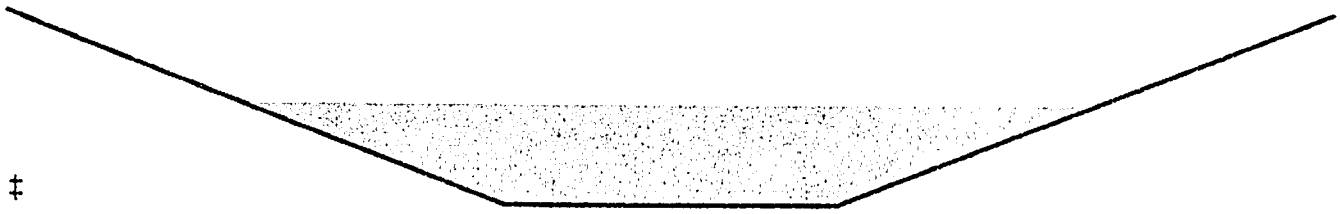
Summary for Reach 6R: GRASS DITCH 2

Inflow Area = 64.120 ac, 5.41% Impervious, Inflow Depth > 2.16" for 100-Year event
Inflow = 86.99 cfs @ 12.27 hrs, Volume= 11.526 af
Outflow = 86.51 cfs @ 12.28 hrs, Volume= 11.516 af, Atten= 1%, Lag= 0.9 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.14 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 2.48 fps, Avg. Travel Time= 1.1 min

Peak Storage= 2,705 cf @ 12.27 hrs
Average Depth at Peak Storage= 1.58'
Bank-Full Depth= 3.00', Capacity at Bank-Full= 330.06 cfs

6.00' x 3.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 24.00'
Length= 160.0' Slope= 0.0100 '/'
Inlet Invert= 719.15', Outlet Invert= 717.55'



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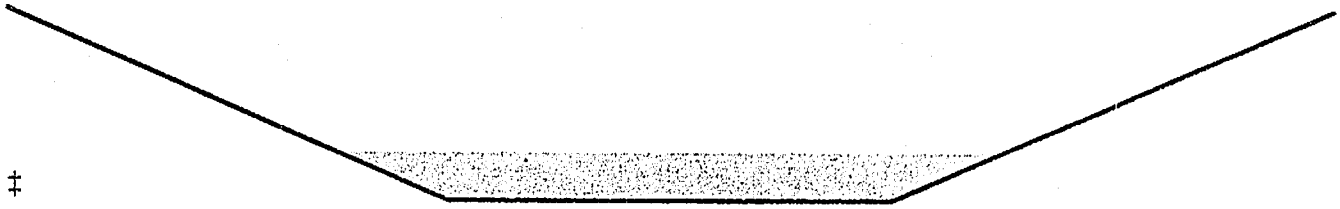
Summary for Reach 12R: DITCH 5

Inflow Area = 3.300 ac, 18.18% Impervious, Inflow Depth > 2.46" for 100-Year event
Inflow = 10.62 cfs @ 12.10 hrs, Volume= 0.676 af
Outflow = 10.27 cfs @ 12.17 hrs, Volume= 0.673 af, Atten= 3%, Lag= 4.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.73 fps, Min. Travel Time= 2.3 min
Avg. Velocity = 0.90 fps, Avg. Travel Time= 7.0 min

Peak Storage= 1,418 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.50'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 375.0' Slope= 0.0100 '/'
Inlet Invert= 722.50', Outlet Invert= 718.75'



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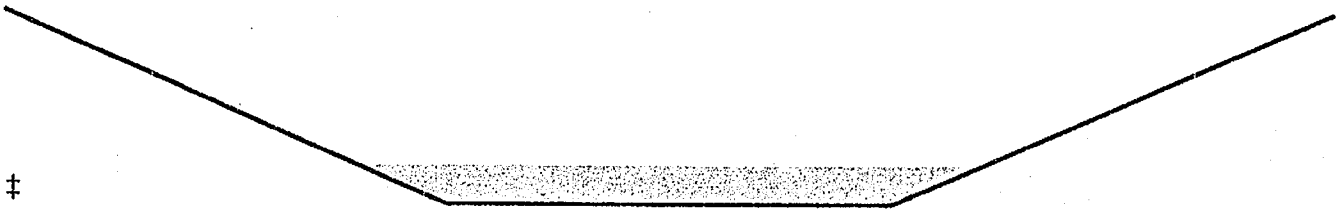
Summary for Reach 13R: DITCH 6

Inflow Area = 1.600 ac, 37.50% Impervious, Inflow Depth > 3.11" for 100-Year event
Inflow = 7.57 cfs @ 12.04 hrs, Volume= 0.414 af
Outflow = 7.20 cfs @ 12.11 hrs, Volume= 0.412 af, Atten= 5%, Lag= 4.3 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.43 fps, Min. Travel Time= 2.6 min
Avg. Velocity = 0.70 fps, Avg. Travel Time= 8.9 min

Peak Storage= 1,117 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.41'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 375.0' Slope= 0.0100 '/'
Inlet Invert= 722.50', Outlet Invert= 718.75'



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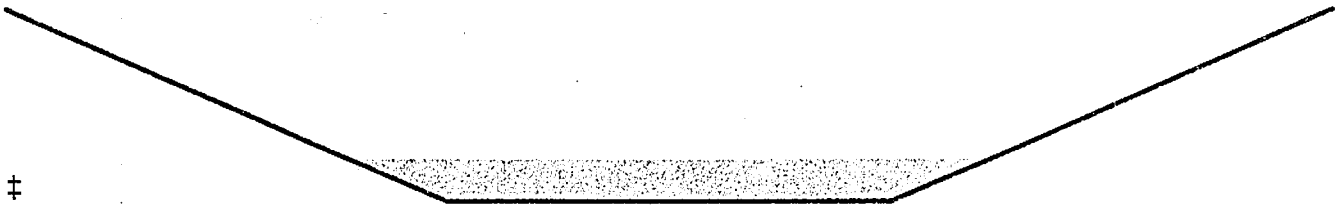
Summary for Reach 14R: DITCH 7

Inflow Area = 2.640 ac, 20.45% Impervious, Inflow Depth > 2.55" for 100-Year event
Inflow = 8.81 cfs @ 12.10 hrs, Volume= 0.561 af
Outflow = 8.41 cfs @ 12.19 hrs, Volume= 0.557 af, Atten= 4%, Lag= 5.6 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.56 fps, Min. Travel Time= 3.3 min
Avg. Velocity = 0.83 fps, Avg. Travel Time= 10.0 min

Peak Storage= 1,647 cf @ 12.14 hrs
Average Depth at Peak Storage= 0.45'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 500.0' Slope= 0.0100 '/'
Inlet Invert= 724.00', Outlet Invert= 719.00'



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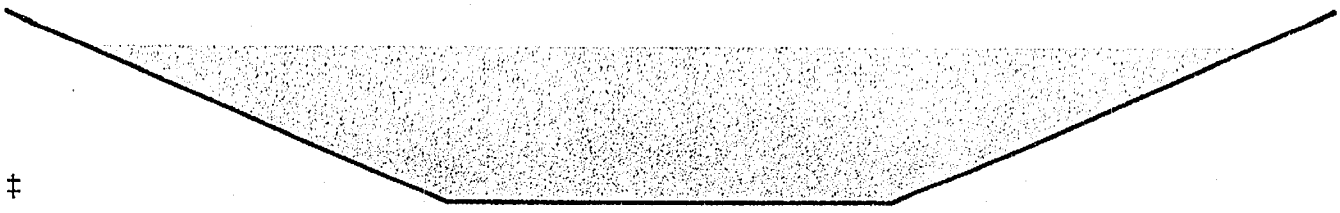
Summary for Reach 15R: (new Reach)

Inflow Area = 72.300 ac, 7.40% Impervious, Inflow Depth > 2.13" for 100-Year event
Inflow = 94.88 cfs @ 12.37 hrs, Volume= 12.822 af
Outflow = 94.33 cfs @ 12.39 hrs, Volume= 12.807 af, Atten= 1%, Lag= 1.1 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.26 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 2.95 fps, Avg. Travel Time= 1.1 min

Peak Storage= 3,602 cf @ 12.38 hrs
Average Depth at Peak Storage= 1.65'
Bank-Full Depth= 2.00', Capacity at Bank-Full= 140.65 cfs

6.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 18.00'
Length= 200.0' Slope= 0.0100 '/'
Inlet Invert= 716.00', Outlet Invert= 714.00'



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Summary for Pond 1P: EXIST CULVER UNDER CTH O

Inflow Area = 61.900 ac, 4.93% Impervious, Inflow Depth > 2.15" for 100-Year event
Inflow = 83.57 cfs @ 12.25 hrs, Volume= 11.094 af
Outflow = 83.57 cfs @ 12.25 hrs, Volume= 11.094 af, Atten= 0%, Lag= 0.0 min
Primary = 83.57 cfs @ 12.25 hrs, Volume= 11.094 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 726.77' @ 12.25 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	723.27'	**71.0" W x 47.0" H, R=36.7"/110.2" Arch Culvert** L= 52.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 723.27' / 722.72' S= 0.0106 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	729.50'	**100.0' long x 24.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=83.41 cfs @ 12.25 hrs HW=726.77' (Free Discharge)
└─**1=Culvert** (Barrel Controls 83.41 cfs @ 6.04 fps)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 5P: CULVERT UNDER DR.

Inflow Area = 62.870 ac, 5.12% Impervious, Inflow Depth > 2.15" for 100-Year event
Inflow = 84.78 cfs @ 12.27 hrs, Volume= 11.270 af
Outflow = 84.78 cfs @ 12.27 hrs, Volume= 11.270 af, Atten= 0%, Lag= 0.0 min
Primary = 84.78 cfs @ 12.27 hrs, Volume= 11.270 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 723.29' @ 12.27 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	719.65'	**36.0" Round Culvert X 2.00** L= 50.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 719.65' / 719.15' S= 0.0100 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	722.60'	**3.0' long x 24.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=84.18 cfs @ 12.27 hrs HW=723.27' (Free Discharge)
└─**1=Culvert** (Barrel Controls 79.82 cfs @ 5.94 fps)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 4.37 cfs @ 2.19 fps)

Summary for Pond 7P: CULVERT UNDER DR 2

Inflow Area = 64.120 ac, 5.41% Impervious, Inflow Depth > 2.16" for 100-Year event
Inflow = 86.51 cfs @ 12.28 hrs, Volume= 11.516 af
Outflow = 86.51 cfs @ 12.28 hrs, Volume= 11.516 af, Atten= 0%, Lag= 0.0 min
Primary = 86.51 cfs @ 12.28 hrs, Volume= 11.516 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 721.25' @ 12.28 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	717.55'	**36.0" Round Culvert X 2.00** L= 50.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 717.55' / 717.05' S= 0.0100 '/' Cc= 0.900 n= 0.025 Corrugated metal
#2	Primary	720.50'	**3.0' long x 24.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=86.04 cfs @ 12.28 hrs HW=721.23' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 81.05 cfs @ 5.95 fps)
└—**2=Broad-Crested Rectangular Weir** (Weir Controls 5.00 cfs @ 2.28 fps)

Summary for Pond 13P: (new Pond)

Inflow Area = 68.060 ac, 6.19% Impervious, Inflow Depth > 2.17" for 100-Year event
Inflow = 95.83 cfs @ 12.26 hrs, Volume= 12.324 af
Outflow = 88.78 cfs @ 12.36 hrs, Volume= 11.903 af, Atten= 7%, Lag= 6.2 min
Primary = 88.78 cfs @ 12.36 hrs, Volume= 11.903 af

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 720.21' @ 12.36 hrs Surf.Area= 0.308 ac Storage= 1.240 af

Plug-Flow detention time= 22.9 min calculated for 11.903 af (97% of inflow)
Center-of-Mass det. time= 11.2 min (847.7 - 836.5)

Volume	Invert	Avail.Storage	Storage Description
#1	714.50'	1.498 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
714.50	0.110	0.000	0.000
715.00	0.120	0.057	0.057
716.00	0.190	0.155	0.212
717.00	0.210	0.200	0.412
718.00	0.240	0.225	0.637
719.00	0.270	0.255	0.893
720.00	0.300	0.285	1.177
721.00	0.340	0.320	1.498