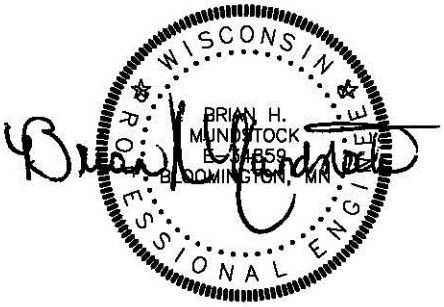
Kwik Trip
La Crosse, WI #762

Stormwater Management Calculations

~~1/17/2024~~
2/29/2024



SUNDE ENGINEERING, PLLC.
10830 Nesbitt Avenue South
Bloomington, MN 55437-3100
Phone: (952) 881-3344
Fax: (952) 881-1913

Narrative

Kwik Trip is proposing a site redevelopment project on a 2.98 acre parcel located in the North quadrant of STH 35 and George Street in La Crosse, WI. The project includes the construction of a new station store with car wash, new fueling islands, associated parking areas, and stormwater ponds.

The existing site consists of existing paved parking lots, buildings, and small landscaped areas. Existing soils on site are unknown. Existing soils are assumed to be HSG 'A' soils for pre-development conditions and HSG 'C' for post-development conditions as a conservative precaution.

Stormwater management has been provided for this site in accordance with City and DNR requirements. The proposed Kwik Trip is a fueling station and therefore is exempt from infiltrating runoff from pavement areas exposed to fueling.

The proposed on-site stormwater management plan consists of a series of catch basins with HDPE storm sewer pipes that drain to two proposed wet stormwater ponds prior to discharge. The proposed ponds discharge to the city and state stormwater system.

The proposed stormwater management pond and BMPs were designed to reduce the rate of discharge of stormwater and also remove a minimum of 60% of total suspended solids (TSS) from the stormwater runoff prior to discharging offsite. TSS removal and rate control are provided with on-site stormwater treatment.

The site's hydrology was modeled using HydroCAD software, which utilizes the TR-55 methodology. The TSS removal was modeled using WINSLAMM software.

Existing Conditions

Area	Impervious (sf)	Pervious (sf)	Total (sf)
EX N	40,279	8,410	48,689
OS-N*	12,058	7,263	19,321
EX S	77,271	3,864	81,135
OS-S*	3,063	384	3,447
Total	132,671	19,921	152,592

See Attached Existing Conditions Drainage Area Map
*Offsite area

Proposed Conditions

Area	Impervious (sf)	Pervious (sf)	Total (sf)
1	0	16,044	16,044
2a	12,929	1,313	14,242
3	12,530	1,399	13,929
4*	3,800	0	3,800
5	10,204	0	10,204
6	11,324	335	11,659
7	0	7,616	7,616
8	6,066	822	6,888
9a	7,027	1,590	8,617
10a	2,703	751	3,454
11	2,018	0	2,018
12*	1,897	0	1,897
13*	9,216	0	9,216
14a	0	7,482	7,482
15	3,012	1,928	4,940
16**	1,313	6,489	7,802
2b***	3,810	667	4,477
9b***	1,029	2,846	3,875
10b***	2,260	870	3,130
14b***	8,189	3,113	11,302
Total Site	84,039	45,769	129,808
Total Drainage	99,327	53,265	152,592

See Attached Proposed Conditions Drainage Area Map.
*Roof Area
**Untreated area to offsite
***Offsite run-on area

HydroCAD Results

Peak Discharge Summary Table: Total Drainage

24-HR, Event	Existing Runoff (cfs): Link TEX		Proposed Runoff (cfs): Link TP
2-YR	13.05	>	3.97
10-YR	19.51	>	5.48
25-YR	24.49	>	7.04
100-YR	33.86	>	10.93

Peak Discharge Summary Table: Ex. north to Mulbery Lane

24-HR, Event	Existing Runoff (cfs): Link TEX-N		Proposed Runoff (cfs): Link P-N
2-YR	5.15	>	2.94
10-YR	7.70	>	4.07
25-YR	9.67	>	4.77
100-YR	13.57	>	5.75

Peak Discharge Summary Table: Ex. South to STH 35

24-HR, Event	Existing Runoff (cfs): Node EX S		Proposed Runoff (cfs): Link P-S
2-YR	7.90	>	1.13
10-YR	11.82	>	1.69
25-YR	14.82	>	2.40
100-YR	20.29	>	5.57

*See attached HydroCAD output.

TSS Removal

WinSLAMM Input

Areas	Total	Paved Parking	Roof	Pervious
To Pond 1P	79,295 sf = 1.82 acres	53,884 sf = 1.237 acres	3,790 sf = 0.087 acres	21,621 sf = 0.498 acres
To Pond 7P	46,711 sf = 1.07 acres	21,083 sf = 0.484 acres	11,108 sf = 0.255 acres	14,520 sf = 0.333 acres
To Pond 14P	18,784 sf = 0.431 acres	8,189 sf = 0.188 acres	n/a	10,595 sf = 0.243 acres
Untreated (Area 16)	7,802 sf = 0.179 acres	1,313 sf = 0.030 acres	n/a	6,489 sf = 0.149 acres

Wet Pond 1P Stage Storage Table:

Elevation	Area (sq. ft.)	Area (ac)	Cum. Storage (cf)	Cum. Storage (ac-ft)
634	698	0.0160	0	0.0000
635	1,126	0.0258	912	0.0209
636	1,652	0.0379	2301	0.0528
637	2,272	0.0522	4,263	0.0979
638	2,980	0.0684	6,889	0.1581
638.5	3,380	0.0776	8,479	0.1947
639	4,759	0.1092	10,514	0.2414
639.5	6,295	0.1445	13,277	0.3048
640	6,787	0.1558	16,548	0.3799
641	7,812	0.1793	23,847	0.5475
642	8,895	0.2042	32,201	0.7392
643	10,033	0.2303	41,665	0.9565
644	11,228	0.2578	52295	1.2005

Wet Pond 7P Stage Storage Table:

Elevation	Area (sq. ft.)	Area (ac)	Cum. Storage (cf)	Cum. Storage (ac-ft)
638	61	0.0014	0	0.0000
639	251	0.0058	156	0.0036
640	522	0.0120	543	0.0125
641	1638	0.0376	1,623	0.0373
642	2,200	0.0505	3,542	0.0813
643	2,871	0.0659	6,077	0.1395
644	3,598	0.0826	9,312	0.2138
645	4,400	0.1010	13,311	0.3056
646	5,240	0.1203	18,131	0.4162

Dry Pond 14P Stage Storage Table:

Elevation	Area (sq. ft.)	Area (ac)	Cum. Storage (cf)	Cum. Storage (ac-ft)
639	0	0.0000	0	0.0000
640	1,060	0.0243	530	0.0122
641	1,580	0.0363	1850	0.0425
642	2,226	0.0511	3,753	0.0862
643	2,887	0.0663	6,310	0.1449
644	3,624	0.0832	9,565	0.2196
645	4,282	0.0983	13,518	0.3103
646	5,300	0.1217	18,309	0.4203

Total Average for Entire Site = 64.95% > 60% TSS Required
*See attached WinSLAMM Input and Output for TSS removal.

Pond Data

Pond 1P: Wet Detention Basin
NWL = 639.50
EOF = 643.00

Pond 1P: HydroCAD Summary Table

24-HR, Event	Peak Discharge Pond 1P (cfs)	HWL
2-YR	0.91	640.68
10-YR	1.18	641.30
25-YR	2.21	641.68
100-YR	4.73	642.17

Pond 7P: Wet Detention Basin
NWL = 641.0
EOF = 645.5

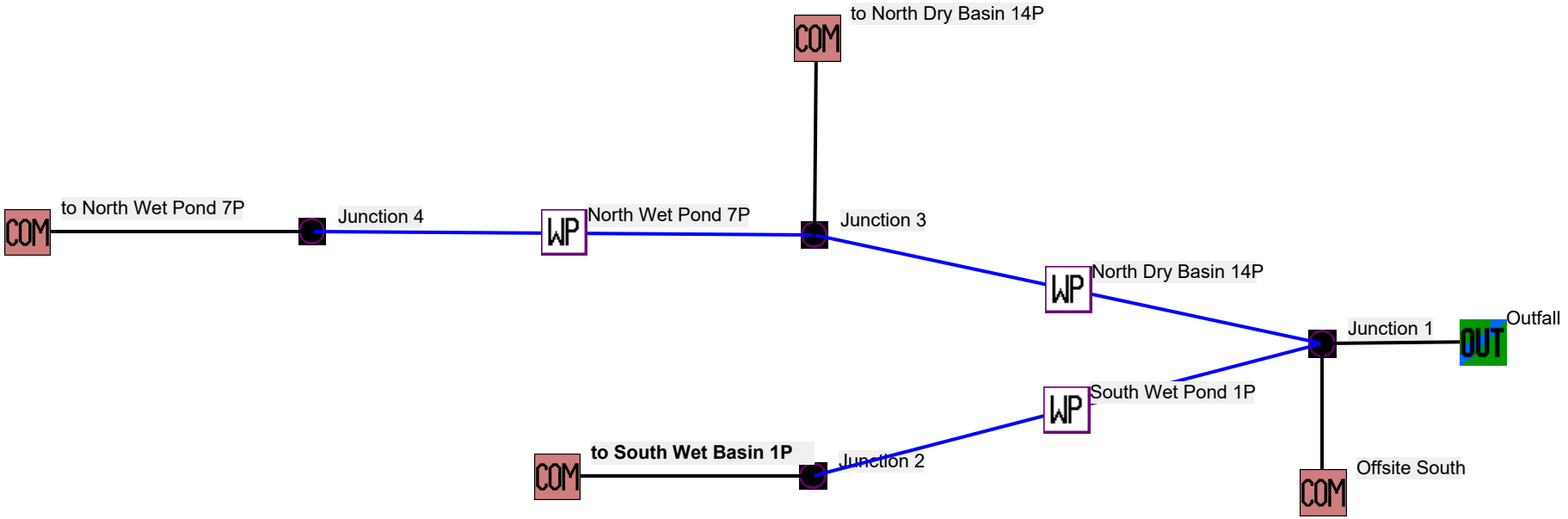
Pond 7P: HydroCAD Summary Table

24-HR, Event	Peak Discharge Pond 7P (cfs)	HWL
2-YR	2.48	641.93
10-YR	3.51	642.36
25-YR	4.16	642.71
100-YR	5.12	643.33

Pond 14P: Dry Detention Basin
EOF = 645.75

Pond 14P: HydroCAD Summary Table

24-HR, Event	Peak Discharge Pond 14P (cfs)	HWL
2-YR	2.94	640.10
10-YR	4.07	640.66
25-YR	4.77	641.09
100-YR	5.75	641.81


COM
to North Dry Basin 14P
COM
to North Wet Pond 7P
Junction 4
WP
North Wet Pond 7P
Junction 3
WP
North Dry Basin 14P
Junction 1
OUT
Outfall
WP
South Wet Pond 1P
COM
to South Wet Basin 1P
Junction 2
COM
Offsite South

Data file name: \\server\Projects\INSITES\Kwik Trip\Kwik Trip-LaCrosse, WI #762 (George Street & US Hwy 53)\Hydro\2024-02-05\WinSLAMM - LaCrosse, WI #762.mdb
WinSLAMM Version 10.4.1
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Minneapolis MN 1959.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
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
Seed for random number generator: -42
Study period starting date: 01/02/59 Study period ending date: 12/28/59
Start of Winter Season: 11/04 End of Winter Season: 03/13
Date: 02-29-2024 Time: 16:26:19
Site information:

LU# 1 - Commercial: to South Wet Basin 1P Total area (ac): 1.822
1 - Roofs 1: 0.087 ac. Flat Connected PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 1.237 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.353 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.145 ac. PSD File:

LU# 2 - Commercial: to North Wet Pond 7P Total area (ac): 1.072
1 - Roofs 1: 0.255 ac. Flat Connected PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 0.484 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.295 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.038 ac. PSD File:

LU# 3 - Commercial: to North Dry Basin 14P Total area (ac): 0.431
13 - Paved Parking 1: 0.188 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.243 ac. Normal Silty PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 4 - Commercial: Offsite South Total area (ac): 0.179
13 - Paved Parking 1: 0.030 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.149 ac. Normal Clayey Low Density PSD File: C:\WinSLAMM Files\NURP.cpz

Control Practice 1: Wet Detention Pond CP# 1 (DS) - South Wet Pond 1P
Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft): 5.5
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered
Outlet Characteristics:
Outlet type: Orifice 1
1. Orifice diameter (ft): 0.5
2. Number of orifices: 1
3. Invert elevation above datum (ft): 5.5
Outlet type: Broad Crested Weir
1. Weir crest length (ft): 4
2. Weir crest width (ft): 0.5
3. Height from datum to bottom of weir opening: 7.5
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	0.10	0.0160	0.00	0.00
2	1.00	0.0258	0.00	0.00
3	2.00	0.0379	0.00	0.00
4	3.00	0.0522	0.00	0.00
5	4.00	0.0684	0.00	0.00
6	4.50	0.0776	0.00	0.00
7	5.00	0.1093	0.00	0.00
8	5.50	0.1445	0.00	0.00
9	6.00	0.1558	0.00	0.00
10	7.00	0.1793	0.00	0.00
11	8.00	0.2042	0.00	0.00
12	9.00	0.2303	0.00	0.00
13	10.00	0.2578	0.00	0.00

Control Practice 2: Wet Detention Pond CP# 2 (DS) - North Wet Pond 7P

Particle Size Distribution file name: Not needed - calculated by program

Initial stage elevation (ft): 3

Peak to Average Flow Ratio: 3.8

Maximum flow allowed into pond (cfs): No maximum value entered

Outlet Characteristics:

Outlet type: Orifice 1

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

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 10
2. Weir crest width (ft): 4
3. Height from datum to bottom of weir opening: 7

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	0.10	0.0014	0.00	0.00
2	1.00	0.0119	0.00	0.00
3	2.00	0.0376	0.00	0.00
4	3.00	0.0505	0.00	0.00
5	4.00	0.0659	0.00	0.00
6	5.00	0.0826	0.00	0.00
7	6.00	0.1010	0.00	0.00
8	7.00	0.1203	0.00	0.00

Control Practice 3: Wet Detention Pond CP# 3 (DS) - North Dry Basin 14P

Particle Size Distribution file name: Not needed - calculated by program

Initial stage elevation (ft): 0

Peak to Average Flow Ratio: 3.8

Maximum flow allowed into pond (cfs): No maximum value entered

Outlet Characteristics:

Outlet type: Orifice 1

1. Orifice diameter (ft): 1
2. Number of orifices: 1
3. Invert elevation above datum (ft): 0

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 10
2. Weir crest width (ft): 3
3. Height from datum to bottom of weir opening: 7.1

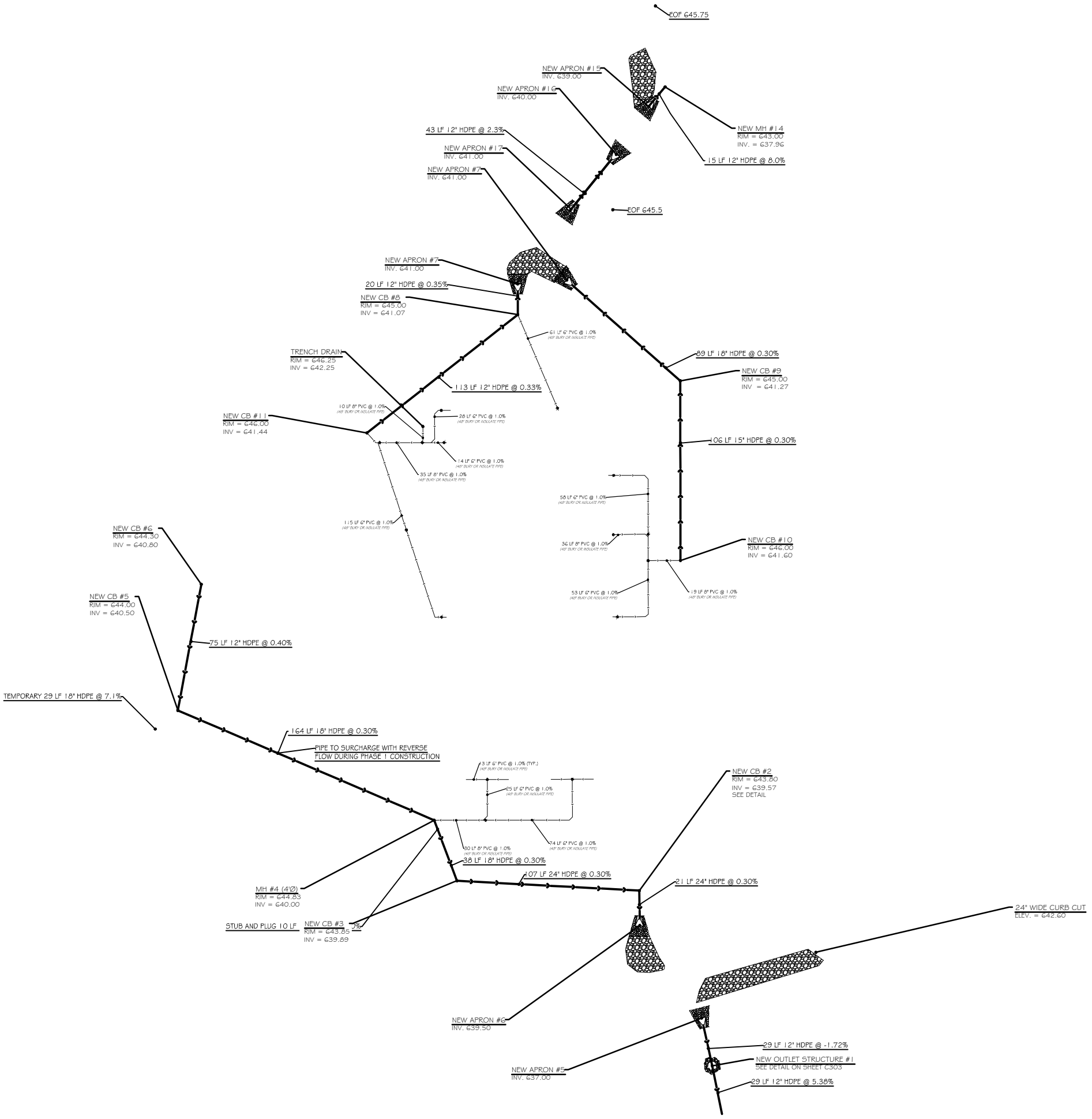
Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	1.00	0.0296	0.00	0.00
2	2.00	0.0462	0.00	0.00
3	3.00	0.0615	0.00	0.00
4	4.00	0.0781	0.00	0.00
5	5.00	0.0970	0.00	0.00

SLAMM for Windows Version 10.4.1

Data file name: \\server\Projects\INSITES\Kwik Trip\Kwik Trip-LaCrosse, WI #762 (George Street & US Hwy 53)\Hydro\2024-02-05\WinSLAMM - LaCrosse, WI #762.mdb
WinSLAMM Version 10.4.1
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Minneapolis MN 1959.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
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
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
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
If Other Device Pollutant Load Reduction Values = 1, Off-site Pollutant Loads are Removed from Pollutant Load % Reduction calculations
Seed for random number generator: -42
Study period starting date: 01/02/59 Study period ending date: 12/28/59
Start of Winter Season: 11/04 End of Winter Season: 03/13
Model Run Start Date: 01/02/59 Model Run End Date: 12/28/59
Date of run: 02-29-2024 Time of run: 16:22:50
Total Area Modeled (acres): 3.504
Years in Model Run: 0.99

	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:	164450	-	107.1	1100	-
Outfall Total with Controls:	151914	7.62%	40.65	385.5	64.95%
Annualized Total After Outfall Controls:	154024			390.9	


EOF 645.75
NEW APRON #15
INV. 639.00
NEW APRON #16
INV. 640.00
NEW MH #14
RIM = 643.00
INV. = 637.96
43 LF 12" HDPE @ 2.3%
NEW APRON #17
INV. 641.00
15 LF 12" HDPE @ 8.0%
NEW APRON #7
INV. 641.00
EOF 645.5
NEW APRON #7
INV. 641.00
20 LF 12" HDPE @ 0.35%
NEW CB #8
RIM = 645.00
INV = 641.07
61 LF 6" PVC @ 1.0%
(45° BURY OR INSULATE PIPE)
TRENCH DRAIN
RIM = 646.25
INV = 642.25
89 LF 18" HDPE @ 0.30%
NEW CB #9
RIM = 645.00
INV = 641.27
113 LF 12" HDPE @ 0.33%
10 LF 8" PVC @ 1.0%
(45° BURY OR INSULATE PIPE)
NEW CB #11
RIM = 646.00
INV = 641.44
28 LF 6" PVC @ 1.0%
(45° BURY OR INSULATE PIPE)
106 LF 15" HDPE @ 0.30%
14 LF 6" PVC @ 1.0%
(45° BURY OR INSULATE PIPE)
35 LF 8" PVC @ 1.0%
(45° BURY OR INSULATE PIPE)
58 LF 6" PVC @ 1.0%
(45° BURY OR INSULATE PIPE)
115 LF 6" PVC @ 1.0%
(45° BURY OR INSULATE PIPE)
NEW CB #6
RIM = 644.30
INV = 640.80
36 LF 8" PVC @ 1.0%
(45° BURY OR INSULATE PIPE)
NEW CB #10
RIM = 646.00
INV = 641.60
NEW CB #5
RIM = 644.00
INV = 640.50
53 LF 6" PVC @ 1.0%
(45° BURY OR INSULATE PIPE)
19 LF 8" PVC @ 1.0%
(45° BURY OR INSULATE PIPE)
75 LF 12" HDPE @ 0.40%
TEMPORARY 29 LF 18" HDPE @ 7.1%
164 LF 18" HDPE @ 0.30%
PIPE TO SURCHARGE WITH REVERSE
FLOW DURING PHASE 1 CONSTRUCTION
3 LF 6" PVC @ 1.0% (TYP.)
(45° BURY OR INSULATE PIPE)
25 LF 6" PVC @ 1.0%
(45° BURY OR INSULATE PIPE)
NEW CB #2
RIM = 643.80
INV = 639.57
SEE DETAIL
30 LF 8" PVC @ 1.0%
(45° BURY OR INSULATE PIPE)
74 LF 6" PVC @ 1.0%
(45° BURY OR INSULATE PIPE)
38 LF 18" HDPE @ 0.30%
107 LF 24" HDPE @ 0.30%
21 LF 24" HDPE @ 0.30%
MH #4 (4'Ø)
RIM = 644.83
INV = 640.00
24" WIDE CURB CUT
ELEV. = 642.60
STUB AND PLUG 10 LF
NEW CB #3
RIM = 643.85
INV = 639.89
NEW APRON #6
INV. 639.50
29 LF 12" HDPE @ -1.72%
NEW APRON #5
INV. 637.00
NEW OUTLET STRUCTURE #1
SEE DETAIL ON SHEET C303
29 LF 12" HDPE @ 5.38%

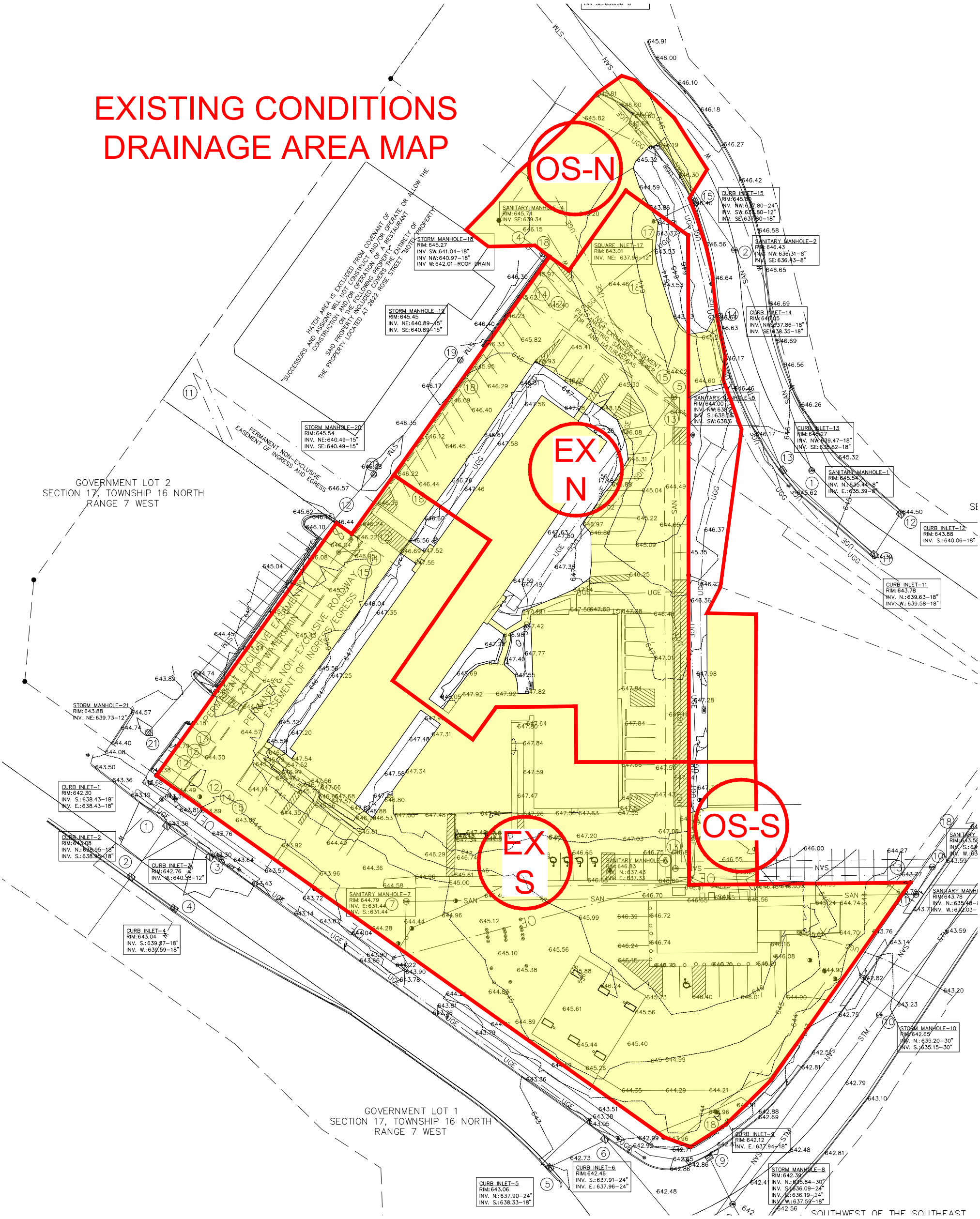
STORM SEWER DESIGN

Client: Kwik Trip
Project: La Crosse, WI #762
Design Basis: 10 year event

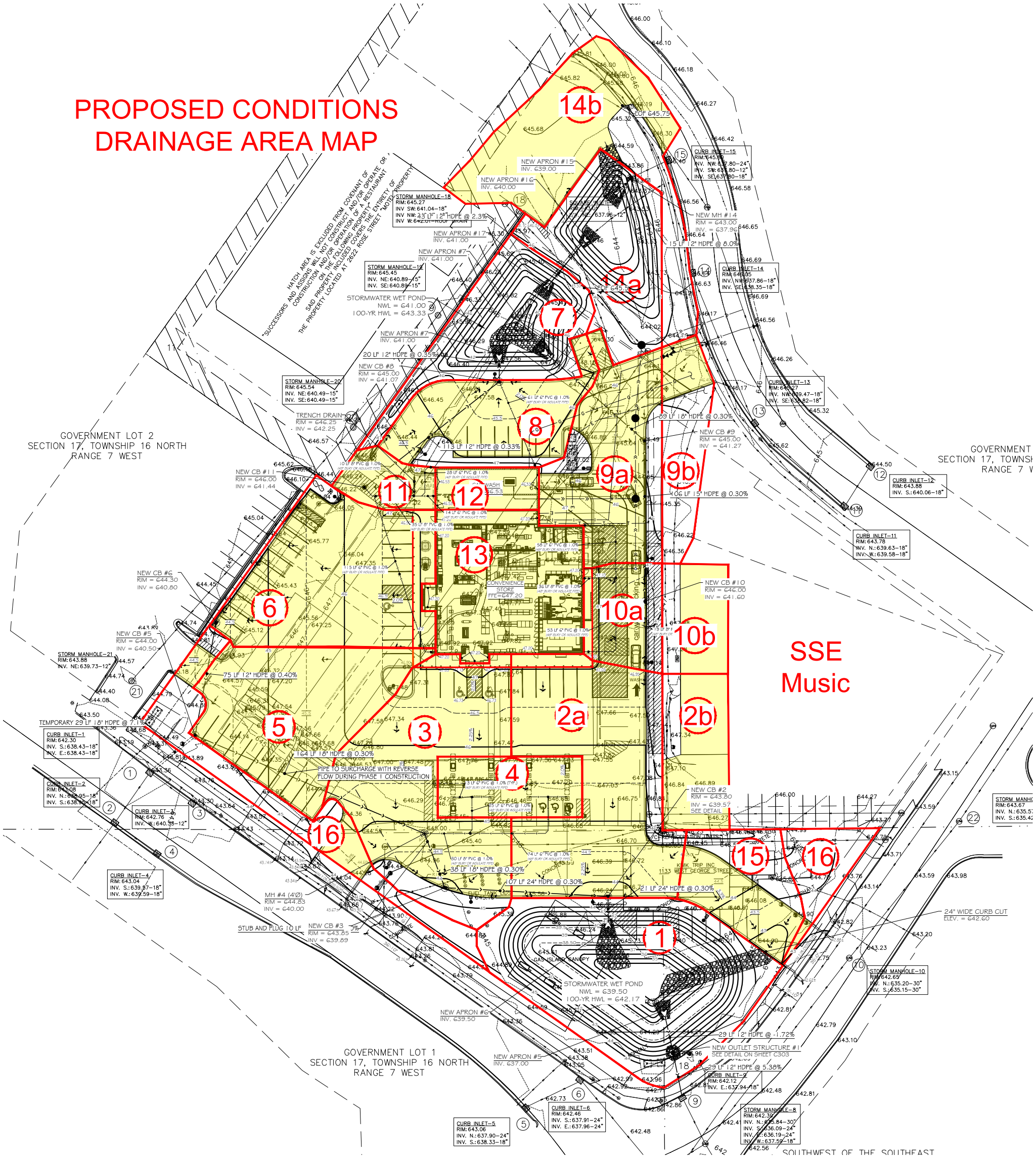
Pipe Location		Contributing Area			Pipe Flow				Pipe Data					Elevations				
Upstream	Downstream	Roof	Paved	Pervious	Area Runoff**		Total Flow		Length	Diameter	Slope	**Capacity ***	**Capacity ***	Velocity	Rim Elev. Up	Inv. Elev. Up	Inv. Elev. Down	Cover to Crown
Structure	Structure	(sq ft)	(sq ft)	(sq ft)	(GPM)	(cfs)	(GPM)	**(cfs)**	(ft)	(in)	(%)	(GPM)	**(cfs)**	(ft/s)	(feet)	(feet)	(feet)	(feet)
CB 11	CB8	1,897	1,018	0	260	0.58	260	0.58	113	12	0.33	917	**2.04**	0.74	646.00	641.44	641.07	3.56
CB8	POND 7P	0	6,066	822	431	0.96	691	1.54	20	12	0.35	949	**2.11**	1.96	645.00	641.07	641.00	2.93
CB10	CB9	11,476	2,703	1,621	1082	2.41	996	2.22	106	15	0.31	1622	**3.61**	1.81	646.00	641.60	641.27	3.15
CB9	POND 7P	0	8,056	4,436	691	1.54	1688	3.76	89	18	0.30	2604	**5.80**	2.13	645.00	641.27	641.00	2.23
CB6	CB5	0	11,324	335	759	1.69	996	2.22	75	12	0.40	1014	**2.26**	2.83	644.30	640.80	640.50	2.50
CB5	MH4	0	10,275	0	678	1.51	1674	3.73	164	18	0.30	2610	**5.82**	2.11	644.00	640.50	640.00	2.00
MH4	CB3	3,800	0	0	251	0.56	1925	4.29	38	18	0.29	2543	**5.67**	2.43	644.83	640.00	639.89	3.33
CB3	CB2	0	12,530	1,399	880	1.96	2805	6.25	107	24	0.30	5568	**12.40**	1.99	643.85	639.89	639.57	1.96
CB2	POND 1P	3,810	12,929	1,980	1176	2.62	3981	8.87	21	24	0.33	5878	**13.10**	2.82	643.80	639.57	639.50	2.23

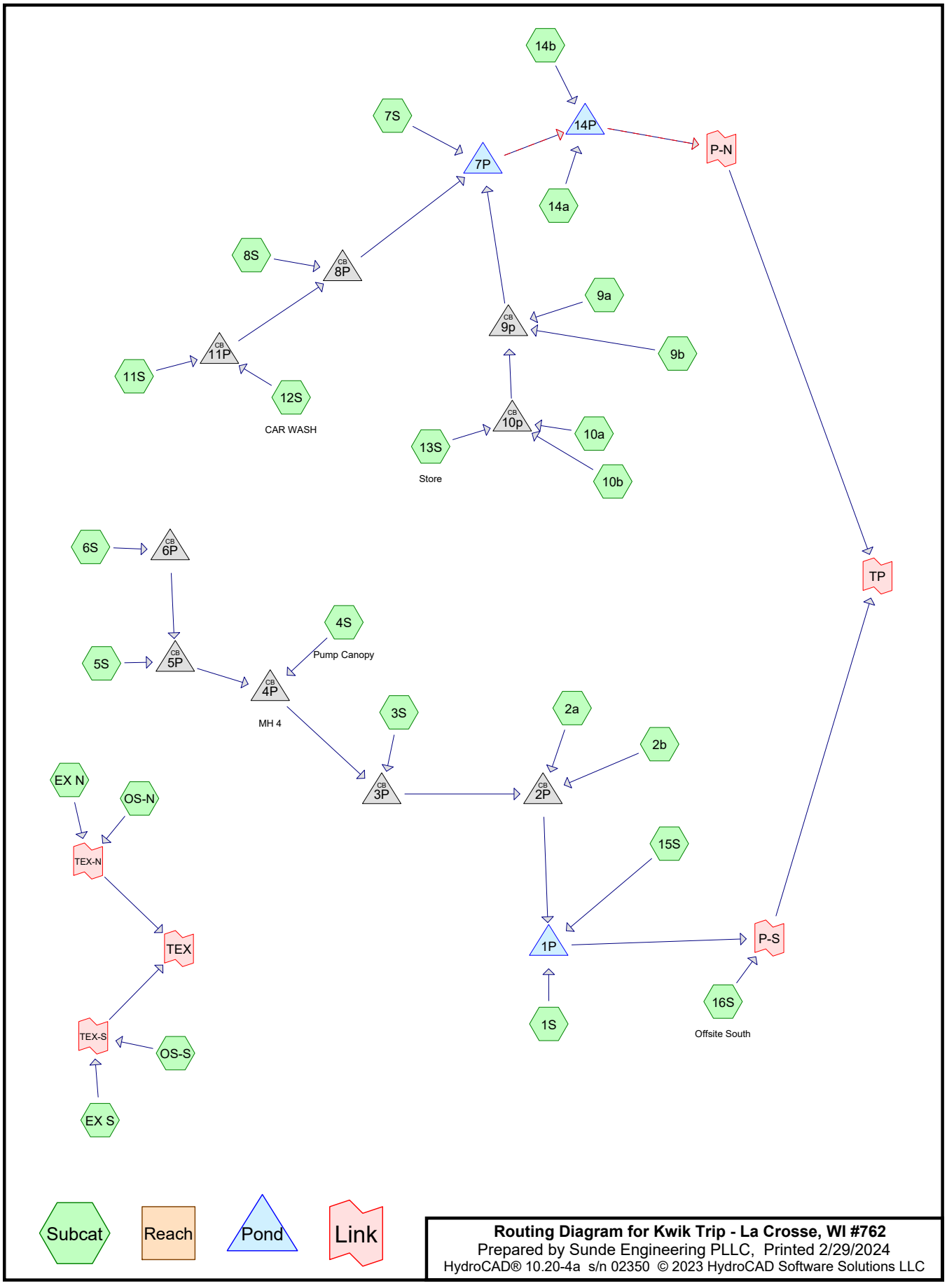
* Pipe capacity is computed using mannings equation with n = 0.013
** Runoff values are from HydroCAD output for a 10 year event

EXISTING CONDITIONS
DRAINAGE AREA MAP



PROPOSED CONDITIONS
DRAINAGE AREA MAP





Routing Diagram for Kwik Trip - La Crosse, WI #762
Prepared by Sunde Engineering PLLC, Printed 2/29/2024
HydroCAD® 10.20-4a s/n 02350 © 2023 HydroCAD Software Solutions LLC

Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Runoff Area=16,044 sf 0.00% Impervious Runoff Depth=1.45"
Tc=6.0 min CN=83/0 Runoff=0.962 cfs 1,945 cf

Subcatchment 2a: Runoff Area=14,242 sf 90.78% Impervious Runoff Depth=2.61"
Tc=6.0 min CN=74/98 Runoff=1.319 cfs 3,093 cf

Subcatchment 2b: Runoff Area=4,477 sf 85.10% Impervious Runoff Depth=2.50"
Tc=6.0 min CN=74/98 Runoff=0.399 cfs 933 cf

Subcatchment 3S: Runoff Area=13,929 sf 89.96% Impervious Runoff Depth=2.59"
Tc=6.0 min CN=74/98 Runoff=1.283 cfs 3,008 cf

Subcatchment 4S: Pump Canopy Runoff Area=3,800 sf 100.00% Impervious Runoff Depth=2.78"
Tc=6.0 min CN=0/98 Runoff=0.374 cfs 880 cf

Subcatchment 5S: Runoff Area=10,204 sf 100.00% Impervious Runoff Depth=2.78"
Tc=6.0 min CN=0/98 Runoff=1.003 cfs 2,362 cf

Subcatchment 6S: Runoff Area=11,659 sf 97.13% Impervious Runoff Depth=2.72"
Tc=6.0 min CN=74/98 Runoff=1.126 cfs 2,647 cf

Subcatchment 7S: Runoff Area=7,616 sf 0.00% Impervious Runoff Depth=1.26"
Tc=6.0 min CN=80/0 Runoff=0.395 cfs 798 cf

Subcatchment 8S: Runoff Area=6,888 sf 88.07% Impervious Runoff Depth=2.56"
Tc=6.0 min CN=74/98 Runoff=0.626 cfs 1,467 cf

Subcatchment 9a: Runoff Area=8,617 sf 81.55% Impervious Runoff Depth=2.43"
Tc=6.0 min CN=74/98 Runoff=0.749 cfs 1,748 cf

Subcatchment 9b: Runoff Area=3,875 sf 26.55% Impervious Runoff Depth=1.41"
Tc=6.0 min CN=74/98 Runoff=0.206 cfs 455 cf

Subcatchment 10a: Runoff Area=3,454 sf 78.26% Impervious Runoff Depth=2.37"
Tc=6.0 min CN=74/98 Runoff=0.293 cfs 683 cf

Subcatchment 10b: Runoff Area=3,130 sf 72.20% Impervious Runoff Depth=2.26"
Tc=6.0 min CN=74/98 Runoff=0.254 cfs 590 cf

Subcatchment 11S: Runoff Area=2,018 sf 100.00% Impervious Runoff Depth=2.78"
Tc=6.0 min CN=0/98 Runoff=0.198 cfs 467 cf

Subcatchment 12S: CAR WASH Runoff Area=1,897 sf 100.00% Impervious Runoff Depth=2.78"
Tc=6.0 min CN=0/98 Runoff=0.187 cfs 439 cf

Subcatchment 13S: Store Runoff Area=9,216 sf 100.00% Impervious Runoff Depth=2.78"
Tc=6.0 min CN=0/98 Runoff=0.906 cfs 2,134 cf

Subcatchment 14a: Runoff Area=7,482 sf 0.00% Impervious Runoff Depth=0.91"
Tc=6.0 min CN=74/0 Runoff=0.276 cfs 570 cf

Subcatchment 14b: Runoff Area=11,302 sf 72.46% Impervious Runoff Depth=2.26"
Tc=6.0 min CN=74/98 Runoff=0.919 cfs 2,133 cf

Subcatchment 15S: Runoff Area=4,940 sf 60.97% Impervious Runoff Depth=2.05"
Tc=6.0 min CN=74/98 Runoff=0.367 cfs 844 cf

Subcatchment 16S: Offsite South Runoff Area=7,802 sf 16.83% Impervious Runoff Depth=1.23"
Tc=6.0 min CN=74/98 Runoff=0.368 cfs 799 cf

Subcatchment EX N: Runoff Area=48,689 sf 82.73% Impervious Runoff Depth=2.30"
Tc=6.0 min CN=39/98 Runoff=3.961 cfs 9,325 cf

Subcatchment EX S: Runoff Area=81,135 sf 95.24% Impervious Runoff Depth=2.65"
Tc=6.0 min CN=39/98 Runoff=7.598 cfs 17,890 cf

Subcatchment OS-N: Runoff Area=19,321 sf 62.41% Impervious Runoff Depth=1.73"
Tc=6.0 min CN=39/98 Runoff=1.186 cfs 2,792 cf

Subcatchment OS-S: Runoff Area=3,447 sf 88.86% Impervious Runoff Depth=2.47"
Tc=6.0 min CN=39/98 Runoff=0.301 cfs 709 cf

Pond 1P: Peak Elev=640.68' Storage=21,381 cf Inflow=6.828 cfs 15,712 cf
Outflow=0.910 cfs 15,712 cf

Pond 2P: Peak Elev=640.84' Inflow=5.504 cfs 12,923 cf
24.0" Round Culvert n=0.013 L=21.0' S=0.0033 '/' Outflow=5.504 cfs 12,923 cf

Pond 3P: Peak Elev=640.92' Inflow=3.786 cfs 8,897 cf
24.0" Round Culvert n=0.013 L=107.0' S=0.0030 '/' Outflow=3.786 cfs 8,897 cf

Pond 4P: MH 4 Peak Elev=640.93' Inflow=2.503 cfs 5,889 cf
18.0" Round Culvert n=0.013 L=38.0' S=0.0029 '/' Outflow=2.503 cfs 5,889 cf

Pond 5P: Peak Elev=641.34' Inflow=2.129 cfs 5,010 cf
18.0" Round Culvert n=0.013 L=164.0' S=0.0030 '/' Outflow=2.129 cfs 5,010 cf

Pond 6P: Peak Elev=641.48' Inflow=1.126 cfs 2,647 cf
12.0" Round Culvert n=0.013 L=75.0' S=0.0040 '/' Outflow=1.126 cfs 2,647 cf

Pond 7P: Peak Elev=641.93' Storage=3,380 cf Inflow=3.811 cfs 8,781 cf
Primary=2.484 cfs 8,781 cf Secondary=0.000 cfs 0 cf Outflow=2.484 cfs 8,781 cf

Pond 8P: Peak Elev=641.72' Inflow=1.011 cfs 2,373 cf
12.0" Round Culvert n=0.013 L=20.0' S=0.0035 '/' Outflow=1.011 cfs 2,373 cf

Pond 9p: Peak Elev=642.17' Inflow=2.407 cfs 5,609 cf
18.0" Round Culvert n=0.013 L=89.0' S=0.0030 '/' Outflow=2.407 cfs 5,609 cf

Pond 10p: Peak Elev=642.34' Inflow=1.453 cfs 3,406 cf
15.0" Round Culvert n=0.013 L=106.0' S=0.0031 '/' Outflow=1.453 cfs 3,406 cf

Pond 11P: Peak Elev=641.83' Inflow=0.385 cfs 906 cf
12.0" Round Culvert n=0.013 L=113.0' S=0.0033 '/' Outflow=0.385 cfs 906 cf

Pond 14P: Peak Elev=640.10' Storage=642 cf Inflow=3.482 cfs 11,484 cf
Primary=2.936 cfs 11,484 cf Secondary=0.000 cfs 0 cf Outflow=2.936 cfs 11,484 cf

Link P-N: Inflow=2.936 cfs 11,484 cf
Primary=2.936 cfs 11,484 cf

Link P-S: Inflow=1.128 cfs 16,511 cf
Primary=1.128 cfs 16,511 cf

Link TEX: Inflow=13.046 cfs 30,716 cf
Primary=13.046 cfs 30,716 cf

Link TEX-N: Inflow=5.146 cfs 12,117 cf
Primary=5.146 cfs 12,117 cf

Link TEX-S: Inflow=7.900 cfs 18,599 cf
Primary=7.900 cfs 18,599 cf

Link TP: Inflow=3.972 cfs 27,995 cf
Primary=3.972 cfs 27,995 cf

Summary for Subcatchment 1S:

Runoff = 0.962 cfs @ 12.13 hrs, Volume= 1,945 cf, Depth= 1.45"
Routed to Pond 1P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
9,749	74	>75% Grass cover, Good, HSG C
6,295	98	Water Surface, 0% imp, HSG C
16,044	83	Weighted Average
16,044	83	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 2a:

Runoff = 1.319 cfs @ 12.13 hrs, Volume= 3,093 cf, Depth= 2.61"
Routed to Pond 2P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

Area (sf)	CN	Description
12,929	98	Paved parking, HSG C
1,313	74	>75% Grass cover, Good, HSG C
14,242	96	Weighted Average
1,313	74	9.22% Pervious Area
12,929	98	90.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 2b:

Runoff = 0.399 cfs @ 12.13 hrs, Volume= 933 cf, Depth= 2.50"
Routed to Pond 2P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

	Area (sf)	CN	Description
*	3,810	98	ROOF/PARKING
	667	74	>75% Grass cover, Good, HSG C
	4,477	94	Weighted Average
	667	74	14.90% Pervious Area
	3,810	98	85.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 3S:

Runoff = 1.283 cfs @ 12.13 hrs, Volume= 3,008 cf, Depth= 2.59"
Routed to Pond 3P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

Area (sf)	CN	Description
12,530	98	Paved parking, HSG C
1,399	74	>75% Grass cover, Good, HSG C
13,929	96	Weighted Average
1,399	74	10.04% Pervious Area
12,530	98	89.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 4S: Pump Canopy

Runoff = 0.374 cfs @ 12.13 hrs, Volume= 880 cf, Depth= 2.78"
Routed to Pond 4P : MH 4

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

Area (sf)	CN	Description
3,800	98	Paved parking, HSG C
0	74	>75% Grass cover, Good, HSG C
3,800	98	Weighted Average
3,800	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 5S:

Runoff = 1.003 cfs @ 12.13 hrs, Volume= 2,362 cf, Depth= 2.78"
Routed to Pond 5P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

Area (sf)	CN	Description
10,204	98	Paved parking, HSG C
0	74	>75% Grass cover, Good, HSG C
10,204	98	Weighted Average
10,204	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 6S:

Runoff = 1.126 cfs @ 12.13 hrs, Volume= 2,647 cf, Depth= 2.72"
Routed to Pond 6P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

Area (sf)	CN	Description
11,324	98	Paved parking, HSG C
335	74	>75% Grass cover, Good, HSG C
11,659	97	Weighted Average
335	74	2.87% Pervious Area
11,324	98	97.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 7S:

Runoff = 0.395 cfs @ 12.14 hrs, Volume= 798 cf, Depth= 1.26"
Routed to Pond 7P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
5,694	74	>75% Grass cover, Good, HSG C
1,922	98	Water Surface, 0% imp, HSG C
7,616	80	Weighted Average
7,616	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 8S:

Runoff = 0.626 cfs @ 12.13 hrs, Volume= 1,467 cf, Depth= 2.56"
Routed to Pond 8P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

Area (sf)	CN	Description
6,066	98	Paved parking, HSG C
822	74	>75% Grass cover, Good, HSG C
6,888	95	Weighted Average
822	74	11.93% Pervious Area
6,066	98	88.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 9a:

Runoff = 0.749 cfs @ 12.13 hrs, Volume= 1,748 cf, Depth= 2.43"
Routed to Pond 9p :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

Area (sf)	CN	Description
7,027	98	Paved parking, HSG C
1,590	74	>75% Grass cover, Good, HSG C
8,617	94	Weighted Average
1,590	74	18.45% Pervious Area
7,027	98	81.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 9b:

Runoff = 0.206 cfs @ 12.13 hrs, Volume= 455 cf, Depth= 1.41"
Routed to Pond 9p :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

Area (sf)	CN	Description
1,029	98	Paved parking, HSG C
2,846	74	>75% Grass cover, Good, HSG C
3,875	80	Weighted Average
2,846	74	73.45% Pervious Area
1,029	98	26.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 10a:

Runoff = 0.293 cfs @ 12.13 hrs, Volume= 683 cf, Depth= 2.37"
Routed to Pond 10p :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

Area (sf)	CN	Description
2,703	98	Paved parking, HSG C
751	74	>75% Grass cover, Good, HSG C
3,454	93	Weighted Average
751	74	21.74% Pervious Area
2,703	98	78.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 10b:

Runoff = 0.254 cfs @ 12.13 hrs, Volume= 590 cf, Depth= 2.26"
Routed to Pond 10p :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

	Area (sf)	CN	Description
*	2,260	98	ROOF
	870	74	>75% Grass cover, Good, HSG C
	3,130	91	Weighted Average
	870	74	27.80% Pervious Area
	2,260	98	72.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 11S:

Runoff = 0.198 cfs @ 12.13 hrs, Volume= 467 cf, Depth= 2.78"
Routed to Pond 11P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

Area (sf)	CN	Description
2,018	98	Paved parking, HSG C
0	74	>75% Grass cover, Good, HSG C
2,018	98	Weighted Average
2,018	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 12S: CAR WASH

Runoff = 0.187 cfs @ 12.13 hrs, Volume= 439 cf, Depth= 2.78"
Routed to Pond 11P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

	Area (sf)	CN	Description
*	1,897	98	ROOF
	0	74	>75% Grass cover, Good, HSG C
	1,897	98	Weighted Average
	1,897	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 13S: Store

Runoff = 0.906 cfs @ 12.13 hrs, Volume= 2,134 cf, Depth= 2.78"
Routed to Pond 10p :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

	Area (sf)	CN	Description
*	9,216	98	ROOF
	0	74	>75% Grass cover, Good, HSG C
	9,216	98	Weighted Average
	9,216	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 14a:

Runoff = 0.276 cfs @ 12.14 hrs, Volume= 570 cf, Depth= 0.91"
Routed to Pond 14P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
7,482	74	>75% Grass cover, Good, HSG C
7,482	74	Weighted Average
7,482	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 14b:

Runoff = 0.919 cfs @ 12.13 hrs, Volume= 2,133 cf, Depth= 2.26"
Routed to Pond 14P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

Area (sf)	CN	Description
8,189	98	Paved parking, HSG A
3,113	74	>75% Grass cover, Good, HSG C
11,302	91	Weighted Average
3,113	74	27.54% Pervious Area
8,189	98	72.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 15S:

Runoff = 0.367 cfs @ 12.13 hrs, Volume= 844 cf, Depth= 2.05"
Routed to Pond 1P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

Area (sf)	CN	Description
3,012	98	Paved parking, HSG C
1,928	74	>75% Grass cover, Good, HSG C
4,940	89	Weighted Average
1,928	74	39.03% Pervious Area
3,012	98	60.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 16S: Offsite South

Runoff = 0.368 cfs @ 12.14 hrs, Volume= 799 cf, Depth= 1.23"
Routed to Link P-S :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

Area (sf)	CN	Description
1,313	98	Paved parking, HSG C
6,489	74	>75% Grass cover, Good, HSG C
7,802	78	Weighted Average
6,489	74	83.17% Pervious Area
1,313	98	16.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment EX N:

Runoff = 3.961 cfs @ 12.13 hrs, Volume= 9,325 cf, Depth= 2.30"
Routed to Link TEX-N :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

Area (sf)	CN	Description
40,279	98	Paved parking, HSG A
8,410	39	>75% Grass cover, Good, HSG A
48,689	88	Weighted Average
8,410	39	17.27% Pervious Area
40,279	98	82.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment EX S:

Runoff = 7.598 cfs @ 12.13 hrs, Volume= 17,890 cf, Depth= 2.65"
Routed to Link TEX-S :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

Area (sf)	CN	Description
77,271	98	Paved parking, HSG A
3,864	39	>75% Grass cover, Good, HSG A
81,135	95	Weighted Average
3,864	39	4.76% Pervious Area
77,271	98	95.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment OS-N:

Runoff = 1.186 cfs @ 12.13 hrs, Volume= 2,792 cf, Depth= 1.73"
Routed to Link TEX-N :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

Area (sf)	CN	Description
12,058	98	Paved parking, HSG A
7,263	39	>75% Grass cover, Good, HSG A
19,321	76	Weighted Average
7,263	39	37.59% Pervious Area
12,058	98	62.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment OS-S:

Runoff = 0.301 cfs @ 12.13 hrs, Volume= 709 cf, Depth= 2.47"
Routed to Link TEX-S :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 2-yr Rainfall=3.01"

	Area (sf)	CN	Description
*	3,063	98	ROOF/PARKING
	384	39	>75% Grass cover, Good, HSG A
	3,447	91	Weighted Average
	384	39	11.14% Pervious Area
	3,063	98	88.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Pond 1P:

Inflow Area = 79,295 sf, 72.65% Impervious, Inflow Depth = 2.38" for 2-yr event
Inflow = 6.828 cfs @ 12.13 hrs, Volume= 15,712 cf
Outflow = 0.910 cfs @ 12.55 hrs, Volume= 15,712 cf, Atten= 87%, Lag= 25.0 min
Primary = 0.910 cfs @ 12.55 hrs, Volume= 15,712 cf
Routed to Link P-S :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Starting Elev= 639.50' Surf.Area= 6,295 sf Storage= 13,277 cf
Peak Elev= 640.68' @ 12.55 hrs Surf.Area= 7,481 sf Storage= 21,381 cf (8,103 cf above start)

Plug-Flow detention time= 868.7 min calculated for 2,435 cf (15% of inflow)
Center-of-Mass det. time= 166.5 min (928.5 - 762.0)

Volume	Invert	Avail.Storage	Storage Description
#1	634.00'	52,295 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
634.00	698	0	0
635.00	1,126	912	912
636.00	1,652	1,389	2,301
637.00	2,272	1,962	4,263
638.00	2,980	2,626	6,889
638.50	3,380	1,590	8,479
639.00	4,759	2,035	10,514
639.50	6,295	2,764	13,277
640.00	6,787	3,271	16,548
641.00	7,812	7,300	23,847
642.00	8,895	8,354	32,201
643.00	10,033	9,464	41,665
644.00	11,228	10,631	52,295

Device	Routing	Invert	Outlet Devices
#1	Primary	639.50'	**12.0" Round Culvert** L= 57.0' Ke= 0.500 Inlet / Outlet Invert= 639.50' / 639.32' S= 0.0032 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf
#2	Device 1	639.50'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	641.50'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.910 cfs @ 12.55 hrs HW=640.68' (Free Discharge)
└─**1=Culvert** (Passes 0.910 cfs of 2.381 cfs potential flow)
  ├─**2=Orifice/Grate** (Orifice Controls 0.910 cfs @ 4.64 fps)
  └─**3=Broad-Crested Rectangular Weir** (Controls 0.000 cfs)

Summary for Pond 2P:

Inflow Area = 58,311 sf, 93.63% Impervious, Inflow Depth = 2.66" for 2-yr event
Inflow = 5.504 cfs @ 12.13 hrs, Volume= 12,923 cf
Outflow = 5.504 cfs @ 12.13 hrs, Volume= 12,923 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.504 cfs @ 12.13 hrs, Volume= 12,923 cf
Routed to Pond 1P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 640.84' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	639.57'	**24.0" Round Culvert** L= 21.0' Ke= 0.500 Inlet / Outlet Invert= 639.57' / 639.50' S= 0.0033 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf

Primary OutFlow Max=5.260 cfs @ 12.13 hrs HW=640.80' (Free Discharge)
└─**1=Culvert** (Barrel Controls 5.260 cfs @ 3.70 fps)

Summary for Pond 3P:

Inflow Area = 39,592 sf, 95.62% Impervious, Inflow Depth = 2.70" for 2-yr event
Inflow = 3.786 cfs @ 12.13 hrs, Volume= 8,897 cf
Outflow = 3.786 cfs @ 12.13 hrs, Volume= 8,897 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.786 cfs @ 12.13 hrs, Volume= 8,897 cf
Routed to Pond 2P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 640.92' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	639.89'	**24.0" Round Culvert** L= 107.0' Ke= 0.500 Inlet / Outlet Invert= 639.89' / 639.57' S= 0.0030 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf

Primary OutFlow Max=3.618 cfs @ 12.13 hrs HW=640.89' (Free Discharge)
1=Culvert (Barrel Controls 3.618 cfs @ 3.36 fps)

Summary for Pond 4P: MH 4

Inflow Area = 25,663 sf, 98.69% Impervious, Inflow Depth = 2.75" for 2-yr event
Inflow = 2.503 cfs @ 12.13 hrs, Volume= 5,889 cf
Outflow = 2.503 cfs @ 12.13 hrs, Volume= 5,889 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.503 cfs @ 12.13 hrs, Volume= 5,889 cf
Routed to Pond 3P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 640.93' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	640.00'	**18.0" Round Culvert** L= 38.0' Ke= 0.500 Inlet / Outlet Invert= 640.00' / 639.89' S= 0.0029 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=2.392 cfs @ 12.13 hrs HW=640.90' (Free Discharge)
1=Culvert (Barrel Controls 2.392 cfs @ 3.09 fps)

Summary for Pond 5P:

Inflow Area = 21,863 sf, 98.47% Impervious, Inflow Depth = 2.75" for 2-yr event
Inflow = 2.129 cfs @ 12.13 hrs, Volume= 5,010 cf
Outflow = 2.129 cfs @ 12.13 hrs, Volume= 5,010 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.129 cfs @ 12.13 hrs, Volume= 5,010 cf
Routed to Pond 4P : MH 4

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 641.34' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	640.50'	**18.0" Round Culvert** L= 164.0' Ke= 0.500

Inlet / Outlet Invert= 640.50' / 640.00' S= 0.0030 '/' Cc= 0.900
n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=2.035 cfs @ 12.13 hrs HW=641.32' (Free Discharge)
└**1=Culvert** (Barrel Controls 2.035 cfs @ 2.98 fps)

Summary for Pond 6P:

Inflow Area = 11,659 sf, 97.13% Impervious, Inflow Depth = 2.72" for 2-yr event
Inflow = 1.126 cfs @ 12.13 hrs, Volume= 2,647 cf
Outflow = 1.126 cfs @ 12.13 hrs, Volume= 2,647 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.126 cfs @ 12.13 hrs, Volume= 2,647 cf
Routed to Pond 5P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 641.48' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	640.80'	**12.0" Round Culvert** L= 75.0' Ke= 0.500 Inlet / Outlet Invert= 640.80' / 640.50' S= 0.0040 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=1.076 cfs @ 12.13 hrs HW=641.46' (Free Discharge)
└**1=Culvert** (Barrel Controls 1.076 cfs @ 2.78 fps)

Summary for Pond 7P:

Inflow Area = 46,711 sf, 68.97% Impervious, Inflow Depth = 2.26" for 2-yr event
Inflow = 3.811 cfs @ 12.13 hrs, Volume= 8,781 cf
Outflow = 2.484 cfs @ 12.21 hrs, Volume= 8,781 cf, Atten= 35%, Lag= 4.6 min
Primary = 2.484 cfs @ 12.21 hrs, Volume= 8,781 cf
Routed to Pond 14P :
Secondary = 0.000 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 14P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Starting Elev= 641.00' Surf.Area= 1,638 sf Storage= 1,623 cf
Peak Elev= 641.93' @ 12.21 hrs Surf.Area= 2,158 sf Storage= 3,380 cf (1,757 cf above start)

Plug-Flow detention time= 126.6 min calculated for 7,158 cf (82% of inflow)
Center-of-Mass det. time= 29.9 min (793.2 - 763.3)

Volume	Invert	Avail.Storage	Storage Description
#1	638.00'	18,131 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
638.00	61	0	0
639.00	251	156	156
640.00	522	387	543
641.00	1,638	1,080	1,623
642.00	2,200	1,919	3,542
643.00	2,871	2,536	6,077
644.00	3,598	3,235	9,312
645.00	4,400	3,999	13,311
646.00	5,240	4,820	18,131

Device	Routing	Invert	Outlet Devices
#1	Primary	641.00'	**12.0" Round Culvert** L= 43.0' Ke= 0.500 Inlet / Outlet Invert= 641.00' / 640.00' S= 0.0233 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf
#2	Secondary	645.50'	**10.0' long x 4.0' 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=2.473 cfs @ 12.21 hrs HW=641.92' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 2.473 cfs @ 3.27 fps)

Secondary OutFlow Max=0.000 cfs @ 0.00 hrs HW=641.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.000 cfs)

Summary for Pond 8P:

Inflow Area = 10,803 sf, 92.39% Impervious, Inflow Depth = 2.64" for 2-yr event
Inflow = 1.011 cfs @ 12.13 hrs, Volume= 2,373 cf
Outflow = 1.011 cfs @ 12.13 hrs, Volume= 2,373 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.011 cfs @ 12.13 hrs, Volume= 2,373 cf
Routed to Pond 7P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 641.72' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	641.07'	**12.0" Round Culvert** L= 20.0' Ke= 0.500 Inlet / Outlet Invert= 641.07' / 641.00' S= 0.0035 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=0.967 cfs @ 12.13 hrs HW=641.71' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.967 cfs @ 2.62 fps)

Summary for Pond 9p:

Inflow Area = 28,292 sf, 78.59% Impervious, Inflow Depth = 2.38" for 2-yr event
Inflow = 2.407 cfs @ 12.13 hrs, Volume= 5,609 cf
Outflow = 2.407 cfs @ 12.13 hrs, Volume= 5,609 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.407 cfs @ 12.13 hrs, Volume= 5,609 cf
Routed to Pond 7P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 642.17' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	641.27'	**18.0" Round Culvert** L= 89.0' Ke= 0.500 Inlet / Outlet Invert= 641.27' / 641.00' S= 0.0030 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=2.300 cfs @ 12.13 hrs HW=642.15' (Free Discharge)
1=Culvert (Barrel Controls 2.300 cfs @ 3.08 fps)

Summary for Pond 10p:

Inflow Area = 15,800 sf, 89.74% Impervious, Inflow Depth = 2.59" for 2-yr event
Inflow = 1.453 cfs @ 12.13 hrs, Volume= 3,406 cf
Outflow = 1.453 cfs @ 12.13 hrs, Volume= 3,406 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.453 cfs @ 12.13 hrs, Volume= 3,406 cf
Routed to Pond 9p :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 642.34' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	641.60'	**15.0" Round Culvert** L= 106.0' Ke= 0.500 Inlet / Outlet Invert= 641.60' / 641.27' S= 0.0031 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf

Primary OutFlow Max=1.389 cfs @ 12.13 hrs HW=642.32' (Free Discharge)
1=Culvert (Barrel Controls 1.389 cfs @ 2.75 fps)

Summary for Pond 11P:

Inflow Area = 3,915 sf,100.00% Impervious, Inflow Depth = 2.78" for 2-yr event
Inflow = 0.385 cfs @ 12.13 hrs, Volume= 906 cf
Outflow = 0.385 cfs @ 12.13 hrs, Volume= 906 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.385 cfs @ 12.13 hrs, Volume= 906 cf
Routed to Pond 8P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 641.83' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	641.44'	**12.0" Round Culvert** L= 113.0' Ke= 0.500

Inlet / Outlet Invert= 641.44' / 641.07' S= 0.0033 '/' Cc= 0.900
n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=0.368 cfs @ 12.13 hrs HW=641.82' (Free Discharge)
1=Culvert (Barrel Controls 0.368 cfs @ 1.98 fps)

Summary for Pond 14P:

Inflow Area = 65,495 sf, 61.69% Impervious, Inflow Depth = 2.10" for 2-yr event
Inflow = 3.482 cfs @ 12.16 hrs, Volume= 11,484 cf
Outflow = 2.936 cfs @ 12.25 hrs, Volume= 11,484 cf, Atten= 16%, Lag= 5.1 min
Primary = 2.936 cfs @ 12.25 hrs, Volume= 11,484 cf
Routed to Link P-N :
Secondary = 0.000 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link P-N :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 640.10' @ 12.25 hrs Surf.Area= 1,114 sf Storage= 642 cf

Plug-Flow detention time= 2.6 min calculated for 11,484 cf (100% of inflow)
Center-of-Mass det. time= 2.5 min (791.8 - 789.2)

Volume	Invert	Avail.Storage	Storage Description
#1	639.00'	18,309 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
639.00	0	0	0
640.00	1,060	530	530
641.00	1,580	1,320	1,850
642.00	2,226	1,903	3,753
643.00	2,887	2,557	6,310
644.00	3,624	3,256	9,565
645.00	4,282	3,953	13,518
646.00	5,300	4,791	18,309

Device	Routing	Invert	Outlet Devices
#1	Primary	639.00'	**12.0" Round Culvert** L= 14.0' Ke= 0.500 Inlet / Outlet Invert= 639.00' / 637.96' S= 0.0743 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf
#2	Secondary	645.75'	**10.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=2.933 cfs @ 12.25 hrs HW=640.10' (Free Discharge)
1=Culvert (Inlet Controls 2.933 cfs @ 3.73 fps)

Secondary OutFlow Max=0.000 cfs @ 0.00 hrs HW=639.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.000 cfs)

Summary for Link P-N:

Inflow Area = 65,495 sf, 61.69% Impervious, Inflow Depth = 2.10" for 2-yr event
Inflow = 2.936 cfs @ 12.25 hrs, Volume= 11,484 cf
Primary = 2.936 cfs @ 12.25 hrs, Volume= 11,484 cf, Atten= 0%, Lag= 0.0 min
Routed to Link TP :

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link P-S:

Inflow Area = 87,097 sf, 67.65% Impervious, Inflow Depth = 2.27" for 2-yr event
Inflow = 1.128 cfs @ 12.16 hrs, Volume= 16,511 cf
Primary = 1.128 cfs @ 12.16 hrs, Volume= 16,511 cf, Atten= 0%, Lag= 0.0 min
Routed to Link TP :

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link TEX:

Inflow Area = 152,592 sf, 86.94% Impervious, Inflow Depth = 2.42" for 2-yr event
Inflow = 13.046 cfs @ 12.13 hrs, Volume= 30,716 cf
Primary = 13.046 cfs @ 12.13 hrs, Volume= 30,716 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link TEX-N:

Inflow Area = 68,010 sf, 76.95% Impervious, Inflow Depth = 2.14" for 2-yr event
Inflow = 5.146 cfs @ 12.13 hrs, Volume= 12,117 cf
Primary = 5.146 cfs @ 12.13 hrs, Volume= 12,117 cf, Atten= 0%, Lag= 0.0 min
Routed to Link TEX :

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link TEX-S:

Inflow Area = 84,582 sf, 94.98% Impervious, Inflow Depth = 2.64" for 2-yr event
Inflow = 7.900 cfs @ 12.13 hrs, Volume= 18,599 cf
Primary = 7.900 cfs @ 12.13 hrs, Volume= 18,599 cf, Atten= 0%, Lag= 0.0 min
Routed to Link TEX :

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link TP:

Inflow Area = 152,592 sf, 65.09% Impervious, Inflow Depth = 2.20" for 2-yr event
Inflow = 3.972 cfs @ 12.23 hrs, Volume= 27,995 cf
Primary = 3.972 cfs @ 12.23 hrs, Volume= 27,995 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Runoff Area=16,044 sf 0.00% Impervious Runoff Depth=2.70"
Tc=6.0 min CN=83/0 Runoff=1.756 cfs 3,608 cf

Subcatchment 2a: Runoff Area=14,242 sf 90.78% Impervious Runoff Depth=4.02"
Tc=6.0 min CN=74/98 Runoff=2.007 cfs 4,775 cf

Subcatchment 2b: Runoff Area=4,477 sf 85.10% Impervious Runoff Depth=3.89"
Tc=6.0 min CN=74/98 Runoff=0.614 cfs 1,453 cf

Subcatchment 3S: Runoff Area=13,929 sf 89.96% Impervious Runoff Depth=4.00"
Tc=6.0 min CN=74/98 Runoff=1.955 cfs 4,648 cf

Subcatchment 4S: Pump Canopy Runoff Area=3,800 sf 100.00% Impervious Runoff Depth=4.23"
Tc=6.0 min CN=0/98 Runoff=0.559 cfs 1,341 cf

Subcatchment 5S: Runoff Area=10,204 sf 100.00% Impervious Runoff Depth=4.23"
Tc=6.0 min CN=0/98 Runoff=1.501 cfs 3,600 cf

Subcatchment 6S: Runoff Area=11,659 sf 97.13% Impervious Runoff Depth=4.17"
Tc=6.0 min CN=74/98 Runoff=1.692 cfs 4,050 cf

Subcatchment 7S: Runoff Area=7,616 sf 0.00% Impervious Runoff Depth=2.44"
Tc=6.0 min CN=80/0 Runoff=0.760 cfs 1,546 cf

Subcatchment 8S: Runoff Area=6,888 sf 88.07% Impervious Runoff Depth=3.96"
Tc=6.0 min CN=74/98 Runoff=0.958 cfs 2,274 cf

Subcatchment 9a: Runoff Area=8,617 sf 81.55% Impervious Runoff Depth=3.81"
Tc=6.0 min CN=74/98 Runoff=1.161 cfs 2,738 cf

Subcatchment 9b: Runoff Area=3,875 sf 26.55% Impervious Runoff Depth=2.56"
Tc=6.0 min CN=74/98 Runoff=0.380 cfs 825 cf

Subcatchment 10a: Runoff Area=3,454 sf 78.26% Impervious Runoff Depth=3.74"
Tc=6.0 min CN=74/98 Runoff=0.458 cfs 1,076 cf

Subcatchment 10b: Runoff Area=3,130 sf 72.20% Impervious Runoff Depth=3.60"
Tc=6.0 min CN=74/98 Runoff=0.402 cfs 939 cf

Subcatchment 11S: Runoff Area=2,018 sf 100.00% Impervious Runoff Depth=4.23"
Tc=6.0 min CN=0/98 Runoff=0.297 cfs 712 cf

Subcatchment 12S: CAR WASH Runoff Area=1,897 sf 100.00% Impervious Runoff Depth=4.23"
Tc=6.0 min CN=0/98 Runoff=0.279 cfs 669 cf

Subcatchment 13S: Store Runoff Area=9,216 sf 100.00% Impervious Runoff Depth=4.23"
Tc=6.0 min CN=0/98 Runoff=1.355 cfs 3,252 cf

Subcatchment 14a: Runoff Area=7,482 sf 0.00% Impervious Runoff Depth=1.95"
Tc=6.0 min CN=74/0 Runoff=0.602 cfs 1,215 cf

Subcatchment 14b: Runoff Area=11,302 sf 72.46% Impervious Runoff Depth=3.60"
Tc=6.0 min CN=74/98 Runoff=1.453 cfs 3,395 cf

Subcatchment 15S: Runoff Area=4,940 sf 60.97% Impervious Runoff Depth=3.34"
Tc=6.0 min CN=74/98 Runoff=0.597 cfs 1,376 cf

Subcatchment 16S: Offsite South Runoff Area=7,802 sf 16.83% Impervious Runoff Depth=2.33"
Tc=6.0 min CN=74/98 Runoff=0.714 cfs 1,517 cf

Subcatchment EX N: Runoff Area=48,689 sf 82.73% Impervious Runoff Depth=3.52"
Tc=6.0 min CN=39/98 Runoff=5.924 cfs 14,286 cf

Subcatchment EX S: Runoff Area=81,135 sf 95.24% Impervious Runoff Depth=4.04"
Tc=6.0 min CN=39/98 Runoff=11.365 cfs 27,299 cf

Subcatchment OS-N: Runoff Area=19,321 sf 62.41% Impervious Runoff Depth=2.68"
Tc=6.0 min CN=39/98 Runoff=1.773 cfs 4,319 cf

Subcatchment OS-S: Runoff Area=3,447 sf 88.86% Impervious Runoff Depth=3.77"
Tc=6.0 min CN=39/98 Runoff=0.451 cfs 1,084 cf

Pond 1P: Peak Elev=641.30' Storage=26,266 cf Inflow=10.677 cfs 24,852 cf
Outflow=1.178 cfs 24,852 cf

Pond 2P: Peak Elev=641.18' Inflow=8.327 cfs 19,867 cf
24.0" Round Culvert n=0.013 L=21.0' S=0.0033 '/' Outflow=8.327 cfs 19,867 cf

Pond 3P: Peak Elev=641.18' Inflow=5.707 cfs 13,640 cf
24.0" Round Culvert n=0.013 L=107.0' S=0.0030 '/' Outflow=5.707 cfs 13,640 cf

Pond 4P: MH 4 Peak Elev=641.17' Inflow=3.752 cfs 8,991 cf
18.0" Round Culvert n=0.013 L=38.0' S=0.0029 '/' Outflow=3.752 cfs 8,991 cf

Pond 5P: Peak Elev=641.56' Inflow=3.193 cfs 7,650 cf
18.0" Round Culvert n=0.013 L=164.0' S=0.0030 '/' Outflow=3.193 cfs 7,650 cf

Pond 6P: Peak Elev=641.67' Inflow=1.692 cfs 4,050 cf
12.0" Round Culvert n=0.013 L=75.0' S=0.0040 '/' Outflow=1.692 cfs 4,050 cf

Pond 7P: Peak Elev=642.36' Storage=4,378 cf Inflow=6.046 cfs 14,031 cf
Primary=3.508 cfs 14,031 cf Secondary=0.000 cfs 0 cf Outflow=3.508 cfs 14,031 cf

Pond 8P: Peak Elev=641.90' Inflow=1.534 cfs 3,655 cf
12.0" Round Culvert n=0.013 L=20.0' S=0.0035 '/' Outflow=1.534 cfs 3,655 cf

Pond 9p: Peak Elev=642.44' Inflow=3.755 cfs 8,829 cf
18.0" Round Culvert n=0.013 L=89.0' S=0.0030 '/' Outflow=3.755 cfs 8,829 cf

Pond 10p: Peak Elev=642.54' Inflow=2.215 cfs 5,266 cf
15.0" Round Culvert n=0.013 L=106.0' S=0.0031 '/' Outflow=2.215 cfs 5,266 cf

Pond 11P: Peak Elev=641.92' Inflow=0.576 cfs 1,381 cf
12.0" Round Culvert n=0.013 L=113.0' S=0.0033 '/' Outflow=0.576 cfs 1,381 cf

Pond 14P: Peak Elev=640.66' Storage=1,341 cf Inflow=5.265 cfs 18,641 cf
Primary=4.071 cfs 18,641 cf Secondary=0.000 cfs 0 cf Outflow=4.071 cfs 18,641 cf

Link P-N: Inflow=4.071 cfs 18,641 cf
Primary=4.071 cfs 18,641 cf

Link P-S: Inflow=1.694 cfs 26,369 cf
Primary=1.694 cfs 26,369 cf

Link TEX: Inflow=19.513 cfs 46,988 cf
Primary=19.513 cfs 46,988 cf

Link TEX-N: Inflow=7.698 cfs 18,605 cf
Primary=7.698 cfs 18,605 cf

Link TEX-S: Inflow=11.816 cfs 28,383 cf
Primary=11.816 cfs 28,383 cf

Link TP: Inflow=5.480 cfs 45,010 cf
Primary=5.480 cfs 45,010 cf

Summary for Subcatchment 1S:

Runoff = 1.756 cfs @ 12.13 hrs, Volume= 3,608 cf, Depth= 2.70"
Routed to Pond 1P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
9,749	74	>75% Grass cover, Good, HSG C
6,295	98	Water Surface, 0% imp, HSG C
16,044	83	Weighted Average
16,044	83	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 2a:

Runoff = 2.007 cfs @ 12.13 hrs, Volume= 4,775 cf, Depth= 4.02"
Routed to Pond 2P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

Area (sf)	CN	Description
12,929	98	Paved parking, HSG C
1,313	74	>75% Grass cover, Good, HSG C
14,242	96	Weighted Average
1,313	74	9.22% Pervious Area
12,929	98	90.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 2b:

Runoff = 0.614 cfs @ 12.13 hrs, Volume= 1,453 cf, Depth= 3.89"
Routed to Pond 2P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

	Area (sf)	CN	Description
*	3,810	98	ROOF/PARKING
	667	74	>75% Grass cover, Good, HSG C
	4,477	94	Weighted Average
	667	74	14.90% Pervious Area
	3,810	98	85.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 3S:

Runoff = 1.955 cfs @ 12.13 hrs, Volume= 4,648 cf, Depth= 4.00"
Routed to Pond 3P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

Area (sf)	CN	Description
12,530	98	Paved parking, HSG C
1,399	74	>75% Grass cover, Good, HSG C
13,929	96	Weighted Average
1,399	74	10.04% Pervious Area
12,530	98	89.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 4S: Pump Canopy

Runoff = 0.559 cfs @ 12.13 hrs, Volume= 1,341 cf, Depth= 4.23"
Routed to Pond 4P : MH 4

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

Area (sf)	CN	Description
3,800	98	Paved parking, HSG C
0	74	>75% Grass cover, Good, HSG C
3,800	98	Weighted Average
3,800	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 5S:

Runoff = 1.501 cfs @ 12.13 hrs, Volume= 3,600 cf, Depth= 4.23"
Routed to Pond 5P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

Area (sf)	CN	Description
10,204	98	Paved parking, HSG C
0	74	>75% Grass cover, Good, HSG C
10,204	98	Weighted Average
10,204	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 6S:

Runoff = 1.692 cfs @ 12.13 hrs, Volume= 4,050 cf, Depth= 4.17"
Routed to Pond 6P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

Area (sf)	CN	Description
11,324	98	Paved parking, HSG C
335	74	>75% Grass cover, Good, HSG C
11,659	97	Weighted Average
335	74	2.87% Pervious Area
11,324	98	97.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 7S:

Runoff = 0.760 cfs @ 12.13 hrs, Volume= 1,546 cf, Depth= 2.44"
Routed to Pond 7P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
5,694	74	>75% Grass cover, Good, HSG C
1,922	98	Water Surface, 0% imp, HSG C
7,616	80	Weighted Average
7,616	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 8S:

Runoff = 0.958 cfs @ 12.13 hrs, Volume= 2,274 cf, Depth= 3.96"
Routed to Pond 8P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

Area (sf)	CN	Description
6,066	98	Paved parking, HSG C
822	74	>75% Grass cover, Good, HSG C
6,888	95	Weighted Average
822	74	11.93% Pervious Area
6,066	98	88.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 9a:

Runoff = 1.161 cfs @ 12.13 hrs, Volume= 2,738 cf, Depth= 3.81"
Routed to Pond 9p :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

Area (sf)	CN	Description
7,027	98	Paved parking, HSG C
1,590	74	>75% Grass cover, Good, HSG C
8,617	94	Weighted Average
1,590	74	18.45% Pervious Area
7,027	98	81.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 9b:

Runoff = 0.380 cfs @ 12.13 hrs, Volume= 825 cf, Depth= 2.56"
Routed to Pond 9p :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

Area (sf)	CN	Description
1,029	98	Paved parking, HSG C
2,846	74	>75% Grass cover, Good, HSG C
3,875	80	Weighted Average
2,846	74	73.45% Pervious Area
1,029	98	26.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 10a:

Runoff = 0.458 cfs @ 12.13 hrs, Volume= 1,076 cf, Depth= 3.74"
Routed to Pond 10p :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

Area (sf)	CN	Description
2,703	98	Paved parking, HSG C
751	74	>75% Grass cover, Good, HSG C
3,454	93	Weighted Average
751	74	21.74% Pervious Area
2,703	98	78.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 10b:

Runoff = 0.402 cfs @ 12.13 hrs, Volume= 939 cf, Depth= 3.60"
Routed to Pond 10p :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

	Area (sf)	CN	Description
*	2,260	98	ROOF
	870	74	>75% Grass cover, Good, HSG C
	3,130	91	Weighted Average
	870	74	27.80% Pervious Area
	2,260	98	72.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 11S:

Runoff = 0.297 cfs @ 12.13 hrs, Volume= 712 cf, Depth= 4.23"
Routed to Pond 11P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

Area (sf)	CN	Description
2,018	98	Paved parking, HSG C
0	74	>75% Grass cover, Good, HSG C
2,018	98	Weighted Average
2,018	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 12S: CAR WASH

Runoff = 0.279 cfs @ 12.13 hrs, Volume= 669 cf, Depth= 4.23"
Routed to Pond 11P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

	Area (sf)	CN	Description
*	1,897	98	ROOF
	0	74	>75% Grass cover, Good, HSG C
	1,897	98	Weighted Average
	1,897	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 13S: Store

Runoff = 1.355 cfs @ 12.13 hrs, Volume= 3,252 cf, Depth= 4.23"
Routed to Pond 10p :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

	Area (sf)	CN	Description
*	9,216	98	ROOF
	0	74	>75% Grass cover, Good, HSG C
	9,216	98	Weighted Average
	9,216	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 14a:

Runoff = 0.602 cfs @ 12.14 hrs, Volume= 1,215 cf, Depth= 1.95"
Routed to Pond 14P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
7,482	74	>75% Grass cover, Good, HSG C
7,482	74	Weighted Average
7,482	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 14b:

Runoff = 1.453 cfs @ 12.13 hrs, Volume= 3,395 cf, Depth= 3.60"
Routed to Pond 14P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

Area (sf)	CN	Description
8,189	98	Paved parking, HSG A
3,113	74	>75% Grass cover, Good, HSG C
11,302	91	Weighted Average
3,113	74	27.54% Pervious Area
8,189	98	72.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 15S:

Runoff = 0.597 cfs @ 12.13 hrs, Volume= 1,376 cf, Depth= 3.34"
Routed to Pond 1P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

Area (sf)	CN	Description
3,012	98	Paved parking, HSG C
1,928	74	>75% Grass cover, Good, HSG C
4,940	89	Weighted Average
1,928	74	39.03% Pervious Area
3,012	98	60.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 16S: Offsite South

Runoff = 0.714 cfs @ 12.13 hrs, Volume= 1,517 cf, Depth= 2.33"
Routed to Link P-S :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

Area (sf)	CN	Description
1,313	98	Paved parking, HSG C
6,489	74	>75% Grass cover, Good, HSG C
7,802	78	Weighted Average
6,489	74	83.17% Pervious Area
1,313	98	16.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment EX N:

Runoff = 5.924 cfs @ 12.13 hrs, Volume= 14,286 cf, Depth= 3.52"
Routed to Link TEX-N :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

Area (sf)	CN	Description
40,279	98	Paved parking, HSG A
8,410	39	>75% Grass cover, Good, HSG A
48,689	88	Weighted Average
8,410	39	17.27% Pervious Area
40,279	98	82.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment EX S:

Runoff = 11.365 cfs @ 12.13 hrs, Volume= 27,299 cf, Depth= 4.04"
Routed to Link TEX-S :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

Area (sf)	CN	Description
77,271	98	Paved parking, HSG A
3,864	39	>75% Grass cover, Good, HSG A
81,135	95	Weighted Average
3,864	39	4.76% Pervious Area
77,271	98	95.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment OS-N:

Runoff = 1.773 cfs @ 12.13 hrs, Volume= 4,319 cf, Depth= 2.68"
Routed to Link TEX-N :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

Area (sf)	CN	Description
12,058	98	Paved parking, HSG A
7,263	39	>75% Grass cover, Good, HSG A
19,321	76	Weighted Average
7,263	39	37.59% Pervious Area
12,058	98	62.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment OS-S:

Runoff = 0.451 cfs @ 12.13 hrs, Volume= 1,084 cf, Depth= 3.77"
Routed to Link TEX-S :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 10-yr Rainfall=4.47"

	Area (sf)	CN	Description
*	3,063	98	ROOF/PARKING
	384	39	>75% Grass cover, Good, HSG A
	3,447	91	Weighted Average
	384	39	11.14% Pervious Area
	3,063	98	88.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Pond 1P:

Inflow Area = 79,295 sf, 72.65% Impervious, Inflow Depth = 3.76" for 10-yr event
Inflow = 10.677 cfs @ 12.13 hrs, Volume= 24,852 cf
Outflow = 1.178 cfs @ 12.60 hrs, Volume= 24,852 cf, Atten= 89%, Lag= 28.3 min
Primary = 1.178 cfs @ 12.60 hrs, Volume= 24,852 cf
Routed to Link P-S :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Starting Elev= 639.50' Surf.Area= 6,295 sf Storage= 13,277 cf
Peak Elev= 641.30' @ 12.60 hrs Surf.Area= 8,140 sf Storage= 26,266 cf (12,988 cf above start)

Plug-Flow detention time= 443.1 min calculated for 11,568 cf (47% of inflow)
Center-of-Mass det. time= 168.7 min (925.2 - 756.5)

Volume	Invert	Avail.Storage	Storage Description
#1	634.00'	52,295 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
634.00	698	0	0
635.00	1,126	912	912
636.00	1,652	1,389	2,301
637.00	2,272	1,962	4,263
638.00	2,980	2,626	6,889
638.50	3,380	1,590	8,479
639.00	4,759	2,035	10,514
639.50	6,295	2,764	13,277
640.00	6,787	3,271	16,548
641.00	7,812	7,300	23,847
642.00	8,895	8,354	32,201
643.00	10,033	9,464	41,665
644.00	11,228	10,631	52,295

Device	Routing	Invert	Outlet Devices
#1	Primary	639.50'	**12.0" Round Culvert** L= 57.0' Ke= 0.500 Inlet / Outlet Invert= 639.50' / 639.32' S= 0.0032 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf
#2	Device 1	639.50'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	641.50'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.178 cfs @ 12.60 hrs HW=641.30' (Free Discharge)
└**1=Culvert** (Passes 1.178 cfs of 3.446 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 1.178 cfs @ 6.00 fps)
  └**3=Broad-Crested Rectangular Weir** (Controls 0.000 cfs)

Summary for Pond 2P:

Inflow Area = 58,311 sf, 93.63% Impervious, Inflow Depth = 4.09" for 10-yr event
Inflow = 8.327 cfs @ 12.13 hrs, Volume= 19,867 cf
Outflow = 8.327 cfs @ 12.13 hrs, Volume= 19,867 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.327 cfs @ 12.13 hrs, Volume= 19,867 cf
Routed to Pond 1P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 641.18' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	639.57'	**24.0" Round Culvert** L= 21.0' Ke= 0.500 Inlet / Outlet Invert= 639.57' / 639.50' S= 0.0033 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf

Primary OutFlow Max=7.959 cfs @ 12.13 hrs HW=641.14' (Free Discharge)
└**1=Culvert** (Barrel Controls 7.959 cfs @ 4.15 fps)

Summary for Pond 3P:

Inflow Area = 39,592 sf, 95.62% Impervious, Inflow Depth = 4.13" for 10-yr event
Inflow = 5.707 cfs @ 12.13 hrs, Volume= 13,640 cf
Outflow = 5.707 cfs @ 12.13 hrs, Volume= 13,640 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.707 cfs @ 12.13 hrs, Volume= 13,640 cf
Routed to Pond 2P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 641.18' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	639.89'	**24.0" Round Culvert** L= 107.0' Ke= 0.500 Inlet / Outlet Invert= 639.89' / 639.57' S= 0.0030 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf

Primary OutFlow Max=5.455 cfs @ 12.13 hrs HW=641.15' (Free Discharge)
1=Culvert (Barrel Controls 5.455 cfs @ 3.75 fps)

Summary for Pond 4P: MH 4

Inflow Area = 25,663 sf, 98.69% Impervious, Inflow Depth = 4.20" for 10-yr event
Inflow = 3.752 cfs @ 12.13 hrs, Volume= 8,991 cf
Outflow = 3.752 cfs @ 12.13 hrs, Volume= 8,991 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.752 cfs @ 12.13 hrs, Volume= 8,991 cf
Routed to Pond 3P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 641.17' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	640.00'	**18.0" Round Culvert** L= 38.0' Ke= 0.500 Inlet / Outlet Invert= 640.00' / 639.89' S= 0.0029 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=3.587 cfs @ 12.13 hrs HW=641.14' (Free Discharge)
1=Culvert (Barrel Controls 3.587 cfs @ 3.46 fps)

Summary for Pond 5P:

Inflow Area = 21,863 sf, 98.47% Impervious, Inflow Depth = 4.20" for 10-yr event
Inflow = 3.193 cfs @ 12.13 hrs, Volume= 7,650 cf
Outflow = 3.193 cfs @ 12.13 hrs, Volume= 7,650 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.193 cfs @ 12.13 hrs, Volume= 7,650 cf
Routed to Pond 4P : MH 4

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 641.56' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	640.50'	**18.0" Round Culvert** L= 164.0' Ke= 0.500

Inlet / Outlet Invert= 640.50' / 640.00' S= 0.0030 '/' Cc= 0.900
n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=3.052 cfs @ 12.13 hrs HW=641.53' (Free Discharge)
1=Culvert (Barrel Controls 3.052 cfs @ 3.32 fps)

Summary for Pond 6P:

Inflow Area = 11,659 sf, 97.13% Impervious, Inflow Depth = 4.17" for 10-yr event
Inflow = 1.692 cfs @ 12.13 hrs, Volume= 4,050 cf
Outflow = 1.692 cfs @ 12.13 hrs, Volume= 4,050 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.692 cfs @ 12.13 hrs, Volume= 4,050 cf
Routed to Pond 5P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 641.67' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	640.80'	**12.0" Round Culvert** L= 75.0' Ke= 0.500 Inlet / Outlet Invert= 640.80' / 640.50' S= 0.0040 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=1.618 cfs @ 12.13 hrs HW=641.65' (Free Discharge)
1=Culvert (Barrel Controls 1.618 cfs @ 3.08 fps)

Summary for Pond 7P:

Inflow Area = 46,711 sf, 68.97% Impervious, Inflow Depth = 3.60" for 10-yr event
Inflow = 6.046 cfs @ 12.13 hrs, Volume= 14,031 cf
Outflow = 3.508 cfs @ 12.22 hrs, Volume= 14,031 cf, Atten= 42%, Lag= 5.3 min
Primary = 3.508 cfs @ 12.22 hrs, Volume= 14,031 cf
Routed to Pond 14P :
Secondary = 0.000 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 14P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Starting Elev= 641.00' Surf.Area= 1,638 sf Storage= 1,623 cf
Peak Elev= 642.36' @ 12.22 hrs Surf.Area= 2,442 sf Storage= 4,378 cf (2,756 cf above start)

Plug-Flow detention time= 100.8 min calculated for 12,402 cf (88% of inflow)
Center-of-Mass det. time= 25.5 min (783.8 - 758.3)

Volume	Invert	Avail.Storage	Storage Description
#1	638.00'	18,131 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
638.00	61	0	0
639.00	251	156	156
640.00	522	387	543
641.00	1,638	1,080	1,623
642.00	2,200	1,919	3,542
643.00	2,871	2,536	6,077
644.00	3,598	3,235	9,312
645.00	4,400	3,999	13,311
646.00	5,240	4,820	18,131

Device	Routing	Invert	Outlet Devices
#1	Primary	641.00'	**12.0" Round Culvert** L= 43.0' Ke= 0.500 Inlet / Outlet Invert= 641.00' / 640.00' S= 0.0233 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf
#2	Secondary	645.50'	**10.0' long x 4.0' 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=3.479 cfs @ 12.22 hrs HW=642.35' (Free Discharge)
1=Culvert (Inlet Controls 3.479 cfs @ 4.43 fps)

Secondary OutFlow Max=0.000 cfs @ 0.00 hrs HW=641.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.000 cfs)

Summary for Pond 8P:

Inflow Area = 10,803 sf, 92.39% Impervious, Inflow Depth = 4.06" for 10-yr event
Inflow = 1.534 cfs @ 12.13 hrs, Volume= 3,655 cf
Outflow = 1.534 cfs @ 12.13 hrs, Volume= 3,655 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.534 cfs @ 12.13 hrs, Volume= 3,655 cf
Routed to Pond 7P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 641.90' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	641.07'	**12.0" Round Culvert** L= 20.0' Ke= 0.500 Inlet / Outlet Invert= 641.07' / 641.00' S= 0.0035 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=1.466 cfs @ 12.13 hrs HW=641.88' (Free Discharge)
1=Culvert (Barrel Controls 1.466 cfs @ 2.93 fps)

Summary for Pond 9p:

Inflow Area = 28,292 sf, 78.59% Impervious, Inflow Depth = 3.74" for 10-yr event
Inflow = 3.755 cfs @ 12.13 hrs, Volume= 8,829 cf
Outflow = 3.755 cfs @ 12.13 hrs, Volume= 8,829 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.755 cfs @ 12.13 hrs, Volume= 8,829 cf
Routed to Pond 7P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 642.44' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	641.27'	**18.0" Round Culvert** L= 89.0' Ke= 0.500 Inlet / Outlet Invert= 641.27' / 641.00' S= 0.0030 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=3.588 cfs @ 12.13 hrs HW=642.41' (Free Discharge)
1=Culvert (Barrel Controls 3.588 cfs @ 3.46 fps)

Summary for Pond 10p:

Inflow Area = 15,800 sf, 89.74% Impervious, Inflow Depth = 4.00" for 10-yr event
Inflow = 2.215 cfs @ 12.13 hrs, Volume= 5,266 cf
Outflow = 2.215 cfs @ 12.13 hrs, Volume= 5,266 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.215 cfs @ 12.13 hrs, Volume= 5,266 cf
Routed to Pond 9p :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 642.54' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	641.60'	**15.0" Round Culvert** L= 106.0' Ke= 0.500 Inlet / Outlet Invert= 641.60' / 641.27' S= 0.0031 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf

Primary OutFlow Max=2.117 cfs @ 12.13 hrs HW=642.51' (Free Discharge)
1=Culvert (Barrel Controls 2.117 cfs @ 3.08 fps)

Summary for Pond 11P:

Inflow Area = 3,915 sf,100.00% Impervious, Inflow Depth = 4.23" for 10-yr event
Inflow = 0.576 cfs @ 12.13 hrs, Volume= 1,381 cf
Outflow = 0.576 cfs @ 12.13 hrs, Volume= 1,381 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.576 cfs @ 12.13 hrs, Volume= 1,381 cf
Routed to Pond 8P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 641.92' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	641.44'	**12.0" Round Culvert** L= 113.0' Ke= 0.500

Inlet / Outlet Invert= 641.44' / 641.07' S= 0.0033 '/' Cc= 0.900
n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=0.550 cfs @ 12.13 hrs HW=641.91' (Free Discharge)
1=Culvert (Barrel Controls 0.550 cfs @ 2.21 fps)

Summary for Pond 14P:

Inflow Area = 65,495 sf, 61.69% Impervious, Inflow Depth = 3.42" for 10-yr event
Inflow = 5.265 cfs @ 12.15 hrs, Volume= 18,641 cf
Outflow = 4.071 cfs @ 12.28 hrs, Volume= 18,641 cf, Atten= 23%, Lag= 7.7 min
Primary = 4.071 cfs @ 12.28 hrs, Volume= 18,641 cf
Routed to Link P-N :
Secondary = 0.000 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link P-N :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 640.66' @ 12.28 hrs Surf.Area= 1,403 sf Storage= 1,341 cf

Plug-Flow detention time= 3.2 min calculated for 18,641 cf (100% of inflow)
Center-of-Mass det. time= 3.2 min (784.1 - 780.9)

Volume	Invert	Avail.Storage	Storage Description
#1	639.00'	18,309 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
639.00	0	0	0
640.00	1,060	530	530
641.00	1,580	1,320	1,850
642.00	2,226	1,903	3,753
643.00	2,887	2,557	6,310
644.00	3,624	3,256	9,565
645.00	4,282	3,953	13,518
646.00	5,300	4,791	18,309

Device	Routing	Invert	Outlet Devices
#1	Primary	639.00'	**12.0" Round Culvert** L= 14.0' Ke= 0.500 Inlet / Outlet Invert= 639.00' / 637.96' S= 0.0743 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf
#2	Secondary	645.75'	**10.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=4.062 cfs @ 12.28 hrs HW=640.65' (Free Discharge)
1=Culvert (Inlet Controls 4.062 cfs @ 5.17 fps)

Secondary OutFlow Max=0.000 cfs @ 0.00 hrs HW=639.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.000 cfs)

Summary for Link P-N:

Inflow Area = 65,495 sf, 61.69% Impervious, Inflow Depth = 3.42" for 10-yr event
Inflow = 4.071 cfs @ 12.28 hrs, Volume= 18,641 cf
Primary = 4.071 cfs @ 12.28 hrs, Volume= 18,641 cf, Atten= 0%, Lag= 0.0 min
Routed to Link TP :

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link P-S:

Inflow Area = 87,097 sf, 67.65% Impervious, Inflow Depth = 3.63" for 10-yr event
Inflow = 1.694 cfs @ 12.15 hrs, Volume= 26,369 cf
Primary = 1.694 cfs @ 12.15 hrs, Volume= 26,369 cf, Atten= 0%, Lag= 0.0 min
Routed to Link TP :

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link TEX:

Inflow Area = 152,592 sf, 86.94% Impervious, Inflow Depth = 3.70" for 10-yr event
Inflow = 19.513 cfs @ 12.13 hrs, Volume= 46,988 cf
Primary = 19.513 cfs @ 12.13 hrs, Volume= 46,988 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link TEX-N:

Inflow Area = 68,010 sf, 76.95% Impervious, Inflow Depth = 3.28" for 10-yr event
Inflow = 7.698 cfs @ 12.13 hrs, Volume= 18,605 cf
Primary = 7.698 cfs @ 12.13 hrs, Volume= 18,605 cf, Atten= 0%, Lag= 0.0 min
Routed to Link TEX :

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link TEX-S:

Inflow Area = 84,582 sf, 94.98% Impervious, Inflow Depth = 4.03" for 10-yr event
Inflow = 11.816 cfs @ 12.13 hrs, Volume= 28,383 cf
Primary = 11.816 cfs @ 12.13 hrs, Volume= 28,383 cf, Atten= 0%, Lag= 0.0 min
Routed to Link TEX :

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link TP:

Inflow Area = 152,592 sf, 65.09% Impervious, Inflow Depth = 3.54" for 10-yr event
Inflow = 5.480 cfs @ 12.24 hrs, Volume= 45,010 cf
Primary = 5.480 cfs @ 12.24 hrs, Volume= 45,010 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Runoff Area=16,044 sf 0.00% Impervious Runoff Depth=3.71"
Tc=6.0 min CN=83/0 Runoff=2.381 cfs 4,964 cf

Subcatchment 2a: Runoff Area=14,242 sf 90.78% Impervious Runoff Depth=5.12"
Tc=6.0 min CN=74/98 Runoff=2.536 cfs 6,078 cf

Subcatchment 2b: Runoff Area=4,477 sf 85.10% Impervious Runoff Depth=4.98"
Tc=6.0 min CN=74/98 Runoff=0.780 cfs 1,857 cf

Subcatchment 3S: Runoff Area=13,929 sf 89.96% Impervious Runoff Depth=5.10"
Tc=6.0 min CN=74/98 Runoff=2.473 cfs 5,920 cf

Subcatchment 4S: Pump Canopy Runoff Area=3,800 sf 100.00% Impervious Runoff Depth=5.35"
Tc=6.0 min CN=0/98 Runoff=0.701 cfs 1,695 cf

Subcatchment 5S: Runoff Area=10,204 sf 100.00% Impervious Runoff Depth=5.35"
Tc=6.0 min CN=0/98 Runoff=1.881 cfs 4,551 cf

Subcatchment 6S: Runoff Area=11,659 sf 97.13% Impervious Runoff Depth=5.28"
Tc=6.0 min CN=74/98 Runoff=2.127 cfs 5,130 cf

Subcatchment 7S: Runoff Area=7,616 sf 0.00% Impervious Runoff Depth=3.41"
Tc=6.0 min CN=80/0 Runoff=1.053 cfs 2,166 cf

Subcatchment 8S: Runoff Area=6,888 sf 88.07% Impervious Runoff Depth=5.05"
Tc=6.0 min CN=74/98 Runoff=1.214 cfs 2,900 cf

Subcatchment 9a: Runoff Area=8,617 sf 81.55% Impervious Runoff Depth=4.89"
Tc=6.0 min CN=74/98 Runoff=1.481 cfs 3,511 cf

Subcatchment 9b: Runoff Area=3,875 sf 26.55% Impervious Runoff Depth=3.51"
Tc=6.0 min CN=74/98 Runoff=0.522 cfs 1,133 cf

Subcatchment 10a: Runoff Area=3,454 sf 78.26% Impervious Runoff Depth=4.81"
Tc=6.0 min CN=74/98 Runoff=0.586 cfs 1,384 cf

Subcatchment 10b: Runoff Area=3,130 sf 72.20% Impervious Runoff Depth=4.65"
Tc=6.0 min CN=74/98 Runoff=0.518 cfs 1,214 cf

Subcatchment 11S: Runoff Area=2,018 sf 100.00% Impervious Runoff Depth=5.35"
Tc=6.0 min CN=0/98 Runoff=0.372 cfs 900 cf

Subcatchment 12S: CAR WASH Runoff Area=1,897 sf 100.00% Impervious Runoff Depth=5.35"
Tc=6.0 min CN=0/98 Runoff=0.350 cfs 846 cf

Subcatchment 13S: Store Runoff Area=9,216 sf 100.00% Impervious Runoff Depth=5.35"
Tc=6.0 min CN=0/98 Runoff=1.699 cfs 4,111 cf

Subcatchment 14a: Runoff Area=7,482 sf 0.00% Impervious Runoff Depth=2.84"
Tc=6.0 min CN=74/0 Runoff=0.875 cfs 1,773 cf

Subcatchment 14b: Runoff Area=11,302 sf 72.46% Impervious Runoff Depth=4.66"
Tc=6.0 min CN=74/98 Runoff=1.872 cfs 4,390 cf

Subcatchment 15S: Runoff Area=4,940 sf 60.97% Impervious Runoff Depth=4.37"
Tc=6.0 min CN=74/98 Runoff=0.780 cfs 1,800 cf

Subcatchment 16S: Offsite South Runoff Area=7,802 sf 16.83% Impervious Runoff Depth=3.27"
Tc=6.0 min CN=74/98 Runoff=1.000 cfs 2,123 cf

Subcatchment EX N: Runoff Area=48,689 sf 82.73% Impervious Runoff Depth=4.49"
Tc=6.0 min CN=39/98 Runoff=7.439 cfs 18,200 cf

Subcatchment EX S: Runoff Area=81,135 sf 95.24% Impervious Runoff Depth=5.11"
Tc=6.0 min CN=39/98 Runoff=14.251 cfs 34,573 cf

Subcatchment OS-N: Runoff Area=19,321 sf 62.41% Impervious Runoff Depth=3.47"
Tc=6.0 min CN=39/98 Runoff=2.234 cfs 5,581 cf

Subcatchment OS-S: Runoff Area=3,447 sf 88.86% Impervious Runoff Depth=4.79"
Tc=6.0 min CN=39/98 Runoff=0.565 cfs 1,377 cf

Pond 1P: Peak Elev=641.68' Storage=29,439 cf Inflow=13.657 cfs 31,996 cf
Outflow=2.209 cfs 31,996 cf

Pond 2P: Peak Elev=641.43' Inflow=10.498 cfs 25,232 cf
24.0" Round Culvert n=0.013 L=21.0' S=0.0033 '/' Outflow=10.498 cfs 25,232 cf

Pond 3P: Peak Elev=641.37' Inflow=7.181 cfs 17,297 cf
24.0" Round Culvert n=0.013 L=107.0' S=0.0030 '/' Outflow=7.181 cfs 17,297 cf

Pond 4P: MH 4 Peak Elev=641.34' Inflow=4.708 cfs 11,376 cf
18.0" Round Culvert n=0.013 L=38.0' S=0.0029 '/' Outflow=4.708 cfs 11,376 cf

Pond 5P: Peak Elev=641.72' Inflow=4.008 cfs 9,681 cf
18.0" Round Culvert n=0.013 L=164.0' S=0.0030 '/' Outflow=4.008 cfs 9,681 cf

Pond 6P: Peak Elev=641.82' Inflow=2.127 cfs 5,130 cf
12.0" Round Culvert n=0.013 L=75.0' S=0.0040 '/' Outflow=2.127 cfs 5,130 cf

Pond 7P: Peak Elev=642.71' Storage=5,275 cf Inflow=7.792 cfs 18,166 cf
Primary=4.162 cfs 18,166 cf Secondary=0.000 cfs 0 cf Outflow=4.162 cfs 18,166 cf

Pond 8P: Peak Elev=642.04' Inflow=1.936 cfs 4,647 cf
12.0" Round Culvert n=0.013 L=20.0' S=0.0035 '/' Outflow=1.936 cfs 4,647 cf

Pond 9p: Peak Elev=642.64' Inflow=4.805 cfs 11,353 cf
18.0" Round Culvert n=0.013 L=89.0' S=0.0030 '/' Outflow=4.805 cfs 11,353 cf

Pond 10p: Peak Elev=642.69' Inflow=2.803 cfs 6,708 cf
15.0" Round Culvert n=0.013 L=106.0' S=0.0031 '/' Outflow=2.803 cfs 6,708 cf

Pond 11P: Peak Elev=641.99' Inflow=0.722 cfs 1,746 cf
12.0" Round Culvert n=0.013 L=113.0' S=0.0033 '/' Outflow=0.722 cfs 1,746 cf

Pond 14P: Peak Elev=641.09' Storage=1,991 cf Inflow=6.524 cfs 24,328 cf
Primary=4.765 cfs 24,328 cf Secondary=0.000 cfs 0 cf Outflow=4.765 cfs 24,328 cf

Link P-N: Inflow=4.765 cfs 24,328 cf
Primary=4.765 cfs 24,328 cf

Link P-S: Inflow=2.396 cfs 34,119 cf
Primary=2.396 cfs 34,119 cf

Link TEX: Inflow=24.490 cfs 59,731 cf
Primary=24.490 cfs 59,731 cf

Link TEX-N: Inflow=9.673 cfs 23,781 cf
Primary=9.673 cfs 23,781 cf

Link TEX-S: Inflow=14.817 cfs 35,950 cf
Primary=14.817 cfs 35,950 cf

Link TP: Inflow=7.041 cfs 58,447 cf
Primary=7.041 cfs 58,447 cf

Summary for Subcatchment 1S:

Runoff = 2.381 cfs @ 12.13 hrs, Volume= 4,964 cf, Depth= 3.71"
Routed to Pond 1P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
9,749	74	>75% Grass cover, Good, HSG C
6,295	98	Water Surface, 0% imp, HSG C
16,044	83	Weighted Average
16,044	83	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 2a:

Runoff = 2.536 cfs @ 12.13 hrs, Volume= 6,078 cf, Depth= 5.12"
Routed to Pond 2P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

Area (sf)	CN	Description
12,929	98	Paved parking, HSG C
1,313	74	>75% Grass cover, Good, HSG C
14,242	96	Weighted Average
1,313	74	9.22% Pervious Area
12,929	98	90.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 2b:

Runoff = 0.780 cfs @ 12.13 hrs, Volume= 1,857 cf, Depth= 4.98"
Routed to Pond 2P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

	Area (sf)	CN	Description
*	3,810	98	ROOF/PARKING
	667	74	>75% Grass cover, Good, HSG C
	4,477	94	Weighted Average
	667	74	14.90% Pervious Area
	3,810	98	85.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 3S:

Runoff = 2.473 cfs @ 12.13 hrs, Volume= 5,920 cf, Depth= 5.10"
Routed to Pond 3P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

Area (sf)	CN	Description
12,530	98	Paved parking, HSG C
1,399	74	>75% Grass cover, Good, HSG C
13,929	96	Weighted Average
1,399	74	10.04% Pervious Area
12,530	98	89.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 4S: Pump Canopy

Runoff = 0.701 cfs @ 12.13 hrs, Volume= 1,695 cf, Depth= 5.35"
Routed to Pond 4P : MH 4

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

Area (sf)	CN	Description
3,800	98	Paved parking, HSG C
0	74	>75% Grass cover, Good, HSG C
3,800	98	Weighted Average
3,800	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 5S:

Runoff = 1.881 cfs @ 12.13 hrs, Volume= 4,551 cf, Depth= 5.35"
Routed to Pond 5P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

Area (sf)	CN	Description
10,204	98	Paved parking, HSG C
0	74	>75% Grass cover, Good, HSG C
10,204	98	Weighted Average
10,204	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 6S:

Runoff = 2.127 cfs @ 12.13 hrs, Volume= 5,130 cf, Depth= 5.28"
Routed to Pond 6P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

Area (sf)	CN	Description
11,324	98	Paved parking, HSG C
335	74	>75% Grass cover, Good, HSG C
11,659	97	Weighted Average
335	74	2.87% Pervious Area
11,324	98	97.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 7S:

Runoff = 1.053 cfs @ 12.13 hrs, Volume= 2,166 cf, Depth= 3.41"
Routed to Pond 7P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
5,694	74	>75% Grass cover, Good, HSG C
1,922	98	Water Surface, 0% imp, HSG C
7,616	80	Weighted Average
7,616	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 8S:

Runoff = 1.214 cfs @ 12.13 hrs, Volume= 2,900 cf, Depth= 5.05"
Routed to Pond 8P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

Area (sf)	CN	Description
6,066	98	Paved parking, HSG C
822	74	>75% Grass cover, Good, HSG C
6,888	95	Weighted Average
822	74	11.93% Pervious Area
6,066	98	88.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 9a:

Runoff = 1.481 cfs @ 12.13 hrs, Volume= 3,511 cf, Depth= 4.89"
Routed to Pond 9p :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

Area (sf)	CN	Description
7,027	98	Paved parking, HSG C
1,590	74	>75% Grass cover, Good, HSG C
8,617	94	Weighted Average
1,590	74	18.45% Pervious Area
7,027	98	81.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 9b:

Runoff = 0.522 cfs @ 12.13 hrs, Volume= 1,133 cf, Depth= 3.51"
Routed to Pond 9p :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

Area (sf)	CN	Description
1,029	98	Paved parking, HSG C
2,846	74	>75% Grass cover, Good, HSG C
3,875	80	Weighted Average
2,846	74	73.45% Pervious Area
1,029	98	26.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 10a:

Runoff = 0.586 cfs @ 12.13 hrs, Volume= 1,384 cf, Depth= 4.81"
Routed to Pond 10p :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

Area (sf)	CN	Description
2,703	98	Paved parking, HSG C
751	74	>75% Grass cover, Good, HSG C
3,454	93	Weighted Average
751	74	21.74% Pervious Area
2,703	98	78.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 10b:

Runoff = 0.518 cfs @ 12.13 hrs, Volume= 1,214 cf, Depth= 4.65"
Routed to Pond 10p :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

	Area (sf)	CN	Description
*	2,260	98	ROOF
	870	74	>75% Grass cover, Good, HSG C
	3,130	91	Weighted Average
	870	74	27.80% Pervious Area
	2,260	98	72.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 11S:

Runoff = 0.372 cfs @ 12.13 hrs, Volume= 900 cf, Depth= 5.35"
Routed to Pond 11P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

	Area (sf)	CN	Description
	2,018	98	Paved parking, HSG C
	0	74	>75% Grass cover, Good, HSG C
	2,018	98	Weighted Average
	2,018	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 12S: CAR WASH

Runoff = 0.350 cfs @ 12.13 hrs, Volume= 846 cf, Depth= 5.35"
Routed to Pond 11P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

	Area (sf)	CN	Description
*	1,897	98	ROOF
	0	74	>75% Grass cover, Good, HSG C
	1,897	98	Weighted Average
	1,897	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 13S: Store

Runoff = 1.699 cfs @ 12.13 hrs, Volume= 4,111 cf, Depth= 5.35"
Routed to Pond 10p :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

	Area (sf)	CN	Description
*	9,216	98	ROOF
	0	74	>75% Grass cover, Good, HSG C
	9,216	98	Weighted Average
	9,216	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 14a:

Runoff = 0.875 cfs @ 12.13 hrs, Volume= 1,773 cf, Depth= 2.84"
Routed to Pond 14P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
7,482	74	>75% Grass cover, Good, HSG C
7,482	74	Weighted Average
7,482	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 14b:

Runoff = 1.872 cfs @ 12.13 hrs, Volume= 4,390 cf, Depth= 4.66"
Routed to Pond 14P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

Area (sf)	CN	Description
8,189	98	Paved parking, HSG A
3,113	74	>75% Grass cover, Good, HSG C
11,302	91	Weighted Average
3,113	74	27.54% Pervious Area
8,189	98	72.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 15S:

Runoff = 0.780 cfs @ 12.13 hrs, Volume= 1,800 cf, Depth= 4.37"
Routed to Pond 1P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

Area (sf)	CN	Description
3,012	98	Paved parking, HSG C
1,928	74	>75% Grass cover, Good, HSG C
4,940	89	Weighted Average
1,928	74	39.03% Pervious Area
3,012	98	60.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 16S: Offsite South

Runoff = 1.000 cfs @ 12.13 hrs, Volume= 2,123 cf, Depth= 3.27"
Routed to Link P-S :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

Area (sf)	CN	Description
1,313	98	Paved parking, HSG C
6,489	74	>75% Grass cover, Good, HSG C
7,802	78	Weighted Average
6,489	74	83.17% Pervious Area
1,313	98	16.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment EX N:

Runoff = 7.439 cfs @ 12.13 hrs, Volume= 18,200 cf, Depth= 4.49"
Routed to Link TEX-N :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

Area (sf)	CN	Description
40,279	98	Paved parking, HSG A
8,410	39	>75% Grass cover, Good, HSG A
48,689	88	Weighted Average
8,410	39	17.27% Pervious Area
40,279	98	82.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment EX S:

Runoff = 14.251 cfs @ 12.13 hrs, Volume= 34,573 cf, Depth= 5.11"
Routed to Link TEX-S :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

Area (sf)	CN	Description
77,271	98	Paved parking, HSG A
3,864	39	>75% Grass cover, Good, HSG A
81,135	95	Weighted Average
3,864	39	4.76% Pervious Area
77,271	98	95.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment OS-N:

Runoff = 2.234 cfs @ 12.13 hrs, Volume= 5,581 cf, Depth= 3.47"
Routed to Link TEX-N :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

Area (sf)	CN	Description
12,058	98	Paved parking, HSG A
7,263	39	>75% Grass cover, Good, HSG A
19,321	76	Weighted Average
7,263	39	37.59% Pervious Area
12,058	98	62.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment OS-S:

Runoff = 0.565 cfs @ 12.13 hrs, Volume= 1,377 cf, Depth= 4.79"
Routed to Link TEX-S :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 25-yr Rainfall=5.59"

	Area (sf)	CN	Description
*	3,063	98	ROOF/PARKING
	384	39	>75% Grass cover, Good, HSG A
	3,447	91	Weighted Average
	384	39	11.14% Pervious Area
	3,063	98	88.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Pond 1P:

Inflow Area = 79,295 sf, 72.65% Impervious, Inflow Depth = 4.84" for 25-yr event
Inflow = 13.657 cfs @ 12.13 hrs, Volume= 31,996 cf
Outflow = 2.209 cfs @ 12.48 hrs, Volume= 31,996 cf, Atten= 84%, Lag= 21.0 min
Primary = 2.209 cfs @ 12.48 hrs, Volume= 31,996 cf
Routed to Link P-S :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Starting Elev= 639.50' Surf.Area= 6,295 sf Storage= 13,277 cf
Peak Elev= 641.68' @ 12.48 hrs Surf.Area= 8,552 sf Storage= 29,439 cf (16,162 cf above start)

Plug-Flow detention time= 377.1 min calculated for 18,709 cf (58% of inflow)
Center-of-Mass det. time= 163.8 min (917.5 - 753.6)

Volume	Invert	Avail.Storage	Storage Description
#1	634.00'	52,295 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
634.00	698	0	0
635.00	1,126	912	912
636.00	1,652	1,389	2,301
637.00	2,272	1,962	4,263
638.00	2,980	2,626	6,889
638.50	3,380	1,590	8,479
639.00	4,759	2,035	10,514
639.50	6,295	2,764	13,277
640.00	6,787	3,271	16,548
641.00	7,812	7,300	23,847
642.00	8,895	8,354	32,201
643.00	10,033	9,464	41,665
644.00	11,228	10,631	52,295

Device	Routing	Invert	Outlet Devices
#1	Primary	639.50'	**12.0" Round Culvert** L= 57.0' Ke= 0.500 Inlet / Outlet Invert= 639.50' / 639.32' S= 0.0032 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf
#2	Device 1	639.50'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	641.50'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=2.189 cfs @ 12.48 hrs HW=641.68' (Free Discharge)
└**1=Culvert** (Passes 2.189 cfs of 4.057 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 1.314 cfs @ 6.69 fps)
  └**3=Broad-Crested Rectangular Weir** (Weir Controls 0.874 cfs @ 1.20 fps)

Summary for Pond 2P:

Inflow Area = 58,311 sf, 93.63% Impervious, Inflow Depth = 5.19" for 25-yr event
Inflow = 10.498 cfs @ 12.13 hrs, Volume= 25,232 cf
Outflow = 10.498 cfs @ 12.13 hrs, Volume= 25,232 cf, Atten= 0%, Lag= 0.0 min
Primary = 10.498 cfs @ 12.13 hrs, Volume= 25,232 cf
Routed to Pond 1P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 641.43' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	639.57'	**24.0" Round Culvert** L= 21.0' Ke= 0.500 Inlet / Outlet Invert= 639.57' / 639.50' S= 0.0033 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf

Primary OutFlow Max=10.034 cfs @ 12.13 hrs HW=641.38' (Free Discharge)
└**1=Culvert** (Barrel Controls 10.034 cfs @ 4.43 fps)

Summary for Pond 3P:

Inflow Area = 39,592 sf, 95.62% Impervious, Inflow Depth = 5.24" for 25-yr event
Inflow = 7.181 cfs @ 12.13 hrs, Volume= 17,297 cf
Outflow = 7.181 cfs @ 12.13 hrs, Volume= 17,297 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.181 cfs @ 12.13 hrs, Volume= 17,297 cf
Routed to Pond 2P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 641.37' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	639.89'	**24.0" Round Culvert** L= 107.0' Ke= 0.500 Inlet / Outlet Invert= 639.89' / 639.57' S= 0.0030 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf

Primary OutFlow Max=6.864 cfs @ 12.13 hrs HW=641.33' (Free Discharge)
1=Culvert (Barrel Controls 6.864 cfs @ 3.98 fps)

Summary for Pond 4P: MH 4

Inflow Area = 25,663 sf, 98.69% Impervious, Inflow Depth = 5.32" for 25-yr event
Inflow = 4.708 cfs @ 12.13 hrs, Volume= 11,376 cf
Outflow = 4.708 cfs @ 12.13 hrs, Volume= 11,376 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.708 cfs @ 12.13 hrs, Volume= 11,376 cf
Routed to Pond 3P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 641.34' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	640.00'	**18.0" Round Culvert** L= 38.0' Ke= 0.500 Inlet / Outlet Invert= 640.00' / 639.89' S= 0.0029 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=4.501 cfs @ 12.13 hrs HW=641.31' (Free Discharge)
1=Culvert (Barrel Controls 4.501 cfs @ 3.68 fps)

Summary for Pond 5P:

Inflow Area = 21,863 sf, 98.47% Impervious, Inflow Depth = 5.31" for 25-yr event
Inflow = 4.008 cfs @ 12.13 hrs, Volume= 9,681 cf
Outflow = 4.008 cfs @ 12.13 hrs, Volume= 9,681 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.008 cfs @ 12.13 hrs, Volume= 9,681 cf
Routed to Pond 4P : MH 4

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 641.72' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	640.50'	**18.0" Round Culvert** L= 164.0' Ke= 0.500

Inlet / Outlet Invert= 640.50' / 640.00' S= 0.0030 '/' Cc= 0.900
n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=3.831 cfs @ 12.13 hrs HW=641.68' (Free Discharge)
└**1=Culvert** (Barrel Controls 3.831 cfs @ 3.52 fps)

Summary for Pond 6P:

Inflow Area = 11,659 sf, 97.13% Impervious, Inflow Depth = 5.28" for 25-yr event
Inflow = 2.127 cfs @ 12.13 hrs, Volume= 5,130 cf
Outflow = 2.127 cfs @ 12.13 hrs, Volume= 5,130 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.127 cfs @ 12.13 hrs, Volume= 5,130 cf
Routed to Pond 5P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 641.82' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	640.80'	**12.0" Round Culvert** L= 75.0' Ke= 0.500 Inlet / Outlet Invert= 640.80' / 640.50' S= 0.0040 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=2.033 cfs @ 12.13 hrs HW=641.79' (Free Discharge)
└**1=Culvert** (Barrel Controls 2.033 cfs @ 3.25 fps)

Summary for Pond 7P:

Inflow Area = 46,711 sf, 68.97% Impervious, Inflow Depth = 4.67" for 25-yr event
Inflow = 7.792 cfs @ 12.13 hrs, Volume= 18,166 cf
Outflow = 4.162 cfs @ 12.22 hrs, Volume= 18,166 cf, Atten= 47%, Lag= 5.7 min
Primary = 4.162 cfs @ 12.22 hrs, Volume= 18,166 cf
Routed to Pond 14P :
Secondary = 0.000 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 14P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Starting Elev= 641.00' Surf.Area= 1,638 sf Storage= 1,623 cf
Peak Elev= 642.71' @ 12.22 hrs Surf.Area= 2,677 sf Storage= 5,275 cf (3,652 cf above start)

Plug-Flow detention time= 89.0 min calculated for 16,534 cf (91% of inflow)
Center-of-Mass det. time= 23.7 min (779.4 - 755.6)

Volume	Invert	Avail.Storage	Storage Description
#1	638.00'	18,131 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
638.00	61	0	0
639.00	251	156	156
640.00	522	387	543
641.00	1,638	1,080	1,623
642.00	2,200	1,919	3,542
643.00	2,871	2,536	6,077
644.00	3,598	3,235	9,312
645.00	4,400	3,999	13,311
646.00	5,240	4,820	18,131

Device	Routing	Invert	Outlet Devices
#1	Primary	641.00'	**12.0" Round Culvert** L= 43.0' Ke= 0.500 Inlet / Outlet Invert= 641.00' / 640.00' S= 0.0233 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf
#2	Secondary	645.50'	**10.0' long x 4.0' 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=4.127 cfs @ 12.22 hrs HW=642.69' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 4.127 cfs @ 5.26 fps)

Secondary OutFlow Max=0.000 cfs @ 0.00 hrs HW=641.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.000 cfs)

Summary for Pond 8P:

Inflow Area = 10,803 sf, 92.39% Impervious, Inflow Depth = 5.16" for 25-yr event
Inflow = 1.936 cfs @ 12.13 hrs, Volume= 4,647 cf
Outflow = 1.936 cfs @ 12.13 hrs, Volume= 4,647 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.936 cfs @ 12.13 hrs, Volume= 4,647 cf
Routed to Pond 7P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 642.04' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	641.07'	**12.0" Round Culvert** L= 20.0' Ke= 0.500 Inlet / Outlet Invert= 641.07' / 641.00' S= 0.0035 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=1.850 cfs @ 12.13 hrs HW=642.01' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 1.850 cfs @ 3.13 fps)

Summary for Pond 9p:

Inflow Area = 28,292 sf, 78.59% Impervious, Inflow Depth = 4.82" for 25-yr event
Inflow = 4.805 cfs @ 12.13 hrs, Volume= 11,353 cf
Outflow = 4.805 cfs @ 12.13 hrs, Volume= 11,353 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.805 cfs @ 12.13 hrs, Volume= 11,353 cf
Routed to Pond 7P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 642.64' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	641.27'	**18.0" Round Culvert** L= 89.0' Ke= 0.500 Inlet / Outlet Invert= 641.27' / 641.00' S= 0.0030 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=4.591 cfs @ 12.13 hrs HW=642.59' (Free Discharge)
1=Culvert (Barrel Controls 4.591 cfs @ 3.70 fps)

Summary for Pond 10p:

Inflow Area = 15,800 sf, 89.74% Impervious, Inflow Depth = 5.09" for 25-yr event
Inflow = 2.803 cfs @ 12.13 hrs, Volume= 6,708 cf
Outflow = 2.803 cfs @ 12.13 hrs, Volume= 6,708 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.803 cfs @ 12.13 hrs, Volume= 6,708 cf
Routed to Pond 9p :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 642.69' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	641.60'	**15.0" Round Culvert** L= 106.0' Ke= 0.500 Inlet / Outlet Invert= 641.60' / 641.27' S= 0.0031 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf

Primary OutFlow Max=2.679 cfs @ 12.13 hrs HW=642.66' (Free Discharge)
1=Culvert (Barrel Controls 2.679 cfs @ 3.27 fps)

Summary for Pond 11P:

Inflow Area = 3,915 sf,100.00% Impervious, Inflow Depth = 5.35" for 25-yr event
Inflow = 0.722 cfs @ 12.13 hrs, Volume= 1,746 cf
Outflow = 0.722 cfs @ 12.13 hrs, Volume= 1,746 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.722 cfs @ 12.13 hrs, Volume= 1,746 cf
Routed to Pond 8P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 641.99' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	641.44'	**12.0" Round Culvert** L= 113.0' Ke= 0.500

Inlet / Outlet Invert= 641.44' / 641.07' S= 0.0033 '/' Cc= 0.900
n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=0.690 cfs @ 12.13 hrs HW=641.97' (Free Discharge)
1=Culvert (Barrel Controls 0.690 cfs @ 2.35 fps)

Summary for Pond 14P:

Inflow Area = 65,495 sf, 61.69% Impervious, Inflow Depth = 4.46" for 25-yr event
Inflow = 6.524 cfs @ 12.15 hrs, Volume= 24,328 cf
Outflow = 4.765 cfs @ 12.31 hrs, Volume= 24,328 cf, Atten= 27%, Lag= 9.7 min
Primary = 4.765 cfs @ 12.31 hrs, Volume= 24,328 cf
Routed to Link P-N :
Secondary = 0.000 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link P-N :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 641.09' @ 12.31 hrs Surf.Area= 1,637 sf Storage= 1,991 cf

Plug-Flow detention time= 3.9 min calculated for 24,328 cf (100% of inflow)
Center-of-Mass det. time= 3.8 min (780.6 - 776.8)

Volume	Invert	Avail.Storage	Storage Description
#1	639.00'	18,309 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
639.00	0	0	0
640.00	1,060	530	530
641.00	1,580	1,320	1,850
642.00	2,226	1,903	3,753
643.00	2,887	2,557	6,310
644.00	3,624	3,256	9,565
645.00	4,282	3,953	13,518
646.00	5,300	4,791	18,309

Device	Routing	Invert	Outlet Devices
#1	Primary	639.00'	**12.0" Round Culvert** L= 14.0' Ke= 0.500 Inlet / Outlet Invert= 639.00' / 637.96' S= 0.0743 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf
#2	Secondary	645.75'	**10.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=4.759 cfs @ 12.31 hrs HW=641.08' (Free Discharge)
1=Culvert (Inlet Controls 4.759 cfs @ 6.06 fps)

Secondary OutFlow Max=0.000 cfs @ 0.00 hrs HW=639.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.000 cfs)

Summary for Link P-N:

Inflow Area = 65,495 sf, 61.69% Impervious, Inflow Depth = 4.46" for 25-yr event
Inflow = 4.765 cfs @ 12.31 hrs, Volume= 24,328 cf
Primary = 4.765 cfs @ 12.31 hrs, Volume= 24,328 cf, Atten= 0%, Lag= 0.0 min
Routed to Link TP :

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link P-S:

Inflow Area = 87,097 sf, 67.65% Impervious, Inflow Depth = 4.70" for 25-yr event
Inflow = 2.396 cfs @ 12.45 hrs, Volume= 34,119 cf
Primary = 2.396 cfs @ 12.45 hrs, Volume= 34,119 cf, Atten= 0%, Lag= 0.0 min
Routed to Link TP :

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link TEX:

Inflow Area = 152,592 sf, 86.94% Impervious, Inflow Depth = 4.70" for 25-yr event
Inflow = 24.490 cfs @ 12.13 hrs, Volume= 59,731 cf
Primary = 24.490 cfs @ 12.13 hrs, Volume= 59,731 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link TEX-N:

Inflow Area = 68,010 sf, 76.95% Impervious, Inflow Depth = 4.20" for 25-yr event
Inflow = 9.673 cfs @ 12.13 hrs, Volume= 23,781 cf
Primary = 9.673 cfs @ 12.13 hrs, Volume= 23,781 cf, Atten= 0%, Lag= 0.0 min
Routed to Link TEX :

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link TEX-S:

Inflow Area = 84,582 sf, 94.98% Impervious, Inflow Depth = 5.10" for 25-yr event
Inflow = 14.817 cfs @ 12.13 hrs, Volume= 35,950 cf
Primary = 14.817 cfs @ 12.13 hrs, Volume= 35,950 cf, Atten= 0%, Lag= 0.0 min
Routed to Link TEX :

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link TP:

Inflow Area = 152,592 sf, 65.09% Impervious, Inflow Depth = 4.60" for 25-yr event
Inflow = 7.041 cfs @ 12.38 hrs, Volume= 58,447 cf
Primary = 7.041 cfs @ 12.38 hrs, Volume= 58,447 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Time span=0.00-96.00 hrs, dt=0.05 hrs, 1921 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Runoff Area=16,044 sf 0.00% Impervious Runoff Depth=5.60"
Tc=6.0 min CN=83/0 Runoff=3.508 cfs 7,482 cf

Subcatchment 2a: Runoff Area=14,242 sf 90.78% Impervious Runoff Depth=7.10"
Tc=6.0 min CN=74/98 Runoff=3.490 cfs 8,430 cf

Subcatchment 2b: Runoff Area=4,477 sf 85.10% Impervious Runoff Depth=6.94"
Tc=6.0 min CN=74/98 Runoff=1.080 cfs 2,591 cf

Subcatchment 3S: Runoff Area=13,929 sf 89.96% Impervious Runoff Depth=7.08"
Tc=6.0 min CN=74/98 Runoff=3.405 cfs 8,218 cf

Subcatchment 4S: Pump Canopy Runoff Area=3,800 sf 100.00% Impervious Runoff Depth=7.36"
Tc=6.0 min CN=0/98 Runoff=0.954 cfs 2,331 cf

Subcatchment 5S: Runoff Area=10,204 sf 100.00% Impervious Runoff Depth=7.36"
Tc=6.0 min CN=0/98 Runoff=2.563 cfs 6,259 cf

Subcatchment 6S: Runoff Area=11,659 sf 97.13% Impervious Runoff Depth=7.28"
Tc=6.0 min CN=74/98 Runoff=2.906 cfs 7,073 cf

Subcatchment 7S: Runoff Area=7,616 sf 0.00% Impervious Runoff Depth=5.25"
Tc=6.0 min CN=80/0 Runoff=1.587 cfs 3,333 cf

Subcatchment 8S: Runoff Area=6,888 sf 88.07% Impervious Runoff Depth=7.03"
Tc=6.0 min CN=74/98 Runoff=1.675 cfs 4,034 cf

Subcatchment 9a: Runoff Area=8,617 sf 81.55% Impervious Runoff Depth=6.85"
Tc=6.0 min CN=74/98 Runoff=2.059 cfs 4,916 cf

Subcatchment 9b: Runoff Area=3,875 sf 26.55% Impervious Runoff Depth=5.31"
Tc=6.0 min CN=74/98 Runoff=0.786 cfs 1,715 cf

Subcatchment 10a: Runoff Area=3,454 sf 78.26% Impervious Runoff Depth=6.75"
Tc=6.0 min CN=74/98 Runoff=0.818 cfs 1,944 cf

Subcatchment 10b: Runoff Area=3,130 sf 72.20% Impervious Runoff Depth=6.58"
Tc=6.0 min CN=74/98 Runoff=0.729 cfs 1,718 cf

Subcatchment 11S: Runoff Area=2,018 sf 100.00% Impervious Runoff Depth=7.36"
Tc=6.0 min CN=0/98 Runoff=0.507 cfs 1,238 cf

Subcatchment 12S: CAR WASH Runoff Area=1,897 sf 100.00% Impervious Runoff Depth=7.36"
Tc=6.0 min CN=0/98 Runoff=0.476 cfs 1,164 cf

Subcatchment 13S: Store Runoff Area=9,216 sf 100.00% Impervious Runoff Depth=7.36"
Tc=6.0 min CN=0/98 Runoff=2.314 cfs 5,653 cf

Subcatchment 14a: Runoff Area=7,482 sf 0.00% Impervious Runoff Depth=4.57"
Tc=6.0 min CN=74/0 Runoff=1.387 cfs 2,849 cf

Subcatchment 14b: Runoff Area=11,302 sf 72.46% Impervious Runoff Depth=6.59"
Tc=6.0 min CN=74/98 Runoff=2.633 cfs 6,208 cf

Subcatchment 15S: Runoff Area=4,940 sf 60.97% Impervious Runoff Depth=6.27"
Tc=6.0 min CN=74/98 Runoff=1.113 cfs 2,582 cf

Subcatchment 16S: Offsite South Runoff Area=7,802 sf 16.83% Impervious Runoff Depth=5.04"
Tc=6.0 min CN=74/98 Runoff=1.532 cfs 3,276 cf

Subcatchment EX N: Runoff Area=48,689 sf 82.73% Impervious Runoff Depth=6.26"
Tc=6.0 min CN=39/98 Runoff=10.344 cfs 25,403 cf

Subcatchment EX S: Runoff Area=81,135 sf 95.24% Impervious Runoff Depth=7.06"
Tc=6.0 min CN=39/98 Runoff=19.510 cfs 47,716 cf

Subcatchment OS-N: Runoff Area=19,321 sf 62.41% Impervious Runoff Depth=4.97"
Tc=6.0 min CN=39/98 Runoff=3.227 cfs 7,998 cf

Subcatchment OS-S: Runoff Area=3,447 sf 88.86% Impervious Runoff Depth=6.65"
Tc=6.0 min CN=39/98 Runoff=0.780 cfs 1,911 cf

Pond 1P: Peak Elev=642.17' Storage=33,774 cf Inflow=19.018 cfs 44,966 cf
Outflow=4.732 cfs 44,966 cf

Pond 2P: Peak Elev=641.89' Inflow=14.398 cfs 34,903 cf
24.0" Round Culvert n=0.013 L=21.0' S=0.0033 '/' Outflow=14.398 cfs 34,903 cf

Pond 3P: Peak Elev=641.68' Inflow=9.828 cfs 23,881 cf
24.0" Round Culvert n=0.013 L=107.0' S=0.0030 '/' Outflow=9.828 cfs 23,881 cf

Pond 4P: MH 4 Peak Elev=641.66' Inflow=6.423 cfs 15,663 cf
18.0" Round Culvert n=0.013 L=38.0' S=0.0029 '/' Outflow=6.423 cfs 15,663 cf

Pond 5P: Peak Elev=642.00' Inflow=5.468 cfs 13,332 cf
18.0" Round Culvert n=0.013 L=164.0' S=0.0030 '/' Outflow=5.468 cfs 13,332 cf

Pond 6P: Peak Elev=642.32' Inflow=2.906 cfs 7,073 cf
12.0" Round Culvert n=0.013 L=75.0' S=0.0040 '/' Outflow=2.906 cfs 7,073 cf

Pond 7P: Peak Elev=643.33' Storage=7,072 cf Inflow=10.949 cfs 25,713 cf
Primary=5.119 cfs 25,713 cf Secondary=0.000 cfs 0 cf Outflow=5.119 cfs 25,713 cf

Pond 8P: Peak Elev=642.30' Inflow=2.659 cfs 6,435 cf
12.0" Round Culvert n=0.013 L=20.0' S=0.0035 '/' Outflow=2.659 cfs 6,435 cf

Pond 9p: Peak Elev=643.02' Inflow=6.705 cfs 15,945 cf
18.0" Round Culvert n=0.013 L=89.0' S=0.0030 '/' Outflow=6.705 cfs 15,945 cf

Pond 10p: Peak Elev=642.97' Inflow=3.861 cfs 9,314 cf
15.0" Round Culvert n=0.013 L=106.0' S=0.0031 '/' Outflow=3.861 cfs 9,314 cf

Pond 11P: Peak Elev=642.09' Inflow=0.983 cfs 2,401 cf
12.0" Round Culvert n=0.013 L=113.0' S=0.0033 '/' Outflow=0.983 cfs 2,401 cf

Pond 14P: Peak Elev=641.81' Storage=3,343 cf Inflow=8.636 cfs 34,770 cf
Primary=5.748 cfs 34,770 cf Secondary=0.000 cfs 0 cf Outflow=5.748 cfs 34,770 cf

Link P-N: Inflow=5.748 cfs 34,770 cf
Primary=5.748 cfs 34,770 cf

Link P-S: Inflow=5.567 cfs 48,243 cf
Primary=5.567 cfs 48,243 cf

Link TEX: Inflow=33.859 cfs 83,027 cf
Primary=33.859 cfs 83,027 cf

Link TEX-N: Inflow=13.571 cfs 33,401 cf
Primary=13.571 cfs 33,401 cf

Link TEX-S: Inflow=20.289 cfs 49,627 cf
Primary=20.289 cfs 49,627 cf

Link TP: Inflow=10.932 cfs 83,013 cf
Primary=10.932 cfs 83,013 cf

Summary for Subcatchment 1S:

Runoff = 3.508 cfs @ 12.13 hrs, Volume= 7,482 cf, Depth= 5.60"
Routed to Pond 1P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
9,749	74	>75% Grass cover, Good, HSG C
6,295	98	Water Surface, 0% imp, HSG C
16,044	83	Weighted Average
16,044	83	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 2a:

Runoff = 3.490 cfs @ 12.13 hrs, Volume= 8,430 cf, Depth= 7.10"
Routed to Pond 2P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

Area (sf)	CN	Description
12,929	98	Paved parking, HSG C
1,313	74	>75% Grass cover, Good, HSG C
14,242	96	Weighted Average
1,313	74	9.22% Pervious Area
12,929	98	90.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 2b:

Runoff = 1.080 cfs @ 12.13 hrs, Volume= 2,591 cf, Depth= 6.94"
Routed to Pond 2P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	3,810	98	ROOF/PARKING
	667	74	>75% Grass cover, Good, HSG C
	4,477	94	Weighted Average
	667	74	14.90% Pervious Area
	3,810	98	85.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 3S:

Runoff = 3.405 cfs @ 12.13 hrs, Volume= 8,218 cf, Depth= 7.08"
Routed to Pond 3P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

	Area (sf)	CN	Description
	12,530	98	Paved parking, HSG C
	1,399	74	>75% Grass cover, Good, HSG C
	13,929	96	Weighted Average
	1,399	74	10.04% Pervious Area
	12,530	98	89.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 4S: Pump Canopy

Runoff = 0.954 cfs @ 12.13 hrs, Volume= 2,331 cf, Depth= 7.36"
Routed to Pond 4P : MH 4

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

	Area (sf)	CN	Description
	3,800	98	Paved parking, HSG C
	0	74	>75% Grass cover, Good, HSG C
	3,800	98	Weighted Average
	3,800	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 5S:

Runoff = 2.563 cfs @ 12.13 hrs, Volume= 6,259 cf, Depth= 7.36"
Routed to Pond 5P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

Area (sf)	CN	Description
10,204	98	Paved parking, HSG C
0	74	>75% Grass cover, Good, HSG C
10,204	98	Weighted Average
10,204	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 6S:

Runoff = 2.906 cfs @ 12.13 hrs, Volume= 7,073 cf, Depth= 7.28"
Routed to Pond 6P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

Area (sf)	CN	Description
11,324	98	Paved parking, HSG C
335	74	>75% Grass cover, Good, HSG C
11,659	97	Weighted Average
335	74	2.87% Pervious Area
11,324	98	97.13% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 7S:

Runoff = 1.587 cfs @ 12.13 hrs, Volume= 3,333 cf, Depth= 5.25"
Routed to Pond 7P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
5,694	74	>75% Grass cover, Good, HSG C
1,922	98	Water Surface, 0% imp, HSG C
7,616	80	Weighted Average
7,616	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 8S:

Runoff = 1.675 cfs @ 12.13 hrs, Volume= 4,034 cf, Depth= 7.03"
Routed to Pond 8P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

Area (sf)	CN	Description
6,066	98	Paved parking, HSG C
822	74	>75% Grass cover, Good, HSG C
6,888	95	Weighted Average
822	74	11.93% Pervious Area
6,066	98	88.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 9a:

Runoff = 2.059 cfs @ 12.13 hrs, Volume= 4,916 cf, Depth= 6.85"
Routed to Pond 9p :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

Area (sf)	CN	Description
7,027	98	Paved parking, HSG C
1,590	74	>75% Grass cover, Good, HSG C
8,617	94	Weighted Average
1,590	74	18.45% Pervious Area
7,027	98	81.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 9b:

Runoff = 0.786 cfs @ 12.13 hrs, Volume= 1,715 cf, Depth= 5.31"
Routed to Pond 9p :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

Area (sf)	CN	Description
1,029	98	Paved parking, HSG C
2,846	74	>75% Grass cover, Good, HSG C
3,875	80	Weighted Average
2,846	74	73.45% Pervious Area
1,029	98	26.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 10a:

Runoff = 0.818 cfs @ 12.13 hrs, Volume= 1,944 cf, Depth= 6.75"
Routed to Pond 10p :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

Area (sf)	CN	Description
2,703	98	Paved parking, HSG C
751	74	>75% Grass cover, Good, HSG C
3,454	93	Weighted Average
751	74	21.74% Pervious Area
2,703	98	78.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 10b:

Runoff = 0.729 cfs @ 12.13 hrs, Volume= 1,718 cf, Depth= 6.58"
Routed to Pond 10p :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	2,260	98	ROOF
	870	74	>75% Grass cover, Good, HSG C
	3,130	91	Weighted Average
	870	74	27.80% Pervious Area
	2,260	98	72.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 11S:

Runoff = 0.507 cfs @ 12.13 hrs, Volume= 1,238 cf, Depth= 7.36"
Routed to Pond 11P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

Area (sf)	CN	Description
2,018	98	Paved parking, HSG C
0	74	>75% Grass cover, Good, HSG C
2,018	98	Weighted Average
2,018	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 12S: CAR WASH

Runoff = 0.476 cfs @ 12.13 hrs, Volume= 1,164 cf, Depth= 7.36"
Routed to Pond 11P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	1,897	98	ROOF
	0	74	>75% Grass cover, Good, HSG C
	1,897	98	Weighted Average
	1,897	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 13S: Store

Runoff = 2.314 cfs @ 12.13 hrs, Volume= 5,653 cf, Depth= 7.36"
Routed to Pond 10p :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	9,216	98	ROOF
	0	74	>75% Grass cover, Good, HSG C
	9,216	98	Weighted Average
	9,216	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 14a:

Runoff = 1.387 cfs @ 12.13 hrs, Volume= 2,849 cf, Depth= 4.57"
Routed to Pond 14P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

Area (sf)	CN	Description
0	98	Paved parking, HSG C
7,482	74	>75% Grass cover, Good, HSG C
7,482	74	Weighted Average
7,482	74	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 14b:

Runoff = 2.633 cfs @ 12.13 hrs, Volume= 6,208 cf, Depth= 6.59"
Routed to Pond 14P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

Area (sf)	CN	Description
8,189	98	Paved parking, HSG A
3,113	74	>75% Grass cover, Good, HSG C
11,302	91	Weighted Average
3,113	74	27.54% Pervious Area
8,189	98	72.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 15S:

Runoff = 1.113 cfs @ 12.13 hrs, Volume= 2,582 cf, Depth= 6.27"
Routed to Pond 1P :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

Area (sf)	CN	Description
3,012	98	Paved parking, HSG C
1,928	74	>75% Grass cover, Good, HSG C
4,940	89	Weighted Average
1,928	74	39.03% Pervious Area
3,012	98	60.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment 16S: Offsite South

Runoff = 1.532 cfs @ 12.13 hrs, Volume= 3,276 cf, Depth= 5.04"
Routed to Link P-S :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

Area (sf)	CN	Description
1,313	98	Paved parking, HSG C
6,489	74	>75% Grass cover, Good, HSG C
7,802	78	Weighted Average
6,489	74	83.17% Pervious Area
1,313	98	16.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment EX N:

Runoff = 10.344 cfs @ 12.13 hrs, Volume= 25,403 cf, Depth= 6.26"
Routed to Link TEX-N :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

Area (sf)	CN	Description
40,279	98	Paved parking, HSG A
8,410	39	>75% Grass cover, Good, HSG A
48,689	88	Weighted Average
8,410	39	17.27% Pervious Area
40,279	98	82.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment EX S:

Runoff = 19.510 cfs @ 12.13 hrs, Volume= 47,716 cf, Depth= 7.06"
Routed to Link TEX-S :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

Area (sf)	CN	Description
77,271	98	Paved parking, HSG A
3,864	39	>75% Grass cover, Good, HSG A
81,135	95	Weighted Average
3,864	39	4.76% Pervious Area
77,271	98	95.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment OS-N:

Runoff = 3.227 cfs @ 12.13 hrs, Volume= 7,998 cf, Depth= 4.97"
Routed to Link TEX-N :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

Area (sf)	CN	Description
12,058	98	Paved parking, HSG A
7,263	39	>75% Grass cover, Good, HSG A
19,321	76	Weighted Average
7,263	39	37.59% Pervious Area
12,058	98	62.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Subcatchment OS-S:

Runoff = 0.780 cfs @ 12.13 hrs, Volume= 1,911 cf, Depth= 6.65"
Routed to Link TEX-S :

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
MSE 24-hr 3 100-yr Rainfall=7.60"

	Area (sf)	CN	Description
*	3,063	98	ROOF/PARKING
	384	39	>75% Grass cover, Good, HSG A
	3,447	91	Weighted Average
	384	39	11.14% Pervious Area
	3,063	98	88.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Minimum**

Summary for Pond 1P:

Inflow Area = 79,295 sf, 72.65% Impervious, Inflow Depth = 6.80" for 100-yr event
Inflow = 19.018 cfs @ 12.13 hrs, Volume= 44,966 cf
Outflow = 4.732 cfs @ 12.35 hrs, Volume= 44,966 cf, Atten= 75%, Lag= 13.4 min
Primary = 4.732 cfs @ 12.35 hrs, Volume= 44,966 cf
Routed to Link P-S :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Starting Elev= 639.50' Surf.Area= 6,295 sf Storage= 13,277 cf
Peak Elev= 642.17' @ 12.35 hrs Surf.Area= 9,094 sf Storage= 33,774 cf (20,496 cf above start)

Plug-Flow detention time= 293.8 min calculated for 31,689 cf (70% of inflow)
Center-of-Mass det. time= 138.0 min (887.9 - 749.9)

Volume	Invert	Avail.Storage	Storage Description
#1	634.00'	52,295 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
634.00	698	0	0
635.00	1,126	912	912
636.00	1,652	1,389	2,301
637.00	2,272	1,962	4,263
638.00	2,980	2,626	6,889
638.50	3,380	1,590	8,479
639.00	4,759	2,035	10,514
639.50	6,295	2,764	13,277
640.00	6,787	3,271	16,548
641.00	7,812	7,300	23,847
642.00	8,895	8,354	32,201
643.00	10,033	9,464	41,665
644.00	11,228	10,631	52,295

Device	Routing	Invert	Outlet Devices
#1	Primary	639.50'	**12.0" Round Culvert** L= 57.0' Ke= 0.500 Inlet / Outlet Invert= 639.50' / 639.32' S= 0.0032 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf
#2	Device 1	639.50'	**6.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	641.50'	**4.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=4.733 cfs @ 12.35 hrs HW=642.17' (Free Discharge)
└─**1=Culvert** (Barrel Controls 4.733 cfs @ 6.03 fps)
  ├─**2=Orifice/Grate** (Passes < 1.472 cfs potential flow)
  └─**3=Broad-Crested Rectangular Weir** (Passes < 7.011 cfs potential flow)

Summary for Pond 2P:

Inflow Area = 58,311 sf, 93.63% Impervious, Inflow Depth = 7.18" for 100-yr event
Inflow = 14.398 cfs @ 12.13 hrs, Volume= 34,903 cf
Outflow = 14.398 cfs @ 12.13 hrs, Volume= 34,903 cf, Atten= 0%, Lag= 0.0 min
Primary = 14.398 cfs @ 12.13 hrs, Volume= 34,903 cf
Routed to Pond 1P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 641.89' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	639.57'	**24.0" Round Culvert** L= 21.0' Ke= 0.500 Inlet / Outlet Invert= 639.57' / 639.50' S= 0.0033 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf

Primary OutFlow Max=13.764 cfs @ 12.13 hrs HW=641.81' (Free Discharge)
└─**1=Culvert** (Barrel Controls 13.764 cfs @ 4.88 fps)

Summary for Pond 3P:

Inflow Area = 39,592 sf, 95.62% Impervious, Inflow Depth = 7.24" for 100-yr event
Inflow = 9.828 cfs @ 12.13 hrs, Volume= 23,881 cf
Outflow = 9.828 cfs @ 12.13 hrs, Volume= 23,881 cf, Atten= 0%, Lag= 0.0 min
Primary = 9.828 cfs @ 12.13 hrs, Volume= 23,881 cf
Routed to Pond 2P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 641.68' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	639.89'	**24.0" Round Culvert** L= 107.0' Ke= 0.500 Inlet / Outlet Invert= 639.89' / 639.57' S= 0.0030 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf

Primary OutFlow Max=9.395 cfs @ 12.13 hrs HW=641.63' (Free Discharge)
1=Culvert (Barrel Controls 9.395 cfs @ 4.32 fps)

Summary for Pond 4P: MH 4

Inflow Area = 25,663 sf, 98.69% Impervious, Inflow Depth = 7.32" for 100-yr event
Inflow = 6.423 cfs @ 12.13 hrs, Volume= 15,663 cf
Outflow = 6.423 cfs @ 12.13 hrs, Volume= 15,663 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.423 cfs @ 12.13 hrs, Volume= 15,663 cf
Routed to Pond 3P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 641.66' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	640.00'	**18.0" Round Culvert** L= 38.0' Ke= 0.500 Inlet / Outlet Invert= 640.00' / 639.89' S= 0.0029 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=6.140 cfs @ 12.13 hrs HW=641.61' (Free Discharge)
1=Culvert (Barrel Controls 6.140 cfs @ 4.03 fps)

Summary for Pond 5P:

Inflow Area = 21,863 sf, 98.47% Impervious, Inflow Depth = 7.32" for 100-yr event
Inflow = 5.468 cfs @ 12.13 hrs, Volume= 13,332 cf
Outflow = 5.468 cfs @ 12.13 hrs, Volume= 13,332 cf, Atten= 0%, Lag= 0.0 min
Primary = 5.468 cfs @ 12.13 hrs, Volume= 13,332 cf
Routed to Pond 4P : MH 4

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 642.00' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	640.50'	**18.0" Round Culvert** L= 164.0' Ke= 0.500

Inlet / Outlet Invert= 640.50' / 640.00' S= 0.0030 '/' Cc= 0.900
n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=5.228 cfs @ 12.13 hrs HW=641.95' (Free Discharge)
└**1=Culvert** (Barrel Controls 5.228 cfs @ 3.80 fps)

Summary for Pond 6P:

Inflow Area = 11,659 sf, 97.13% Impervious, Inflow Depth = 7.28" for 100-yr event
Inflow = 2.906 cfs @ 12.13 hrs, Volume= 7,073 cf
Outflow = 2.906 cfs @ 12.13 hrs, Volume= 7,073 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.906 cfs @ 12.13 hrs, Volume= 7,073 cf
Routed to Pond 5P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 642.32' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	640.80'	**12.0" Round Culvert** L= 75.0' Ke= 0.500 Inlet / Outlet Invert= 640.80' / 640.50' S= 0.0040 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=2.778 cfs @ 12.13 hrs HW=642.25' (Free Discharge)
└**1=Culvert** (Barrel Controls 2.778 cfs @ 3.54 fps)

Summary for Pond 7P:

Inflow Area = 46,711 sf, 68.97% Impervious, Inflow Depth = 6.61" for 100-yr event
Inflow = 10.949 cfs @ 12.13 hrs, Volume= 25,713 cf
Outflow = 5.119 cfs @ 12.24 hrs, Volume= 25,713 cf, Atten= 53%, Lag= 6.8 min
Primary = 5.119 cfs @ 12.24 hrs, Volume= 25,713 cf
Routed to Pond 14P :
Secondary = 0.000 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 14P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Starting Elev= 641.00' Surf.Area= 1,638 sf Storage= 1,623 cf
Peak Elev= 643.33' @ 12.24 hrs Surf.Area= 3,113 sf Storage= 7,072 cf (5,450 cf above start)

Plug-Flow detention time= 76.2 min calculated for 24,090 cf (94% of inflow)
Center-of-Mass det. time= 22.2 min (774.3 - 752.1)

Volume	Invert	Avail.Storage	Storage Description
#1	638.00'	18,131 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
638.00	61	0	0
639.00	251	156	156
640.00	522	387	543
641.00	1,638	1,080	1,623
642.00	2,200	1,919	3,542
643.00	2,871	2,536	6,077
644.00	3,598	3,235	9,312
645.00	4,400	3,999	13,311
646.00	5,240	4,820	18,131

Device	Routing	Invert	Outlet Devices
#1	Primary	641.00'	**12.0" Round Culvert** L= 43.0' Ke= 0.500 Inlet / Outlet Invert= 641.00' / 640.00' S= 0.0233 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf
#2	Secondary	645.50'	**10.0' long x 4.0' 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) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32

Primary OutFlow Max=5.109 cfs @ 12.24 hrs HW=643.33' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 5.109 cfs @ 6.51 fps)

Secondary OutFlow Max=0.000 cfs @ 0.00 hrs HW=641.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.000 cfs)

Summary for Pond 8P:

Inflow Area = 10,803 sf, 92.39% Impervious, Inflow Depth = 7.15" for 100-yr event
Inflow = 2.659 cfs @ 12.13 hrs, Volume= 6,435 cf
Outflow = 2.659 cfs @ 12.13 hrs, Volume= 6,435 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.659 cfs @ 12.13 hrs, Volume= 6,435 cf
Routed to Pond 7P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 642.30' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	641.07'	**12.0" Round Culvert** L= 20.0' Ke= 0.500 Inlet / Outlet Invert= 641.07' / 641.00' S= 0.0035 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=2.542 cfs @ 12.13 hrs HW=642.26' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 2.542 cfs @ 3.44 fps)

Summary for Pond 9p:

Inflow Area = 28,292 sf, 78.59% Impervious, Inflow Depth = 6.76" for 100-yr event
Inflow = 6.705 cfs @ 12.13 hrs, Volume= 15,945 cf
Outflow = 6.705 cfs @ 12.13 hrs, Volume= 15,945 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.705 cfs @ 12.13 hrs, Volume= 15,945 cf
Routed to Pond 7P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 643.02' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	641.27'	**18.0" Round Culvert** L= 89.0' Ke= 0.500 Inlet / Outlet Invert= 641.27' / 641.00' S= 0.0030 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf

Primary OutFlow Max=6.408 cfs @ 12.13 hrs HW=642.96' (Free Discharge)
1=Culvert (Barrel Controls 6.408 cfs @ 4.02 fps)

Summary for Pond 10p:

Inflow Area = 15,800 sf, 89.74% Impervious, Inflow Depth = 7.07" for 100-yr event
Inflow = 3.861 cfs @ 12.13 hrs, Volume= 9,314 cf
Outflow = 3.861 cfs @ 12.13 hrs, Volume= 9,314 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.861 cfs @ 12.13 hrs, Volume= 9,314 cf
Routed to Pond 9p :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 642.97' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	641.60'	**15.0" Round Culvert** L= 106.0' Ke= 0.500 Inlet / Outlet Invert= 641.60' / 641.27' S= 0.0031 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf

Primary OutFlow Max=3.690 cfs @ 12.13 hrs HW=642.92' (Free Discharge)
1=Culvert (Barrel Controls 3.690 cfs @ 3.53 fps)

Summary for Pond 11P:

Inflow Area = 3,915 sf,100.00% Impervious, Inflow Depth = 7.36" for 100-yr event
Inflow = 0.983 cfs @ 12.13 hrs, Volume= 2,401 cf
Outflow = 0.983 cfs @ 12.13 hrs, Volume= 2,401 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.983 cfs @ 12.13 hrs, Volume= 2,401 cf
Routed to Pond 8P :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 642.09' @ 12.13 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	641.44'	**12.0" Round Culvert** L= 113.0' Ke= 0.500

Inlet / Outlet Invert= 641.44' / 641.07' S= 0.0033 '/' Cc= 0.900
n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf

Primary OutFlow Max=0.940 cfs @ 12.13 hrs HW=642.07' (Free Discharge)
1=Culvert (Barrel Controls 0.940 cfs @ 2.56 fps)

Summary for Pond 14P:

Inflow Area = 65,495 sf, 61.69% Impervious, Inflow Depth = 6.37" for 100-yr event
Inflow = 8.636 cfs @ 12.15 hrs, Volume= 34,770 cf
Outflow = 5.748 cfs @ 12.37 hrs, Volume= 34,770 cf, Atten= 33%, Lag= 13.3 min
Primary = 5.748 cfs @ 12.37 hrs, Volume= 34,770 cf
Routed to Link P-N :
Secondary = 0.000 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link P-N :

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs
Peak Elev= 641.81' @ 12.37 hrs Surf.Area= 2,104 sf Storage= 3,343 cf

Plug-Flow detention time= 5.0 min calculated for 34,752 cf (100% of inflow)
Center-of-Mass det. time= 5.0 min (777.0 - 772.0)

Volume	Invert	Avail.Storage	Storage Description
#1	639.00'	18,309 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
639.00	0	0	0
640.00	1,060	530	530
641.00	1,580	1,320	1,850
642.00	2,226	1,903	3,753
643.00	2,887	2,557	6,310
644.00	3,624	3,256	9,565
645.00	4,282	3,953	13,518
646.00	5,300	4,791	18,309

Device	Routing	Invert	Outlet Devices
#1	Primary	639.00'	**12.0" Round Culvert** L= 14.0' Ke= 0.500 Inlet / Outlet Invert= 639.00' / 637.96' S= 0.0743 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 0.79 sf
#2	Secondary	645.75'	**10.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=5.744 cfs @ 12.37 hrs HW=641.81' (Free Discharge)
1=Culvert (Inlet Controls 5.744 cfs @ 7.31 fps)

Secondary OutFlow Max=0.000 cfs @ 0.00 hrs HW=639.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.000 cfs)

Summary for Link P-N:

Inflow Area = 65,495 sf, 61.69% Impervious, Inflow Depth = 6.37" for 100-yr event
Inflow = 5.748 cfs @ 12.37 hrs, Volume= 34,770 cf
Primary = 5.748 cfs @ 12.37 hrs, Volume= 34,770 cf, Atten= 0%, Lag= 0.0 min
Routed to Link TP :

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link P-S:

Inflow Area = 87,097 sf, 67.65% Impervious, Inflow Depth = 6.65" for 100-yr event
Inflow = 5.567 cfs @ 12.22 hrs, Volume= 48,243 cf
Primary = 5.567 cfs @ 12.22 hrs, Volume= 48,243 cf, Atten= 0%, Lag= 0.0 min
Routed to Link TP :

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link TEX:

Inflow Area = 152,592 sf, 86.94% Impervious, Inflow Depth = 6.53" for 100-yr event
Inflow = 33.859 cfs @ 12.13 hrs, Volume= 83,027 cf
Primary = 33.859 cfs @ 12.13 hrs, Volume= 83,027 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link TEX-N:

Inflow Area = 68,010 sf, 76.95% Impervious, Inflow Depth = 5.89" for 100-yr event
Inflow = 13.571 cfs @ 12.13 hrs, Volume= 33,401 cf
Primary = 13.571 cfs @ 12.13 hrs, Volume= 33,401 cf, Atten= 0%, Lag= 0.0 min
Routed to Link TEX :

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link TEX-S:

Inflow Area = 84,582 sf, 94.98% Impervious, Inflow Depth = 7.04" for 100-yr event
Inflow = 20.289 cfs @ 12.13 hrs, Volume= 49,627 cf
Primary = 20.289 cfs @ 12.13 hrs, Volume= 49,627 cf, Atten= 0%, Lag= 0.0 min
Routed to Link TEX :

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

Summary for Link TP:

Inflow Area = 152,592 sf, 65.09% Impervious, Inflow Depth = 6.53" for 100-yr event
Inflow = 10.932 cfs @ 12.25 hrs, Volume= 83,013 cf
Primary = 10.932 cfs @ 12.25 hrs, Volume= 83,013 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.05 hrs

NOAA Atlas 14, Volume 8, Version 2
Location name: La Crosse, Wisconsin, USA*
Latitude: 43.8595°, Longitude: -91.2404°
Elevation: m/ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.385 (0.329-0.458)	0.451 (0.385-0.538)	0.562 (0.477-0.671)	0.654 (0.552-0.785)	0.783 (0.632-0.967)	0.884 (0.693-1.10)	0.986 (0.740-1.26)	1.09 (0.777-1.43)	1.23 (0.835-1.65)	1.34 (0.879-1.82)
10-min	0.563 (0.481-0.671)	0.661 (0.564-0.788)	0.822 (0.699-0.983)	0.958 (0.808-1.15)	1.15 (0.926-1.42)	1.29 (1.02-1.62)	1.44 (1.08-1.84)	1.60 (1.14-2.09)	1.80 (1.22-2.42)	1.96 (1.29-2.67)
15-min	0.687 (0.587-0.819)	0.806 (0.688-0.961)	1.00 (0.852-1.20)	1.17 (0.985-1.40)	1.40 (1.13-1.73)	1.58 (1.24-1.97)	1.76 (1.32-2.25)	1.95 (1.39-2.55)	2.20 (1.49-2.95)	2.39 (1.57-3.25)
30-min	0.938 (0.801-1.12)	1.11 (0.946-1.32)	1.39 (1.18-1.66)	1.62 (1.37-1.95)	1.95 (1.57-2.41)	2.20 (1.73-2.76)	2.46 (1.85-3.14)	2.72 (1.94-3.56)	3.07 (2.08-4.12)	3.33 (2.19-4.54)
60-min	1.22 (1.04-1.45)	1.44 (1.23-1.72)	1.82 (1.55-2.18)	2.14 (1.81-2.57)	2.59 (2.10-3.21)	2.95 (2.32-3.70)	3.32 (2.49-4.25)	3.69 (2.63-4.84)	4.20 (2.86-5.65)	4.60 (3.02-6.26)
2-hr	1.50 (1.29-1.77)	1.78 (1.53-2.10)	2.25 (1.93-2.67)	2.66 (2.26-3.17)	3.24 (2.64-3.99)	3.70 (2.92-4.61)	4.17 (3.16-5.31)	4.67 (3.35-6.09)	5.34 (3.65-7.14)	5.86 (3.88-7.94)
3-hr	1.68 (1.45-1.98)	2.00 (1.72-2.35)	2.53 (2.17-2.99)	3.00 (2.55-3.55)	3.67 (3.01-4.52)	4.22 (3.35-5.25)	4.79 (3.64-6.09)	5.39 (3.89-7.02)	6.22 (4.28-8.30)	6.88 (4.57-9.28)
6-hr	2.00 (1.74-2.34)	2.35 (2.04-2.75)	2.97 (2.56-3.48)	3.52 (3.02-4.15)	4.36 (3.61-5.36)	5.06 (4.05-6.27)	5.80 (4.45-7.35)	6.60 (4.80-8.56)	7.73 (5.36-10.3)	8.64 (5.78-11.6)
12-hr	2.30 (2.01-2.67)	2.67 (2.33-3.10)	3.34 (2.90-3.88)	3.97 (3.42-4.63)	4.94 (4.13-6.05)	5.77 (4.67-7.13)	6.67 (5.17-8.43)	7.66 (5.63-9.91)	9.09 (6.36-12.0)	10.3 (6.91-13.6)
24-hr	2.60 (2.28-2.99)	2.99 (2.63-3.44)	3.73 (3.26-4.30)	4.43 (3.84-5.13)	5.51 (4.65-6.72)	6.45 (5.26-7.92)	7.47 (5.83-9.38)	8.60 (6.37-11.1)	10.2 (7.22-13.5)	11.6 (7.86-15.3)
2-day	2.92 (2.59-3.34)	3.38 (2.99-3.86)	4.21 (3.71-4.82)	4.98 (4.35-5.72)	6.15 (5.21-7.42)	7.15 (5.86-8.70)	8.24 (6.46-10.2)	9.42 (7.01-12.0)	11.1 (7.88-14.5)	12.5 (8.53-16.4)
3-day	3.20 (2.84-3.63)	3.67 (3.26-4.17)	4.52 (4.00-5.15)	5.31 (4.66-6.07)	6.51 (5.53-7.80)	7.53 (6.19-9.10)	8.63 (6.80-10.7)	9.82 (7.34-12.5)	11.5 (8.22-15.0)	12.9 (8.88-16.9)
4-day	3.44 (3.07-3.90)	3.93 (3.50-4.45)	4.80 (4.25-5.45)	5.60 (4.93-6.39)	6.83 (5.82-8.14)	7.86 (6.49-9.47)	8.98 (7.10-11.1)	10.2 (7.65-12.9)	11.9 (8.53-15.5)	13.4 (9.20-17.4)
7-day	4.08 (3.65-4.58)	4.62 (4.13-5.20)	5.59 (4.98-6.30)	6.47 (5.73-7.33)	7.80 (6.68-9.23)	8.92 (7.40-10.7)	10.1 (8.04-12.4)	11.4 (8.61-14.3)	13.3 (9.52-17.1)	14.8 (10.2-19.1)
10-day	4.65 (4.18-5.20)	5.25 (4.71-5.88)	6.31 (5.65-7.09)	7.27 (6.46-8.20)	8.70 (7.46-10.2)	9.89 (8.22-11.7)	11.2 (8.88-13.6)	12.5 (9.46-15.6)	14.4 (10.4-18.5)	16.0 (11.1-20.6)
20-day	6.32 (5.72-7.01)	7.09 (6.41-7.88)	8.41 (7.58-9.37)	9.56 (8.55-10.7)	11.2 (9.66-13.0)	12.6 (10.5-14.7)	14.0 (11.2-16.8)	15.4 (11.7-19.0)	17.5 (12.6-22.1)	19.0 (13.3-24.5)
30-day	7.76 (7.05-8.57)	8.70 (7.90-9.62)	10.3 (9.28-11.4)	11.6 (10.4-12.9)	13.5 (11.6-15.4)	14.9 (12.5-17.4)	16.4 (13.2-19.6)	18.0 (13.7-22.0)	20.0 (14.6-25.2)	21.6 (15.2-27.7)
45-day	9.63 (8.79-10.6)	10.8 (9.86-11.9)	12.7 (11.6-14.0)	14.3 (12.9-15.9)	16.5 (14.2-18.7)	18.1 (15.2-20.9)	19.7 (15.9-23.4)	21.4 (16.3-26.0)	23.5 (17.1-29.4)	25.1 (17.7-32.0)
60-day	11.3 (10.3-12.3)	12.7 (11.6-13.9)	14.9 (13.6-16.4)	16.7 (15.1-18.5)	19.2 (16.6-21.7)	21.0 (17.6-24.1)	22.7 (18.3-26.7)	24.4 (18.7-29.6)	26.6 (19.4-33.1)	28.2 (20.0-35.8)

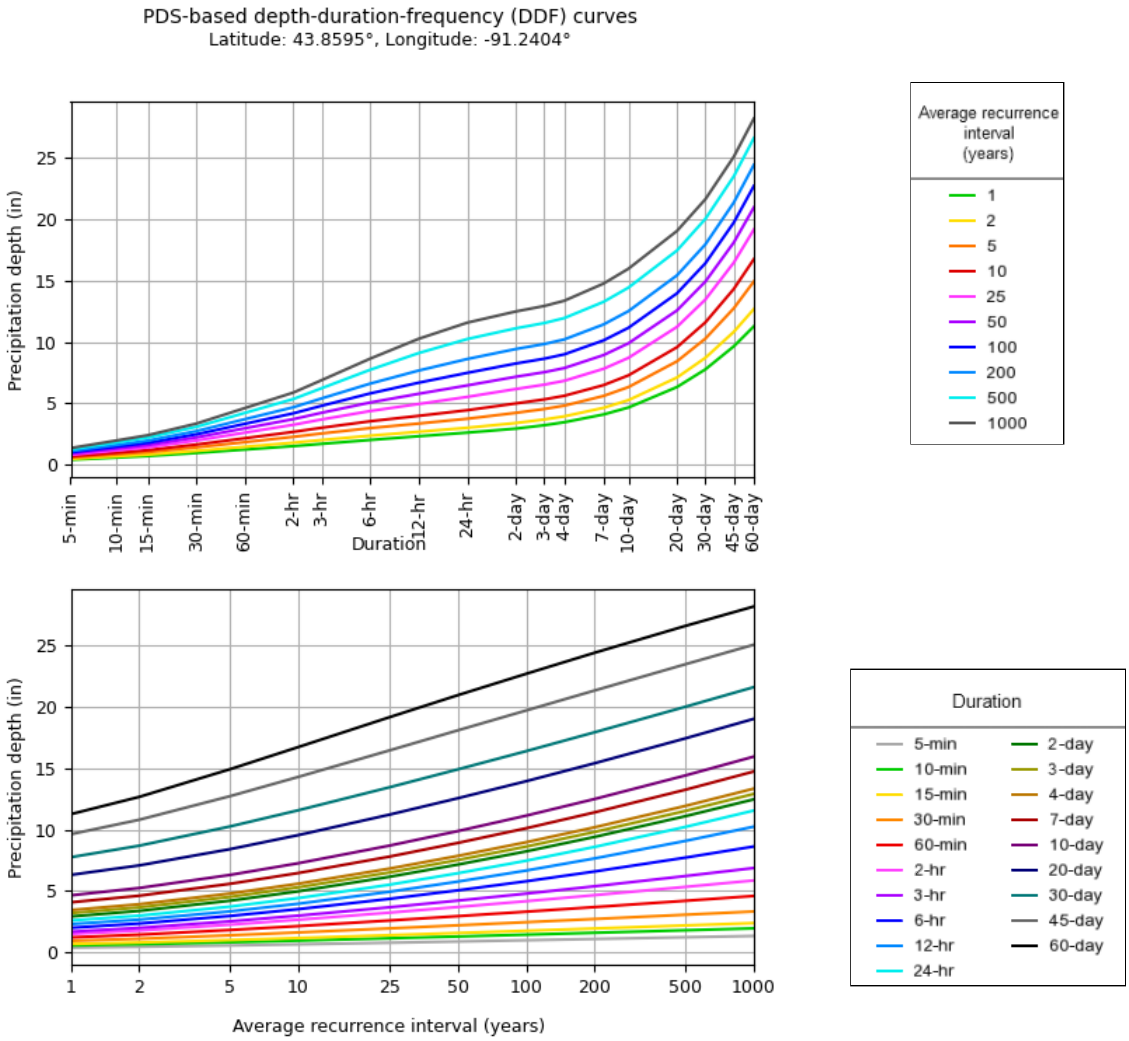
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical



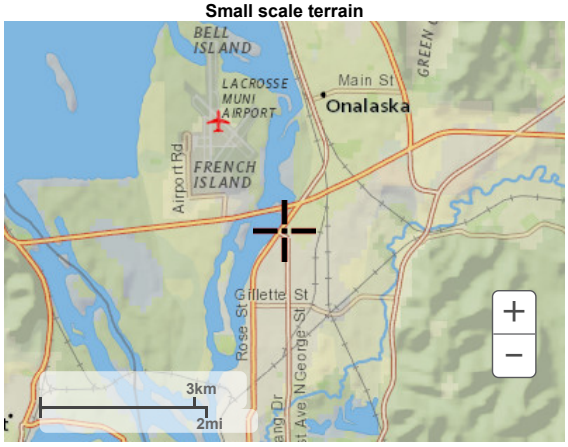
NOAA Atlas 14, Volume 8, Version 2

Created (GMT): Wed Dec 27 18:31:41 2023

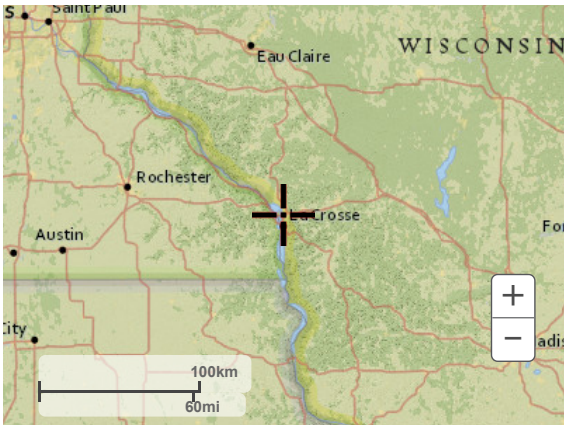
Back to Top

Maps & aerials

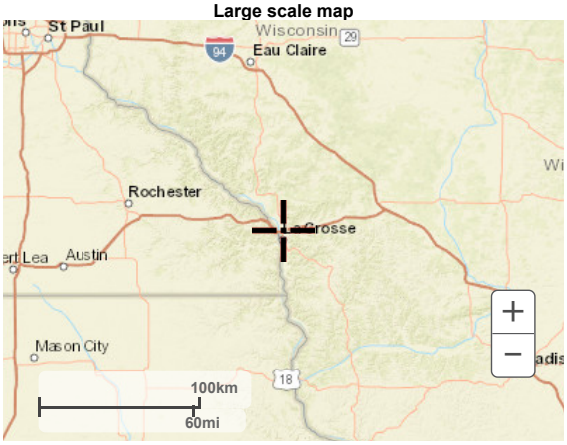
Small scale terrain



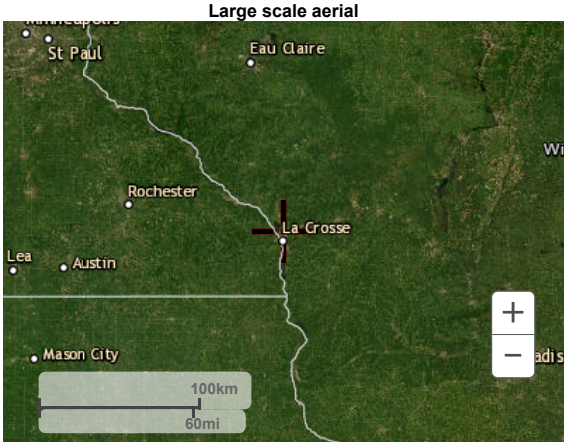
Large scale terrain



Large scale map



Large scale aerial



Back to Top

US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov