



January 19, 2022

City of La Crosse Engineering Department
400 La Crosse Street
La Crosse, WI 54601

Re: Storm Water Permit Application
Fire Station No. 2
La Crosse Street and Oakland Street, La Crosse, WI

Dear Mr. Nasonovs,

Knight E/A, Inc. is pleased to submit the stormwater permit application for proposed Fire Station No. 2. The La Crosse Fire District intends to construct a New Firehouse Building and Parking Lot in the southeast corner of La Crosse Street and Oakland Street on the Lots 23 thru 25 and west ½ vacated 14th Street in Samuel T Smith Addition.

Knight completed stormwater and drainage design as part of the civil site plan design activities. In reviewing the updated City of La Crosse Stormwater Ordinance Manual. It is anticipated that this project will be over two critical factors when determining the Ordinance applying to a project. We estimate the disturbed area to be about 42,253 SF, which is over the 1/4-acre criteria.

The pre-development conditions consist of a 42,253 lot with existing 5,227 SF of impervious area. The post development conditions consist of 29,621 SF of impervious area and 13,068 SF of pervious area consisting of lawn and landscaping. In order to control stormwater, surface water will be collected in catch basins and sent through stormwater pipes into two detention ponds on the north end of the property. The northeast pond contains a restrictor manhole which will result in decreased outflow from proposed. Existing 2- and 10-year results in 2.24 and 4.17 CFS while proposed outflow results in 2.06 and 3.97 CFS. Knight utilized WINSALMM program to evaluate TSS Reduction Standards. Our analysis showed a 41% reduction which meets redevelopment requirements of 40%.

The attached permit application, exhibits, and plans show the proposed improvements.

If you have any questions, please do not hesitate to contact me at 608-713-9274 or at rmckane@knightea.com.

Respectfully Submitted,

KNIGHT E/A, INC.

Ryan B McKane, PE
Project Manager



Stormwater Management Permit Application

City of La Crosse Engineering Department

400 La Crosse Street ■ Engineering Department ■ La Crosse, WI 54601

Section 1 ■ Property Information

Project Name: _____

Property
Address:

Street

Lot Number(s)

Parcel Number

City

State

ZIP Code

Plat or CSM

Section 2 ■ Landowner Information

Full Name: _____

Last

First

M.I.

Mailing
Address:

Street

Apartment/Unit #

City

State

ZIP Code

Contact Phone: _____ E-Mail: _____

Section 3 ■ Applicant Information

☐ Same as Landowner (Check if YES, and continue with Section 4)

Full Name: _____

Last

First

M.I.

Mailing
Address:

Street

Apartment/Unit #

City

State

ZIP Code

Contact Phone: _____ E-Mail: _____

Section 4 ■ Site Information

Total Site Area	ft ²
Existing Impervious Area (Before Project)	ft ²
New Impervious Area (Impervious area added outside any existing impervious area)	ft ²
Redeveloped Impervious Area (Impervious area redeveloped inside original impervious area footprint)	ft ²
Removed Impervious Area (From inside original impervious area footprint)	ft ²
Net Impervious Area (After Project)	ft ²

Work to be performed by (if known): ☐ Same as Applicant (Check if YES) ☐ Same as Landowner (Check if YES)

Construction Contact: _____

Contact Phone: _____ E-Mail: _____

Stormwater Management Report/Plan to be attached.
*****Please note application cannot be processed without report/plan*****

Section 5 ▣ Fee

Permit Fee \$ 0.00

FEES RECEIVED

Office Use Only

Date _____

Amt _____

By _____

Section 6 ▣ Stormwater Management Requirements

- | | | | | | |
|--------------------------|--------------------------------|--------------------------|-----------------------|--------------------------|---------------------|
| ☐ | TSS Reduction: | ☐ | New Development (80%) | ☐ | Redevelopment (40%) |
| ☐ | Oil & Grease Removal | | | | |
| ☐ | Runoff Rate Control/Detention | | | | |
| ☐ | Infiltration | | | | |
| ☐ | Groundwater Recharge | | | | |
| ☐ | Thermal Control | | | | |
| ☐ | Maintenance Agreement Executed | | | | |

Construction Start Date _____

Estimated Project Completion Date _____

Section 7 ▣ Applicant Signature

I have reviewed and understand Chapter 105 of the La Crosse Ordinances regarding erosion control, and I shall implement the control plan for this project as approved by the city.

I further, in accordance with Chapter 105, grant the right-of-entry onto this property, as described above, to the designated personnel of the City of La Crosse for the purpose of inspecting and monitoring for compliance with the aforesaid ordinance.

Applicant Signature _____ Date of Application _____

****Applicant other than landowner requires a notarized statement authorizing the applicant to act as the landowner's agent—must be attached***

All of Lots 23 & 24, also part of Lot 25, Samuel T. Smith's Add.; Lot 8, Block 3, D.C. Evan's Add.; Vacated Forest Avenue, Vacated 14th Avenue N.; City of La Crosse, La Crosse County, WI 1270 La Crosse Street / 1400 La Crosse Street

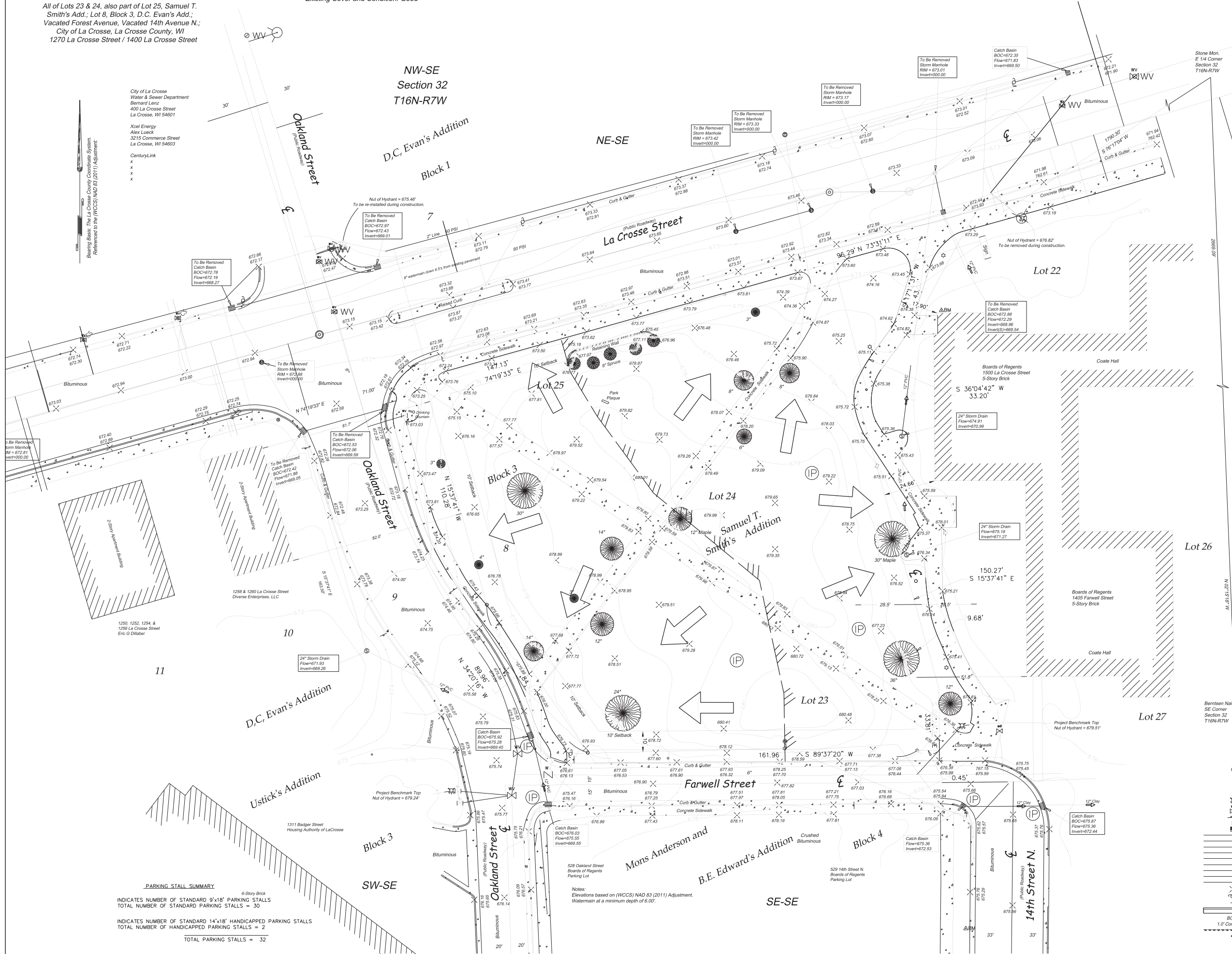
Predominant Soil Type: Urban Land, Valley Trains
Hydrologic Soil Group: D
Existing Cover and Condition: Good

City of La Crosse
Water & Sewer Department
Bernard Lenz
400 La Crosse Street
La Crosse, WI 54601

Xcel Energy
Alex Lueck
3215 Commerce Street
La Crosse, WI 54603

CenturyLink
x
x
x

Being Based: The La Crosse County Coordinate System.
Referenced to the (WCCS) NAD 83 (2011) Adjustment.



PARKING STALL SUMMARY

INDICATES NUMBER OF STANDARD 9'x18' PARKING STALLS
TOTAL NUMBER OF STANDARD PARKING STALLS = 30

INDICATES NUMBER OF STANDARD 14'x18' HANDICAPPED PARKING STALLS
TOTAL NUMBER OF HANDICAPPED PARKING STALLS = 2

TOTAL PARKING STALLS = 32

Drawn By: JH
Designed By: JM
Scale: 1"=20'

LA CROSSE FIRE STATION #2

PREPARED FOR:

WENDEL COMPANIES
BANBURY PLACE, BUILDING D04
800 WISCONSIN STREET, SUITE 202
EAU CLAIRE, WI 54703
(715) 832-4848

KNIGHT

Engineers & Architects

Knight E/A, Inc.
Phone (312) 577-3300
Fax (312) 577-3526
knigtea.com

SHEET NO.

OF 9

DATE: 08/25/2021
JOB NO. 7752.01

All of Lots 23 & 24, also part of Lot 25, Samuel T. Smith's Add.; Lot 8, Block 3, D.C. Evan's Add.; Vacated Forest Avenue, Vacated 14th Avenue N.; City of La Crosse, La Crosse County, WI 1270 La Crosse Street / 1400 La Crosse Street

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x
x
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x

Bearing Basis: The La Crosse County Coordinate System.
Referenced to the (WCCS) NAD 83 (2011) Adjustment.

Pollutant Loading Calculations:

	Runoff Volume (cu ft)	Percent Runoff Volume Reduction	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of all Lands Uses without Controls:	44245	-	100.9	278.8	-
Outfall Total with Controls:	30281	31.56%	86.99	164.5	41.90%
Annualized Total After Outfall Controls	30365			164.9	

Predominant Soil Type: Urban Land, Valley Trains
Hydrologic Soil Group: D
Existing Cover and Condition: Good

STORMWATER MANAGEMENT PLAN NOTES:

STORMWATER MANAGEMENT PLAN IS IN ACCORDANCE WITH CITY OF LA CROSSE CODE OF ORDINANCES CHAPTER 105, SECTION K, 'STORMWATER MANAGEMENT PLAN'

A) NAME, ADDRESS, AND TELEPHONE NUMBERS OF DESIGNEES:

- a. LANDOWNER:
i. CITY OF LA CROSSE FIRE DEPARTMENT
ii. 400 N LA CROSSE ST, LA CROSSE, WI 54601
iii. 608-789-7261
- b. DEVELOPER:
i. ANDREW KELKENBERG, WENDELL COMPANIES CONSTRUCTION MANAGER
ii. 375 ESSJAY RD, SUITE 200, WILLIAMSVILLE, NY 14221
iii. 716-688-0766
- c. PROJECT ENGINEER:
i. RYAN MCKANE, KNIGHT E/A
ii. 831 CRITTER COURT, SUITE 400, ONALASKA, WI 54650
iii. 608-519-1455
- d. PERSONS RESPONSIBLE FOR INSTALATION OF STORMWATER MANAGEMENT PRACTICES:
i. ANDREW KELKENBERG, WENDELL COMPANIES CONSTRUCTION MANAGER
ii. 375 ESSJAY RD, SUITE 200, WILLIAMSVILLE, NY 14221
iii. 716-688-0766
- e. PERSONS RESPONSIBLE FOR MAINTENANCE OF STORMWATER MANAGEMENT PRACTICES PRIOR TO THE TRANSFER:
i. KEN GILLIAM, LA CROSSE FIRE CHIEF
ii. 400 LA CROSSE ST, LA CROSSE, WI 54601
iii. 608-789-7261

B) CONTRACTOR IS TO PRESERVE NATURAL TOPOGRAPHY AND LAND COVER. ANY AREA DISTURBED SHALL BE VEGETATED TO A CONDITION AT OR BETTER THAN ITS ORIGINAL USE.

C) STORMWATER IS TO BE RESTRICTED IN THE PROPOSED CONDITION IN TWO DETENTION PONDS AT THE NORTHERN END OF THE PROPERTY. THE NORTHEAST POND IS TO CONTAIN A RESTRICTOR MANHOLE. PROPOSED CONDITIONS RESULTS IN A DECREASED OUTFLOW FROM PROPOSED. EXISTING 2 AND 10 YEAR RESULTS IN 2.24 AND 4.17 CFS WHILE PROPOSED OUTFLOW RESULTS IN 2.06 AND 3.97 CFS.

D) INSTALLATION SCHEDULE FOR STORMWATER MANAGEMENT PRACTICES:

- a. PLACEMENT OF INITIAL EROSION CONTROL DEVICES - APR 2022
b. INITIAL GRADING AND SITE DEMO - APR 2022
c. INSTALLATION OF CATCH BASIN AND STORM WATER PIPES - JUL 2022
d. FINAL GRADING FOR PONDS - AUG 2022
e. PLACEMENT OF FINAL LANDSCAPING ITEMS, TOPSOIL, SEED - SEP 2022

E) MAINTENANCE PLAN:
REGULAR INSPECTIONS AND ROUTINE MAINTENANCE OF GENERAL AREAS SHALL BE PERFORMED ON A MONTHLY OR AS-NEEDED BASIS. SPECIFIC ITEMS OF CONCERN INCLUDE:

- a. LITTER AND DEBRIS SHALL BE CONTROLLED
b. LANDSCAPED AREAS SHALL BE MAINTANCED WITH REGULAR MOWING AND RESTORED WITH APPROPRIATE SEEDING/VEGETATION AS NECESSARY
c. ACCUMULATED SEDIMENT SHALL BE DISPOSED OF PROPERLY, ALONG WITH ANY WASTES GENERATED DURING MAINTENANCE OPERATIONS
d. ROADS SHALL BE SWEEP, VACUUMED AND/OR WASHED ON A REGULAR BASIS
e. INSPECT OUTLET CONTROL RESTRICTOR AND REMOVE DEBRIS IF CLOGGED OR DISCHARGE REDUCED
f. REMOVE ACCUMULATED SEDIMENT AT OUTLET
g. SCOUR AND EROSION AT OUTLET, REPAIR AND RESEED
h. INSPECT ALL STORMWATER DETENTION FACILITIES TO ENSURE THAT THE CONSTRUCTED VOLUME FOR DEENTION IS MAINTAINED. NO SEDIMENT, TOPSOIL, OR OTHER DUMPING INTO THE FACILITY SHALL BE ALLOWED. SPECIFIC LOCATIONS IN THE STORMWATER MANAGEMENT SYSTEM, DESIGNED TO ACCUMULATE SEDIMENT, SHALL BE DREDGED AS NECESSARY TO PREVENT SEDIMENT FROM REACHING THE INVERT OF ANY GRAVITY OUTLET PIPE.

F) COST ESTIMATES FOR CONSTRUCTION, OPERATION, AND MAINTENANCE OF EACH STORMWATER MANAGEMENT PRACTICE:

- a. CONSTRUCTION COSTS FOR STORMWATER MANAGEMENT PRACTICES: \$50,000.00
b. OPERATIONAL COSTS: \$0.00
c. MAINTENANCE COSTS (ANNUAL CLEANING OF CATCH BASINS): \$500.00

Berntsen Nail
SE Corner
Section 32
T16N-R7W

- LEGEND
- Found 1" Iron Pipe (unless stated otherwise)
 - Set 3/4" x 20" Rebar (1.50 brln. ft.)
 - Found 3/4" Iron Bar
 - Found MAG nail
 - Set Drill Hole
 - Found County marker
 - Recorded dimensions
 - Communication Manhole
 - Sanitary Sewer Manhole
 - Storm Sewer Manhole
 - Storm Sewer Drain
 - Hydrant
 - Water Valve
 - Sign
 - Light Pole
 - Storm Water Inlet
 - Boundary of this survey
 - Centerline
 - Electric
 - Gas Line
 - Communication
 - Sanitary Sewer
 - Storm Sewer
 - Water Line
 - Overhead Wires
 - Spot Elevation
 - Wood Utility Pole with street lamp
 - Guy Wire Anchor
 - Concrete Curb & Gutter
 - BOC = Back of Curb
 - 1'0" Contour Interval
 - Drainage Boundary
 - Sheet Flow Direction
 - Impervious Areas

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TOTAL PARKING STALLS = 32

Notes:
Elevations based on (WCCS) NAD 83 (2011) Adjustment.
Watermain at a minimum depth of 6.00'.

KNIGHT

Engineers & Architects

Knight E/A, Inc.
221 N. LaSalle Street, Suite 300
Chicago, Illinois 60601-1211
Phone (312) 577-3300
Fax (312) 577-3526
knightsa.com

SHEET NO.

OF 9

DATE: 08/25/2021
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LA CROSSE FIRE STATION #2

PREPARED FOR:

WENDEL COMPANIES
BANBURY PLACE, BUILDING D04
800 WISCONSIN STREET, SUITE 202
EAU CLAIRE, WI 54603
(715) 832-4848

Drawn By: JH

Designed By: JHM

Scale: 1"=20'

STORMWATER POST-DEVELOPMENT

REVISIONS

Data file name: W:\7752_01\Coordination\Permits\Stormwater Permit\WinSLAMM\7752.01 winslamm - Copy.mdb

WinSLAMM Version 10.4.1

Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN

Particulate Solids Concentration file name: C:\WinSLAMM Files\lv10.1 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:

Seed for random number generator: -42

Study period starting date: 01/01/81 Study period ending date: 12/31/81

Start of Winter Season: 12/02 End of Winter Season: 03/12

Date: 10-12-2021 Time: 15:05:48

Site information:

LU# 1 - Commercial: Commercial 1 Total area (ac): 0.980

1 - Roofs 1: 0.140 ac. Pitched Connected PSD File: C:\WinSLAMM Files\NURP.cpz WP-CP#5

2 - Roofs 2: 0.140 ac. Pitched Disconnected Normal Sandy PSD File: C:\WinSLAMM Files\NURP.cpz

13 - Paved Parking 1: 0.330 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz CB-CP#3

14 - Paved Parking 2: 0.070 ac. Connected PSD File: C:\WinSLAMM Files\NURP.cpz CB-CP#4

45 - Large Landscaped Areas 1: 0.300 ac. Normal Sandy PSD File: C:\WinSLAMM Files\NURP.cpz

Control Practice 1: Wet Detention Pond CP# 1 (DS) - DS Wet Pond # 1

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: Broad Crested Weir

1. Weir crest length (ft): 10

2. Weir crest width (ft): 2

3. Height from datum to bottom of weir opening: 4.68

Outlet type: Seepage field

1. Infiltration rate (inches/hr): 0.4

2. Width of device (ft): 10

3. Length of device (ft): 12

4. Invert elevation of seepage basin inlet above datum (ft): 1.2

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	0.50	0.0040	0.00	0.00
2	1.00	0.0055	0.40	3.97
3	1.50	0.0075	0.00	0.00
4	2.00	0.0090	0.00	0.00
5	2.50	0.0180	0.00	0.00
6	3.50	0.0220	0.00	0.00
7	4.50	0.0350	0.00	0.00
8	5.00	0.0500	0.00	0.00

Control Practice 2: Catchbasin Cleaning CP# 1 (DS) - DS Catchbasins # 3

1. Fraction of area served by catchbasins (acres) = 1.00

2. Number of catchbasins = 1

3. Average sump depth below catchbasin outlet invert (feet) = 1.5

4. Depth of sediment in catchbasin sump at beginning of study period (ft) = 0

5. Typical outlet pipe diameter (ft) = 1

6. Typical outlet pipe Mannings n = 0.013

7. Typical outlet pipe slope (ft/ft) = 0.02

8. Typical catchbasin sump surface area (square feet) = 19

9. Total catchbasin depth (feet) = 6

10. Inflow hydrograph peak to average flow ratio = 3.8

11. Leakage rate through sump bottom (in/hr) = 0

12. Catchbasin Critical Particle Size File Name:

13. Catchbasin cleaning frequency: 4

Control Practice 3: Catchbasin Cleaning CP# 2 (SA) - SA Device, LU# 1, SA# 13

1. Fraction of area served by catchbasins (acres) = 1.00

2. Number of catchbasins = 3

3. Average sump depth below catchbasin outlet invert (feet) = 1.5

4. Depth of sediment in catchbasin sump at beginning of study period (ft) = 0

5. Typical outlet pipe diameter (ft) = 1

6. Typical outlet pipe Mannings n = 0.013

7. Typical outlet pipe slope (ft/ft) = 0.02

8. Typical catchbasin sump surface area (square feet) = 12

9. Total catchbasin depth (feet) = 3.5

10. Inflow hydrograph peak to average flow ratio = 3.8

11. Leakage rate through sump bottom (in/hr) = 0

12. Catchbasin Critical Particle Size File Name: Not needed - calculated by program

Control Practice 4: Catchbasin Cleaning CP# 3 (SA) - SA Device, LU# 1 ,SA# 14

1. Fraction of area served by catchbasins (acres) = 1.00
2. Number of catchbasins = 1
3. Average sump depth below catchbasin outlet invert (feet) = 1.5
4. Depth of sediment in catchbasin sump at beginning of study period (ft) = 0
5. Typical outlet pipe diameter (ft) = 1
6. Typical outlet pipe Mannings n = 0.013
7. Typical outlet pipe slope (ft/ft) = 0.02
8. Typical catchbasin sump surface area (square feet) = 12
9. Total catchbasin depth (feet) = 5
10. Inflow hydrograph peak to average flow ratio = 3.8
11. Leakage rate through sump bottom (in/hr) = 0
12. Catchbasin Critical Particle Size File Name: Not needed - calculated by program

Control Practice 5: Wet Detention Pond CP# 2 (SA) - SA Device, LU# 1 ,SA# 1

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: Broad Crested Weir

1. Weir crest length (ft): 10
2. Weir crest width (ft): 2
3. Height from datum to bottom of weir opening: 2.25

Outlet type: Seepage field

1. Infiltration rate (inches/hr): 0.4
2. Width of device (ft): 3
3. Length of device (ft): 25
4. Invert elevation of seepage basin inlet above datum (ft): 0.5

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	0.50	0.0010	0.40	3.80
2	1.00	0.0015	0.00	0.00
3	1.50	0.0020	0.00	0.00
4	2.00	0.0025	0.00	0.00
5	2.50	0.0030	0.00	0.00