

Permeable Pavement for Storm Water Management

Regulatory Overview

Pete Wood, P.E.
DNR Sturtevant

Permeable
Pavement
Technical
Standard
(1008)



NR216

NR151

Construction Site Storm Water

New Development

80% TSS

Peak Discharge

Infiltration

Redevelopment

40% TSS

Transportation



Municipal Storm Water (MS4)

Existing Urban Area

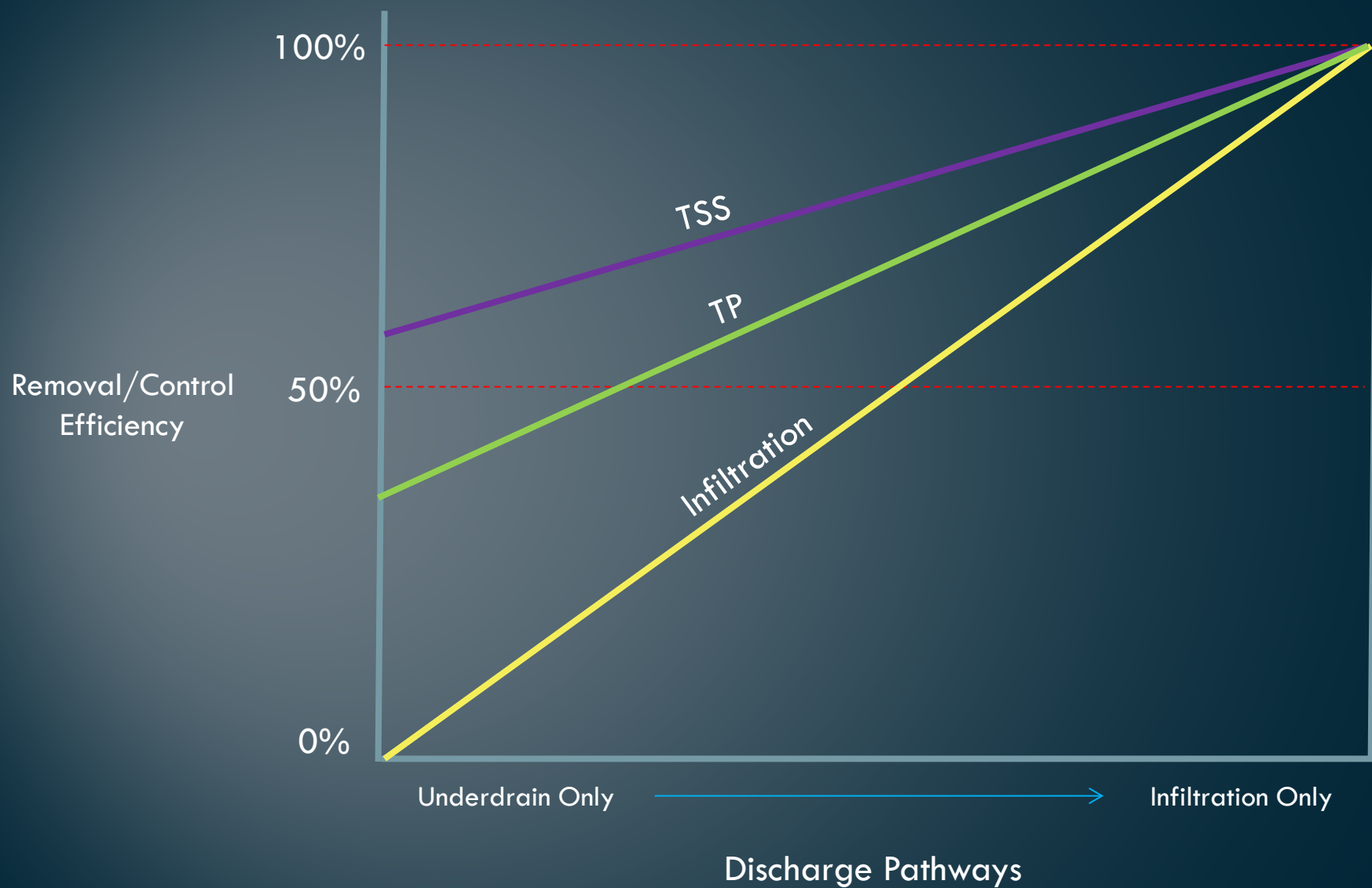
20% TSS

TMDLs

TSS

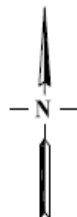
TP





Freistadt Road

S87°36'41"W



PROP. MONUMENT SIGN

STA. 134+00
45 L.F. - 15" HOPE CULVERT
W/ STEEL APRON ENDWALLS
15" INL. I.E. = 665.55
15" DISCH. I.E. = 665.05

Oak Shore Lane

BEGIN ROADWAY
STA. 9+91.50
(EL. 669.2)
(P/L 10+00)

PROPOSED PERMEABLE
PAVEMENT SIGHT/INSPECTION
WELL
FINAL LOCATION(S) TO BE
DETERMINED BY INSTALLATION
CONTRACTOR.

PROPOSED 30'-FT. EASEMENT - CITY OF MEQUON

PROPOSED INFILTRATION BASIN

PROPOSED NATURAL AREA

LEVEL SPREADER

CLEWOUT (SEE DETAIL)
6" U.D.E. = 664.0

INFILTRATION BASIN
BOTTOM = 669.00

INSTALL 18" NYLOPLAST BASIN - PUMP WELL
W/ 12" SUMP
4" PERFORATED PVC UNDERDRAIN (100 L.F.)
4" CONTINUOUS PVC PIPE (45 L.F.)
S = 0.010 V/V
6" W = 660.30
COVER (SOLID) = 667.25

EMERGENCY SPILLWAY
ELEV. = 666.50

PROPOSED HAMMER-HEAD
ROAD TERMINUS

STA. 16+38
40 L.F. - 15" HOPE CULVERT
W/ STEEL APRON ENDWALLS
15" INL. I.E. = 664.55
15" DISCH. I.E. = 664.05

DIGGERS HOTLINE

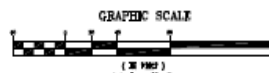
Toll Free (800) 342-9811
Milwaukee Area (414) 259-1181
Hearing Impaired TDD (800) 642-2286
www.DiggersHotline.com

CERTAIN UNDERGROUND STRUCTURES HAVE BEEN
LOCATED ON THE DRAWING. THESE LOCATIONS SHALL
NOT BE TAKEN AS CORRELATING WITH EXISTING TO THE
SATISFACTION OF THE CONTRACTOR OF ALL UNDERGROUND
STRUCTURES. WHETHER SHOWN ON THE DRAWING OR NOT,
SHALL BE ASSUMED AS A CONDITION OF THE CONTRACT.

NOTES
TEMPORARY SPILL, TRUCKWASH SHALL BE PLACED AT THE CORNER
OF THE CONTRACTOR WITH THE EXISTING APPROVAL. IT SHALL BE
LOCATED TO CLEAR THE DRIVE AND NOT BE PLACED IN THE
DRIVE OR UNDERGROUND STRUCTURES. UNLESS APPROVED BY THE
ADJUTANT GENERAL. UNLESS APPROVED BY THE ADJUTANT
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GENERAL. UNLESS APPROVED BY THE ADJUTANT GENERAL.
THE ADJUTANT GENERAL SHALL BE ADVISED OF THE LOCATION
AND MAKE IT.

GRASS FILTER STRIP
(EXISTING VEGETATION)
(MIN. 40' LENGTH, MAX. 80'
LENGTH)
NOTE:
EXISTING AREA SHALL NOT BE
DISTURBED

PRELIMINARY



Legend

- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR

Milwaukee River



REVISIONS					DESIGNED	DRAWN	CHECKED	SHEET
NO.	DATE	BY	REASON	APPD.	J.W.H.	J.A.W.	J.G.S.	1

CITY OF MEQUON		
DEAUWEE COUNTY	WISCONSIN	
River Club Estates		
Site Grading Plan		
DATE	SCALE	PROJECT
8-12-2014	1"=40'	LS-3218
APPROVED		
		SHEET 1 OF 8

NSE NORTH SHORE ENGINEERING, INC.
Consulting Engineers & Land Surveyors
11400 N. Port Washington Rd., Mequon, Wisconsin, 53090
(262) 541-0400 • FAX: (262) 541-0337

-001

1/16-01-201-001
313.3 W
0.210.3 AC±

LEGAL DESCRIPTION:
LOT 1, CERTIFIED SURVEY MAP NO. 8804, BEING A REVISION OF LOTS 1 & 2 OF CERTIFIED SURVEY MAP NO. 8587
AND BEING A PART OF THE SW 1/4 OF THE NW 1/4 OF SECTION 1 AND SE 1/4 OF THE NE 1/4 OF SECTION 2, TOWN 6
NORTH, RANGE 18 EAST, CITY OF WAUKESHA, WAUKESHA COUNTY, WISCONSIN.

LAKEWOOD
P.O. BOX 100
LAKEWOOD, ILL. 60450
TEL. 414-455-1000

UNDER
DISCHARGE
WITH ST
& SS CR

SHRUB PLANTING

18" CONCRETE CURB & GUTTER

POROUS PAVEMENT DETAIL

GENERAL CONSTRUCTION NOTES

[illegible]

SITE DATA:
TOTAL AREA OF PROPERTY ■ 1.39 Acres
TOTAL AREA OF PAVED AREA ■ 54,560 SF
TOTAL AREA OF PROPOSED BIWAY ■ 2,940 SF (5.2%)
TOTAL AREA OF PROPOSED PAVEMENT ■ 8,630 SF

DRAINAGE AREA DESIGN DATA:
PERMEABLE PAVEMENT AREA ■ 12,000 SF
MAXIMUM CONVEYENTIAL PAVEMENT AREA ■ 12,000/2 = 60,000 SF
CONVEYENTIAL PAVEMENT AREA PROPOSED (SF) ■ 14,880 + 13,800 + 42,500 = 71,180 ACFT

NOTE A:
WDMR HAS DETERMINED THE SITE TO BE A REDEVELOPMENT OF THE FORMER CITY LAND AND THEREFORE A MINOR ENVIRONMENTAL SETBACK DOES NOT APPLY TO THIS PROPERTY.

REMARKS: HYDRANT "OPEN" ON HYDRANT FLANGE AT SOUTHERN CORNER EUREKA COURT & ARCADEAN AVENUE, ELEVATION 58.00 (CITY OF WINDSOR DATA).

SCALE: 1" = 20'

NOTE: PROPOSED 4" DRAINTILE SHALL BE CONSTRUCTED WITH CLEANOUTS AT MAX 100' INTERVALS & BENDS

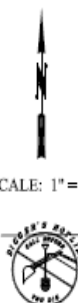
REVISIONS	
DATE	DESC.
07-08-14	WORK

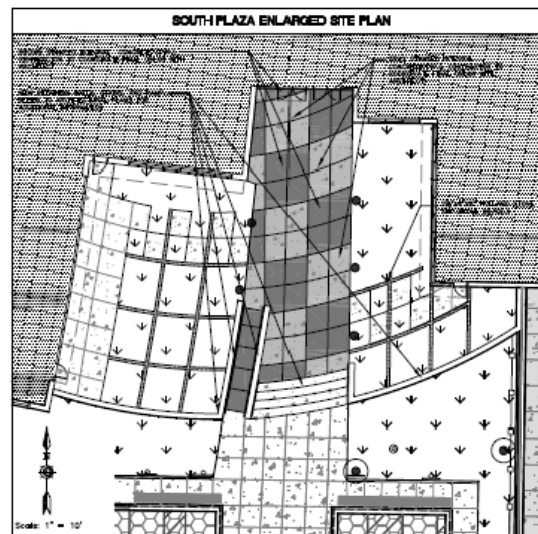
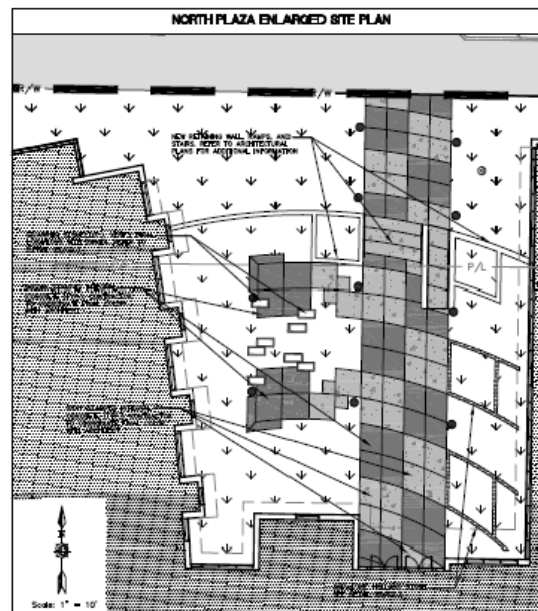
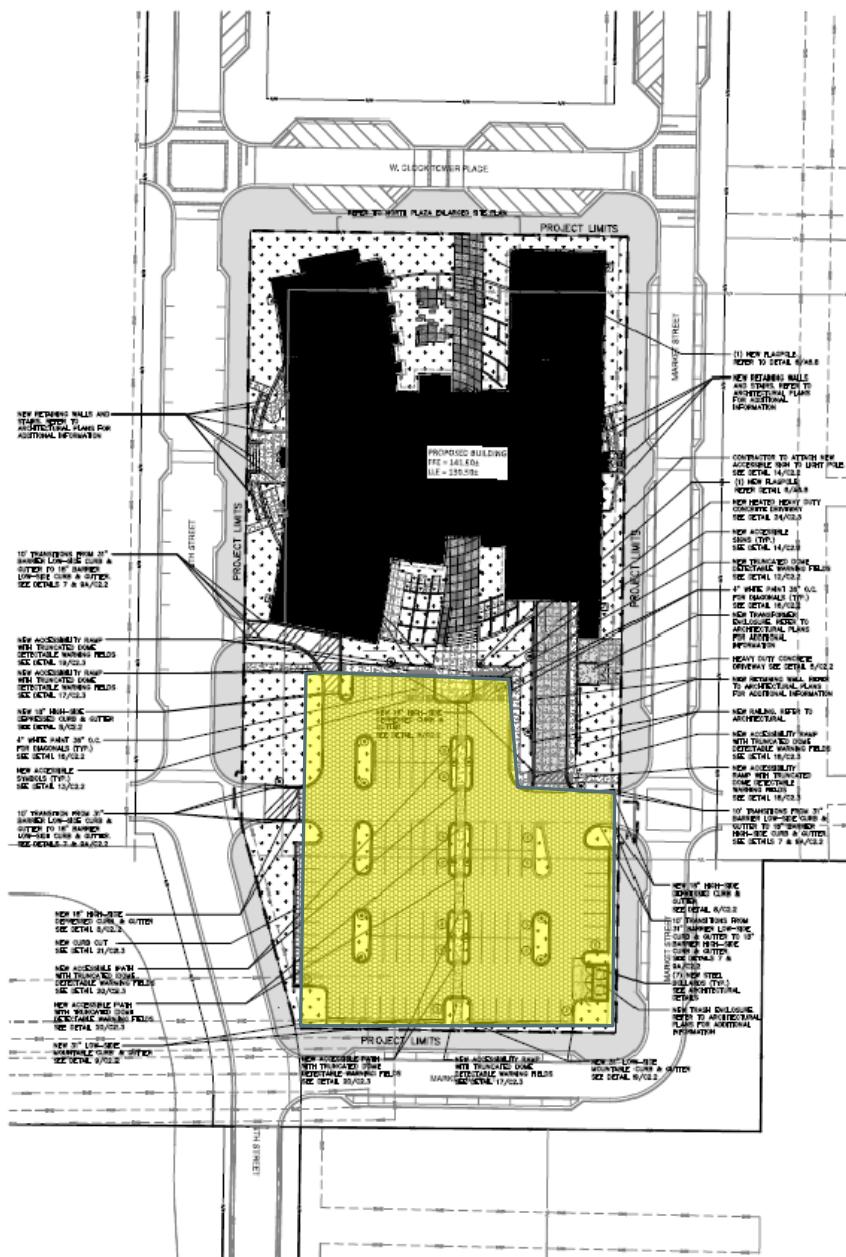
CLIPPA, INC./BENSON CONSULTANTS, LLC
875 N. LAMAR BLVD. SUITE 200 • TAMPA, FL 33606
CLIPPA Engineering Consultants, LLC • 7901 Bay Parkway • Suite 100 • Inverness, FL 33830
Phone 352.734.0300 • Fax 352.734.0301 • info@clippa.com • www.clippa.com

EUGENE COURT STORAGE AREA
Wausau, Wisconsin

PAVING & DRAINAGE PLAN

SCALE: 1"=20'	JOB NO.1	DATE:08-11-14
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HATCH LEGEND

AREAS DEFINED BY CONSTRUCTION LINE
SPECIFICALLY CALL OUT ON THE
LANDSCAPE PLANS TO BE RESTRICTED WITH
CONCRETE SHALL BE SHOWN, AND
MAJOR VIEWS (SEE SPECIFICATIONS FOR
CONCRETE) SHALL BE SHOWN

NEW ASPHALT/CONCRETE (HARD SURF)
SEE DETAIL 1/10/2.3

NEW ASPHALT/CONCRETE (HEAVY SURF)
SEE DETAIL 1/10/2.3

NEW PERMEABLE PAVEMENT
SEE DETAIL 1/10/2.1

STREETCROSSING AREA BETWEEN BACK OF
CURB AND FRONT-OF-WAY LINE BY OTHERS

NEW CONCRETE SLAB
SEE DETAIL 5/1 & 5/1.2

NEW HEAVY HATCH CONCRETE SLAB
SEE DETAIL 5/1 & 5/1.2 (ALL UNDERGROUND
PAVED DRIVEWAYS, TUNNELS, & TRAIL ENCLOSURES)

GRAY COLORED CONCRETE SLAB
SEE DETAIL 1/10/2.3

PLAIN CONCRETE
PLAIN COLORED CONCRETE SLAB
SEE DETAIL 5/1/2.3

NATURALLY QUARRIED STONE
SLAB DETAIL 2/10/2.3

BROWN HATCH CONCRETE
AND BRICKS SEE DETAIL 10/2.3

NEW 18" 180-180° BARRERS
SEE DETAIL 8/1/3.3 (UNLESS OTHERWISE NOTED)

NEW 18" 135-135° BARRERS
CONCRETE CURB & GUTTER
SEE DETAIL 7/1 & 8/1/3.3 (UNLESS OTHERWISE NOTED)

GENERAL NOTE

1. ALL THROUGHOUT THESE VESTIBULE DRAWINGS SHALL BE PROVIDED BY OWNER AND INSTALLED BY CONTRACTOR. ALL OTHERS SHALL BE LANDSCAPE PLANS FOR LOCATIONS OF INTEREST.

- Use WinSLAMM v10.1 for anticipated pavement life to check minimum surface infiltration rate (see tech note)
- Establish subsoil infiltration rates per Tech Standard 1002
- Check effective infiltration area criteria for run-on ratio $> 3:1$
- Check drain down time for aggregate storage reservoir (72-hr maximum)