



Village of Menomonee Falls
W156 N8480 Pilgrim Road
Menomonee Falls, WI 53051-3140
Telephone: (262) 532-4200

STORMWATER MANAGEMENT FACILITIES OPERATION AND INSPECTION REPORT

Quarter Section 08 SE Name of Business/Subdivision FIRE STATION NO.1
Property Tax ID Number 0032997002 Address of Property N84W18989 MENOMONEE AVE

Dry Pond	
Wet Pond	X
Other	

Description: SWP08S002
P-0152

Location Of
Pond

S OF MENOMONEE AVE
W OF MAIN ST (CTH 74/CTH F)

Year Pond Constructed 2014

Year of Last Certification N/A

Compliance Verification	Design (Non-AsBuilt)	Actual (GPS)	Compliant Yes	Non-Compliant No	Comments (Condition of Structure)
Primary Outlet Pipe					
Opening Diameter (inches)	12"	12"	Y	-	RCP
Upstream Invert (ST014022)	866.00	866.01	Y	-	
Downstream Invert (ST014023)	861.65	861.73	Y	-	
Length (feet)	60.0 FT	58.9 FT	Y	-	
Slope (%)	7.250%	7.267%	Y	-	ELEVATIONS TO VARY SLIGHTLY FROM YEAR TO YEAR DUE TO GPS TECHNOLOGY
Secondary Outlet Pipe					
Opening Diameter (inches)			-	-	
Upstream Invert			-	-	
Downstream Invert			-	-	
Length (feet)			-	-	
Slope (%)			-	-	
Riser	<u>N/A</u>		Riser Material		
Opening Diameter (inches)	24"	24"	Y	-	REINFORCED CONCRETE
Elevation	868.60	868.69	Y	-	
Upper Discharge Control	<u>N/A</u>				
Opening Diameter (inches)			-	-	
Elevation			-	-	

Compliance Verification	Design	Actual	Compliant		Comments
			Yes	No	
<i>Lower Discharge Control</i>					
Opening Diameter (inches)	3.5"	4"	Y	-	
Elevation	866.00	866.05	Y	-	
<i>Other (Description)</i>	N/A				
Opening Type and Size (inches)			-	-	
Elevation			-	-	
<i>Emergency Spillway</i>					
Elevation	868.66	868.72	Y	-	
Length of spillway (feet)	13.0 FT	13.6 FT	Y	-	NE CORNER OF POND, S OF ST014022
<i>Embankment</i>	Present Yes No		Comments/Maintenance Requirements		
Unauthorized Plantings, trees, or woody vegetation	-	N			
Animal burrows or slope erosion or hole	Y	-	SLOPE EROSION AT SE & NW CORNERS OF POND		
<i>Storm Sewer Outfalls</i>	Type & Size		Location		Comments
Outfall 1 (ST014014)	12" RCP		SE CORNER		WESTERLY – RCP GOOD COND.
Outfall 2 (ST014016)	12" RCP		SE CORNER		EASTERLY – RCP GOOD COND.
Outfall 3 (ST014021)	12" RCP		NW CORNER		GOOD COND.
Outfall 4	-		-		
Outfall 5	-		-		-
<i>Storage Properties</i>	Design (NON-ASBUILT)	Actual (GPS)	Compliant Yes No	Not Applicable	Equipment Used
Normal Water Elevation (Wet Ponds)	866.00	866.01	Y -		GPS EQUIPMENT: SOKKIA GSR2700ISX & CARLSON SURVEYOR+ WITH SURV CE v1.7 2015 HAS BEEN A DRY YEAR TO DATE
Design High Water Elevation	868.66	868.72	Y -		
Area at Normal Water Elevation (Ac) (Wet Ponds)	0.176 AC	0.162 AC	Y -		
Area at Design High Water Elevation (Ac)	0.495 AC	0.482 AC	Y -		
Active Storage Available (Ac-Ft)*	1.321 ACFT	1.287 ACFT	Y -		
Lowest Elevation at Top of Embankment (If Applicable)	868.66	868.72	Y -		
Average Elevation at Top of Embankment (If Applicable)	869.65	869.68	Y -		
Maximum Bottom Elevation	-	-	- -		
Average Pond Bottom Elevation	-	-	- -		
Pond Bottom Area (Ac)	-	-	- -		
Maximum Pond Depth	-	-	- -		NO MEASUREMENTS TAKEN OF POND BOTTOM
Average Pond Depth	-	-	- -		
Average Permanent Pool Depth (Wet Ponds)	-	-	- -	N/A	

*To Determine Active Storage $V = ((H/3)(A_1 + A_2 + ((A_1 + A_2)^{(1/2)})))$

Wet Ponds Use $H = \text{Height of Section}$, $A_1 = \text{area at normal water elevation}$, $A_2 = \text{area at top section}$

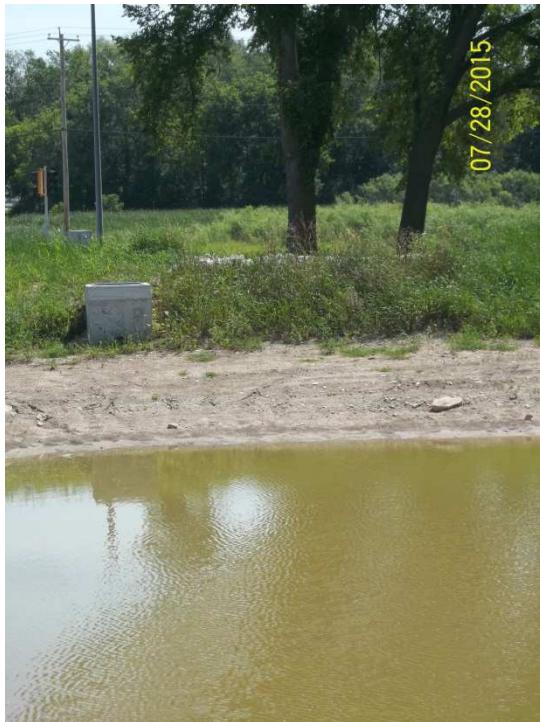
Dry Ponds Use $H = \text{Height of Section}$, $A_1 = \text{pond bottom area}$, $A_2 = \text{area at top section}$

Fire Station No.1 – SWP08S002

Overview



Storm Sewer Inlet ST014022



Storm Sewer Outlet ST014023



Fire Station No.1 – SWP08S002

Storm Sewer Outlets ST014014 (Right) and ST014016 (Left)



Storm Outlet ST014021



Fire Station No.1 – SWP08S002

Storm Overflow Structure ST014022

- 4" Diameter Lower Discharge Control
- 22"x22" Top Opening
- 12" RCP to ST014023



Emergency Spillway

At NE Corner of Pond

Fire Station No.1 – SWP08S002

Repairs Needed (7/2015)

Slope Erosion/Sediment Deposit in Pond

NW Corner



SE Corner



Sketch Outlet

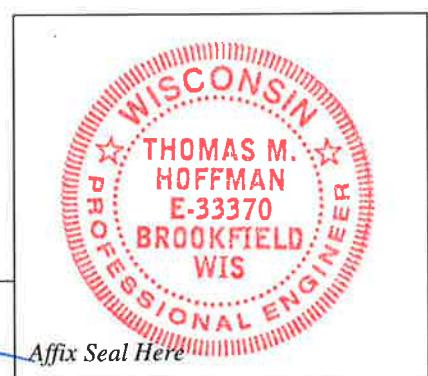
Place Photograph of Pond

Place Photograph of Pond

Inspection Firm:	<u>VILLAGE OF MENOMONEE FALLS</u>	Inspector Name :	<u>CHRISTOPHER M GARIEPY</u>
Phone Number:	<u>262-532-4411</u>	Inspection Date:	<u>7/29/2015</u>
Address:	<u>W156N8480 PILGRIM RD</u>		
	<u>MENOMONEE FALLS, WI</u>		
	<u>53051</u>		

Certifying
Professional Name: THOMAS M. HOFFMAN, P.E.
Phone Number: 262-532-4415

Date:	Signature:
<u>2/26/16</u>	<u></u>



Affix Seal Here

SWP08S002
Fire Station No.1 - MNFV0032997002
2015 Pond Inspection 072915 CMG



0.765 15 22.5 30
 Feet
 1 inch = 30 feet

MNFV0032998
 RENU PAVEMENT LLC
 N84W19019 MENOMONEE AVE

SWP08S002

MNFV0032997002
 VILLAGE OF MENOMONEE FALLS
 N84W18989 MENOMONEE AVE

SEPTIC
 -2.3FT 876.69 876.49 876.08
 SEPTIC 876.63 876.47 876.32
 SEPTIC 876.76 876.64 876.5844
 SLAT -11.0FT 877.43
 5FT W OF SAN CO
 877.43

SEPTIC COVER 30IN
 875.78 875.35
 SEPTIC 876.48 876.07
 SLAT -8.3FT 876.58
 SLAT -6.5FT 876.43
 WELL PIPE 875.94
 876.48 876.07
 876.43
 876.07
 875.94

RCP 12IN 869.93 ST014025

ST014013

ST014014

ST014015

ST014016

ST014017

ST014018

ST014019

ST014020

ST014021

ST014022

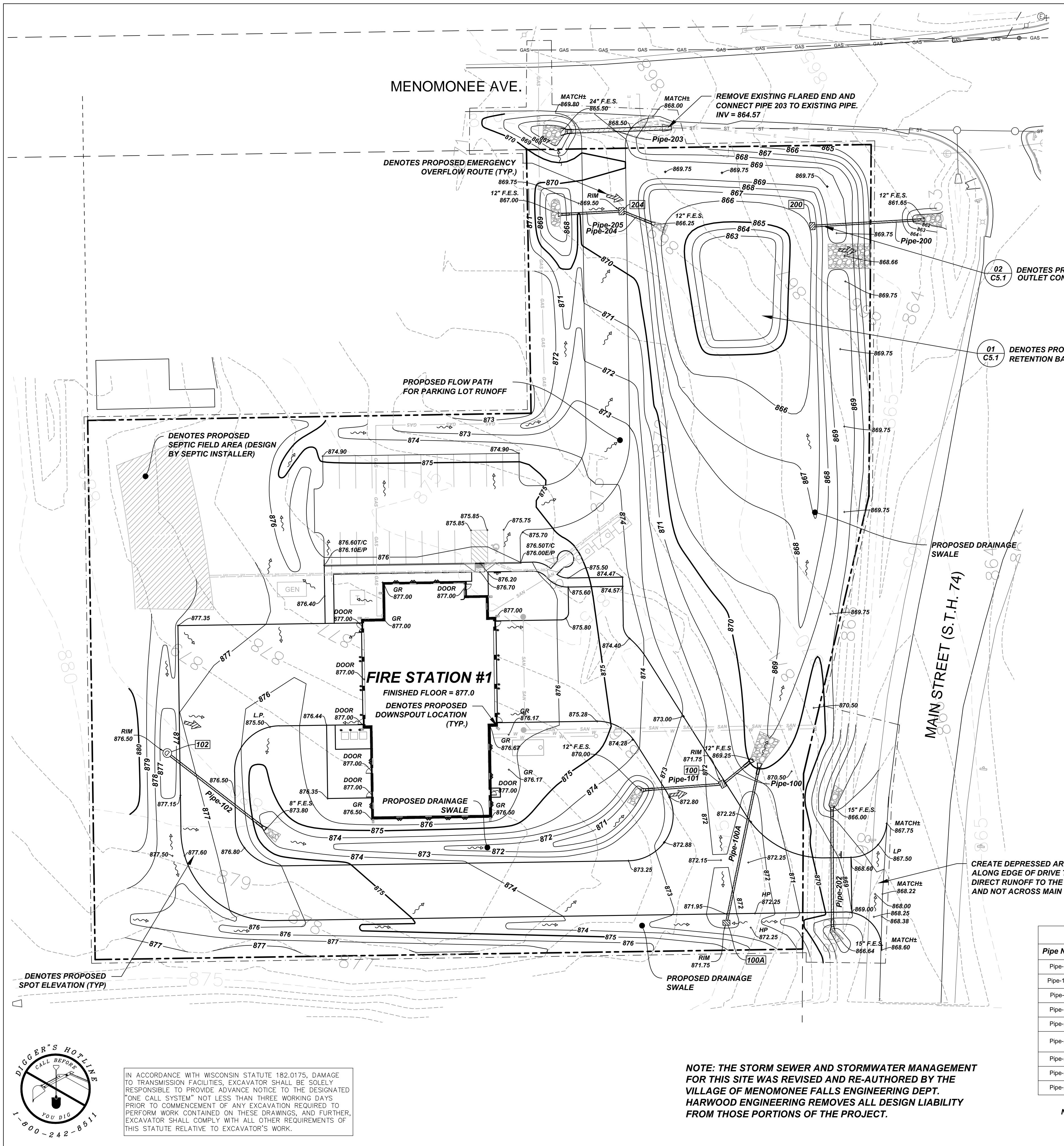
ST014023

ST014024

ST013569

ST013570

CALVARY BAPTIST CHURCH INC OF MENOMONEE FALLS WI
 N84W19049 MENOMONEE AVE



Storm Structure Table	
#	Structure Details
100	2' x 3' CATCH BASIN R3067-C, TYPE C GRATE RIM = 871.75 Pipe-101 = 869.50 Pipe-100 = 869.50
100A	2' x 3' CATCH BASIN R3067-C, TYPE L GRATE RIM = 871.75 Pipe-100A = 869.75
102	CATCH BASIN (3' DIA) RIM = 876.50 Pipe-102 = 874.13
200	OUTLET CONTROL STRUCTURE (SEE DETAIL) RIM = 868.60 Pipe-200 = 866.00
204	2' x 3' CATCH BASIN R3067-C, TYPE L GRATE RIM = 869.50 Pipe-204 = 866.54 Pipe-205 = 866.54

Pipe Name	Size	Material	Length	Slope	Description
Pipe-100	12	RCP	19	1.31%	W/ FLARED END SECTION
Pipe-100A	12	RCP	87	0.57%	
Pipe-101	12	RCP	43	1.18%	W/ FLARED END SECTION
Pipe-102	12	RCP	66	0.50%	W/ FLARED END SECTION
Pipe-200	12	RCP	60	7.29%	W/ F.E.S.
Pipe-202	15	RCP	64	1.00%	W/ FLARED END SECTION BOTH ENDS
Pipe-203	24	RCP	57	1.62%	EXTEND EXISTING PIPE
Pipe-204	12	RCP	18	1.64%	
Pipe-205	12	RCP	33	1.40%	

NOTE: ALL RCP PIPE SHALL BE CLASS IV MINIMUM.

GENERAL NOTES AND SPECIFICATIONS

- THE EXISTING SITE INFORMATION ON THIS PLAN WAS TAKEN FROM A SITE SURVEY PROVIDED BY GAI CONSULTANTS, INC. THE ENGINEER MAKES NO WARRANTY OR REPRESENTATION WITH REFERENCE TO THE ACCURACY AND COMPLETENESS OF THE EXISTING CONDITIONS INDICATED OR NOT INDICATED ON THE ENGINEERING PLANS PROVIDED. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING SITE CONDITIONS INCLUDING UNDERGROUND UTILITIES, UNDERGROUND UTILITY ELEVATIONS, BUILDING SETBACKS AND EXISTING BUILDING LOCATIONS. THE CONTRACTOR SHALL INFORM THE OWNER AND ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCING WITH WORK. QUESTIONS REGARDING THE EXISTING SURVEY SHALL BE DIRECTED TO THE PARTIES LISTED ABOVE.
- BEFORE PROCEEDING WITH ANY UTILITY CONSTRUCTION, CONTRACTOR SHALL EXCAVATE EACH EXISTING LATERAL TO BE CONNECTED TO (VERIFYING ELEVATION, LOCATION AND SIZE). SHOULD THE EXISTING UTILITY NOT BE AS INDICATED ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY FOR EVALUATION.
- ALL UTILITY CONSTRUCTION SHALL ADHERE TO THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN (2003), AS WELL AS, THE VILLAGE OF MENOMONEE FALLS CONSTRUCTION STANDARDS AND THE DEPT. OF SAFETY AND PROFESSIONAL SERVICES SEC. 382-387.
- ALL UTILITY PERMITS SHALL BE RECEIVED FROM THE VILLAGE OF MENOMONEE FALLS PRIOR TO THE START OF CONSTRUCTION.
- NOTIFY THE PUBLIC WORKS INSPECTION DEPT. AT LEAST 48 HOURS BEFORE STARTING CONSTRUCTION.
- BACKFILL REQUIREMENTS AND ROADWAY/SIDEWALK RESTORATION SHALL ADHERE TO LOCAL STANDARD (GRANULAR BACKFILL UNDER OR WITHIN 12" OF CURB, SIDEWALK, OR PAVEMENT SPOIL MAY BE USED ELSEWHERE. SLURRY BACKFILL SHALL BE REQUIRED IN PUBLIC ROADWAYS.)
- ALL BUILDING UTILITIES SHALL BE VERIFIED WITH THE ARCHITECTURAL PLANS PRIOR TO CONSTRUCTION.
- ALL PROPOSED WATERMAIN SHALL BE PVC SDR 18, CLASS 150, AWWA C900 WITH ELASTOMERIC JOINTS. (SDR 14 FOR FIRE SERVICE)
- PROPOSED SANITARY SEWER PIPE SHALL BE PVC, ASTM D-3034, SDR 35 WITH RUBBER GASKETED JOINTS CONFORMING TO ASTM D-3212.
- PROPOSED STORM SEWER SHALL BE PVC, ASTM D-3034, SDR 35 WITH RUBBER ELASTOMERIC JOINTS CONFORMING TO ASTM D-3212 (UNLESS OTHERWISE NOTED).
- UTILITY TRENCHES SHALL BE MECHANICALLY COMPACTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.
- SILT FENCE AND ALL OTHER EROSION CONTROL METHODS SHALL BE INSTALLED PRIOR TO COMMENCEMENT OF CONSTRUCTION. ALSO, CONTRACTOR IS RESPONSIBLE FOR REMOVING EROSION CONTROL METHODS ONCE THE SITE IS STABILIZED.
- THE PROPOSED SITE LOCATION AND SURROUNDING STREETS SHALL BE KEPT DEBRIS FREE. SWEEP STREETS AS NEEDED TO MAINTAIN CLEAN STREETS.
- ALL EXCAVATED OR STRIPPED MATERIALS NOT BEING REPLACED IN UTILITY TRENCHES OR BEING USED FOR FILL SHALL BE REMOVED FROM THE SITE, UNLESS OTHERWISE DIRECTED BY THE OWNER.
- ALL DISTURBED GRASS AREAS SHALL BE STABILIZED (PER DNR TECHNICAL STANDARDS) WITHIN 7 DAYS OF COMPLETION. DISTURBED GRASS AREAS SHALL BE TOPSOILED (6"), RESEDED AND STABILIZED. AREAS WITH A SLOPE OF 3H:1V OR STEEPER SHALL BE COVERED WITH A CLASS 1 - TYPE A EROSION FABRIC. (SEE SPECIFICATIONS)
- SEE ARCHITECTURAL PLANS FOR EXACT BUILDING & FOUNDATION DETAILS AND ORIENTATION.
- ALL ON-SITE CONCRETE CURB AND GUTTER SHALL BE 18" WIDE VERTICAL FACE, UNLESS OTHERWISE NOTED. REVERSE OR REGULAR STYLE CURB DENOTED ON PLANS.
- ALL CURB ELEVATIONS ARE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED. SEE CURB DETAIL FOR TOP OF CURB ELEVATIONS.
- ALL CURB RADII ARE MEASURED TO THE FACE OF CURB UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL MATCH PLACEMENT CONCRETE CURB AND GUTTER, SIDEWALK AND PAVEMENT TO EXISTING IN ELEVATION AND ALIGNMENT.
- REMOVAL OF CURB AND GUTTER, SIDEWALK AND PAVEMENT SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE WISCONSIN D.O.T.
- ALL CONCRETE FOR CURB AND GUTTER, ROADWAY AND SIDEWALKS SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR READY MIXED CONCRETE. MINIMUM 28 DAY COMPRESSIVE STRENGTH TEST SHALL EQUAL 4000 PSI.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL PROPERTY CORNERS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING UTILITIES OR SITE IMPROVEMENTS. CONTRACTOR SHALL DOCUMENT ALL EXISTING DAMAGE PRIOR TO START OF CONSTRUCTION AND NOTIFY CONSTRUCTION MANAGER OF ANY FINDINGS.
- PROJECT SAFETY ON-SITE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXISTING SOIL CONDITIONS, CONSTRUCTION MANAGER MAY HAVE SOILS REPORT FOR MORE INFO.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE OWNER WITH A SET OF MARKED UP PLANS (AS-BUILTS) SHOWING ANY CHANGES DURING CONSTRUCTION.
- DIGGERS HOTLINE SHALL BE NOTIFIED (3) DAYS IN ADVANCE OF COMMENCING EXCAVATION TO LOCATION UTILITIES.

UTILITY LEGEND	
SYMBOL	DESCRIPTION
W	EXISTING WATER MAIN
E	PROPOSED WATER SERVICE
E	EXISTING ELECTRICAL LINE
GAS	PROPOSED ELECTRICAL LINE
GAS	EXISTING GAS MAIN
GAS	PROPOSED GAS MAIN
SAN	EXISTING SANITARY SEWER
SAN	PROPOSED SANITARY SEWER
ST	EXISTING STORM SEWER
ST	PROPOSED STORM SEWER
OHW	PROPOSED STORM SEWER
OHW	OVERHEAD WIRES
POWER POLES	EXISTING POWER POLES
POWER POLES	EXISTING LIGHT POLES
POWER POLES	SANITARY MANHOLE
POWER POLES	FIRE HYDRANT
POWER POLES	EXISTING WATER VALVE
POWER POLES	PROPOSED WATER VALVE
POWER POLES	EXISTING STORM STRUCTURE
POWER POLES	PROPOSED STORM STRUCTURE
POWER POLES	DENOTES EMERGENCY OVERFLOW ROUTE / DRAINAGE PATH
POWER POLES	PROPOSED & EXISTING SPOT GRADE

FIRE STATION NO. 1
VILLAGE OF MENOMONEE FALLS, WISCONSIN
MENOMONEE FALLS, WISCONSIN

THE ARCHITECTURAL WORKSHOP, LLC
W161 N11110 Meadow Drive
Germantown, WI 53022
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GENERAL NOTES AND SPECIFICATIONS

1. SURVEY DRAWN BMS DESIGNED BMS
APPROVED TBO DATE 08-01-14
NO. 1001-13-14

2. SURVEY DRAWN BMS DESIGNED BMS
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NO. 1001-13-14

3. SURVEY DRAWN BMS DESIGNED BMS
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21. SURVEY DRAWN BMS DESIGNED BMS
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22. SURVEY DRAWN BMS DESIGNED BMS
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NO. 1001-13-14

23. SURVEY DRAWN BMS DESIGNED BMS
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NO. 1001-13-14

24. SURVEY DRAWN BMS DESIGNED BMS
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25. SURVEY DRAWN BMS DESIGNED BMS
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NO. 1001-13-14

26. SURVEY DRAWN BMS DESIGNED BMS
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NO. 1001-13-14

27. SURVEY DRAWN BMS DESIGNED BMS
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NO. 1001-13-14

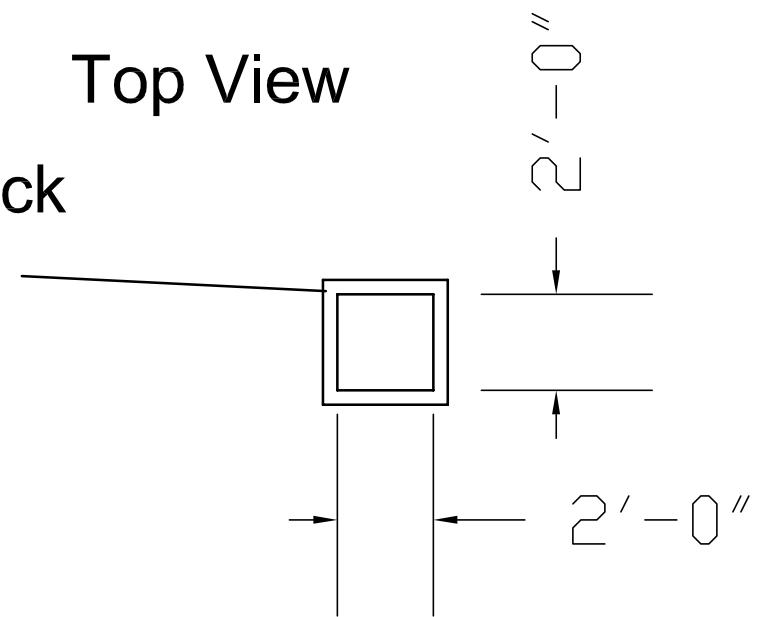
28. SURVEY DRAWN BMS DESIGNED BMS
APPROVED TBO DATE 08-01-14
NO. 1001-13-14

Pond Outfall Detail

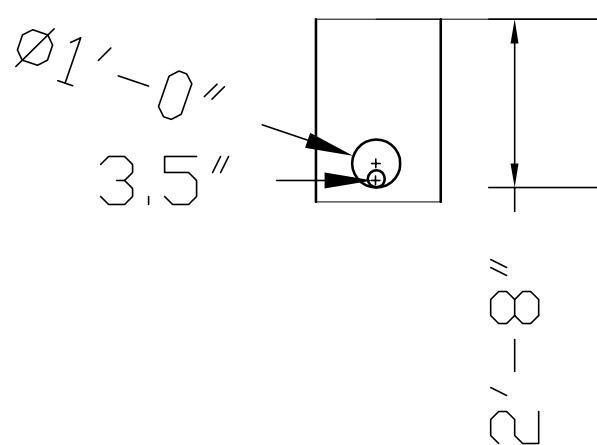
Reinforced Concrete Riser & Pipe

Top View

Galvanized Trash Rack
1/4" Wire Mesh
4"x4" Opening



Side View



Rim Elevation
868.6

Elevation 866

NOT TO SCALE

$$H = 868.72 - 866.05 = 2.67'$$

$$A = 7,053, SF = 0.162 AC$$

$$A_2 = 20,977.2 SF = 0.482 AC$$

2015
085002

Final Sta 700-1; As-Built

$$V = \left(\frac{4}{3}\right)(A_1 + A_2 + \sqrt{A_1 \cdot A_2})$$

$$V = \left(\frac{2.67}{3}\right)(0.162 AC + 0.482 AC + \sqrt{0.162 AC \cdot 0.482 AC})$$

$$V = (0.89)(0.644 AC + \sqrt{0.644 AC})$$

$$V = (0.89)(0.644 AC + 0.802 AC)$$

$$V = (0.89)(1.446 AC)$$

$$\underline{V = 1.287 AC FT}$$

CMG
9/24/15

$$H = 868.60 - 868.00 = 2.60'$$

2014
086002

$$A_1 = 0.17634C$$

$$A_2 = 0.4947AC$$

Find Sta. No. 1, Plan

$$V = \left(\frac{H}{3}\right) (A_1 + A_2 + \sqrt{A_1 + A_2})$$

$$V = \left(\frac{2.60}{3}\right) (0.17634C + 0.4947AC + \sqrt{0.17634C + 0.4947AC})$$

$$V = \left(0.867\right) (0.671AC + \sqrt{0.671AC})$$

$$V = \left(0.867\right) (0.671AC + 0.819AC)$$

$$V = \left(0.867\right) (1.49AC)$$

~~$$V = 1.328ACFT$$~~
~~$$1.292ACFT$$~~

CNG
2/11/16