

PUBLIC UTILITIES COMMITTEE

Tuesday, December 20, 2016

6:00 P.M.

McFarland Municipal Center
Conference Room "A"

AGENDA

1. CALL TO ORDER.
2. PUBLIC COMMENT
3. APPROVAL OF MINUTES
Review and possible approval of draft Minutes from the Public Utilities Committee Meeting of September 20, 2016.

Review and possible approval of draft Minutes from the Public Utilities Committee Meeting of October 18, 2016.
4. BUSINESS
 - a. Discussion and possible action regarding the planned public utilities improvements within the proposed Prairie Place Subdivision.
 - b. Discussion and possible recommendation regarding the Well Head Protection plan.
 - c. Discussion and recommendation to approve an easement for Alliant Energy along the Broadhead Street / Holscher Road Detention Pond.
5. STAFF REPORTS
 - a. Update on tax certification roll over
 - b. Impact Fee Summary
6. ADJOURNMENT.

NOTES:

- 1) Persons needing special accommodations should call 838-7287 at least 24 hours prior to the meeting.
- 2) A quorum of The Village Board may attend this meeting for the purpose of gathering information relevant to their responsibilities as Village trustees. No matter shall be considered nor shall any action be taken by said Village Board members at this meeting.
- 3) More specific information about agenda items may be obtained by calling 838-7287.

This agenda was posted, or caused to be posted, by my hand on the 14th day of October, 2016 at the following three (3) posting places in the Village of McFarland, to wit: McFarland Municipal Center, 5915 Milwaukee Street; E.D. Locke Public Library, 5920 Milwaukee Street; and the McFarland State Bank, 5990 Hwy. 51.

Public Utilities Committee
Meeting Minutes
September 20, 2016

Members present: Mary Pat Lytle, Stephanie Brassington, Craig Weiss, Ernie Peterson, Marc Nielsen, and Chris Fredrick.

Members absent: None

Staff present: Allan Coville, Pauline Boness, and Kelsy Boyd.

Others present: Brian Berquist (Town & Country Engineering) and Brett Reimen (Spanrie Development Group)

1. Call to order: The meeting was called to order at 6:01 p.m. by Chair Lytle in Conference Room A at the Municipal Center.

2. Public comments: None

3. Review and possible approval of draft Minutes of Public Utilities Meeting of August 16, 2016:

Motion by Lytle, second by Nielsen, to approve the draft minutes with spelling corrections.
Approved 6-0.

4. BUSINESS

b. Discussion and possible recommendation regarding the Paulson Road South Development.

Brett Riemen from Spanrie Development Group arrived at 6:05 pm regarding the recent plans submitted for the Paulson Road South development project. Due to the late submission of the plans by the developer's engineer, Village staff was unable to review the submission prior to the meeting. Given the committee's reliance on staff input, it was decided to table this discussion until next month.

c. Discussion and recommendation to Village Board regarding the contract to service the brush and yard waste site along with the yearly curb side pick up for brush and yard waste.

The service was taken out to bid with three vendor's providing a quote. It was recommended by Village staff to sign a three year contract with Barnes to provide this service.

Motion by Lytle, second by Weiss, to recommend to the Village Board to approve the three year contract with Barnes to service the yard waste site as well as provide yearly curb side pick up of brush and yard waste. Approved 6-0.

d. Response to the 2016 DNR Sanitary Survey Report Dated 7/22/2016.

Once every three years, the DNR water quality engineer conducts a site visit and provides comments and recommendations. All comments and recommendations were responded to by Jim Hessling, the Assistant Director of Public Works.

e. Updated cost to continue with the MS4 TMDL Phosphorus Remove Program

The Village's revised contribution for this program has been reduced from an initial estimate of \$36,200 to approximately \$14,854. The reduction in cost can be attributed to the Village's proactive approach to stormwater infrastructure improvements such as the installation of detention ponds, converting dry ponds to wet ponds, and the utilization of our high-efficiency vacuum sweeper. All of these improvements have contributed greatly to the reduction of total suspended solids being discharged into the stormwater system.

Adjournment: Motion by Nielsen, second by Brassington, to adjourn at 6:32 pm. Approved 6-0.

December 20, 2016

Mr. Matthew Schuenke
Village Administrator
Village of McFarland
5915 Milwaukee Street
P.O. Box 110
McFarland, WI 53558

Subject: Construction Plan Review for Prairie Place Plat

Dear Matt:

We have received a set of proposed construction plans for the Prairie Place plat located north and east of the intersection of Holscher Road and Broadhead Street. The plans were submitted on December 8. We have completed our review of the plans based on Village ordinances and public works practices, and are providing our comments below. Comments are organized by sheet number for ease of review.

Sheet 2

- A minimum of 6 inches of crushed aggregate base course should be used under all curb & gutter.
- A minimum of 6 inches of crushed aggregate base course must be used under all sidewalks.
- Per Public Works Committee and staff discussions, sidewalks will be required along both sides of the culs-de-sac at least up to the throat. For the cul-de-sac along Shooting Star Court, the southern sidewalk should be extended to the multi-use path.
- A 2-inch radius on the top of the curb face should be used to match Village standard.
- The triangle created between two handicap ramps at each corner should be filled in with concrete.
- Truncated dome panels are proposed for handicap sidewalk ramps. The Village policy has historically been to use the diamond pattern, which is required by Wisconsin Statute. The Village attorney recommended going with the truncated dome panels, and we so recommend as well changing the Village policy.
- The detail for the Type III barricades references Perry Parkway. This should instead reflect the temporary dead-end streets in the plat.

Sheet 3

- A full-depth tracer wire box is required for sanitary lateral tracer wires.

Sheet 4

- The Village standard for water curb stop boxes are Minneapolis pattern, H10302, 1½-inch diameter with no stationary rods.
- Type N brass should be used, signifying no lead in the brass fittings.
- There have been some changes made to the Village construction details. We will provide the updated drawings for the developer's use.

Sheet 8

- The eastern sidewalk is not one foot from and parallel to the right-of-way line. In subsequent discussions with the developer's engineer, this was done to preserve existing trees in this area. The Public Works Committee has agreed that this is a good approach and we concur.

Sheet 9

- All runs of sewers with any areas deeper than 15 feet must utilize SDR-26 PVC pipe.

This should be shown on the plans.

Sheet 10

- We recommend showing a continuous slope on the water main to the end of North Peninsula Way, and an addition of a temporary hydrant at the end. This can be removed once the development to the north ties on.

Sheet 11

- We recommend the Village consider requiring sidewalks along both sides of the cul de sacs, as has been done for similar length cul de sacs in recent developments. This will require widening the right-of-way to 60 feet for the stem of each cul-de-sac, as was shown on the preliminary plat.
- The hydrant located at Lot 11 should be moved to 5 feet behind the curb and placed between Lots 36 and 37 with a 45° bend instead of a 90° bend. This will allow for cleaner layout of the water laterals and less flow loss to the hydrant.

Sheet 12

- Storm sewer inlets should be added at the northeast and northwest corners of the Peninsula Way/Shooting Star intersection.
- A temporary tee turnaround should be constructed within the right-of-way of Shooting Star Trail.

Sheet 13

- A temporary tee turnaround should be constructed within the right-of-way at the end of Meadowsweet Terrace.

Sheet 14

- Please see similar comments regarding sidewalk on both sides of culs-de-sac to the throat.

Sheet 15

- The developer should consider keeping the water main along the south side of County Highway MM up to North Peninsula Way, and then crossing there to avoid the storm sewer constructed in 2015 heading to the east. This will make future locating main easier and align better with the existing main along the south side of Broadhead Street closer to the Village center.

Sheet 16

- Some of the proposed multi-use path is shown to be constructed in delineated wetland areas. This will likely be allowable, but a special permit will be required. The developer may want to consider shifting the path slightly south to avoid impacts.
- We suggest placing the hydrant at the east corner to allow use as a flushing hydrant.

Sheet 19

- An overflow path should be shown between Lots 50 and 51, along with a note to depress the sidewalk. This would limit any potential stormwater ponding in the street to a 6-inch depth before overflowing towards stormwater management areas in the event that the inlets become plugged.
- We suggest that the engineer make an attempt to match pipe tops at storm sewer diameter changes.

Sheet 20

- An overflow path should be shown between Lots 47 and 48, along with a note to depress the sidewalk. This would limit any potential stormwater ponding in the street to a 6-inch depth before overflowing towards stormwater management areas in the event that the inlets become plugged.
- We suggest that the engineer make an attempt to match pipe tops at storm sewer diameter changes.

Sheet 21

- An overflow path should be shown between Lots 38 and 39, along with a note to depress the sidewalk. This would limit any potential stormwater ponding in the street to a 6-inch depth before overflowing towards stormwater management areas in the event that the inlets become plugged.

Sheet 24

- We suggest more grading or notes be added to the grading plan to indicate direction of flow along the lot lines between Lots 20, 21 and 15.

Miscellaneous Comments

Several other infrastructure-related items will be required prior to Village approval of the project, as listed below:

- Lighting plan.
- Cross-sections showing all future streets.
- A final stormwater management and erosion control plan.
- Similar to the restored prairie areas in the adjacent Veridian Juniper Ridge subdivision, we recommend the Village obtain an operation and maintenance manual for the prairie plantings proposed in the wetland area and stormwater management areas.
- We suggest rounding the right-of-way corners for the North Peninsula Way intersections.

This concludes our review of this drawing set. Please do not hesitate to contact us with any questions. We will plan on attending the December Public Utilities Committee meeting as well to discuss the project.

Very truly yours,
TOWN & COUNTRY ENGINEERING, INC.



Brian R. Berquist, P.E.
Vice-President of Municipal Services

cc: Ms. Pauline Boness, Director of Community Development, Village of McFarland (5915 Milwaukee Street, P.O. Box 110, McFarland, WI 53558)

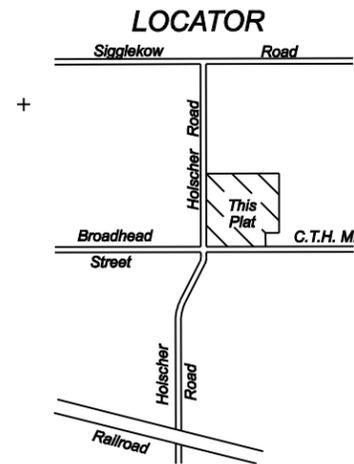
Mr. Allan Coville, Director of Public Works, Village of McFarland (5915 Milwaukee Street, P.O. Box 110, McFarland, WI 53558)

Mr. Tom Gannon, Gannon Company (4719 Farwell Street, McFarland, WI 53558)

Mr. Tim Thorson, Royal Oak & Associates, Inc. (3678 Kinsman Boulevard, Madison, WI 53704)

BRB:sai

REVISIONS:



INDEX

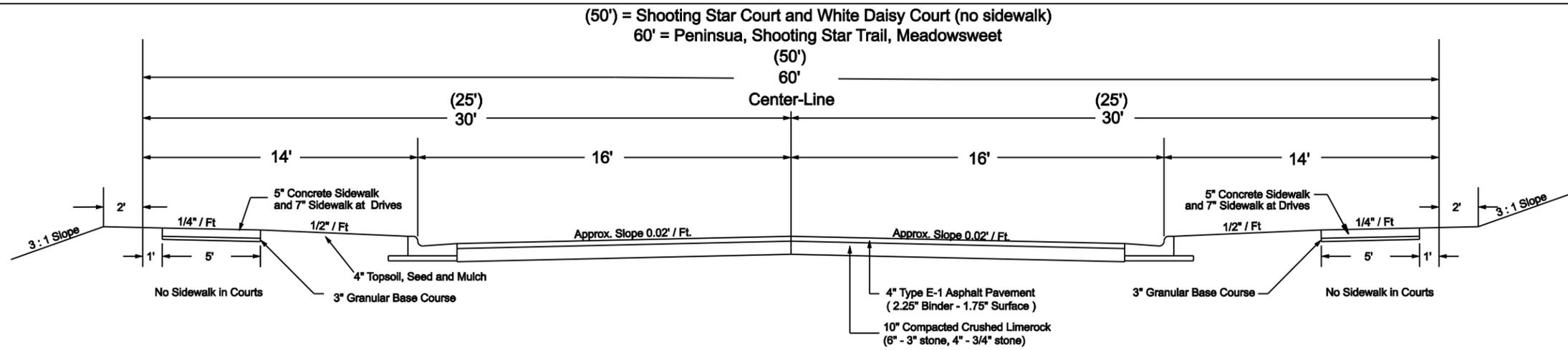
- 1. Cover Sheet
- 2 - 7. Detail Sheets
- 8 - 10. North Peninsula Way
- 11. Shooting Star Court
- 12. Shooting Star Trail
- 13. Meadowsweet Terrace
- 14. White Daisy Court
- 15 - 17. County Trunk Hwy. MN
- 18. Sanitary Easement
- 19. Storm Sewer Easement Lot 50-51
- 20. Storm Sewer Easement Lot 47-48
- 21. Storm Sewer Easement Lot 35-36
- 22. - 28. Erosion Control Plans

PLAN BY
Royal Oak & Associates
 3678 Kinsman Blvd
 Madison Wisconsin 53704
 Phone 274-0500

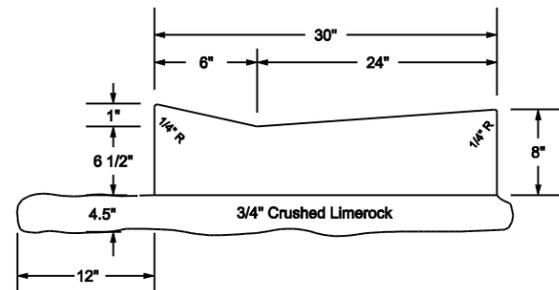
PLAN FOR
Gannon Construction
 4719 Farwell Street
 McFarland Wisconsin 53558

Praririe Place

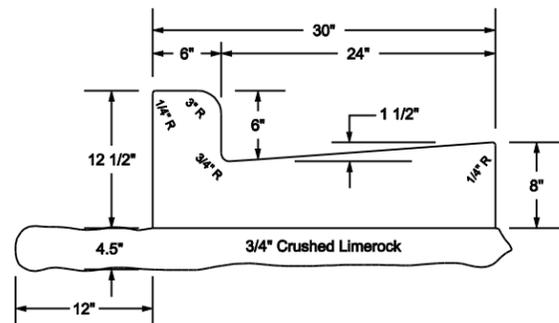
Village of McFarland,
 Dane County, Wisconsin



TYPICAL STREET CROSS SECTION

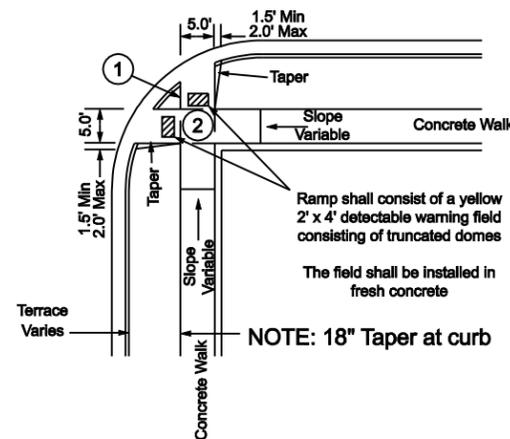


DRIVEWAY SECTION



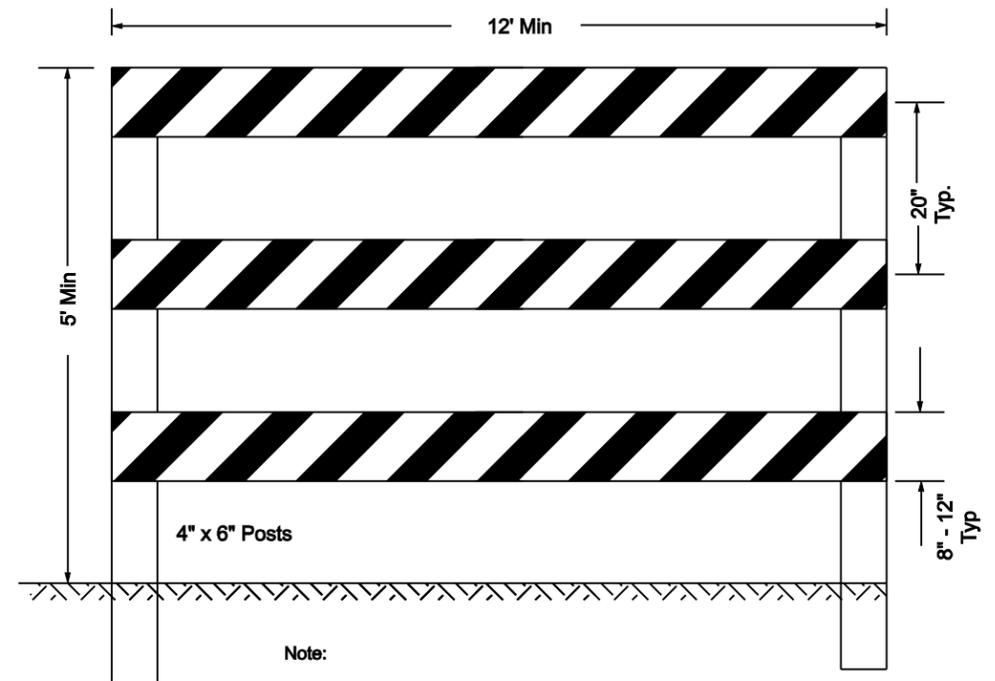
NORMAL SECTION

CONCRETE CURB AND GUTTER SECTION



SIDEWALK RAMP TYPE 2 WisDOT DETAIL

- NOTES:
- Grade change between gutter flag slope and the curb ramp shall not exceed 11%. Provide drainage away from curb ramp at gutter flag interface.
- ①= Then this distance is less than 6.0', it may be difficult to achieve a 12:1 slope or flatter on the ramp. Reduce curb height in triangle area to achieve 12:1 slope or flatter on ramp. 2" minimum curb height.
- ②= Provide landing at the top of ramp with no more than 2% slope in any direction.



- Note:
- Barricade shall be placed at the end of Perry Parkway
- Barricade shall have a Road Closed sign attached.
- Each barricade shall have alternate reflectorized white and red stripes, 4" - 6" wide and place at a 45° angle. The entire area of white and red shall be reflectorized with a smooth, scaled outer surface that will display the same approximate size, shape and color day and night.

TYPE III BARRICADE

Revisions

Royal Oak & Associates Inc.
 3678 Kinsman Blvd, Madison, Wisconsin 53704
 Phone (608) 274-0500

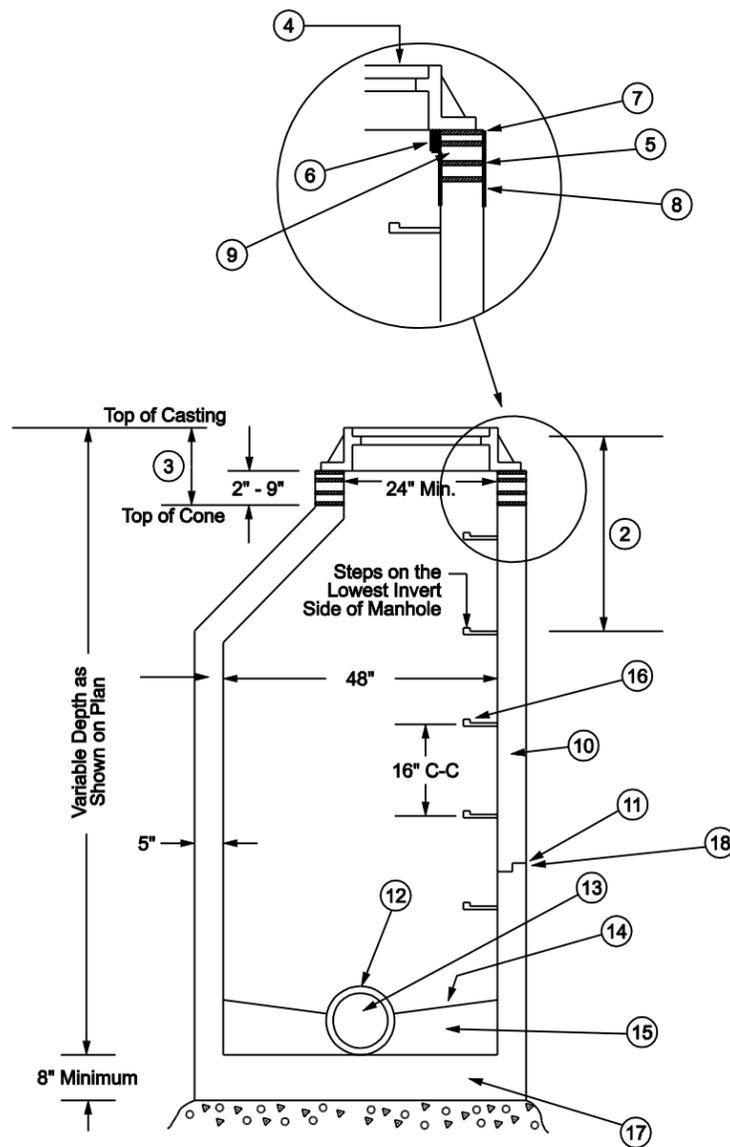
Prairie Place

Detail Sheet
 Streets

NOTES:

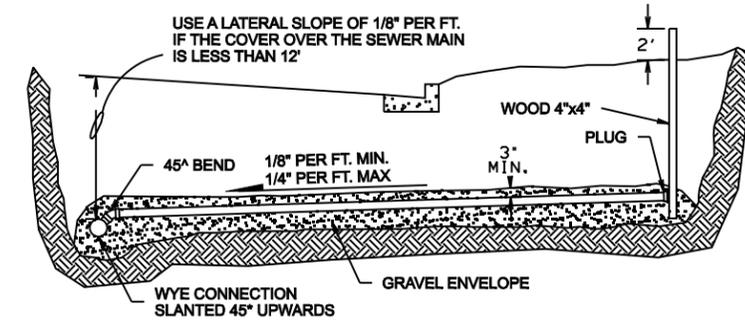
1. Low pressure air test shall be run after total installation of the system and cleaning
2. Manhole dimensions shall be specified in File 30, Standard Specifications for sewer and water construction in Wisconsin, Sixth Addition, dated December 22, 2004.
3. Install 4" X 4" X 8' treated timber Marker Post at lateral end, protruding 2' above ground

PRECAST CONCRETE MANHOLE



STANDARD MANHOLE

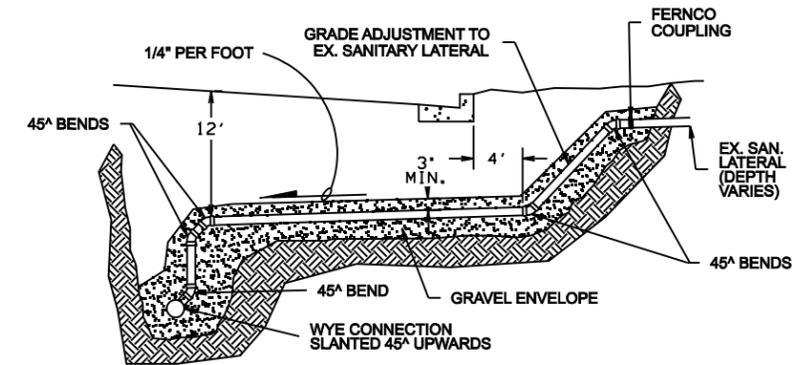
1. When manholes are located under pavements, the top of the manhole frame shall be adjusted to within 1/4" below the pavement grade. The final adjustment shall be made by shimming the frame to grade and setting the frame in a bed of mortar.
2. Top manhole step shall be placed in the cone at a maximum of 28" from the top of the frame.
3. Adjust as necessary to meet plan grade. Maximum height of chimney and casting shall be 18" and the minimum height shall be 11". (a minimum of one adjustment ring shall be used.)
4. Manhole frame and lid - R-1550-A or equivalent (See specifications)
5. Set adjustment rings and casting on uniform bed of mortar.
6. Internal frame / chimney seal.
7. Set manhole frame with mortar, manhole frame and steps to be orientated over downstream main line sewer.
8. Cover outside of chimney from frame to cone with trowel grade butyl based sealant. Overlap cone section a minimum of 4".
9. Concrete adjustment rings shall have a maximum thickness of 9" and a minimum thickness of 2". Rings shall be supplied in 1/2" increments (thickness) to allow adjustment of the frame to within 1/4" of plan grade. Adjustment rings shall be reinforced as required in ASTM C-478. The outside diameter of the rings shall be uniform and equal to or greater than outside diameter of the frame and equal to or less than the top of the cone. The wall thickness of the rings shall equal the wall thickness of the manhole sections. When assembled, the top of the cone, the rings and the frame, shall be aligned vertically with no protrusions.
10. Precast concrete manhole sections, typical, conforming to ASTM C-478
11. Watertight joint, typical, with gaskets conforming to C-443
12. Press seal gasket (See specifications)
13. Sanitary sewer size, number of connections to manhole, orientation, and elevation shown on plan.
14. Bench slope - 2 in / ft.
15. Standard Manhole bench to the crown of the pipe. See file No. 13 of "Utility Standard Specifications"
16. Manhole Step, See File No 15 of "Utility Standard Specifications" molded plastic covering required.
17. Precast integral base
18. At all External Manhole joints below high ground water level, provide external mastic wrap. - (see specifications)



STANDARD INSTALLATION WITHOUT A RISER

NOTES:

1. CONSTRUCT LATERALS IN CONFORMANCE WITH CHAPTER COMM 82 OF THE WISCONSIN ADMINISTRATIVE CODE.
2. LATERAL SLOPE SHALL BE ** PER FOOT WHERE SUFFICIENT COVER EXISTS.
3. WHERE LATERALS ARE NOT IMMEDIATELY CONNECTED TO BUILDING SEWERS THE ENDS OF THE LATERALS SHALL BE MARKED BY POSITIONING 4" X 4" BOARDS VERTICALLY FROM THE ENDS OF LATERALS TO AT LEAST 2' ABOVE THE GROUND SURFACE.



INSTALLATION WITH VERTICAL RISER

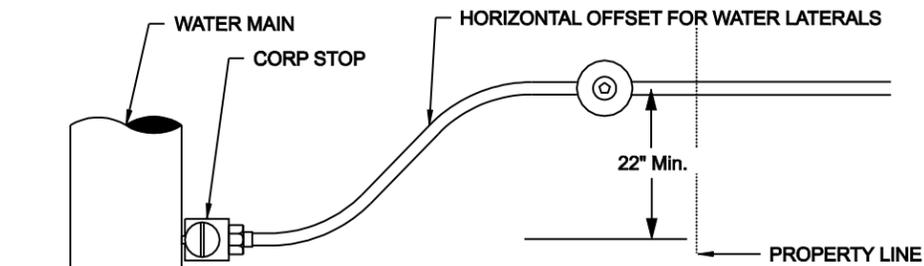
SANITARY SEWER LATERAL DETAIL

Revisions

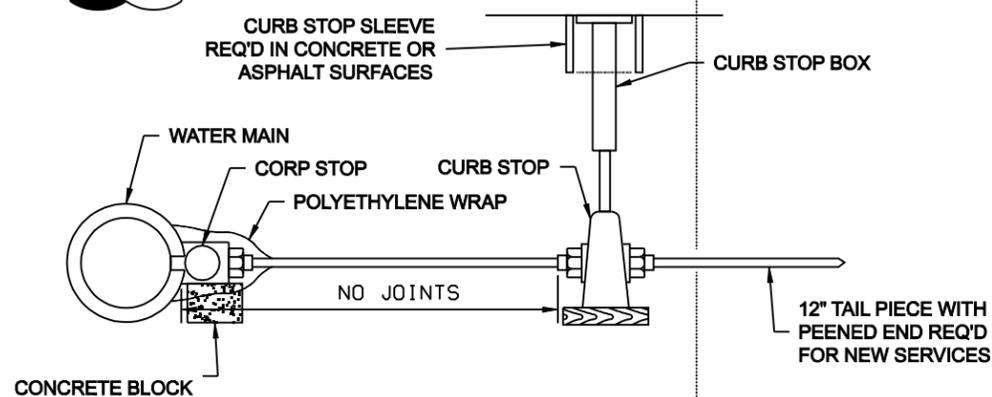
Royal Oak & Associates Inc.
3678 Kinsman Blvd, Madison, Wisconsin 53704
Phone (608) 274-0500

Prairie Place

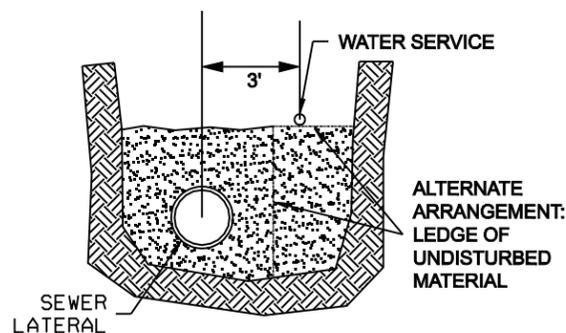
Detail Sheet
Sanitary Sewer



PLAN VIEW



PROFILE VIEW



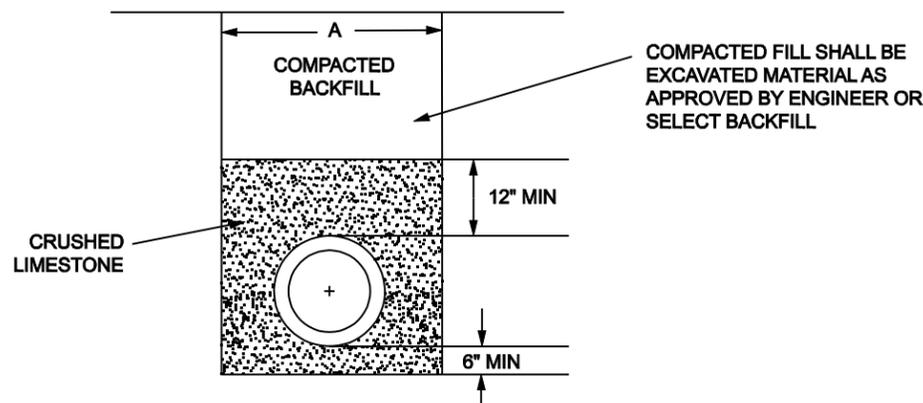
- NOTES:**
- LATERAL SHALL BE INSTALLED 5' PAST PROPERTY LINE
 - INSTALL 4" X 4" TREATED TIMBER EXTENDED 2' ABOVE GROUND AT TH END OF LATERAL AND THE SERVICE BOX
 - VERTICAL OFFSETS SHALL BE MADE ON THE PROPERTY LINE SIDE OF THE CURB STOP.
 - CAST IRON CURB BOX SLEEVES SHALL BE INSTALLED WHERE CURB BOXES ARE INSTALLED IN CONCRETE OR ASPHALT SURFACES.

JOINT TRENCH INSTALLATION

- WATER SERVICE**
1-IN COPPER, TYPE K, WATER TUBING
- CORPORATION STOPS:**
MUELLER H-15008 (1-IN) OR EQUAL BY APPROVAL BY VILLAGE ENGINEER WITH COPPER SERVICE THREAD CONNECTION AND COMPRESSION TYPE CONNECTION
- CURB STOPS:**
MUELLER H-15209 OR EQUAL WITH COPPER SERVICE THREAD CONNECTION AND COMPRESSION TYPE CONNECTION
- CURB BOXES**
BINGHAM & TAYLOR 94F, OR EQUAL BY APPROVAL OF VILLAGE ENGINEER, BUFFALO TYPE-ARCH PATTERN 2 1/2" SHAFT SIZE, WITH 1 1/2" NEW STYLE FLUSH FIT COVER MARKED "WATER". EXTENDED LENGTH, WITH EXTENSION, OF 7' MIN. WITH STATIONARY EXTENSION ROD AND GUIDE RING

WATER SERVICE INSTALLATION DETAIL

DIMENSIONS:
A: OUTSIDE DIAMETER OF PIPE PLUS 24" (MAXIMUM)
OUTSIDE DIAMETER OF PIPE PLUS 16" (MINIMUM)

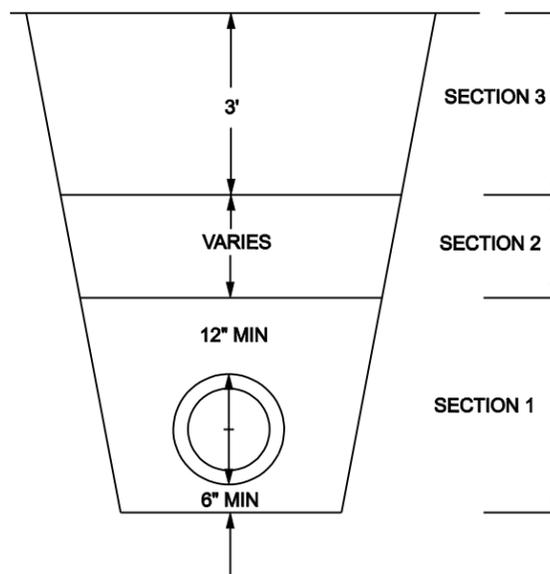


**TRENCH WIDTH AND BEDDING DETAILS
SANITARY SEWER AND WATER MAIN**

COMPACTED FILL SHALL BE EXCAVATED MATERIAL AS APPROVED BY ENGINEER OR SELECT BACKFILL

STANDARD TRENCH COMPACTION

ALL BACKFILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 12" BEFORE COMPACTION UNLESS AUTHORIZED BY THE ENGINEER DUE TO THE CHARACTER OF THE MATERIAL AND COMPACTION EQUIPMENT. EACH LIFT SHALL BE MACHANICALLY COMPACTIONED TO THE REQUIRED DENSITY PRIOR TO PLACING SUCCEEDING LIFTS OF BACKFILL MATERIAL.



**TRENCH COMPACTION DETAIL
SANITARY SEWER AND WATER MAIN**

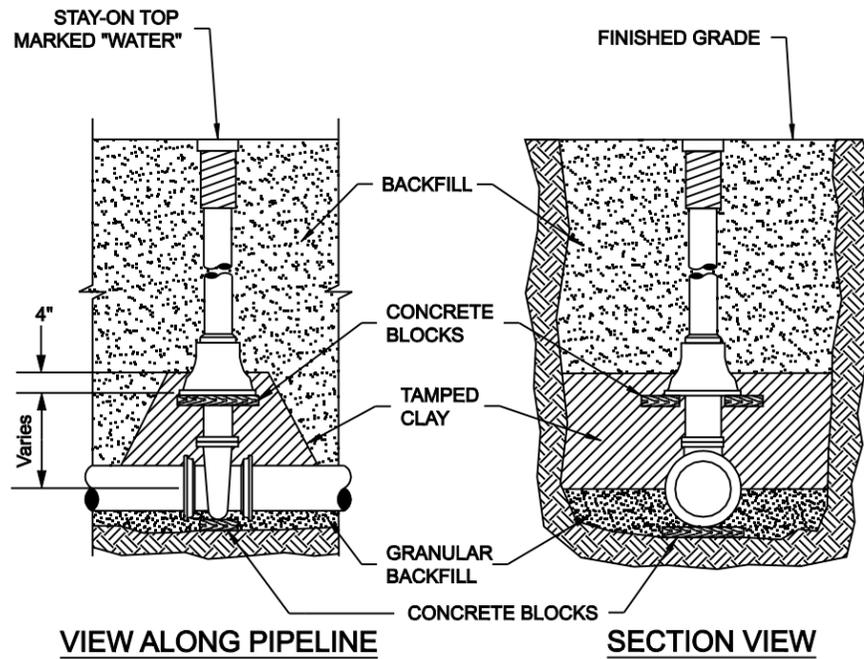
- SECTION 1:**
MECHANICALLY COMPACTIONED BEDDING AS REQUIRED BY THE SPECIFIATIONS. COMPACTION ACHIEVED WITH SMALLER PLATE COMPACTOR.
- SECTION 2:**
MINIMUM COMPACTION 90% MAXIMUM DENSITY. COMPACTION OF BACKFILL WITH BOMAG OR HOE-PAC SHALL NOT BE BEGIN UNTIL THE DEPTH OF BACKFILL MATERIAL IS TWO (2) FEET ABOVE THE TOP OF PIPE.
- SECTION 3:**
MINIMUM COMPACTION 95% MAXIMUM DENSITY

Revisions

Royal Oak & Associates Inc.
3678 Kinsman Blvd, Madison, Wisconsin 53704
Phone (608) 274-0500

Prairie Place

Detail Sheet
Water Main



PIPE DIA., INCHES	6	8	10	12	14	16
"X" DIMENSION, INCHES	12	13	17	21	25	30

NOTES:

VALVES SHALL BE SECURED WITH RODDING OR MEGALUGS TO THE NEAREST "TEE" FITTING OR TO THE FIRST JOINT CONNECTING A FULL SECTION OF WATER MAIN PIPE.

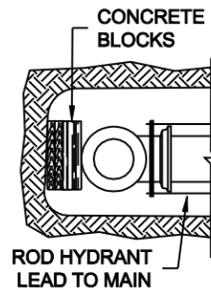
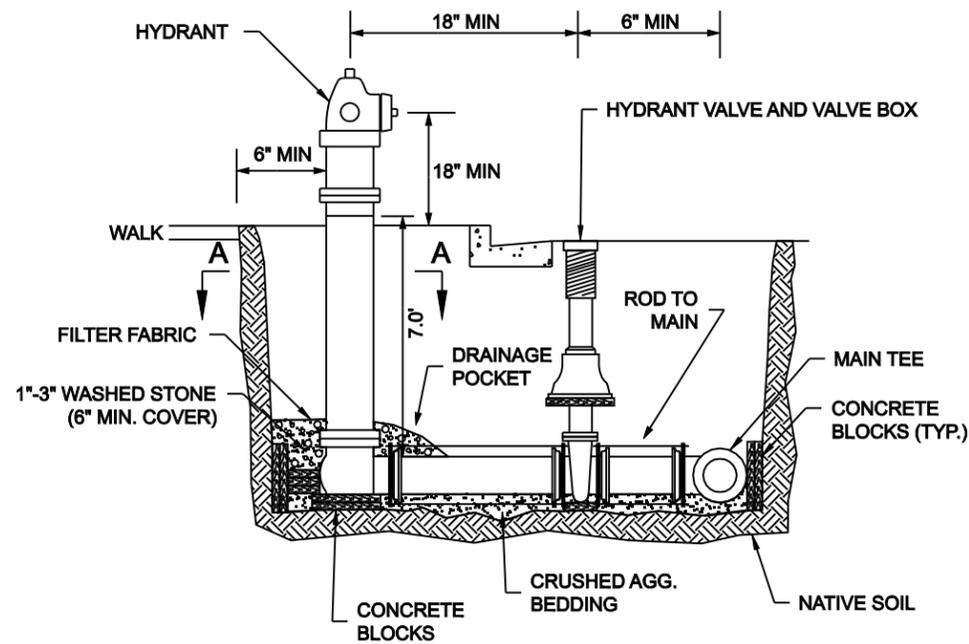
VALVE BOX
TYLER/UNION 6860, THREE PIECE, SCREW TYPE, CAST OR DUTILE IRON, 5 1/4" SHAFT, ITEM DD WITH 6" BASE

PROVIDE WITH NO TILT DROP COVER MARKED "WATER"

GATE VALVE ACCEPTABLE MANUFACTURES
AMERICAN FLOW CONTROL, SERIES 2500, OR EQUAL
US PIPE: METROSEAL 250
MUELLER: RESILIENT WEDGE VALVE, A-2360

VALVE BOX ADAPTERS SHALL BE REQUIRED ON ALL VALVES. VALVE ADAPTERS AS MANUFACTURED BY ADAPTER, INC.

STANDARD VALVE BOX SETTING



SECTION A-A

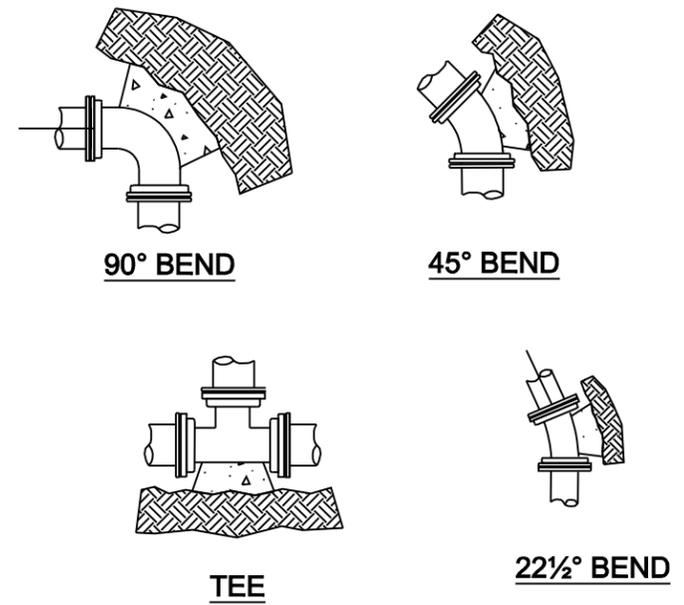
NOTES:

- THE HYDRANT AND HYDRANT VALVE SHALL BE CONNECTED TO THE MAIN TEE BY RODDING, OR BY MEGA LUGS.

-WHERE THE HYDRANT IS INSTALLED AT THE HIGH POINT OF THE WATER MAIN ON MAINS 10 INCHES IN DIAMETER AND LARGER THE CONTRACTOR SHALL TIP THE MAIN TEE UPWARDS 45 DEGREES AND USE A 45 DEGREE FITTING TO ALLOW AIR TO ESCAPE FROM THE MAIN.

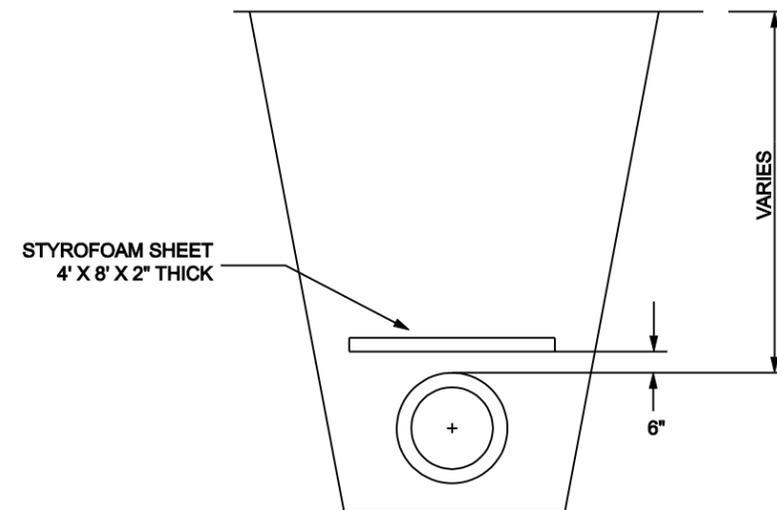
VALVE BOX ADAPTER IS REQUIRED ON ALL VALVES

STANDARD HYDRANT DETAIL



IN ADDITION TO MEG-A-LUG OR FIELD-LOK GASKET PIPE RESTRAINT, ALL BENDS, CAPS, PLUGS, TEES AND HYDRANTS, SHALL BE BLOCKED WITH SOILD CONCRETE BLOCKS FROM WATER MAIN APPURTENANCE TO TRENCH WALL. CONCRETE BLOCKS SHALL HAVE NOMINAL DIMENSIONS OF 4" X 8" X 16" OR GREATER

THRUST BLOCKING DETAILS



NOTE:
STYROFOAM SHEET SHALL BE PLACED AT ALL STORM SEWER - WATER MAIN CROSSINGS INCLUDING WATER MAIN LATERALS

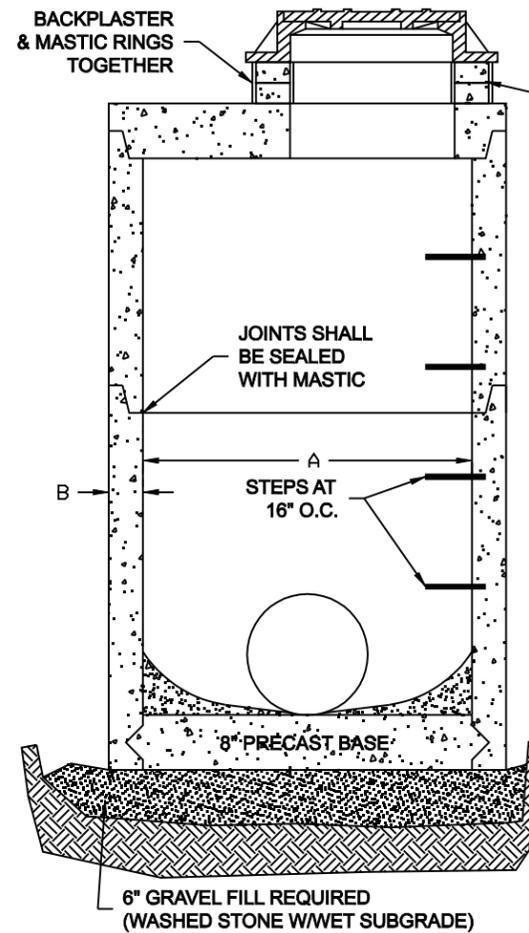
STYROFOAM INSTALLATION DETAIL

Revisions

Royal Oak & Associates Inc.
3678 Kinsman Blvd, Madison, Wisconsin 53704
Phone (608) 274-0500

Prairie Place

Detail Sheet
Water Main



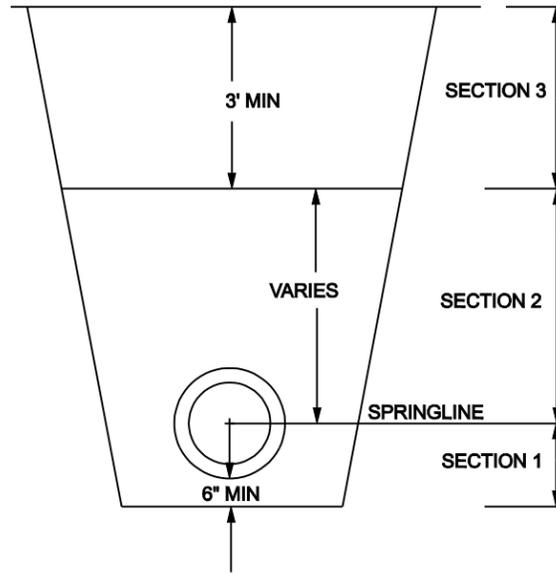
MANHOLE CASTING SHALL BE HEAVY DUTY, NEENAH FOUNDRY CO. CATALOG LISTING NO. R-1550, WITH TYPE "B" NON-ROCKING LID, GASKET SEAL AND CONCEALED PICKHOLES

ADJUST FRAME TO GRADE WITH AT LEAST TWO PRECAST CONCRETE RINGS OF DIFFERENT THICKNESSES. RINGS SHALL BE REINFORCED WITH ONE NO. 3 STEEL BAR CENTERED WITHIN EACH RING.

MANHOLE STEPS SHALL CONFORM TO ASTM-C478 & SHALL BE NEENAH FOUNDRY CO. R-1981-N OR APPROVED EQUAL. STEPS SHALL BE SPACED 16" ON CENTER.

A MINIMUM OF 2" TO A MAXIMUM OF 9" OF ADJUSTING RINGS SHALL BE USED TO ADJUST THE MANHOLE CASTING TO THE FINISHED GRADE. ALL RINGS SHALL BE SEALED TOGETHER USING MASTIC AND ALL JOINTS SHALL BE BACK PLASTERED INSIDE AND OUT WITH CEMENT MORTAR.

2' x 3' OPENING IS REQUIRED FOR STORM INLET MANHOLES WITH R-3067 CASTINGS AND RINGS



TRENCH COMPACTION DETAIL
STORM SEWER

STANDARD TRENCH COMPACTION
ALL BACKFILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 12" BEFORE COMPACTION UNLESS AUTHORIZED BY THE ENGINEER DUE TO THE CHARACTER OF THE MATERIAL AND COMPACTION EQUIPMENT. EACH LIFT SHALL BE MACHANICALLY COMPACTED TO THE REQUIRED DENSITY PRIOR TO PLACING SUCCEEDING LIFTS OF BACKFILL MATERIAL.

SECTION 3:
MINIMUM COMPACTION 95% MAXIMUM DENSITY

SECTION 2:
MINIMUM COMPACTION 90% MAXIMUM DENSITY. COMPACTION OF BACKFILL WITH BOMAG OR HOE-PAC SHALL NOT BE BEGIN UNTIL THE DEPTH OF BACKFILL MATERIAL IS TWO (2) FEET ABOVE THE TOP OF PIPE.

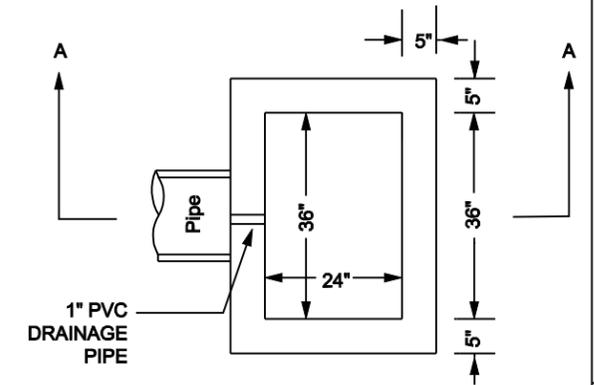
SECTION 1:
MECHANICALLY COMPACTED BEDDING AS REQUIRED BY THE SPECIFICATIONS. COMPACTION ACHIEVED WITH SMALLER PLATE COMPACTOR.

NOTES:
- TOP OF CURB AND PIPE INVERT ELEVATIONS ARE SHOWN ON THE PLANS.

- THE CASTING SHALL BE NEENAH FOUNDRY R-3067 CURB INLET AT LOW POINTS OR A NEENAH R-3067-L CASTING. DIRECTIONAL SLOTS TO BE LOCATED TO DIRECT THE FLOW INTO THE STREET INLET.

- FRAME ADJUSTING RINGS SHALL BE AT LEAST TWO CONCRETE RINGS OF VARIABLE THICKNESS. MASTIC BETWEEN RINGS AND BACKPLASTER A SMOOTH LAYER OF GROUT OVER THE ENTIRE INNER AND OUTER SURFACES OF THE RINGS.

- THE 1" BLEEDER PIPE SHALL BE PLACE AT THE TOP OF THE SUB GRADE AND COVER END WITH FILTER FABRIC

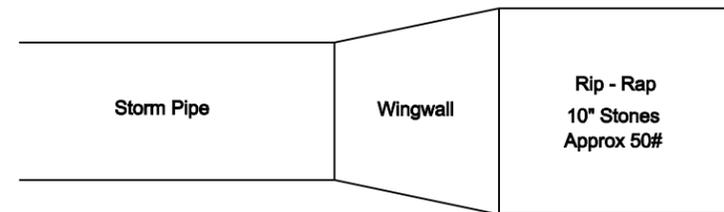


PLAN VIEW

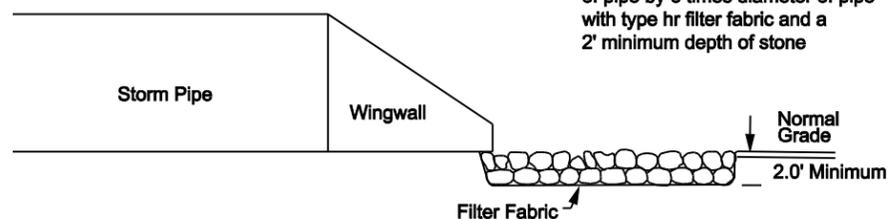
STORM MANHOLE DIMENSIONS

MANHOLE SIZE	DIMENSION	
	A	B (MIN.)
48"	48"	5"
60"	60"	6"
72"	72"	7"
84"	84"	7"
96"	96"	9"

STORM SEWER MANHOLE DETAIL

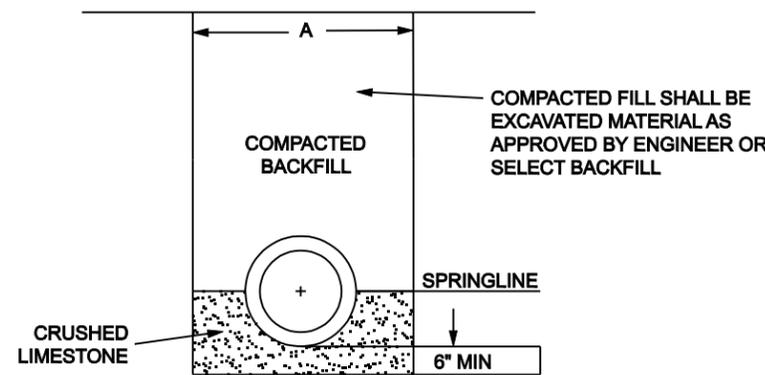


RIP - RAP DETAIL

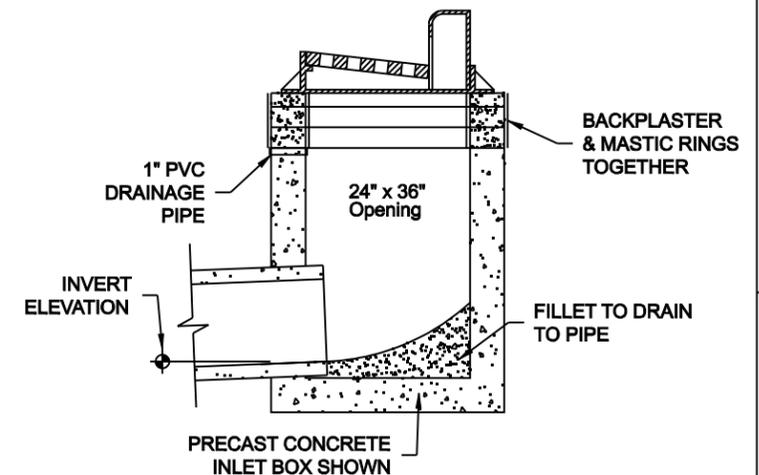


Rip Rap shall be 5 times diameter of pipe by 6 times diameter of pipe with type hr filter fabric and a 2' minimum depth of stone

DIMENSIONS:
A: OUTSIDE DIAMETER OF PIPE PLUS 24" (MAXIMUM)
OUTSIDE DIAMETER OF PIPE PLUS 16" (MINIMUM)



TRENCH WIDTH AND BEDDING DETAILS
STORM SEWER



SECTION A-A

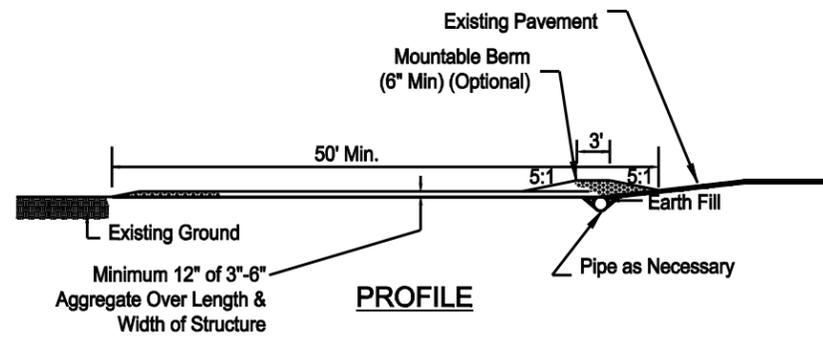
PRECAST CONCRETE JUNCTION
BOX OR INLET

Revisions

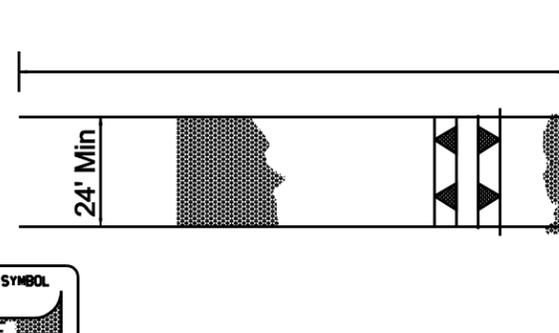
Royal Oak & Associates Inc
3678 Kinsman Blvd, Madison, Wisconsin 53704
Phone (608) 274-0500

Prairie Place

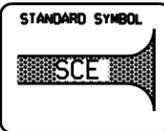
Detail Sheet
Storm Sewer



PROFILE



PLAN VIEW



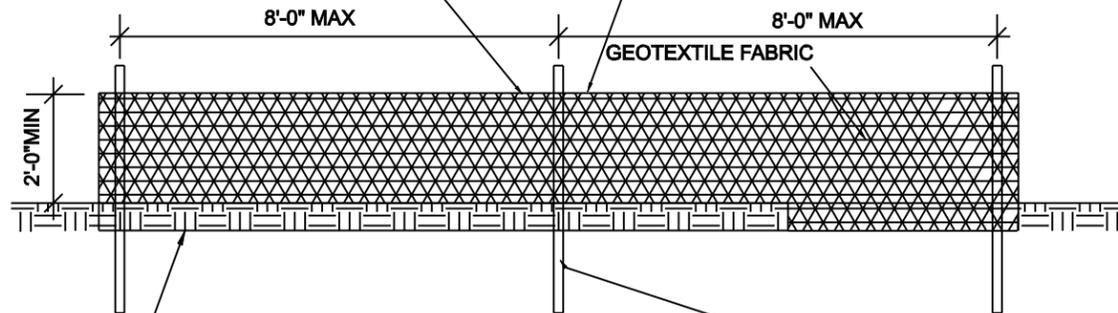
Stabilized Construction Entrance

- 1) LENGTH - MINIMUM OF 50'
- 2) WIDTH - 24' MINIMUM
- 3) STONE - CRUSHED AGGREGATE (3" to 6") OR SHALL BE PLACED AT LEAST 12" DEEP OVER THE LENGTH AND WIDTH OF ENTRANCE.
- 4) SURFACE WATER - ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE. MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND MINIMUM OF 6" OF STONE OVER THE PIPE. TO BE SIZED ACCORDING TO THE DRAINAGE. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY A PIPE WILL NOT BE NECESSARY. PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM WILL BE REQUIRED.
- 5) LOCATION - A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE.

PROVIDE WOVEN GOETEXTILE FABRIC. A HEAVY DUTY NYLON TOP SUPPORT CORD OR EQUIVILANT IS REQUIRED. FOLD FABRIC 3" OVER NYLON CORD.

OR

NONWOVEN GOETEXTILE FABRIC SHALL BE REINFORCED WITH AN INDUSTRIAL POLYPROPYLENE NETTING WITH A MAX. MESH SPACING OF 3/4" OR EQUAL. A HEAVY DUTY NYLON TOP SUPPORT CORD OR EQUIVALENT IS REQUIRED. FOLD FABRIC 3" OVER NYLON CORD.



EXCAVATE A TRENCH A MINIMUM OF 4" WIDE & 4" DEEP TO BURY AND ANCHOR OF THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH. BACKFILL & COMPACT WITH EXCAVATED SOIL.

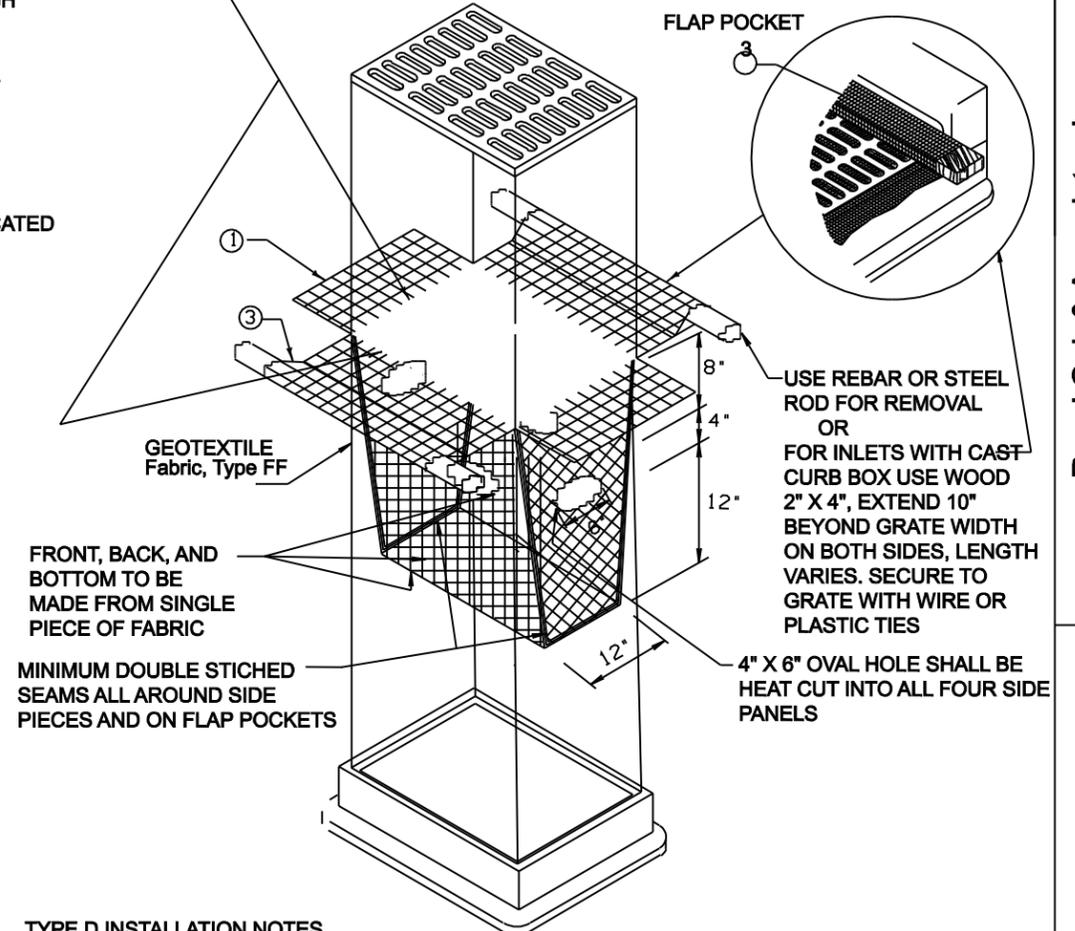
WOOD POSTS BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OAK OR HICKORY. LENGTH=4'-0" MIN. WITH 1'-8" MIN. DEPTH IN GROUND.

SILT FENCE

INLET PROTECTION, TYPE D

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX AS PER NOTE)

INLET SPECIFICATIONS AS PER THE PLAN DIMENSION LENGTH AND WIDTH TO MATCH



TYPE D INSTALLATION NOTES

DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE.

TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.

THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACED AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

1- FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

2- FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.

3- FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2" X 4".
FLAP POCKET

Revisions

Royal Oak & Associates Inc.
3678 Kinsman Blvd, Madison, Wisconsin 53704
Phone (608) 274-0500

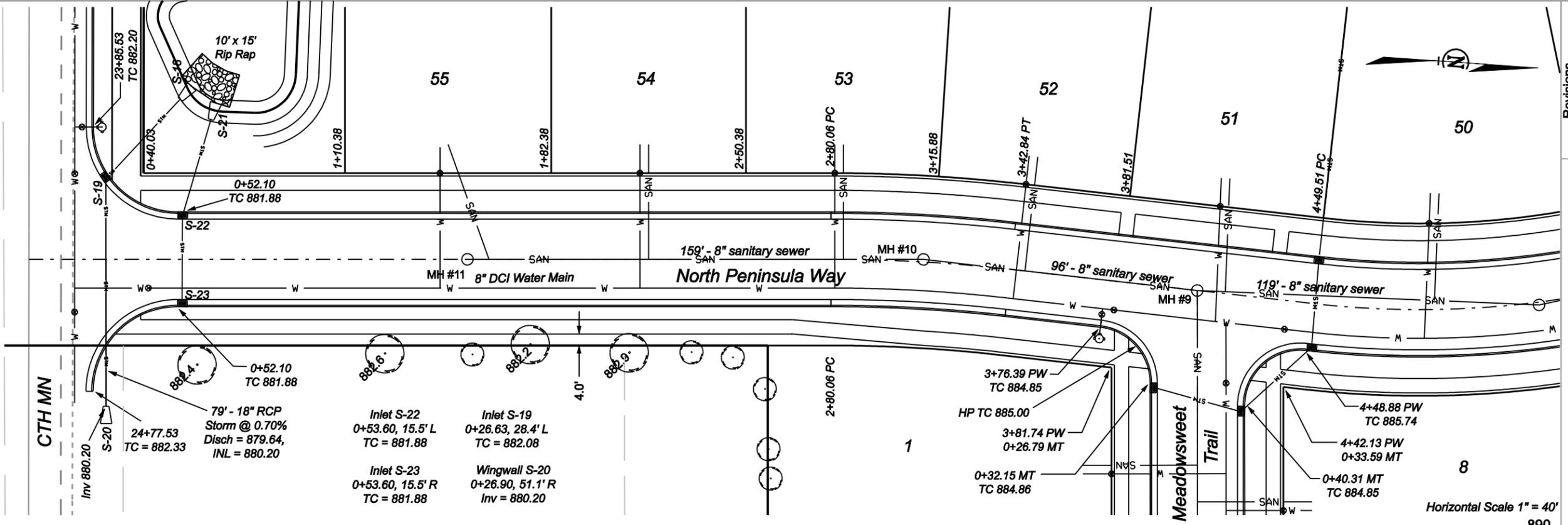
Prairie Place

Detail Sheet - Erosion

S-18 to S-19
44' - 24" RCP
Storm @ 0.70%
Disch = 879.20
INL = 879.54

S-22 to S-23
30' - 12" RCP
Storm @ 0.50%
Disch = 879.23
INL = 879.38

S-21 to S-22
41' - 12" RCP
Storm @ 0.50%
Disch = 879.00
INL = 879.20

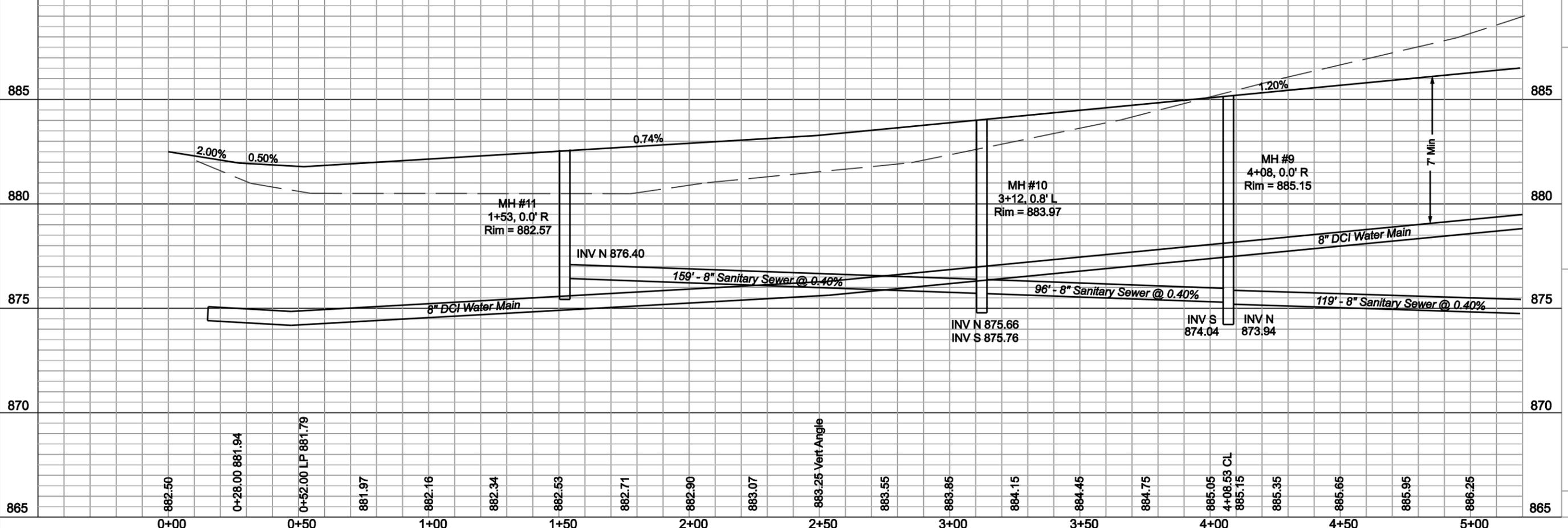


Revisions

Royal Oak & Associates Inc.
3678 Kinsman Blvd, Madison, Wisconsin 53704
Phone (608) 274-0500

890

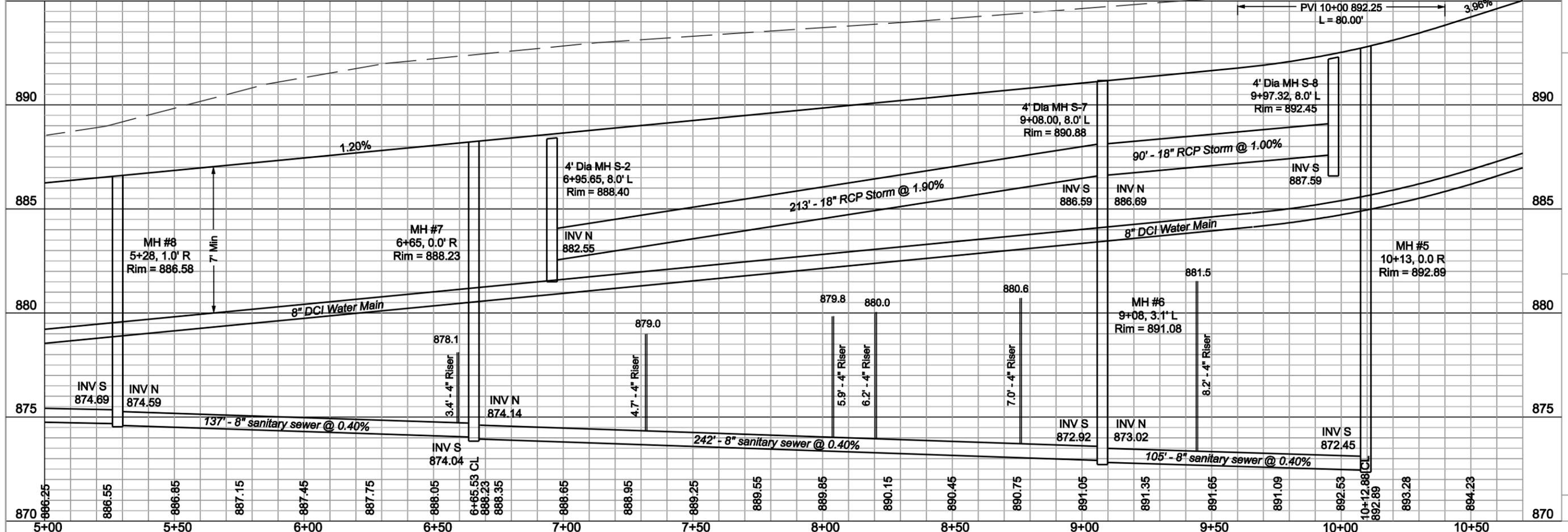
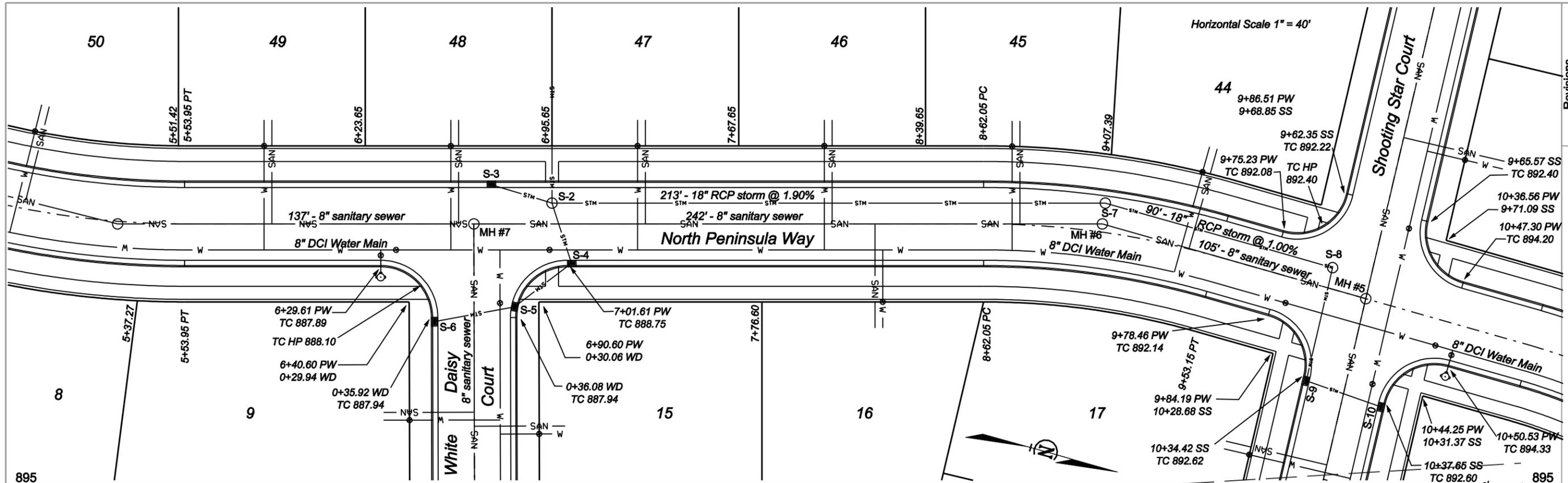
890



Prairie Place

North Peninsula Way

∞



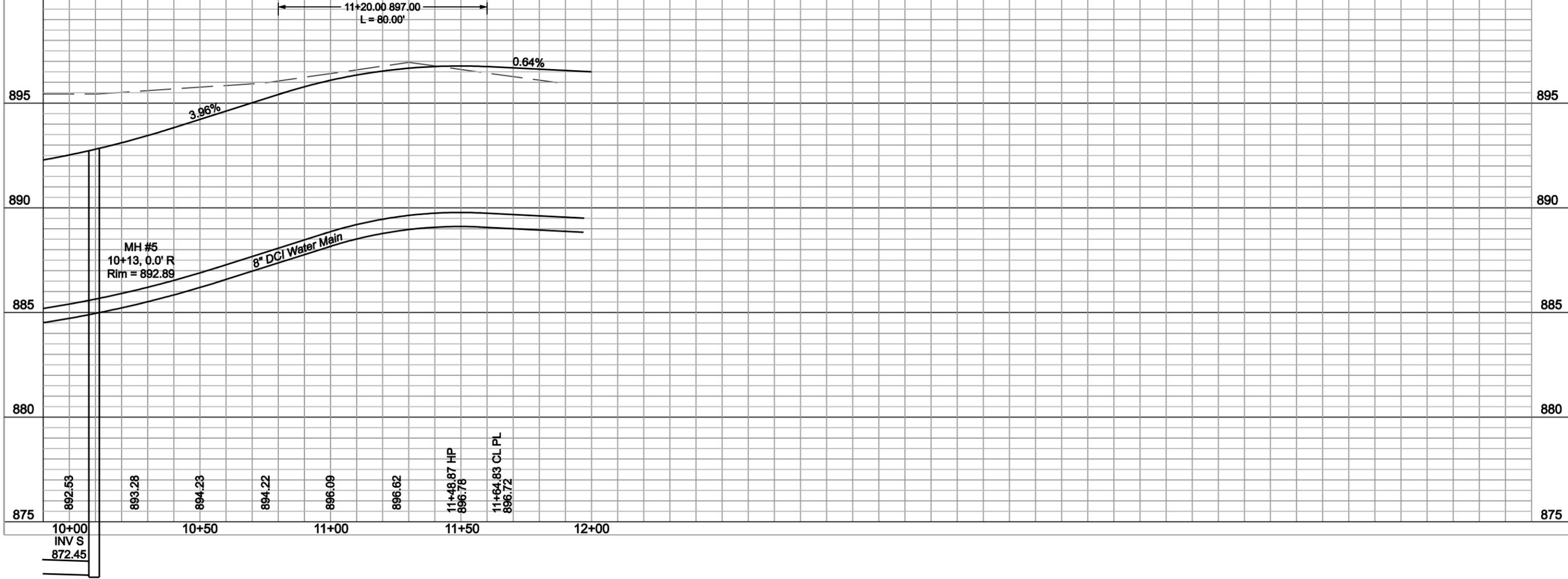
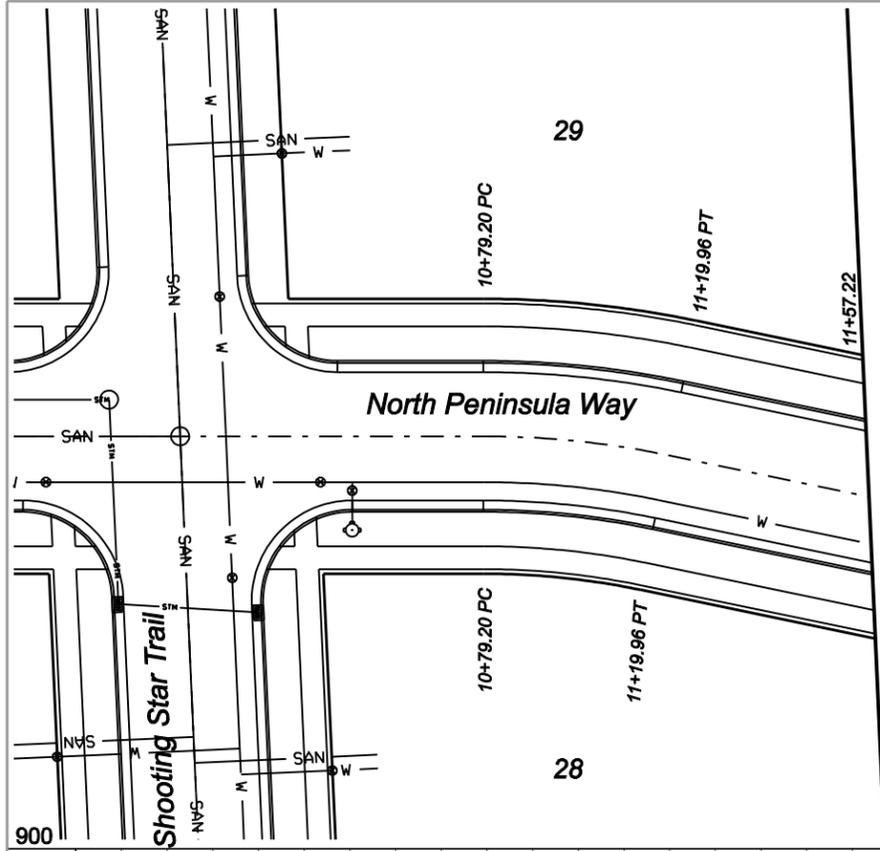
Revisions

Royal Oak & Associates Inc.
 3678 Kinsman Blvd, Madison, Wisconsin 53704
 Phone (608) 274-0500

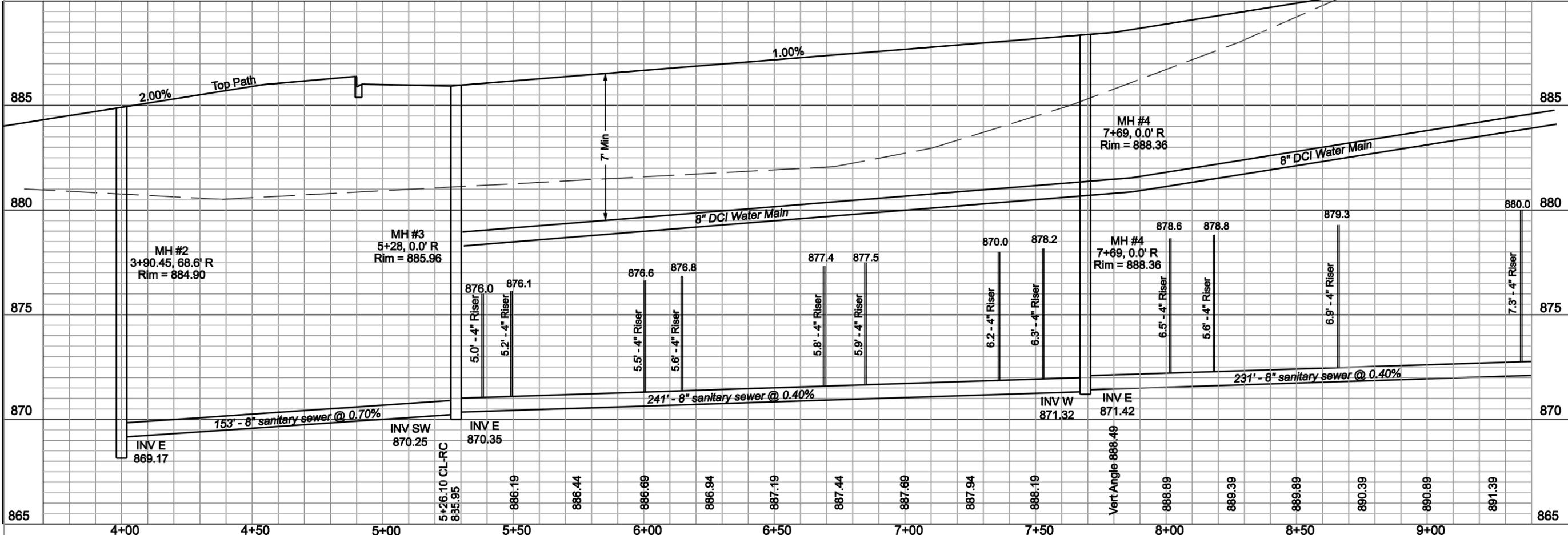
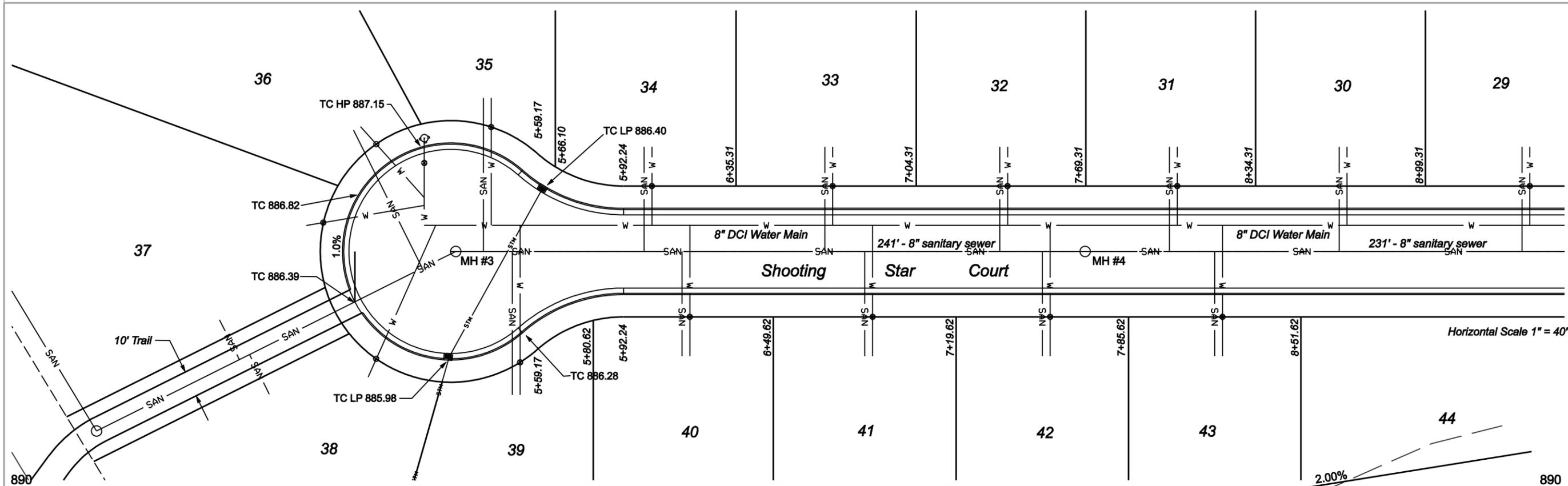
Prairie Place

Peninsula Way

9



Revisions
Royal Oak & Associates Inc. 3678 Kinsman Blvd, Madison, Wisconsin 53704 Phone (608) 274-0500
Prairie Place
Peninsula Way
10



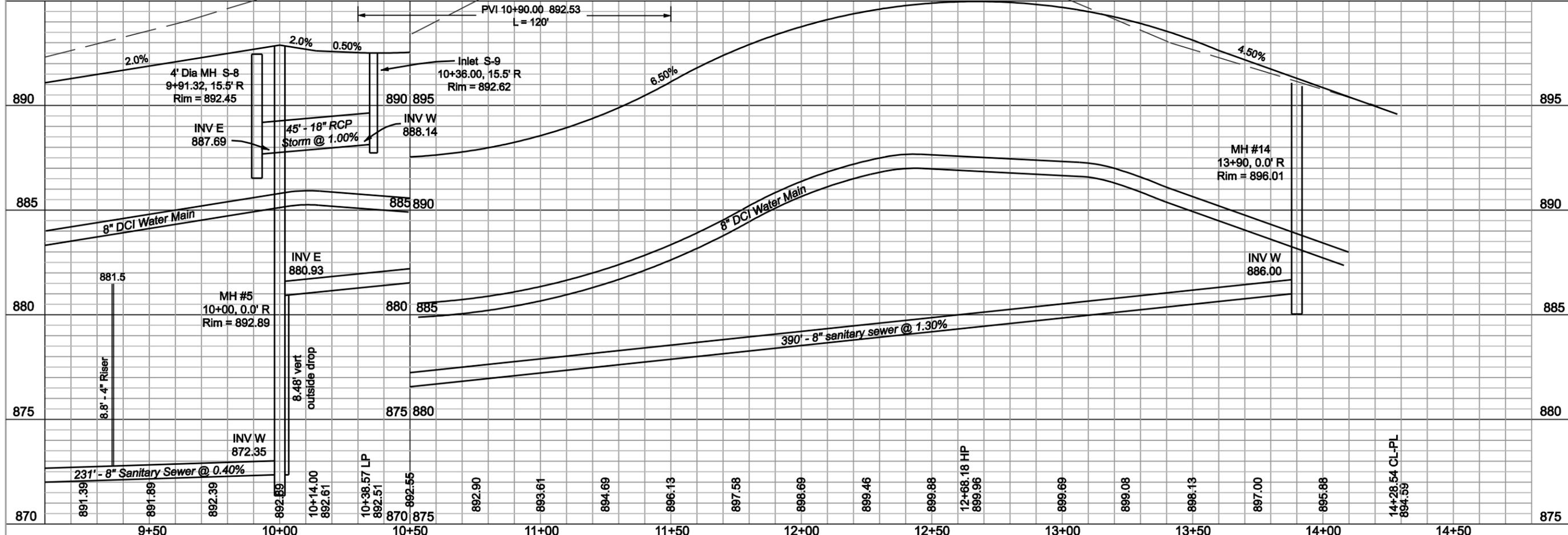
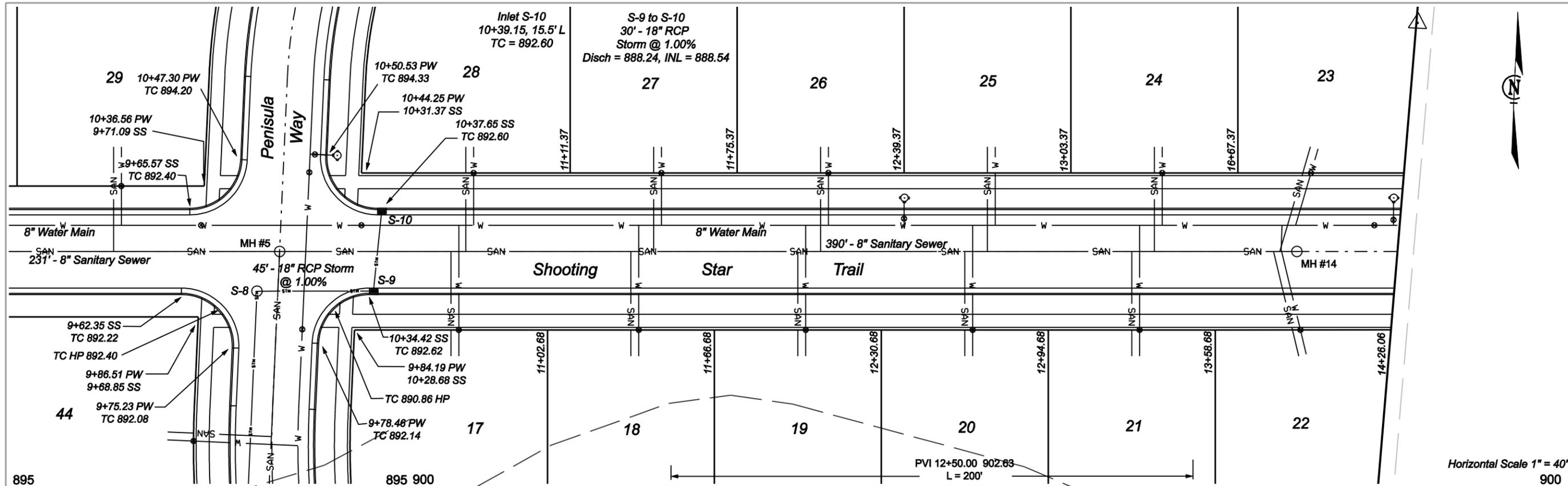
Revisions

Royal Oak & Associates Inc.
 3678 Kinsman Blvd, Madison, Wisconsin 53704
 Phone (608) 274-0500

Prairie Place

Shooting Star Court

11



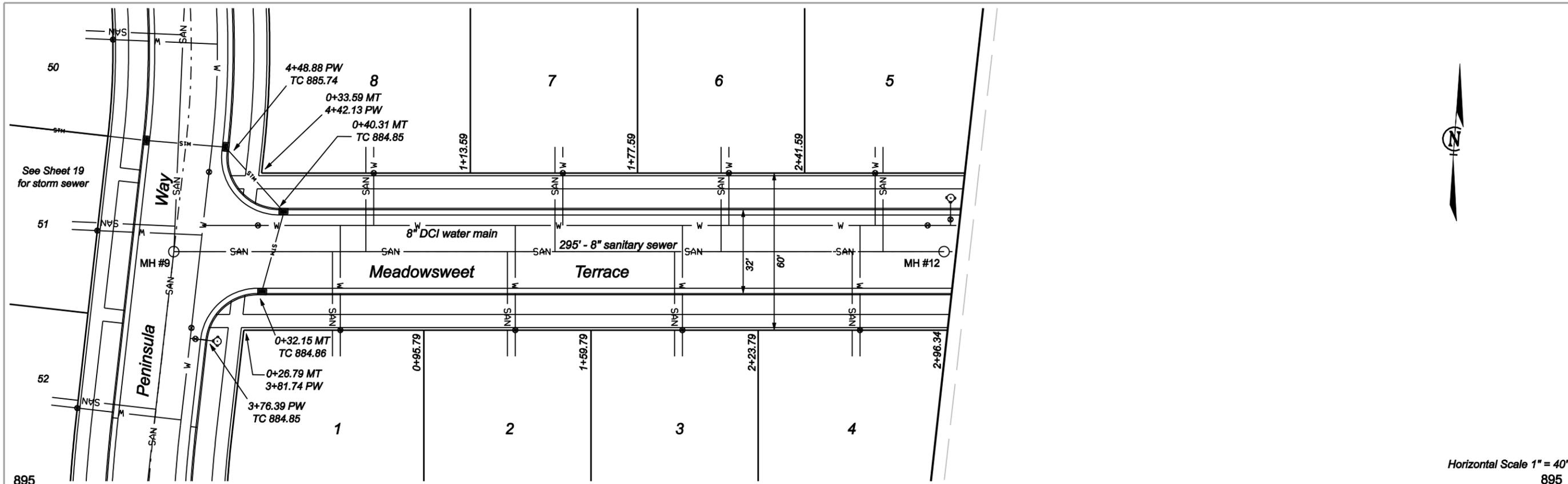
Revisions

Royal Oak & Associates Inc.
 3678 Kinsman Blvd, Madison, Wisconsin 53704
 Phone (608) 274-0500

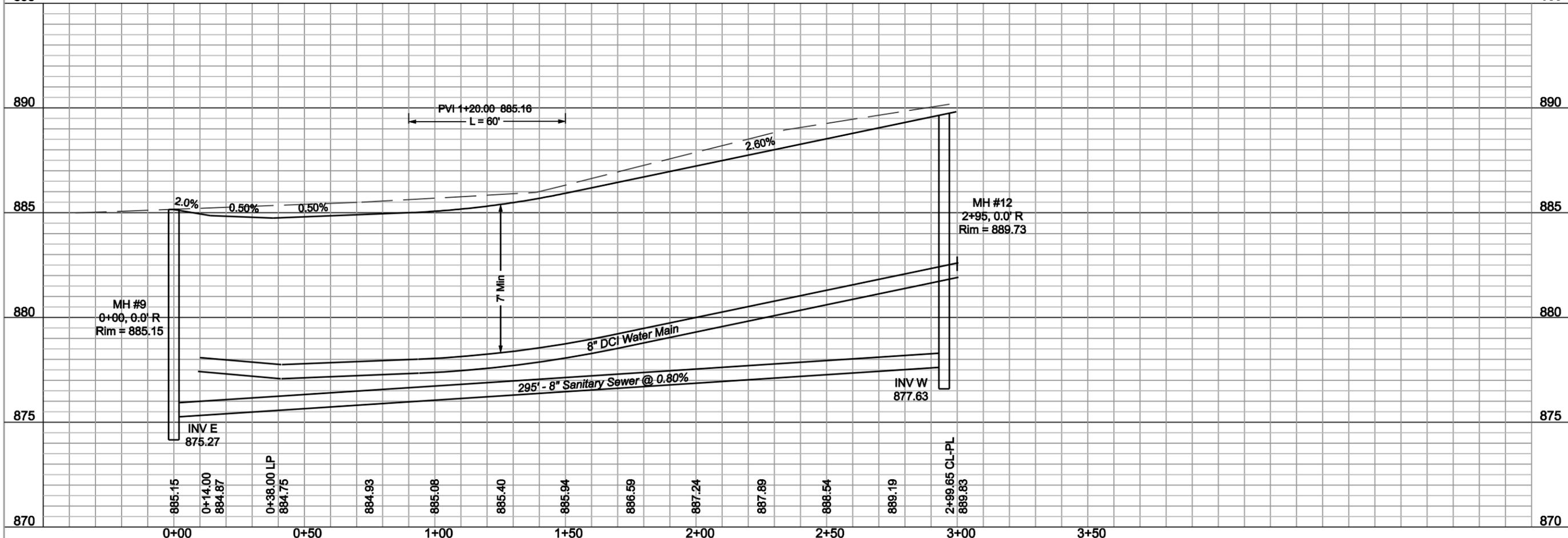
Prairie Place

Shooting Star Trail

12



Horizontal Scale 1" = 40'



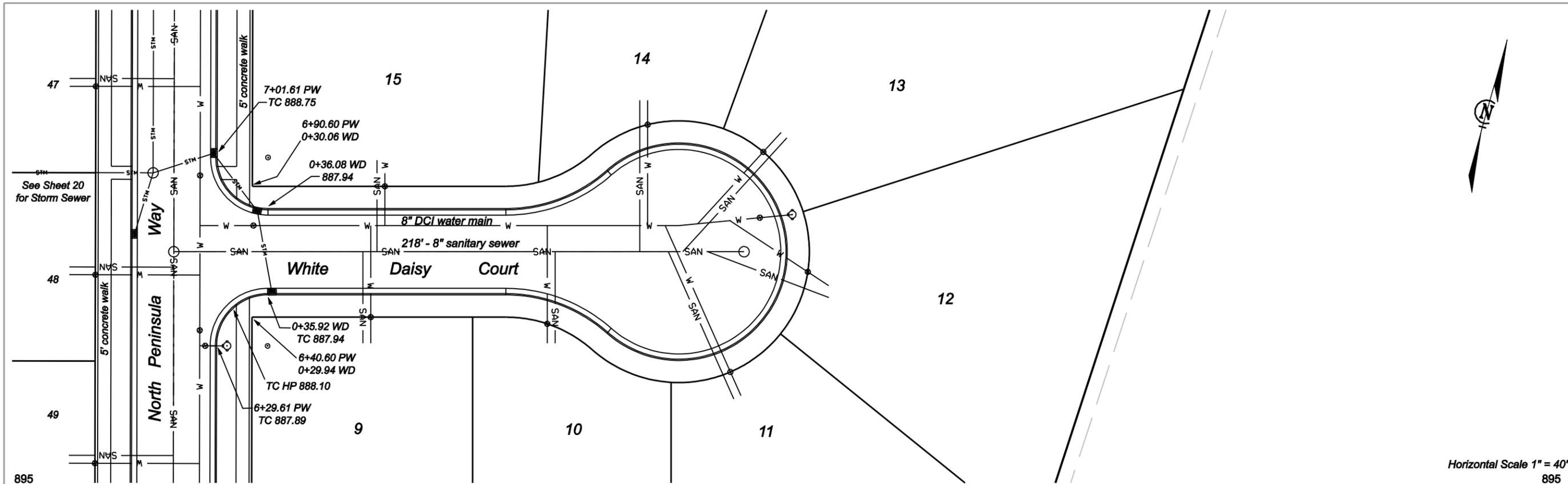
Revisions

Royal Oak & Associates Inc.
3678 Kinsman Blvd, Madison, Wisconsin 53704
Phone (608) 274-0500

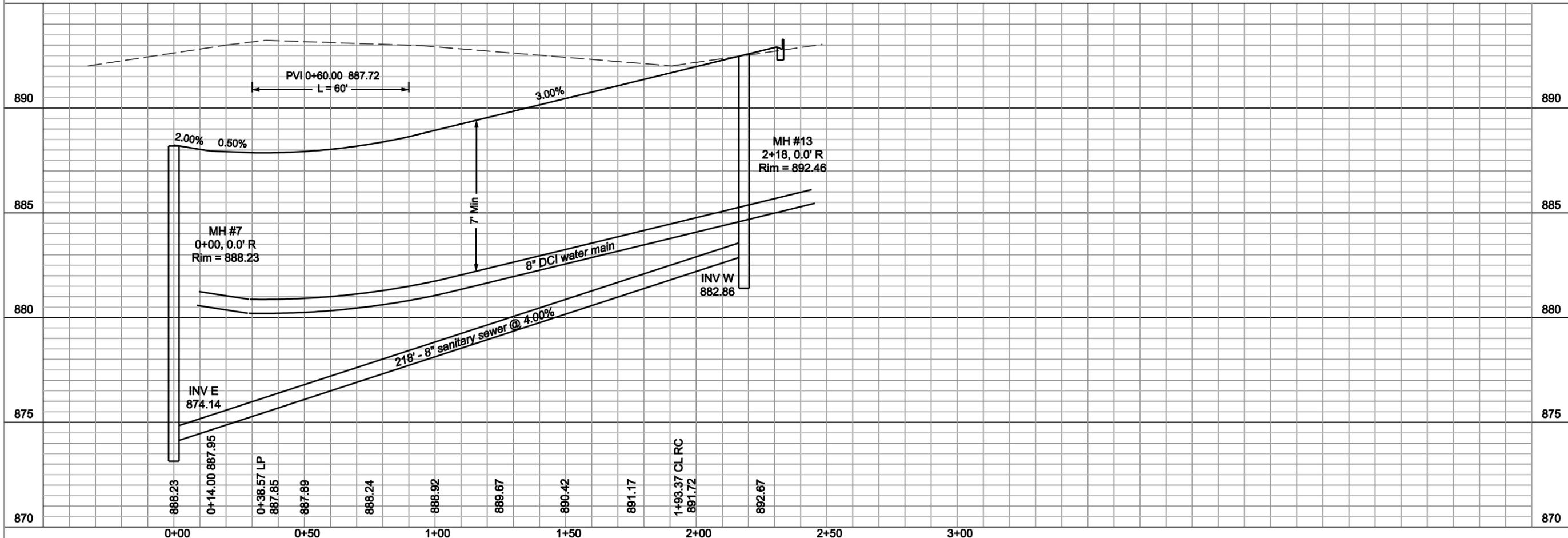
Prairie Place

Meadowsweet Terrace

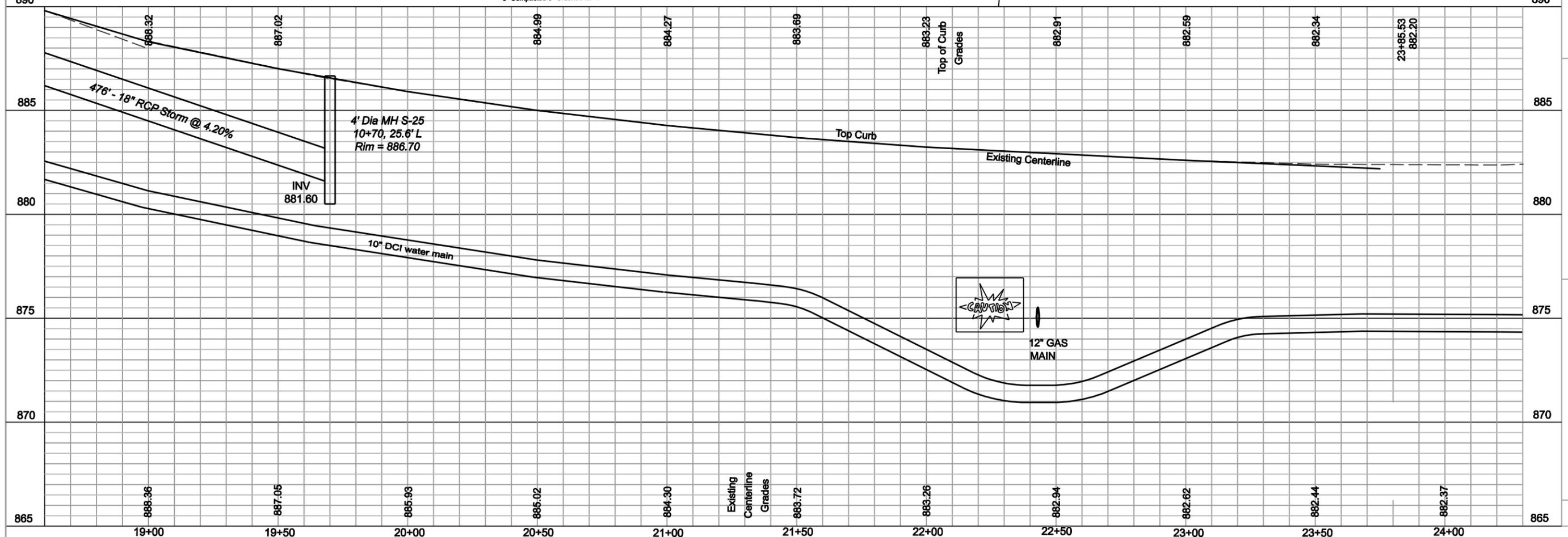
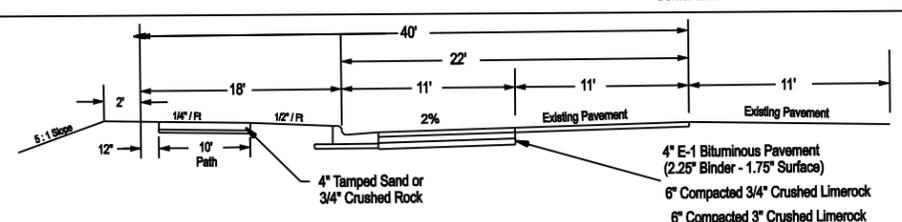
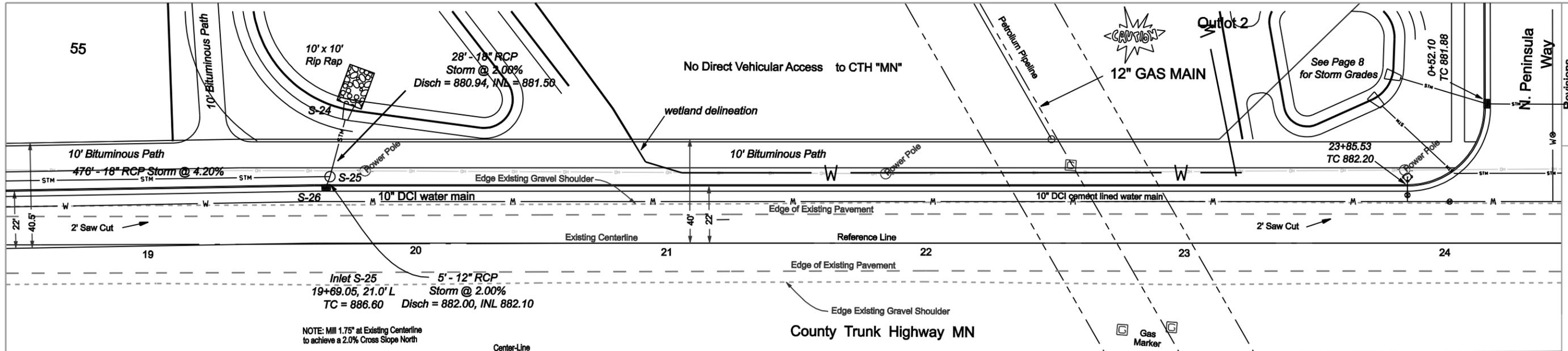
13



Horizontal Scale 1" = 40'



Revisions
Royal Oak & Associates Inc. 3678 Kinsman Blvd, Madison, Wisconsin 53704 Phone (608) 274-0500
Prairie Place
White Daisy Court
14



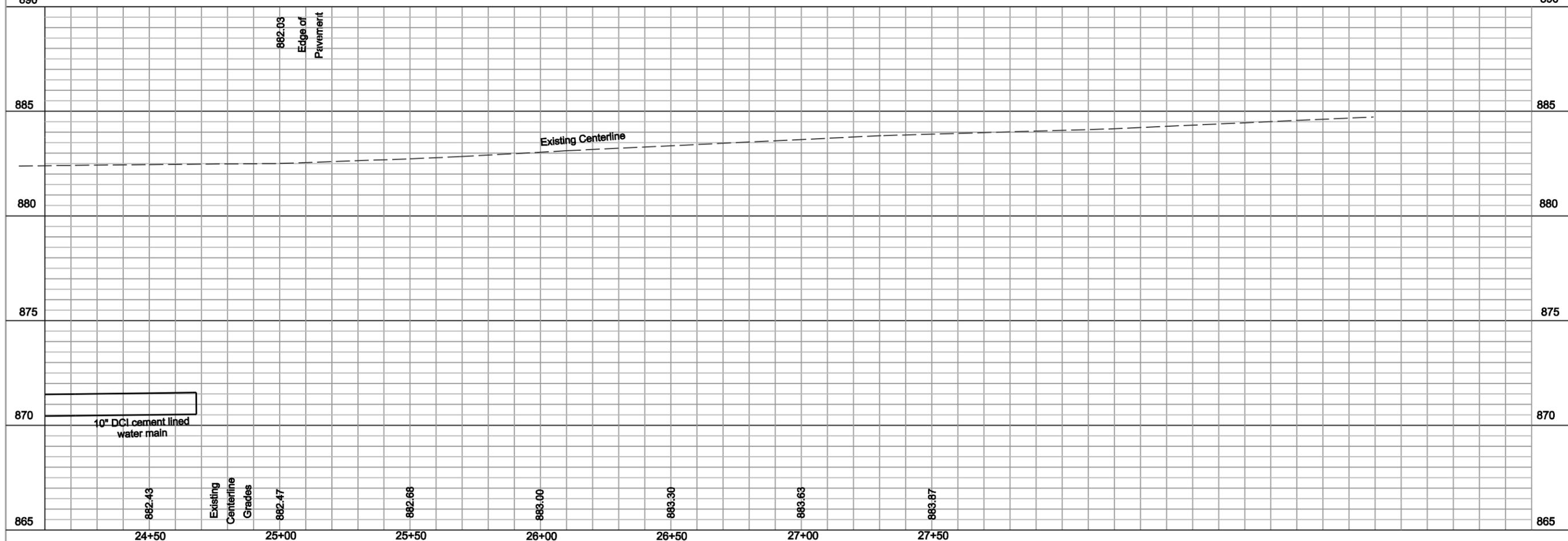
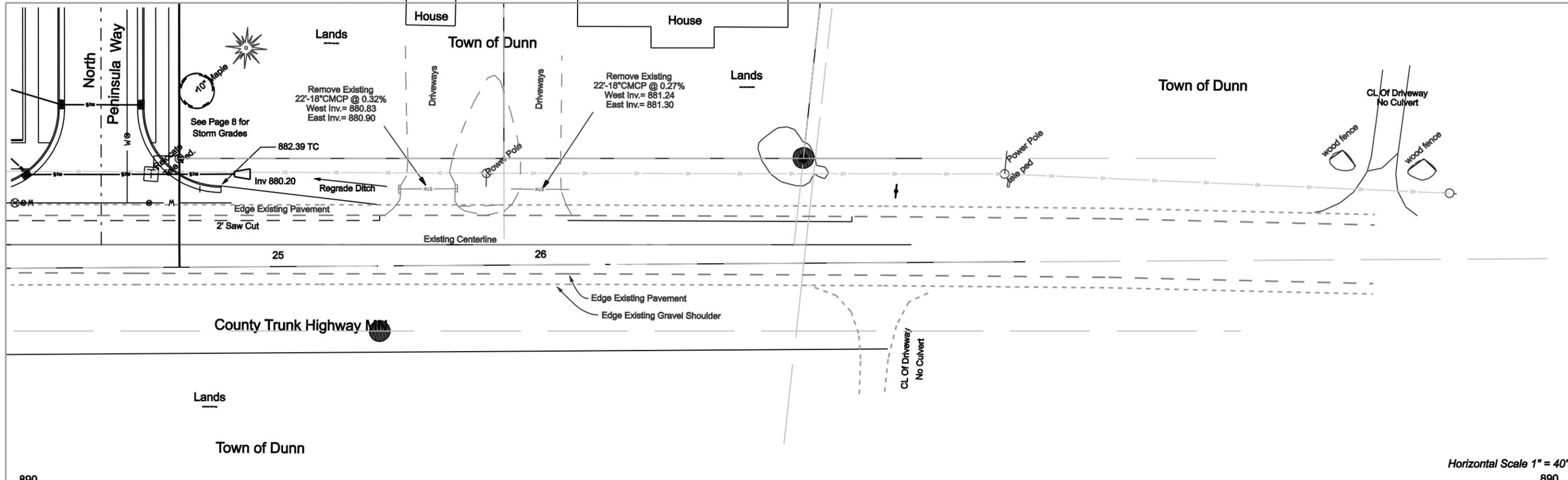
Revisions

Royal Oak & Associates Inc.
3678 Kinsman Blvd, Madison, Wisconsin 53704
Phone (608) 274-0500

Prairie Place

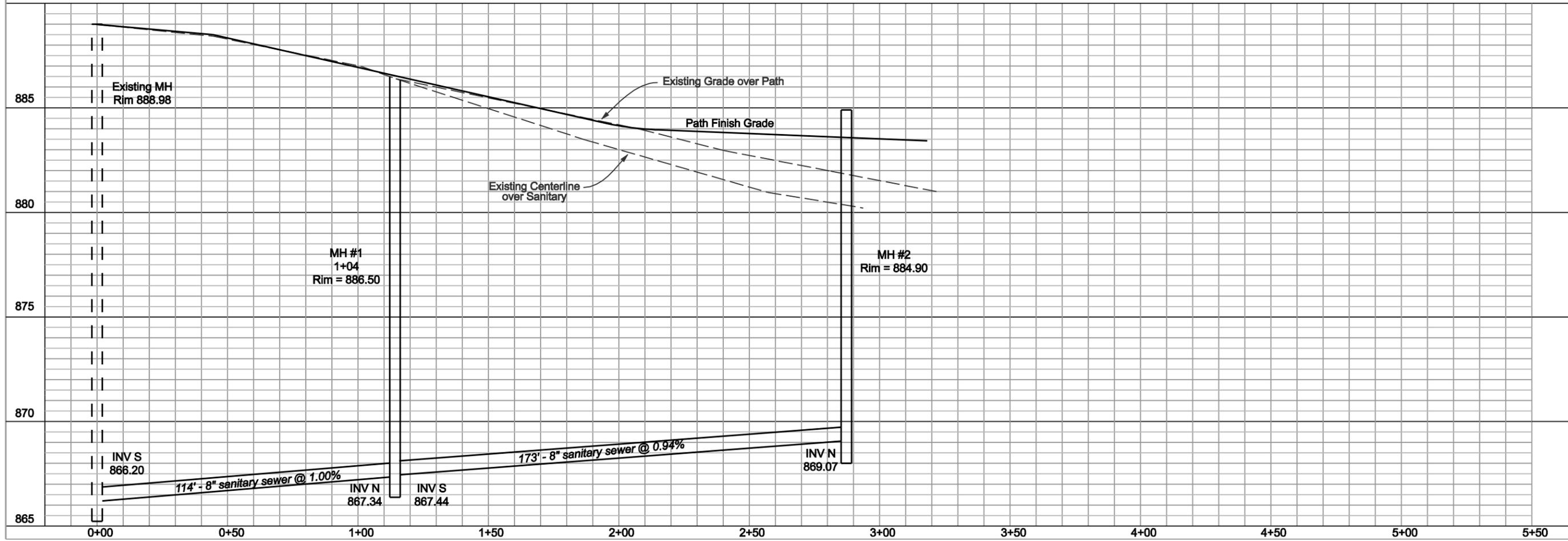
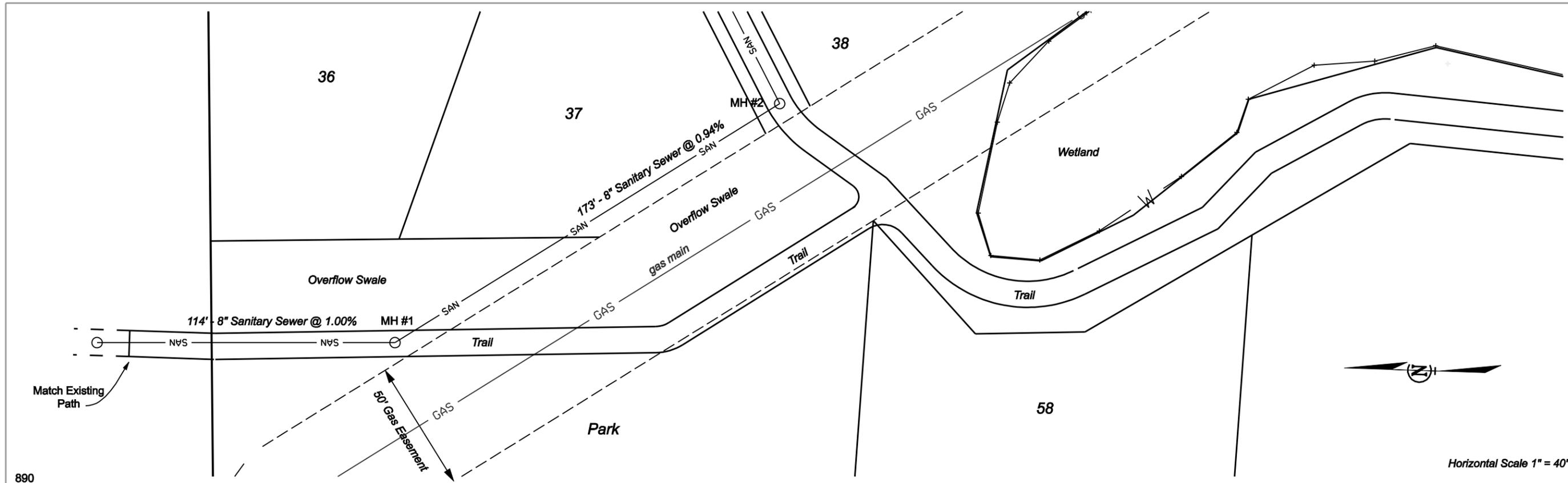
CTH MN

16



Horizontal Scale 1" = 40'

Revisions
 Royal Oak & Associates Inc.
 3678 Kinsman Blvd, Madison, Wisconsin 53704
 Phone (608) 274-0500
 Prairie Place
 CTH MN
 17



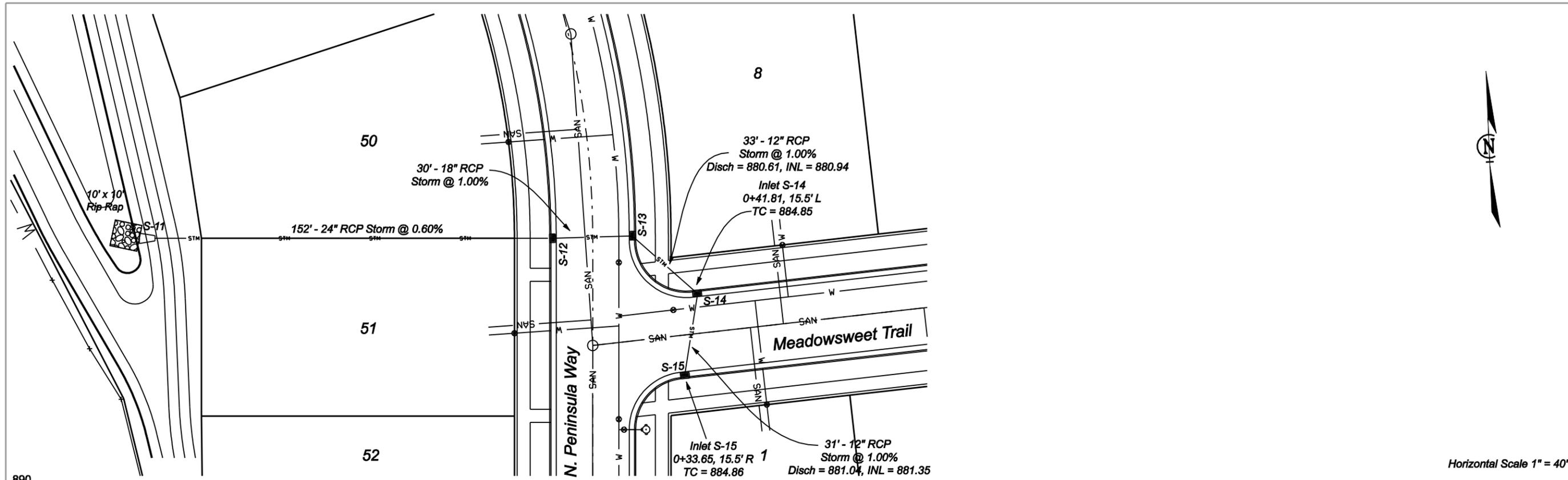
Revisions

Royal Oak & Associates Inc.
 3678 Kinsman Blvd, Madison, Wisconsin 53704
 Phone (608) 274-0500

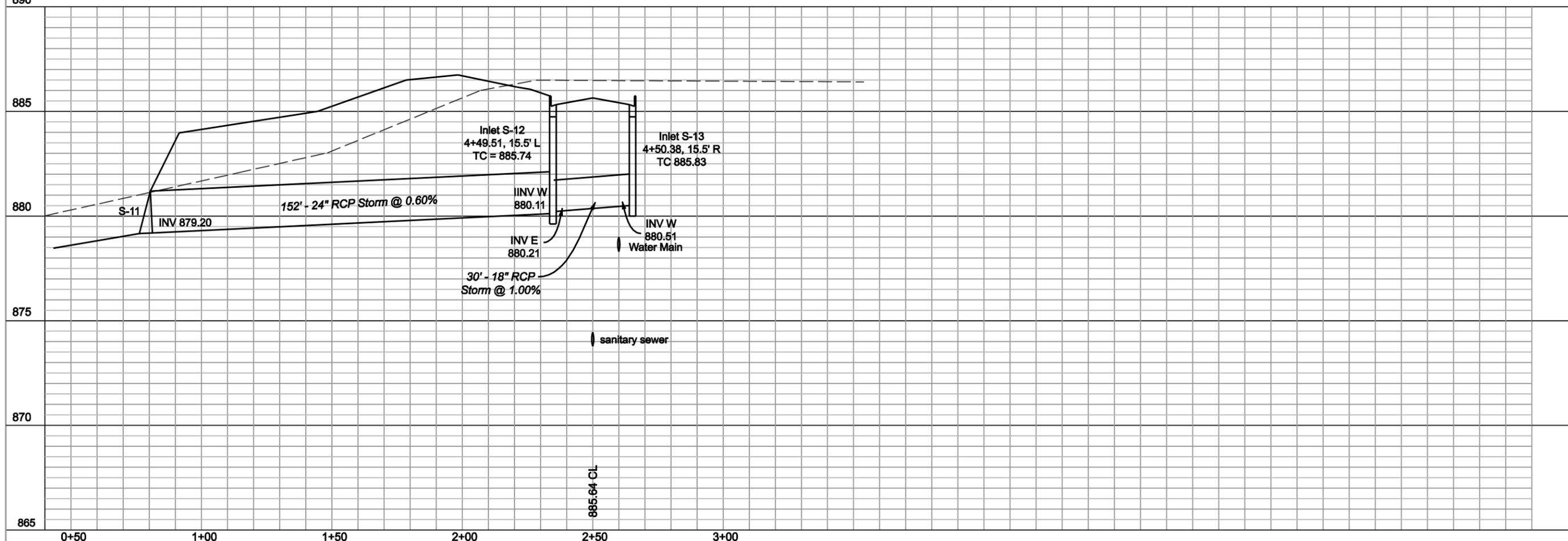
Prairie Place

Sanitary Sewer

18



Horizontal Scale 1" = 40'

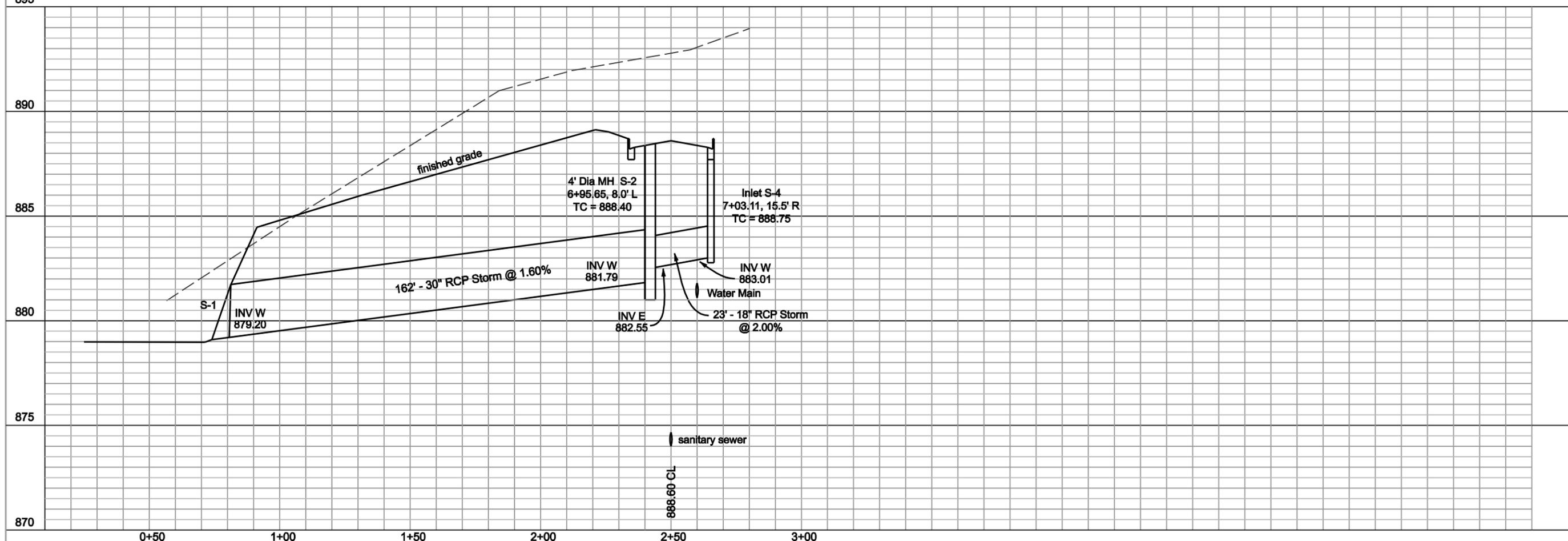
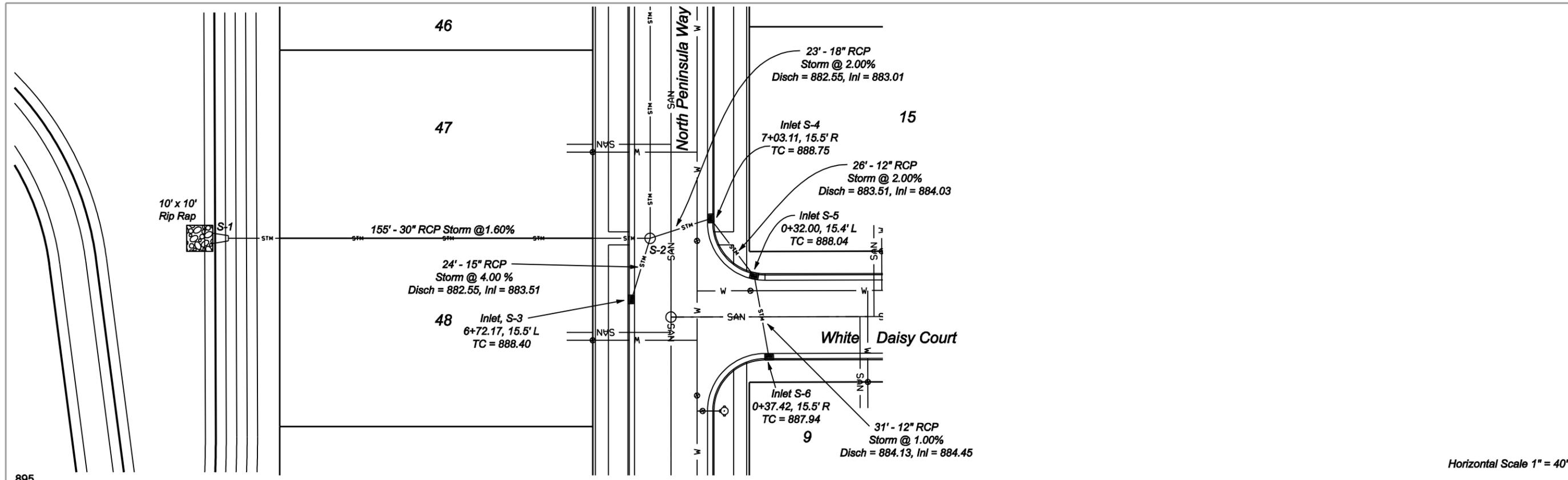


Revisions

Royal Oak & Associates Inc.
3678 Kinsman Blvd, Madison, Wisconsin 53704
Phone (608) 274-0500

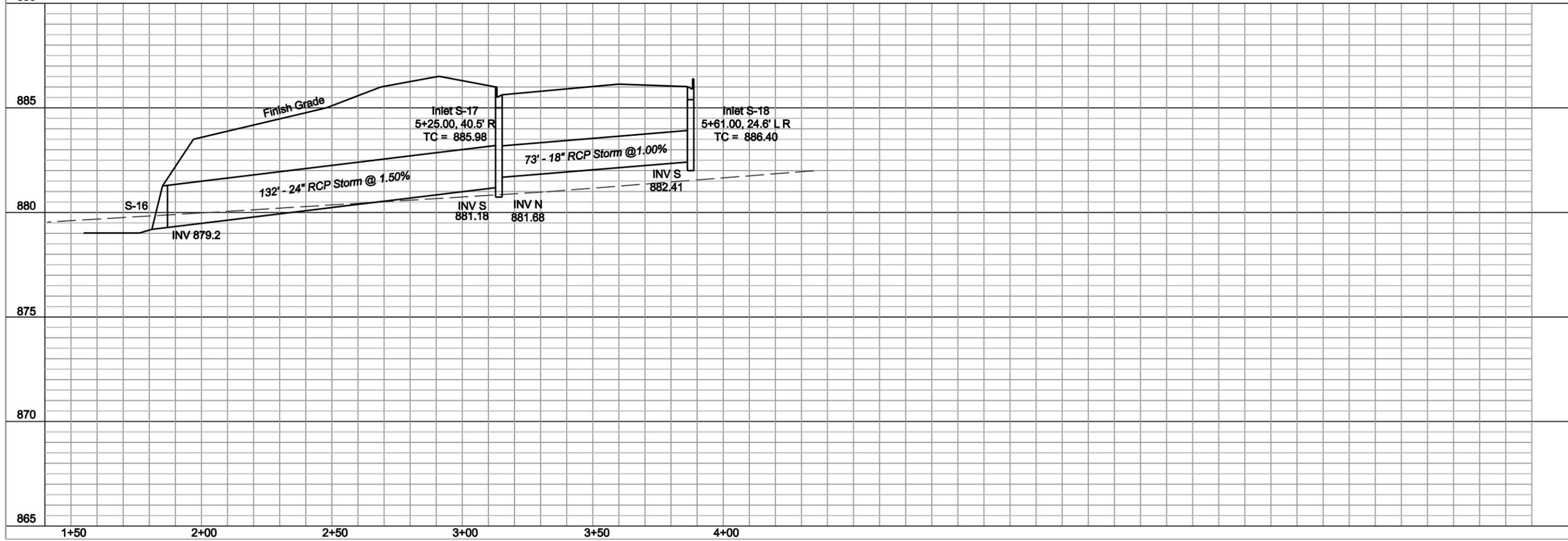
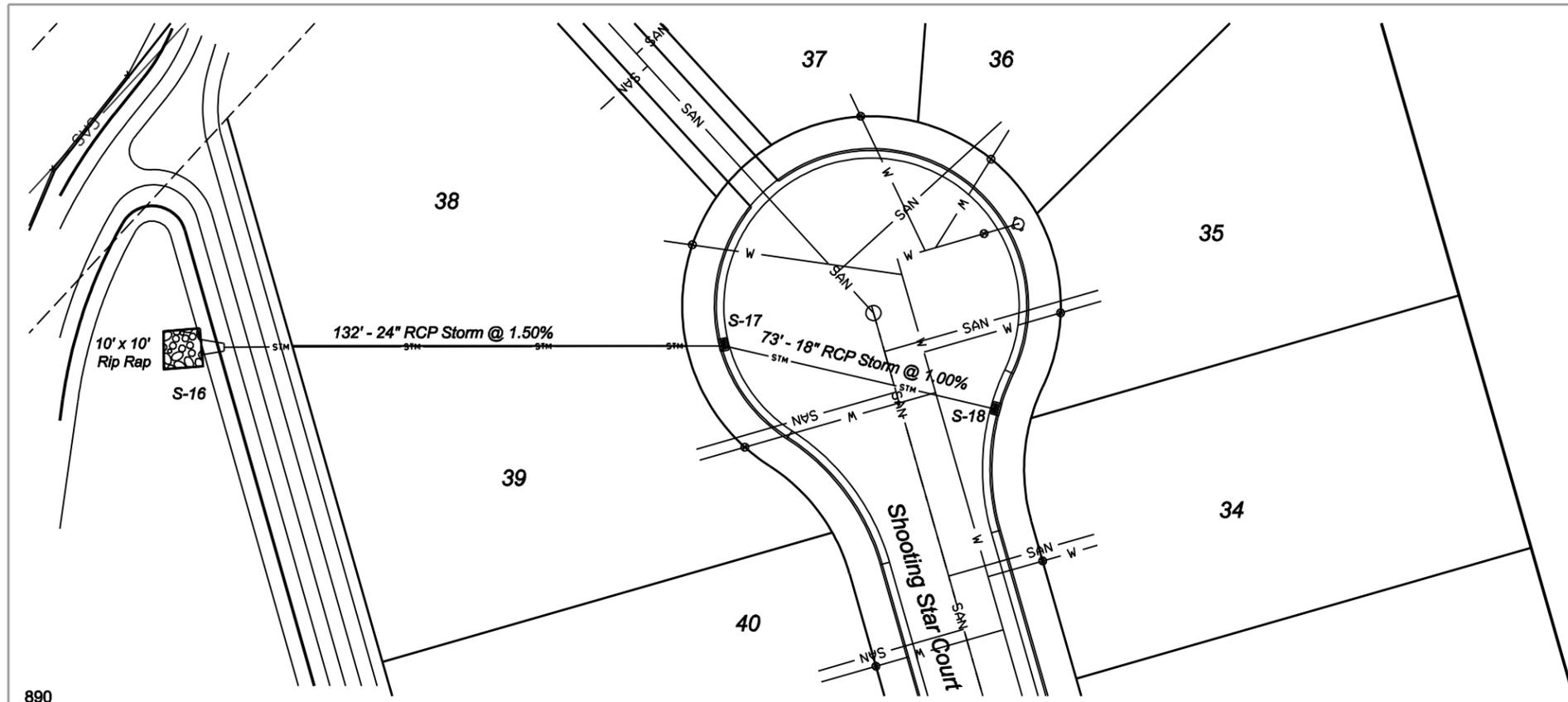
Prairie Place

Storm Sewer - Lots 50-51



Horizontal Scale 1" = 40'

Revisions
Royal Oak & Associates Inc. 3678 Kinsman Blvd, Madison, Wisconsin 53704 Phone (608) 274-0500
Prairie Place
Storm Sewer 47-48
20



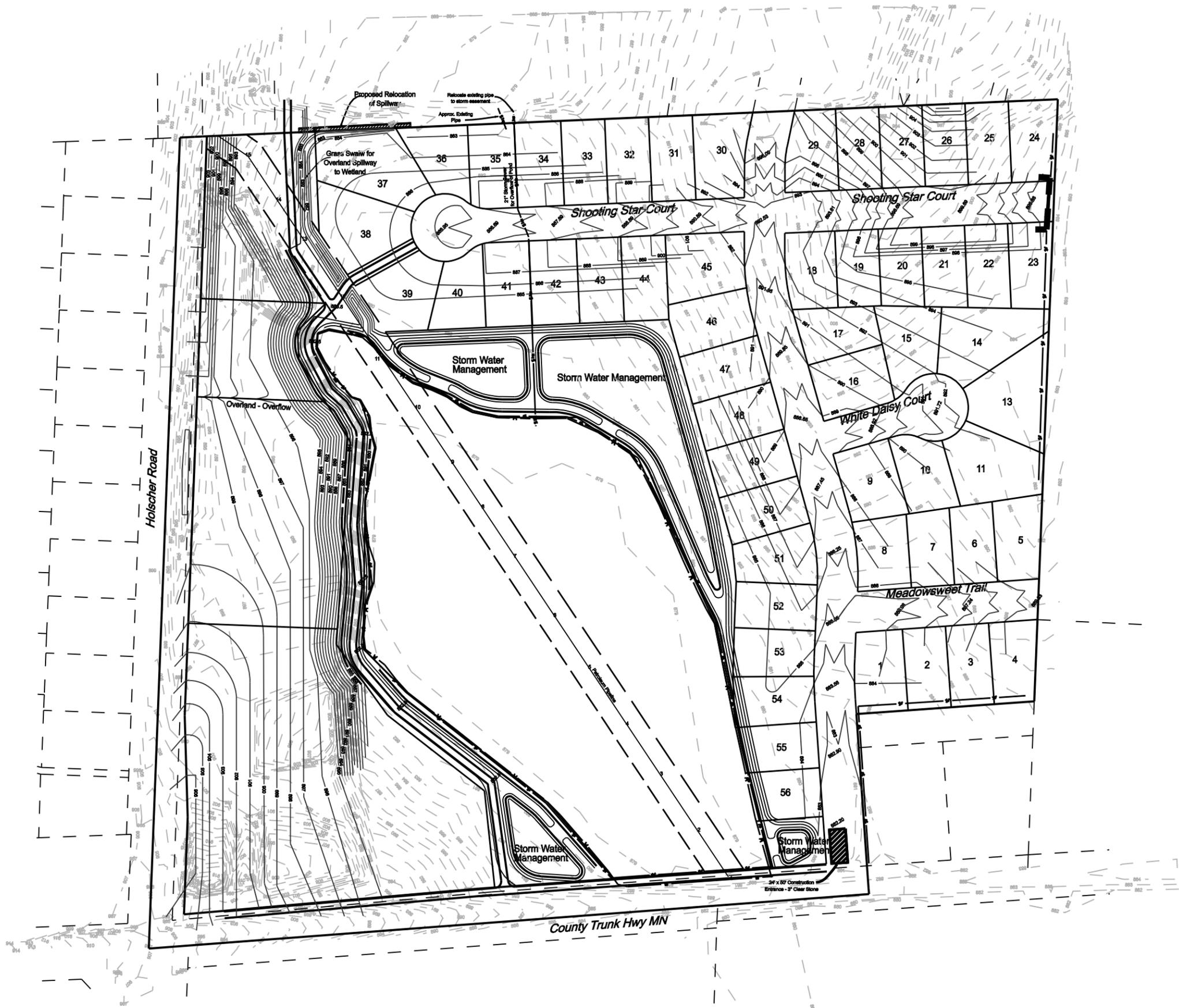
Revisions

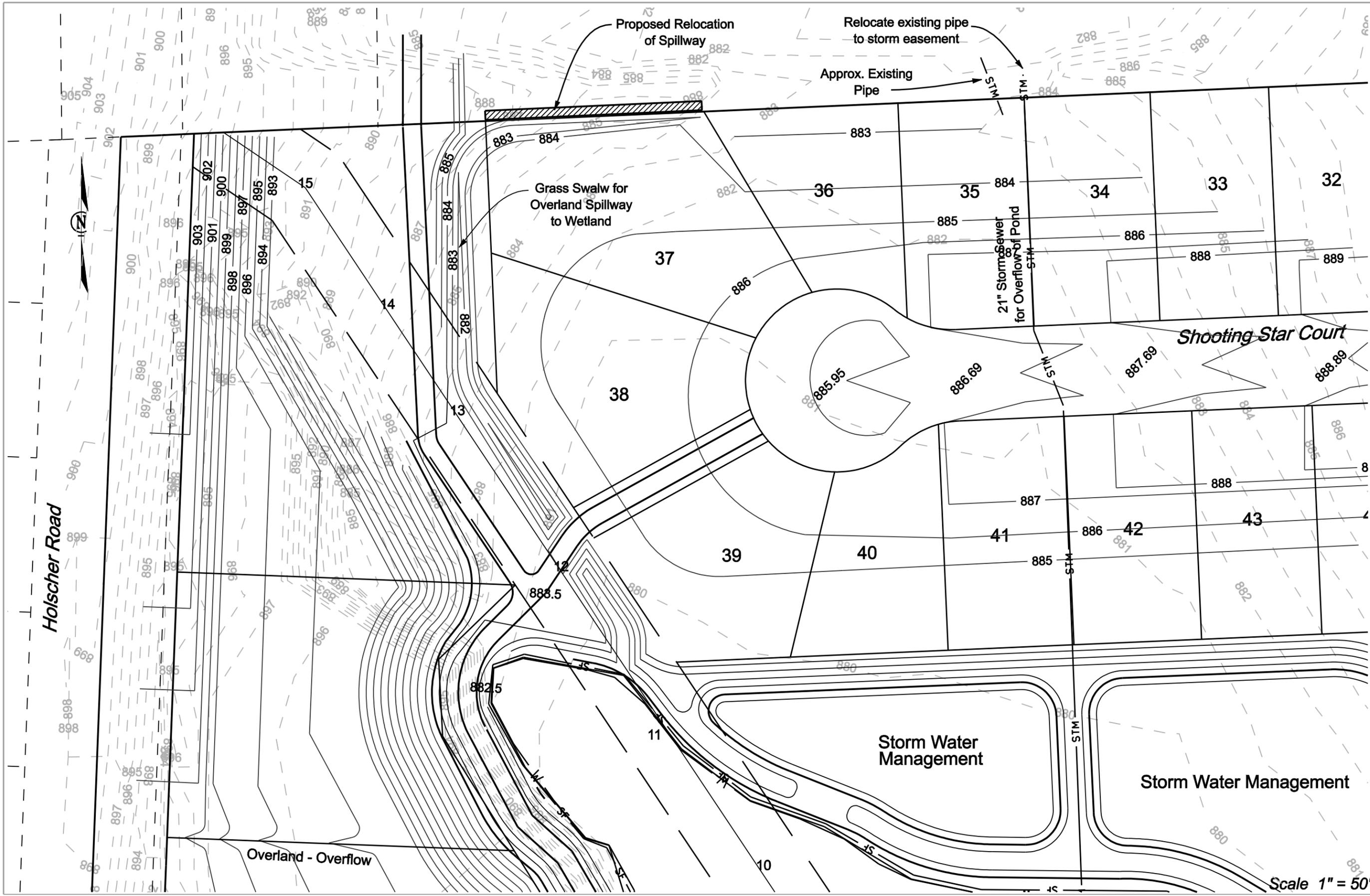
Royal Oak & Associates Inc.
3678 Kinsman Blvd, Madison, Wisconsin 53704
Phone (608) 274-0500

Prairie Place

Storm Sewer 38-39

21





Holscher Road

Shooting Star Court

Storm Water Management

Storm Water Management

Overland - Overflow

Grass Swallow for Overland Spillway to Wetland

Proposed Relocation of Spillway

Relocate existing pipe to storm easement

Approx. Existing Pipe

21" Storm Sewer for Overflow of Pond

Revisions

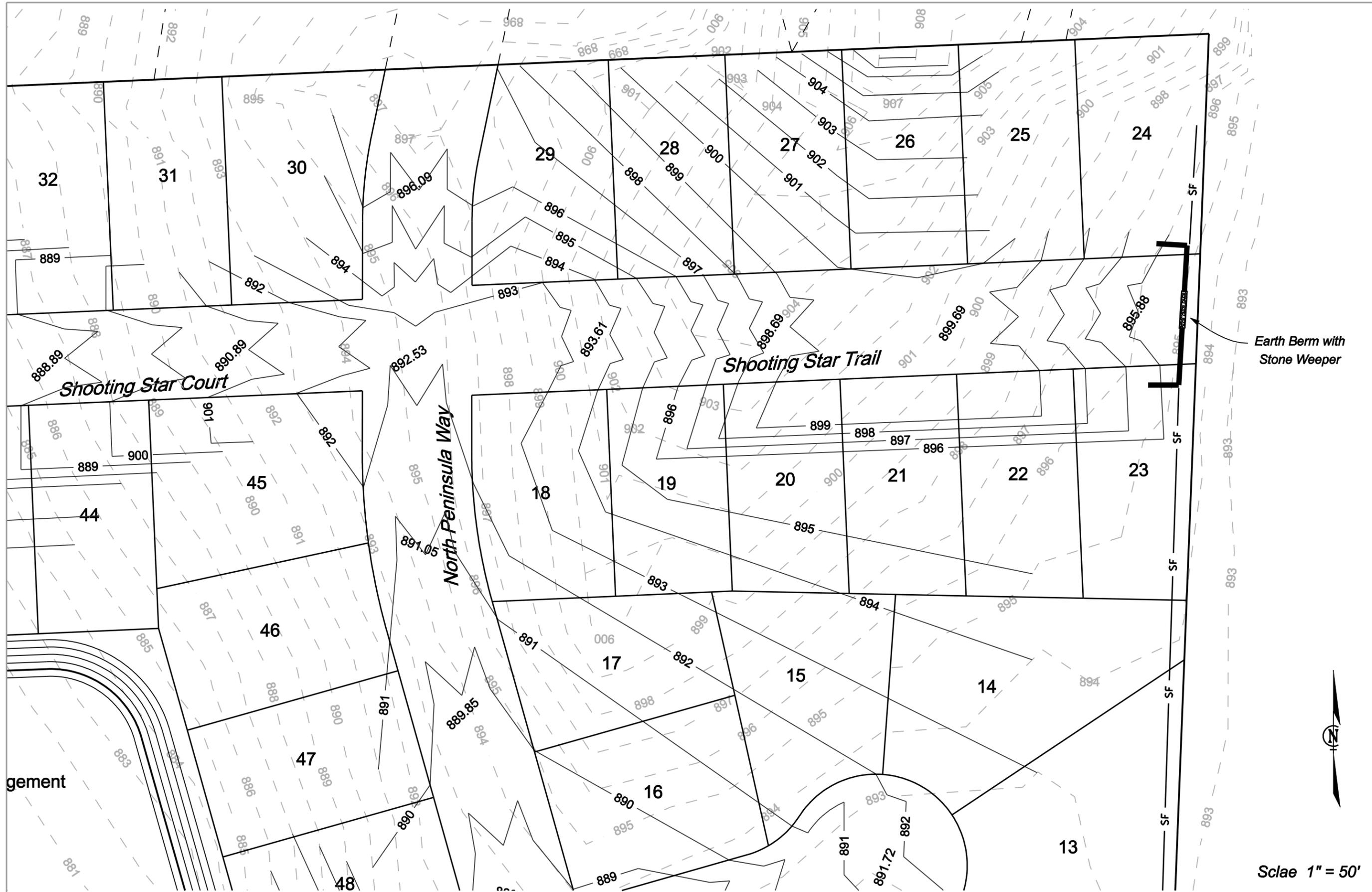
Royal Oak & Associates Inc.
3678 Kinsman Blvd, Madison, Wisconsin 53704
Phone (608) 274-0500

Prairie Place

Grading and Erosion Control

23

Scale 1" = 50'



Revisions

Royal Oak & Associates Inc.
 3678 Kinsman Blvd, Madison, Wisconsin 53704
 Phone (608) 274-0500

Prairie Place

Grading and
 Erosion Control

24

Earth Berm with
 Stone Weeper

Scale 1" = 50'



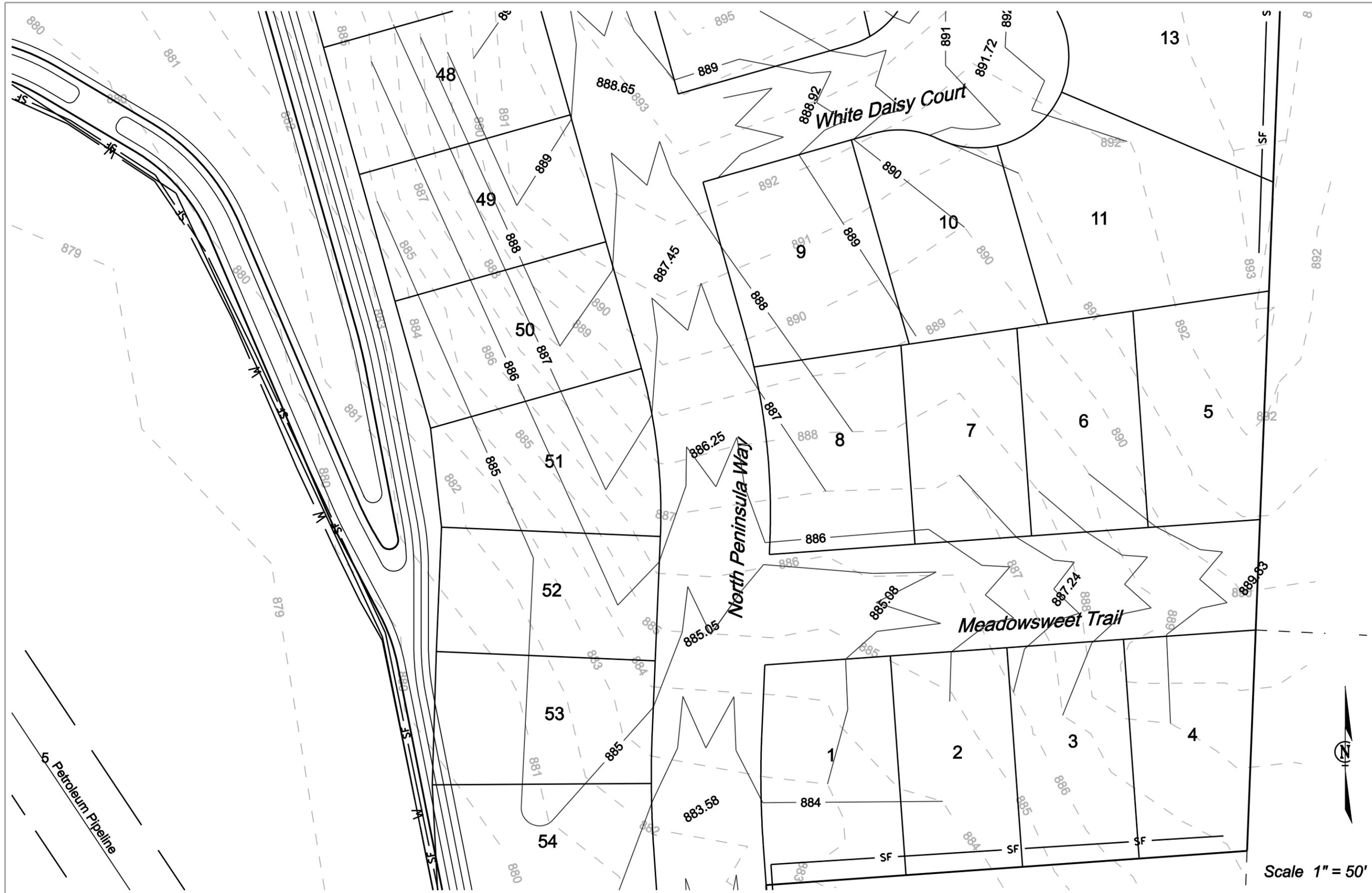
Holscher Road

Petroleum Pipeline

Scale 1" = 50'



25	Grading and Erosion Control	Prairie Place	Royal Oak & Associates Inc. 3678 Kirsman Blvd, Madison, Wisconsin 53704 Phone (608) 274-0500	Revisions
----	--------------------------------	---------------	--	-----------



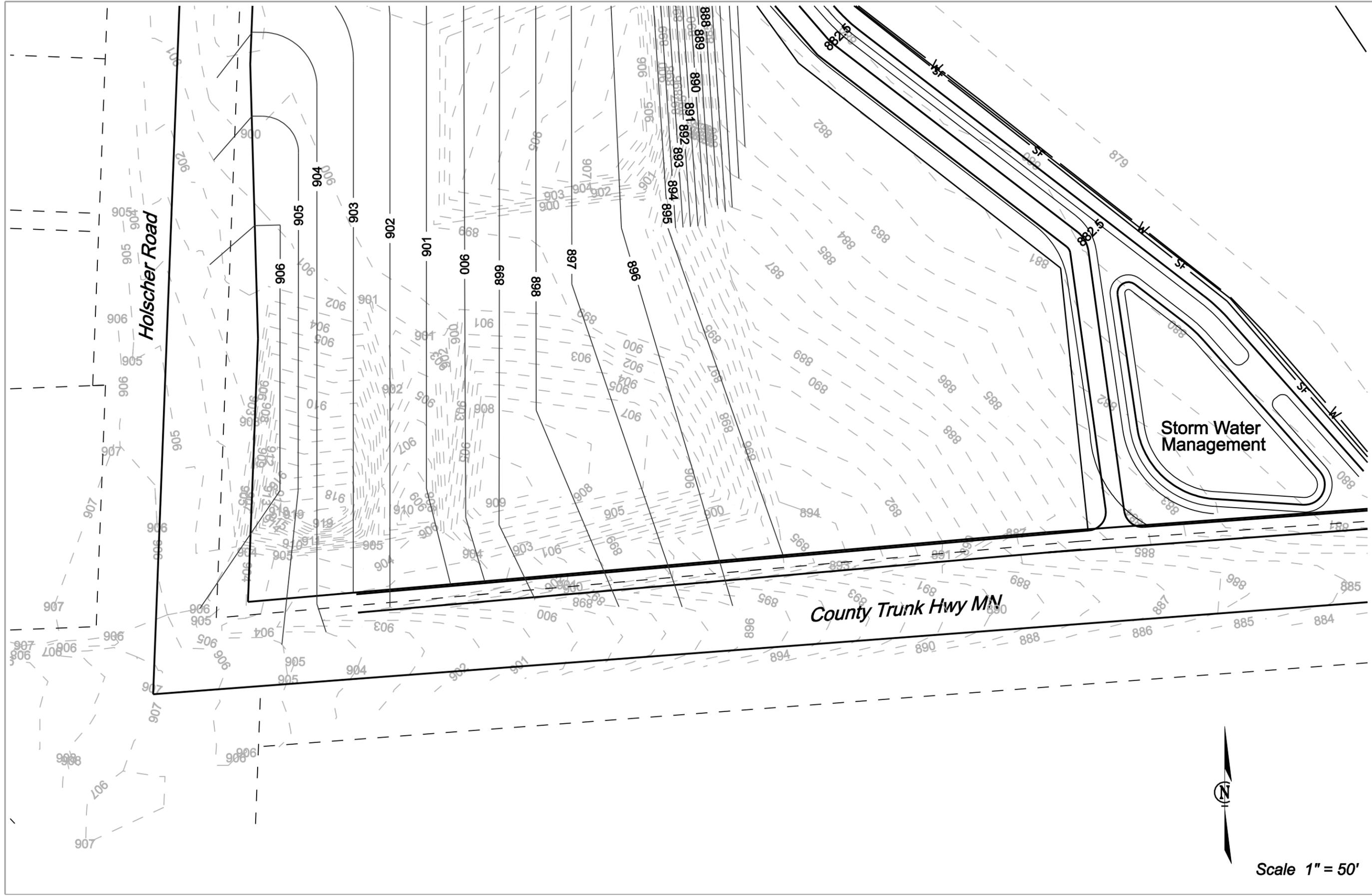
Revisions

Royal Oak & Associates Inc.
 3678 Kinsman Blvd, Madison, Wisconsin 53704
 Phone (608) 274-0500

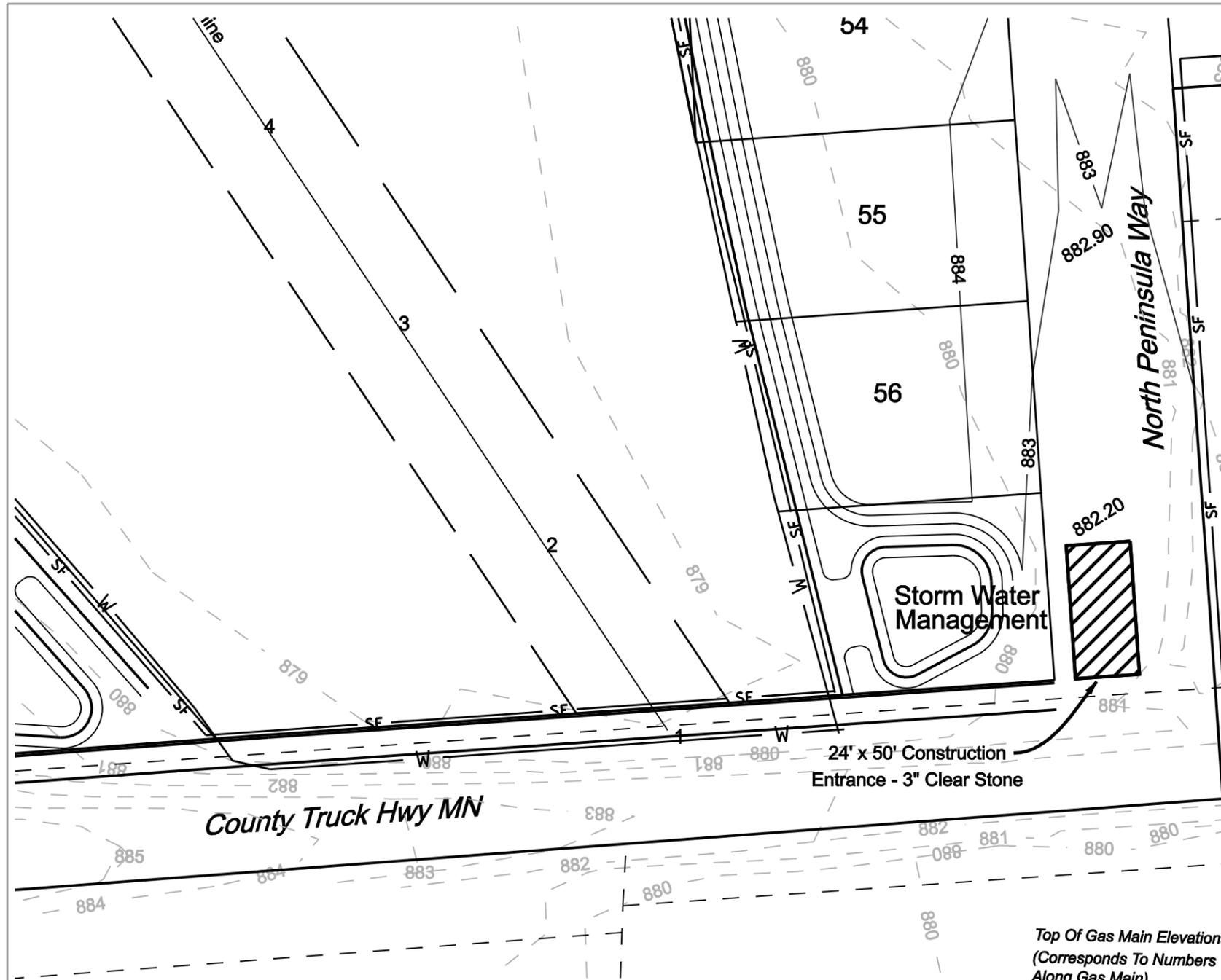
Prairie Place

Grading and
 Erosion Control

26



Revisions	Royal Oak & Associates Inc. 3678 Kinsman Blvd, Madison, Wisconsin 53704 Phone (608) 274-0500	Prairie Place	Grading and Erosion Control
			27



Project Narrative

This project is a small plat lying on the Southeast side of the Village of Oregon. This plat consists of 10 single family lots and one Outlot. The project will extend the streets of Perry Parkway and Fairfax Avenue. The Outlot will be used as park and stormwater management. The existing site conditions is cropped farmland with some trees along the south side of the project. The farmland around the plat will remain as farmland.

1. All grading and erosion control shall conform to the Village of McFarland ordinances.
2. Erosion control devices shall be installed prior to the start of grading.
3. Erosion control is the responsibility of the contractor until acceptance of this project. Erosion control measures as shown shall be the minimum precautions that will be allowed. The contractor shall be responsible for recognizing and correcting all the erosion control problems that are a result of construction activities.
4. Additional erosion control measures, as requested by the Village inspector or developers engineers, shall be installed within 24 hours.
5. All erosion control measures and structures serving the site must be inspected at least weekly and within 24 hours of the time 0.50 inches of rain is produced. All maintenance will follow and installed within 24 hours.
6. All trucks leaving site shall have clean tires. Prior to the start of grading, the contractor shall install a tracking pad. The tracking pad shall be 50' long, 24' wide, and 1' thick. The pad shall be constructed with 3" clear stone. The construction entrance shall be maintained by the contractor in a condition in which will prevent the tracking of mud onto the public street. All material deposited on public property shall be swept up daily.
7. Type "D" inlet protection shall be installed in the inlets downstream of the project. The inlet protection shall be inspected and maintained throughout the construction.
8. Once the site has finished graded and vegetation has been established and stabilized, the silt fence shall be removed and restored with seed, fertilizer and mulch.
9. See other plan and profiles for street grades, paved areas, and utilities
10. Electric and cables will be installed in easements shown on the plat. Finish grade, seed and mulch these areas after installation.
11. Topsoil shall be stockpiled on site and then used to finish lots and terraces.

**Top Of Gas Main Elevations
(Corresponds To Numbers
Along Gas Main)**

1. 875.6
2. 875.6
3. 875.5
4. 875.6
5. 876.0
6. 875.2
7. 875.3
8. 875.6
9. 876.5
10. 876.9
11. 877.4
12. 878.0
13. 881.1
14. 884.6
15. 889.4

Erosion Control Devices

1. Silt fence
2. Type "D" inlet bags installed in the downstream inlets.
3. A 50' long, 24' wide, 1' deep construction entrance pad located on N. Peninsula Way. The pad shall consist 3" clear stone.

Legend

- Existing Contour
- Proposed Contour
- Finish Spot Grade
- Drainage Arrow
- Wetland Delineation



Scale 1" = 50'

Revisions

Royal Oak & Associates Inc.
3678 Kinsman Blvd, Madison, Wisconsin 53704
Phone (608) 274-0500

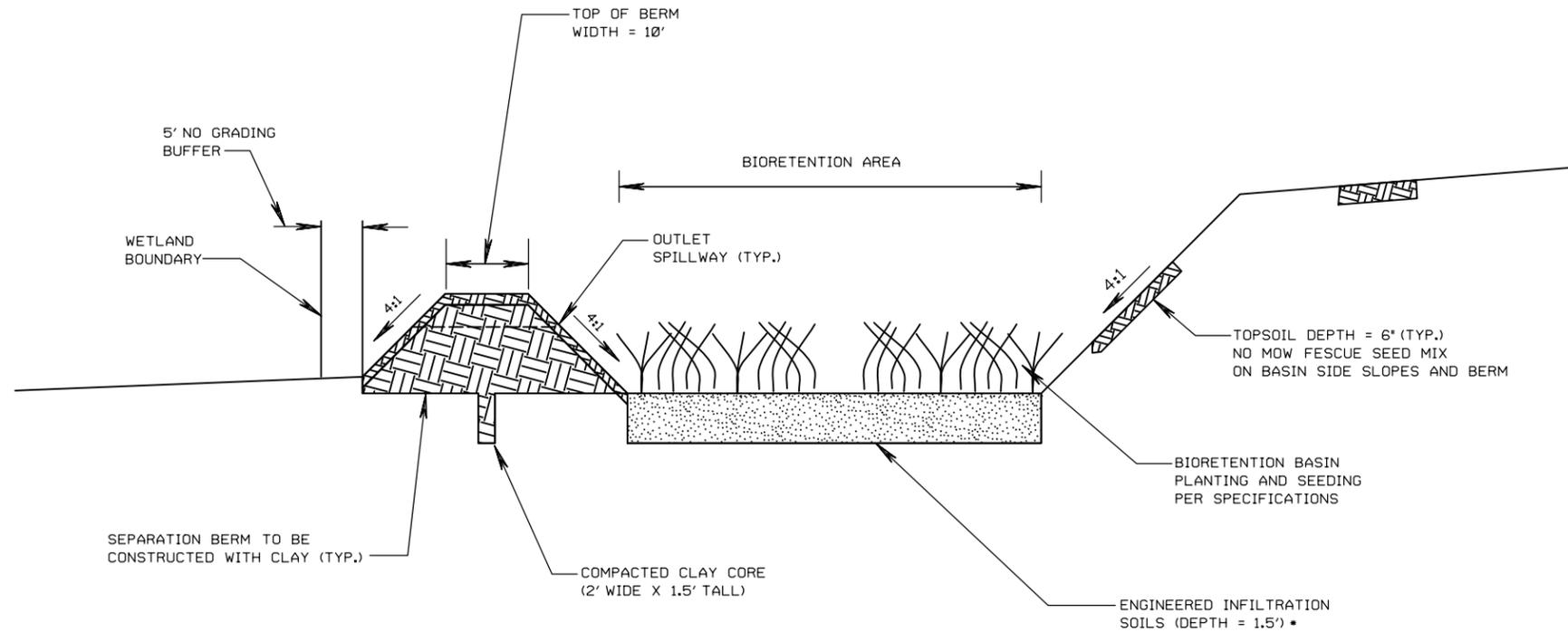
Prairie Place

Grading and
Erosion Control

ENGINEERED SOIL NOTES

1. ENGINEERED SOIL SHALL ONLY BE USED WITHIN THE LIMITS SHOWN.
2. THE PLANTING MIXTURE SHALL CONSIST OF A MIXTURE OF 70 TO 85% SAND AND 15 TO 30% COMPOST. THE PERCENTAGES ARE BASED ON VOLUME. SPECIAL ATTENTION SHOULD BE GIVEN TO PLANT SELECTION WHEN THE PERCENTAGE OF SAND EXCEEDS 75%.

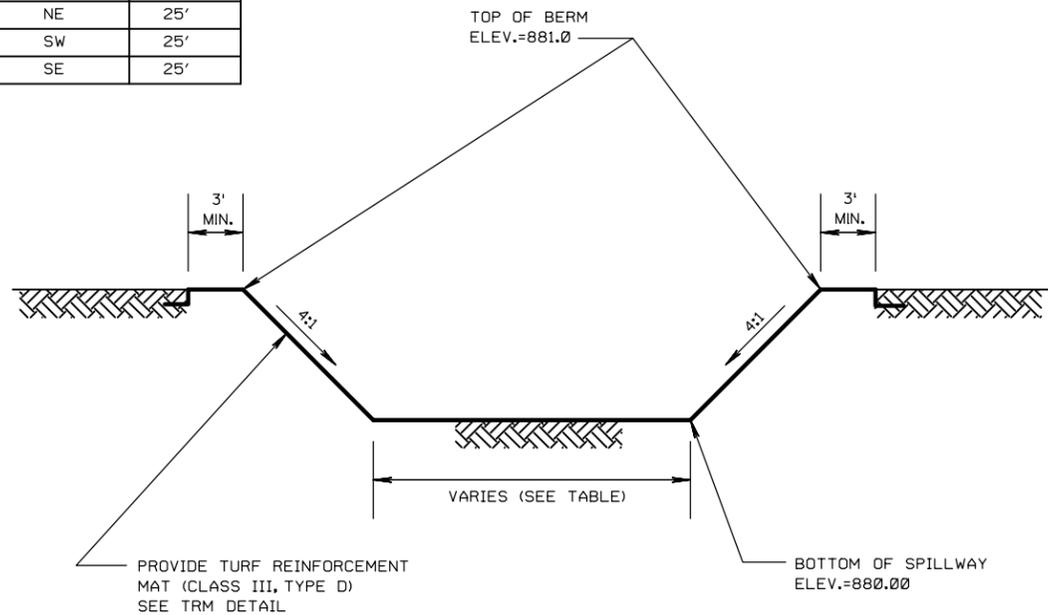
NOTE: THIS MIXTURE MEETS THE EQUIVALENT LEVEL OF PROTECTION AS DETERMINED BY DNR.
3. THE SAND SHALL MEET ONE OF THE FOLLOWING GRADATION REQUIREMENTS:
 - a. USDA COARSE SAND (.02 - .04 INCHES).
 - b. ASTM C33 (FINE AGGREGATE CONCRETE SAND).
 - c. WISCONSIN STANDARDS AND SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, SECTION 501.2.5.3.4. (FINE AGGREGATE CONCRETE SAND) 2005 EDITION, OR AN EQUIVALENT AS APPROVED BY THE ADMINISTERING AUTHORITY.
4. THE PREFERRED SAND COMPONENT CONSISTS OF MOSTLY, BUT SAND CONSISTING OF DOLOMITE OR CALCIUM CARBONATE MAY ALSO BE USED. MANUFACTURED SAND OR STONE DUST IS NOT ALLOWED. THE SAND SHALL BE WASHED AND DRAINED TO REMOVE CLAY AND SILT PARTICLES PRIOR TO MIXING.
5. THE COMPOST COMPONENT SHALL MEET THE REQUIREMENTS OF WISCONSIN DEPARTMENT OF NATURAL RESOURCES S100, COMPOST.
6. THE ENGINEERED SOIL MIX SHALL BE FREE OF ROCKS, STUMPS, ROOTS, BRUSH OR OTHER MATERIAL OVER 1 INCH IN DIAMETER. NO OTHER MATERIAL SHALL BE MIXED WITH THE PLANTING SOIL THAT MAY BE HARMFUL TO PLANT GROWTH OR PROVE AN OBSTACLE TO PLANTING OR MAINTENANCE.
7. THE ENGINEERED SOIL MIX SHALL HAVE A pH BETWEEN 5.5 AND 8.0.
8. THE ENGINEERED SOIL MIX SHALL HAVE ADEQUATE NUTRIENT CONTENT TO MEET PLANT GROWTH REQUIREMENTS.



SECTION B-B BIORETENTION BASIN TYPICAL SECTION

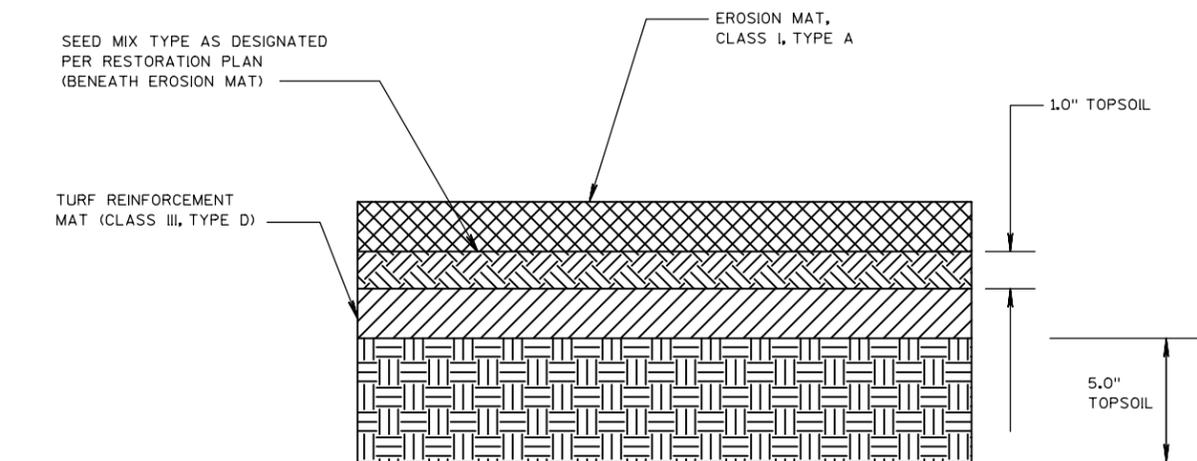
NO SCALE

BIORETENTION BASIN	SPILLWAY WIDTH (FT)
NW	30'
NE	25'
SW	25'
SE	25'



SECTION A-A OUTLET SPILLWAY

NO SCALE



- NOTE:
1. TOPSOIL CAN BE EXISTING TOPSOIL OR PARTIALLY NEW/PARTIALLY EXISTING.
 2. SEE DRAWINGS AND CROSS SECTIONS FOR LOCATIONS AND USE.

TURF REINFORCEMENT MAT (TRM) SYSTEM

NO SCALE

DATE:	NO.	REVISIONS

RETENTION DETAILS
JUNIPER RIDGE SUBDIVISION
 GANNON CONSTRUCTION
 VILLAGE OF MCFARLAND EAST BASIN

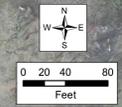
JOB NO.
1791.006
PROJECT MGR.



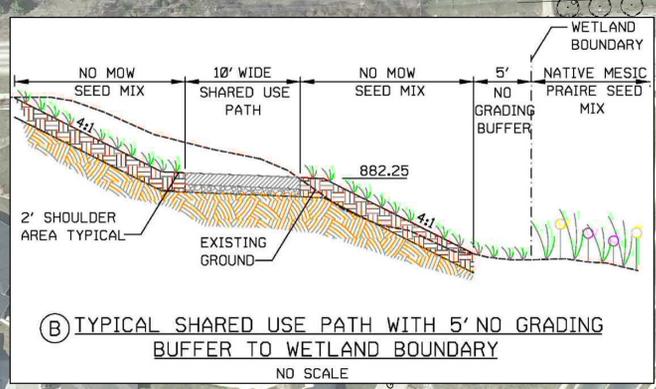
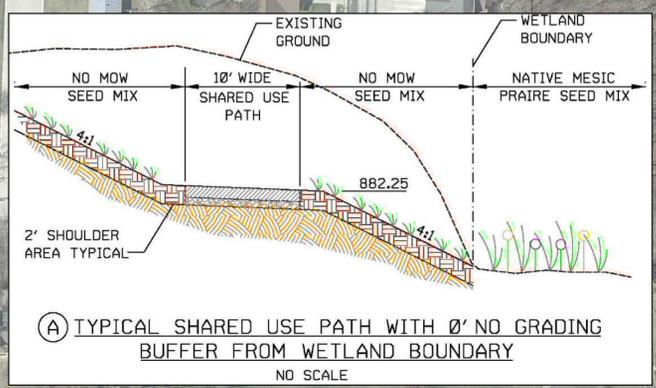
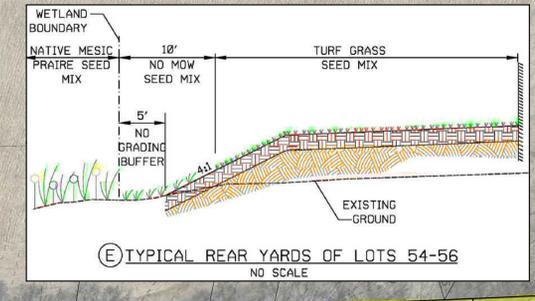
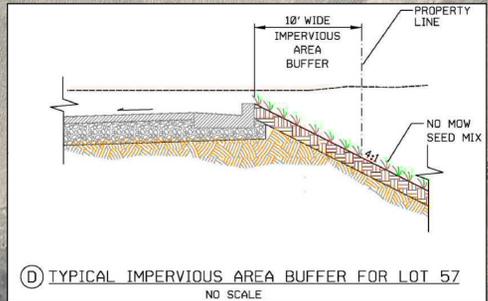
SHEET
S-2

Legend

Proposed 5' No Grading Wetland Buffer	Path
Proposed 10' Wide Impervious Area Buffer	Multi Family
No Mow Seed Mix	Single Family Residential
Bioretention Basin	Proposed Storm Sewer
Native Mesic Prairie Seed Mix	Wetland Boundary
Wet Detention Seed Mix	Prescribed 30' No Grading Wetland Buffer
Wet Mesic Prairie Seed Mix	Prescribed 75' No Impervious Area Wetland Buffer

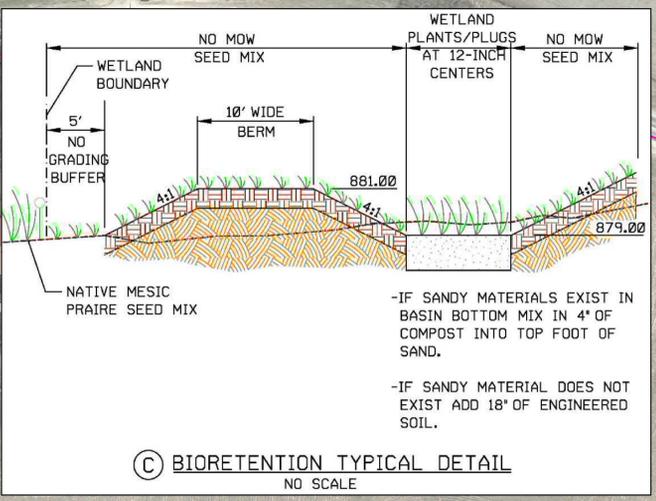


Event	High Water Elev. W/Infiltration (ft)	High Water Elev. W/Out Infiltration (ft)
1-Year	878.85	879.37
2-Year	879.00	879.52
10-Year	879.39	880.09
100-Year	880.34	881.35



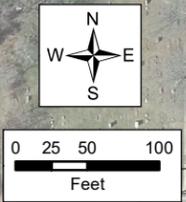
- Prairie Place Wetland/Prairie Restoration - Implementation Plan and Schedule**
1. Spring 2016 - Plant Roundup-Ready soybean crop for minimum stubble. Plant without additional grass or weed herbicides over entire limit of plat, including the 6.83-acre wetland.
 2. Early Fall-October 2016 - Harvest soybean crop and minimize surface disturbance. Direct-seed/no-till seed native seed mixes and perform other needed site preparation for enhancement plantings within the 6.83-acre wetland as shown in the restoration plan.
 3. Spring 2017 - Placement of silt fence around the perimeter of the enhanced/restored 6.83 acre wetland.
 4. Spring 2017 - Anticipated start of construction of Prairie Place subdivision phase. Implement erosion control measures (temporary sediment basins at locations of future bioretention basins). Erosion control measures kept in place until development site is completed and stabilized. Install native plantings associated with cumulative development and restoration plan.
 5. 2017 Growing Season - Perform maintenance mowing to prevent quick-growing weeds from reseeding, shading, or over-competing with new native seedlings. Mow each time weed growth reaches 10-12" and cut to height of 6".
 6. 2018 Growing Season - Maintenance mow or spot-mow once or twice raising the cutting height to 6-12". Additional management to include: spot-spraying and selective invasive species and woody species removals.
 7. 2019 Growing Season and Beyond - Spring/Summer/Fall reviews and assessment for needed management (mowing, spot-spraying, selective woody removals) and other techniques recommended by restoration contractor.

- Wetland Buffer Notes**
1. The minimum wetland buffers for proposed impervious surfaces shall be as follows: Lots 54 through 56 = 35', Lot 53 = 42', Lot 52 = 58' and Lot 59 = 62'. All other single family residential lots shall have a minimum wetland buffers for impervious surfaces of 75'. A minimum 10' no mow buffer shall be maintained for Lots 54 through 56. The proposed 10' wide shared use path shall be located a minimum distance of 10' from the wetland boundary.
 2. Proposed impervious surfaces on the multi-family lot (Lot 57) located within the 75' wetland buffer shall be setback a minimum of 10' off the property line adjacent to the wetlands and shall be designed to drain to a bioretention basin prior to discharging to the wetlands.
 3. Proposed wetland grading buffers shown on the typical cross sections shall be maintained.



PRAIRIE PLACE STORMWATER MANAGEMENT PLAN
 GANNON CONSTRUCTION, INC.
 PRAIRIE PLACE STORMWATER MANAGEMENT PLAN
 VILLAGE OF MCFARLAND
 DANE COUNTY, WISCONSIN

- Legend**
-  No Mow Seed Mix
 -  Bioretention Basin
 -  Native Mesic Prairie Seed Mix
 -  Wet Detention Seed Mix
 -  Wet Mesic Prairie Seed Mix
 -  Path
 -  Multi Family
 -  Single Family Residential
 -  Proposed Storm Sewer
 -  Wetland Boundary



PRAIRIE PLACE STORMWATER MANAGEMENT PLAN

GANNON CONSTRUCTION, INC.
 PRAIRIE PLACE STORMWATER MANAGEMENT PLAN
 VILLAGE OF MCFARLAND
 DANE COUNTY, WISCONSIN



FIGURE 1
1809.002

33 East Main Street
Suite 500
Madison, WI 53703-3095

Mailing Address:
P.O. Box 2038
Madison, WI 53701-2038

Phone:
608.257.7181

Fax:
608.257.2508

www.murphydesmond.com

Lawrence E. Bechler
Direct Line 608.268.5601
Facsimile 608.257.4333
lbechler@murphydesmond.com



10 November 2016

VIA E-MAIL ONLY

matt.schuenke@mcfarland.wi.us

Mr. Matthew Schuenke
Administrator
Village of McFarland
5915 Milwaukee Street
McFarland, WI 53558

Re: Wellhead Protection Ordinance

Dear Matt:

I enclose the lightly revised draft of the Wellhead Protection Ordinance based on the model furnished with the Wellhead Protection Plan, which was basically pretty good. The most significant change was the express reference to the Wellhead Protection Plan since it contains a great deal of important information that ought to be in the ordinance.

I could not find what a "MSDS" was – see Section 62.713(f). Certainly this term should be written out in the ordinance.

I question whether the broad language of Section 62-717(w) is enforceable. That sounds very ad hoc to me; if we know of other uses to prohibit, we should amend the ordinance to include them.

I would be happy to discuss this with your further.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Lawrence E. Bechler".

Lawrence E. Bechler

150069
Enclosure
cc: Allan Colville
Pauline Boness
4811-4139-7820, v. 1

VILLAGE OF MCFARLAND
WELLHEAD PROTECTION PLAN
WELLS #1, 3, 4 and
Future Well #5

December, 2016



Prepared for the Village of McFarland
By: Wisconsin Rural Water Association
Sourcewater Protection Program
Andrew Aslesen, Sourcewater Specialist, Aaslesen@wrwa.org

Date: _____

DRAFT

Table of Contents

BACKGROUND	1
WATER SUPPLY	1
HYDROGEOLOGIC SETTING	2
AQUIFER CHARACTERISTICS	3
GROUNDWATER FLOW DIRECTION	4
ZONE OF INFLUENCE	5
ZONE OF CONTRIBUTION (RECHARGE AREA)	6
POTENTIAL CONTAMINANT SOURCES	6
WELLHEAD PROTECTION AREAS	8
MANAGEMENT STRATEGY	8
STEERING COMMITTEE	8
CONTINGENCY PLANNING	10
REFERENCES	21

Figures

Figure 1 – Village of McFarland Municipal Well Locations	11
Figure 2 – Vertical Relationships	12
Figure 3 – Groundwater Flow	13
Figure 4 – Zone of Contribution	14
Figure 5 – Wells #1 Potential Contaminant Sources	15
Figure 6 – Well #3 Potential Contaminant Sources	16
Figure 7 – Well #4 Potential Contaminant Sources	17
Figure 8 – Future Well #5 Potential Contaminant Sources	18
Figure 9 – Wellhead Protection Areas	19
Figure 10 – Wellhead Protection Area Parcels	20

Appendices

Appendix A – Potential Contaminant Source Inventory, Setbacks & List of Abbreviations

Appendix B – Lithologic Logs And Well Construction Details

BACKGROUND

The Village of McFarland has prepared this wellhead protection plan for the purpose of minimizing the risk of contamination of the municipal water supply. Wellhead protection is a preventative program designed to protect public water supplies by managing land use in the area surrounding the wells. For newly constructed wells, wellhead protection plans are required by the WI DNR. For existing wells constructed prior to 1992, such as McFarland’s Wells #1, #3 & #4, wellhead protection plans are voluntarily completed at the utilities discretion. The village had to remove Well #2 from service in October 1987 due to contaminated groundwater. The well was permanently abandoned in 2000. Preventing similar events in the future is the goal of wellhead protection planning. This plan establishes wellhead protection areas around each municipal water supply well. These areas are designated for special protective measures intended to minimize the risk of the well becoming contaminated. The wellhead protection areas are generally the area determined by a hydrologic study to contribute groundwater to the well. Wellhead protection areas receive the most concerted protection efforts. This plan is prepared in accordance with the Wisconsin Administrative Code, Chapter NR 811.12(6) for wellhead protection planning.

WATER SUPPLY

McFarland’s water system serves the entire Village, population 7,808, with an average demand of around 580,000 gallons per day (gpd). The demand stays fairly consistent throughout the year, with a slight increase during the summer months. This plan includes the village’s three existing wells and the location of future Well #5. Well construction details are as follows.

Table 1

Well #	WI Unique Well ID#	Total Depth (ft)	Casing Depth (ft)	Open Interval (ft)	Well Diameter (in)	Design Capacity (gpm)
1	BF498	560	167	393	10	500
3	HJ137	700	260	440	17	1000
4	AC718	800	130	670	18	1000
5	TBD	TBD	TBD	TBD	TBD	TBD

All wells are controlled by a SCADA system and are pumped simultaneously. The wells are pumped 2-3 times per day for about one hour each pumping cycle. Water is treated at each well house with liquid chlorine for disinfection and fluoride for dental health. From the well house water is sent into the distribution system. Like much of Wisconsin, the water is very hard, ranging from 330-380 mg/L calcium carbonate (Kammerer, 1981). The Village has two elevated storage tanks with capacities of 500,000 and 750,000 gallons. Locations of the wells are shown in Figure 1. Lithologic logs and construction details for the wells are included in Appendix B.

Well #1

Well #1 is located on the northwest corner of the intersection of Long St. & Milwaukee St. in the central part of the village. The well house sits between the library to the west and village hall to the east. Land use surrounding the well on all sides is primarily residential with some commercial & industry mixed in. Well #1 was completed in 1940 and was most recently rehabilitated in 2010. Backup power for the well is provided by a natural gas motor located permanently in the well house and connected with a right angle gear drive.

Well #3

Well #3 is located on the southeast corner of Siggelkow Rd. and North Autumn Lane on the north edge of the village. Part of the land north of Siggelkow Rd. is the City of Madison. Land use surrounding the well on all sides is residential, with a petroleum pipeline right of way 800 feet northeast of the well. Northwest of the well along Hwy 51 is heavy commercial & industrial land use. Well #3 was originally completed in 1974 to a depth of 320 feet. The well was reconstructed in 1995 to extend the well to a depth of 700 and the casing to a depth of 260 feet. The well was most recently rehabilitated in 2008. Backup power for the well is provided by a natural gas motor located permanently in the well house and connected with a right angle gear drive.

Well #4

Well #4 is located in Egner Park on the Northeast corner of the intersection of Creamery Rd & Elvehjem Rd in the southeast part of the village. Land use surrounding the well is residential to the north, parks/natural conservation areas to the south and agriculture to the east beyond the village limits. Well #4 was completed in 1989 and was most recently rehabilitated in 2001. Backup power for the well is provided by a natural gas motor located permanently in the well house and connected with a right angle gear drive.

Future Well #5

The well site for McFarland's future Well #5 is located on the northeast corner of the intersection of Prairie Wood Drive and Wiouwash Way, in the southeast part of the village. The village owns the double lot sized parcel in a residential neighborhood.

HYDROGEOLOGIC SETTING

McFarland is located in central Dane County in the south central part of the state. The topography of the area was shaped by Green Bay Lobe of the Laurentide Ice Sheet that extended into and covered eastern Dane County several times. The Glaciers shaped drumlins and left deposits of "till", which are unconsolidated surficial material deposited directly by glaciers. The till consists of gravelly, clayey, silty sand deposits typically 15 to 65 ft thick. Drumlins are northeast-southwest trending elongated hills separated by flat lowlands. They are as much as 90 ft high, 1200 ft wide and more than a half mile long, oriented in the direction

which the glaciers moved (Clayton & Attig, 1997). There are several drumlins located within the Village of McFarland.

Below the glacial till are several hundred feet of dolomite, sandstone & shale bedrock of the Trempealeau & Tunnel City groups and the Wonewoc, Eau Claire & Mt. Simon formations (Brown et. al., 2012). The Wonewoc is described as quartz sandstone, medium grained, brownish yellow to white with a thickness of up to 200 feet. Recent studies at multiple field sites within Dane County provide evidence for preferential flow of groundwater along bedding-plane fracture features within the Wonewoc. The Eau Claire is described as fine to very fine, silty, shaly, and/or dolomitic quartz sandstone. The upper portion of the Eau Claire Formation contains significant amounts of shale and siltstone forming an aquatard, slowing groundwater movement between the formations above and below (Parsen et. at., 2016). The Mt. Simon ranges from 300 to 600 feet thick and is described as medium to coarse grained quartz sandstone, with pebble conglomerate near the basal contact with the Precambrian; generally cemented by carbonate, iron oxide, and locally, silica. The upper part may be locally dolomitic, especially in the Madison area, and may grade gradually upward into the overlying Eau Claire Formation (Brown et. al., 2012). Below the sandstone is Precambrian age igneous and metamorphic crystalline bedrock that is effectively impermeable (Kammerer, 1998). A geologic cross section showing geologic formations is shown in Figure 2.

AQUIFER CHARACTERISTICS

The bedrock aquifer is divided into an upper and lower aquifer divided by the Eau Claire Shale formation. The sandstone aquifers are very productive with mean hydraulic conductivity values calculated from 1,554 specific capacity or aquifer tests of 4.2 and 10 feet per day in the upper & lower bedrock aquifers (Krohelski et. al., 2000). All of McFarland's wells pump water from both upper and lower bedrock aquifers that include the Wonewoc & Mt. Simon formations and are screened across the Eau Claire aquatard.

The source of all groundwater is precipitation which infiltrates and recharges the aquifer. The rate at which groundwater flows in the aquifer is determined by the hydraulic parameters of the aquifer. Important hydraulic parameters are described below and given in Table 2:

- Aquifer Thickness – Vertical thickness of water bearing porous medium.
- Effective Porosity – The ratio of void volume to the total volume of material (estimate)
- Hydraulic Gradient – The change in water table elevation (hydraulic head), divided by the change in distance in a given direction (calculation shown in Figure 2)
- Storage Coefficient – The volume of water that an aquifer releases from storage, per unit surface area of the aquifer, per unit change in head. Estimated for unconfined aquifers (Driscoll 1986, pp. 737).
- Transmissivity – The rate at which water is transmitted through a unit width of the aquifer under a unit hydraulic gradient. It is estimated using pump test data, and the "T-Guess" computer solution (Bradbury and Rothschild, 1985).
- Hydraulic Conductivity – The ease with which flow takes place through a porous medium. It is calculated by dividing the transmissivity by the aquifer thickness.

Village of McFarland Wellhead Protection Plan – December, 2016

Table 2

Aquifer Hydrologic Parameters	Well #1	Well #3	Well #4	Well #5
Aquifer	Upper & Lower Bedrock Aquifers			TBD
Aquifer Thickness (ft)	800	800	800	
Effective Porosity	0.2	0.2	0.2	
Hydraulic Gradient	0.006	0.006	0.006	
Storage Coefficient	0.1	0.1	0.1	
Transmissivity (ft ² /sec)	0.0073	0.0052	0.0056	
Calculated Hydraulic Conductivity (ft/day)	0.79	0.56	0.60	

The Aquifer hydraulic parameters are estimated using a pump test, which is conducted at the time of well construction, and can be found on the well construction report. A pump test provides an estimate of how much water an aquifer can yield and how good the well performs, also known as the wells specific capacity. This is done by measuring drawdown, which is the difference between the static (pre-pumping) water levels and water levels after pumping the well at a given rate for a given period of time. The pumping test results are as follows:

Table 3

Pump Test	Well #1	Well #3	Well #4	Well #5
Pumping Rate (gpm)	395	1200	1000	Not yet
Duration (hours)	12	6	8	Drilled
Static Water Level (ft)	20	49	16	
Pumping Water Level (ft)	31	218	35	
Drawdown (ft)	11	169	19	
Specific Capacity (gpm/ft)	35.9	7.1	52.6	

GROUNDWATER FLOW DIRECTION

In a groundwater flow system, groundwater moves continuously from areas of recharge to areas of discharge. The direction of groundwater flow may be inferred from the regional topography and the slope of the water table. The water table is the upper limit of the aquifer and is measured in “head” or elevation above sea level. The water table is estimated by looking at water levels in wells that have a screened interval within the aquifer. Wells provide a point of measurement of the water table elevation. The best available water table map for the area was published by the Wisconsin Geologic and Natural History Survey in 1999. A local portion of the map is shown in Figure 3. The water table is shown as contour lines of equal head with a 20 ft interval. Groundwater flows approximately at right angles to the contour lines of equal head in the direction of decreasing head. Groundwater flow near McFarland originates at the groundwater divide northeast of the village near the Village of Cottage Grove and moves from east/northeast to west/southwest towards the Yahara River.

ZONE OF INFLUENCE

The Theis Equation is used to calculate the Zone of Influence (ZOI), which is a circle around each well that represents a cone of depression in the water table defined by a drawdown of 1 foot that would develop after 30 days of continuous pumping at full capacity, with no recharge to the groundwater. It assumes that the aquifer is homogeneous (the aquifer is equally permeable in all places and in all directions), the well fully penetrates the aquifer and drawdown is small compared to the saturated thickness. It simulates theoretical worst-case condition. Since the formula uses continuous pumping at full capacity and does not consider recharge to the aquifer, the calculation may be artificially large. When recharge is considered the ZOI becomes an elliptical shape extending farther upgradient and less downgradient.

Theis Equation:

$$W(\mu) = \frac{sT}{114.6*Q}$$

$$r^2 = \frac{Tt\mu}{1.87S}$$

Where:

$W(\mu)$ = Well Function

s = Drawdown (1 ft)

Q = Maximum Pumping Capacity

T = Transmissivity (gpd/ft)

S = Storativity

μ = From lookup table based on $W(\mu)$

t = 30 days continuous pumping

R = Radius of the cone of depression

Zone of Influence (ZOI) Calculations:

Well #1	$W(\mu) = \frac{1 \times 109,820}{114.6 \times 500}$	$W(\mu) = 1.9166$
		$\mu = 0.09$
	$r = \sqrt{\left(\frac{109,820 \times 30 \times 0.09}{1.87 \times 0.1} \right)}$	ZOI radius= 1,259 feet
Well #3	$W(\mu) = \frac{1 \times 9,690}{114.6 \times 1000}$	$W(\mu) = 0.0846$
		$\mu = 1.6$
	$r = \sqrt{\left(\frac{9,690 \times 30 \times 1.6}{1.87 \times 0.1} \right)}$	ZOI radius= 1,577 feet
Well #4	$W(\mu) = \frac{1 \times 83,980}{114.6 \times 1000}$	$W(\mu) = 0.7328$
		$\mu = 0.38$
	$r = \sqrt{\left(\frac{83,980 \times 30 \times 0.38}{1.87 \times 0.1} \right)}$	ZOI radius= 2,263 feet

ZONE OF CONTRIBUTION (RECHARGE AREA)

In order to protect the groundwater reaching McFarland's municipal wells, it is important to determine where that groundwater is coming from. The land area that contributes water to a well is known as the "Zone of Contribution" (ZOC) or recharge area. Several methods can be used to delineate recharge areas ranging from a simple fixed radius to the use of complex computer models. There have been many studies focused on the groundwater resources in Dane County including groundwater modeling. The WGNHS, USGS & Capital Area Regional Planning Commission (CARPC) worked in cooperation to form a groundwater model for the county in 1996. In 2015 a revised version of the original model was produced by the same cooperators. CARPC used the revised 2015 model to delineate the ZOC for each of McFarland's municipal wells. ZOCs were delineated based on year 2040 projected water use rates spread equally between all wells. Pumping rates used were 0.174 million gallons per day for each for 4 wells (this includes future Well #5).

The ZOC is delineated as "capture zones" equal to the 5-year, 50-year & 100-year Time of Travel (TOT) capture zones. Water recharging the aquifer at the margins of the 5, 50 & 100-year capture zone should take 5, 50 & 100 years respectively to reach the pumping well. The 5-year capture zone is particularly important because 5 years is generally determined to be an adequate amount of time needed for the geologic formation to degrade or dilute most contaminants, or contamination could be cleaned up before reaching the pumping well. The 5-year TOT capture zones represents an area where protecting the groundwater is the most important. The full capture zone should be protected as well; however protection measures can be less intensive in this area. The modeled capture zones are mapped in Figure 4.

POTENTIAL CONTAMINANT SOURCES

In order to design the most appropriate management strategy, it is necessary to know what possible sources of contaminants are present around each well. These are locations where human activity or land use has created the potential to release contaminants into the groundwater aquifer. Potential contaminant sources within ½ mile of each well were identified in the Source Water Assessment prepared by the Wisconsin Department of Natural Resources (WDNR, 2003) as well as a records review and field reconnaissance.

Contaminants on the surface are subject to a series of physical, chemical and biological processes that impede, destroy or bind up contaminants moving through the soil and unconsolidated till toward the groundwater. Soil grain size & organic matter as well as layers of silt & clay in the glacial till work to reduce the susceptibility of the aquifer. Soils near McFarland are primarily silty loams that have moderate potential to attenuate pollutants. The primary risks to the aquifer are described and discussed below and potential contaminant sources within ½ mile of each well are mapped in Figures 5, 6, 7 & 8. Appendix A contains a comprehensive inventory with distances and direction from the nearest well.

Domestic Wastewater

Sewage from leaking sanitary sewers and septic systems contain both domestic and industrial wastewater. While industrial wastewater can have many types of pollutants, the contaminants of most concern in domestic wastewater include pathogens and nitrate. Pathogens (primarily bacteria and viruses) are filtered somewhat as they move through the ground and are viable for a limited time. Pathogens are treated using continuous disinfection. All wells have wastewater mains within 200 feet and there is an un-sewered subdivision with multiple septic systems 2,200 feet northeast of Well #3. The distance of the subdivision minimizes the risk of contamination from these sources; however continuous disinfection is an important protective measure.

Agriculture

The risk from agriculture is primarily Nitrate from fertilizers and manure. Nitrate travels very easily in groundwater with little attenuation. The primary agriculture near McFarland are cultivated row crop fields located north & east of Future Well #5. The depth and large saturated thickness of the aquifer minimize risk from agricultural land. If producers on these fields follow good farming practices for manure & fertilizer application, the risk of nitrate contamination from agriculture is minimal.

Volatile Organic Compounds (VOCs)

VOCs can be released from a variety of sources, including petroleum storage & transport, auto repair shops & dry cleaners. Some VOCs are heavy and readily move downward through the aquifer. Heavy VOCs consist primarily of chlorinated solvents used in dry cleaning, parts washing (general de-greasing) and brake cleaning operations. There are two leaking underground storage tank sites near Well #1 that have been cleaned up under the authority of the DNR remediation program. West Shore Pipeline Co. operates a petroleum pipeline which passes 920 feet northeast (and within the modeled 5-year zone of contribution) of Well #3, 1,400 northeast of future Well #5 and just over ½ mile northeast of Wells #1 & #4. This is upgradient from all of McFarland's wells. A pipeline break near McFarland could affect one or all of McFarland's wells, particularly Well #3. Additionally, there are several bulk storage & distribution sites more than ½ mile northwest of Well #3. These are down gradient from the well, but worth noting. VOC's are the primary threat to McFarland's municipal wells.

VOC's from the former Monona Tube and Welding 1,800 feet west/northwest of McFarland's former Well #2 contaminated the well causing it to be removed from service in October 1987 and abandoned.

Private Wells

Water can move through a private well that is unused or in disrepair. These wells can be a direct conduit for contaminants to move quickly from the surface to the groundwater.

Village of McFarland Wellhead Protection Plan – December, 2016

Damaged or missing well caps provide a direct path for vermin, insect and other organisms to contaminate the aquifer. There are several private wells within ½ mile of several municipal wells, the closest being near Well #3. If any wells are found that are un-used or don't meet construction codes, they should be properly abandoned.

WELLHEAD PROTECTION AREAS

A Wellhead Protection Area (WHPA) is defined by the federal Safe Drinking Water Act as the "surface and subsurface area surrounding a water well or well field, supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water or well field". In practical terms, the WHPA is a legally-defined area including all or part of the Zone of Contribution and within which zoning practices or other land-use controls can be implemented to help protect groundwater from contamination. (Bradbury et. al., 1999). The WHPA's are established to clearly define the area most critical for protecting the wells from contamination. They should be the primary focus of efforts to protect the Village water supply.

The WHPA's for McFarland include the full 5-year TOT capture zones. The DNR suggests the boundary of a WHPA be extended to a minimum distance of 1,200 ft around municipal wells. The Village has decided a minimum distance of 1,800 feet is appropriate since the source of contamination that affected Well #2 was 1,800 feet from the well. The boundaries of the WHPAs have been extended to a distance of 1,800 feet. McFarland's WHPA's are mapped in Figure 9. Any parcel that is fully or partially within a WHPA is considered fully part of the WHPA for any implementation purposes, including the establishment of a zoning overlay district. A map showing the parcels that are fully or partially within the WHPA is included in Figure 10.

MANAGEMENT STRATEGY

The management strategy outlines the Village's plan to implement the wellhead protection plan. "Implementation" means taking specific actions to protect the village water supply wells. This includes addressing specific issues and solutions identified in the wellhead protection plan or by the steering committee. The implementation plan lays out specific actions along with the responsible party and a timeline for completion.

Blue-shaded blocks indicate activities already in place and ongoing

Activity	Responsible Party	Timeframe	Comments
SOURCE MANAGEMENT ACTIVITIES			
Private Well Abandonment Ordinance	Director of Public Works/Zoning Administrator	Ongoing	The Village will continue to enforce their private well abandonment ordinance.

Village of McFarland Wellhead Protection Plan – December, 2016

<i>Activity</i>	<i>Responsible Party</i>	<i>Timeframe</i>	<i>Comments</i>
SOURCE MANAGEMENT ACTIVITIES			
Wellhead Protection Ordinance	Director of Public Works	Within 3 months of plan completion	The DPW along with WRWA will draft a wellhead protection ordinance for consideration by the village board.
Intergovernmental Agreement Supporting WHP Ordinance	Director of Public Works	Within 6 months of plan completion	The DPW will work with the village attorney to draft and implement an intergovernmental agreement with surrounding communities to recognize the WHP ordinance for the portions of the WHP area that lies outside the Village of McFarland.
Work With West Shore Pipeline	Director of Public Works	Ongoing	The DPW will work with West Shore Pipeline to protect the village wells by reviewing spill prevention and emergency response procedures.
EDUCATION AND OUTREACH ACTIVITIES			
Consumer Confidence Reports	Director of Public Works	Annually	Consumer Confidence Reports are direct mailed to every customer annually to educate them and provide information on water quality.
Village Website	Director of Public Works	Within 6 months of plan completion	The DPW will see that an article on wellhead protection is placed on the village website.
WATER CONSERVATION ACTIVITIES			
Leak Detection	Director of Public Works	Ongoing	Water bills are screened for anomalies that could indicate leaks or excessive water use and leak detection surveys are conducted as needed.
Water Meter Testing	Director of Public Works	Ongoing	Water meters are tested every 10 years to insure accuracy in accordance with PSC requirements.

STEERING COMMITTEE

A steering committee has been formed to oversee implementation of the elements of this plan. The committee consists of the following individuals:

- Director of Public Works/Utilities, Village of McFarland
- Assistant Director of Public Works/Utilities, Village of McFarland
- Engineer, Town & Country Engineering
- Source Water Specialist, Wisconsin Rural Water Association

Local governmental entities that have jurisdiction in the planning area are the Village of McFarland, City of Madison, Town of Blooming Grove, Town of Dunn and Dane County. Cooperation will be sought with these entities in implementing this plan.

CONTINGENCY PLANNING

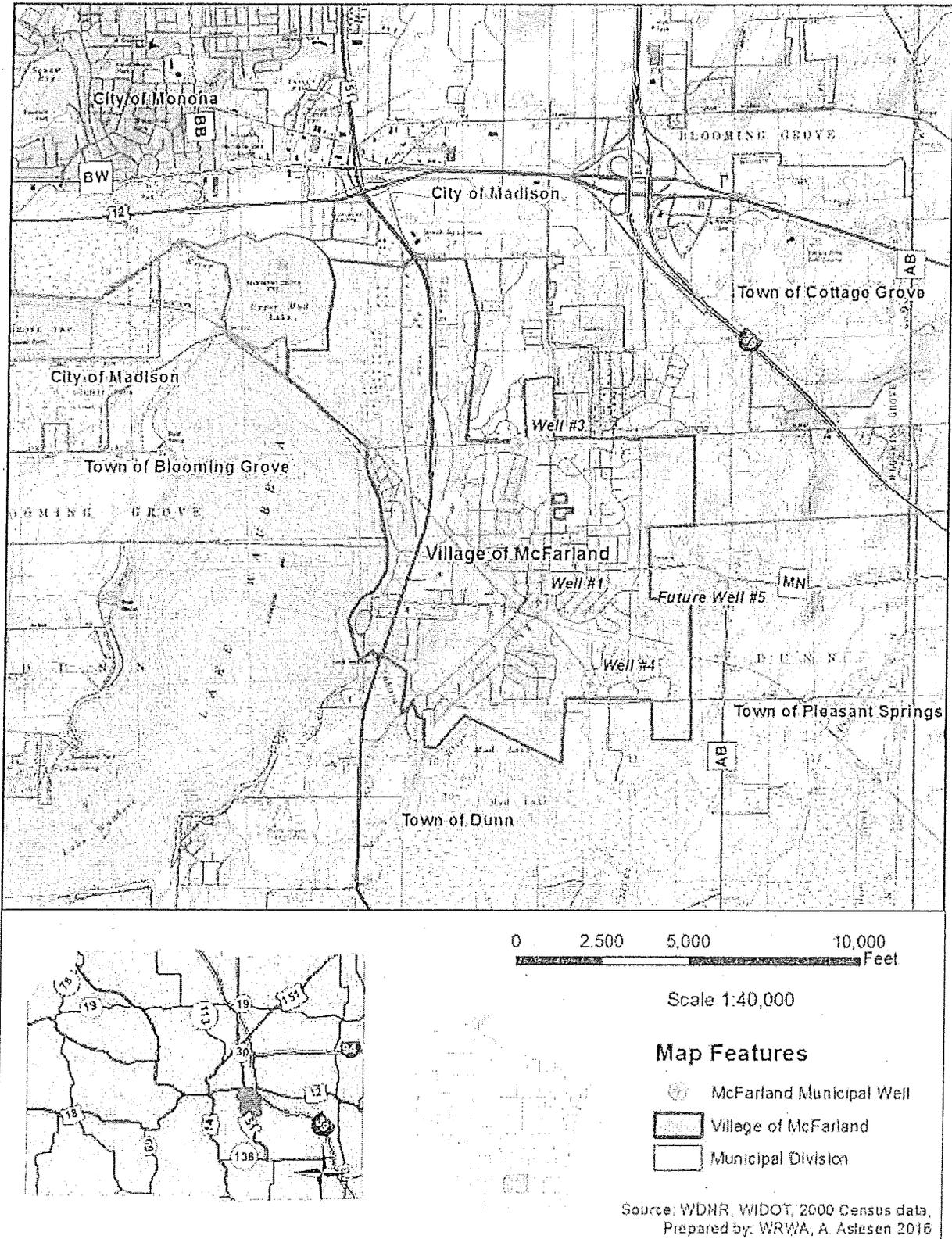
Contingency planning is done to minimize the disruption of water service in the event of emergencies. In the event that McFarland's water supply becomes contaminated, the procedures laid out in the Emergency Response Plan, developed by McFarland Utilities and stored at the public works department office, will be followed. The Emergency Response Plan provides a regularly updated comprehensive list of all necessary contacts for water system employees, emergency management agencies, contractors, and state agencies; as well as emergency procedures, including emergency alternate water sources and emergency disinfection procedures.

With any one or two wells out of service, the remaining well(s) could temporarily meet the average daily pumpage of around 580,000 gallons. The Village has two elevated storage tanks capable of holding a total of 1.25 million gallons that could provide two days of water. Additionally, emergency water use restrictions could be implemented to conserve water. The following is an abbreviated list of emergency contacts.

<u>EMERGENCY CONTACT</u>	<u>PHONE NUMBERS</u>
Local:	
McFarland – Village Hall	608-838-3153
McFarland Director of Public Works	608-838-7287
McFarland Assistant DPW	608-838-7287
Fire Department (EMS)	911 or 608-838-3278
Police Department	911 or 608-838-7954
DNR Representative	608-275-3300
County and Regional:	
Dane County Sheriff	911 or 608-284-6800
Dane County Emergency Management	608-266-4387
Dane County Health Department	608-266-4821
DNR-Regional Spill Coordinator	608-275-3303
State:	
DNR-State Spill Response	800-943-0003
State Lab of Hygiene	608-263-3280

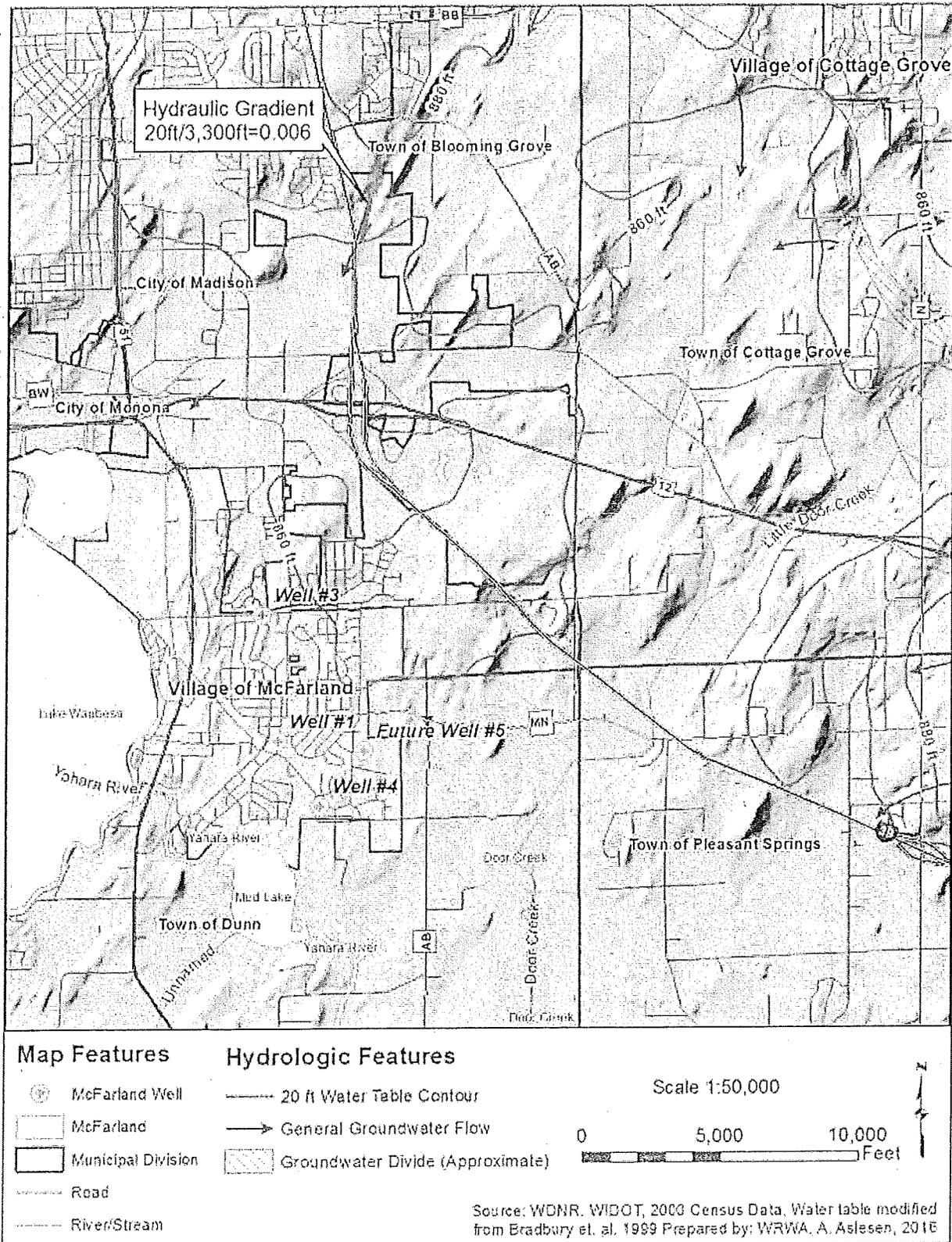
Village of McFarland Wellhead Protection Plan – December, 2016

Figure 1 – Village of McFarland Municipal Well Locations



Source: WDNR, WIDOT, 2000 Census data,
Prepared by: WRWA, A. Astiesen 2016

Figure 3 – Groundwater Flow



Village of McFarland Wellhead Protection Plan – December, 2016

Figure 4 – Zone of Contribution

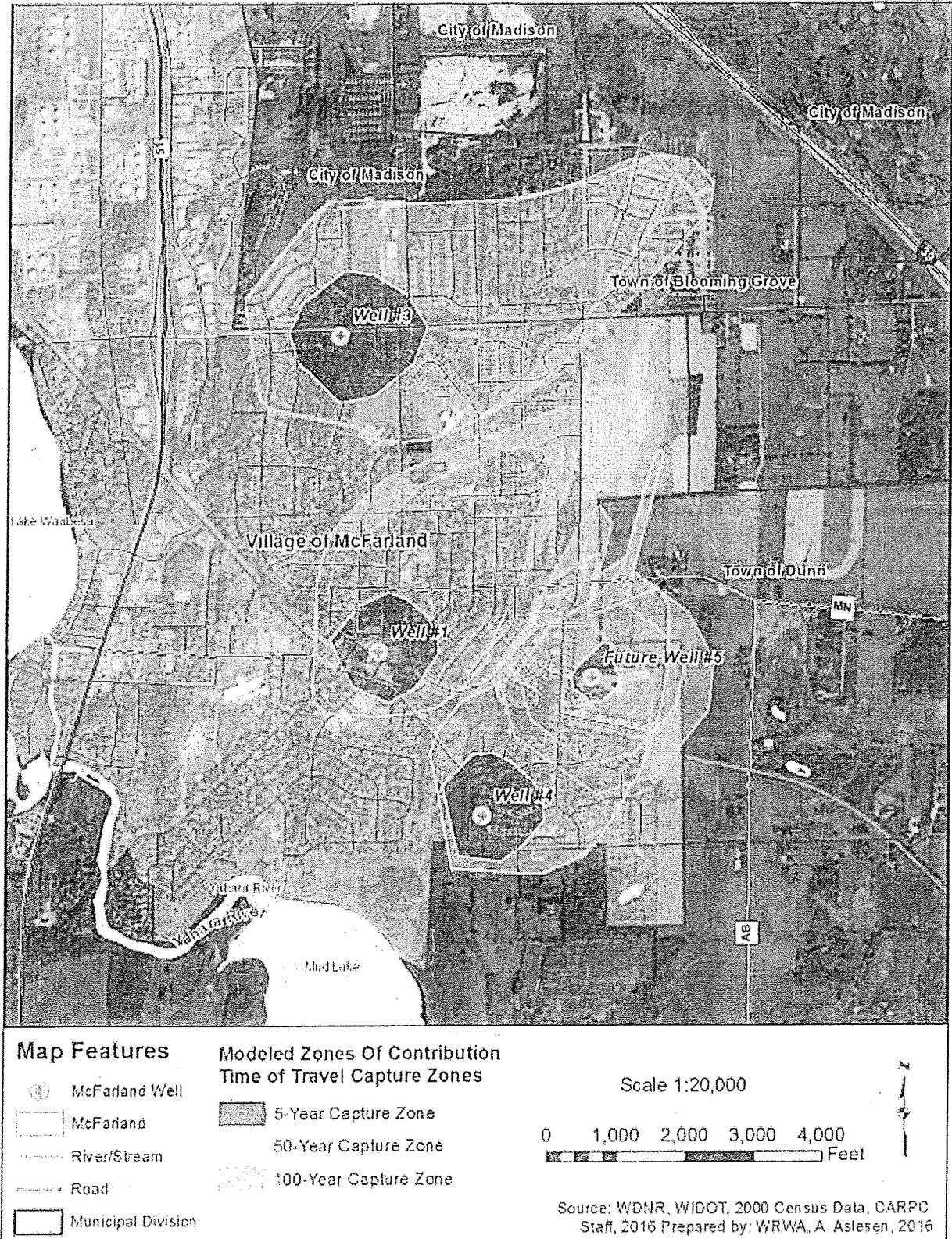
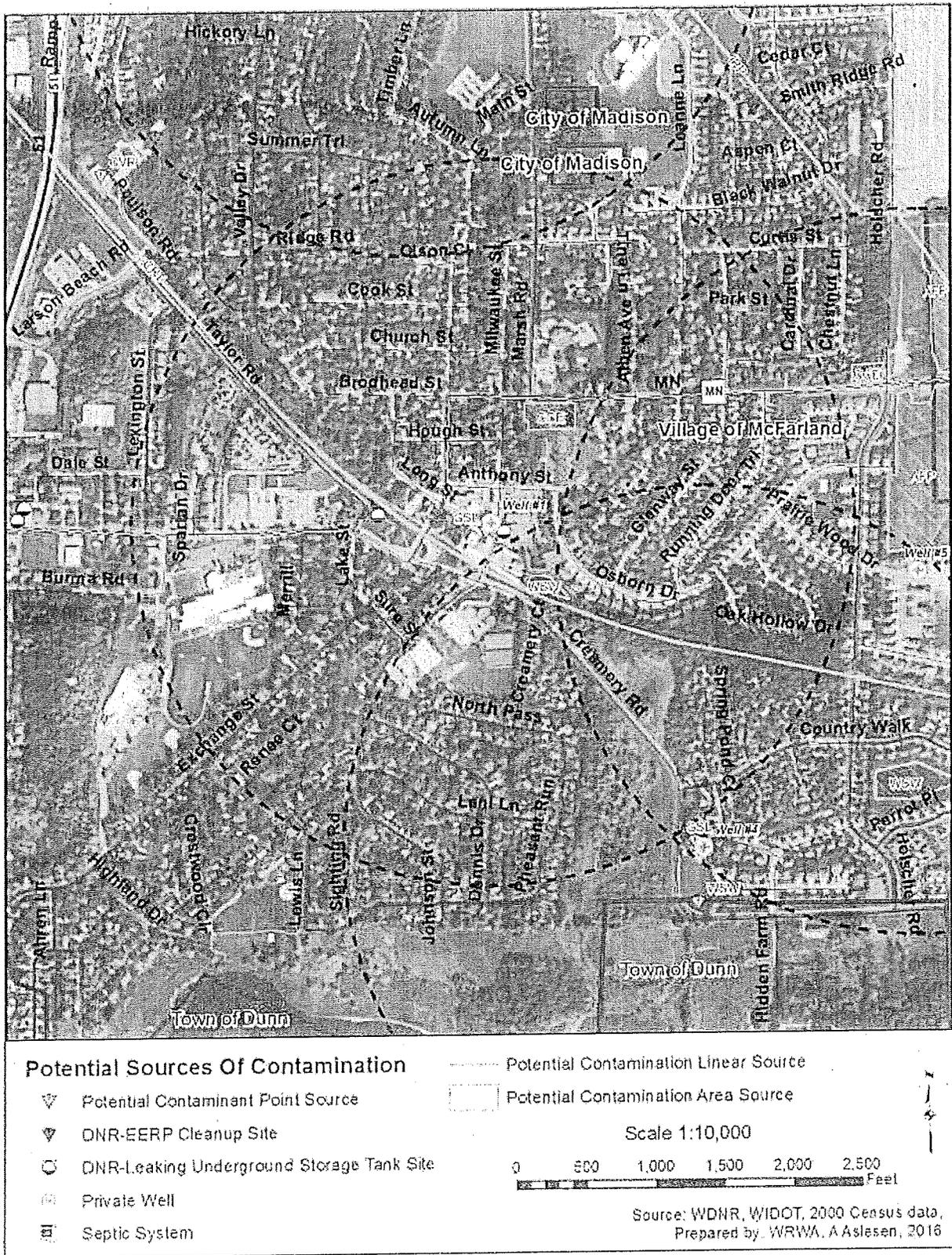


Figure 5 – Well #1 Potential Contaminant Sources



Village of McFarland Wellhead Protection Plan – December, 2016

Figure 6 – Well #3 Potential Contaminant Sources



Figure 7 – Well #4 Potential Contaminant Sources

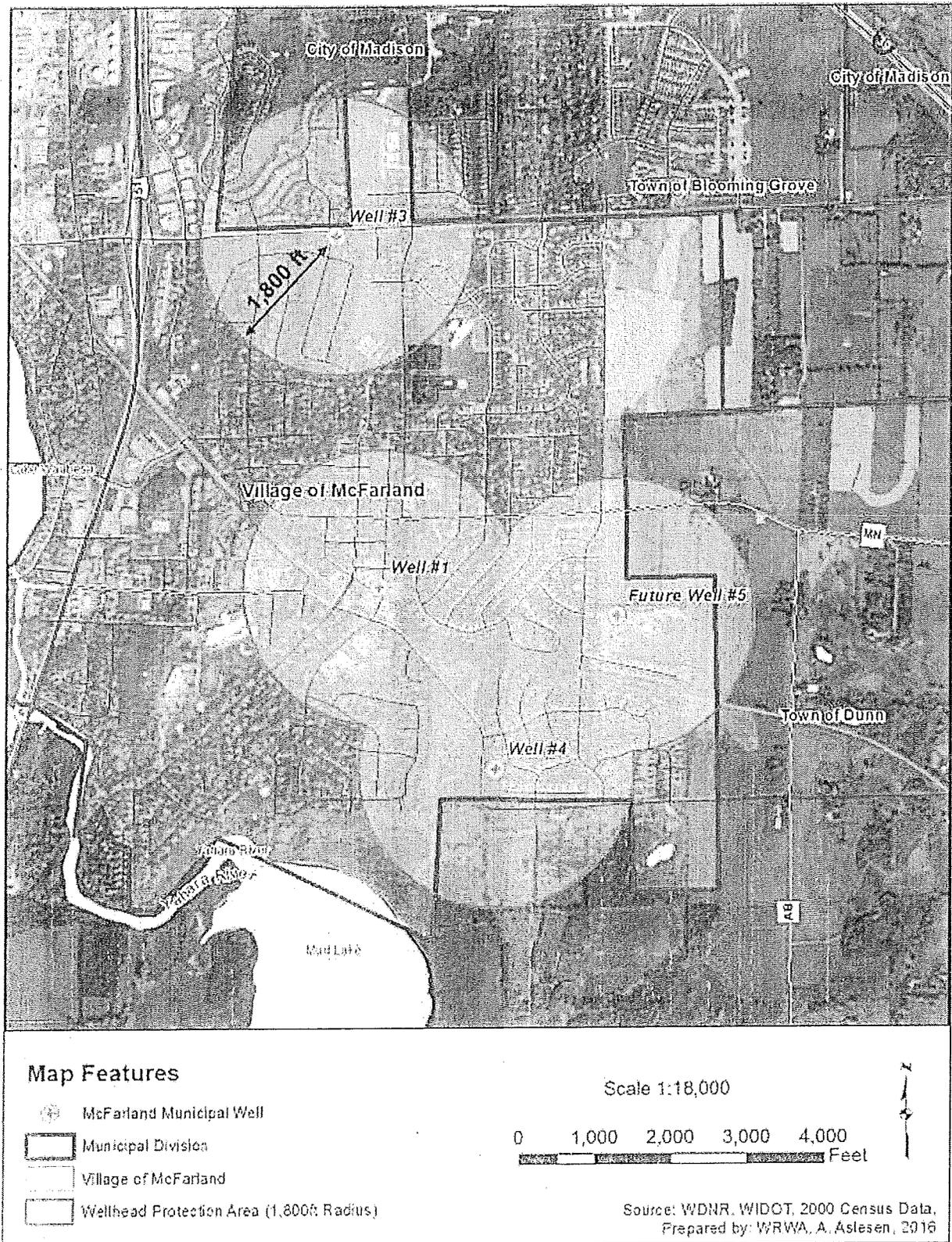


Figure 8 – Future Well #5 Potential Contaminant Sources



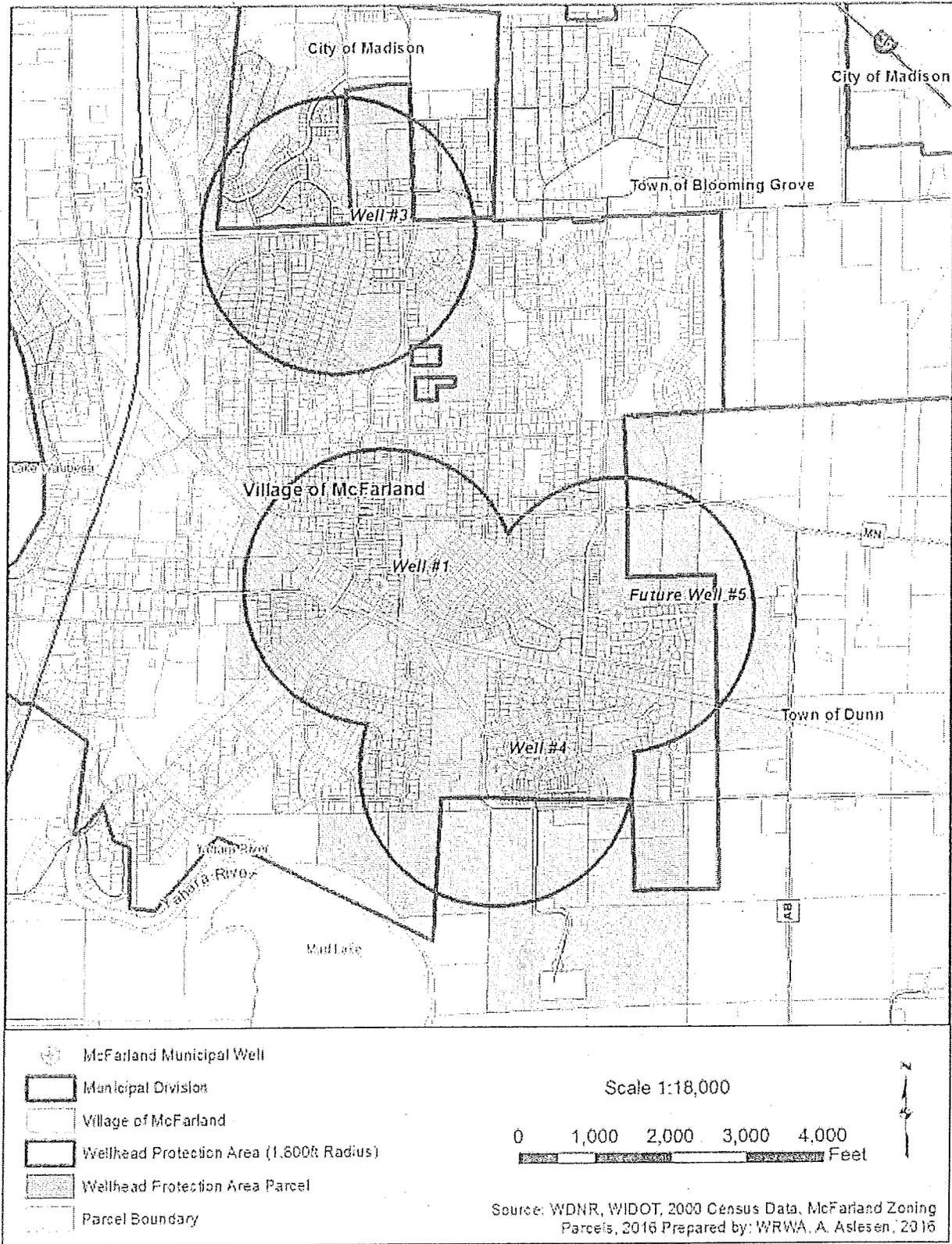
Village of McFarland Wellhead Protection Plan – December, 2016

Figure 9 – Wellhead Protection Areas



Village of McFarland Wellhead Protection Plan – December, 2016

Figure 10 – Wellhead Protection Area Parcels



REFERENCES

- Bradbury, K.R., Rothschild, E.R., 1985. *A computerized technique for estimating the hydraulic conductivity of aquifer from specific capacity data*: Ground Water vol. 23, No. 2.
- Bradbury, K.R., Swanson, K.S., Krohelski, J.T., Fritz, A.K., 1999. *Hydrogeology of Dane County, Wisconsin*: Wisconsin Geological and Natural History Survey, Open-File Report 1999-04.
- Brown, B.A., Massie-Ferch, K., Peters, R.M., 2012. *Preliminary Bedrock Geology of Dane County, Wisconsin*: Wisconsin Geological and Natural History Survey, Open-File Report 2013-01.
- Capital Area Regional Planning Commission (CARPC) Staff, 2016. *McFarland Zone of Contribution Delineations: using the 2015 WGNHS Dane County Groundwater Vistas Model*.
- Clayton, L., Attig, J.W., 1997. *Pleistocene Geology of Dane County, Wisconsin*: Wisconsin Geological and Natural History Survey, Bulletin 95.
- Driscoll, F.G., 1986. *Ground Water and Wells*: Johnson Division, Signal Environmental Systems.
- Kammerer, P.A., Trotta, L.C., Krabbenhoft, D.P. and Lidwin, R.A., 1998. *Geology, Ground-Water Flow, and Dissolved Solids Concentrations in Ground Water along Hydrogeologic Sections through Wisconsin Aquifers*: U.S. Geological Survey, Hydrologic Investigations Atlas HA-731.
- Kammerer, P.A., 1981. *Ground-Water-Quality Atlas of Wisconsin*: Wisconsin Geological and Natural History Survey, Information Circular 39.
- Krohelski, J.T., Bradbury, K.R., Hunt, R.J., Swanson, S.K., 2000. *Numerical Simulation of Groundwater Flow in Dane County, Wisconsin*: Wisconsin Geological and Natural History Survey, Bulletin 98.
- Parsen, M.J., Bradbury, K.R., Hunt, R.J., Feinstein, D.T., 2016. *The 2016 Groundwater Flow Model for Dane County, Wisconsin*: Wisconsin Geological and Natural History Survey, In Press.

Village of McFarland Wellhead Protection Plan – December, 2016

Appendix A – Potential Contaminant Source Inventory, Setbacks & List of Abbreviations

Potential Contaminant Sources Within ½ Mile of Well #1

See Figure 5

	Code	Potential Contaminant Sources	Distance (ft)	Direction	Name/Owner	
1	GSL	Sewer Line	75	S	Village of McFarland	
2	CRT	Railroad Track	310	S	Wisconsin & Southern Railroad	
3	CCE	Cemetery	330	N/NE	McFarland Lutheran Cemetery Assn	
4	CRT	Railroad Track	340	S	Wisconsin & Southern Railroad	
5	WSW	Stormwater Retention Pond	500	SE	Village of McFarland	
6	GFB	Fuel Storage Tank-Underground	630	NW	Parkview School Bus Garage	
	WLS	Leaking underground storage tank	Dist (ft)	Direction	BRRTS ID #	Status
1		McFarland Oil	100	SE	03-13-000584	Closed
2		Larson Park	850	W	03-13-000811	Closed

Potential Contaminant Sources Within ½ Mile of Well #3

See Figure 6

	Code	Potential Contaminant Sources	Distance (ft)	Direction	Name/Owner	
1	GSL	Sewer Line	80	E	Village of McFarland	
2	GWA	Water Well-Active	450	E	5406 Siggelkow Rd.	
3	WSW	Storm Water Retention Pond	700	E	Village of McFarland	
4	IPP	Pipeline (petro./chem/)	920	NE	West Shore Pipeline Co	
5	WSW	Storm Water Retention Pond	1,400	NW	Village of McFarland	
6	GWA	Water Well-Active	2,200	NE	Multiple-Subdivision in Blooming Grove	
7	GSA	Septic System	2,200	NE	Multiple-Subdivision in Blooming Grove	
	WRP	Spill remediation (ERRP) site	Dist (ft)	Direction	BRRTS ID #	Status
1		Monona Tube & Welding	2,600	SW	02-13-000846	Closed

Potential Contaminant Sources Within ½ Mile of Well #4

See Figure 7

	Code	Potential Contaminant Sources	Distance (ft)	Direction	Name/Owner	
1	GSL	Sewer Line	75	NW	Village of McFarland	
2	WSW	Storm Water Retention Pond	400	S	Village of McFarland	
3	WSW	Storm Water Retention Pond	1,320	E	Village of McFarland	
4	CRT	Railroad Track	1,430	N	Wisconsin & Southern Railroad	
5	GWA	Water Well-Active	1,850	S/SE	2840 Hidden Farm Rd	
6	GSA	Septic System	1,850	S/SE	2840 Hidden Farm Rd	
	WLS	Leaking underground storage tank	Dist (ft)	Direction	BRRTS ID #	Status
1		McFarland Oil	100	SE	03-13-000584	Closed
2		Larson Park	850	W	03-13-000811	Closed

Village of McFarland Wellhead Protection Plan – December, 2016

Potential Contaminant Sources Within ½ Mile of Future Well #5

See Figure 8

	Code	Potential Contaminant Sources	Distance (ft)	Direction	Name/Owner
1	GSL	Sewer Line	75	S	Village of McFarland
2	AFP	Agricultural Farming	150	N,E	Multiple
3	WSW	Storm Water Retention Pond	1,380	S	Village of McFarland
4	IPP	Pipeline (petro./chem/)	1,400	NE	West Shore Pipeline Co
5	CCE	Cemetery	1,400	N	McFarland Lutheran Cemetery Assn
6	GWA	Water Well-Active	1,600	NE	3495 County Rd MN
7	GSA	Septic System	1,600	NE	3495 County Rd MN
8	GWA	Water Well-Active	1,750	NE	3510 County Rd MN
9	GSA	Septic System	1,750	NE	3510 County Rd MN
10	GWA	Water Well-Active	1,840	NE	3502 County Rd MN
11	GSA	Septic System	1,840	NE	3502 County Rd MN
12	GWA	Water Well-Active	2,000	NE	3486 County Rd MN
13	GSA	Septic System	2,000	NE	3486 County Rd MN
14	GWA	Water Well-Active	2,100	E	3029 County Rd AB
15	GSA	Septic System	2,100	E	3029 County Rd AB
16	CSS	Gas Service Station	2,190	E	3037 County Rd AB
17	GWA	Water Well-Active	2,190	E	3037 County Rd AB

DRAFT

Village of McFarland Wellhead Protection Plan – December, 2016

CONT CODE	CONTAMINANT SOURCE	DESCRIPTION	SPECIFIC CONTAMINANTS
AAH	Animal housing		Livestock sewage wastes, nitrates, phosphates, chloride, chemical sprays and dips for controlling insect, bacterial, viral, and fungal pests, coliform bacteria, viruses
AFA	Animal Feeding		Livestock sewage wastes, nitrates, phosphates, chloride, chemical sprays and dips for controlling insect, bacterial, viral, and fungal pests, coliform bacteria, viruses
AFP	Agricultural farming	Active farming operations	Pesticides, fertilizers
AIA	Irrigation system	Agricultural irrigation	Pesticides, fertilizers
AMH	Agriculture milkhouse		Livestock sewage wastes, nitrates, phosphates, chloride, chemical sprays and dips for controlling insect, bacterial, viral, and fungal pests, coliform bacteria, viruses, acids
AMS	Manure storage	Lined and unlined manure storage facilities	Livestock sewage wastes, nitrates, phosphates, chloride, chemical sprays and dips for controlling insect, bacterial, viral, and fungal pests, coliform bacteria, viruses
BCT	Chemical storage	500 gallon or more	Specific to chemical product stored at site
BFS	Fertilizer storage/mixing	Feed mill, agricultural co-op	Nitrates
BFT	Petroleum storage	500 gallon or more	Specific to petroleum product stored at site
BGS	Grain storage site		Fungicides
BPS	Pesticide storage / mixing / load	Feed mill, agricultural co-op	Herbicides, insecticides, rodenticides, fungicides, avicides
BSS	Road salt storage	Bulk storage sites	Sodium chloride, calcium chloride, waste oil
CAI	Airport		Pet fuels, deicers, batteries, diesel fuel, chlorinated solvents, automobile wastes, heating oil, building wastes
CBS	Auto body shop		Paints, solvents
CBY	Boat yard		Diesel fuels, batteries, oils, septage from boat waste disposal areas, wood preservatives, paints, waxes, varnishes, automotive wastes
CCE	Cemetery		Leachate (formaldehyde), lawn and maintenance chemicals
CCW	Car wash	Car washes in unsewered areas	Soaps, detergents, waxes, miscellaneous chemicals
CDC	Dry cleaning		Solvents (tetrachloroethylene, petroleum solvents, freon), spotting chemicals (trichloroethane, ammonia, rust removers)
CLD	Laundromat	Laundromats in unsewered areas	Detergents, bleaches, fabric dyes
CMP	Plating facility	Jewelry and metal plating	Cyanide, heavy metals
CMW	Machine / metal working shop		Solvents, metals, organics, sludges, cutting oils, degreasers
CPII	Photo processing	Only include processing facilities, don't include photo drop off sites	Cyanides, biosludges, silver sludges
CPR	Printing		Solvents, inks, dyes, oils, organics, chemicals
CPS	Paint shop		Paint, paint thinner, solvents
CRT	Railroad track		Spills
CRY	Rail yard		Spills
CSP	Seed production plant		Fumigants
CSS	Gas service station		Gasoline, oils, solvents, miscellaneous wastes
CSY	Scrap/junkyard		Oil, gasoline, antifreeze, PCB contaminated soils, lead acids, batteries
CVR	Motor vehicle repair shop		Waste oils, solvents, acids, paints, automotive wastes
GFA	Fuel storage tank - above ground	Non-service station tanks	Gasoline, diesel fuel, other petroleum products
GFB	Fuel storage tank - underground	Non-service station tanks	Gasoline, diesel fuel, other petroleum products
GSA	Sewage absorption area	Drainfields, mounds, dry wells	"
GSI	Sewer line (municipal)	Municipal sewer lines	Septage, coliform bacteria, viruses, nitrates
GSN	Sewer line (non-municipal)	Non-municipal sewer lines	"
GST	Sewage tank	Holding tanks, septic tanks, sumps	Septage, coliform bacteria, viruses, nitrates, heavy metals, synthetic detergents, cooking and motor oil, bleach, pesticides, paints, paint thinner, photographic chemicals, septic tank cleaner chemicals, chlorides, sulfate, calcium, magnesium, potassium, phosphate
GWA	Water well (active production)		Potential conduit
GWJ	Water well (unused or improperly abandoned)		Potential conduit
IAS	Asphalt plant		Petroleum derivatives
ICM	Chemical production	Industrial chemical production facilities	Chemicals
IEE	Electrical and electronic products		Cyanides, metal sludges, caustics, solvents, oils, acids, alkalis,

Village of McFarland Wellhead Protection Plan – December, 2016

	manufacturing		paints, methylene chloride, tetrachloroethylene, trichloroethane, acetone, toluene, PCBs
IES	Electroplating / metal finishing facility		Acids, alkaline solutions, cyanide, metallic salts, solvents, cyanide, heavy metal contaminated wastewater
IFM	Furniture or wood manufacturing / refinishing / stripping		Paints, solvents (toluene, methylene chloride), degreasing sludges
IFW	Foundry / smelting plant		Cyanides, sulfides
IGS	Gravel and Sand pits		Spills, miscellaneous chemicals, bacteria
IMQ	Mining / Mine waste		Cyanide, sulfides, metals, acids drainage
IPC	Plastics manufacturer / molder		Solvents, oils, organics and inorganics, paint wastes, cyanides, acids, alkalis, sludges, esters, surfactants, glycols, phenols, formaldehyde, peroxides
IPM	Paper mill		Metals, acids, minerals, sulfides, chemicals, sludges, chlorine, hypochlorite, chlorine dioxide, hydrogen peroxide
IPP	Pipeline (petro/chem)		Petroleum, chemicals
ISQ	Stone quarries		Spills, miscellaneous chemicals, potential conduit, bacteria
ITP	Textile / polyester manufacturer		Chemicals
IWT	Wood preserving facility		Treated wood residue, preservatives (pentachlorophenol, chromate, copper azanate), tanner gas, paint sludges, solvents, creosote, coating wastes
MFT	Fire training facility		Chemicals
MGC	Golf course		Fertilizers, herbicides, pesticides for controlling mosquitoes, ticks, ants, gypsy moths, and other pests, automotive wastes
MGP	Manufactured gas plant / gasification plant		Petroleum VOCs, Benzo(a)pyrene, PAHs, cyanide
MLA	Laboratory (college, medical, school, private, etc.)		Biological wastes, disinfectants, acids, formaldehyde, miscellaneous chemicals
MMI	Military installation		
MMP	Medical installation (e.g. Hospital)		X-ray developers and fixers, infectious wastes, radiological wastes, biological wastes, disinfectants, asbestos, beryllium, acids, formaldehyde, miscellaneous chemicals
MOI	Other (specify)		
WDR	Class V injection well	Any well, drilled or dug hole, used to inject fluids into the subsoil	Chlorides, pathogens, petroleum products, pesticides
WHS	Hazardous waste generator (SARA Title III) / RCRA authority clean-ups	Any facility listed on the SARA Title III list thought to pose a threat to the well / RCRA clean-ups	Hazardous waste
WIN	Incinerator (municipal)		Metals, combustion by-products
WLA	Landfill	Solid and hazardous waste sites listed in the DNR "Registry of Waste Disposal Sites in Wisconsin"	Leachate
WLS	Leaking underground storage tank (LUST)	LLST Sites included in the DNR "Leaking Underground Storage Tank List"	Gasoline, diesel fuel, other petroleum products
WRF	Recycling facility		Petroleum products, chemicals
WRP	ERRP Site	Sites on the DNR "Emergency and Remedial Response" list	Spills
WSI	Wastewater Spray Irrigation		Coliform bacteria, nitrate, chloride, pathogens, viruses
WSS	Sludge spreading	Municipal wastewater sludge, paper mill sludge	Viruses, coliform bacteria, heavy metals, thioxins
WSW	Storm water retention pond		Metals, petroleum products
WTS	Solid waste transfer station		Miscellaneous chemicals
WUC	Superfund site	Sites listed in the DNR "Superfund Sites in Wisconsin"	Miscellaneous contaminants
WWL	Wastewater lagoon	Treatment and/or storage lagoons	Coliform bacteria, viruses
WWO	Wastewater discharge to surface water	Surface water outfall	Coliform bacteria, viruses
WWP	Wastewater treatment plant		
WWS	Wastewater discharge to groundwater	Absorption and seepage cells, spray irrigation, subsurface systems, etc.	Coliform bacteria, viruses

Village of McFarland Wellhead Protection Plan – December, 2016

NR 811.12(5) Required Setback Distances From Community Water Supply Wells and Potential Sources of Contamination

Potential Contaminant Source	Minimum Setback Distance (ft)
Emergency Power System Operated by The Same Facility Operating Well And Has a Double Wall Above Ground Storage Tank With Continuous Electronic Interstitial Leak Monitoring	10
Storm Sewer Main or Sanitary Sewer Main Constructed of Water Main Class Material	50
Sanitary Sewer Main Not Constructed of Water Main Class Materials	200
Lift Station	
One or Two Family Residential Fuel Oil UST ¹ or AST ²	
POWIS Treatment Tank or Holding Tank	
Any farm UST ³ system or other UST ¹ system with double wall and with electronic interstitial monitoring for the system, any farm AST ² with double wall, or single wall tank with other secondary containment and under a canopy; other AST ² system with double wall, or single wall tank with secondary containment and under a canopy and with electronic interstitial monitoring for a double wall tank or electronic leakage monitoring for a single wall tank secondary containment structure*	300 ³
Septic Tank (<12,000 gpd)	400
Cemetery	
Storm Water Retention or Detention Pond	
Farm UST ¹ system or other UST ¹ system with double wall and with electronic interstitial monitoring for the system, any farm AST ² with double wall, or single wall tank with other secondary containment and under a canopy or other AST ² system with double wall, or single wall tank with secondary containment and under a canopy; and with electronic interstitial monitoring for a double wall tank or electronic leakage monitoring for a single wall tank secondary containment structure*	600 ⁴
Land Application of Municipal, Commercial, or Industrial Waste	1,000
The Boundary of a Land Spreading Facility for Spreading of Petroleum-Contaminated Soil Regulated Under ch. NR 718 While Facility is in Operation	
Industrial, Commercial, or Municipal Wastewater Treatment Plant Treatment Units, Lagoons, or Storage Structures	
Manure Stacks or Storage Structures	
Septic Tank (>12,000 gpd)	
Solid Waste Storage, Transportation, Transfer, Incineration, Air Curtain Destructor, Processing, Wood Burning, One Time Disposal or Small Demolition Facility	1,200
Sanitary Landfill	
Any Property With Residual Groundwater Contamination That Exceeds CH. NR140 Enforcement	
Coal Storage Area	
Salt or Deicing Material Storage Area	
Single Wall Farm UST or Single Wall Farm AST or Other Single Wall UST or AST That Has or Has Not Received Written Approval From The Department of Commerce or Its Designated Local Program Operator*	
Bulk Fuel Storage Facilities	
Bulk Pesticide or Fertilizer Handling or Storage Facilities	

Footnotes On Page 2

Village of McFarland Wellhead Protection Plan – December, 2016

⁶ These requirements apply to tanks containing gasoline, diesel, bio-diesel, ethanol, or other alternative fuel, fuel oil, petroleum product, motor fuel, burner fuel, lubricant, waste oil, or hazardous substance

¹ UST-Underground Storage Tank

² AST-Above Ground Storage Tank

³ These installations shall meet the most restrictive installation requirements of s. Comm 10.260 and receive written approval from the department of commerce or its designated Local Program Operator under s. Comm 10.110

⁴ For USTs s. Comm 10.260 states the 600ft setback distance may be reduced by 50% if all of the following features are provided and maintained in addition to the features in the tank-type column: tank system construction of corrosion-resistant material, such as fiber-reinforced plastic, or steel with a fiber-reinforced plastic wrap or jacket; non-discriminating sump sensors; testable secondary containment spill bucket; continuous electronic liquid-filled, pressure, or vacuum interstitial monitoring with automatic system shut-down; audible and visual high-level alarm at 90% full, and automatic shut-off at 95%; all fueling area protected by canopy; and downspouts for drainage of rainwater do not discharge into a fueling area.

⁵ For ASTs s. Comm 10.260 states the 600ft setback distance may be reduced by 50% if all of the following features are provided and maintained in addition to the features in the tank-type column: either continuous non-discriminating electronic interstitial monitoring for double wall, or continuous non-discriminating electronic sensor for other secondary containment; audible and visual high-level alarm at 90% full, and either automatic shut-off at 95% or no latch-open device is used with any manual-shutoff nozzle; all dispensing by suction pump fuel transfer; all motor vehicle fueling limited to private or fleet use; all fueling area protected by canopy; and downspouts for drainage of rainwater do not discharge into a fueling area.

⁶ These installations shall meet the standard double wall tank or single wall tank secondary containment installation requirements of s. Comm 10.260 and receive written approval from the department of commerce or its designated Local Program Operator under s. Comm 10.110

DRAFT

Village of McFarland Wellhead Protection Plan – December, 2016

Appendix B – Lithologic Logs and Well Construction Details

WISCONSIN UNIQUE WELL NUMBER Source: SWAP PROJECT KEYED				State of Wisconsin Water Systems DWT Department Of State & Personnel, Box 3021 Madison, WI 53707		Form 3.200-776 (Rev 02/01) Use					
Property Owner: MORGAN, W & C, INC. 200 S. 10th St. Telephone Number: 608-536-3154				1. Well Location Town: V of McFarland Depth: 500 FT							
Address: 5915 MILWAUKEE ST City: McFarland State: WI Zip Code: 53550				Street Address of Road Name and Number: 5412 LONG ST #1 Subdivision Name: Lot: Block:							
County of Well Location: DC - Dodge Well Permit No.: Well Completion Date:		Well Contractor: MILASGER WELL & PUMP CO INC License #: 92 License ID (Number): 115024120		Well Type: 1 (See item 12 below)		1 - New 1 - Replacement 3 - Rehabilitation Specialized Cased Well? <input type="checkbox"/> Constructed by: 0					
Well Constructer Address: 20350 ENTERPRISE AVE City: BROOKFIELD State: WI Zip Code: 53005 Date of Approval: 03/28/1949				Public Well (Yes/No): Specific Comments: 059 gpm @		Reason for replacement or reconstructed Well?					
3. Well Service: of homes and/or (e.g. Department stores, church, school, restaurant, etc.) High Capacity Well? <input type="checkbox"/>				Property?		1 - Labeled 2 - Driven Point 3 - Other 4 - Other					
4. Is the well located (topography, geology and environmental factors) and construction factors, including those affecting water quality?											
Well located in floodplain? <input type="checkbox"/> (Circle W if it is in floodplain) (check four properties)				6. Obstructions: (check all that apply) 10. Ponds 11. Foundation Drains to Groundwater 12. Foundation to Foundation 13. Building Grout 14. Building Sewer 1 - Gravity 2 - Pressure 15. Cellar or Basement <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> 16. Clearwater Runoff				17. Wastewater Vault 18. Used Animal Barn Pen 19. Animal Yard or Stable 20. Silo 21. Barn Center 22. Manure Pile 1 - Gravity 2 - Pressure 1 - Cellar or Plastic 2 - Other 23. Other manure Storage 24. Ditch 25. Other NR 812 Water Source			
5. Drillhole Dimensions and Construction Method											
Diameter (in)		From (ft) To (ft)		Upper Subsequent Drillhole 1. Return - Mud Circulation 2. Return - Air 3. Return - Air and Foam 4. Drill-through Casing (Specify) 5. Reverse Rotary 6. Cased Bit 7. Pump Jetting 8. Other		Lower Open Hole or Casing Code Geology Type, Logging Numbering, Color, Hardness, etc. From (ft) To (ft)					
16.0	surface	167				DRIFT	0	145			
						LH SANDSTONE-FRANCISIAN	145	195			
						LH SANDSTONE-DRESDEN	195	260			
						1825 SILTSTONE-EAU CLAIRE	260	265			
						LH SANDSTONE-EAU CLAIRE	265	305			
						U HL SHALE-EAU CLAIRE	305	320			
						LH SANDSTONE-EAU CLAIRE	320	455			
						LH SANDSTONE-MT SIMON	455	500			
6. Casing Data Section Material, Weight, Specification, Manufacture & Material Assembly				From (ft) To (ft)		9. Static Water Level 20.0 ft B ground surface Hydraulic Pressure					
16.0			surface	145			11. Well Is: 0 in. Fresh				
10.0			0	167			X-Meas B-Block				
10. Pump Test Pumping Level: 31.8 ft below surface Program #: 385.0 cfd 6.0 hr				Developed? <input type="checkbox"/> Divided? <input type="checkbox"/> Capped? <input type="checkbox"/>							
7. Grout or Other Sealing Material											
Material (Kind of Sealing Material)		From (ft) To (ft)		Packer Casing		12. Did you notify the owner of the local governmental authority and fill all gravel wells on the property? Yes, explain					
CEMENT		surface 167.0				13. Name of Well Constructor or Supervisory Official Date Typed					
13. Name of Well Constructor or Supervisory Official Date Typed											
14. Name of Well Head Operator (if different from name(s) above) Date Typed											
Additional Comments: 67 Owner Sign: 1/2/17				Verifier Initial: Date Geology: Batch: 551							

Village of McFarland Wellhead Protection Plan – October, 2016

WISCONSIN UNIQUE WELL NUMBER Source: WELL CONSTRUCTION		HJ107	State of Wisconsin Water System DGT Department of Natural Resources, DNR-7921 Madison, WI 53707	Form WSR-77A (Rev. 02-02-06)
Well Name: WELL 03		Telephone Number: 608-238-3133	Depth: 700 FT	
Address: 3015 MILWAUKEE ST		City: McFARLAND State: WI Zip Code: 53556		
County: SC		Well Permit No: W	Well Completion Date: January 31, 2001	Well Location: 1. Township: NE 14 of R2 2. Range: 7 R 3. Section: 10 E
Well Construction: MUNICIPAL WELL @ PUMP INC		Locality ID (Public): 113024125	Well Type: 3 (See Item 11 below)	
Well Contractor: 3090 ENTERPRISE AVE		Public Well Plan Approval: 662846	Well Type Legend: 1-New 2-Replacement 3-Substantiated of previously existing well: 74	
Well Location: BROOKFIELD		Date of Approval: 07/27/1995	Basis for replacement or replacement Well: original construction 11/11/874	
Well Capacity: 7.1 gpm		Hydraulic Capacity: gpm	4. 1-Drilled 2-Driven 3-Driven 4-Other: Y	

1. Well Screen: **MUNICIPAL** (See Item 11 below)

2. Well Type: **3** (See Item 11 below)

3. Basis for replacement or replacement Well: **original construction 11/11/874**

4. 1-Drilled 2-Driven 3-Driven 4-Other: **Y**

5. Is the well located in slope or on slope and not overlapped from any contamination source, including those on adjoining properties? **Y**

6. Contaminants in the well (including seepage):

1. Lead (Pb)	17. Dioxin	18. Warfarin
2. Building Overhang	18. Foundation Drainage	19. Paved Animal Manure
3. Septic Tank	19. Foundation Drainage	20. Animal Yards or Stalls
4. Sewage Abatement Unit	20. Building Drain	21. Rain Drain
5. Sewerage Pump Out	21. Car Wash	22. Motor Pile
6. Buried Above Ground Oil Tank	22. Building Sewer	23. Other
7. Buried Petroleum Tank	23. Other	24. Other
8. Other	24. Other	25. Other

5. Drilling Dimensions and Construction Method		Lower Open Bedrock		Geology	
From (ft)	To (ft)	Upper Enlarged Drifts	From (ft)	To (ft)	Geology Type, Color, Noncrystalline, Color, Fractures, etc.
24.0	62	1. Rotary - Mud Circulation			T_M_SILT
		2. Rotary - Air			S_SAND
29.0	116	3. Rotary - Air and Foam			SC_GRAVEL
		4. Drill-Through Casing Method			Y_2E_SANDSTONE-JORDAN
		5. Reverse Rotary			MW_BOLDRITE-BLACK EARTH
		6. Other			R_SANDSTONE-TUN CITY
17.0	700	7. Tangi Outer Casing			Y_N_SANDSTONE-WONEWOCO

6. Casing Line Section		Material, Weight, Specification		From (ft)		To (ft)	
Size (in)	Material	Weight	Specification	From (ft)	To (ft)	Material	Weight
14.0	ASTM A53 GR B WELL CASING PIPE	11.3	40	0	280		
	BEVELLED FOR WELDING 3/16 IN WALL						

7. Grout or Other Sealing Material		Count		Sacks	
Material	Description	From (ft)	To (ft)	Count	Sacks
MEAT CEMENT S G		0	280	225	

Additional Comments: **NO** Verified Based: **NO** Batch: **394**

Village of McFarland Wellhead Protection Plan – October, 2016

WISCONSIN UNIQUE WELL NUMBER Source: WELL CONSTRUCTION			AC718	Source of Wellhead Water System: D62 Department of Natural Resources, Dec 7, 2011 Madison, WI 53707		Form 8309-77A (Rev 02/02/09)
Property Owner: THE VILLAGE OF MCFARLAND			Telephone Number: 608-839-2153	1. Well Location: Town/City/Village: Village of MCFARLAND		Depth: 800 FT
Mailing Address: City: MCFARLAND State: WI Zip Code: 53558			Street Address or Rural Name and Number: CREAMERY RD		Subdivision Name: _____ Lot: _____ Block: _____	
County of Well Location: SC	Well Permit No: _____	Well Completion Date: 06/21/1998		Grid Loc: S44 14 W 10 E		
Well Contractor: LAYNE WESTERN COMPANY INC License # 582			Public Well Plan Approval: 581354	Section: 2 7 6 N R 10 E		
Address: W229 N500E EMPLAHIWI			City: REWAUKEE State: WI Zip Code: 53072	2. Well Type: 1 (See para 12 below)		
Well Purpose: Water			Specialty: 50.8	1-New, 2-Improvement, 3-Reconstruction of previous complete well: _____ mandated in: 0		
Well Serves: _____ of homes and/or _____ (school, restaurant, church, school, industry, etc.)			High Capacity Well: Y	Reason for replacement of reconstructed Well: _____		
Wellhead Protection Area: _____			Specialty: Y	1-1-Brilled 2-Open Hole 3-Grout 4-Other		

4. Is this well located up slope or down slope from any communication sources, including those on adjoining properties?
- Well located up/down slope? _____
- Other communication sources (including prohibited):
- | | | |
|---------------------------------|--|--|
| 1. Landfill | 9. Dumpyard/ Yard Debris | 13. Wastewater Pump |
| 2. Building Overhang | 10. Drive | 14. Paved Animal Manure Pile |
| 3. Septic Tank | 11. Foundation Drain to Chlorinator | 15. Animal Feed or Shelter |
| 4. Sewage Absorption Unit | 12. Foundation Drain to Sump | 16. Sidewalk |
| 5. Mechanical Heating Unit | 13. Building Drain | 17. Drain Gully |
| 6. Traced Home Heating Oil Tank | 14. Can from a Drain: 2-Other | 18. Manure Pile: 1st Floor 2-2nd Floor |
| 7. Buried Petroleum Tank | 15. Building Sewer: 1-Gravity 2-Pressure | 19. Other Feed or Pasture 2-Other |
| 8. 1-Sterilizer 2-Swimming Pool | 16. Car from a Drain: 1-Other | 20. Other Animal Manure |
| | 17. Chlorinator | 21. Other |
| | 18. Chlorinator | 22. Other |
| | 19. Chlorinator | 23. Other |
| | 20. Chlorinator | 24. Other |
| | 21. Chlorinator | 25. Other |

5. Drillhole Dimensions and Construction Method		Log	Open Borehole	Geology	From (ft)	To (ft)
Diaper (ft)	To (ft)	Type: Drilled/ Drilled	Log	Type: Comp/ Non-comp	Color, Hardness, etc	
240	131	X-1 Rotary - Mud Circulation		1 TOPSOIL	0	3
120	900	- 2 Rotary - Air - 3 Rotary - Air and Foam - 4 Drill-Through-String Hammer - 5 Reverse Rotary - 6 Cased Hole - 7 Temp. Open Casing Removal?		2 GS SANDY CLAY	3	10
		Other: _____		3 GG GRAVEL @ STONES BOULDERS	10	55
				4 Y_L Limestone YELLOW @ GRAY	55	80
				5 HL SHALE @ LIMESTONE	82	145
				6 R_LN RED LIME @ SANDSTONE	145	185
				7 SH SANDSTONE, OCCASIONAL SHALE	185	300
				8 LN SANDSTONE	300	727
				9 HL SANDSTONE HARD	727	800

6. Casing/Liner Screen		Material, Weight, Specification	From (ft)	To (ft)	Geology	From (ft)	To (ft)
Diaper (ft)	To (ft)	Manufacturer & Method of Assembly					
240	131	BL NEW STEEL P.E. WELDED 78.50 LB. A-36 GR. B	130	130			
		Screen type, material & size					

7. Grout or Other Sealing Material		Material	From (ft)	To (ft)	Sacks/Container
		PRESSURE			
		Heat Cement	130.0	208	

12. Duty to notify the owner of the well to permanently abandon and fill all unused wells on this property?
If so, explain: _____

13. Initials of Well Contractor or Supervisory Order: **JUN** Date signed: **7/27/16**

Initials of Well Rig Operator (Member of the crew as above): **JJ** Date signed: **7/28/16**

Allan Coville

From: Allan Coville
Sent: Monday, November 28, 2016 1:53 PM
To: Bass, Betsi (BetsiBass@alliantenergy.com)
Cc: Matt Schuenke; Brian Berquist
Subject: FW: Outlot 2, Ridge View, McFarland

Betsi,

As shown below outlined in red, then that should be fine. Are you going to prepare the easement?

Allan Coville
Village of McFarland
Director Public Works / Utilities

From: Brian Berquist [mailto:brian@tcengineers.net]
To: Allan Coville <Allan.Coville@mcfarland.wi.us>
Cc: Matt Schuenke <Matt.Schuenke@mcfarland.wi.us>
Subject: RE: Outlot 2, Ridge View, Mcfarland

Matt and Allan-

Yes – I do not see that as a big issue. The area Betsi is referring to is circled in red below and is in the berm of the stormwater pond.



Brian
Brian R. Berquist, P.E. – Vice President, Municipal Services
brian@tcengineers.net
Town & Country Engineering, Inc.
2912 Marketplace Drive, Suite 103
Madison, WI 53719
(608) 273-3350 Fax: (608) 273-3391

From: Bass, Betsi [<mailto:BetsiBass@alliantenergy.com>]
Sent: Thursday, November 10, 2016 11:16 AM
To: Allan Coville <Allan.Coville@mcfarland.wi.us>
Subject: FW: Outlot 2, Ridge View, Mcfarland

Good morning Allan,

I am trying to get my ducks in a row for the rest of the Holscher Rd project, as I will soon be leaving the Stoughton office for my home district. In doing so, I noticed that I missed something last time I went through this project. I thought we had an easement on Outlot 2 (west of the cemetery at the corner of MN & Holscher), but we do not. Would the Village be willing to grant us a 10' easement along the east property line of that outlot? Please let me know if this will work, and I will get the information to our real estate dept to get the paperwork going. Enjoy the rest of your day.

Betsi Bass

Alliant Energy

Engineering Technician Apprentice

608-328-5323

betsibass@alliantenergy.com

Allan Coville

From: Brian Berquist <brian@tcengineers.net>
Sent: Monday, December 12, 2016 10:12 AM
To: Allan Coville
Subject: FW: McFarland Alliant Easement Document
Attachments: Document McFaraland 12 12 16.pdf

Allan-

This is an easement document from the Village to Alliant for a new underground electric line along the east side of the Village's Outlot 2 (the stormwater pond for Ridge View Subdivision).

I took a look through it and had no further comments. It would probably be good to have Larry review this prior to any official approval. Alliant had also asked what the process is – I told them likely first at Utilities Committee then Board?

Regards,

Brian
Brian R. Berquist, P.E. – Vice President, Municipal Services
brian@tcengineers.net
Town & Country Engineering, Inc.
2912 Marketplace Drive, Suite 103
Madison, WI 53719
(608) 273-3350 Fax: (608) 273-3391

From: June Notbusch [mailto:jnotbusc@mi-tech.us]
Sent: Monday, December 12, 2016 10:01 AM
To: Brian Berquist <brian@tcengineers.net>
Cc: Betsibass@alliantenergy.com
Subject: McFarland Alliant Easement Document

Good morning Brian,

I have attached the document for the Alliant easement for 5902 Broadhead Street in McFarland for your review and possibly to put on the Public Utilities Committee for review.

Please contact myself if you have any questions or concerns about the document. And, could you notify me if the document is forwarded to the Public Utilities Committee?

Thank you for your time.

June Notbusch

June Notbusch | Property Acquisition Agent

Mi-Tech Services Inc.

office: 920.924.4300 | cell: 920.539.0784
jnotbusc@mi-tech.us | www.mi-tech.us

4001 Felland Rd. Suite 108
Madison, WI 53718

THE INFORMATION CONTAINED IN THIS COMMUNICATION MAY BE CONFIDENTIAL, IS INTENDED ONLY FOR THE USE OF RECIPIENT(S) NAMED ABOVE, AND MAY BE LEGALLY PRIVILEGED. IF THE READER OF THIS MESSAGE IS NOT THE INTENDED RECIPIENT, YOU ARE HEREBY NOTIFIED THAT ANY DISSEMINATION, DISTRIBUTION, OR COPYING OF THIS COMMUNICATION, OR ANY OF ITS CONTENTS, IS STRICTLY PROHIBITED.

Document No.

**EASEMENT UNDERGROUND
ELECTRIC**

The undersigned Grantor(s) Village of McFarland, (hereinafter called the "Grantor"), in consideration of the sum of one dollar (\$1.00) and other good and valuable consideration, receipt of which is hereby acknowledged, does hereby grant, convey and warrant unto Wisconsin Power and Light Company, a Wisconsin corporation, (hereinafter called the "Grantee"), the Grantee's successors and assigns, the perpetual right and easement to construct, install, maintain, operate, repair, inspect, replace, add, relocate and remove the Designated Facilities, as indicated below, upon, in, over, through and across lands owned by the Grantor in the Village of McFarland, County of Dane, State of Wisconsin, said Easement Area to be ten (10) feet in width and described as follows:

See Exhibit "A" for a legal description of the Easement Area and Exhibit "B" for a depiction of the Easement Area, both which are attached hereto and made a part hereof.

This easement is subject to the following conditions:

1. **Designated Facilities:** This easement is for underground electric line facilities, including but not limited to conduit, cables, above ground electric pad-mount transformers, secondary pedestals, riser equipment and other appurtenant equipment associated with underground electric line facilities.
2. **Access:** The Grantee and its agents shall have the right of reasonable ingress and egress to, over and across the Grantor's land adjacent to the Easement Area.
3. **Buildings and Structures:** The Grantor agrees within the Easement Area not to construct or place buildings, structures, or other improvements (excluding parking lots, lighting and signage), or place water, sewer or drainage facilities; all without the express written consent of the Grantee.
4. **Landscaping and Vegetation:** Plantings and landscaping are allowed within the Easement Area so long as said plantings and landscaping do not interfere with the easement rights herein granted. The Grantee has the right to trim or remove trees, bushes and brush within the Easement Area without replacement or compensation hereinafter. The Grantee may treat the stumps of any trees, bushes or brush to prevent re-growth and apply herbicides in accordance with applicable laws, rules and regulations, for tree and brush control.
5. **Elevation:** After the installation of the facilities and final grading of the Easement Area, the Grantor agrees not to alter the elevation of the existing ground surface by more than six (6) inches or place rocks or boulders more than eight (8) inches in diameter, within the Easement Area, without the express written consent of the Grantee.
6. **Restoration and Damages:** The Grantee shall at its option, restore, cause to have restored or pay a reasonable sum for all damages to property, crops, fences, livestock, lawns, roads, fields and field tile (other than trees trimmed or cut down and removed), caused by the construction, maintenance or removal of said facilities.
7. **Rights not granted to the Grantee:** The Grantee shall not have the right to construct or place fences buildings or any other facilities other than the above Designated Facilities.
8. **Reservation of use by the Grantor:** The right is hereby expressly reserved to the Grantor, the heirs, successors and assigns, of every use and enjoyment of said land within the Easement Area consistent with rights herein granted.
9. **Binding Effect:** This agreement is binding upon the heirs, successors and assigns of the parties hereto, and shall run with the lands described herein.
10. **Easement Brochure:** As provided by PSC 113, the Grantor shall have a minimum period of five days to examine materials approved or provided by the Public Service Commission of Wisconsin describing the Grantor's rights and options in the easement negotiating process. The Grantor hereby voluntarily waives the five day review period or acknowledges that they have had at least five days to review such materials.

Record this document with the Register of Deeds

Name and Return Address:

Alliant Energy
Attn: Real Estate Department
4902 North Biltmore Lane
P.O. Box 77007
Madison, WI 53707-1007

Parcel Identification Number(s)

154/0610-022-0412-3

WITNESS the signature(s) of the Grantor this _____ day of _____, 20____.
Village of McFarland

Signature (SEAL)

Brad Czebotar, Village President

Printed Name and Title

ACKNOWLEDGEMENT

STATE OF WISCONSIN }
COUNTY OF DANE } SS

Personally came before me this _____ day of _____, 20____, the above named _____

_____ to me known to be the person(s) who
executed the foregoing instrument and acknowledged the same.

Signature of Notary

Printed Name of Notary

Notary Public, State of Wisconsin

My Commission Expires (is) _____

This instrument drafted by
June Notbusch

Dan Boettcher

Checked by

WPL2016-5141
December 12, 2016

Project Title:	Holscher Rd-South Lift Station
ERP Activity ID:	4037583
Tract No.:	1 of 1
PPN:	

Exhibit A

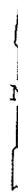
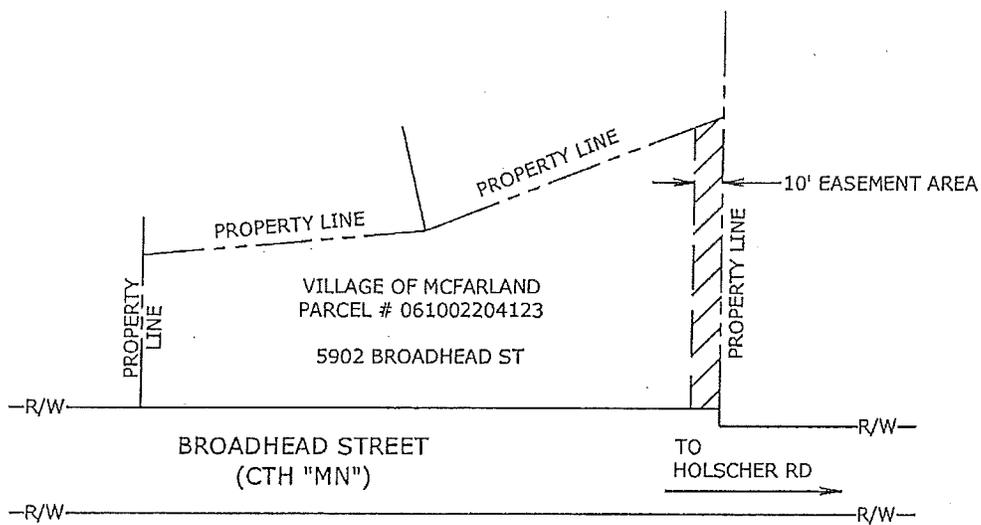
Part of Outlot 2 of Ridge View Subdivision, as recorded on August 7, 1992, in Volume 56-135A of Plats, Pages 397 and 398, as Document Number 2379771, in the Office of the Register of Deeds for Dane County, Wisconsin and more particularly described as follows:

The east ten feet (10') of said Outlot 2.

Located in part of the Northeast Quarter of the Northwest Quarter (NE $\frac{1}{4}$ NW $\frac{1}{4}$) of Section 2, Town 6 North, Range 10 East, Village of McFarland, Dane County, Wisconsin

EXHIBIT "B"

PART OF THE NE $\frac{1}{4}$ OF THE NW $\frac{1}{4}$ OF SECTION 2, TOWNSHIP 6 NORTH, RANGE 10 EAST; AND PART OF THE SE $\frac{1}{4}$ OF THE SW $\frac{1}{4}$ OF SECTION 35, TOWNSHIP 7 NORTH, RANGE 10 EAST; ALL IN THE VILLAGE OF MCFARLAND, DANE COUNTY, WISCONSIN.



NOT TO SCALE

2016 WATER SYSTEM IMPACT FEES

Collected in Month	2016 Fees	2015 Fees	2016 Impact Fee Distribution		
			Tower	Main	Well
January	2,600.00	0.00	1,465.92	416.00	718.08
February	7,151.00	650.00	6,300.44	312.00	538.56
March	3,250.00	1,300.00	1,832.40	520.00	897.60
1st Quarter Total	13,001.00	1,950.00	9,598.76	1,248.00	2,154.24
April	1,300.00	-	732.96	208.00	359.04
May	2,275.00	-	1,282.68	364.00	628.32
June	5,200.00	1,300.00	2,931.84	832.00	1,436.16
2nd Quarter Total	8,775.00	1,300.00	4,947.48	1,404.00	2,423.52
July	3,250.00	1,950.00	1,832.40	520.00	897.60
August	1,950.00	1,300.00	1,099.44	312.00	538.56
September	2,600.00	1,300.00	1,465.92	416.00	718.08
3rd Quarter Total	7,800.00	4,550.00	4,397.76	1,248.00	2,154.24
October	1,950.00	650.00	1,099.44	312.00	538.56
November	5,850.00	-	3,298.32	936.00	1,615.68
December	-	5,201.00	-	-	-
4th Quarter Total	7,800.00	5,851.00	4,397.76	1,248.00	2,154.24

HISTORICAL WATER IMPACT FEE TOTALS

2016 Total	37,376.00		23,341.76	5,148.00	8,886.24
2015 Total	5,851.00		3,298.92	936.00	1,616.08
2014 Total	7,150.00		4,031.28	1,144.00	1,974.72
2013 Total	21,125.00		11,910.59	3,380.00	5,834.41
2012 Total	13,650.00		7,696.08	2,184.00	3,769.92
2011 Total	12,350.00		6,963.12	1,976.00	3,410.88
2010 Total	5,200.00		2,931.84	832.00	1,436.16
2009 Total	7,150.00		4,031.26	1,144.00	1,974.74
2008 Total	10,400.00		5,863.62	1,664.00	2,872.38
2007 Total	34,451.00		19,423.88	5,512.16	9,514.96
2006 Total	28,927.00		16,309.33	4,628.32	7,989.35
2005 Total	52,326.00		29,501.92	8,372.16	14,451.92
2004 Total	77,679.00		43,796.20	12,428.64	21,454.16
2003 Total	59,802.00		33,716.97	9,568.32	16,516.71
2002 Total	69,625.00		39,255.27	11,140.00	19,229.73
2001 Total	55,271.50		31,162.62	8,843.44	15,265.44
2000 Total	56,701.00		31,968.59	9,072.16	15,660.25
1999 Total	55,388.00		31,228.31	8,862.08	15,297.61
1998 Total	14,581.73		8,221.33	2,333.08	4,027.32
Grand Total	\$ 625,004.23		\$ 354,652.89	\$ 99,168.36	\$ 171,182.98

\$650=	\$366.48	\$104.00	\$179.52
\$1300=	\$732.96	\$208.00	\$359.04

Tower= .56381, Main=.16, Well=.27619

PSN Implementation

Date	Customers Registered	Customers Opted out	Fees Collected	Fees Charged
10/31/2016	157	80	\$ 18,330.28	\$ 59.70
11/30/2016	484	237	31,303.39	147.95
12/15/2016	626	338	15,260.60	

Tax Certification						
Year	Preliminary #	Preliminary Dollar Amount	Penalty Amount	Final Tax Certification #	Dollar Amount	Final Tax Certification
2007	438	\$63,224.35	\$4,081.60	113	\$39,048.71	
2008	383	\$77,422.50	\$4,606.37	129	\$45,305.24	
2009	514	\$99,462.39	\$5,530.17	166	\$56,764.33	
2010	540	\$106,854.64	\$6,344.69	178	\$64,307.69	
2011	429	\$101,608.38	\$7,425.20	146	\$69,932.25	
2012	335	\$91,854.71	\$6,868.28	146	\$68,157.51	
2013	425	\$92,931.92	\$5,330.71	129	\$49,516.96	
2014	403	\$87,531.75	\$4,481.49	114	\$39,563.48	
2015	253	\$62,238.41	\$4,815.01	102	\$40,699.67	
2016	225	\$61,843.40	\$3,738.56	95	\$42,225.82	

VILLAGE OF MCFARLAND

REVENUES WITH COMPARISON TO BUDGET
FOR THE 11 MONTHS ENDING NOVEMBER 30, 2016

UTILITY FUND

	BUDGET AMOUNT	PERIOD ACTUAL	YTD ACTUAL	% OF BUDGET	UNEARNED
<u>NON OPERATING INCOME</u>					
600-4210 WATER: IMPACT FEES	20,000.00	5,850.00	37,376.00	186.88	(17,376.00)
600-4211 SEWER: NON OPERATING INCOME	.00	.00	.00	.00	.00
600-4212 LOSS ON RETIREMENT	.00	.00	.00	.00	.00
600-4213 WATER:HOLSCHER RD FEES	.00	8,736.32	27,301.00	.00	(27,301.00)
600-4214 SEWER:HOLSCHER RD FEES	.00	21,581.60	67,442.50	.00	(67,442.50)
600-4221 CONTRIBUTIONS FROM TIF	.00	.00	.00	.00	.00
600-4250 MISC AMORTIZATION REGULATORY L	.00	.00	.00	.00	.00
TOTAL NON OPERATING INCOME	20,000.00	36,167.92	132,119.50	660.60	(112,119.50)
<u>SEWER SALES REVENUE</u>					
600-4560 FLAT RATE SERVICE - RESIDENTIA	2,000.00	77.26	1,627.59	81.38	372.41
600-4561 FLAT RATE SERVICE - COMMERCIAL	100.00	5.00	77.00	77.00	23.00
600-4562 MEASURED SERVICE - COMMERCIAL	149,000.00	16,545.16	153,255.39	102.86	(4,255.39)
600-4563 MEASURED SERVICE - RESIDENTIAL	828,000.00	66,223.22	768,457.22	92.81	59,542.78
600-4564 PUBLIC AUTHORITY - SEWER	16,000.00	2,660.44	18,122.74	113.27	(2,122.74)
600-4570 FORFEITED DISCOUNTS - SEWER	6,000.00	2,975.52	8,431.61	140.53	(2,431.61)
600-4571 MISC OPERATING REVENUES - SEWE	.00	.00	.00	.00	.00
TOTAL SEWER SALES REVENUE	1,001,100.00	88,486.60	949,971.55	94.89	51,128.45
<u>WATER SALES REVENUE</u>					
600-4640 UNMETERED SALES TO GEN CUSTOME	1,800.00	.00	561.85	31.21	1,238.15
600-4641 METERED SALES - RESIDENTIAL -	483,042.00	36,682.10	430,955.48	89.22	52,086.52
600-4642 METERED SALES - COMMERCIAL - W	59,110.00	5,082.65	60,088.73	101.66	(978.73)
600-4643 PUBLIC FIRE PROTECTION - WATER	315,000.00	26,100.00	287,100.00	91.14	27,900.00
600-4644 PUBLIC AUTHORITY - WATER	13,581.00	1,714.69	15,324.76	112.84	(1,743.76)
600-4645 PRIVATE FIRE PROTECTION - WATE	32,711.00	1,452.00	29,136.02	89.07	3,574.98
600-4646 METERED SALES - MFAMILY RSDNTL	34,851.00	4,634.80	33,631.72	96.50	1,219.28
600-4650 FORFEITED DISCOUNTS - WATER	3,846.00	1,835.07	5,024.65	130.65	(1,178.65)
600-4651 MISC. SERVICE REVENUES - WATER	4,000.00	.00	.00	.00	4,000.00
600-4652 OTHER WATER REVENUES	107,153.00	700.00	93,540.08	87.30	13,612.92
600-4699 MISCELLANEOUS REVENUE	.00	.00	.00	.00	.00
TOTAL WATER SALES REVENUE	1,055,094.00	78,201.31	955,363.29	90.55	99,730.71

VILLAGE OF MCFARLAND

REVENUES WITH COMPARISON TO BUDGET
FOR THE 11 MONTHS ENDING NOVEMBER 30, 2016

UTILITY FUND

	BUDGET AMOUNT	PERIOD ACTUAL	YTD ACTUAL	% OF BUDGET	UNEARNED
<u>MISCELLANEOUS REVENUE</u>					
600-4810 MISCELLANEOUS REV-SEWER	1,000.00	.00	123.39	12.34	876.61
600-4811 INTEREST INCOME - SEWER	100.00	8.13	81.30	81.30	18.70
600-4812 INTEREST INCOME - WATER	851.00	289.52	2,954.02	347.12	(2,103.02)
600-4813 INTEREST INCOME-IMPACT FEES	240.00	86.39	910.57	379.40	(670.57)
TOTAL MISCELLANEOUS REVENUE	2,191.00	384.04	4,069.28	185.73	(1,878.28)
<u>SOURCE 49</u>					
600-4920 UNAMORTIZED DEBT DISCOUNT	.00	.00	.00	.00	.00
TOTAL SOURCE 49	.00	.00	.00	.00	.00
TOTAL FUND REVENUE	2,078,385.00	203,239.87	2,041,523.62	98.23	36,861.38

VILLAGE OF MCFARLAND

EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 11 MONTHS ENDING NOVEMBER 30, 2016

UTILITY FUND

	BUDGET AMOUNT	PERIOD ACTUAL	YTD ACTUAL	% OF BUDGET	UNEXPENDED
<u>SEWER TRANSPORTATION</u>					
600-56-0020-151	SOCIAL SECURITY	.00	4.54	67.78	.00 (67.78)
600-56-0020-152	FRINGE BENEFITS	.00	3.97	127.96	.00 (127.96)
600-56-0020-820	MMSD TREATMENT CHARGES	529,000.00	142,908.79	440,501.56	83.27 88,498.44
600-56-0020-821	POWER PURCHASED FOR PUMPING	4,700.00	624.77	5,505.49	117.14 (805.49)
600-56-0020-827	SUPPLIES & EXPENSES	500.00	.00	650.77	130.15 (150.77)
600-56-0020-828	TRANSPORTATION EXPENSES	20,000.00	952.68	16,826.40	84.13 3,173.60
	TOTAL SEWER TRANSPORTATION	554,200.00	144,494.75	463,679.96	83.67 90,520.04
<u>SEWER MAINTENANCE</u>					
600-56-0030-151	SOCIAL SECURITY	3,869.00	134.81	1,625.19	42.01 2,243.81
600-56-0030-152	FRINGE BENEFITS	12,398.00	186.98	3,228.93	26.04 9,169.07
600-56-0030-831	EE MAINT-SEWERAGE COLLECTIONS	37,500.00	204.39	22,957.96	61.22 14,542.04
600-56-0030-832	EE MAINTENANCE-PUMPING EQUIP	65,361.00	1,909.30	41,274.39	63.15 24,086.61
600-56-0030-834	MAINTENANCE-GENERAL PLANT	5,000.00	41.96	4,393.72	87.87 606.28
600-56-0030-835	MAINTENANCE-SEWER COLLECTIONS	.00	.00	5,017.16	.00 (5,017.16)
600-56-0030-836	MAINTENANCE-PUMPING EQUIPMENT	.00	.00	.00	.00 .00
	TOTAL SEWER MAINTENANCE	124,128.00	2,477.44	78,497.35	63.24 45,630.65
<u>SEWER BILLINGS</u>					
600-56-0040-151	SOCIAL SECURITY	2,058.00	136.30	2,466.74	119.86 (408.74)
600-56-0040-152	FRINGE BENEFITS	8,301.00	310.38	9,075.25	109.33 (774.25)
600-56-0040-840	BILLING AND ACCOUNTING	23,687.00	1,939.56	35,581.03	150.21 (11,894.03)
600-56-0040-842	METER READING LABOR	2,033.00	91.21	586.33	28.84 1,446.67
600-56-0040-844	MAINT/TEST OF METERS	6,300.00	.00	.00	.00 6,300.00
	TOTAL SEWER BILLINGS	42,379.00	2,477.45	47,709.35	112.58 (5,330.35)
<u>SEWER ADMINISTRATION</u>					
600-56-0050-151	SOCIAL SECURITY	2,700.00	226.67	2,845.36	105.38 (145.36)
600-56-0050-152	FRINGE BENEFITS	14,545.00	493.18	6,277.77	43.16 8,267.23
600-56-0050-850	ADMIN & GENERAL SALARIES	53,676.00	3,017.69	38,020.27	70.83 15,655.73
600-56-0050-851	ADMIN OFFICE SUPPLIES & EXPENS	5,000.00	728.10	5,877.11	117.54 (877.11)
600-56-0050-852	OUTSIDE SERVICES	29,000.00	1,643.37	30,520.53	105.24 (1,520.53)
600-56-0050-853	INSURANCE EXPENSES	24,000.00	.00	17,543.00	73.10 6,457.00
600-56-0050-854	RETIREE HRA CONTRIBUTIONS	10,000.00	.00	.00	.00 10,000.00
600-56-0050-857	RENTS	63,360.00	5,279.50	58,074.50	91.66 5,285.50
	TOTAL SEWER ADMINISTRATION	202,281.00	11,388.51	159,158.54	78.68 43,122.46
<u>MISCELLANEOUS SEWER</u>					

VILLAGE OF MCFARLAND

EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 11 MONTHS ENDING NOVEMBER 30, 2016

UTILITY FUND

		BUDGET AMOUNT	PERIOD ACTUAL	YTD ACTUAL	% OF BUDGET	UNEXPENDED
600-56-0060-403	DEPRECIATION EXPENSE	96,000.00	8,000.00	88,000.00	91.67	8,000.00
600-56-0060-408	TAXES	.00	.00	.00	.00	.00
600-56-0060-427	INTEREST-SEWER LT DEBT(OLD ACC	.00	.00	.00	.00	.00
600-56-0060-428	AMORTIZATION-SEWER	1,460.00	.00	.00	.00	1,460.00
	TOTAL MISCELLANEOUS SEWER	97,460.00	8,000.00	88,000.00	90.29	9,460.00
	<u>DEPARTMENT 61</u>					
600-56-0061-403	DEPRECIATION EXP-CON ASSETS	.00	.00	.00	.00	.00
	TOTAL DEPARTMENT 61	.00	.00	.00	.00	.00
	<u>DEPARTMENT 80</u>					
600-56-0080-427	DEBT INTEREST	32,321.00	.00	21,089.79	65.25	11,231.21
600-56-0080-437	DEBT PRINCIPAL	.00	.00	.00	.00	.00
	TOTAL DEPARTMENT 80	32,321.00	.00	21,089.79	65.25	11,231.21
	<u>SEWER CONTINGENCY</u>					
600-56-0090-160	OPERATING CONTINGENCY	2,000.00	1,096.36	2,121.12	106.06	(121.12)
	TOTAL SEWER CONTINGENCY	2,000.00	1,096.36	2,121.12	106.06	(121.12)
	<u>WATER SUPPLY</u>					
600-57-0020-151	SOCIAL SECURITY	.00	.00	.00	.00	.00
600-57-0020-152	FRINGE BENEFITS	.00	.00	.00	.00	.00
600-57-0020-600	EE-OPERATION LABOR	.00	.00	.00	.00	.00
600-57-0020-603	SUPPLIES & TESTING	6,000.00	.00	86.66	1.44	5,913.34
600-57-0020-605	WELL #2 REMEDIATION	.00	.00	.00	.00	.00
	TOTAL WATER SUPPLY	6,000.00	.00	86.66	1.44	5,913.34
	<u>WATER PUMPING</u>					
600-57-0030-151	SOCIAL SECURITY	2,000.00	131.95	1,985.38	99.27	14.62
600-57-0030-152	FRINGE BENEFITS	6,409.00	201.59	3,996.40	62.36	2,412.60
600-57-0030-620	EE OPERATION LABOR	25,000.00	1,741.85	26,217.36	104.87	(1,217.36)
600-57-0030-622	POWER FOR PUMPING	39,000.00	1,876.17	36,536.70	93.68	2,463.30
600-57-0030-623	SUPPLIES & EXPENSES	6,000.00	1,180.50	2,885.73	48.10	3,114.27
600-57-0030-625	MAINT. OF PUMPING PLANT	7,000.00	.00	1,235.12	17.64	5,764.88

VILLAGE OF MCFARLAND

EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 11 MONTHS ENDING NOVEMBER 30, 2016

UTILITY FUND

	BUDGET AMOUNT	PERIOD ACTUAL	YTD ACTUAL	% OF BUDGET	UNEXPENDED
TOTAL WATER PUMPING	85,409.00	5,132.06	72,856.69	85.30	12,552.31
<u>WATER TREATMENT</u>					
600-57-0040-151 SOCIAL SECURITY	240.00	10.23	217.66	90.69	22.34
600-57-0040-152 FRINGE BENEFITS	769.00	60.19	1,145.97	149.02 (	376.97)
600-57-0040-630 EE-OPERATION LABOR	3,000.00	138.00	2,922.49	97.42	77.51
600-57-0040-631 CHEMICALS	14,000.00	681.81	8,931.88	63.80	5,068.12
600-57-0040-635 MAINT. OF WATER TREATMENT PLAN	4,000.00	.00	3,616.18	90.40	383.82
TOTAL WATER TREATMENT	22,009.00	890.23	16,834.18	76.49	5,174.82
<u>TRANSMISSION & DISTRIBUTION</u>					
600-57-0050-151 SOCIAL SECURITY	1,629.00	136.05	3,421.23	210.02 (	1,792.23)
600-57-0050-152 FRINGE BENEFITS	5,220.00	187.90	10,019.54	191.95 (	4,799.54)
600-57-0050-640 EE-OPERATION LABOR	20,360.00	1,223.33	23,416.27	115.01 (	3,056.27)
600-57-0050-641 OPERATION SUPPLIES & EXPENSES	3,000.00	.00	3,236.86	107.90 (	236.86)
600-57-0050-650 TOWER PAINTING RESERVE	27,500.00	.00	.00	.00	27,500.00
600-57-0050-651 EE MAINTENANCE-MAINS	30,000.00	981.36	21,289.36	70.96	8,710.64
600-57-0050-652 EE MAINTENANCE-SERVICES	17,000.00	1,535.33	9,262.97	54.49	7,737.03
600-57-0050-653 EE MAINTENANCE-METERS	6,400.00	.00	3,194.94	49.92	3,205.06
600-57-0050-654 EE MAINTENANCE-HYDRANTS	16,500.00	95.94	20,139.56	122.06 (	3,639.56)
600-57-0050-655 MAINTENANCE-MAINS	.00	.00	93.03	.00 (	93.03)
600-57-0050-656 MAINTENANCE-SERVICES	.00	.00	.00	.00	.00
600-57-0050-657 MAINTENANCE-METERS	.00	.00	(53.50)	.00	53.50
600-57-0050-658 MAINTENANCE-HYDRANTS	.00	.00	20.31	.00 (	20.31)
TOTAL TRANSMISSION & DISTRIBUTION	127,609.00	4,159.91	94,040.57	73.69	33,568.43
<u>METER READINGS</u>					
600-57-0060-151 SOCIAL SECURITY	1,655.00	148.04	2,629.77	158.90 (	974.77)
600-57-0060-152 FRINGE BENEFITS	8,301.00	357.48	9,962.20	120.01 (	1,661.20)
600-57-0060-901 METER READING LABOR	1,937.00	91.21	786.49	40.60	1,150.51
600-57-0060-902 ACCOUNTING & COLLECTIONS LABOR	20,687.00	1,986.68	35,985.20	173.95 (	15,298.20)
600-57-0060-903 SUPPLIES & EXPENSES CUST ACCTS	3,200.00	274.40	1,902.81	59.46	1,297.19
TOTAL METER READINGS	35,780.00	2,857.81	51,266.47	143.28 (	15,486.47)
<u>WATER ADMINISTRATION</u>					

VILLAGE OF MCFARLAND

EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 11 MONTHS ENDING NOVEMBER 30, 2016

UTILITY FUND

		BUDGET AMOUNT	PERIOD ACTUAL	YTD ACTUAL	% OF BUDGET	UNEXPENDED
600-57-0070-151	SOCIAL SECURITY	5,340.00	283.83	3,578.43	67.01	1,761.57
600-57-0070-152	FRINGE BENEFITS	18,103.00	674.60	8,161.31	45.08	9,941.69
600-57-0070-920	ADMIN & GENERAL SALARIES	66,749.00	3,794.64	47,792.90	71.60	18,956.10
600-57-0070-921	ADMIN OFFICE SUPPLIES & EXPENS	7,500.00	764.11	4,157.15	55.43	3,342.85
600-57-0070-923	OUTSIDE SERVICES	40,000.00	1,365.74	41,025.61	102.56	(1,025.61)
600-57-0070-924	INSURANCE EXPENSES	43,945.00	.00	31,467.25	71.61	12,477.75
600-57-0070-926	RETIREE HRA CONTRIBUTIONS	10,000.00	.00	.00	.00	10,000.00
600-57-0070-928	REGULATORY COMMISSION EXPENSES	1,500.00	.00	1,095.19	73.01	404.81
600-57-0070-930	MISC GENERAL EXPENSES	35,000.00	2,679.50	40,122.16	114.63	(5,122.16)
600-57-0070-933	TRANSPORTATION EXPENSES	30,000.00	968.58	18,206.98	60.69	11,793.02
	TOTAL WATER ADMINISTRATION	258,137.00	10,531.00	195,606.98	75.78	62,530.02
	<u>MISCELLANEOUS WATER</u>					
600-57-0080-395	BAD DEBT EXPENSE	.00	.00	.00	.00	.00
600-57-0080-403	DEPRECIATION EXPENSE	145,200.00	10,900.00	119,900.00	82.58	25,300.00
600-57-0080-408	TAXES-WATER DEPT	.00	(500.00)	(5,500.00)	.00	5,500.00
600-57-0080-409	TRANSFER - TAX EQUIVALENT	230,000.00	.00	.00	.00	230,000.00
600-57-0080-427	DEBT INTEREST	38,728.00	.00	25,270.19	65.25	13,457.81
600-57-0080-428	AMORTIZATION - WATER	.00	.00	.00	.00	.00
600-57-0080-429	AMORTIZATION ON REFINANCING	.00	.00	.00	.00	.00
600-57-0080-430	INTEREST (SHORT TERM DEBT)-WAT	.00	.00	.00	.00	.00
600-57-0080-432	INTEREST CHARGED TO CONSTRUCTI	.00	.00	.00	.00	.00
600-57-0080-437	DEBT PRINCIPAL	.00	.00	.00	.00	.00
600-57-0080-500	DEBT ISSUANCE EXPENSES	.00	.00	.00	.00	.00
600-57-0080-900	TRANSFER OUT	.00	.00	.00	.00	.00
	TOTAL MISCELLANEOUS WATER	413,928.00	10,400.00	139,670.19	33.74	274,257.81
	<u>DEPARTMENT 81</u>					
600-57-0081-403	DEPRECIATION EXPENSE ON CIAC	73,200.00	6,300.00	69,300.00	94.67	3,900.00
	TOTAL DEPARTMENT 81	73,200.00	6,300.00	69,300.00	94.67	3,900.00
	<u>WATER CONTINGENCY</u>					
600-57-0090-160	OPERATING CONTINGENCY	2,000.00	1,549.18	1,549.18	77.46	450.82
	TOTAL WATER CONTINGENCY	2,000.00	1,549.18	1,549.18	77.46	450.82
	TOTAL FUND EXPENDITURES	2,078,841.00	211,754.70	1,501,467.03	72.23	577,373.97
	NET REVENUES OVER EXPENDITURES	(456.00)	(8,514.83)	540,056.59	118,433.46	(540,512.59)

VILLAGE OF MCFARLAND

REVENUES WITH COMPARISON TO BUDGET
FOR THE 11 MONTHS ENDING NOVEMBER 30, 2016

STORMWATER UTILITY FUND

		BUDGET AMOUNT	PERIOD ACTUAL	YTD ACTUAL	% OF BUDGET	UNEARNED
<u>FEES</u>						
650-4040	STW: USER CHARGES	510,281.00	27,928.20	416,151.74	81.55	94,129.26
650-4070	FORFEITED DISCOUNTS - STW	3,000.00	737.70	2,703.14	90.10	296.86
	TOTAL FEES	.00	.00	.00	.00	.00
<u>TAXES</u>						
650-4111	PROPERTY TAXES	.00	.00	.00	.00	.00
	TOTAL TAXES	.00	.00	.00	.00	.00
<u>INTERGOVERNMENTAL AID</u>						
650-4210	STATE/COUNTY GRANTS	.00	.00	.00	.00	.00
650-4211	CAPITAL PD IN-DEVELOPER/GRANT	.00	.00	.00	.00	.00
650-4212	LOSS ON RETIREMENT	.00	.00	.00	.00	.00
650-4221	TRANSFER IN	.00	.00	.00	.00	.00
650-4279	MONONA PORTION: BLDG INSP	11,036.00	.00	3,982.09	36.08	7,053.91
	TOTAL INTERGOVERNMENTAL AID	.00	.00	.00	.00	.00
<u>PERMITS</u>						
650-4310	APPLICATION FEES	.00	.00	.00	.00	.00
650-4313	STW:HOLSCHER RD FEES	.00	2,508.64	7,839.50	.00 (	7,839.50)
650-4344	EROSION CONTROL PERMITS	4,000.00	3,150.00	16,550.00	413.75 (	12,550.00)
650-4350	YARD WASTE PERMITS	250.00	.00	240.00	96.00	10.00
	TOTAL PERMITS	.00	.00	.00	.00	.00
<u>PUBLIC CHARGES FOR SERVICES</u>						
650-4581	DEVELOPER CHARGEBACKS	.00	.00	.00	.00	.00
650-4590	PROPERTY RENTAL	8,800.00	1,675.00	16,780.00	190.68 (	7,980.00)
650-4599	MISCELLANEOUS REVENUE	2,500.00	652.84	2,278.09	91.12	221.91
	TOTAL PUBLIC CHARGES FOR SERVICES	.00	.00	.00	.00	.00

VILLAGE OF MCFARLAND

REVENUES WITH COMPARISON TO BUDGET
FOR THE 11 MONTHS ENDING NOVEMBER 30, 2016

STORMWATER UTILITY FUND

	BUDGET AMOUNT	PERIOD ACTUAL	YTD ACTUAL	% OF BUDGET	UNEARNED
<u>OTHER FINANCING SOURCES</u>					
650-4610 BORROWING PROCEEDS	.00	.00	.00	.00	.00
650-4615 INTEREST ON TEMP INVESTMENTS	400.00	176.84	1,905.08	476.27	(1,505.08)
650-4618 INSURANCE REFUNDS, RECOVERIES	.00	.00	.00	.00	.00
650-4620 MISCELLANEOUS REVENUE	1,200.00	347.31	548.31	45.69	651.69
650-4699 APPLICATION OF FUND BALANCE	.00	.00	.00	.00	.00
TOTAL OTHER FINANCING SOURCES	.00	.00	.00	.00	.00
TOTAL FUND REVENUE	541,467.00	37,176.53	468,977.95	86.61	72,489.05

VILLAGE OF MCFARLAND

EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 11 MONTHS ENDING NOVEMBER 30, 2016

STORMWATER UTILITY FUND

		BUDGET AMOUNT	PERIOD ACTUAL	YTD ACTUAL	% OF BUDGET	UNEXPENDED
STORMWATER MANAGEMENT						
<u>PERSONNEL EXPENSES</u>						
650-53-3040-110	STORMWATER SALARIES	130,524.00	6,401.50	88,888.01	68.10	41,635.99
650-53-3040-112	STORMWATER OVERTIME	7,269.00	.00	.00	.00	7,269.00
650-53-3040-151	STORMWATER SOCIAL SECURITY	10,442.00	601.42	7,815.92	74.85	2,626.08
650-53-3040-152	STORMWATER FRINGE BENEFITS	40,516.00	1,547.99	22,620.88	55.83	17,895.12
650-53-3040-155	RETIREE HRA CONTRIBUTIONS	10,000.00	.00	.00	.00	10,000.00
SUB-TOTAL PERSONNEL EXPENSES		198,751.00	8,550.91	119,324.81	60.04	79,426.19
<u>SERVICES</u>						
650-53-3040-210	STORMWATER MAMSWAP	4,443.00	.00	4,615.00	103.87	(172.00)
650-53-3040-211	STORMWATER LEGAL SERVICES	1,500.00	128.50	534.90	35.66	965.10
650-53-3040-212	STORMWATER AUDIT SERVICE	5,700.00	.00	8,946.70	156.96	(3,246.70)
650-53-3040-215	STORMWATER ENGINEERING SERVICE	7,500.00	105.00	11,948.35	159.31	(4,448.35)
650-53-3040-220	STORMWATER DETENTION BASIN MAI	7,500.00	61.24	3,688.53	49.18	3,811.47
650-53-3040-230	STORMWATER SEWER MAINTENANCE	10,000.00	.00	19,575.03	195.75	(9,575.03)
650-53-3040-231	STORMWATER STREET SWEEPING	20,000.00	1,856.46	14,819.44	74.10	5,180.56
650-53-3040-232	STORMWATER YARD WASTE SERVICES	18,000.00	.00	13,173.00	73.18	4,827.00
650-53-3040-235	STORMWATER MONITORING/TESTING	2,500.00	.00	.00	.00	2,500.00
650-53-3040-236	STORMWATER LOCATES	250.00	.00	.00	.00	250.00
650-53-3040-240	STORMWATER PERMITS	1,000.00	.00	.00	.00	1,000.00
650-53-3040-242	STORMWATER ADAPT MGMT	6,200.00	.00	6,200.00	100.00	.00
650-53-3040-245	STORMWATER FACILITY RENT	11,360.00	965.00	10,678.14	94.00	681.86
650-53-3040-246	STORMWATER EQUIPMENT RENT	9,570.00	813.00	8,943.00	93.45	627.00
650-53-3040-250	STORMWATER INSURANCE	6,189.00	.00	11,345.25	183.31	(5,156.25)
650-53-3040-255	STORMWATER NEWSLETTER EXP	2,000.00	.00	1,109.12	55.46	890.88
650-53-3040-260	STW: RENTAL PROPERTY EXPENSES	1,500.00	.00	3,300.90	220.06	(1,800.90)
650-53-3040-265	STW UNINSURED LOSSES	.00	.00	6,459.75	.00	(6,459.75)
SUB-TOTAL SERVICES		115,212.00	3,929.20	125,337.11	108.79	(10,125.11)
<u>OTHER OPERATING EXPENSES</u>						
650-53-3040-310	STORMWATER OFFICE SUPPLIES	1,500.00	454.39	1,829.62	121.97	(329.62)
650-53-3040-325	STORMWATER EQUIP MAINT	2,100.00	.00	3,086.34	146.97	(986.34)
650-53-3040-330	STORMWATER EDUCATION & TRAVEL	750.00	.00	602.57	80.34	147.43
650-53-3040-340	STORMWATER OPERATING SUPPLIES	2,000.00	229.86	4,474.94	223.75	(2,474.94)
SUB-TOTAL OTHER OPERATING		6,350.00	684.25	9,993.47	157.38	(3,643.47)

VILLAGE OF MCFARLAND

EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 11 MONTHS ENDING NOVEMBER 30, 2016

STORMWATER UTILITY FUND

		BUDGET AMOUNT	PERIOD ACTUAL	YTD ACTUAL	% OF BUDGET	UNEXPENDED
<u>MATERIALS</u>						
650-53-3040-403	DEPRECIATION EXPENSE	74,400.00	7,700.00	84,700.00	113.84	(10,300.00)
650-53-3040-428	AMORTIZATION-DEBT ISSUANCE CTS	.00	.00	.00	.00	.00
650-53-3040-429	AMORTIZATION OF PREMIUM	.00	.00	.00	.00	.00
	SUB-TOTAL MATERIALS	74,400.00	7,700.00	84,700.00	113.84	(10,300.00)
<u>OTHER EXPENSES</u>						
650-53-3040-510	'11 875K BORR INTEREST	11,975.00	1,000.00	11,000.00	91.86	975.00
650-53-3040-511	INTEREST:2015 BORROWING	14,249.00	.00	9,297.35	65.25	4,951.65
650-53-3040-520	'11, 875K BORR PRINCIPAL	85,000.00	.00	.00	.00	85,000.00
650-53-3040-521	PRINCIPAL:2015 BORROWING	.00	.00	.00	.00	.00
	SUB-TOTAL OTHER EXPENSES	111,224.00	1,000.00	20,297.35	18.25	90,926.65
<u>CAPITAL OUTLAY</u>						
650-53-3040-810	STW: SMALL CAPITAL	21,000.00	.00	3,699.13	17.61	17,300.87
650-53-3040-815	STW SINKING FUNDS	20,000.00	.00	.00	.00	20,000.00
650-53-3040-820	STW CAPITAL PROJECTS	.00	.00	.00	.00	.00
650-53-3040-830	STW: PROPERTY ACQUISITION	.00	.00	.00	.00	.00
	SUB-TOTAL CAPITAL OUTLAY	41,000.00	.00	3,699.13	9.02	37,300.87
	TOTAL STORMWATER MANAGEMENT	546,937.00	21,864.36	363,351.87	66.43	183,585.13
	TOTAL FUND EXPENDITURES	546,937.00	21,864.36	363,351.87	66.43	183,585.13
	NET REVENUES OVER EXPENDITURES	(5,470.00)	15,312.17	105,626.08	1,931.01	(111,096.08)