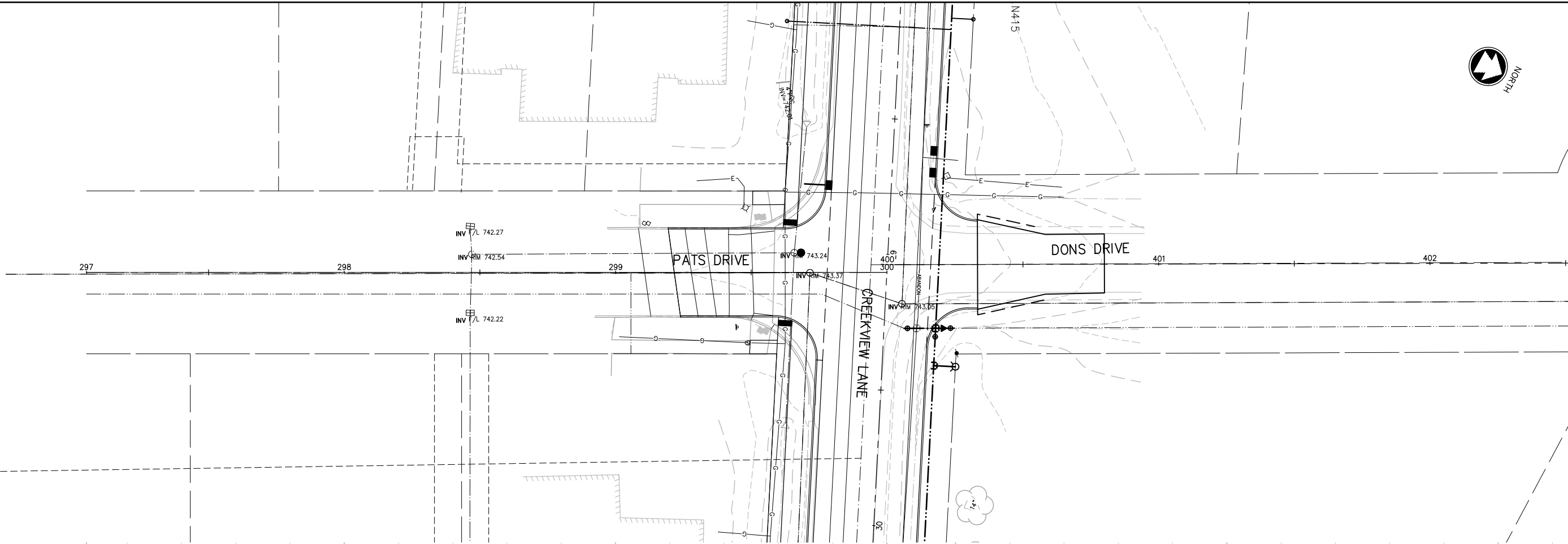
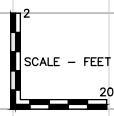
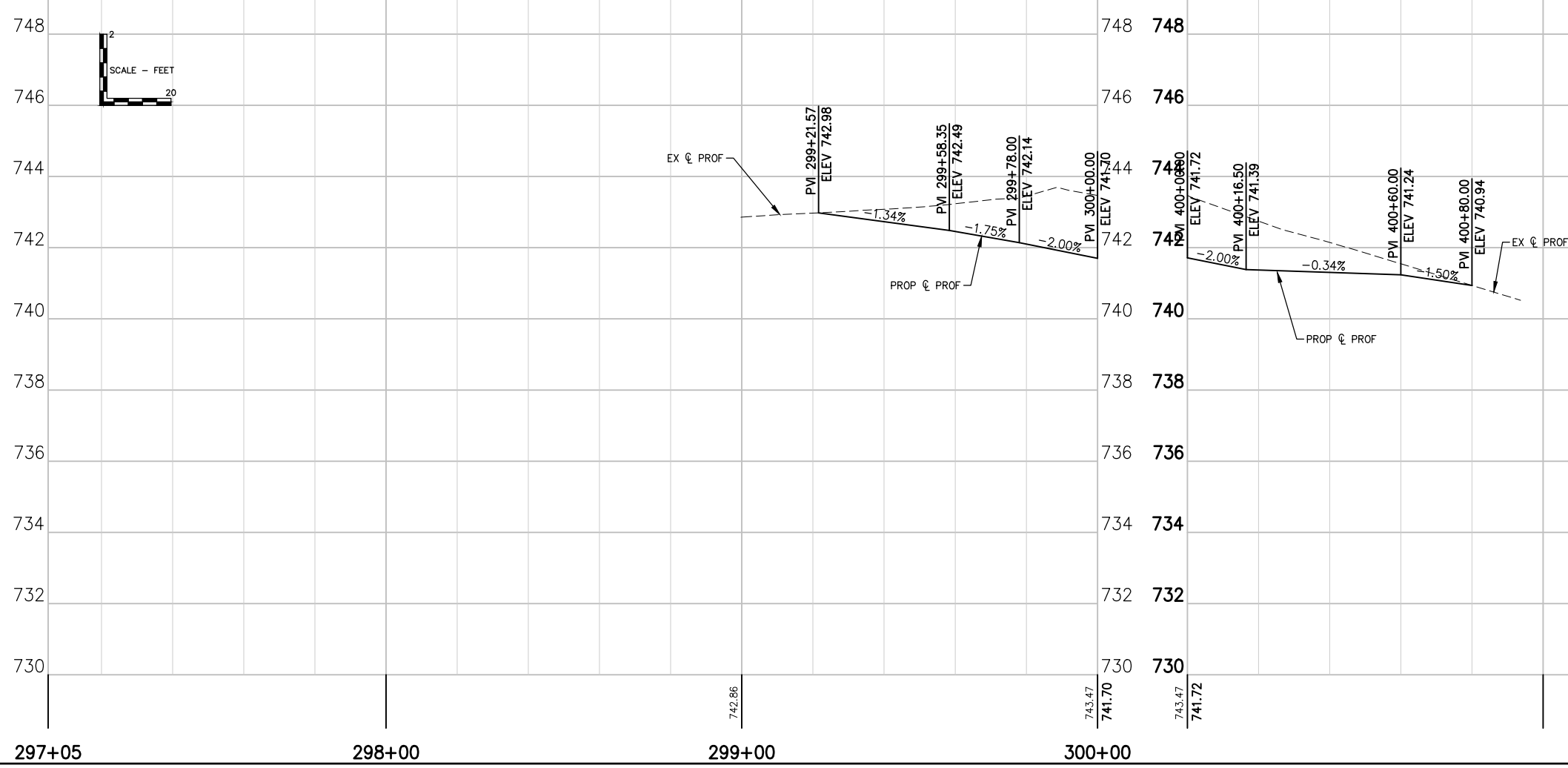


<b>McMAHON</b> ENGINEERING ARCHITECTURE	
McMAHON ASSOCIATES, INC. 1445 McMAHON DRIVE NEENAH, WI 54956 Mailing: P.O. BOX 1025 NEENAH, WI 54957-1025 PH 920/751-4200 FX 920/751-4284 MCMGRP.COM	
McMAHON Associates, Inc. provides the design and construction services shown on this drawing. All rights including copyright are reserved. The user of this drawing shall be held harmless for any reuse or modification of this drawing without prior written consent by McMAHON Associates, Inc.	
<b>CREEKVIEW LANE &amp; RAILROAD STREET RECONSTRUCTION</b> <b>VILLAGE OF KIMBERLY, OUTAGAMIE COUNTY, WISCONSIN</b> <b>PINECREST BOULEVARD</b>	
DESIGNED BDW	DRAWN MJA
PROJECT NO. K0001 9-20-00313	
DATE 05/2020	
SHEET NO. <b>16</b>	



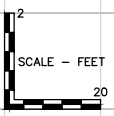
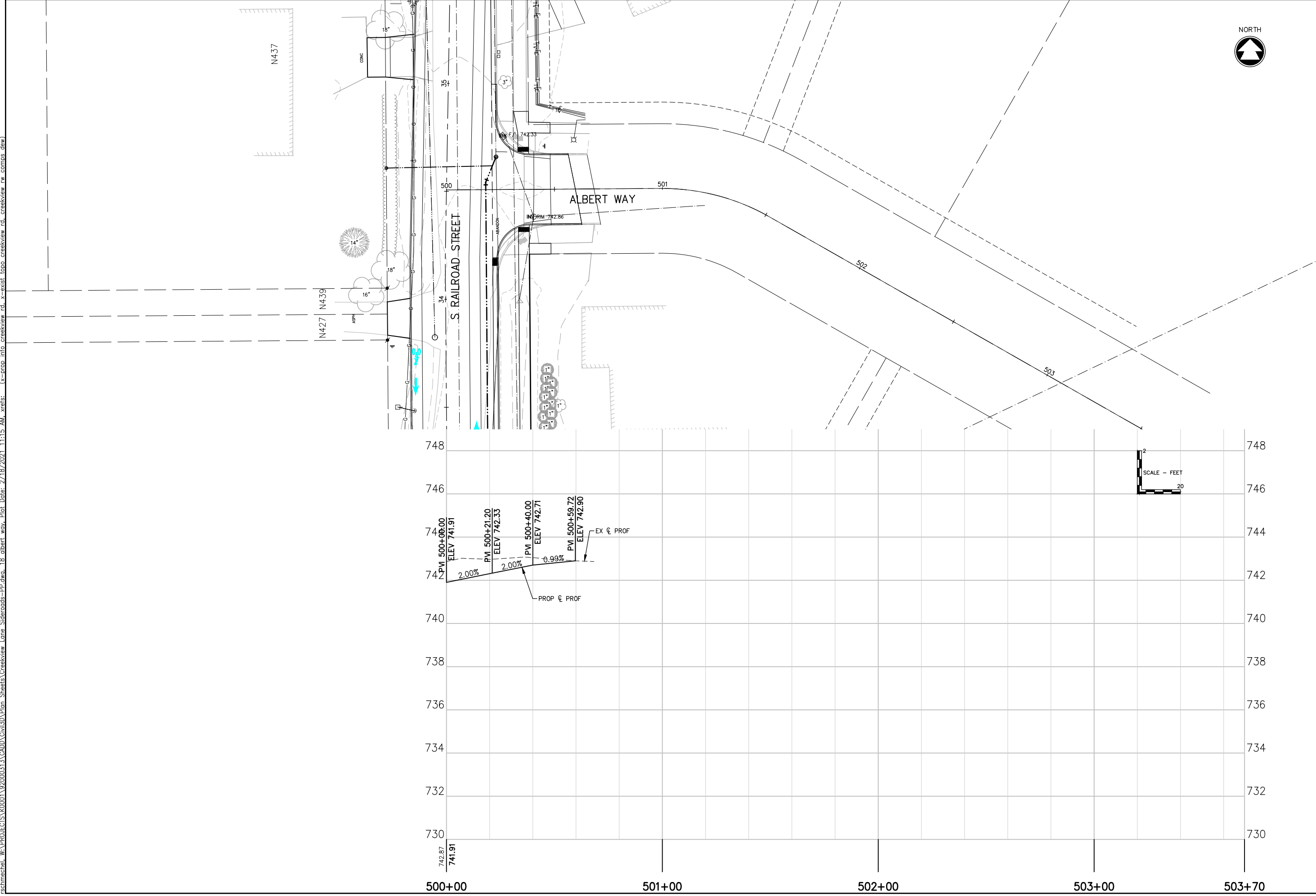
**McMAHON**  
 ENGINEERING ARCHITECTURE  
 McMAHON ASSOCIATES, INC.  
 1445 McMAHON DRIVE NEENAH, WI 54956  
 Mailing: P.O. BOX 1025 NEENAH, WI 54957-1025  
 PH 920.751.4200 FX 920.751.4284 MCMGRP.COM

McMahon Associates, Inc. provides engineering and architectural services of varying nature and scope. All rights, including copyright, are reserved by McMahon Associates, Inc. The user of this drawing or specification agrees to indemnify and hold McMahon Associates, Inc. harmless for any reuse of or modification of this drawing or specification without prior written consent by McMahon Associates, Inc.

NO.	DATE	REVISION

**CREEKVIEW LANE & RAILROAD STREET RECONSTRUCTION**  
**VILLAGE OF KIMBERLY, OUTAGAMIE COUNTY, WISCONSIN**  
**PATS DRIVE & DONS DRIVE**

DESIGNED BDW	DRAWN MJA
PROJECT NO. K0001 9-20-00313	
DATE 05/2020	
SHEET NO. <b>17</b>	



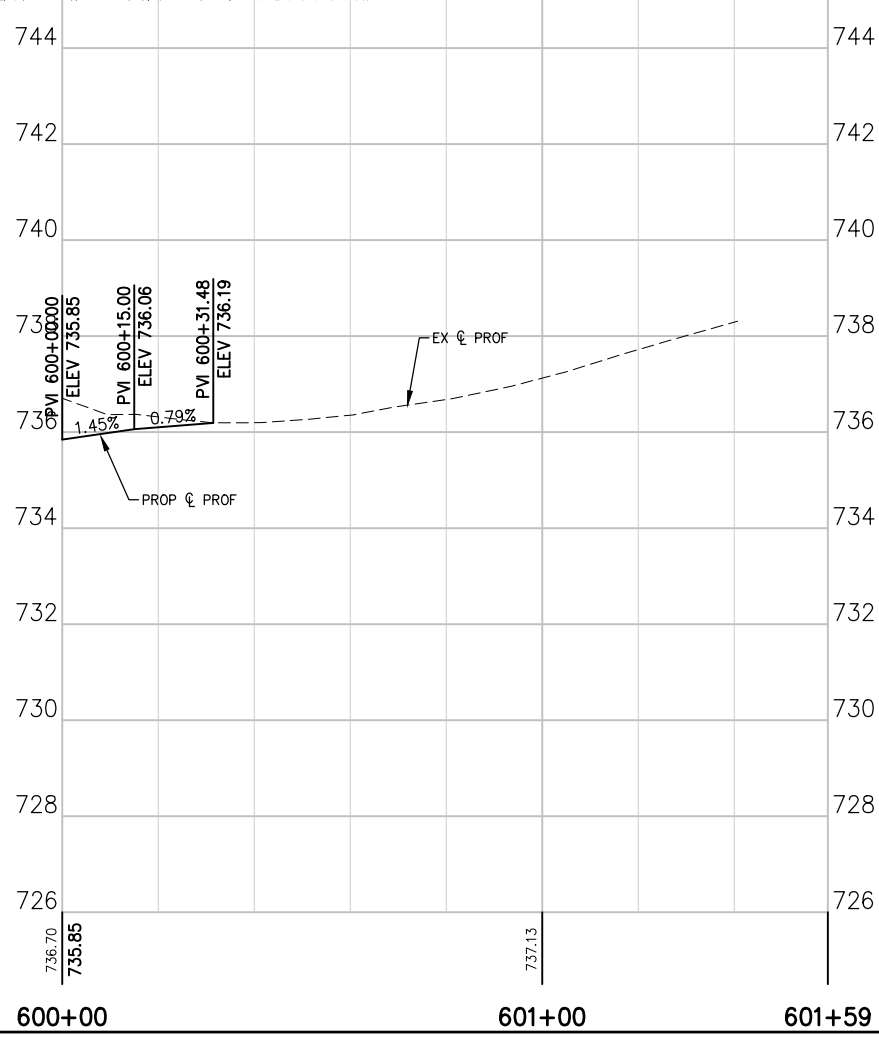
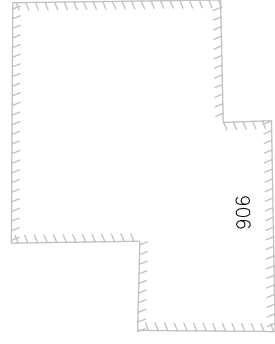
**McMAHON**  
 ENGINEERING ARCHITECTURE  
 McMAHON ASSOCIATES, INC.  
 1445 McMAHON DRIVE NEENAH, WI 54956  
 Mailing: P.O. BOX 1025 NEENAH, WI 54957-1025  
 PH 920.751.4200 FX 920.751.4284 MCMGRP.COM

McMahon Associates, Inc. provides engineering & architectural services. All rights including copyright are reserved by McMahon Associates, Inc. The user of this drawing agrees to hold McMahon Associates, Inc. harmless for any reuse of or modification of this drawing without prior written consent by McMahon Associates, Inc.

NO.	DATE	REVISION

**CREEKVIEW LANE & RAILROAD STREET RECONSTRUCTION**  
**VILLAGE OF KIMBERLY, OUTAGAMIE COUNTY, WISCONSIN**  
**ALBERT WAY**

DESIGNED BDW	DRAWN MJA
PROJECT NO. K0001 9-20-00313	
DATE 05/2020	
SHEET NO. <b>18</b>	



**McMAHON**  
 ENGINEERING ARCHITECT  
 McMAHON ASSOCIATES, INC.  
 1445 McMAHON DRIVE NEENAH, WI 54956  
 Mailing: P.O. BOX 1025 NEENAH, WI 54957-1025  
 PH 920.751.4200 FX 920.751.4284 MCMGRP.COM

McMahon Associates, Inc. provides engineering & architectural services. All rights including copyright are reserved by McMahon Associates, Inc. The user of these drawings agrees to hold McMahon Associates, Inc. harmless for any reuse of or reliance on these drawings without prior written consent by McMahon Associates, Inc.

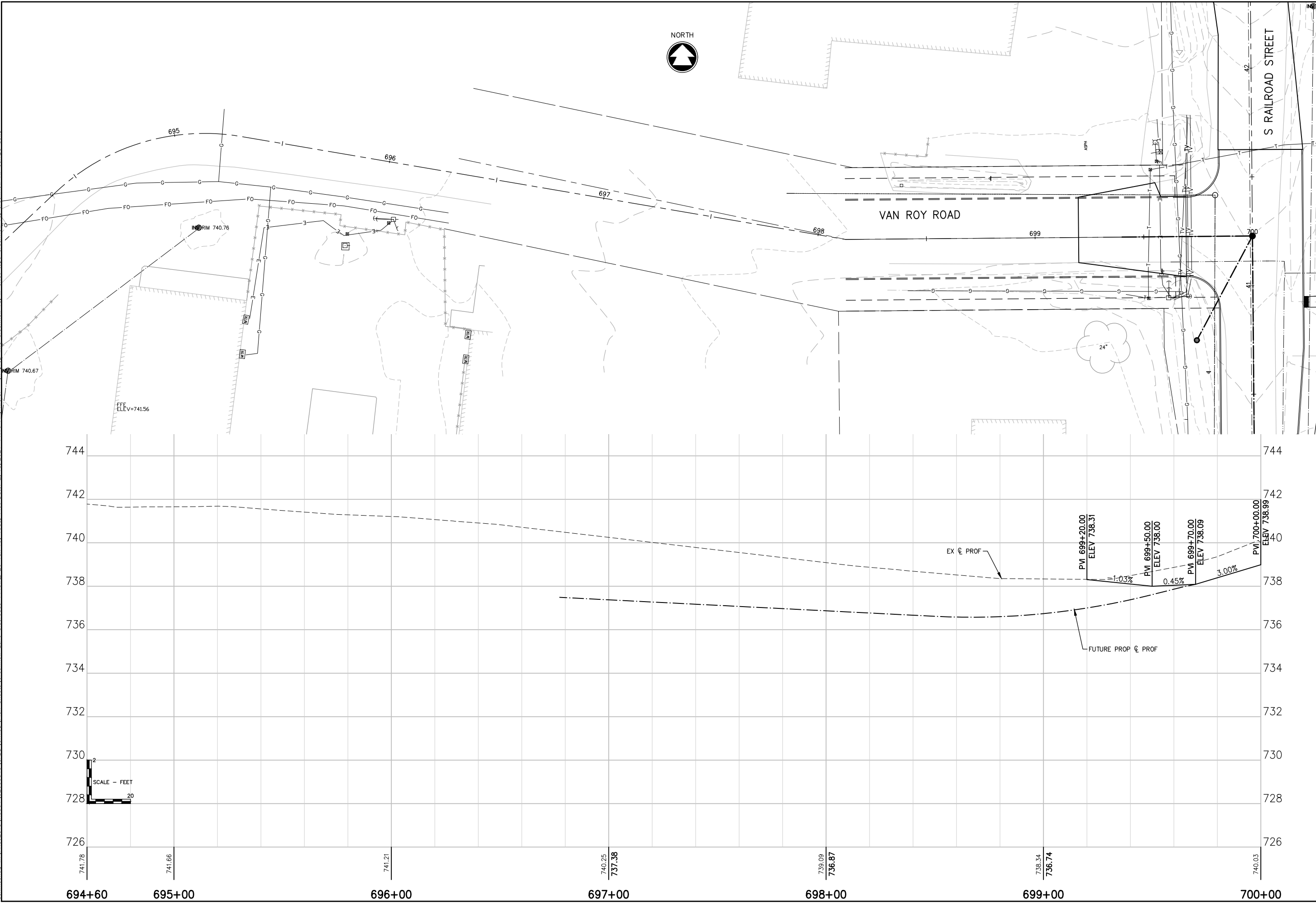
NO.	DATE	REVISION

**CREEKVIEW LANE & RAILROAD STREET RECONSTRUCTION**  
**VILLAGE OF KIMBERLY, OUTAGAMIE COUNTY, WISCONSIN**  
**BETTER WAY**

DESIGNED BDW	DRAWN MJA
PROJECT NO. K0001 9-20-00313	
DATE 05/2020	
SHEET NO. <b>19</b>	

W:\PROJECTS\K000192000313\CADD\Civil3D\Plan Sheets\Creekview Lane Sideroads-PP.dwg, 20 Van RoY Road, 2/18/2021 11:15:57 AM, RSchmechel, 1,2

rschmechel, W:\PROJECTS\K000192000313\CADD\Civil3D\Plan Sheets\Creekview Lane Sideroads-PP.dwg, 20 van roy road, Plot Date: 2/18/2021 11:16 AM, xrefs: (x-prop info creekview rd, x-exist topo creekview rd, creekview rw comps dew)



**McMAHON**  
 ENGINEERING ARCHITECTURE  
 McMAHON ASSOCIATES, INC.  
 1445 McMAHON DRIVE NEENAH, WI 54956  
 Mailing: P.O. BOX 1025 NEENAH, WI 54957-1025  
 PH 920.751.4200 FX 920.751.4284 MCMGRP.COM

McMahon Associates, Inc. provides professional engineering and architectural services. All rights including copyright are reserved. The user of this drawing or specification is to indemnify and hold McMahon Associates, Inc. harmless for any reuse of or modification of this drawing or specification without prior written consent by McMahon Associates, Inc.

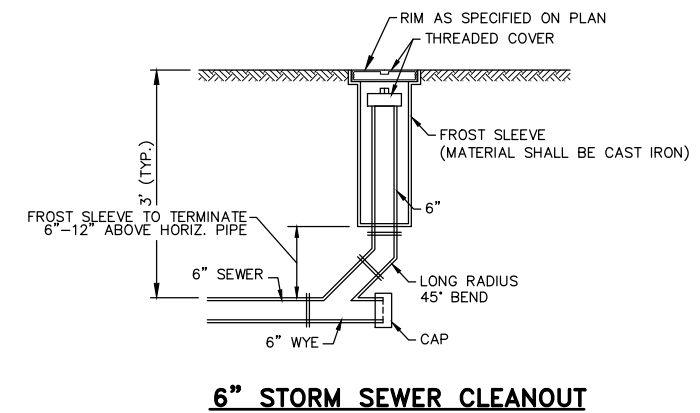
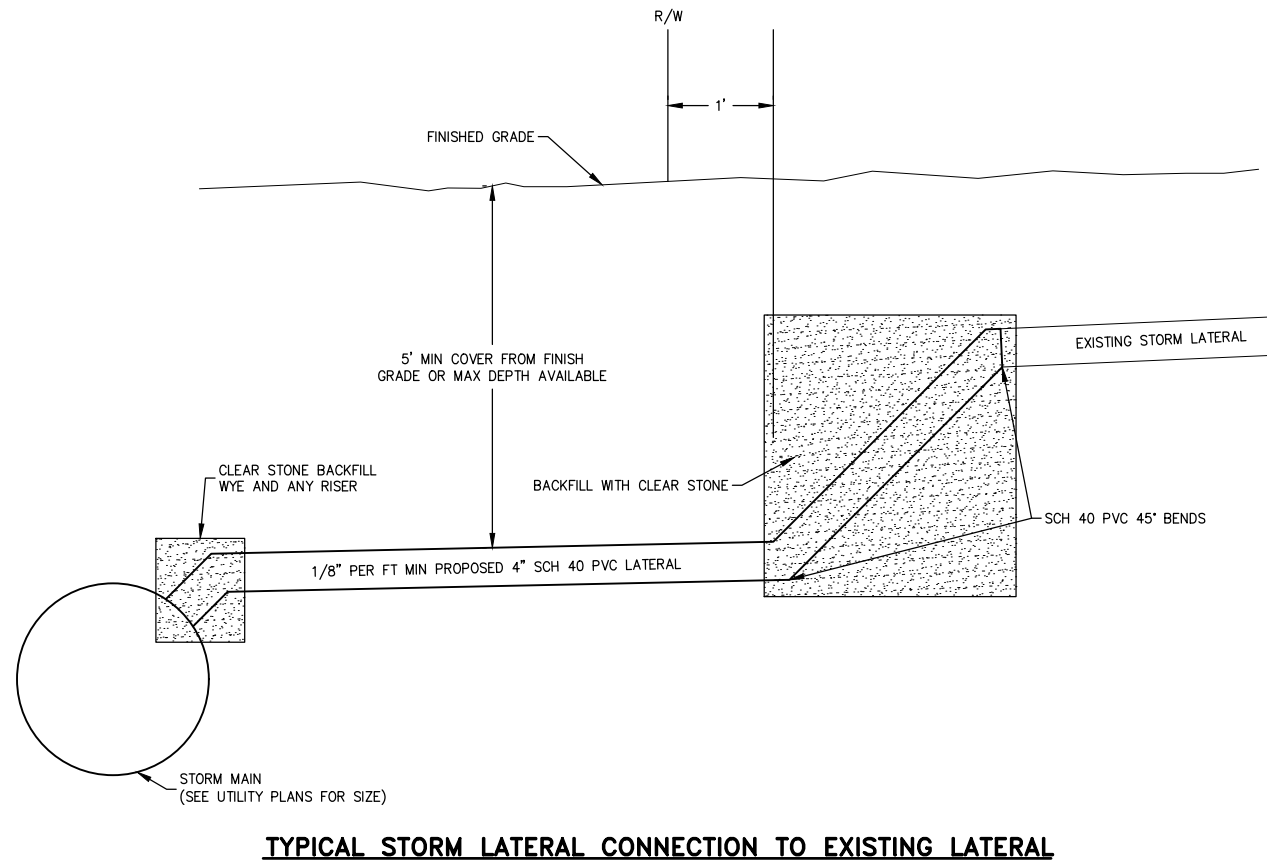
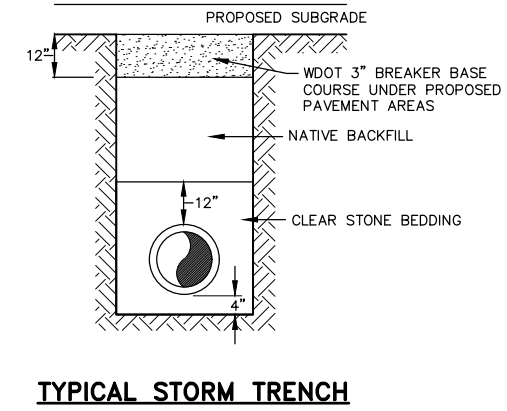
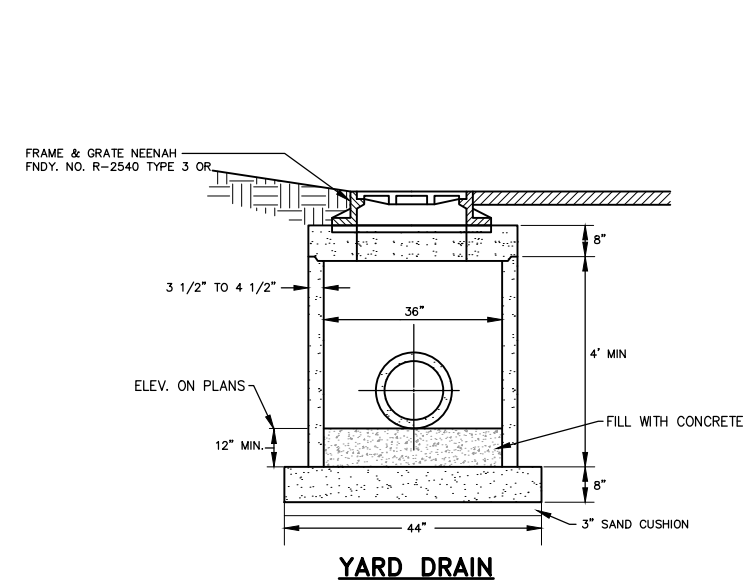
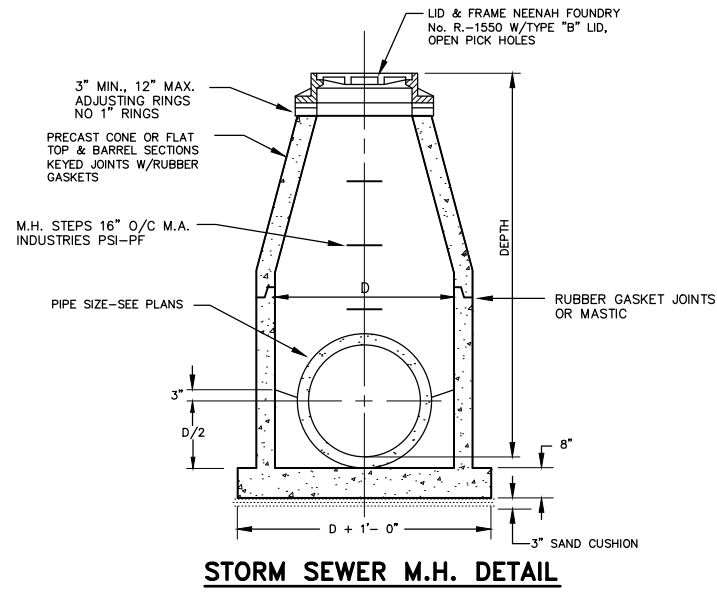
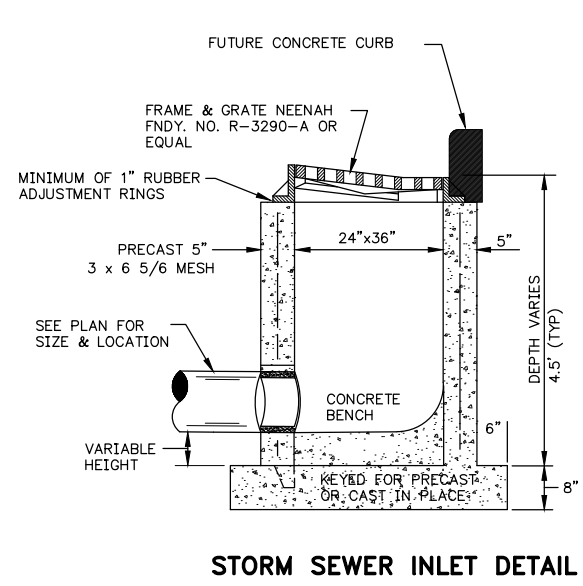
NO.	DATE	REVISION

**CREEKVIEW LANE & RAILROAD STREET RECONSTRUCTION**  
**VILLAGE OF KIMBERLY, OUTAGAMIE COUNTY, WISCONSIN**  
**VAN ROY ROAD**

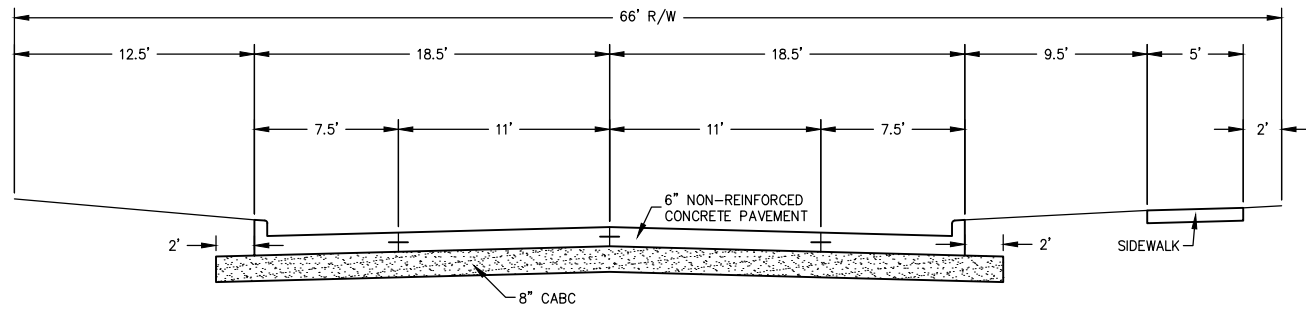
DESIGNED BDW	DRAWN MJA
PROJECT NO. K0001 9-20-00313	
DATE 05/2020	
SHEET NO. <b>20</b>	

W:\PROJECTS\K0001\92000313\CADD\Civil3D\Plan Sheets\Cover-Notes-Details.dwg, 21 STORM SEWER DETAILS, 2/18/2021 11:16:09 AM, RSchmechel, 1:2

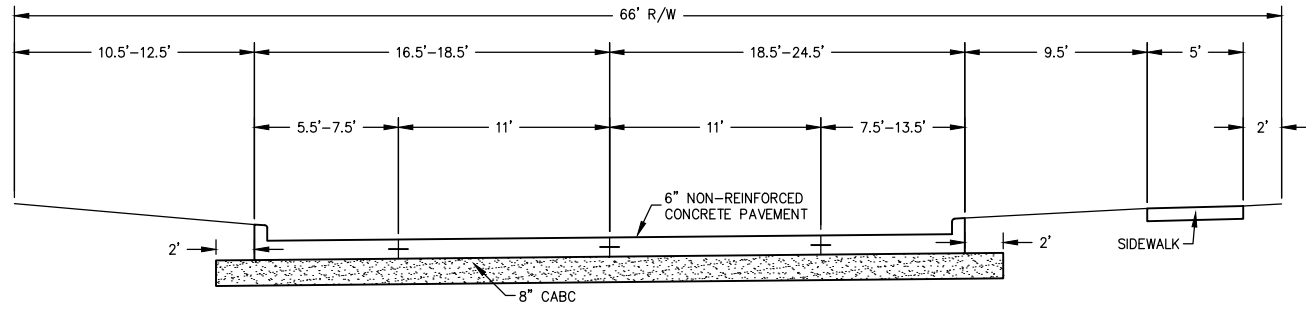
rschmechel, W:\PROJECTS\K0001\92000313\CADD\Civil3D\Plan Sheets\Cover-Notes-Details.dwg, 21 storm sewer details, Plot Date: 2/18/2021 11:16 AM, xrefs:none



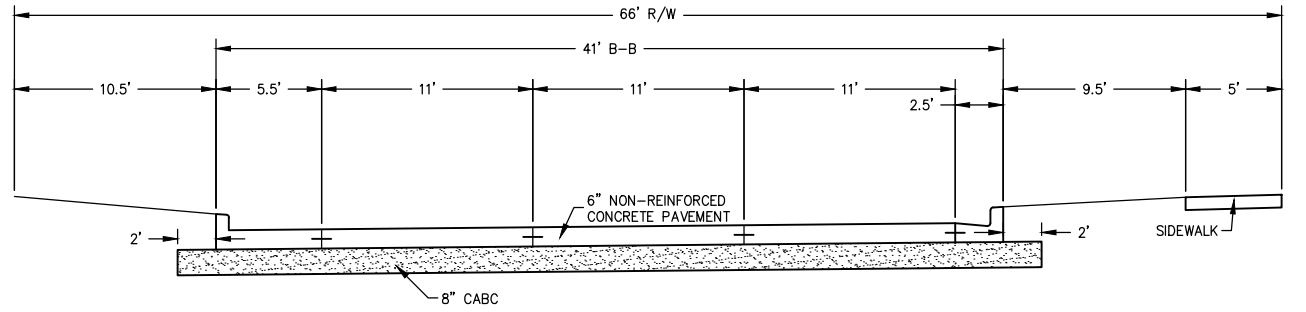
NO.	DATE	REVISION



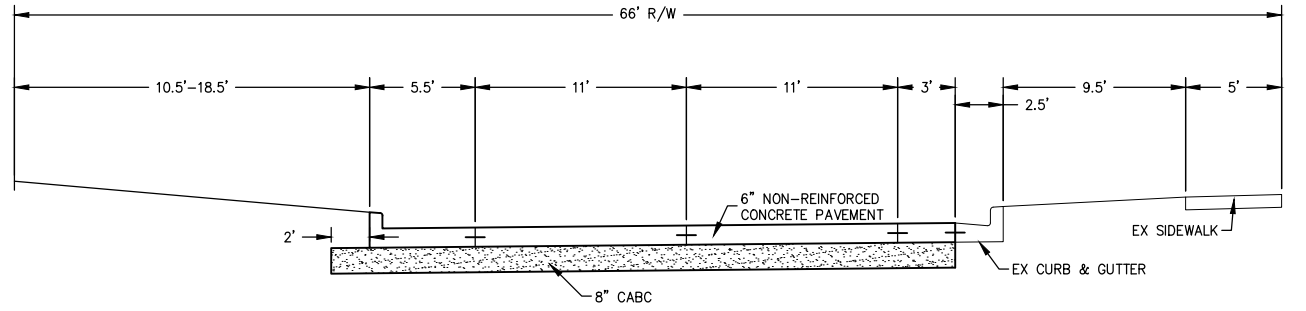
**37' B-B TYPICAL SECTION**  
10+59-14+87



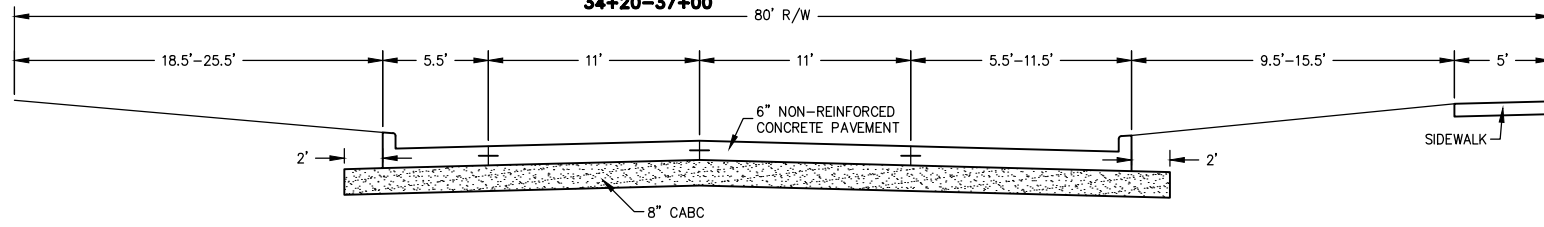
**37'-41' B-B TYPICAL SECTION**  
14+87-17+80



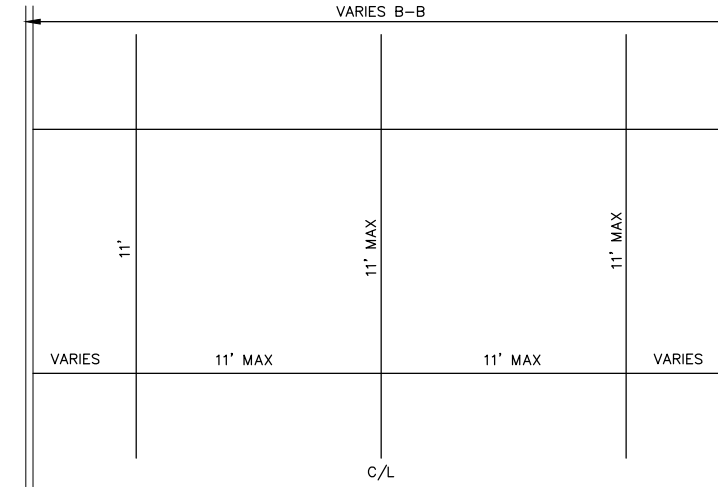
**41' B-B TYPICAL SECTION**  
17+80-34+20



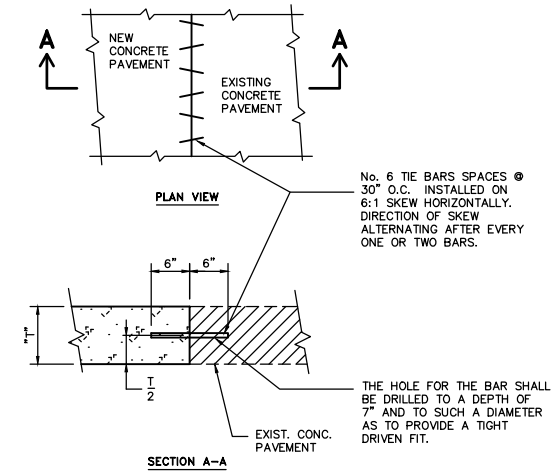
**33'-41' B-B TYPICAL SECTION**  
34+20-37+00



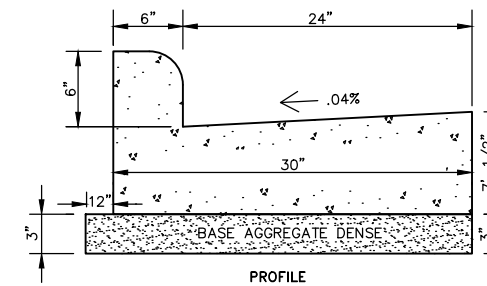
**33'-39' B-B TYPICAL SECTION**  
37+00-40+70  
39' B-B 40+70-41+63



**SAWCUT DETAIL**



**PAVEMENT TIES**

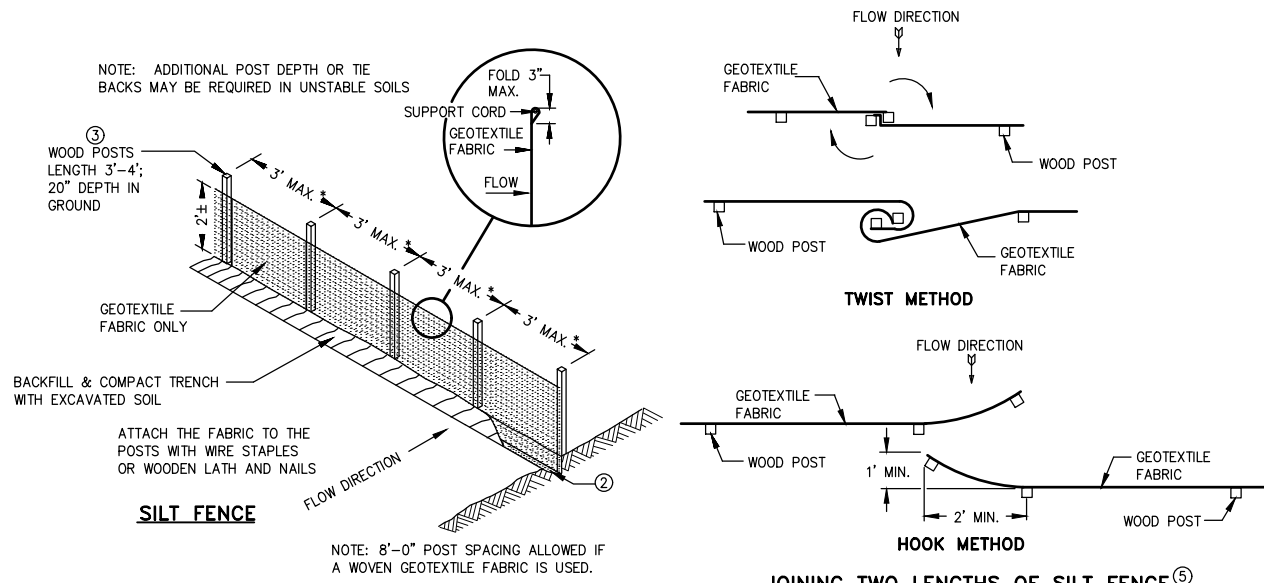


**STREET CURB DETAIL**  
(SEPARATE CURB & GUTTER)

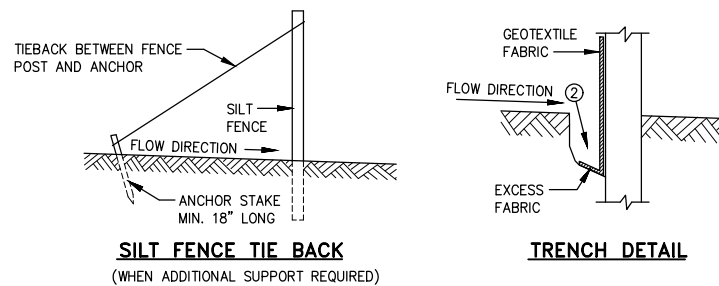
NO.	DATE	REVISION

DESIGNED BDW	DRAWN MJA
PROJECT NO. K0001 9-20-00313	
DATE 05/2020	
SHEET NO. <b>22</b>	

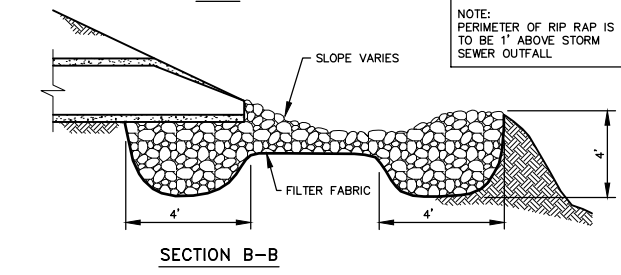
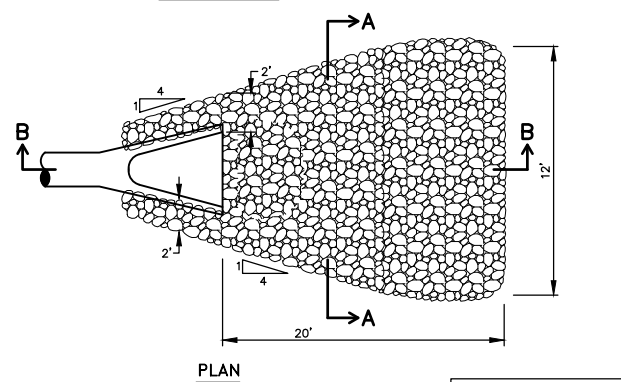
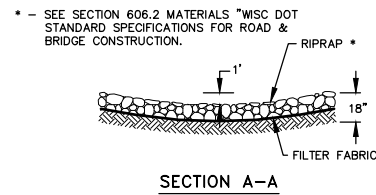




This drawing based on Wisconsin Department of Transportation Standard Detail Drawing 8 E 9-6.



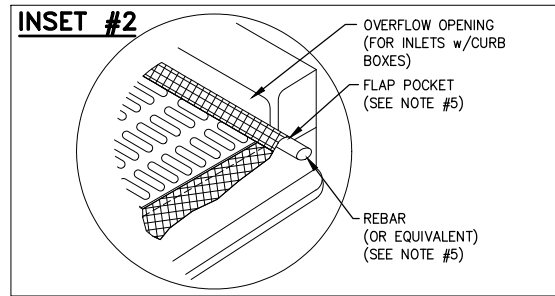
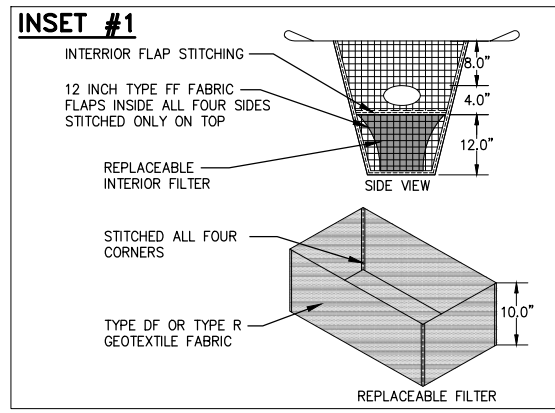
**SILT FENCE DETAIL**



**RIPRAP AT STORM SEWER OUTFALL**

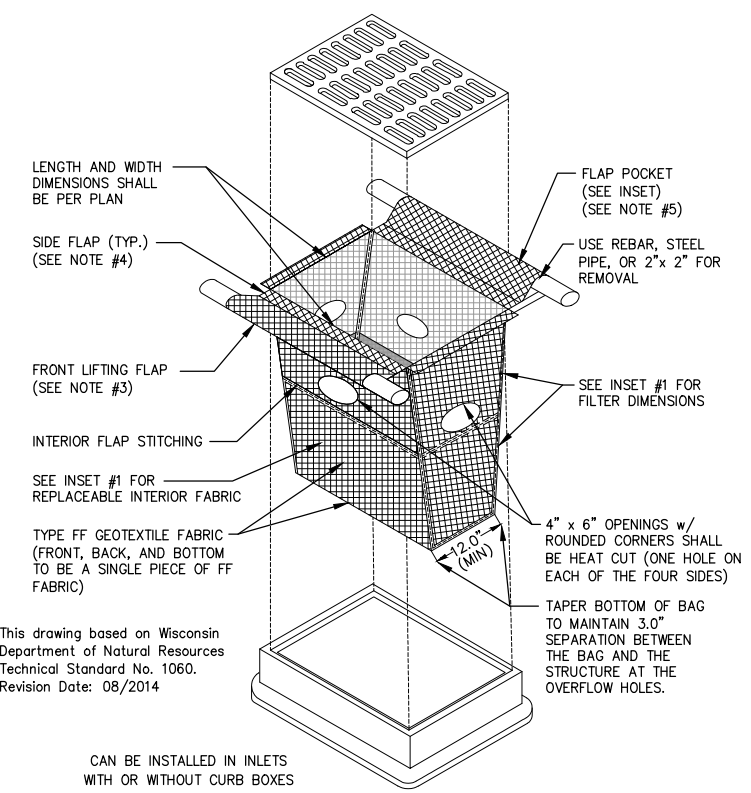
**GENERAL NOTES**

- HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
- TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
- WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY
- SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
- CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ONE OF THE FOLLOWING TWO METHODS; A) OVERLAP THE END POSTS AND TWIST, OR ROTATE, AT LEAST 180 DEGREES, B) HOOK THE END OF EACH SILT FENCE LENGTH.



**GENERAL NOTES**

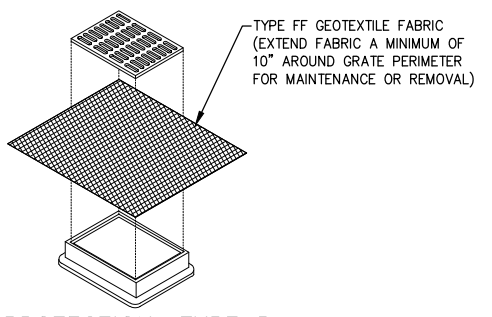
- TAPER BOTTOM OF BAG TO MAINTAIN THREE INCHES OF CLEARANCE BETWEEN THE BAG AND THE STRUCTURE, MEASURED FROM THE BOTTOM OF THE OVERFLOW OPENINGS TO THE STRUCTURE WALL.
- GEOTEXTILE FABRIC TYPE FF FOR FLAPS, TOP AND BOTTOM OF OUTSIDE OF FILTER BAG. FRONT, BACK, AND BOTTOM OF FILTER BAG BEING ONE PIECE.
- FRONT LIFTING FLAP IS TO BE USED WHEN REMOVING AND MAINTAINING FILTER BAG.
- SIDE FLAPS SHALL BE A MAXIMUM OF TWO INCHES LONG. FOLD THE FABRIC OVER AND REINFORCE WITH MULTIPLE STITCHES.
- FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2" X 4". THE REBAR, STEEL PIPE, OR WOOD SHALL BE INSTALLED IN THE REAR FLAP AND SHALL NOT BLOCK THE TOP HALF OF THE CURB FACE OPENING.



**MAINTENANCE NOTES**

- WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED IN THE FABRIC DOES NOT FALL INTO THE STRUCTURE. MATERIAL THAT HAS FALLEN INTO THE INLET SHALL BE IMMEDIATELY REMOVED.

**INLET PROTECTION, TYPE D-M**



**INLET PROTECTION, TYPE B**

WITHOUT CURB BOX

**MAINTENANCE NOTES**

- WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED IN THE FABRIC DOES NOT FALL INTO THE STRUCTURE. MATERIAL THAT HAS FALLEN INTO THE INLET SHALL BE IMMEDIATELY REMOVED.

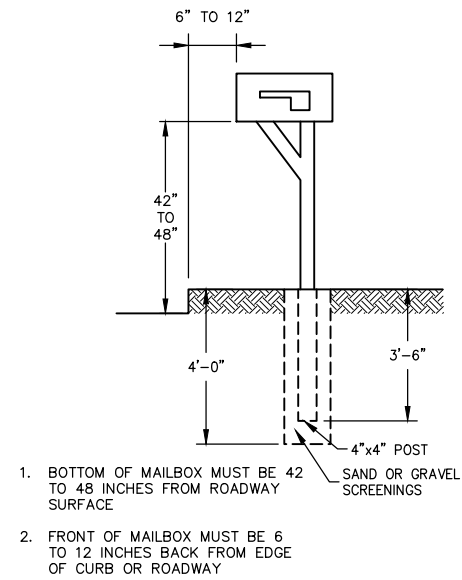
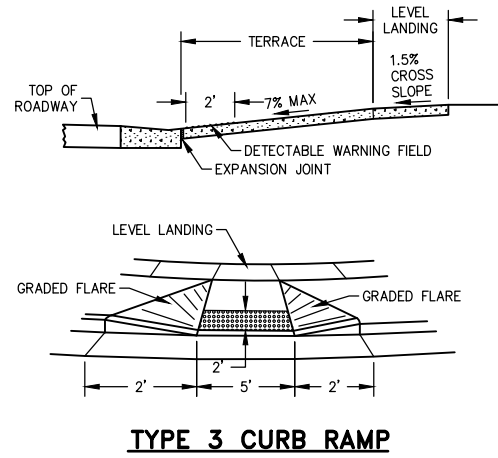
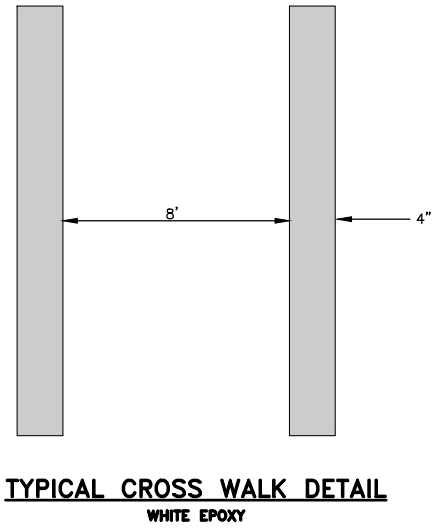
**STORM DRAIN INLET PROTECTION**

McMahon Associates, Inc. provides professional engineering and architectural services. All rights reserved. The user of this drawing is to indemnify and hold McMahon Associates, Inc. harmless for any reuse of or reliance on this drawing without prior written consent by McMahon Associates, Inc.

NO.	DATE	REVISION

DESIGNED BDW	DRAWN MJA
PROJECT NO. K0001 9-20-00313	
DATE 05/2020	
SHEET NO. <b>23</b>	





**CREEKVIEW LANE & RAILROAD STREET RECONSTRUCTION**  
Village Of Kimberly, Outagamie County, Wisconsin  
MISCELLANEOUS DETAILS

DESIGNED BDW	DRAWN MJA
PROJECT NO. K0001 9-20-00313	
DATE 05/2020	
SHEET NO.	

McMahon Associates, Inc. provides professional engineering and architectural services. All rights including copyright are reserved. The user of these drawings agrees to indemnify and hold McMahon Associates, Inc. harmless for any reuse or modification of these drawings without prior written consent by McMahon Associates, Inc.

**McMAHON**  
ENGINEER-ARCHITECT  
McMAHON ASSOCIATES, INC.  
1445 McMAHON DRIVE NEENAH, WI 54956  
Mailing: P.O. BOX 1025 NEENAH, WI 54957-1025  
PH 920.751.4200 FX 920.751.4284 MCMGRP.COM

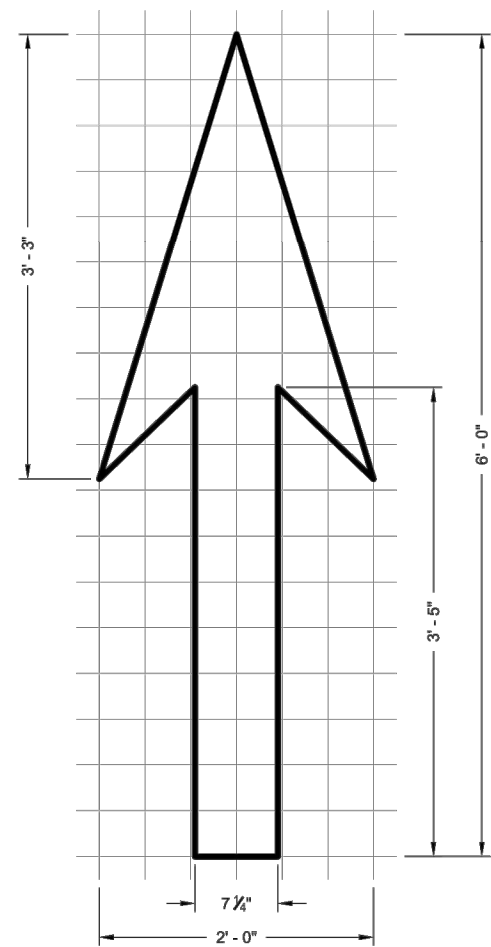
NO.	DATE	REVISION



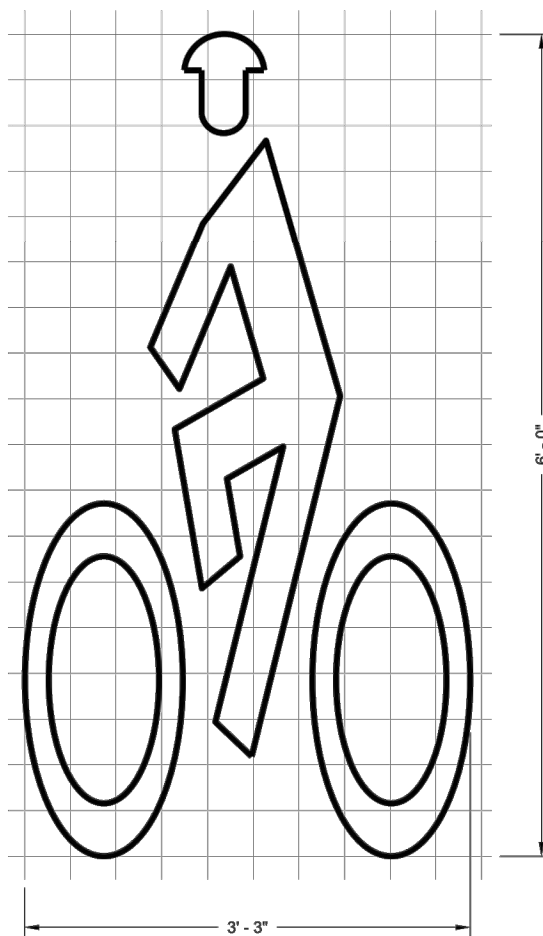
# SDD 15C7-e Pavement Marking For Bike Lanes

## GENERAL NOTES

DETAILS OF INSTALLATION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND APPLICABLE SPECIAL PROVISIONS.



**BIKE LANE ARROW**



**BIKE LANE SYMBOL**

<b>PAVEMENT MARKING FOR BIKE LANES</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
DESIGNED BDW	DRAWN MJA
PROJECT NO. K0001 9-20-00313	
DATE 05/2020	
SHEET NO. 25R	
APPROVED November 2019 /S/ Matthew Rauch DATE STATE SIGNING AND MARKING ENGINEER	
FHWA	

**CREEKVIEW LANE & RAILROAD STREET RECONSTRUCTION**  
 Village Of Kimberly, Outagamie County, Wisconsin  
**BIKE LANE DETAILS**

NO.	DATE	REVISION
1	2/22/21	REVISED BIKE LANE DETAILS

**McMAHON**  
 ENGINEERING ARCHITECT  
 McMAHON ASSOCIATES, INC.  
 1445 McMAHON DRIVE NEENAH, WI 54956  
 Mailing: P.O. BOX 1025 NEENAH, WI 54957-1025  
 PH 920.751.4200 FX 920.751.4284 MCMGRP.COM

W:\PROJECTS\K0001\92000313\CADD\Civil3D\Plan Sheets\Cover-Notes-Details.dwg, 25R BIKE LANE DETAILS, 2/22/2021 7:05:33 AM, RSchmechel, 1:2

rschmechel, W:\PROJECTS\K0001\92000313\CADD\Civil3D\Plan Sheets\Cover-Notes-Details.dwg, 25r bike lane details, Plot Date: 2/22/2021 7:05 AM, xrefs:none

# SDD 14B44-a Midwest Guardrail System (MGS) Energy Absorbing Terminal

## GENERAL NOTES

- (A) THE SLOPE IN THE AREA BOUNDED BY THE GRADELINE, THE HINGE POINT LINE AND THE CLEAR ZONE LIMITS (CZL) SHALL BE 4:1 OR FLATTER.
- (B) AFTER FINAL ASSEMBLY, RECHECK CABLE TO BE SURE IT IS TAUT AND HAS NOT RELAXED
- (C) DIFFERENT MANUFACTURERS REQUIRE DIFFERENT PERFORATED W - BEAM RAIL END PANELS. SEE MANUFACTURER'S INFORMATION.
- (D) ATTACH ALUMINUM SHEET TO E.A.T. HEAD USING 4 STAINLESS STEEL SELF - TAPPING SCREWS. ONE SCREW PER CORNER.
- (E) HARDWARE MAY VARY BETWEEN MANUFACTURER. SEE MANUFACTURER'S DRAWING FOR INFORMATION.
- (F) DIMENSIONS MAY VARY, MANUFACTURER'S INFORMATION.

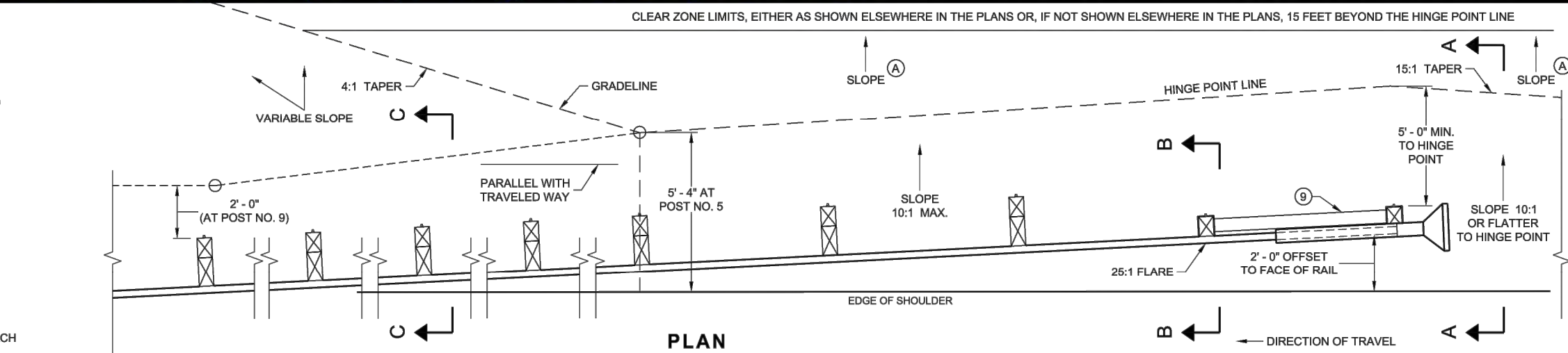
SEE SDD 14B42 FOR MORE INFORMATION.

\* DO NOT ATTACH BLOCKOUTS TO POST 1 AND 2.

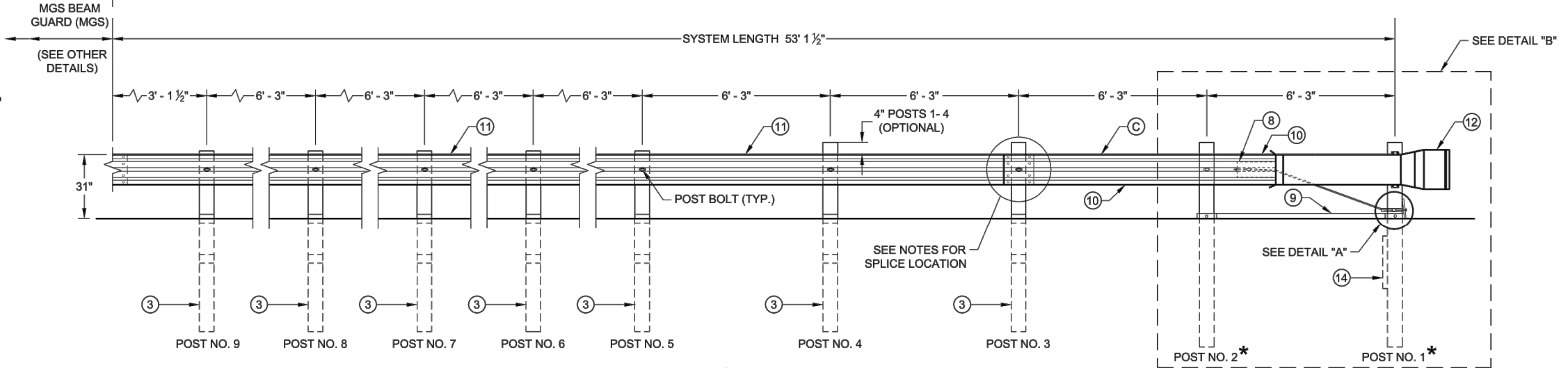
DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.

SEE MANUFACTURER'S DRAWING FOR SPLICE LOCATION, HARDWARE DIMENSIONS AND INSTALLATION INSTRUCTIONS.

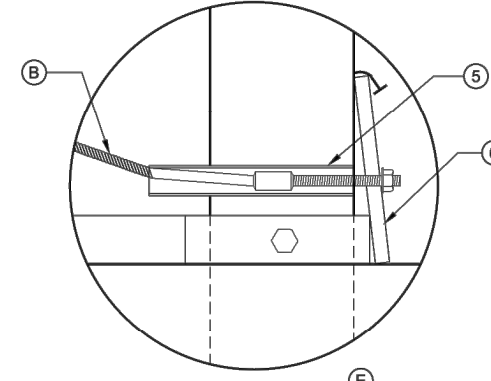
THE CENTER OF THE UPPER 3 1/2" DIAMETER HOLE ON POST NUMBER 3 THROUGH POST 9 IS TO BE FLUSH WITH THE GROUND LINE UP TO A MAXIMUM OF 2" ABOVE GROUND LINE. WOOD BLOCKS ON POSTS NUMBERED 3 THROUGH 9 MAY BE ADJUSTED UP TO 3" ABOVE THE TOP OF POST.



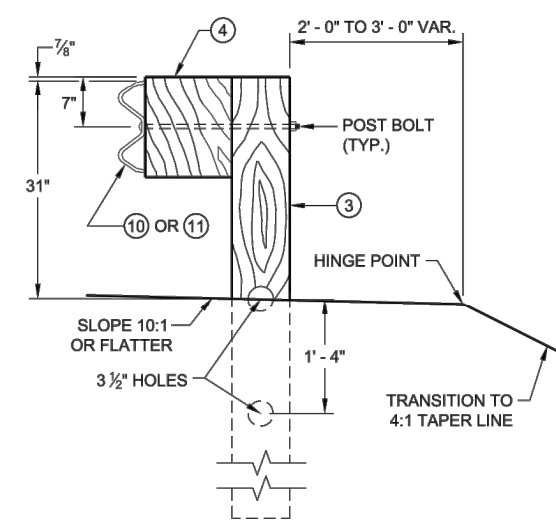
PLAN



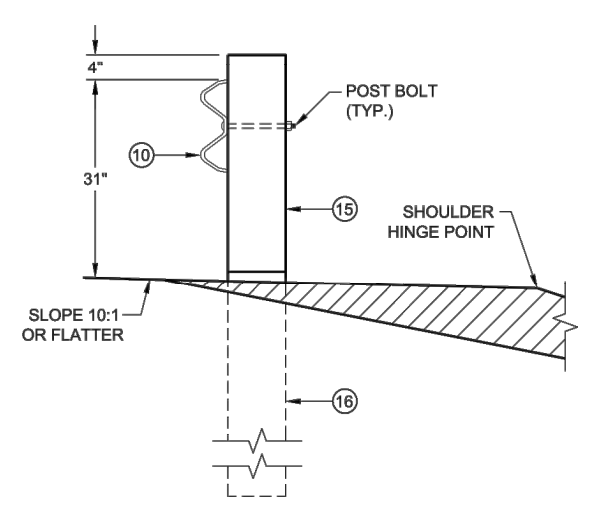
ELEVATION



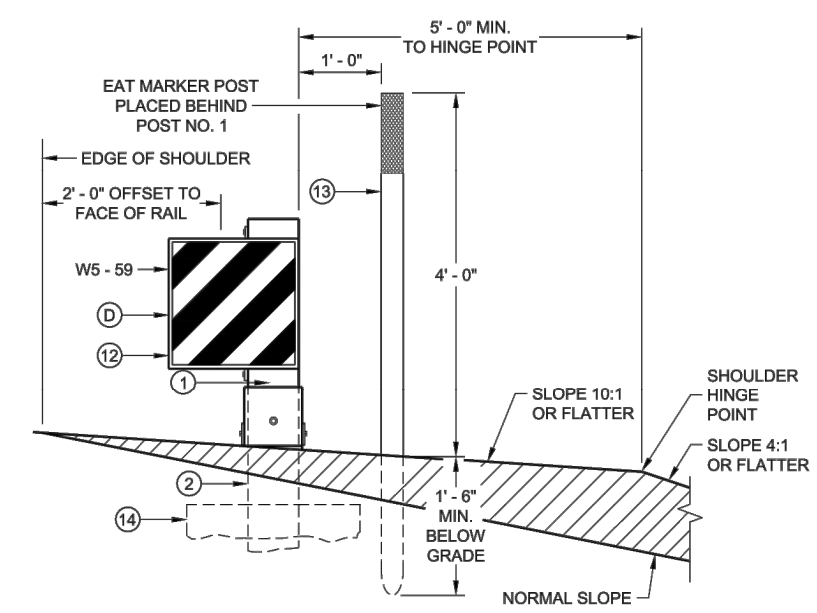
DETAIL "A"



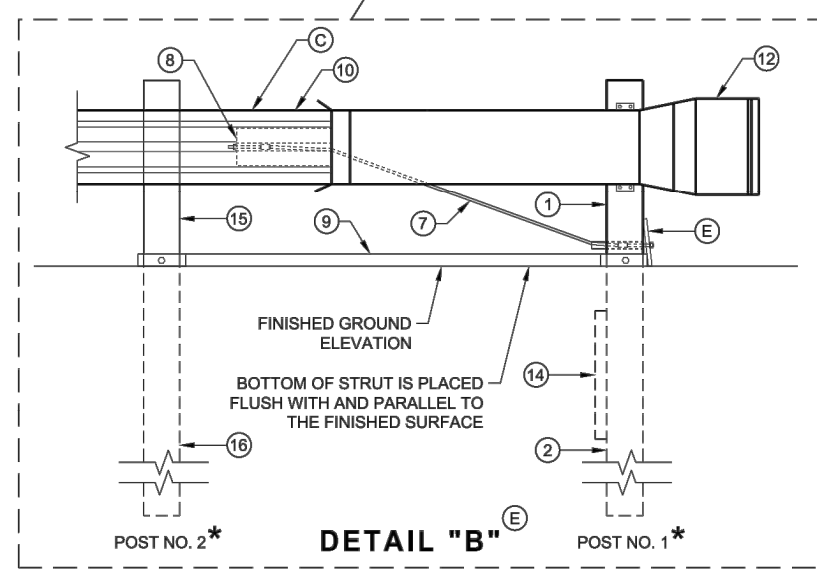
SECTION C - C  
TYPICAL AT POST NOS. 3 - 9



SECTION B - B  
TYPICAL AT POST NO. 2\*



SECTION A - A  
TYPICAL AT POST NO. 1\*



DETAIL "B"

**MIDWEST GUARDRAIL SYSTEM  
ENERGY ABSORBING TERMINAL  
(MGS)**

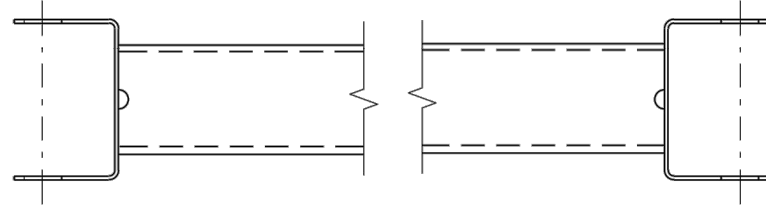
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

**McMAHON**  
ENGINEERING ARCHITECT  
McMAHON ASSOCIATES, INC.  
1445 McMAHON DRIVE NEENAH, WI 54956  
Mailing: P.O. BOX 1025 NEENAH, WI 54957-1025  
PH 920.751.4200 FX 920.751.4284 MCMGRP.COM

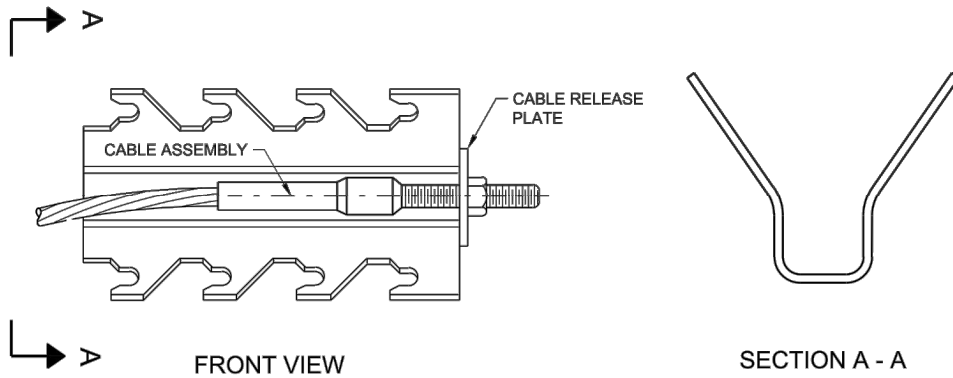
CREEKVIEW LANE & RAILROAD STREET RECONSTRUCTION  
Village of Kimberly, Outagamie County, Wisconsin  
GUARDRAIL DETAILS

DESIGNED BDW	DRAWN MJA
PROJECT NO. K0001 9-20-00313	
DATE 05/2020	
SHEET NO. 26	

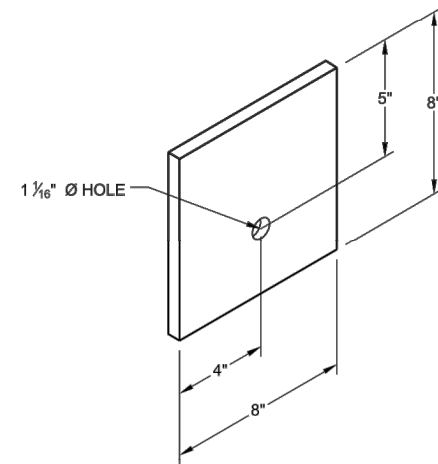
W:\PROJECTS\K0001\92000313\CADD\Civil3D\Plan Sheets\Cover-Notes-Details.dwg, 26 GUARDRAIL DETAILS, 2/18/2021 11:16:14 AM, RSchmechel, 1:2



GENERIC GROUND STRUT <sup>9</sup> (E)



GENERIC ANCHOR CABLE BOX <sup>9</sup> (E)



BEARING PLATE <sup>6</sup> (E)

**BILL OF MATERIALS**

PART NO.	DESCRIPTION
MATERIALS PROVIDED BY MGS EAT MANUFACTURER. SEE MANUFACTURER'S DETAILS FOR MORE INFORMATION.	
①	UPPER POST NO. 1 6" X 6" TUBE
②	LOWER POST NO. 1
③	WOOD CRT
④	WOOD BLOCKOUT
⑤	PIPE SLEEVE
⑥	BEARING PLATE
⑦	BCT CABLE ASSEMBLY
⑧	ANCHOR CABLE BOX
⑨	GROUND STRUT
⑩	PERFORATED W-BEAM RAIL END PANEL, 12'-6" LONG.
⑪	STANDARD W-BEAM RAIL. MULTIPLE SECTIONS REQUIRED. SECTIONS VARY IN LENGTH.
⑫	IMPACT HEAD
⑬	EAT MARKER POST - YELLOW (SEE APPROVED PRODUCTS LIST)
⑭	SOIL PLATE
⑮	UPPER POST NO. 2
⑯	LOWER POST NO. 2

McMahon Associates, Inc. provides engineering and architectural services. All rights including copyright are reserved by McMahon Associates, Inc. The user/recipient agrees to hold McMahon Associates, Inc. harmless for any reuse of or copying of this drawing without prior written consent by McMahon Associates, Inc.

NO.	DATE	REVISION

**CREEKVIEW LANE & RAILROAD STREET RECONSTRUCTION**  
 Village Of Kimberly, Outagamie County, Wisconsin  
**GUARDRAIL DETAILS**

**MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)**

DESIGNED: BDW      DRAWN: MJA

PROJECT NO.: K0001 9-20-00313

DATE: 05/2020

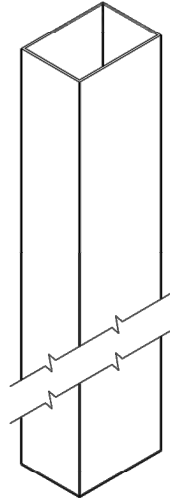
SHEET NO.:

DESIGNED	DRAWN
BDW	MJA
PROJECT NO.	
K0001 9-20-00313	
DATE	
05/2020	
SHEET NO.	

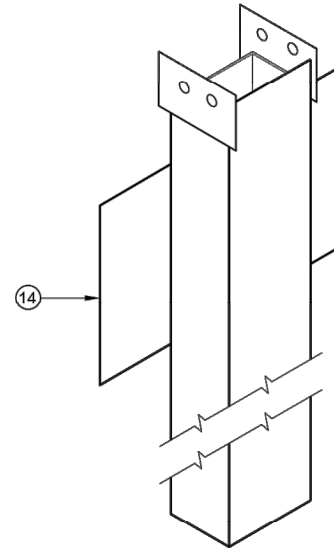
W:\PROJECTS\K0001\92000313\CADD\Civil3D\Plan Sheets\Cover-Notes-Details.dwg, 27 GUARDRAIL DETAILS, 2/18/2021 11:16:16 AM, RSchmechel, 1:2

rschmechel, W:\PROJECTS\K0001\92000313\CADD\Civil3D\Plan Sheets\Cover-Notes-Details.dwg, 27\_guardrail\_details, Plot Date: 2/18/2021 11:16 AM, xref:smore

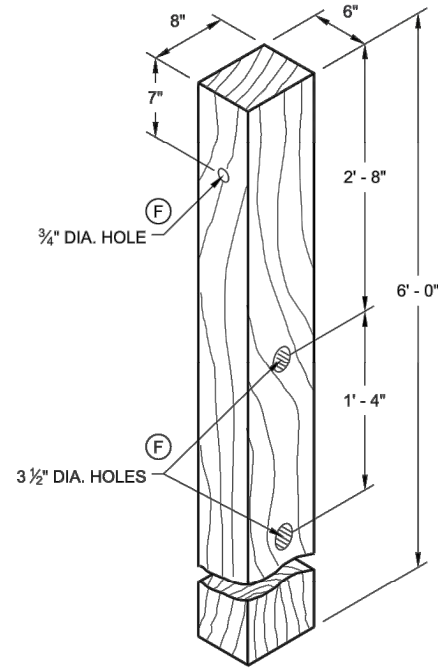
**SDD 14B44-c Midwest Guardrail System (MGS) Energy Absorbing Terminal**



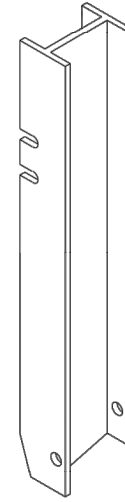
**UPPER POST NO. 1** ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺



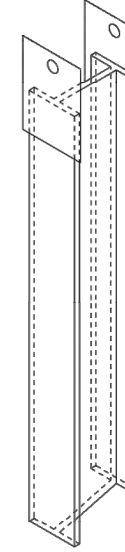
**LOWER POST NO. 1** ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺



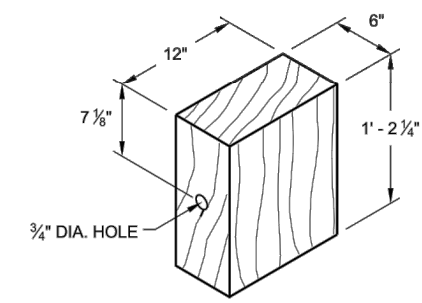
**WOOD CRT POST** ③ ④ ⑤  
POSTS NUMBER 3-9



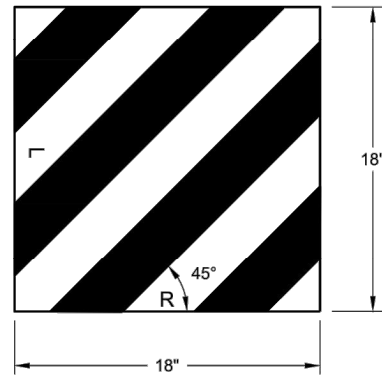
**UPPER POST NO. 2** ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺



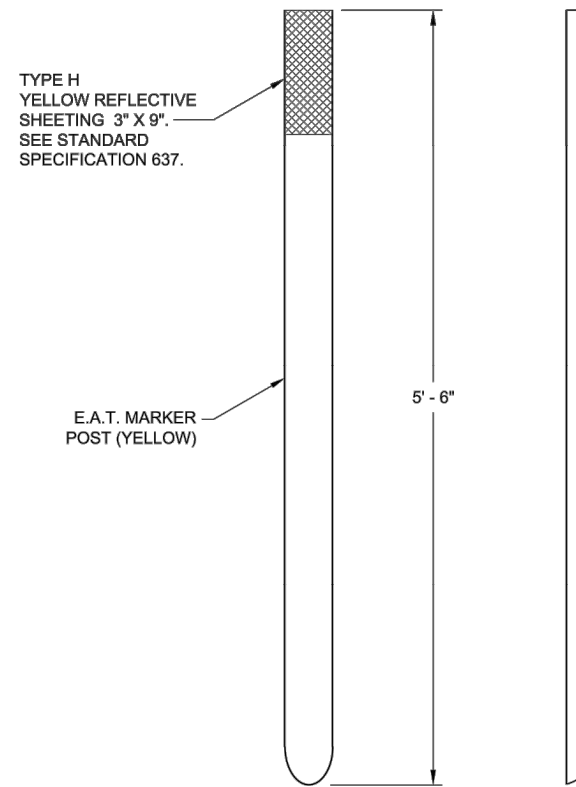
**LOWER POST NO. 2** ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺



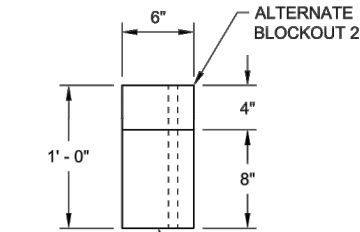
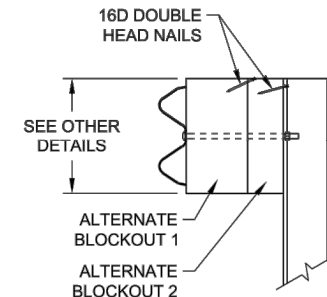
**WOOD BLOCKOUT** ④  
REQ'D. AT ALL POSTS EXCEPT POST NO'S 1 & 2



**REFLECTIVE SHEETING DETAIL** ⑤  
W5 - 59



**E.A.T. MARKER POST** ⑬  
FRONT VIEW SIDE VIEW



**ALTERNATE WOOD BLOCKOUT DETAIL**

<b>MIDWEST GUARDRAIL SYSTEM ENERGY ABSORBING TERMINAL (MGS)</b>	
STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION	
DESIGNED BDW	DRAWN MJA
PROJECT NO. K0001 9-20-00313	
DATE 05/2020	
SHEET NO. 28	
APPROVED 7/2018 /S/ Rodney Taylor DATE ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR	

**McMAHON**  
McMAHON ASSOCIATES, INC.  
1445 McMAHON DRIVE NEENAH, WI 54956  
Mailing: P.O. BOX 1025 NEENAH, WI 54957-1025  
PH 920.751.4200 FX 920.751.4284 MCMGRP.COM

**CREEKVIEW LANE & RAILROAD STREET RECONSTRUCTION**  
Village Of Kimberly, Outagamie County, Wisconsin  
GUARDRAIL DETAILS

NO.	DATE	REVISION

W:\PROJECTS\K0001\92000313\CADD\Civil\3D\Plan Sheets\Cover-Notes-Details.dwg, 28 GUARDRAIL DETAILS, 2/18/2021 11:16:17 AM, RSchmechel, 1:2

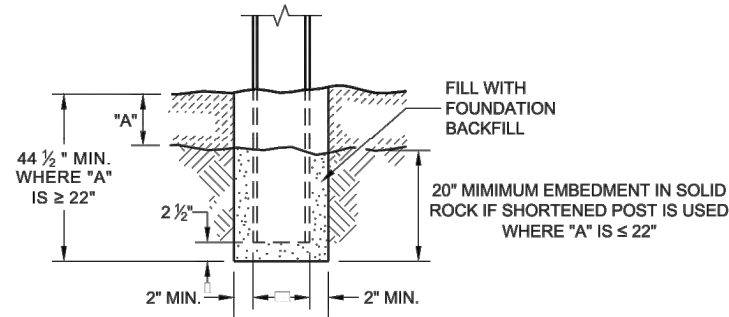
rschmechel, W:\PROJECTS\K0001\92000313\CADD\Civil\3D\Plan Sheets\Cover-Notes-Details.dwg, 28\_guardrail\_details, Plot Date: 2/18/2021 11:16 AM, xref:rschmechel



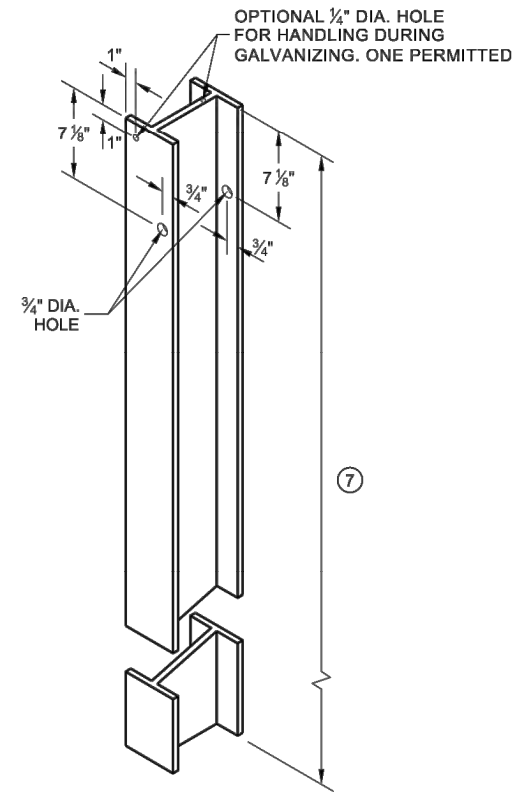


# SDD 14B42-a Midwest Guardrail System (MGS) Guardrail

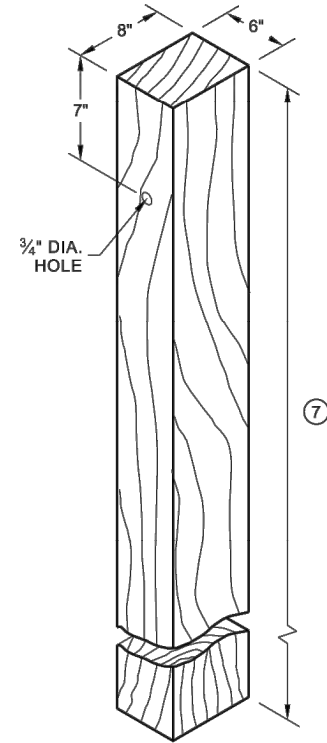
- WOOD OR STEEL POSTS (w6X9 OR w6X8.5) MAY BE USED. DO NOT INTERMIX WOOD AND STEEL POSTS. INSTALL STEEL POSTS WITH HOLES ON APPROACHING TRAFFIC SIDE.
- USE WOOD OR APPROVED PLASTIC BLOCKOUTS. WOOD BLOCKOUTS MAY BE CONSTRUCTED OUT OF TWO OR MORE WOOD BLOCKOUTS. SEE ALTERNATE WOOD BLOCKOUT DETAIL. DIMENSIONS OF APPROVED PLASTIC BLOCKOUTS MAY VARY.
- IF ROCK IS ENCOUNTERED DURING EXCAVATION, PROVIDE A HOLE IN DIAMETER EXTENDING 20 INCHES DEEP INTO THE ROCK. PLACE APPROXIMATELY 2 1/2" INCHES OF GRANULAR MATERIAL IN THE BOTTOM OF THE HOLE. CUT THE POSTS THE TO LENGTH AND INSTALL. BACKFILL WITH EXCAVATED MATERIAL AND COMPACT. BACKFILL IS TO BE FREE OF LARGE ROCKS.
- WHEN THE DISTANCE FROM BACK OF POST TO SHOULDER HINGE POINT IS LESS THAN 2 FEET INSTALL LONGER POST AT HALF POST SPACING (K).
- FOR NEW MGS INSTALLATION TOP OF W-BEAM RAIL TOLERANCE IS ±1". FOR EXISTING MGS INSTALLATION TOP OF W-BEAM IS BETWEEN 27 3/4" TO 32".
- WHEN USING STEEL POST AND WOOD BLOCKOUTS INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.
- TOTAL POST LENGTH FOR TYPE K IS 7' - 0".  
TOTAL POST LENGTH FOR OTHER MGS TYPES IS 6' - 0".



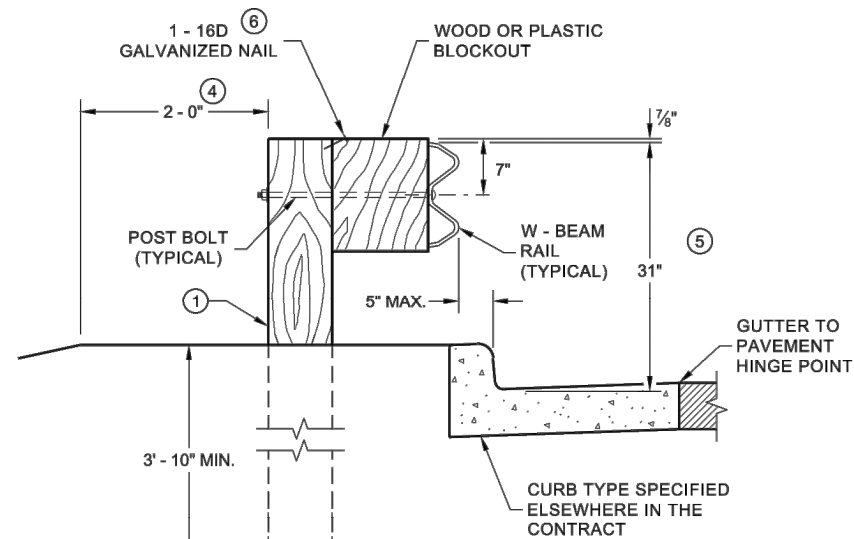
**END VIEW  
SETTING STEEL OR WOOD POST IN ROCK** ③



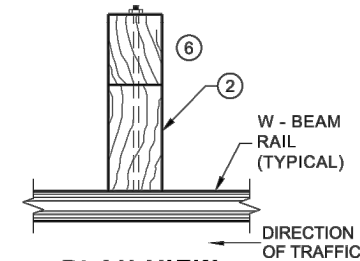
**STEEL POST & HOLE  
PUNCHING DETAIL  
(W 6 X 9)** ①



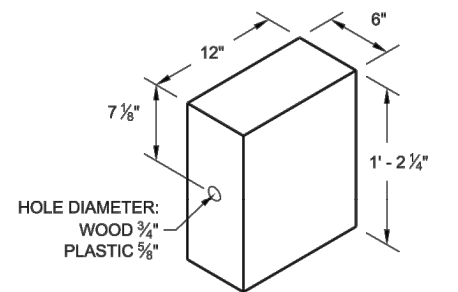
**WOOD POST  
(6" X 8") NOMINAL** ①



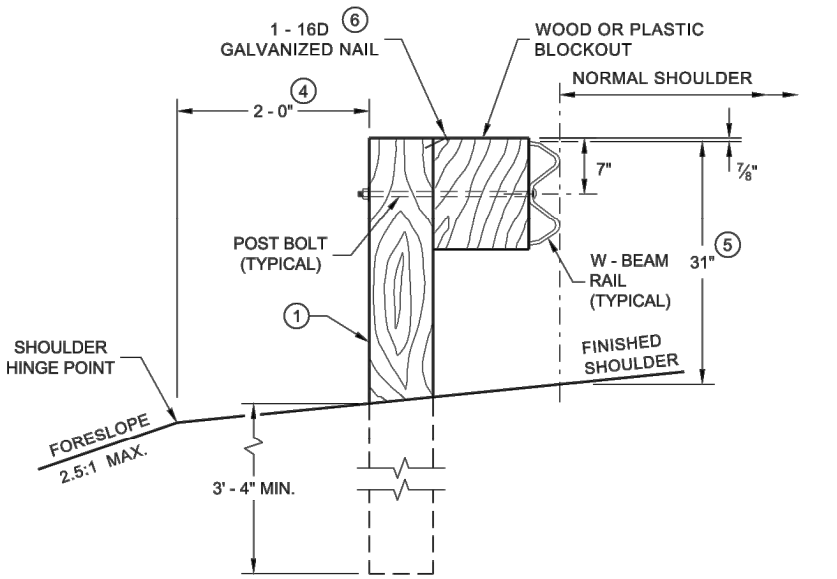
**END VIEW  
LOCATED ALONG A CURBED ROADWAY**



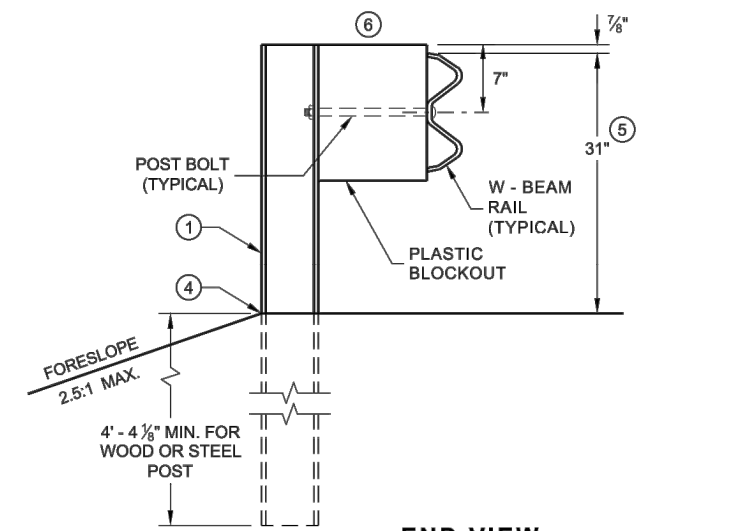
**PLAN VIEW  
WOOD POST,  
BLOCKOUT & BEAM**



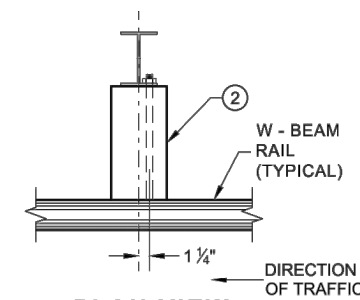
**WOOD OR PLASTIC  
BLOCKOUT** ②



**END VIEW  
LOCATED ALONG A ROADWAY SHOULDER  
STANDARD INSTALLATION**



**END VIEW  
MGS LONGER POST AT HALFPOST  
SPACING W BEAM (K)**



**PLAN VIEW  
STEEL POST,  
PLASTIC BLOCKOUT & BEAM**

**MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

**McMAHON**  
ENGINEERING ARCHITECT  
McMAHON ASSOCIATES, INC.  
1445 McMAHON DRIVE NEENAH, WI 54956  
Mailing: P.O. BOX 1025 NEENAH, WI 54957-1025  
PH 920.751.4200 FX 920.751.4284 MCMGRP.COM

McMahon Associates, Inc. provides engineering and architectural services. All rights reserved. The information contained herein is the property of McMahon Associates, Inc. and is not to be distributed, copied, or used in any form without the written consent of McMahon Associates, Inc.

REVISION

DATE

NO.

**CREEKVIEW LANE & RAILROAD STREET RECONSTRUCTION**  
Village Of Kimberly, Outagamie County, Wisconsin  
GUARDRAIL DETAILS

DESIGNED  
BDW

DRAWN  
MJA

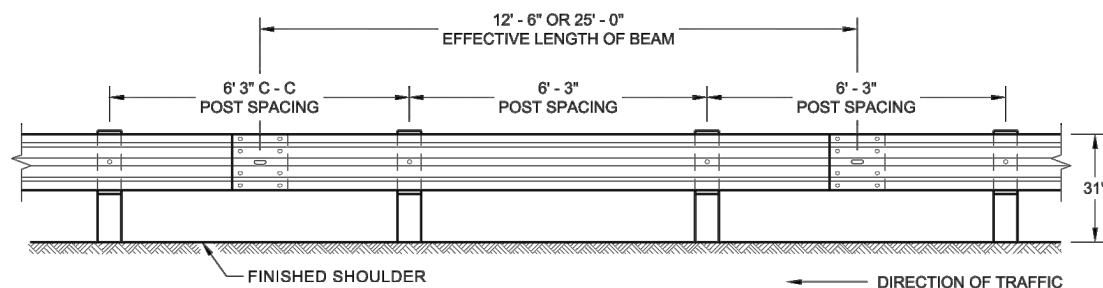
PROJECT NO.  
K0001 9-20-00313

DATE  
05/2020

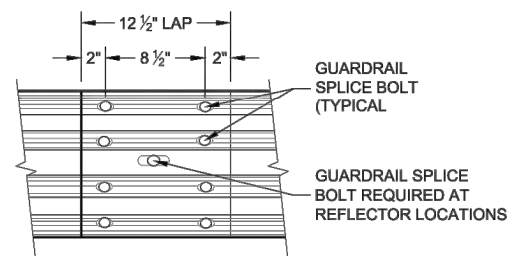
SHEET NO.  
29



# SDD 14B42-b Midwest Guardrail System (MGS) Guardrail



**FRONT VIEW  
POST SPACING STANDARD INSTALLATION**



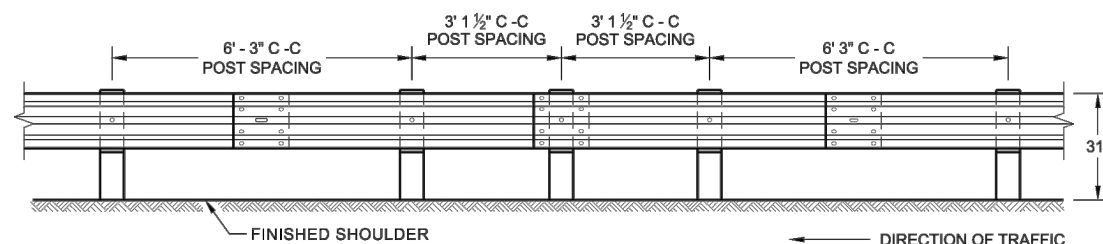
**FRONT VIEW  
MID-SPAN BEAM SPLICE**

## GENERAL NOTES

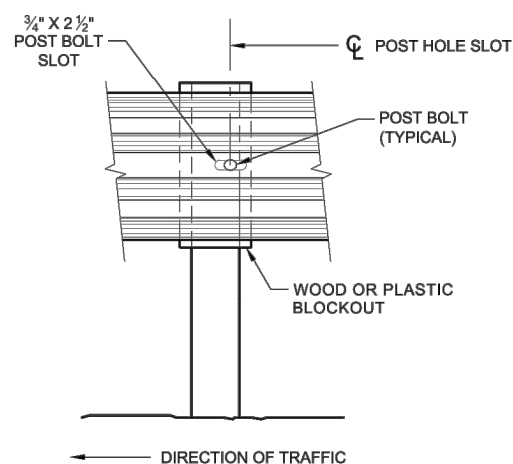
- ⑧ DO NOT INSTALL REFLECTORS ON THE FIRST 50 FEET OF THE APPROACH END OF THE ENERGY ABSORBING TERMINAL.
- ⑨ 25 FEET OF HALF POST SPACING IS REQUIRED ON APPROACH AND DEPARTURE ENDS OF QUARTER POST SPACING.

POST BOLTS ARE A 3/4" DIAMETER ASTM A307 GUARDRAIL BOLT. A POST BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT AND 3/4" DIAMETER F844 FLAT WASHER. POST BOLTS MAY BE LONGER IF MULTIPLE BLOCKOUTS ARE BEING USED.

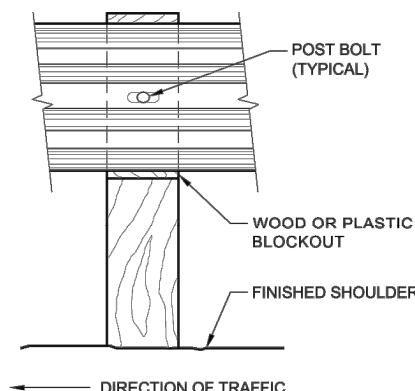
GUARD RAIL SPLICE BOLTS ARE A 3/4" DIAMETER ASTM A307 GUARDRAIL HEAD BOLT. A GUARDRAIL SPLICE BOLT REQUIRES 3/4" DIAMETER A563A DOUBLE RECESSED (DR) HEAVY HEX NUT.



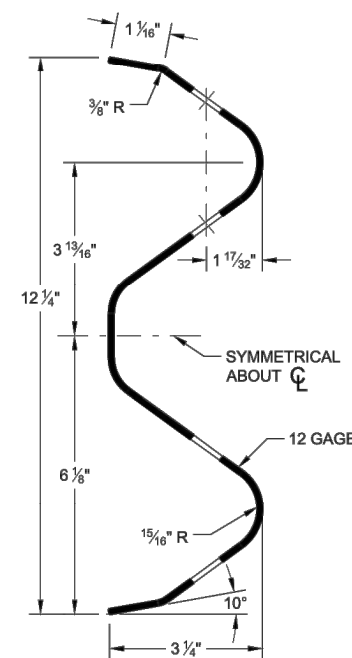
**FRONT VIEW  
HALF POST SPACING (HS) AND  
HALF POST SPACING WITH LONGER POSTS (K)**



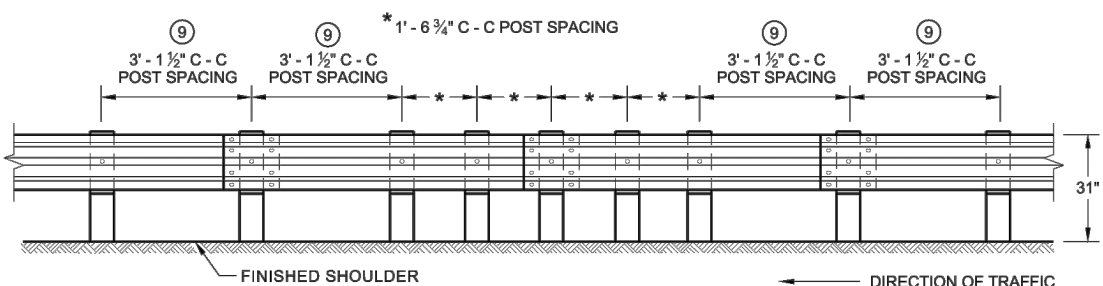
**FRONT VIEW AT STEEL POST**



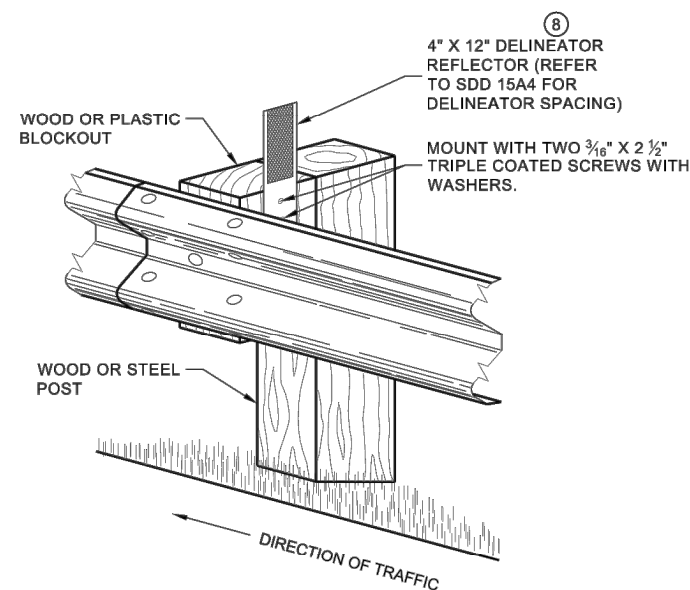
**FRONT VIEW AT WOOD POST**



**SECTION THRU W-BEAM RAIL**



**FRONT VIEW  
QUARTER POST SPACING (QS)**



**ONE SIDED REFLECTOR DETAIL  
AND TYPICAL INSTALLATION**

**McMAHON**  
ENGINEERING ARCHITECT

McMAHON ASSOCIATES, INC.  
1445 McMAHON DRIVE NEENAH, WI 54956  
Mailing: P.O. BOX 1025 NEENAH, WI 54957-1025  
PH 920.751.4200 FX 920.751.4284 MCMGRP.COM

McMahon Associates, Inc. provides engineering and architectural services. All rights including copyright are reserved. The user of this drawing/representation of the work is to indemnify and hold McMahon Associates, Inc. harmless for any reuse of or modification of this drawing without prior written consent by McMahon Associates, Inc.

NO.	DATE	REVISION

**CREEKVIEW LANE & RAILROAD STREET RECONSTRUCTION**  
Village Of Kimberly, Outagamie County, Wisconsin  
GUARDRAIL DETAILS

**MIDWEST GUARDRAIL SYSTEM  
(MGS) GUARDRAIL**

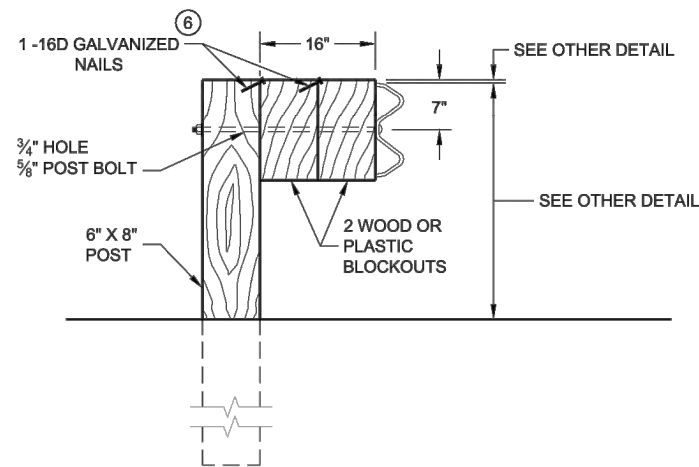
STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

DESIGNED BDW	DRAWN MJA
PROJECT NO. K0001 9-20-00313	
DATE 05/2020	
SHEET NO. 30	

W:\PROJECTS\K0001\92000313\CADD\Civil3D\Plan Sheets\Cover-Notes-Details.dwg, 30 GUARDRAIL DETAILS, 2/18/2021 11:16:21 AM, RSchmechel, 1:2

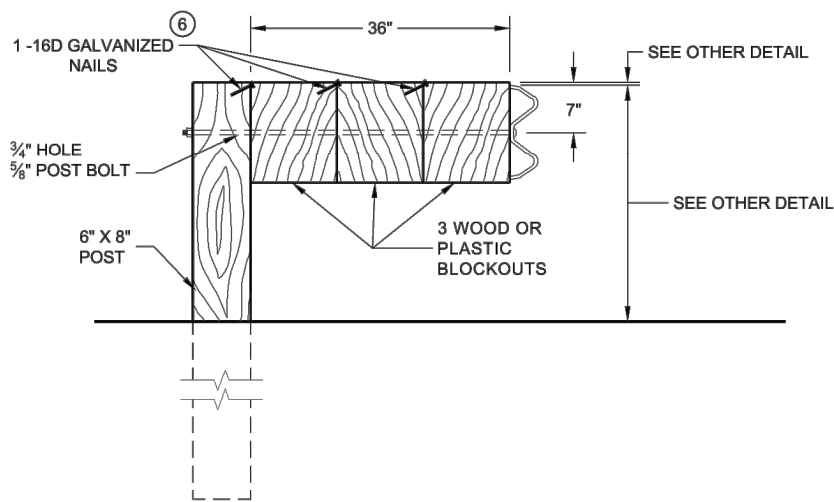
rschmechel, W:\PROJECTS\K0001\92000313\CADD\Civil3D\Plan Sheets\Cover-Notes-Details.dwg, 30\_guardrail\_details, Plot Date: 2/18/2021 11:16 AM, xref:none

# SDD 14B42-c Midwest Guardrail System (MGS) Guardrail



## DETAIL FOR 16" BLOCKOUT DEPTH

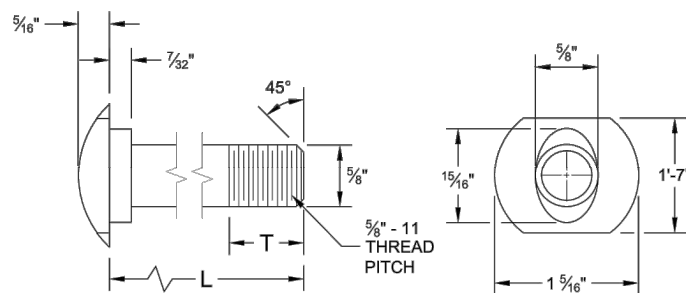
IT IS ACCEPTABLE TO USE BLOCKOUTS UP TO 16" DEEP TO INCREASE THE POST OFFSET TO AVOID UNDERGROUND OBSTACLES. THERE IS NO LIMIT TO THE NUMBER OF POSTS THAT CAN HAVE ADDITIONAL BLOCKOUTS UP TO 16" DEEP.



## DETAIL FOR 36" BLOCKOUT DEPTH

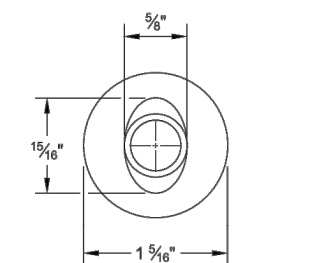
NOTES: UNDER SPECIAL CIRCUMSTANCES, SUCH AS AVOIDING OBSTACLES THAT ARE NOT RELOCATED, IT IS ACCEPTABLE TO INSTALL ADDITIONAL BLOCKOUTS TO OBTAIN UP TO 36" DEPTH FOR ONE OR TWO POSTS IN A SECTION OF GUARDRAIL.  
DO NOT USE 16" OR 36" BLOCKOUTS IF IT CAUSES THE POST TO BE DRIVEN BEYOND SHOULDER HINGE POINT OR CAUSES A FIXED OBJECT TO BE WITHIN THE DEFLECTION DISTANCE OF THE BARRIER.

NOTE:  
1. ALL FILLETS SHALL HAVE A MINIMUM RADIUS OF 3/16".  
2. IF THE BOLT EXTENDS MORE THAN 1/4" FROM THE NUT THE BOLT SHOULD BE TRIMMED BACK.

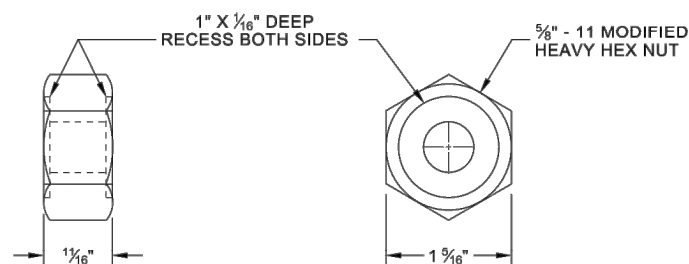


## POST BOLT TABLE

L	T (MIN.)
1 1/4"	1 1/8"
2"	1 3/4"
10"	4"
14"	4 1/8"
18"	4"
21"	4 1/8"
25"	4"

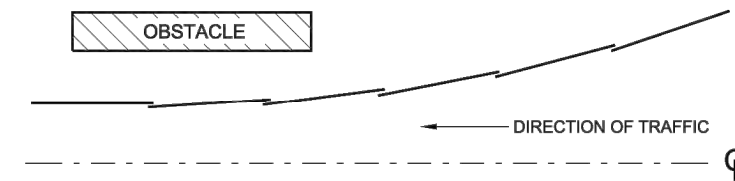


ALTERNATE BOLT HEAD

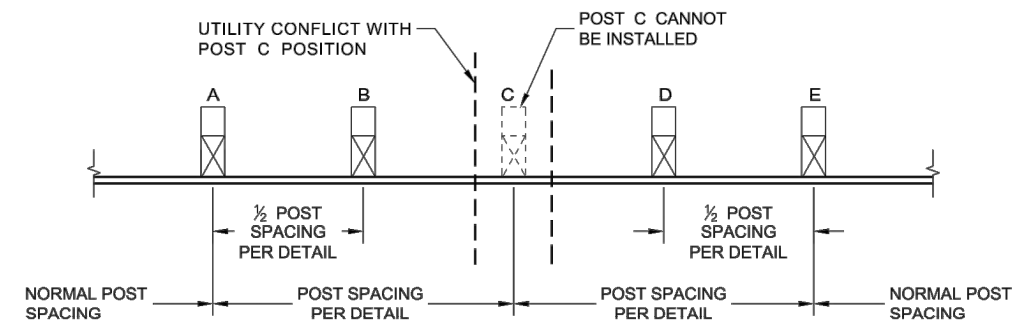


POST BOLT, SPLICE BOLT AND RECESS NUT

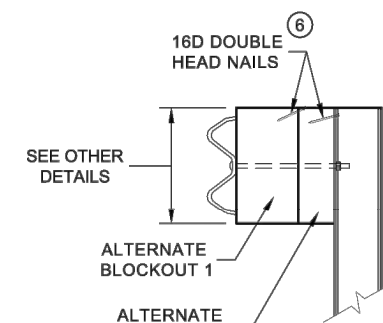
⑥ WHEN USING STEEL POST AD WOOD BLOCKOUTS, INSTALL FOUR 16D GALVANIZED NAILS. INSTALL NAILS AT THE BACK CORNERS OF THE BLOCK AND BEND THE NAILS OVER THE FLANGE OF THE STEEL POST.



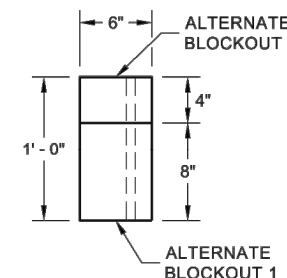
PLAN VIEW BEAM LAPPING DETAIL



POST DRIVING FOR CONTINUOUS UNDERGROUND OBSTRUCTION



SIDE VIEW



PLAN VIEW

ALTERNATE WOOD BLOCKOUT DETAIL

**MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL**

STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION

**McMAHON**  
ENGINEERING ARCHITECT  
McMAHON ASSOCIATES, INC.  
1445 McMAHON DRIVE NEENAH, WI 54956  
Mailing: P.O. BOX 1025 NEENAH, WI 54957-1025  
PH 920.751.4200 FX 920.751.4284 MCMGRP.COM

McMahon Associates, Inc. provides professional engineering, architectural, and construction services. All rights reserved. This drawing is the property of McMahon Associates, Inc. The user of this drawing/representation shall be held liable for any use or misuse of this drawing without prior written consent by McMahon Associates, Inc.

REVISION

DATE

NO.

NO.

CREEKVIEW LANE & RAILROAD STREET RECONSTRUCTION  
Village Of Kimberly, Outagamie County, Wisconsin  
GUARDRAIL DETAILS

DESIGNED: BDW DRAWN: MJA

PROJECT NO.: K0001 9-20-00313

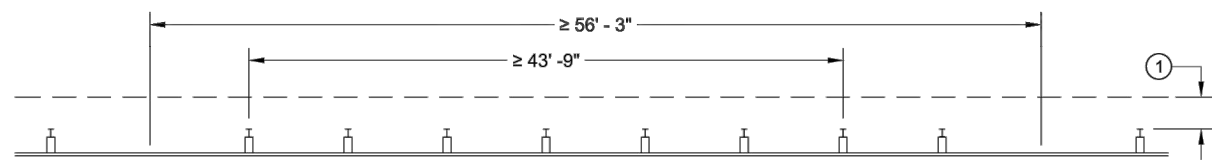
DATE: 05/2020

SHEET NO.

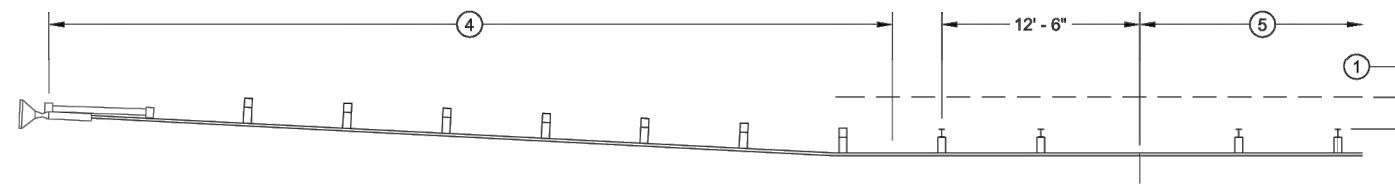
W:\PROJECTS\K0001\92000313\CADD\Civil\3D\Plan Sheets\Cover-Notes-Details.dwg, 31 GUARDRAIL DETAILS, 2/18/2021 11:16:23 AM, RSchmechel, 1:2

rschmechel, W:\PROJECTS\K0001\92000313\CADD\Civil\3D\Plan Sheets\Cover-Notes-Details.dwg, 31 Guardrail Details, Plot Date: 2/18/2021 11:16 AM, xref:smore

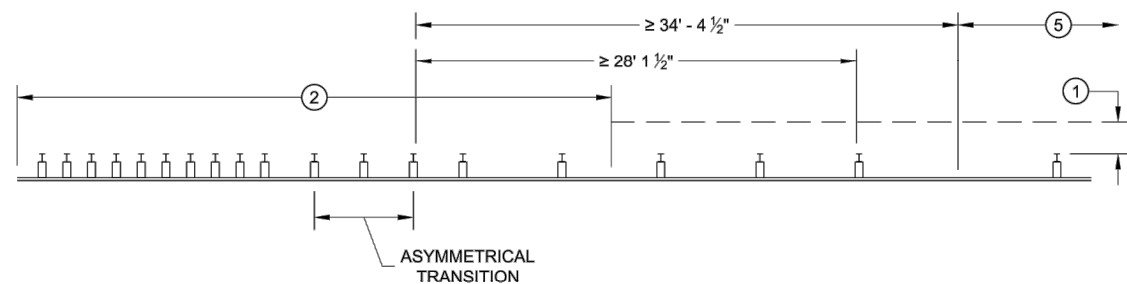




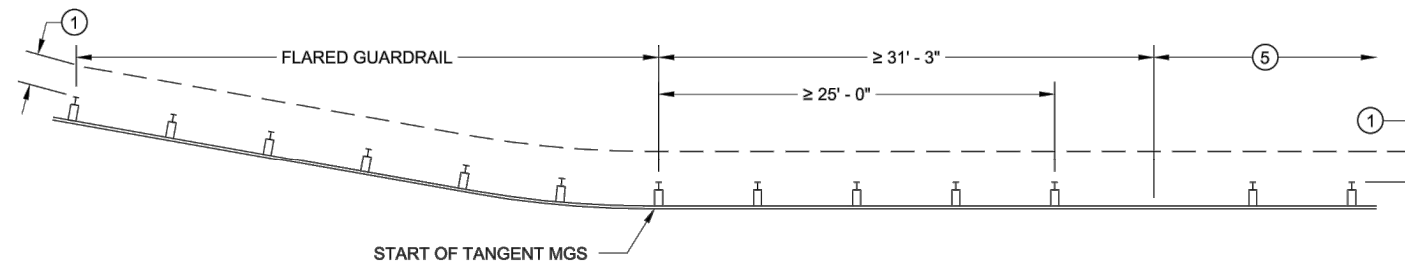
MISSING POST IN NORMAL BEAM GUARD RUN



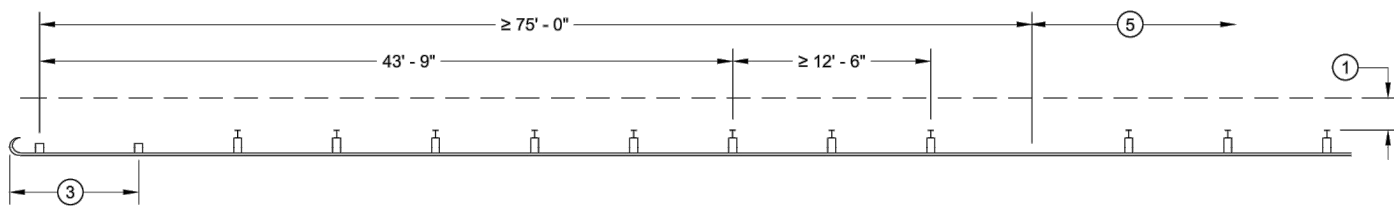
MISSING POST IN NORMAL BEAM GUARD RUN NEAR EAT



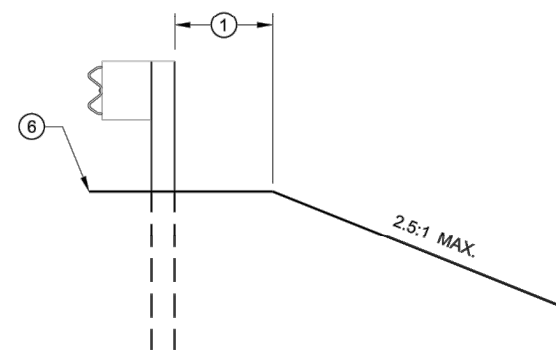
MISSING POST NEAR APPROACH THRIE BEAM TRANSITION



MISSING POST IN NORMAL BEAM GUARD RUN NEAR FLARED BEAM GUARD



MISSING POST IN NORMAL BEAM GUARD RUN NEAR TYPE 2 TERMINAL



CROSS SECTION VIEW

- ① MINIMUM OF 2 FEET OF GRADING BEHIND POST.
- ② SEE SDD 14B45 FOR MORE DETAILS.
- ③ SEE SDD 14B47 FOR MORE DETAILS.
- ④ SEE SDD 14B44 FOR MORE DETAILS.
- ⑤ SEE MISSING POST IN NORMAL BEAM GUARD RUN FOR DISTANCE TO NEXT MISSING POST AND AREA FOR WELL DRAINED, COMPACTED SOILS.
- ⑥ SEE PLAN FOR SHOULDER DESIGN.

**MIDWEST GUARDRAIL SYSTEM (MGS) GUARDRAIL**

STATE OF WISCONSIN  
DEPARTMENT OF TRANSPORTATION

APPROVED  
DATE 7/2018 /S/ Rodney Taylor  
ROADWAY STANDARDS DEVELOPMENT UNIT SUPERVISOR

DESIGNED BDW DRAWN MJA  
PROJECT NO. K0001 9-20-00313  
DATE 05/2020  
SHEET NO.

McMahon Associates, Inc. provides professional engineering, architectural, and construction services. All rights including copyright are reserved. The user of this drawing is to indemnify and hold McMahon Associates, Inc. harmless for any reuse of or modification of this drawing without prior written consent by McMahon Associates, Inc.

NO.	DATE	REVISION

CREEKVIEW LANE & RAILROAD STREET RECONSTRUCTION  
Village of Kimberly, Outagamie County, Wisconsin  
GUARDRAIL DETAILS

W:\PROJECTS\K0001\92000313\CADD\Civil3D\Plan Sheets\Cover-Notes-Details.dwg, 32 GUARDRAIL DETAILS, 2/18/2021 11:16:25 AM, RSchmechel, 1:2

rschmechel, W:\PROJECTS\K0001\92000313\CADD\Civil3D\Plan Sheets\Cover-Notes-Details.dwg, 32\_guardrail\_details, Plot Date: 2/18/2021 11:16 AM, xref:isnone