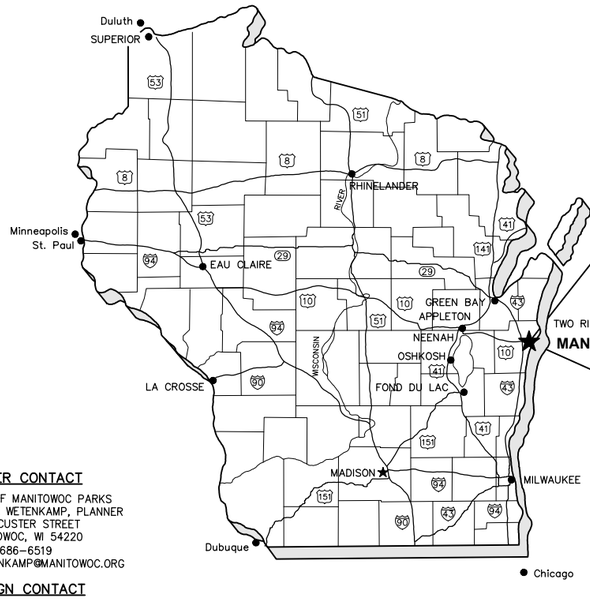
BAY POINTE TRAIL
CITY OF MANITOWOC

MANITOWOC COUNTY, WISCONSIN
MCM # M0026 09-20-00716



NORTH

CONTACT INFORMATION

UTILITIES

WPS
LORI BUTRY
700 NORTH ADAMS STREET
GREEN BAY, WI 54307
(920) 433-1703
LABUTRY@INTEGRYSGROUP.COM

LAKEFIELD TELEPHONE CO.
DOUG STAHL
7520 ENGLISH LAKE ROAD
PO BOX 102
MANITOWOC, WI 54220
920-323-4200

CHARTER COMMUNICATIONS
BRUCE HENRY
1623 BROADWAY AVE
SHEBOYGAN, WI 53081
(920) 263-0074
BRUCE.HENRY@CHARTER.COM

CITY OF MANITOWOC PUBLIC INFRASTRUCTURE
900 QUAY STREET
MANITOWOC, WI 54220
920-686-6940
DKOSKI@MANITOWOC.ORG

OWNER CONTACT

CITY OF MANITOWOC PARKS
BROCK WETENKAMP, PLANNER
3330 CUSTER STREET
MANITOWOC, WI 54220
(920) 686-6519
BWETENKAMP@MANITOWOC.ORG

DESIGN CONTACT

McMAHON ASSOCIATES, INC.
ANDY SCHMIDT
1445 McMAHON DRIVE
NEENAH, WI 54956
(920) 751-4200
ASCHMIDT@MCMGRP.COM

DNR

WISCONSIN DNR
CARRIE WEBB
2984 SHAWANO AVENUE
GREEN BAY, WI 54313-6727
(920) 662-5453
carriea.webb@wisconsin.gov

DIGGERS HOTLINE
Dial 811 or (800) 242-8511
www.DiggersHotline.com

McMAHON
ENGINEERS ARCHITECTS
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

SHEET INDEX

01 – ABBREVATIONS SYMBOLS & NOTES
02 – OVERALL SITE PLAN
03 – GRADING PLAN
04 – EROSION CONTROL PLAN
05 – 08 – MAIN TRAIL SECTION
09 – 10 – NORTH – SOUTH TRAIL SECTION
11 – LAUNCH RAMP TRAIL SECTION
12 – MISCELLANEOUS DETAILS
13 – EROSION & SEDIMENT CONTROL DETAILS
14 – PEDESTRIAN BRIDGE DETAIL
15 – PEDESTRIAN BRIDGE SPECIFICATIONS
16 – KAYAK LAUNCH DETAILS
17 – LIGHTING PLAN
18 – LIGHTING DETAILS
S1–S5 – ABUTMENT STRUCTURAL PLANS & DETAILS

DATE
JUNE 2023
PROJECT NO.
M0026 09-20-00716

STANDARD ABBREVIATIONS

AC	ACRE
AGG	AGGREGATE
AH	AHEAD
ASPH	ASPHALT PAVEMENT
AVG	AVERAGE
B-B	BACK TO BACK
BEG	BEGIN
BIT	BITUMINOUS
BK	BACK
B/L	BASE LINE
BLDG	BUILDING
BM	BENCH MARK
BOC	BACK OF CURB
BRG	BEARING
C-C	CENTER TO CENTER
CY	CUBIC YARD
C&G	CURB AND GUTTER
CB	CATCH BASIN
CE	COMMERCIAL ENTRANCE
CHD	CHORD
C/L	CENTER LINE
CL	CLASS (FOR CONC PIPE)
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
CONC	CONCRETE
CORR	CORRUGATED
CP	CONTROL POINT
CR	CRUSHED
CS	CURB STOP
CSW	CONCRETE SIDEWALK
CTH	COUNTY TRUNK HIGHWAY
CULV	CULVERT
D	DEPTH OR DELTA
DI	DUCTILE IRON
DIA	DIAMETER
DIS	DISCHARGE
EA	EACH
EB	EASTBOUND
EBS	EXCAVATION BELOW SUBGRADE
EG	EDGE OF GRAVEL
ELEV	ELEVATION
ELEC	ELECTRIC
EMB	EMBANKMENT
EMAT	EROSION MAT
ENT	ENTRANCE
EOR	END OF RADIUS
EP	EDGE OF PAVEMENT
EXC	EXCAVATION
EX	EXISTING
EW	ENDWALL
F-F	FACE TO FACE
FDN	FOUNDATION
FE	FIELD ENTRANCE
FERT	FERTILIZER
FG	FINISHED GRADE
F/L	FLOW LINE
FT	FOOT
FTG	FOOTING
GRAV	GRAVEL
GN	GRID NORTH
GV	GAS VALVE
HDPE	HIGH DENSITY POLYETHYLENE
HE	HIGHWAY EASEMENT
HMA	HOT MIX ASPHALT
HP	HIGH POINT
HT	HEIGHT
HYD	HYDRANT
ID	INSIDE DIAMETER
IN	INCH
INL	INLET
INV	INVERT
IP	IRON PIPE
JCT	JUNCTION
LB	POUND
LF	LINEAR FOOT
LP	LIGHT POLE
LT	LEFT
LVC	LENGTH OF VERTICAL CURVE
MAINT	MAINTENANCE
MAT'L	MATERIAL
MAX	MAXIMUM
MIN	MINIMUM
MH	MANHOLE
MP	MILE POST
NB	NORTHBOUND
NO	NUMBER
NOR	NORMAL
OD	OUTSIDE DIAMETER
OBLIT	OBLITERATE
PAV'T	PAVEMENT
PC	POINT OF CURVATURE
PCC	PORTLAND CEMENT CONCRETE OR POINT OF COMPOUND CURVATURE
PE	PRIVATE ENTRANCE
PED	PEDESTAL
PGL	PROFILE GRADE LINE
PI	POINT OF INTERSECTION
P/L	PROPERTY LINE
PLE	PERMANENT LIMITED EASEMENT
PP	POWER POLE
PRC	POINT OF REVERSE CURVATURE
PROP	PROPOSED
PSD	PASSING SIGHT DISTANCE
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE OR POINT OF VERTICAL CURVATURE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
R	RADIUS
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
REBAR	REINFORCEMENT ROD
REM	REMOVE
RECON	RECONSTRUCT
REQ'D	REQUIRED
R/L	REFERENCE LINE
RP	RADIUS POINT
RR	RAILROAD
RT	RIGHT
R/W	RIGHT-OF-WAY
SB	SOUTHBOUND
SE	SUPERELEVATION
SF	SQUARE FEET
SI	SLOPE INTERCEPT
STH	STATE TRUNK HIGHWAY
SY	SQUARE YARD
SALV	SALVAGED
SAN	SANITARY
SEC	SECTION
SHLDR	SHOULDER
S/L	SURVEY LINE
SQ	SQUARE
STA	STATION
STD	STANDARD
STO	STORM
SW	SIDEWALK
TC	TOP OF CURB
TEL	TELEPHONE
TEMP	TEMPORARY
TLE	TEMPORARY LIMITED EASEMENT
TV	TELEVISION
TYP	TYPICAL
UG	UNDERGROUND
USH	U.S. HIGHWAY
VAR	VARIES
VC	VERTICAL CURVE
VERT	VERTICAL
WB	WESTBOUND
WM	WATER MAIN
WV	WATER VALVE

GENERAL NOTES

1. THE UTILITIES SHOWN IN PLAN AND PROFILE ARE INDICATED IN ACCORDANCE WITH AVAILABLE RECORDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING EXACT LOCATIONS AND ELEVATIONS OF ALL UTILITIES, INCLUDING ANY PRIVATE UTILITIES, FROM THE OWNERS OF THE RESPECTIVE UTILITIES. ALL UTILITIES SHALL BE NOTIFIED 72 HRS. PRIOR TO EXCAVATION.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PROPOSED SITE GRADES BY FIELD CHECKING TWO (2) BENCHMARKS AND A MINIMUM OF ONE (1) SITE FEATURE AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY MCMAHON OF ANY VERTICAL DISCREPANCY.
3. THE PROPERTY LINES, RIGHT-OF-WAY LINES AND OTHER PROPERTY INFORMATION ON THIS DRAWING WERE DEVELOPED OR OBTAINED AS PART OF THE COUNTY GEOGRAPHIC INFORMATION SYSTEM OR THROUGH THE COUNTY PROPERTY TAX MAPPING FUNCTION. McMAHON DOES NOT GUARANTEE THIS INFORMATION TO BE CORRECT, CURRENT OR COMPLETE. THE PROPERTY AND RIGHT-OF-WAY INFORMATION ARE INTENDED FOR USE AS A GENERAL REFERENCE AND ARE NOT INTENDED OR SUITABLE FOR SITE-SPECIFIC USES. ANY USE TO THE CONTRARY OF THE ABOVE STATED USES IS THE RESPONSIBILITY OF THE USER AND SUCH USE IS AT THE USER'S OWN RISK.
4. NO TREES OR SHRUBS ARE TO BE REMOVED WITHOUT PRIOR APPROVAL FROM THE OWNER.
5. A SAWED JOINT IS REQUIRED WHERE NEW HMA PAVEMENT MATCHES EXISTING ASPHALTIC CONCRETE SURFACE.
6. ALL CURB RADII SHOWN ON THE PLAN SHEETS ARE TO THE BACK OF CURB UNLESS OTHERWISE NOTED.
7. DIMENSIONS ARE TO THE BACK OF CURB UNLESS OTHERWISE NOTED.
8. ITEMS LISTED AS "UNDISTRIBUTED" ARE FOR ITEMS WHICH MAY OR MAY NOT BE INCLUDED IN THE CONTRACT. THE CITY MAY ELECT TO OR MAY ELECT NOT TO HAVE THESE ITEMS INCLUDED. IF THESE ITEMS ARE NOT INCLUDED, THEY WILL NOT BE INSTALLED OR PAID.

STANDARD SYMBOLS (PLAN VIEW ONLY)

2" IRON PIPE FOUND
1 1/4" REBAR FOUND
1 1/4" x 30" IRON REBAR WEIGHING 4.30 LB/LF SET
1" (1.315 OD) IRON PIPE FOUND
1" IRON PIPE SET
3/4" IRON REBAR FOUND
3/4" IRON PIPE FOUND
3/4"x 24" IRON REBAR WEIGHING 1.5 LB/LF SET
MAG NAIL FOUND
MAG NAIL SET
MAG SPIKE FOUND
MAG SPIKE SET
CHISEL CROSS FOUND
CHISEL CROSS SET
COUNTY MONUMENT
CONCRETE MONUMENT FOUND
CONTROL POINT HORIZONTAL
VERTICAL BENCHMARK
SB or MW — SOIL BORING or MONITORING WELL
POWER POLE
POWER POLE W/GUY WIRE
TELEPHONE OR TELEVISION PEDESTAL
MB — MAILBOX
SIGN
RAILROAD CROSS BUCK
RAILROAD GATE ARM
RAILROAD TRACKS
LIGHT POLE
WOOD POLE
TRAFFIC SIGNAL
TRAFFIC SIGNAL MAST ARM
CONIFEROUS TREE
DECIDUOUS TREE
TREE OR BRUSH LINE
BED ROCK (IN PROFILE VIEW)
HANDICAPPED PARKING STALL
EXISTING SPOT ELEVATION
× 750.00 — PROPOSED SPOT ELEVATION
DRAINAGE HIGH POINT
DRAINAGE DIRECTION
EXISTING MANHOLE
PROPOSED MANHOLE
EXISTING INLET
PROPOSED INLET
EXISTING YARD DRAIN
PROPOSED YARD DRAIN
CO — EXISTING CLEAN OUT
CO — PROPOSED CLEAN OUT
EXISTING DOWNSPOUT
PROPOSED DOWNSPOUT
EXISTING WATER VALVE
PROPOSED WATER VALVE
EXISTING CURB STOP
PROPOSED CURB STOP
EXISTING FIRE HYDRANT
PROPOSED FIRE HYDRANT
PROPOSED WATER FITTING
PROPOSED WATER REDUCER
PROPOSED ENDCAP
GAS VALVE

Line	Description
T	TELEPHONE CABLE - BURIED
E	ELECTRIC CABLE - BURIED
OHU	UTILITIES - OVERHEAD
FO	FIBER OPTIC CABLE - BURIED
G	GAS MAIN
TV	CABLE TELEVISION - BURIED
	DITCH LINE
	STREET C/L OR R/L
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	SECTION LINE
746	EXISTING CONTOURS
746	PROPOSED CONTOURS
FM	EXISTING FORCEMAIN SEWER
SAN	EXISTING SANITARY SEWER
SAN	PROPOSED SANITARY SEWER
WM	EXISTING WATER MAIN
WM	PROPOSED WATER MAIN
STO	EXISTING STORM SEWER
STO	PROPOSED STORM SEWER
	EXISTING CURB & GUTTER
	PROPOSED CURB & GUTTER
	PROPOSED REJECT CURB & GUTTER
	EXISTING CULVERT WITH END SECTIONS
	PROPOSED CULVERT WITH END SECTIONS
	BUILDING OUTLINE
	FENCE LINE
	SAW CUT REQ'D
	SILT FENCE
	GUARD RAIL
	DITCH CHECK
	INLET PROTECTION
	TRACKING PAD
	TURBIDITY BARRIER OR SHEET PILING
	SANDBAG COFFERDAM
	SLOPE INTERCEPT
	LIMITS OF DISTURBANCE

EXISTING	PROPOSED	
		ASPHALT PAVEMENT
		CONCRETE SIDEWALK/DRIVEWAY
		GRAVEL
		RIP-RAP (SIZE AS SPECIFIED)
		PROPOSED EROSION MAT
		EXISTING DELINEATED WETLANDS
		PROPOSED ASPHALTIC DRIVEWAY

EROSION & SEDIMENT CONTROL PLAN

BEST MANAGEMENT PRACTICES:

THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING, INSTALLING, MAINTAINING AND REMOVING BEST MANAGEMENT PRACTICES IN ACCORDANCE WITH WISCONSIN DEPARTMENT OF NATURAL RESOURCES (DNR) TECHNICAL STANDARDS. THESE STANDARDS MAY BE FOUND ON THE DNR WEBSITE AT http://www.dnr.wi.gov/runoff/stormwater/techstds.htm. RIP-RAP SHALL BE IN ACCORDANCE WITH SECTION 606, WIS-DOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION, UNTIL TECHNICAL STANDARD 1065 IS COMPLETED BY THE DNR. THE MINIMUM BEST MANAGEMENT PRACTICES SPECIFIED FOR THIS PROJECT ARE AS FOLLOWS:

- [ ] LAND APPLICATION OF POLYACRYLAMIDE (1050)
- [ ] WATER APPLICATION OF POLYMERS (1051)
- [ ] NON-CHANNEL EROSION MAT (1052)
- [ ] CHANNEL EROSION MAT (1053)
- [X] VEGETATIVE BUFFER (1054)
- [ ] SEDIMENT BALE BARRIER (1055)
- [X] SILT FENCE (1056)
- [X] TRACKING PAD & TIRE WASHING (1057)
- [X] MULCHING (1058)
- [X] SEEDING (1059)
- [ ] STORM DRAIN INLET PROTECTION (1060)
- [X] DE-WATERING (1061)
- [ ] DITCH CHECK (1062)
- [ ] SEDIMENT TRAP (1063)
- [ ] SEDIMENT BASIN (1064)
- [ ] RIP-RAP (1065)
- [ ] CONSTRUCTION DIVERSION (1066)
- [ ] GRADING PRACTICES (1067)
- [ ] DUST CONTROL (1068)
- [ ] TURBIDITY BARRIER (1069)
- [ ] SILT CURTAIN (1070)
- [ ] MANUFACTURED PERIMETER PRODUCTS (1071)

THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES AND IMPLEMENT BEST MANAGEMENT PRACTICES TO PREVENT OR REDUCE ALL OF THE FOLLOWING:

A. DEPOSITION OR TRACKING OF SOIL ONTO STREETS BY VEHICLES.
B. DISCHARGE OF SEDIMENT INTO STORM WATER INLETS.
C. DISCHARGE OF SEDIMENT INTO ADJACENT STREAMS, RIVERS, LAKES AND WETLANDS.
D. DISCHARGE OF SEDIMENT FROM DITCHES AND STORM SEWERS THAT FLOW OFFSITE.
E. DISCHARGE OF SEDIMENT FROM DEWATERING ACTIVITIES.
F. DISCHARGE OF SEDIMENT FROM SOIL STOCKPILES EXISTING FOR 7 DAYS OR MORE.
G. DISCHARGE OF SEDIMENT FROM EROSIVE OUTLET FLOWS.
H. TRANSPORT OF CHEMICALS, CEMENT AND BUILDING MATERIALS BY RUNOFF.
I. TRANSPORT OF UNTREATED VEHICLE AND WHEEL WASH WATER BY RUNOFF.

THE CONTRACTOR SHALL IMPLEMENT THE FOLLOWING PREVENTATIVE MEASURES:

A. PRESERVE EXISTING VEGETATION WHENEVER POSSIBLE.
B. MINIMIZE SOIL COMPACTION AND PRESERVE TOPSOIL.
C. MINIMIZE LAND DISTURBANCES ON SLOPES OF 20% OR MORE.
D. MINIMIZE THE AMOUNT OF SOIL EXPOSED AT ANY ONE TIME.
E. DIVERT CLEAR WATER AWAY FROM EXPOSED SOILS.
F. TEMPORARILY STABILIZE EXPOSED SOILS THAT WILL NOT BE ACTIVE FOR 14 DAYS OR MORE. USE MULCHING, SEEDING, POLYACRYLAMIDE OR GRAVELING TO STABILIZE.
G. PERMANENTLY STABILIZE EXPOSED SOILS AS SOON AS POSSIBLE.
H. CONTRACTOR SHALL EDUCATE ITS EMPLOYEES AND SUBCONTRACTORS ABOUT PROPER SPILL PREVENTION AND RESPONSE PROCEDURES. IF A SPILL OCCURS, THE CONTRACTOR SHALL EVACUATE THE AREA AND IMMEDIATELY NOTIFY THE LOCAL MUNICIPALITY, FIRE DEPARTMENT OR 911 EMERGENCY SYSTEM. IF NO FIRE, EXPLOSION OR LIFE / HEALTH SAFETY HAZARD EXISTS, THE NEXT STEP IS TO CONTAIN THE SPILL AND PERFORM CLEANUP. USE DRY CLEANUP METHODS, NOT WET.

THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING OR REPLACING BEST MANAGEMENT PRACTICES DESTROYED AS A RESULT OF CONSTRUCTION ACTIVITIES BY THE END OF THE WORK DAY. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING BEST MANAGEMENT PRACTICES TEMPORARILY REMOVED FOR CONSTRUCTION ACTIVITY AS SOON AS THOSE ACTIVITIES ARE COMPLETED. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING AND DISPOSING OF TEMPORARY BEST MANAGEMENT PRACTICES AFTER CONSTRUCTION IS COMPLETE AND PERMANENT VEGETATION IS ESTABLISHED.

INSPECTION & MAINTENANCE:

THE CONTRACTOR IS RESPONSIBLE FOR INSPECTING BEST MANAGEMENT PRACTICES WEEKLY, AND WITHIN 24 HOURS FOLLOWING A RAINFALL OF 0.5 INCHES OR GREATER. WRITTEN DOCUMENTATION OF EACH INSPECTION SHALL BE KEPT AT THE CONSTRUCTION SITE AND SHALL INCLUDE THE FOLLOWING INFORMATION: DATE, TIME, AND LOCATION OF INSPECTION; NAME OF INDIVIDUAL WHO PERFORMED THE INSPECTION; AN ASSESSMENT OF THE CONDITION OF BEST MANAGEMENT PRACTICES; A DESCRIPTION OF ANY BEST MANAGEMENT PRACTICE IMPLEMENTATION AND MAINTENANCE PERFORMED; AND A DESCRIPTION OF THE PRESENT PHASE OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING, REPAIRING, OR REPLACING BEST MANAGEMENT PRACTICES AS NECESSARY WITHIN 24 HOURS OF AN INSPECTION OR NOTIFICATION. THE CONTRACTOR IS RESPONSIBLE FOR INSPECTING, MAINTAINING, REPAIRING, OR REPLACING BEST MANAGEMENT PRACTICES UNTIL ALL LAND DISTURBING CONSTRUCTION ACTIVITY IS COMPLETED AND A UNIFORM PERENNIAL VEGETATIVE COVER IS ESTABLISHED WITH A DENSITY OF AT LEAST 70%.

THE CONTRACTOR IS RESPONSIBLE FOR POSTING THE PERMIT IN A CONSPICUOUS LOCATION ON THE CONSTRUCTION SITE. THE CONTRACTOR IS RESPONSIBLE FOR KEEPING A COPY OF THE APPROVED REPORTS, PLANS, AMENDMENTS, INSPECTION REPORTS, AND PERMITS AT THE CONSTRUCTION SITE AT ALL TIMES UNTIL ALL LAND DISTURBING CONSTRUCTION ACTIVITY IS COMPLETED AND A UNIFORM PERENNIAL VEGETATIVE COVER IS ESTABLISHED WITH A DENSITY OF AT LEAST 70%. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE OWNER WHEN THE VEGETATIVE DENSITY REACHES AT LEAST 70%. THE OWNER IS RESPONSIBLE FOR TERMINATING DNR PERMIT COVERAGE.

AMENDMENTS:

THE CONTRACTOR IS RESPONSIBLE FOR AMENDING THE EROSION & SEDIMENT CONTROL PLAN IF: THERE IS A CHANGE IN CONSTRUCTION, OPERATION OR MAINTENANCE AT THE SITE WHICH HAS THE REASONABLE POTENTIAL FOR THE DISCHARGE OF POLLUTANTS; THE ACTIONS REQUIRED BY THE PLAN FAIL TO REDUCE THE IMPACTS OF POLLUTANTS CARRIED BY CONSTRUCTION SITE RUNOFF; OR IF THE DNR NOTIFIES THE APPLICANT OF CHANGES NEEDED IN THE PLAN. THE DNR AND OWNER SHALL BE NOTIFIED 5 WORKING DAYS PRIOR TO MAKING CHANGES TO THE PLAN.

McMAHON ENGINEERS ARCHITECTS
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

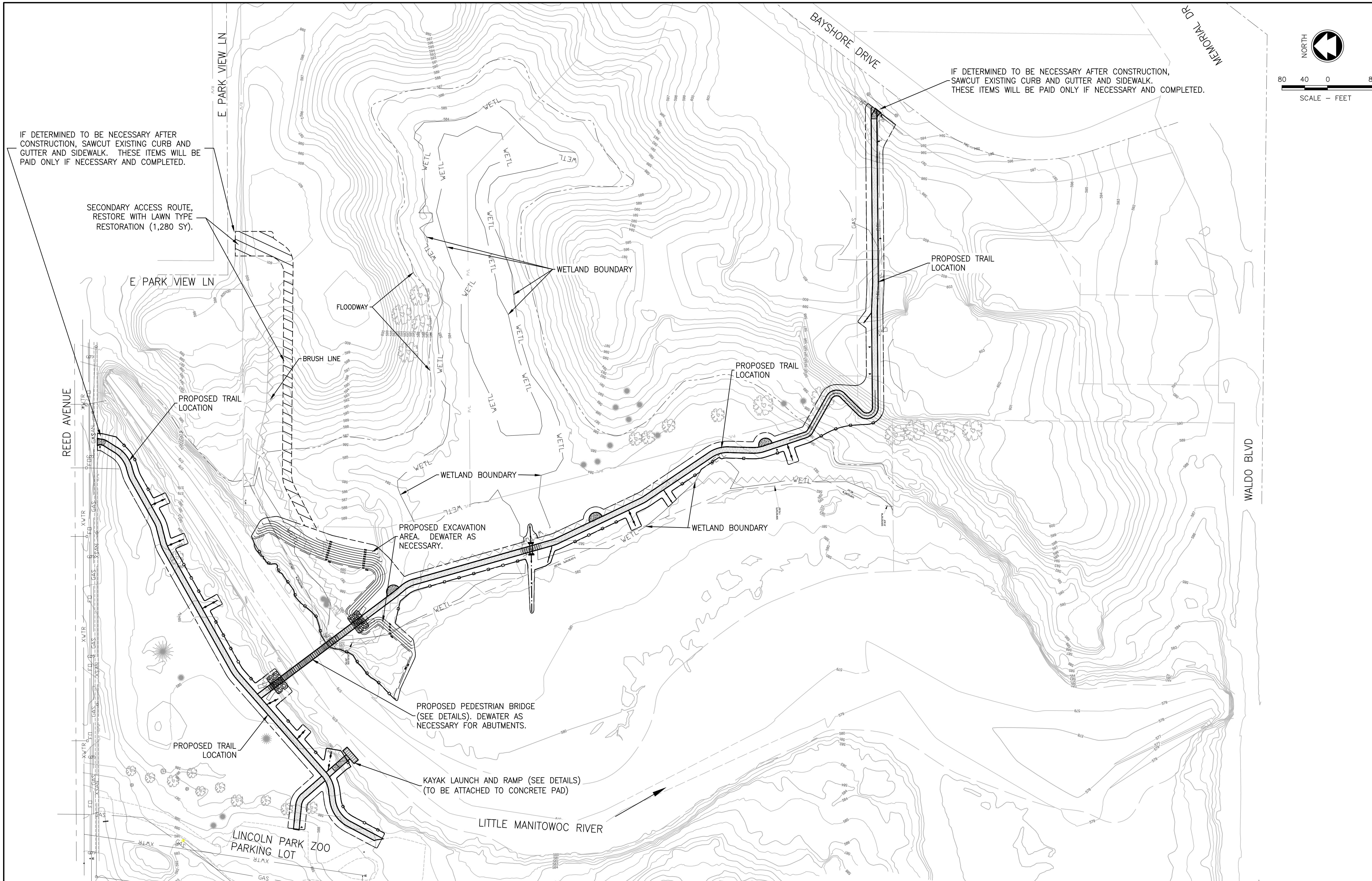
NO.	DATE	REVISION

BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
ABBREVIATIONS, SYMBOLS & NOTES

DESIGNED	DRAWN
AWS	JJJ

PROJECT NO. M0026 09-20-00716
DATE JUNE 2023
SHEET NO. 01

oschmidt W:\PROJECTS\M0026\92000716\CADD\Civil3D\Plan Sheets\Cover Notes Details.dwg, 01 abbreviations symbols & notes, Plot Date: 3/18/2024 1:50 PM, xrefs:none



COMMON EXCAVATION FOR TRAIL: CUT = 2,540 C.Y. / FILL = 292 C.Y.
RESULTING (NET) = 2,248 C.Y.
(NO EXPANSION FACTORS APPLIED)

* THE COMMON EXCAVATION QUANTITY IS BASED ON COMARING EXISTING CONTOURS TO PROPOSED ELEVATIONS (BELOW THE B.A.D.); PAYMENT WILL BE PLAN QUANTITY UNLESS AN ERROR IS DETERMINED TO EXIST WHEN COMPARING EX CONTOURS VS PROPOSED SUBBASE ELEV

McMAHON
ENGINEERS | ARCHITECTS
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

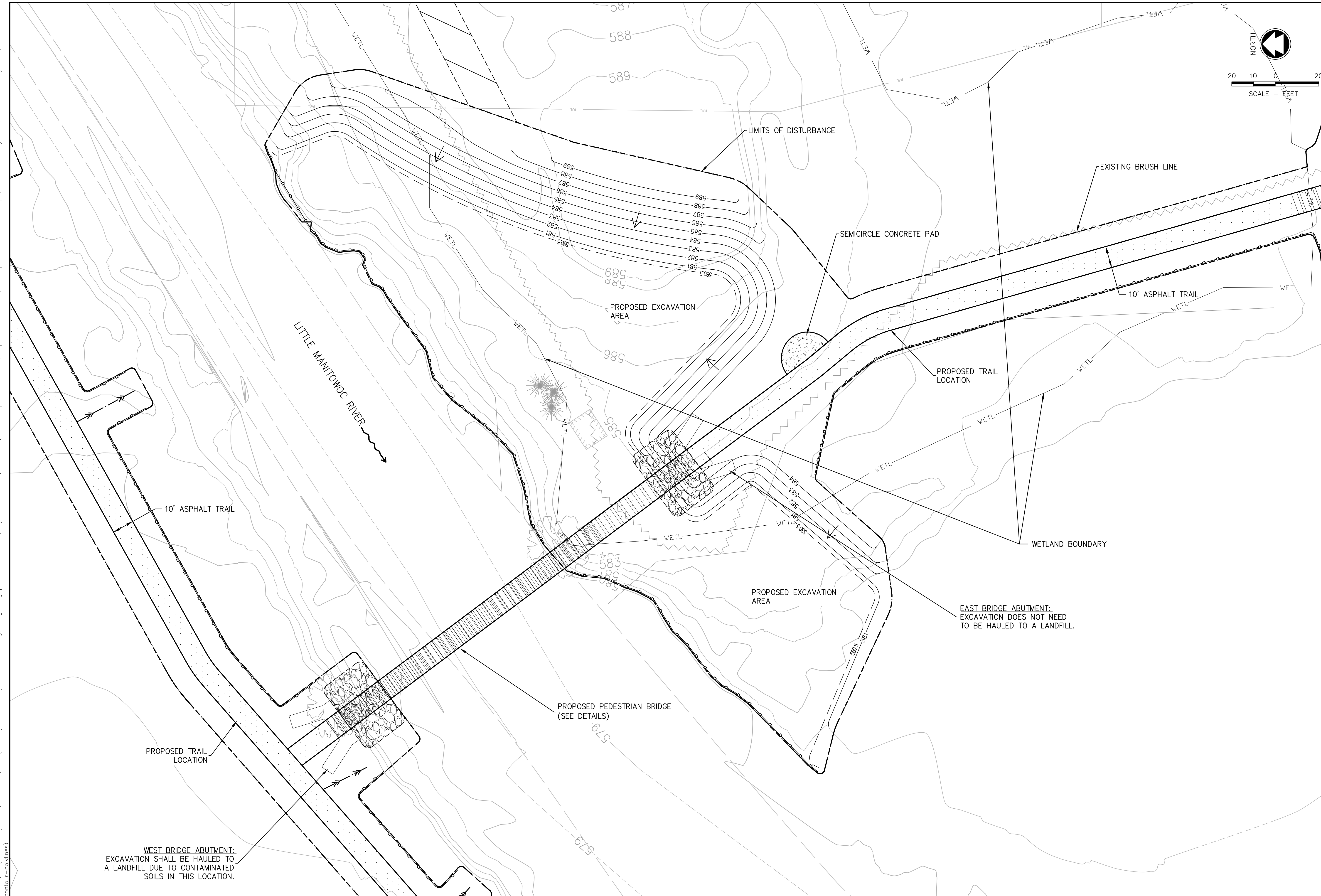
NO.	DATE	REVISION

BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
OVERALL SITE PLAN

DESIGNED	DRAWN
AWS	JJJ

PROJECT NO. M0026 09-20-00716
DATE JUNE 2023
SHEET NO. 02

aschmidt, W:\PROJECTS\M0026\92000716\CADD\Civil3D\Plan Sheets\OVERALL SITE PLAN.dwg, 02 overall site plan, Plot Date: 3/18/2024 1:51 PM, xrefs: (x-exist topo from others, x-proposed linework, x-all points from others topo, x-aerial county 2017, x-aerial county 2020, x-contour-polylines)



aschmidt, W:\PROJECTS\M0026\92000716\CADD\Civil3D\Plan Sheets\GRADING PLAN.dwg, 03 grading plan, Plot Date: 3/18/2024 1:51 PM, xrefs: (x-exist topo from others, x-proposed linework, x-all points from others topo, x-aerial county 2017, x-aerial county 2020, x-contour-polylines)

McMAHON
ENGINEERS ARCHITECTS
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

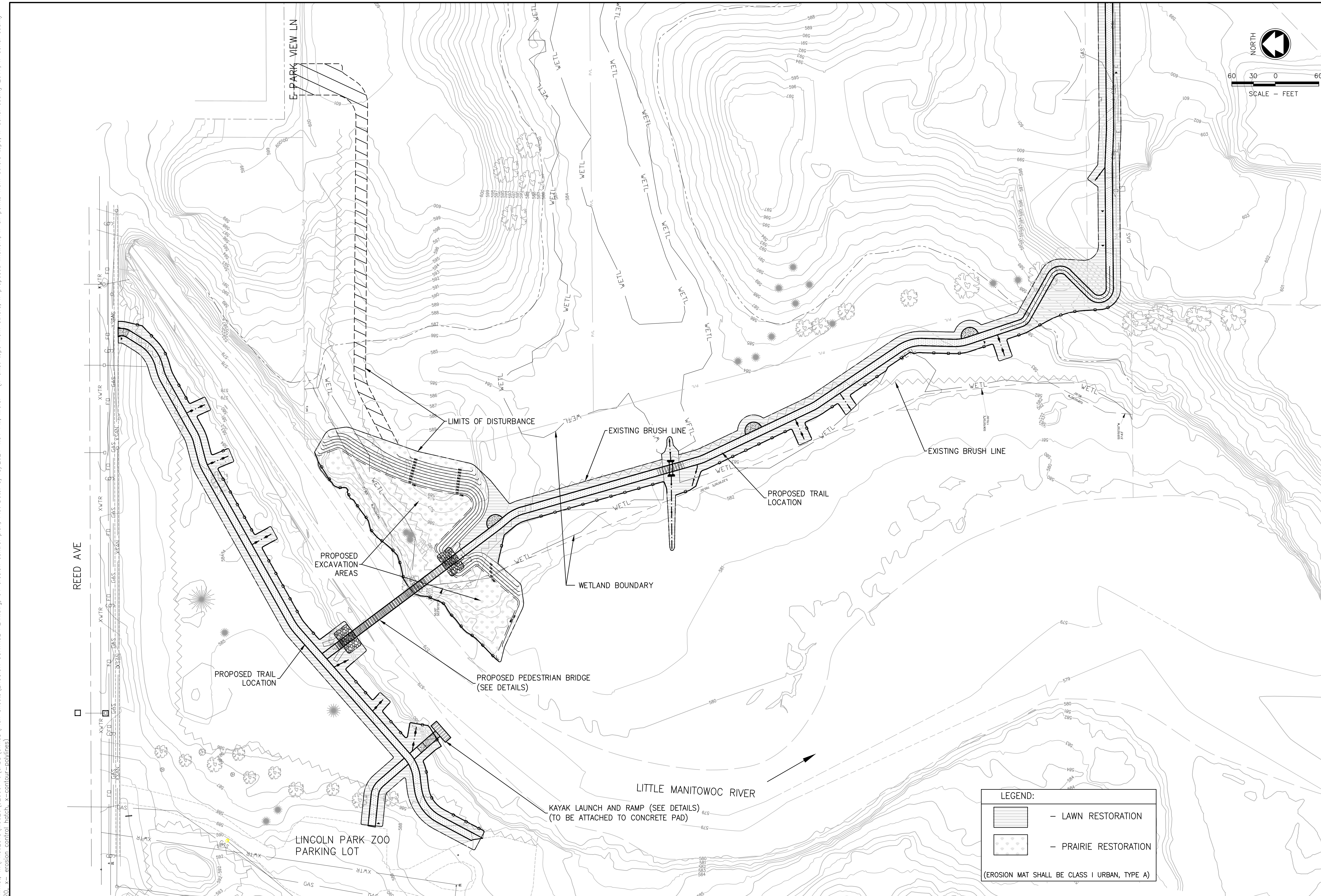
BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
GRADING PLAN

DESIGNED	DRAWN
AWS	JJJ

PROJECT NO.
M0026 09-20-00716

DATE
JUNE 2023

SHEET NO.
03



BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
EROSION CONTROL PLAN

McMAHON
ENGINEERS ARCHITECTS
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

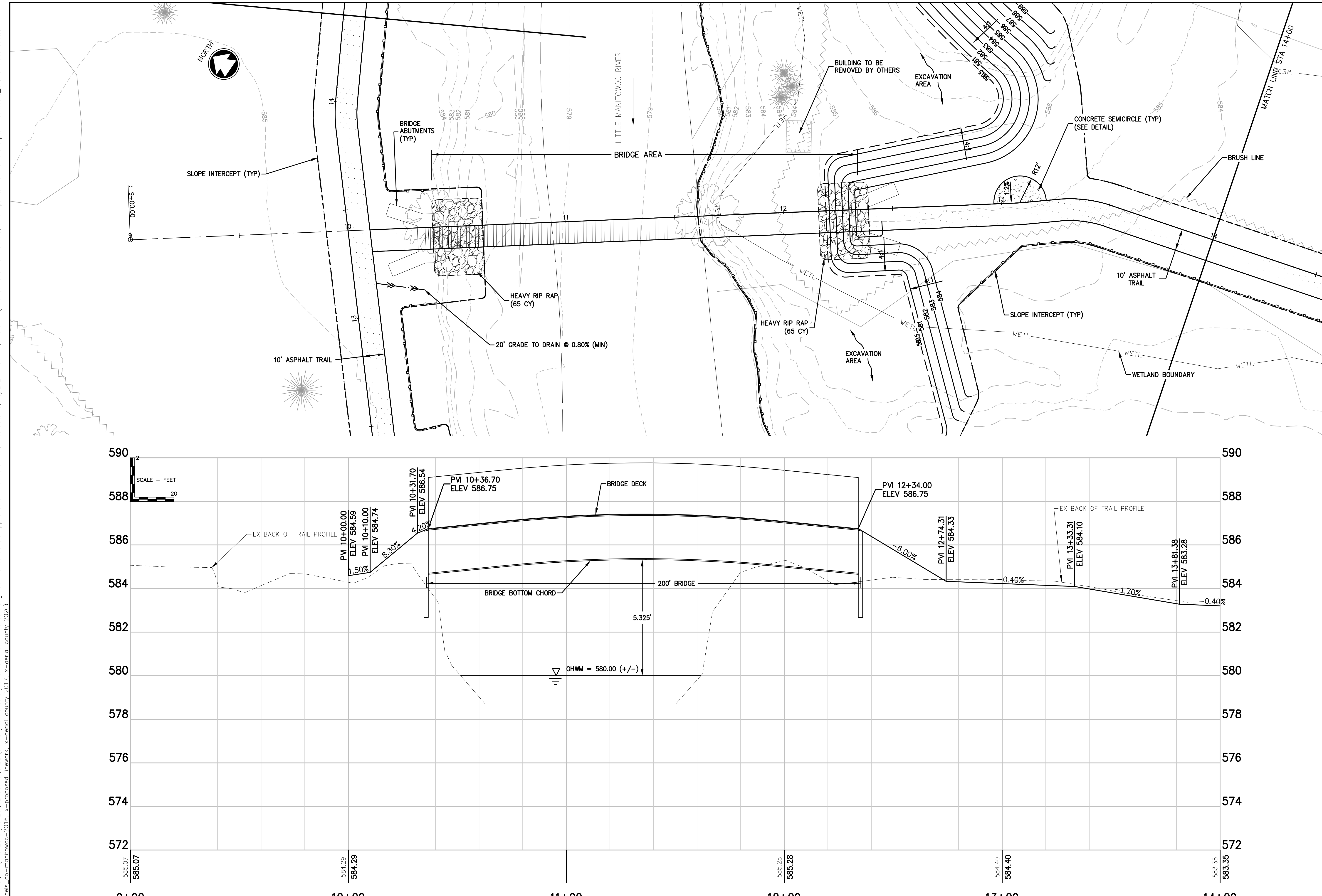
DESIGNED	DRAWN
AWS	JJJ

PROJECT NO. M0026 09-20-00716

DATE JUNE 2023

SHEET NO. 04

aschmidt, W:\PROJECTS\M0026\92000716\CADD\Civil3D\Plan Sheets\EROSION CONTROL PLAN.dwg, 04 erosion control plan, Plot Date: 3/18/2024 1:51 PM, xrefs: (x-exist topo from others, x-proposed linework, x-all points from others topo, x-aerial county 2017, x-aerial county 2020, x- erosion control hatch, x-contour-polylines)



McMAHON
ENGINEERS | ARCHITECTS

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

BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
MAIN TRAIL PLAN & PROFILE

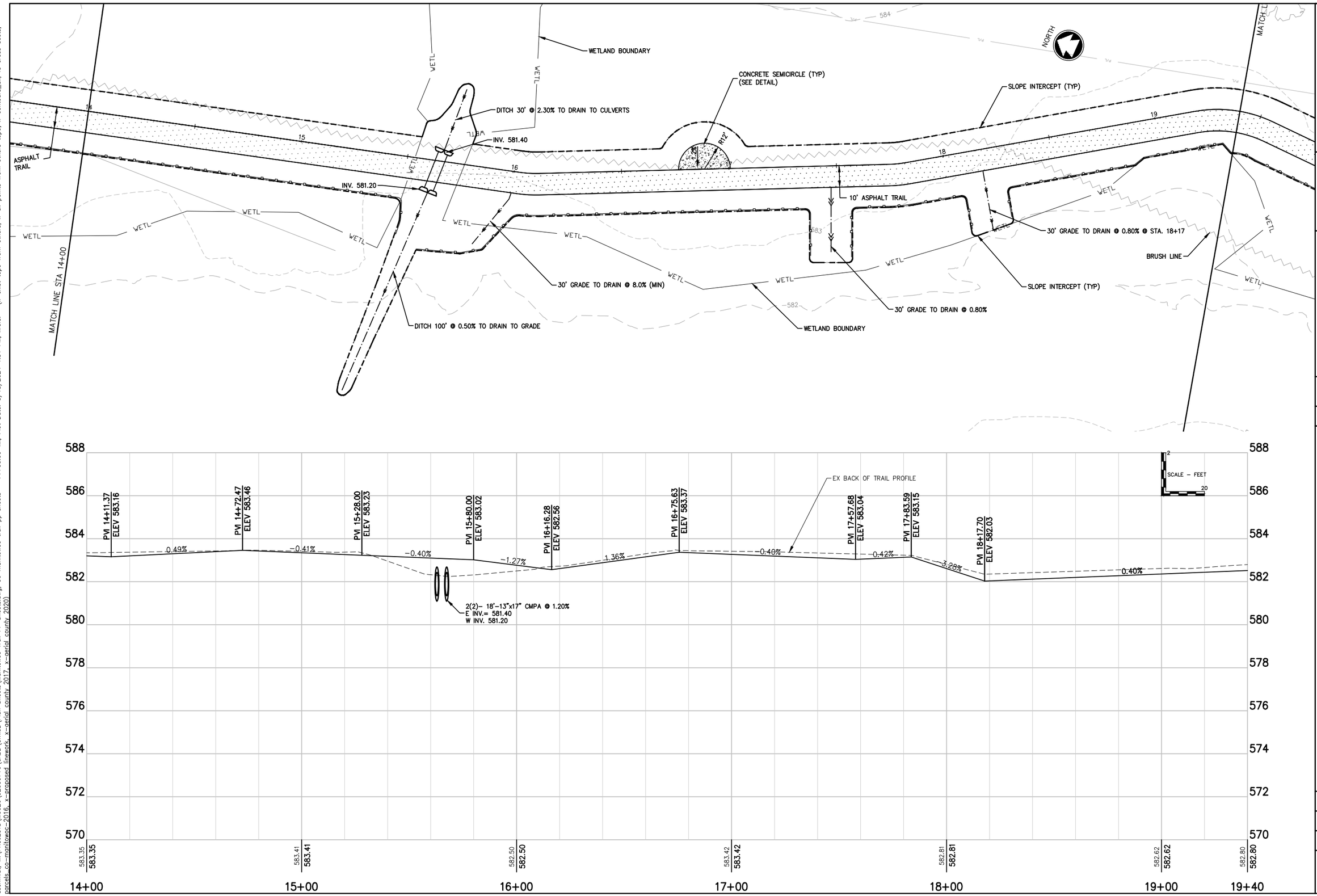
DESIGNED	DRAWN
AWS	JJJ

PROJECT NO. M0026 09-20-00716

DATE JUNE 2023

SHEET NO. 05

aschmidt, W:\PROJECTS\M0026\92000716\CADD\Civil3D\Plan Sheets\Manitowoc Trail PP Sheets.dwg, 05 manitowoc trail pp sheets - 9+00.00-xx, Plot Date: 3/18/2024 1:51 PM, xrefs: (x-exist topo from others, x-all points from others topo, x-contours_all, fs cross sects, parcels_co-manitowoc-2016, x-proposed linework, x-aerial county 2017, x-aerial county 2020)



McMAHON
ENGINEERS ARCHITECTS
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

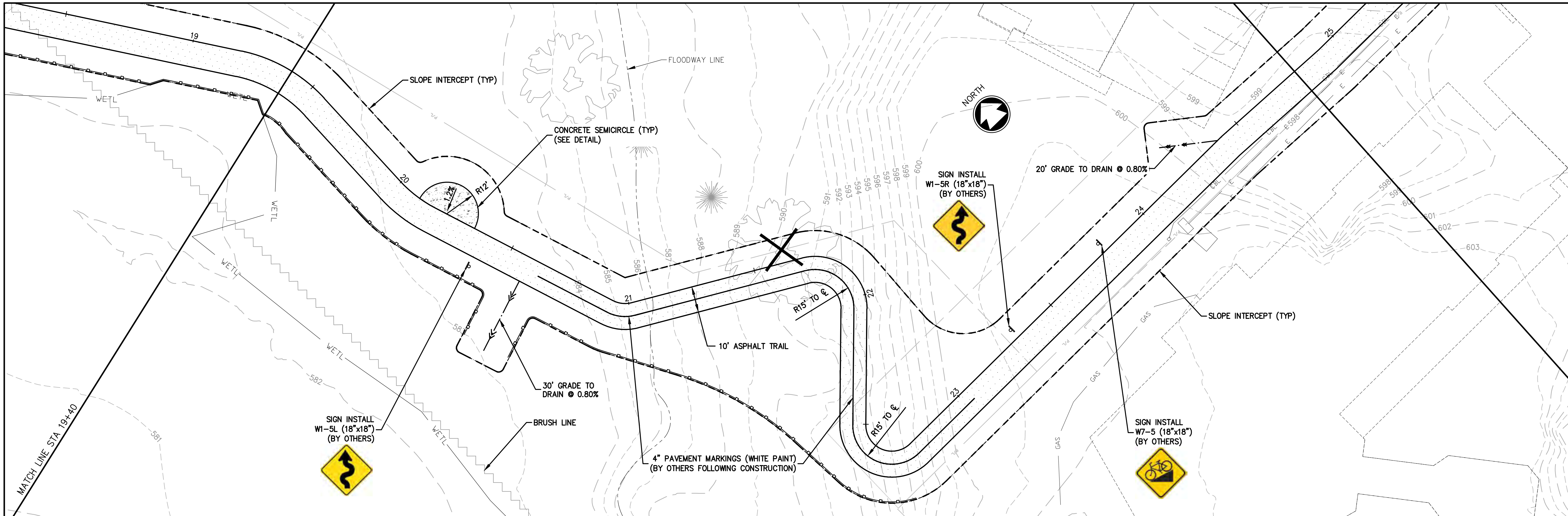
BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
MAIN TRAIL PLAN & PROFILE

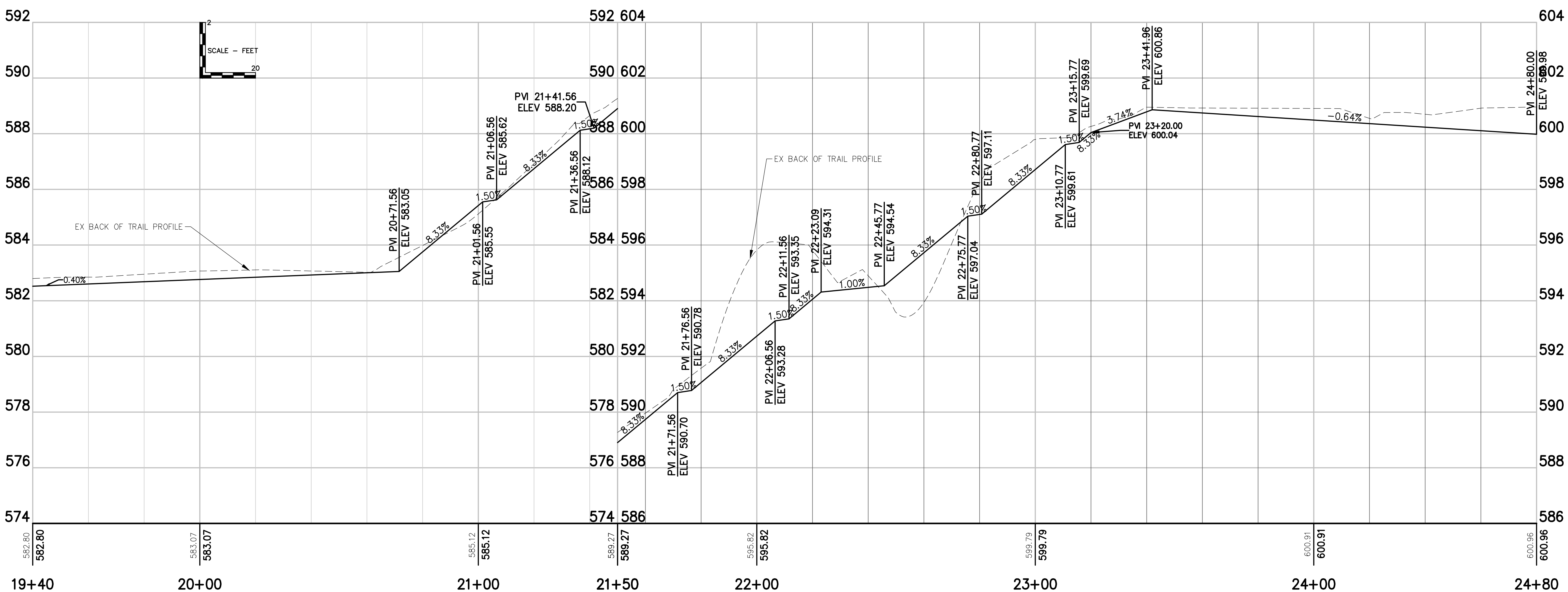
DESIGNED	DRAWN
AWS	JJJ

PROJECT NO.
M0026 09-20-00716

DATE
JUNE 2023

SHEET NO.
06





McMAHON
ENGINEERS ARCHITECTS
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

BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
MAIN TRAIL PLAN & PROFILE

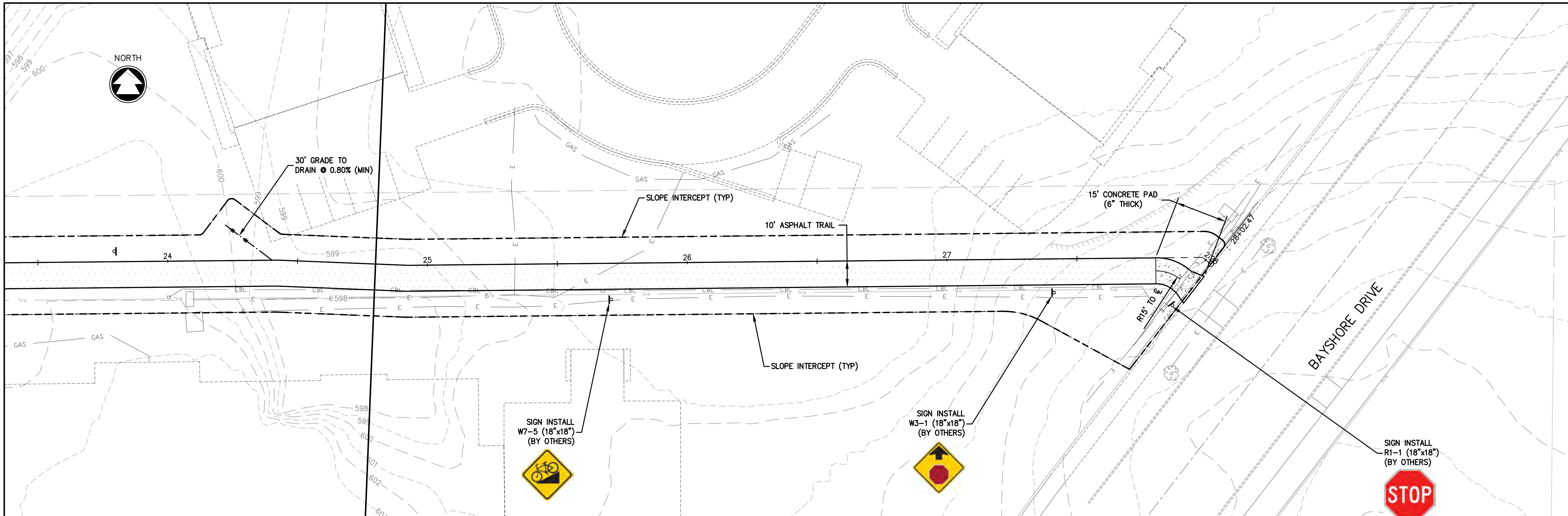
DESIGNED	DRAWN
AWS	JJJ

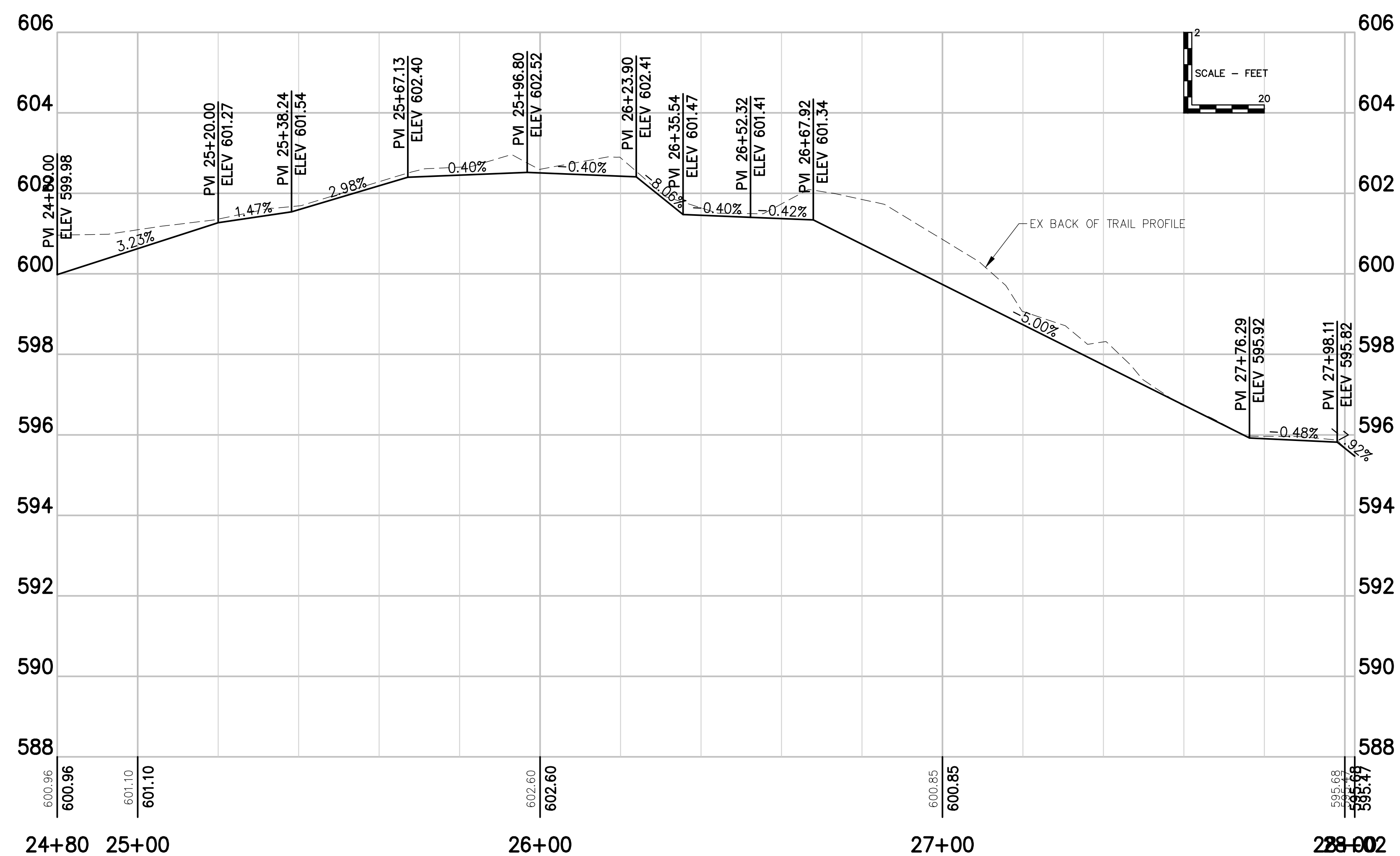
PROJECT NO. M0026 09-20-00716

DATE JUNE 2023

SHEET NO. 07

aschmidt, W:\PROJECTS\M0026\92000716\CADD\Civil3D\Plan Sheets\Manitowoc Trail PP Sheets.dwg, 07 manitowoc trail pp sheets – 19+40.00-xx, Plot Date: 3/18/2024 1:51 PM, xrefs: (x-exist topo from others, x-all points from others topo, x-contours_all, fs cross sects, parcels_co-manitowoc-2016, x-proposed linework, x-aerial county 2017, x-aerial county 2020)





McMAHON
ENGINEERS | ARCHITECTS

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

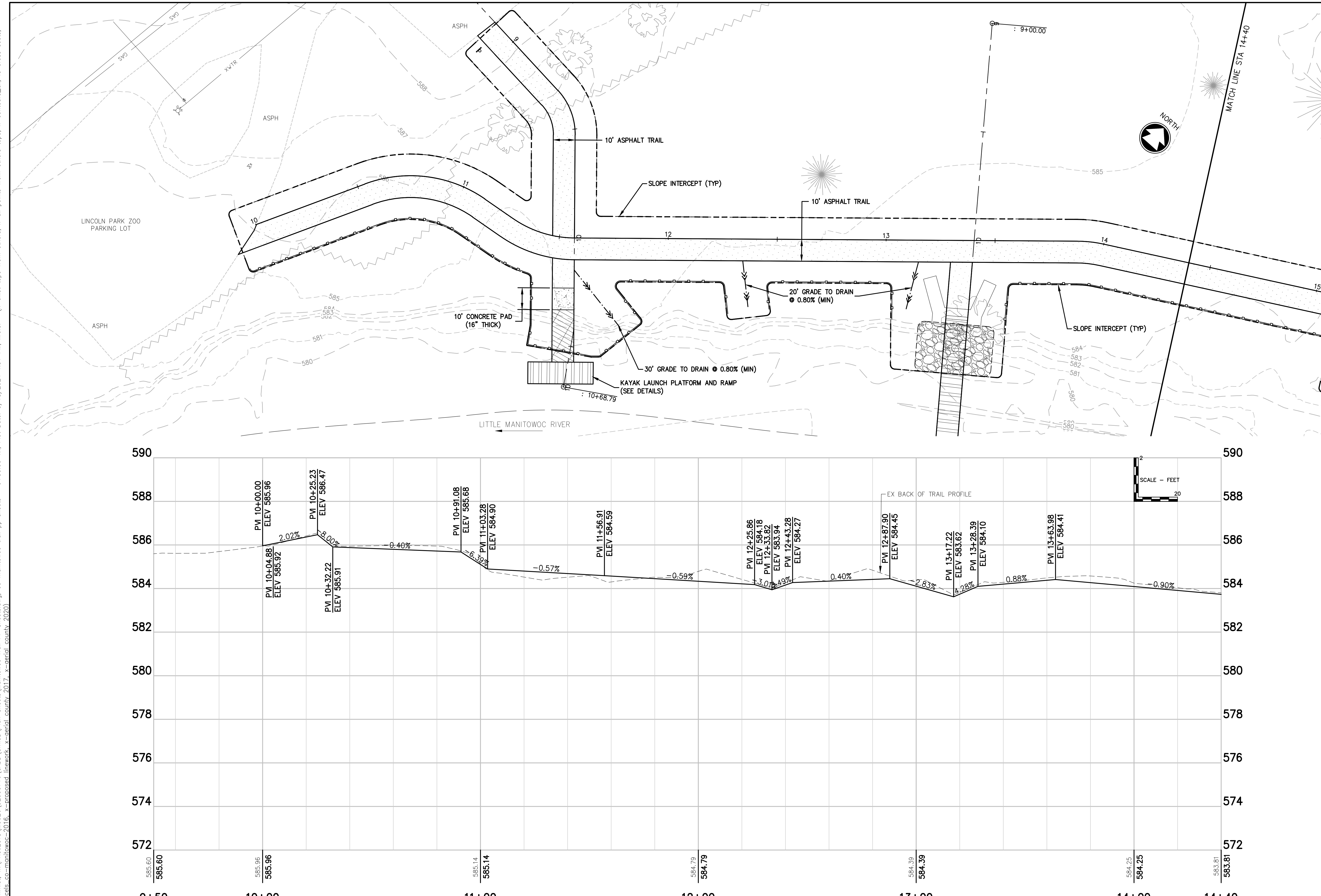
BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
MAIN TRAIL PLAN & PROFILE

DESIGNED	DRAWN
AWS	JJJ

PROJECT NO.
M0026 09-20-00716

DATE
JUNE 2023

SHEET NO.
08



McMAHON ENGINEERS ARCHITECTS

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

BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
NORTH–SOUTH TRAIL PLAN & PROFILE

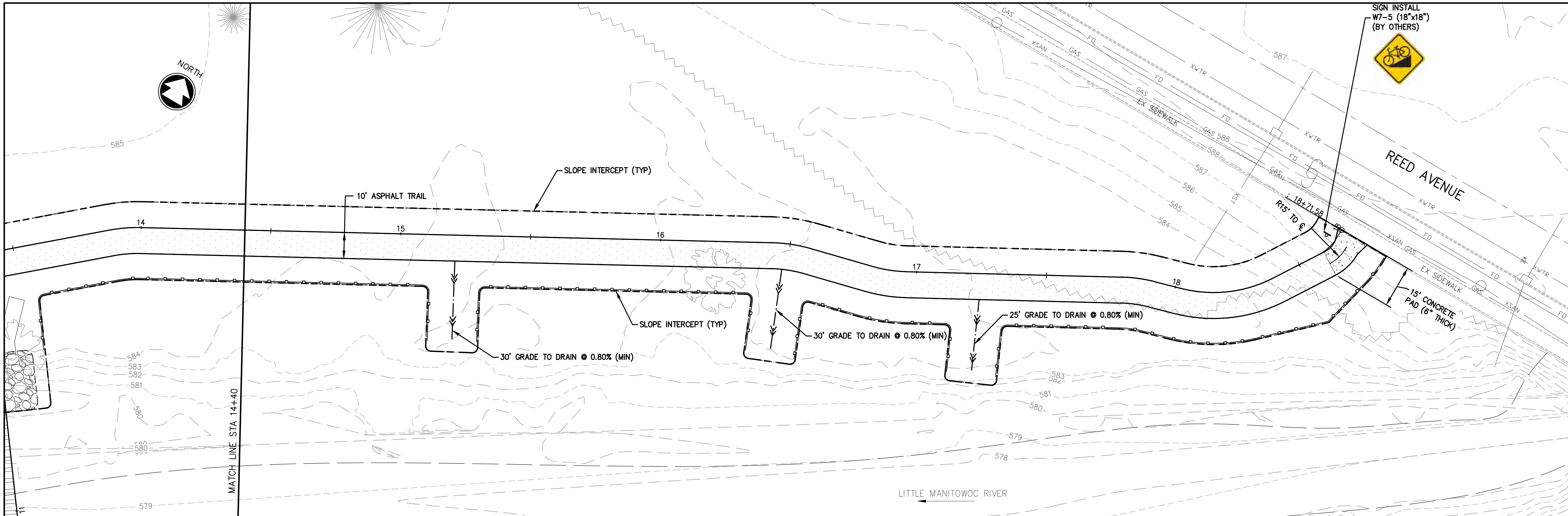
DESIGNED	DRAWN
AWS	JJJ

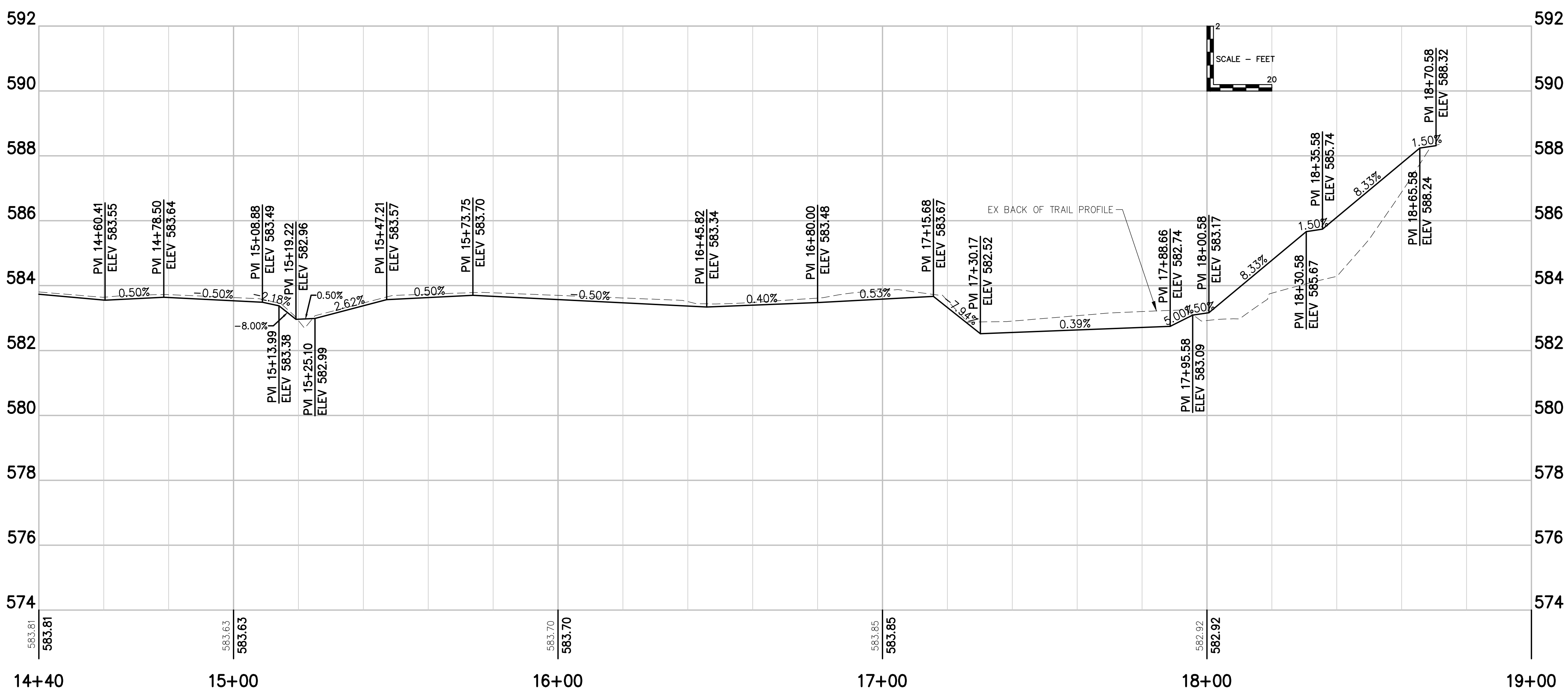
PROJECT NO. M0026 09-20-00716

DATE JUNE 2023

SHEET NO. 09

aschmidt, W:\PROJECTS\M0026\92000716\CADD\Civil3D\Plan Sheets\Manitowoc Trail PP Sheets.dwg, 09 manitowoc trail pp sheets – 9+50.00–xx, Plot Date: 3/18/2024 1:51 PM, xrefs: (x–exist topo from others, x–all points from others topo, x–contours_all, fs cross sects, parcels_co–manitowoc–2016, x–proposed linework, x–aerial county 2017, x–aerial county 2020)





McMAHON
ENGINEERS ARCHITECTS

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

BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
NORTH-SOUTH TRAIL PLAN & PROFILE

DESIGNED	DRAWN
AWS	JJJ

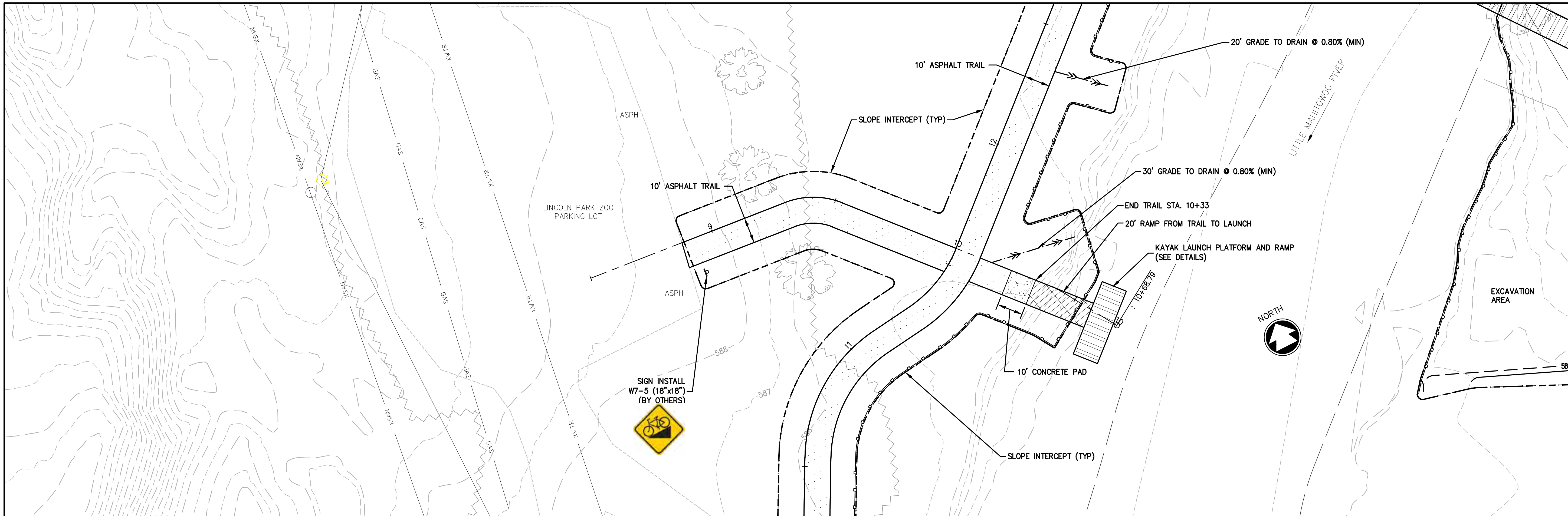
PROJECT NO.
M0026 09-20-00716

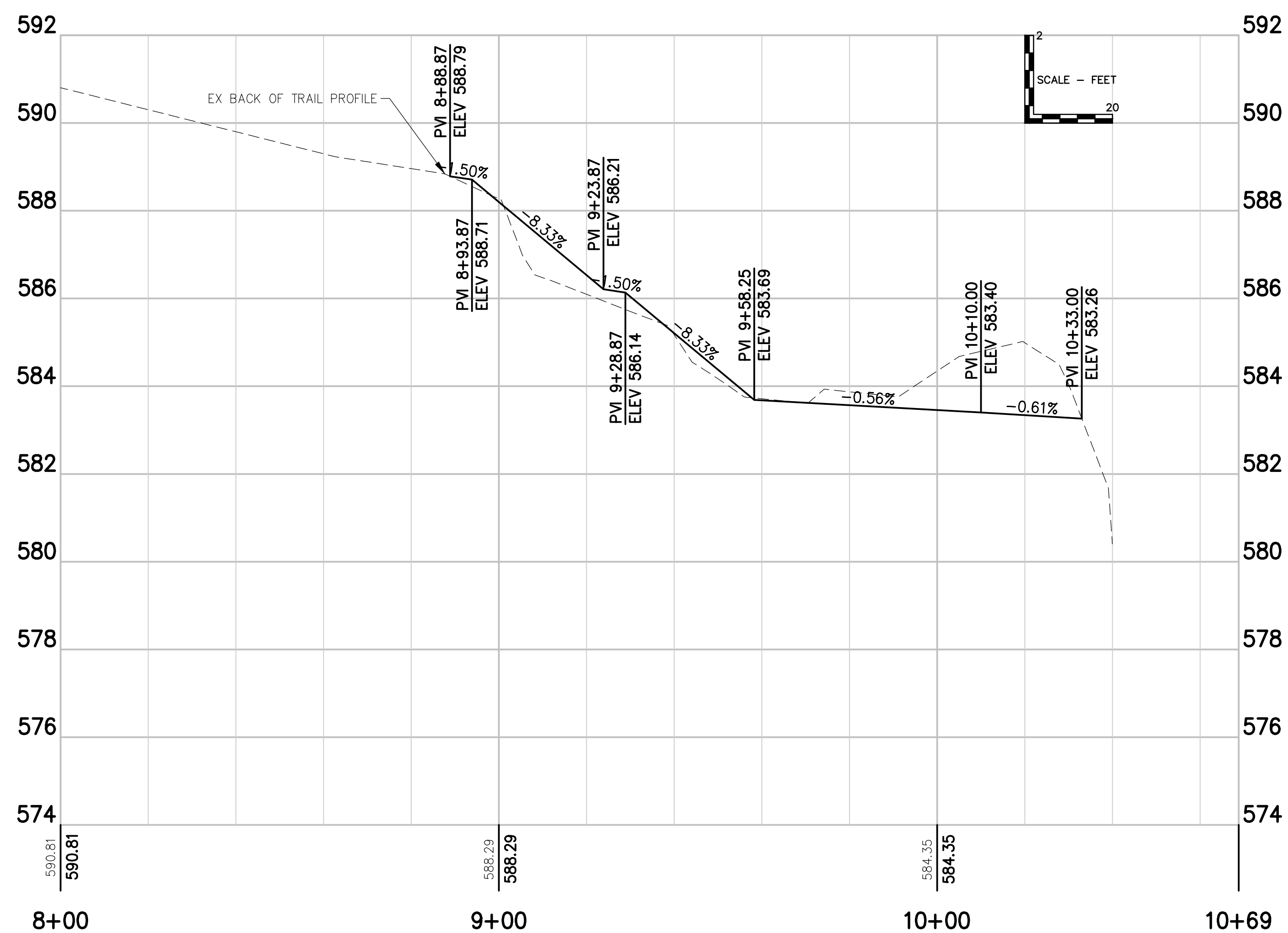
DATE
JUNE 2023

SHEET NO.
10

aschmidt, W:\PROJECTS\M0026\92000716\CADD\Civil3D\Plan Sheets\Manitowoc Trail PP Sheets.dwg, 10 manitowoc trail pp sheets – 14+40.00-xx, Plot Date: 3/18/2024 1:51 PM, xrefs: (x-exist topo from others, x-all points from others topo, x-contours_all, fs cross sects, parcels_co-manitowoc-2016, x-proposed linework, x-aerial county 2017, x-aerial county 2020)

aschmidt, W:\PROJECTS\M0026\92000716\CADD\Civil3D\Plan Sheets\Manitowoc Trail PP Sheets.dwg, 11 manitowoc trail pp sheets – 8+00.00-xx, Plot Date: 3/18/2024 1:51 PM, xrefs: (x-exist topo from others, x-all points from others topo, x-contours_all, fs cross sects, parcels_co-manitowoc-2016, x-proposed linework, x-aerial county 2017, x-aerial county 2020)





McMAHON
ENGINEERS | ARCHITECTS

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

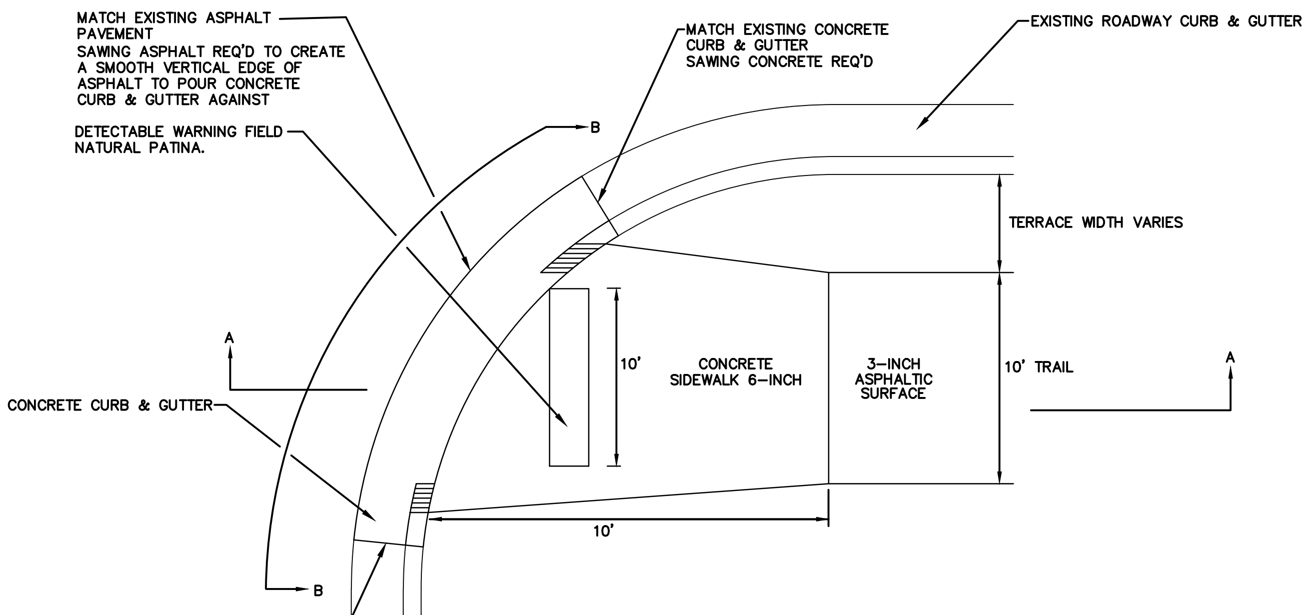
BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
RAMP PLAN & PROFILE

DESIGNED	DRAWN
AWS	JJJ

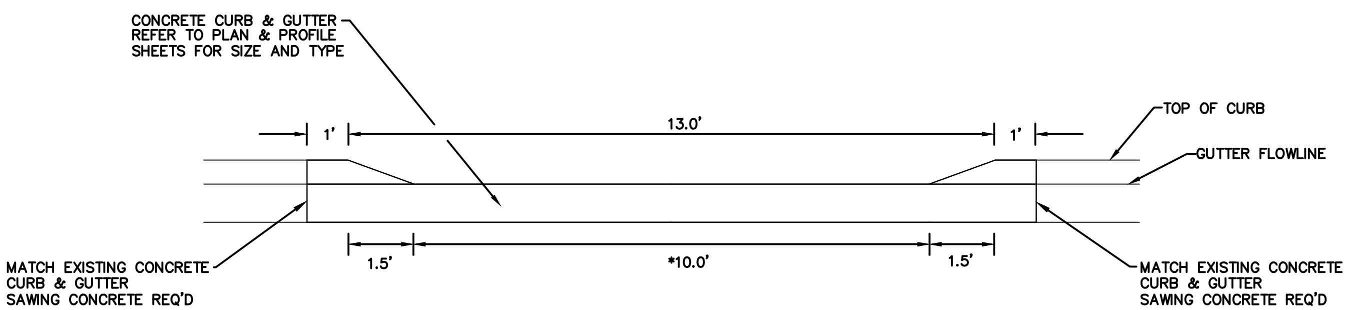
PROJECT NO.
M0026 09-20-00716

DATE
JUNE 2023

SHEET NO.
11

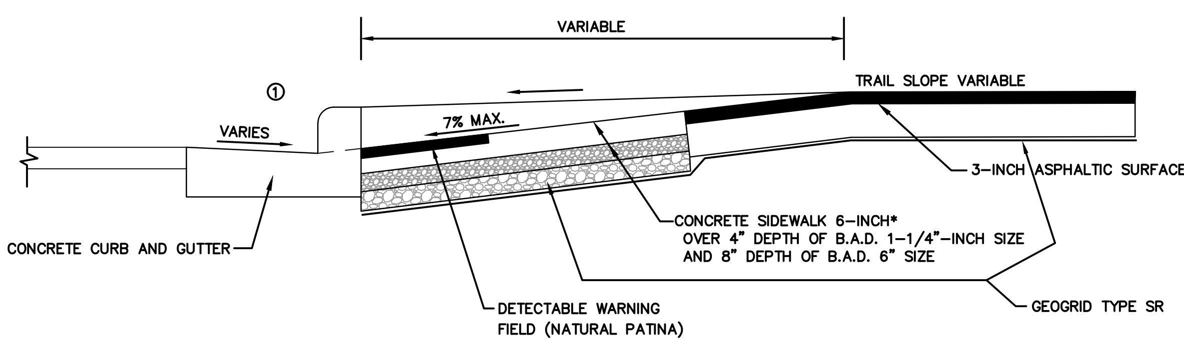


PLAN VIEW



SECTION B–B

*DISTANCE MEASURED ALONG C&G WILL BE GREATER

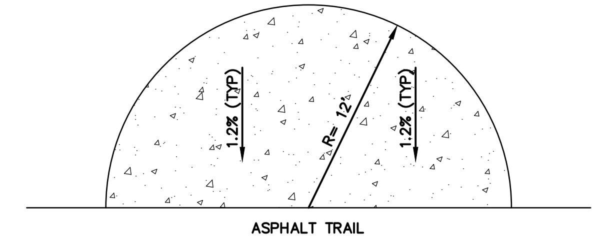


SECTION A–A

MODIFIED CURB RAMP TYPE 2

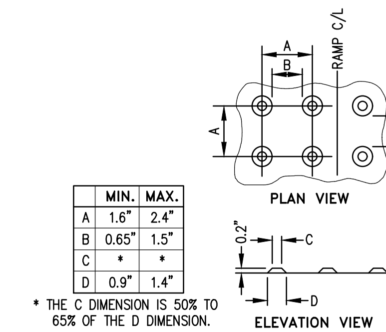
FOR INFORMATION NOT SHOWN ON THIS DETAIL, REFER TO WISCONSIN DOT SDD 8d5 CURB RAMPS

* FOR THE KAYAK LAUNCH PAD, 16" THICK CONCRETE SIDEWALK OVER 6" OF 1-1/4" B.A.D.



CONCRETE SEMICIRCLE

6" THICK CONCRETE SIDEWALK
(SEE CURB RAMP DETAIL FOR CROSS SECTION)

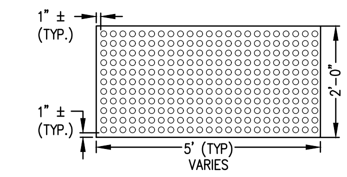


	MIN.	MAX.
A	1.6"	2.4"
B	0.65"	1.5"
C	*	*
D	0.9"	1.4"

* THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.

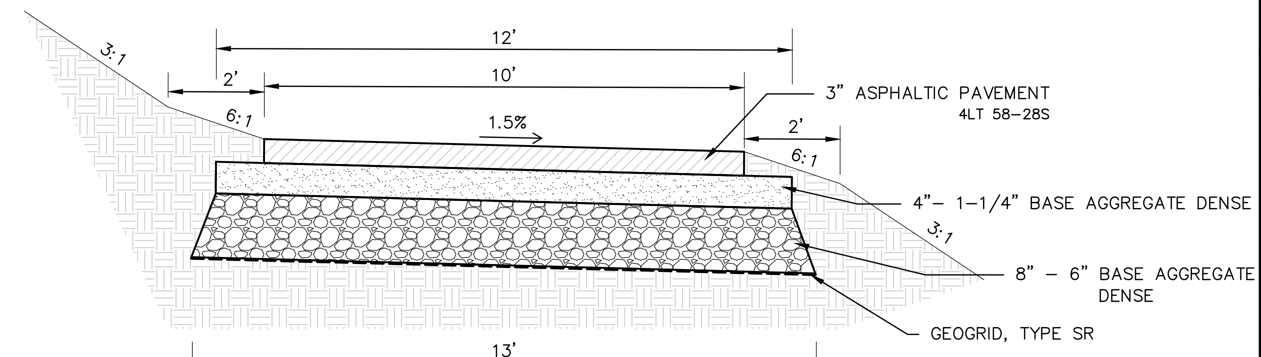
TRUNCATED DOMES

DETECTABLE WARNING PATTERN DETAIL



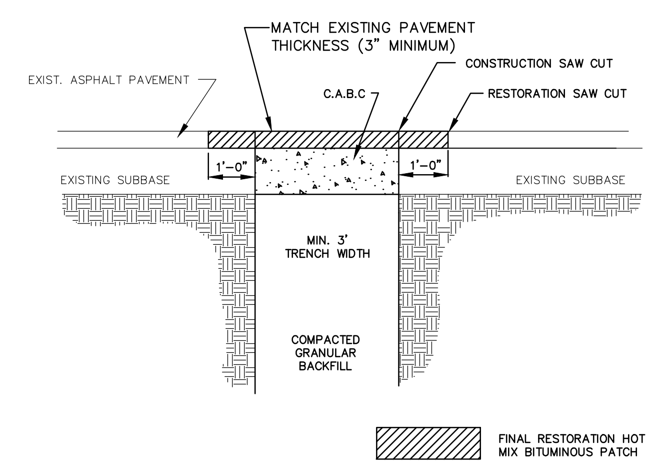
PLAN VIEW

DETECTABLE WARNING FIELD (TYPICAL)

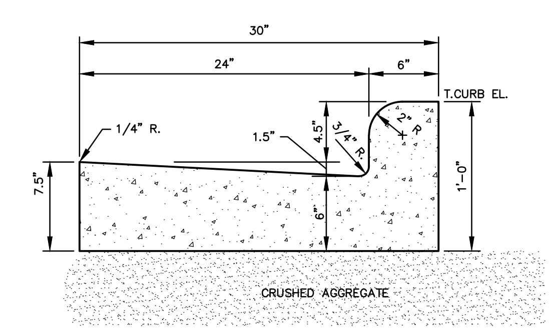


TYPICAL TRAIL SECTION

NOTE: REVERSE CROSS SLOPE STATIONS (MAIN TRAIL SECTION): STATION 21+75 TO 26+50



BITUMINOUS PAVEMENT RESTORATION



CURB AND GUTTER DETAIL

NOTE: ITEMS LISTED AS "UNDISTRIBUTED" ARE FOR ITEMS WHICH MAY OR MAY NOT BE INCLUDED IN THE CONTRACT. THE CITY MAY ELECT TO OR MAY ELECT NOT TO HAVE THESE ITEMS INCLUDED. IF THESE ITEMS ARE NOT INCLUDED, THEY WILL NOT BE INSTALLED OR PAID.

McMAHON
ENGINEERS ARCHITECTS
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

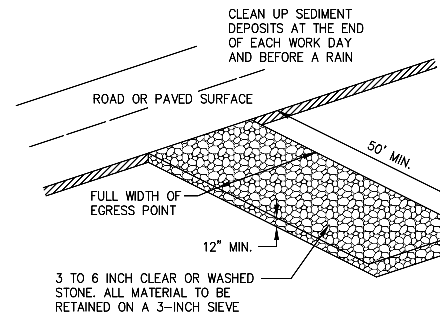
BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
MISCELLANEOUS DETAILS

DESIGNED	DRAWN
AWS	JJJ

PROJECT NO. M0026 09-20-00716

DATE JUNE 2023

SHEET NO. 12

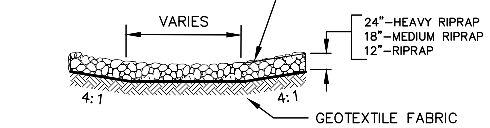


1. DIVERT FLOW AWAY FROM TRACKING PAD USING CULVERTS, SHALLOW TRENCH OR DIVERSION DAM.
2. ROCKS LODGED BETWEEN THE TIRES OF DUAL VEHICLES SHALL BE REMOVED PRIOR TO LEAVING THE SITE.
3. ON SITES WITH A HIGH WATER TABLE OR SATURATED SOILS, INSTALL A DOT TYPE R GEOTEXTILE FABRIC UNDER STONE TRACKING PAD.

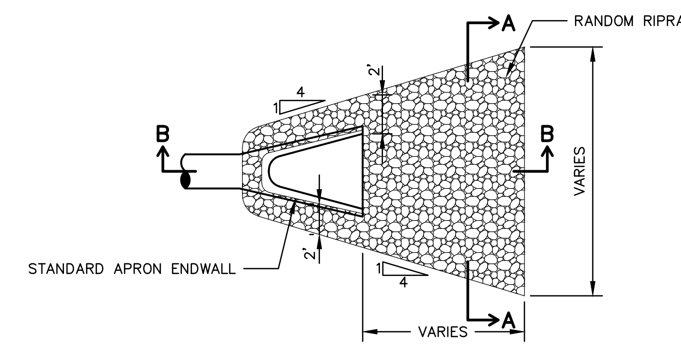
* MANUFACTURED TRACKOUT CONTROL DEVICE PER WDNR TECHNICAL STANDARD 1057 MAY BE USED.

TRACKING PAD DETAIL

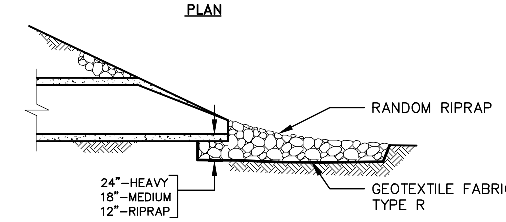
RIP-RAP
1. RIP-RAP SHALL BE IN ACCORDANCE WITH SECTION 606, WIS-DOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, 2009 EDITION.
2. RIP-RAP SHALL BE ANGULAR. ROUND RIP-RAP IS NOT PERMITTED.



SECTION A-A

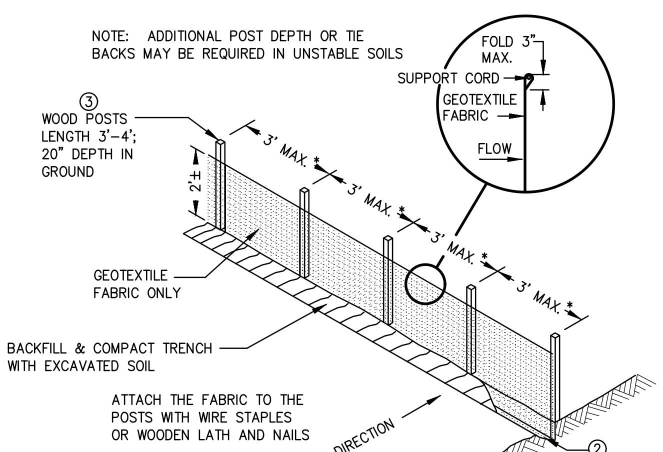


PLAN



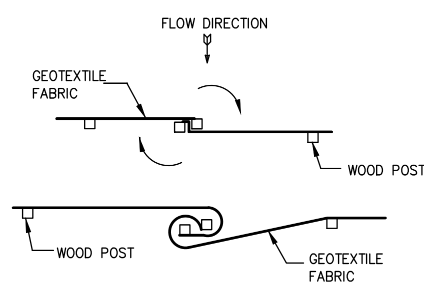
SECTION B-B

RIPRAP AT STORM SEWER OUTFALL

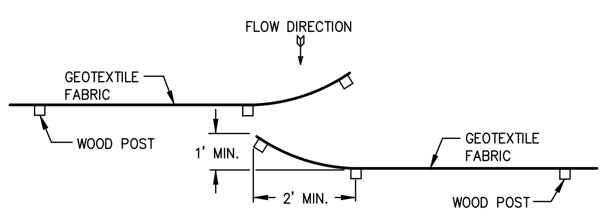


SILT FENCE

NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.



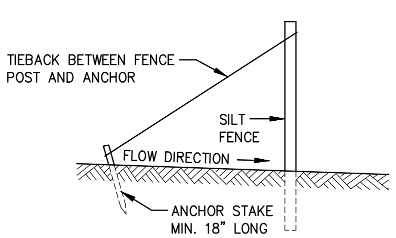
TWIST METHOD



HOOK METHOD

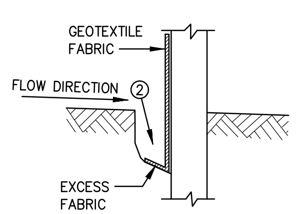
JOINING TWO LENGTHS OF SILT FENCE (5)

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



SILT FENCE TIE BACK

(WHEN ADDITIONAL SUPPORT REQUIRED)

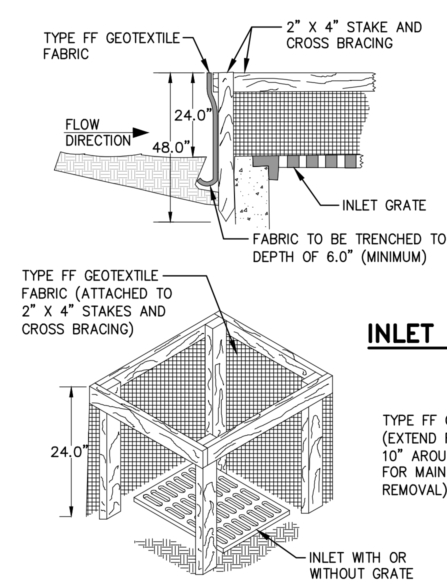


TRENCH DETAIL

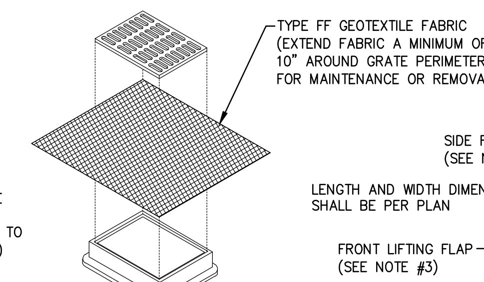
GENERAL NOTES

1. HORIZONTAL BRACE REQUIRED WITH 2" X 4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. 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.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1 1/8" X 1 1/8" OF OAK OR HICKORY
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. 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.

SILT FENCE DETAIL

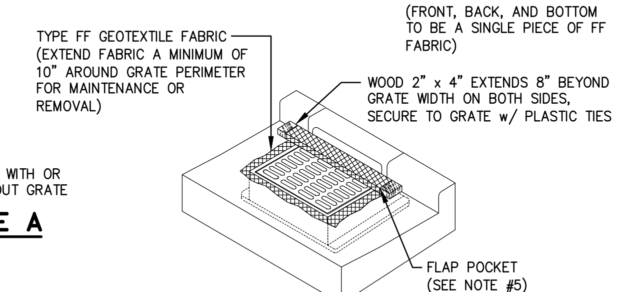


INLET PROTECTION, TYPE A



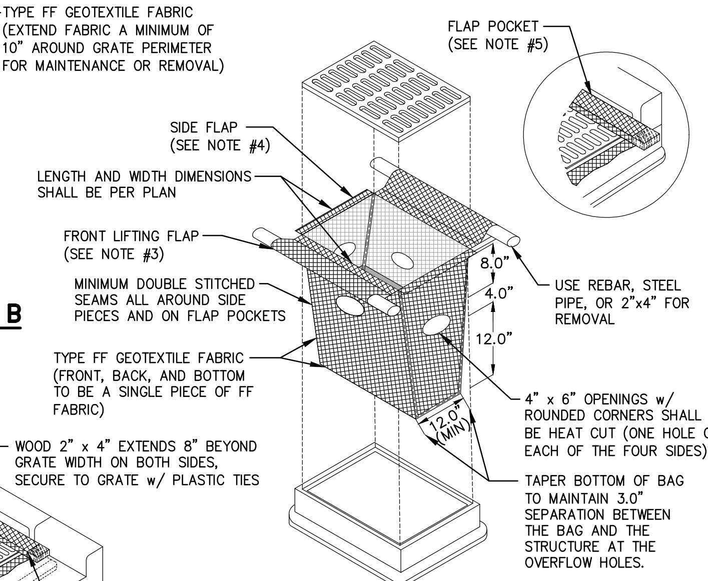
INLET PROTECTION, TYPE B

WITHOUT CURB BOX



INLET PROTECTION, TYPE C

WITH CURB BOX



INLET PROTECTION, TYPE D

CAN BE INSTALLED IN INLETS WITH OR WITHOUT CURB BOXES

This drawing based on Wisconsin Department of Natural Resources Technical Standard No. 1060. Revision Date: 08/2014

GENERAL NOTES

1. 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.
2. GEOTEXTILE FABRIC TYPE FF FOR FLAPS, TOP AND BOTTOM OF OUTSIDE OF FILTER BAG. FRONT, BACK, AND BOTTOM OF FILTER BAG BEING ONE PIECE.
3. FRONT LIFTING FLAP IS TO BE USED WHEN REMOVING AND MAINTAINING FILTER BAG.
4. SIDE FLAPS SHALL BE A MAXIMUM OF TWO INCHES LONG. FOLD THE FABRIC OVER AND REINFORCE WITH MULTIPLE STITCHES.
5. 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

1. 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.

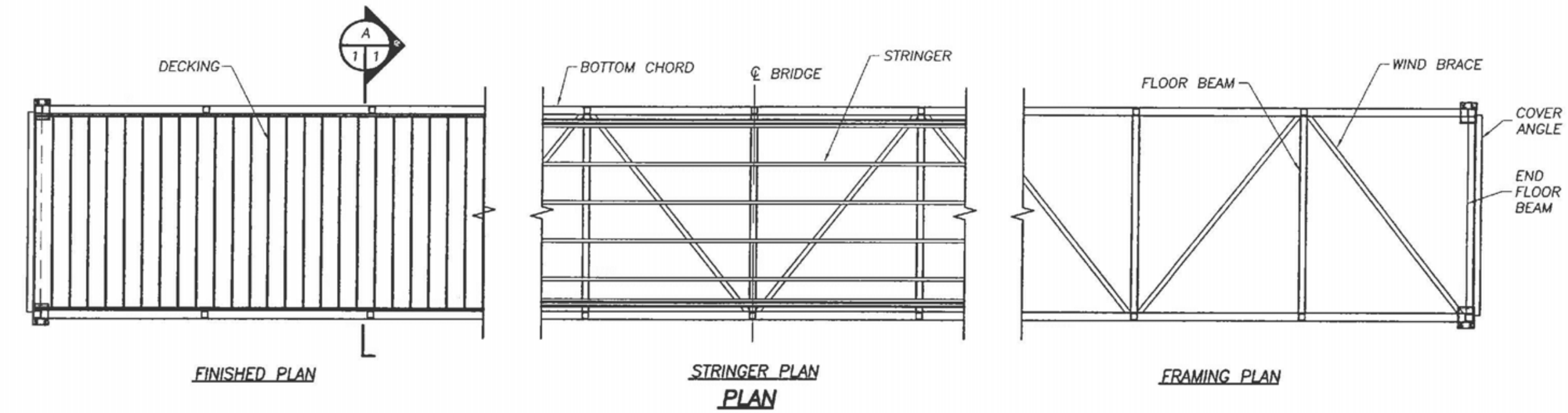
STORM DRAIN INLET PROTECTION

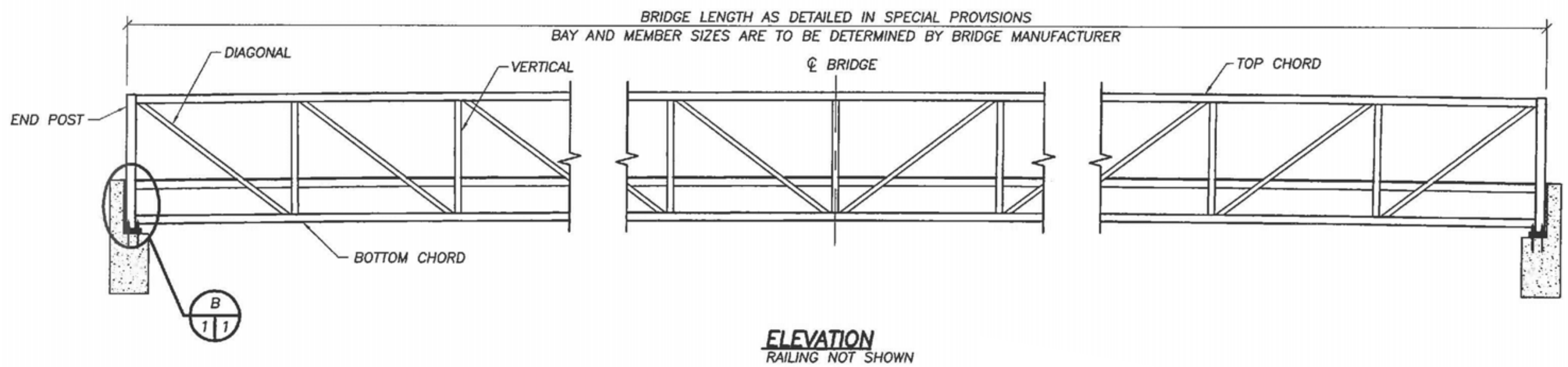
McMAHON
ENGINEERS ARCHITECTS
McMAHON ASSOCIATES, INC.
1445 McMAHON DRIVE NEENAH, WI 54956
Mailing: P.O.BOX 1025 NEENAH, WI 54957-1025
PH 920.751.4200 FX 920.751.4284 MCMGRP.COM

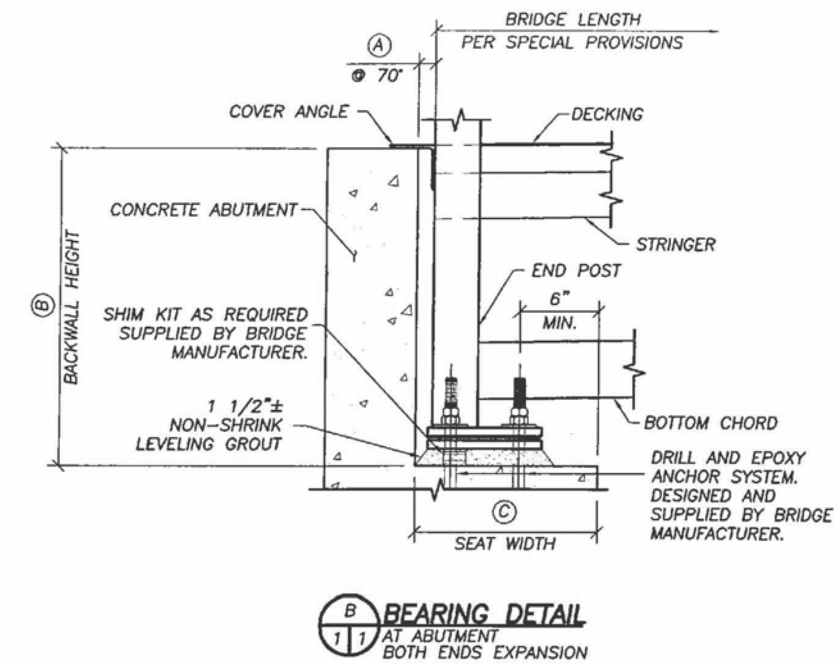
REVISION | DATE | NO.

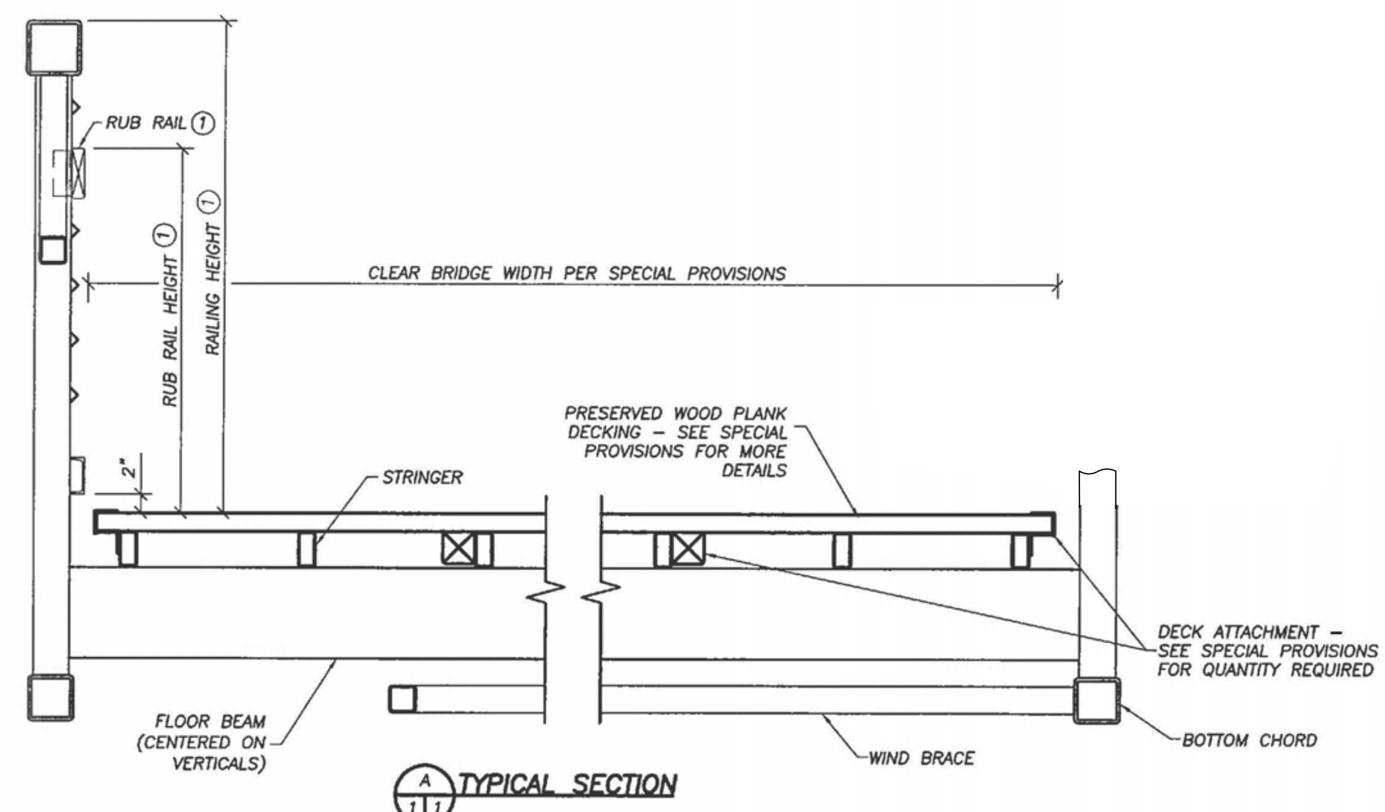
BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
EROSION & SEDIMENT CONTROL DETAILS

DESIGNED	DRAWN
AWS	JJJ
PROJECT NO.	
M0026 09-20-00716	
DATE	
JUNE 2023	
SHEET NO.	
13	









Wheeler
952-929-7854
info@wheeler1892.com
wheeler1892.com
9531 West 78th Stree
Suite 100
Minneapolis, MN 5534
Jake Silkey, PE | Wheeler
d. 262.229.4068 | jsilkey@wheeler1892.com

① RAILING REQUIREMENTS ARE TO BE AS DETAILED IN THE FOLLOWING SHEET

DRAWINGS ARE NOT TO SCALE

PEDESTRIAN BRIDGE DETAILS

McMAHON ENGINEERS ARCHITECTS
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

BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
PEDESTRIAN BRIDGE DETAIL

DESIGNED	DRAWN
AWS	JJJ

PROJECT NO. M0026 09-20-00716
DATE JUNE 2023
SHEET NO. 14

DESIGN/BUILD STEEL TRUSS RECREATION BRIDGE

PART 1 – GENERAL

1.01 SCOPE

A. The Contractor shall be responsible for designing, detailing, fabrication, delivery, construction and erection of the Steel Truss Recreation Bridge superstructure.
B. Substructures shall be constructed in accordance with the plans and specifications.

1.02 UNIT PRICES

A. Payment for "Design/Build Steel Truss Recreation Bridge" shall be compensation in full for all costs of design, supply, fabricating, and installation for steel recreation bridge superstructure.

1.03 REFERENCES

A. AASHTO LRFD Bridge Design Specifications, current edition and interims
B. AASHTO LRFD Guide Specifications for the Design of Pedestrian Bridges, current edition
C. American Wood Protection Association (AWPA) Standards, current edition
D. American Wood Council (AWC) National Design Specifications (NDS) for Wood Construction
E. American Institute for Timber Construction (AITC), Timber Construction Manual
F. American Welding Society (AWS), Structural Welding Code, D1.1, current edition
G. American Institute for Steel Construction (AISC), Steel Construction Manual, current edition

PART 2 - DESIGN

2.01 STEEL TRUSS RECREATION BRIDGE

A. Steel recreation bridge shall be "Pratt Steel Truss Recreation Bridge" as designed by Wheeler (Bridge Manufacturer). OR EQUAL
   Wheeler
   9531 W 78th St, Ste 100
   Minneapolis, MN 55344
   (952) 929-7854
   Email: info@wheeler1892.com
B. Bridge shall be of steel truss design with transverse timber deck plank.
C. Truss shall be parallel chord with Pratt diagonals. If the bridge has an odd number of bays the center bay shall have double diagonals.
D. The bridge cross-section shall be H-shaped with the floor beams connected to the truss verticals.
E. End truss verticals shall be plumb. Interior verticals shall be perpendicular to the bottom chord.
F. All members of the truss and deck system shall be fabricated from square/rectangular hollow structural sections (HSS), with the exception that floor beams may be wide flange (W) shapes. Open ends of end posts and floor beams shall be capped. Open shaped (non-tubular) stringers will be allowed only if adequate lateral or torsional bracing is provided. The timber deck and its attachments shall not be considered to brace the stringers.

2.02 DESIGN CODES

A. Design of bridge superstructure shall comply with AASHTO LFRD Bridge Design Specifications, the AASHTO LFRD Guide Specifications for Design of Pedestrian Bridges, supplemented by AISC, further supplemented by AWS D1.1 Structural Welding Code, as modified and further supplemented herein.
B. Structural members shall be designed in accordance with recognized engineering practices and principles.
C. Welded tubular truss connections shall meet the provisions of AISC Chapter K2: HSS-to-HSS Truss Connections.
D. If non-tubular floor beams are used, the floor beam to vertical connections shall be analyzed by treating the floor beam flanges as a pair of transverse plates and ignoring the floor beam web. The connections shall meet the applicable provisions of AISC Chapter K1: Concentrated Forces on HSS.
E. All welded tubular moment connections shall meet the provisions of AISC Chapter K3: HSS-to-HSS Moment Connections.
F. Unique connection types that are not directly addressed by the governing codes, such as unreinforced connections to the side of a beam web, shall be proven by finite element analysis or other rational design methods.

2.03 DIMENSIONS AND LOADINGS

A. Bridge dimensions:
   1. Bridge length = 200' As measured from end to end of the end posts. Bridge length shall be as a clear span.
   2. Clear bridge width = 12' As measured between inside faces of railing.
B. Bridge shall be cambered 1% of bridge length plus 100% of the full dead load deflection. Camber shall not exceed standards set forth by the Americans with Disabilities Act.
C. All dead loads, applied dead loads, live loads, and wind loads as specified in the AASHTO specification.
D. Live loads:
   1. 90 psf pedestrian load.
   2. Applied separate from to pedestrian load, AASHTO Standard H-Truck with a 20,000 LB (H-10). GVW positioned to produce the maximum load effect.
   3. Point Load = 1000 lbs plus 33% impact, applied at a single point.
   4. Lateral Wind Load = 35 psf on the full height of the bridge as if enclosed.
   5. Uplift Wind Load = 20 psf applied at the windward quarter point of the bridge width.
D. In addition to the load combinations specified by AASHTO, when bridge structural members support or serve as railing members, the bridge shall be designed for the simultaneous application of rail load plus dead load plus 50% of live load.
E. To resist warping forces, deck tie-down systems shall be designed to resist an uplift force of 500 lbs per plank per tie-down location, assuming wet service conditions.
F. Bearing elevations, structure depth, clearance and profile grade must conform to site conditions.

2.04 RAILING

A. Total rail height shall measure at least 46" above deck surface and meet AASHTO dimensional and structural requirements.
B. Top Chord make act as upper element of railing design and can be considered in the total rail height.
C. The orientation of the safety rail elements shall be horizontal.
D. Horizontal safety rails shall contain a 6" sphere up to 27" above the deck and contain an 8" sphere above 27-inches.
E. When horizontal safety rails are specified, a steel rub rail with 6" minimum nominal height, centered at 36" plus or minus 2" above the deck surface shall be included. Rub rails shall be designed per AASHTO as horizontal rails.
F. Railing shall include a 4" minimum steel toe rails located no more than 2" clear above the deck. Toe rails shall be designed per AASHTO as horizontal rails.

2.05 VIBRATION

A. The frequency of the first harmonic for the unloaded bridge shall be no less than 3.0 Hz except when the weight of the structure with no live load exceeds 180 x exp(-0.35xFreq).
B. The peak acceleration of the deck systems shall be limited to 5% gravity.
C. Peak acceleration shall be computed based on a constant force of 92 pounds, and a damping ratio of 0.01.
D. Peak acceleration in deck systems shall be computed with consideration of the combined effect of longitudinal components and floor beams.

2.06 DEFLECTION

A. Wind deflections of the truss, as measured at deck level, shall be limited to L/500.
B. Deflections in planks due to point or truck load shall be limited to L/300 or 0.1". Impact shall be included in deflection checks as applicable.
C. Deflection of the truss due to uniform live load shall be limited to L/500. The load may be reduced based on loaded area for the purpose of calculating truss deflection only to no less than 65 psf.
D. Deflections in longitudinal deck members due to uniform live load shall be limited to L/500.
E. No other service deflection limits need be considered.

2.07 FIELD SPLICES

A. Field splices shall be fully bolted slip critical connections, utilizing tension indicating washers. Tack welding of high strength hardware is prohibited.
B. Splices not immediately at or adjacent to panel points shall be designed for 100% of the member bending moment capacity for primary compression members, and 75% for bracing members or tension members subject to load reversal, including slip resistance, and slip resistance shall further meet the same AASHTO required strength as with other failure modes.

2.08 ANCHORAGES AND BEARINGS

A. Design and materials for connection of superstructure to substructure shall be included with the superstructure and compatible with substructure design.
B. Design the bridge for expansion and contraction with a temperature range of -40° F to 110° F.
C. Anchors shall be of the drilled type, installed with a chemical adhesive system, except that when design forces exceed the strength of typical chemical systems, cast-in-place anchors may be used. Anchor systems shall be designed and supplied by the Bridge Manufacturer.
D. Expansion bearings shall include teflon or stainless steel sliding surfaces per AASHTO or elastomeric pads. Consideration of dead load rotation is required in all cases.

PART 3 – MATERIALS

3.01 STRUCTURAL STEEL

A. Structural steel material shall be cold-formed welded and seamless high strength, low-alloy structural tubing with improved atmospheric corrosion resistance meeting the requirements of ASTM A847, and plates and structural shapes meeting the requirements of ASTM A588 with a minimum corrosion index of 6.0 per ASTM G101.
B. Minimum thickness of HSS members shall be 3/16". Minimum thickness for other rolled sections shall be 5/16", except the web thickness of rolled beams or channel shall not be less than 1/4" as per AASHTO. Railing members are not subject to minimum thickness requirements.

3.02 HARDWARE

A. Splices for truss members, bracing, and floor beams, when used, shall be made with ASTM A325 or A490 high strength bolts. Type III bolts shall be used with weathering steel. Other splices shall be made with the above mentioned material or ASTM A307.
B. All hardware (other than Type III high strength) shall be hot-dip galvanized in accordance with ASTM A153.
C. Anchor bolts shall conform to ASTM A307, A193, or F1554.

3.03 TRANSVERSE TIMBER DECK PLANK

A. Deck planks shall be nominal 3" (minimum). Species to be Douglas Fir-Larch. Other species will not be accepted.
B. Preservative treatment of lumber and timber shall be by the pressure process, and unless otherwise provided in the contract special provisions, be in accordance AWPA Standards and AASHTO Designation M 133.
C. Lumber and timber shall be pressure treated with Copper Naphthenate in AWPA P9 Type A Hydrocarbon Solvent with retentions to meet APWA UC4C. **Other preservatives will not be accepted.**
D. Unless otherwise directed by the Engineer the material shall be graded prior to treatment. Material shall be accepted after treatment on the basis of its condition prior to treatment, on the basis of inspection of the treatment procedure substantiated by plant records, on the condition of the material after treatment and on absorption, penetration and visual inspection.
E. If practicable, all adzing, boring, chamfering, framing, gaining, mortising, surfacing and general framing, etc., shall be done prior to treatment. If cut after treatment, coat cut surfaces according to AWPA M4.
F. All Douglas Fir and other species that are difficult to penetrate shall be incised prior to treatment.
G. Use of self-tapping steel screws will not be allowed for deck plank tie-down system.

3.04 OTHER MATERIALS

A. Cementitious non-shrink grout, when applicable, shall meet ASTM C-1107, 7000 psi minimum.
B. Materials not specified shall conform to applicable ASTM or AASHTO specifications.

PART 4 – SUBMITTALS

4.01 SEALED PLAN AND CALCULATIONS

A. A detailed bridge plan and supporting calculations sealed by a Professional Engineer registered in the State of Wisconsin and experienced in steel bridge design shall be submitted to the Owner after award of contract.
B. The bridge plan shall be unique and include all design details and all details necessary for the fabrication and installation of the bridge superstructure. Details of individual fabricated pieces are not required.
C. Structural calculations for the design of the bridge superstructure shall include complete design, analysis and code checks.

4.02 MATERIAL CERTIFICATION

A. Solid sawn timber members shall conform to the requirements of the grading rules agency for the species, type, and grade specified in the plans or special provisions. Glued-Laminated members shall have the trademarks of a third party inspection agency recognized by the International Accreditation Service, Inc. (IAS) for the combination, species, use, and appearance as specified in the plans or special provisions. A Grading Agency Certification is required on all timber material.
B. The manufacturer shall be regularly engaged in the production of the specified product or item and be able to furnish independent records or references of competence and satisfaction of this fact upon the request of the Owner.
C. All structural steel shall be melted and manufactured in the United States of America. Mill certifications must be provided for all heat numbers.

PART 5 – WORK PERFORMANCE

5.01 BRIDGE MANUFACTURER

A. Bridge Manufacturer shall be currently certified by the AISC to have the personnel, organization, experience, capability, and commitment to produce fabricated structural steel. Certification shall be maintained for Certified Bridge Fabrication – Intermediate (Major) with Fracture Critical Endorsement as set forth in the AISC Certification Program.
B. Bridge Manufacturer shall be a WISDOT preapproved "Prefabricated Steel Truss Pedestrian Bridge" supplier.
C. Manufacturer shall employ a registered professional engineer in the state of Wisconsin. Engineer shall reside within the state and shall be available to make site visits during construction.

5.02 WORKMANSHIP

A. Workmanship shall be first class throughout.
B. Deck planks shall be placed tight together with no gaps.
C. Deck tie-downs shall be provided at plank ends and intermediate points as required such that tie-down spacing does not exceed actual plank thickness multiplied by 50. Edge tie-downs shall be made with a continuous steel angle member above the planks.
D. Proper pre-drilling of holes for screws, nails, spikes, lags or bolts where necessary to avoid splitting of timber will be required.
E. Where water collection inside of structural tubing is possible during construction or service, weep holes shall be provided at low points.

5.03 WELDING

A. Welding and weld qualification tests shall conform to the provisions of AWS D1.1. The flux core arc welding (FCAW) process with similar weathering characteristics as the base material shall be used.
B. Welding operators shall be properly accredited experienced operators. Each shall have certification of satisfactorily passing AWS standard qualification test(s) and have demonstrated the ability to make acceptable welds of the type required.
C. Nondestructive weld testing is required. Testing will be performed by a qualified ASNT Level II Technician or greater and paid for by the Bridge Manufacturer. All welds are to be 100% visually inspected. Ten percent (10%) of all differing fillet and partial penetration welds shall be magnetic particle tested. For arch type bridges, 100% of end of top chord to bottom chord connections shall be tested. Full penetration shop welds shall be Ultrasonic tested in accordance with AWS D1.1; Section 6. Base material certifications are to be supplied by the material suppliers. Inspection test results shall be available on request.

5.04 ABRASIVE BLASTING

A. All structural steel shall be unpainted and self-weathering. All exposed surfaces, defined as those surfaces seen from the deck and from alongside the structure, shall be blast cleaned in accordance with SSPC: The Society for Protective Coatings Specifications, latest edition, (SSPC - SP 7) Brush-Off Blast Cleaning.

5.05 DELIVERY

A. Materials to be available for delivery to jobsite within 12-14 weeks after approval of plan.
B. The Contractor shall coordinate with the Bridge Manufacturer in the delivery and erection schedule.
C. Delivery to the job site will be by trucks by means of good haul roads unless specified otherwise.
D. The Bridge Manufacturer shall provide detailed, written instruction procedures for proper lifting and splicing of bridge components. Instructions shall be considered typical. Actual means and methods of erection and installation may warranty site specific considerations and shall be the responsibility of the Contractor.

PART 6 – PRE-BID APPROVAL

6.01 REQUIREMENTS

A. Manufacturers other than those listed in this specification shall submit the following items 7 days prior to the bid date to be eligible for award:
   a. List of 10 references of projects in the state of Wisconsin similar in scale. List shall include project name, owner contact information, year built and bridge details.
   b. Copy of AISC Certification Resume of staff employed by manufacturer and registered as a professional engineer in the state of Wisconsin. Engineer shall reside within the state and shall be available to make site visits during construction.

McMAHON
ENGINEERS ARCHITECTS
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

BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
PEDESTRIAN BRIDGE SPECIFICATIONS

DESIGNED	DRAWN
AWS	JJJ

PROJECT NO. M0026 09-20-00716
DATE JUNE 2023
SHEET NO. 15

KAYAK LAUNCH AND RAMP DETAILS:

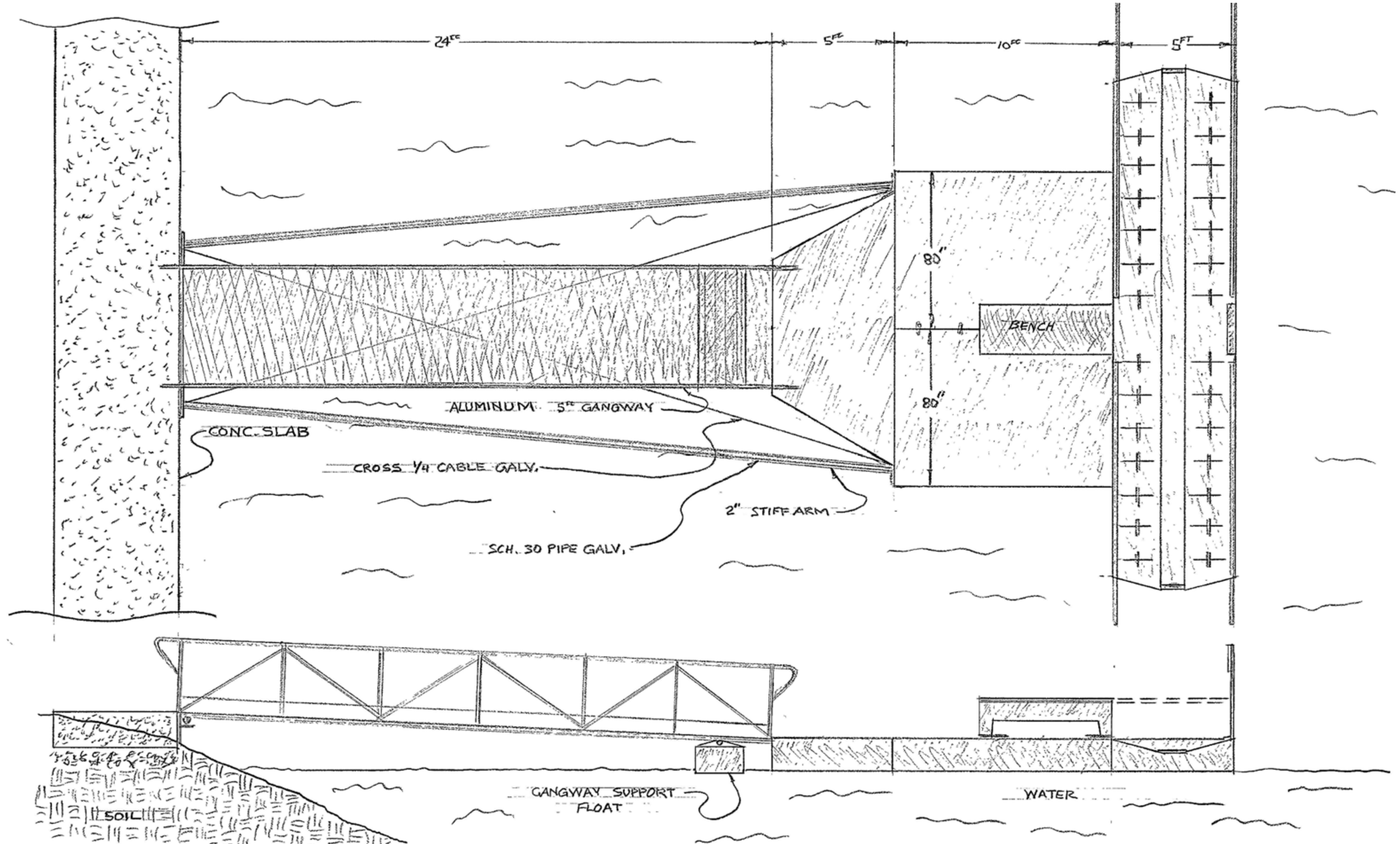
1. THE KAYAK LAUNCH SHALL BE THE EZ LAUNCH®, DRIVE THROUGH ADA WITH TRANSFER BENCH (OR APPROVED EQUAL).

2. THE RAMP AND SYSTEM DETAILS SHALL BE AS SHOWN IN THE PLAN AND PROFILE SHOWN ON THIS SHEET (OR SIMILIAR PLAN IF ACCEPTED BY THE CITY)..

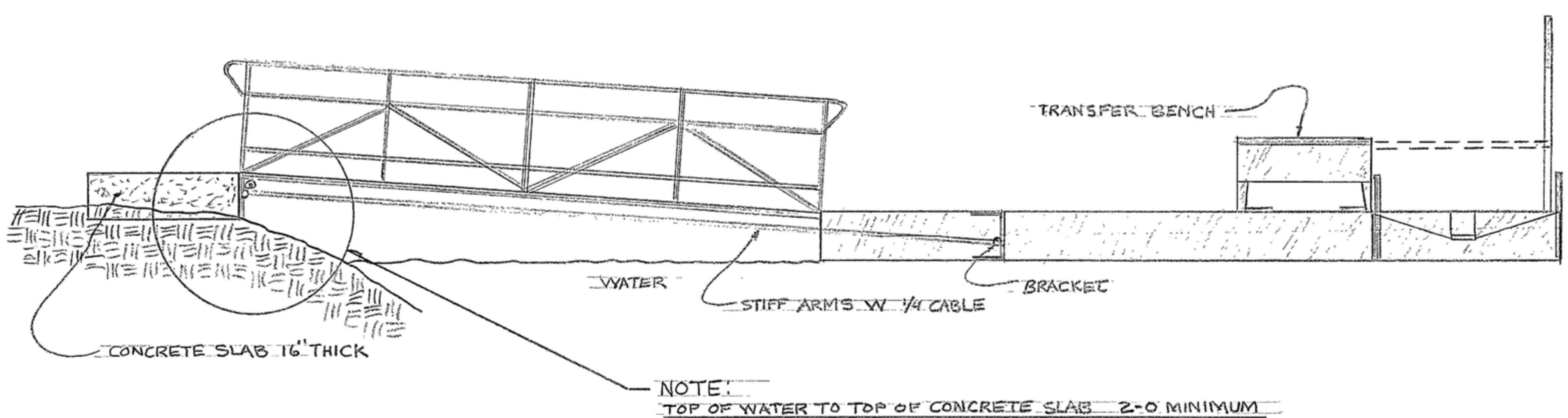
3. RAMP AND LAUNCH SHALL BE INSTALLED ACCORDING TO MANUFACTURER RECOMMENDATIONS.

4. THE ATTACHED DETAIL DRAWING WAS PROVIDED BY BADGER DOCKS, LLC AND MAY CONTACTED FOR MORE INFORMATION, IF NECESSARY:

JIM CAMMARATA
(262) 305-9735
W208 N16761 S CENTER ST
JACKSON, WI 53037
badgerdocks@yahoo.com



PLAN VIEW



PROFILE VIEW

McMAHON
ENGINEERS ARCHITECTS
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

BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
KAYAK LAUNCH DETAILS

DESIGNED	DRAWN
AWS	JJJ

PROJECT NO.
M0026 09-20-00716

DATE
JUNE 2023

SHEET NO.
16

LIGHTING SYSTEM DETAILS:

1. PROVIDE (2) 120/240V, 100-AMP OUTDOOR RATED ELECTRICAL SERVICES MOUNTED TO TREATED WOOD BACKBOARDS, ONE NEAR REED AVE. AND ONE NEAR BAYSHORE DRIVE.

2. PROVIDE AND INSTALL (29) LIGHT BOLLARDS PER THE SHOWN LIGHTING PLAN. BOLLARDS SHALL BE "BOL" (TM) AS SHOWN ON THE FOLLOWING PLAN SHEET

3. PROVIDE TRENCHING AND IN GROUND CONDUIT FOR THE BOLLARD POWER FEEDS.

4. PROVIDE BORING UNDER A SMALL SECTION OF WETLAND PER PLAN.

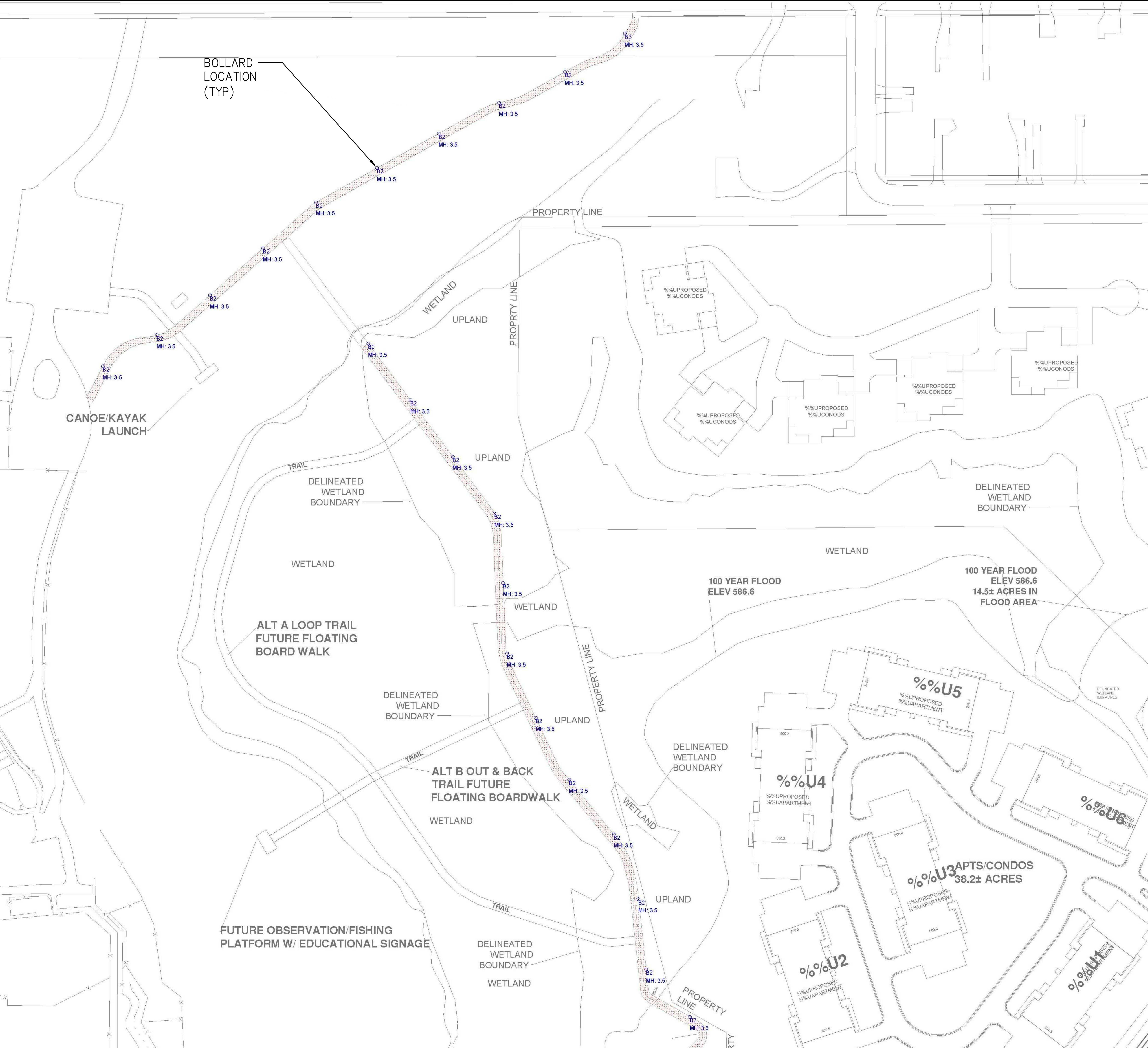
5. PROVIDE AN IN-GROUND CONCRETE BASE FOR EACH BOLLARD.

6. PROVIDE TIME CLOCK AND PHOTO EYE FOR CONTROL AT EACH ELECTRICAL SERVICE LOCATION.

7. PROVIDE LOCKABLE SERVICE GFCI RECEPTACLE AT EACH ELECTRICAL SERVICE BACKBOARD.

8. THE ATTACHED DRAWING AND DETAILS WAS PROVIDED BY HUBBARTT ELECTRIC, INC AND MAY CONTACTED FOR MORE INFORMATION, IF NECESSARY:

JASON NAIDL
HUBBARTT ELECTRIC, INC.
(920) 973-0744
4315 EXPO DRIVE
MANITOWOC, WI 54220
jnaidl@hubbarttelectric.com



Luminaire Schedule

Qty	Label	Arrangement	LLF	MFR	Description	Lum. Watts	Total Watts	Lum. Lumens
29	B2	SINGLE	0.950		BOL-2500-XX-U-D	26	754	2500

McMAHON ENGINEERS ARCHITECTS
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

REVISION | DATE | NO.

BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
LIGHTING PLAN

DESIGNED	DRAWN
AWS	JJJ

PROJECT NO. M0026 09-20-00716

DATE JUNE 2023

SHEET NO. 17

INDOOR

ENTERPRISE Lighting & Control

Date:	
Project Name:	
Sku #:	

BOL™
Bollard

3 CCT

APPLICATIONS

Residential, Commercial, Pedestrian Walkways, Pathways

FEATURES

Construction
- Extruded 6061 Aluminum Alloy Body with Die-cast Top Heatsink

Finish
- Dark Bronze [Standard]
- White*
- Black*
- Corrosion Resistance Polyester Power Coating

Electrical & Technical
- Input Voltage: 120-277V
- Input Frequency: 50/60Hz
- Projected Life: L70 > 50,000 hrs
- PF: >0.9
- CRI: 80
- THD: <20%
- CCT Selectable: 3000K/4000K/5000K
- Operating Temp.: -40°F~104°F
- IP Rating: IP65
- 8W Emergency Battery Backup [Option] [Factory Installed]

Optical
- Frosted Diffused Lens
- Uniformed 360° Distribution

Installation/Mounting
- Mounting includes steel bollard base and anchor bolts for sturdy installation.

Controls
- 0-10V Dimming

Lumen Output
- 26W: 3100lm [5000K]

Warranty
- 5 Year Warranty
See warranty documentation for more information.

IP65 cULus LISTED

ORDERING INFORMATION — EXAMPLE: BOL-2500-C-U-D-D

Series		CCT	Input Voltage	Controls	Finish	Emergency Battery Backup Driver Option
BOL						
BOL	2500	C - 3000K/4000K/5000K	U - 120-277V	D - 0-10V Dimming	D - Dark Bronze B - Black* W - White*	EM - Emergency Battery Backup Driver

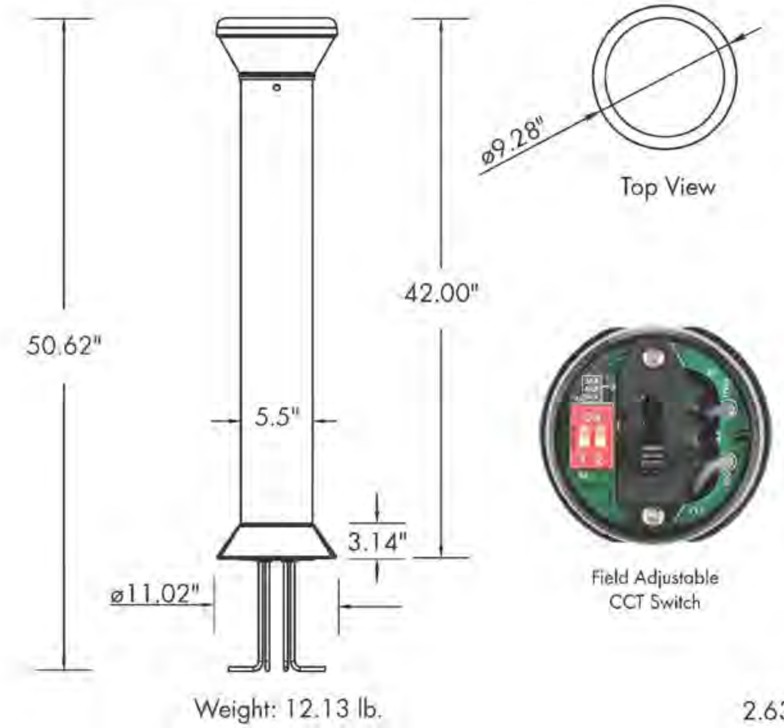
Specifications & dimensions subject to change without notice.
*MOQ & longer lead times may apply, please contact customer service for more information.

INDOOR

ENTERPRISE Lighting & Control

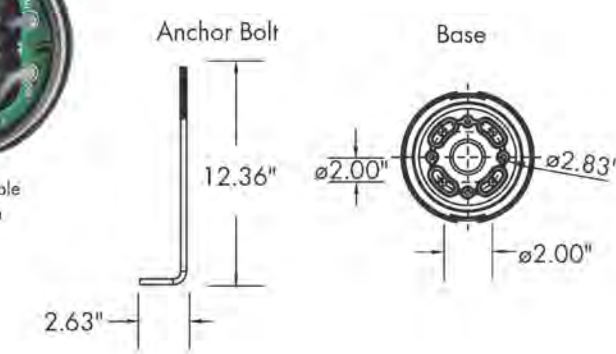
BOL
Bollard

DIMENSIONS



ACCESSORIES INCLUDED:

Mounting Type	Accessory	Quantity
	Bollard Base	1
	M8-SS Nuts	4
	Anchor Bolts	4
	Spring Washer	4
	Round Screw Washer	4



LUMEN OUTPUT

SKU	Wattage (W)	Delivered Lumens (lm) (3000K)	Efficacy (lm/W)	Delivered Lumens (lm) (4000K)	Efficacy (lm/W)	Delivered Lumens (lm) (5000K)	Efficacy (lm/W)
BOL-2500-C-U-D-D	26	2800	96	3000	115	3100	119

ELECTRICAL LOAD

Wattage (W)	Current (A) Input Voltage 120V	208V	240V	277V
26	0.22	0.13	0.11	0.09

Specifications & dimensions subject to change without notice.
*MOQ & longer lead times may apply, please contact customer service for more information.

McMAHON ENGINEERS ARCHITECTS
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

BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
LIGHTING DETAILS

DESIGNED	DRAWN
AWS	JJJ
PROJECT NO.	M0026 09-20-00716
DATE	JUNE 2023
SHEET NO.	18

OUTLINE SPECIFICATIONS

GENERAL:

1. VERIFY ALL DIMENSIONS, ELEVATIONS, SECTIONS AND DETAILS BETWEEN THE PLANS PRIOR TO STARTING WORK. NOTIFY ENGINEER OF ANY DISCREPANCIES OR INCONSISTENCIES.
2. PROVIDE ALL NECESSARY TEMPORARY BRACING, SHORING, GUYING, OR OTHER MEANS TO AVOID EXCESSIVE STRESSES AND TO HOLD STRUCTURAL ELEMENTS IN PLACE DURING CONSTRUCTION.
3. SUBMIT SHOP DRAWINGS FOR ALL PRE-FABRICATED ITEMS SUCH AS REINFORCING STEEL AND ACCESSORIES, DRIVEN PILES, BRIDGE FRAMING, AND CONCRETE MIX DESIGNS. CONTRACTOR SHALL REVIEW SHOP DRAWINGS BEFORE SUBMITTING TO ENGINEER. FABRICATE ITEMS AFTER REVIEW BY ENGINEER.
4. JOBSITE SAFETY IS THE CONTRACTOR'S RESPONSIBILITY.
5. CONTRACTOR SHALL CONFORM WITH ALL OSHA REGULATIONS.
6. THE ENGINEER IS NOT RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION OR THE SAFETY OF THE JOB SITE. THESE RESPONSIBILITIES ARE INTENDED TO REMAIN SOLELY THOSE OF THE CONTRACTOR.
7. ALL MATERIAL INSTALLATIONS SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS.
8. THE STRUCTURAL PLANS AND DETAILS HAVE NOT BEEN INVESTIGATED FOR POTENTIAL ERECTION AND CONSTRUCTION LOADS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY INVESTIGATION OF THE STRUCTURAL FRAMING FOR ERECTION OR CONSTRUCTION LOADS.
9. WHEN REFERENCED IN THE PLANS AND DETAILS, THE FOLLOWING POST-INSTALLED ANCHORS SHALL BE PERMISSIBLE. CONTRACTOR SHALL SUBMIT SUBSTITUTION REQUEST FOR ANY ALTERNATE POST-INSTALLED ANCHORS.
   - A. ADHESIVE /EPOXY ANCHORS
     - a. HILTI: HY200, HY 150 MAX
     - b. POWERS: AC100+ GOLD
   - B. EXPANSION ANCHORS
     - a. HILTI KWIK BOLT TZ
     - b. POWERS: POWERS-STUD+ SD2

FOUNDATION:

1. SEE GEOTECHNICAL REPORT PREPARED BY #00941409 BY INTERTEK PSI, DATED JUNE 2 2021.
2. CONTRACTOR SHALL OBTAIN A GEOTECHNICAL ENGINEER TO INSPECT SUB-GRADE AFTER EXCAVATION TO VERIFY SOIL BEARING PRESSURES. AT THE DIRECTION OF THE GEOTECHNICAL ENGINEER, REMOVE UNSATISFACTORY SOILS TO AN ELEVATION WHERE SATISFACTORY SOIL IS ENCOUNTERED. REPLACE UNSATISFACTORY SOIL w/ EITHER COMPACTED STRUCTURAL FILL OR CONCRETE SLURRY – SEE GEOTECHNICAL REPORT.
3. PLACE FOUNDATION CONCRETE ON CLEAN FIRM BEARING SOIL MATERIAL.
4. WALL FOOTINGS ARE CENTERED ON WALLS (U.N.O.).
5. MINIMUM DEPTH TO ALL EXTERIOR FOOTINGS SHALL BE 4'-0" BELOW GRADE.
6. CONTRACTOR TO CONSULT WITH LOCAL AUTHORITIES PRIOR TO EXCAVATION TO LOCATE UNDERGROUND GAS, SEWER, WATER, AND ELECTRICAL OBSTACLES.
7. STRUCTURAL FILL
   - LOCATION: ALL BACKFILL WITHIN 5'-0" OF THE BUILDING LINES, BELOW STRUCTURAL FOUNDATIONS, AND BEHIND RETAINING WALLS WITHIN A WEDGE EXTENDING UPWARDS 45 DEGREES FROM THE BACK FACE OF RETAINING WALL FOOTINGS.
   - TYPE: PREDOMINANTLY WELL GRADED GRANULAR MATERIAL. UNLESS MORE STRINGENT REQUIREMENTS ARE SPECIFIED BY THE PROJECT GEOTECHNICAL ENGINEER, PROVIDE MATERIAL WITH 100% PASSING THE 3" SIEVE, 70-100% PASSING THE #4 SIEVE AND LESS THAN 15% PASSING THE #200 SIEVE.
   - COMPACTION: UNLESS MORE STRINGENT REQUIREMENTS ARE SPECIFIED BY THE PROJECT GEOTECHNICAL ENGINEER, COMPACT TO 95% MODIFIED PROCTOR (ASTM: D1557) PLACED IN LIFTS NOT TO EXCEED 8".

10. BACKFILLING AGAINST BOTH SIDES OF WALLS SHALL BE DONE AT THE SAME RATE TO PREVENT STRESS AND OVERTURNING OF FOUNDATION WALLS.
11. ALL EARTHWORK WITH ON-SITE MATERIALS SHOULD BE PERFORMED WHEN TEMPERATURES ARE ABOVE FREEZING. FROZEN SOIL SHOULD NOT BE USED BENEATH STRUCTURES. ALL FOUNDATION EXCAVATION MUST BE INSULATED AGAINST FREEZING UNTIL CONSTRUCTION OF FOUNDATION IS COMPLETE.
12. SOILS THAT BECOME RUTTED OR DISTURBED BY CONSTRUCTION VEHICLES WILL BE UNSUITABLE FOR SUPPORTING FOUNDATION AND CONCRETE SLABS. THE SOILS SHALL BE REMOVED AND REPLACED WITH COMPACTED STRUCTURAL FILL.
13. NO SOIL DISTURBANCES, HOLES, OR TRENCHES ARE PERMITTED BELOW FOOTINGS, WITHIN A WEDGE EXTENDING DOWNWARDS 45 DEGREES FROM THE BOTTOM EDGE OF THE FOOTING. FOOTINGS SHALL BE STEPPED DOWN AS REQUIRED TO AVOID SUCH DISTURBANCES.

PILE FOUNDATIONS:

1. ALL PILES SHALL BE HP10x42 GR. 36.
2. PILES SHALL BE DRIVEN TO A DEPTH TO ACHIEVE A 20 TON MINIMUM ALLOWABLE LOAD BEARING CAPACITY. THE PILE CAPACITY SHALL BE DETERMINED BY ACCEPTABLE DRIVING FORMULA ESTABLISHED BY A GEOTECHNICAL ENGINEER REGISTERED IN WISCONSIN BASED ON THE PILE HAMMER AND SECTION USED.
3. A GEOTECHNICAL ENGINEER REGISTERED IN WISCONSIN SHALL BE ON SITE FULL-TIME TO MONITOR PILE DRIVING OPERATIONS, DOCUMENT PILE PLUMBNESS, RESISTANCE TO DRIVING, PILE LENGTH, AND FINAL TIP ELEVATIONS. SUBMIT DRIVING RESULTS FOR EACH PILE TO ENGINEER FOR APPROVAL.
4. PILES SHALL BE ASSUMED TO BE DRIVEN TO SOUND BEARING CONDITIONS, APPROXIMATELY 70'-0" BELOW GRADE. CONTRACTOR SHALL PROVIDE A UNIT COST PER FOOT OF PILE INSTALLATION (BASED ON PILE LENGTHS ESTABLISHED BY GEOTECHNICAL ENGINEER). ADDITIONAL COSTS FOR LONGER PILE LENGTHS WILL BE DETERMINED.
5. NOTIFY ADJACENT AND AFFECTED LAND OWNERS AND BUILDING OCCUPANTS WITH SEVEN (7) DAYS NOTICE BEFORE DRIVING PILES.
6. ONLY ONE WELDED SPLICE PER PILE WILL BE PERMITTED. MAKE SPLICES BEFORE STARTING DRIVING OPERATIONS WHEREVER POSSIBLE. IF A WELDED SPLICE IS REQUIRED DURING DRIVING OPERATIONS, MAKE SPLICE WHEN TOP OF DRIVEN PILE PORTION IS AT LEAST 3'-0" ABOVE GROUND. SPLICES SHALL BE FULLY BUTT WELDED, PRODUCING STRAIGHT PILE ALIGNMENT THROUGH SPLICE AND DEVELOPING FULL STRENGTH IN BOTH BEARING AND BENDING.
7. TOLERANCES
   - LOCATION: 6" INCHES FROM INDICATED CENTER OF GRAVITY OF EACH PILE IN A GROUP, 1 INCH FOR FOR PILES UNDER GRADE BEAMS.
   - PLUMBNESS: MAINTAIN 1 INCH IN 10'-0" FROM VERTICAL AND A MAXIMUM OF 4 INCH, MEASURED WHEN PILE IS ABOVE GROUND IN LEADS.
   - STOP CUT OFF ELEVATION: MAXIMUM 1/2" INCH FROM ELEVATION INDICATED
8. PROTECT STRUCTURES, UNDERGROUND UTILITIES, AND OTHER CONSTRUCTION FROM DAMAGE CAUSED BY PILE DRIVING OPERATIONS. THE VIBRATIONS ASSOCIATED WITH THE INITIAL PILE DRIVING SHOULD BE CAREFULLY MONITORED. THE CONDITION OF ALL EXISTING STRUCTURES SHALL BE CAREFULLY DOCUMENTED PRIOR TO THE TIMES PILES ARE INSTALLED TO DETECT ANY DETRIMENTAL EFFECTS OF VIBRATION.
9. ANY PILE WHICH IS DEEMED UNACCEPTABLE DUE TO MIS-LOCATION AND/OR INSUFFICIENT CAPACITY WILL BE REPLACED.
10. FOR FURTHER INFORMATION, SEE GEOTECHNICAL REPORT PREPARED BY #00941409 BY INTERTEK PSI, DATED JUNE 2 2021.

CAST IN PLACE CONCRETE:

1. CONCRETE AND ITS PLACEMENT SHALL BE IN ACCORDANCE WITH ACI 318, ACI 301, AND THE PROJECT SPECIFICATIONS, EXCEPT AS MODIFIED BELOW. PROTECT ALL CONCRETE IN ACCORDANCE WITH ACI STANDARDS FOR HOT & COLD WEATHER CONCRETING.
2. STANDARD WEIGHT CONCRETE SHALL COMPLY WITH THE FOLLOWING:
   - A. MINIMUM COMPRESSIVE STRENGTH (AT 28 DAYS) – 4,000 PSI
   - B. MAXIMUM WATER/CEMENT RATIO – .45 (AIR ENTRAINED) – .52 (NON-AIR ENTRAINED)
   - C. MAXIMUM AGGGREGATE SIZE – 3/4" (TYPICAL) – 1 1/2" (FOOTINGS GREATER THAN 12" THICK)
   - D. TOTAL AIR CONTENT – 6%±1 1/2% (3/4" AGGREGATE) – 5%±1 1/2% (1 1/2" AGGREGATE)
   - E. MAX SLUMP – 3" (TYPICAL)
   - F. REINFORCING BARS: PROVIDE DEFORMED BARS COMPLYING WITH ASTM A615 GRADE 60.
   - G. WELDED WIRE FABRIC: ASTM A195 COLD DRAWN STEEL PLAIN.
   - H. NO ADMIXTURES WITHOUT REVIEW FROM ENGINEER. ADMIXTURES CONTAINING CHLORIDES SHALL NOT BE USED.
3. ALL CONCRETE SHALL BE AIR ENTRAINED (U.N.O.). FOOTINGS BELOW THE FROST DEPTH LINE AND INTERIOR CONCRETE PROTECTED FROM FREEZING & ENVIRONMENTAL EFFECTS MAY BE NON-AIR ENTRAINED, AT CONTRACTOR'S OPTION.
4. CONCRETE COVERAGE FOR REINFORCING (U.N.O.):
   - A. UNFORMED CONCRETE IN CONTACT WITH EARCH – 3"
   - B. FORMED CONCRETE IN CONTACT WITH EARTH – 2"
   - C. OTHER CONCRETE – 1 1/2"
5. LAP SPLICES SHALL BE AS FOLLOWING BAR DIAMETERS UNLESS NOTED OTHERWISE ON DRAWINGS. LOCATE SPLICES AT POINT OF MINIMUM STRESS. WELDED SPLICES ARE NOT PERMITTED.
   - A. ALL REINF. EXCEPT FOR THAT NOTED IN 4B.

REINFORCEMENT	LAP LENGTH IN BAR DIAMETERS
#3 THROUGH #6	38
#7 THROUGH #11	48

   - B. HORIZONTAL REINFORCEMENT SO PLACED THAT MORE THAN 12 INCHES OF CONCRETE IS CAST BELOW THE REINFORCEMENT (I.E. HORIZONTAL WALL REINFORCEMENT AND TOP BEAM REINFORCEMENT)

REINFORCEMENT	LAP LENGTH IN BAR DIAMETERS
#3 THROUGH #6	50
#7 THROUGH #11	62

   - C. WELDED WIRE FABRIC – MESH SPACE +2".

6. COMPLY WITH ACI 301. POSITION, SUPPORT AND SECURE REINFORCEMENT AGAINST DISPLACEMENT, LOCATE AND SUPPORT WITH METAL CHAIRS, RUNNERS, BOLSTERS, SPACERS, AND HANGERS, AS REQUIRED. SET WIRE TIES SO ENDS ARE DIRECTED INTO CONCRETE, NOT TOWARD EXPOSED CONCRETE SURFACES.
7. PROVIDE DOWELS OF SAME SIZE AND SPACING AS VERTICAL WALL OR COLUMN REINFORCING, WITH STANDARD HOOKS, AT THE FOUNDATION (U.N.O.).
8. MAXIMUM FREE DROP OF ALL CONCRETE = 2'-0".
9. CONCRETE CAN ONLY BE PLACED ON A FROST-FREE SUBGRADE
10. MECHANICALLY VIBRATE ALL CONCRETE.
11. PROVIDE A 3/4"x3/4" CHAMFER ON ALL EXPOSED CORNERS OF CONCRETE, UNLESS CONCRETE IS ADJACENT TO GRATING.
12. ALL CAST-IN-PLACE CONCRETE SHALL BE PROTECTED AGAINST RAPID DRYING AND MUST BE KEPT MOIST FOR A MINIMUM OF (7) DAYS FOR NOMINAL CONCRETE.
13. AT LEAST 24 HOURS SHALL PASS BETWEEN POURING ADJACENT CONCRETE SECTIONS BETWEEN CONSTRUCTION JOINTS.
14. CONCRETE FIELD TESTS FOR SLUMP, AIR CONTENT, YIELD AND STRENGTH SHALL BE CONDUCTED BY A CERTIFIED CONCRETE TECHNICIAN IN ACCORDANCE WITH ACI 301. TESTS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW.

McMAHON
ENGINEERS | ARCHITECTS
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

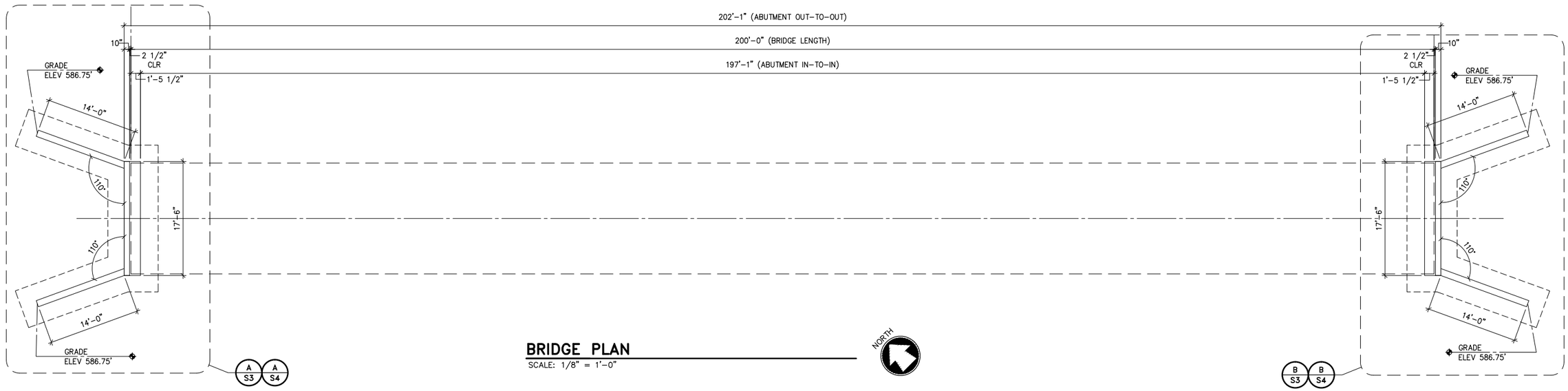
NO.	DATE	REVISION

BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
SPECIFICATIONS

DESIGNED	DRAWN
DJB	GYV

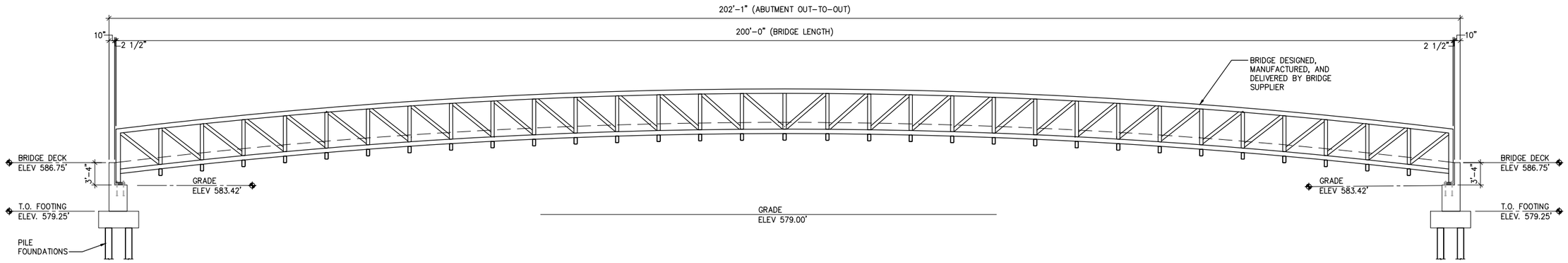
PROJECT NO. M0026 09-20-00716
DATE JUNE 2023
SHEET NO. S1

gschmidt, W:\PROJECTS\M0026\92000716\CADD\ACAD\S1 SPECIFICATIONS.dwg, Plot Date: 3/18/2024 1:52 PM, xrefs:none



BRIDGE PLAN

SCALE: 1/8" = 1'-0"



NOTE:
CONTRACTOR SHALL COORDINATE ALL DIMENSIONS, ELEVATIONS AND CONDITIONS BETWEEN BRIDGE SUPPLIER AND FIELD CONDITIONS PRIOR TO POURING CONCRETE FOUNDATIONS.

BRIDGE ELEVATION (LOOKING NORTHEAST)

SCALE: 1/8" = 1'-0"

McMAHON
ENGINEERS ARCHITECTS
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

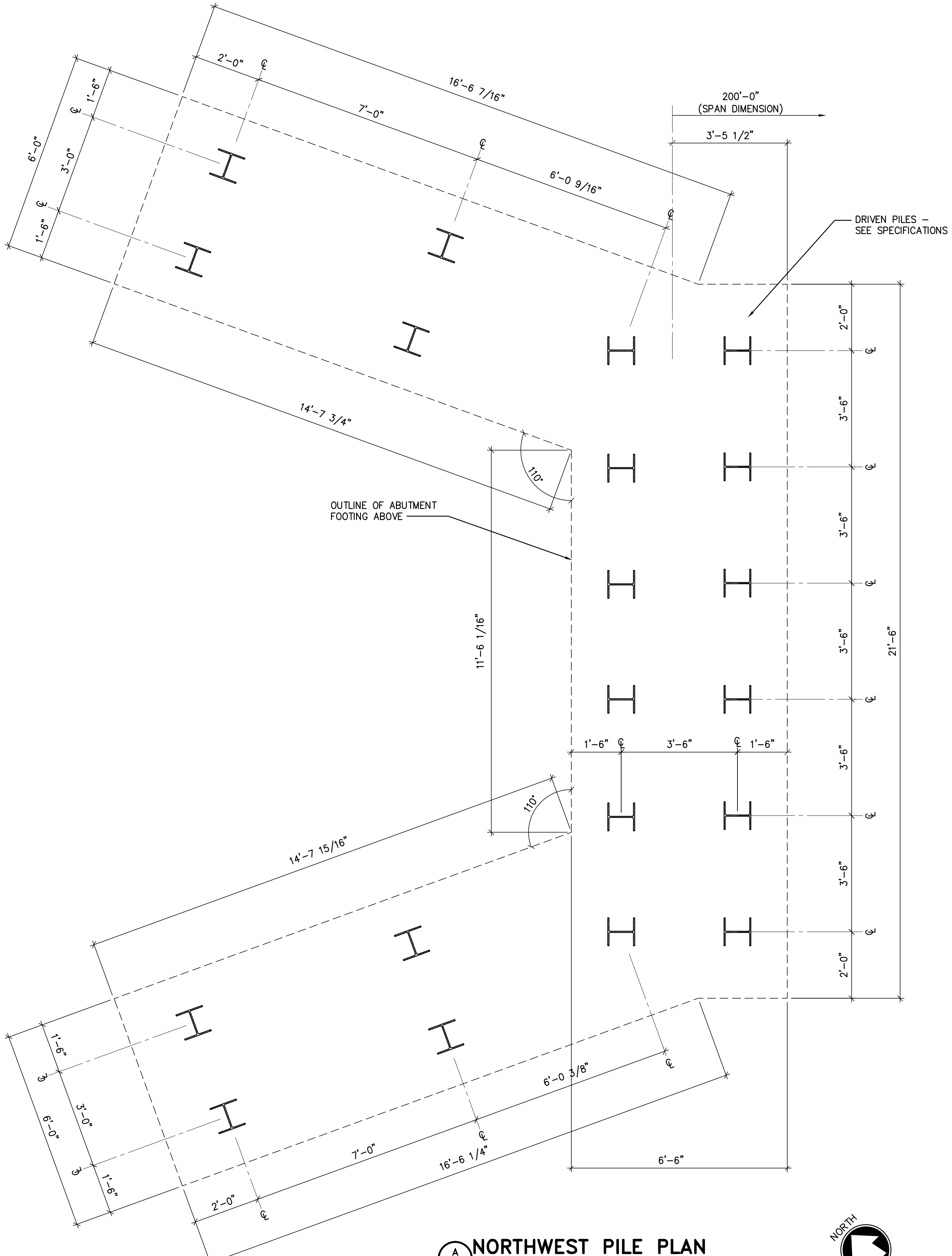
BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
BRIDGE PLAN & ELEVATION

DESIGNED	DRAWN
DJB	GYV

PROJECT NO.
M0026 09-20-00716

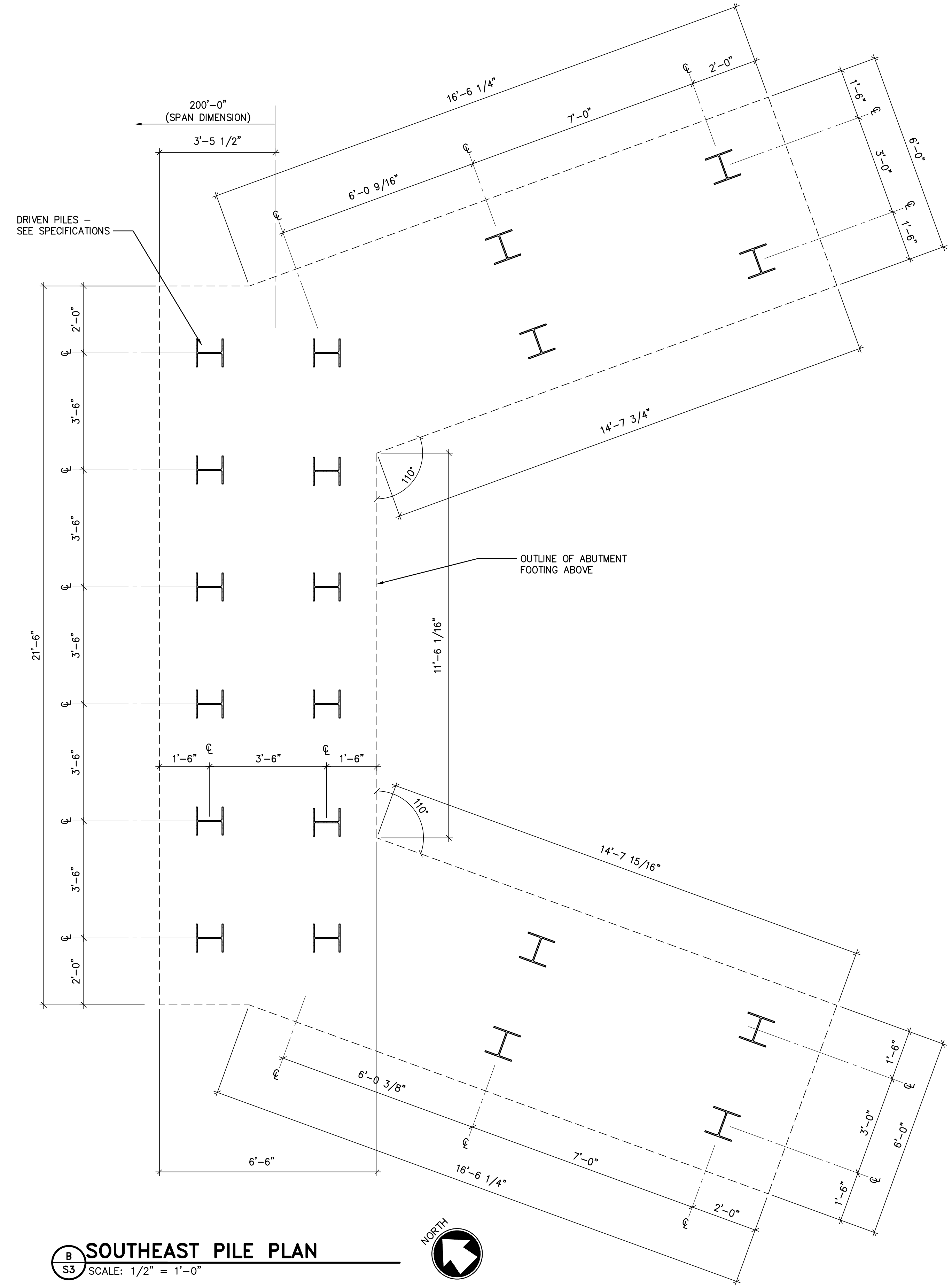
DATE
JUNE 2023

SHEET NO.
S2



A
S3
NORTHWEST PILE PLAN
SCALE: 1/2" = 1'-0"

NORTH



B
S3
SOUTHEAST PILE PLAN
SCALE: 1/2" = 1'-0"

NORTH

NOTE: VERIFY ALL BRIDGE FOUNDATION DIMENSIONS & ELEVATIONS w/ BRIDGE SUPPLIER.

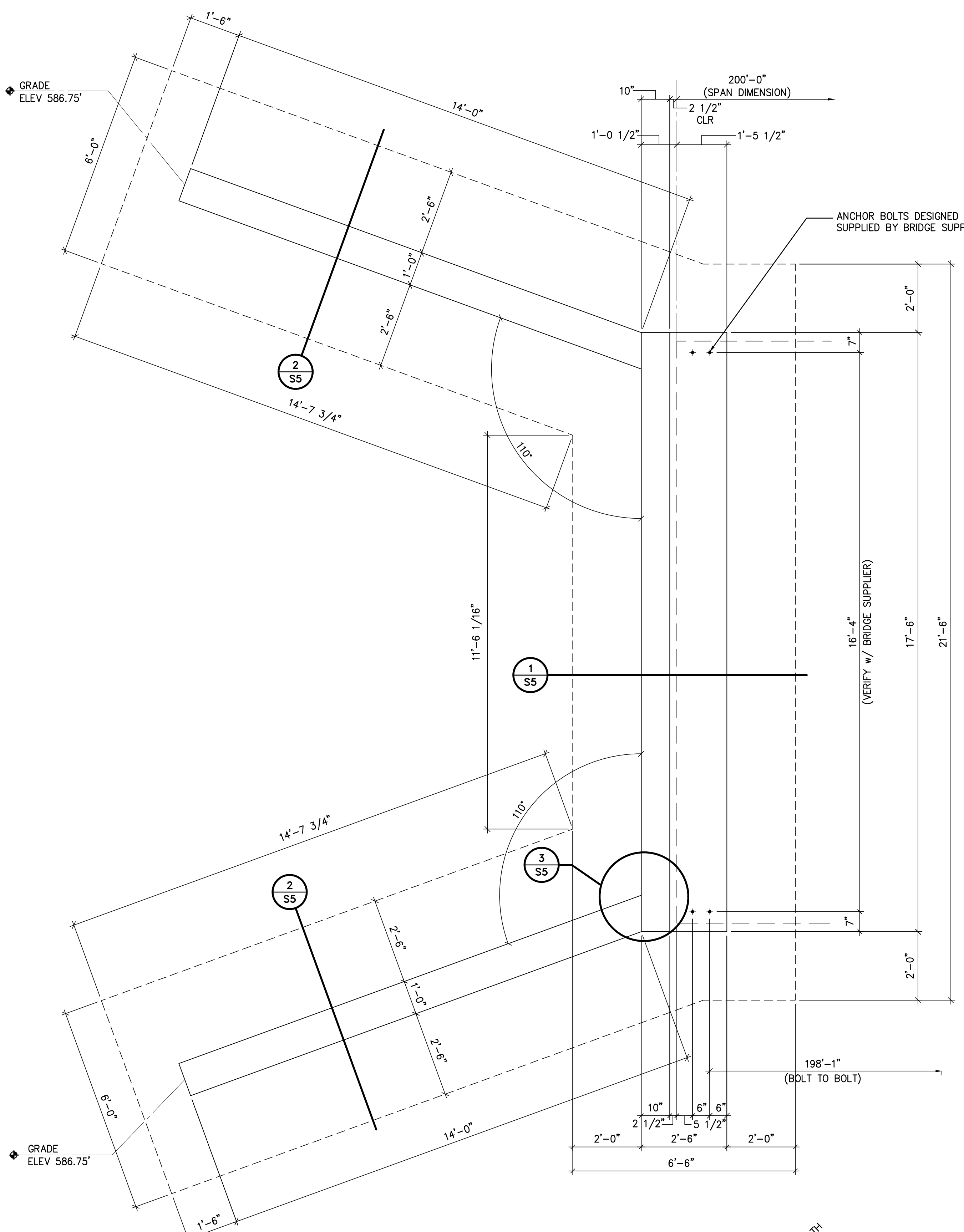
McMAHON
ENGINEERS ARCHITECTS
McMAHON ASSOCIATES, INC.
1445 McMAHON DRIVE NEENAH, WI 54956
Mailing: P.O.BOX 1025 NEENAH, WI 54957-1025
PH 920.751.4200 FX 920.751.4284 MCMGRP.COM

NO.	DATE	REVISION

BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
PILE FOUNDATION PLANS

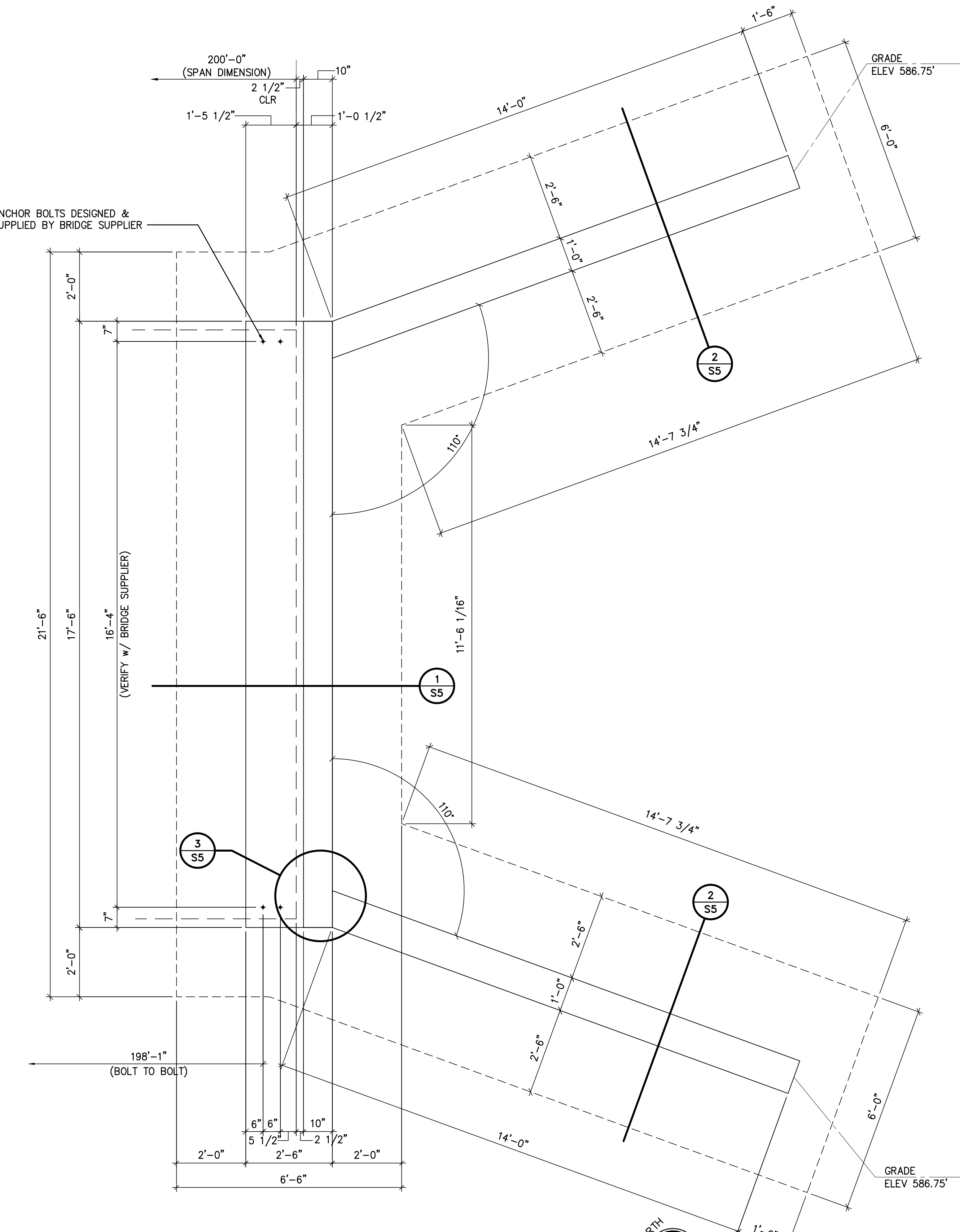
DESIGNED	DRAWN
DJB	GYV

PROJECT NO. M0026 09-20-00716
DATE JUNE 2023
SHEET NO. S3



A/S4 NORTHWEST ABUTMENT PLAN
SCALE: 1/2" = 1'-0"

NORTH



B/S4 SOUTHEAST ABUTMENT PLAN
SCALE: 1/2" = 1'-0"

NORTH

NOTE: VERIFY ALL BRIDGE FOUNDATION DIMENSIONS & ELEVATIONS w/ BRIDGE SUPPLIER.

McMAHON
ENGINEERS ARCHITECTS

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

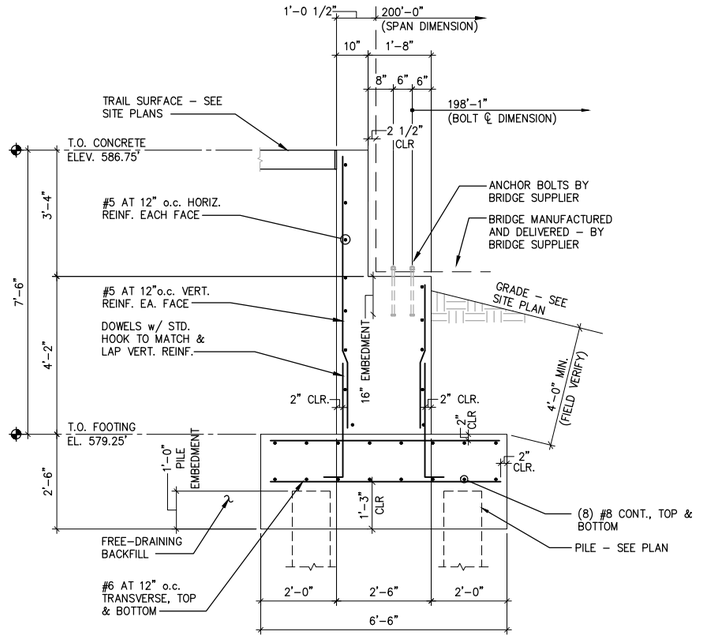
BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
ENLARGED ABUTMENT PLANS

DESIGNED	DRAWN
DJB	GYV

PROJECT NO. M0026 09-20-00716

DATE JUNE 2023

SHEET NO. S4

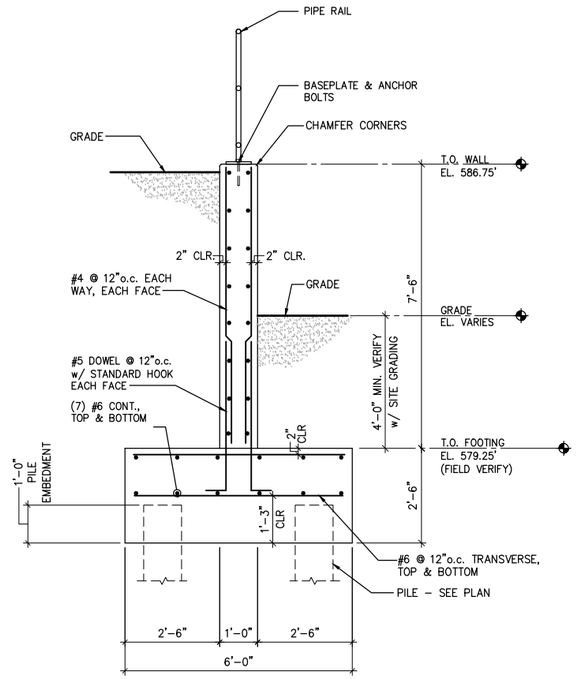


NOTE: VERIFY ALL BRIDGE FOUNDATION DIMENSIONS & ELEVATIONS w/ BRIDGE SUPPLIER.

BRIDGE ABUTMENT SECTION

SCALE: 1/2" = 1'-0"

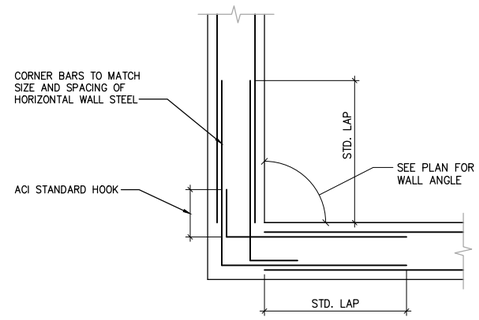
(1 / S5)



BRIDGE WINGWALL

SCALE: 1/2" = 1'-0"

(2 / S5)



CONCRETE CORNER DETAIL

SCALE: NONE

(3 / S5)

McMAHON ENGINEERS ARCHITECTS
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

BAY POINTE TRAIL
CITY OF MANITOWOC, MANITOWOC COUNTY, WI
ABUTMENT DETAILS

DESIGNED	DRAWN
DJB	GYV\

PROJECT NO.
M0026 09-20-00716

DATE
JUNE 2023

SHEET NO.
S5