

BOX CULVERT REMOVAL AND NEW BRIDGE CONSTRUCTION GANDY DANCER STATE TRAIL

TOWN OF SUMMIT, WI DIVISION PROJECT NO. 1811N JANUARY 30TH, 2023

Cedar
corporation
604 Wilson Avenue
Menomonie, Wisconsin 54751
engineers • architects • planners
environmental specialists
land surveyors • landscape architects
interior designers
715-235-9081
800-472-7372
FAX 715-235-2727
www.cedarcorp.com

State of Wisconsin
Department of Administration
Division of Facilities Development



P.O. BOX 7866
MADISON, WI 53707-7866

**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**
Sheet Title: TITLE SHEET

CONTACT INFORMATION

OWNER
DEPARTMENT OF NATURAL RESOURCES
PHONE: (715) 635-4020
CONTACT: THOMAS DETTLE, PE

OWNER
DEPARTMENT OF ADMINISTRATION
DIVISION OF FACILITIES DEVELOPMENT
101 E. WILSON STREET, 7TH FLOOR
MADISON, WI 53707
PHONE: (608) 573-2031
CONTACT: SALLY SHUMAKER

CIVIL DESIGN
CEDAR CORPORATION
604 WILSON AVENUE
MENOMONIE, WI 54751
PHONE: (715) 235-9081
CONTACT: TROY PETERSON

STRUCTURAL DESIGN
CEDAR CORPORATION
604 WILSON AVENUE
MENOMONIE, WI 54751
PHONE: (715) 235-9081
CONTACT: TROY PETERSON

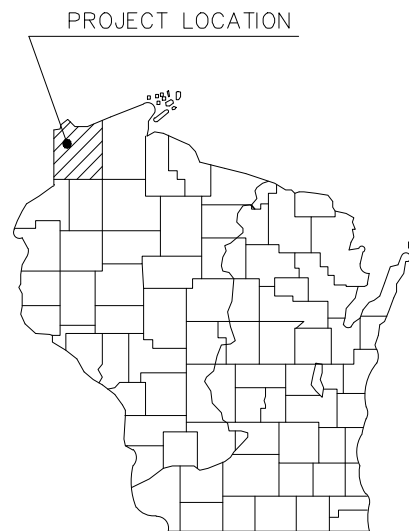
ENGINEER
CEDAR CORPORATION
604 WILSON AVENUE
MENOMONIE, WI 54751
PHONE: (715) 235-9081
CONTACT: TROY PETERSON

SHEET INDEX

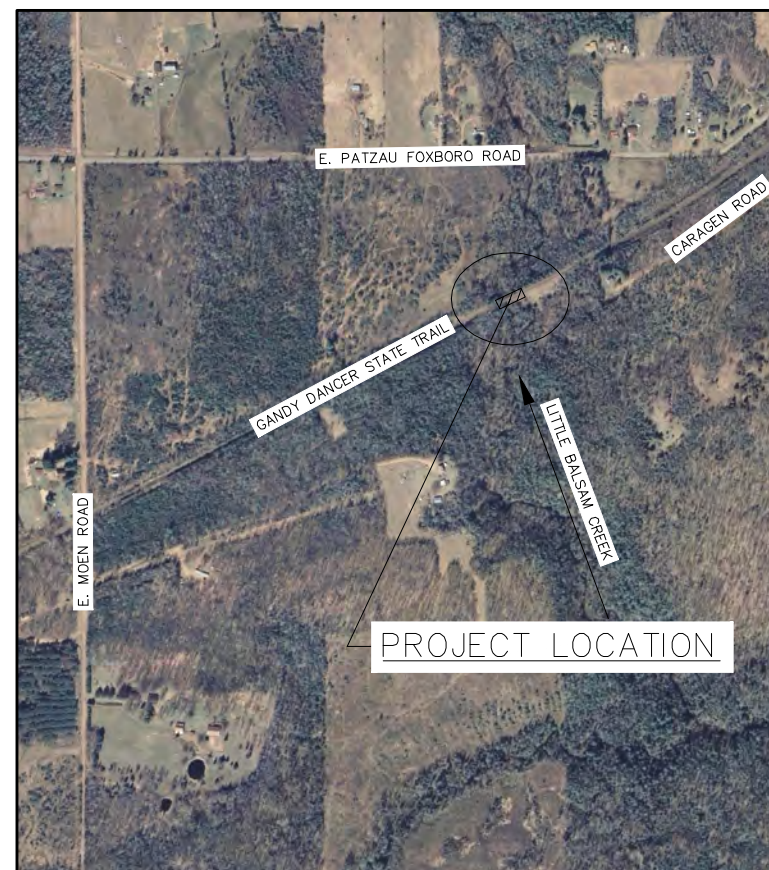
SHEET	SHEET DESCRIPTION
T100	TITLE SHEET
C100	TYPICAL SECTION
C101	GENERAL NOTES
C102	PLAN AND PROFILE – BRIDGE
C103	PLAN AND PROFILE – STREAM
C104	BRIDGE PLAN
C105	CONSTRUCTION DETAILS
C106	EROSION CONTROL
C107	EROSION CONTROL DETAILS
C108	TRAFFIC CONTROL
C109	BRIDGE SIGNAGE
C110-C119	CROSS SECTIONS – TRAIL
C120-C125	CROSS SECTIONS – STREAM
S100-S112	BRIDGE DETAILS

Revisions:		
No.	Date:	Description:

Graphic Scale	NO SCALE
DFD Number	1811N
Set Type	N/A
Date Issued	01/30/2023
Sheet Number	T100



PROJECT LOCATION MAP



LAYOUT
SCALE 0 5000 FT.

CONVENTIONAL SYMBOLS

PLAN		PROFILE	
CORPORATE LIMITS	////	GRADE LINE	—————
PROPERTY LINE	- - - - -	ORIGINAL GROUND	~~~~~
LOT LINE	- . - . -	MARSH OR ROCK PROFILE (To be noted as such)	ROCK
LIMITED HIGHWAY EASEMENT	┌──┴──┐	SPECIAL DITCH	— LABEL —
EXISTING RIGHT OF WAY	— — — — —	GRADE ELEVATION	95.36
PROPOSED OR NEW R/W LINE	—— ———	CULVERT (Profile View)	□ ◻
SLOPE INTERCEPT	—— / ——	UTILITIES	
REFERENCE LINE	—— / ——	ELECTRIC	— E —
EXISTING CULVERT	— ⊞ —	OVERHEAD LINES	— OH —
PROPOSED CULVERT (Box or Pipe)	— ⊞ —	FIBER OPTIC	— FO —
COMBUSTIBLE FLUIDS	CAUTION	GAS	— G —
MARSH AREA		SANITARY SEWER	— SAN —
WOODED OR SHRUB AREA		STORM SEWER	— SS —
RIGHT-OF-WAY MARKERS	• — —	TELEPHONE	— T —
		WATER	— W —
		UTILITY PEDESTAL	□
		POWER POLE	⊥
		TELEPHONE POLE	⊃

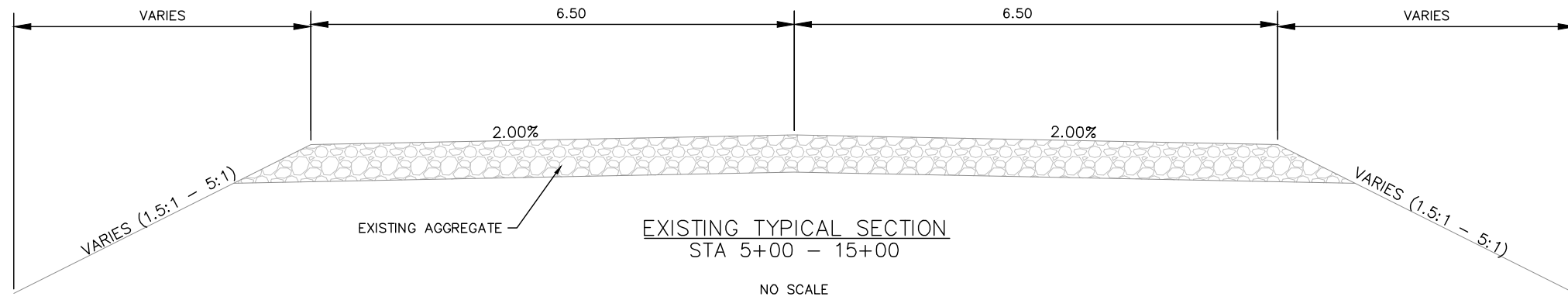


**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**

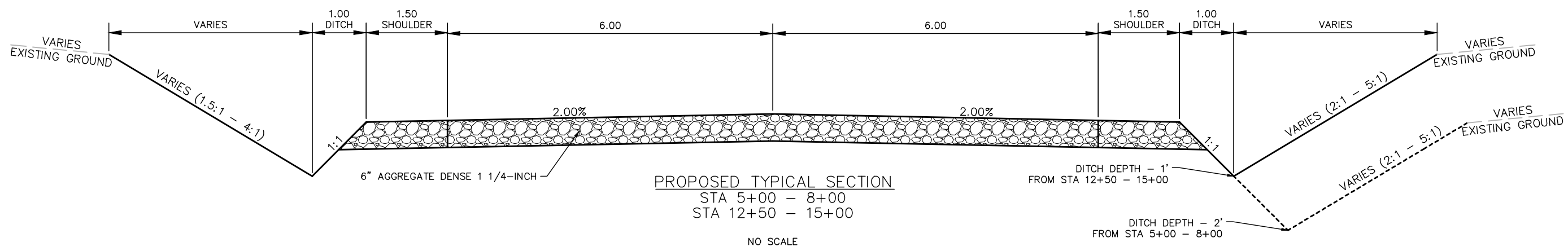
Sheet Title:
TYPICAL SECTION

Revisions:		
No.	Date:	Description:

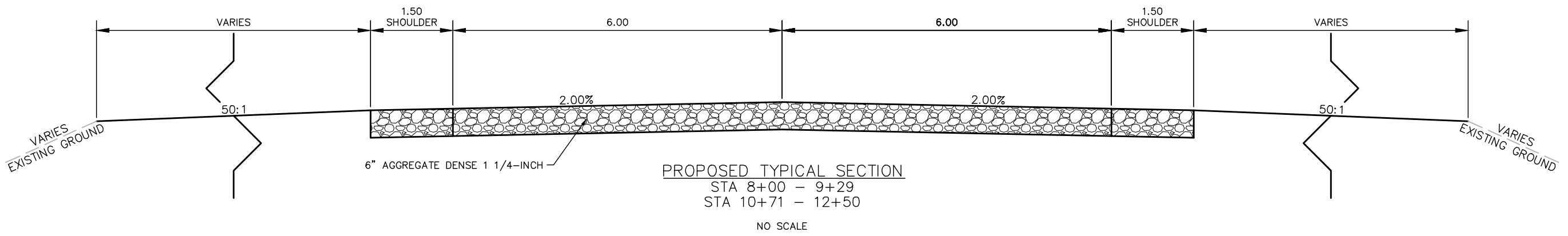
Graphic Scale	NO SCALE
DFD Number	1811N
Set Type	FR
Date Issued	01/26/2023
Sheet Number	C100



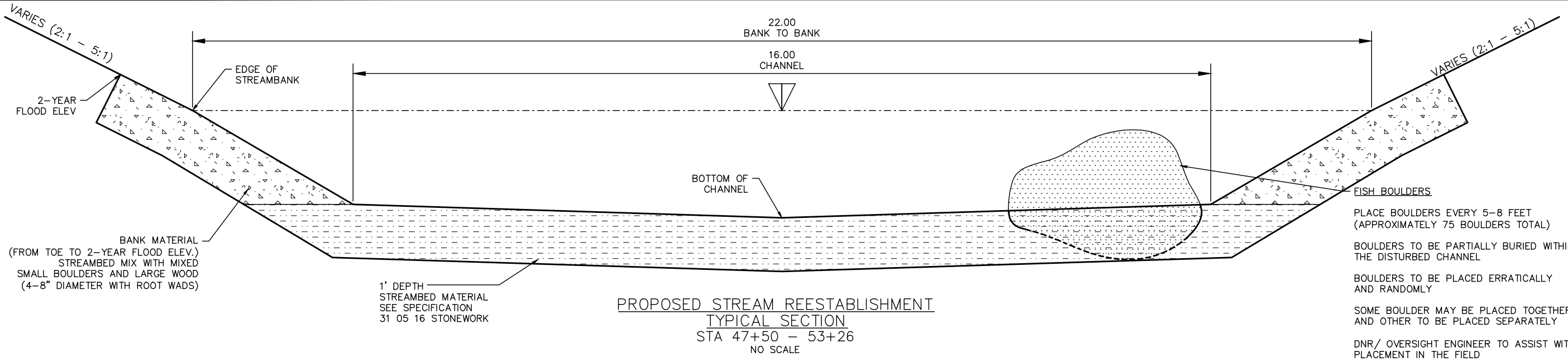
EXISTING TYPICAL SECTION
STA 5+00 - 15+00
NO SCALE



PROPOSED TYPICAL SECTION
STA 5+00 - 8+00
STA 12+50 - 15+00
NO SCALE



PROPOSED TYPICAL SECTION
STA 8+00 - 9+29
STA 10+71 - 12+50
NO SCALE



PROPOSED STREAM REESTABLISHMENT
TYPICAL SECTION
STA 47+50 - 53+26
NO SCALE

PLACE BOULDERS EVERY 5-8 FEET (APPROXIMATELY 75 BOULDERS TOTAL)
BOULDERS TO BE PARTIALLY BURIED WITHIN THE DISTURBED CHANNEL
BOULDERS TO BE PLACED ERRATICALLY AND RANDOMLY
SOME BOULDER MAY BE PLACED TOGETHER AND OTHER TO BE PLACED SEPARATELY
DNR/ OVERSIGHT ENGINEER TO ASSIST WITH PLACEMENT IN THE FIELD

I:\Clients-Memo\W\W0779 Wis Dept of Administration\121 1811N - Gandy Dancer ST Repair-Replace Box Culvert Under Trail\100 Cad\01 DWG\1811N-00-FR-C101.dwg 01/26/23 3:41:25 PM

I:\Clients-Memo\W\W0779 Wis Dept of Administration\121 181N - Candy Dancer ST Repair-Replace Box Culvert Under Trail\100 Cad\01 DWG\181N-00-FR-C101.dwg 01/26/23 4:56:28 PM

GENERAL NOTES

1. WE CERTIFY, TO THE BEST OF OUR KNOWLEDGE, INFORMATION AND STANDARD OF INDUSTRY CARE THAT THE DESIGN OF THE PROJECT COMPLIES WITH APPLICABLE PROVISIONS OF THE ADMINISTRATIVE CODES AND STATUTES OF THE STATE OF WISCONSIN AND ACCESSIBILITY STANDARDS.
2. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES TO PROTECT THE PUBLIC AND ADJACENT PROPERTIES FROM DAMAGE THROUGHOUT CONSTRUCTION.
3. ANY EXISTING UTILITIES TO BE ABANDONED SHALL BE PROPERLY DISCONNECTED, PLUGGED OR CAPPED, AS REQUIRED BY CODE OR LOCAL ORDINANCE.
4. THESE DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. ADDITIONAL DATA SHALL BE FROM THE ARCHITECT/ENGINEER THROUGH WRITTEN CLARIFICATION ONLY. VERIFY ALL EXISTING CONDITIONS, ELEVATIONS, AND DIMENSIONS BEFORE PROCEEDING WITH ANY PORTION OF ANY WORK.
5. NO CHANGES, MODIFICATIONS OR DEVIATIONS SHALL BE MADE FROM THE DRAWINGS OR SPECIFICATIONS WITHOUT FIRST SECURING WRITTEN PERMISSION FROM THE ARCHITECT/ENGINEER.
6. WHERE LACK OF INFORMATION, OR ANY DISCREPANCY SHOULD APPEAR IN THE DRAWINGS OR SPECIFICATIONS, REQUEST WRITTEN INTERPRETATION FROM THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THAT PORTION OF THE WORK.
7. ALL WORK AS OUTLINED IN THESE DOCUMENTS, SHALL STRICTLY CONFORM TO ALL APPLICABLE CODES AND ORDINANCES, IN THE EVENT OF CONFLICTS THE MORE STRINGENT REQUIREMENT SHALL GOVERN AND BE MET.
8. THE CONTRACTOR SHALL PAY FOR ALL FEES, PERMITS, LICENSES, ETC., NECESSARY FOR PROPER COMPLETION OF THE WORK. VERIFY COST WITH AUTHORITY HAVING JURISDICTION.
9. THE CONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OR AS OTHERWISE REQUIRED IN THE SPECIFICATIONS.
10. PROVIDE ADEQUATE CONCEALED BLOCKING AND ANCHORING FOR ALL CEILING AND WALL MOUNTED EQUIPMENT, HARDWARE, AND ACCESSORIES.
11. WHEN A SYSTEM OR ASSEMBLY IS CALLED OUT, ALL NECESSARY PARTS AND MATERIALS REQUIRED FOR A COMPLETE INSTALLATION/SYSTEM SHALL BE INSTALLED ACCORDING TO THE MANUFACTURERS INSTRUCTIONS.
12. COORDINATE WITH ALL TRADES THE LOCATIONS OF SLEEVES OR OTHER PRESET ACCESSORIES INVOLVING OTHER TRADES.
13. DISRUPTED EXISTING CONDITIONS i.e. LANDSCAPING, LIGHTING, PEDESTRIAN, AND VEHICLE ACCESS SHALL BE MINIMALLY REPLACED AT THE END OF CONSTRUCTION TO MATCH EXISTING AND ADJACENT CONDITIONS PRIOR TO CONSTRUCTION.
14. DIMENSIONS ARE SHOWN FROM FACE TO FACE WALL SURFACE AND EDGE OF ROUGH OPENING UNLESS NOTED OTHERWISE.
15. THE CONTRACTOR SHALL VISIT THE JOB SITE AND BECOME FAMILIARIZED WITH ALL EXISTING CONDITIONS WHICH MAY AFFECT THE BID. NO ALLOWANCES WILL BE MADE AFTER THE BID FOR EXISTING CONDITIONS OR THE CONTRACTOR'S FAILURE TO VERIFY EXISTING CONDITIONS.
16. PROVIDE SHOP DRAWINGS FOR ALL MATERIALS AND EQUIPMENT TO THE ARCHITECT/ENGINEER FOR REVIEW PRIOR TO ORDERING. MATERIALS AND EQUIPMENT INSTALLED WITHOUT APPROVAL SHALL BE SUBJECT TO REJECTION AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING LOCATIONS OF EXISTING UTILITIES, EASEMENTS, PROPERTY BOUNDARIES, AND SETBACKS.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING AND COORDINATING EXTENSION OF ALL UTILITIES AND SERVICES TO THE BUILDING.
19. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE SOIL BEARING CAPACITY AND TESTING.
20. THE CONTRACTOR SHALL PROVIDE 6" COMPACTED GRANULAR FILL AT EXTERIOR SIDEWALKS AND PAVED AREAS UNLESS NOTED OTHERWISE.
21. ALL DETAILS NOT SHOWN ON THIS PLAN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. WHERE CLARIFICATION IS REQUIRED CONTACT ARCHITECT/ENGINEER.
22. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL CUTTING AND PATCHING FOR ALL TRADES.
23. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND COORDINATING INSTALLATION OF KNOX BOX WITH ARCHITECT AND LOCAL FIRE CHIEF.
24. WDNR WILL PROVIDE DETOUR ROUTE FOR TRAIL DURING CONSTRUCTION.
25. THE CONTRACTOR WILL BE RESPONSIBLE FOR TRAFFIC CONTROL AND TRAIL CLOSURE.
26. THE CONTRACTOR WILL BE RESPONSIBLE FOR CONSTRUCTION ACTIVITIES SIGNAGE UPSTREAM AND DOWNSTREAM OF THE PROJECT.

ABBREVIATIONS

AD	SLOPE CHANGE
ADJ	ADJUST
APPROX	APPROXIMATE
B-B	BACK OF CURB TO BACK OF CURB
BC	BACK OF CURB
BEG	BEGIN
BM	BENCH MARK
BR	BEGIN RADIUS
C&G	CURB AND GUTTER
CL	CENTERLINE
CONC	CONCRETE
CP	CONTROL POINT
CY	CUBIC YARD
DIA	DIAMETER
DWY	DRIVEWAY
EA	EACH/ EDGE OF ASPHALT
EC	EDGE OF CONCRETE
EL / ELEV	ELEVATION
ER	END RADIUS
EX	EXISTING
FL	FLOW LINE
FT	FEET
HP	HIGH POINT
HYD	HYDRANT
INL	INLET
INV	INVERT
K	RATE OF VERTICAL CURVATURE
L	LENGTH
LAT	LATERAL
LF	LINEAR FEET
LP	LOW POINT
LT	LEFT
MAX	MAXIMUM
MH	MANHOLE
MIN	MINIMUM
MR	MID RADIUS
NTS/N.T.S.	NOT TO SCALE
OE	OVERHEAD ELECTRIC
O/S	OFFSET
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PI	POINT OF INTERSECTION
PROP	PROPOSED
PT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE
PVC	POLY-VINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PVT	POINT OF VERTICAL TANGENCY
QTY	QUANTITY
R	RADIUS
RCP	RE-INFORCED CONCRETE PIPE
PL	PROPERTY LINE
R/W	RIGHT-OF-WAY
RAD	RADIUS POINT
RT	RIGHT
SAN	SANITARY
SDWK	SIDEWALK
SF	SQUARE FEET
STA	STATION
STH	STATE TRUNK HIGHWAY
STM	STORM
SY	SQUARE YARDS
TBOC	TOP BACK OF CURB
TC	TOP OF CURB
TEL	TELEPHONE
TYP	TYPICAL
UGE	UNDERGROUND ELECTRIC
VAR	VARIABLE OR VARIABLE
VC	VERTICAL CURVE
WM	WATERMAIN
WTR	WATER



604 Wilson Avenue
Menomonie, Wisconsin 54751

engineers • architects • planners
environmental specialists
land surveyors • landscape architects
interior designers

715-235-9081
800-472-7372
FAX 715-235-2727
www.cedarcorp.com

State of Wisconsin
Department of Administration
Division of Facilities Development



P.O. BOX 7866
MADISON, WI 53707-7866

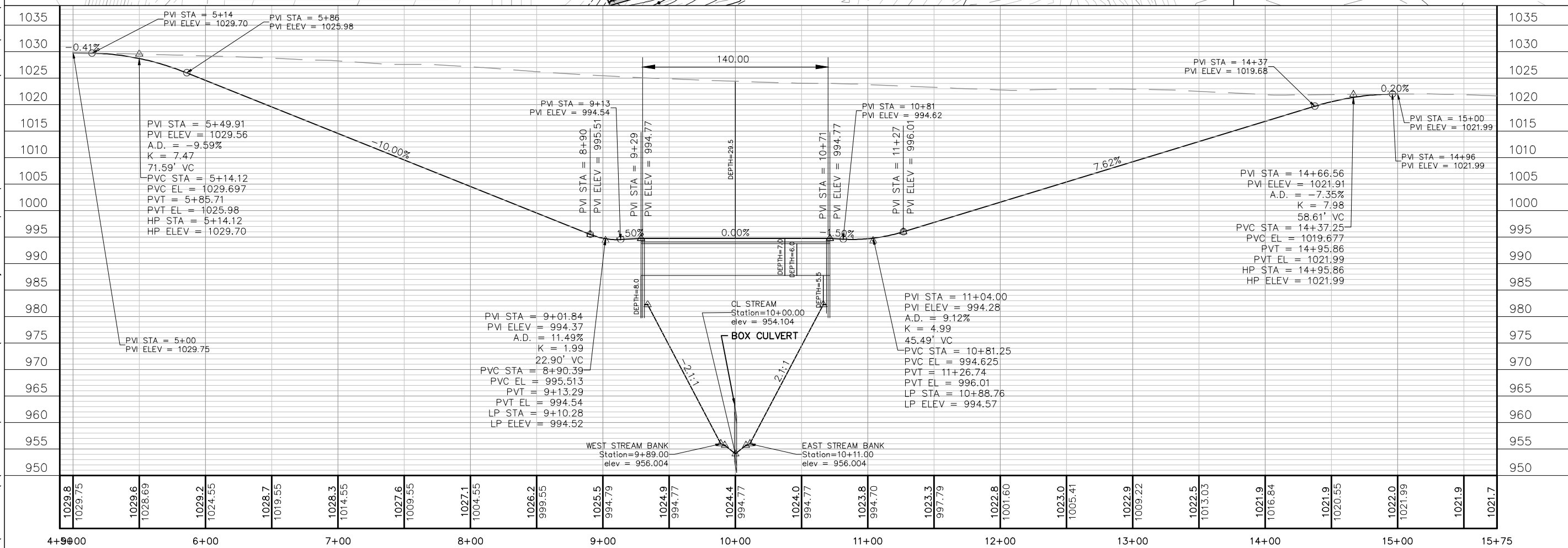
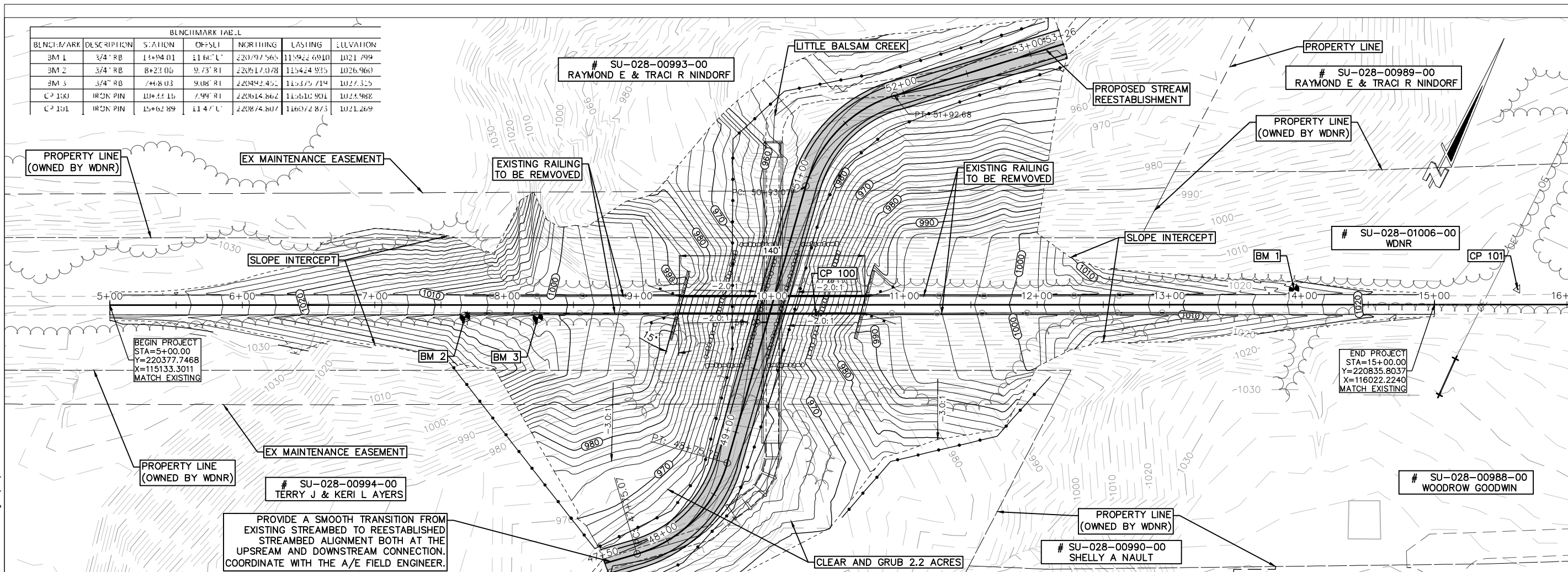
**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**

Sheet Title:
GENERAL NOTES

Revisions:		
No.	Date:	Description:

Graphic Scale	NO SCALE
DFD Number	181N
Set Type	FR
Date Issued	01/26/2023
Sheet Number	C101

BENCHMARK	DESCRIPTION	STATION	OFFSET	NORTHING	EASTING	ELEVATION
BM 1	3/4" RB	1+94.01	11.60' L	22079.565	115922.6910	1021.799
BM 2	3/4" RB	8+23.05	9.73' R	220517.078	115424.935	1026.960
BM 3	3/4" RB	7+48.03	9.08' R	220492.452	115375.719	1027.525
CP 100	IRON PIN	10+00.00	7.99' R	220514.862	115510.901	1024.988
CP 101	IRON PIN	15+00.00	11.47' L	220874.807	116072.873	1021.269



Cedar Corporation
 604 Willson Avenue
 Menomonie, Wisconsin 54751
 engineers • architects • planners
 environmental specialists
 land surveyors • landscape architects
 interior designers
 715-235-9081
 800-472-7372
 FAX 715-235-2327
 www.cedarcorp.com

State of Wisconsin
 Department of Administration
 Division of Facilities Development

 P.O. BOX 7866
 MADISON, WI 53707-7866

BOX CULVERT REMOVAL AND NEW BRIDGE CONSTRUCTION GANDY DANCER STATE TRAIL TOWN OF SUMMIT, WISCONSIN

Sheet Title: PLAN AND PROFILE
 BRIDGE

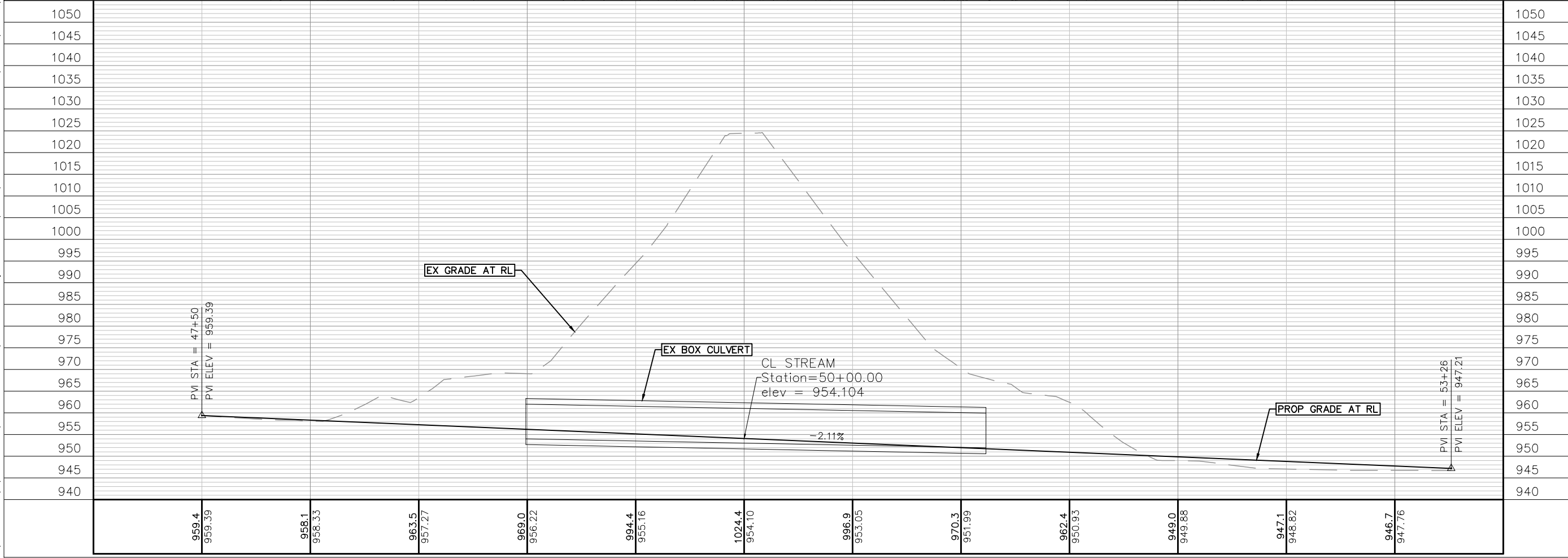
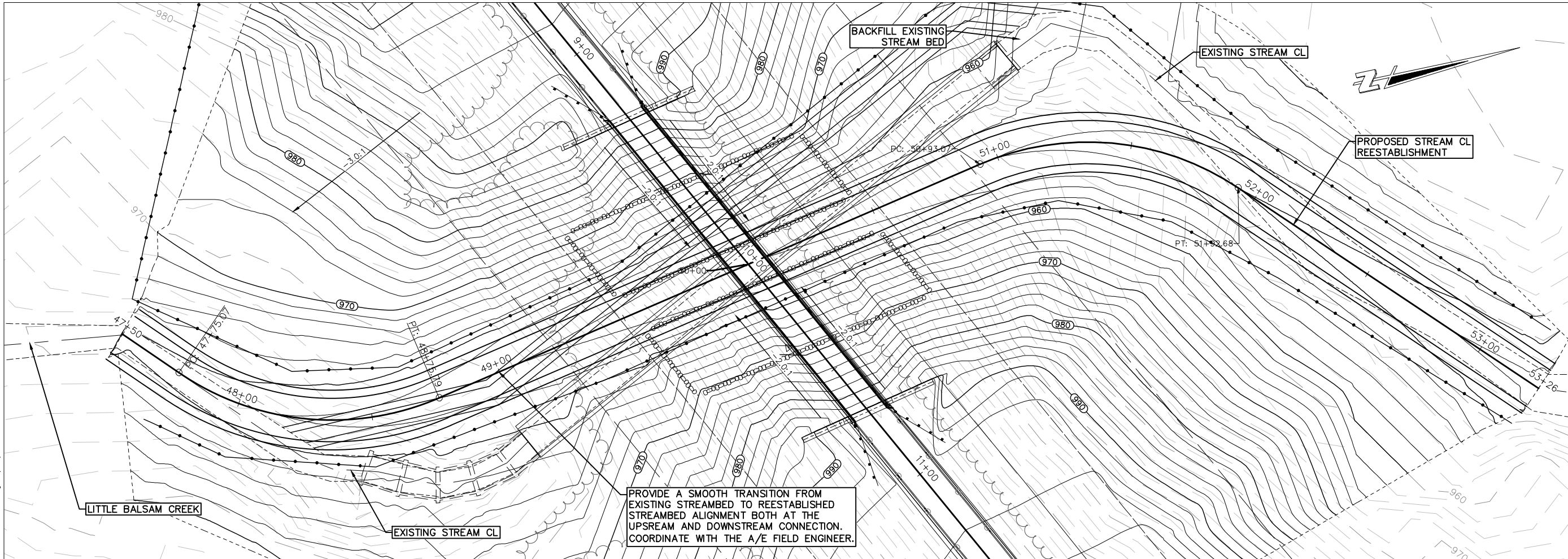
Revisions:		
No.	Date:	Description:

Graphic Scale: 0' 10' 20' 40' 60'
 DFD Number: 1811N
 Set Type: FR
 Date Issued: 01/30/2023
 Sheet Number: C102

I:\Clients-Memo\W 0779 Wis Dept of Administration\121 1811N - Gandy Dancer ST Repair-Replace Box Culvert Under Trail\100 Cad\01 DWG\0779-121_Base.dwg 01/30/23 10:48:39 AM

tb-11x17

I:\Clients-Memo\W\W0779 Wis Dept of Administration\121 1811N - Candy Dancer ST Repair-Replace Box Culvert Under Trail\100 Cad\01 DWG\0779-121_Base.dwg 01/30/23 10:56:51 AM



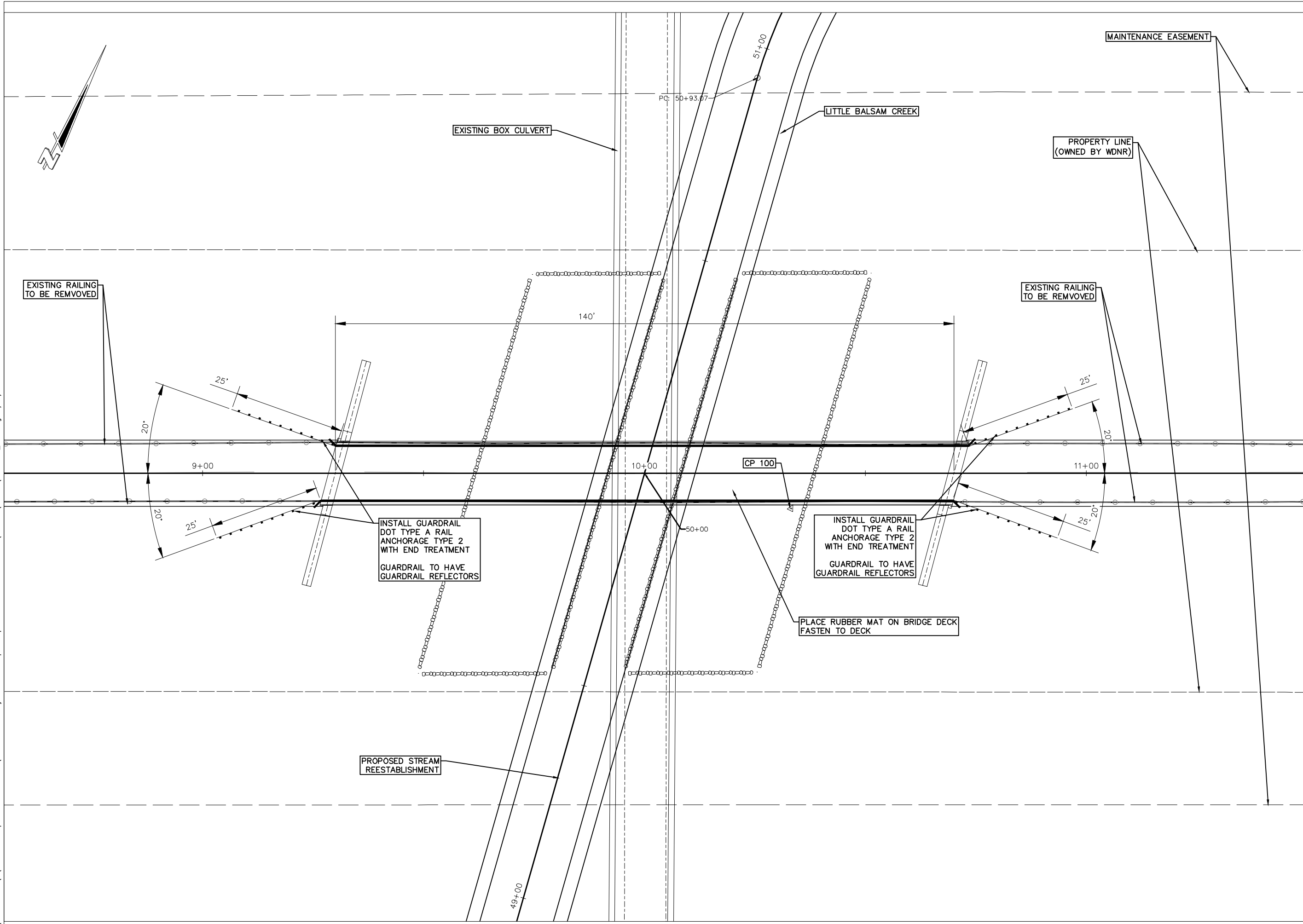
**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**

Sheet Title:
PLAN AND PROFILE
STREAM REESTABLISHMENT

Revisions:	
Date:	Description:

Graphic Scale	
Number	1811N
	FR
Issued	01/30/2023
Sheet Number	C103

I:\Clients-Memo\W0779 Wis Dept. of Administration\121 181N - Gandy Dancer ST Repair-Replace Box Culvert Under Trail\100 Cca\01 DWG\0779-121_Base.dwg 07/30/23 11:04:55 AM




Cedar
corporation

604 Willson Avenue
Menomonie, Wisconsin 54751

engineers • architects • planners
environmental specialists
land surveyors • landscape architects
interior designers

715-235-9081
800-472-7372
FAX 715-235-2727
www.cedarcorp.com

State of Wisconsin
Department of Administration
Division of Facilities Development



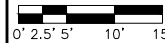
P.O. BOX 7866
MADISON, WI 53707-7866

**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**

Sheet Title:
PLAN AND PROFILE
BRIDGE PLAN

Revisions:

Date:	Description:

Graphic Scale	
Number	1811N
	FR
Issued	01/30/2023
Sheet Number	C104

I:\Clients-Memo\W0779 Wis Dept of Administration\121 181N - Gandy Dancer ST Repair-Replace Box Culvert Under Trail\100 Cca\01 DWG\0779-121_Base.dwg 01/30/23 10:28:30 AM



604 Willson Avenue
Menomonie, Wisconsin 54751

engineers • architects • planners
environmental specialists
land surveyors • landscape architects
interior designers

715-235-9081
800-472-7372
FAX 715-235-2727
www.cedarcorp.com

State of Wisconsin
Department of Administration
Division of Facilities Development



P.O. BOX 7866
MADISON, WI 53707-7866

**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**

Sheet Title:
CONSTRUCTION DETAILS

Revisions:

No.	Date:	Description:

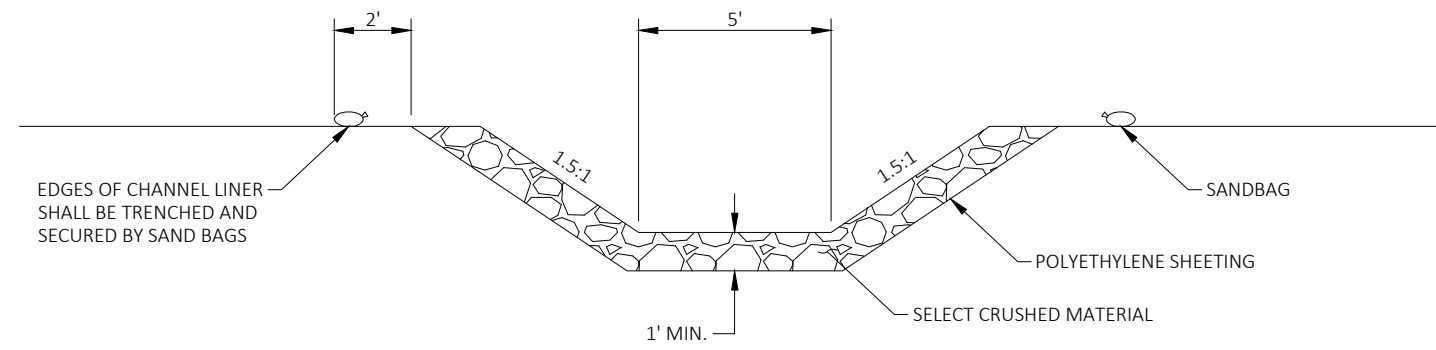
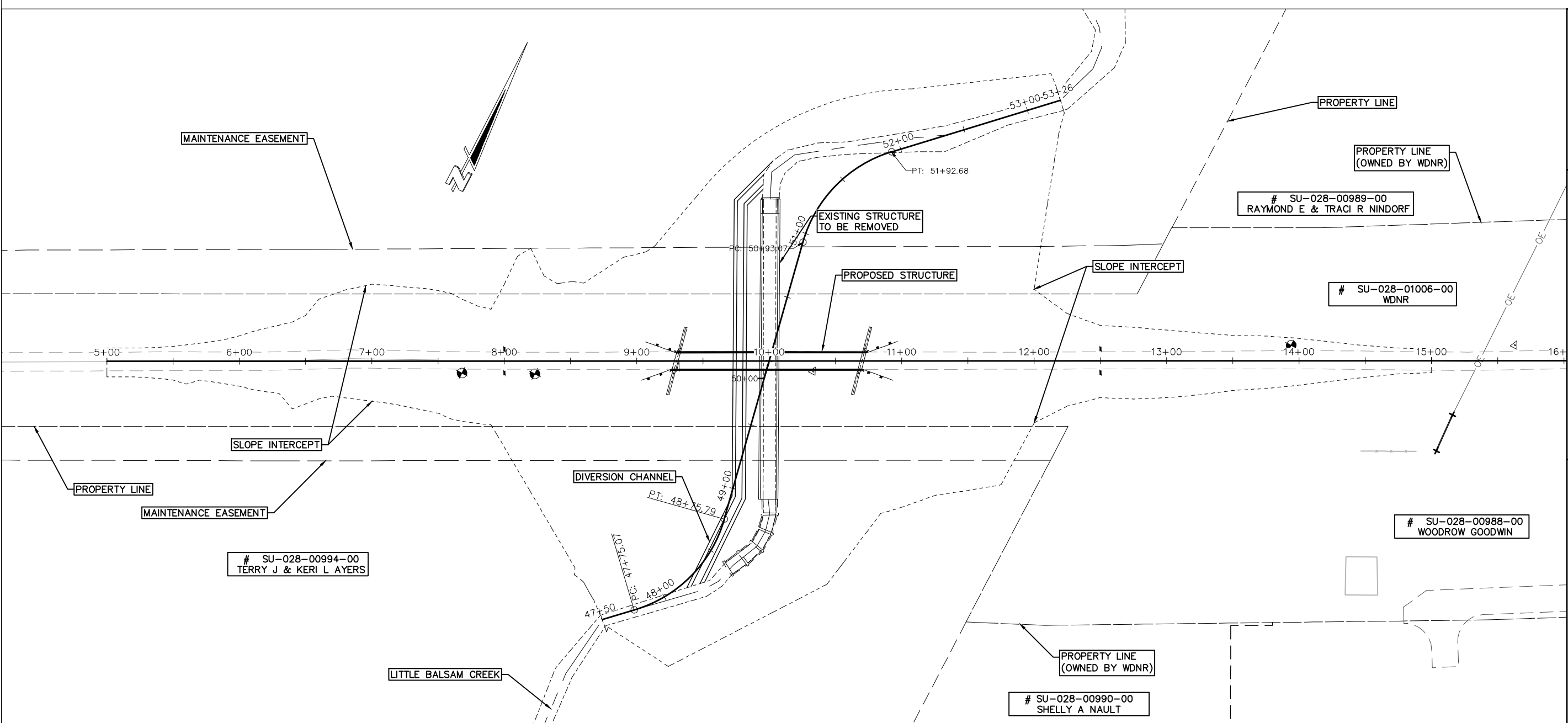
Graphic Scale: 0' 10' 20' 40' 60'

DFD Number: 1811N

Set Type: FR

Date Issued: 01/26/2023

Sheet Number: C105



TYPICAL SECTION DIVERSION CHANNEL

* FOR INFORMATION ONLY
SANDBAGS, SELECT CRUSHED MATERIAL, AND POLYETHYLENE SHEETING SHALL BE CONSIDERED INCIDENTAL TO ROADWAY ITEM " TEMPORARY WATER DIVERSION"



**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**

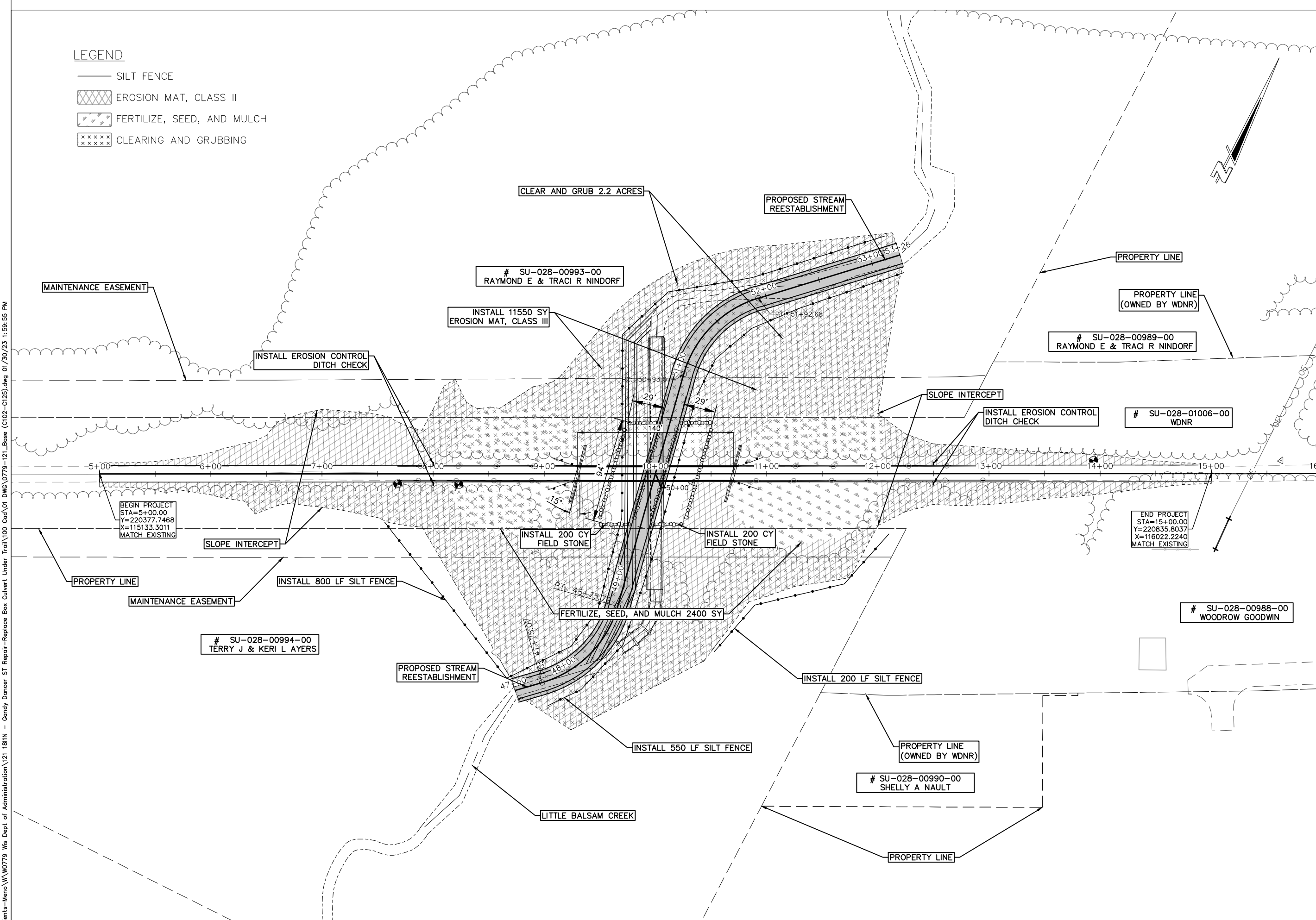
Sheet Title:
EROSION CONTROL

Revisions:

No.	Date	Description

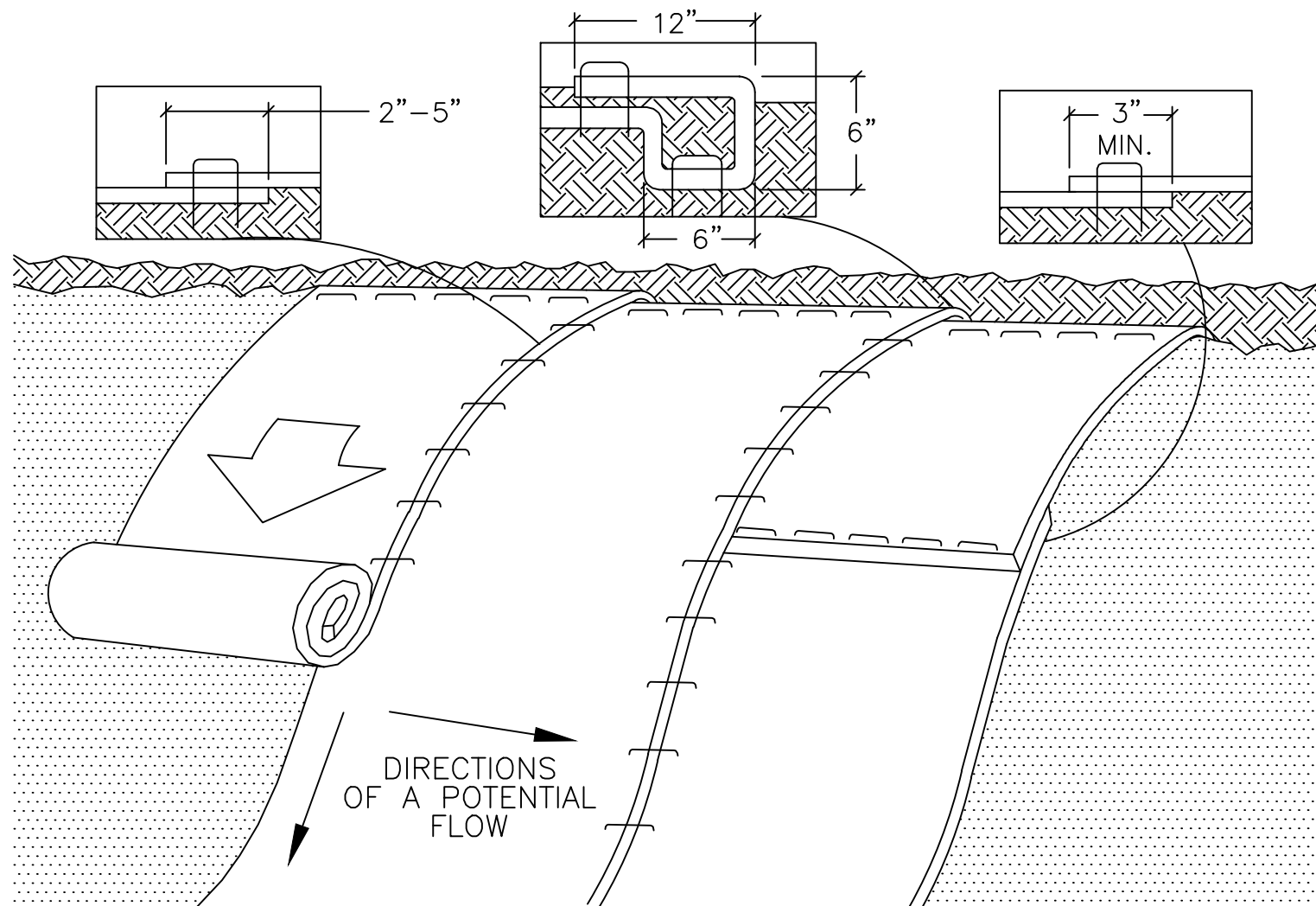
Graphic Scale	
DFD Number	1811N
Set Type	FR
Date Issued	01/30/2023
Sheet Number	C106

- LEGEND**
- SILT FENCE
 - EROSION MAT, CLASS II
 - FERTILIZE, SEED, AND MULCH
 - CLEARING AND GRUBBING



I:\Clients-Memo\W\W0779 Wis Dept of Administration\121 1811N - Gandy Dancer ST Repair-Replace Box Culvert Under Trail\100 Cad\01 DWG\0779-121_Base (C102-C125).dwg 01/30/23 1:59:55 PM

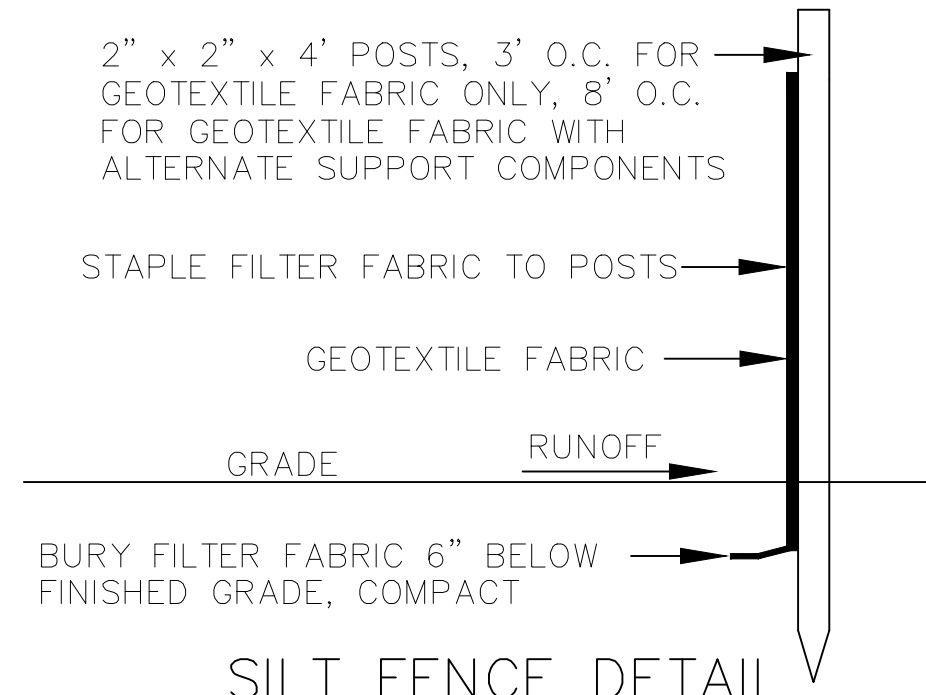
I:\Clients-Memo\W\0779 Wis Dept of Administration\121 1811N - Candy Dancer ST Repair-Replace Box Culvert Under Trail\100 Cad\01 DWG\1811N-06-FR-C101.dwg 01/26/23 4:12:27 PM



- * PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL MAT, INCLUDING GRADING, TOPSOIL, SEED & FERTILIZER.
- * BEGIN AT TOP OF SLOPE, BY ANCHORING MAT IN TRENCH, INSTALL STAPLES 12" APART, SEE DETAIL.
- * ROLL MAT DOWN SLOPE AS SHOWN. FASTEN MAT TO SOIL SURFACE W/ STAPLES. STAPLE PATTERN GUIDE BY MFR.
- * OVERLAP MAT AS PER MFRS. SPEC.

EROSION CONTROL MAT DETAIL NO SCALE

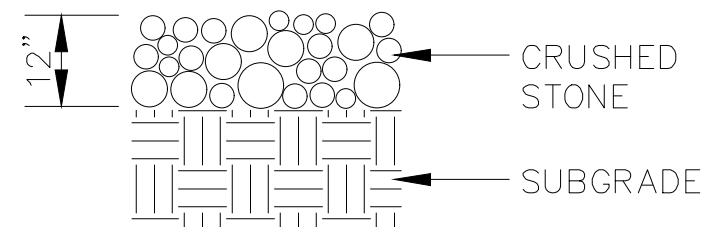
2" x 2" x 4' POSTS, 3' O.C. FOR GEOTEXTILE FABRIC ONLY, 8' O.C. FOR GEOTEXTILE FABRIC WITH ALTERNATE SUPPORT COMPONENTS



SILT FENCE DETAIL

NOTES: NO SCALE

- * SILT FENCE SHALL BE SUPPLIED & INSTALLED AS PER THE WI DOT STANDARD SPECIFICATIONS FOR HIGHWAY & STRUCTURE CONSTRUCTION.



TRACKING AREA NO SCALE

NOTES: * SUPPLY CRUSHED STONE AS PER WI DNR STANDARD, 1057, TRACKOUT CONTROL PRACTICES.

- * REMOVE & REPLACE STONE WHEN VOIDS BECOME FILLED W/ SEDIMENT OR IF SURFACE OPENINGS BECOME PLUGGED SO THAT TRACKING AREA DOES NOT FUNCTION.



604 Wilson Avenue
Menomonie, Wisconsin 54751

engineers • architects • planners
environmental specialists
land surveyors • landscape architects
interior designers

715-235-9081
800-472-7372
FAX 715-235-2727
www.cedarcorp.com

State of Wisconsin
Department of Administration
Division of Facilities Development



P.O. BOX 7866
MADISON, WI 53707-7866

BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN

Sheet Title:
EROSION CONTROL DETAILS

Revisions:		
No.	Date:	Description:

Graphic Scale	NO SCALE
DFD Number	1811N
Set Type	FR
Date Issued	01/26/2023
Sheet Number	C107

I:\Clients-Memo\W0779 Wis Dept. of Administration\121 181N - Gandy Dancer ST Repair-Replace Box Culvert Under Trail\100 Cad\01 DWG\181N-00-FR-C108.dwg 01/26/23 4:08:07 PM


Cedar
corporation

604 Willson Avenue
Menomonie, Wisconsin 54751

engineers • architects • planners
environmental specialists
land surveyors • landscape architects
interior designers

715-235-9081
800-472-7372
FAX 715-235-2727
www.cedarcorp.com

State of Wisconsin
Department of Administration
Division of Facilities Development



P.O. BOX 7866
MADISON, WI 53707-7866

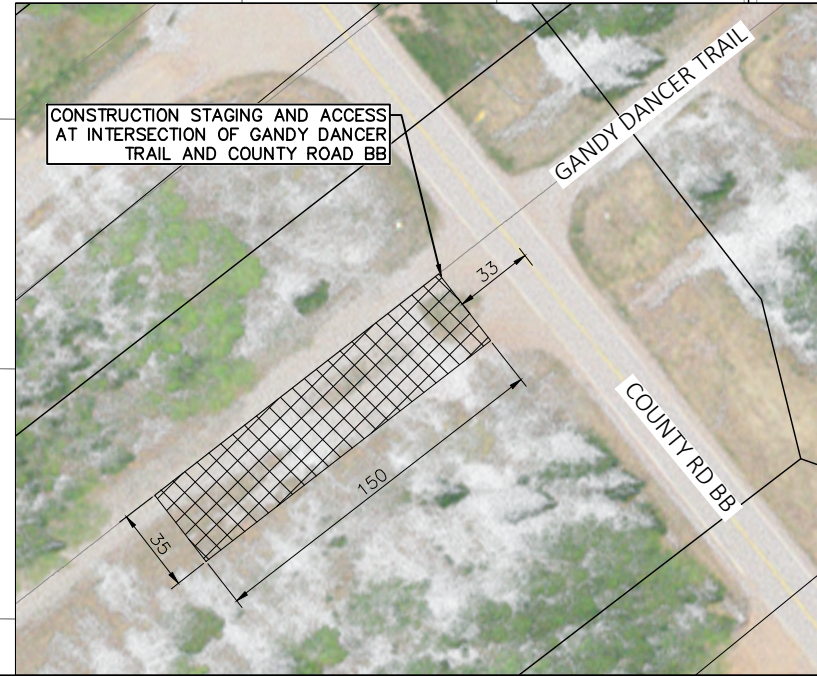
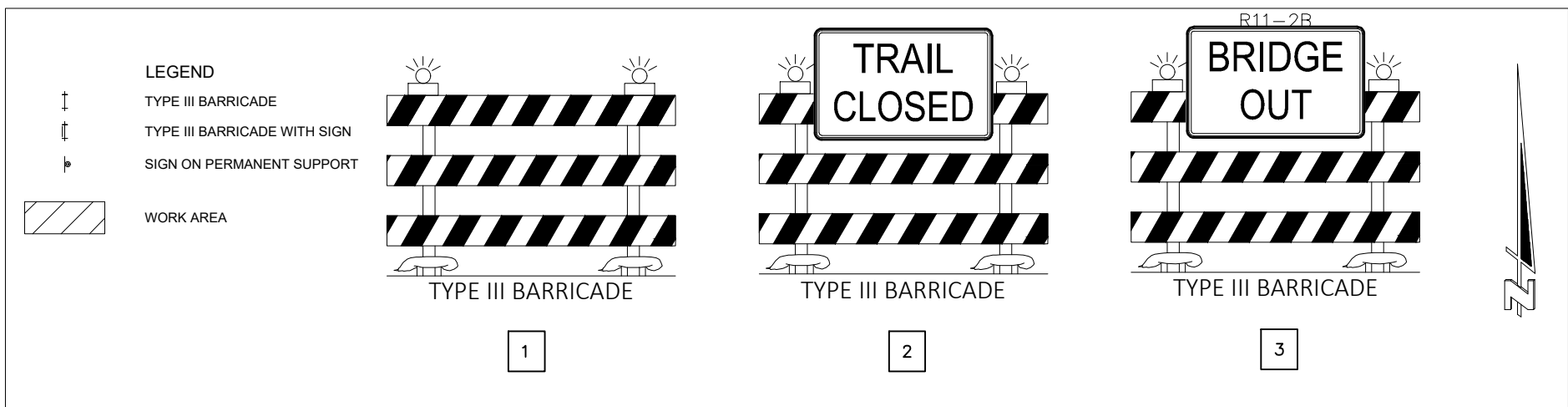
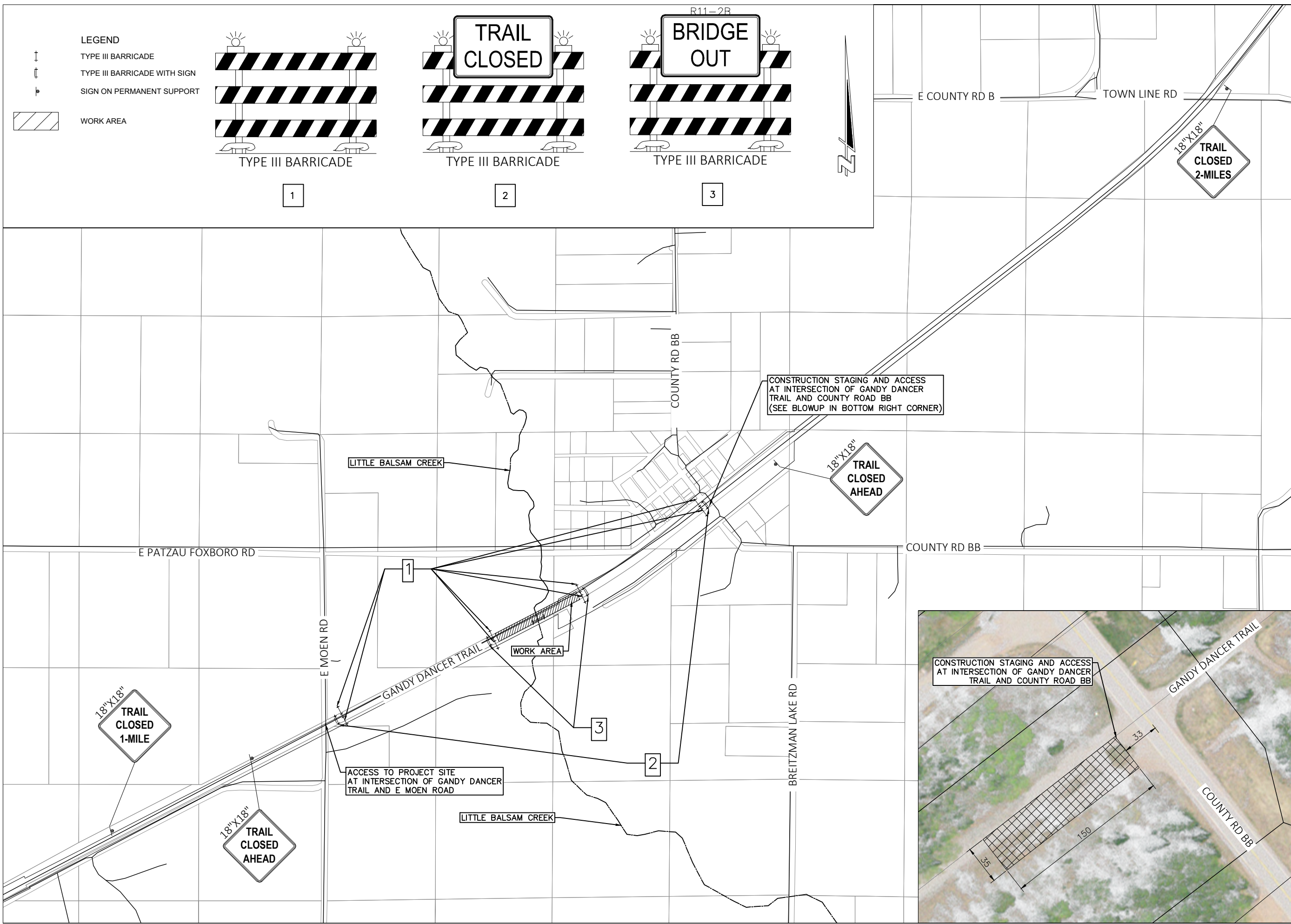
**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**

Sheet Title:
TRAIL CLOSED - TRAFFIC CONTROL

Revisions:

No.	Date:	Description:

Graphic Scale	0' 250' 500' 1000'
DFD Number	1811N
Set Type	FR
Date Issued	01/26/2023
Sheet Number	C108



CONSTRUCTION STAGING AND ACCESS AT INTERSECTION OF GANDY DANCER TRAIL AND COUNTY ROAD BB (SEE BLOWUP IN BOTTOM RIGHT CORNER)

18"X18" TRAIL CLOSED AHEAD

18"X18" TRAIL CLOSED 1-MILE

18"X18" TRAIL CLOSED AHEAD

ACCESS TO PROJECT SITE AT INTERSECTION OF GANDY DANCER TRAIL AND E MOEN ROAD

WORK AREA

LITTLE BALSAM CREEK

LITTLE BALSAM CREEK

COUNTY RD BB

E COUNTY RD B

TOWN LINE RD

COUNTY RD BB

BREITZMAN LAKE RD

E MOEN RD

E PATZAU FOXBORO RD

18"X18" TRAIL CLOSED 2-MILES

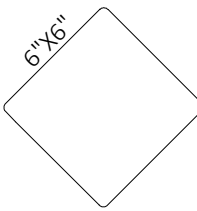
LEGEND

⊙ SIGN ON STEEL POST



1 & 8

ORANGE BLAZER



2 & 7

W5-52R



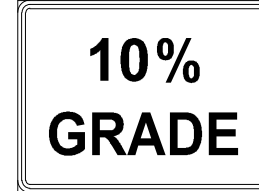
3 & 5

W5-52L



4 & 6

24"X18"



W7-3

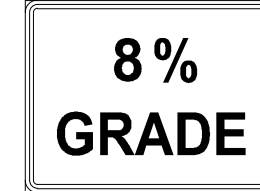
24"X12"



W16-9P

9

24"X18"



W7-3

24"X12"



W16-9P

10

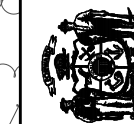


604 Willson Avenue
Menomonie, Wisconsin 54751

engineers • architects • planners
environmental specialists
land surveyors • landscape architects
interior designers

715-235-9081
800-472-7372
FAX 715-235-2727
www.cedarcorp.com

State of Wisconsin
Department of Administration
Division of Facilities Development



P.O. BOX 7866
MADISON, WI 53707-7866

BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN

Sheet Title:
BRIDGE SIGNAGE

Revisions:		
No.	Date:	Description:

Graphic Scale: 0' 10' 20' 40' 60'

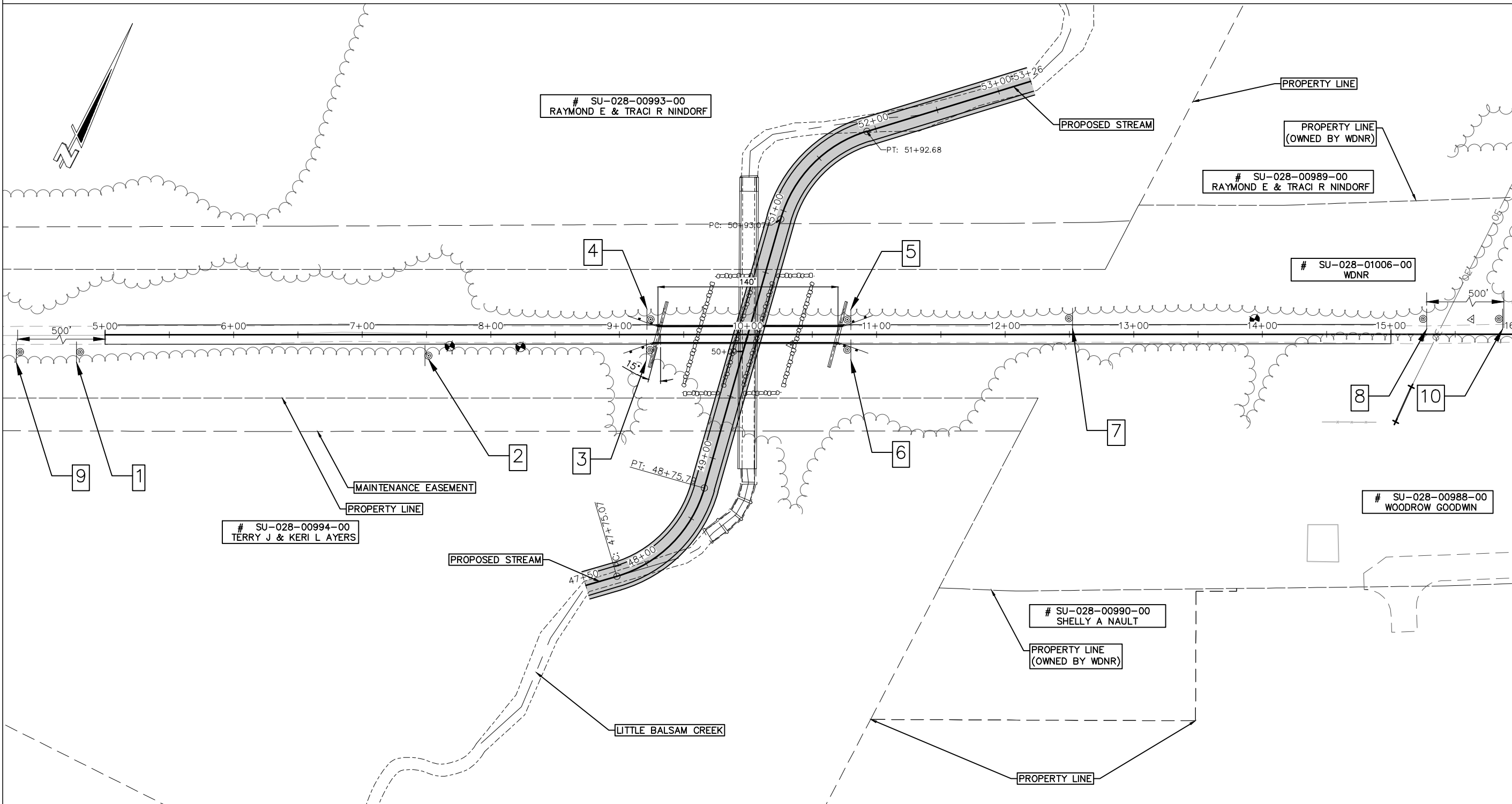
DFD Number: 1811N

Set Type: FR

Date Issued: 01/30/2023

Sheet Number: C109

I:\Clients-Memo\W\W0779 Wis Dept of Administration\121 1811N - Gandy Dancer ST Repair-Replace Box Culvert Under Trail\100 Cad\01 DWG\0779-121_Base.dwg 01/30/23 10:43:42 AM



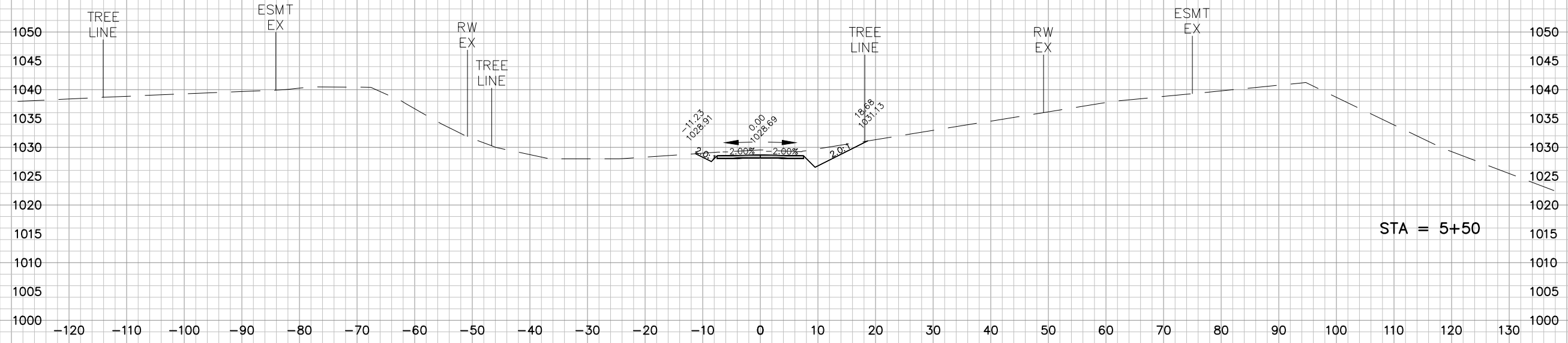
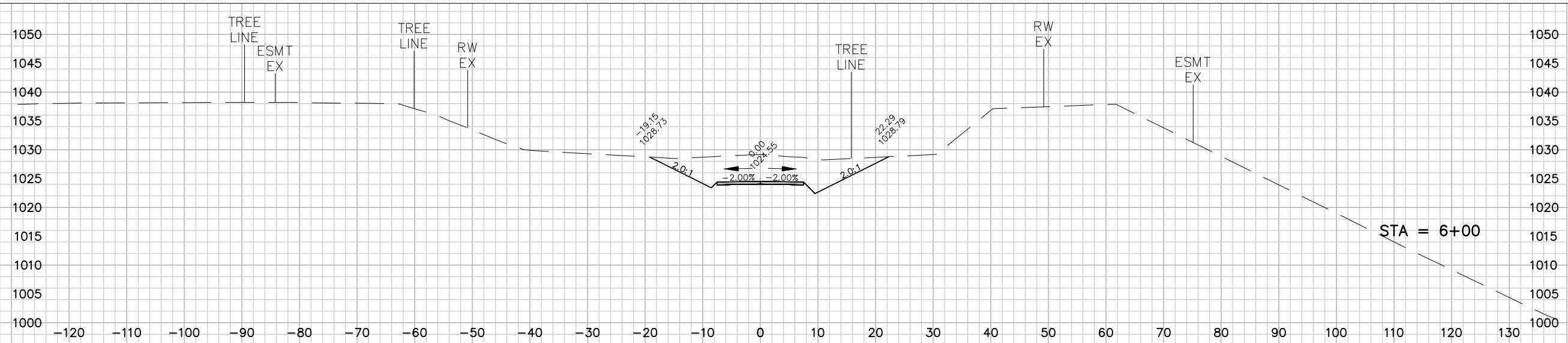


**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**

Sheet Title:
CROSS SECTIONS

Revisions:		
No.	Date:	Description:

Graphic Scale	
DFD Number	1811N
Set Type	FR
Date Issued	01/30/2023
Sheet Number	C110



C:\AcadTemp\AcPublish_18552\0779-12_Base.dwg 01/30/23 9:34:10 AM



**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**

Sheet Title:
CROSS SECTIONS

Revisions:

No.	Date:	Description:

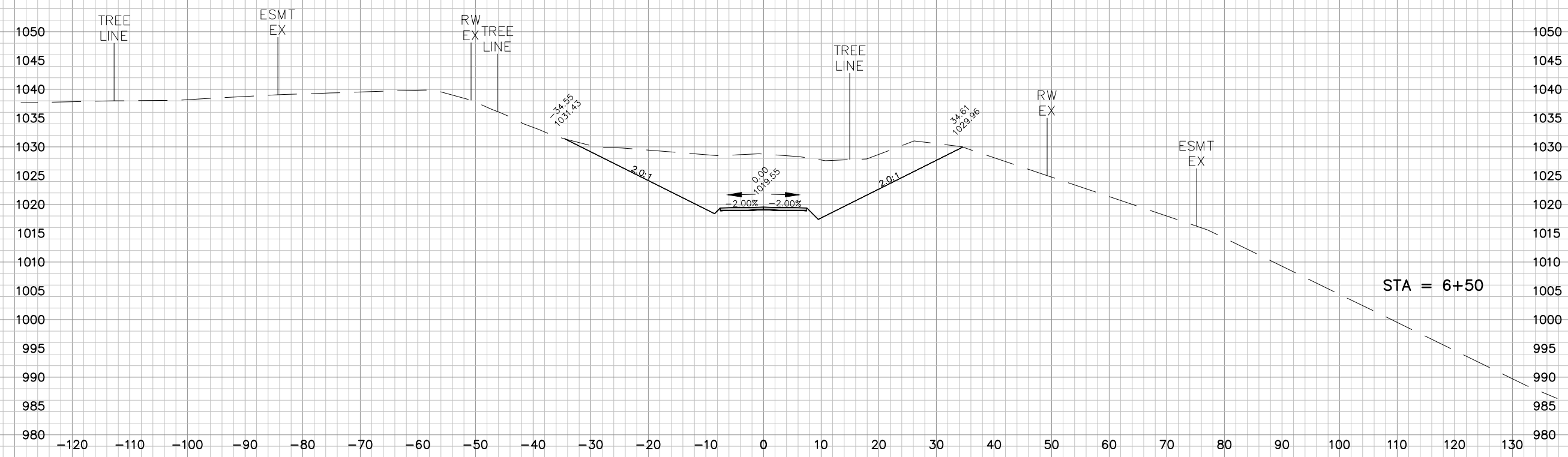
Graphic Scale: 0' 2.5' 5' 10' 15'

DFD Number: 1811N

Set Type: FR

Date Issued: 01/30/2023

Sheet Number: C111





**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**

Sheet Title:
CROSS SECTIONS

Revisions:

No.	Date:	Description:

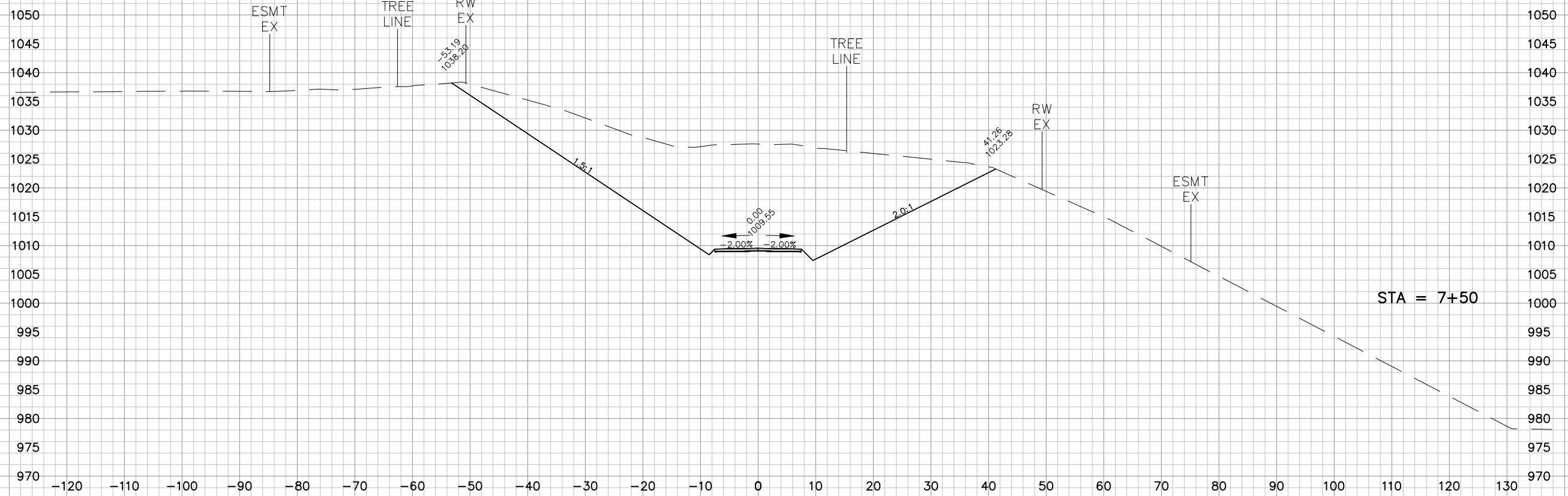
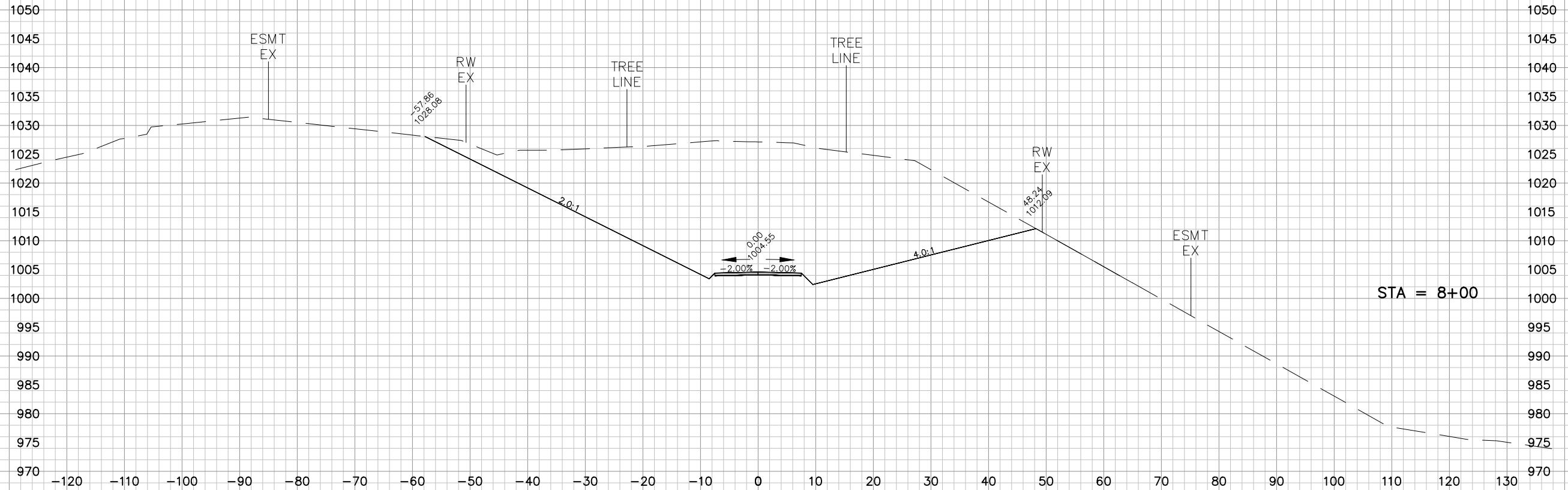
Graphic Scale: 0' 2.5' 5' 10' 15'

DFD Number: 1811N

Set Type: FR

Date Issued: 01/30/2023

Sheet Number: C112





**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**

Sheet Title:
CROSS SECTIONS

Revisions:

No.	Date:	Description:

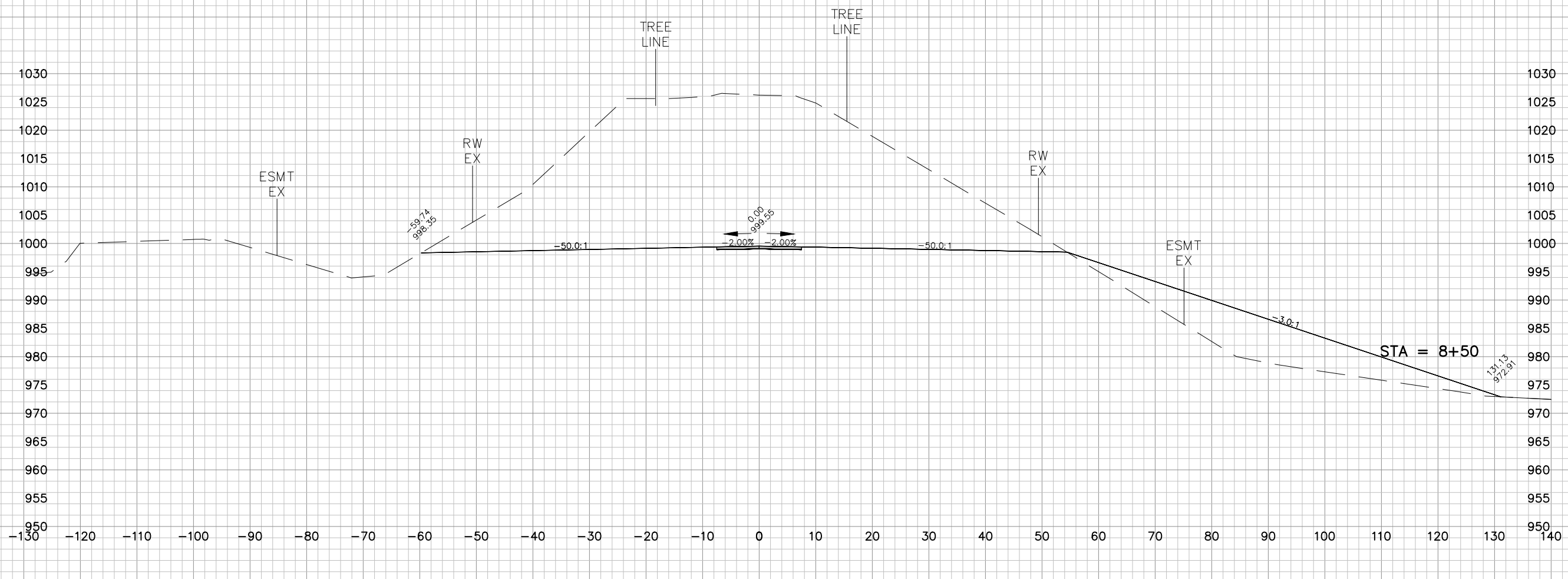
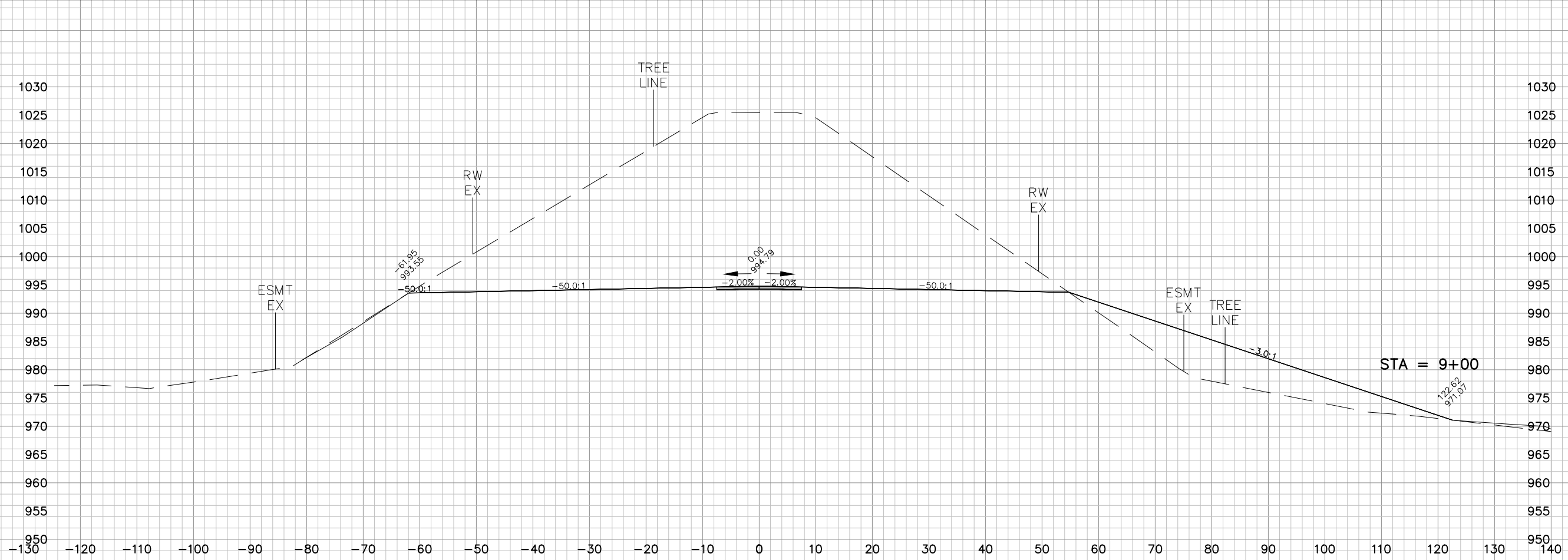
Graphic Scale: 0' 2.5' 5' 10' 15'

DFD Number: 1811N

Set Type: FR

Date Issued: 01/30/2023

Sheet Number: C113





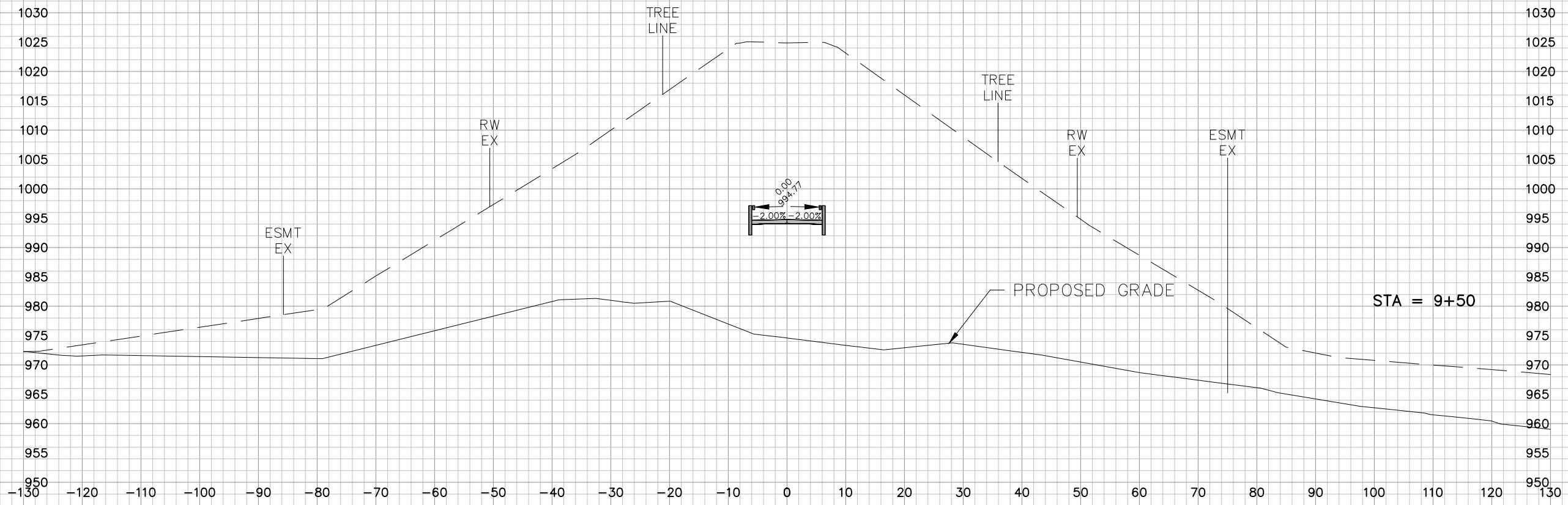
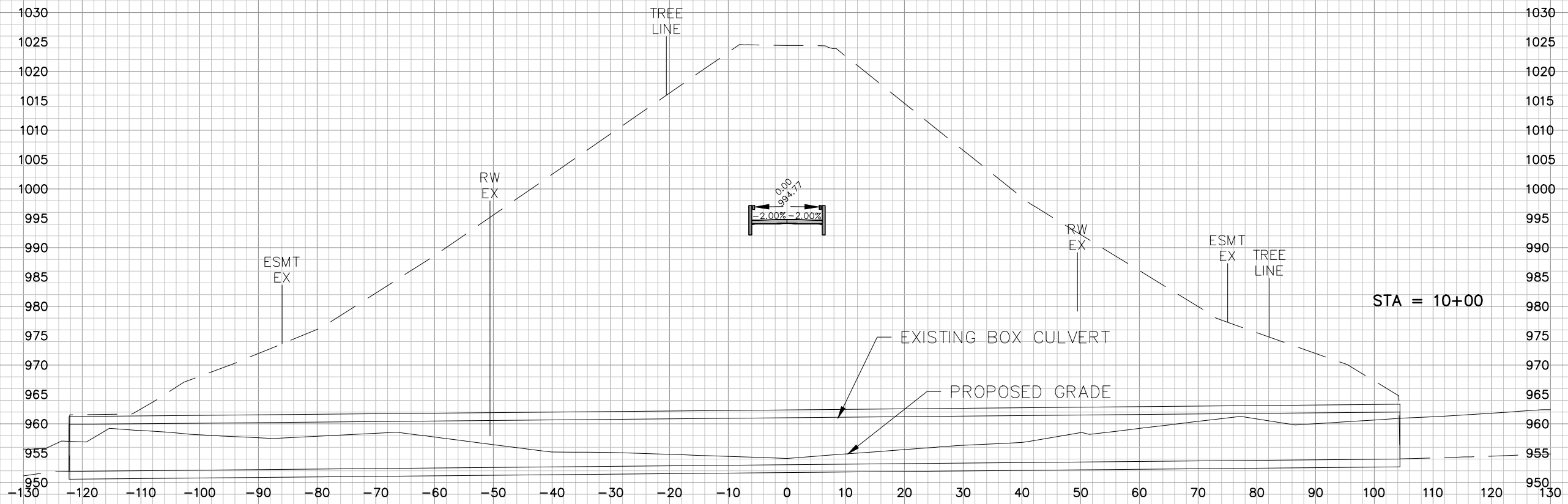
**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**

Sheet Title:
CROSS SECTIONS

Revisions:

No.	Date:	Description:

Graphic Scale	
DFD Number	1811N
Set Type	FR
Date Issued	01/30/2023
Sheet Number	C114



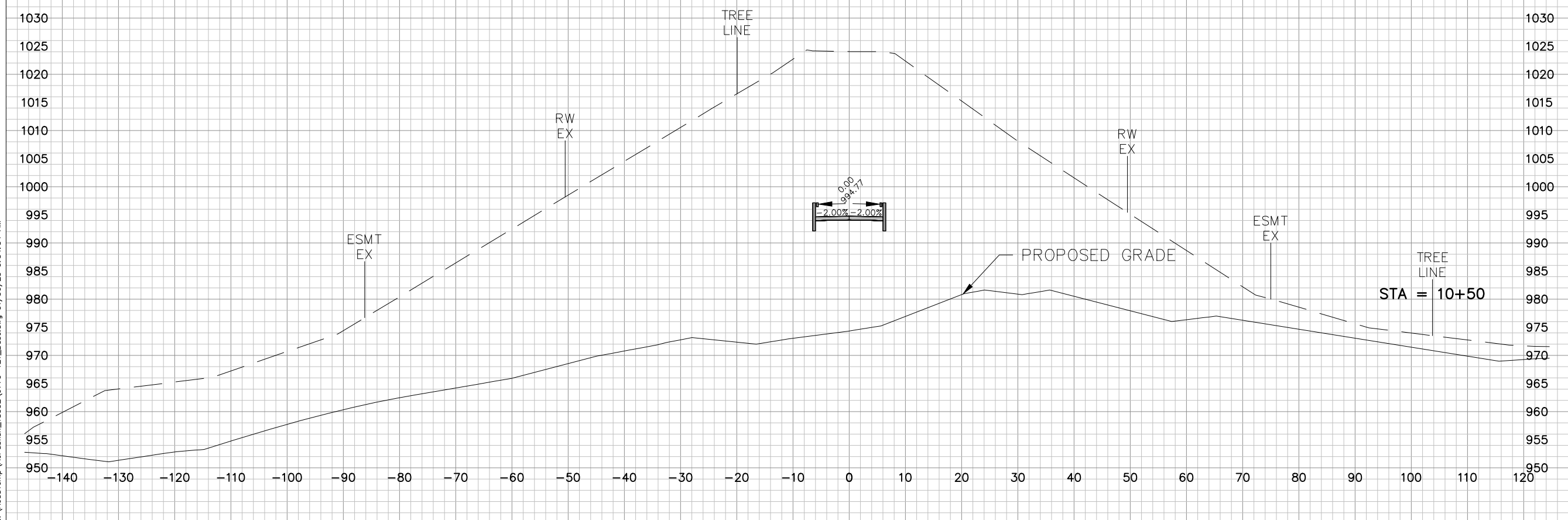
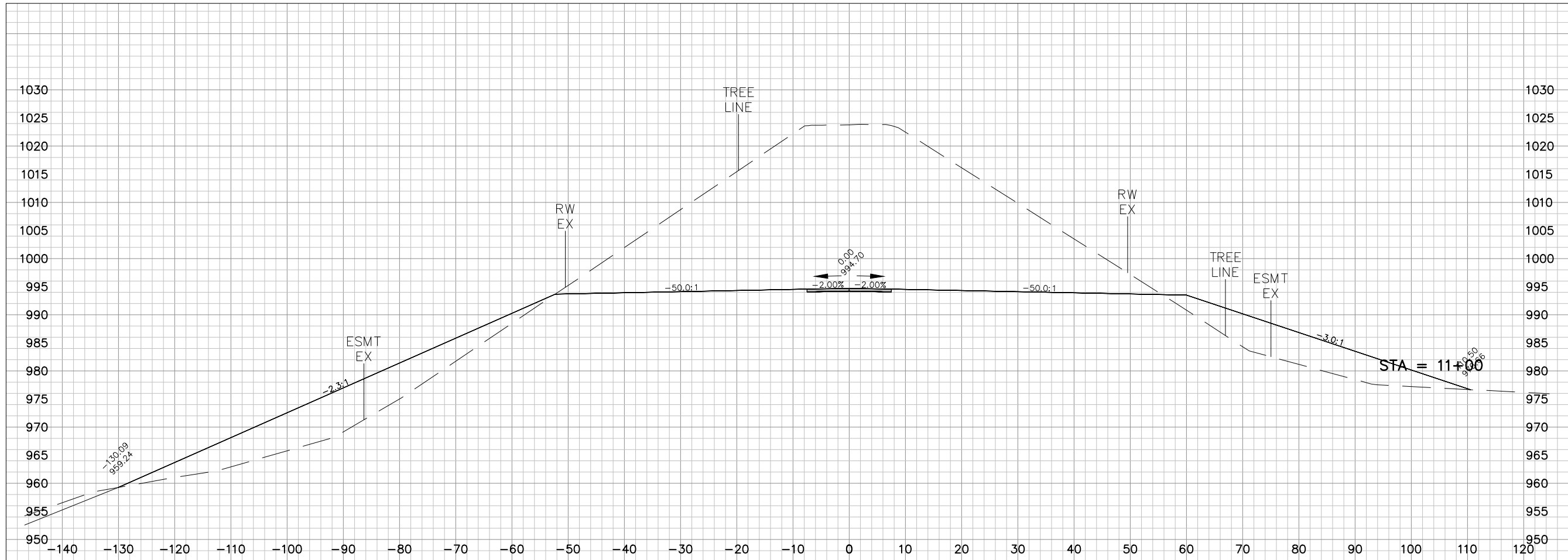


**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**

Sheet Title:
CROSS SECTIONS

Revisions:		
No.	Date:	Description:

Graphic Scale	
DFD Number	1811N
Set Type	FR
Date Issued	01/30/2023
Sheet Number	C115



C:\AcadTemp\AcPublish_18552\0779-121_Base.dwg 01/30/23 9:34:34 AM



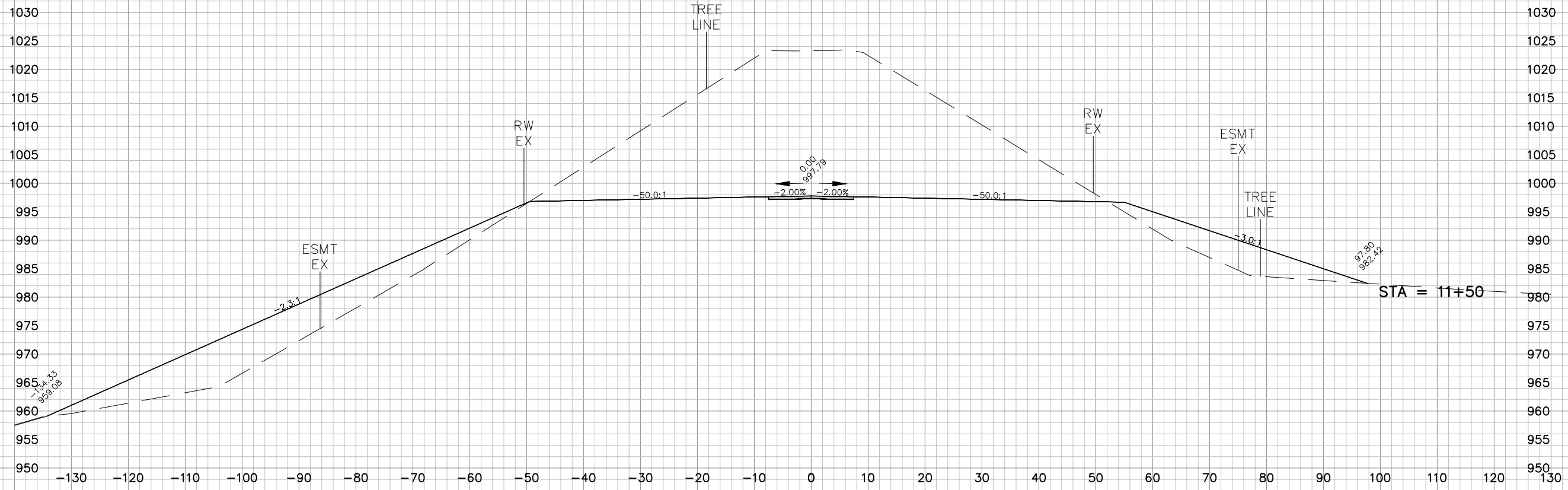
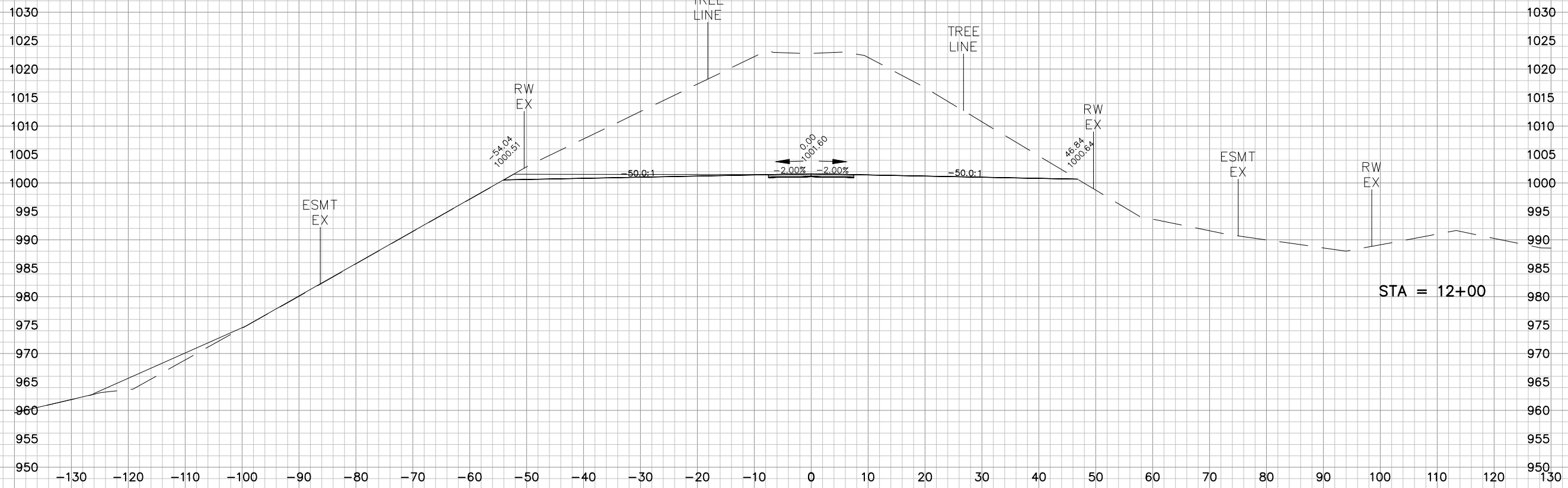
**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**

Sheet Title:
CROSS SECTIONS

Revisions:

No.	Date:	Description:

Graphic Scale	
DFD Number	1811N
Set Type	FR
Date Issued	01/30/2023
Sheet Number	C116



C:\AcadTemp\AcPublish\18552\0779-121_Base.dwg 01/30/23 9:34:38 AM



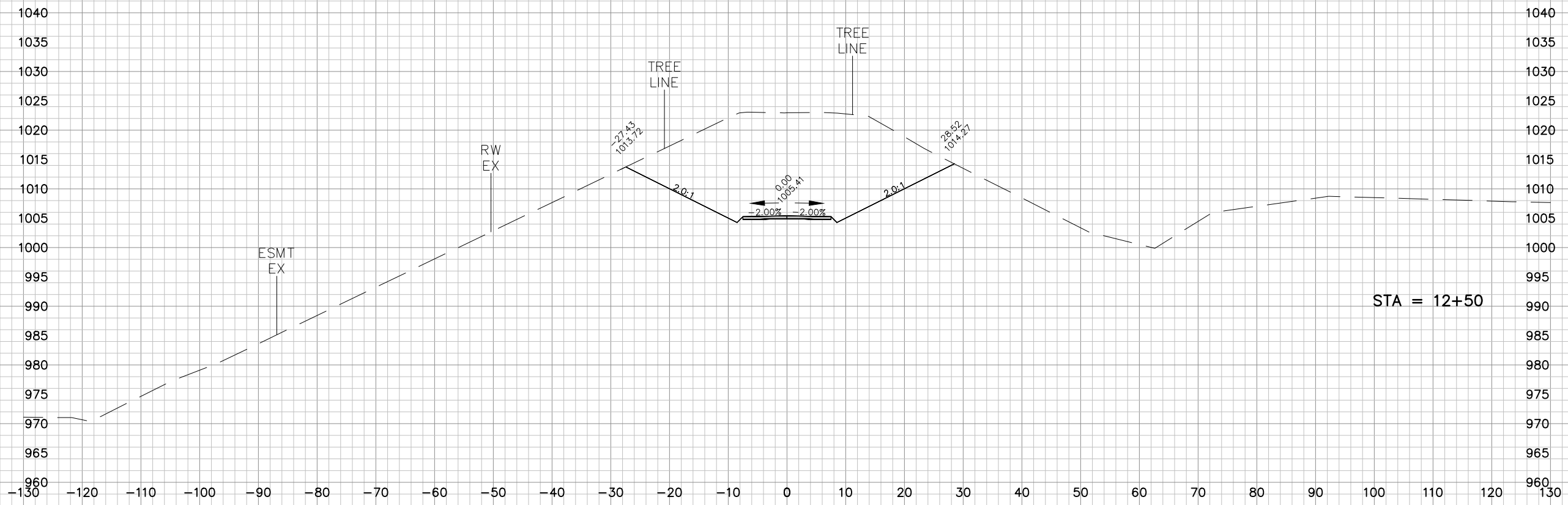
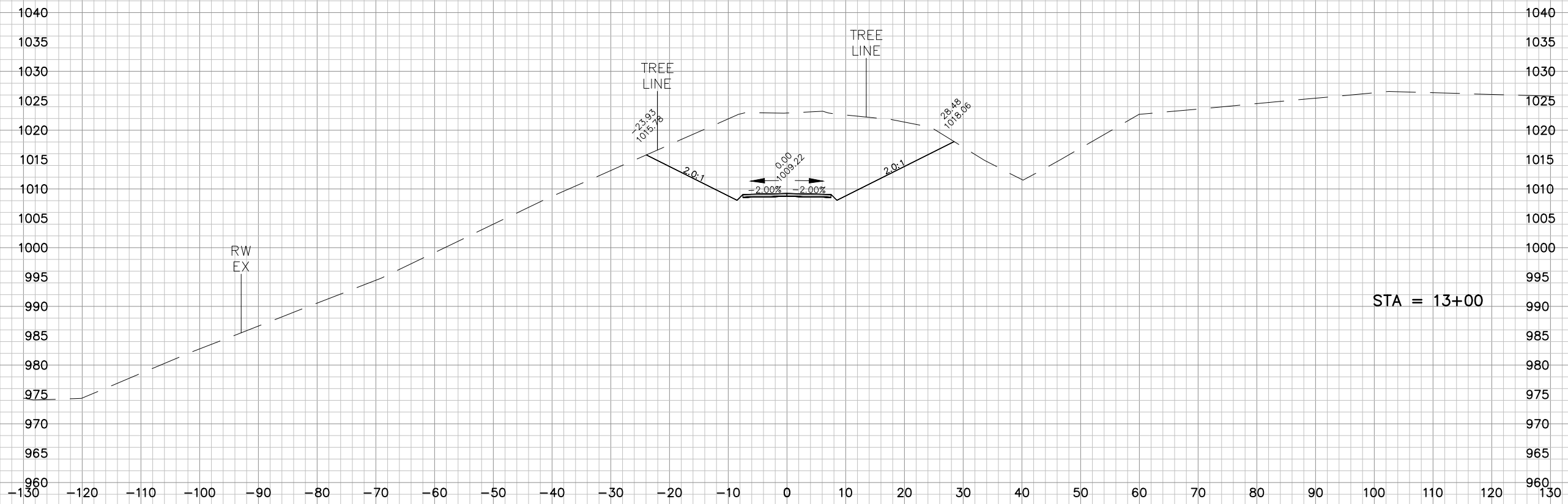
**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**

Sheet Title:
CROSS SECTIONS

Revisions:

No.	Date:	Description:

Graphic Scale	
DFD Number	1811N
Set Type	FR
Date Issued	01/30/2023
Sheet Number	C117



C:\AcadTemp\AcPublish\18552\0779-121_Base.dwg 01/30/23 9:34:43 AM



**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**

Sheet Title:
CROSS SECTIONS

Revisions:		
No.	Date:	Description:

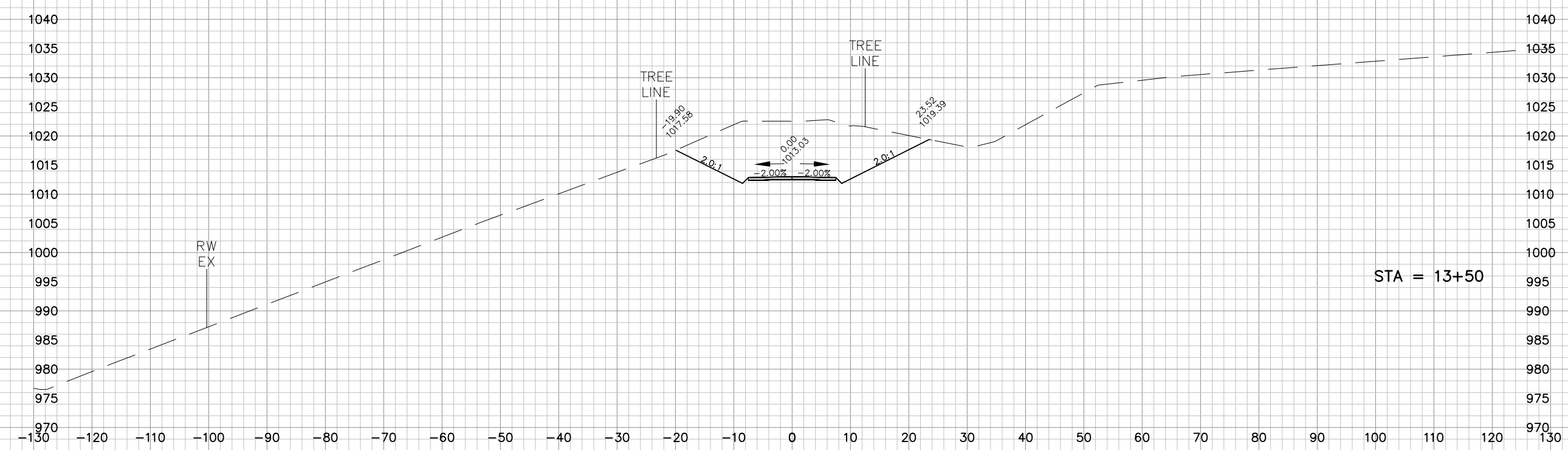
Graphic Scale: 0' 2.5' 5' 10' 15'

DFD Number: 1811N

Set Type: FR

Date Issued: 01/30/2023

Sheet Number: C118





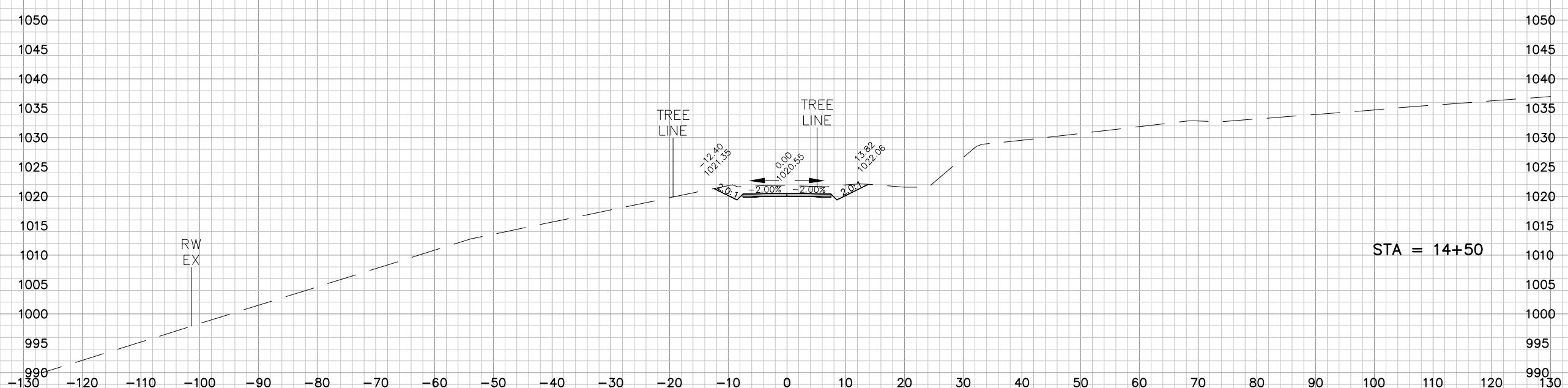
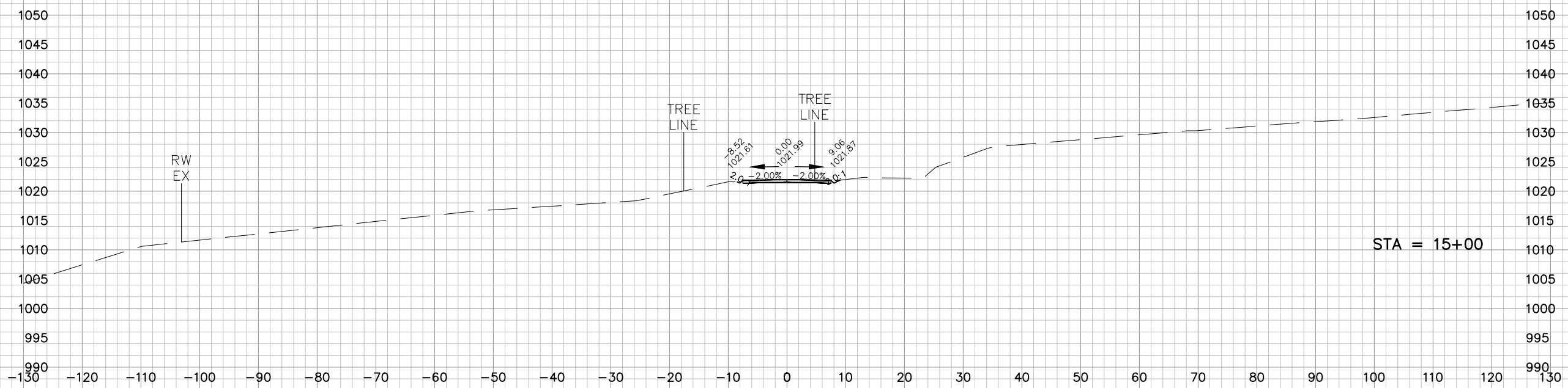
**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**

Sheet Title:
CROSS SECTIONS

Revisions:

No.	Date:	Description:

Graphic Scale	
DFD Number	1811N
Set Type	FR
Date Issued	01/30/2023
Sheet Number	C119





604 Wilson Avenue
Menomonie, Wisconsin 54751

engineers • architects • planners
environmental specialists
land surveyors • landscape architects
interior designers

715-235-9081
800-472-7372
FAX 715-235-2727
www.cedarcorp.com

State of Wisconsin
Department of Administration
Division of Facilities Development



P.O. BOX 7866
MADISON, WI 53707-7866

BOX CULVERT REMOVAL AND NEW BRIDGE CONSTRUCTION GANDY DANCER STATE TRAIL TOWN OF SUMMIT, WISCONSIN

Sheet Title:
CROSS SECTIONS
STREAM

Revisions:

No.	Date:	Description:

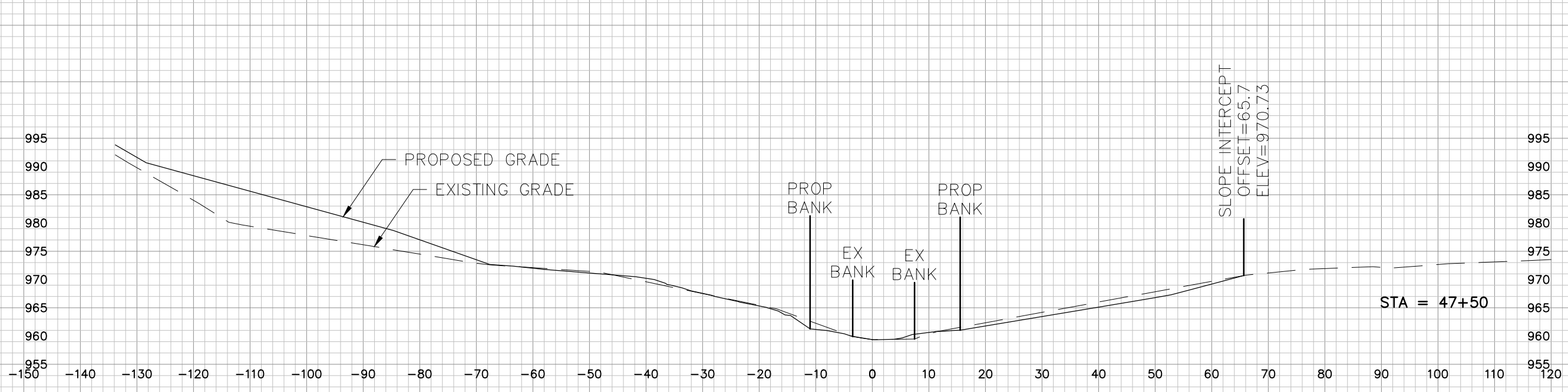
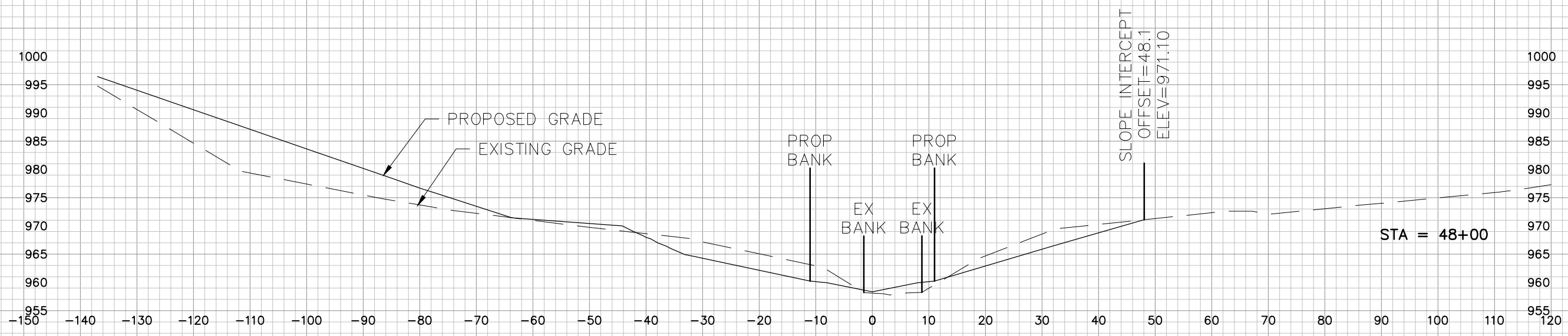
Graphic Scale: 0' 2.5' 5' 10' 15'

DFD Number: 1811N

Set Type: FR

Date Issued: 01/30/2023

Sheet Number: C120



C:\AcadTemp\AcPublish_18552\0779-121_Base.dwg 01/30/23 9:34:57 AM



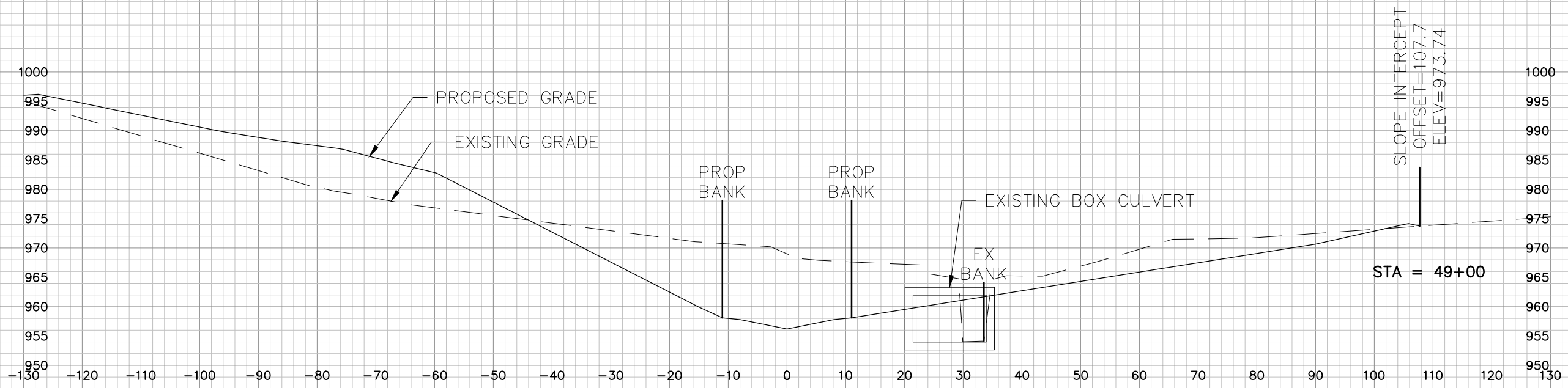
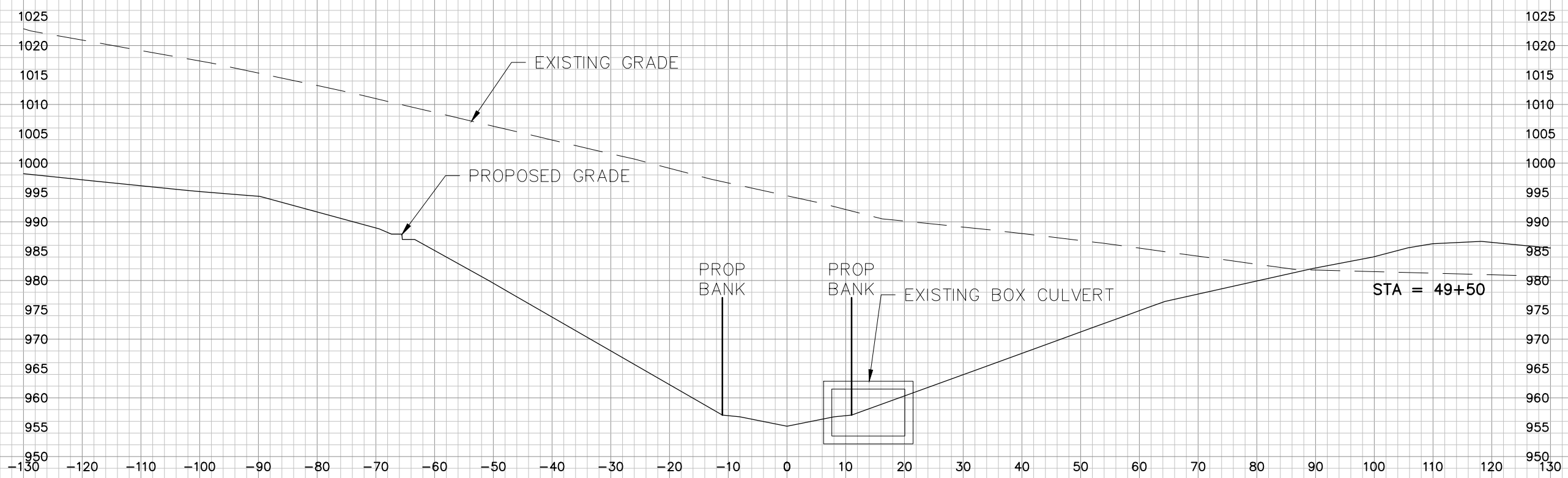
**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**

Sheet Title:
CROSS SECTIONS
STREAM

Revisions:

No.	Date:	Description:

Graphic Scale	
DFD Number	1811N
Set Type	FR
Date Issued	01/30/2023
Sheet Number	C121



C:\acad\temp\AcPublish_18552\0779-121_Base.dwg 01/30/23 9:35:02 AM



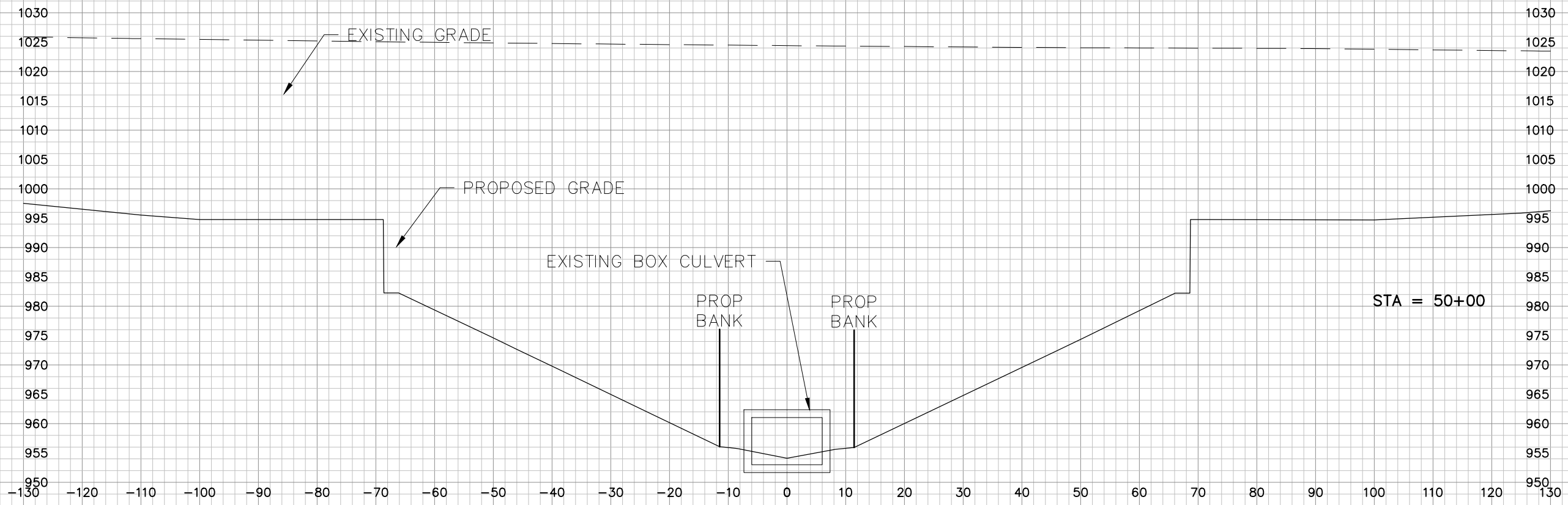
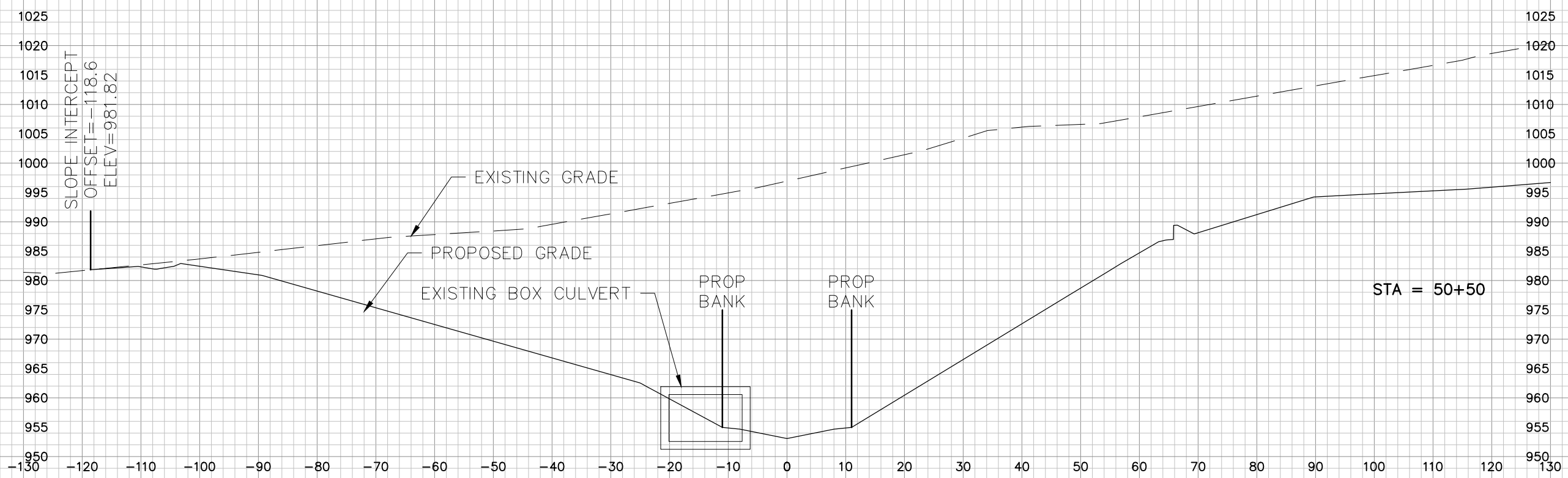
**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**

Sheet Title:
CROSS SECTIONS
STREAM

Revisions:

No.	Date:	Description:

Graphic Scale	
DFD Number	1811N
Set Type	FR
Date Issued	01/30/2023
Sheet Number	C122





**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**

Sheet Title:
CROSS SECTIONS
STREAM

Revisions:		
No.	Date:	Description:

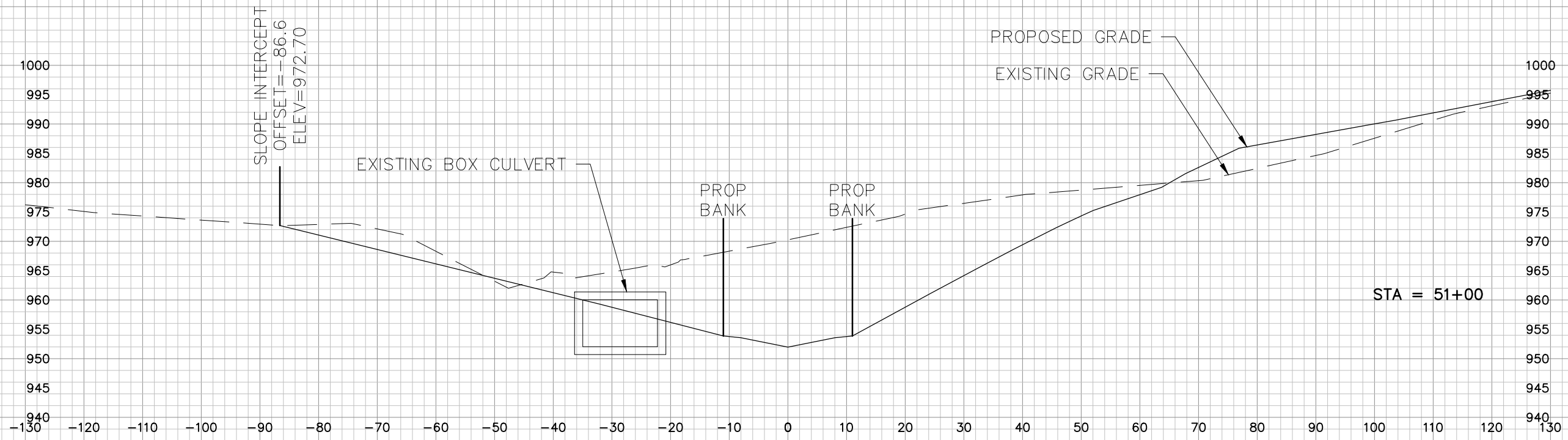
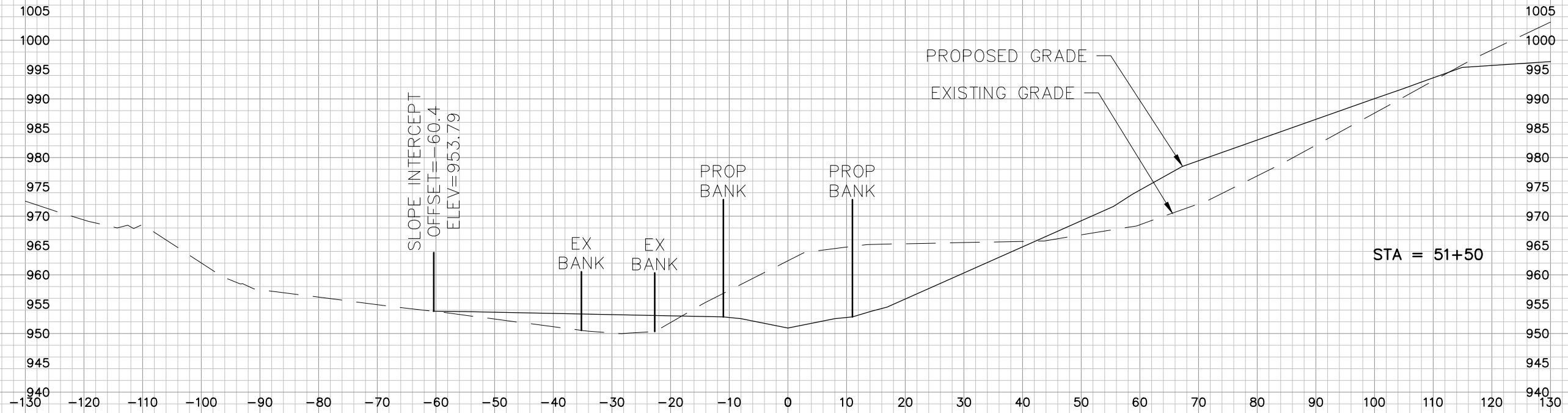
Graphic Scale	
---------------	--

DFD Number	1811N
------------	-------

Set Type	FR
----------	----

Date Issued	01/30/2023
-------------	------------

Sheet Number	C123
--------------	------





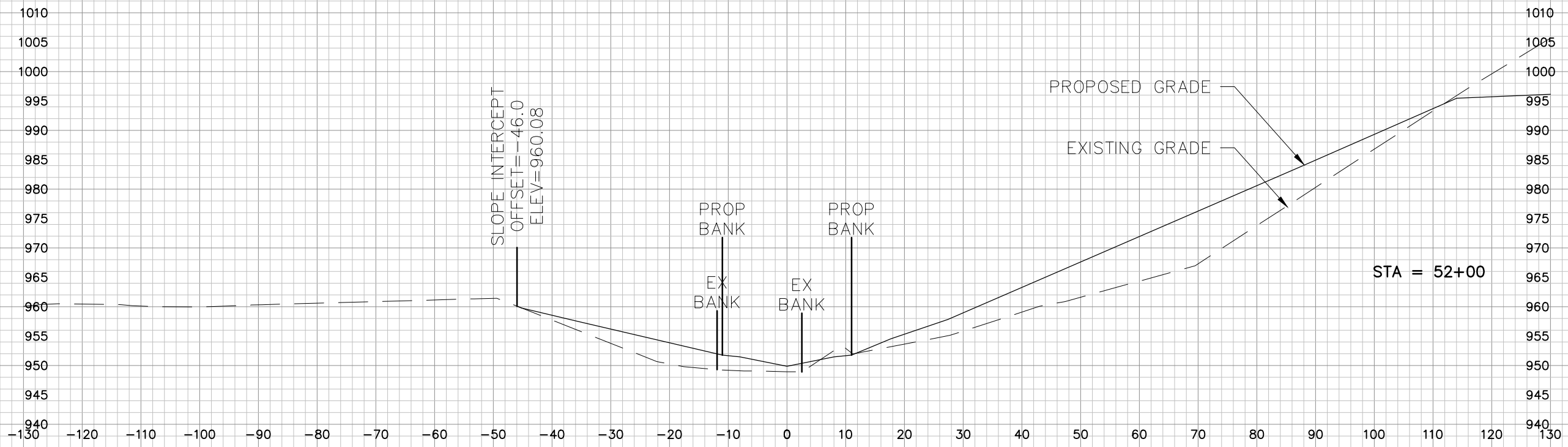
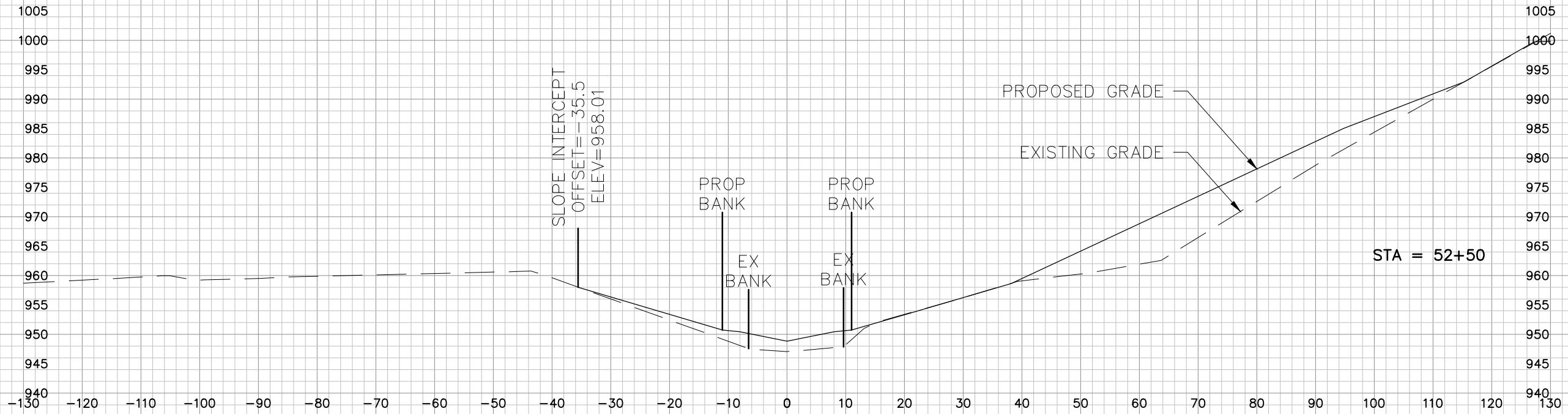
**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**

Sheet Title:
CROSS SECTIONS
STREAM

Revisions:

No.	Date:	Description:

Graphic Scale	
DFD Number	1811N
Set Type	FR
Date Issued	01/30/2023
Sheet Number	C124





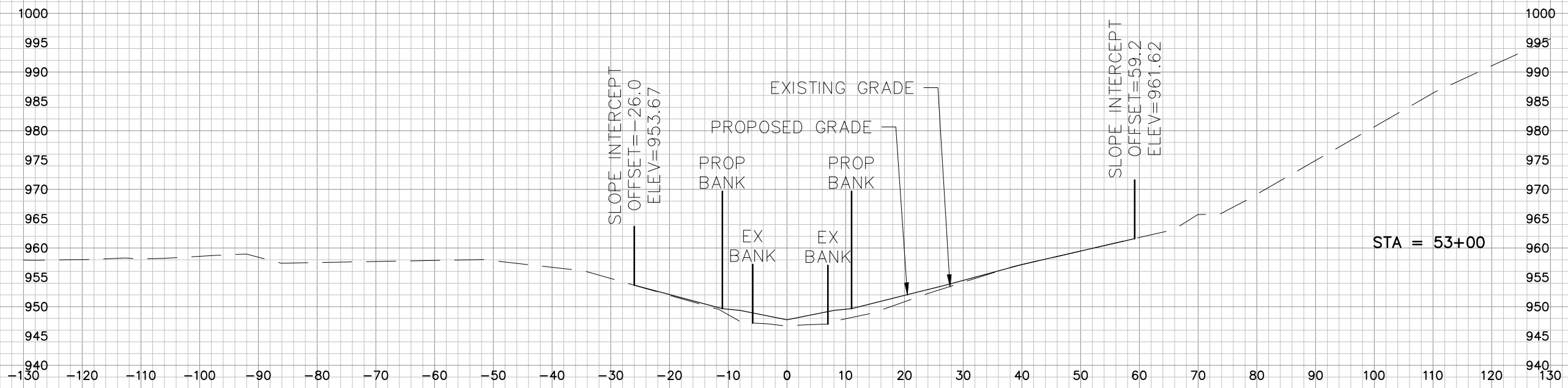
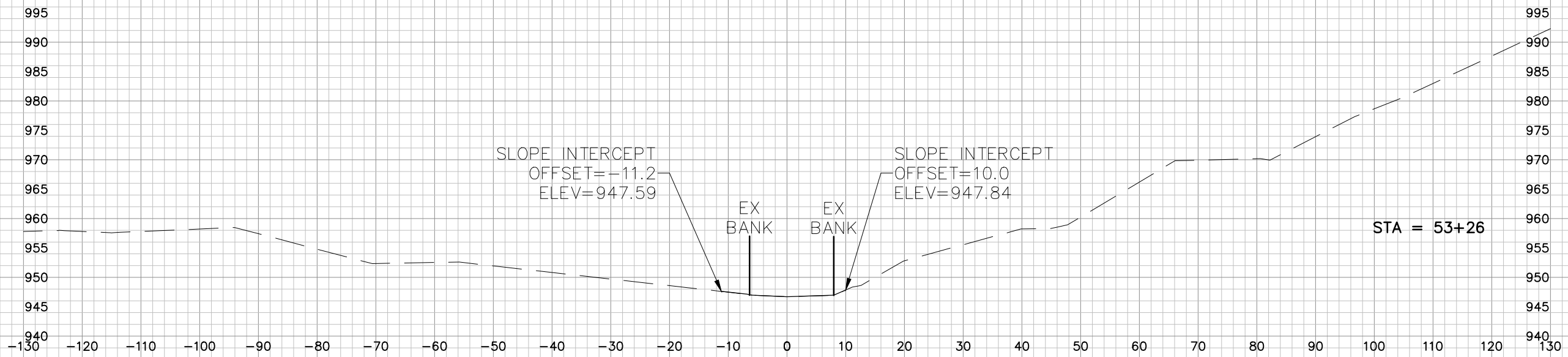
**BOX CULVERT REMOVAL
AND NEW BRIDGE CONSTRUCTION
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT, WISCONSIN**

Sheet Title:
CROSS SECTIONS
STREAM

Revisions:

No.	Date:	Description:

Graphic Scale	
DFD Number	1811N
Set Type	FR
Date Issued	01/30/2023
Sheet Number	C125





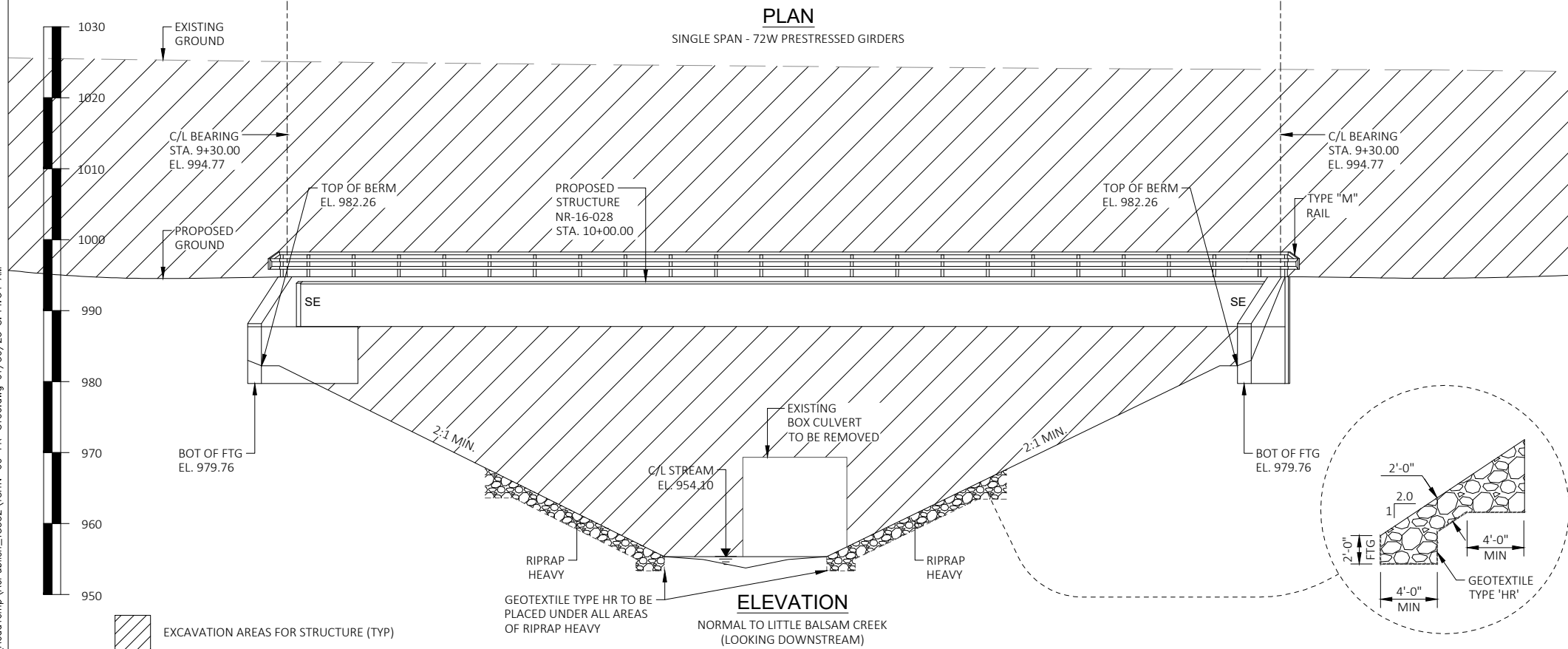
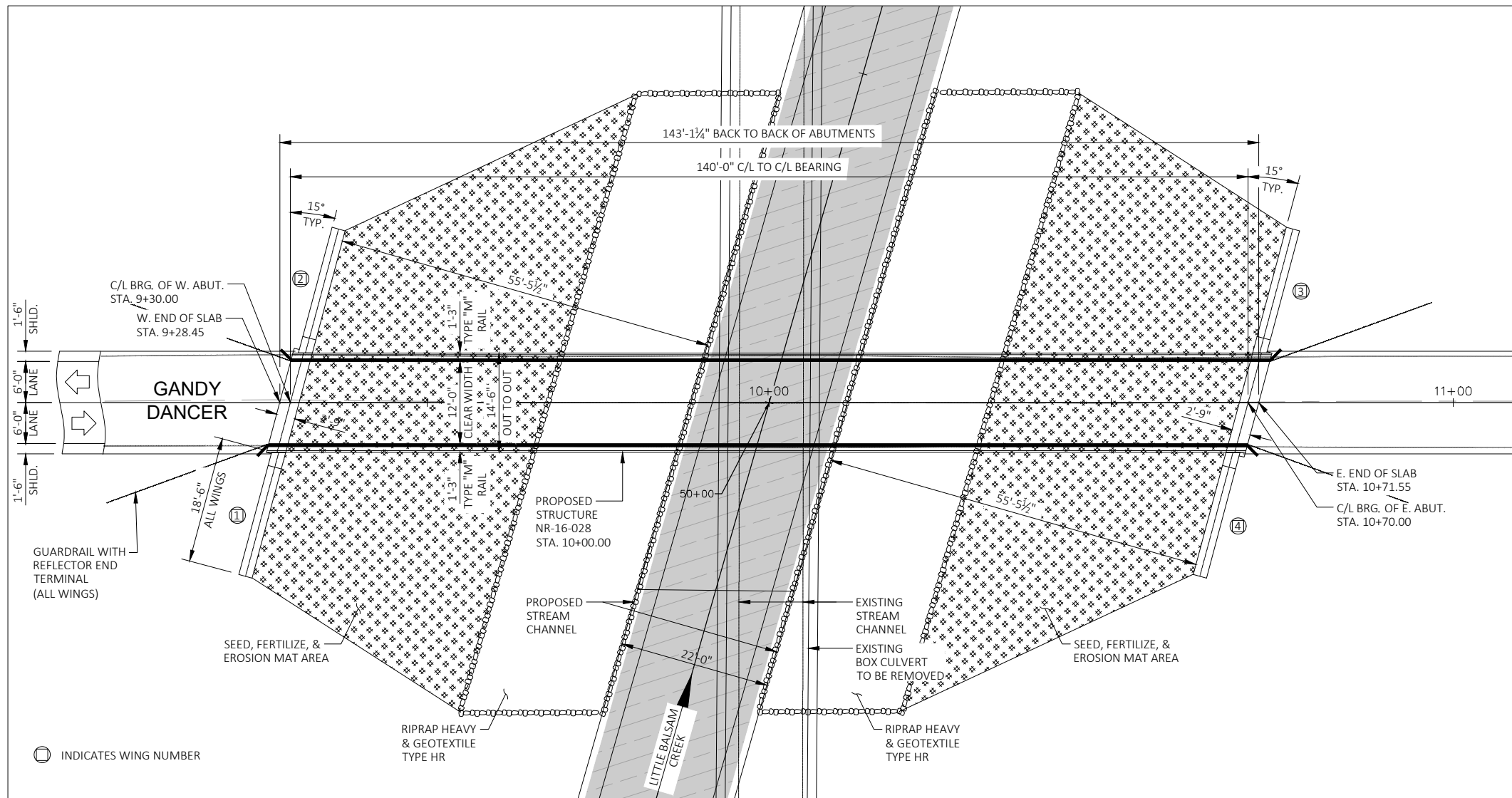
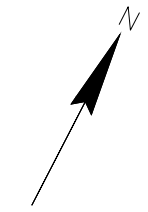
GANDY DANCER S.T. REPAIR
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT
DOUGLAS COUNTY, WISCONSIN

Sheet Title:
GENERAL PLAN

Revisions:

No.	Date:	Description:

Graphic Scale	
DFD Number	1811N
Set Type	FR
Date Issued	01/23/2023
Sheet Number	S100



DESIGN DATA

STRUCTURE IS DESIGNED FOR FUTURE WEARING SURFACE OF 20 POUNDS PER SQUARE FOOT.

LIVE LOAD: DESIGN LOADING _____ H10 & 90PSF PEDESTRIAN

MATERIAL PROPERTIES:

- CONCRETE MASONRY _____ f_c = 4,000 PSI
 SUPERSTRUCTURE _____ f_c = 3,500 PSI
 ALL OTHER _____ f_c = 3,500 PSI
 BAR STEEL REINFORCEMENT, GRADE 60 _____ f_y = 60,000 PSI
 (INCLUDES COATED STEEL REINFORCEMENT)
 PRESTRESSED GIRDER _____
 CONCRETE MASONRY _____ f_c = 8,000 PSI
 STRANDS - 0.6" DIA WITH _____
 ULTIMATE TENSILE STRENGTH OF _____ f_c = 270,000 PSI

HYDRAULIC DATA

100 YEAR FREQUENCY

- Q₁₀₀ _____
 Q_{BRIDGE} _____
 VEL. _____
 HW₁₀₀ _____
 WATERWAY AREA _____
 DRAINAGE AREA _____
 SCOUR CRITICAL CODE _____

2 YEAR FREQUENCY

- Q₂ TOTAL _____
 VEL. _____
 HW₂ _____

FOUNDATION DATA

ABUTMENTS TO BE SUPPORTED ON PILING HP 12-INCH X 53 LB, WITH A REQUIRED DRIVING RESISTANCE OF 200 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC EQUATION.

ESTIMATED LENGTH 45'-0" WEST ABUTMENT
 ESTIMATED LENGTH 50'-0" EAST ABUTMENT

* THE FACTORED AXIAL RESISTANCE OF PILES IN COMPRESSION USED FOR DESIGN IS THE REQUIRED DRIVING RESISTANCE MULTIPLIED BY A RESISTANCE FACTOR OF 0.5 USING MODIFIED GATES TO DETERMINE DRIVEN PILE CAPACITY.

BENCHMARKS			
NO	STA	DESCRIPTION	ELEV
1	13+94±	3/4" REBAR SET IN GROUND (@ 11.60' LT)	1021.80'
2	8+23±	3/4" REBAR SET IN GROUND (@ 9.73' RT)	1026.96'
3	7+68±	1" STEEL PIN SET IN WOOD BEAM (@ 9.08' RT)	1027.32'

LIST OF DRAWINGS

- S100 GENERAL PLAN
- S101 CROSS SECTION, QUANTITIES, & NOTES
- S102 SUBSURFACE EXPLORATION
- S103 WEST ABUTMENT
- S104 EAST ABUTMENT
- S105 WING DETAILS
- S106 72W-INCH PRESTRESSED GIRDER DETAILS 1
- S107 72W-INCH PRESTRESSED GIRDER DETAILS 2
- S108 STEEL DIAPHRAGM
- S109 SUPERSTRUCTURE CROSS SECTIONS
- S110 SUPERSTRUCTURE
- S111 SUPERSTRUCTURE DETAILS
- S112 RAILING TUBULAR TYPE M

CONSULTANT CONTACT

TROY L. PETERSON
(715) 235-9081



Revisions:		
No.	Date:	Description:

Graphic Scale	
DFD Number	1811N
Set Type	FR
Date Issued	01/23/2023
Sheet Number	S101

GENERAL NOTES

DRAWINGS SHALL NOT BE SCALED.

ALL STATIONS & ALL ELEVATIONS ARE IN FEET.

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2" CLEAR UNLESS SHOWN OR NOTED OTHERWISE.

ALL REINFORCING BARS ARE ENGLISH. THE FIRST DIGIT OF A THREE-DIGIT BAR MARK OR THE FIRST TWO DIGITS OF A FOUR-DIGIT BAR MARK SIGNIFIES THE BAR SIZE.

JOINT FILLER SHALL CONFORM TO THE REQUIREMENTS OF A.A.S.H.T.O. DESIGNATION M 153, TYPE I, II OR III OR A.A.S.H.T.O. DESIGNATION M 213.

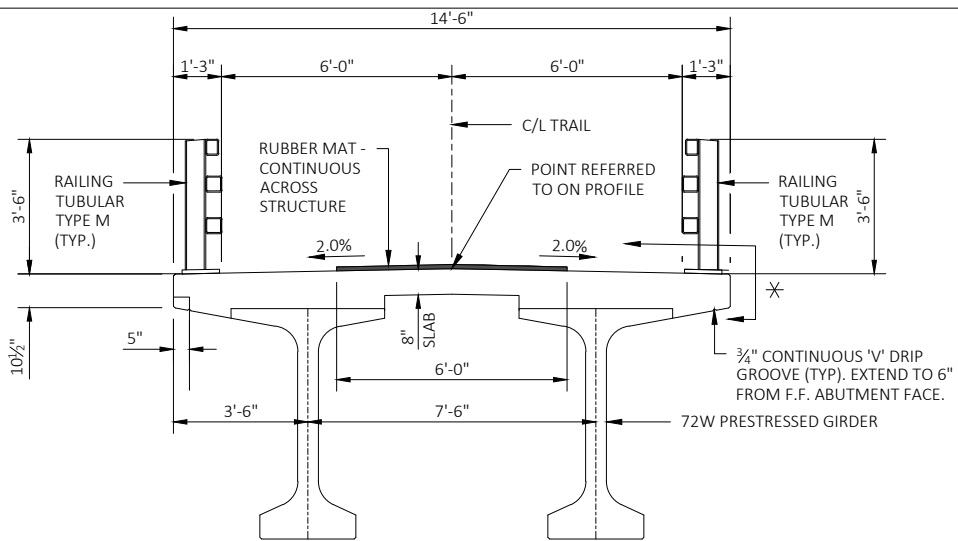
THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH SEED, FERTILIZER, MULCH, RIPRAP HEAVY, AND GEOTEXTILE TYPE 'HR' TO THE EXTENT SHOWN ON SHEET S100 AND IN THE ABUTMENT DETAILS.

AT THE BACK FACE OF ABUTMENT ALL VOLUME WHICH CANNOT BE IN PLACE BEFORE ABUTMENT CONSTRUCTION AND NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH BACKFILL STRUCTURE.

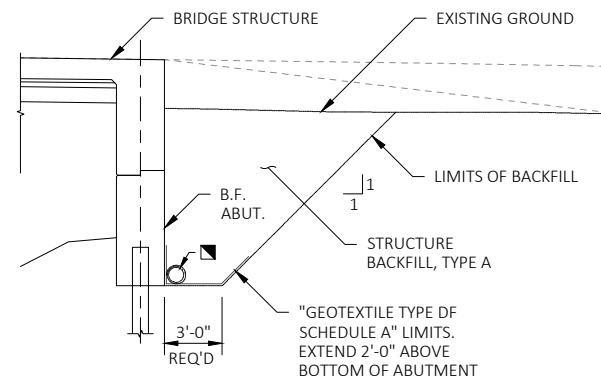
AT ABUTMENTS, CONCRETE POURED UNDERWATER WILL BE ALLOWED AND SHALL BE DONE IN ACCORDANCE WITH SECTION 502.3.5.3 OF THE STANDARD SPECIFICATIONS.

PIPE UNDERDRAIN WRAPPED (6-INCH). SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.

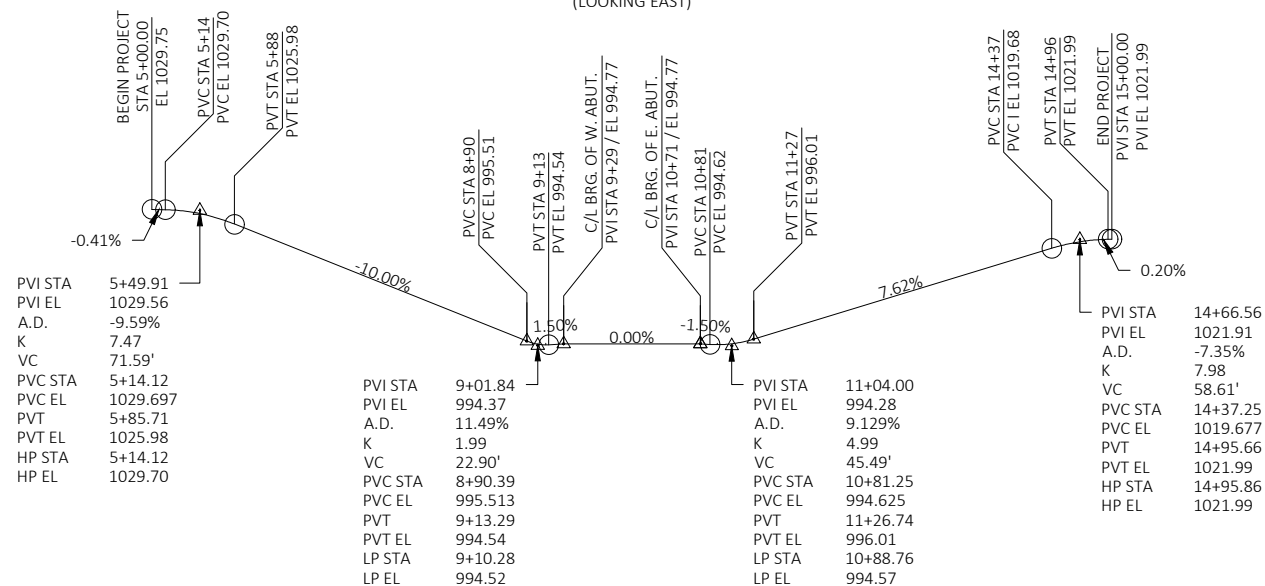
APPLY PROTECTIVE SURFACE TREATMENT TO THE TOP OF DECK, EDGES OF DECK, AND BOTTOM 1' OUTSIDE EDGE OF DECK. APPLY TO TOP OF WINGS AND EXTERIOR EXPOSED FACE OF WINGS AND THE END 1' OF THE FRONT FACE OF ABUTMENTS.



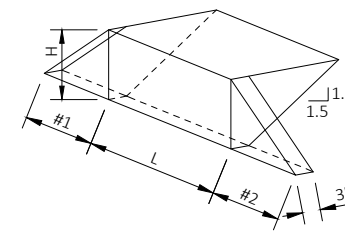
CROSS SECTION THRU STRUCTURE
(LOOKING EAST)



STRUCTURE BACKFILL & LIMITS



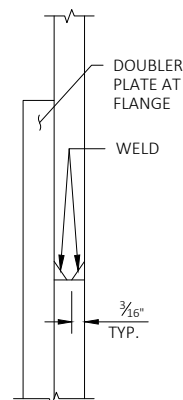
PROPOSED GRADE ON TRAIL



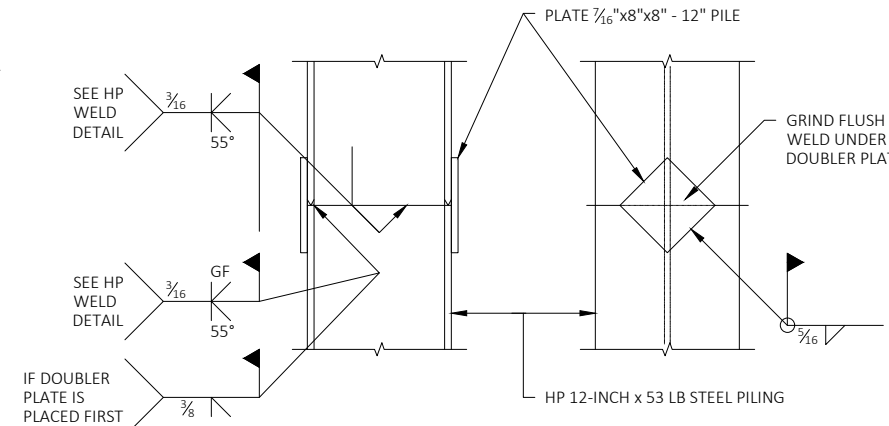
ABUTMENT BACKFILL DIAGRAM FOR WINGS PARALLEL TO ABUTMENT

- L = OUT TO OUT OF ABUTMENT BODY (FT)
- H = AVERAGE ABUTMENT FILL HEIGHT (FT)
- W1 = WING 1 LENGTH (FT)
- W2 = WING 2 LENGTH (FT)
- EF = EXPANSION FACTOR (1.20 FOR CY BID ITEMS & 1.00 FOR TON BID ITEMS)
- $V_{CF} = (L)(3.0')(H) + (L)(0.5)(1.5H)(H) + (3.0')(0.5)(W1+W2)(H)$
- $V_{CY} = V_{CF}(EF)/27$
- $V_{TON} = V_{CY}(2.0)$

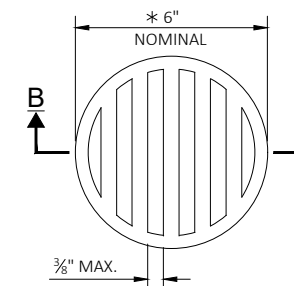
ESTIMATED QUANTITIES FOR INFORMATION ONLY					
	UNIT	WEST ABUT.	EAST ABUT.	SUPER.	TOTALS
REMOVING STRUCTURE OVER WATERWAY MINIMAL DEBRIS (EX. CULVERT)	EACH	-	-	-	1
EXCAVATION FOR STRUCTURES BRIDGES NR-16-028	LS	-	-	-	1
BACKFILL STRUCTURE TYPE A	TON	280	280	-	560
CONCRETE MASONRY BRIDGES	CY	45.6	45.6	82.8	174
PROTECTIVE SURFACE TREATMENT	SY	40	40	288	368
PRESTRESSED GIRDER TYPE I 72W-INCH	LF	-	-	282	282
BAR STEEL REINFORCEMENT HS STRUCTURES	LB	1420	1420	-	2840
BAR STEEL REINFORCEMENT HS COATED STRUCTURES	LB	2910	2910	15270	21090
RAILING TUBULAR TYPE M	LF	-	-	290	290
RUBBERIZED MEMBRANE WATERPROOFING	SY	5	5	-	10.0
PILE POINTS	EACH	6	6	-	12
PILING STEEL HP 12-INCH X 53 LB	LF	270	300	-	570
RIPRAP HEAVY	CY	145	145	-	290
PIPE UNDERDRAIN WRAPPED 6-INCH	LF	75	75	-	150
GEOTEXTILE TYPE DF SCHEDULE A	SY	12	12	-	24
GEOTEXTILE TYPE HR	SY	265	265	-	530
NON-BID ITEMS					
FILLER	SIZE	-	-	-	1/2" X 3/4"



HP WELD DETAIL
FLANGE SHOWN, WEB SIMILAR



PILE SPLICE DETAILS



RODENT SHIELD DETAIL

* DIMENSION IS APPROXIMATE. THE GRATE IS SIZED TO FIT INTO A PIPE COUPLING. ORIENT SO SLOTS ARE VERTICAL. THE RODENT SHIELD SHALL BE A PVC GRATE SIMILAR TO THIS DETAIL. THE GRATE IS COMMERCIALY AVAILABLE AS A FLOOR STRAINER. A PIPE COUPLING IS REQUIRED FOR THE ATTACHMENT OF THIS SHIELD TO THE EXPOSED END OF THE PIPE UNDERDRAIN. THE SHIELD SHALL BE FASTENED TO THE PIPE COUPLING WITH TWO OR MORE NO. 10 X 1-INCH STAINLESS STEEL SHEET METAL SCREWS.



Revisions:

No.	Date:	Description:

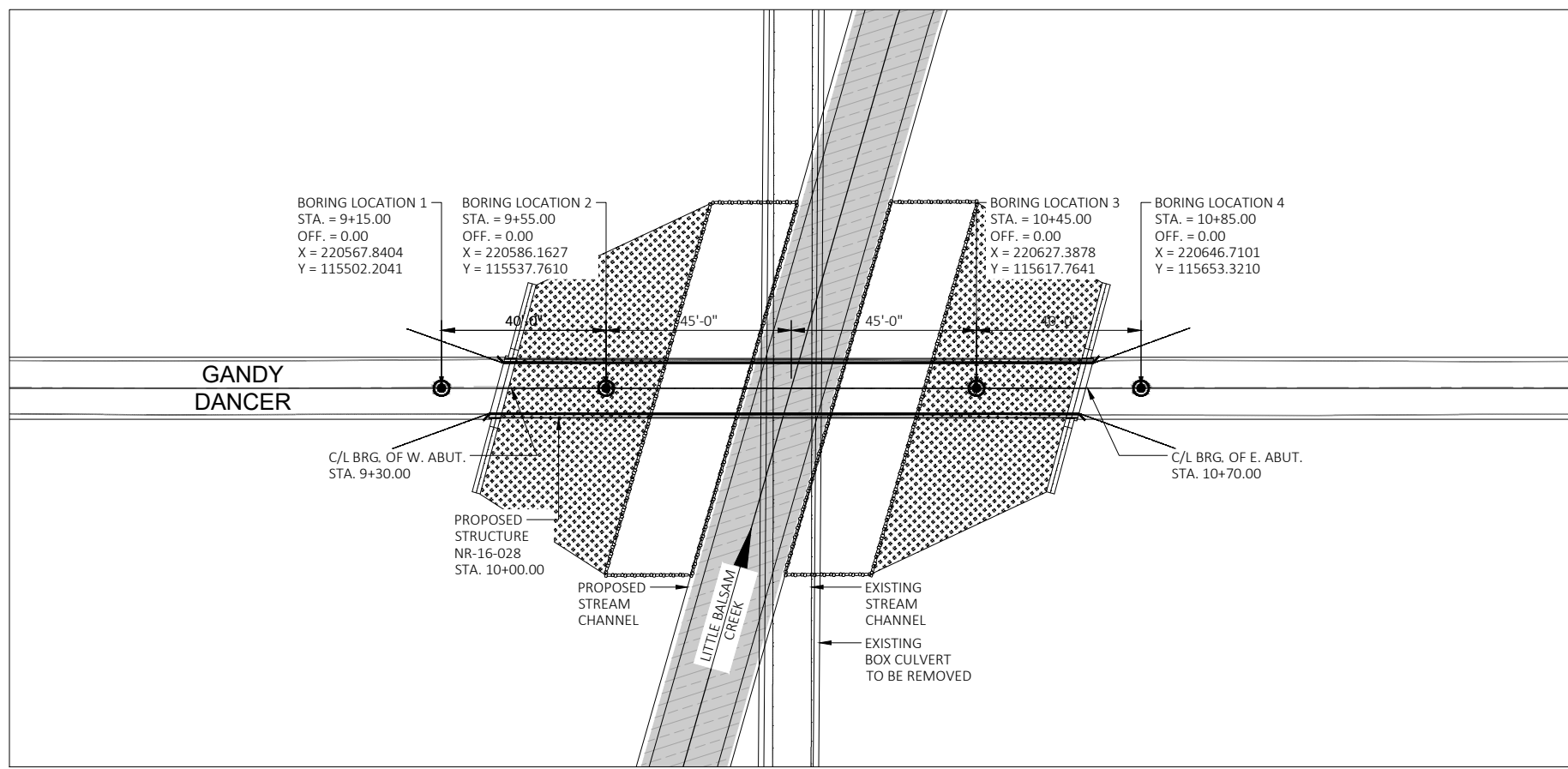
Graphic Scale: 0' 10' 20' 40' 60'

DFD Number: 1811N

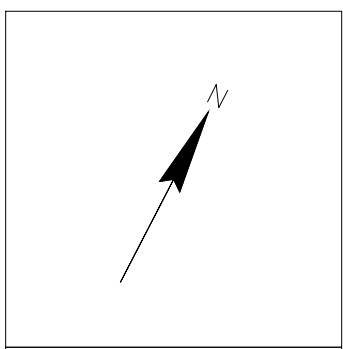
Set Type: FR

Date Issued: 01/23/2023

Sheet Number: **S102**



PLAN



SUBSURFACE NOTES

THE SUBSURFACE INFORMATION PRESENTED HEREIN IS AN ABBREVIATED VERSION OF THE INFORMATION PRESENTED IN THE GEOTECHNICAL ENGINEERING REPORT. REVIEW THE APPROPRIATE GEOTECHNICAL REPORT AND SOIL BORING LOGS FOR ADDITIONAL SUBSURFACE INFORMATION.

BORINGS & REPORT COMPLETED BY:

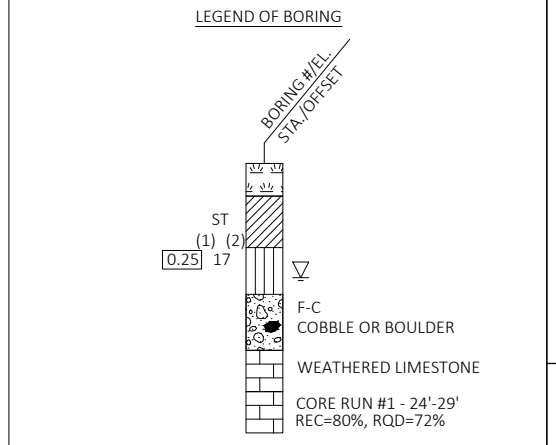
CHOSEN VALLEY TESTING, INC.
1019 SECOND AVENUE SW
ONALASKA, WI 54650
(608) 782-5505

BORINGS PERFORMED ON:

- 1/25/2021 - B1
- 1/26/2021 - B2
- 1/26/2021 - B3
- 1/26/2021 - B3

MATERIAL SYMBOLS

	ASPHALT		TOPSOIL		PEAT
	CONCRETE		FILL		GRAVEL
	SAND		CLAY		SILT
	BOULDERS OR COBBLES		LIMESTONE		BEDROCK (UNKNOWN)
	SHALE		SANDSTONE		IGNEOUS/META



- (1) UNCONFINED STRENGTH, AS DETERMINED BY A POCKET PENETROMETER (TSF)
- (2) UNLESS OTHERWISE SPECIFIED THE SPT 'N' VALUE IS BASED ON AASHTO T-206, STANDARD PENETRATION TEST. THE SPT 'N' VALUE PRESENTED HAS NOT BEEN CORRECTED FOR OVERBURDEN PRESSURE OR HAMMER EFFICIENCY.

GROUND WATER ELEVATION

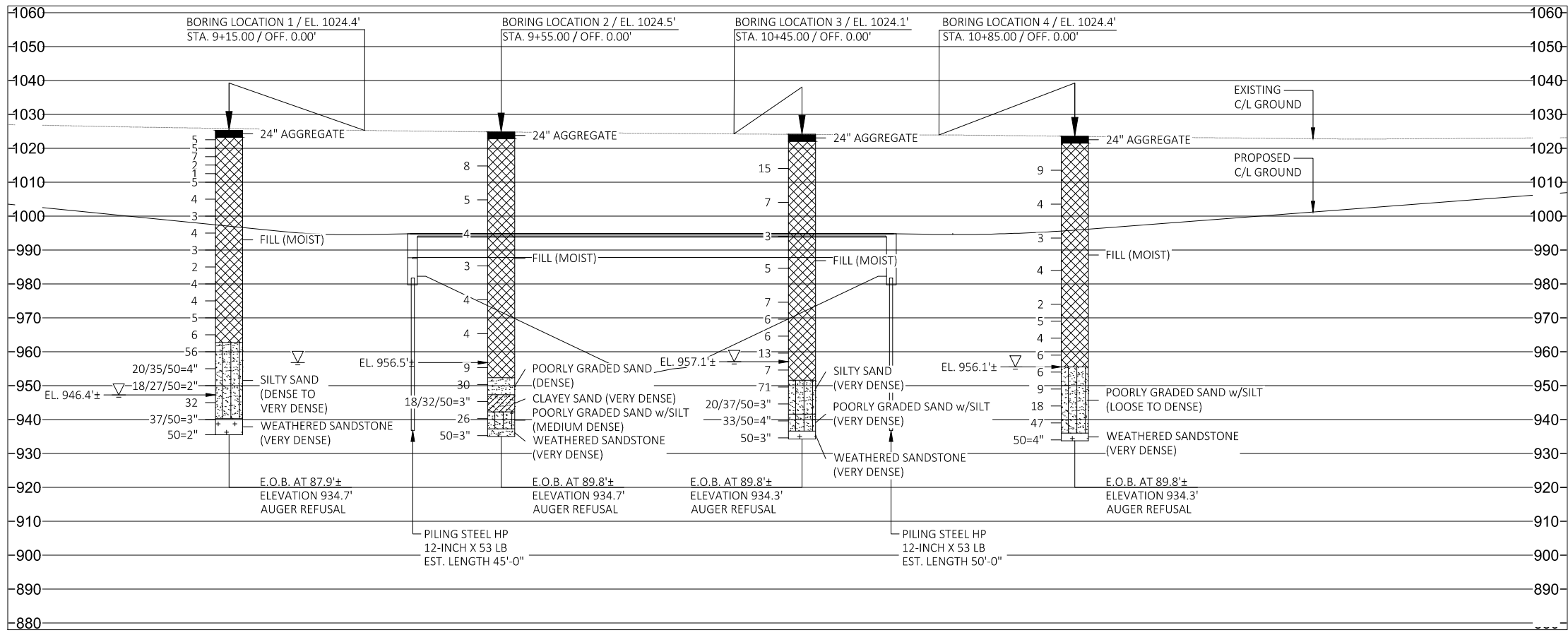
▽ AT TIME OF DRILLING
▼ END OF DRILLING
▼ AFTER DRILLING

ABBREVIATIONS

F-Fine M-Medium C-Coarse st-shelby tube

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN AND BIDDERS INFORMATION

BORINGS WERE COMPLETED AT POINTS APPROXIMATELY AS INDICATED ON THIS DRAWING TO OBTAIN INFORMATION CONCERNING THE CHARACTER OF SUBSURFACE MATERIALS FOUND AT THE SITE. BECAUSE THE INVESTIGATED DEPTHS ARE LIMITED AND THE AREA OF THE BORINGS IS VERY SMALL IN RELATION TO THE ENTIRE SITE, THE WISCONSIN DEPARTMENT OF TRANSPORTATION DOES NOT WARRANT SIMILAR SUBSURFACE CONDITIONS BELOW, BETWEEN, OR BEYOND THESE BORINGS. VARIATIONS IN SOIL CONDITIONS SHOULD BE EXPECTED AND FLUCTUATIONS IN GROUNDWATER LEVELS MAY OCCUR.



ELEVATION



Revisions:

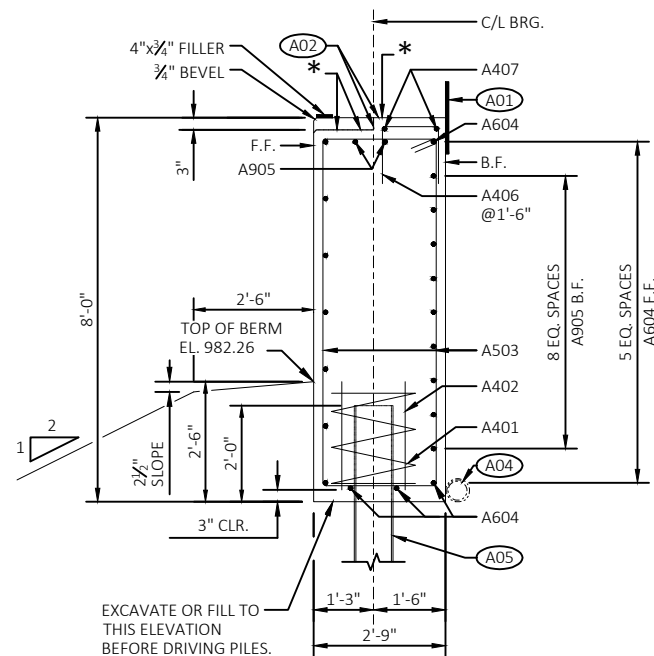
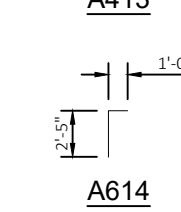
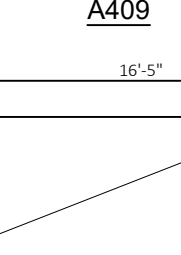
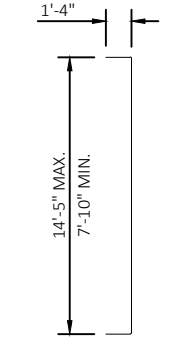
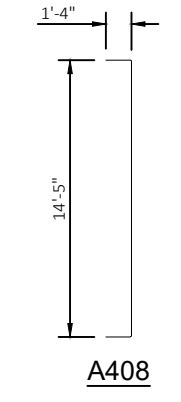
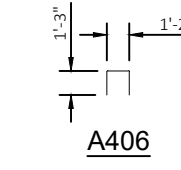
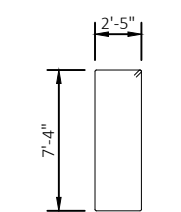
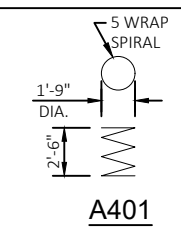
No.	Date:	Description:

Graphic Scale	
DFD Number	1811N
Set Type	FR
Date Issued	01/23/2023
Sheet Number	S103

BILL OF BARS

BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
A401		6	28-0	X		BODY - ONE PER PILE
A402		12	2-3			BODY - TWO PER PILE
A503		22	20-2	X		BODY - STIRRUPS
A604		10	15-5			BODY - HORIZONTAL F.F.
A905		11	15-5			BODY - HORIZONTAL B.F.
A406		4	3-6	X		BODY - STIRRUPS
A407		2	6-3			BODY - HORIZONTAL
A408	X	4	16-11	X		WING 1 & 2 - VERTICAL TOP
A409	X	72	13-8	X	■	WING 1 & 2 - VERTICAL BASE
A510	X	16	20-1			WING 1 & 2 - BASE HORIZ. F.F.
A911	X	20	22-11			WING 1 & 2 - BASE HORIZ. B.F.
A412	X	24	11-3	■		WING 1 & 2 - TOP HORIZONTAL
A413	X	4	19-4	X		WING 1 & 2 - TOP HORIZONTAL
A614	X	16	3-3	X		WING 1 & 2 - WING B.F. CORNERS

NOTE: BAR DIMENSIONS ARE OUT TO OUT OF BAR. THE FIRST DIGIT OF A THREE-DIGIT BAR MARK OR THE FIRST TWO DIGITS OF A FOUR-DIGIT BAR MARK SIGNIFIES THE BAR SIZE.



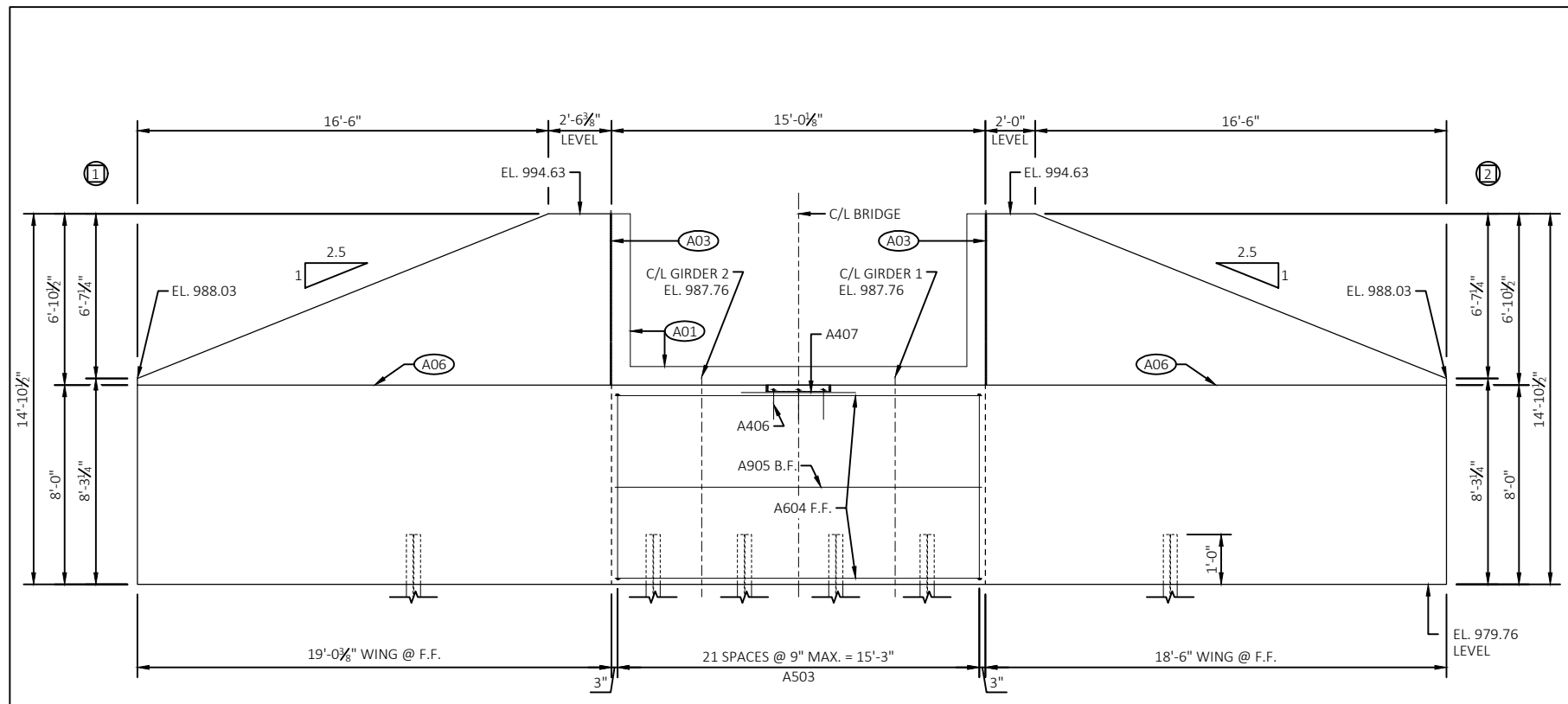
SECTION THRU BODY

ALL HORIZONTAL BARS ARE A604 UNLESS OTHERWISE SPECIFIED

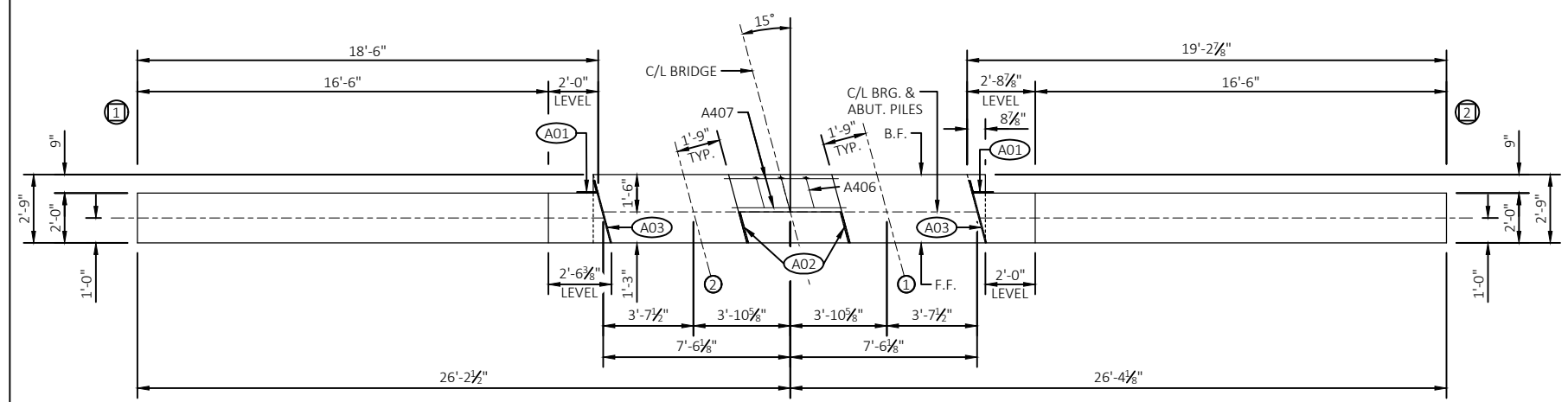
* STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS AND/OR SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".

LEGEND

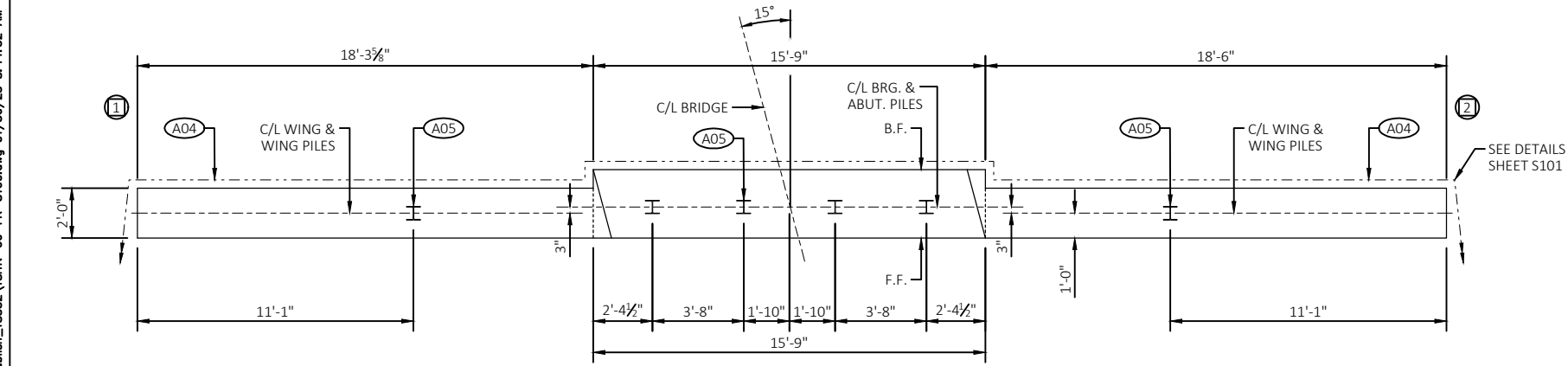
- (I) INDICATES WING NUMBER
- (A01) 18" RUBBERIZED MEMBRANE WATERPROOFING (R.M.W). SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- (A02) 3/4" CORK FILLER ON ALL VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- (A03) SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A04) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.
- (A05) PILING STEEL HP 12-INCH X 53 LB WITH A REQUIRED DRIVING RESISTANCE OF 200 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA. ESTIMATED LENGTH 45'-0".
- (A06) OPTIONAL KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6". (18" R.M.W. @ B.F. & 3/4" V-GROOVE @ F.F. IF JOINT IS USED).



ELEVATION
(LOOKING WEST)



PLAN



PILE PLAN



Revisions:

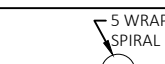
No.	Date:	Description:

Graphic Scale	
DFD Number	1811N
Set Type	FR
Date Issued	01/23/2023
Sheet Number	S104

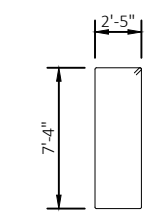
BILL OF BARS

BAR MARK	COAT	1420#UNCOATED		2910#COATED		BAR SERIES	LOCATION
		NO. REQ'D	LENGTH	NO. REQ'D	LENGTH		
B401		6	28-0	X			BODY - ONE PER PILE
B402		12	2-3				BODY - TWO PER PILE
B503		22	20-2	X			BODY - STIRRUPS
B604		10	15-5				BODY - HORIZONTAL F.F.
B905		11	15-5				BODY - HORIZONTAL B.F.
B406		4	3-6	X			BODY - STIRRUPS
B407		2	6-3				BODY - HORIZONTAL
B408	X	4	16-11	X			WING 3 & 4 - VERTICAL TOP
B409	X	72	13-8	X	X		WING 3 & 4 - VERTICAL BASE
B510	X	16	20-1				WING 3 & 4 - BASE HORIZ. F.F.
B911	X	20	22-11				WING 3 & 4 - BASE HORIZ. B.F.
B412	X	24	11-3	X			WING 3 & 4 - TOP HORIZONTAL
B413	X	4	19-4	X			WING 3 & 4 - TOP HORIZONTAL
B614	X	16	3-3	X			WING 3 & 4 - WING B.F. CORNERS

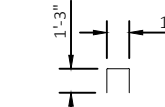
NOTE: BAR DIMENSIONS ARE OUT TO OUT OF BAR. THE FIRST DIGIT OF A THREE-DIGIT BAR MARK OR THE FIRST TWO DIGITS OF A FOUR-DIGIT BAR MARK SIGNIFIES THE BAR SIZE.



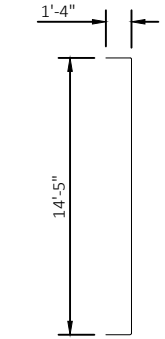
B401



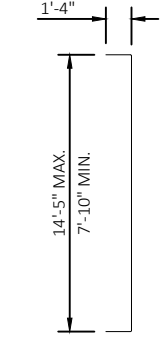
B503



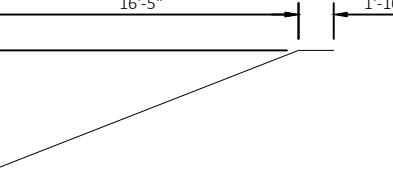
B406



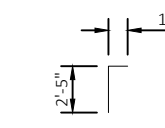
B408



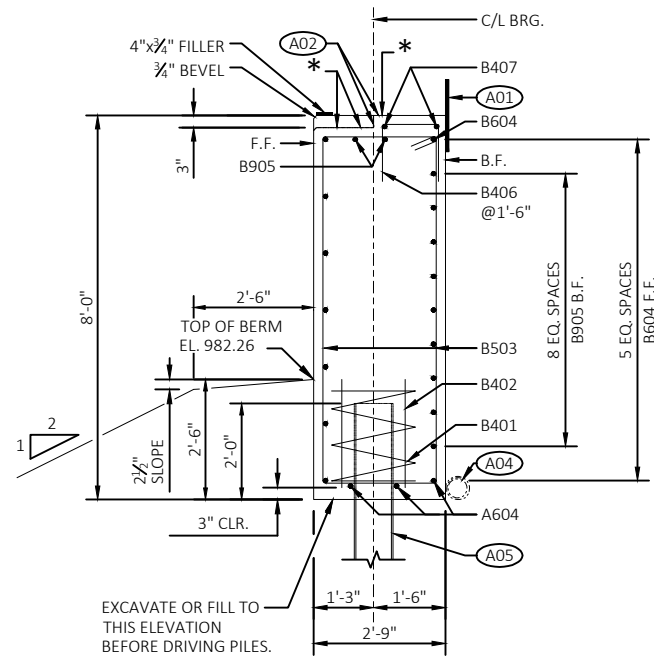
B409



B413



B614



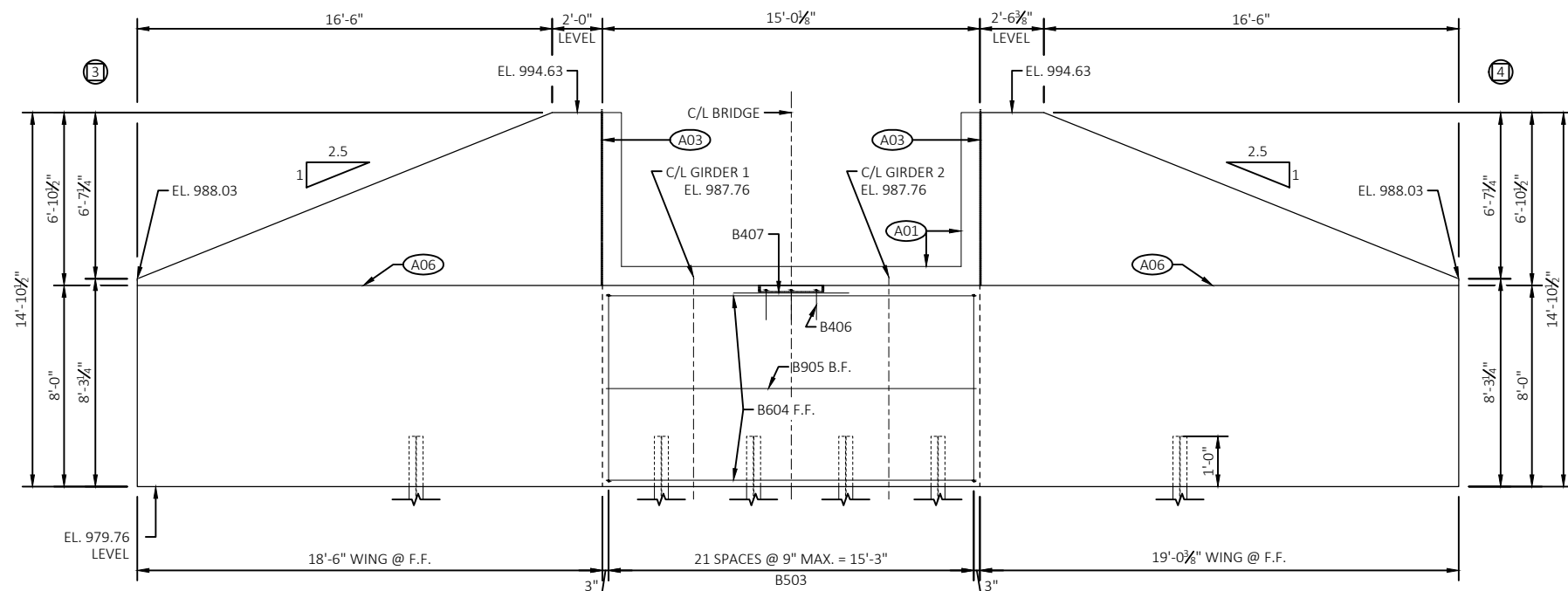
SECTION THRU BODY

ALL HORIZONTAL BARS ARE A604 UNLESS OTHERWISE SPECIFIED

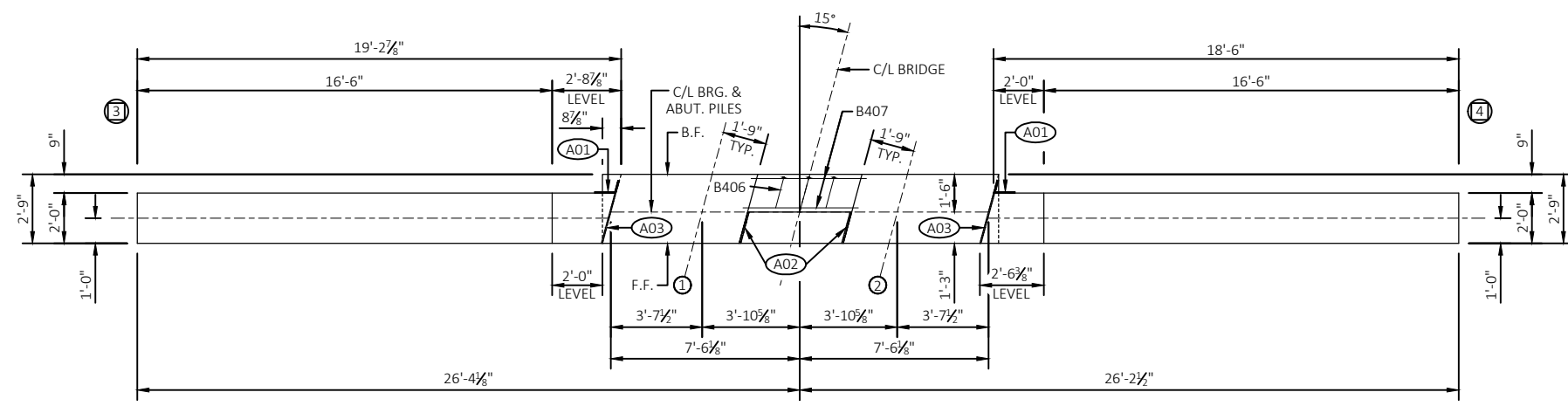
STEEL TROWEL TOP SURFACE OF ABUTMENT. PLACE MULTIPLE LAYERS OF POLYETHYLENE SHEETS OVER ENTIRE ABUTMENT TOP BEFORE PLACING BEARING PADS AND/OR SUPERSTRUCTURE. TOTAL THICKNESS OF SHEETS SHALL BE AT LEAST 0.03".

LEGEND

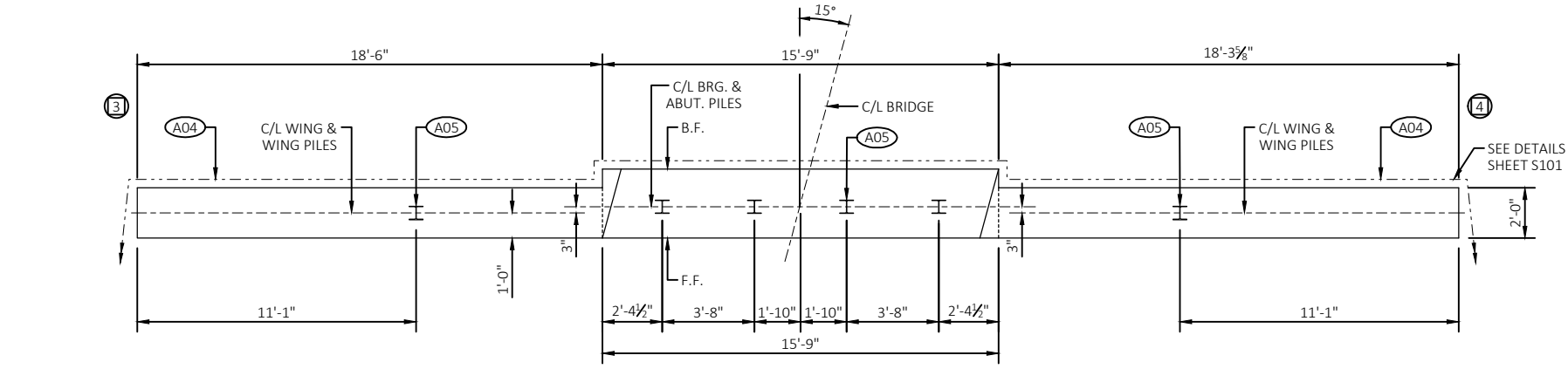
- (B) INDICATES WING NUMBER
- (A01) 18" RUBBERIZED MEMBRANE WATERPROOFING (R.M.W.). SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
- (A02) 3/4" CORK FILLER ON ALL VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
- (A03) SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
- (A04) PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.
- (A05) PILING STEEL HP 12-INCH X 53 LB WITH A REQUIRED DRIVING RESISTANCE OF 200 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES' DYNAMIC FORMULA. ESTIMATED LENGTH 50'-0".
- (A06) OPTIONAL KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6". (18" R.M.W. @ B.F. & 3/4" V-GROOVE @ F.F. IF JOINT IS USED).



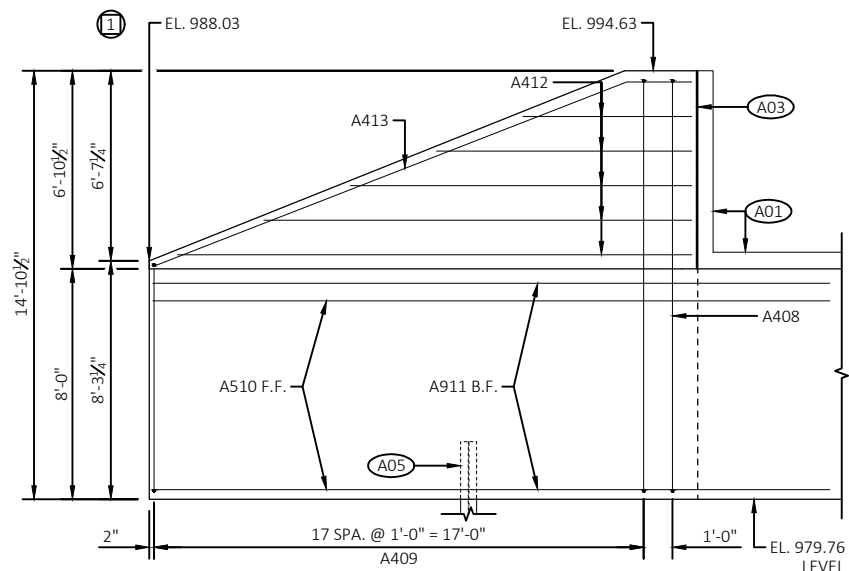
ELEVATION
(LOOKING EAST)



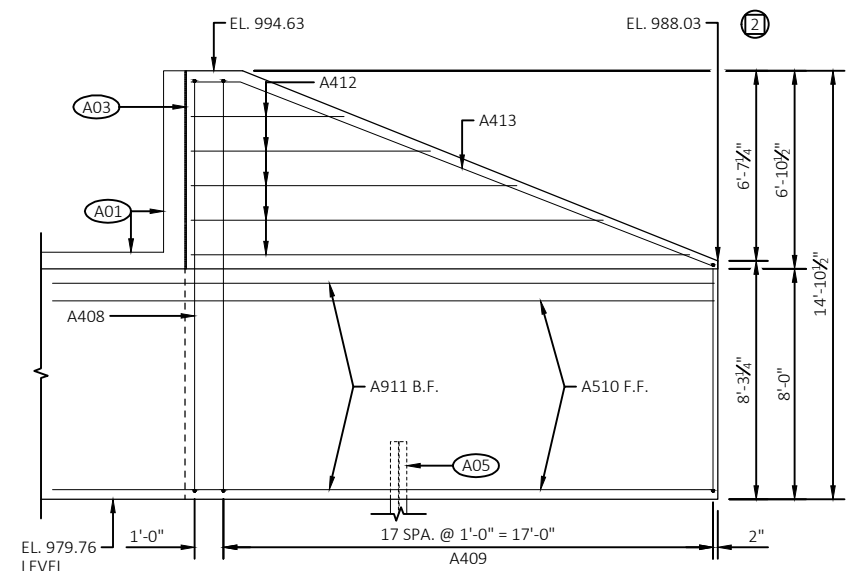
PLAN



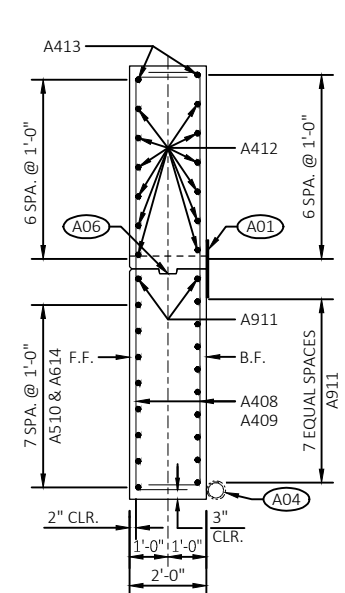
PILE PLAN



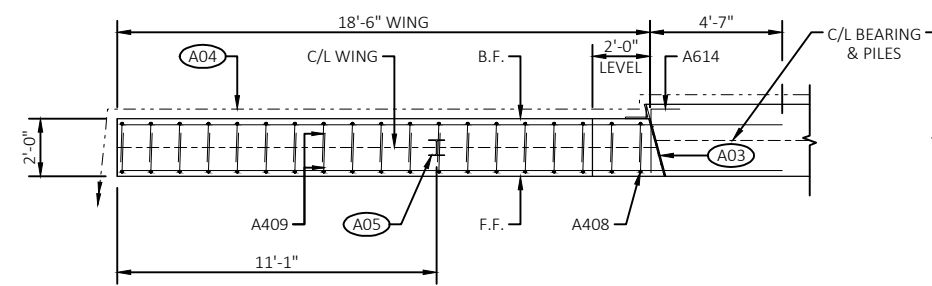
WING 1 ELEVATION



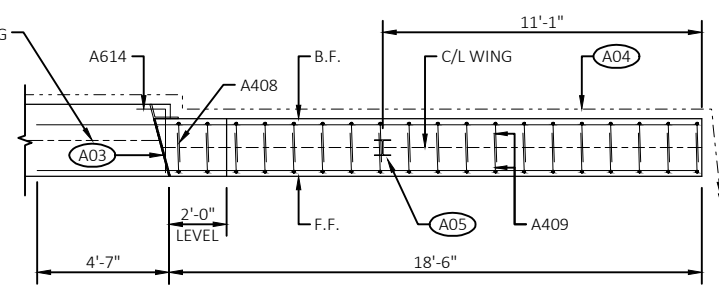
WING 2 ELEVATION



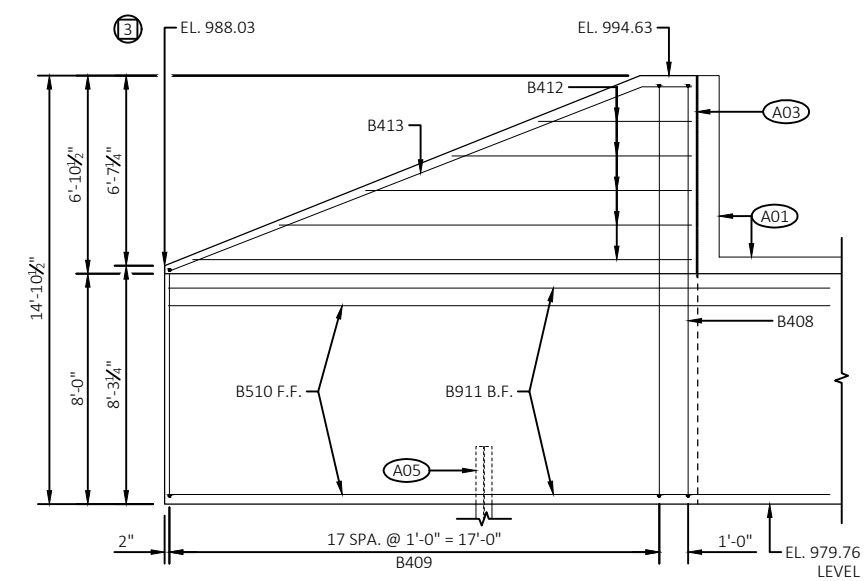
WINGS 1 & 2 SECTION



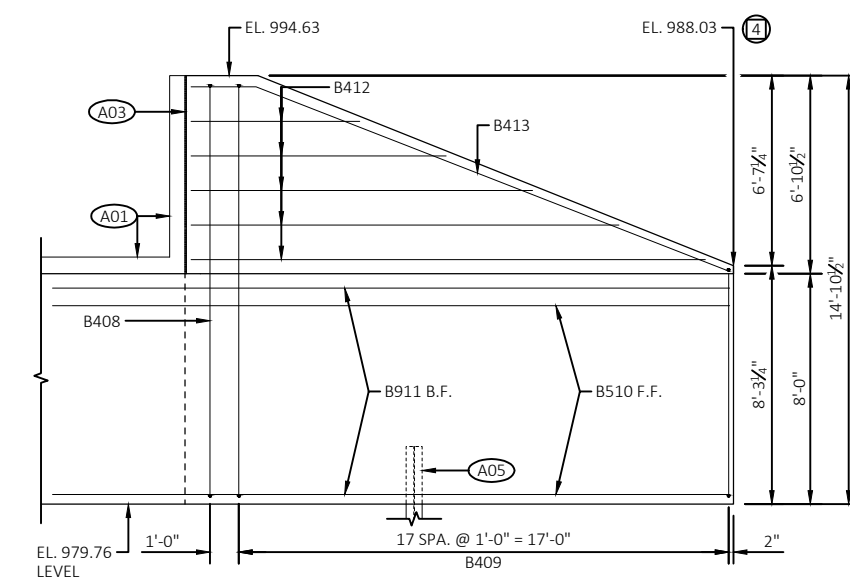
WING 1 PLAN



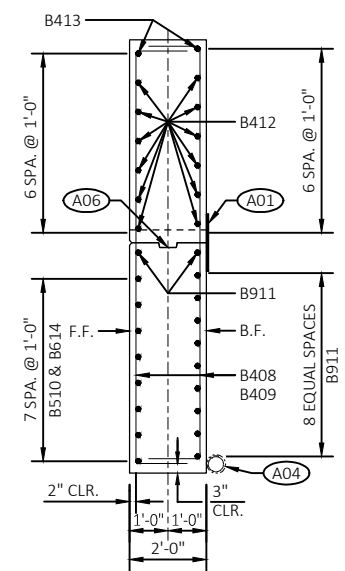
WING 2 PLAN



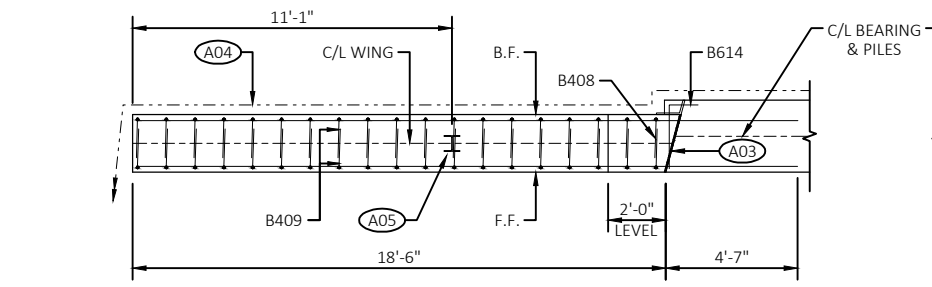
WING 3 ELEVATION



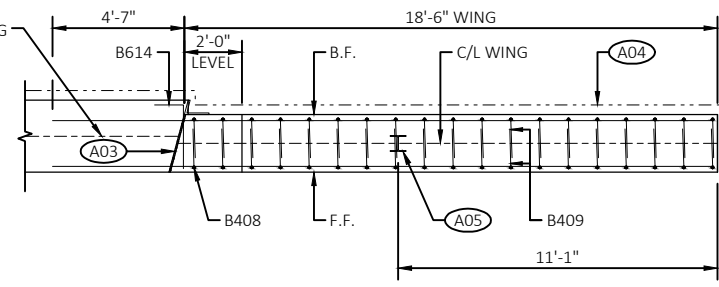
WING 4 ELEVATION



WINGS 3 & 4 SECTION



WING 3 PLAN



WING 4 PLAN

MARK	NO. REQ'D	LENGTH
A409 & B409	4 SERIES OF 18	10'-4" TO 16'-11"
A412 & B412	4 SERIES OF 6	4'-3" TO 18'-2"

	INDICATES WING NUMBER
	18" RUBBERIZED MEMBRANE WATERPROOFING (R.M.W.). SEAL ALL HORIZONTAL AND VERTICAL JOINTS ON BACK FACE.
	3/4" CORK FILLER ON ALL VERTICAL BEAM SEAT FACES THAT RUN PARALLEL WITH GIRDER.
	SEAL ALL EXPOSED HORIZONTAL AND VERTICAL SURFACES OF 1/2" FILLER WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (1" DEEP AND HOLD 1/8" BELOW SURFACE OF CONCRETE). EXTEND SEALER 3" BELOW GUTTER LINE AT INSIDE FACE.
	PIPE UNDERDRAIN WRAPPED 6-INCH. SLOPE 0.5% MIN. TO SUITABLE DRAINAGE. ATTACH RODENT SHIELD AT ENDS OF PIPE UNDERDRAIN.
	PILING STEEL HP 12-INCH X 53 LB WITH A REQUIRED DRIVING RESISTANCE OF 200 TONS PER PILE AS DETERMINED BY THE MODIFIED GATES DYNAMIC FORMULA.
	OPTIONAL KEYED CONSTRUCTION JOINT FORMED BY BEVELED 2" X 6". (18" R.M.W. @ B.F. & 3/4" V-GROOVE @ F.F. IF JOINT IS USED).

No.	Date:	Description:

Graphic Scale	
DFD Number	1811N
Set Type	FR
Date Issued	01/23/2023
Sheet Number	S105



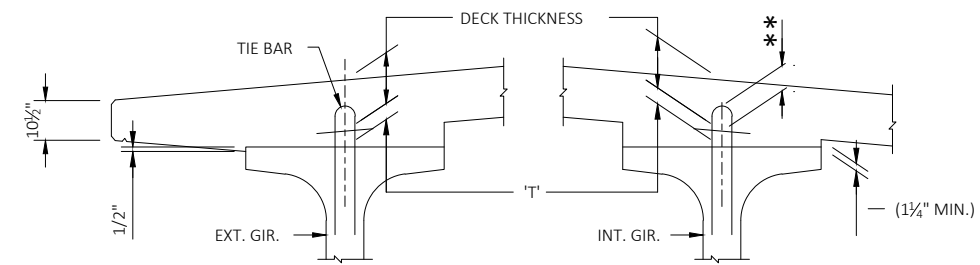
Revisions:

No.	Date:	Description:

Graphic Scale

DFD Number: 1811N
Set Type: FR
Date Issued: 01/23/2023

Sheet Number: **S106**



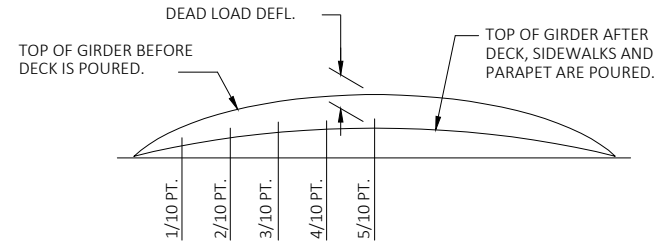
DECK HAUNCH DETAIL

IF 1/4" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR, THE PLAN DECK THICKNESS SHALL BE HELD. NOTIFY THE STRUCTURES SECTION IF THE GRADE LINE IS RAISED FROM THE PLAN PROFILE BY MORE THAN 1/2" OR, ** IF 3" MINIMUM DECK EMBEDMENT OF TIE BAR CANNOT BE OBTAINED.

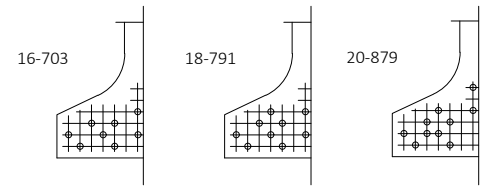
TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ` OF SUBSTRUCTURE UNITS & AT 1/10 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

$$\begin{aligned} & \text{TOP OF DECK ELEV. AT FINAL GRADE} \\ & - \text{TOP OF GIRDER ELEVATION} \\ & + \text{DEAD LOAD DEFLECTION} \\ & - \text{DECK THICKNESS} \\ & \hline & = \text{HAUNCH HEIGHT 'T'} \end{aligned}$$

NOTE: AN AVERAGE HAUNCH ('T') OF 2.6" WAS USED IN THE QUANTITY "CONCRETE MASONRY BRIDGES".

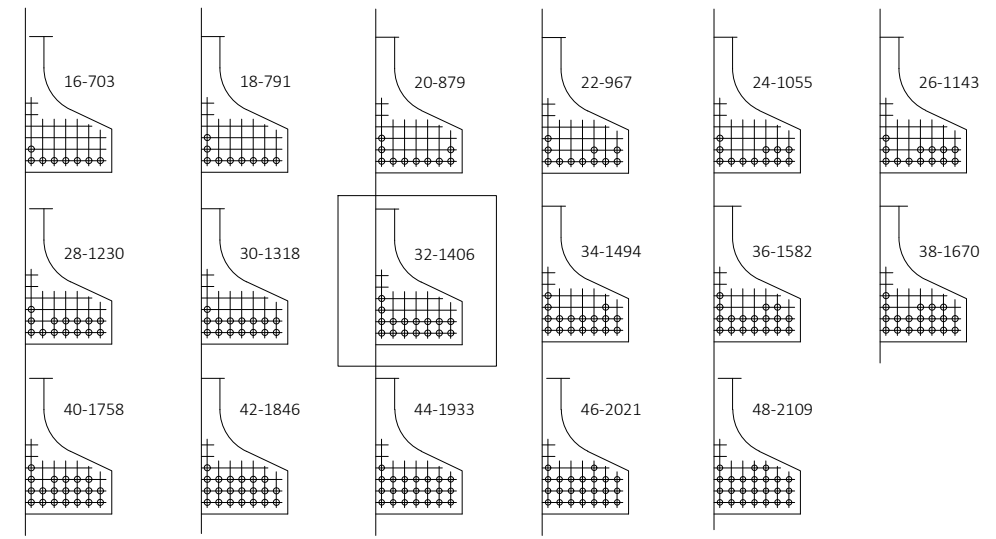


DEAD LOAD DEFLECTION DIAGRAM



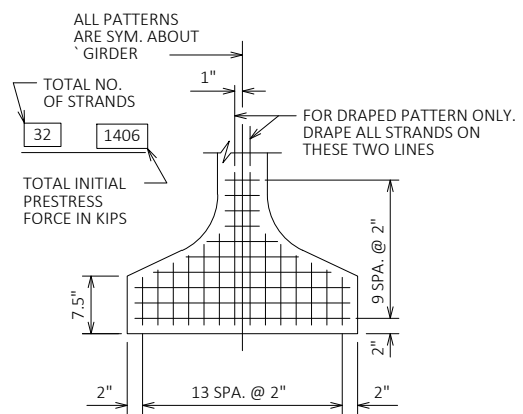
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS

0.6" DIA. STRANDS

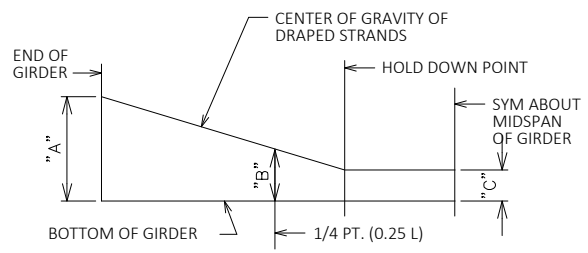


ARRANGEMENT AT ` SPAN - FOR GIRDERS WITH DRAPED STRANDS

0.6" DIA. STRANDS



TYP. STRAND PATTERN



DRAPED STRAND PROFILE

* THE THEORETICAL INITIAL CAMBER VALUE AT THE TIME OF STRAND RELEASE AT MIDSPAN MULTIPLIED BY A FACTOR OF 1.4 TO ACCOUNT FOR CAMBER GROWTH FROM THE TIME OF STRAND RELEASE TO JOBSITE PLACEMENT.

SPAN	CAMBER (IN.) *
1	2.24

THESE VALUES ARE NOT TO BE USED IN DETERMINING 'T', USE ACTUAL GIRDER SHOTS. THESE VALUES ARE FOR INFORMATIONAL PURPOSES ONLY.



**GANDY DANCER S.T. REPAIR
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT
DOUGLAS COUNTY, WISCONSIN**

Sheet Title:
72W-INCH PRESTRESSED
GIRDER DETAILS 2

Revisions:

No.	Date:	Description:

Graphic Scale	
DFD Number	1811N
Set Type	FR
Date Issued	01/23/2023
Sheet Number	S107

NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 15" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED CONCRETE SEALER SHALL BE APPLIED TO ALL SMOOTH SURFACES INCLUDING THE OUTSIDE 15" OF THE TOP FLANGE.

DO NOT APPLY CONCRETE SEALER OR EPOXY TO SURFACES RECEIVING APPLICATION OF CONCRETE STAINING.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

STRANDS SHALL BE FLUSH WITH END OF GIRDER. FOR GIRDER ENDS EMBEDDED COMPLETELY IN CONCRETE, END OF STRANDS SHALL BE COATED WITH NON-BITUMINOUS JOINT SEALER. FOR GIRDER ENDS THAT ARE FINALLY EXPOSED, COAT THE GIRDER ENDS, EXPOSED STRAND ENDS AND ALL NON-BONDING SURFACES WITHIN 2 FEET OF THE GIRDER ENDS WITH A NON-PIGMENTED EPOXY CONFORMING TO AASHTO M-235 TYPE III, GRADE 2, CLASS B OR C. THE EPOXY SHALL BE APPLIED AT LEAST 3 DAYS AFTER MOIST CURING HAS CEASED AND PRIOR TO THE APPLICATION OF THE SEALER.

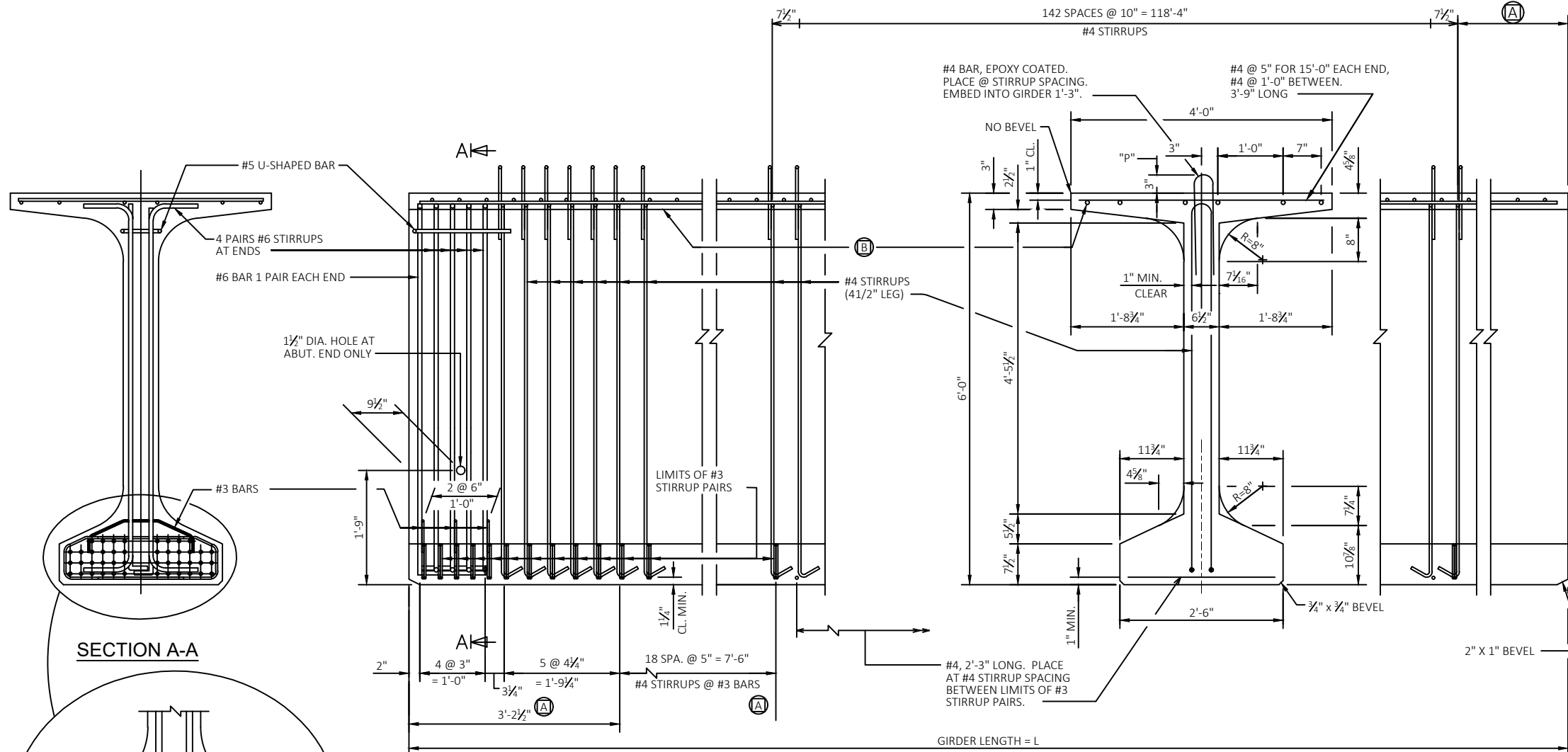
ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT.

AN EQUIVALENT OF WELDED WIRE FABRIC (WWF) ASTM A1064 MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE ENGINEER. IF USED, WWF SUBSTITUTION DETAILS SHALL BE SUBMITTED ELECTRONICALLY TO THE ENGINEER AND ACCEPTED PRIOR TO SHOP DRAWING SUBMITTAL.

PRESTRESSING STRANDS SHALL BE 0.6 DIA. -7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI.

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.



SIDE VIEW & TYP. SECTION IN SPAN

- (A) DETAIL TYP. AT EACH END
- (B) (6) #4 BARS, FULL LENGTH, MIN. LAP = 1'-11"

* MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

SPAN	GIRDER	GIRDER LENGTH (FEET)	DEAD LOAD DEFL. (IN.)										CONC. STRGTH. f _c (p.s.i.)	"P" (IN.)			DIA. OF STRAND (IN.)	DRAPED PATTERN (IN.)					UNDRAPED PATTERN	
			1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	10/10		1st 1/3 OF GIRDER	MID 1/3 OF GIRDER	END 1/3 OF GIRDER		TOTAL NO. OF STRANDS	f _{ci} (P.S.I.)	f _{ci} (P.S.I.)			TOTAL NO. OF STRANDS	f _{ci} (P.S.I.)
			"A"	"B" MIN.	"B" MAX.	"C"	"A"	"B" MIN.	"B" MAX.	"C"	"A"	"B" MIN.		"B" MAX.	"C"	"A"		"B" MIN.	"B" MAX.	"C"	"A"	"B" MIN.	"B" MAX.	"C"
1	ALL	141	0.64	1.25	1.72	2.02	2.13	2.02	1.72	1.25	0.64	8000	7	7	7	0.6	32	6800	65	20	23	5	-	-



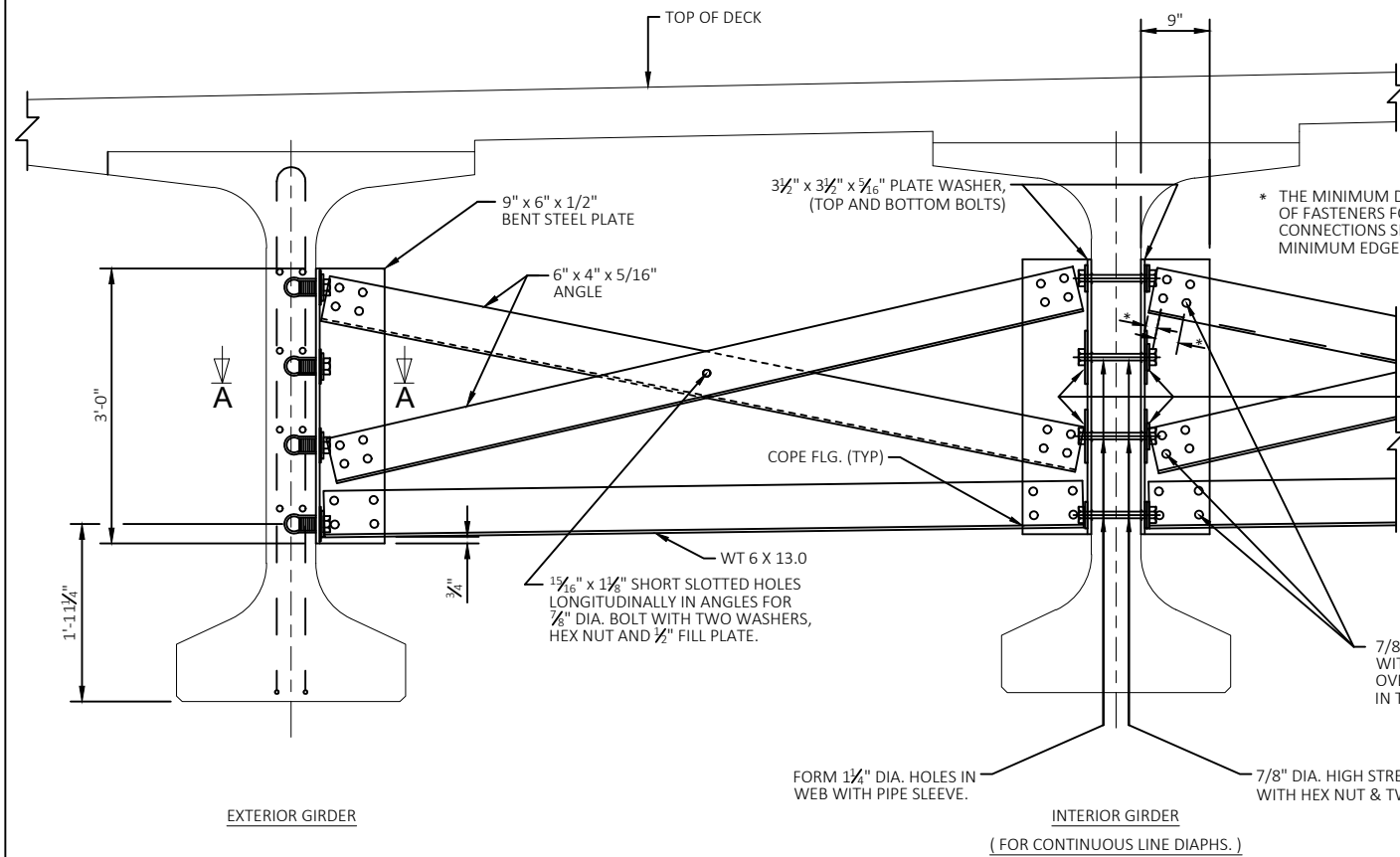
NOTES

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36.

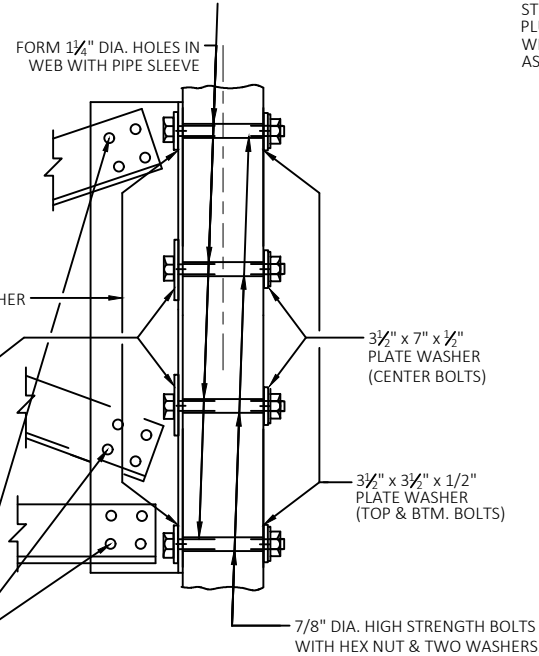
ALL DIAPHRAGM MATERIAL INCLUDING BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AFTER FABRICATION.

STEEL DIAPHRAGM TO CONCRETE WEB CONNECTION SHALL BE SNUG-TIGHT PLUS 1/4 TURN, UNLESS NOTED OTHERWISE. HIGH STRENGTH BOLTS FOR WEB CONNECTION SHALL MEET THE REQUIREMENTS FOR ASTM A325 OR ASTM A449.

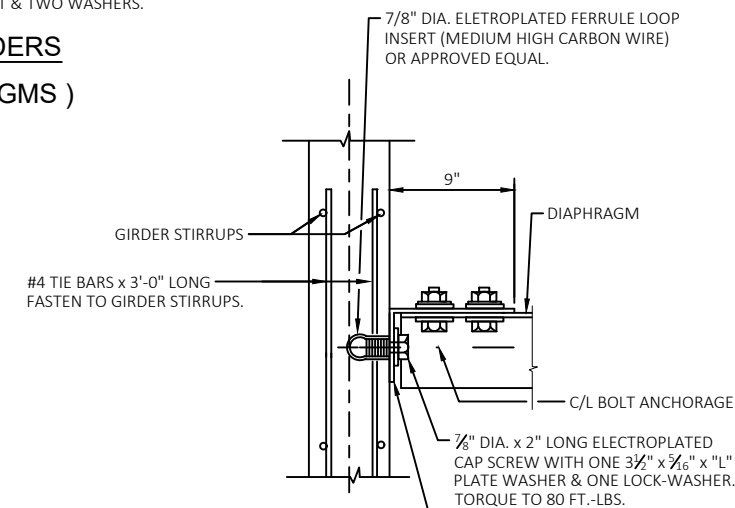


PART TRANSVERSE SECTION AT DIAPHRAGM
(72W PRESTRESSED GIRDER)

* THE MINIMUM DISTANCE BETWEEN CENTERS OF FASTENERS FOR SUPPORT & ANGLE CONNECTIONS SHALL BE 3 1/8" AND THE MINIMUM EDGE DISTANCE SHALL BE 1 1/2".

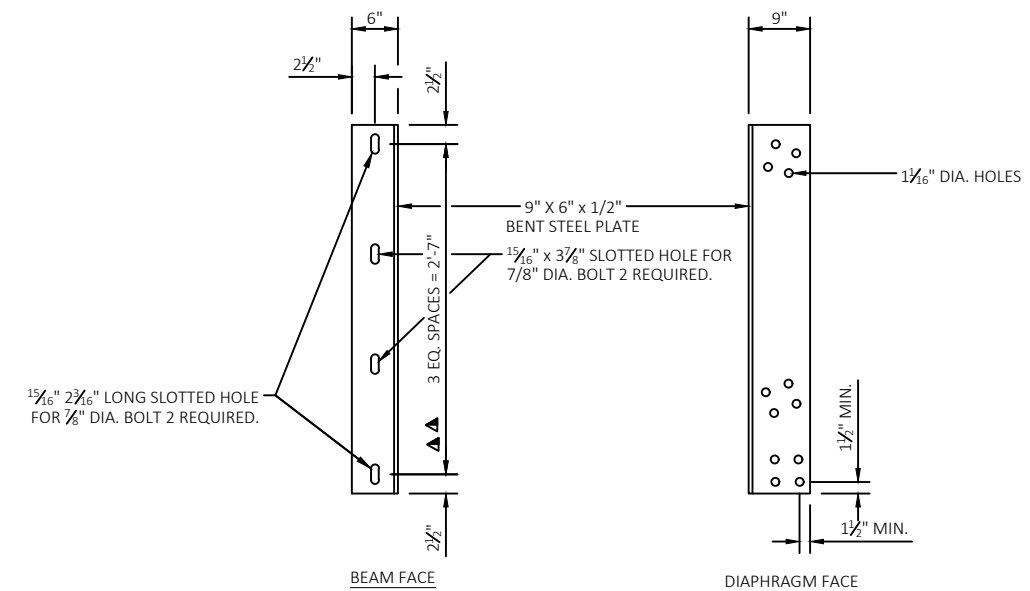


SECTION AT INTERIOR GIRDERS
(FOR STAGGERED DIAPHRAGMS)



SECT. A-A
(FOR EXTERIOR ATTACHMENT)

"L" = 31/2"; TOP AND BOTTOM BOLTS
"L" = 7"; CENTER BOLTS



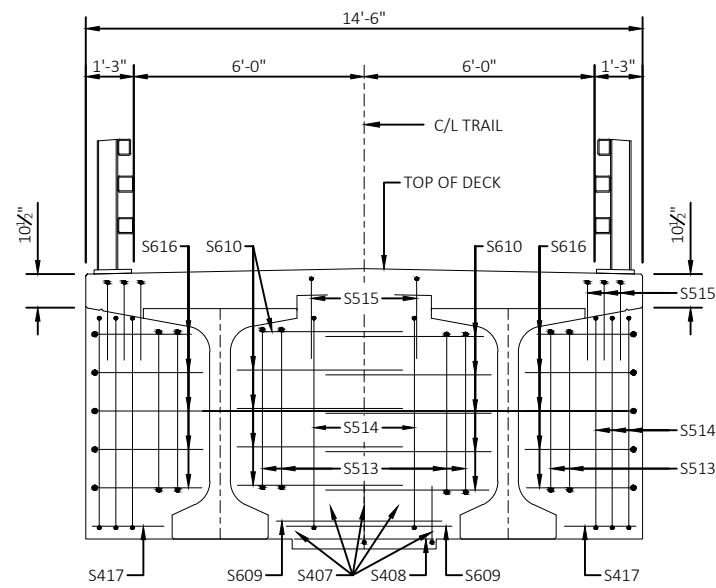
DIAPHRAGM SUPPORT

▲▲ BOLT HOLES SHALL BE SPACED SO AS TO MISS PRESTRESSED STRANDS IN CONCRETE BEAMS.

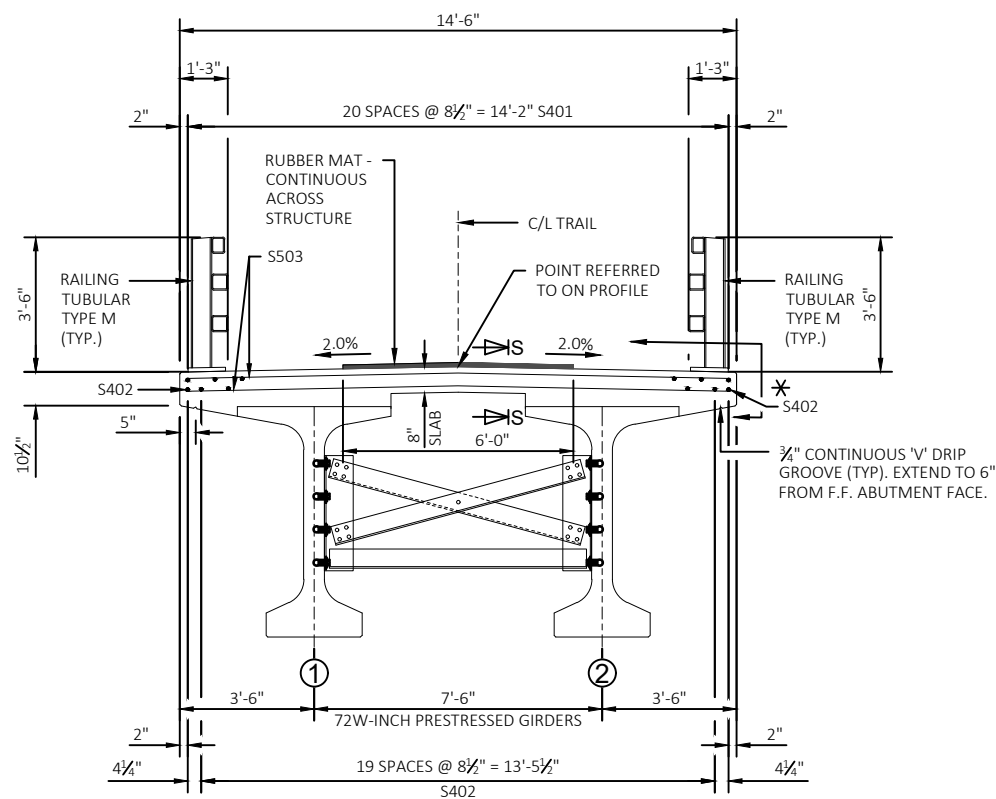
Revisions:

No.	Date	Description

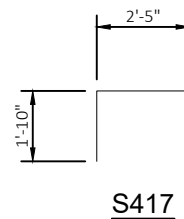
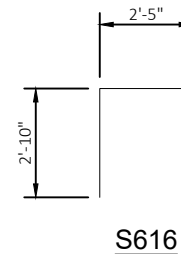
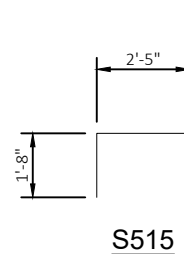
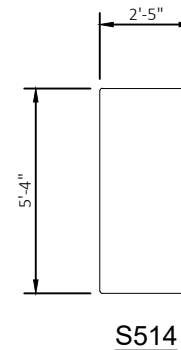
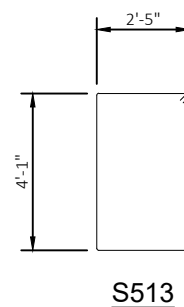
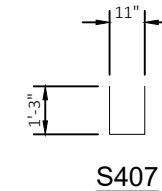
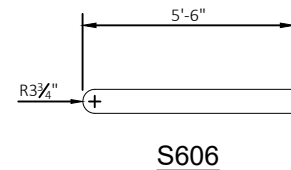
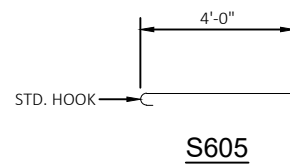
Graphic Scale	
DFD Number	1811N
Set Type	FR
Date Issued	01/23/2023
Sheet Number	S108



CROSS SECTION THRU STRUCTURE AT ABUTMENT



CROSS SECTION THRU STRUCTURE IN SPAN (LOOKING EAST)

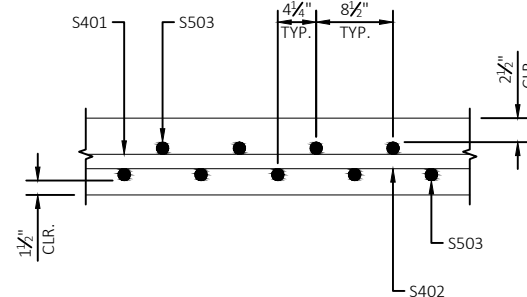


BILL OF BARS

15270# COATED

BAR MARK	COAT	NO. REQ'D	LENGTH	BENT	BAR SERIES	LOCATION
S401	X	63	48-9			SLAB LONGITUDINAL TOP
S402	X	66	48-9			SLAB LONGITUDINAL BOTTOM
S503	X	405	14-8			SLAB TRANSVERSE TOP & BOTTOM
S604	X	168	6-0			LONGITUDINAL INTERIOR RAIL POST
S605	X	16	4-10	X		LONGITUDINAL END RAIL POSTS
S606	X	92	11-10	X		TRANSVERSE AT RAIL POSTS
S407	X	10	3-3	X		ABUTMENT DIAPHRAGM
S408	X	4	3-9			ABUTMENT DIAPHRAGM
S609	X	4	3-6			ABUTMENT DIAPHRAGM
S610	X	20	4-6			ABUTMENT DIAPHRAGM
S611	X	16	14-8			ABUTMENT DIAPHRAGM
S512	X	8	6-0			ABUTMENT DIAPHRAGM
S513	X	16	13-8	X		ABUTMENT DIAPHRAGM
S514	X	24	16-2	X		ABUTMENT DIAPHRAGM
S515	X	24	5-6	X		ABUTMENT DIAPHRAGM
S616	X	20	7-9	X		ABUTMENT DIAPHRAGM
S417	X	4	5-11	X		ABUTMENT DIAPHRAGM

NOTE: BAR DIMENSIONS ARE OUT TO OUT OF BAR. THE FIRST DIGIT OF A THREE-DIGIT BAR MARK OR THE FIRST TWO DIGITS OF A FOUR-DIGIT BAR MARK SIGNIFIES THE BAR SIZE.



SECTION S-S



604 Willson Avenue
Menomonie, Wisconsin 54751

engineers • architects • planners
environmental specialists
land surveyors • landscape architects
interior designers

715-235-9081
800-472-7372
FAX 715-235-2727
www.cedarcorp.com

State of Wisconsin
Department of Administration
Division of Facilities Development



P.O. BOX 7866
MADISON, WI 53707-7866

GANDY DANCER S.T. REPAIR
GANDY DANCER STATE TRAIL
TOWN OF SUMMIT
DOUGLAS COUNTY, WISCONSIN

Sheet Title:
SUPERSTRUCTURE
CROSS SECTIONS

Revisions:		
No.	Date:	Description:

Graphic Scale	
DFD Number	1811N
Set Type	FR
Date Issued	01/23/2023
Sheet Number	S109



Revisions:

No.	Date:	Description:

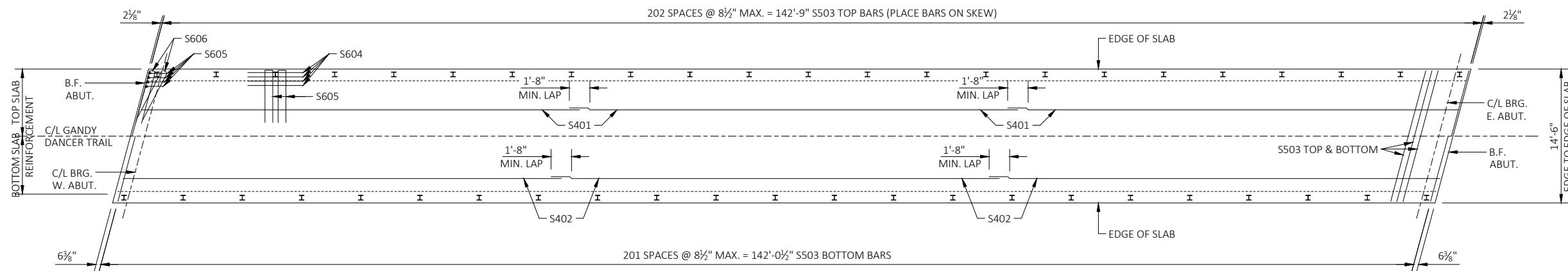


DFD Number: 1811N

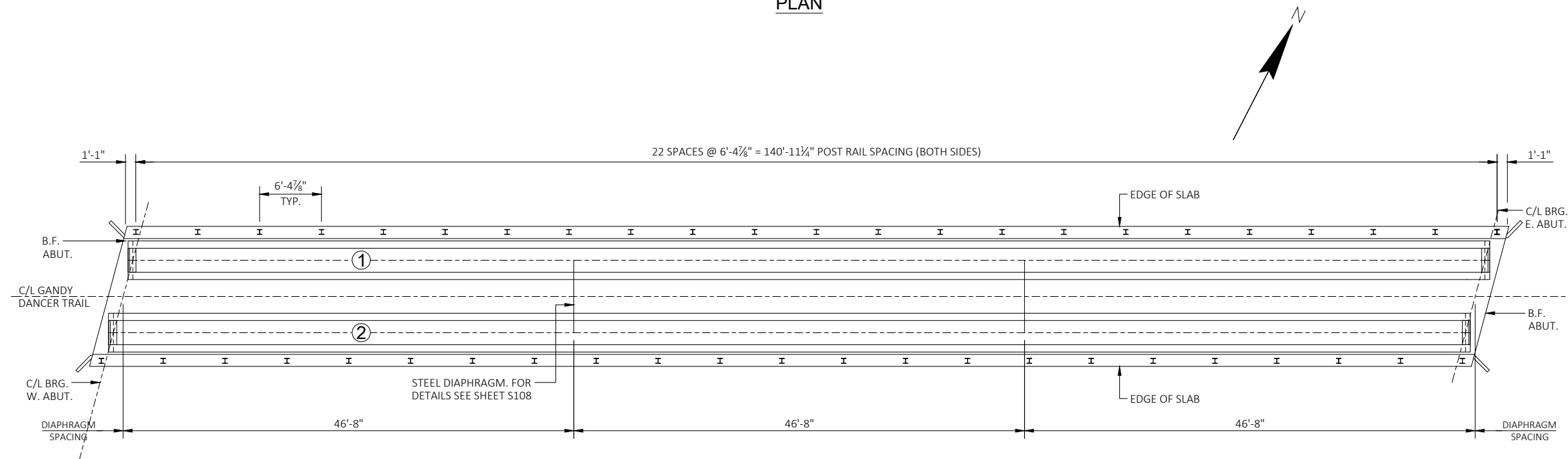
Set Type: FR

Date Issued: 01/23/2023

Sheet Number: **S110**



PLAN



PLAN

(SHOWING DIAPHRAGM & RAIL POST SPACING)

TOP OF DECK ELEVATIONS

LOCATION	WEST ABUT.	1/10	2/10	3/10	4/10	5/10	6/10	7/10	8/10	9/10	EAST ABUT.
NORTH EDGE OF DECK	994.63	994.63	994.63	994.63	994.63	994.63	994.63	994.63	994.63	994.63	994.63
GIRDER 1	994.70	994.70	994.70	994.70	994.70	994.70	994.70	994.70	994.70	994.70	994.70
GIRDER 2	994.70	994.70	994.70	994.70	994.70	994.70	994.70	994.70	994.70	994.70	994.70
SOUTH EDGE OF DECK	994.63	994.63	994.63	994.63	994.63	994.63	994.63	994.63	994.63	994.63	994.63

ELEVATIONS SHOWN ARE FINISHED DECK AND DO NOT INCLUDE ALLOWANCES OF DEAD LOAD DEFLECTION AND FUTURE CREEP.

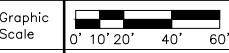
SURVEY TOP OF SLAB ELEVATIONS

LOCATION	C/L BRG. WEST ABUT.	5/10 PT.	C/L BRG. EAST ABUT.
NORTH GUTTER			
CENTERLINE			
SOUTH GUTTER			



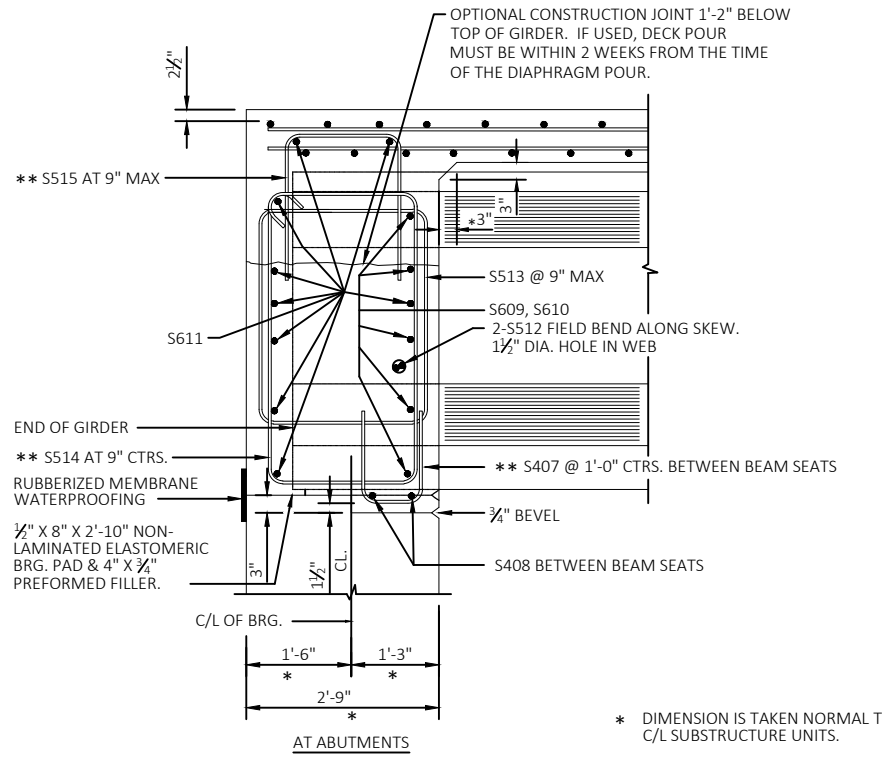
Revisions:

No.	Date:	Description:



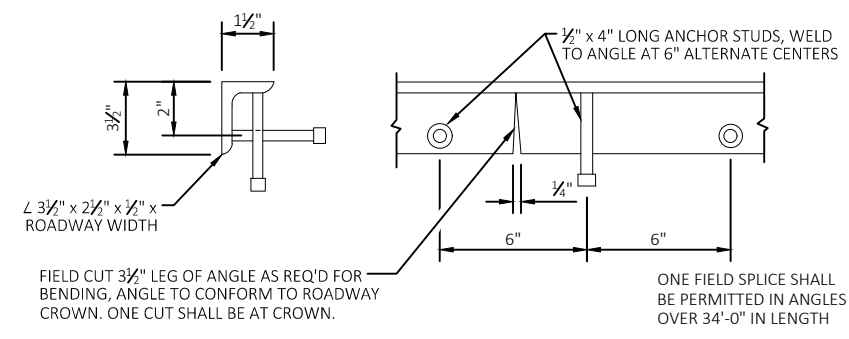
DFD Number	1811N
Set Type	FR
Date Issued	01/23/2023

Sheet Number	S111
--------------	------



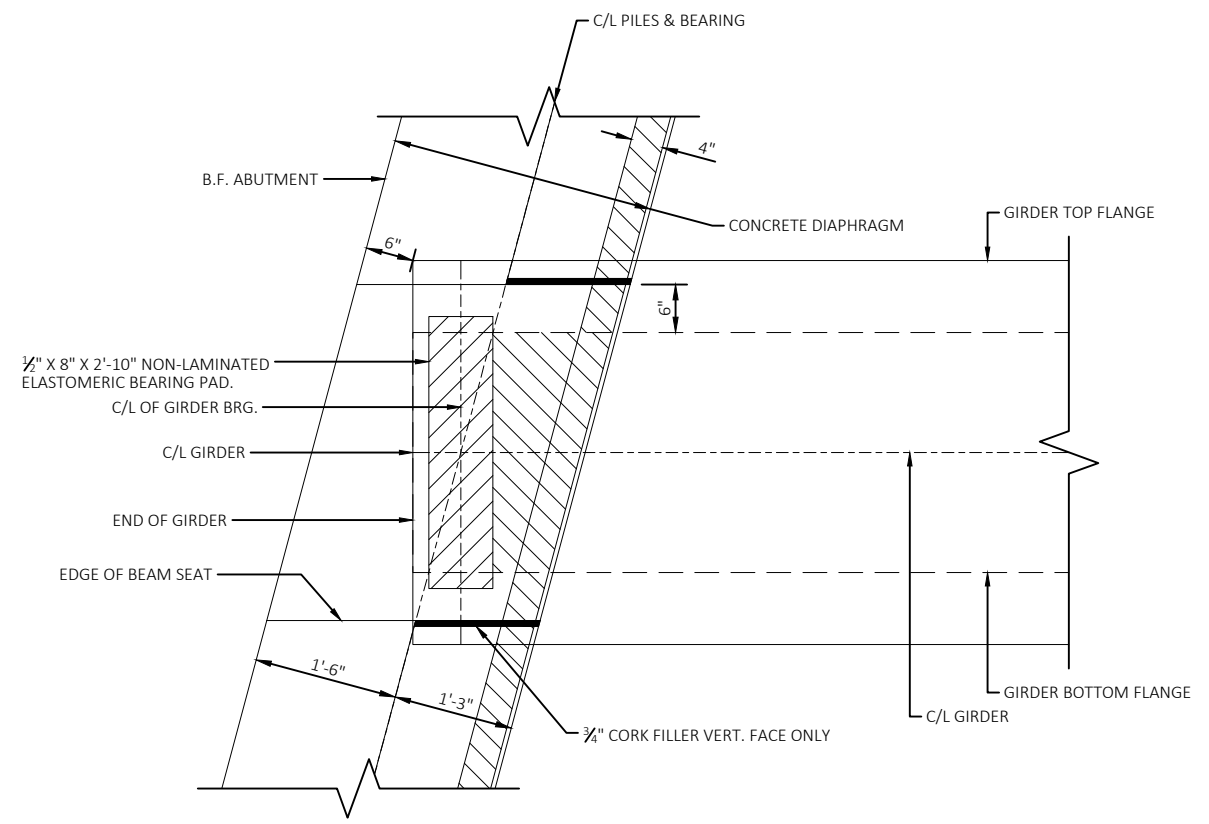
PART LONGIT. SECTION

- * DIMENSION IS TAKEN NORMAL TO C/L SUBSTRUCTURE UNITS.
- ** BARS PLACED PARALLEL TO GIRDERS SPACING PERPENDICULAR TO C/L GIRDERS



PROTECTION ANGLE ARMOR

SANDBLAST PROTECTION ANGLE AFTER FABRICATION PER NOTES. AFTER BLAST CLEANING, THE PROTECTION ANGLE SHALL BE HOT DIPPED GALVANIZED.



BEARING PAD DETAIL

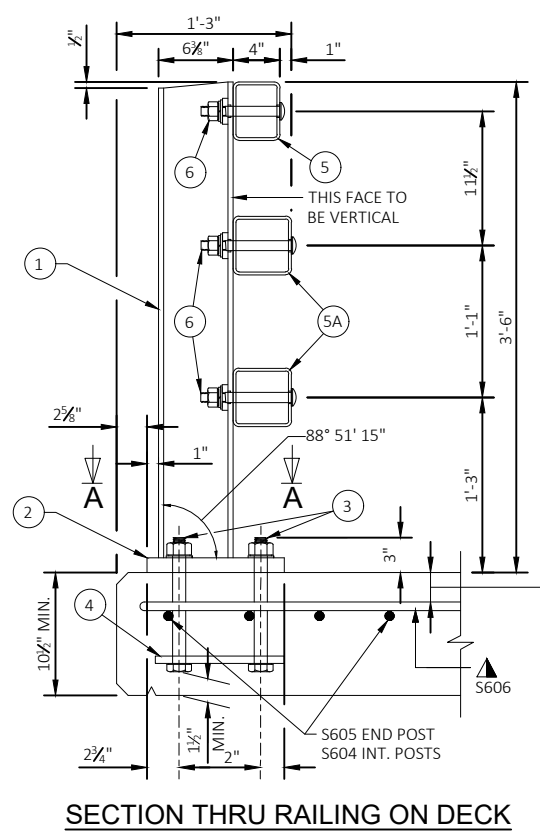


Revisions:		
No.	Date:	Description:

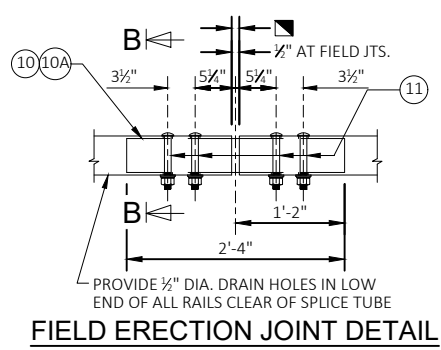
Graphic Scale	
---------------	--

DFD Number	1811N
Set Type	FR
Date Issued	01/23/2023

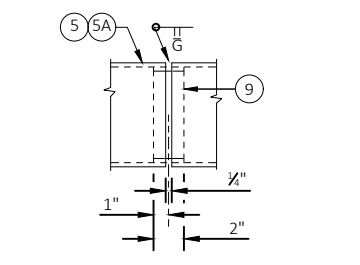
Sheet Number	S112
--------------	------



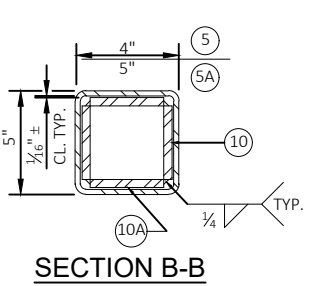
SECTION THRU RAILING ON DECK



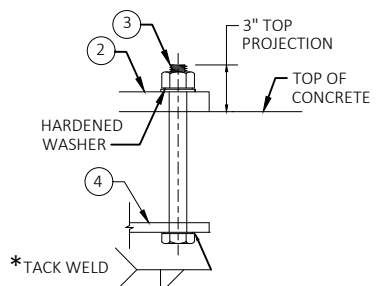
FIELD ERECTION JOINT DETAIL



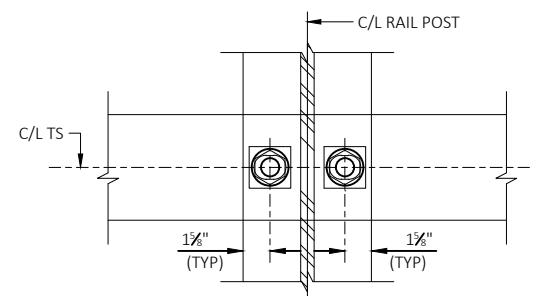
SHOP RAIL SPLICE DETAIL



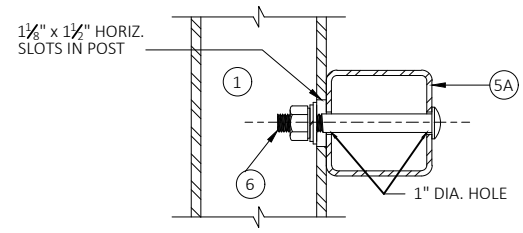
SECTION B-B



ANCHOR BOLTS



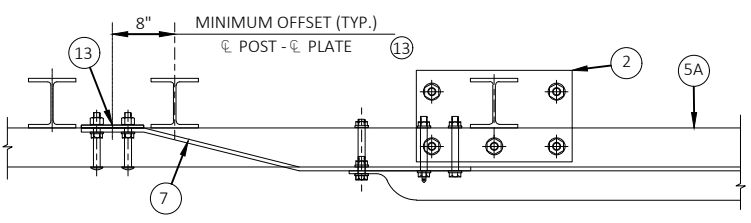
SECTION THRU POST WEB



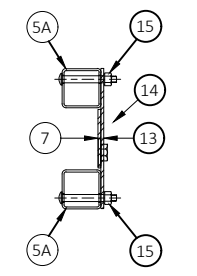
SECTION THRU RAIL

NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

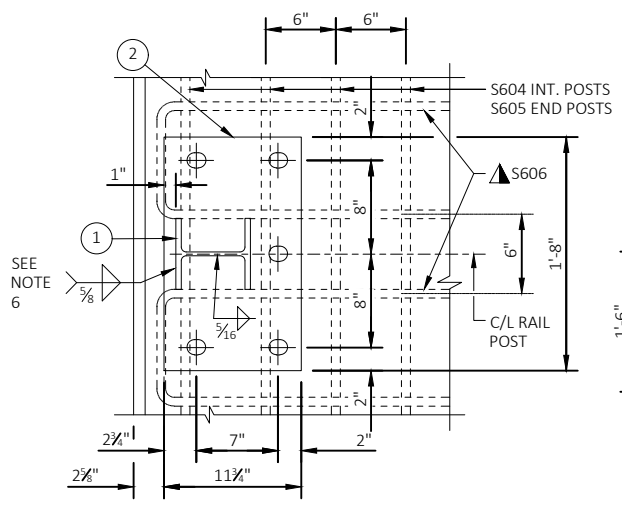
TYPICAL RAIL TO POST CONNECTIONS



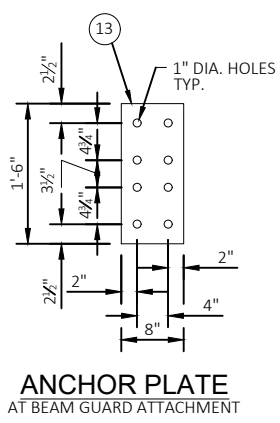
TOP VIEW AT END POST



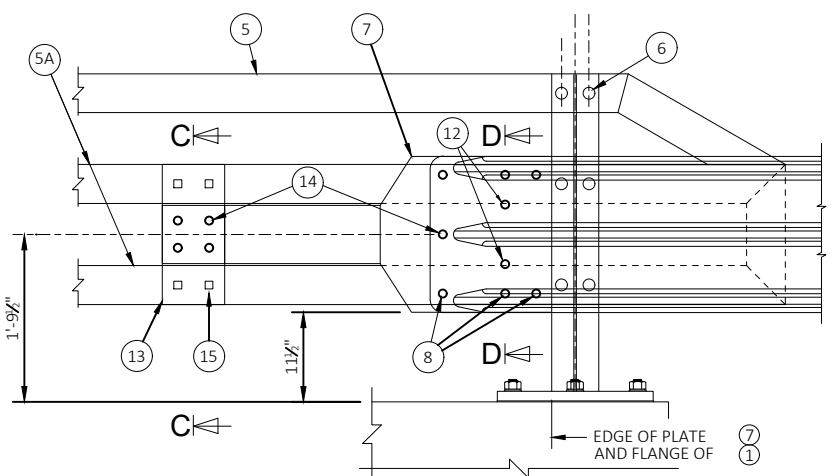
SECTION C-C



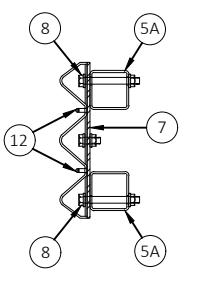
SECTION A-A



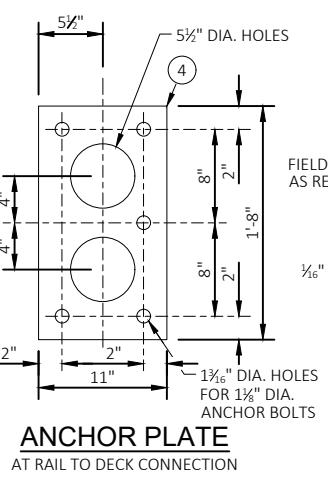
ANCHOR PLATE AT BEAM GUARD ATTACHMENT



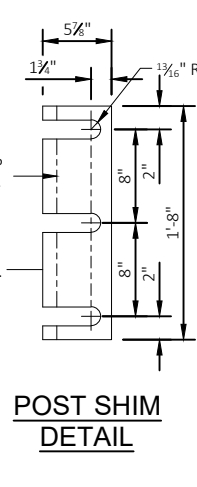
DETAIL AT END POST



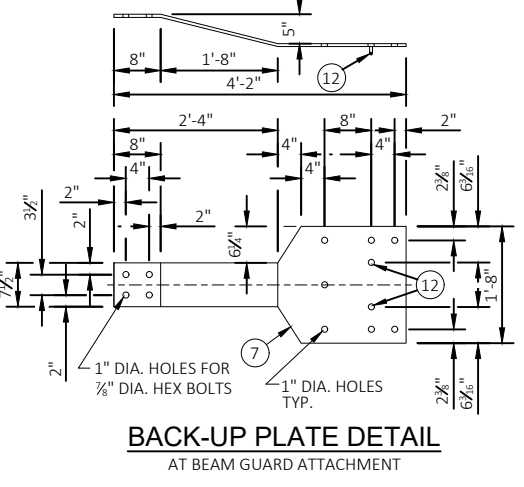
SECTION D-D



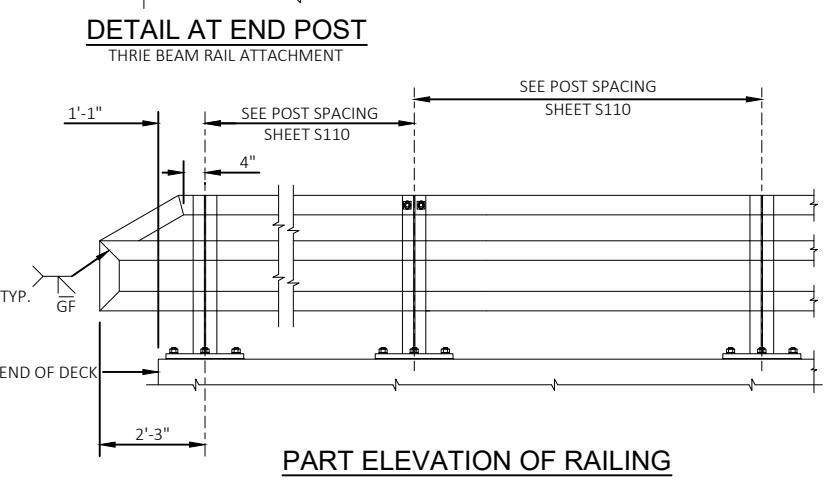
ANCHOR PLATE AT RAIL TO DECK CONNECTION



POST SHIM DETAIL



BACK-UP PLATE DETAIL AT BEAM GUARD ATTACHMENT



PART ELEVATION OF RAILING

LEGEND

- W6 x 25 WITH 1 1/2" x 1 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
- PLATE 1 1/4" x 1 1/4" x 1'-8" WITH 1 1/2" x 1 1/2" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.
- ASTM A449 - 1 1/2" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" & PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS, AT POST ON CONCRETE SLAB STRUCTURE WHERE THE SLAB THICKNESS IS >16" USE 1'-3" LONG. USE 10 1/2" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)
- 5/8" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 1 1/2" DIA. HOLES FOR ANCHOR BOLTS NO. 3
- TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- 5A TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.
- 7/8" DIA. A325 SLOTTED ROUND HEAD BOLT WITH NUT, 3/8" x 1 1/2" x 1 1/2" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)
- 1/2" THICK BACK-UP PLATE WITH 2 - 7/8" x 1 1/2" THREADED SHOP WELDED STUDS (NO. 12). BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.
- 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR 7/8" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.
- SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".
- 3/8" x 3 3/8" x 2' - 4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.
- 5A 3/8" x 2 3/8" x 2' - 4" PLATE USED IN NO. 5, 3/8" x 3 3/8" x 2' - 4" PLATE USED IN NO. 5A. 2 PER RAIL.
- 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 1 1/2" x 1 1/2" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 1 1/2" x 2 1/2" MIN. LONGITUDINAL SLOTTED HOLES AT EXPOSED JOINTS IN PLATE NO. 10A.
- 7/8" DIA. x 1 1/2" LONG THREADED SHOP WELDED STUDS (2 REQ'D).
- 3/8" x 8" x 1'-6" PLATE. BOLT TO RAIL AS SHOWN IN DETAIL. REQ'D. AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYM. ABOUT TUBES NO. 5A.
- 7/8" DIA. x 2" LONG A325 HEX BOLT WITH NUT AND WASHER (5 REQ'D.).
- 1" DIA. HOLES IN TUBES NO. 5A FOR 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, WASHER AND LOCK WASHER (4 REQ'D.). 4 HOLES IN TUBES.

GENERAL NOTES

- RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 ksi. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
- THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/2 TURN.
- RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF THREE (3) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
- ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
- WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
- FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
- POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
- ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY SSPC SPECIFICATIONS.
- THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).

▲ TIE TO TOP MAT OF STEEL.

* FOR ANCHOR BOLTS IN WINGS, TACK WELD MAY BE USED IN FIELD AFTER ANCHOR PLATE IS IN POSITION IF REQ'D. FOR CONSTRUCTIBILITY.

■ RDWY. OPENING OR 2 1/2" MIN. FOR STRIP SEAL EXP. JOINT & 1/2" OPENING FOR A1 ABUTMENT.