FUTURE FISHERIES IMPROVEMENT PROGRAM GRANT APPLICATION

All sections must be addressed, or the application will be considered invalid

I. APPLICANT INFORMATION

A. Applicant Name: Big Blackfoot Chapter of Trout Unlimited

Mailing Address: PO Box 1

City: Ovando State: MT Zip: 59854

Telephone: 406.240.4824 E-mail: ryen@montanatu.org

B. Contact Person (if different than applicant): Ryen Neudecker

Address: see above

City: State: Zip:

Telephone: E-mail:

C. Landowner and/or Lessee Name (if different than applicant): Double Arrow Ranch Landowners Association

Mailing Address: PO Box 307

City: Seeley Lake State: MT Zip: 59868

Telephone: 4066772030 E-mail: tmb.darloa@gmail.com

II. PROJECT INFORMATION

A. Project Name: Trail Creek Fish Passage Project

River, stream, or lake: Trail Creek

Location: Township: 16N Range: 15W Section: 1

Latitude: 47.16736 Longitude: -113.43769 *within project (decimal degrees)*

County: Missoula

B. Purpose of Project:

The purpose of this project is to restore fish passage, improve floodplain function, and reduce anthropogenic sediment inputs to Trail Creek by upgrading an undersized stream crossing near stream mile 0.2 with a bridge that meets stream simulation design criteria. Trail Creek is a high priority tributary that supports adfluvial bull trout, as well as migratory and stream resident westslope cutthroat trout populations.

C. Brief Project Description (attach additional information to end of application):

Trail Creek is a third order tributary to Morrell Creek near Seeley Lake, MT. Morrell Creek feeds the Clearwater River—the largest tributary to the Big Blackfoot River. Trail Creek drains the west side of Pyramid Pass and flows 10 miles through a mixture of USFS and private land before entering lower Morrell Creek. The greater Morrell Creek Watershed is significant and ranks as a high priority in FWP Region 2 as it supports one of the largest adfluvial bull trout populations in the upper Clark fork Basin and still contains genetically pure westslope cutthroat trout populations in the headwaters. Future Fisheries has supported past fish passage, fish screening, and habitat enhancement projects in this watershed. The most recent is located about one mile upstream from the proposed project site. This project eliminated entrainment of trout in an irrigation diversion and restored migration corridors to the upper 13 miles of the basin.

The proposed project will address an existing stream crossing just above the Morrell-Trail Creek confluence (mile 0.2) that is undersized and perched. It also creates a fish passage barrier during high flow periods and impairs natural channel function. The existing culverts (three pipes, each 36") that create a dam across the stream are proposed to be replaced with an appropriately sized bridge that was designed to meet 'stream simulation', allowing uninhibited aquatic organism passage and replicating natural stream characteristics above and below the crossing. The road crossing is located 300 yards downstream of a channel braid. Elevation surverys and stream monitoring over recent years suggest the river right channel (with the proposed bridge site) is becoming the primary channel. The new bridge is designed to accommodate all of the Trail Creek flow (up to 100 year event) and will eliminate chronic impairments including road over-topping and subsequent sediment inputs, channel aggradation and substandard upstream fish passage. This is the last known fish passage barrier on Trail Creek.

The proposed upgraded road crossing structure will also facilitate improved riparian condition and natural channel function as this new primary channel location passes through a subdivision common area that lacks impacts associated with subdivided lots in the opposite channel (e.g., riparian clearing, lawns, water withdrawal, etc).

A basic topographic and hydraulic field survey was conducted to locate key physical features within the area of the culvert replacement project site. Longitudinal profile, stream cross-sections, bank-full widths, and general geomorphic parameters were assessed. The proposed structure was sized and designed to meet stream restoration parameters and ensure that it accomodates100-year flood capacity. Please refer to attached map, photo and design for site and design details.

D. Length of stream or size of lake that will be treated (project extent): 150 feet

Length/size of impact, if larger than project extent (e.g. stream miles opened): One mile

E. Project Budget:

Grant Request (Dollars):	**$**	14,300
Matching Dollars:	**$**	124,478
Matching In-Kind Services:*	**$**	3,000

**salaries of government employees are not considered matching contributions*

Other Contributions (not part of this application)	**$**	
Total Project Cost:	**$**	141,778

F. **Attach** itemized (line item) budget – *see budget template*

G. **Insert** or **attach** a project location map showing the project area in relation to a major landmark or town. Please indicate if the project location is on public or private property.

See attached map. Project is located on private property.

H. **Attach** specific project plans (e.g. detailed sketches, plan views [showing location and type of channel modifications], example photographs), current condition photographs, and maps. **If project involves water leasing or water salvage complete and attach a supplemental questionnaire (fwp.mt.gov/habitat/futurefisheries/supplement2.doc).*

I. **Attach** letters or statements of support. This includes landowner consent, community or public support, and fish biologist support.

J The project agreement includes a 20-year maintenance commitment. Please indicate (yes or no) that you will ensure project protection for 20 years. Discuss your ability to meet this commitment.

Yes [✔] No [ ]

The landowners have committed to signing a 20-year agreement. The proposed bridge is essentially a maintenance-free structures with a life expectancy estimated at 75 plus years.

K. **Describe** or **attach** land management & maintenance plans, including changing to grazing regimes, that will ensure protection of the restored area.

The structure occurs on a public road and will be maintained as part of the existing, heavily used road network within the subdivsion.

III. PROJECT BENEFITS (attach additional information to end of application):

A. What species of fish will benefit from this project?

Westslope cutthroat trout, bull trout and brook trout.

B. How will the project protect or enhance wild fish habitat?

This project occurs near the mouth of Trail Creek. This reach is significant as it not only serves as a migration corridor and rearing area for trout originating in Trail Creek, but also supports juvenile foraging and rearing for bull trout and westslope cutthroat associated with lower Morrell Creek. We anticipate even greater use of this habitat once this project is completed as replacing the undersized crossing will restore connectivity,eliminate channel impairments, and address local habitat impairments (e.g., point sediment sources).

C. Will the project improve fish populations and/or fishing? To what extent?

Yes, by enhancing stream connectivity and ultimately wild trout recruitment to the interconnected Clearwater lake and river system.

D. Will the project increase public fishing opportunity for wild fish and, if so, how?

Yes, improved fish passage will contribute to both the resident trout fishery in Trail and Morrell Creek and the migratory trout component associated with adjacent lakes and mainstem river sections.

E. What was the cause of habitat degradation in the area of this project and how will the project correct the cause?

Undersized culverts restrict upstream fish passage, create sediment/BMP issues and impair natural channel function. The health of wild and native trout fisheries in the Blackfoot and Clearwater River systems are tied to tributary health. By restoring fish passage through this portion of Trail Creek, we will eliminate upstream migration issues and allow unrestricted movements for trout and other species. This stream crossing is the last known partial barrier in the watershed.

F. What public benefits will be realized from this project?

This project continues and furthers the overall Blackfoot River Restoration program, in this case by benefiting native trout conservation, wild trout fishery enhancement and watershed restoration. Specific public benefits include: 1) expanding suitable habitat and fish passage conditions for westslope cutthroat trout and adfluvial bull trout populations, 2) improving water quality and natural stream function through properly designed infrastructure and on-site best management practices, and 3) facilitating improved channel and riparian conditions in the project reach.

The current Bull Trout Conservation Strategy for the Blackfoot-Clearwater core area lists the Trail/Morrell Creek drainage as an important population that contributes to the Blackfoot core population. The strategy specifically identifies the lack of high quality tributaries as one primary factor limiting native trout recovery throughout the watershed. This project, in conjunction with the cumulative effects of other projects in the drainage, will benefit native trout and contribute to the recovery and resilience of these populations, which provides a public benefit in a number of respects.

G. Will the project interfere with water or property rights of adjacent landowners? (explain):

NA

H. Will the project result in the development of commercial recreational use on the site? (explain):

No.

I. Is this project associated with the reclamation of past mining activity?

No.

Each approved project applicant must enter into a written agreement with Montana Fish, Wildlife & Parks specifying terms and duration of the project. The applicant must obtain all applicable permits prior to project construction. A competitive bid process must be followed when using State funds.

IV. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature: Ryen Neudecker Date: May 27, 2021

Sponsor (if applicable): _____

Submittal: **Applications must be *signed and received before* December 1 and June 1 of each year to be considered for the subsequent funding period**. Late or incomplete applications will be rejected.

Mail to:	FWP Future Fisheries Fish Management Bureau PO Box 200701 Helena, MT 59620-0701	Email:	Future Fisheries Coordinator FWPFFIP@mt.gov (electronic submissions must be signed) For files over 10MB, use https://transfer.mt.gov

Applications may be rejected if this form is modified.

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

Both tables must be completed or the application will be returned

PROJECT COSTS					CONTRIBUTIONS			
WORK ITEMS (Itemize by Category)	**NUMBER OF UNITS**	**UNIT DESCRIPTION***	**COST/UNIT**	**TOTAL COST**	**FUTURE FISHERIES REQUEST**	**MATCH (Cash or Services)****	**OTHER (Not part of this application)**	**TOTAL**
Personnel***								
Survey	20	hours	$100.00	$ 2,000.00		$ 2,000.00		$ 2,000.00
Design	68	hours	$120.00	$ 8,160.00		$ 8,160.00		$ 8,160.00
Engineering	65	hours	$120.00	$ 7,800.00		$ 7,800.00		$ 7,800.00
Permitting	32	hours	$55.00	$ 1,760.00		$ 1,760.00		$ 1,760.00
Oversight	40	hours	$120.00	$ 4,800.00		$ 4,800.00		$ 4,800.00
Staking	1	Lump sum	$1,500.00	$ 1,500.00		$ 1,500.00		$ 1,500.00
			Sub-Total	$ 26,020.00	$ -	$ 26,020.00	$ -	$ 26,020.00
Travel								
Mileage	1100	miles	$0.58	$ 638.00		638.00		$ 638.00
Per diem				$ -				$ -
			Sub-Total	$ 638.00	$ -	$ 638.00	$ -	$ 638.00
Construction Materials****								
Gravel Base Course	126	Lump sum	$35.00	$ 4,410.00		4,410.00		$ 4,410.00
Gravel Surface Course	77	CY	$42.00	$ 3,234.00		3,234.00		$ 3,234.00
Imported structural backfull	50	CY	$32.00	$ 1,600.00		1,600.00		$ 1,600.00
Roadway embankment	156	CY	$16.00	$ 2,496.00		2,496.00		$ 2,496.00
Precast Grade Beams	1	Lump sum	$15,000.00	$ 15,000.00	3,000.00	12,000.00		$ 15,000.00
Riprap, Class 3	60	cubic yards	$85.00	$ 5,100.00		5,100.00		$ 5,100.00
Steel Superstructure	1	Lump sum	$13,500.00	$ 13,500.00	3,000.00	10,500.00		$ 13,500.00
Corrugated steel deck	1	lump sum	$22,600.00	$ 22,600.00	3,000.00	19,600.00		$ 22,600.00
Galvanized corrugated steel backwall	1	Lump sum	$3,200.00	$ 3,200.00		3,200.00		$ 3,200.00
Timber Curb	1	Lump sum	$8,000.00	$ 8,000.00		8,000.00		$ 8,000.00
			Sub-Total	$ 79,140.00	$ 9,000.00	$ 70,140.00	$ -	$ 79,140.00
Equipment, Labor, and Mobilization								
Soil Erosion & Pollution Control	1	Lump sum	$3,400.00	$ 3,400.00		3,400.00		$ 3,400.00

(Revised 5/27/2021)

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

Removal of Existing Culverts	1	Lump sum	$2,800.00	$ 2,800.00	800.00	2,000.00		$ 2,800.00
Install Steel superstructure	1	Lump sum	$5,000.00	$ 5,000.00	1,000.00	4,000.00		$ 5,000.00
Install grade beams	1	Lump sum	$3,000.00	$ 3,000.00	500.00	2,500.00		$ 3,000.00
Hydraulic Excavator	20	hours	$132.00	$ 2,640.00	1,000.00	1,640.00		$ 2,640.00
Dump Truck	8	hours	$105.00	$ 840.00		840.00		$ 840.00
Install steel deck & steel backwall	1	Lump sum	$9,300.00	$ 9,300.00	2,000.00	7,300.00		$ 9,300.00
Mobilization	1	Lump sum	$9,000.00	$ 9,000.00		9,000.00		$ 9,000.00
				$ -				$ -
			Sub-Total	$ 35,980.00	$ 5,300.00	$ 30,680.00	$ -	$ 35,980.00
			TOTALS	$ 141,778.00	$ 14,300.00	$ 127,478.00	$ -	$ 141,778.00

OTHER REQUIREMENTS:

All of the columns in the budget table and the matching contribution table MUST be completed appropriately or the application will be invalid. Please see the example budget sheet for additional clarification.

*Units = feet, hours, inches, etc. Do not use lump sum unless there is no other way to describe the costs.

**Can include in-kind materials. Justification for in-kind labor (e.g. hourly rates used). Do not use government salaries as match. Describe here or in text.

***The Review Panel suggests that design and oversight costs associated with a proposed project not exceed 15% of the total project budget. If design and oversight costs are in excess of 15%, applications must include a justification or minimum of two competitive bids for the cost of undertaking the project.

****The Review Panel recommends a maximum fencing cost of $1.50 per foot. Additional costs may be the responsibility of the applicant and/or partners.

Additional details:

APPLICATION MATCHING CONTRIBUTIONS

(do not include requested funds or contributions not associated with the application)

CONTRIBUTOR	IN-KIND	CASH	TOTAL	Secured? (Y/N)
DARLOA	$ -	$ 25,000.00	$ 25,000.00	Yes
USFWS Partners for Fish & Wildlife Program		$ 55,000.00	$ 55,000.00	Yes
USFWS Fish Passage	$ -	$ 20,000.00	$ 20,000.00	Yes
BBCTU	$ 3,000.00	$ 24,478.00	$ 27,478.00	Yes
	$ -	$ -	$ -	
TOTALS	$ 3,000.00	$ 124,478.00	$ 127,478.00	

OTHER CONTRIBUTIONS

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

(contributions not associated with the application)

CONTRIBUTOR	IN-KIND	CASH	TOTAL	Secured? (Y/N)
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
	$ -	$ -	$ -	
TOTALS	$ -	$ -	$ -	

United States Department of the Interior
FISH AND WILDLIFE SERVICE
MONTANA PARTNERS FOR FISH & WILDLIFE PROGRAM
PO Box 66
Ovando, Montana 59854 406/793.7400

IN REPLY REFER TO:

May 27, 2021

Montana Fish, Wildlife & Parks
Future Fisheries Review Committee
1420 E 6th Ave
Helena, MT 59620

Dear Committee Members:

This letter is in reference to the Trail Creek & Willow Creek Fish Passage Projects located in the Blackfoot Watershed being proposed by the Big Blackfoot Chapter of Trout Unlimited. The U.S. Fish and Wildlife Service fully supports these projects because of the incredible biological values associated with them.

The Partners for Fish and Wildlife has a long history of working with the associated private landowners and other partners collaborating to restore the native trout fishery of these important tributaries to the Blackfoot River. This project is exciting in that we will be able to continue our efforts of restoring native trout within the watershed by working with committed landowners.

We commend the efforts of the many partners for their time and due diligence with these important projects and urge the Future Fisheries Review Committee to support these grant applications.

If you have any questions regarding this project, feel free to contact me.

Sincerely,

Greg Neudecker
State Coordinator
Partners for Fish and Wildlife Service

FWP.MT.GOV

THE **OUTSIDE** IS IN US ALL.

Region 2 Headquarters
3201 Spurgin Road
Missoula, MT 59804
Phone 406-542-5506
May 27, 2021

Future Fisheries Improvement Program
C/O Michelle McGree
Montana Fish, Wildlife & Parks
P.O. Box 200701
1420 E. 6th Avenue
Helena, MT 59620

RE: Big Blackfoot Trout Unlimited FFIP Proposal - Trail Creek Crossing Improvement

Dear Review Committee Members:

This letter in written in support of Trout Unlimited's application for Future Fisheries Improvement Program funding for enhancement of lower Trail Creek near Seeley Lake. Trail Creek is the largest tributary of Morrell Creek, a native trout stronghold in western Montana and one of six primary migratory Bull Trout tributary core areas in the greater Blackfoot River Basin. The Morrell-Trail Cr watershed is unique among these populations, as this system supports one of the only viable *adfluvial* (lake-migrant) Bull Trout populations in the upper Clark Fork drainage. Migratory and stream-resident Westslope Cutthroat Trout are also prevalent.

Morrell and Trail Creeks are a regional priority for protection and restoration because of their native fish assemblage, cold water, and high quality habitat. The proposed project enhances these values and will complement numerous recent projects involving fish passage, channel improvements, irrigation diversion upgrades, and large-scale public land acquisitions in the watershed. Over the past decade, $ Millions have been invested in this tributary stream system to protect and enhance native trout.

The proposed project involves replacement of an undersized culvert with a bridge on main stem Trail Creek near its confluence with Morrell Creek. The crossing is part of a more complex channel change and habitat enhancement where a braided section of Trail Creek is transitioning to a new primary channel location. The proposed project will facilitate this transition as it converts the primary channel from a subdivided, largely denuded reach to a vegetated subdivision common area. The new channel location (including bridge site) will promote upstream fish passage and higher habitat quality over a ~0.25 mile stream reach, as well as provide better stream access for local residents.

Fortunately, an established long-term fisheries and aquatic habitat monitoring baseline already exists in the Morrell-Trail Creek basin. This baseline not only guides the prioritization of enhancement projects, but is also used to inform management decisions and track fisheries and aquatic project response. Monitoring effort and commitment will continue on Trail and Morrell Creeks, reflecting the prioritization and importance of these watersheds for native trout and public fishery resources.

This project is certainly worthy of Future Fisheries funding and cost-effectively complements major, recent investments in the Morrell and Trail Creek watersheds. Please don't hesitate to contact me if you would like additional information regarding past, ongoing and planned projects in the basin or for updated monitoring data.

Sincerely,

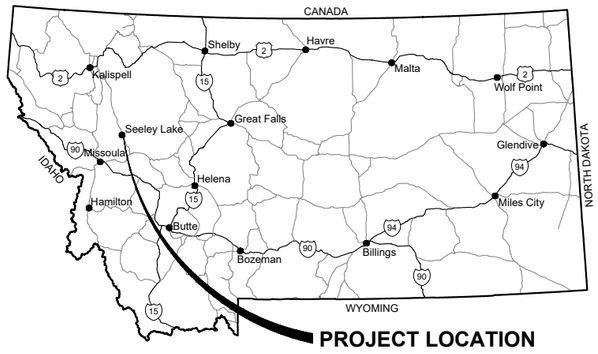
W. Ladd Knotek
Fisheries Management Biologist

TRAIL CREEK EXISTING STREAM CROSSING PHOTOS

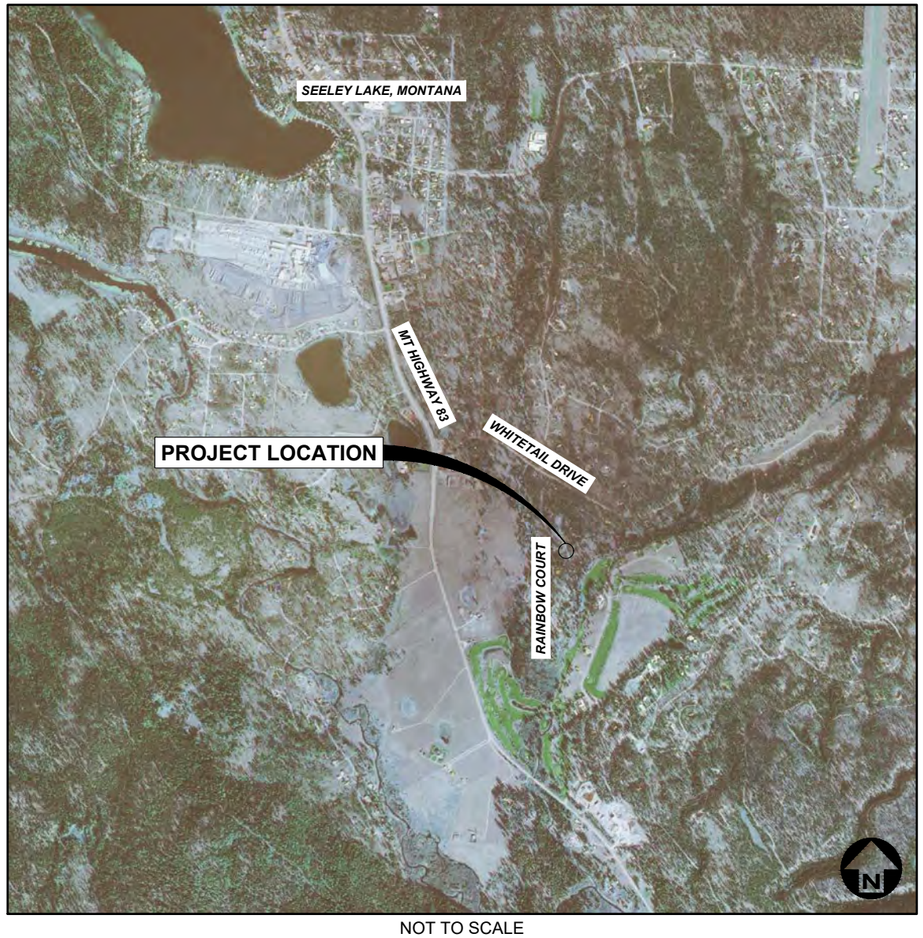
BIG BLACKFOOT CHAPTER OF TROUT UNLIMITED (BBCTU)

TRAIL CREEK BRIDGE

FINAL REVIEW



SECTION 11, TOWNSHIP 16 NORTH, AND RANGE 15 WEST



NOT TO SCALE

SHEET INDEX

PROJECT: 1-19182-TO4

DATE: MARCH 3, 2021

SHEET 1	COVER
SHEET 2	LEGEND AND GENERAL NOTES
SHEET 3	RAINBOW COURT PLAN & PROFILE
SHEET 4	TRAIL CREEK PLAN & PROFILE
SHEET 5	BRIDGE PLAN & ABUTMENT ELEVATION
SHEET 6	BEARING AND BACKWALL DETAILS
SHEET 7	GIRDER FRAMING PLAN
SHEET 8	MISCELLANEOUS DETAILS
SHEET 9	EXISTING GIRDER PHOTOS
SHEET 10	TRAIL CREEK CROSS-SECTIONS
SHEET 11	RAINBOW COURT CROSS-SECTIONS

PLANS PREPARED FOR:

BIG BLACKFOOT CHAPTER OF TROUT UNLIMITED

BBCTU

APPROVED BY:

RYAN ELLIOTT, P.E.
GREAT WEST ENGINEERING

MONTANA RYAN ELLIOTT 23709PE LICENSED PROFESSIONAL ENGINEER

DRAFT

PLANS PREPARED BY:

EVAN CARROLL, E.I.

GreatWest engineering®
2501 BELT VIEW DRIVE
HELENA, MT 59601
(406)449-8627

NO.	REVISION DESCRIPTION	BY	DATE
1			
2			
3			
4			
5			
6			

SET NO.

SHEET NO. 1

F:\1-19182-BBCTU On Call\TO 4 - Trail Creek Bridge\CADD 1-19182-TO4\Sheets\1-19182-TO4-01-Cover.dwg

ABBREVIATIONS

@	AT
Δ	ANGLE OF DEFLECTION, DELTA ANGLE
<PT	ANGLE POINT
AB	ANCHOR BOLT
ABDN	ABANDON
AC	ASBESTOS CONCRETE
ADDN	ADDITIONAL
ADJ	ADJACENT
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
APVD	APPROVED
ARCH	ARCHITECTURE, ARCHITECTURAL
ASPH	ASPHALT
AVE	AVENUE
AVG	AVERAGE
BFV	BUTTERFLY VALVE
BLDG	BUILDING
BLK	BLOCK
BLVD	BOULEVARD
BM	BEAM, BENCHMARK
BOT	BOTTOM
BRG	BEARING
BRKT	BRACKET
BVC	BEGIN VERTICAL CURVE
C–C	CENTER TO CENTER
CHAN	CHANNEL
CHK	CHECK
CI	CAST IRON
CIPC	CAST–IN–PLACE CONCRETE
CIRC	CIRCULAR
CJ	CONSTRUCTION JOINT, CONTROL JOINT
℄	CENTER LINE
CLR	CLEAR, CLEARANCE
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNITS
CO	CLEANOUT
COL	COLUMN
CONC	CONCRETE
CONSTR	CONSTRUCTION
CONT	CONTINUE, CONTINUED, CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
CP	CONTROL PANEL, CONTROL POINT
CPLG	COUPLING
CTR	CENTER
CTV	CABLE TELEVISION
CU	CUBIC, COPPER
CF	CUBIC FEET
CULV	CULVERT
CY	CUBIC YARD
DET	DETAIL
DI	DUCTILE IRON, DRAIN INLET
DIA, ø	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DR	DRIVE
DWG	DRAWING
E	EAST
EA	EACH
EL, ELEV	ELEVATION
ELB	ELBOW
ELEC	ELECTRIC, ELECTRICAL
ENCL	ENCLOSE
ENGR	ENGINEER
EOP	EDGE OF PAVEMENT
EQ	EQUAL, EQUALLY
EQ SP	EQUALLY SPACED
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
EVC	END VERTICAL CURVE
EW	EACH WAY
EXC	EXCAVATE
EXP	EXPANSION
EXP JT	EXPANSION JOINT
EXST	EXISTING
FCV	FLOW CONTROL VALVE
FD	FLOOR DRAIN
FDN	FOUNDATION
FES	FLARED END SECTION
FET	FLARED END TERMINAL
FF	FINISHED FLOOR
FG	FINISH GRADE
FHYD	FIRE HYDRANT
FJ	FLANGE JOINT
FL	FLOW LINE
FLEX	FLEXIBLE
FM	FORCEMAIN
FT	FOOT, FEET
FO	FIBER OPTIC
FTG	FOOTING, FITTING
G	NATURAL GAS
GA	GAGE, GAUGE
GAL	GALLON
GALV	GALVANIZED
GND	GROUND
GVL	GRAVEL
HB	HOSE BIB
HDPE	HIGH DENSITY POLYETHYLENE
HOR, HORIZ	HORIZONTAL
HWY	HIGHWAY
HYD	HYDRANT
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCH
INV	INVERT
JB	JUNCTION BOX
JT	JOINT
K	RATE OF VERTICAL CURVATURE
LBS	POUNDS
LF	LINEAR FEET
LN	LANE
LPG	LIQUID PROPANE GAS
LT	LEFT
MAX	MAXIMUM
MD	MEASURE DOWN
MFD	MANUFACTURED
MFR	MANUFACTURE, MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MJ	MECHANICAL JOINT
MOV	MOTOR OPERATED VALVE
MPWSS	MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS
N	NORTH
NE	NORTHEAST
NG	NATURAL GAS
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
NW	NORTHWEST
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OVERFLOW
OH	OVERHEAD
OHP	OVERHEAD POWER
OHT	OVERHEAD TELEPHONE
OPNG	OPENING
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PE	PLAIN END, POLYETHYLENE
PERP	PERPENDICULAR
PI	POINT OF INTERSECTION
P℄	PROPERTY LINE
PNL	PANEL
PRC	POINT OF REVERSE CURVATURE
PREFAB	PREFABRICATED
PRELIM	PRELIMINARY
PREP	PREPARE, PREPARATION
PROP	PROPERTY
PRV	PRESSURE REDUCING VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT, POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
R, RAD	RADIUS
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD
RDCR	REDUCER
REBAR	REINFORCEMENT BAR
REF	REFERENCE
REINF	REINFORCE
REQD	REQUIRED
RR	RAILROAD
RST	REINFORCING STEEL
RT	RIGHT
R/W	RIGHT–OF–WAY
S	SOUTH, SANITARY SEWER
SAN	SANITARY
SCH	SCHEDULE
SD	STORM DRAIN
SDWK	SIDEWALK
SE	SOUTHEAST
SECT	SECTION
SF	SQUARE FOOT
SHT	SHEET
SIM	SIMILAR
SLP	SLOPE
SPEC	SPECIFICATION
SQ	SQUARE
SSTL	STAINLESS STEEL
STA	STATION
SS	SANITARY SEWER SERVICE
STD	STANDARD
ST	STREET
STL	STEEL
STRUCT	STRUCTURE
SW	SOUTHWEST
SYM	SYMMETRICAL
TB	THRUST BLOCK
TBC	TOP BACK OF CURB
TBM	TEMPORARY BENCH MARK
TEL	TELEPHONE
TEMP	TEMPORARY
THRU	THROUGH
TYP	TYPICAL
UG	UNDERGROUND
UGP	UNDERGROUND POWER
UGT	UNDERGROUND TELEPHONE
UTIL	UTILITY
V	VALVE, VOLT
VB	VALVE BOX
VERT	VERTICAL
VOL	VOLUME
W	WEST, WATER
WTR	WATER
WD	WOOD
W/	WITH
W/O	WITHOUT
WL	WETLAND
WM	WIRE MESH, WATER METER
WS	WATERSTOP, WATER SURFACE, WATER SERVICE
WT	WEIGHT
WV	WATER VALVE
WWF	WELDED WIRE FABRIC
WWM	WELDED WIRE MESH
XFMR	TRANSFORMER
X–ING	CROSSING
XS	CROSS SECTION
YD	YARD

LEGEND

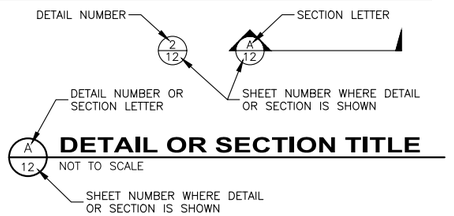
EXISTING	PROPOSED	DESCRIPTION
		MAJOR CONTOUR
		MINOR CONTOUR
OHT	OHT	OVERHEAD TELEPHONE
UGT	UGT	UNDERGROUND TELEPHONE
CTV	CTV	CABLE TELEVISION
FO	FO	FIBER OPTIC
G	G	NATURAL GAS
OHP	OHP	OVERHEAD POWER
UGP	UGP	UNDERGROUND POWER
S	S	SANITARY SEWER
SS	SS	SANITARY SEWER SERVICE
FM	FM	SANITARY SEWER FORCEMAIN
SD	SD	STORM DRAIN
		STORM CULVERT
W	W	WATER
WS	WS	WATER SERVICE
		CHAINLINK FENCE
X	X	BARBED WIRE FENCE
		WOOD FENCE
		PAVED ROAD
		GRAVEL ROAD
		PROPERTY/LOT LINE
		PROPERTY EASEMENT
		PROPERTY SETBACK
		RIGHT–OF–WAY
		CITY LIMIT/DISTRICT BOUNDARY
		RAILROAD
		DITCH
		WATER EDGE
WL		WETLAND
		BUILDING
		BENCHMARK
		CONTROL POINT
		PROPERTY PIN
		BORING
		MONITORING WELL
		TEST PIT
		BOLLARD
		MAIL BOX
		SIGN

EXISTING	PROPOSED	DESCRIPTION
		STUMP
		SHRUB/BUSH
		TREE–CONIFER
		TREE–DECIDUOUS
		TREE LINE
		COMMUNICATION MANHOLE
C	C	COMMUNICATION VAULT
T	T	TELEPHONE RISER
TV	TV	CABLE TV RISER
		NATURAL GAS METER
G	G	NATURAL GAS RISER
		NATURAL GAS VALVE
		LIGHT POLE
		STREET LIGHT POLE
P	P	POWER RISER
		PAD MOUNTED TRANSFORMER
P	P	POWER VAULT
		UTILITY POLE
		GUY WIRE
S	S	SANITARY MANHOLE
CO	CO	SANITARY CLEANOUT
		SANITARY LAMPHOLE
ST	ST	STORM MANHOLE
		STORM ROUND INLET
		STORM SQUARE INLET
		STORM CATCH BASIN
		11.25° ELBOW
		22.50° ELBOW
		45° ELBOW
		90° ELBOW
		TEE
		CROSS
		CAP
		FIRE HYDRANT
		GATE VALVE
		REDUCER
		WATER METER
W	W	WELL
		CURB STOP
		FROST FREE HYDRANT

GENERAL NOTES:

1. THIS IS A STANDARD LEGEND AND ABBREVIATION LIST. THEREFORE, NOT ALL SYMBOLS AND ABBREVIATIONS MAY BE USED ON THIS PROJECT.
2. UNLESS MODIFIED BY THE CONTRACT DOCUMENTS, ALL WORK WILL CONFORM TO THE MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS, SIXTH EDITION, APRIL 2010 (REFERRED TO COLLECTIVELY AS MPWSS).
3. EXISTING UNDERGROUND UTILITIES SHOWN ARE FROM THE BEST INFORMATION AVAILABLE. THIS INFORMATION IS APPROXIMATE AND MAY BE INCOMPLETE. FOR ACCURATE LOCATION, THE CONTRACTOR SHALL CONTACT, PRIOR TO EXCAVATION, THE UTILITIES UNDERGROUND LOCATION CENTER AT: 1–800–424–5555.

GENERAL DESIGN DESIGNATIONS:



NO.	REVISION DESCRIPTION	BY	DATE

PROJECT: 1-19182.TO4
DESIGNED: RE, EC
DRAWN: EC
CHECKED: JT
APPROVED: RE
DATE: MARCH 3, 2021

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2501 BELT VIEW DRIVE
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BBCTU

TRAIL CREEK BRIDGE

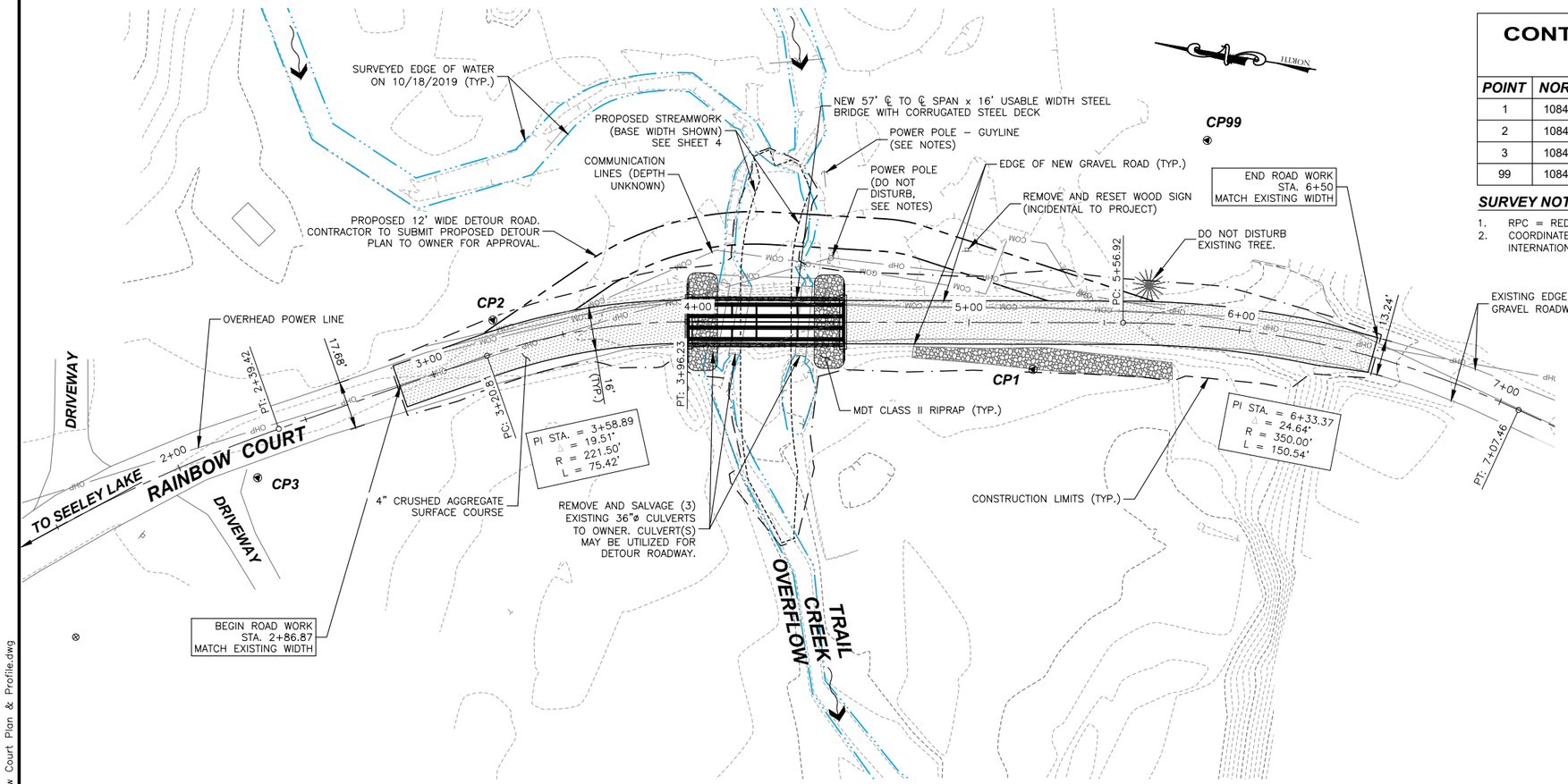
LEGEND AND GENERAL NOTES

SHEET NO.

2

OF 11

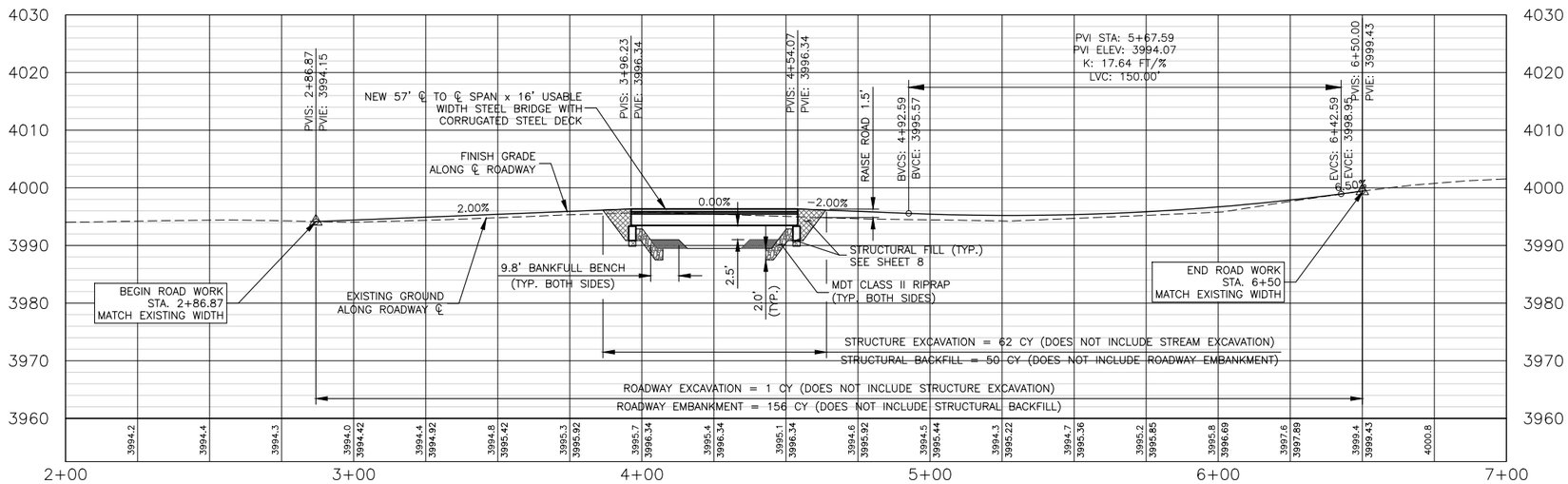
F:\1-19182-BBCTU On Call\TO 4 - Trail Creek Bridge\CADD 1-19182-TO4\Sheets\1-19182-TO4-02-Legend and General Notes.dwg



PLAN VIEW OF RAINBOW COURT - STA. 2+00 TO STA. 7+00

0 25 50
SCALE IN FEET

DESIGN SPEED - 20 MPH



PROFILE VIEW OF RAINBOW COURT - STA. 2+00 TO STA. 7+00

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 25'

CONTROL POINT COORDINATE TABLE

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
1	1084261.383	983341.03	3991.82	REBAR W/ RPC
2	1084460.874	983326.099	3993.58	REBAR W/ RPC
3	1084536.876	983254.401	3993.64	REBAR W/ RPC
99	1084211.937	983435.003	3993.55	REBAR W/ RPC

SURVEY NOTES:

1. RPC = RED PLASTIC CAP
2. COORDINATE SYSTEM USED IS NAD83 MONTANA STATE PLANES, INTERNATIONAL FOOT.

INFORMATIONAL QUANTITIES*

STRUCTURE EXCAVATION	62 CY
STRUCTURAL BACKFILL (FOUNDATION FILL AND FILL BEHIND GRADE BEAMS, ONSITE SOURCE)	50 CY
ONSITE-SOURCED ROADWAY EMBANKMENT MATERIAL	156 CY
COMMERCIAL-SOURCED MDT CLASS II RIPRAP	60 CY
AGGREGATE SURFACE COURSE (ROAD AND BRIDGE)	77 CY
CHANNEL EXCAVATION MATERIAL	328 CY

*QUANTITIES FOR INFORMATIONAL USE ONLY

HYDRAULICS*

Q25: 0.96' FB @ 412 CFS
Q50: 0.77' FB @ 483 CFS
Q100: 0.59' FB @ 557 CFS

*HYDRAULICS BASED ON ENTIRE TRAIL CREEK FLOWS, STREAMSTATS, NO ADJUSTMENTS DUE TO FIRE EFFECTS MADE.
**FB = FREEBOARD

SITE NOTES:

1. GEOTECHNICAL AND SOIL INVESTIGATIONS HAVE NOT BEEN COMPLETED AT THE SITE.
2. QUANTITIES PROVIDED FOR INFORMATION ONLY AND ARE IN-PLACE QUANTITIES, NO SHRINKAGE OR SWELL FACTORS HAVE BEEN APPLIED. CONTRACTOR SHALL VERIFY QUANTITIES.
3. STAGING AREAS TO BE DISCUSSED AT SITE-WALK THROUGH WITH BBCTU.
4. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHMENT OF DETOUR ROAD, PROVIDING DRAINAGE UNDER DETOUR ROAD, AND RECLAIMING DISTURBED AREAS AFTER CONSTRUCTION. THIS WORK IS INCIDENTAL TO THE MOBILIZATION BID ITEM.
5. ROADWAY EXCAVATION IS PAID UNDER THE HYDRAULIC EXCAVATOR RENTAL BID ITEM.
6. STRUCTURE EXCAVATION QUANTITY SHOWN IS FOR INFORMATION ONLY BASED ON THE LIMITS SHOWN. CONTRACTOR IS RESPONSIBLE FOR DETERMINING ACTUAL QUANTITIES BASED ON THEIR OWN EXCAVATION PLANS. LIMITS SHOWN ARE MINIMUM EXCAVATION REQUIREMENTS BASED ON SOIL TYPE AND OSHA EXCAVATION REQUIREMENTS. ACTUAL SITE CONDITIONS MAY VARY. STRUCTURE EXCAVATION IS PAID UNDER THE HYDRAULIC EXCAVATOR RENTAL BID ITEM.
7. APPROXIMATELY 80% OF STRUCTURE EXCAVATION MATERIAL IS ANTICIPATED TO BE SUITABLE FOR USE AS ROADWAY EMBANKMENT MATERIAL. SOME MIXING, SORTING AND DRYING MAY BE REQUIRED PRIOR TO USE AS EMBANKMENT MATERIAL.
8. CONTRACTOR TO COORDINATE DETOUR ROUTE WITH POWER UTILITY. BARRICADES MEETING MUTCD STANDARDS SHALL BE INSTALLED AROUND POLE FOR PROTECTION OF TRAVELING PUBLIC DURING DETOUR ROUTE USE. (PAID UNDER MOBILIZATION BID ITEM).

NO.	REVISION DESCRIPTION	BY	DATE

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CHECKED: JT
APPROVED: RE
DATE: MARCH 3, 2021

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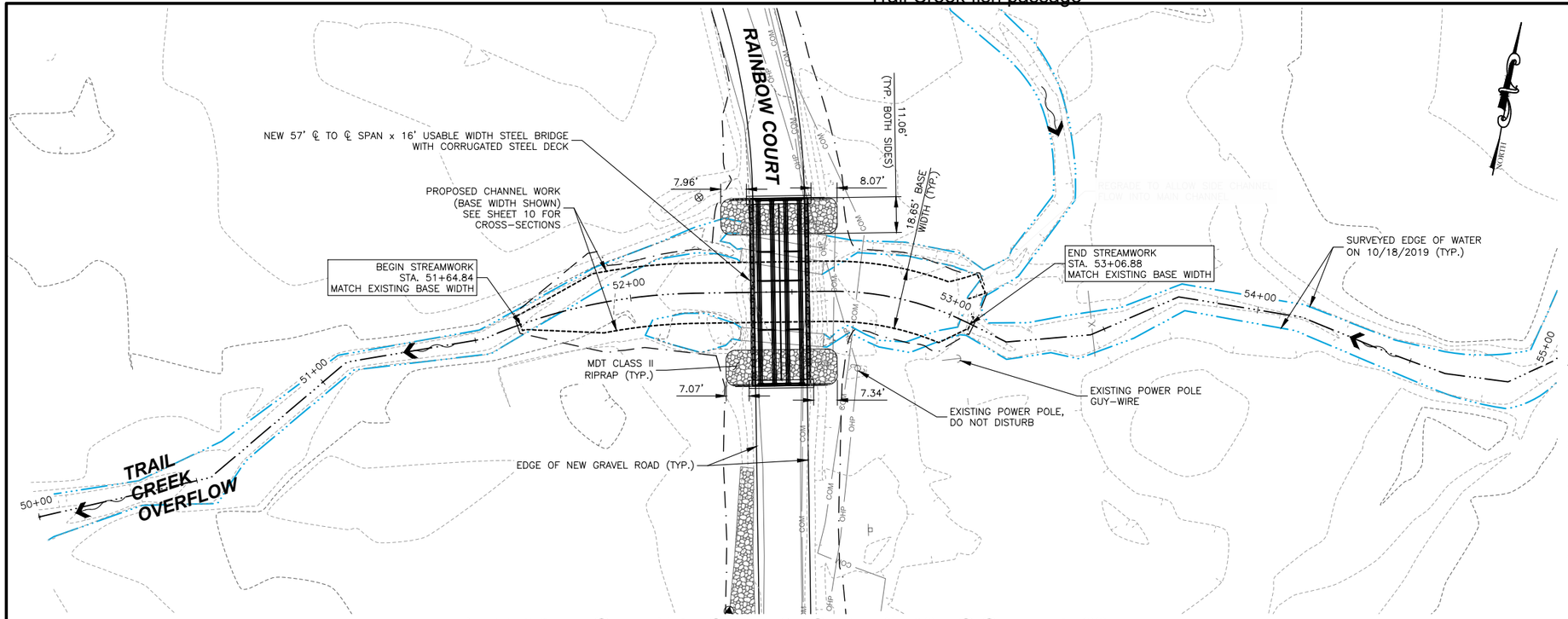
BBCTU
TRAIL CREEK BRIDGE
RAINBOW COURT PLAN & PROFILE

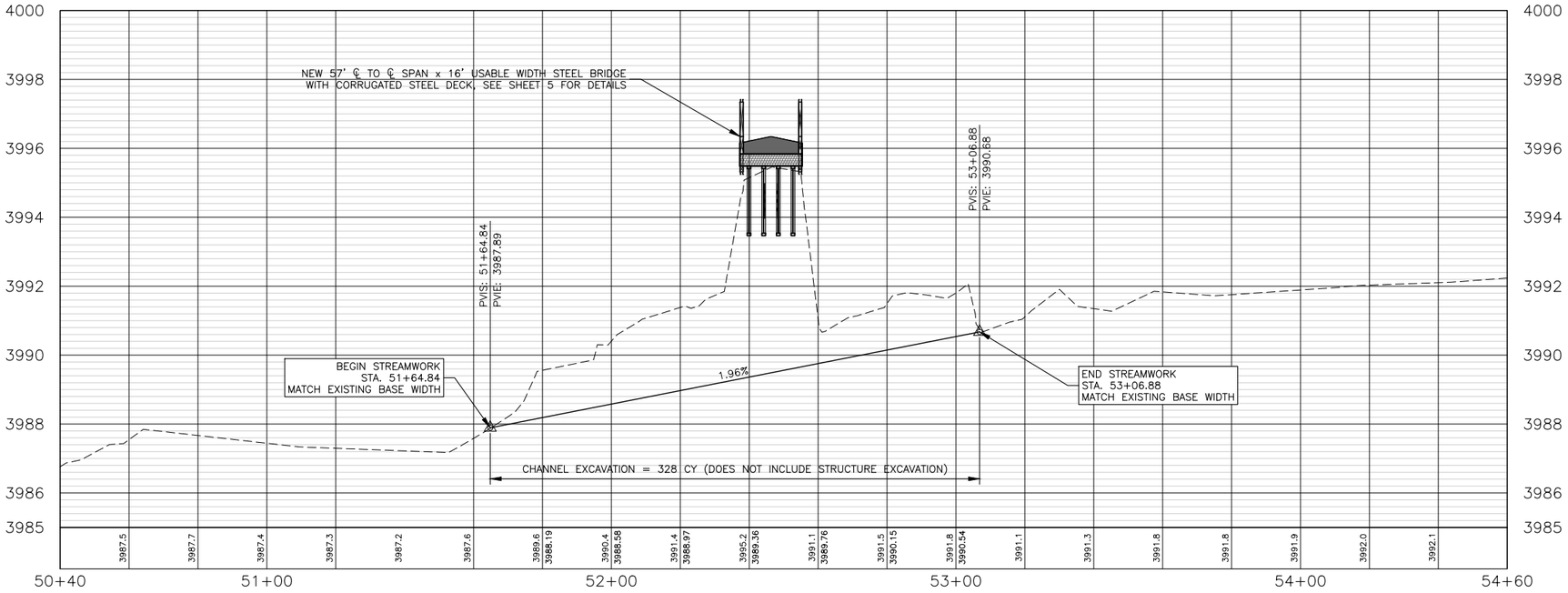
SHEET NO.
3
OF 11

F:\1-19182-BBCTU On Call\TO 4 - Trail Creek Bridge\CADD 1-19182-TO4\Sheets\1-19182-TO4-03-Rainbow Court Plan & Profile.dwg



PLAN VIEW OF TRAIL CREEK - STA. 50+40 TO STA. 54+60

0 20 40
SCALE IN FEET



PROFILE VIEW OF TRAIL CREEK - STA. 50+40 TO STA. 54+60

HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE: 1" = 4'

GENERAL NOTES:

1. UTILIZE SALVAGED NATIVE STREAMBED/STREAMBANK MATERIAL TO REGRADE AND SHAPE THE CHANNEL THROUGH THE BRIDGE PER THE PROFILE ON SHEET 2. REGRADE AND SHAPE THE CHANNEL OUTSIDE THE BRIDGE PER THE CROSS SECTIONS ON THIS SHEET.
2. CONTRACTOR MAY SALVAGE VEGETATED SOIL MATS, WILLOWS AND TOPSOIL PRIOR TO CLEARING AND GRUBBING.
3. TO OPTIMIZE TRANSPLANT SUCCESS, OVER-EXCAVATE A DIVOT FOR SOIL MAT. PLACE FILL MATERIAL IN DIVOT HOLE SURROUNDING PLANT TO NATURAL CONTOUR. COMPACT THOROUGHLY. WATER IMMEDIATELY WITH EXCAVATOR BUCKET.
4. CONTRACTOR SHALL COMPLETE SEEDING OF ALL NEWLY CREATED CHANNEL SLOPES WITH NATIVE LOCAL UPLAND GRASS SEED MIX AS WELL AS ALL SEEDING OUTSIDE THE CHANNEL EXTENTS (ROAD EMBANKMENT AND DETOUR ROUTE RESTORATION).
5. CHANNEL EXCAVATION IS PAID UNDER THE HYDRAULIC EXCAVATOR RENTAL BID ITEM.
6. DETOUR ROUTE (UPSTREAM) NOT SHOWN IN THIS VIEW.

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DATE: MARCH 3, 2021

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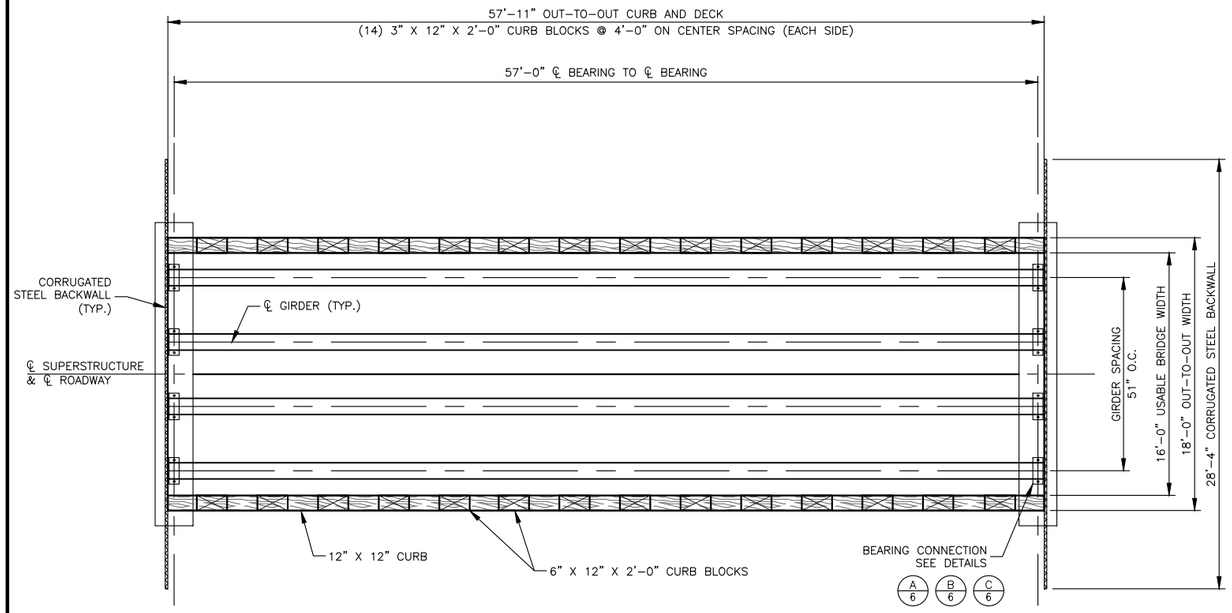
BBCTU

TRAIL CREEK BRIDGE

TRAIL CREEK PLAN & PROFILE

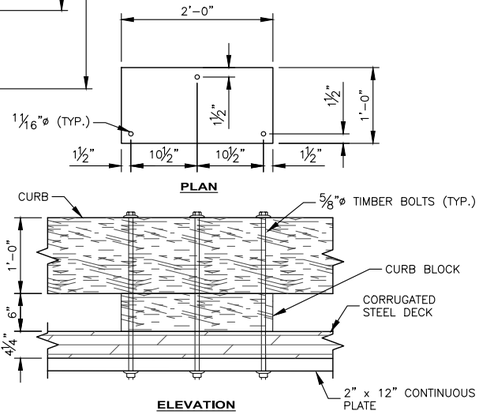
SHEET NO.
4
OF 11

F:\1-19182-BBCTU On Call\TO 4 - Trail Creek Bridge\CADD 1-19182-TO4\Sheets\1-19182-TO4-04-Trail Creek Plan & Profile.dwg



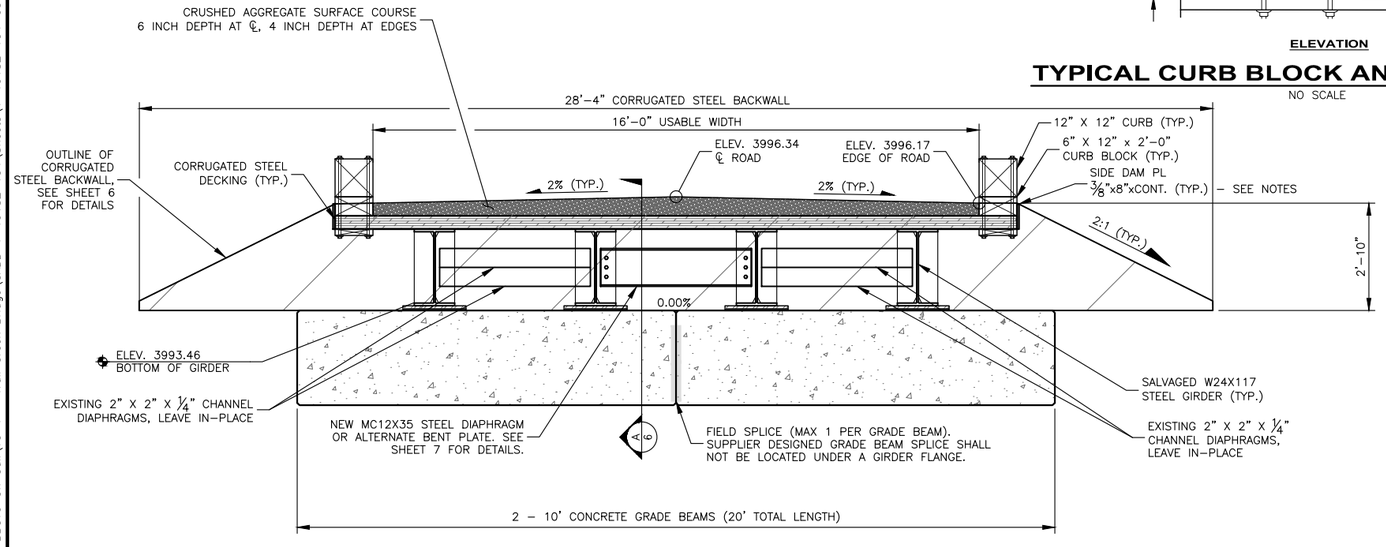
SUPERSTRUCTURE PLAN

0 5 10
SCALE IN FEET



TYPICAL CURB BLOCK AND CONNECTION

NO SCALE



ABUTMENT ELEVATION

0 2 4
SCALE IN FEET

NOTE: ATTACHMENT OF SIDE DAM TO CORRUGATIONS TO BE PER CORRUGATED DECK SUPPLIER RECOMMENDATIONS.

GENERAL BRIDGE NOTES:

DESIGN:

DESIGNS SHALL BE IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION
DESIGN DATA AS FOLLOWS:

- HL-93 LIVE LOAD
- TRUCK IMPACT = 33%
- FUTURE WEARING SURFACE = 10 PSF.
- DEFLECTION CRITERIA: L/500

STEEL COMPONENTS:

STEEL DIAPHRAGMS, BEARINGS, SIDE DAMS AND OTHER SPECIFIED STEEL COMPONENTS SHALL BE GRADE 36, BLACK STEEL. BEARING PADS SHALL CONFORM TO LRFD BRIDGE CONSTRUCTION SPECIFICATIONS. BEARING COMPONENTS SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

ALL STEEL SHAPES, PLATES, AND BARS SHALL MEET THE REQUIREMENTS OF AASHTO M270, GRADE 36 (ASTM A36) AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M111 (ASTM A123) UNLESS NOTED OTHERWISE. ALL NUTS AND BOLTS SHALL CONFORM TO ASTM A307, GRADE A, EXCEPT AS NOTED AND SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 (ASTM A153). ANCHOR BOLTS SHALL CONFORM TO ASTM A325. USE MALLEABLE IRON WASHERS AGAINST TIMBER UNLESS NOTED OTHERWISE.

CORRUGATED STEEL DECK AND BACKWALL SHALL HAVE 12" x 4¼" CORRUGATIONS. STEEL UTILIZED IN CORRUGATED DECK AND BACKWALL SHALL BE 50 KSI, 9 GAGE, GALVANIZED.

WELDING:

WELDING, WELDER QUALIFICATIONS, PRE-QUALIFICATION OF WELD DETAILS, AND INSPECTION OF WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE ANSI/AASHTO/AWS BRIDGE WELDING CODE D1.5. NO FIELD WELDING WILL BE ALLOWED UNLESS NOTED OTHERWISE. ALL ELECTRODES SHALL BE E70XX.

TIMBER COMPONENTS:

WELDING, WELDER QUALIFICATIONS, PRE-QUALIFICATION OF WELD DETAILS, AND INSPECTION OF WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE ANSI/AASHTO/AWS BRIDGE WELDING CODE D1.5. NO FIELD WELDING WILL BE ALLOWED UNLESS NOTED OTHERWISE. ALL ELECTRODES SHALL BE E70XX.

FABRICATION & FIELD VERIFICATION:

SUBMIT SHOP DRAWINGS FOR ALL STRUCTURAL STEEL ELEMENTS AND PRECAST ELEMENTS. SHOW ALL DIMENSIONS, FABRICATION DETAILS, AND MATERIAL SPECIFICATIONS ON THE SHOP DRAWINGS FOR ALL CUT OR BORED STEEL. FIELD DRILLING OF HOLES SHALL NOT BE ALLOWED UNLESS OTHERWISE NOTED ON THE DRAWINGS. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS AND CONNECTIONS OF ALL MEMBERS TO BE REPLACED PRIOR TO ORDERING MATERIALS.

TIMBER & LUMBER:

ALL TREATED TIMBER SHALL BE OF COASTAL REGION DOUGLAS-FIR, WITH GRADE AS NOTED BELOW, CONFORMING TO THE CURRENT WWPA GRADING RULES FOR WESTERN LUMBER OR CURRENT WCLIB STANDARD GRADING RULES FOR WESTERN COAST LUMBER.

MEMBER	COMMERCIAL GRADE
CURBS, CURB BLOCK, PLATE	NO. 1

TREATMENT:

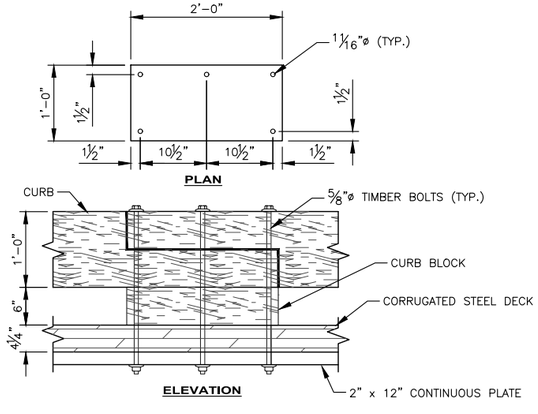
AFTER FABRICATION, ALL TIMBER MEMBERS SHALL BE INCISED AND PRESSURE TREATED IN ACCORDANCE WITH AWPA U1 USING PENTACHLOROPHENOL OR COPPER NAPHTHENATE (CuN) IN HEAVY OIL (TYPE A SOLVENT). TREAT TO USE CATEGORY UC4B. COMPLY WITH THE REQUIREMENTS OF THE CURRENT EDITION OF WWPI'S "BEST MANAGEMENT PRACTICES FOR THE USE OF TREATED WOOD IN AQUATIC ENVIRONMENTS".

FIELD TREATMENT:

PENTACHLOROPHENOL OR COPPER NAPHTHENATE MEETING AWPA P-8 WITH TYPE A SOLVENT MEETING AWPA P-9 SHALL BE FURNISHED FOR FIELD TREATING OF WOOD. ALL ABRASIONS, FIELD DRILLED HOLES, AND FIELD CUTS APPROVED BY BBCTU (OR THEIR REPRESENTATIVE) SHALL BE CAREFULLY TRIMMED AND GIVEN THREE BRUSH COATS OF THE FIELD PRESERVATIVE TREATMENT SOLUTION.

TIMBER INSPECTION AND CERTIFICATION:

FURNISHED NECESSARY COMPLIANCE CERTIFICATES UPON DELIVERY.



TYPICAL CURB BLOCK AND CONNECTION AT SPLICE

NO SCALE

NO.	REVISION DESCRIPTION	BY	DATE

PROJECT: 1-19182.T04
DESIGNED: RE, EC
DRAWN: EC
CHECKED: JT
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DATE: MARCH 3, 2021

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2501 BELT VIEW DRIVE
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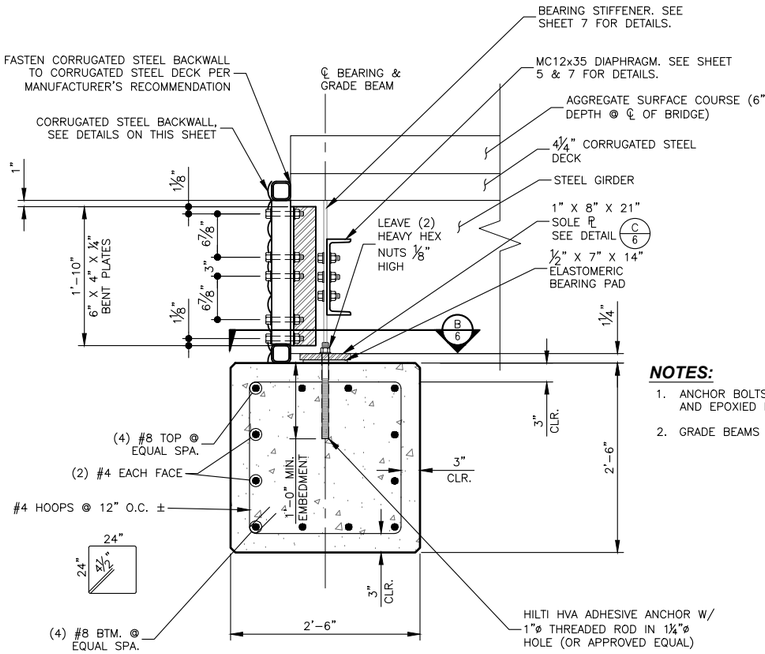
BBCTU

TRAIL CREEK BRIDGE

BRIDGE PLAN & ABUTMENT ELEVATION

SHEET NO.
5
OF 11

F:\1-19182-BBCTU On Call\TO 4 - Trail Creek Bridge\CADD 1-19182-T04\Sheets\1-19182-T04-05-Bridge Plan & Abutment Elevation.dwg

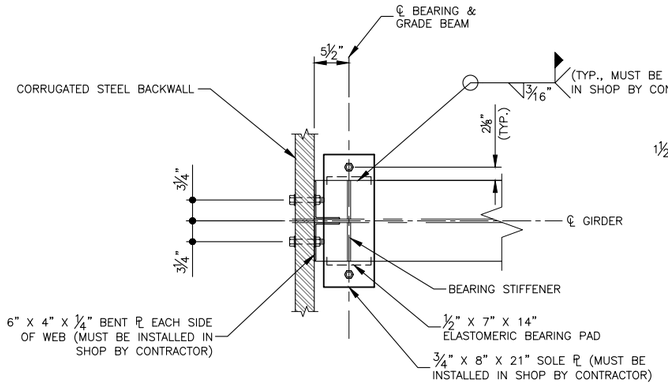


NOTES:

1. ANCHOR BOLTS SHALL BE FIELD DRILLED AND EPOXIED INTO CONCRETE.
2. GRADE BEAMS SHALL BE PRECAST ONLY.

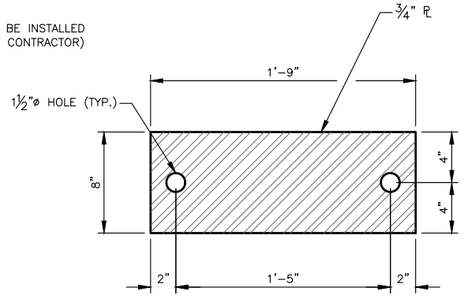
A/6 GRADE BEAM & BEARING DETAIL

SCALE: 1/2" = 1'–0"



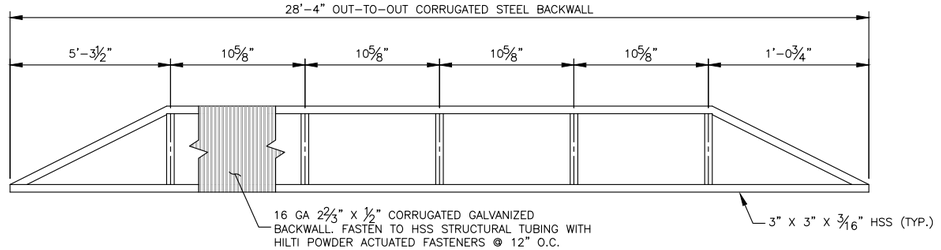
B/6 BEARING SECTION

SCALE: 1/2" = 1'–0"



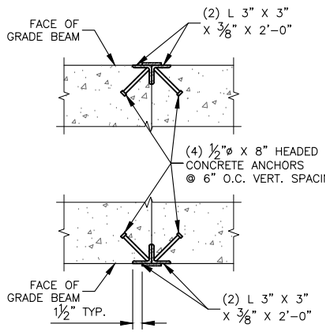
C/6 SOLE PLATE DETAIL

SCALE: 1" = 1'–0"

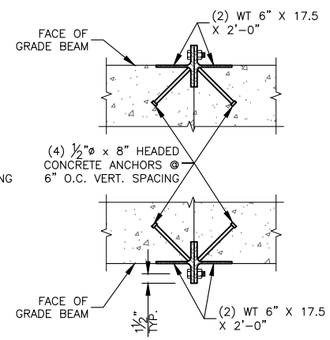


CORRUGATED STEEL BACKWALL ELEVATION

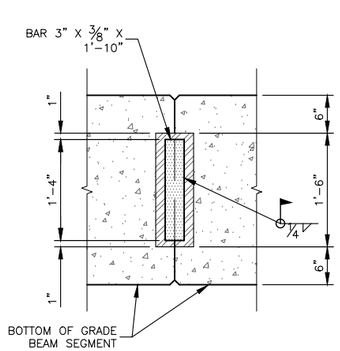
SCALE: 1" = 5'



PLAN SECTION

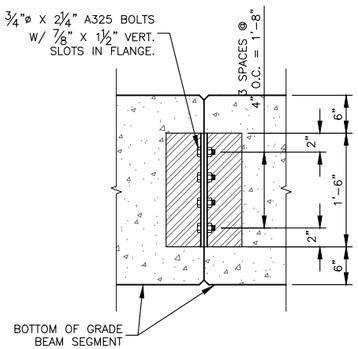


PLAN SECTION



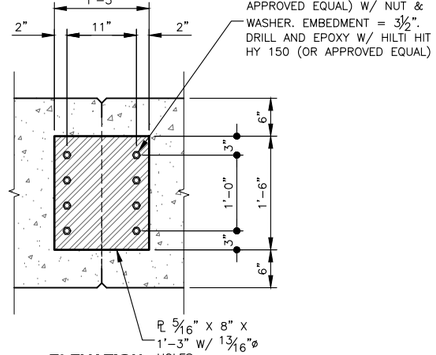
ELEVATION

FIELD WELD ALTERNATIVE



ELEVATION

FIELD BOLT ALTERNATIVE



ELEVATION

POST-INSTALLED ANCHOR PLATE ALTERNATIVE

D/6 OPTIONAL GRADE BEAM SPLICE DETAILS

SCALE: 1/2" = 1'–0"

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APPROVED: RE
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BBCTU

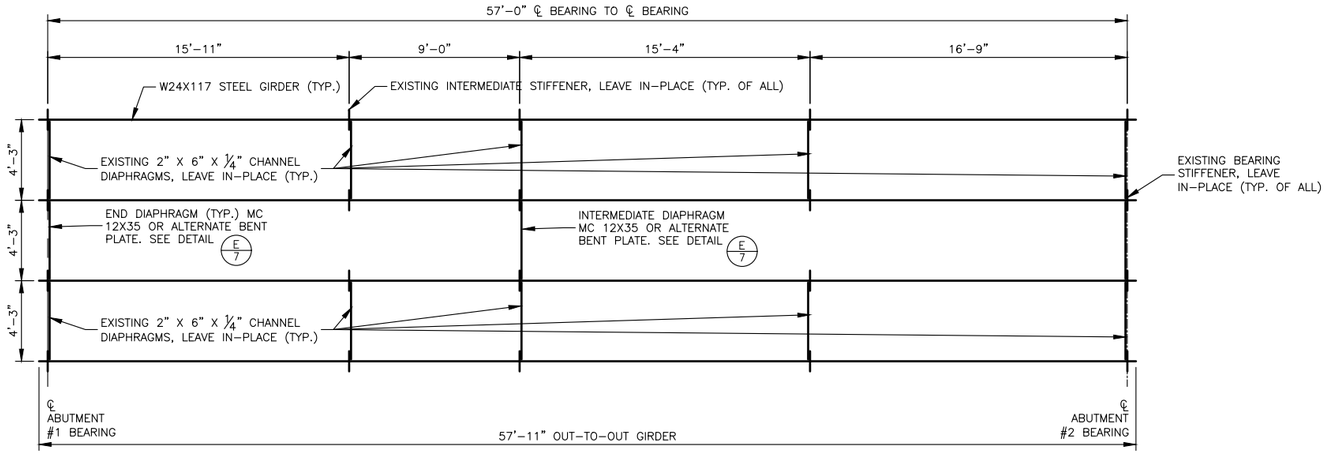
TRAIL CREEK BRIDGE

BEARING AND BACKWALL DETAILS

SHEET NO.

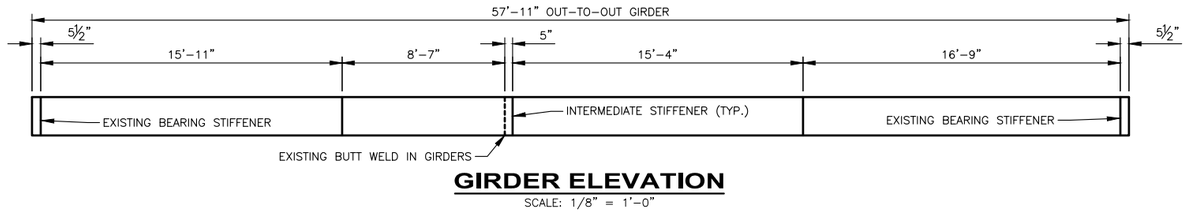
6

OF 11



FRAMING PLAN

SCALE: 1/8" = 1'–0"

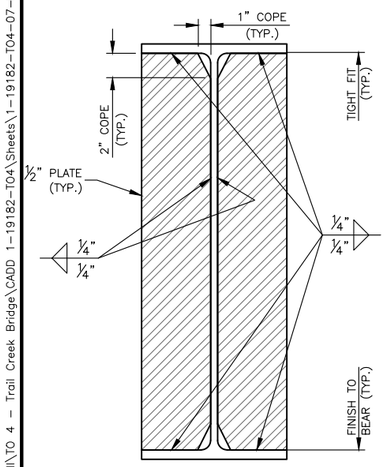


GIRDER ELEVATION

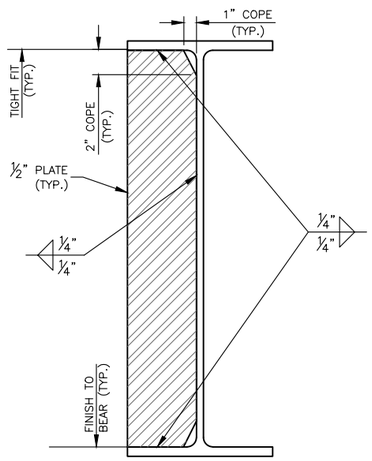
SCALE: 1/8" = 1'–0"

NOTES:

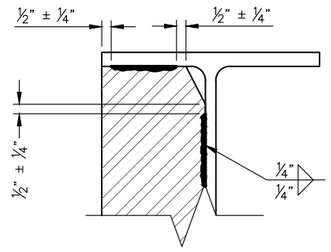
1. BIG BLACKFOOT CHAPTER TROUT UNLIMITED (BBCTU) TO PROVIDE FOUR (4) SALVAGED W24X117 STEEL GIRDERS. MEASUREMENTS SHOWN ON THIS SHEET ARE BASED ON MEASUREMENT OF ONE (1) GIRDER. VARIANCES IN ACTUAL GIRDER DIMENSIONS MAY EXIST. CONTRACTOR IS RESPONSIBLE FOR TRANSPORTATION OF GIRDERS FROM UPSATA LAKE TO A SHOP ENVIRONMENT, ALL WORK REQUIRED TO MODIFY GIRDERS TO THE SPECIFIED DIMENSIONS, AND TRANSPORTATION OF GIRDERS TO THE SITE.
2. SEE SHEETS 5 & 6 FOR DIAPHRAGM AND BEARING DETAILS. DIAPHRAGMS SHALL BE PROVIDED BY THE CONTRACTOR.
3. NEW MC 12X35 DIAPHRAGMS (OR ALTERNATE BENT PLATE) SHALL BE INSTALLED BY THE CONTRACTOR AS SHOWN IN THE FRAMING PLAN ON THIS SHEET.
4. EXISTING SOLE PLATES SHALL BE REMOVED AND REPLACED WITH NEW SOLE PLATES PROVIDED BY THE CONTRACTOR. SEE SHEET 6 FOR DETAILS. CONTRACTOR TO PROVIDE AND INSTALL 7" X 14" X ½" ELASTOMERIC BEARING PAD BETWEEN THE SOLE PLATE AND GRADE BEAM.
5. EXISTING BEARING STIFFENERS SHALL BE LEFT IN–PLACE AND USED FOR INSTALLATION OF NEW END DIAPHRAGMS AND INTERMEDIATE DIAPHRAGM.
6. CONSTRUCTION CONTRACTOR SHALL AVOID DAMAGING THE STRUCTURAL INTEGRITY OF THE GIRDERS DURING TRANSPORTATION AND THE INSTALLATION OF DIAPHRAGMS. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO THE GIRDERS DURING FABRICATION.
7. WELDING, WELDER QUALIFICATIONS, PRE–QUALIFICATION OF WELD DETAILS, AND INSPECTION OF WELDS SHALL CONFORM TO THE REQUIREMENTS OF THE ANSI/AASHTO/AWS BRIDGE WELDING CODE D1.5. NO FIELD WELDING WILL BE ALLOWED UNLESS NOTED OTHERWISE. ALL ELECTRODES SHALL BE E70XX.
8. THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING ERECTION.
9. REFER TO SHEET 9 FOR PHOTOS OF EXISTING STEEL GIRDERS TO BE PROVIDED BY BBCTU.



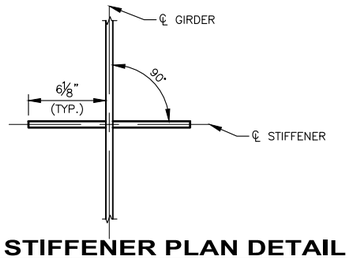
A/7 **BEARING STIFFENER**
SCALE: 1" = 1'–0"



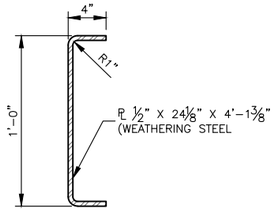
B/7 **INTERMEDIATE STIFFENER**
SCALE: 1" = 1'–0"



C/7 **STIFFENER WELD DETAIL**
SCALE: 1" = 1'–0"



D/7 **STIFFENER PLAN DETAIL**
SCALE: 1" = 1'–0"



E/7 **ALTERNATE DIAPHRAGM**
NOT TO SCALE

NO.	REVISION DESCRIPTION	BY	DATE

PROJECT: 1-19182.TO4
DESIGNED: RE, EC
DRAWN: EC
CHECKED: JT
APPROVED: RE
DATE: MARCH 3, 2021

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2501 BELT VIEW DRIVE
HELENA, MT 59601
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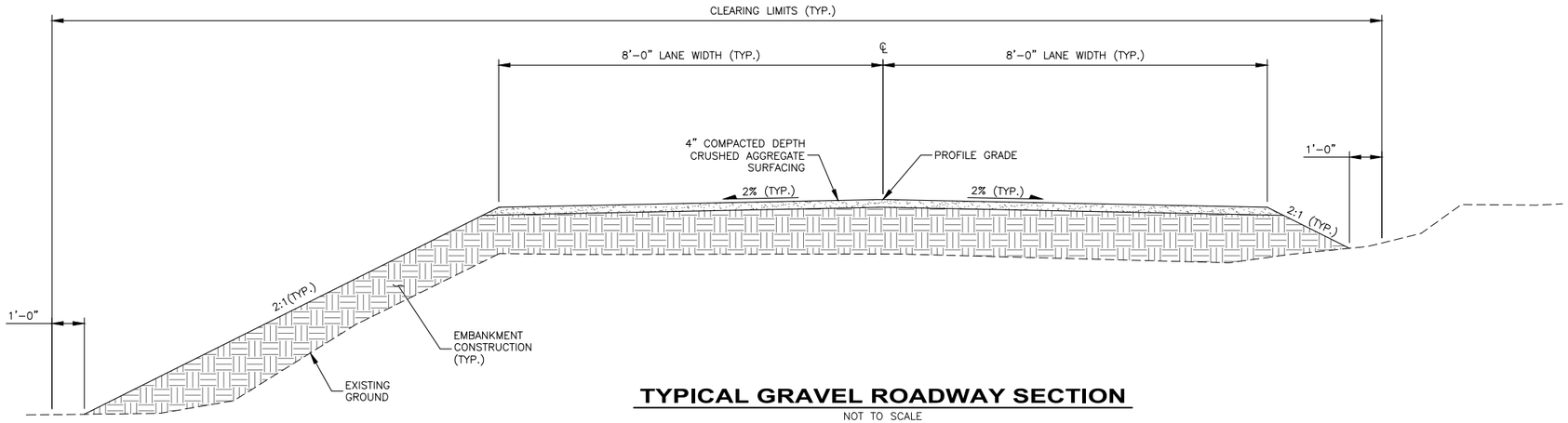
TRAIL CREEK BRIDGE

GIRDER FRAMING PLAN

SHEET NO.
7
OF 11

F:\1-19182-BBCTU On Call\TO 4 - Trail Creek Bridge\CADD 1-19182-TO4\Sheets\1-19182-TO4-07-Framing Plan.dwg

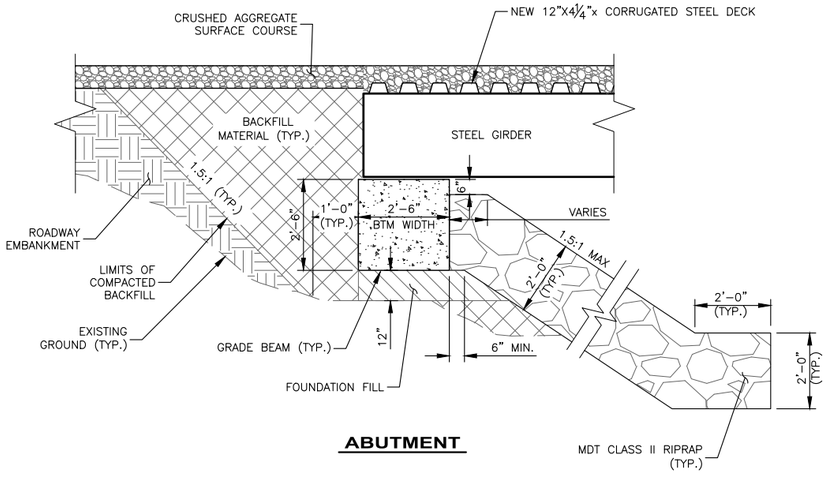


TYPICAL GRAVEL ROADWAY SECTION

NOT TO SCALE

NOTE:

DETAIL SHOWS CUT FILL CONDITIONS FOR ROADWAY CONSTRUCTION, NO DITCH CONSTRUCTION IS ANTICIPATED. LANE WIDTH WILL TAPER TO EXISTING AT PROJECT EXTENTS.

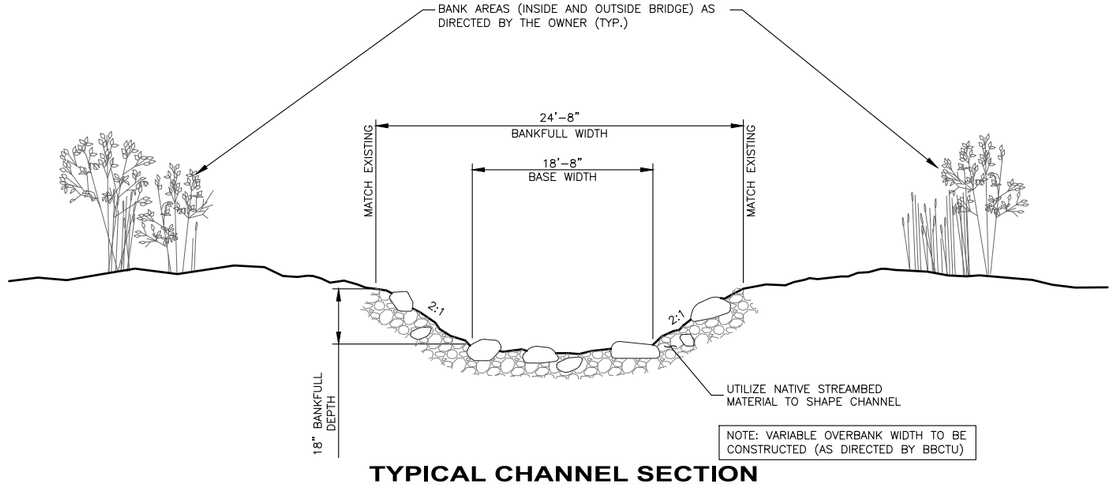


ABUTMENT

A/8 RIPRAP, BACKFILL & GRADE BEAM SECTION

NOT TO SCALE

NOTE: CORRUGATED STEEL BACKWALL AND BEARING ASSEMBLY NOT SHOWN FOR CLARITY. SEE SHEET 6 FOR DETAILS



TYPICAL CHANNEL SECTION

NOT TO SCALE

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TRAIL CREEK BRIDGE

MISCELLANEOUS DETAILS

SHEET NO.

8

OF 11

PHOTO OF EXISTING END DIAPHRAGMS

PHOTO OF EXISTING END STIFFENERS

PHOTO OF EXISTING GIRDER SPLICE WELD

PHOTO OF EXISTING INTERMEDIATE STIFFENER WELD

PHOTO OF OWNER FURNISHED W24x117 GIRDER ENDS

PHOTO OF EXISTING BEARING SOLE PLATE

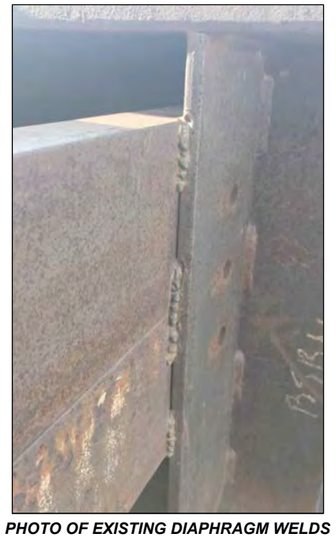

PHOTO OF EXISTING DIAPHRAGM WELDS

PHOTO OF EXISTING INTERMEDIATE STIFFENERS AND DIAPHRAGMS

NO.	REVISION DESCRIPTION	BY	DATE
1			
2			
3			
4			
5			

PROJECT: 1-19182.TO4
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DRAWN: EC
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APPROVED: RE
DATE: MARCH 3, 2021

PRELIMINARY
NOT FOR CONSTRUCTION
JOHN TAYLOR
37942
REGISTERED PROFESSIONAL ENGINEER
MONTANA

GreatWest engineering®
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HELENA, MT 59601
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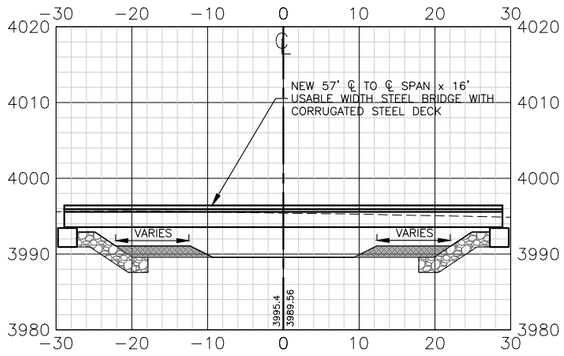
TRAIL CREEK BRIDGE

EXISTING GIRDER PHOTOS

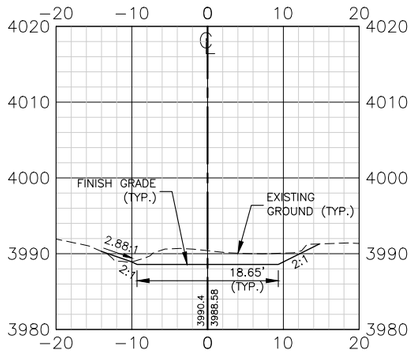
SHEET NO.
9
OF 11

F:\1-19182-BBCTU On Call\TO 4 - Trail Creek Bridge\CADD 1-19182-TO4\Sheets\1-19182-TO4-09-Existing Girder Photos.dwg

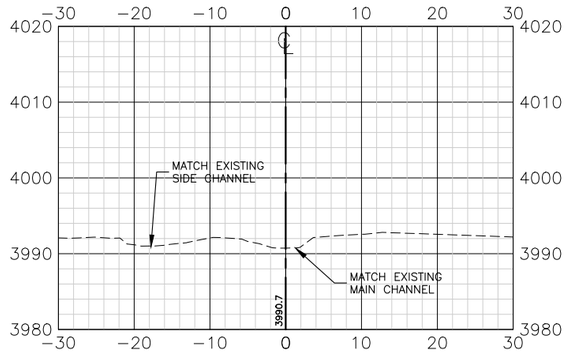
52+50.00



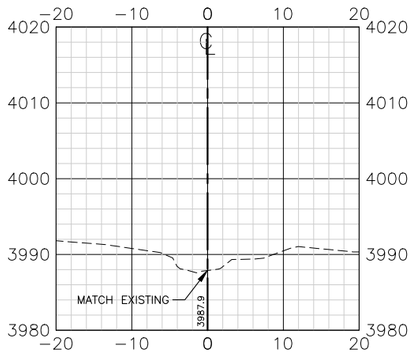
52+00.00



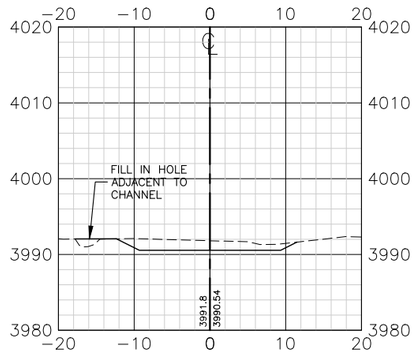
53+06.88 ***END CHANNEL WORK***



51+64.84 ***BEGIN CHANNEL WORK***



53+00.00



TRAIL CREEK CROSS-SECTIONS

0 10 20

SCALE IN FEET

NOTE: VARIABLE OVERBANK WIDTH TO BE CONSTRUCTED (AS DIRECTED BY BBCTU)

NO.	REVISION DESCRIPTION	BY	DATE

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APPROVED: RE
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TRAIL CREEK BRIDGE

TRAIL CREEK CROSS-SECTIONS

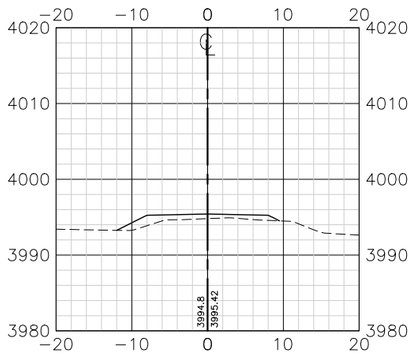
SHEET NO.

10

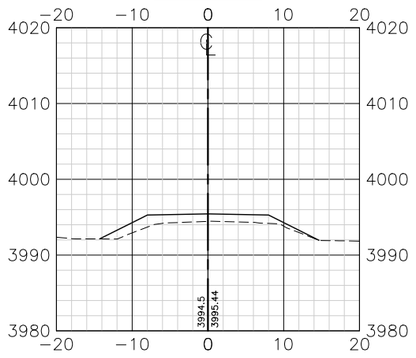
OF 11

F:\1-19182-BBCTU On Call\TO 4 - Trail Creek Bridge\CADD 1-19182-T04\Sheets\1-19182-T04-10-Trail Ck XS.dwg

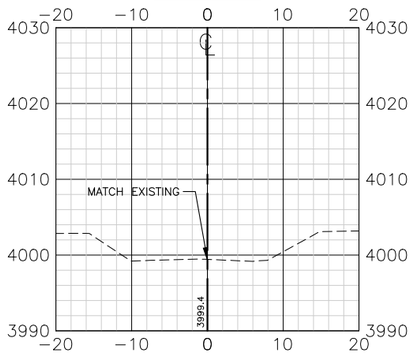
3+50.00



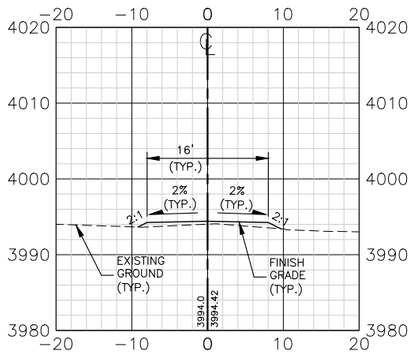
5+00.00



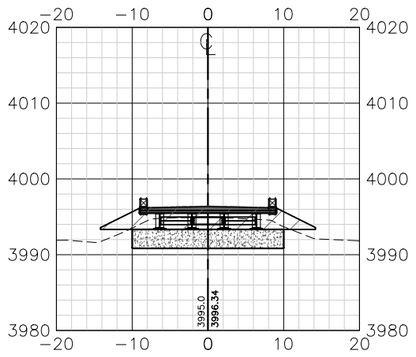
6+50.00 ***END ROAD WORK***



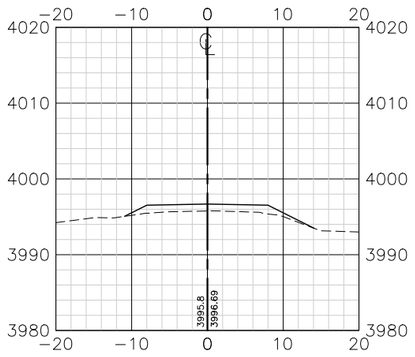
3+00.00



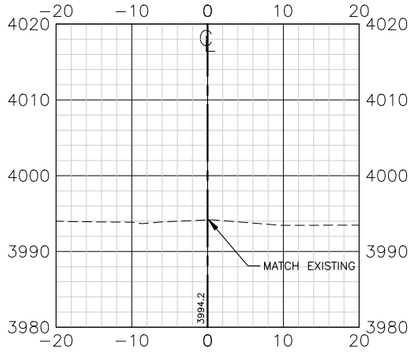
4+53.65 ***CL ABUTMENT 2***



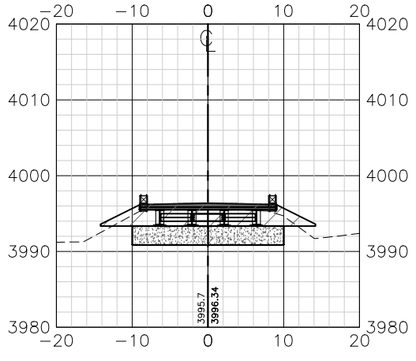
6+00.00



2+86.87 ***BEGIN ROAD WORK***



3+96.65 ***CL ABUTMENT 1***



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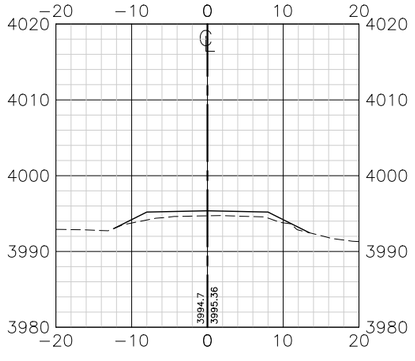

RAINBOW COURT CROSS-SECTIONS

0 10 20
SCALE IN FEET

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TRAIL CREEK BRIDGE

RAINBOW COURT CROSS-SECTIONS

SHEET NO.
11
OF 11

F:\1-19182-BBCTU On Call\TO 4 - Trail Creek Bridge\CADD 1-19182-TO4\Sheets\1-19182-TO4-11-Rainbow Ct XS.dwg