GENERAL NOTES

1. CONSTRUCTION SHALL BE RESPONSIBLE FOR VERIFICATION OF CURRENT CONDITIONS AND LOCATIONS OF ALL EXISTING ITEMS WITHIN OR ADJACENT TO THE WORK, OR THAT MAY BE DISTURBED BY THE WORK.

2. THE LOCATIONS OF ALL SUBSURFACE CONDITIONS ARE BASED ON THE BEST AVAILABLE INFORMATION AND SHOWN LOCATIONS MAY NOT BE REPRESENTATIVE.

3. CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING SURFACE FEATURES AND OTHER EXISTING ITEMS.

4. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL SURFACE AND SUBSURFACE UTILITIES PRIOR TO DISTURBING SUBSURFACE.

5. DRAWINGS SHALL BE PRINTED IN COLOR FOR REALIZATION OF ALL DESIGN FEATURES.

6. DRAWING NUMBER WHERE SECTION / DETAIL IS DRAWN.

7. SECTION / DETAIL NUMBER.

8. SECTION / DETAIL CALLOUT SYMBOL.

9. SCALE.

10. SECTION / DETAIL TITLE.

11. TITLE FOR SECTION / DETAIL.

ABBREVIATIONS

A: NUMBER
B: AND
D: DIAMETER
E: PERCENT
G: DEFLECTION ANGLE
AASHTO: AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS
ASTM: AMERICAN SOCIETY FOR TESTING AND MATERIALS
CF: CUBIC FEET
CY: CUBIC YARD
CMP: CORRUGATED METAL PIPE
CMPA: CORRUGATED METAL PIPE ARCH
d: DIAMETER
DWG: DRAWING
E: EXIT
EG: EXISTING GROUND
EPA: US ENVIRONMENTAL PROTECTION AGENCY
FO: FIBER OPTIC
G: GAS LINE
MAX: MAXIMUM
MIN: MINIMUM
LF: LINEAR FEET
MDEQ: MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
MISC: MISCELLANEOUS
MH: MANHOLE
MPWSS: MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS
N: NORTH
NTS: NOT TO SCALE
PVC: POLYVINYL CHLORIDE
PW: POTABLE WATER
QTY: QUANTITY
RD: ROAD
RR: RAILROAD
ROW: RIGHT OF WAY
S: SOUTH
STA: STATION
SS: SANITARY SEWER
STD: STANDARD
SF: SQUARE FEET
SY: SQUARE YARD
TYP: TYPICAL
UP: UTILITY POLE
YW: YARD WATER
YH: YARD HYDRANT

MAPPING SOURCES

D & J & A, MISSOULA, MT
FUGRO EARTHDATA, INC., RAPID CITY, SD, AUGUST 2011
D & J & A, MISSOULA, MT
BROWN & ASSOCIATES, INC.
MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY
WELLS MEMORIAL LIBRARY
MONTANA PUBLIC WORKS STANDARD SPECIFICATIONS
N: NORTH
NOT TO SCALE
FH: HIGHWAY ELECTRIC
PVC: POLYVINYL CHLORIDE
PW: POTABLE WATER
QTY: QUANTITY
RD: ROAD
RR: RAILROAD
ROW: RIGHT OF WAY
S: SOUTH
STA: STATION
SS: SANITARY SEWER
STD: STANDARD
SF: SQUARE FEET
SY: SQUARE YARD
TYP: TYPICAL
UP: UTILITY POLE
YW: YARD WATER
YH: YARD HYDRANT

MAPPING CONTROL

SURVEY CONTROL

LOCAL SURVEY DATA: BROWN & ASSOCIATES, INC.
LOCAL SURVEY CONTROL:

SURVEY CONTROL:

G2
CLARK FORK SITE
IMPACTED FLOODPLAIN MATERIAL EXCAVATION PLAN
825 West Custer Avenue
Helena, Montana 59602
PHONE: 406-443-5210  FAX: 406-442-7182

NOTES
1. CUT-TEXT COLORS ON SHEET INTERVALS REPRESENT DEPTH OF EXCAVATION BASED ON EXISTING GROUND SURFACE.
2. PROJECT DATUM BASED ON MONTANA STATE PLANE COORDINATE SYSTEM, NAD 83 INT. FT. ELEVATIONS ARE NAVD1988.

EXCAVATION DEPTHS

<table>
<thead>
<tr>
<th>MAXIMUM DEPTH (FEET)</th>
<th>MINIMUM DEPTH (FEET)</th>
<th>AREA (SQ. FEET)</th>
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LEGEND
- BASE OF EXCAVATION MAJOR CONTOUR
- BASE OF EXCAVATION MINOR CONTOUR
- EXCAVATION DEPTHS
- PROJECT DATUM
- DISTURBANCE BOUNDARY
- REMOVAL BOUNDARY
- WORK AREA BOUNDARY
- PRESERVE VEGETATION NO DISTURBANCE

COLOR
NEGATIVE DEPTHS INDICATE CUT

SCALE: 1" = 100'  
CONTOUR INTERVAL: 1FT
1. Cut for spider or soft material represents depth of subsidence below the removal surface.


3. Preserve vegetation, no disturbance shall be allowed.

Legend:
- Subgrade Major Contour
- Subgrade Minor Contour
- Disturbance Boundary
- Cultural Features
- Subgrade Boundary
- Work Area Boundary
- Channel Migration Zone Boundary
- Preserve Vegetation, No Disturbance

Notes:
- Cut for spider or soft material represents depth of subsidence below the removal surface.
- Preserve vegetation, no disturbance shall be allowed.

 Coordinates:

- Existing Contour Interval: 1 ft
- Design Contour Interval: 0.5 ft

Scale: 1" = 100'
1. Fill tick grid on 50ft intervals represents depth of subgrade above the removal surface.


Legend:
- Subgrade major contour
- Subgrade minor contour
- Disturbance boundary
- Work area boundary
- Subgrade boundary
- Cultural features
- Preserve vegetation/no disturbance

Area (AC)

Notes:
- Fill tick grid on 50ft intervals represents depth of subgrade above the removal surface.
CONTRACTOR SHALL CREATE A SMOOTH AND GRADUAL TRANSITION GRADE BETWEEN EXISTING GROUND AND FLOODPLAIN REGRADING.

NOTES

- PROTECT CULTURAL RESOURCES IN THIS AREA. GKR WILL REQUIRE ACCESS TO THIS LOCATION THROUGHOUT PROJECT.
CONTRACTOR SHALL CREATE A SMOOTH AND GRADUAL TRANSITION GRADE BETWEEN EXISTING GROUND AND FLOODPLAIN REGRADING.

LEGEND
- FLOODPLAIN MAJOR CONTOUR
- FLOODPLAIN MINOR CONTOUR
- DISTURBANCE BOUNDARY
- REGRADING BOUNDARY
- WORK AREA BOUNDARY
- PRIMARY HAUL ROAD
- AVULSION AREAS (TYPE A MATERIAL)

NOTES
- CONTRACTOR SHALL CREATE A SMOOTH AND GRADUAL TRANSITION GRADE BETWEEN EXISTING GROUND AND FLOODPLAIN REGRADING.
CONTRACTOR SHALL CREATE A SMOOTH AND GRADUAL TRANSITION GRADE BETWEEN EXISTING GROUND AND FLOODPLAIN REGRADING.

LEGEND
- FLOODPLAIN MAJOR CONTOUR
- FLOODPLAIN MINOR CONTOUR
- DISTURBANCE BOUNDARY
- REGRADING BOUNDARY
- WORK AREA BOUNDARY
- PRIMARY HAUL ROAD
- AVULSION AREAS (TYPE A MATERIAL)

NOTES
- CONTRACTOR SHALL CREATE A SMOOTH AND GRADUAL TRANSITION GRADE BETWEEN EXISTING GROUND AND FLOODPLAIN REGRADING.

SCALE: 1" = 100' 
EXISTING CONTOUR INTERVAL: 1 FT 
DESIGN CONTOUR INTERVAL: 0.5 FT 

C18
LEGEND

- BANK TREATMENT DETAILS PROVIDED ON SHEETS D4-D8.

NOTES

1. BANK TREATMENT DETAILS PROVIDED ON SHEETS D4-D8.

SCALE: 1" = 100'

EXISTING CONTOUR INTERVAL: 1FT

DESIGN CONTOUR INTERVAL: 1FT

CLARK FORK SITE
STREAMBANK TREATMENT PLAN
825 West Custer Avenue
Helena, Montana 59602
PHONE: 406-443-5210  FAX: 406-442-7182

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PROPOSED CONSTRUCTION SEQUENCE:

**STEP 1:** Excavate the existing ground material to footprint of temporary diversion channel, and install ECO blocks.

**STEP 2:** Construct temporary diversion channel, and install ECO blocks.

**STEP 3:** Remove ECO blocks between ECO blocks and river.

**STEP 4:** Install ground water dewatering, as necessary.

**STEP 5:** Remove soil wedge between ECO-blocks and river.

**STEP 6:** Construct diversion channel inlet control structure.

**STEP 7:** Place COPPER dam C.

**STEP 8:** Install bridge revetment, see sheet C27, & remove COFFER DAM A, B & C.

**STEP 9:** Construct streambanks behind COFFER DAM D.

**STEP 10:** Construct new channel, see sheet C25.

**STEP 11:** Regrade floodplain including fill of abandoned channel.

**STEP 12:** Install filter on floodplain.

**STEP 13:** Construct grade control structures.

**STEP 14:** Grade control structure section.

**STEP 15:** Regrade floodplain including fill of temporary diversion channel & abandoned channel.

**STEP 16:** Repair CATTLE DRIVE RD, fill both channels as part of regrade.

**STEP 17:** Removal floodplain including fill of temporary diversion channel & abandoned channel.

**LEGEND:**
- Floodplain
- Mesh contour
- Pre-1980 minor contour
- Removal boundary

**NOTES:**
1. Contractor shall create a smooth and gradual transition grade between existing ground and pre-1980 minor contour.

**SCALE:** 1" = 80'

**DESIGN CONTOUR INTERVAL:** 0.5 FT
EXCAVATION LIMIT

EXISTING CHANNEL BOTTOM

EXISTING HP 12x53 PILE (DEPTH AND CONDITION UNKNOWN)
PROTECT AND PRESERVE existing bridge I beams

EXISTING TIMBER LAGGING (DEPTH UNKNOWN)
PROTECT AND PRESERVE existing timber lagging

CATTLE DRIVE BRIDGE AREA

PLAN VIEW
EXTENT OF BRIDGE REVETMENT RIPRAP

SECTION VIEW
EXTENT OF BRIDGE REVETMENT RIPRAP

EXISTING PILE (DEPTH AND CONDITION UNKNOWN)

EXCAVATE AND STOCKPILE STREAM BANK MATERIAL

EXISTING TIMBER LAGGING (DEPTH UNKNOWN)

EXISTING CONTOUR INTERVAL: 1 FT
DESIGN CONTOUR INTERVAL: 0.5 FT

LEGEND
FLOODPLAIN MAJOR CONTOUR
FLOODPLAIN MINOR CONTOUR
REMOVAL BOUNDARY
EXISTING GROUND

NOTES
1. TRANSITION GRADING BETWEEN EXISTING GROUND AND FLOODPLAIN/REVETMENT RIPRAP SMOOTHLY.

SCALE: 1" = 10'
Bar Measures 1 inch

C28

CFR REACH A, PHASES 15 AND 16

CLARK FORK SITE
BECK BORROW
AREA DEVELOPMENT PLAN AND CROSS-SECTIONS

825 West Custer Avenue
Helena, Montana 59602

PHONE: 406-443-5210  FAX: 406-442-7182

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