October 29th, 2021

As-Built Report for the Pleasant Valley Fish Habitat Improvement Project
Regional General Permit No. 12, Corps Identification Number SPA-2021-00131

Dear Drew Johnroe and the Yampa Valley Stream Improvement Charitable Trust (Trust):

FlyWater, inc. has completed construction on the Pleasant Valley Fish Habitat Improvement Project as per the conditions listed for the Army Corps of Engineers (ACOE) Identification No *SPA-2021-00131*. All coordination for this project occurred with Tucker Feyder (ACOE), Billy Atkinson (CPW), Eric Scherff (BLM) and Tom Fresques (BLM). The project was completed within the projected time frame, and FlyWater, inc. is pleased to submit this As-Built Report.

CONSTRUCTION

The Pleasant Valley Fish Habitat Improvements on the Yampa River focused on aquatic habitat improvement within ~3,900 linear feet of the Yampa River between Stagecoach Reservoir and Lake Catamount, including the recently acquired BLM Hubbard Summer Camp property. Thirteen large improvements and several micro-improvements were constructed throughout the 3,900 ft of the Yampa River (See As-Built Plans, Attachment A).

The thirteen large improvements, and several micro-improvements were excavated and constructed to increase instream complexity, increase deep water holding areas for adult fish, maintain and improve juvenile trout habitat, increase instream cover, minimize negate effect of sediment from upstream tributaries and increase overall recreational and angling opportunity throughout the reach. Excavated material was used to create point bars and channel complexity. Habitat rocks and woody material were placed throughout the reach to provide increased cover. Five trees were harvested (saw cut) from onsite and placed within the treatments located near Station 25+00, 37+50 and 47+00. Other vegetation harvested on site included 750 willow stakes and willow clump transplants, which were used to reclaim access ramps and were installed along with log structures. Once construction was completed, all staging areas, travel paths and access ramps were seeded with a Routt County and BLM approved seed mix and then wood strand mulch was applied.

PHOTOS

Photographs from the projects photo points are presented below. Photo point locations are depicted in the as-built plan-set. Approximate view direction is noted for each photo.

Pre-Construction and Post-Construction Photos:
Pleasant Valley – Yampa River Fish Habitat Improvement Project; Routt County, CO.

PP1


Station # 47+50: Looking at opposite bank from river left. Bearing: 10°N

Photos captured: 8/24/2021 (photo left, pre-construction), 9/22/2021 (photo right, post-construction)

PP1


Station # 47+50: Looking downstream from river left. Bearing: 320°NW
Photos captured: 8/24/2021 (photo left, pre-construction), 9/22/2021 (photo right, post-construction)

PP2


Station # 42+90: Looking at opposite bank from river left. Bearing: 60°NE
Photos captured: 8/24/2021 (photo left, pre-construction), 9/22/2021 (photo right, post-construction)

PP2


Station # 42+90: Looking downstream from river left. Bearing: 0°N
Photos captured: 8/24/2021 (photo left, pre-construction), 9/22/2021 (photo right, post-construction)

PP3


Station # 38+75: Looking downstream from river left. Bearing: 350°N
Photos captured: 8/24/2021 (photo left, pre-construction), 9/22/2021 (photo right, post-construction)

PP4


Station # 34+80: Looking at opposite bank from river left. Bearing: 60°NE
Photos captured: 8/24/2021 (photo left, pre-construction), 9/22/2021 (photo right, post-construction)

PP4


Station # 34+80: Looking downstream from river left. Bearing: 330°NW
Photos captured: 8/24/2021 (photo left, pre-construction), 9/22/2021 (photo right, post-construction)

PP5


Station # 33+25: Looking downstream from river left. Bearing: 330°NW
Photos captured: 8/24/2021 (photo left, pre-construction), 9/22/2021 (photo right, post-construction)

PP5


Station # 33+25: Looking upstream from river left. Bearing: 140°SE
Photos captured: 8/24/2021 (photo left, pre-construction), 9/22/2021 (photo right, post-construction)

PP6


Station # 28+60: Looking downstream from river right. Bearing: 310°SE
Photos captured: 8/24/2021 (photo left, pre-construction), 9/22/2021 (photo right, post-construction)

PP6


Station # 28+60: Looking upstream from river right. Bearing: 190°S
Photos captured: 8/24/2021 (photo left, pre-construction), 9/22/2021 (photo right, post-construction)

PP7


Station # 25+25: Looking upstream from river left. Bearing: 135°SE
Photos captured: 8/24/2021 (photo left, pre-construction), 9/22/2021 (photo right, post-construction)

PP7


Station # 25+25: Looking at opposite bank from river left. Bearing: 70° ENE
Photos captured: 8/24/2021 (photo left, pre-construction), 9/22/2021 (photo right, post-construction)

PP8


Station # 21+60: Looking at opposite bank from river left. Bearing: 90° E
Photos captured: 8/24/2021 (photo left, pre-construction), 9/22/2021 (photo right, post-construction)

PP8


Station # 21+60: Looking downstream from river left. Bearing: 0° N
Photos captured: 8/24/2021 (photo left, pre-construction), 9/22/2021 (photo right, post-construction)

PP9


Station # 17+60: Looking at opposite bank from river left. Bearing: 60° NE
Photos captured: 8/24/2021 (photo left, pre-construction), 9/22/2021 (photo right, post-construction)

PP9


Station # 17+60: Looking downstream from river left. Bearing: 10° N
Photos captured: 8/24/2021 (photo left, pre-construction), 9/22/2021 (photo right, post-construction)

PP10


Station # 15+40: Looking at the opposite bank from river left. Bearing: 80° E
Photos captured: 8/24/2021 (photo left, pre-construction), 9/22/2021 (photo right, post-construction)

PP10


Station # 15+40: Looking downstream from river left. Bearing: 0° N
Photos captured: 8/24/2021 (photo left, pre-construction), 9/22/2021 (photo right, post-construction)

PP11


Station # 12+10: Looking at opposite bank from river left. Bearing: 80° E
Photos captured: 8/24/2021 (photo left, pre-construction), 9/22/2021 (photo right, post-construction)

PP11


Station # 12+10: Looking downstream from river left. Bearing: 0° N
Photos captured: 8/24/2021 (photo left, pre-construction), 9/22/2021 (photo right, post-construction)

CONCLUSION

The Pleasant Valley Fish Habitat Improvement Project was successfully constructed with a few minor field design changes implemented in response to site conditions.

I would like to thank you in advance for reviewing our As-Built Survey Report. If you have any questions or comments, please contact me. I can be reached by phone at (303) 941-1677 or by email at parker@flywater.com.

ATTACHEMENT A

PLEASANT VALLEY
FISH HABITAT IMPROVEMENT PROJECT

ROUTT COUNTY, COLORADO

AS BUILT PLANS

STAKEHOLDERS

Bureau of Land Management (BLM)
Representative -

Yampa Valley Stream Improvement Charitable Trust (YSVICT)
Representative -

DESIGN BUILD TEAM

Stillwater Sciences
Contact - Julie Ash
(720) 618-5032

FlyWater Inc.
Contact - Corey Engen
(970) 217-3182

SHEET INDEX

811 Know what's below. Call before you dig.

Stillwater Sciences

FlyWater

PLEASANT VALLEY
FISH HABITAT
IMPROVEMENT PROJECT
ROUTT COUNTY, CO

DESIGN BUILD PLANSET
YAMPA RIVER

CS
DATE: OCT. 2021

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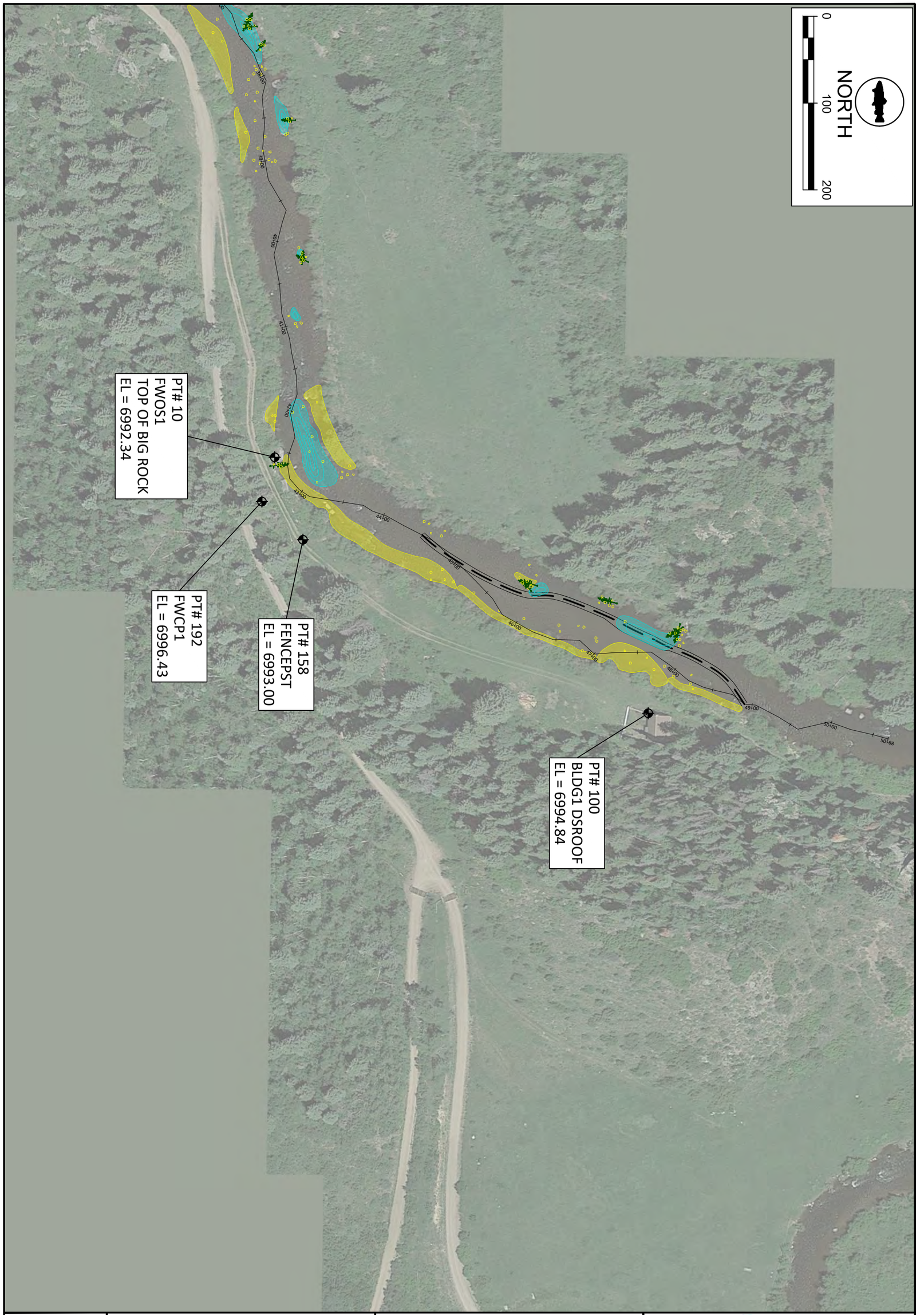

CP

DATE: OCT. 2021

CONTROL POINT
MAP

PLEASANT VALLEY
FISH HABITAT
IMPROVEMENT PROJECT
ROUTT COUNTY, CO

Stillwater Sciences

NORTH

US BLM PROPERTY BOUNDARY

US BLM PROPERTY

STATE OF CO PROPERTY

US BLM PROPERTY BOUNDARY

SHEET 1
STA. 10+00 - 15+00

SHEET 2
STA. 15+00 - 20+00

SHEET 3
STA. 20+00 - 25+00

SHEET 4
STA. 25+00 - 30+00

SHEET 5
STA. 30+00 - 35+00

SHEET 6
STA. 35+00 - 40+00

SHEET 7
STA. 40+00 - 45+00

SHEET 8
STA. 45+00 - 50+68

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PLEASANT VALLEY
FISH HABITAT
IMPROVEMENT PROJECT
ROUTT COUNTY, CO

SHEET LOCATOR
KEY MAP

KM

DATE: OCT. 2021

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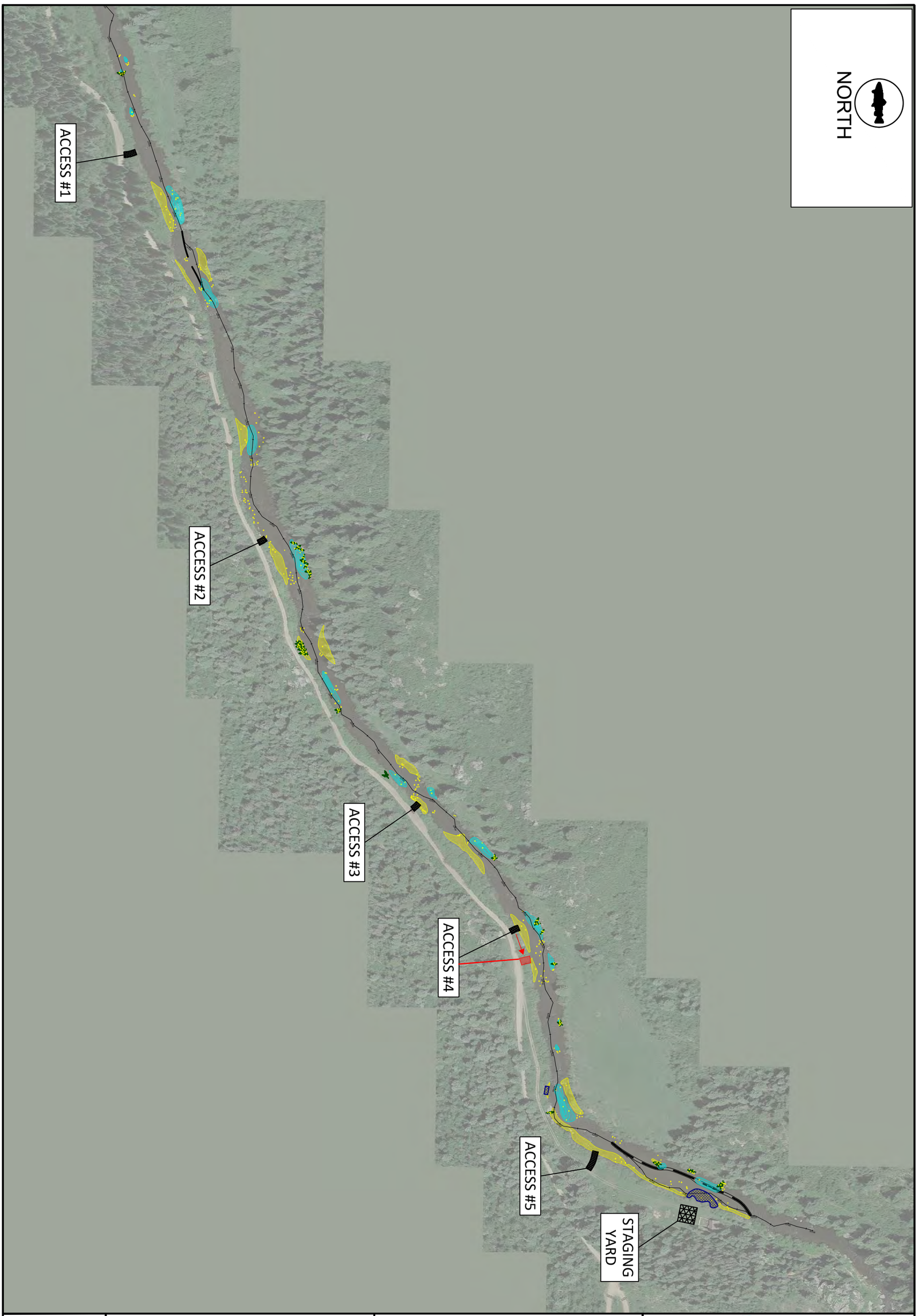

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DATE: OCT. 2021

STAGING AND ACCESS PLAN

PLEASANT VALLEY

FISH HABITAT IMPROVEMENT PROJECT

ROUTT COUNTY, CO

FlyWater

Stillwater Sciences

LEGEND
- PROPOSED POOL GRADING
- PROPOSED FILL
- LARGE WOODY DEBRIS
- HABITAT ROCK

US BLM PROPERTY BOUNDARY

BOULDERS FOR POOL SCOUR

HABITAT REFUGE ROCK

HABITAT REFUGE ROCK

LWD FOR OVERHEAD COVER AND TO PROMOTE SCOUR

Wood moved to 12+00 pool

BOULDERS FOR POOL SCOUR

PP 11

PARKING AREA #1

MACHINE ACCESS #1

BAR ROUGHNESS ROCK TO ENCOURAGE DEPOSITION

Reallocated fill area

HABITAT REFUGE ROCK

Pool shifted to center of channel to work with natural thalweg.

PP 10

10+00 11+00 12+00 13+00 14+00 15+00

6980 6975 6970 6965

NORTH
0 40 80

* NOTE:
PROPOSED POOL EXCAVATIONS AND BAR FILLS MAY BE OFFSET FROM THE STATION LINE, REFER TO THE PLANVIEW

SCALE : 1'' = 40'
10:1 V:H EXAGGERATION

EXISTING GRADE DASHED

MICROPOOLS

PROPOSED POOL CUT (2' MAX.)

Pool cut shifted downstream.

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PLEASANT VALLEY
FISH HABITAT IMPROVEMENT PROJECT
ROUTT COUNTY, CO

PLAN AND PROFILE SHEET
STA. 10+00 - 15+00

1

DATE: OCT. 2021

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LEGEND

- PROPOSED POOL GRADING
- PROPOSED FILL
- LARGE WOODY DEBRIS
- HABITAT ROCK

NORTH

0 40 80

FDP XS 1757.38

BAR ROUGHNESS ROCK TO ENCOURAGE DEPOSITION

Pool moved downstream slightly to enhance existing pool

HABITAT REFUGE ROCK

15+00 16+00 17+00 18+00 19+00 20+00

PP 10

PP 9

BOULDERS TO PROMOTE SCOUR AND DIRECT FLOW TO POOL

BAR ROUGHNESS ROCK TO ENCOURAGE DEPOSITION

REALIGN THALWEG DASHED

6980 6975 6970 6965

** NOTE:*
PROPOSED POOL EXCAVATIONS AND BAR FILLS MAY BE OFFSET FROM THE STATION LINE, REFER TO THE PLANVIEW

SCALE : 1'' = 40'

10:1 V:H EXAGGERATION

EXISTING GRADE DASHED

PROPOSED POOL CUT (2' MAX.)

Pool cut shifted downstream.

** NOTE:*
PROPOSED POOL EXCAVATIONS AN BAR FILLS MAY BE OFFSET FROM THE STATION LINE, REFER TO THE PLANVIEW

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PLEASANT VALLEY

FISH HABITAT IMPROVEMENT PROJECT

ROUTT COUNTY, CO

PLAN AND PROFILE SHEET
STA. 15+00 - 20+00

2

DATE: OCT. 2021

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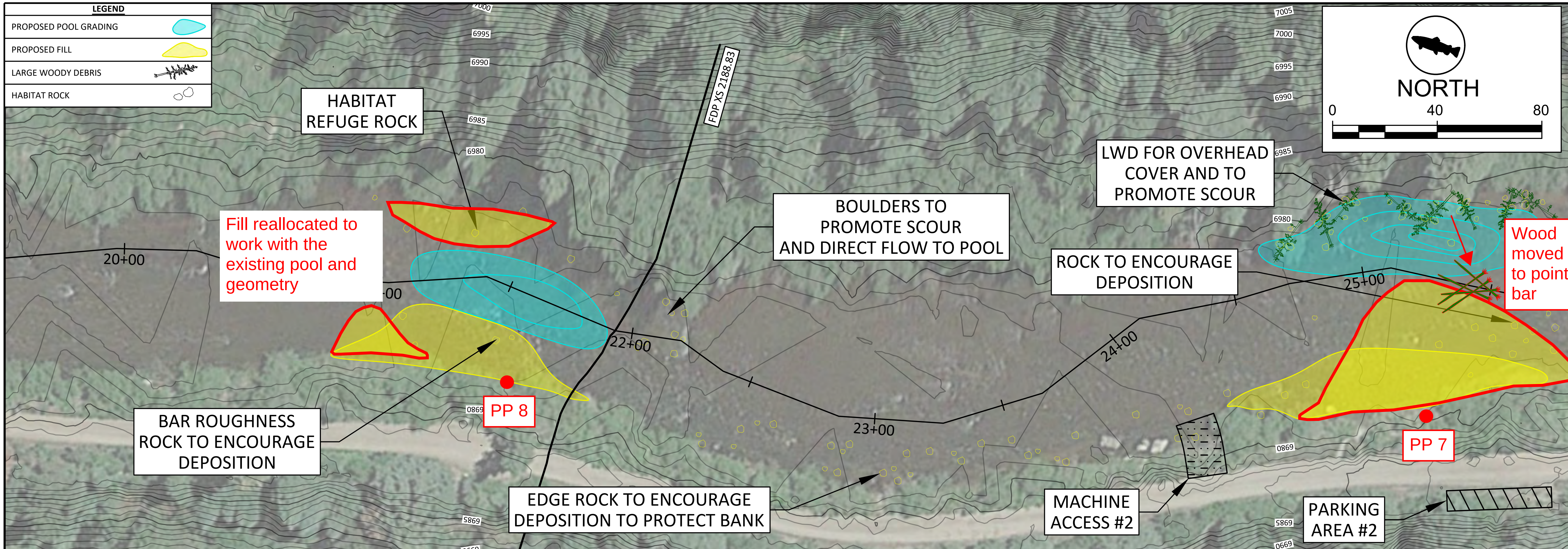
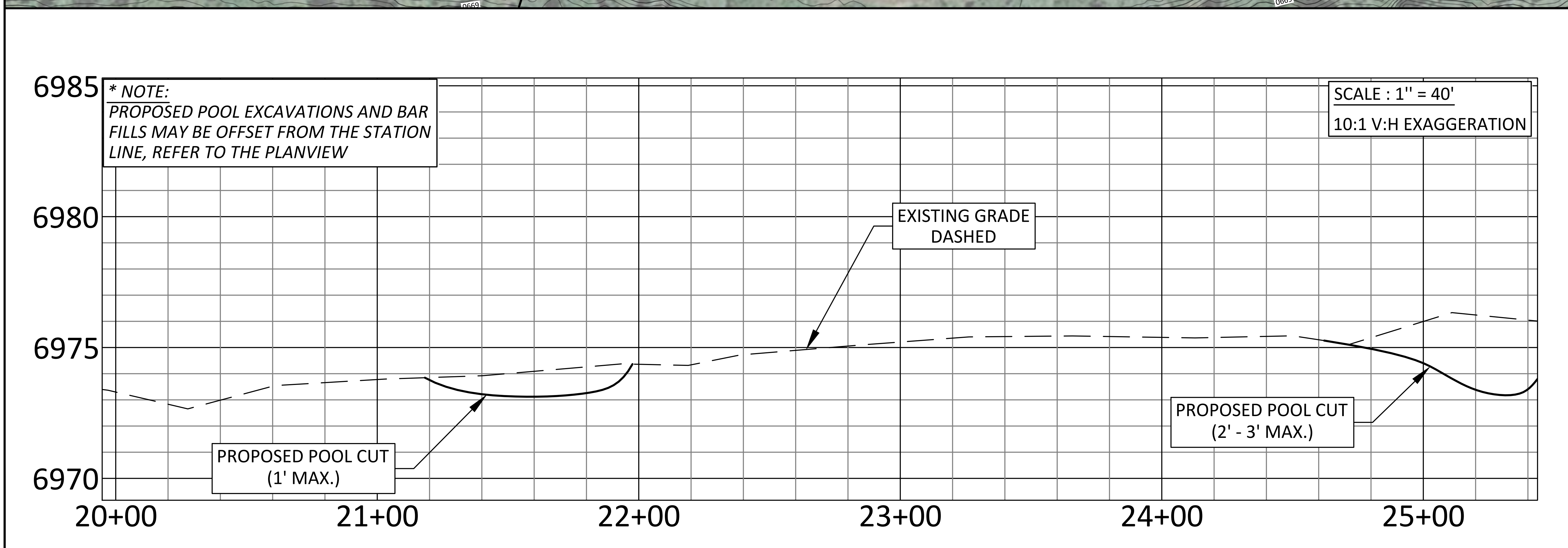


LEGEND
PROPOSED POOL GRADING
PROPOSED FILL
LARGE WOODY DEBRIS
HABITAT ROCK
NORTH
0
40
80
HABITAT REFUGE ROCK
Fill reallocated to work with the existing pool and geometry
BOULDERS TO PROMOTE SCOUR AND DIRECT FLOW TO POOL
LWD FOR OVERHEAD COVER AND TO PROMOTE SCOUR
ROCK TO ENCOURAGE DEPOSITION
Wood moved to point bar
FDP XS 2188.83
20+00
22+00
23+00
24+00
25+00
PP 8
PP 7
BAR ROUGHNESS ROCK TO ENCOURAGE DEPOSITION
EDGE ROCK TO ENCOURAGE DEPOSITION TO PROTECT BANK
MACHINE ACCESS #2
PARKING AREA #2



* NOTE:
PROPOSED POOL EXCAVATIONS AND BAR FILLS MAY BE OFFSET FROM THE STATION LINE, REFER TO THE PLANVIEW
SCALE : 1'' = 40'
10:1 V:H EXAGGERATION
6985
6980
6975
6970
EXISTING GRADE DASHED
PROPOSED POOL CUT (1' MAX.)
PROPOSED POOL CUT (2' - 3' MAX.)
20+00
21+00
22+00
23+00
24+00
25+00

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flyWater

PLEASANT VALLEY

FISH HABITAT IMPROVEMENT PROJECT

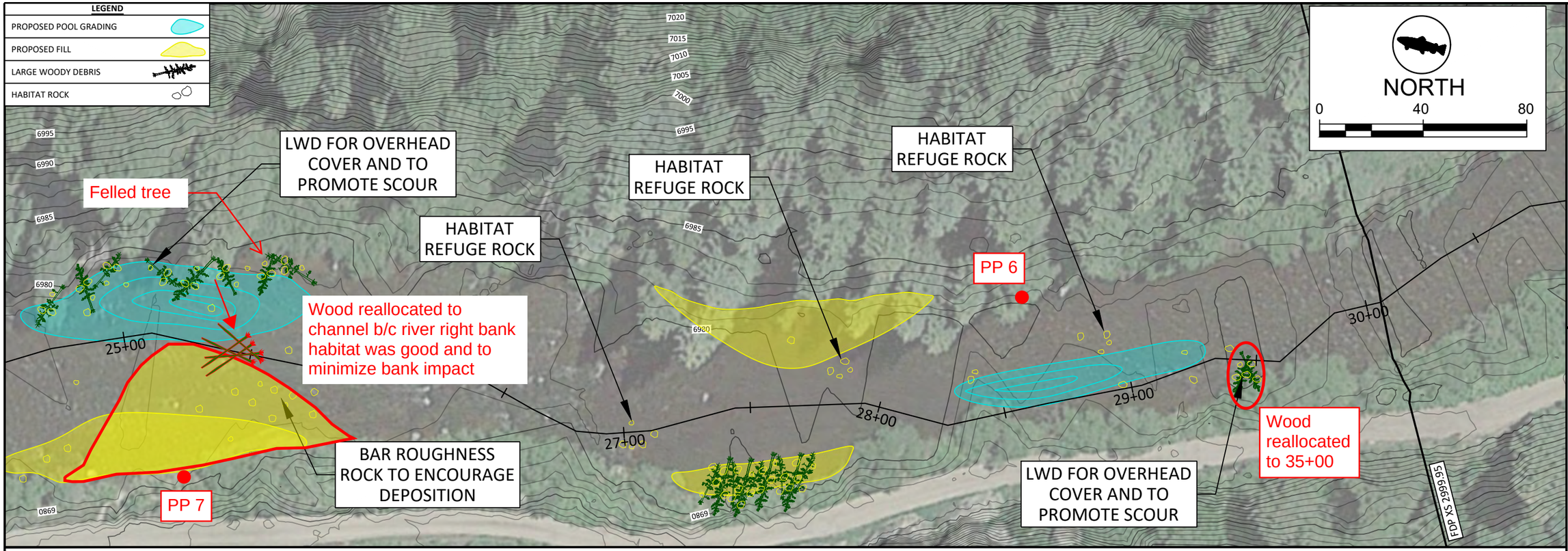
ROUTT COUNTY, CO

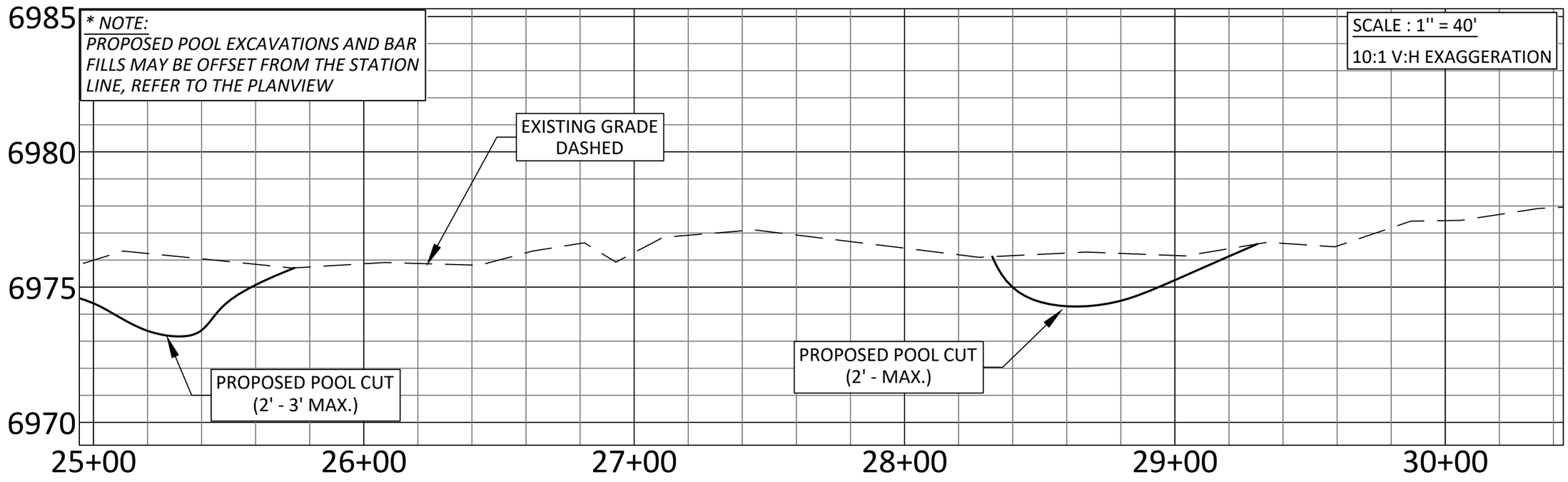
PLAN AND PROFILE SHEET

STA. 20+00 - 25+00

3

DATE: OCT. 2021





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PLEASANT VALLEY

FISH HABITAT IMPROVEMENT PROJECT

ROUTT COUNTY, CO

PLAN AND PROFILE SHEET
STA. 25+00 - 30+00

4

DATE: OCT. 2021

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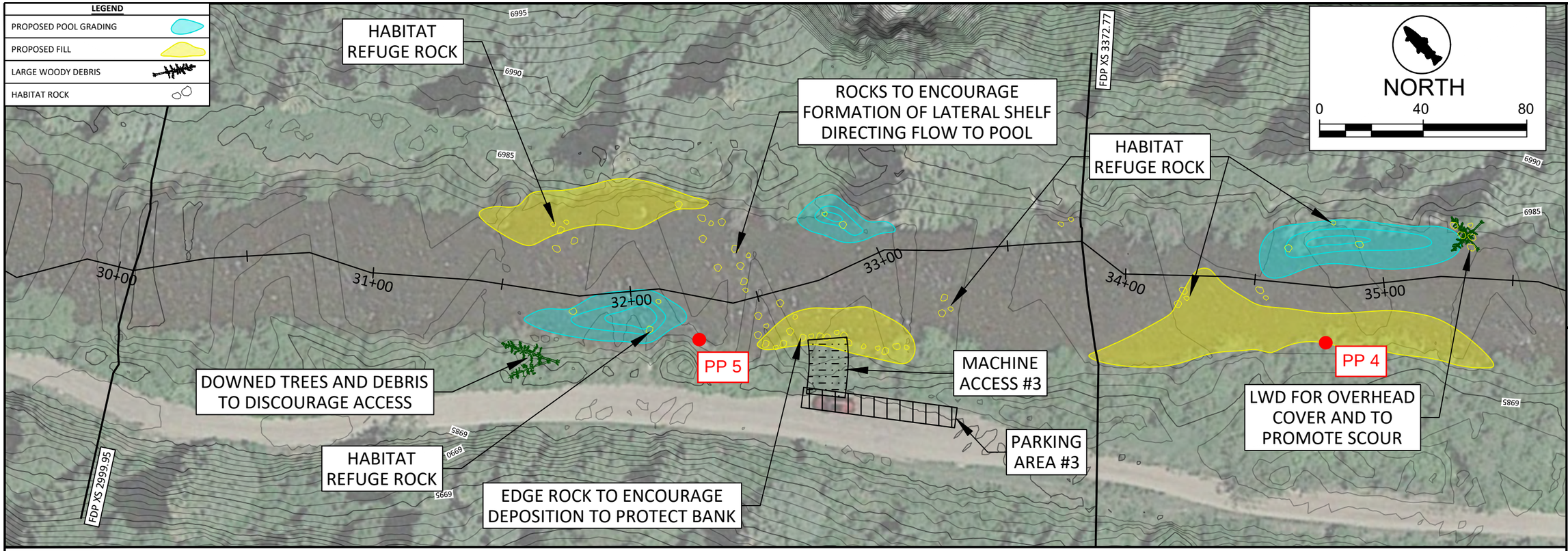

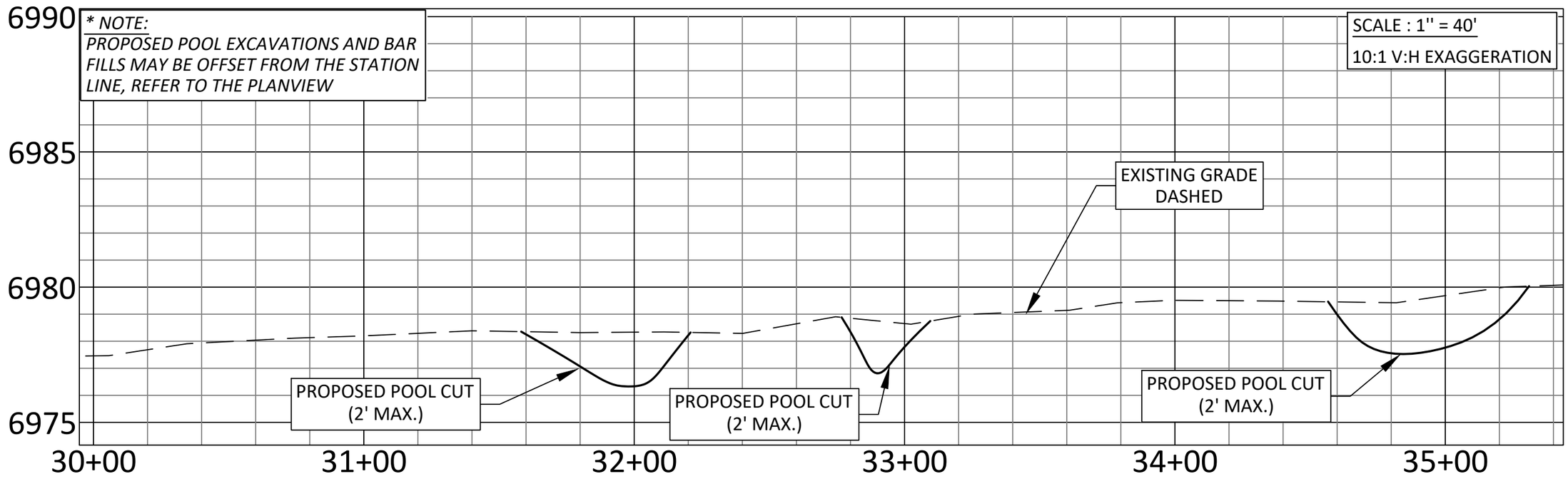

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PLEASANT VALLEY

FISH HABITAT IMPROVEMENT PROJECT

ROUTT COUNTY, CO

PLAN AND PROFILE SHEET
STA. 30+00 - 35+00

5

DATE: OCT. 2021

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LEGEND

- PROPOSED POOL GRADING
- PROPOSED FILL
- LARGE WOODY DEBRIS
- HABITAT ROCK

HABITAT REFUGE ROCK

LWD FOR OVERHEAD COVER AND TO PROMOTE SCOUR

LWD TO PROMOTE POOL SCOUR

LWD FOR OVERHEAD COVER AND TO PROMOTE SCOUR

HABITAT REFUGE ROCK

LWD FOR OVERHEAD COVER AND TO PROMOTE SCOUR

MACHINE ACCESS #4

PARKING AREA #4

PP 3

Machine access #4 moved to minimize riparian impact

35+00 36+00 37+00 38+00 39+00 40+00

6995 6990 6985 5869 0669

FDP XS 3969.21

NORTH

0 40 80

* NOTE:
PROPOSED POOL EXCAVATIONS AND BAR FILLS MAY BE OFFSET FROM THE STATION LINE, REFER TO THE PLANVIEW

SCALE : 1'' = 40'

10:1 V:H EXAGGERATION

6990
6985
6980
6975

EXISTING GRADE DASHED

PROPOSED POOL CUT (2' - 3' MAX.)

Pool cut shallower than design

MICROPOOL

PROPOSED POOL CUT (2' - 3' MAX.)

35+00 36+00 37+00 38+00 39+00 40+00

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PLEASANT VALLEY

FISH HABITAT IMPROVEMENT PROJECT

ROUTT COUNTY, CO

PLAN AND PROFILE SHEET
STA. 35+00 - 40+00

6

DATE: OCT. 2021

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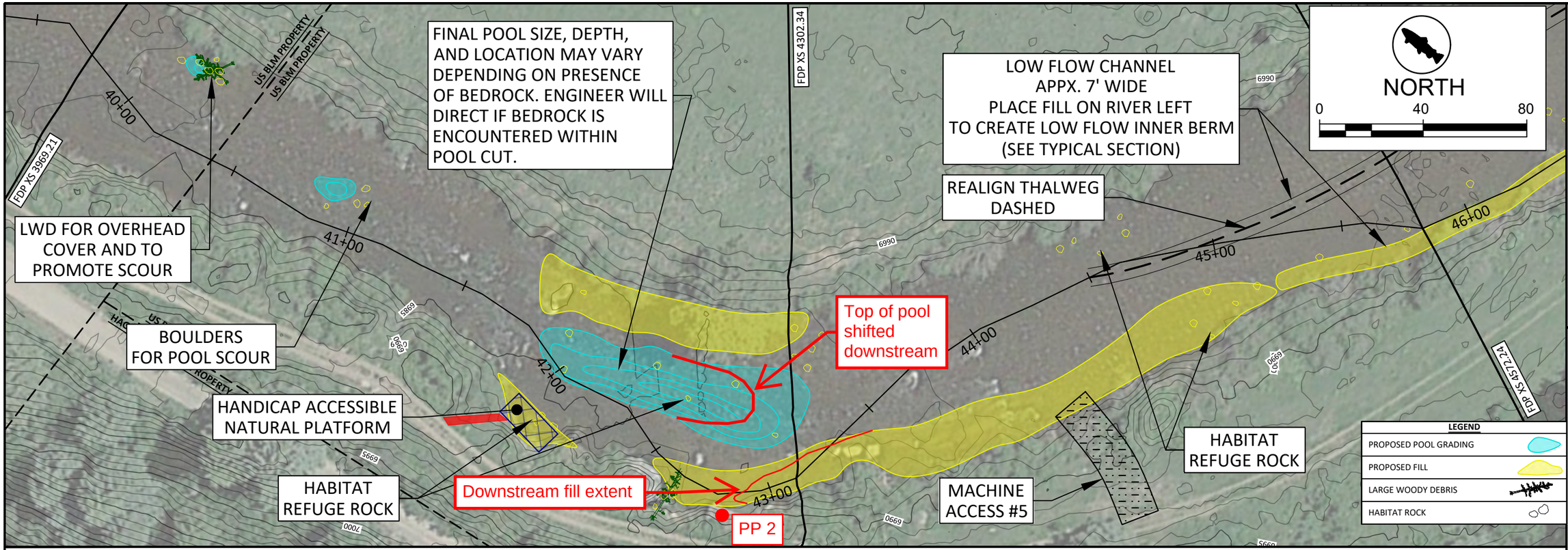

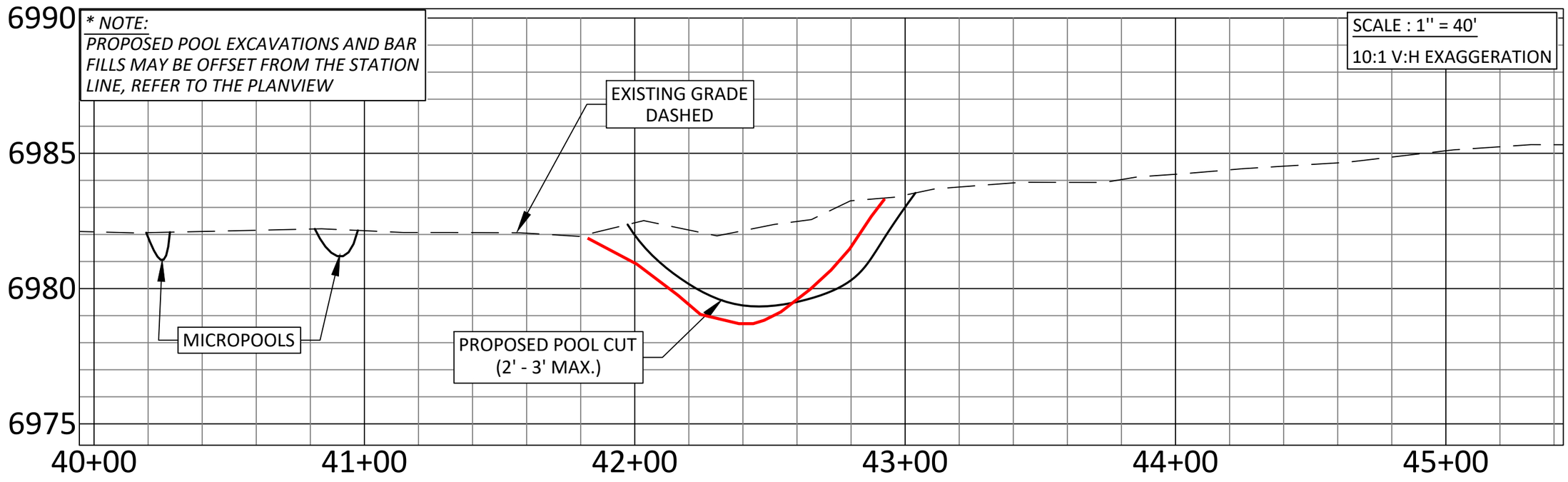

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FISH HABITAT IMPROVEMENT PROJECT

ROUTT COUNTY, CO

PLAN AND PROFILE SHEET
STA. 40+00 - 45+00

7

DATE: OCT. 2021

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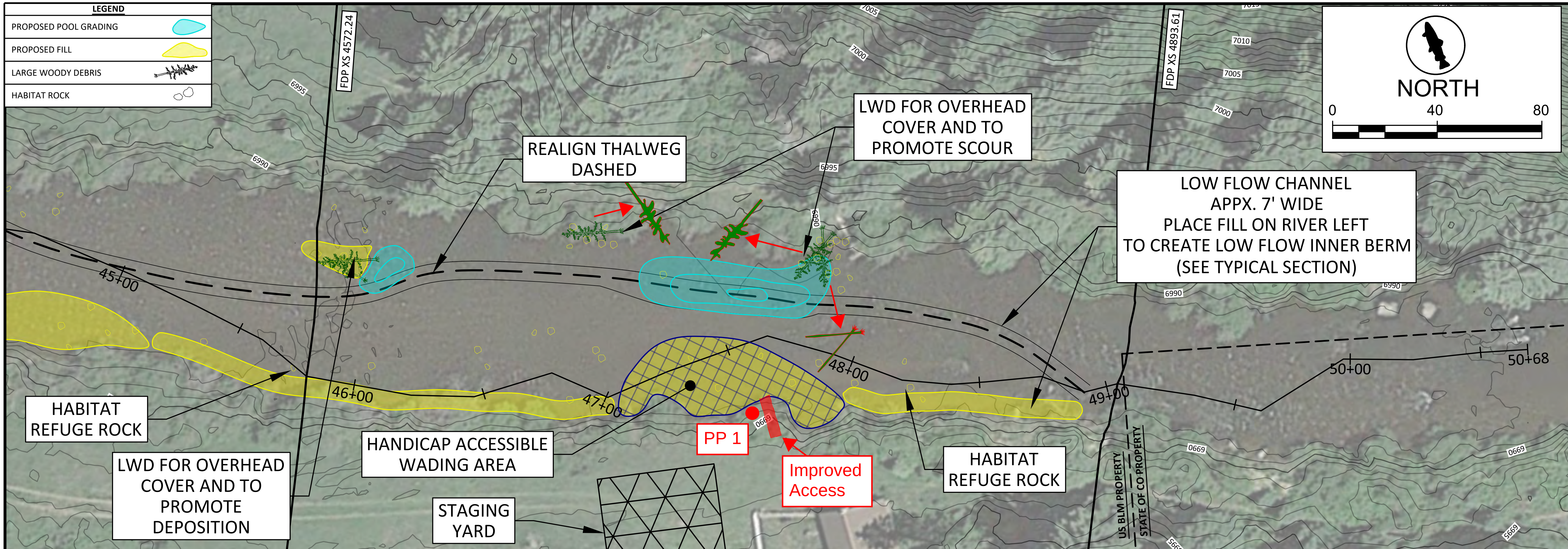
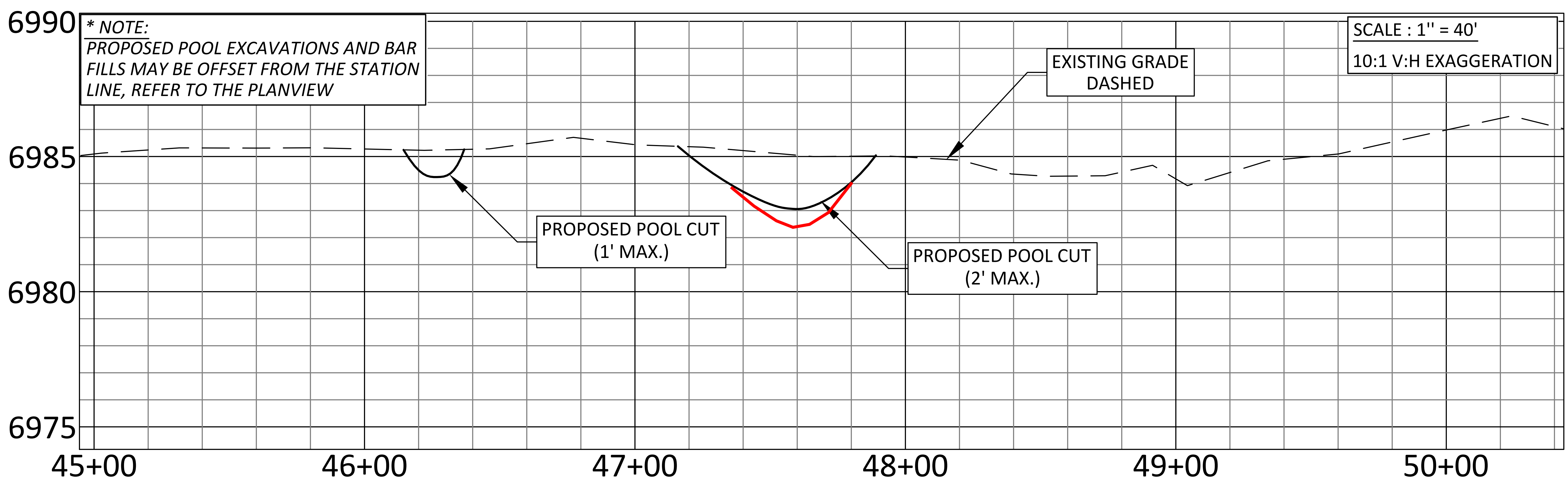

LEGEND
PROPOSED POOL GRADING
PROPOSED FILL
LARGE WOODY DEBRIS
HABITAT ROCK
NORTH
0
40
80
FDP XS 4572.24
FDP XS 4893.61
REALIGN THALWEG DASHED
LWD FOR OVERHEAD COVER AND TO PROMOTE SCOUR
LOW FLOW CHANNEL APPX. 7' WIDE PLACE FILL ON RIVER LEFT TO CREATE LOW FLOW INNER BERM (SEE TYPICAL SECTION)
45+00
46+00
47+00
48+00
49+00
50+00
50+68
HABITAT REFUGE ROCK
LWD FOR OVERHEAD COVER AND TO PROMOTE DEPOSITION
HANDICAP ACCESSIBLE WADING AREA
STAGING YARD
PP 1
Improved Access
HABITAT REFUGE ROCK
US BLM PROPERTY
STATE OF CO PROPERTY


6990
6985
6980
6975
* NOTE:
PROPOSED POOL EXCAVATIONS AND BAR FILLS MAY BE OFFSET FROM THE STATION LINE, REFER TO THE PLANVIEW
SCALE : 1'' = 40'
10:1 V:H EXAGGERATION
EXISTING GRADE DASHED
PROPOSED POOL CUT (1' MAX.)
PROPOSED POOL CUT (2' MAX.)
45+00
46+00
47+00
48+00
49+00
50+00

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PLEASANT VALLEY
FISH HABITAT
IMPROVEMENT PROJECT
ROUTT COUNTY, CO

PLAN AND PROFILE SHEET
STA. 45+00 - 50+68

8

DATE: OCT. 2021

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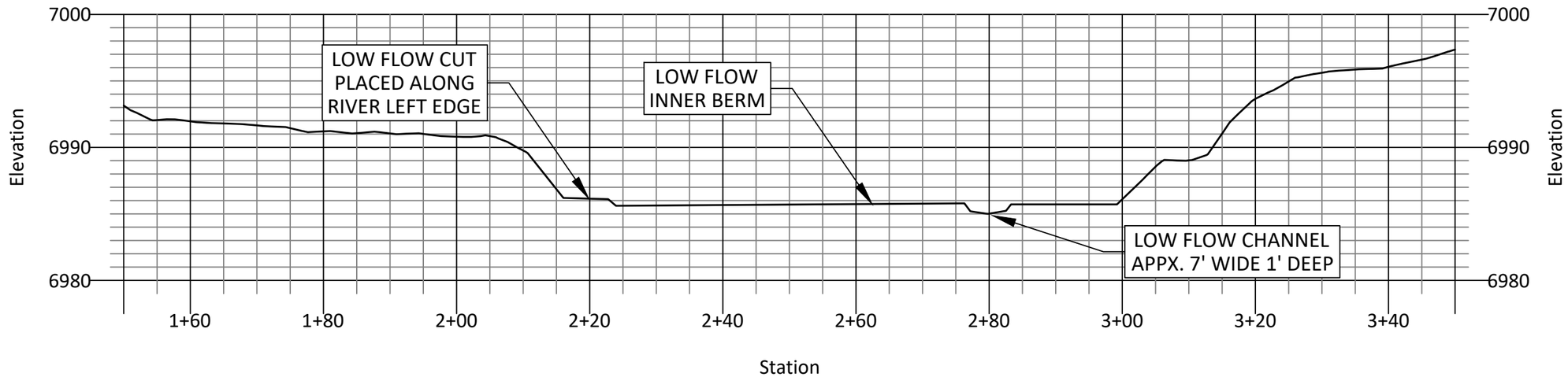
TYPICAL SECTION STA. 44+50 - 49+00



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PLEASANT VALLEY
FISH HABITAT
IMPROVEMENT PROJECT
ROUTT COUNTY, CO

TYPICAL CROSS-SECTION
STA. 44+50 - 49+00

XS

DATE: APR. 2021

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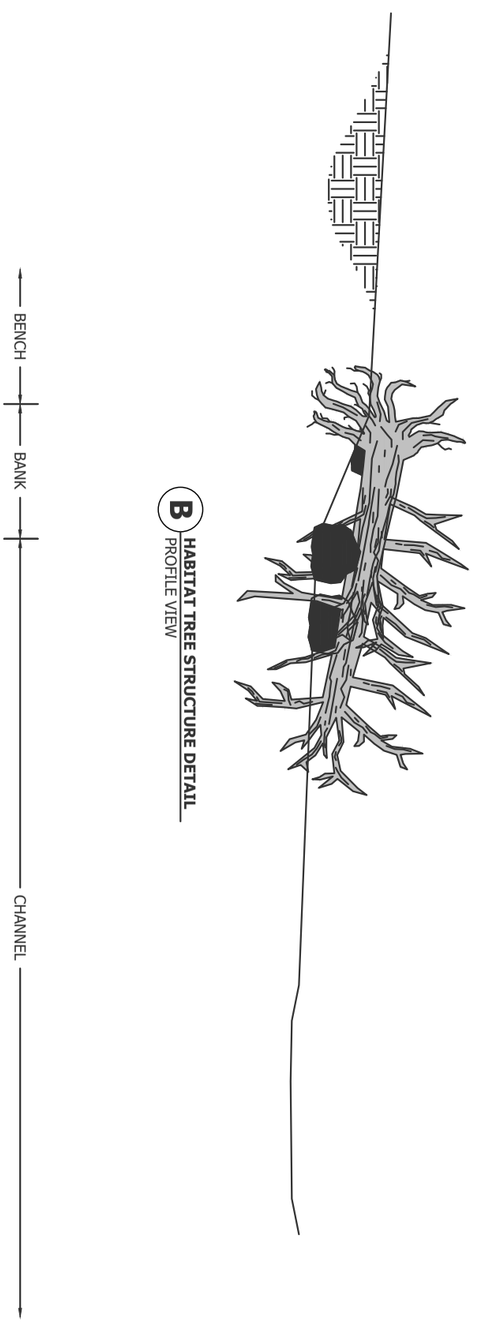
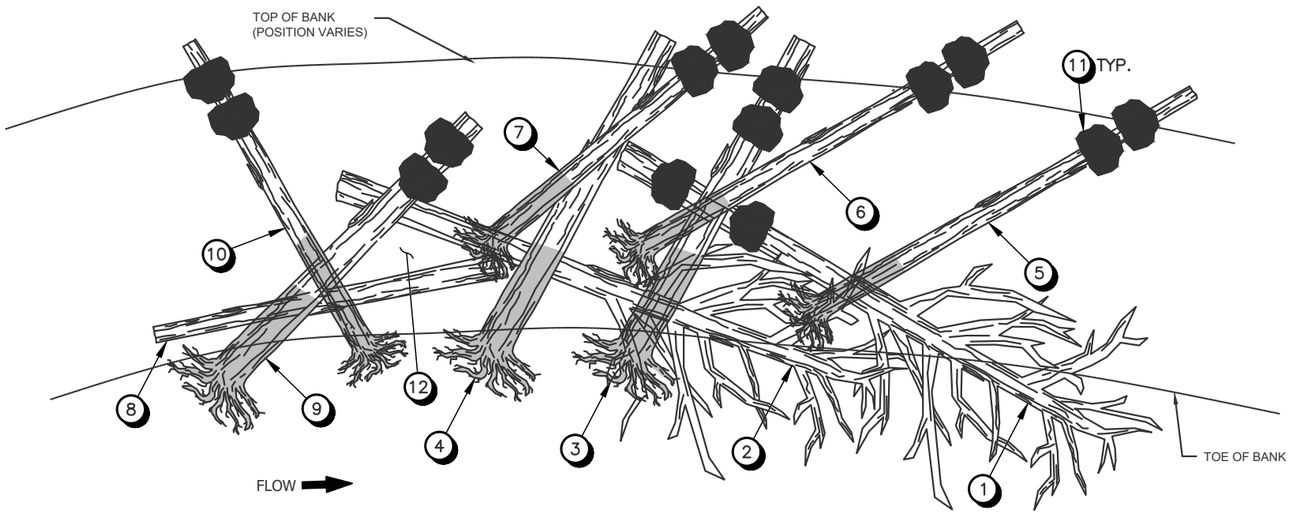


B HABITAT TREE STRUCTURE DETAIL
PROFILE VIEW

A HABITAT TREE STRUCTURE DETAIL
PLAN VIEW

LWD1 DATE: MAY. 2021	HABITAT TREE STRUCTURE TYPICAL DETAIL	PLEASANT VALLEY FISH HABITAT IMPROVEMENT PROJECT ROUTT COUNTY, CO	Flywater Stillwater Sciences



A **LARGE WOOD STRUCTURE DETAIL**
PLAN VIEW

1. PLACE LOG WITH BRANCHES INTACT AT THE TOE OF THE SLOPE WITH BRANCHES EXPOSED AND POINTING DOWNSTREAM. LOG IS ANGLED DOWNSTREAM AT 20 DEG. FROM THE BANK.
2. PLACE LOG WITH BRANCHES INTACT AT THE TOE OF THE SLOPE, UPSTREAM OF THE FIRST LOG, WITH BRANCHES EXPOSED AND POINTING DOWNSTREAM. LOG IS ANGLED DOWNSTREAM AT 30 DEG. FROM THE BANK.
3. INSTALL LOG WITH ROOTWAD CROWN RESTING ON TOP THE LOGS PLACED IN STEPS 1 AND 2 AT TOE OF BANK AND ORIENTED UPSTREAM AT 60 DEG.
4. INSTALL LOG WITH ROOTWAD CROWN RESTING ON LOG PLACED IN STEP 2 ABOVE THE TOE OF BANK AND ORIENTED UPSTREAM AT 50 DEG.
5. INSTALL LOG WITH ROOTWAD CROWN RESTING ON LOG PLACED IN STEP 2 ABOVE THE TOE OF BANK AND ORIENTED UPSTREAM AT 50 DEG.
6. INSTALL LOG WITH ROOTWAD CROWN RESTING ON LOG PLACED IN STEP 3 AND ORIENTED UPSTREAM AT 50 DEG.
7. INSTALL LOG WITH ROOTWAD CROWN RESTING ON LOG PLACED IN STEP 4 AND ORIENTED UPSTREAM AT 50 DEG.
8. EMBED FOOTER LOG AT TOE OF SLOPE PARALLEL TO FLOW WITH THE TOP OF LOG AT THE ELEVATION OF CHANNEL THALWEG.
9. INSTALL LOG WITH ROOTWAD CROWN RESTING ON THE FOOTER LOG PLACED IN STEP 8 AT THE TOE OF THE BANK ORIENTED UPSTREAM AT 45 DEG.
10. INSTALL LOG WITH ROOTWAD CROWN RESTING ON LOG PLACED IN STEP 9 ABOVE THE TOE OF THE BANK AND ORIENTED DOWNSTREAM AT 60 DEG.
11. PLACE TWO 30-INCH DIAMETER BOULDERS ON TOP OF LOGS PLACED IN STEPS 1, 3, 5, 6, 7, 9, AND 10. THE FOURTEEN BOULDERS SHALL BE POSITIONED APPROXIMATELY 5 FEET FROM END OF LOG.
12. PLACE 4-INCH MINUS SLASH DEBRIS (SMALLER BRANCHES SALVAGED DURING GRADING ACTIVITIES) IN ALL VISIBLE VOID SPACES BETWEEN LOGS. PARTIALLY ANCHOR THE SLASH DEBRIS BY PINNING THE ENDS OF THE BRANCHES BENEATH THE KEY LOGS INSTALLED IN THE STEPS ABOVE.

Stillwater Sciences

Skyline Ltd.

PLEASANT VALLEY
FISH HABITAT
IMPROVEMENT PROJECT
ROUTT COUNTY, CO

LOG JAM
TYPICAL DETAIL

LWD2

DATE: MAY. 2021

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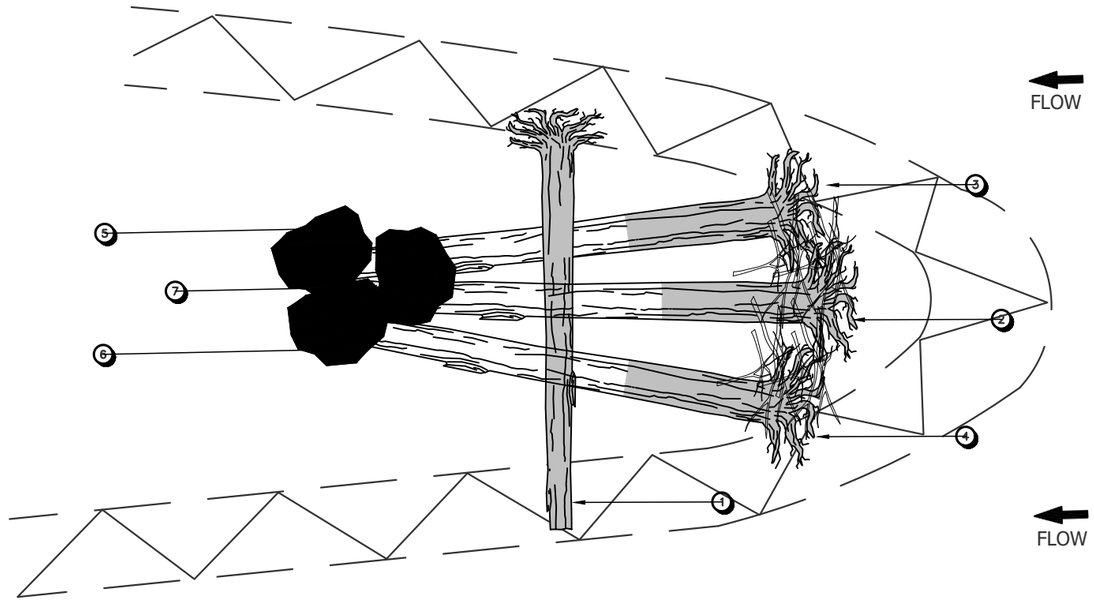
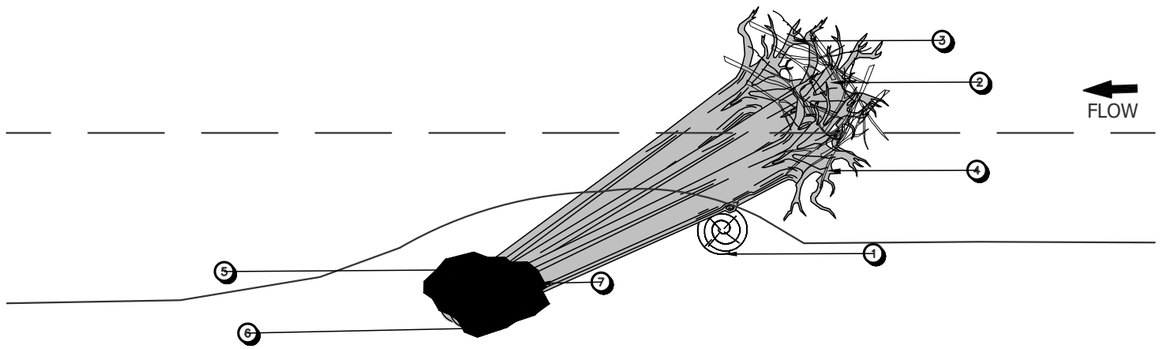


A BAR APEX JAM STRUCTURE DETAIL
PLAN VIEW



B BAR APEX JAM STRUCTURE DETAIL
PROFILE VIEW

CONSTRUCTION SEQUENCING NOTES:

1. BURY FOOTER LOG (1) INTO UPSTREAM END OF BAR SO TOP OF LOG IS FLUSH WITH GROUND SURFACE. INSTALL FOOTER ORIENT LOG PERPENDICULAR TO FLOW. LOG SHALL BE PLACED AT THE ELEVATION WHERE THE LOGS (5-7) WILL BE BURIED IN THE CHANNEL BED. EMBED FULL LENGTH OF LOG.
2. PLACE BOTTOM CROWN OF LOG ON TOP OF THE FOOTER LOG INSTALLED IN STEP 1. ORIENT DOWNSTREAM END OF LOG SLIGHTLY TOWARDS THE CENTERLINE OF THE CHANNEL.
3. PLACE BOTTOM CROWN OF LOG ON TOP OF THE HEADER LOG INSTALLED IN STEP 1. ORIENT LOG NEARLY PARALLEL TO FLOW.
4. PLACE BOTTOM CROWN OF LOG ON TOP OF THE HEADER LOG INSTALLED IN STEP 1. ORIENT DOWNSTREAM END OF LOG SLIGHTLY TOWARDS THE CENTERLINE OF THE CHANNEL.
5. PLACE AND BURY BOULDERS (5-7) ON TOP OF LOGS (2-5) AS SHOWN. TOP OF BOULDERS SHOULD BE AT OR LOWER THAN ELEVATION OF FOOTER LOG.
6. ADD BRANCHY MATERIAL IN ROOT WADS OF LOGS.

Stillwater Sciences

Hayden Water

PLEASANT VALLEY
FISH HABITAT
IMPROVEMENT PROJECT
ROUTT COUNTY, CO

LOG JAM
TYPICAL DETAIL

LWD2

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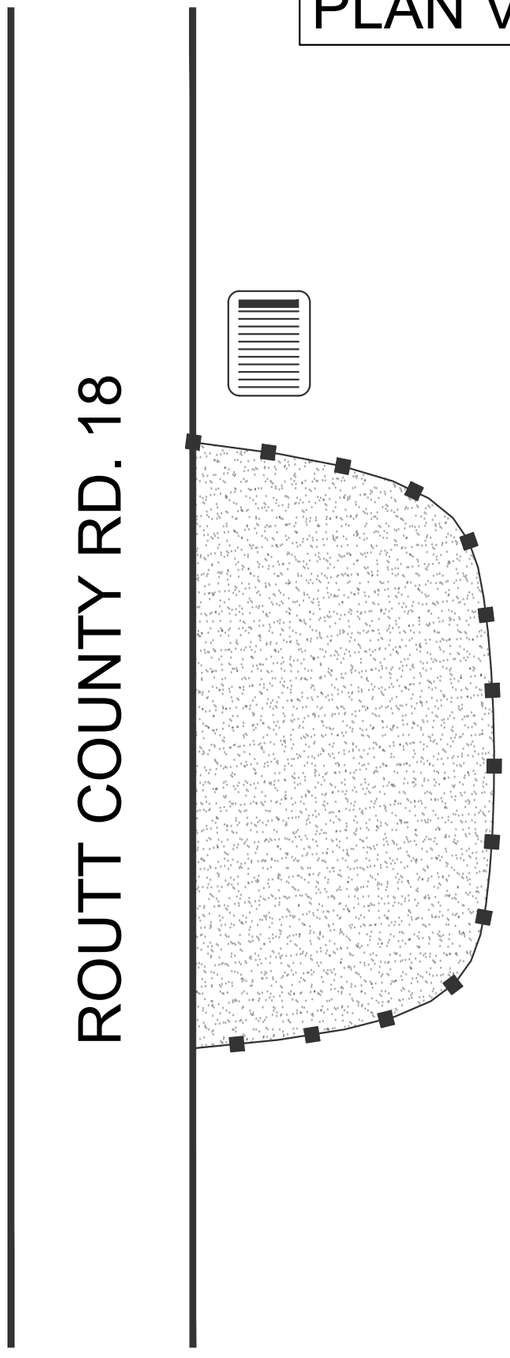
PLAN VIEW



LEGEND

- SIGN DESCRIBING PARKING AREA AND DESIGNATION.

- 8" x 8" TREATED POST

- ROAD BASE AGGREGATE

NOTES:

1. 8" x 8" TREATED POSTS MUST BE 6.5' IN LENGTH AND BURIED 30"+ INTO THE GROUND.
2. 8" x 8" TREATED POSTS ARE INSTALLED TOPROTECT RIPARIAN AREA.
3. PARKING AREA 1 WILL BE NOSE-IN OR TAIL-IN PARKING ONLY.
4. PARKING AREAS 2-4 WILL BE PARALLEL PARKING ONLY.
5. SIGNS WILL DESCRIBE PARKING AREAS AND VEHICLE NUMBER LIMITS.

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PLEASANT VALLEY
FISH HABITAT
IMPROVEMENT PROJECT
ROUTT COUNTY, CO

HARDENED PARKING AREA
TYPICAL DETAIL

PA

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LARGE WOOD STRUCTURE CONSTRUCTION GENERAL NOTES:

1. LARGE WOOD MATERIAL (LWM) FOR STRUCTURES SHALL BE SECURED FROM THE FOLLOWING SOURCES:

    1.A. LOGS WITH ROOTWAD PRE-STOCKPILED ON-SITE BY CPW.
    1.B. LARGE WOOD (LW) PILES SALVAGED ON-SITE BY CONTRACTOR, AS APPROVED BY STREAM RESTORATION SPECIALIST.
    1.C. LW PILES IMPORTED BY CONTRACTOR FROM OFF-SITE SOURCE, AS APPROVED BY STREAM RESTORATION SPECIALIST.

2. UPON NOTIFICATION TO PROCEED, THE CONTRACTOR SHALL BEGIN COORDINATION WITH CPW AND STREAM RESTORATION SPECIALIST TO DEVELOP A LIST AND SPECIFICATIONS FOR LOGS PROPOSED FOR USE FOR THE PROJECT, INCLUDING PRE-STOCKPILED LWM BY CPW AND LW PILES SALVAGED ON-SITE OR IMPORTED BY CONTRACTOR. THE CONTRACTOR SHALL NOTIFY CPW AND THE STREAM RESTORATION SPECIALIST IMMEDIATELY IF A SPECIFIED LOG SIZE IS NOT AVAILABLE. THE LIST AND SPECIFICATIONS SHALL INCLUDE, FOR EACH LWM/LW PILE, THE TREE SPECIES, DIAMETER AT DBH, LENGTH, AND ROOTWAD DIAMETER. THE LARGE WOOD STRUCTURE CONFIGURATIONS AND MATERIAL SCHEDULES SHOWN IN THE PLANS ARE SUBJECT TO REVISION BY THE STREAM RESTORATION SPECIALIST UPON RECEIPT OF THE LIST OF LOG MATERIAL.

3. LWM SHALL PREFERENTIALLY INCLUDE BRANCHES AND ROOTWAD. INVASIVE SPECIES (E.G., CRACK WILLOW) SHALL NOT BE IMPORTED, SALVAGED, OR INSTALLED IN LARGE WOOD STRUCTURES. THE STREAM RESTORATION OR VEGETATION SPECIALIST SHALL IDENTIFY INVASIVE SPECIES OF TREES.

4. THE LOCATION AND CONFIGURATION OF LARGE WOOD STRUCTURES MAY VARY IN FIELD DUE TO SITE CONDITIONS, AND THE FINAL LOCATION OF THESE STRUCTURES WILL BE FLAGGED BY THE STREAM RESTORATION SPECIALIST DURING CONSTRUCTION.

5. SPECIFIED DIAMETER OF LOGS SHALL BE MEASURED AT BREAST HEIGHT (DBH). LENGTHS OF LOGS SHALL INCLUDE THE ROOTWAD PORTIONS OF THE LOG. LOG SIZE SHALL BE WITHIN 3 INCHES OF THE SPECIFIED DIAMETER. ROOTWAD DIAMETER SHALL TYPICALLY BE A MINIMUM OF 3 TIMES THE DBH OF THE LOG, UNLESS OTHERWISE APPROVED BY THE STREAM RESTORATION SPECIALIST.

6. LOG ORIENTATION ANGLES ARE MEASURED BETWEEN THE LOG AND THE BANK. A LOG WITH AN ORIENTATION ANGLE OF 0 DEGREES SHALL BE PLACED PARALLEL TO THE BANK, AND A LOG WITH A 90 DEGREE ORIENTATION ANGLE SHALL BE PLACED PERPENDICULAR TO THE BANK. ORIENTATION OF LOGS SHALL BE WITHIN 10 DEGREES OF THE SPECIFIED ORIENTATION ANGLE, UNLESS APPROVED BY THE STREAM RESTORATION SPECIALIST IN THE FIELD.

7. FINAL WOOD CONFIGURATION, LOCATION, AND STRUCTURE TYPE TO BE DETERMINED IN THE FIELD PER THE DIRECTION OF THE STREAM RESTORATION SPECIALIST.

8. TYPICAL TOP OF STRUCTURE ELEVATIONS WILL BE NEAR THE 5-YR WSEL; FINAL ELEVATIONS TO BE PROVIDED DURING CONSTRUCTION PHASE.

9. TYPICAL TOP OF PILE ELEVATIONS WILL BE NEAR THE 25-YR WSEL; FINAL ELEVATIONS TO BE PROVIDED DURING THE CONSTRUCTION PHASE.

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DESIGN BUILD PLANSET
GENERAL NOTES

GN

DATE: MAY. 2021