

DELTA GATEWAY RIVERFRONT PRELIMINARY PLANNING AND ENGINEERING PROJECT DELTA, CO JUNE 27, 2016

PRELIMINARY DESIGN DRAWINGS

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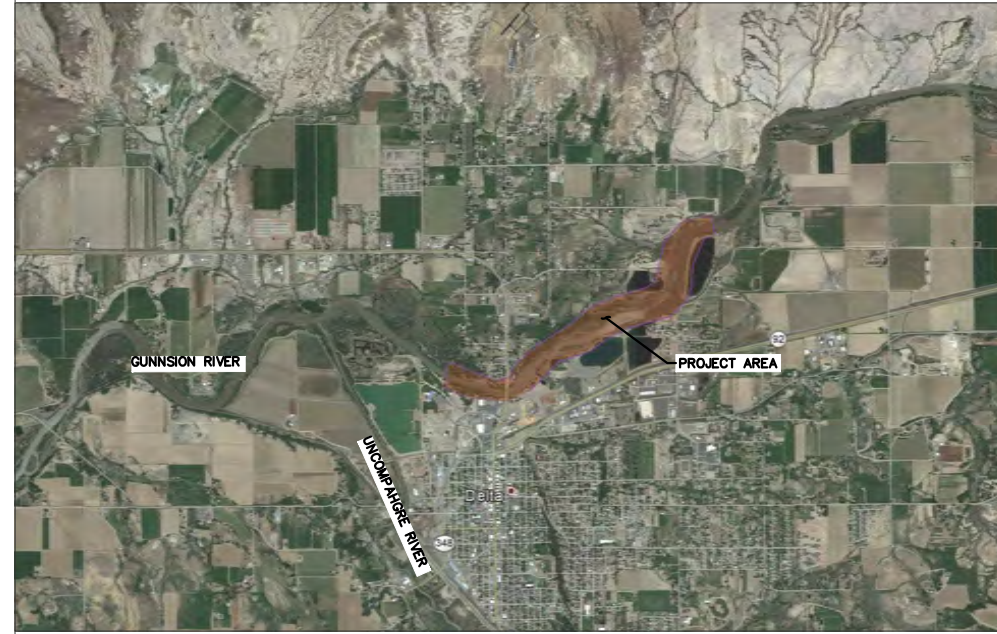
SHEET NO.	SHEET TITLE
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G02	SITE PLAN AND SHEET INDEX
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EC02	E.C AND C.O.W. - US HWY 50 UNDERPASS
EC03	E.C AND C.O.W. - GRAVEL DEPOSIT REMOVAL
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D03	BOAT RAMP DETAILS
D04	BANK TREATMENT DETAILS
D05	MISCELLANEOUS SITE DETAILS

CONTACTS

Mr. Glen Black
Project Manager
City of Delta
(970) 874-7903

Mr. Jason Carey, P.E.
Project Engineer
RiverRestoration.org, LLC.
(970)-947-9568

LOCATION MAP



VICINITY MAP



SHEET INDEX (CONT.)

SHEET NO.	SHEET TITLE
L01	PLANTING PLAN
L02	PLANTING PLAN
L03	PLANTING PLAN
L04	PLANTING PLAN
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DELTA GATEWAY RIVERFRONT
 PRELIMINARY PLANNING AND ENGINEERING
 COVER SHEET AND
 VICINITY MAP

1	DESIGN UPDATES	
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No.	REVISION/UPDATE	Date

CLIENT NAME AND ADDRESS



City of Delta
360 Main Street
Delta, CO 81416
(970) 874-7566

DESIGN FIRM NAME AND ADDRESS



RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

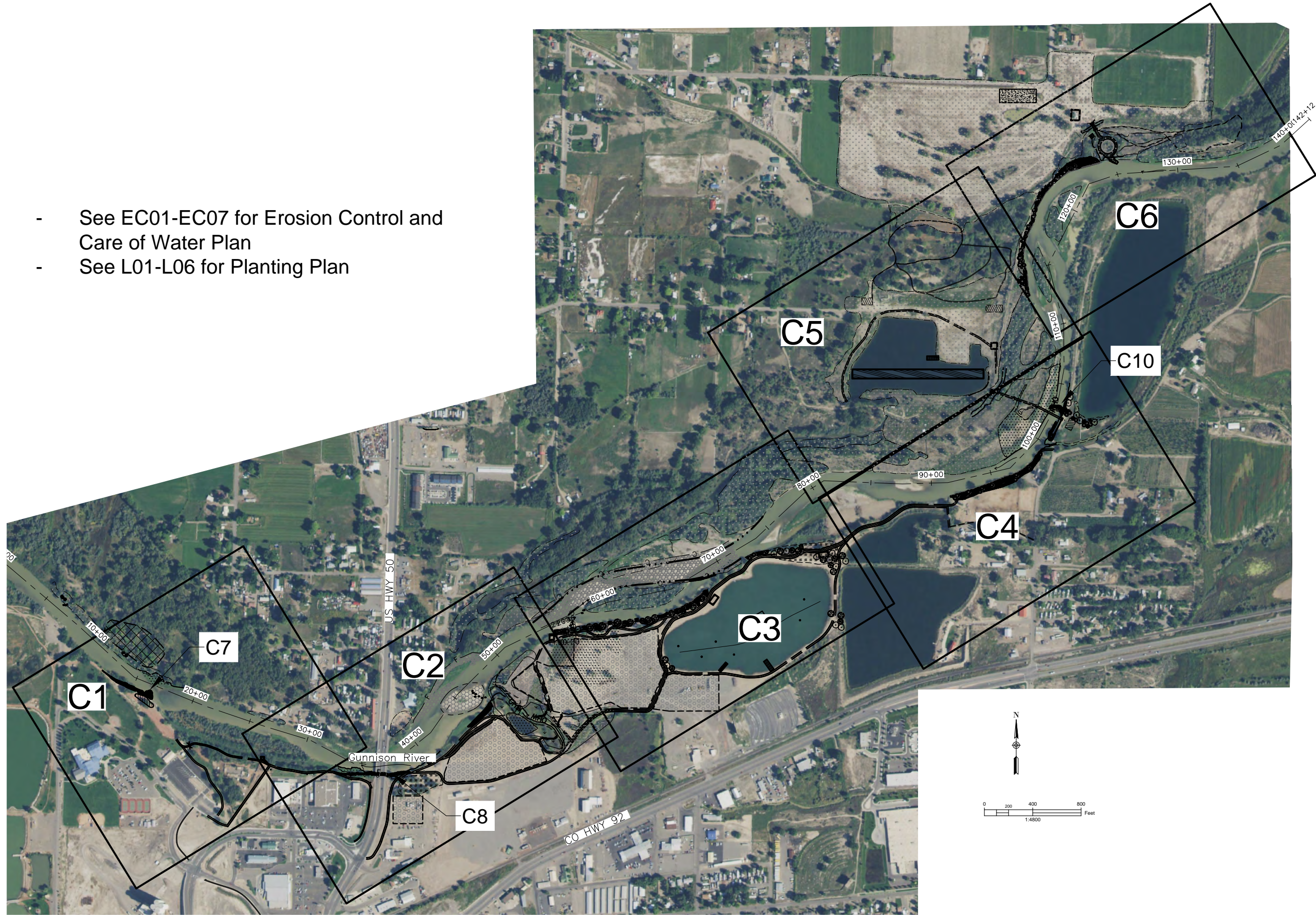
PROJECT NAME AND ADDRESS

Delta Gateway Riverfront
Gunnison River
Delta, CO 81416

Project 38040	Sheet G1
Date JUNE 27, 2016	
Scale VARIES	

PRELIMINARY DESIGN - NOT FOR CONSTRUCTION

- See EC01-EC07 for Erosion Control and Care of Water Plan
- See L01-L06 for Planting Plan



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PRELIMINARY

DELTA GATEWAY RIVERFRONT
 PRELIMINARY PLANNING AND ENGINEERING
 SITE PLAN AND SHEET INDEX

1	DESIGN UPDATES	
No.	REVISION/UPDATE	Date

CLIENT NAME AND ADDRESS

City of
DELTA

City of Delta
 360 Main Street
 Delta, CO 81416
 (970) 874-7566

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RIVER
 RESTORATION

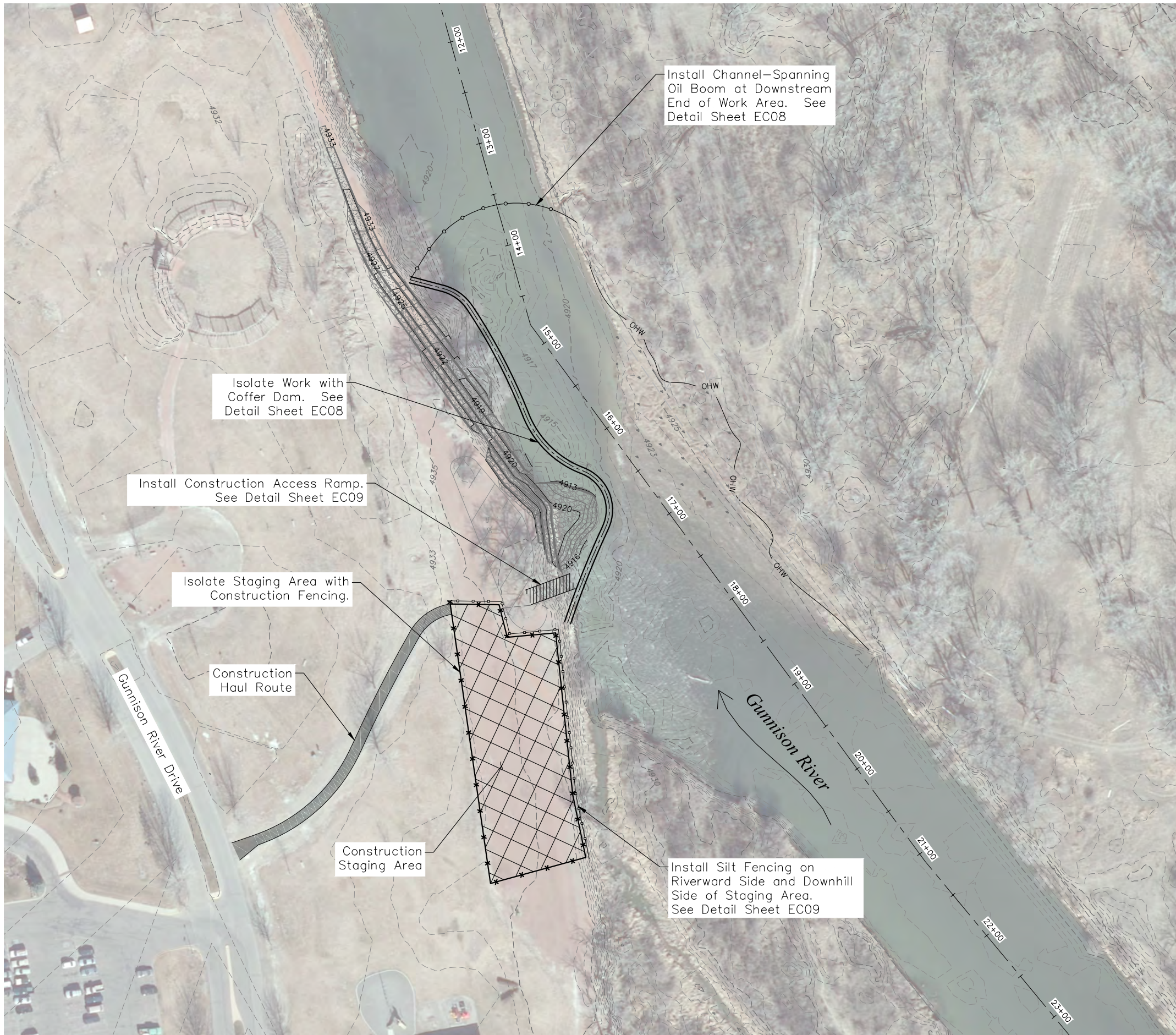
RiverRestoration
 P.O. Box 248
 Carbondale, CO 81623
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PROJECT NAME AND ADDRESS

Delta Gateway Riverfront
 Gunnison River
 Delta, CO 81416

Project	38040	Sheet	G2
Date	JUNE 27, 2016		
Scale	1" = 100' (FULL SIZE)		

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DELTA GATEWAY RIVERFRONT
 PRELIMINARY PLANNING AND ENGINEERING
 EROSION CONTROL AND CARE OF WATER
 WHITEWATER PARK I

1	DESIGN UPDATES	
No.	REVISION/UPDATE	Date

CLIENT NAME AND ADDRESS

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DELTA
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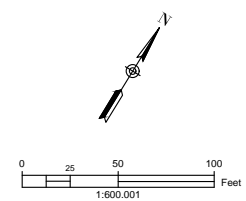
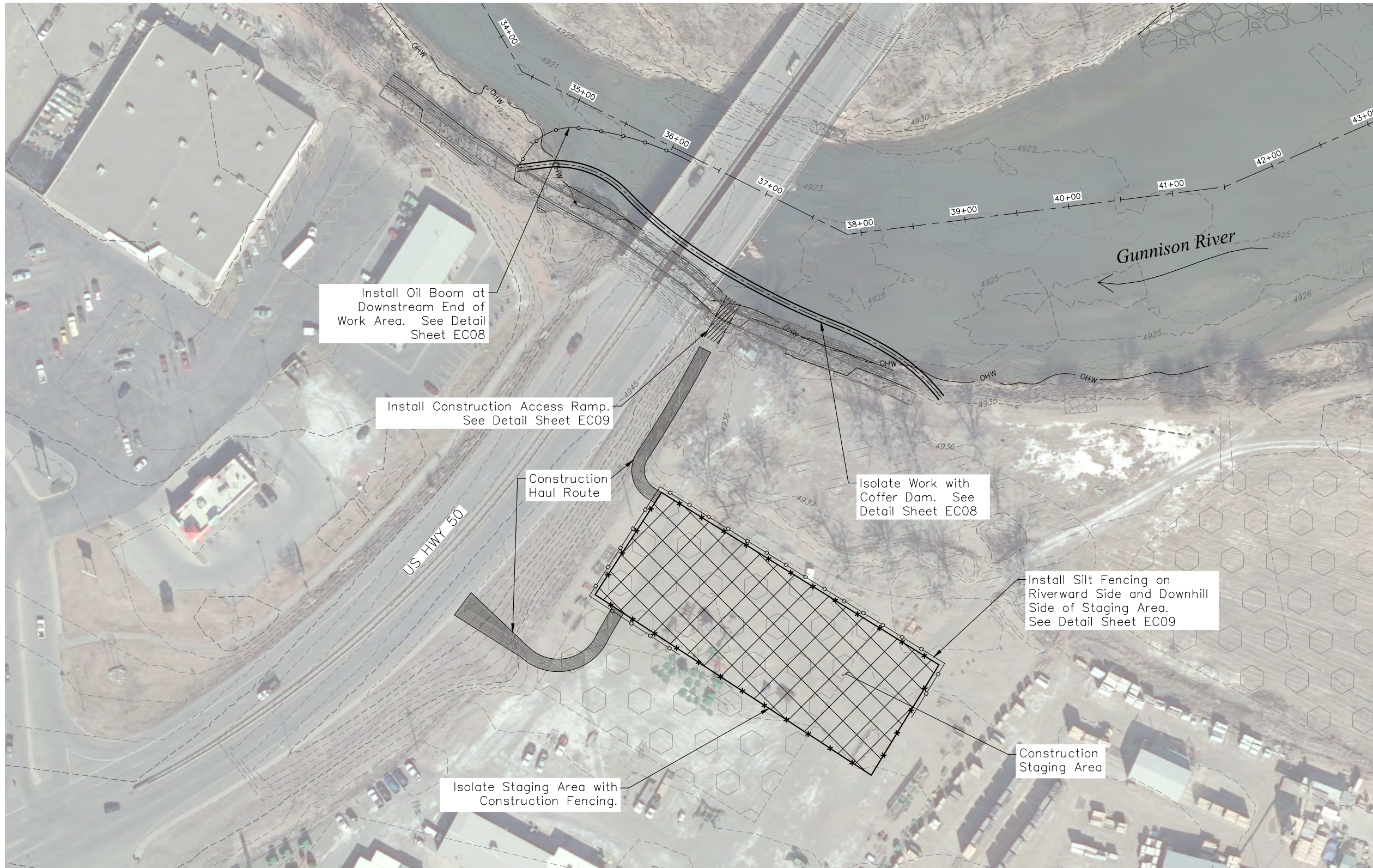
RIVER
 RESTORATION
 RiverRestoration
 P.O. Box 248
 Carbondale, CO 81623
 www.RiverRestoration.org

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Delta Gateway Riverfront
 Gunnison River
 Delta, CO 81416

Project 38040	Sheet ECO I
Date JUNE 27, 2016	
Scale 1" = 100' (FULL SIZE)	

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PRELIMINARY

DELTA GATEWAY RIVERFRONT
 PRELIMINARY PLANNING AND ENGINEERING
 EROSION CONTROL AND CARE OF WATER
 US HWY 50 UNDERPASS

1	DESIGN UPDATES	
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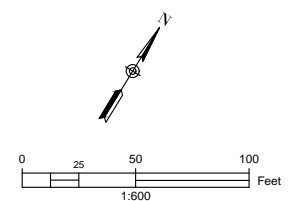
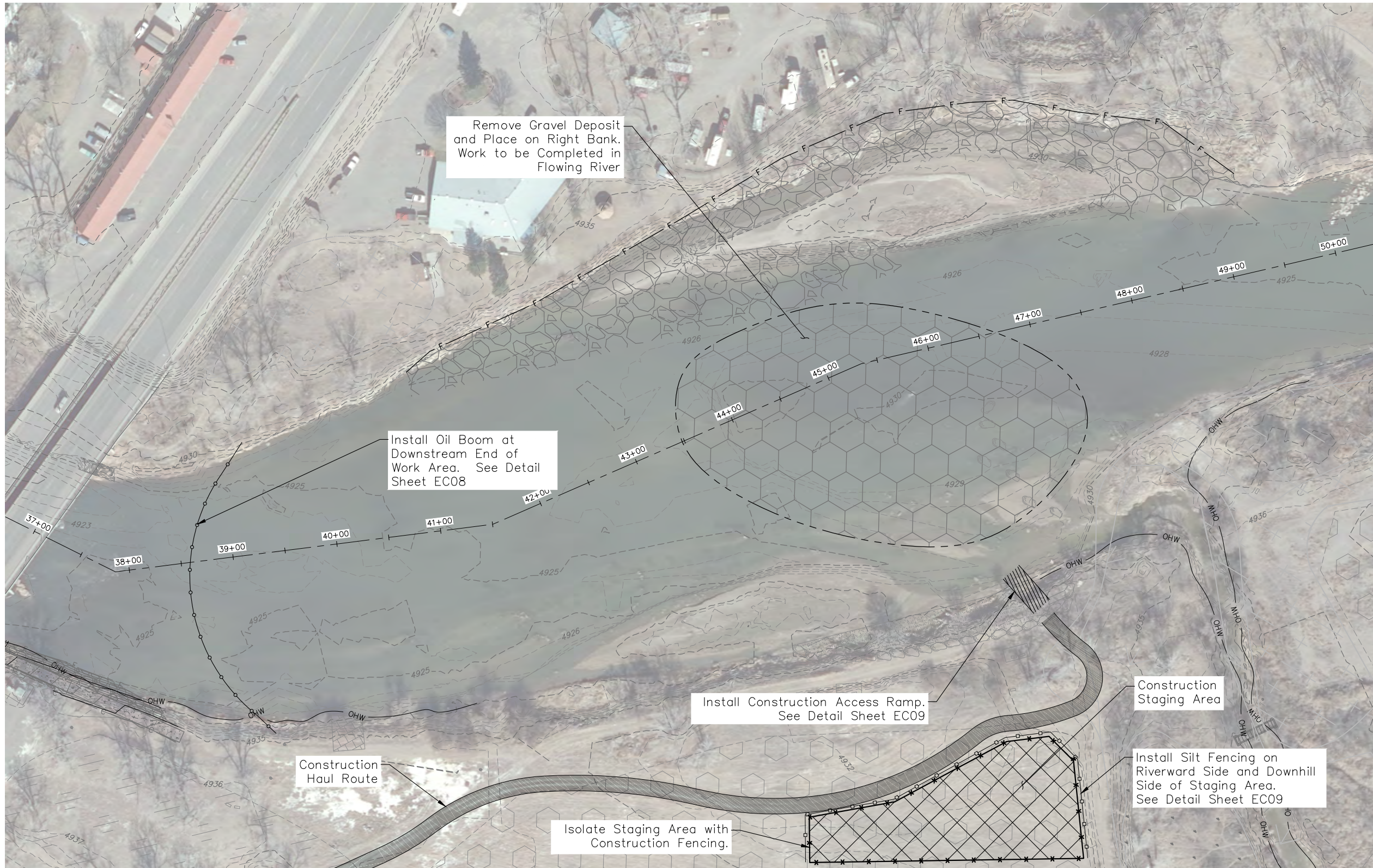
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PROJECT NAME AND ADDRESS

Delta Gateway Riverfront
 Gunnison River
 Delta, CO 81416

Project 38040	Sheet ECO2
Date JUNE 27, 2016	
Scale 1" = 100' (FULL SIZE)	

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DELTA GATEWAY RIVERFRONT
 PRELIMINARY PLANNING AND ENGINEERING
 EROSION CONTROL AND CARE OF WATER
 GRAVEL DEPOSIT REMOVAL

1	DESIGN UPDATES	
No.	REVISION/UPDATE	Date

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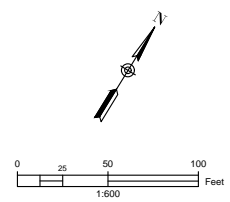
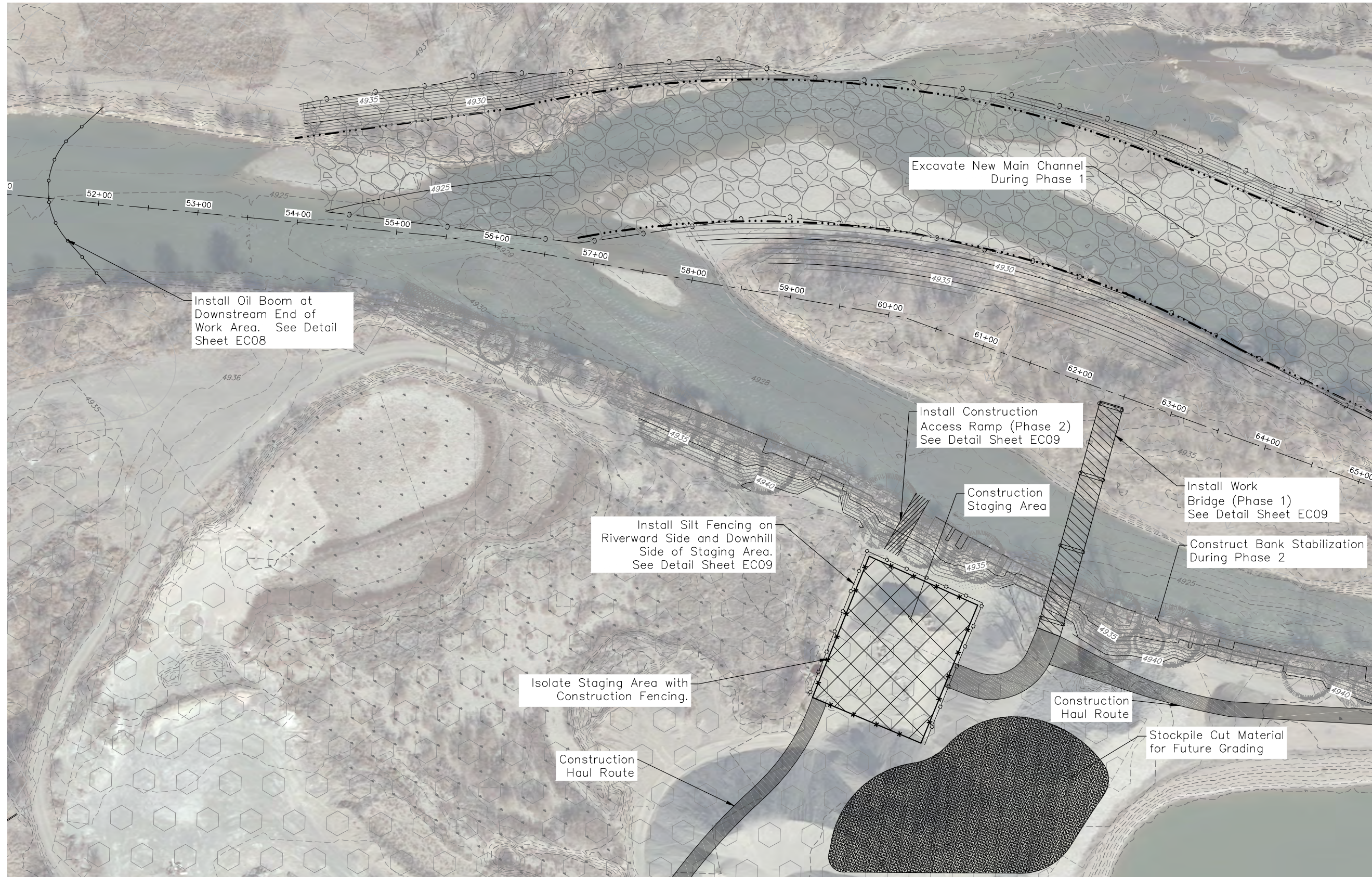
DESIGN FIRM NAME AND ADDRESS

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PROJECT NAME AND ADDRESS
 Delta Gateway Riverfront
 Gunnison River
 Delta, CO 81416

Project	38040	Sheet	ECO3
Date	JUNE 27, 2016		
Scale	1" = 100' (FULL SIZE)		

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**DELTA GATEWAY RIVERFRONT
 PRELIMINARY PLANNING AND ENGINEERING
 EROSION CONTROL AND CARE OF WATER
 CHANNEL RE-ALIGNMENT I**

1	DESIGN UPDATES	
No.	REVISION/UPDATE	Date

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PROJECT NAME AND ADDRESS

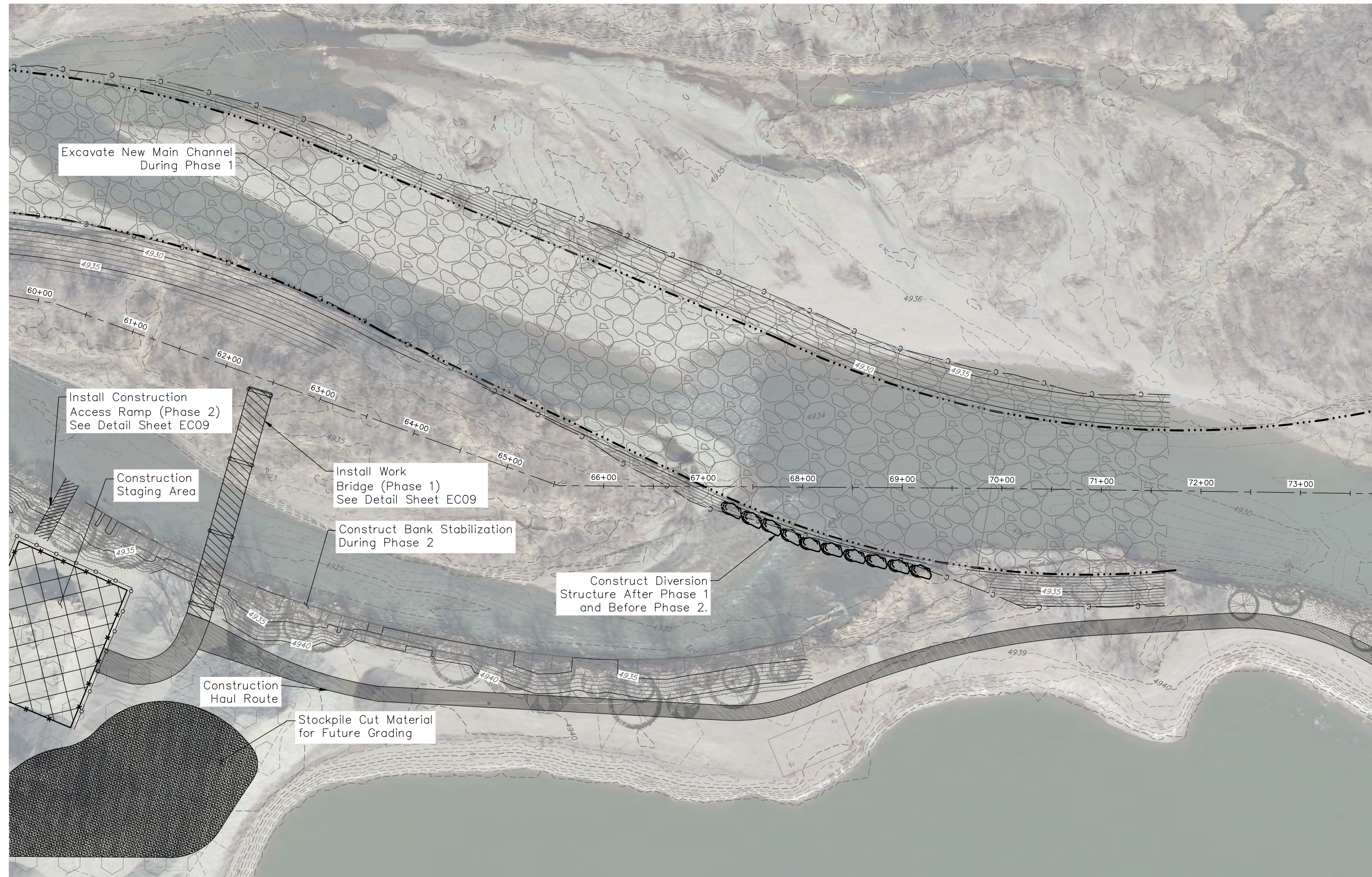
Delta Gateway Riverfront
 Gunnison River
 Delta, CO 81416

Project	38040	Sheet	ECO4
Date	JUNE 27, 2016		
Scale	1" = 100' (FULL SIZE)		

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DELTA GATEWAY RIVERFRONT
PRELIMINARY PLANNING AND ENGINEERING
EROSION CONTROL AND CARE OF WATER
CHANNEL RE-ALIGNMENT 2



1	DESIGN UPDATES	
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DESIGN FIRM NAME AND ADDRESS

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RESTORATION

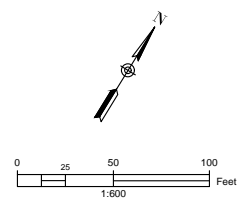
RiverRestoration
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Carbondale, CO 81623
www.RiverRestoration.org

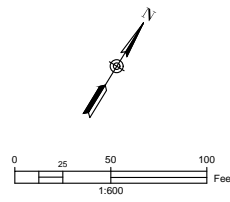
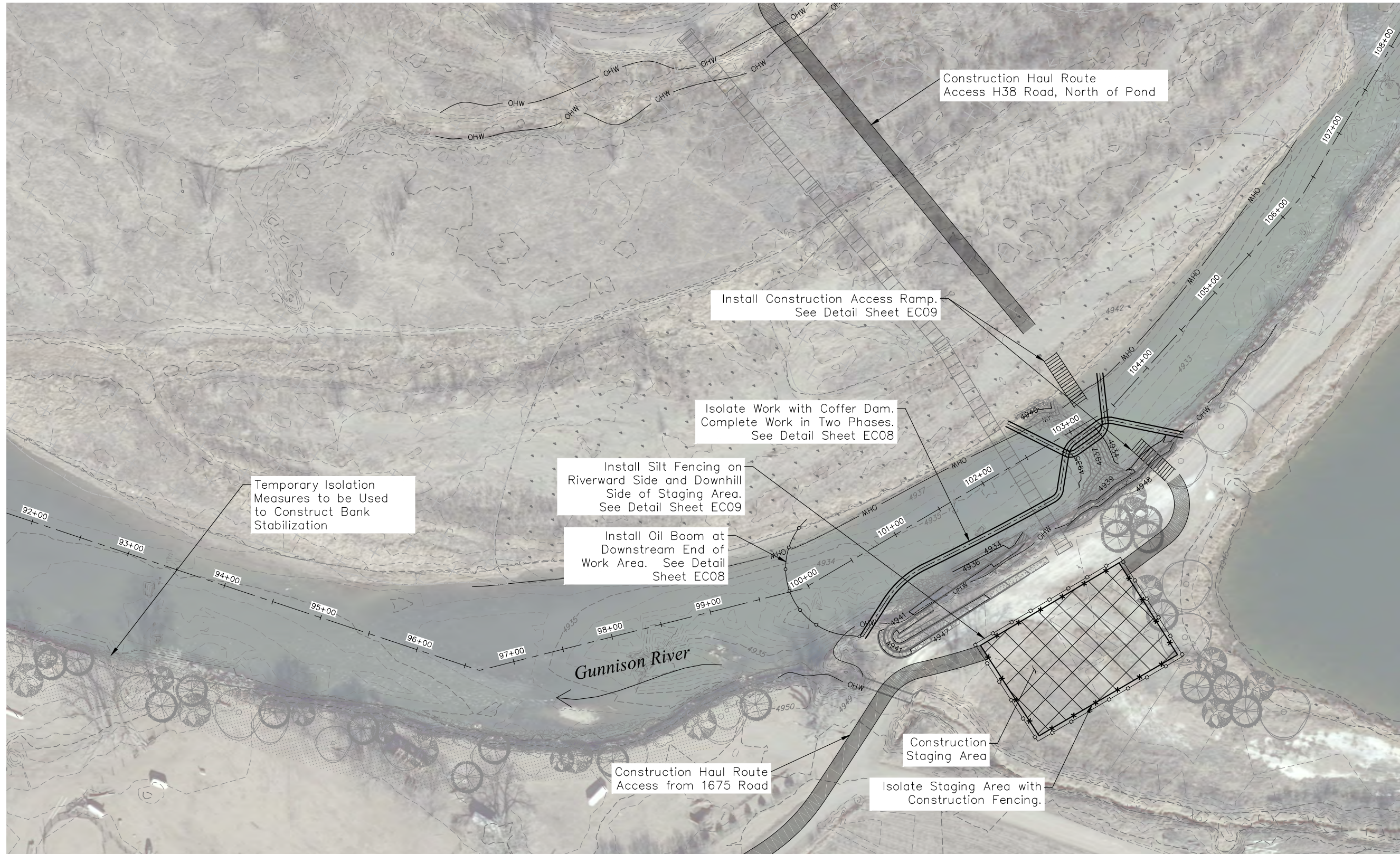
PROJECT NAME AND ADDRESS

Delta Gateway Riverfront
Gunnison River
Delta, CO 81416

Project 38040	Sheet EC05
Date JUNE 27, 2016	
Scale 1" = 100' (FULL SIZE)	

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**DELTA GATEWAY RIVERFRONT
 PRELIMINARY PLANNING AND ENGINEERING
 EROSION CONTROL AND CARE OF WATER
 WHITEWATER PARK 2**

1	DESIGN UPDATES	
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No.	REVISION/UPDATE	Date
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DESIGN FIRM NAME AND ADDRESS

RIVER
 RESTORATION

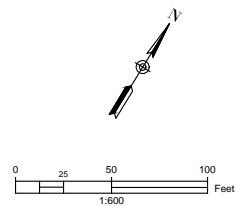
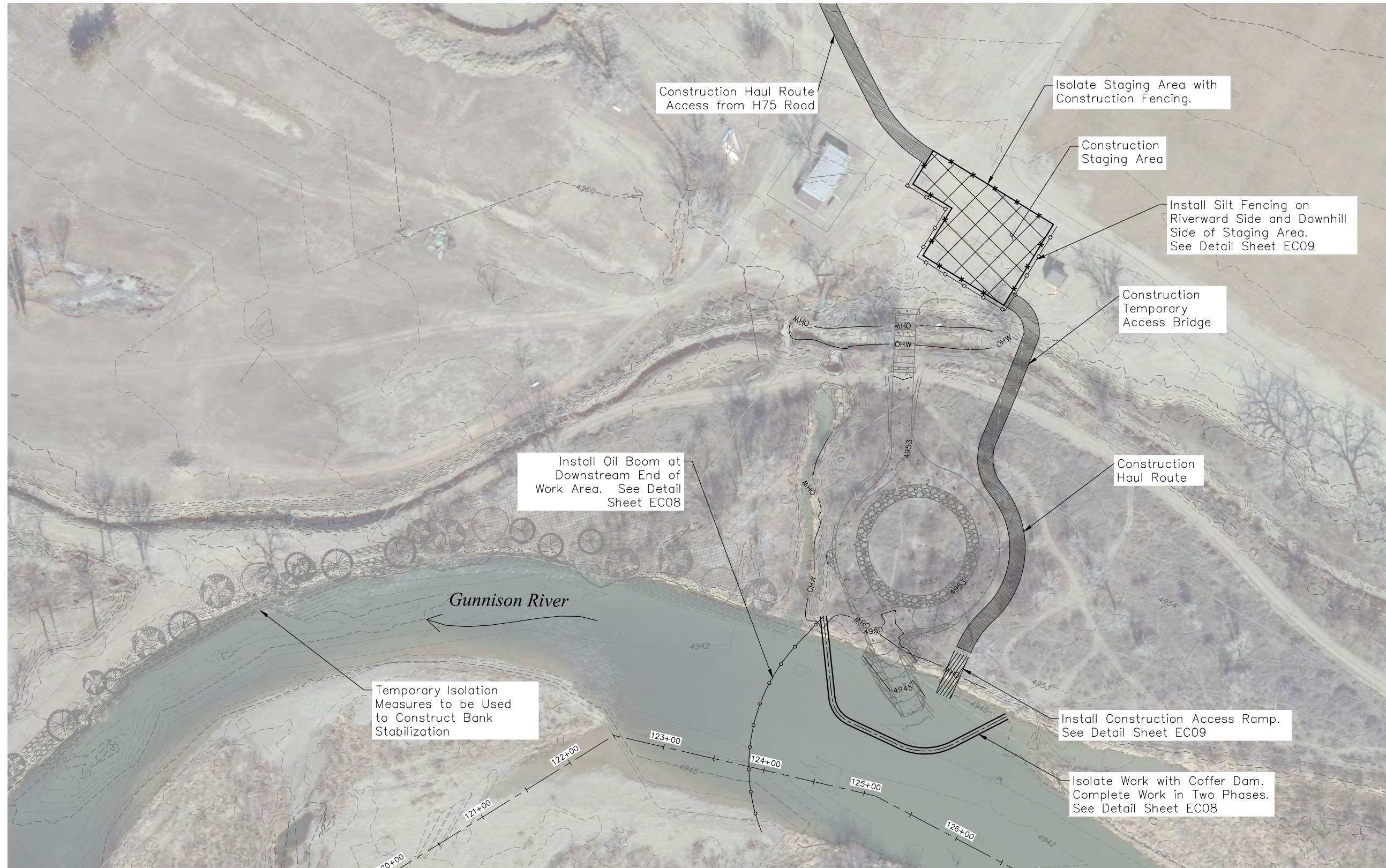
RiverRestoration
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PROJECT NAME AND ADDRESS

Delta Gateway Riverfront
 Gunnison River
 Delta, CO 81416

Project 38040	Sheet EC6
Date JUNE 27, 2016	
Scale 1" = 100' (FULL SIZE)	

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DELTA GATEWAY RIVERFRONT
 PRELIMINARY PLANNING AND ENGINEERING
 EROSION CONTROL AND CARE OF WATER
 BOAT LAUNCH

1	DESIGN UPDATES	
No.	REVISION/UPDATE	Date

CLIENT NAME AND ADDRESS

City of

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 Delta, CO 81416
 (970) 874-7566

DESIGN FIRM NAME AND ADDRESS

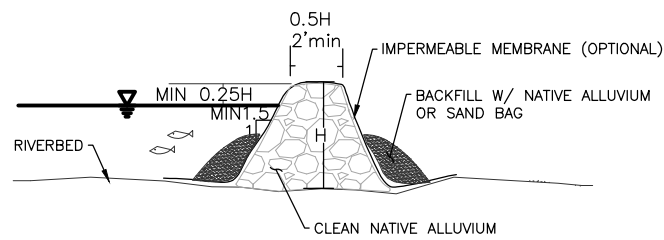

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 www.RiverRestoration.org

PROJECT NAME AND ADDRESS

Delta Gateway Riverfront
 Gunnison River
 Delta, CO 81416

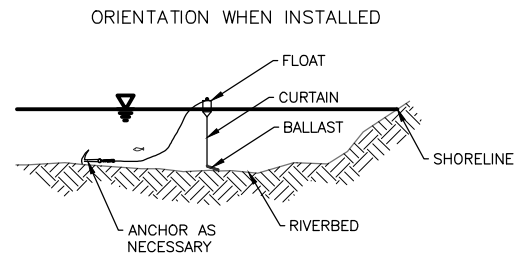
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Date	JUNE 27, 2016		
Scale	1" = 100' (FULL SIZE)		

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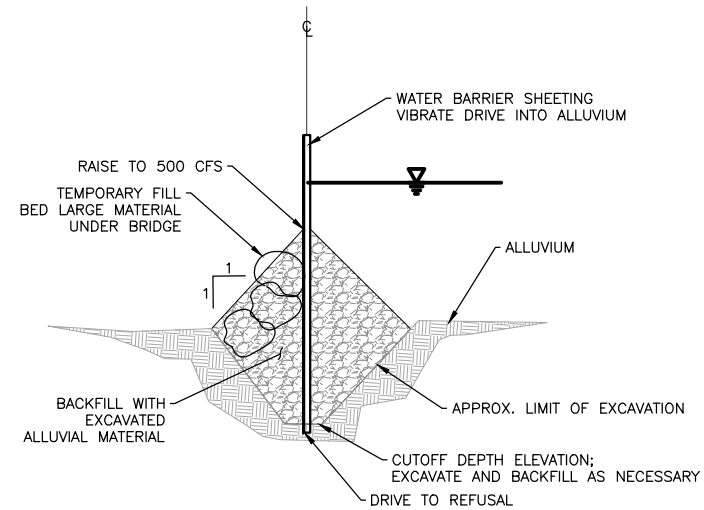


ALLUVIAL COFFER (TYP.)
SECTION VIEW-NTS

1
EC08



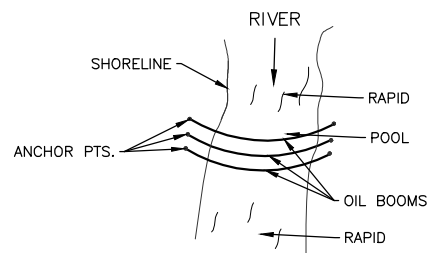
TURBIDITY CURTAIN (TYP.)
SECTION VIEW-NTS



ALLUVIAL CHANNEL TEMPORARY SHEET PILING

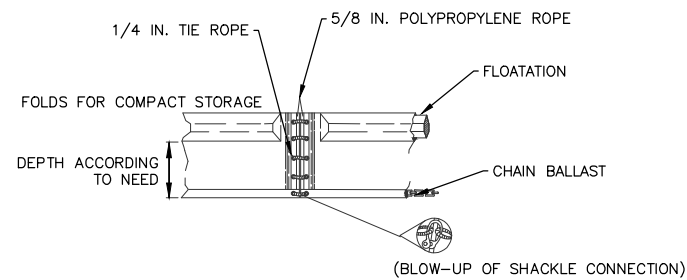
5
EC08

PLAN VIEW
TYPICAL LAYOUT FOR STREAMS AND RIVERS
TO BE PLACED DOWNSTREAM OF
ANY EQUIPMENT WORKING IN THE WET



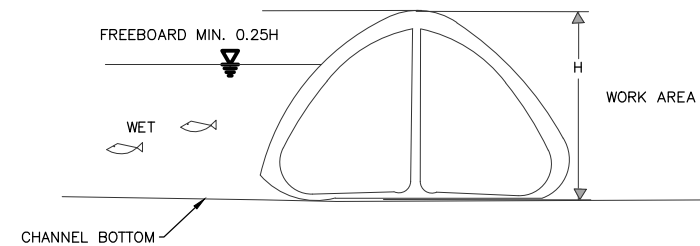
OIL BOOM (TYP.)
PLAN VIEW-NTS

2
EC08

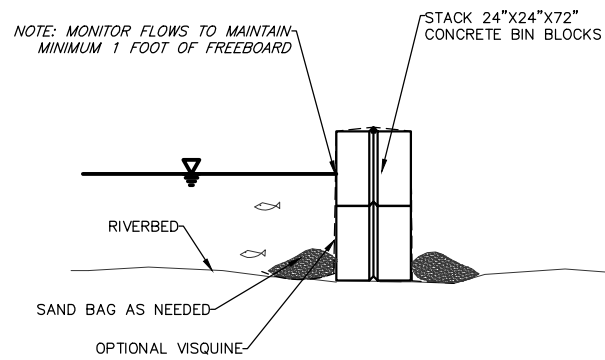


SILTMASTER II PERMEABLE GEOTEXTILE
DREDGE BARRIER NON-WOVEN DBNW
BY PARKERSYSTEMS OR EQUIVALENT

TURBIDITY CURTAIN (TYP.)
PROFILE VIEW-NTS



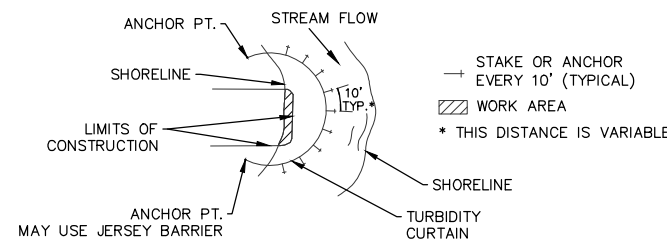
WATER FILLED COFFER DAM (TYP.)
SECTION VIEW-NTS



CONCRETE BARRIER COFFER DAM (TYP.)
SECTION VIEW-NTS

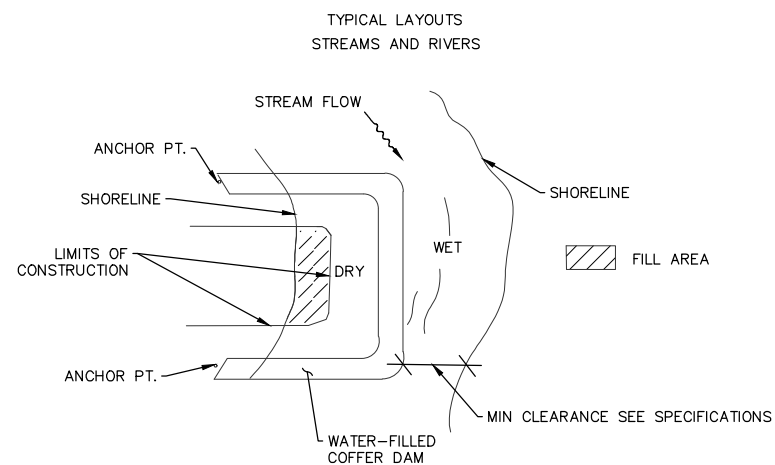
3
EC08

TYPICAL LAYOUTS
STREAMS, PONDS, AND LAKES (PROTECTED AND NON-TIDAL)



TURBIDITY CURTAIN (TYP.)
PLAN VIEW-NTS

4
EC08



WATER FILLED COFFER DAM (TYP.)
PLAN VIEW-NTS

6
EC08

PRELIMINARY

DELTA GATEWAY RIVERFRONT
PRELIMINARY PLANNING AND ENGINEERING
CARE OF WATER DETAILS

1	DESIGN UPDATES	
No.	REVISION/UPDATE	Date

CLIENT NAME AND ADDRESS

City of Delta
360 Main Street
Delta, CO 81416
(970) 874-7566

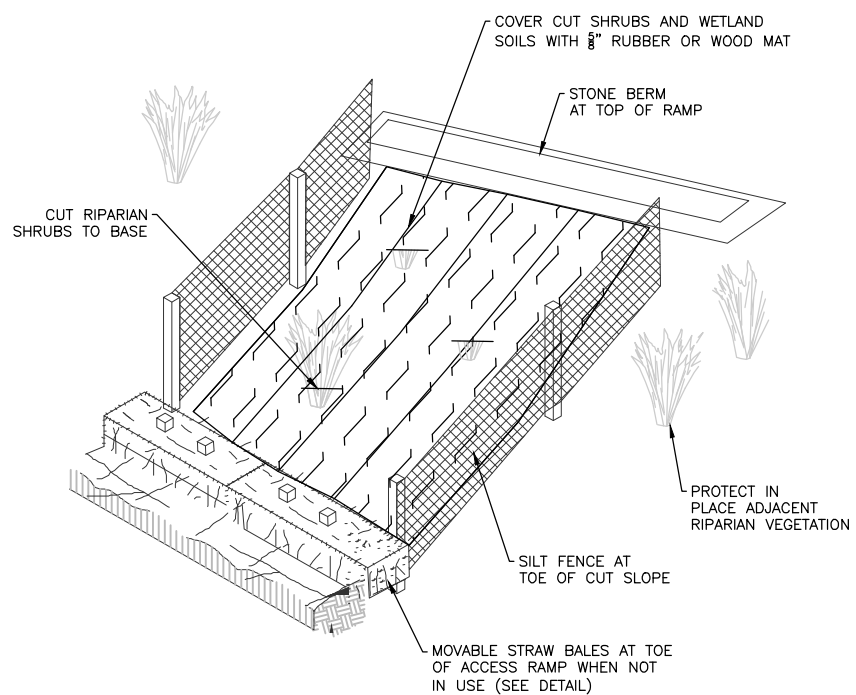
DESIGN FIRM NAME AND ADDRESS

RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

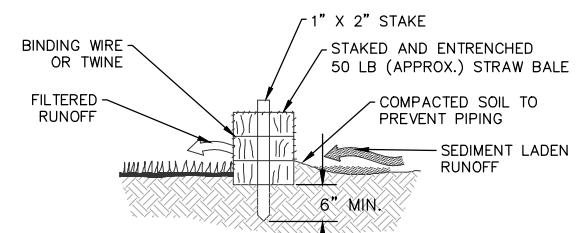
PROJECT NAME AND ADDRESS
Delta Gateway Riverfront
Gunnison River
Delta, CO 81416

Project	38040	Sheet	ECO8
Date	JUNE 27, 2016		
Scale			

PRELIMINARY DESIGN - NOT FOR CONSTRUCTION

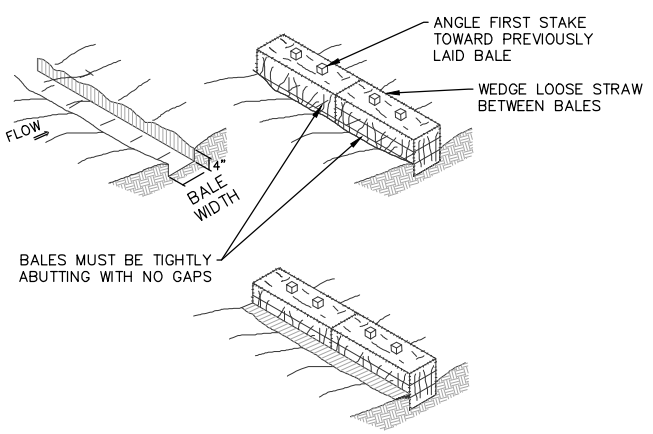


TEMPORARY EQUIPMENT ACCESS (TYP.)
NTS (1) EC09

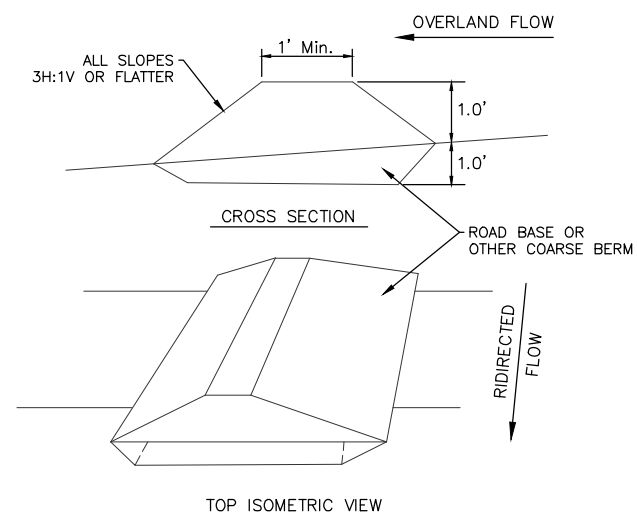


PROPERLY INSTALLED STRAW BALE (CROSS-SECTION)

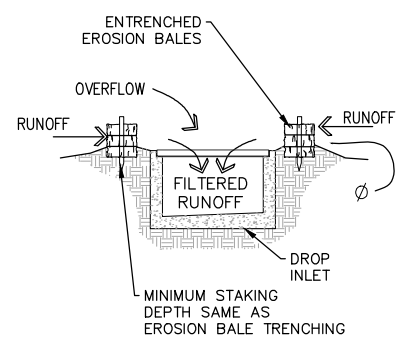
- INSTALLATION STEPS:
1. EXCAVATE THE TRENCH 2. PLACE AND STAKE STRAW BALES



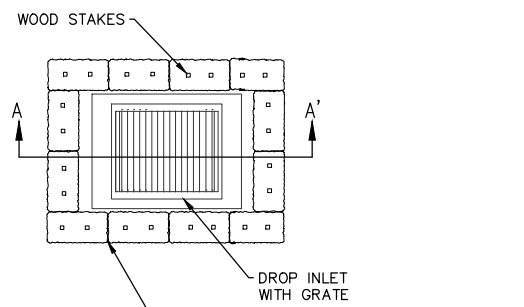
STRAW BALE (TYP.)
NTS (2) EC09



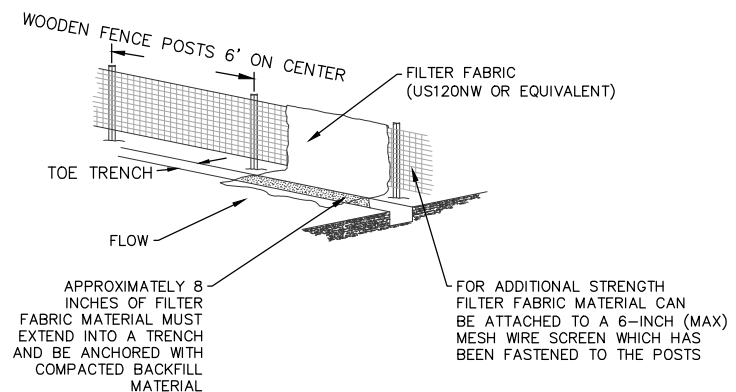
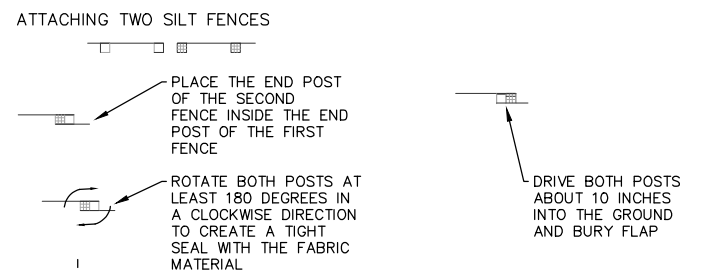
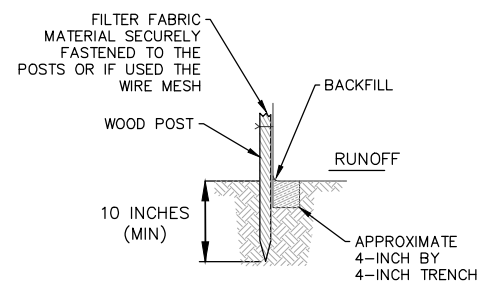
STONE BERM (TYP.)
NTS (3) EC09



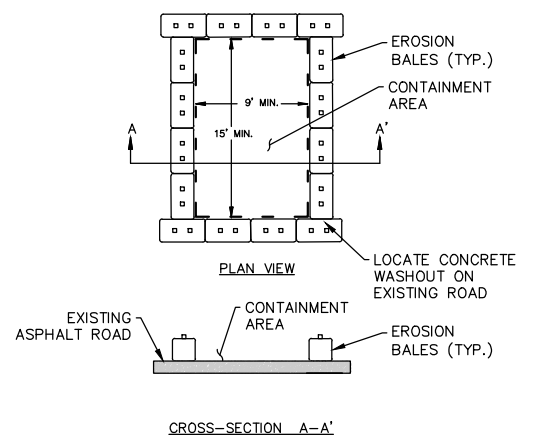
DROP INLET EROSION BALE FILTER
CROSS SECTION VIEW-NTS



DROP INLET EROSION BALE FILTER
PLAN VIEW-NTS (4) EC09



SILT FENCE (TYP.)
NTS (5) EC09



CONCRETE WASHOUT (TYP.)
NTS (6) EC09

PRELIMINARY

DELTA GATEWAY RIVERFRONT
PRELIMINARY PLANNING AND ENGINEERING
EROSION CONTROL DETAILS

1	DESIGN UPDATES	
No.	REVISION/UPDATE	Date

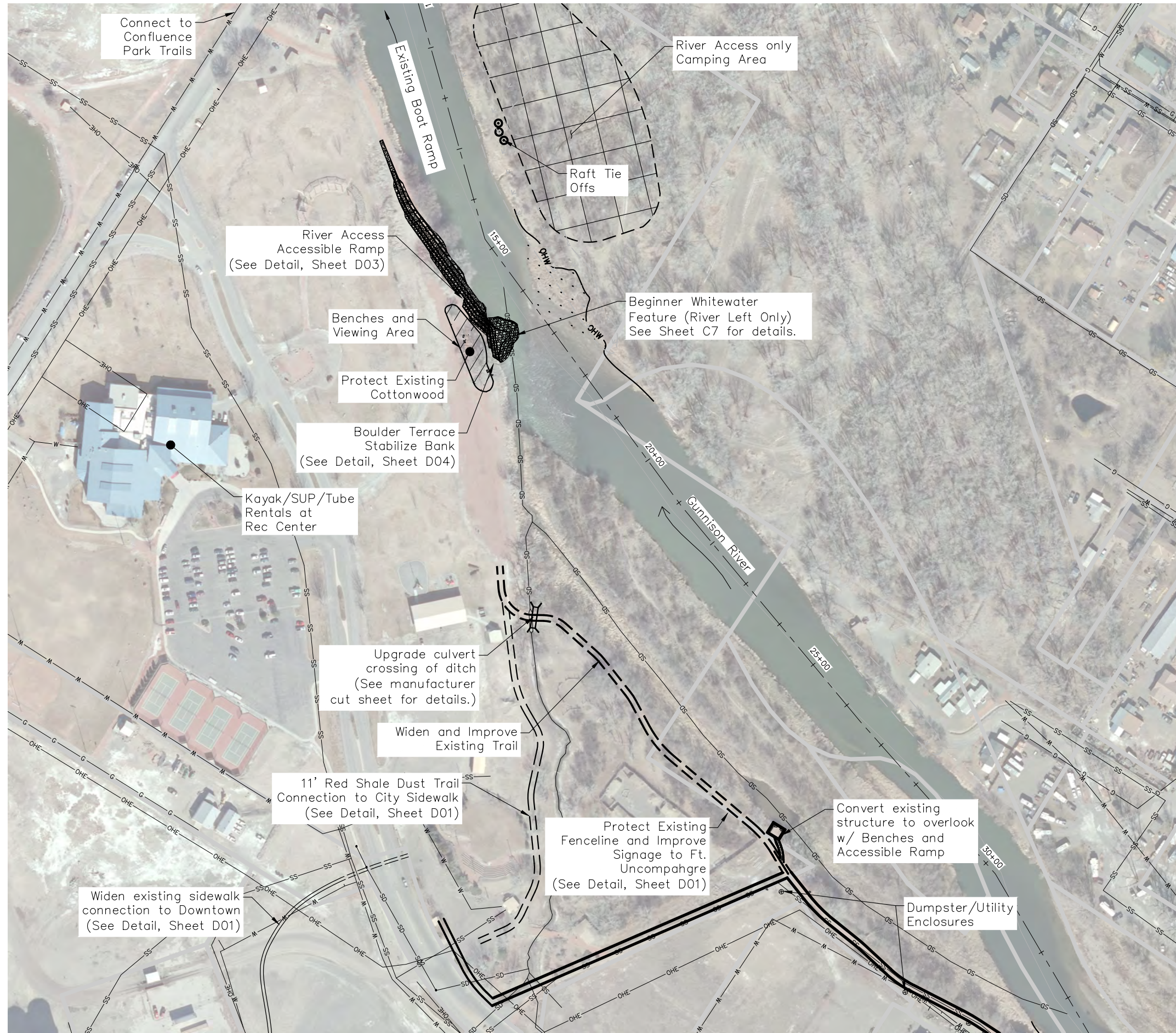
CLIENT NAME AND ADDRESS
City of Delta
City of Delta
360 Main Street
Delta, CO 81416
(970) 874-7566

DESIGN FIRM NAME AND ADDRESS
RIVER RESTORATION
RiverRestoration
P.O. Box 248
Carbondale, CO 81623
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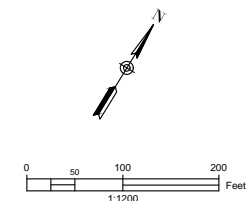
PROJECT NAME AND ADDRESS
Delta Gateway Riverfront
Gunnison River
Delta, CO 81416

Project 38040	Sheet EC09
Date JUNE 27, 2016	
Scale	

PRELIMINARY DESIGN - NOT FOR CONSTRUCTION



SEE SHEET C2



PROFESSIONAL ENGINEER STAMP



DELTA GATEWAY RIVERFRONT
PRELIMINARY PLANNING AND ENGINEERING
PLAN VIEW

1	DESIGN UPDATES	
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No.	REVISION/UPDATE	Date
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360 Main Street
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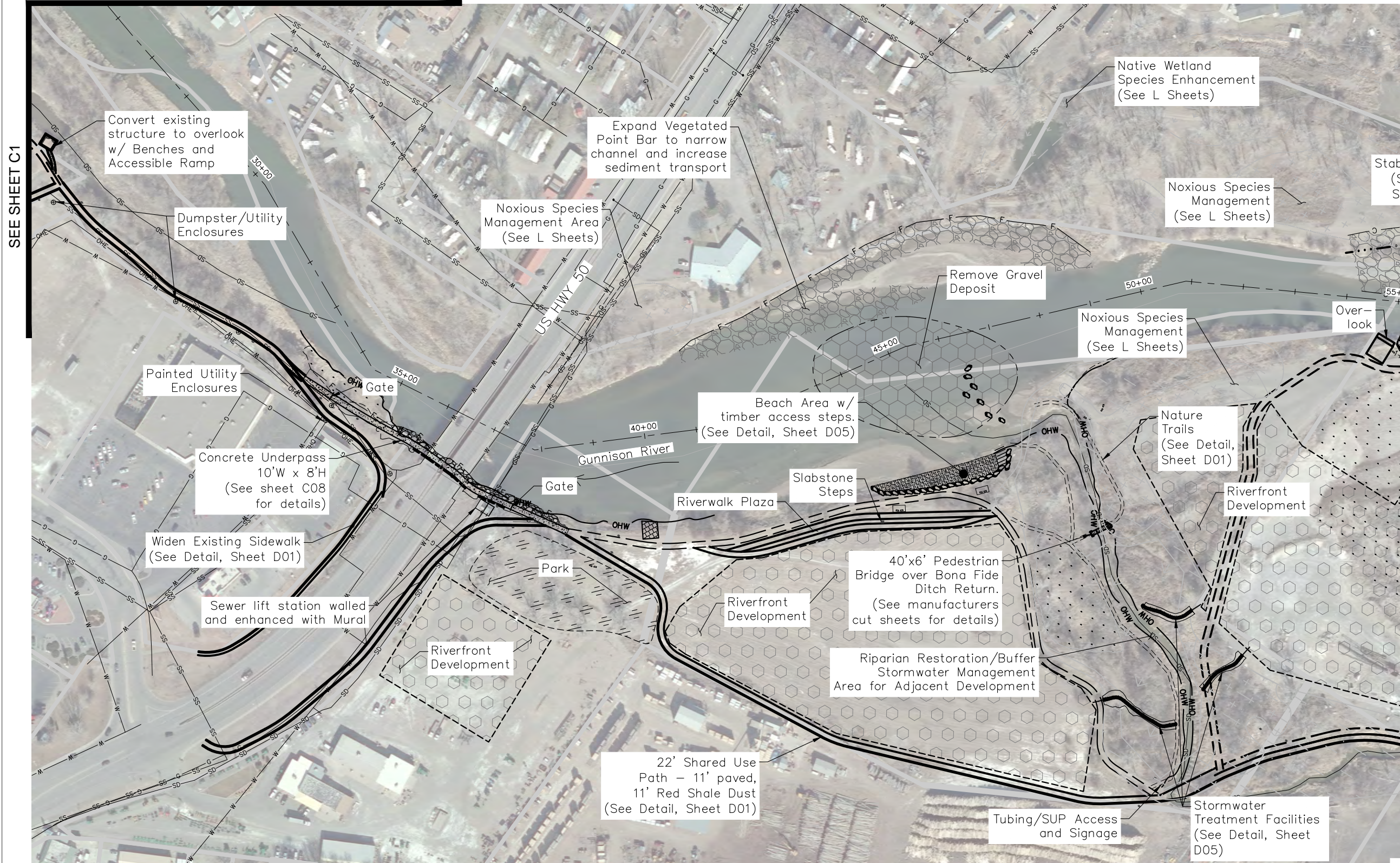
RiverRestoration
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PROJECT NAME AND ADDRESS

Delta Gateway Riverfront
Gunnison River
Delta, CO 81416

Project 38040	Sheet C1
Date JUNE 27, 2016	
Scale 1" = 100' (FULL SIZE)	

PRELIMINARY DESIGN - NOT FOR CONSTRUCTION



SEE SHEET C1

SEE SHEET C3

PROFESSIONAL ENGINEER STAMP



DELTA GATEWAY RIVERFRONT
 PRELIMINARY PLANNING AND ENGINEERING
 PLAN VIEW

1	DESIGN UPDATES	
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No.	REVISION/UPDATE	Date
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 Delta, CO 81416
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DESIGN FIRM NAME AND ADDRESS

RIVER RESTORATION

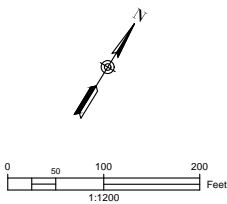
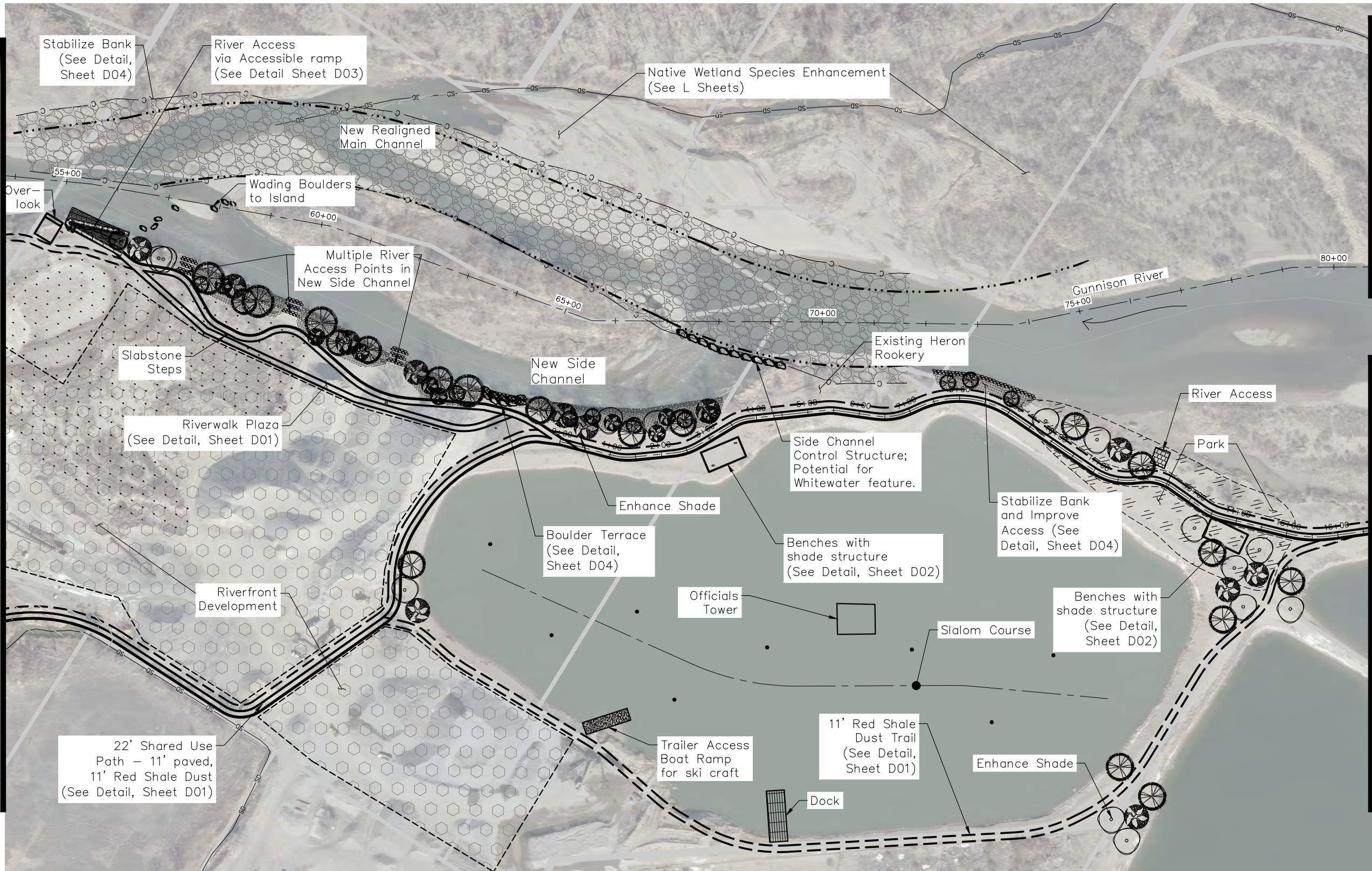
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Delta Gateway Riverfront
 Gunnison River
 Delta, CO 81416

Project 38040	Sheet C2
Date JUNE 27, 2016	
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DELTA GATEWAY RIVERFRONT
 PRELIMINARY PLANNING AND ENGINEERING
 PLAN VIEW

1	DESIGN UPDATES	
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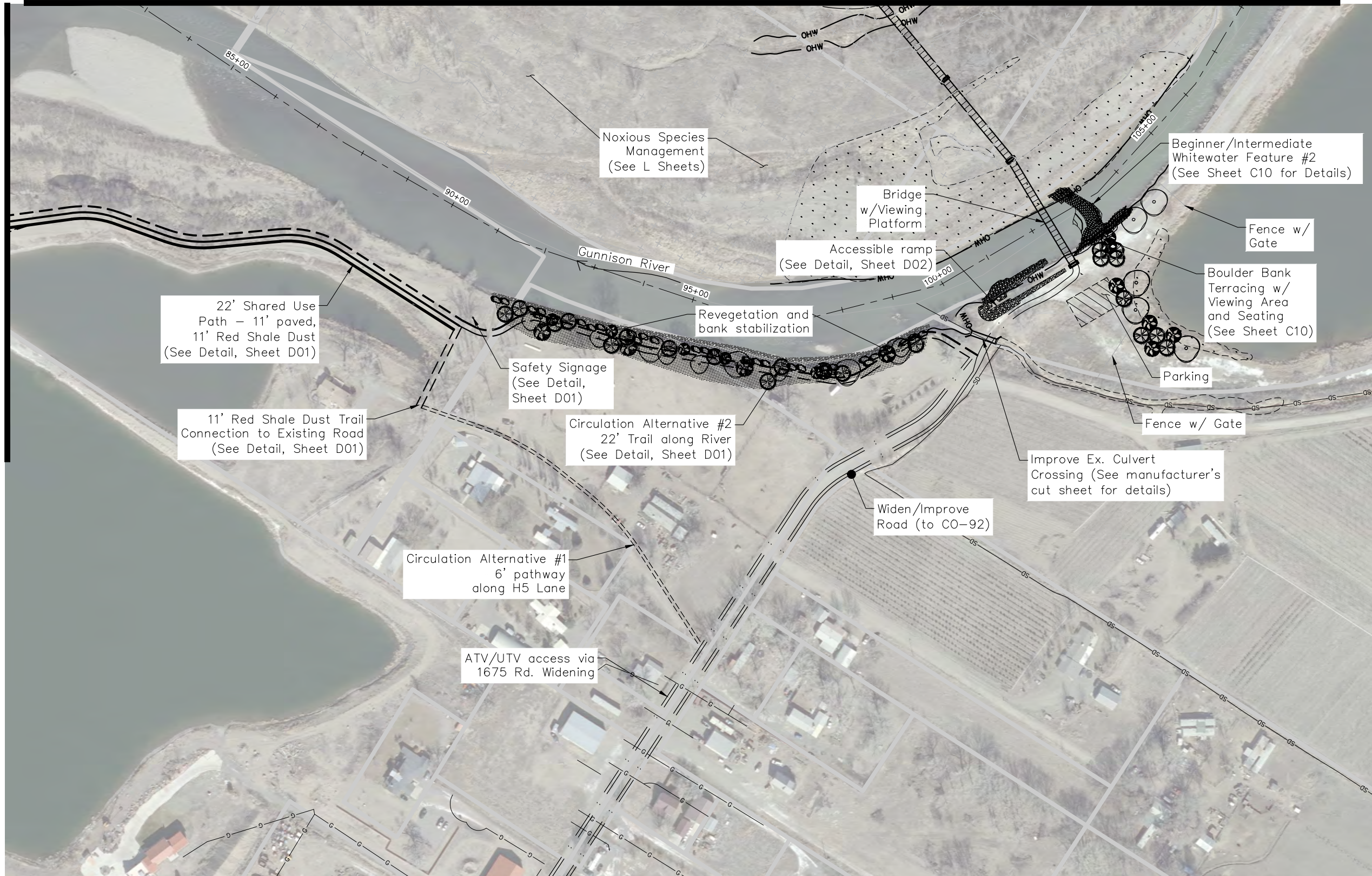
Delta Gateway Riverfront
 Gunnison River
 Delta, CO 81416

Project 38040	Sheet C3
Date JUNE 27, 2016	
Scale 1" = 100' (FULL SIZE)	

PRELIMINARY DESIGN - NOT FOR CONSTRUCTION

SEE SHEET C5

SEE SHEET C3



PROFESSIONAL ENGINEER STAMP



DELTA GATEWAY RIVERFRONT
PRELIMINARY PLANNING AND ENGINEERING
PLAN VIEW

1	DESIGN UPDATES	
No.	REVISION/UPDATE	Date

CLIENT NAME AND ADDRESS

City of
DELTA

City of Delta
360 Main Street
Delta, CO 81416
(970) 874-7566

DESIGN FIRM NAME AND ADDRESS

RIVER
RESTORATION

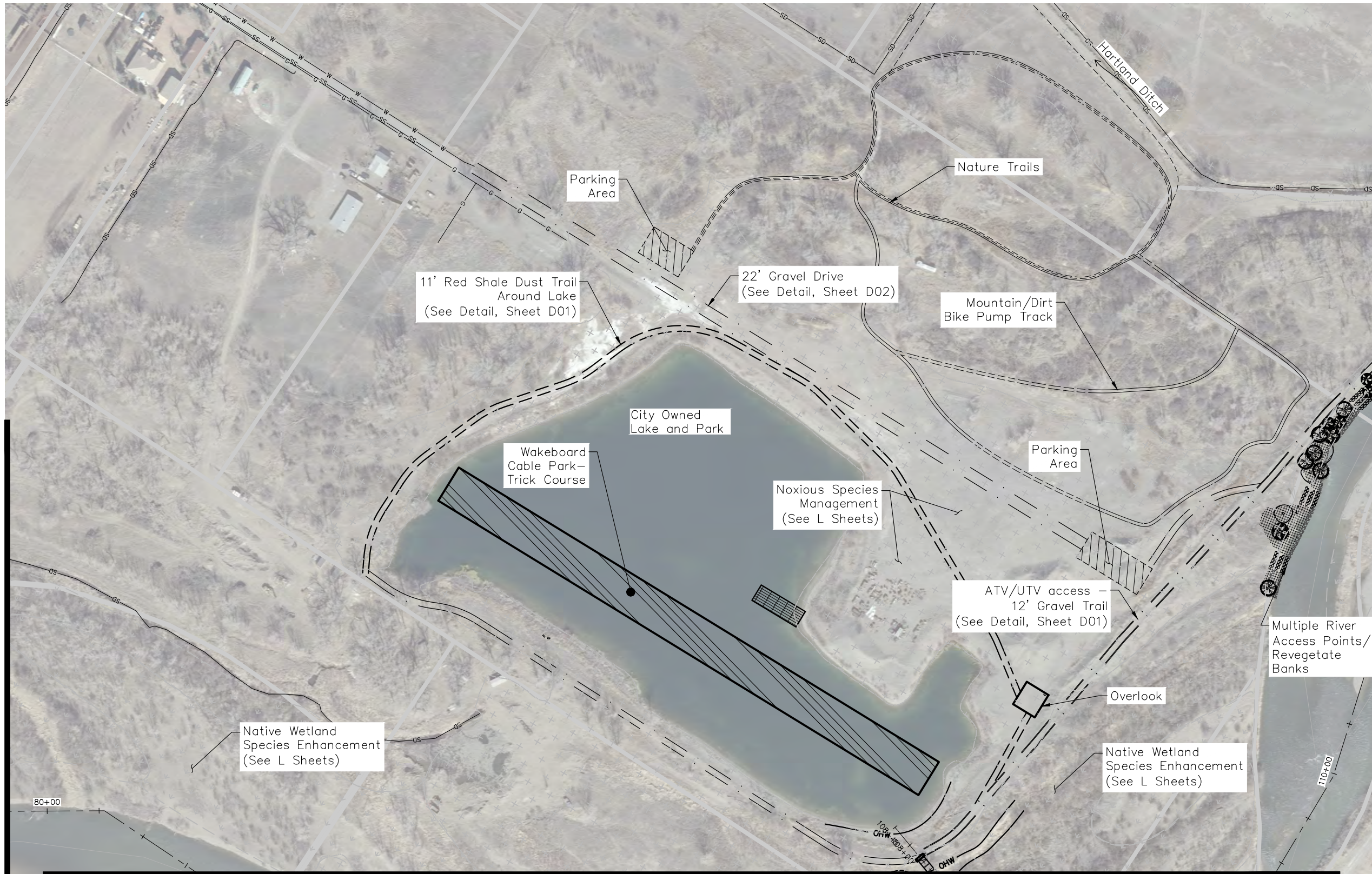
RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

PROJECT NAME AND ADDRESS

Delta Gateway Riverfront
Gunnison River
Delta, CO 81416

Project	38040	Sheet	C4
Date	JUNE 27, 2016		
Scale	1" = 100' (FULL SIZE)		

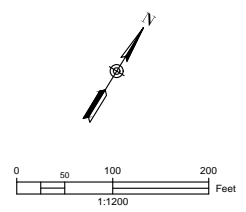
PRELIMINARY DESIGN - NOT FOR CONSTRUCTION



SEE SHEET C3

SEE SHEET C6

SEE SHEET C4



PROFESSIONAL ENGINEER STAMP



DELTA GATEWAY RIVERFRONT
 PRELIMINARY PLANNING AND ENGINEERING
 PLAN VIEW

1	DESIGN UPDATES	
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No.	REVISION/UPDATE	Date
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CLIENT NAME AND ADDRESS

City of Delta

City of Delta
 360 Main Street
 Delta, CO 81416
 (970) 874-7566

DESIGN FIRM NAME AND ADDRESS

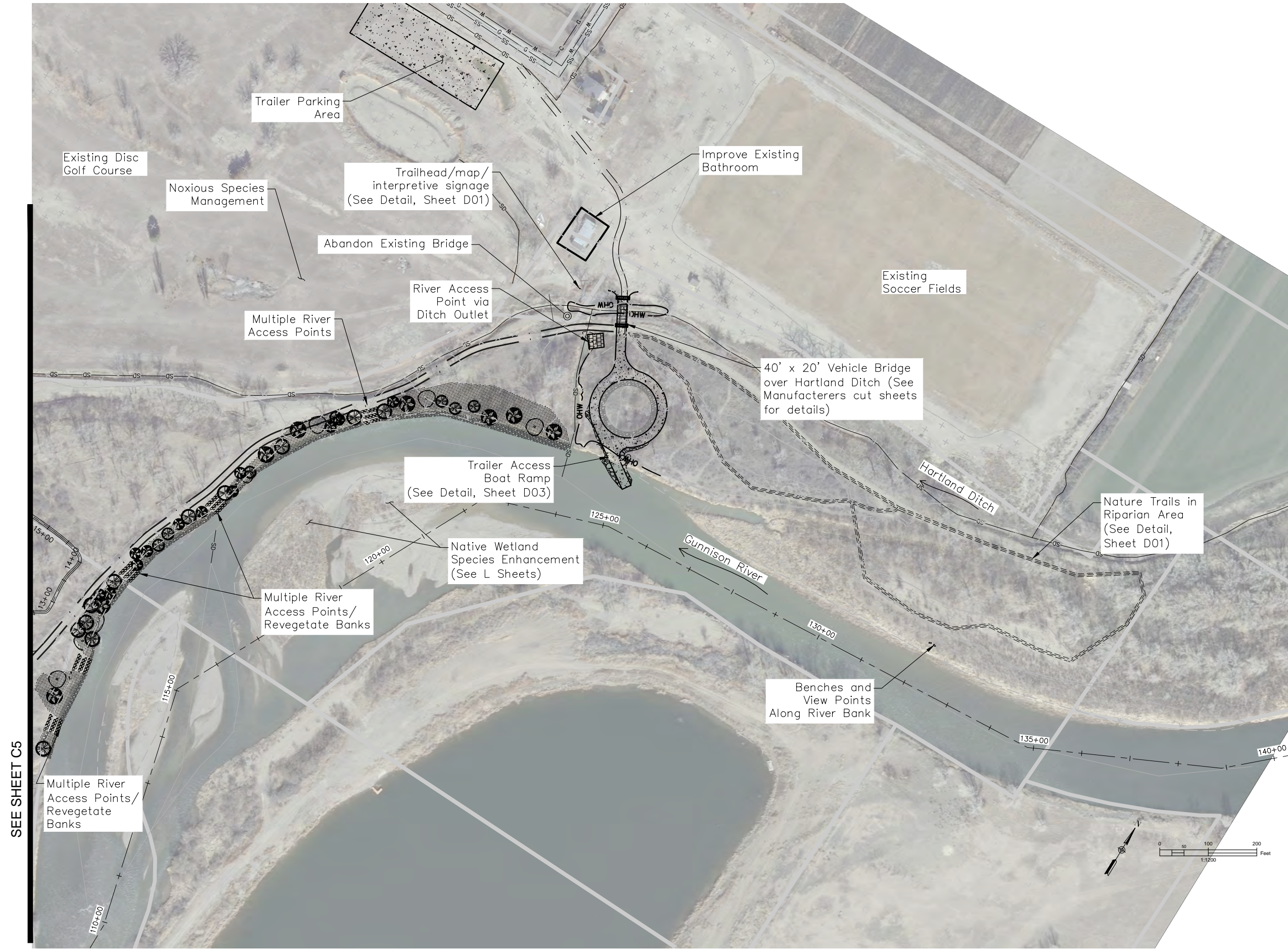
RiverRestoration
 P.O. Box 248
 Carbondale, CO 81623
 www.RiverRestoration.org

PROJECT NAME AND ADDRESS

Delta Gateway Riverfront
 Gunnison River
 Delta, CO 81416

Project	38040	Sheet	C5
Date	JUNE 27, 2016		
Scale	1" = 100' (FULL SIZE)		

PRELIMINARY DESIGN - NOT FOR CONSTRUCTION



SEE SHEET C5

PROFESSIONAL ENGINEER STAMP



DELTA GATEWAY RIVERFRONT
 PRELIMINARY PLANNING AND ENGINEERING
 PLAN VIEW

1	DESIGN UPDATES	
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No.	REVISION/UPDATE	Date
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CLIENT NAME AND ADDRESS

City of
DELTA

City of Delta
 360 Main Street
 Delta, CO 81416
 (970) 874-7566

DESIGN FIRM NAME AND ADDRESS

RIVER
 RESTORATION

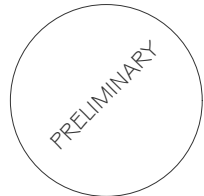
RiverRestoration
 P.O. Box 248
 Carbondale, CO 81623
 www.RiverRestoration.org

PROJECT NAME AND ADDRESS

Delta Gateway Riverfront
 Gunnison River
 Delta, CO 81416

Project	38040	Sheet	C6
Date	JUNE 27, 2016		
Scale	1" = 100' (FULL SIZE)		

PRELIMINARY DESIGN - NOT FOR CONSTRUCTION



DELTA GATEWAY RIVERFRONT
 PRELIMINARY PLANNING AND ENGINEERING
 WHITEWATER FEATURE #1
 PLAN AND SECTION

1	DESIGN UPDATES	
No.	REVISION/UPDATE	Date

CLIENT NAME AND ADDRESS

City of
DELTA

City of Delta
 360 Main Street
 Delta, CO 81416
 (970) 874-7566

DESIGN FIRM NAME AND ADDRESS

RIVER
 RESTORATION

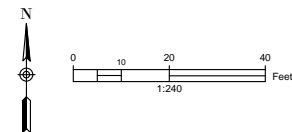
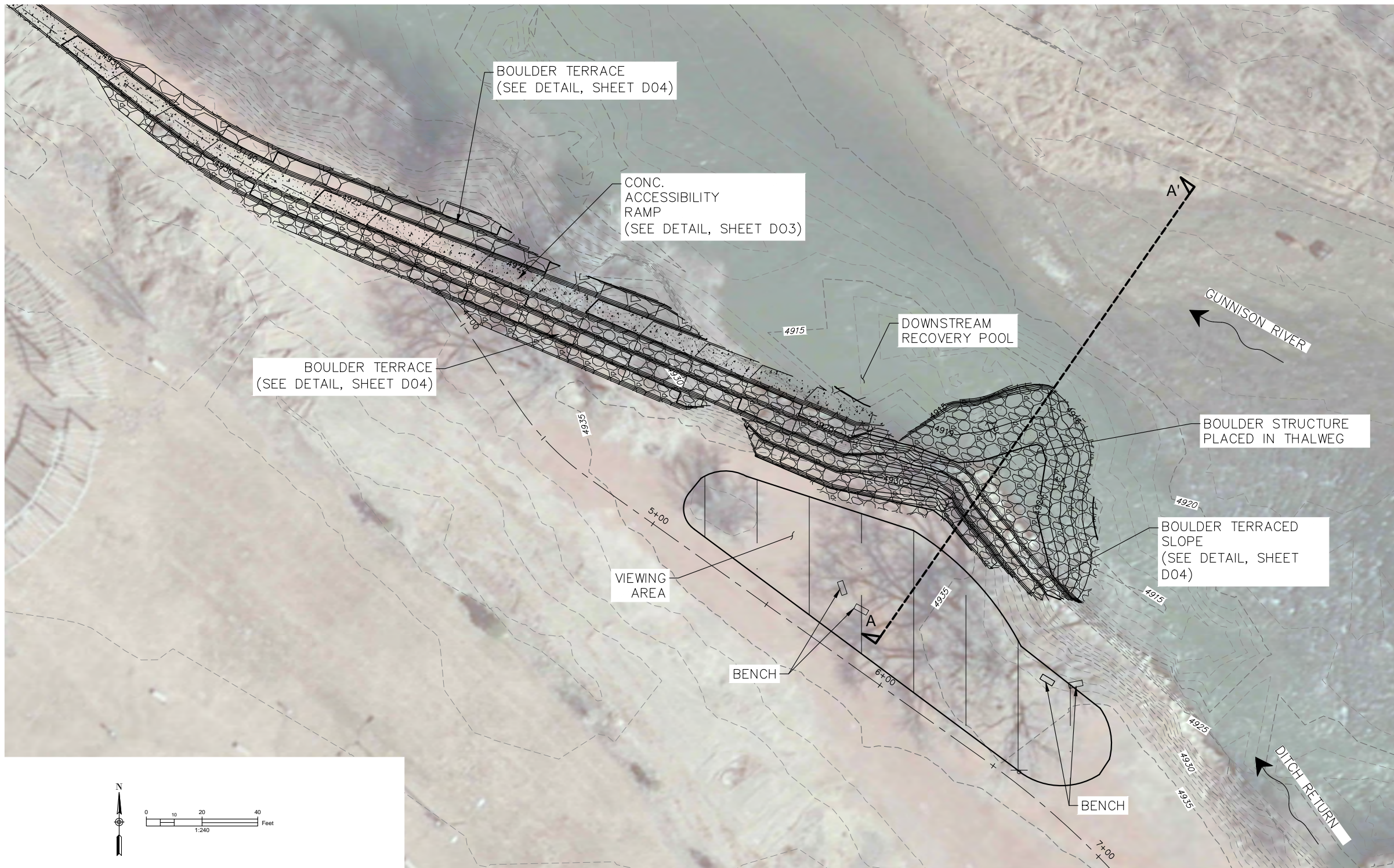
RiverRestoration
 P.O. Box 248
 Carbondale, CO 81623
 www.RiverRestoration.org

PROJECT NAME AND ADDRESS

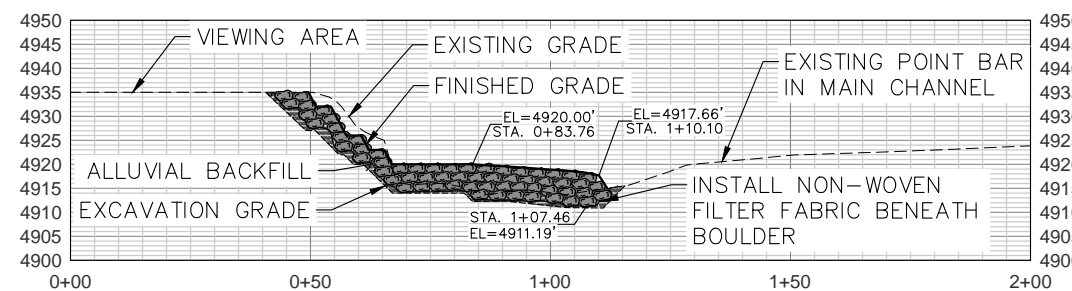
Delta Gateway Riverfront
 Gunnison River
 Delta, CO 81416

Project	38040	Sheet	C7
Date	JUNE 27, 2016		
Scale	1"=30' (FULL SIZE)		

PRELIMINARY DESIGN - NOT FOR CONSTRUCTION

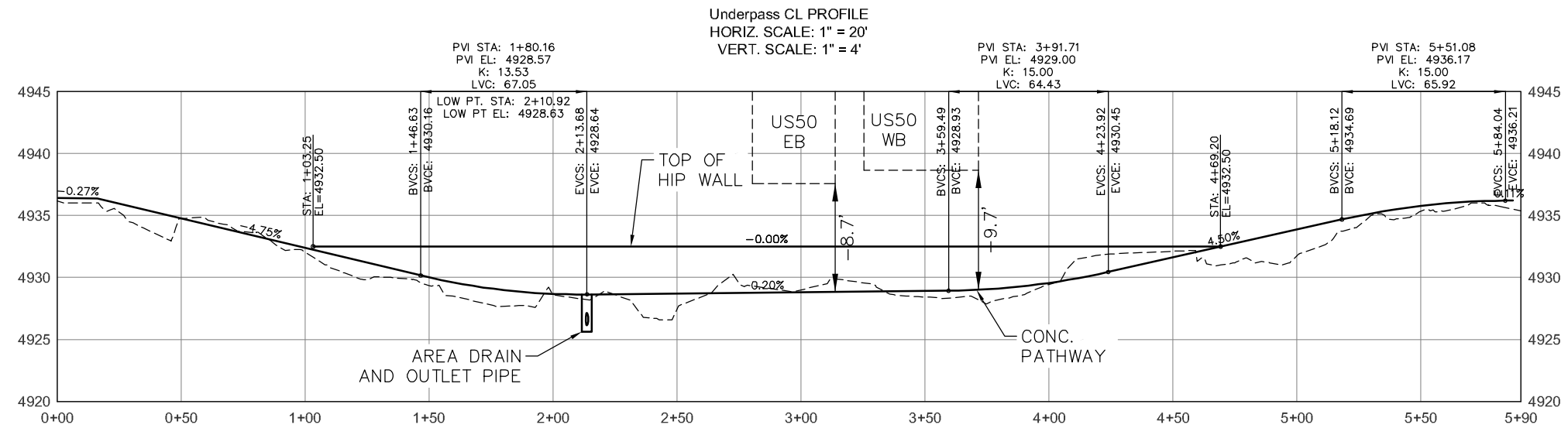
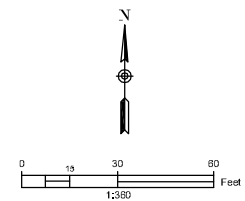
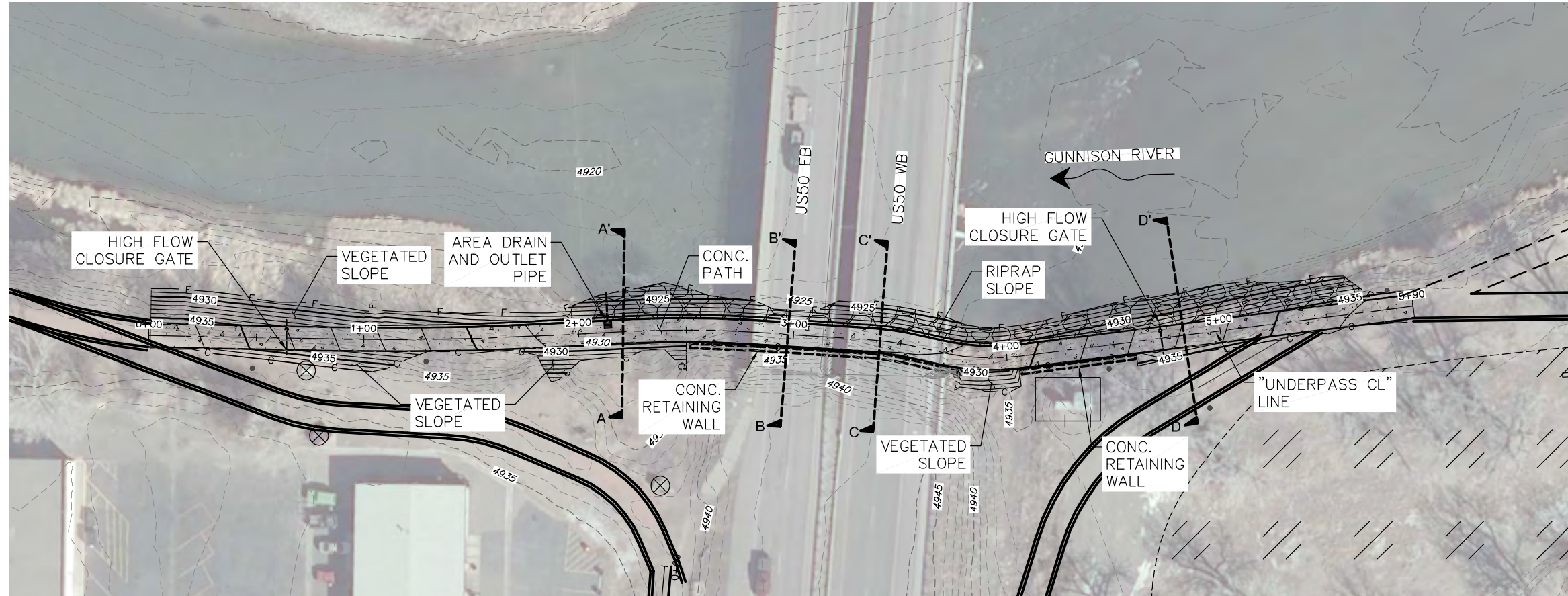


Whitewater Park #1 Section A-A'
 HORIZ. SCALE: 1" = 20'
 VERT. SCALE: 1" = 20'





DELTA GATEWAY RIVERFRONT
 PRELIMINARY PLANNING AND ENGINEERING
 US-50 UNDERPASS
 PLAN AND PROFILE



PRELIMINARY DESIGN - NOT FOR CONSTRUCTION

1	DESIGN UPDATES	
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No.	REVISION/UPDATE	Date
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CLIENT NAME AND ADDRESS

City of Delta
 360 Main Street
 Delta, CO 81416
 (970) 874-7566

DESIGN FIRM NAME AND ADDRESS

RiverRestoration
 P.O. Box 245
 Carbondale, CO 81623
 www.RiverRestoration.org

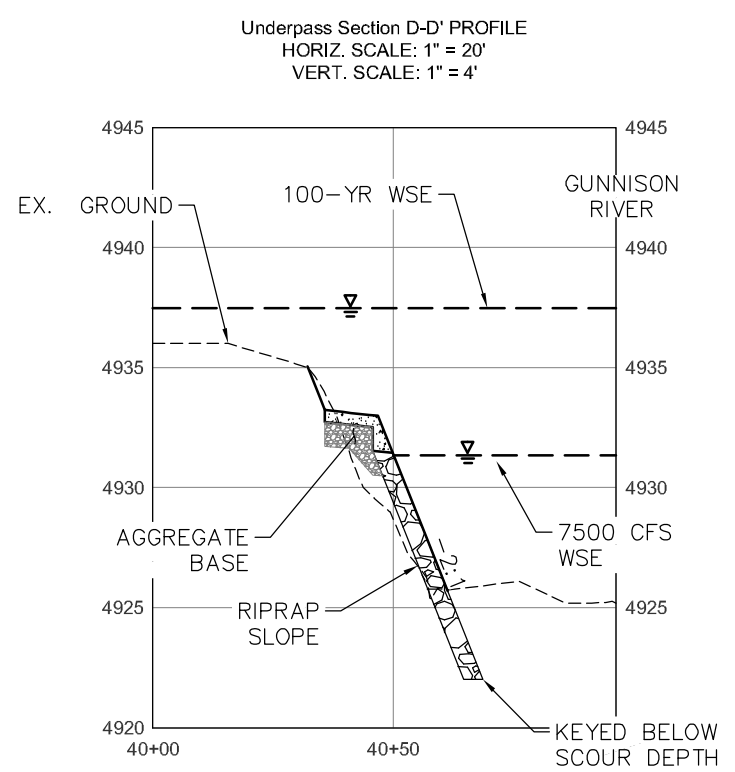
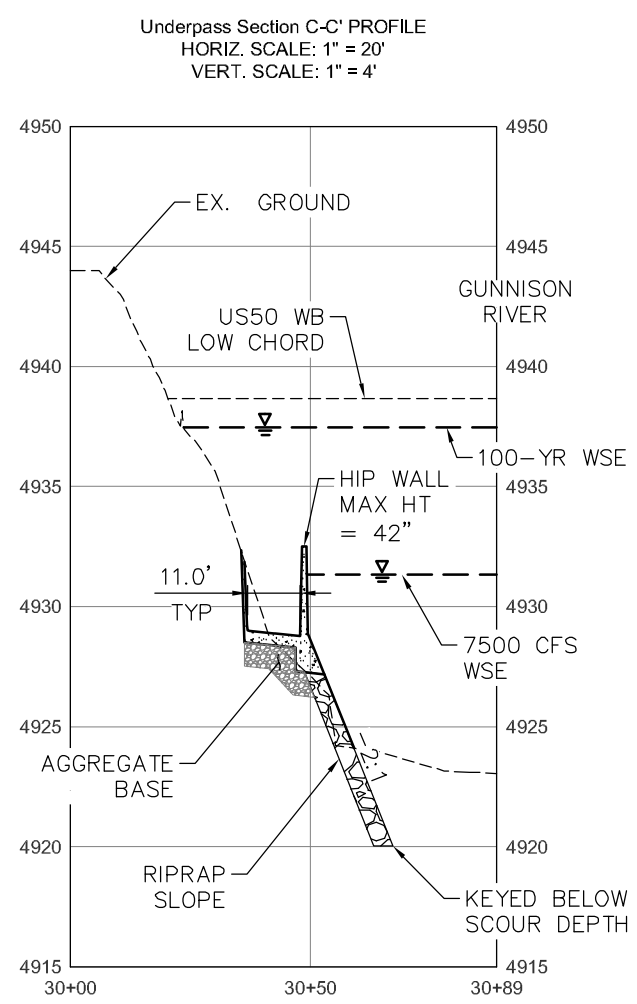
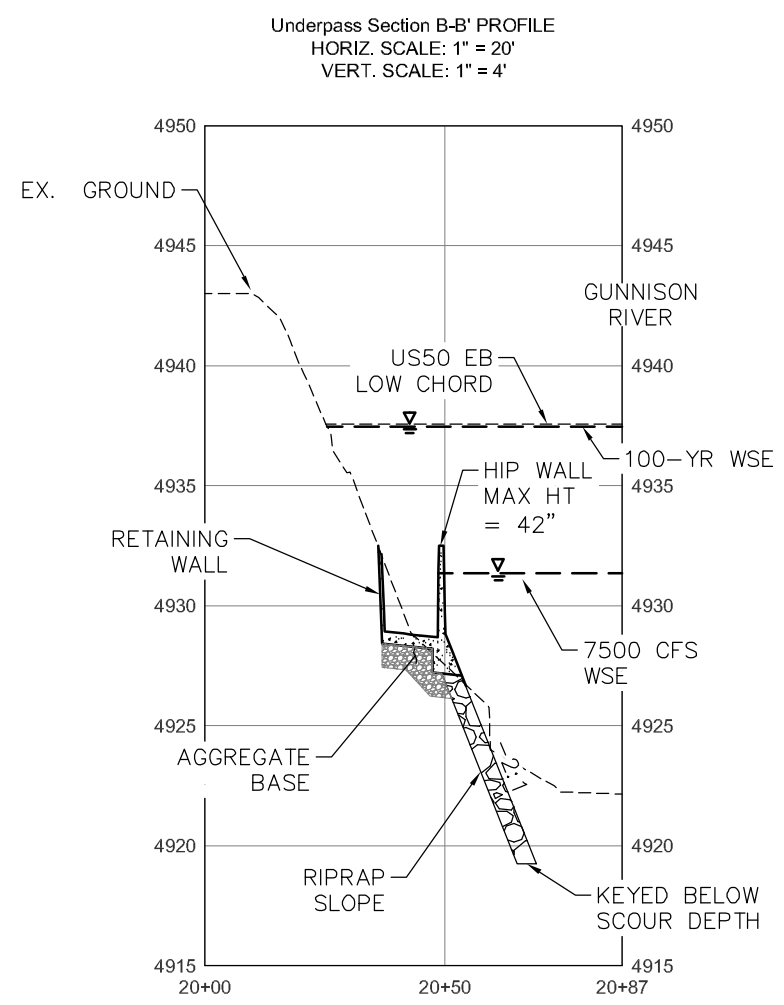
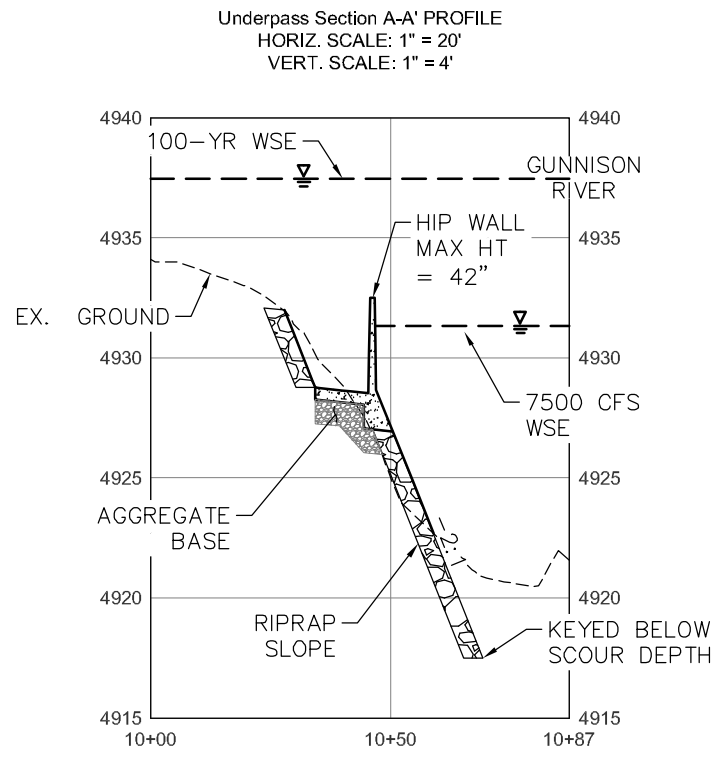
PROJECT NAME AND ADDRESS

Delta Gateway Riverfront
 Gunnison River
 Delta, CO 81416

Project 38040	Sheet C8
Date JUNE 27, 2016	
Scale 1" = 30' (FULL SIZE)	



DELTA GATEWAY RIVERFRONT
 PRELIMINARY PLANNING AND ENGINEERING
 US-50 UNDERPASS -
 TYPICAL SECTIONS



PRELIMINARY DESIGN - NOT FOR CONSTRUCTION

1	DESIGN UPDATES	
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No.	REVISION/UPDATE	Date
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CLIENT NAME AND ADDRESS

City of Delta
 360 Main Street
 Delta, CO 81416
 (970) 874-7566

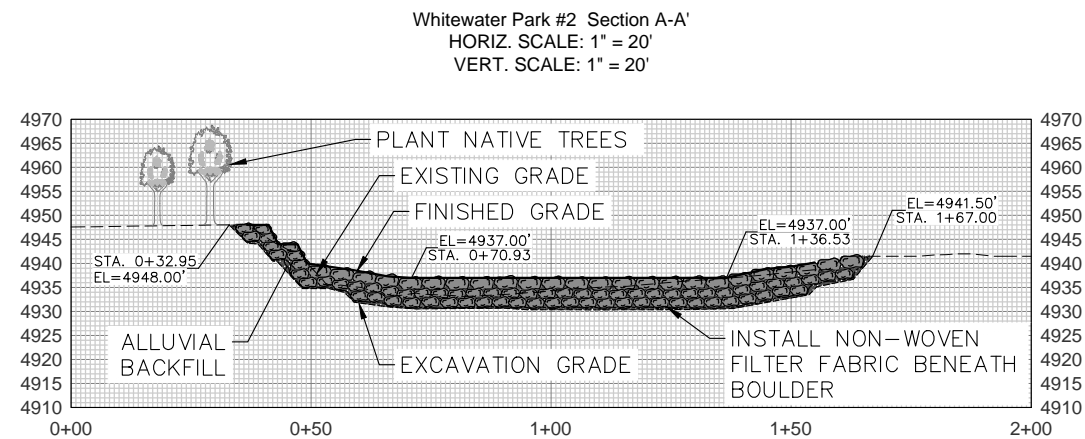
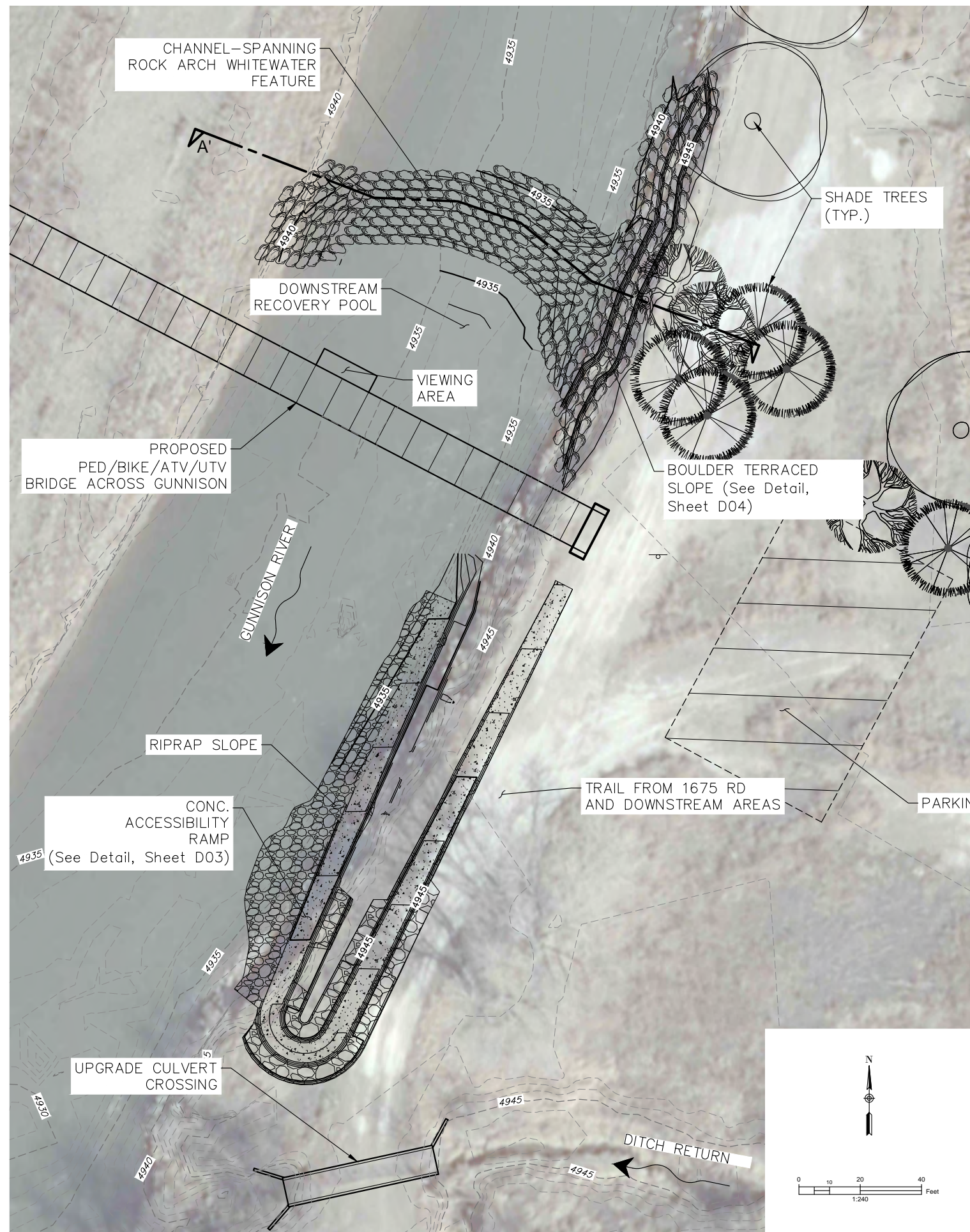
DESIGN FIRM NAME AND ADDRESS

RiverRestoration
 P.O. Box 245
 Carbondale, CO 81623
 www.RiverRestoration.org

PROJECT NAME AND ADDRESS

Delta Gateway Riverfront
 Gunnison River
 Delta, CO 81416

Project	38040	Sheet	C9
Date	JUNE 27, 2016		
Scale	1" = 30' (FULL SIZE)		



PROFESSIONAL ENGINEER STAMP



DELTA GATEWAY RIVERFRONT
 PRELIMINARY PLANNING AND ENGINEERING
 WHITEWATER FEATURE #2
 PLAN AND SECTION

1	DESIGN UPDATES	
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No.	REVISION/UPDATE	Date
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CLIENT NAME AND ADDRESS

City of Delta

City of Delta
 360 Main Street
 Delta, CO 81416
 (970) 874-7566

DESIGN FIRM NAME AND ADDRESS

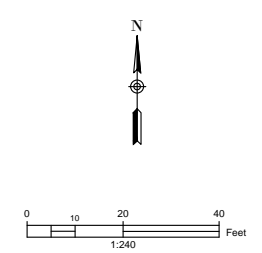
RiverRestoration
 P.O. Box 248
 Carbondale, CO 81623
 www.RiverRestoration.org

PROJECT NAME AND ADDRESS

Delta Gateway Riverfront
 Gunnison River
 Delta, CO 81416

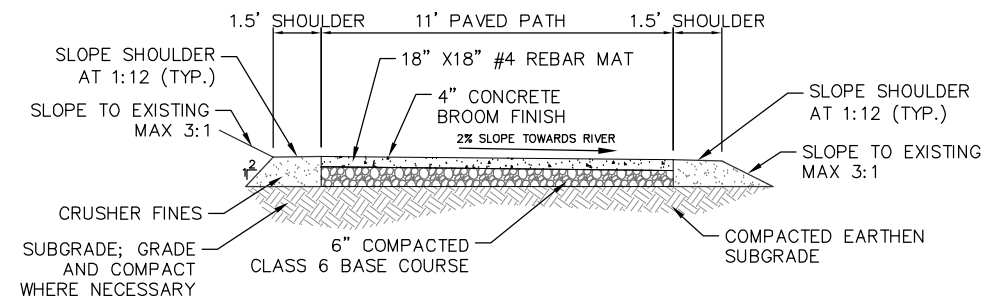
Project 38040	Sheet C10
Date JUNE 27, 2016	
Scale 1"=30' (FULL SIZE)	

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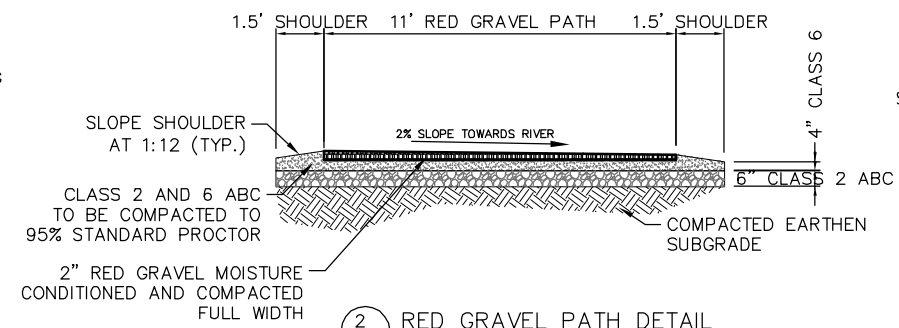


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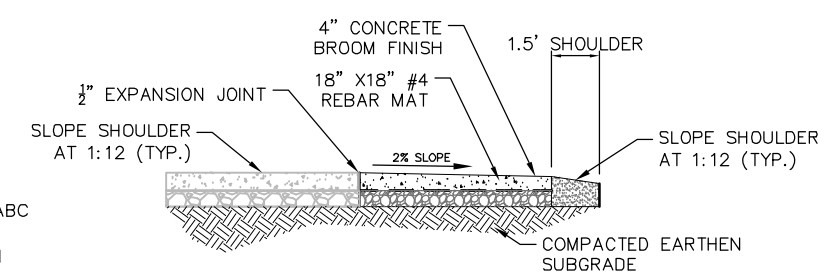
DELTA GATEWAY RIVERFRONT
 PRELIMINARY PLANNING AND ENGINEERING
 TRAIL, PATHWAY AND STEP DETAILS



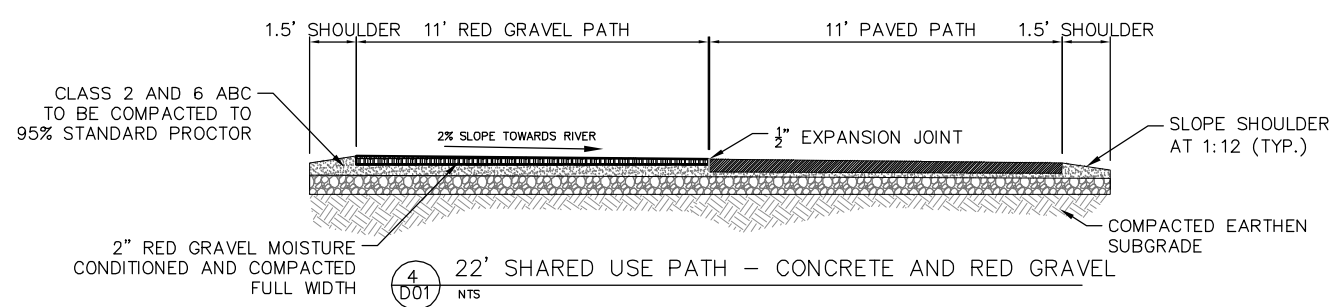
1 D01 CONCRETE PATH DETAIL
 NTS



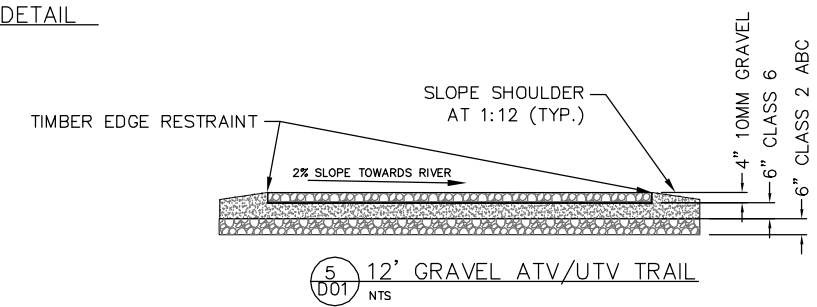
2 D01 RED GRAVEL PATH DETAIL
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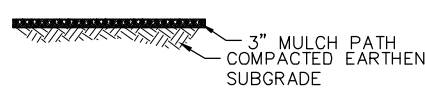
3 D01 EXISTING CITY SIDEWALK WIDENING
 NTS



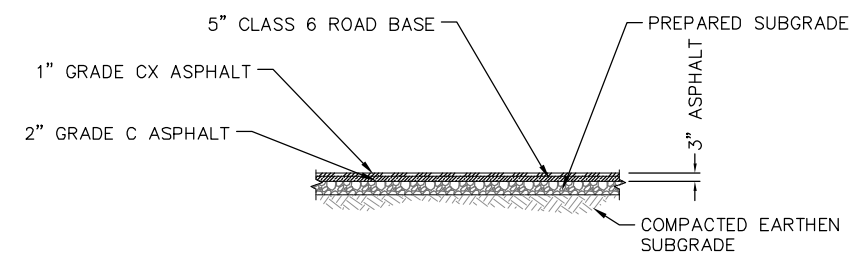
4 D01 22' SHARED USE PATH - CONCRETE AND RED GRAVEL
 NTS



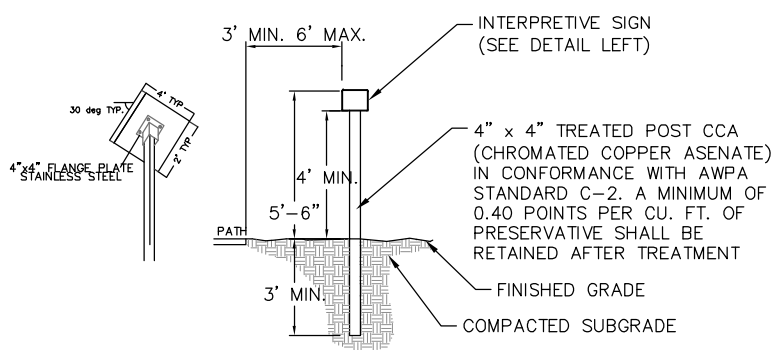
5 D01 12' GRAVEL ATV/UTV TRAIL
 NTS



6 D01 NATURE TRAIL SECTION
 NTS

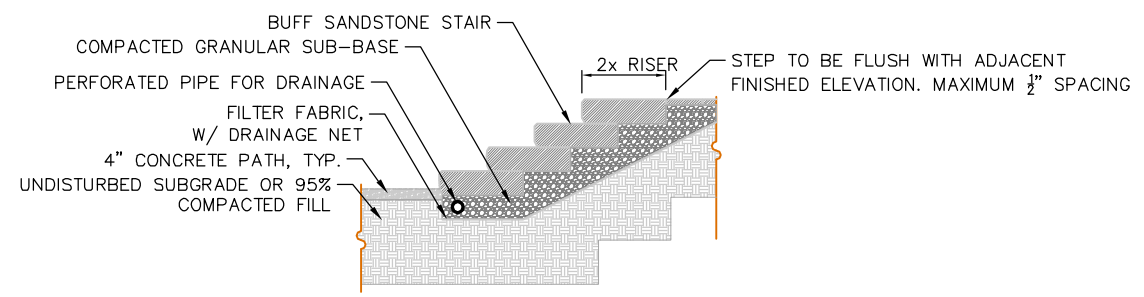


7 D01 PARKING LOT PAVEMENT SECTION
 NTS



SIGN NOTES:
 A HEX. HEAD BOLT WITH NUT & WASHERS SHALL BE USED TO FASTEN THE SIGN TO THE WOOD POST. NUT SHALL BE COUNTER-SUNK IN WOOD POST.
 BOLT HEADS & WASHERS ON THE PANEL FACE SHALL BE DIPPED, PAINTED, OR COVERED WITH REFLECTIVE SHEETING TO MATCH THE BACKGROUND COLOR OF THE SIGN.

8 D01 INTERPRETIVE SIGN AND POST
 NTS



9 D01 SLABSTONE STEPS TYP.
 NTS

PRELIMINARY DESIGN - NOT FOR CONSTRUCTION

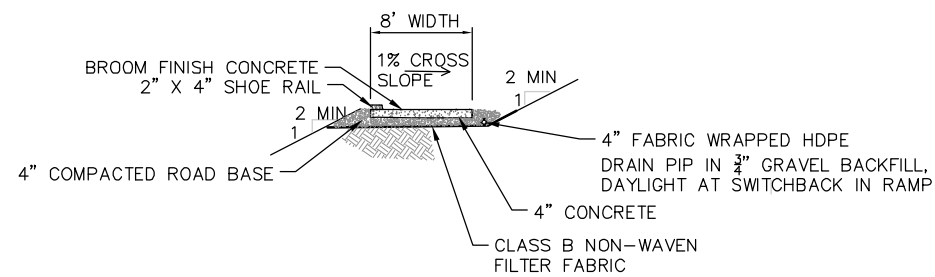
1	DESIGN UPDATES	
No.	REVISION/UPDATE	Date

CLIENT NAME AND ADDRESS
City of Delta
 City of Delta
 360 Main Street
 Delta, CO 81416
 (970) 874-7566

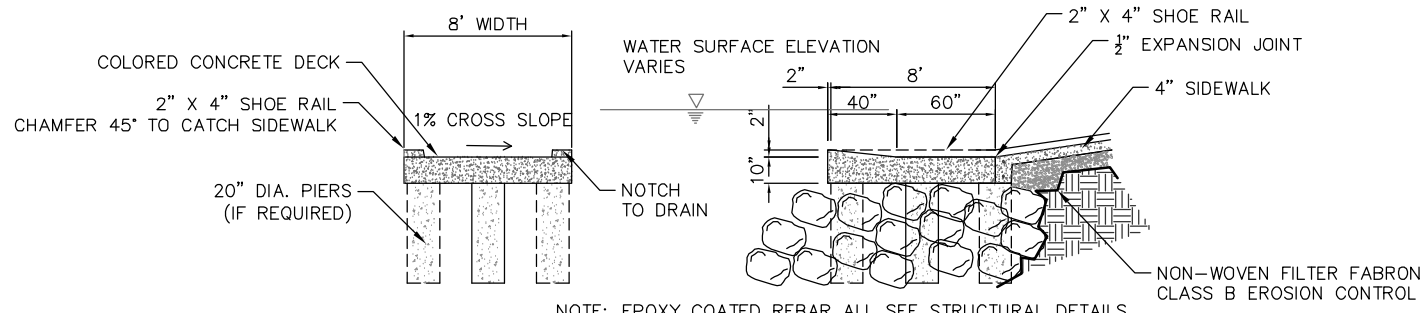
DESIGN FIRM NAME AND ADDRESS
RIVER
 RiverRestoration
 P.O. Box 245
 Carbondale, CO 81623
 www.RiverRestoration.org

PROJECT NAME AND ADDRESS
 Delta Gateway Riverfront
 Gunnison River
 Delta, CO 81416

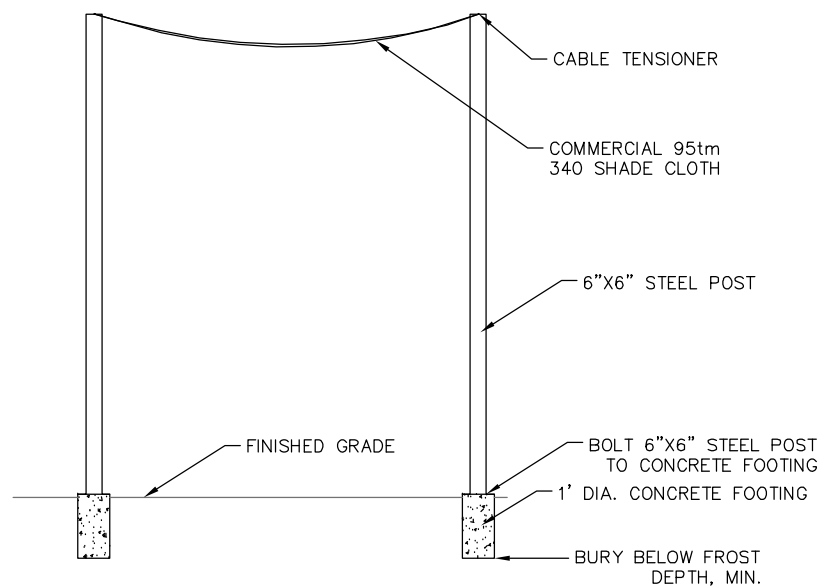
Project	38040	Sheet	D01
Date	JUNE 27, 2016		
Scale	N.T.S.		



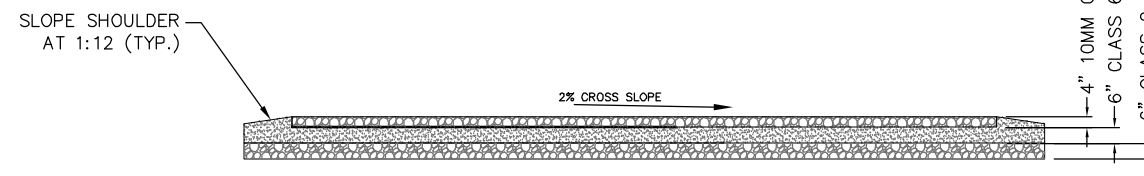
1 ACCESSIBLE CONCRETE RAMP DETAIL
D02 NTS



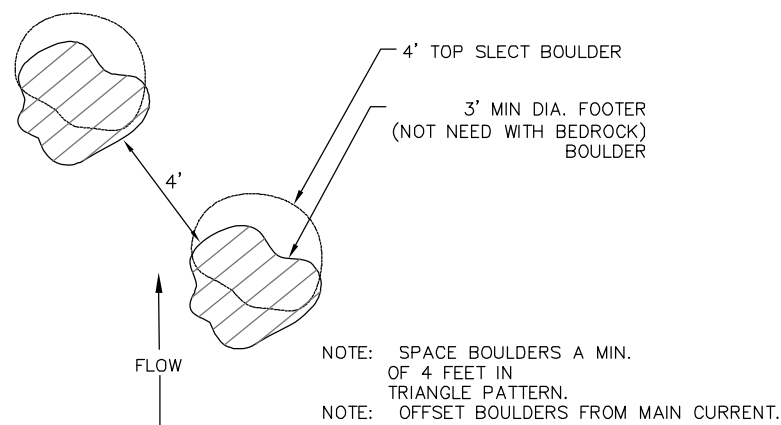
2 ACCESSIBLE CONCRETE RAMP PLATFORM DETAIL
D02 NTS



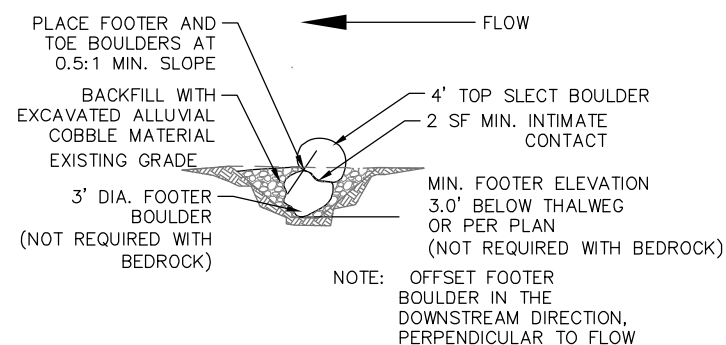
3 SHADE SAIL STRUCTURE DETAIL
D02 NTS



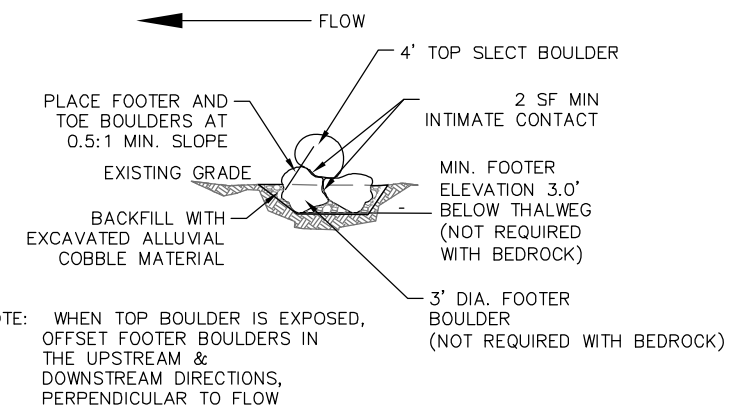
4 22' GRAVEL DRIVE
D02 NTS



5 HABITAT BOULDER CLUSTER PLAN VIEW DETAIL
D02 NTS



6 HABITAT BOULDER CLUSTER DETAIL
D02 NTS



PROFESSIONAL ENGINEER STAMP



DELTA GATEWAY RIVERFRONT
PRELIMINARY PLANNING AND ENGINEERING
MISCELLANEOUS SITE DETAILS

1	DESIGN UPDATES	
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No.	REVISION/UPDATE	Date
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CLIENT NAME AND ADDRESS

City of Delta
360 Main Street
Delta, CO 81416
(970) 874-7566

DESIGN FIRM NAME AND ADDRESS

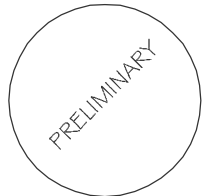
RiverRestoration
P.O. Box 245
Carbondale, CO 81623
www.RiverRestoration.org

PROJECT NAME AND ADDRESS

Delta Gateway Riverfront
Gunnison River
Delta, CO 81416

Project	38040	Sheet	
Date	JUNE 27, 2016		D02
Scale	N.T.S.		

PRELIMINARY DESIGN - NOT FOR CONSTRUCTION



DELTA GATEWAY RIVERFRONT
 PRELIMINARY PLANNING AND ENGINEERING
 BOAT RAMP DETAILS

1	DESIGN UPDATES	
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No.	REVISION/UPDATE	Date
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CLIENT NAME AND ADDRESS



City of Delta
 360 Main Street
 Delta, CO 81416
 (970) 874-7566

DESIGN FIRM NAME AND ADDRESS



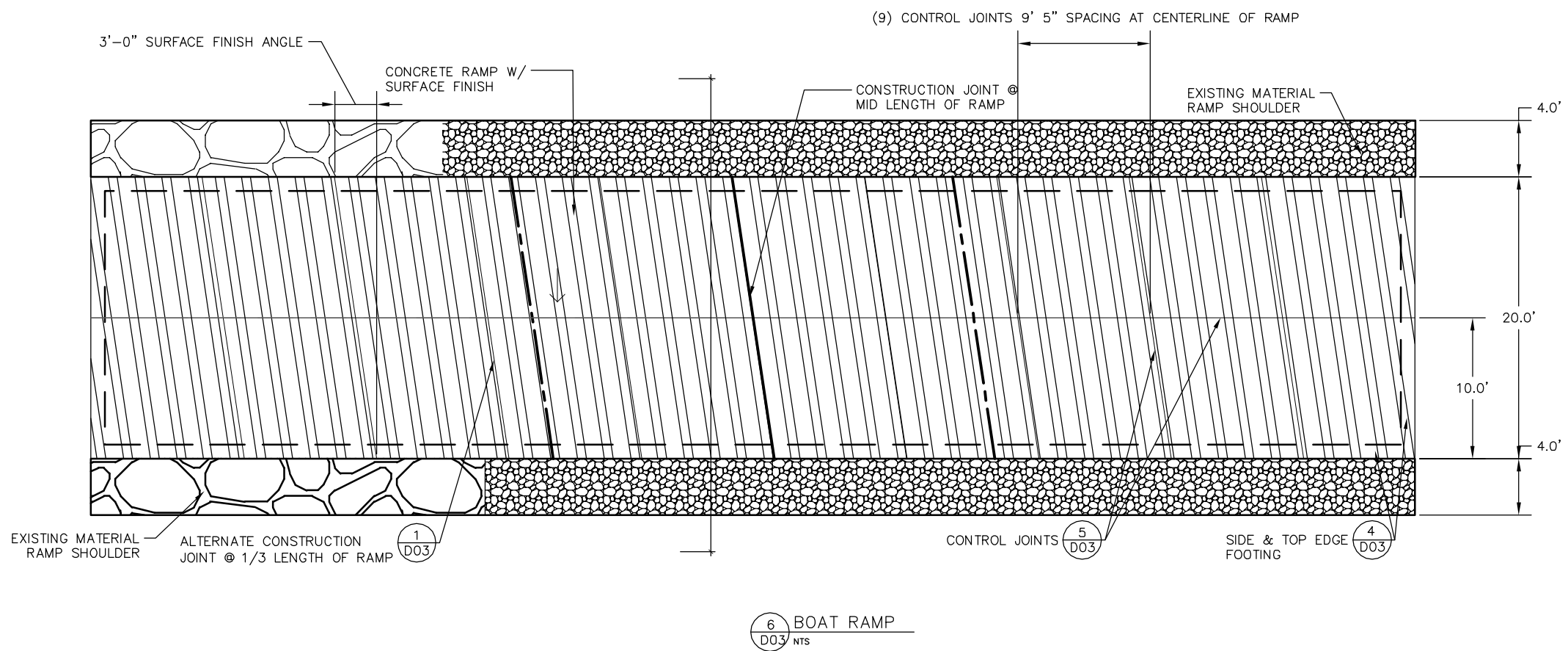
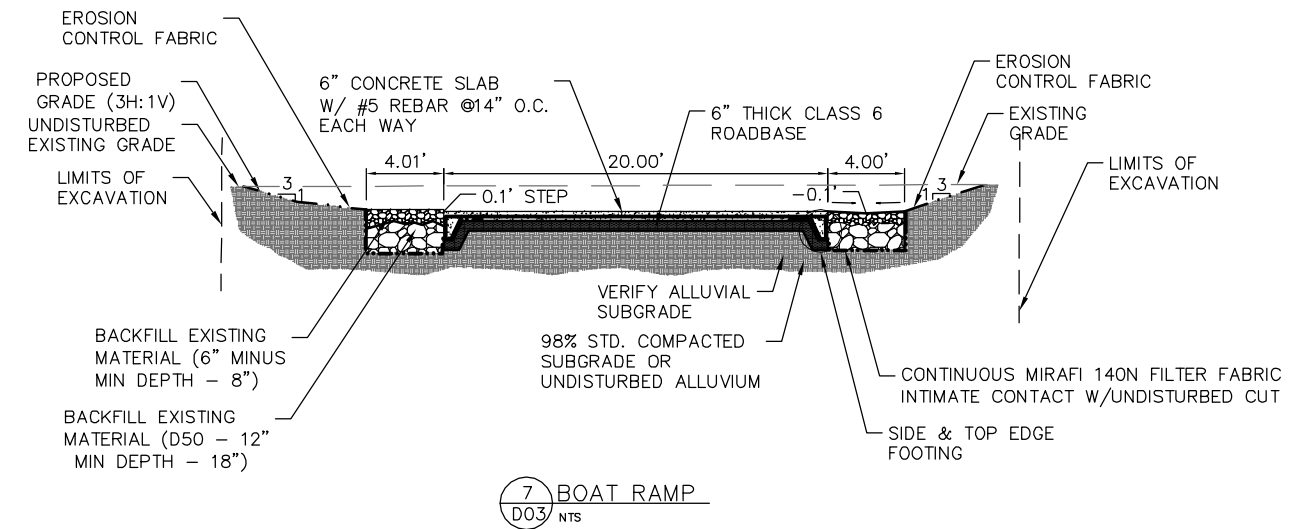
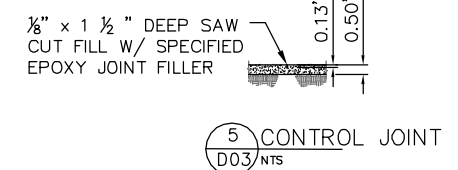
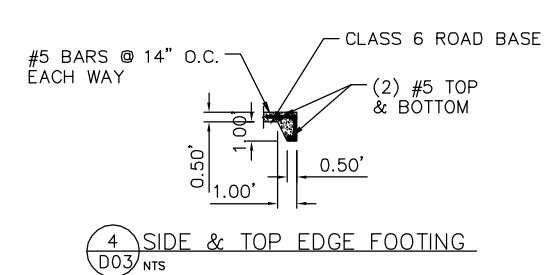
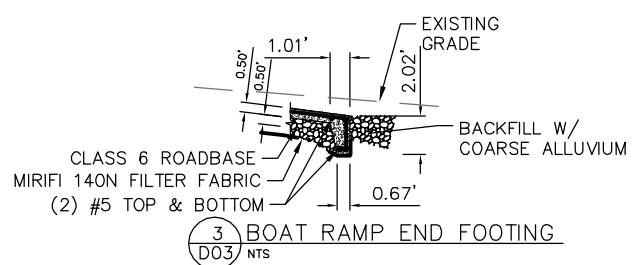
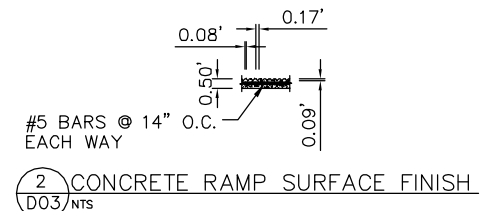
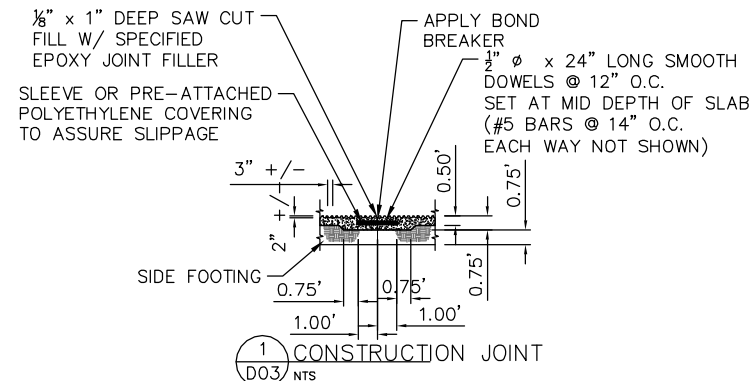
RiverRestoration
 P.O. Box 245
 Carbondale, CO 81623
 www.RiverRestoration.org

PROJECT NAME AND ADDRESS

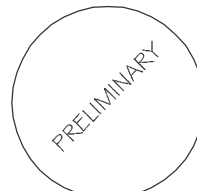
Delta Gateway Riverfront
 Gunnison River
 Delta, CO 81416

Project	38040	Sheet	D03
Date	JUNE 27, 2016		
Scale	N.T.S.		

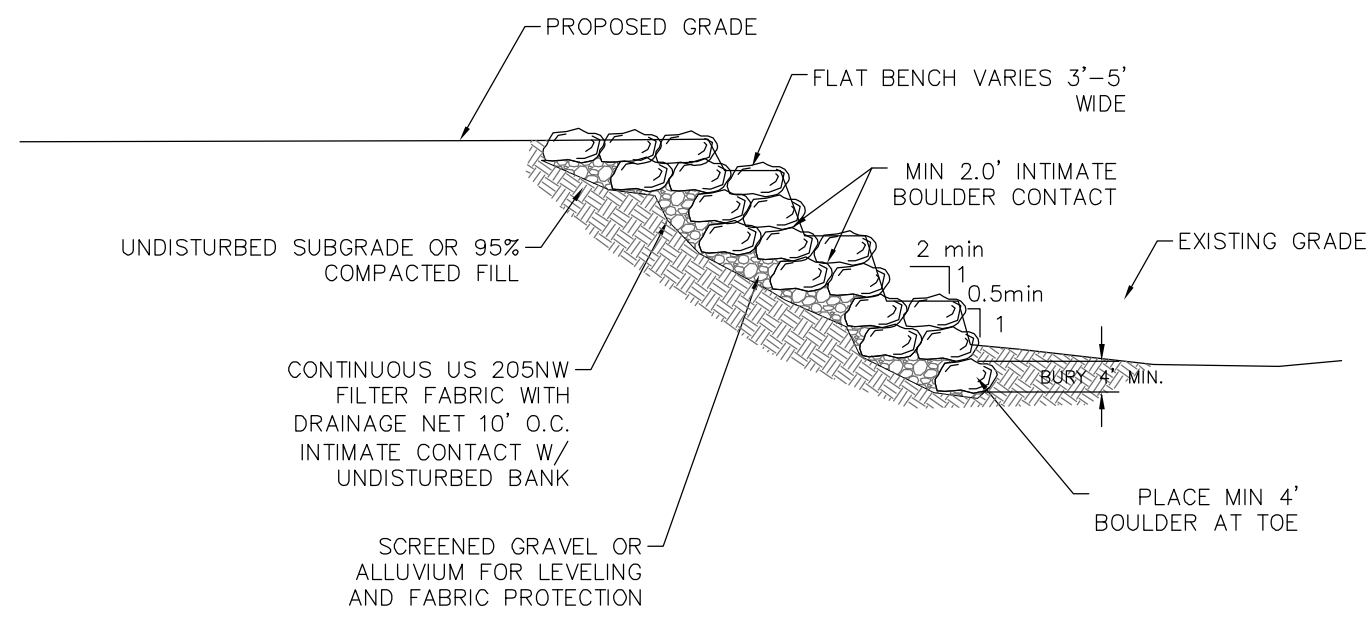
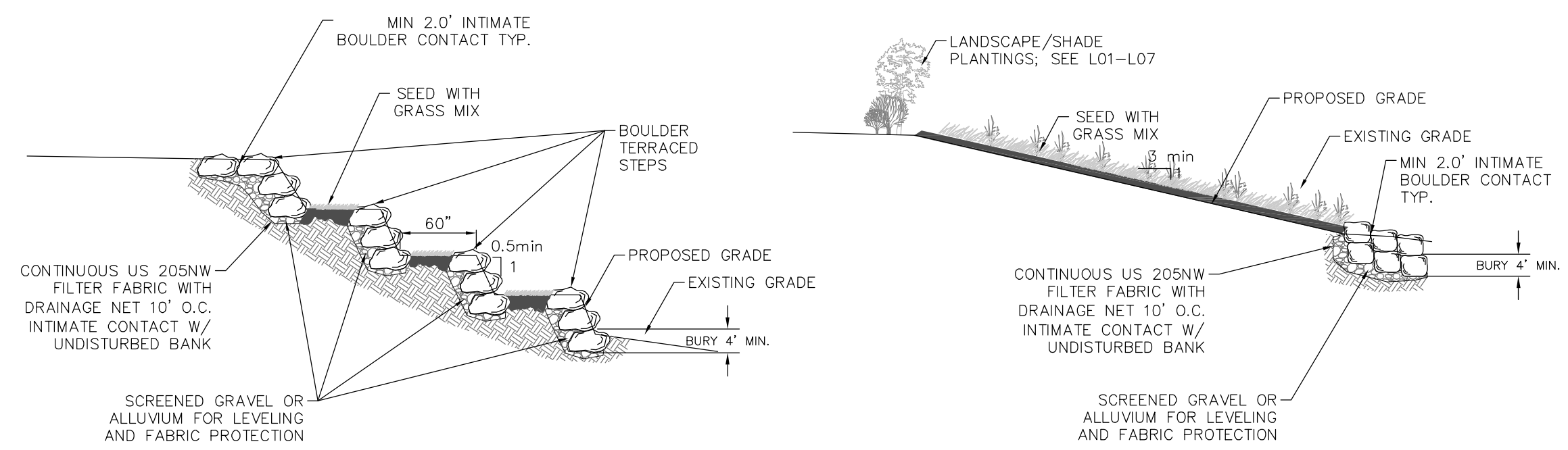
PRELIMINARY DESIGN - NOT FOR CONSTRUCTION



PRELIMINARY DESIGN - NOT FOR CONSTRUCTION



DELTA GATEWAY RIVERFRONT
 PRELIMINARY PLANNING AND ENGINEERING
 BANK TREATMENT DETAILS



PRELIMINARY DESIGN - NOT FOR CONSTRUCTION

1	DESIGN UPDATES	
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No.	REVISION/UPDATE	Date
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CLIENT NAME AND ADDRESS

City of
DELTA
 City of Delta
 360 Main Street
 Delta, CO 81416
 (970) 874-7566

DESIGN FIRM NAME AND ADDRESS

RiverRestoration
 P.O. Box 245
 Carbondale, CO 81623
 www.RiverRestoration.org

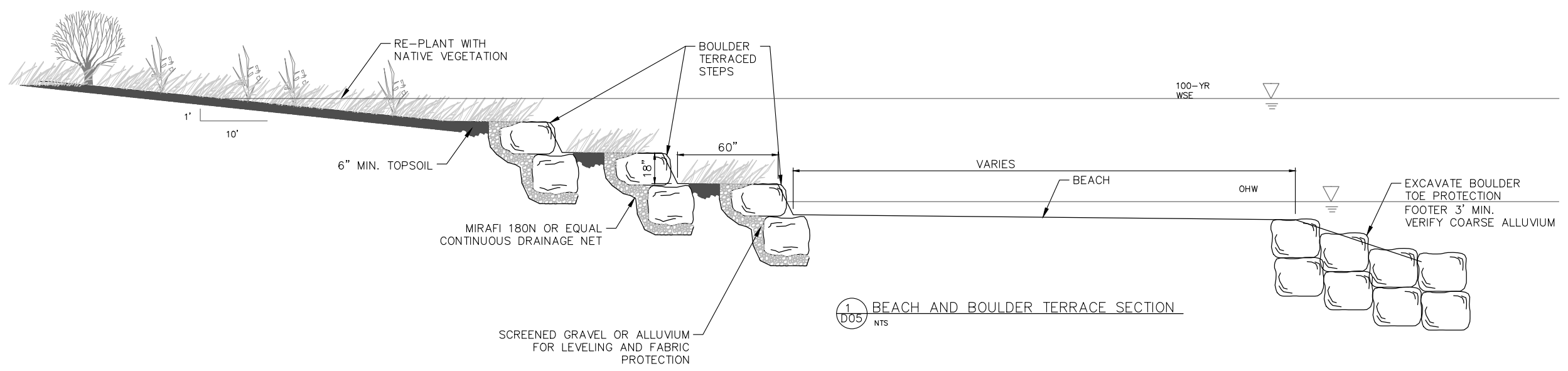
PROJECT NAME AND ADDRESS

Delta Gateway Riverfront
 Gunnison River
 Delta, CO 81416

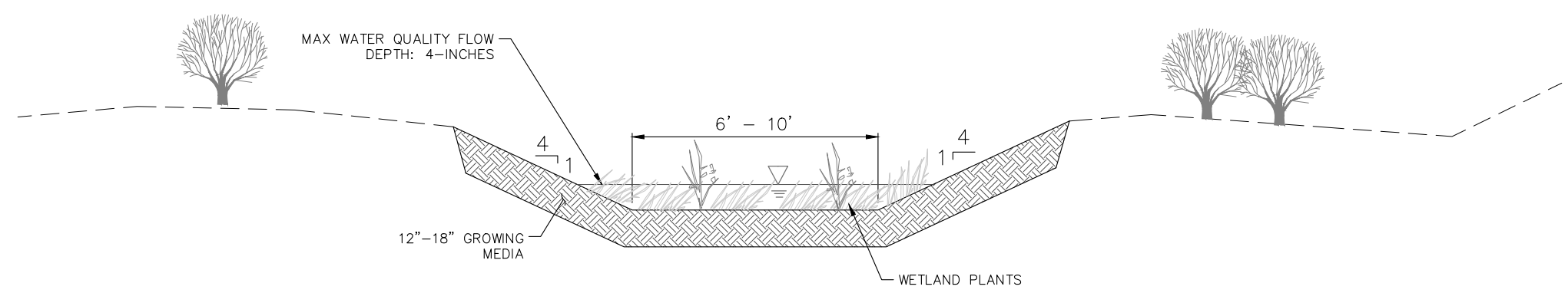
Project	38040	Sheet	D04
Date	JUNE 27, 2016		
Scale	N.T.S.		



DELTA GATEWAY RIVERFRONT
 PRELIMINARY PLANNING AND ENGINEERING
 MISCELLANEOUS SITE DETAILS



1
 D05
 NTS
 BEACH AND BOULDER TERRACE SECTION



2
 D05
 NTS
 WATER QUALITY SWALE - TYPICAL SECTION

PRELIMINARY DESIGN - NOT FOR CONSTRUCTION

1	DESIGN UPDATES	
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No.	REVISION/UPDATE	Date
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CLIENT NAME AND ADDRESS

City of Delta
 360 Main Street
 Delta, CO 81416
 (970) 874-7566

DESIGN FIRM NAME AND ADDRESS

RiverRestoration
 P.O. Box 248
 Carbondale, CO 81623
 www.RiverRestoration.org

PROJECT NAME AND ADDRESS




Delta Gateway Riverfront
 Gunnison River
 Delta, CO 81416

Project 38040	Sheet D05
Date JUNE 27, 2016	
Scale N.T.S.	



SEE SHEET L02

LEGEND

-  NOXIOUS AND INVASIVE SPECIES MANAGEMENT
-  NATIVE WETLAND AND RIPARIAN SPECIES
-  WETLAND MANAGEMENT
-  RIPARIAN ENHANCEMENT

NOTES:
SEE DETAILS, SHEET L07
SEE PLANT LISTS, SHEET L08

PROFESSIONAL ENGINEER STAMP



**DELTA GATEWAY RIVERFRONT
PRELIMINARY PLANNING AND ENGINEERING
PLANTING PLAN**

1	DESIGN UPDATES	
No.	REVISION/UPDATE	Date

CLIENT NAME AND ADDRESS

City of Delta



City of Delta
360 Main Street
Delta, CO 81416
(970) 874-7566

DESIGN FIRM NAME AND ADDRESS



RiverRestoration
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Carbondale, CO 81623
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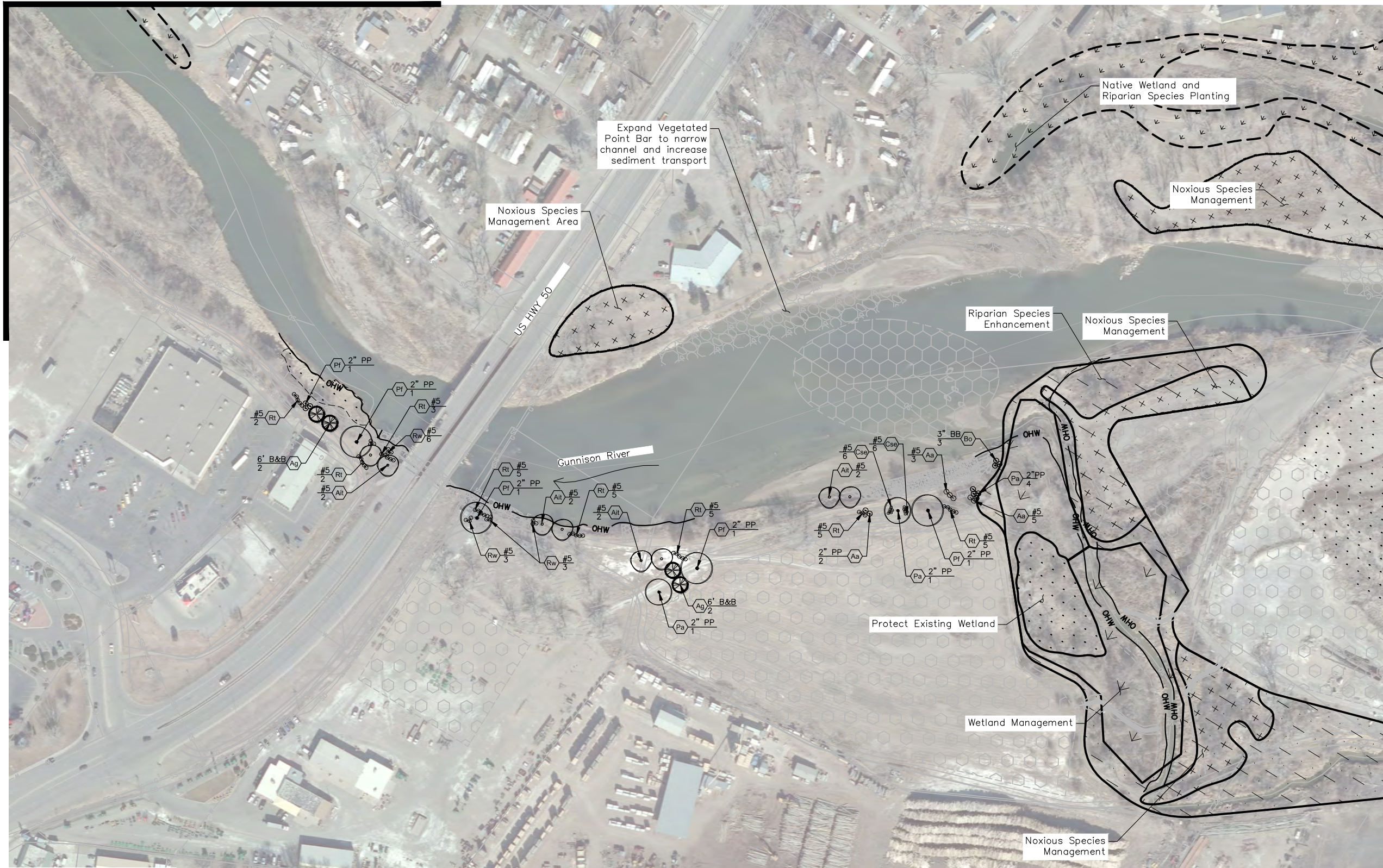
PROJECT NAME AND ADDRESS

Delta Gateway Riverfront
Gunnison River
Delta, CO 81416

Project 38040	Sheet LO1
Date JUNE 27, 2016	
Scale 1" = 100' (FULL SIZE)	

PRELIMINARY DESIGN - NOT FOR CONSTRUCTION

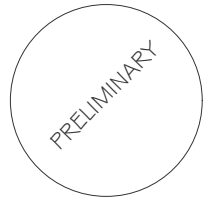
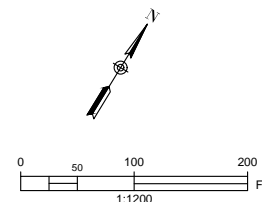
SEE SHEET L01



SEE SHEET L03

- NOXIOUS AND INVASIVE SPECIES MANAGEMENT
- NATIVE WETLAND AND RIPARIAN SPECIES
- WETLAND MANAGEMENT
- RIPARIAN ENHANCEMENT

NOTES:
 SEE DETAILS, SHEET L07
 SEE PLANT LISTS, SHEET L08



DELTA GATEWAY RIVERFRONT
 PRELIMINARY PLANNING AND ENGINEERING
 PLANTING PLAN

1	DESIGN UPDATES	
No.	REVISION/UPDATE	Date

CLIENT NAME AND ADDRESS

City of
DELTA

City of Delta
 360 Main Street
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DESIGN FIRM NAME AND ADDRESS

RIVER RESTORATION

RiverRestoration
 P.O. Box 248
 Carbondale, CO 81623
 www.RiverRestoration.org

PROJECT NAME AND ADDRESS

Delta Gateway Riverfront
 Gunnison River
 Delta, CO 81416

Project 38040	Sheet L02
Date JUNE 27, 2016	
Scale 1" = 100' (FULL SIZE)	

PRELIMINARY DESIGN - NOT FOR CONSTRUCTION

PROFESSIONAL ENGINEER STAMP



DELTA GATEWAY RIVERFRONT PRELIMINARY PLANNING AND ENGINEERING PLANTING PLAN

1	DESIGN UPDATES	
No.	REVISION/UPDATE	Date

CLIENT NAME AND ADDRESS

City of
DELTA

City of Delta
360 Main Street
Delta, CO 81416
(970) 874-7566

DESIGN FIRM NAME AND ADDRESS

RIVER
RESTORATION

RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

PROJECT NAME AND ADDRESS

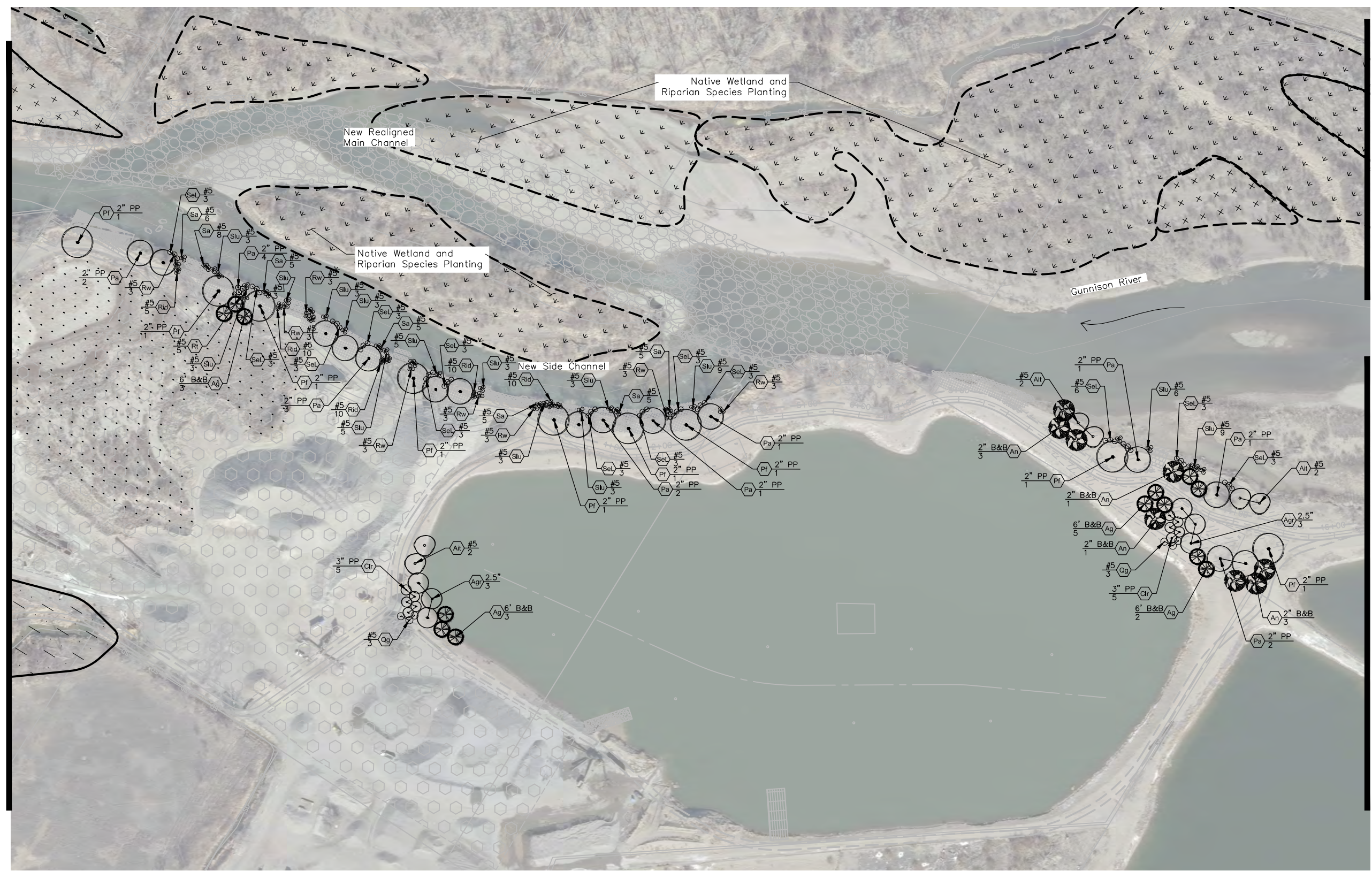
Delta Gateway Riverfront
Gunnison River
Delta, CO 81416

Project	38040	Sheet	L03
Date	JUNE 27, 2016		
Scale	1" = 100' (FULL SIZE)		

SEE SHEET L05

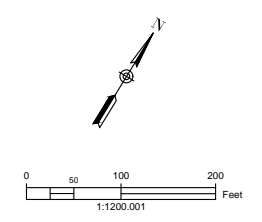
SEE SHEET L04

SEE SHEET L02



- NOXIOUS AND INVASIVE SPECIES MANAGEMENT
- NATIVE WETLAND AND RIPARIAN SPECIES
- WETLAND MANAGEMENT
- RIPARIAN ENHANCEMENT

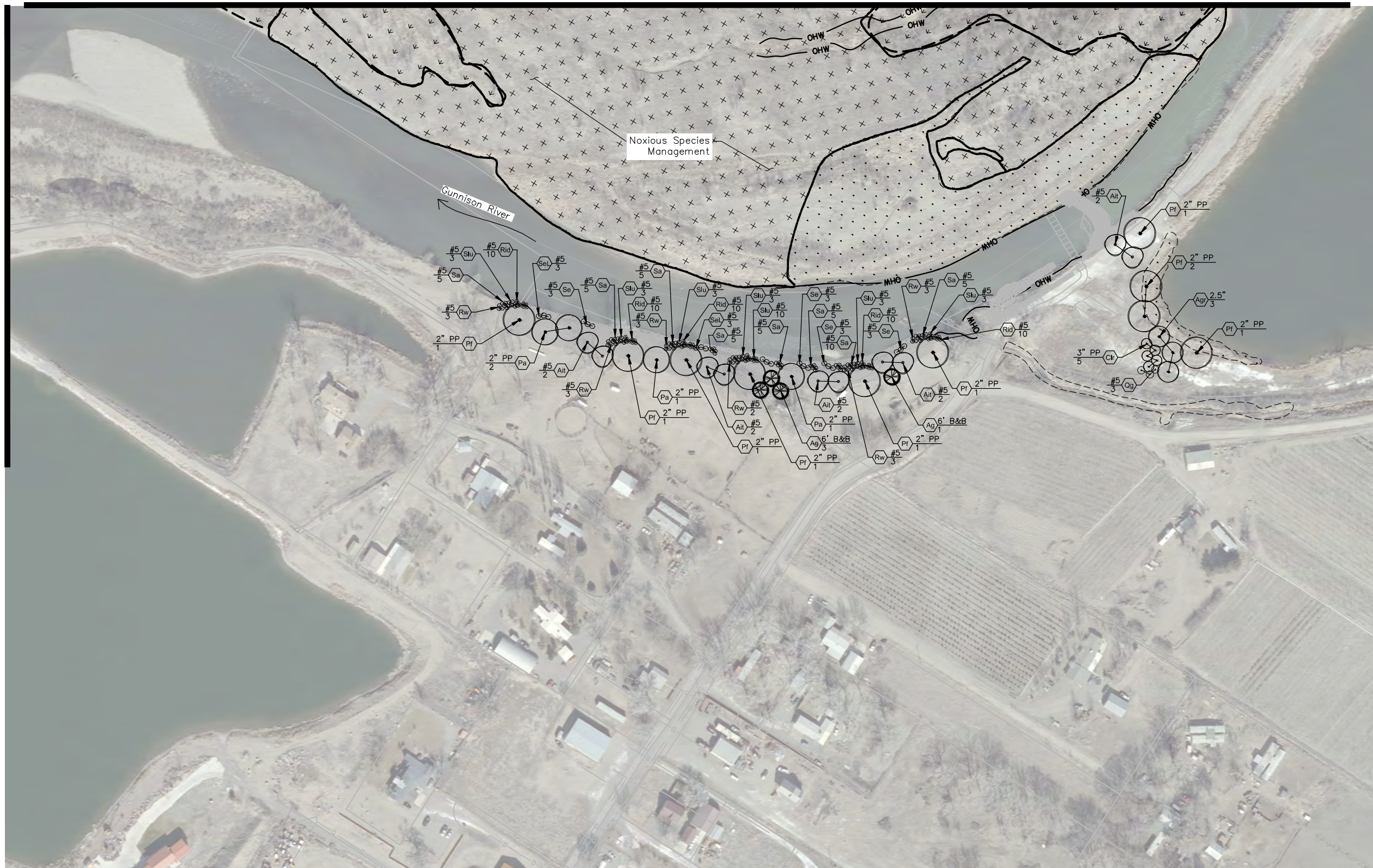
NOTES:
SEE DETAILS, SHEET L07
SEE PLANT LISTS, SHEET L08



PRELIMINARY DESIGN - NOT FOR CONSTRUCTION

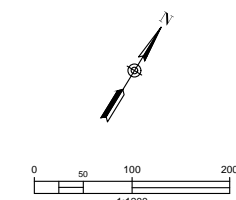
SEE SHEET C5

SEE SHEET C3

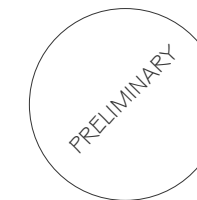


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NOTES:
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Gunnison River
Delta, CO 81416

Project 38040	Sheet LO4
Date JUNE 27, 2016	
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



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SEE SHEET L03

SEE SHEET L06

SEE SHEET L04

-  NOXIOUS AND INVASIVE SPECIES MANAGEMENT
-  NATIVE WETLAND AND RIPARIAN SPECIES
-  WETLAND MANAGEMENT
-  RIPARIAN ENHANCEMENT

NOTES:
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PRELIMINARY PLANNING AND ENGINEERING
PLANTING PLAN

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City of Delta



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DESIGN FIRM NAME AND ADDRESS



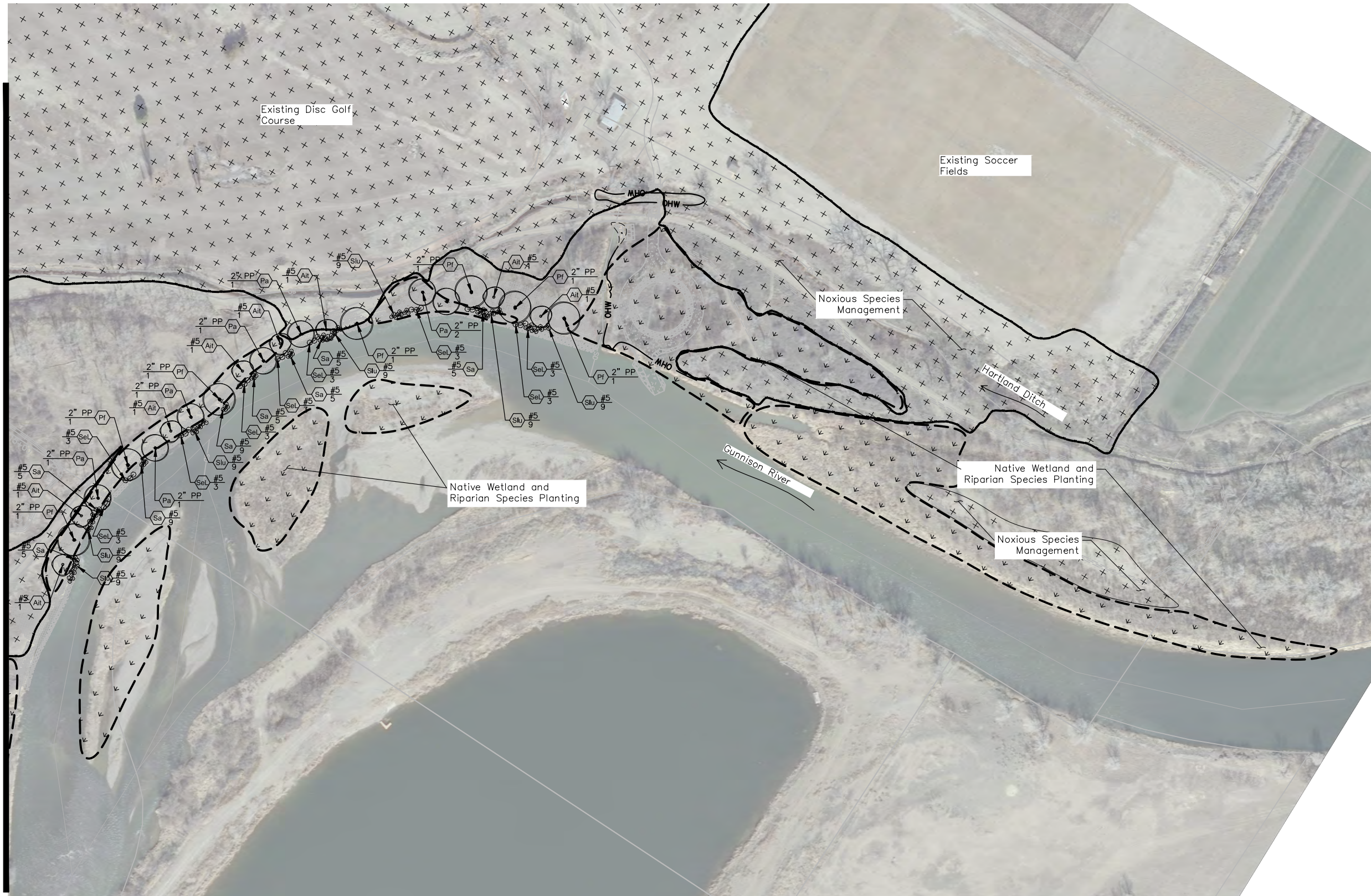
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Delta Gateway Riverfront
Gunnison River
Delta, CO 81416

Project	38040	Sheet	L05
Date	JUNE 27, 2016		
Scale	1" = 100' (FULL SIZE)		

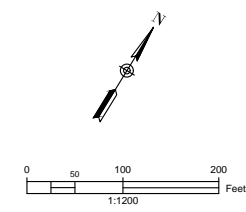
PRELIMINARY DESIGN - NOT FOR CONSTRUCTION



SEE SHEET L05

-  NOXIOUS AND INVASIVE SPECIES MANAGEMENT
-  NATIVE WETLAND AND RIPARIAN SPECIES
-  WETLAND MANAGEMENT
-  RIPARIAN ENHANCEMENT

NOTES:
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SEE PLANT LISTS, SHEET L08



PROFESSIONAL ENGINEER STAMP



DELTA GATEWAY RIVERFRONT
 PRELIMINARY PLANNING AND ENGINEERING
 PLANTING PLAN

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No.	REVISION/UPDATE	Date
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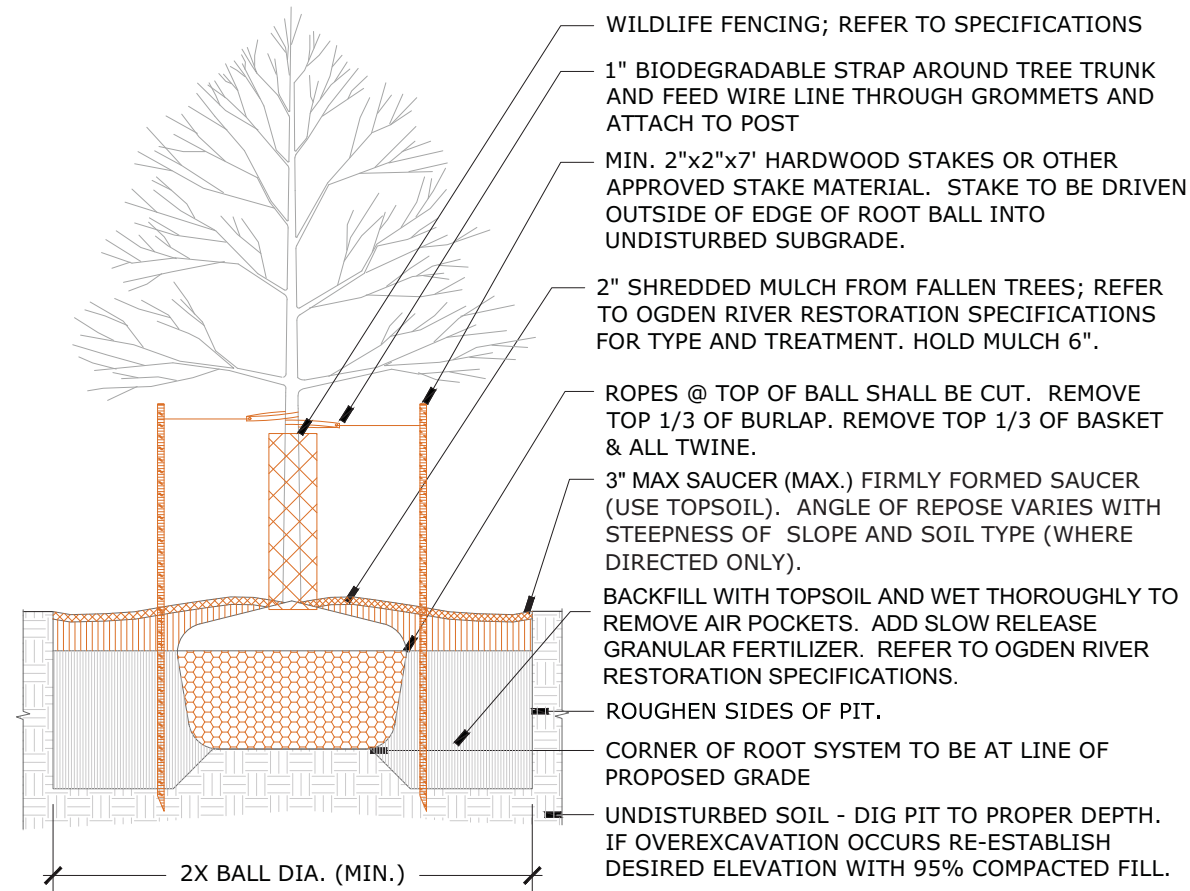

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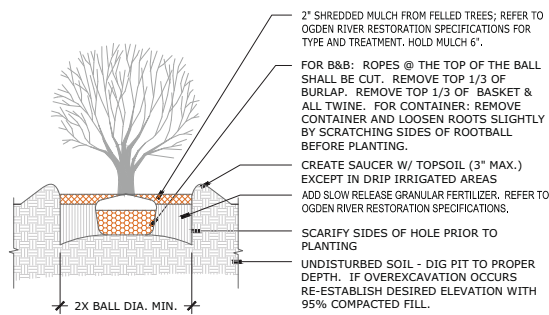
Delta Gateway Riverfront
 Gunnison River
 Delta, CO 81416

Project 38040	Sheet L06
Date JUNE 27, 2016	
Scale 1" = 100' (FULL SIZE)	

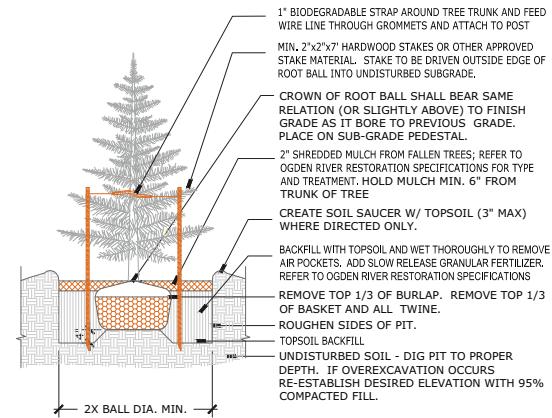
PRELIMINARY DESIGN - NOT FOR CONSTRUCTION



1
L7
DECIDUOUS TREE PLANTING
SCALE: 1/4" = 1'-0"

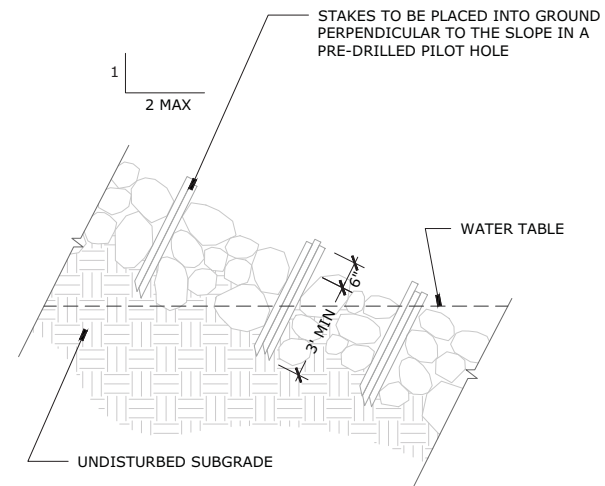


4
L7
SHRUB PLANTING
SCALE: 1/2" = 1'-0"



2
L7
EVERGREEN TREE PLANTING
SCALE: 1/2" = 1'-0"

NOTE: STAKES SHOULD BE PLACED RANDOMLY AT A RATE OF 2 HOLES PER SQUARE YARD. INSTALL 3 LIVE STAKES (WHERE POSSIBLE) PER HOLE.



3
L7
POLE STAKING
NTS

TEXT SIZE

PROFESSIONAL ENGINEER STAMP
PRELIMINARY

DELTA GATEWAY RIVERFRONT
PRELIMINARY PLANNING AND ENGINEERING
Planting Details

1	DESIGN UPDATES	
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No.	REVISION/UPDATE	Date
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CLIENT NAME AND ADDRESS



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Delta Gateway Riverfront
Gunnison River
Delta, CO 81416

Project	38040	Sheet
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Date	JUNE 2016	L7
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Scale	
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NOT FOR CONSTRUCTION



DELTA GATEWAY RIVERFRONT
PRELIMINARY PLANNING AND ENGINEERING
PLANTING LISTS

Native Wetland and Riparian Species			
Common name	Scientific name	Growth form	Revegetation technique
Fremont cottonwood	<i>Populus fremontii</i>	tree	Deep cell pots - 14" or 30"; or gallon sized
Narrowleaf cottonwood	<i>Populus angustifolia</i>	tree	Deep cell pots - 14" or 30"; or gallon sized
Peachleaf willow	<i>Salix amygdaloides</i>	tree	Deep cell pots - 14" or 30"; or gallon sized
Box elder	<i>Acre negundo</i>	tree	Deep cell pots - 14" or 30"; or gallon sized
River hawthorn	<i>Crataegus rivularis</i>	tree	Deep cell pots - 14" or 30"; or gallon sized
Sandbar willow	<i>Salix exigua</i>	shrub	Deep cell pots - 14" or 30"; or gallon sized
Black chokecherry	<i>Prunus virginiana</i>	shrub	Deep cell pots - 14" or 30"; or gallon sized
Skunkbush sumac	<i>Rhus trilobata</i>	shrub	Deep cell pots - 14" or 30"; or gallon sized
Bebb willow	<i>Salix bebbiana</i>	shrub	Deep cell pots - 14" or 30"; or gallon sized
Wood's rose	<i>Rosa woodsii</i>	shrub	Deep cell pots - 14" or 30"; or gallon sized
Golden currant	<i>Ribes aureum</i>	shrub	Deep cell pots - 14" or 30"; or gallon sized
Western wheatgrass	<i>Pascopyrum smithii</i>	grass	seed (drill or broadcast)
Slender wheatgrass	<i>Elymus trachyculus</i>	grass	seed (drill or broadcast)
Alkali sacaton	<i>Sporobolus airoides</i>	grass	seed (drill or broadcast)
Indian ricegrass	<i>Achatherum hymenoides</i>	grass	seed (drill or broadcast)
Inland saltgrass	<i>Distichlis spicata</i>	grass	seed (drill or broadcast)
Green rabbitbrush	<i>Crysothamnus viscidiflorus</i>	shrub	seed (drill or broadcast)
Palmer penstemon	<i>Penstemon palmeri</i>	forb	seed (drill or broadcast)
Solidago canadensis	<i>Canada goldenrod</i>	forb	seed (drill or broadcast)
Arctic rush	<i>Juncus arcticus</i>	grass-like	Bare root or 10 cubic inch containers
Nebraska sedge	<i>Carex nebraskensis</i>	grass-like	Bare root or 10 cubic inch containers
Wooly sedge	<i>Carex pellita</i>	grass-like	Bare root or 10 cubic inch containers
Common spikerush	<i>Eleocharis palustris</i>	grass-like	Bare root or 10 cubic inch containers
Torrey's rush	<i>Juncus torreyi</i>	grass-like	Bare root or 10 cubic inch containers
Hardstem bulrush	<i>Schoenoplectus acutus</i>	grass-like	Bare root or 10 cubic inch containers
Alkali bulrush	<i>Scirpus maritimus</i>	grass-like	Bare root or 10 cubic inch containers
Marsh milkweed	<i>Asclepsia incarnata</i>	forb	Bare root or 10 cubic inch containers
Nuttall's sunflower	<i>Helianthus nuttallii</i>	forb	Bare root or 10 cubic inch containers

Notes: specific species selected will be based on site hydrology and soil salinity.

Wetland Management			
Common name	Scientific name	Growth form	Revegetation technique
Western wheatgrass	<i>Pascopyrum smithii</i>	grass	seed (drill or broadcast)
Inland saltgrass	<i>Distichlis spicata</i>	grass	seed (drill or broadcast) or 10 cubic inch
Alkali muhley	<i>Mulenbergia asperifolia</i>	grass-like	Bare root or 10 cubic inch containers
Arctic rush	<i>Juncus arcticus</i>	grass-like	Bare root or 10 cubic inch containers
Nebraska sedge	<i>Carex nebraskensis</i>	grass-like	Bare root or 10 cubic inch containers
Wooly sedge	<i>Carex pellita</i>	grass-like	Bare root or 10 cubic inch containers
Common spikerush	<i>Eleocharis palustris</i>	grass-like	Bare root or 10 cubic inch containers
Torrey's rush	<i>Juncus torreyi</i>	grass-like	Bare root or 10 cubic inch containers
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Marsh milkweed	<i>Asclepsia incarnata</i>	forb	Bare root or 10 cubic inch containers
Nuttall's sunflower	<i>Helianthus nuttallii</i>	forb	Bare root or 10 cubic inch containers

Notes: specific species selected will be based on site hydrology and soil salinity.

Noxious and Invasive Species Management						
Common Name	Scientific Name	Classification	Treatment	Treatment Time	Cost Estimate (per ac.)	Notes:
Canada thistle	<i>Cirsium arvense</i>	List B	Aminopyralid herbicide	Fall	\$200-\$400	Found in cropland, pastures, meadows, right-of-way, ditch banks and disturbed sites. Prefers moist soil.
Downy brome (Cheat grass)	<i>Bromus tectorum</i>	List C	Prevent with proper revegetation plan	Spring	\$200-\$400	Found in cropland, rangeland, pastures, waste places and right-of-way. Dense stands are fire hazards.
Halogeton	<i>Halogeton glomeratus</i>	List C	Prevent with proper revegetation plan	Spring	\$200-\$400	Found in rangeland, shrublands and right-of-way. Prefers arid and semi-arid areas. Accumulates salts. Toxic to livestock.
Hoary cress	<i>Cardaria draba</i>	List B	Chlorsulfuron herbicide	Spring	\$200-\$400	Found in pastures, disturbed sites and right-of-way. Prefers moist sites.
Quackgrass	<i>Elymus repens</i>	List C	Prevent with proper revegetation plan	Spring	\$200-\$400	Found in gardens, turf, cropland and right-of-way.
Russian knapweed	<i>Rhaponticum repens</i>	List B	Aminopyralid herbicide	Fall	\$200-\$400	Found in cropland, orchards, rangeland, pastures, right-of-way and disturbed sites. Toxic to horses. A very aggressive competitor.
Russian-olive	<i>Elaeagnus angustifolia</i>	List B	Treatment as per phased revegetation plan; Low cut stump/girdle, Glyphosate	Fall	\$2500-3000	Found in riparian areas, landscape plantings and right-of-way. Competes with native trees that provide nesting and roosting for birds. Consumes water at higher rate than native trees.
Salt cedar	<i>Tamarix ramosissima</i>	List B	Low cut stump and chip, treat stumps with Garlon herbicide	Fall	\$2500-3000	Found in riparian areas, edges of lakes, and in landscape plantings. Consumes large quantities of water daily. Increases salt content of surface soils, lowers water tables and degrades value of wildlife habitat.
Common reed	<i>Phragmites australis</i>	Watch list	Glyphosate (aquatic approved formulation)	Early fall, Late summer	\$200-\$400	Found in riparian areas, edges of lakes, and in landscape plantings.

Notes:
Control weed management prior to disturbance and construction.
Revegetate within 2 weeks of disturbance.

Riparian Enhancement			
Common name	Scientific name	Growth form	Revegetation technique
Fremont cottonwood	<i>Populus fremontii</i>	tree	Deep cell pots - 14" or 30"; or gallon sized
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Palmer penstemon	<i>Penstemon palmeri</i>	forb	seed (drill or broadcast)
Solidago canadensis	<i>Canada goldenrod</i>	forb	seed (drill or broadcast)

Notes: Container species are very successful with supplemental irrigation for at least 2 years. Willows and cottonwoods can be planted as dormant pole cuttings.

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Delta Gateway Riverfront Gunnison River Delta, CO 81416		
Project	38040	Sheet
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