CITY OF CASPER PROJECT # 12-51

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
WY	172621100	COVER	13

CITY OF CASPER

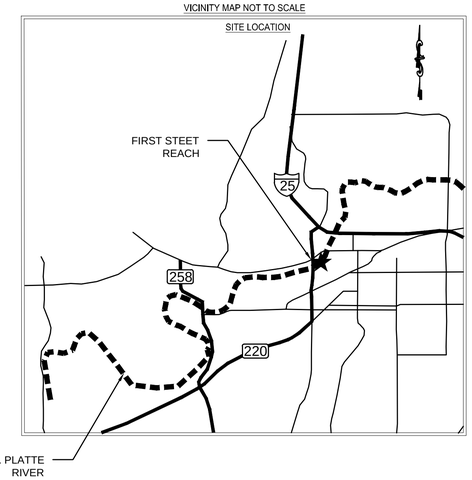
NORTH PLATTE RIVER RESTORATION
FIRST STREET REACH

FEBRUARY 2021

AS-BUILT PLANS

NATRONA COUNTY, WYOMING

VICINITY MAP NOT TO SCALE



SYM.	DESCRIPTION
A	

REVISIONS

GRAPHIC SCALES (SCALE IN FEET)

40 0 40 120
ALL PLAN & PROFILE SHEETS

20 0 20 60
ALL CROSS SECTION SHEETS

8 0 8 24
VERTICAL PROFILE - ALL PLAN & PROFILE SHEETS

10 0 10 30
VERTICAL PROFILE - ALL CROSS SECTION SHEETS

PROJECT LENGTH

RESTORATION = 2,548 FT

Prepared by:

Stantec

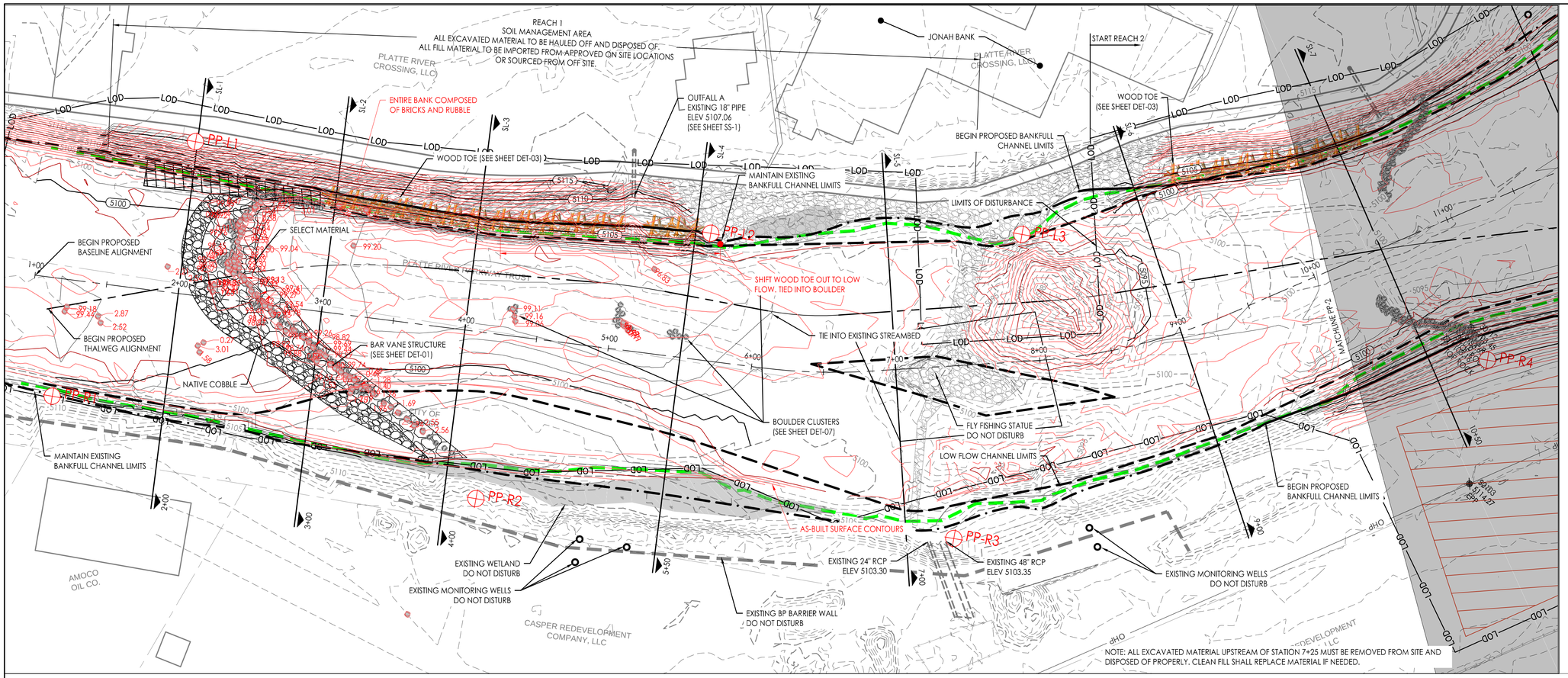
Stantec Consulting Services Inc.
3325 South Timberline Road, Suite 150
Fort Collins, Colorado 80525
www.stantec.com

TIMOTHY DINKINS
PROJECT ENGINEER

Prepared for:

SEAL OF THE CITY OF CASPER, WYOMING

Scott Baxter
PROJECT MANAGER



AS-BUILT

Profile View: B-NPFST-CL-OVR4
Alignment: B-NPFST-CL-OVR
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End Sta: 10+00.00
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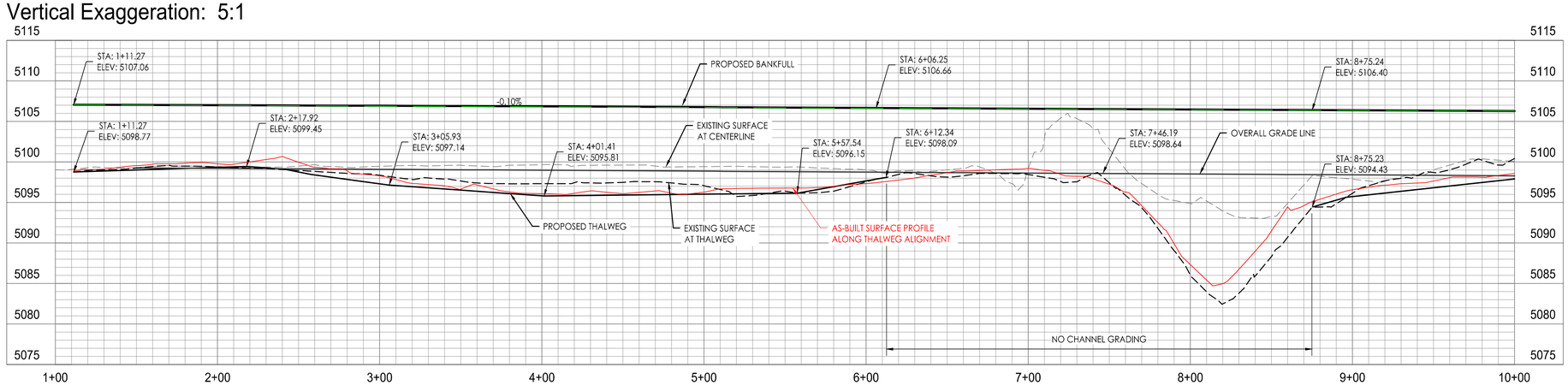
Vertical Scale: 1" = 4'
Vertical Exaggeration: 5:1



1"=40' 0 20' 40' 80'

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Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD

Client/Project
CITY OF CASPER
200 NORTH DAVID STREET CASPER, WY 82601

NORTH PLATTE RIVER RESTORATION
FIRST STREET REACH
CASPER, WYOMING

Title
AS-BUILT
PLAN AND PROFILE 1

Permit-Seal

Project Number: 172621110

File Name: NPFST_AS-BUILT_PP_SHEETS.dwg

PTP	JGA	TCD	21.2.25
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No.
Revision 0
Sheet PP-1

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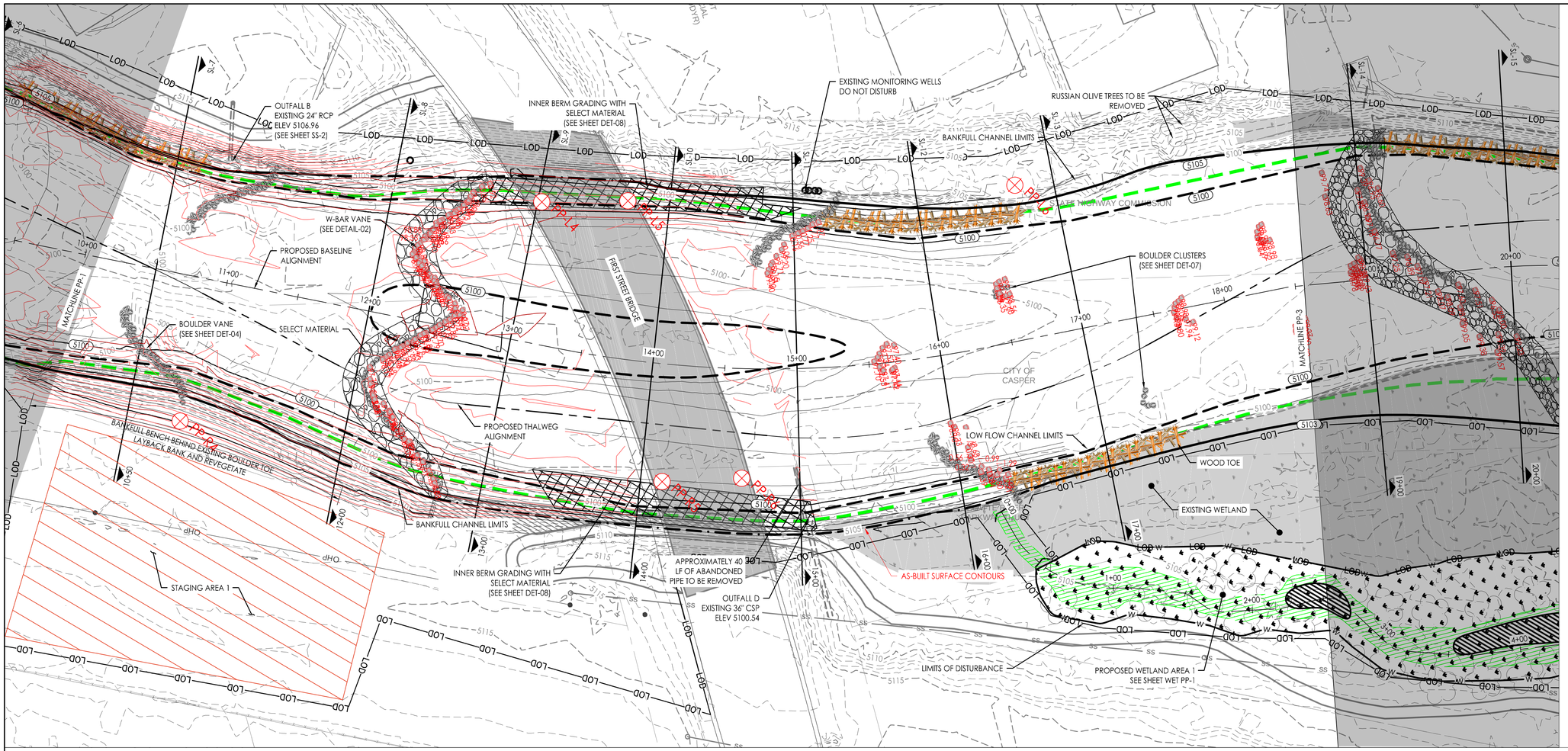

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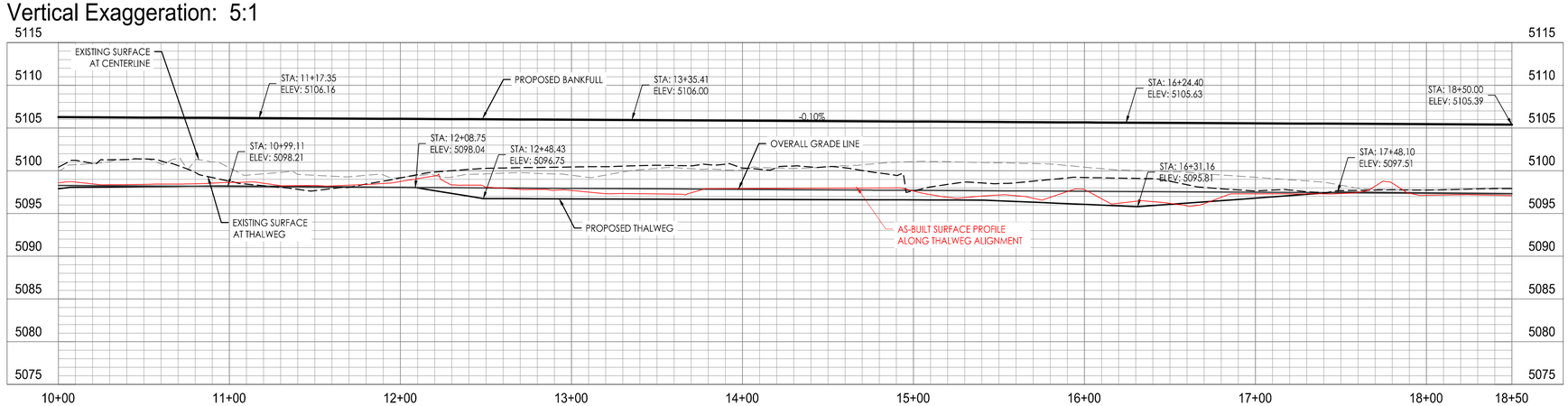
Vertical Exaggeration: 5:1

AS-BUILT



1"=40' 0 20' 40' 80'

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Issued	By	Appd.	YY.MM.DD

Client/Project
CITY OF CASPER
200 NORTH DAVID STREET CASPER, WY 82601

NORTH PLATTE RIVER RESTORATION
FIRST STREET REACH
CASPER, WYOMING

Title
AS-BUILT
PLAN AND PROFILE 2

Permit-Seal

Project Number: 172621110
File Name: NPFST_AS-BUILT_PP_SHEETS.dwg

PTP	JGA	TCD	21.2.25
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No.
Revision 0
Sheet PP-2

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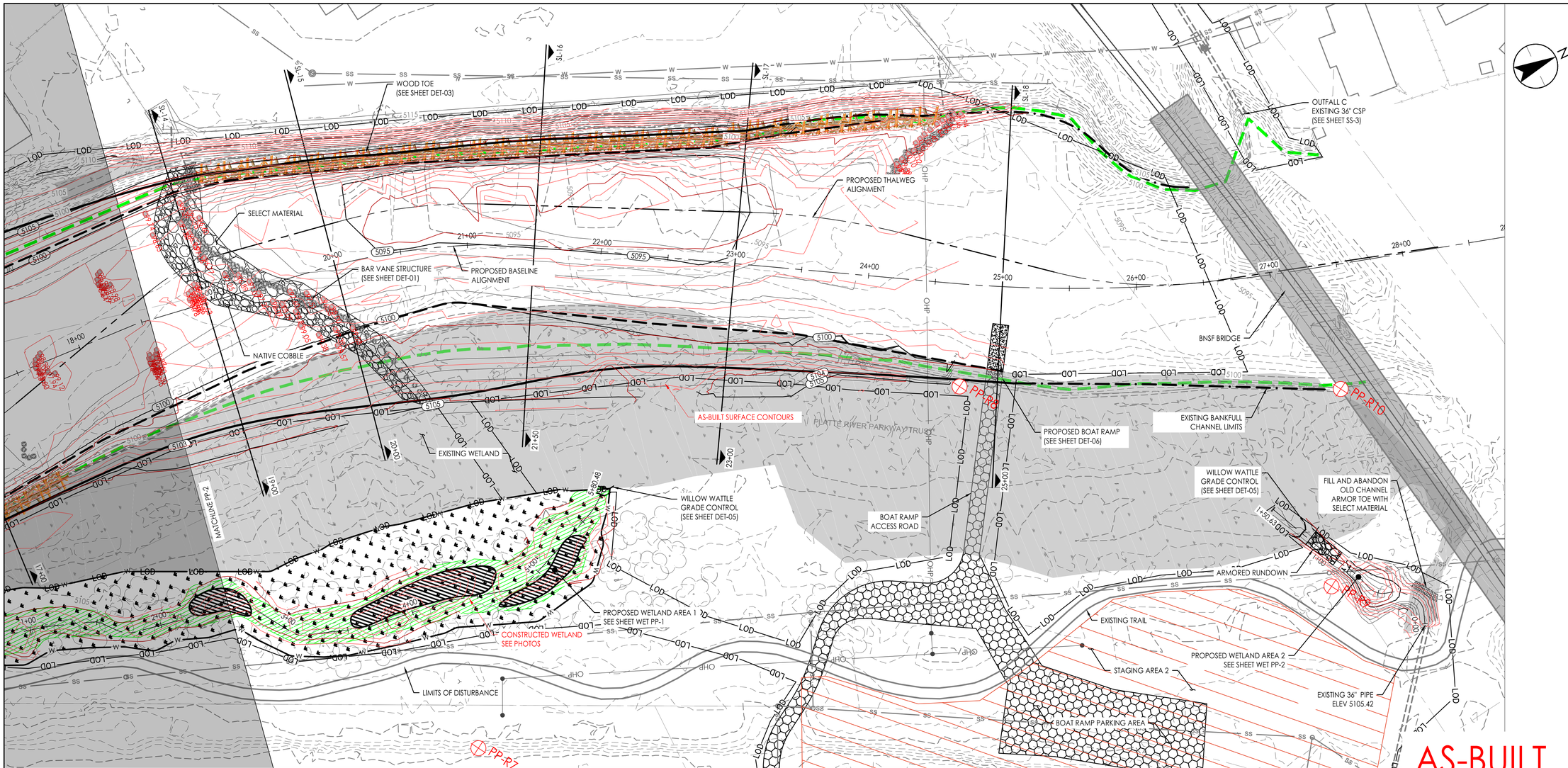
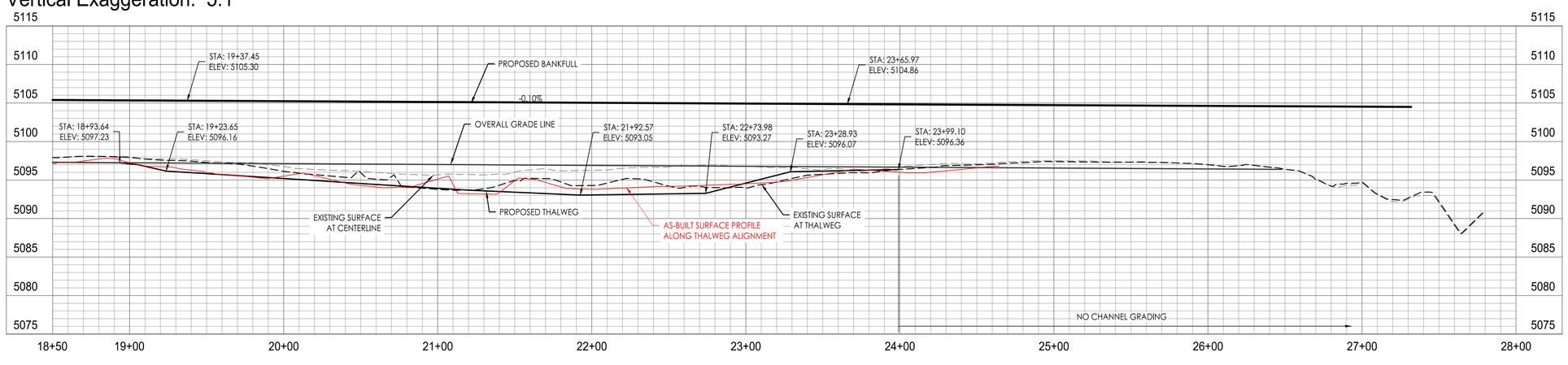


AS-BUILT

Vertical Exaggeration: 5:1



1"=40' 0 20' 40' 80'

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Issued	By	Appd.	YY.MM.DD

Client/Project
CITY OF CASPER
200 NORTH DAVID STREET CASPER, WY 82601

NORTH PLATTE RIVER RESTORATION
FIRST STREET REACH
CASPER, WYOMING

Permit-Seal

Title
AS-BUILT
PLAN AND PROFILE 3

Project Number: 172621110

File Name: NPFST_AS-BUILT_PP_SHEETS.dwg

PTP	JGA	TCD	21.2.25
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No.

Revision	Sheet
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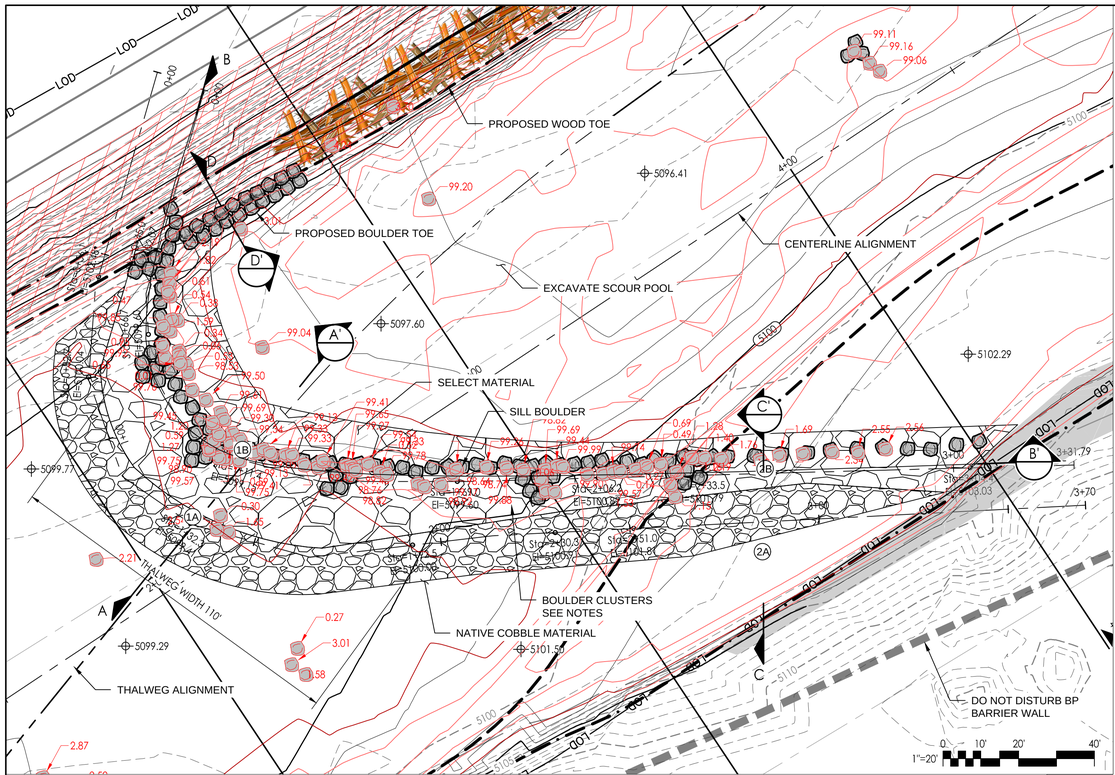
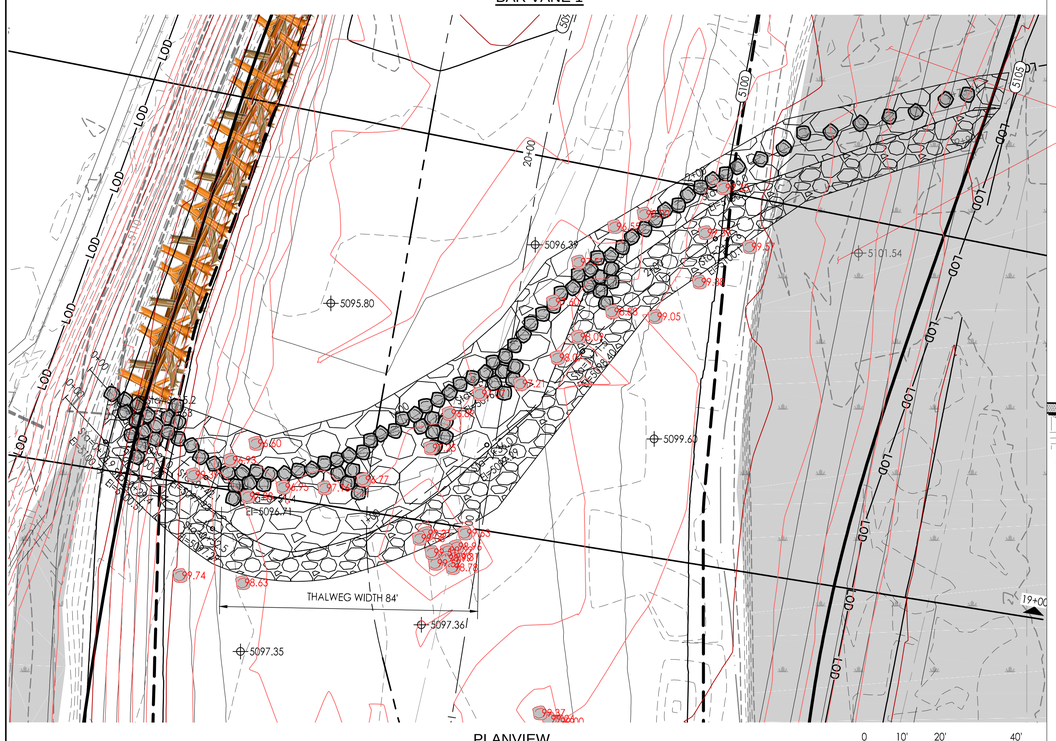


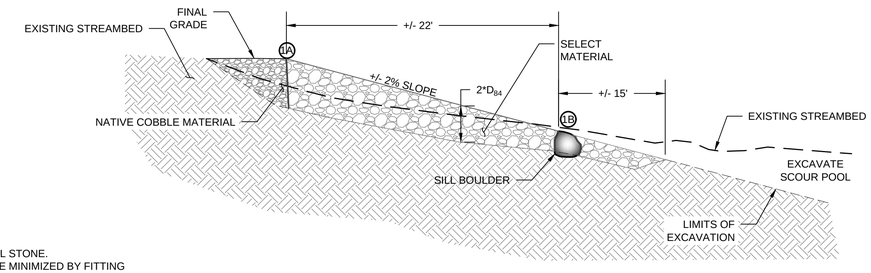
PLANVIEW
BAR VANE 1



PLANVIEW
BAR VANE 2

NOTES:

1. ALL STONES ARE TO BE STRUCTURAL STONE.
2. GAPS BETWEEN BOULDERS SHALL BE MINIMIZED BY FITTING BOULDERS TOGETHER, AND PLUGGING WITH RIPRAP AND SELECT MATERIAL. THE CONTRACTOR WILL BE REQUIRED TO FIT BOULDERS TIGHTLY.
3. DIMENSIONS AND SLOPES MAY BE ADJUSTED TO FIT BY THE ENGINEER.
4. VANE ARMS SHALL MATCH THE ELEVATIONS SHOWN IN THE PLAN VIEWS
5. BOULDERS SHALL BE NATIVE STONE OR SHOT ROCK, CUBICAL OR RECTANGULAR IN NATURE.
6. ALL MATERIALS ARE TO BE APPROVED BY ENGINEER OR ENGINEER'S ONSITE CONSTRUCTION MANAGER.
7. SEE GENERAL NOTES PAGE FOR SELECT MATERIAL GRADATION AND BOULDER SIZE REQUIREMENTS.
8. BOULDER CLUSTERS SHALL BE PLACED ALONG THE UPSTREAM FACE OF THE SILL BOULDERS AND SPACED APART AT THE ENGINEERS DISCRETION. THE TOPS OF THE BOULDERS SHALL PROTRUDE OUT FROM THE ADJACENT BED BY 1-1.5' AS DIRECTED BY ENGINEER.
9. FLAT POINT BAR IS LIKELY CRITICAL TO REDUCE STRESS ON BANK DURING PERIODS OF HIGH WATER.
10. ASSUME CLUSTERS ~ 3-4 BOULDERS
11. SET BOULDERS AS SILL AND SELECT MATERIAL LOOSE.



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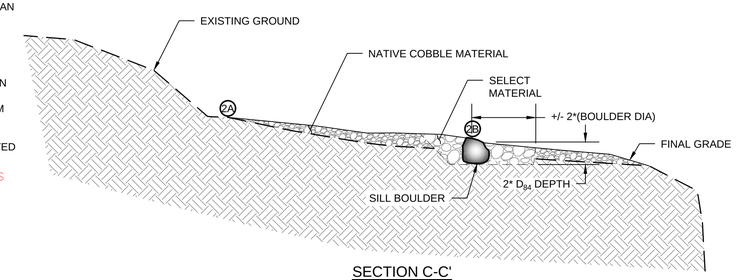

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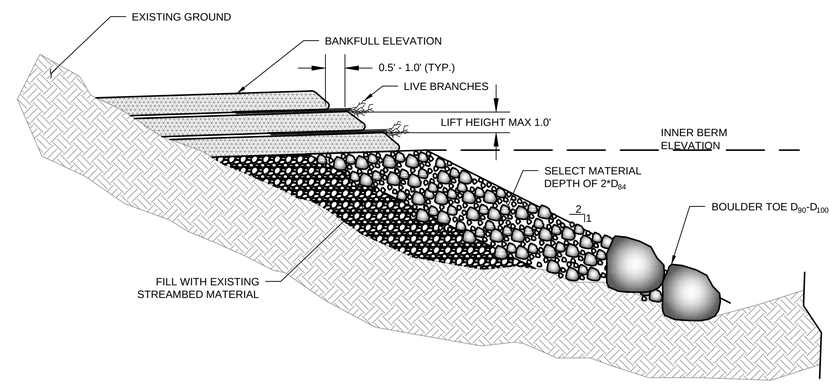

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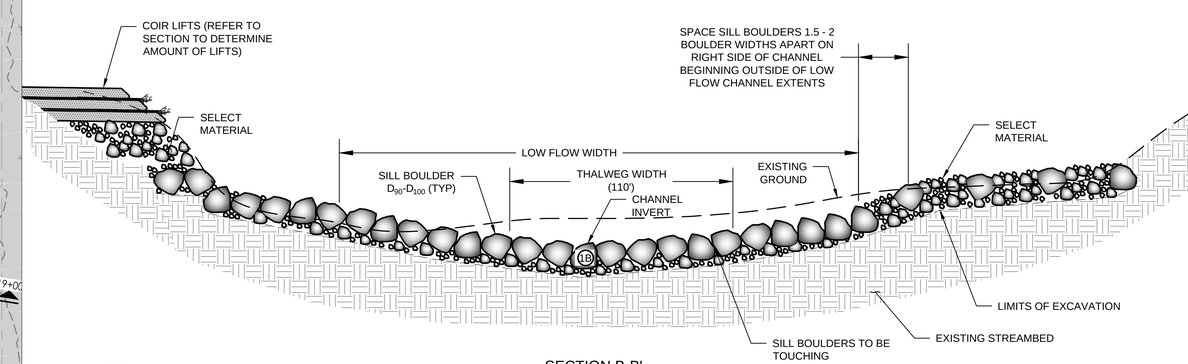

SECTION B-B'
NOT TO SCALE

1 DETAIL - BAR VANE
NOT TO SCALE

AS-BUILT

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Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD

Client/Project
CITY OF CASPER
200 NORTH DAVID STREET CASPER, WY 82601

NORTH PLATTE RIVER RESTORATION
FIRST STREET REACH
CASPER, WYOMING

Permit-Seal

Title
AS-BUILT
BAR VANE DETAIL

Project Number: 172621110

File Name: AS-BUILT_DET-01_BAR_VANE.dwg

PTP	JGA	TCD	19.5.17
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. BAR VANE DETAIL

Revision	Sheet
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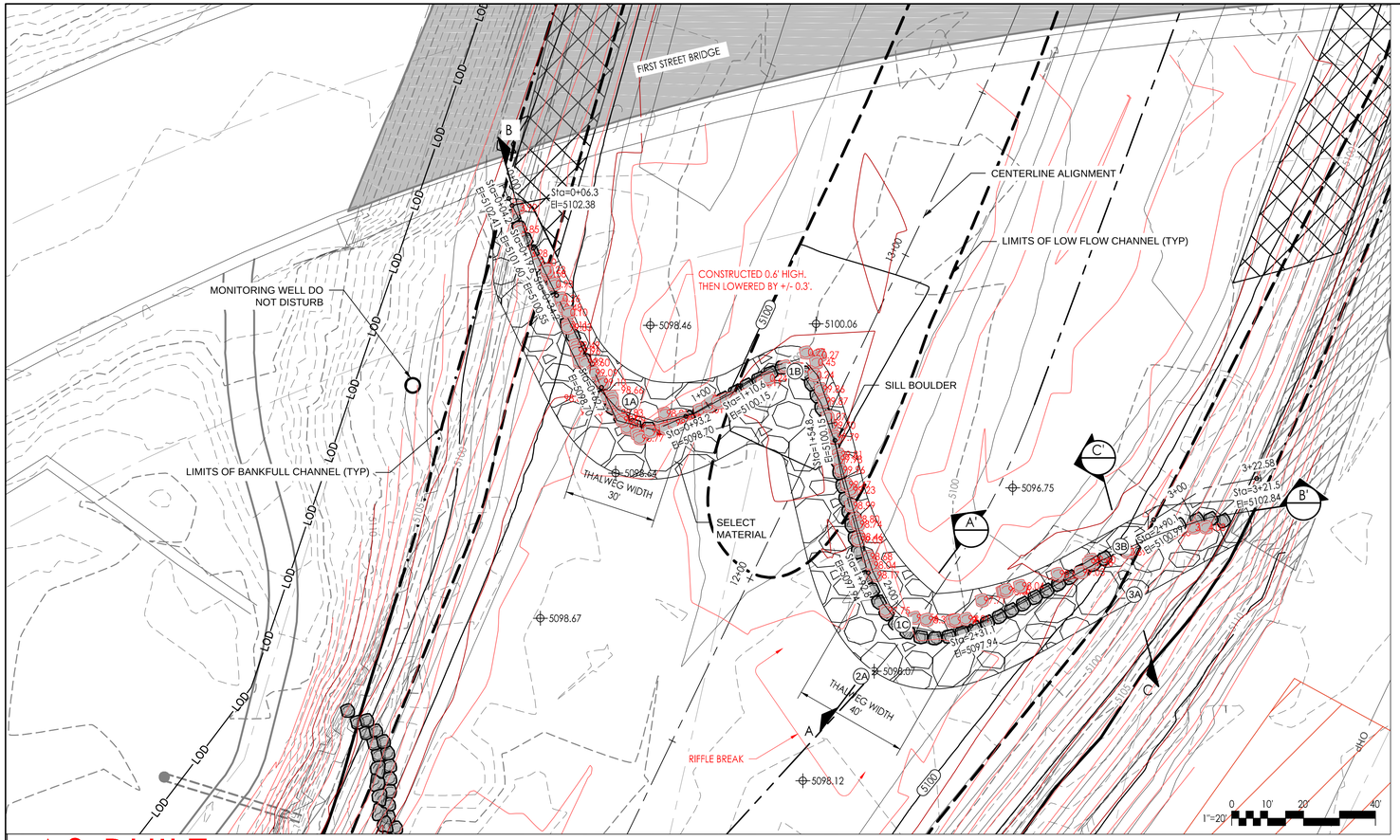


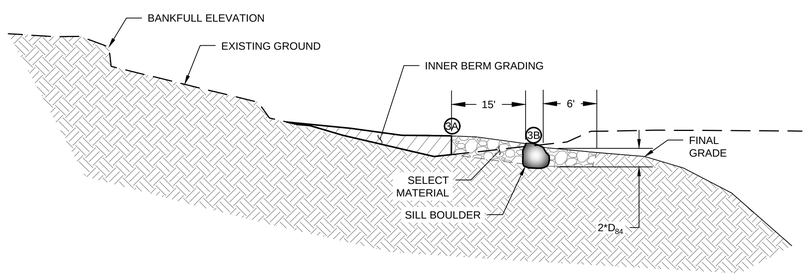
AS-BUILT

PLANVIEW

NOTES:

1. ALL STONES ARE TO BE STRUCTURAL STONE.
2. GAPS BETWEEN BOULDERS SHALL BE MINIMIZED BY FITTING BOULDERS TOGETHER, AND PLUGGING WITH RIPRAP AND SELECT MATERIAL. THE CONTRACTOR WILL BE REQUIRED TO FIT BOULDERS TIGHTLY.
3. DIMENSIONS AND SLOPES MAY BE ADJUSTED TO FIT BY THE ENGINEER.
4. VANE ARM SHALL TIE INTO THE BANK HALFWAY BETWEEN THE CHANNEL INVERT AND BANKFULL ELEVATIONS. THE ARM SHALL RISE AT 1.0% TO 1.5% FROM THE CHANNEL INVERT AT AN ANGLE OF 20-30 DEG FROM THE ADJACENT TANGENT LINE.
5. BOULDERS SHALL BE NATIVE STONE OR SHOT ROCK, CUBICAL OR RECTANGULAR IN NATURE.
6. ALL MATERIALS ARE TO BE APPROVED BY ENGINEER OR ENGINEER'S ONSITE CONSTRUCTION MANAGER.
7. SEE GENERAL NOTES PAGE FOR BOULDER AND SELECT MATERIAL SIZE REQUIREMENTS

AS-BUILT NOTES:
* BOULDERS PLACED +/- GRADE
* SELECT FILL HIGH IN MOST PLACES, BUT DESIGNED TO BE WORKED INTO PLACE/EXPECTED IT TO MOVE.
* SETTLING WILL ADJUST UP TO 0.8'.



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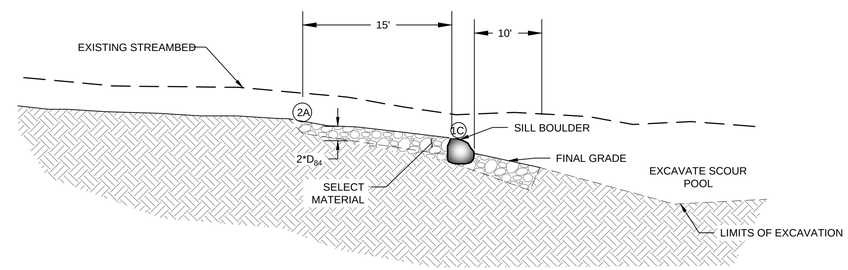

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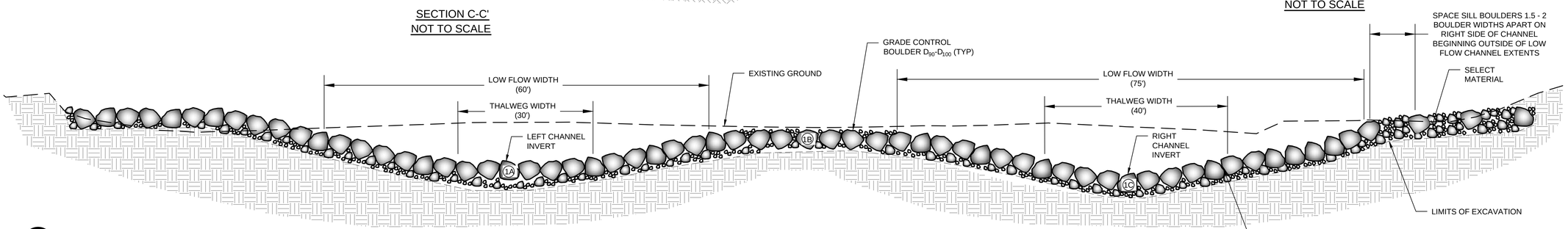

SECTION B-B'
NOT TO SCALE

2 DETAIL - W BAR VANE
NOT TO SCALE

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www.stantec.com

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Revision	By	Appd.	YY.MM.DD

Issued	By	Appd.	YY.MM.DD

Client/Project
CITY OF CASPER
200 NORTH DAVID STREET CASPER, WY 82601

NORTH PLATTE RIVER RESTORATION
FIRST STREET REACH
CASPER, WYOMING

Title
AS-BUILT
W BAR VANE DETAIL

Permit-Seal

Project Number: 172621110

File Name: AS-BUILT_DET-02_MODIFIED_BAR_VANE.dwg

PTP	JGA	TCD	21.2.25
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. W BAR VANE DETAIL

Revision	Sheet
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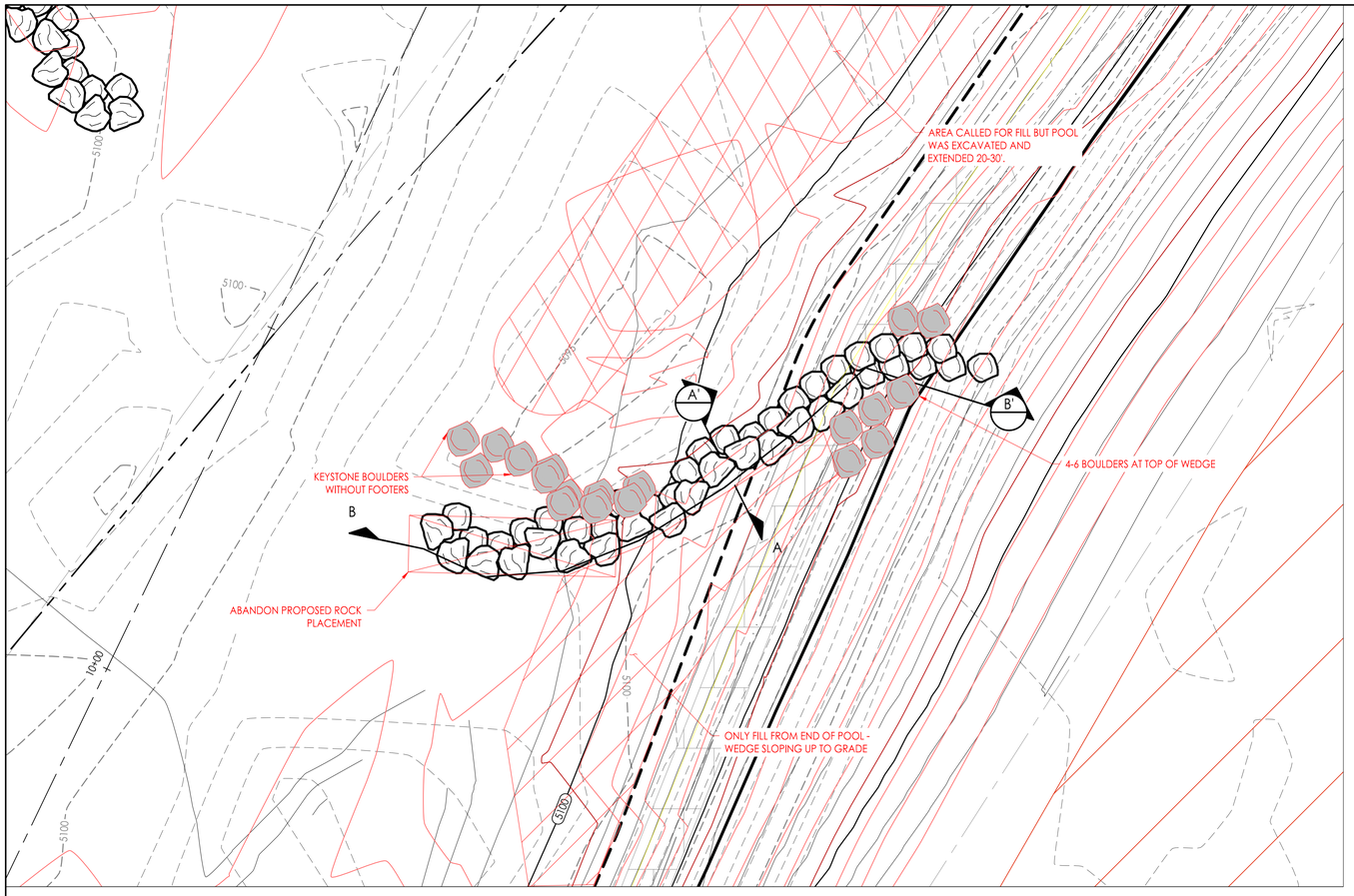


PLAN VIEW
SCALE 1" = 10'

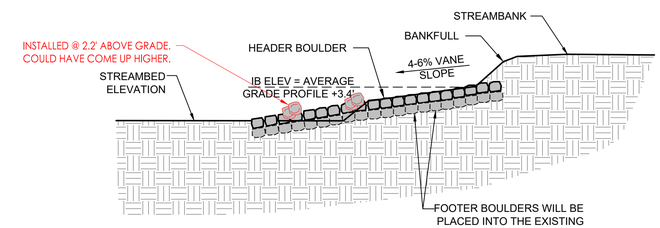
NOTES:

1. ALL STONES ARE TO BE STRUCTURAL STONE.
2. GAPS BETWEEN BOULDERS SHALL BE MINIMIZED BY FITTING BOULDERS TOGETHER, AND PLUGGING WITH RIPRAP AND SELECT MATERIAL. THE CONTRACTOR WILL BE REQUIRED TO FIT BOULDERS TIGHTLY.
3. DIMENSIONS AND SLOPES MAY BE ADJUSTED TO FIT BY THE ENGINEER.
4. A DOUBLE FOOTER BOULDER MAY BE ADJUSTED TO FIT BY THE ENGINEER.
5. VANE ARM SHALL TIE INTO THE BANK HALFWAY BETWEEN THE CHANNEL INVERT AND BANKFULL ELEVATIONS. THE ARM SHALL RISE AT 2%-4% FROM THE CHANNEL INVERT AT AN ANGLE OF 20-30 DEG FROM THE ADJACENT TANGENT LINE.
6. BOULDERS SHALL BE NATIVE STONE OR SHOT ROCK, CUBICAL OR RECTANGULAR IN NATURE.
7. ALL MATERIALS ARE TO BE APPROVED BY ENGINEER OR ENGINEER'S ONSITE CONSTRUCTION MANAGER.
8. SEE GENERAL NOTES SHEET FOR BOULDER SIZING.

+/- ABOVE AVERAGE GRADE ELEVATION

GRADE SHOWN IN SECTION VIEW

* INSTALLED @ 0.3'-0.4' ABOVE LOW FLOW ELEVATION
* KEYSTONE BOULDERS (50-70% LARGER THAN TYPICAL SIZED BOULDERS) MAY SERVE AS SUBSTITUTE FOR HEADER AND FOOTER BOULDERS IN VANE THROAT.



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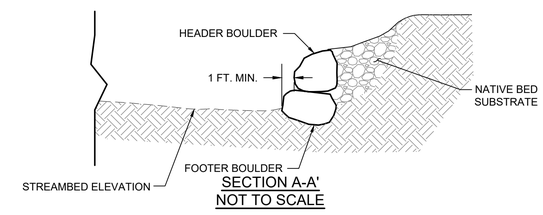

SECTION A-A'
NOT TO SCALE

AS-BUILT NOTES:

BOULDER VANE #1

BOULDER VANE #2
WSE: 5100.3
ELEVATION @ TIE IN: 5100.5
ELEVATION @ TOP OF SLOPE: 5100.3

BOULDER VANE #3
WSE 5100.1
ELEVATION AT TIE-IN: 5100.8
ELEVATION @ TOP OF SLOPE: 5100.3
ELEVATION @ CHANNEL: 5096.9

BOULDER VANE #4
WSE 5099.8
ELEVATION AT TIE-IN: 5102.3
ELEVATION @ TOP OF SLOPE: 5100.2
ELEVATION @ CHANNEL: 5098.6
NOTES: BOULDER VANE ARM WAS INSTALLED AT ~5% SLOPE TO START OF HOOK. BOULDERS WERE PLACED IRREGULARLY ALONG THE "HOOK" WITH FOOTER TOPS SERVING AS GAPS BETWEEN CLUSTERS OF TOP BOULDERS.

4 DETAIL - BOULDER VANE
NOT TO SCALE

AS-BUILT

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Client/Project
CITY OF CASPER
200 NORTH DAVID STREET CASPER, WY 82601

NORTH PLATTE RIVER RESTORATION
FIRST STREET REACH
CASPER, WYOMING

Title
AS-BUILT
BOULDER VANE DETAIL

Permit-Seal

Project Number: 172621110

File Name: AS-BUILT_DET-04_BOULDER_VANE.dwg

PTP	JGA	TCD	21.2.25
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. BOULDER VANE DETAIL

Revision	Sheet
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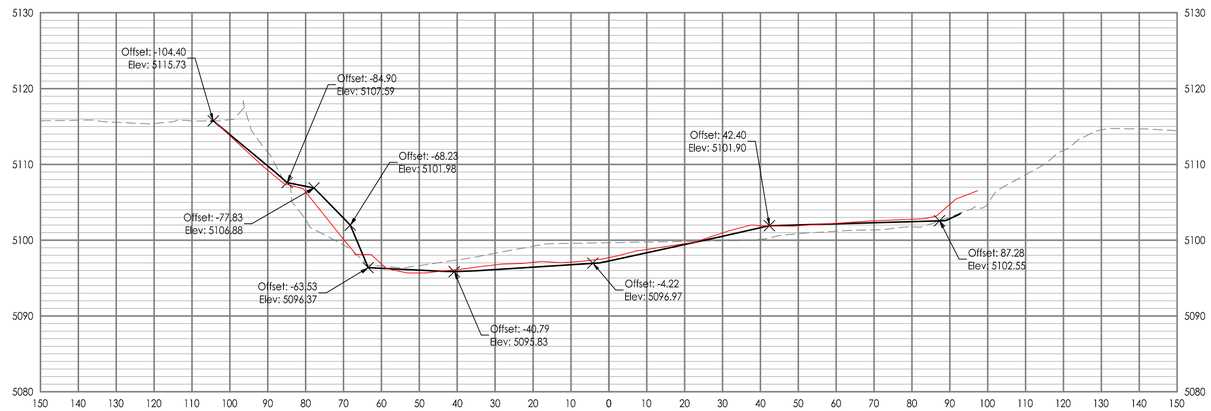

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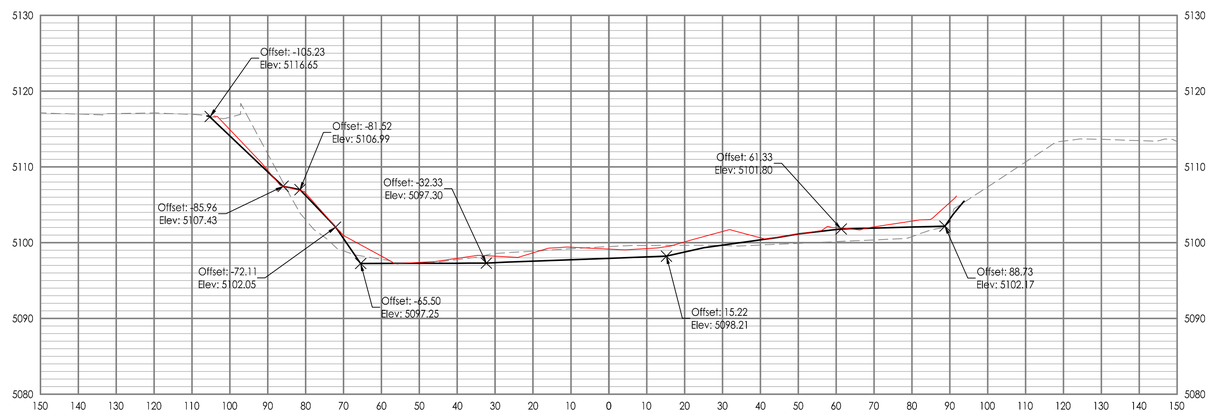

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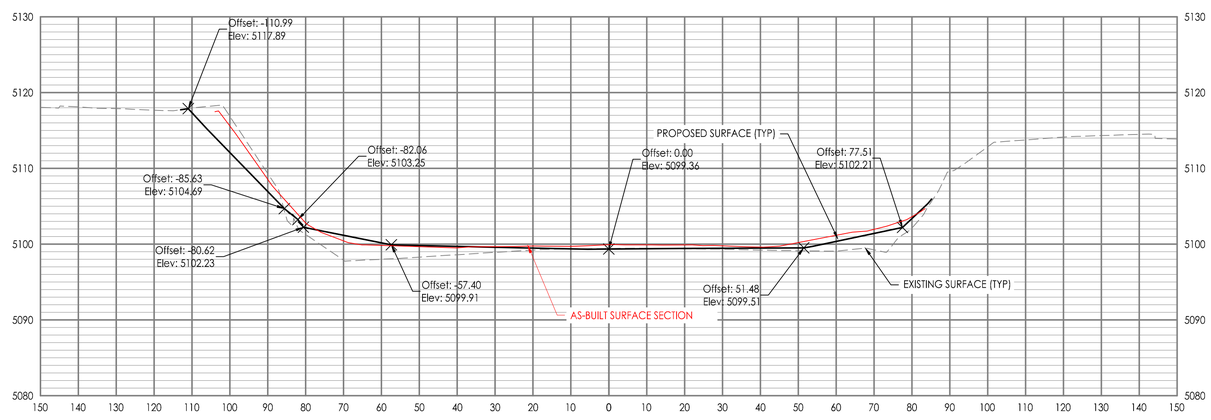

1
2+00

AS-BUILT

VERTICAL SCALE
1"=10' 0 5' 10' 20'

HORIZONTAL SCALE
1"=20' 0 10' 20' 40'

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Fort Collins, Colorado 80525
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Client/Project
CITY OF CASPER
200 NORTH DAVID STREET CASPER, WY 82601

NORTH PLATTE RIVER RESTORATION
FIRST STREET REACH
CASPER, WYOMING

Title
AS-BUILT
CROSS SECTIONS

Permit-Seal

Project Number: 172621110

File Name: NPFST_AS-BUILT_PP_SHEETS.dwg

PTP	JGA	TCD	21.2.25
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. CROSS SECTIONS

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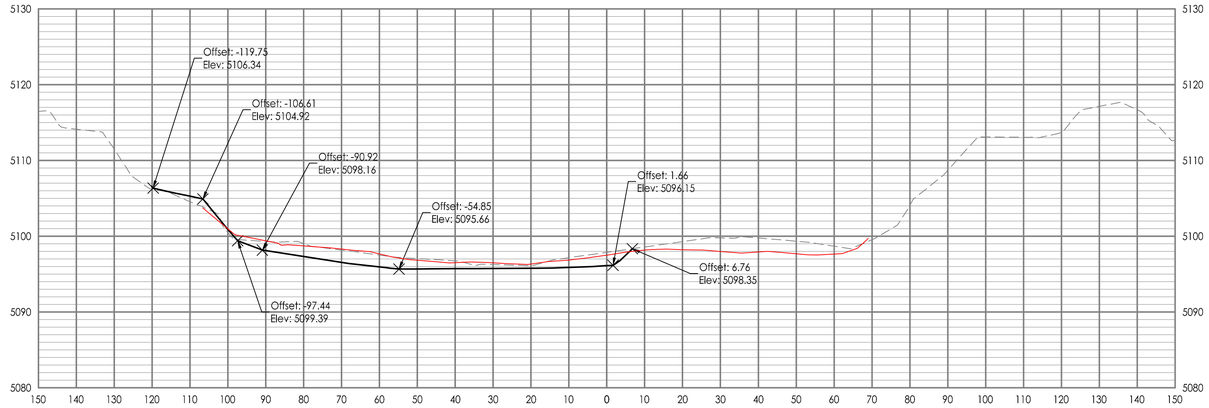
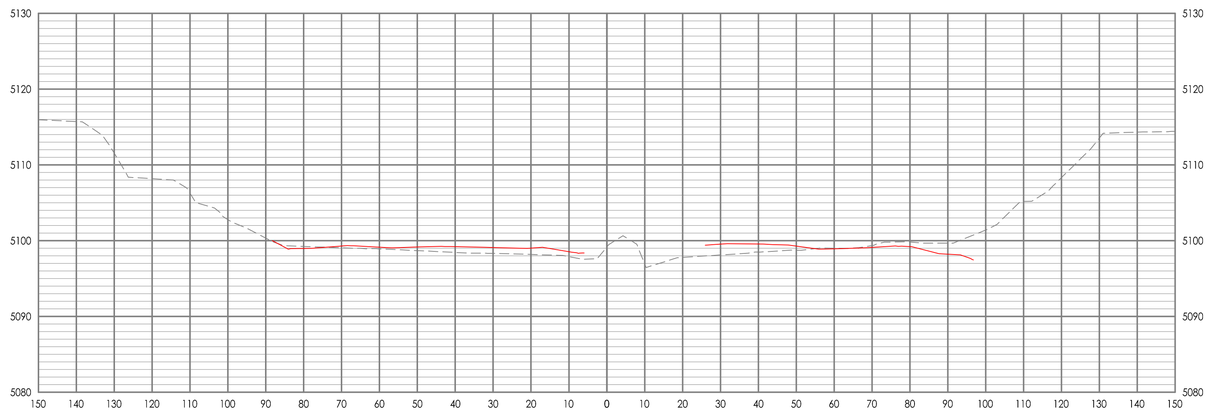


6
9+00



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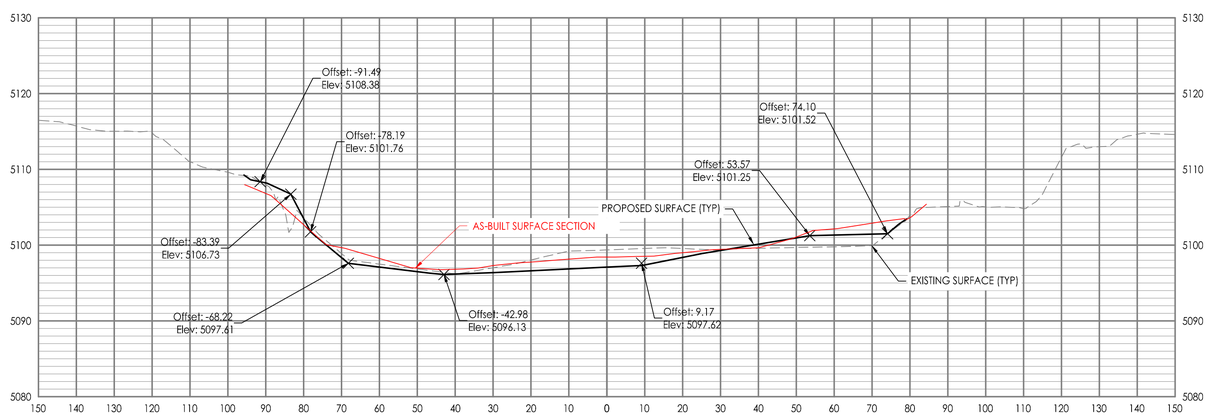

4
5+50

AS-BUILT

VERTICAL SCALE
1"=10' 0 5' 10' 20'

HORIZONTAL SCALE
1"=20' 0 10' 20' 40'

Stantec

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Issued	By	Appd.	YY.MM.DD

Client/Project
CITY OF CASPER
200 NORTH DAVID STREET CASPER, WY 82601

NORTH PLATTE RIVER RESTORATION
FIRST STREET REACH
CASPER, WYOMING

Permit-Seal

Title
AS-BUILT
CROSS SECTIONS

Project Number: 172621110

File Name: NPFST_AS-BUILT_PP_SHEETS.dwg

PTP	JGA	TCD	21.2.25
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. CROSS SECTIONS

Revision	Sheet
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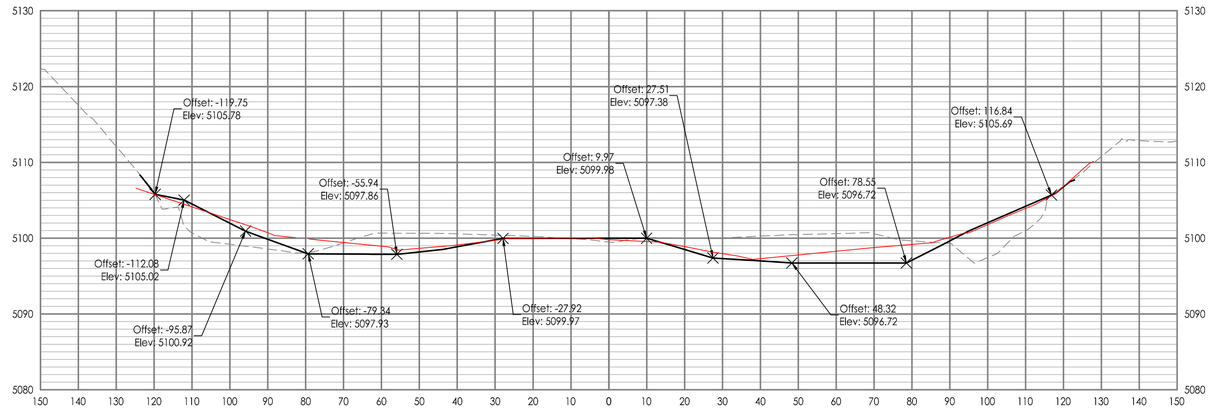

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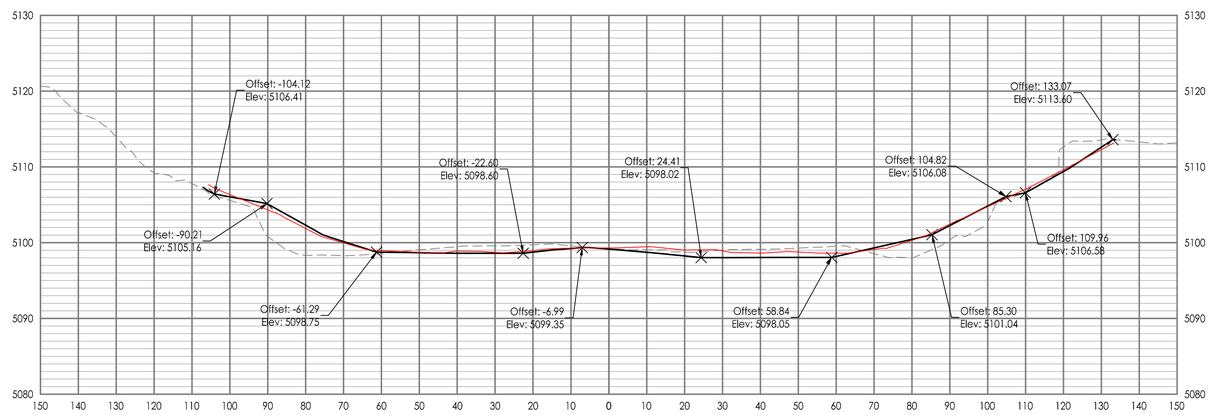

8
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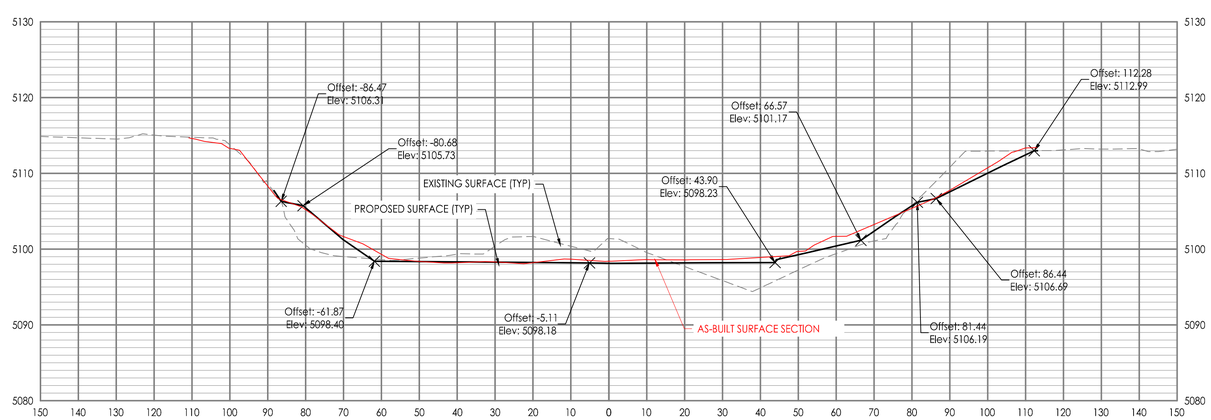

7
10+50

AS-BUILT

VERTICAL SCALE
0 5' 10' 20'
1"=10'

HORIZONTAL SCALE
0 10' 20' 40'
1"=20'

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Client/Project
CITY OF CASPER
200 NORTH DAVID STREET CASPER, WY 82601

NORTH PLATTE RIVER RESTORATION
FIRST STREET REACH
CASPER, WYOMING

Title
AS-BUILT
CROSS SECTIONS

Permit-Seal

Project Number: 172621110

File Name: NPFST_AS-BUILT_PP_SHEETS.dwg

PTP	JGA	TCD	21.2.25
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. CROSS SECTIONS

Revision	Sheet
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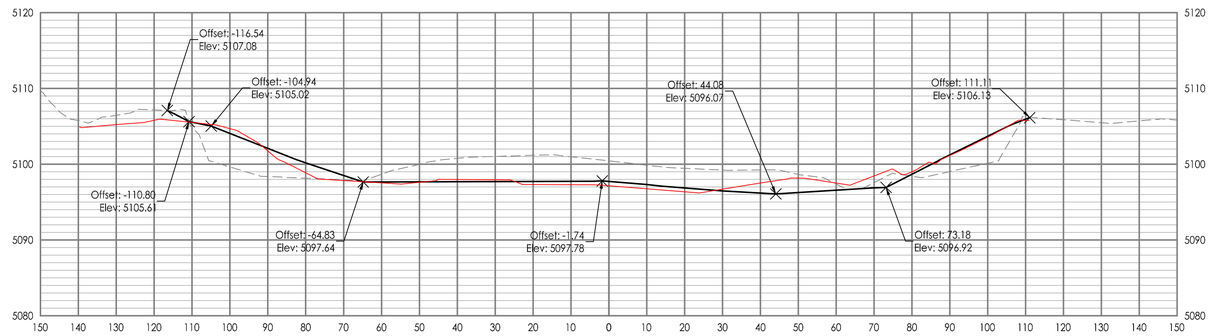
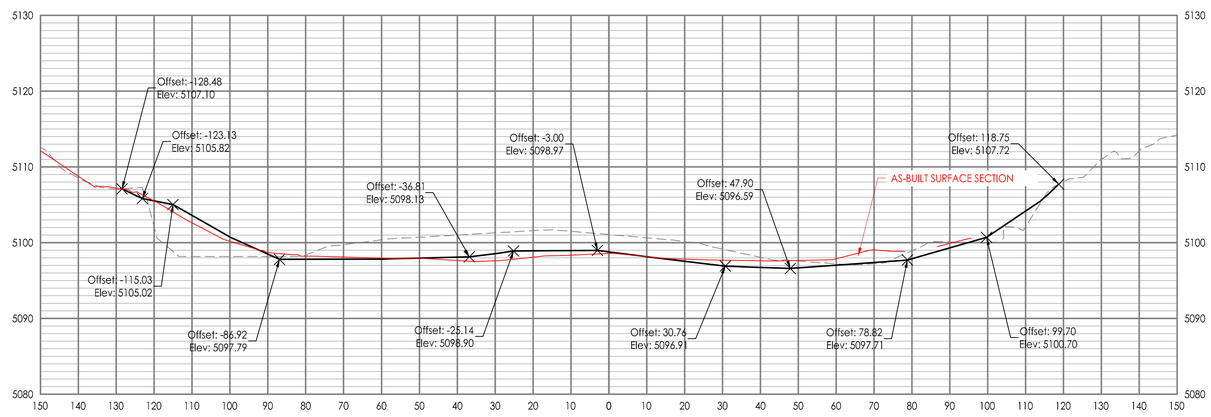


12
16+00



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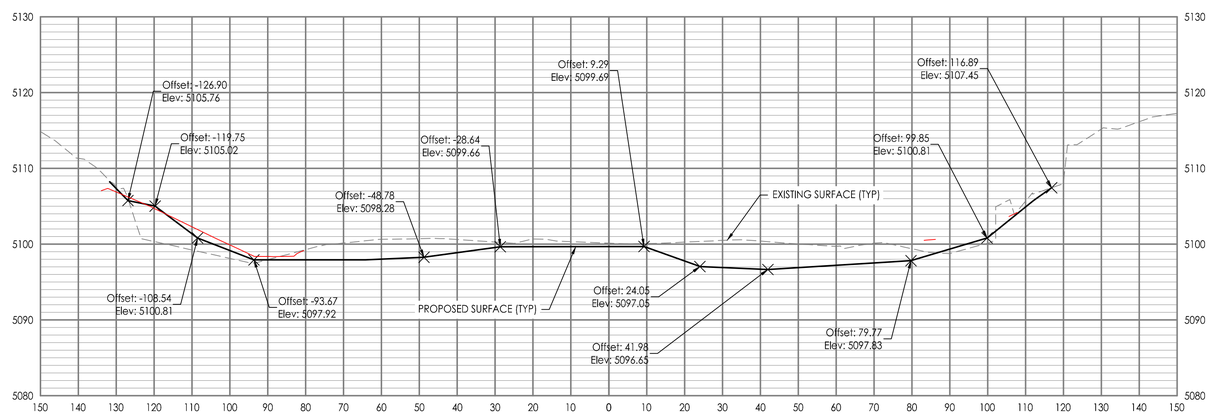

10
14+00

AS-BUILT

VERTICAL SCALE
0 5' 10' 20'
1"=10'

HORIZONTAL SCALE
0 10' 20' 40'
1"=20'

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Client/Project
CITY OF CASPER
200 NORTH DAVID STREET CASPER, WY 82601

NORTH PLATTE RIVER RESTORATION
FIRST STREET REACH
CASPER, WYOMING

Title
AS-BUILT
CROSS SECTIONS

Permit-Seal

Project Number: 172621110

File Name: NPFST_AS-BUILT_PP_SHEETS.dwg

PTP	JGA	TCD	21.2.25
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. CROSS SECTIONS

Revision	Sheet
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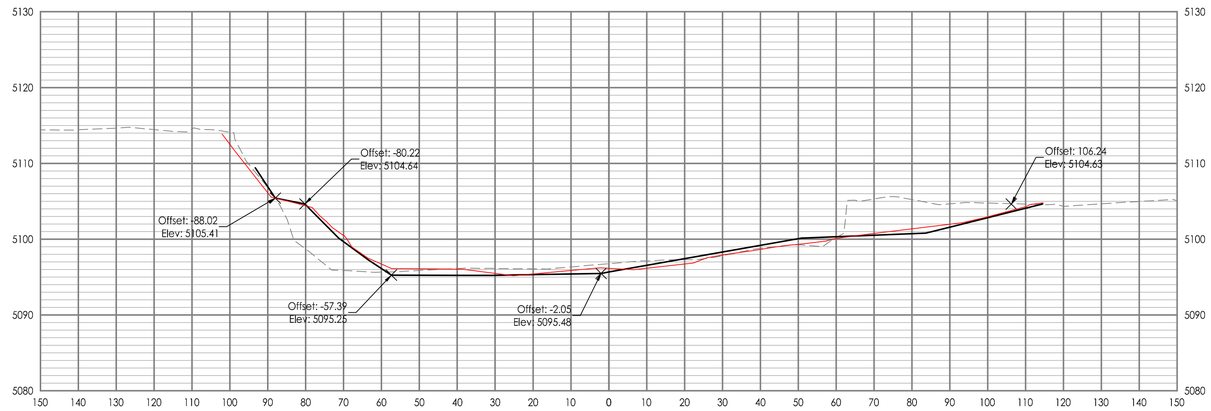

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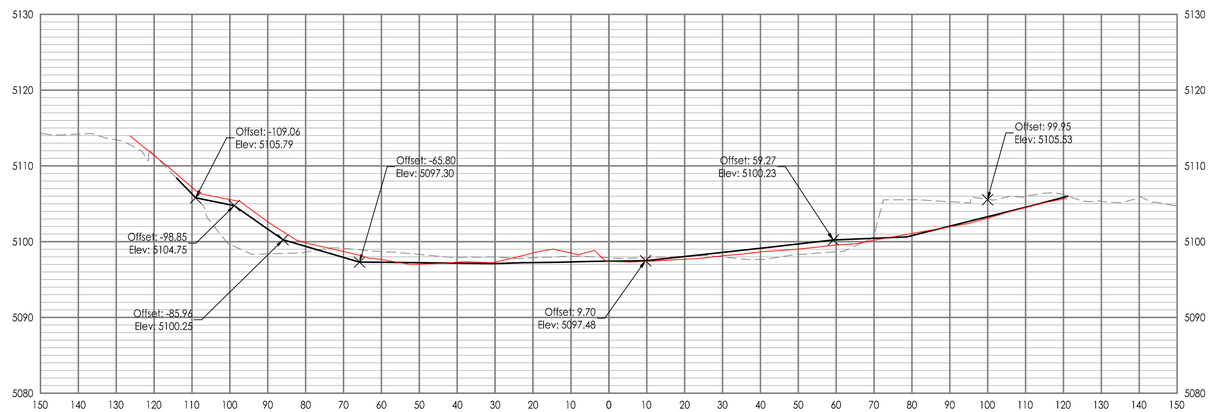

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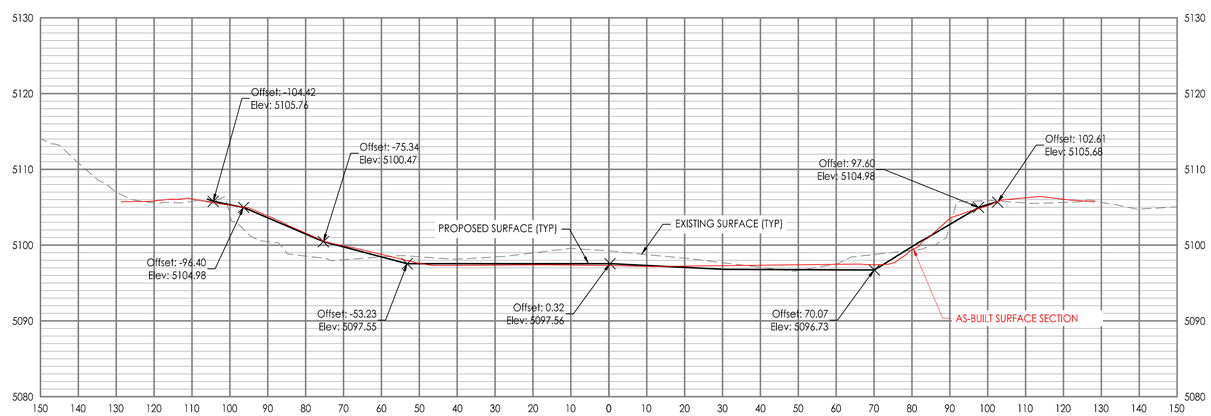

13
17+00

AS-BUILT

VERTICAL SCALE
0 5' 10' 20'
1"=10'

HORIZONTAL SCALE
0 10' 20' 40'
1"=20'

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Client/Project
CITY OF CASPER
200 NORTH DAVID STREET CASPER, WY 82601

NORTH PLATTE RIVER RESTORATION
FIRST STREET REACH
CASPER, WYOMING

Title
AS-BUILT
CROSS SECTIONS

Permit-Seal

Project Number: 172621110

File Name: NPFST_AS-BUILT_PP_SHEETS.dwg

PTP	JGA	TCD	21.2.25
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. CROSS SECTIONS

Revision	Sheet
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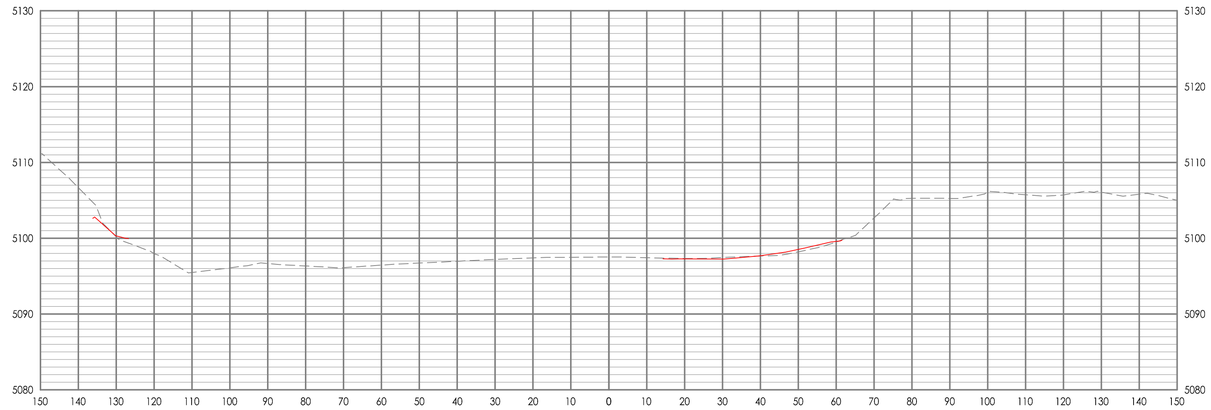

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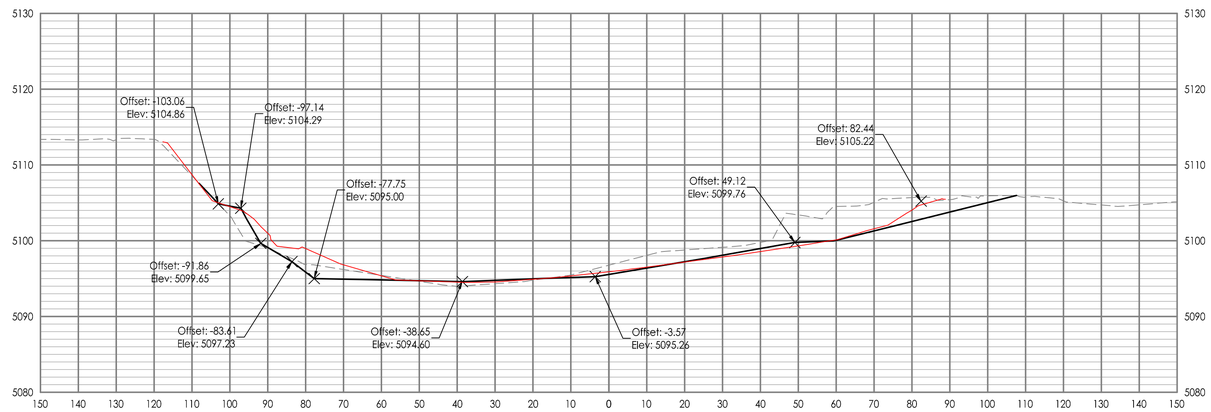

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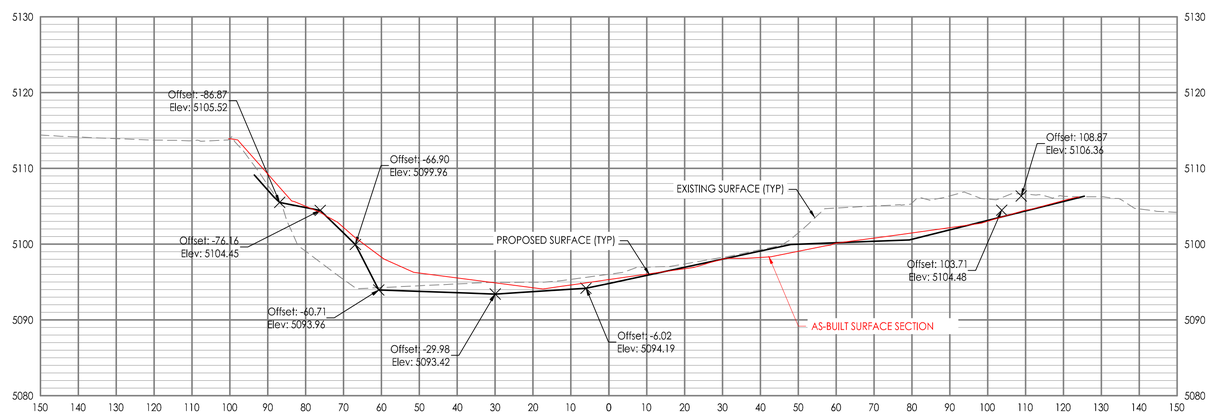

16
21+50

AS-BUILT

VERTICAL SCALE
1"=10' 0 5' 10' 20'

HORIZONTAL SCALE
1"=20' 0 10' 20' 40'

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FIRST STREET REACH
CASPER, WYOMING

Title
AS-BUILT
CROSS SECTIONS

Permit-Seal

Project Number: 172621110

File Name: NPFST_AS-BUILT_PP_SHEETS.dwg

PTP	JGA	TCD	21.2.25
Dwn.	Chkd.	Dsgn.	YY.MM.DD

Drawing No. CROSS SECTIONS

Revision	Sheet
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