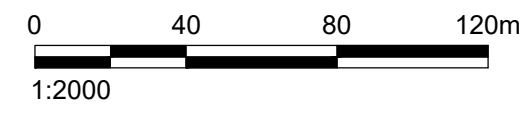
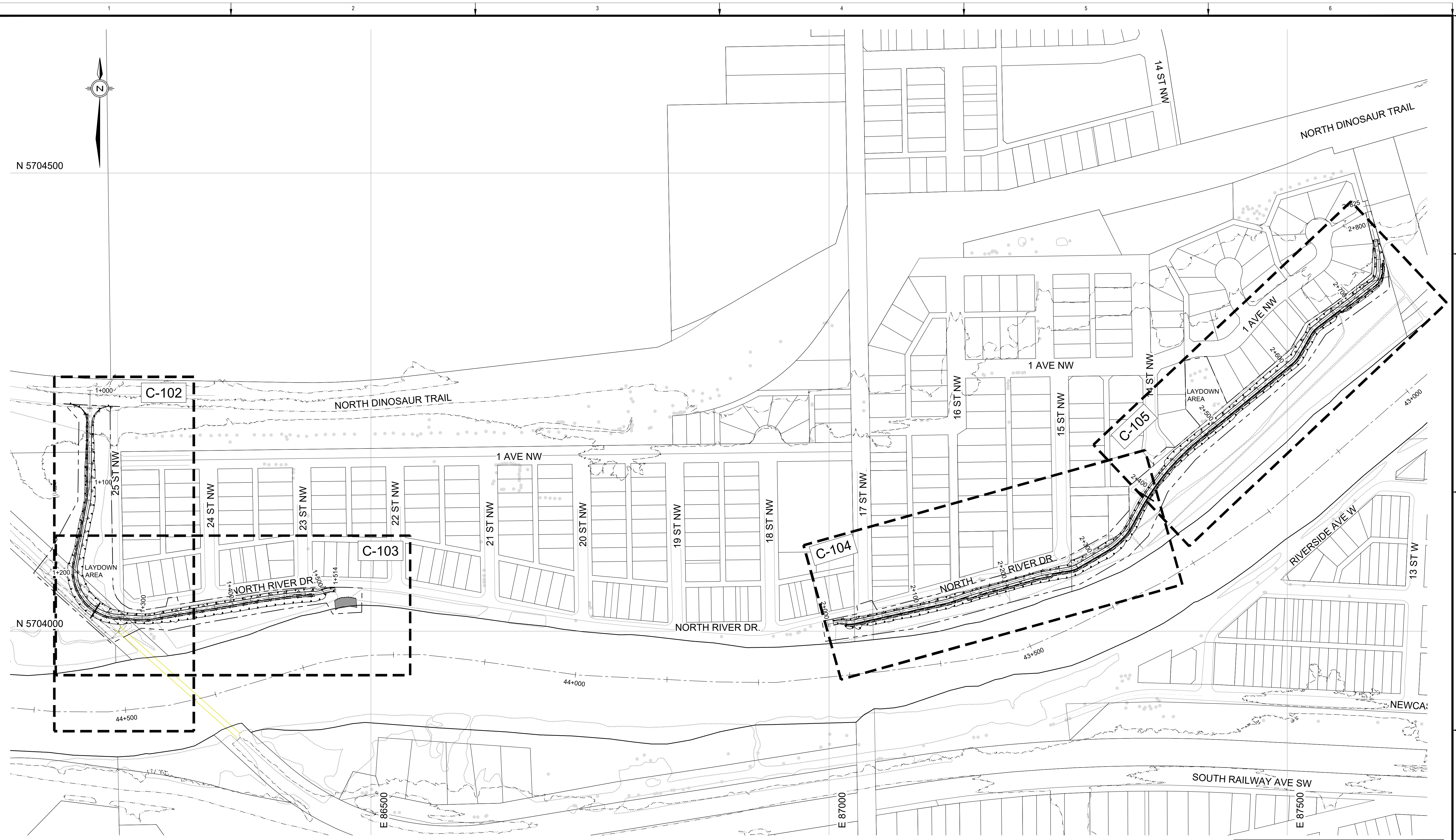






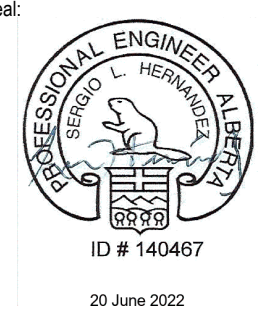
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**PLAN**  
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Rev	Date	Des	Dwn	Chk	Description
A	2022-06-20	SH	SH	RC	ISSUED FOR TENDER

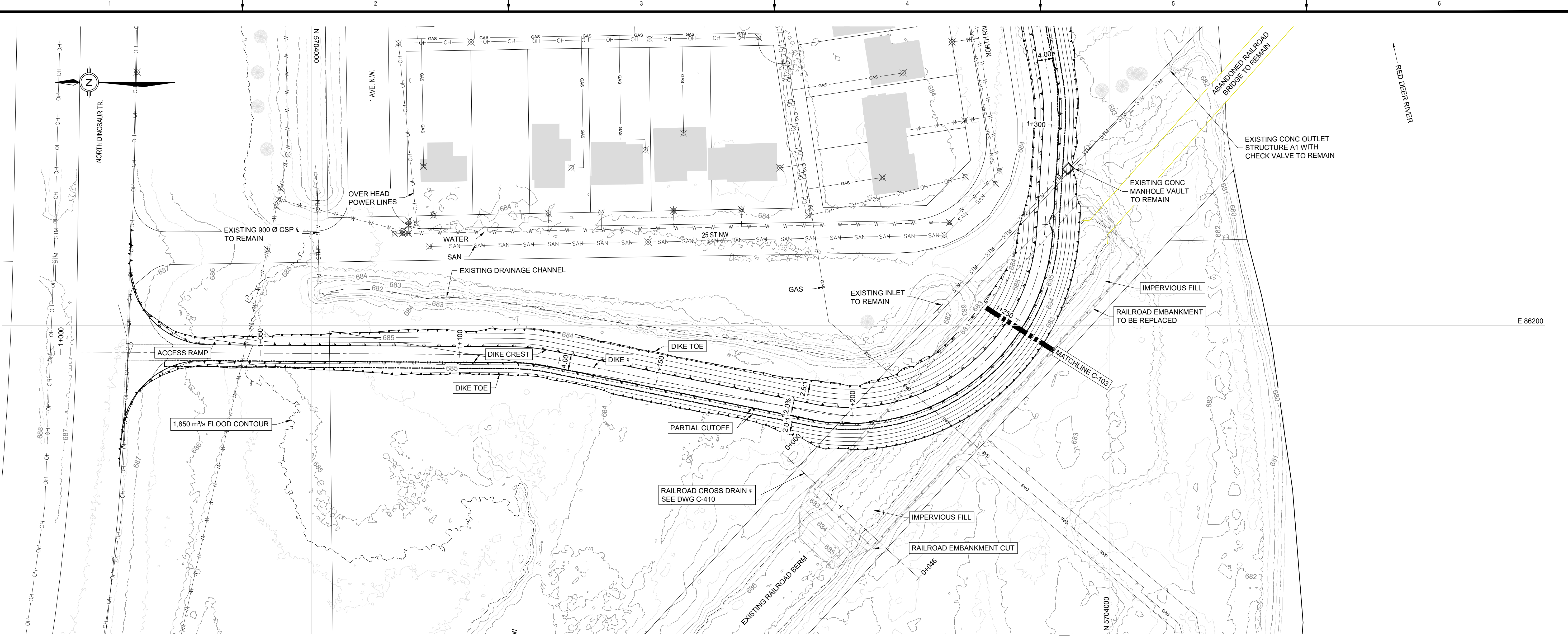
Rev	Date	Des	Dwn	Chk	Description

**DRUMHELLER RESILIENCY & FLOOD MITIGATION OFFICE**  
**MIDLAND PROJECT**

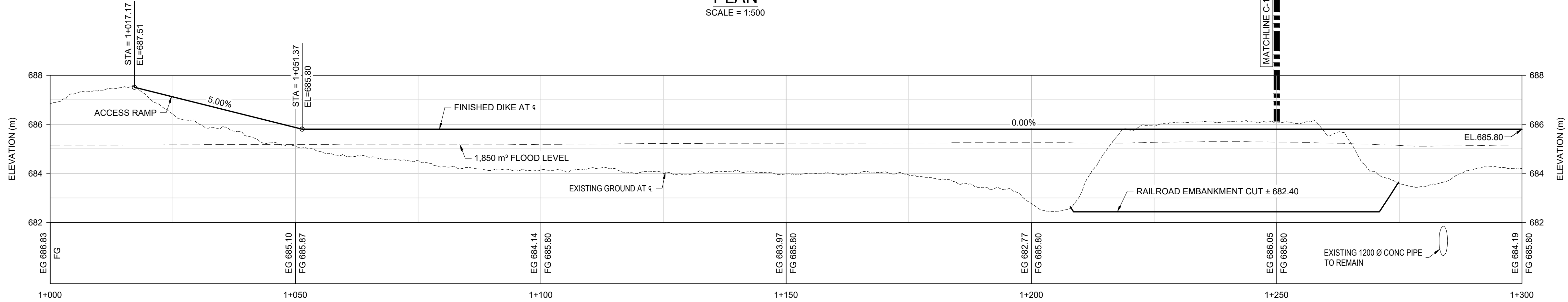
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Project No. **22.06.20A** Drawing No. **C-101** Rev. **A**  
 Group **CIVIL**

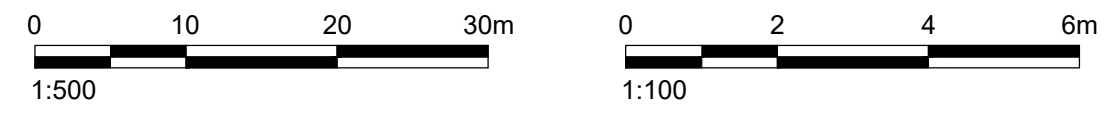
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**PLAN**  
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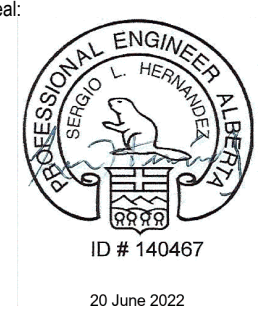


**PROFILE**  
HOR: 1:500  
VER: 1:100



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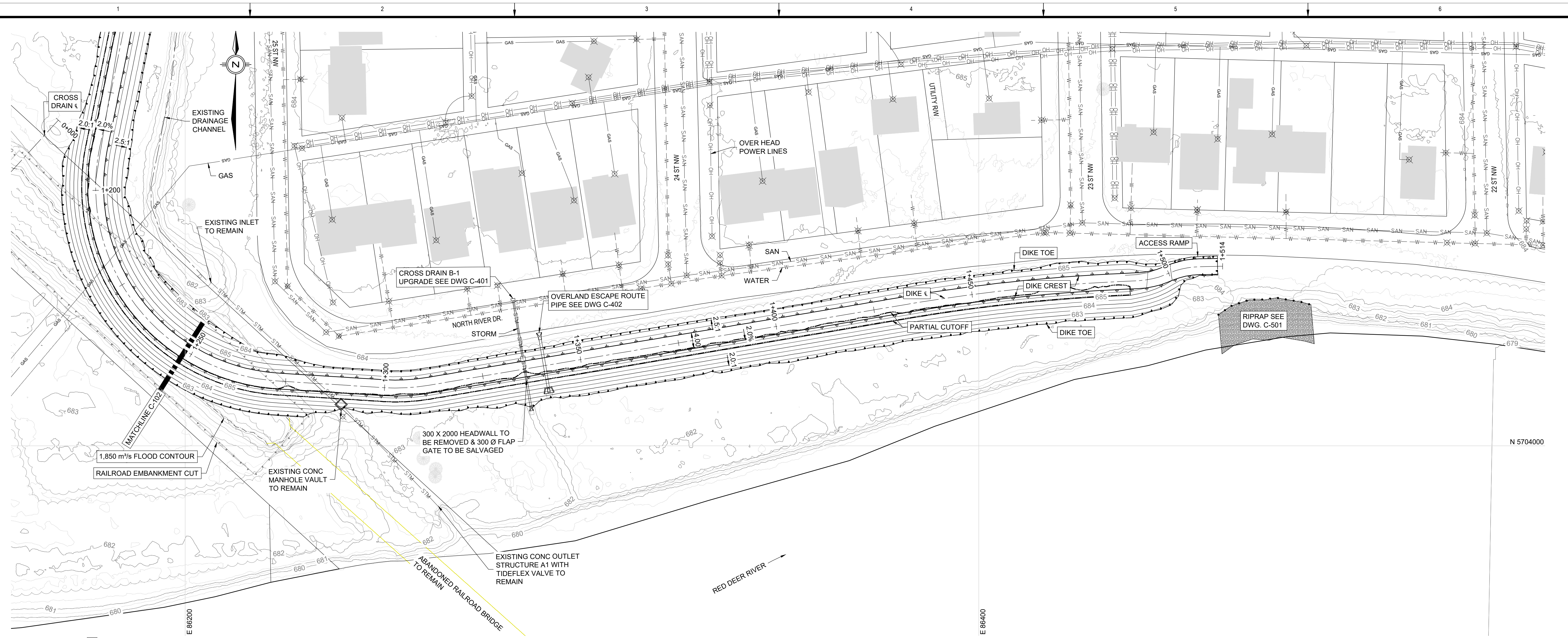
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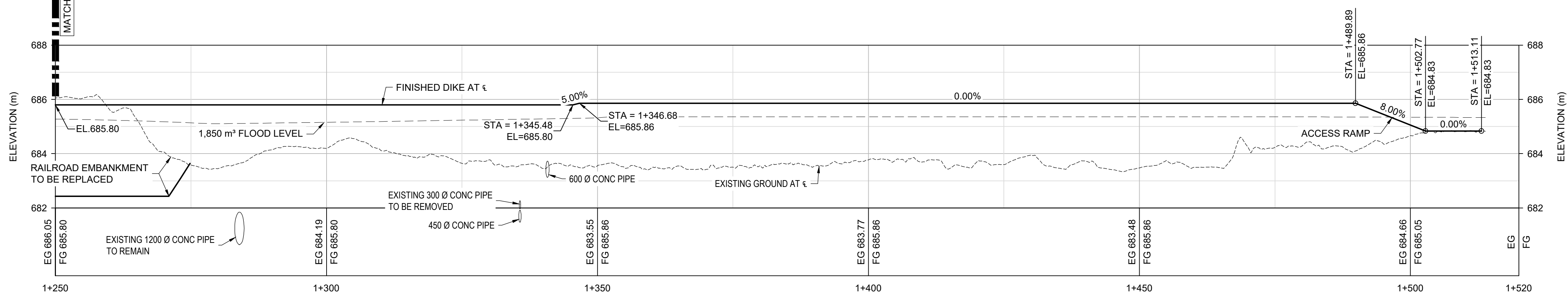
**DRUMHELLER RESILIENCY & FLOOD MITIGATION OFFICE**  
**MIDLAND PROJECT**  
**UPSTREAM**  
**PLAN AND PROFILE**  
**STA 1+000 TO 1+250**

Project No. **22.06.20A** Drawing No. **C-102** Rev. **A**  
Group **CIVIL**

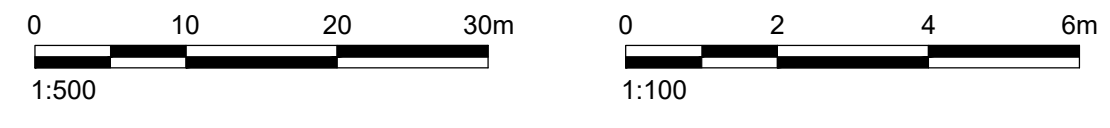
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**PLAN**  
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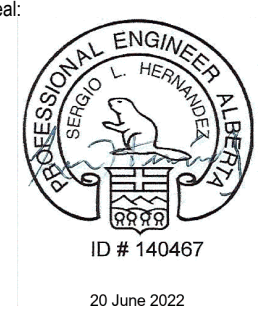


**PROFILE**  
HOR: 1:500  
VER: 1:100



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 RM ID #: 48789  
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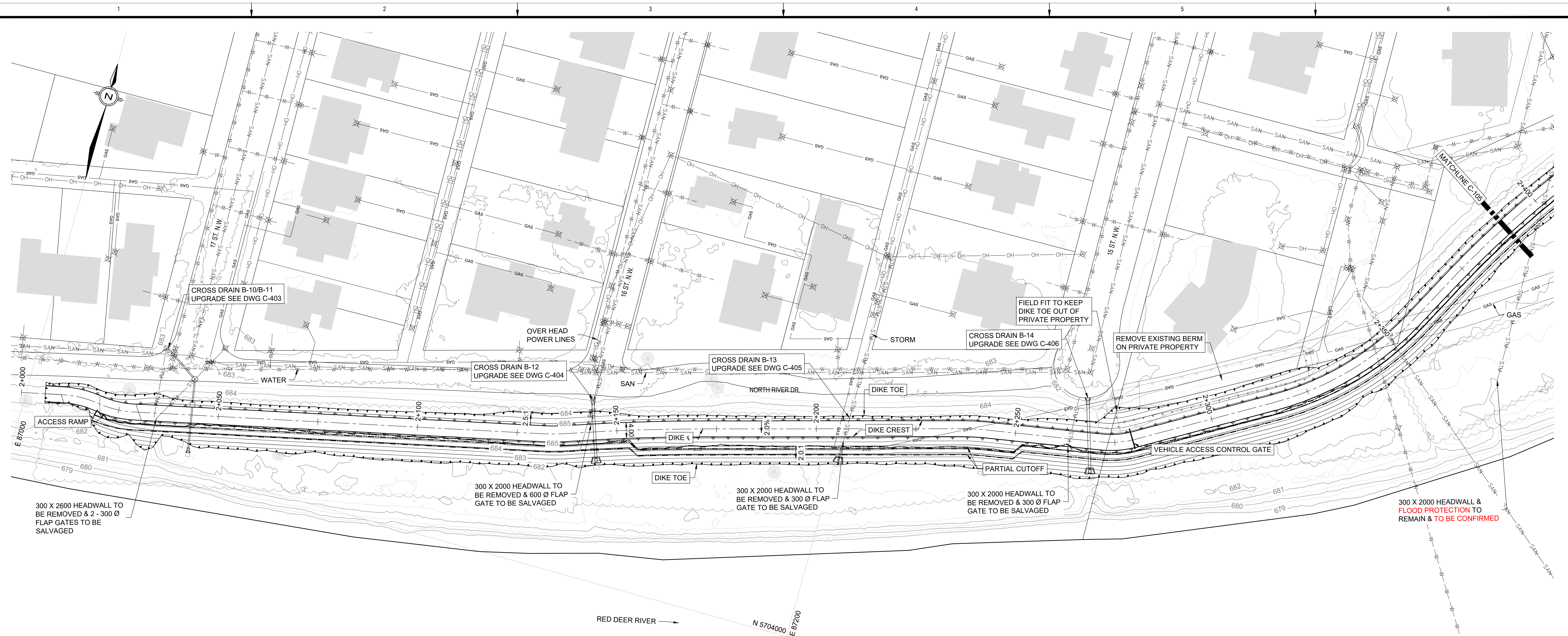
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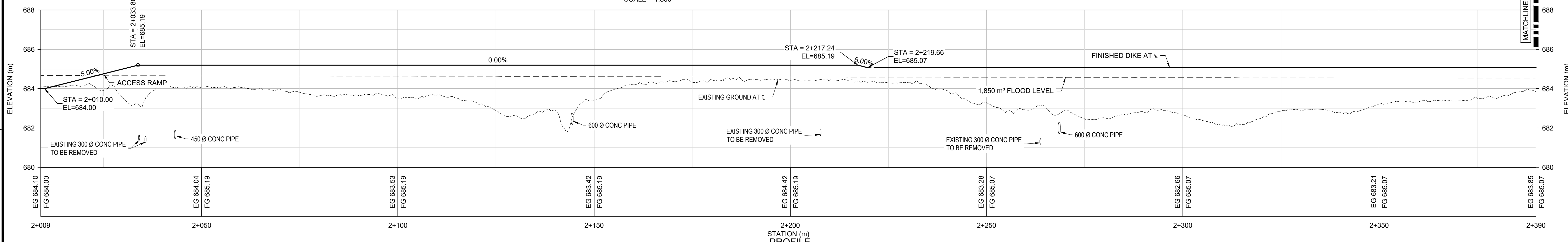
**DRUMHELLER RESILIENCY & FLOOD MITIGATION OFFICE**  
**MIDLAND PROJECT**  
**UPSTREAM**  
**PLAN AND PROFILE**  
**STA 1+250 TO 1+500**

Project No. **22.06.20A** Drawing No. **C-103** Rev. **A**  
 Group **CIVIL**

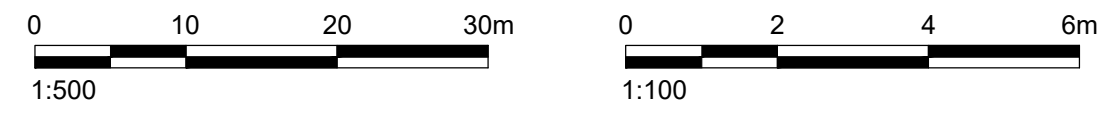
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 A B C D



**PLAN**  
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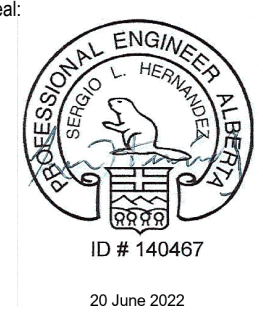


**PROFILE**  
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VER: 1:100



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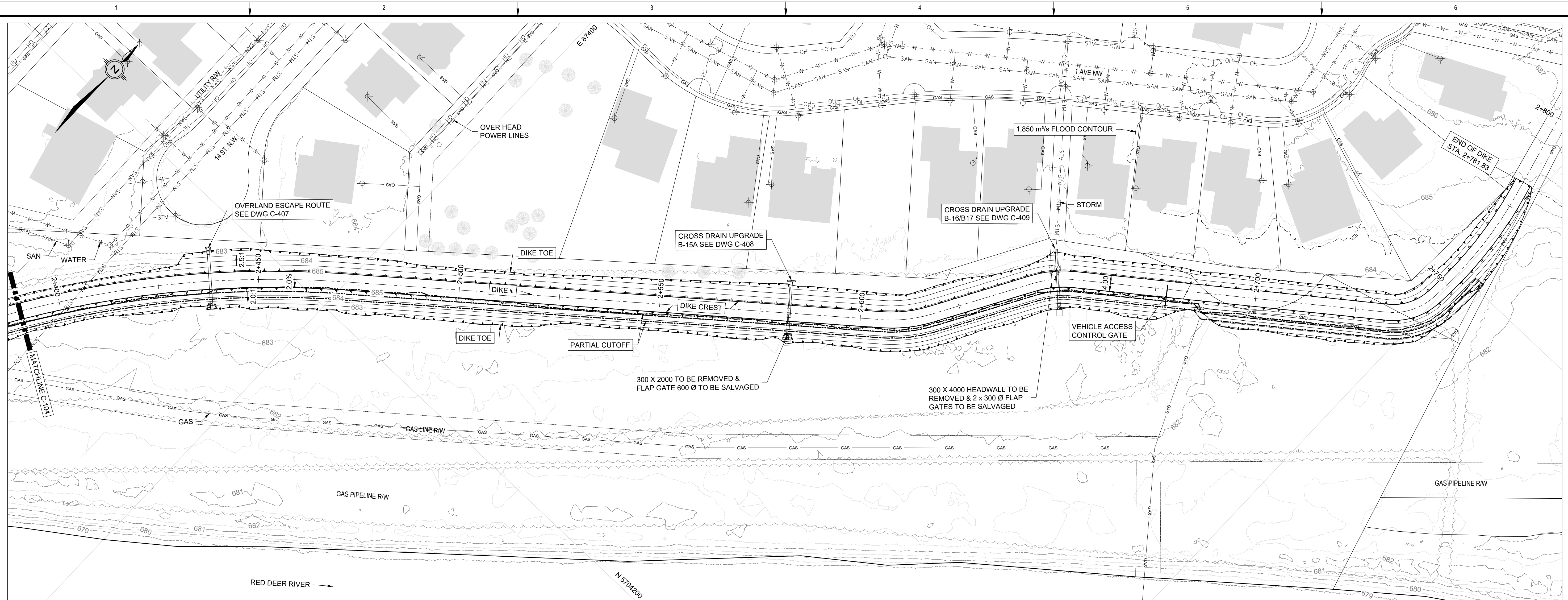
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RM SIGNATURE: *L. Hernandez*  
RM APEGA ID #: 48789  
DATE: Jun. 20 2022  
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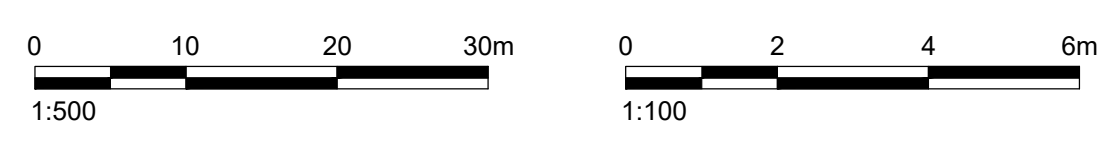
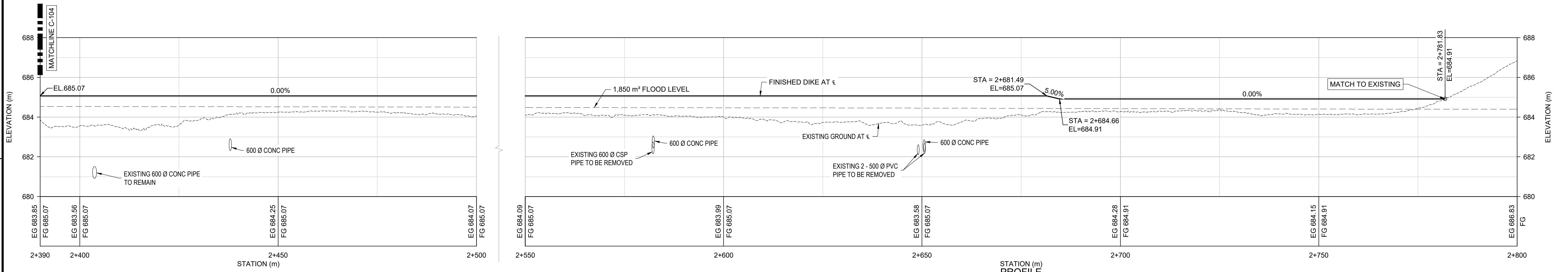
Rev	Date	Des	Dwn	Chk	Description

**DRUMHELLER RESILIENCY & FLOOD MITIGATION OFFICE**  
**MIDLAND PROJECT**  
**DOWNSTREAM**  
**PLAN AND PROFILE**  
**STA 2+000 TO 2+400**  
Project No. **22.06.20A** Drawing No. **C-104** Rev. **A**  
Group **CIVIL**

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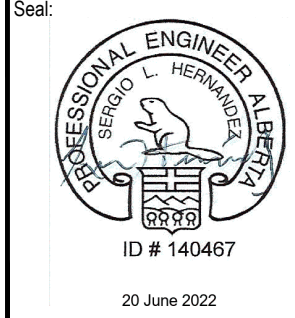
PLAN  
SCALE = 1:500



PROFILE  
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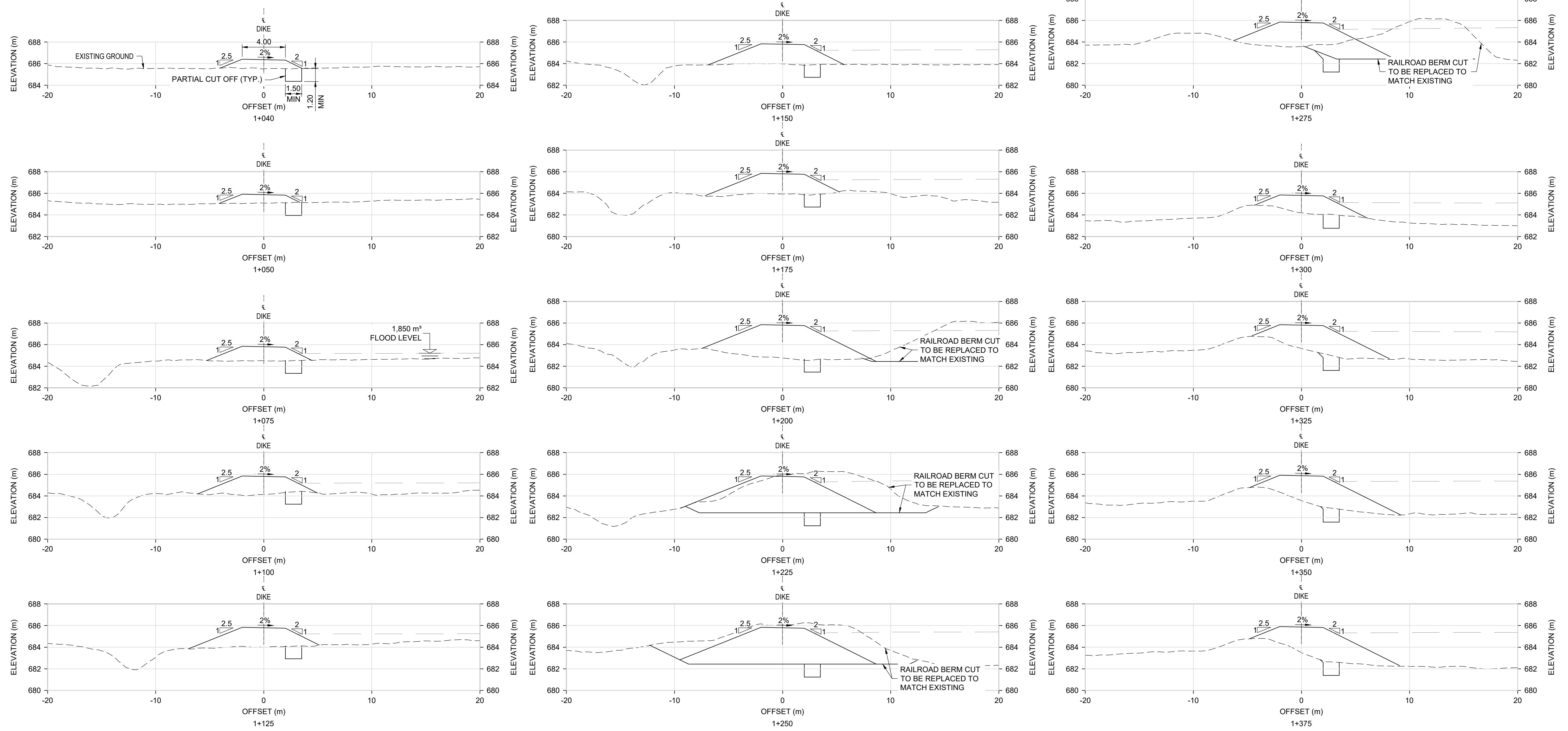
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Rev	Date	Des	Dwn	Chk	Description

**DRUMHELLER RESILIENCY & FLOOD MITIGATION OFFICE**  
**MIDLAND PROJECT**  
**DOWNSTREAM**  
**PLAN AND PROFILE**  
**STA 2+406 TO 2+782**  
 Project No. **22.06.20A** Drawing No. **C-105** Rev. **A**  
 Group **CIVIL**

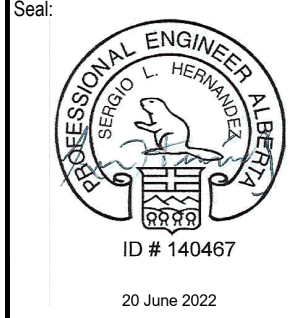
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**SECTIONS**  
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Rev	Date	Des	Dwn	Chk	Description

**DRUMHELLER RESILIENCY & FLOOD MITIGATION OFFICE**  
**MIDLAND PROJECT**

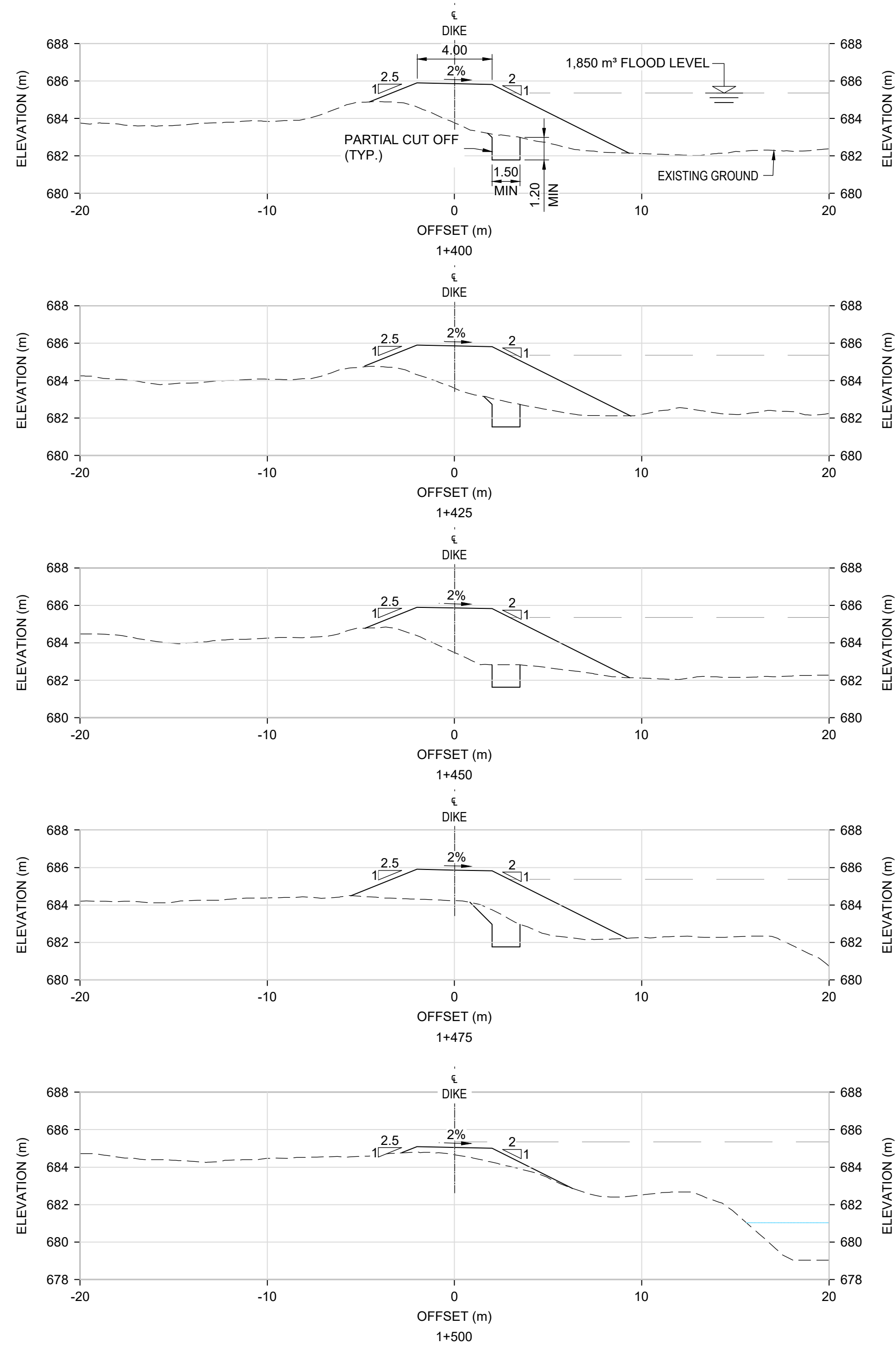
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Project No. **22.06.20A**      Drawing No. **C-301**

Group **CIVIL**      Rev. **A**



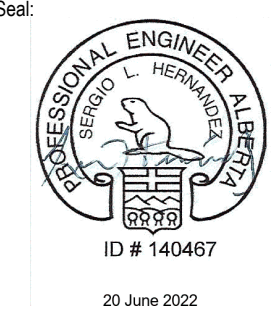
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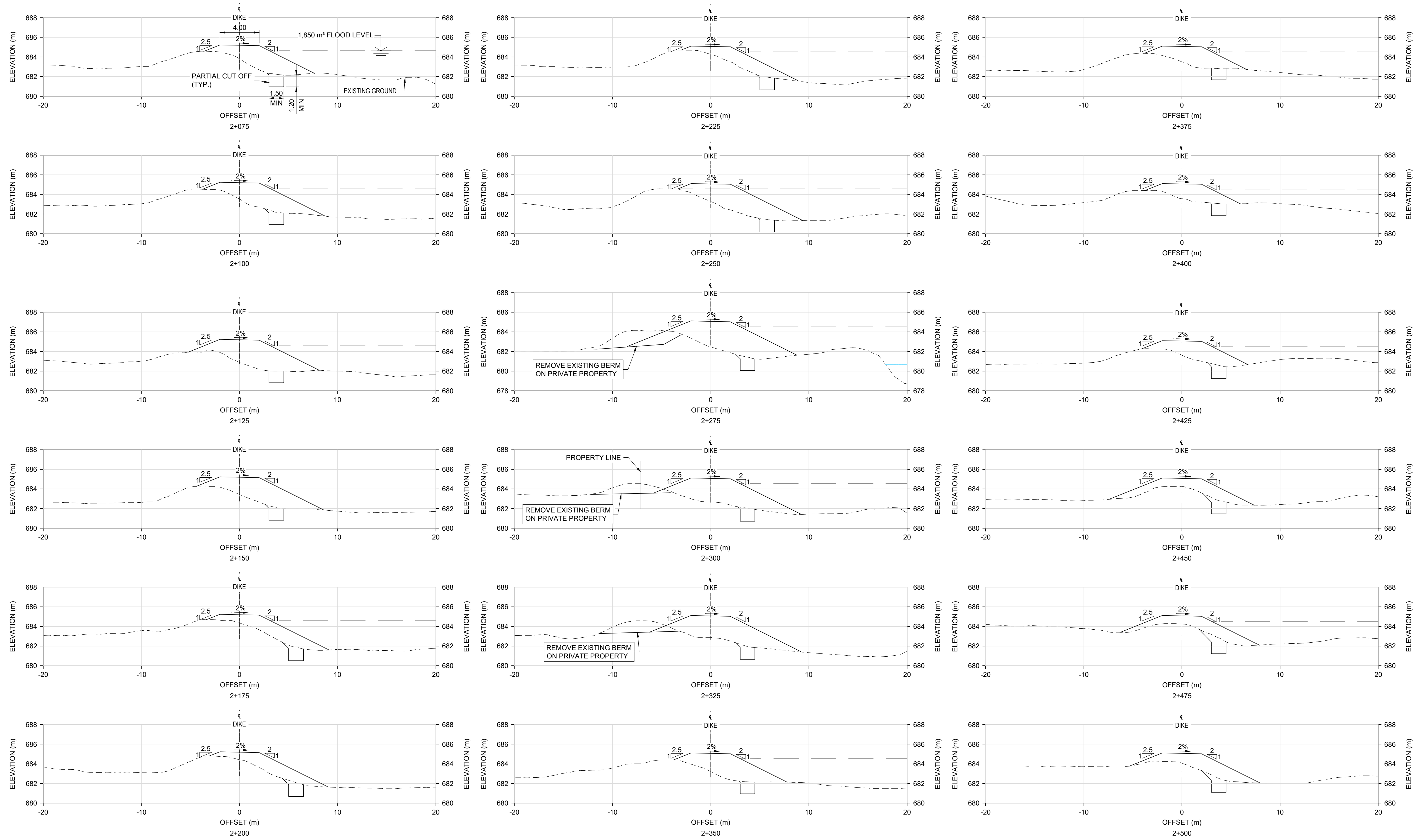
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**DRUMHELLER RESILIENCY & FLOOD MITIGATION OFFICE**  
**MIDLAND PROJECT**

**UPSTREAM SECTIONS**  
**2 OF 2**

Project No.	22.06.20A	Drawing No.	C-302	Rev.	A
Group	CIVIL				

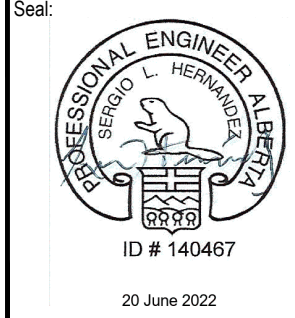
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**SECTIONS**  
SCALE = 1:200

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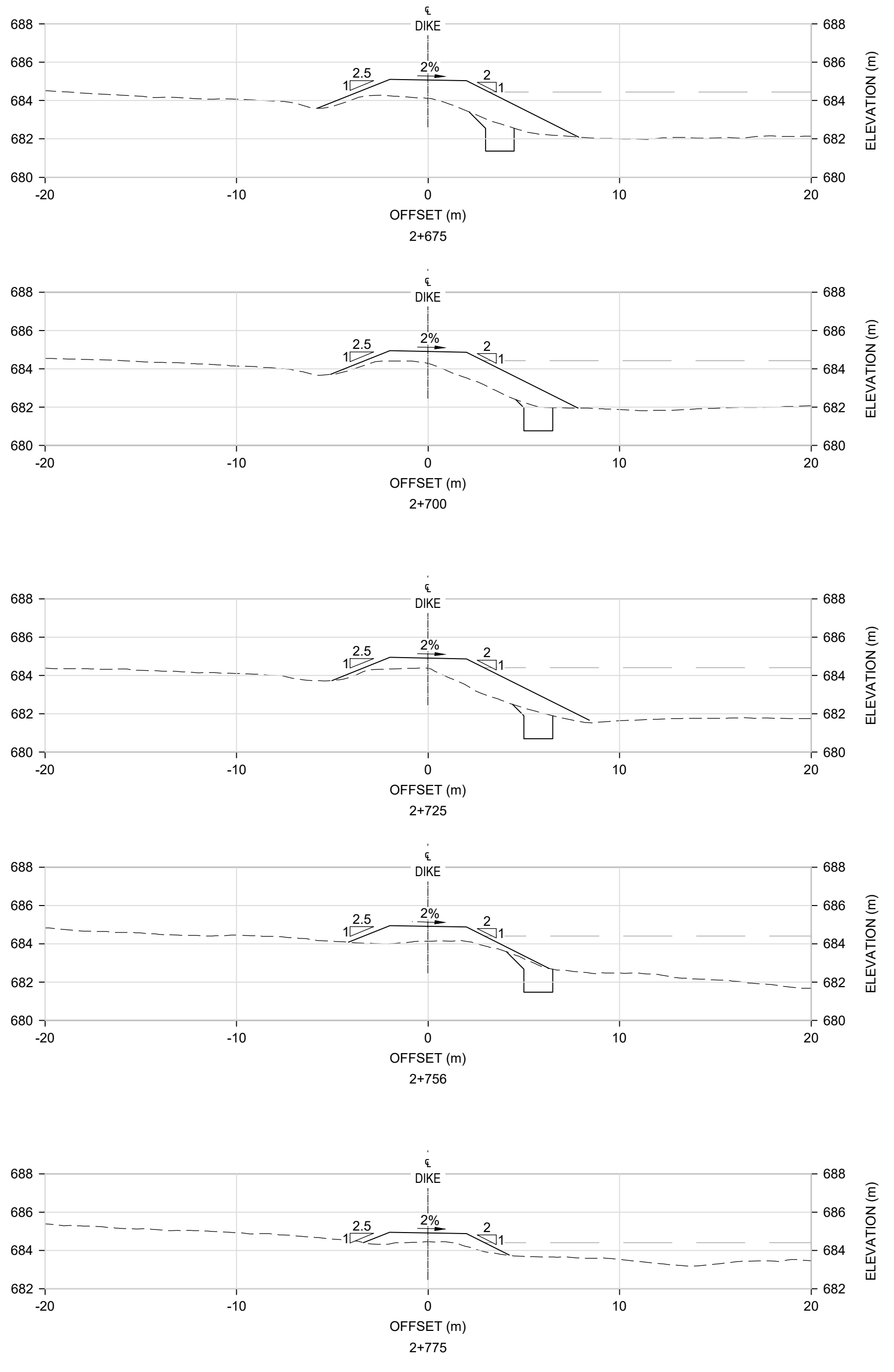
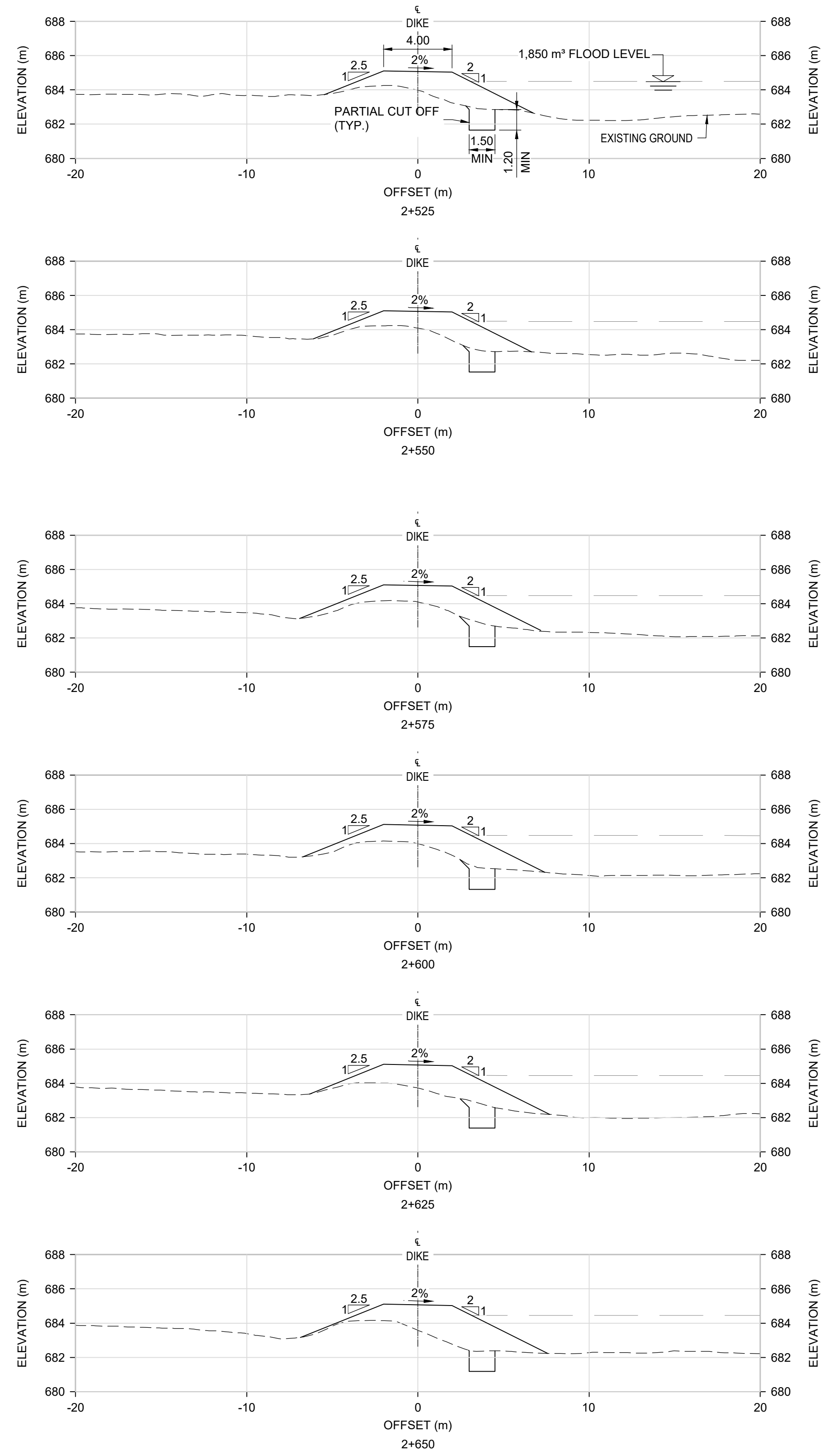
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**DRUMHELLER RESILIENCY & FLOOD MITIGATION OFFICE**  
**MIDLAND PROJECT**

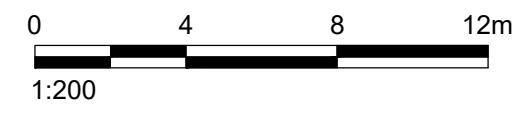
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**1 OF 2**

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 Group **CIVIL**

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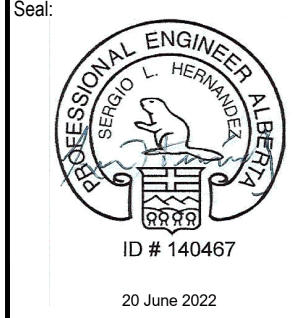


**SECTIONS**  
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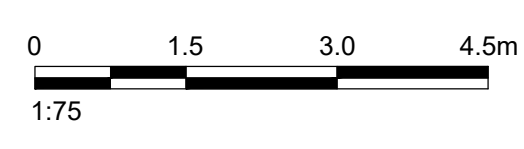
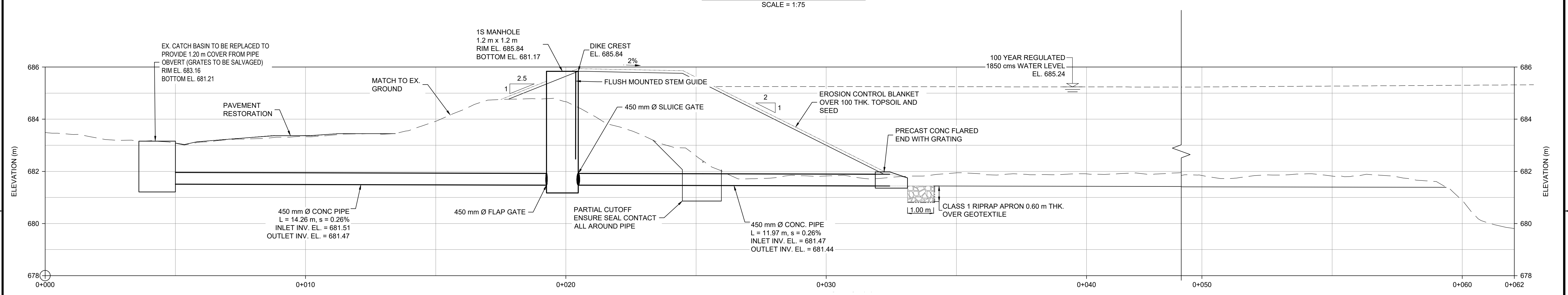
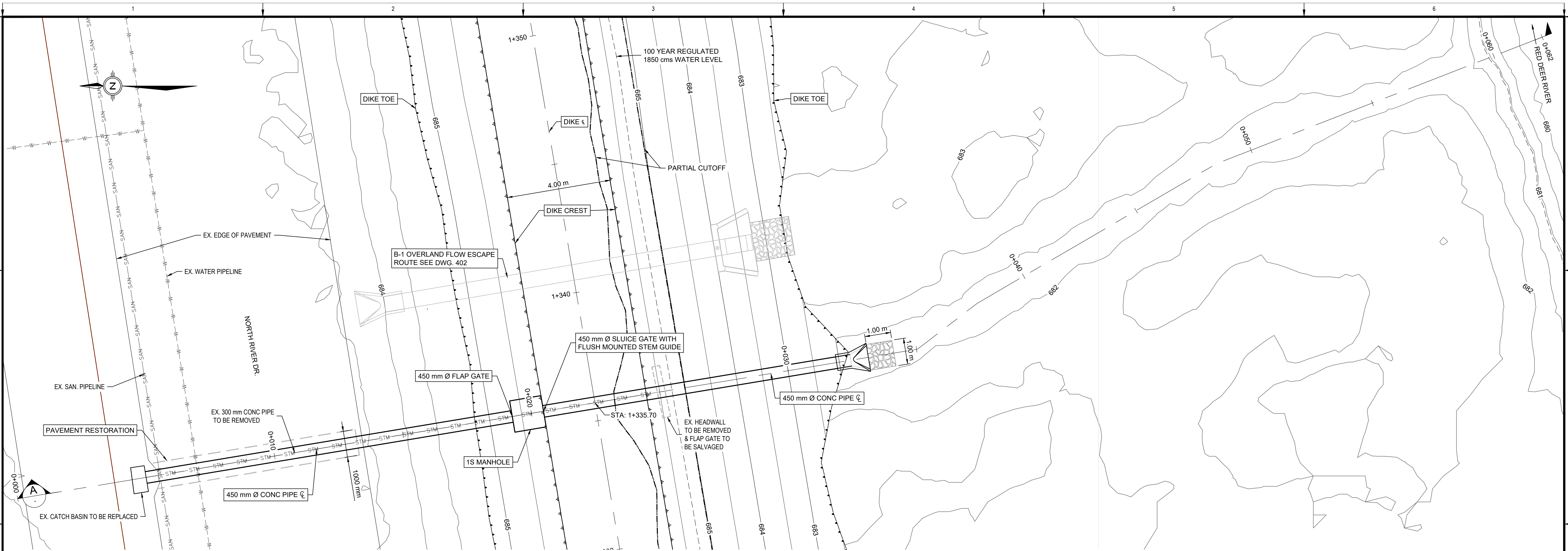
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**PERMIT NUMBER: P009196**  
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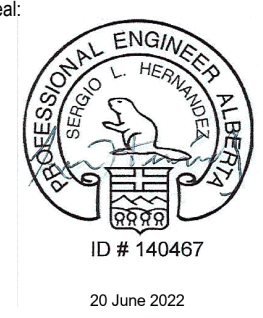
<b>DRUMHELLER RESILIENCY &amp; FLOOD MITIGATION OFFICE</b>			
<b>MIDLAND PROJECT</b>			
<b>DOWNSTREAM SECTIONS</b>			
<b>2 OF 2</b>			
Project No.	22.06.20A		Rev.
Group	CIVIL		<b>C-304 A</b>

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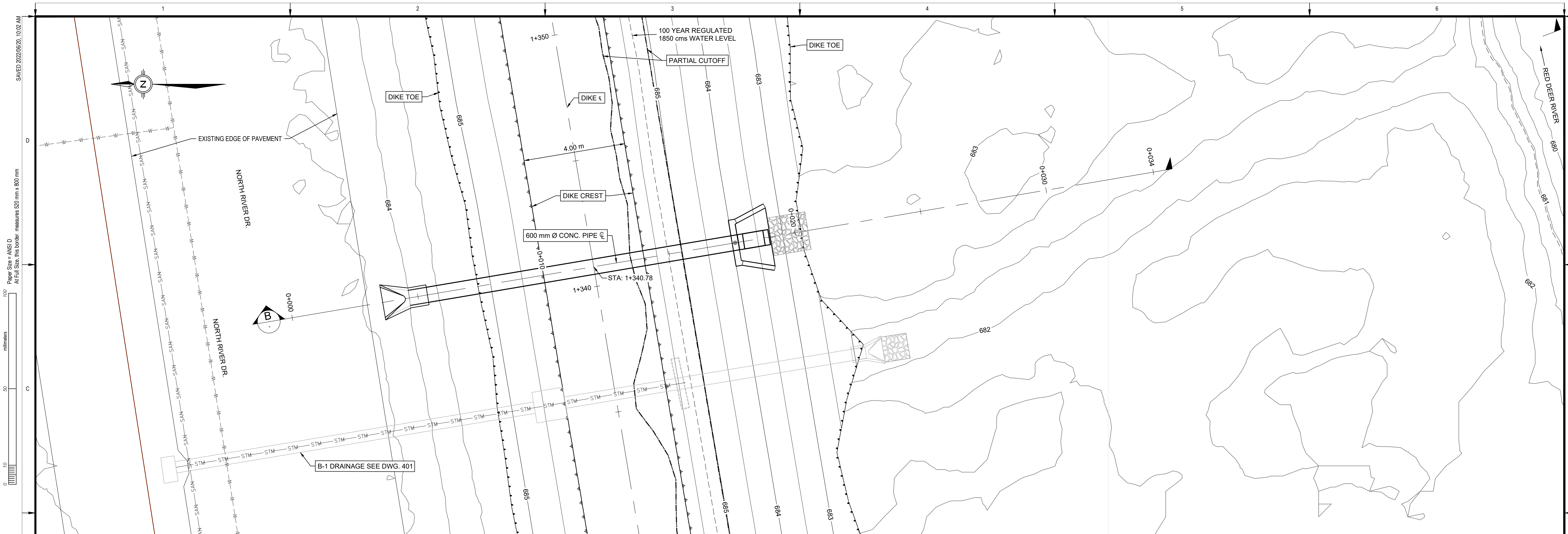


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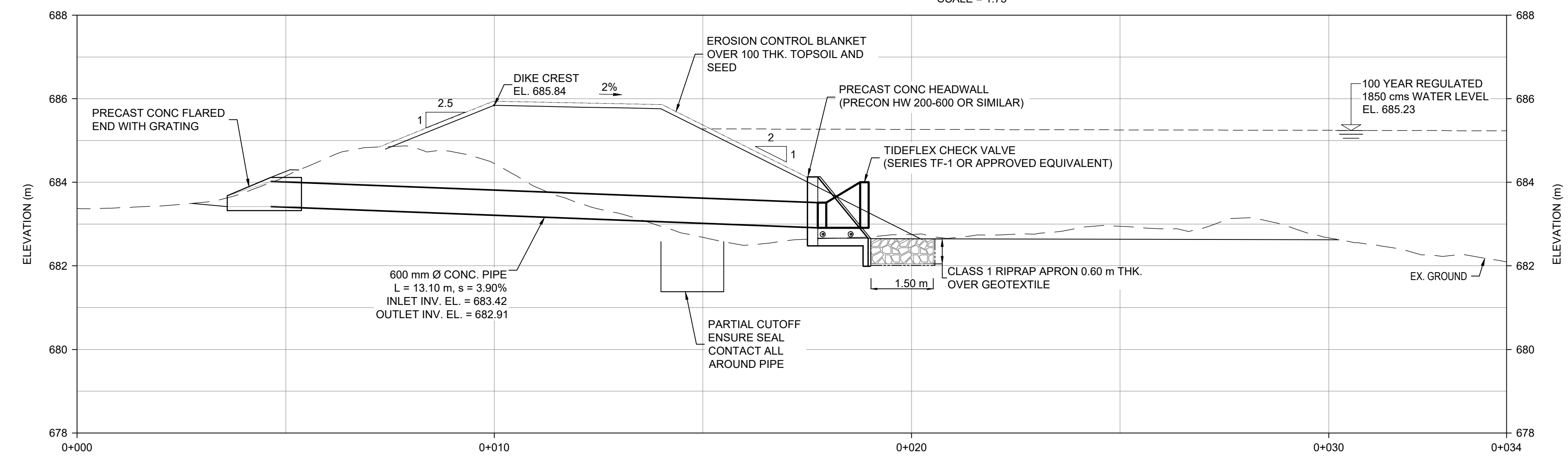
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DRUMHELLER RESILIENCY & FLOOD MITIGATION OFFICE			
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CROSSDRAIN B-1			
PLAN AND PROFILE			
Project No.	22.06.20A	Drawing No.	
Group	CIVIL		

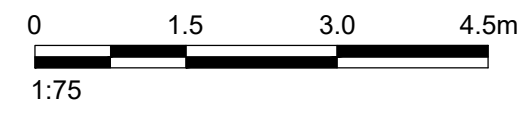
**C-401 A**



OVERLAND FLOW ESCAPE ROUTE B-1 - PLAN  
SCALE = 1:75



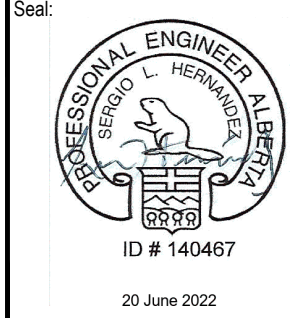
OVERLAND FLOW ESCAPE ROUTE B-1 - SECTION B  
SCALE = 1:75



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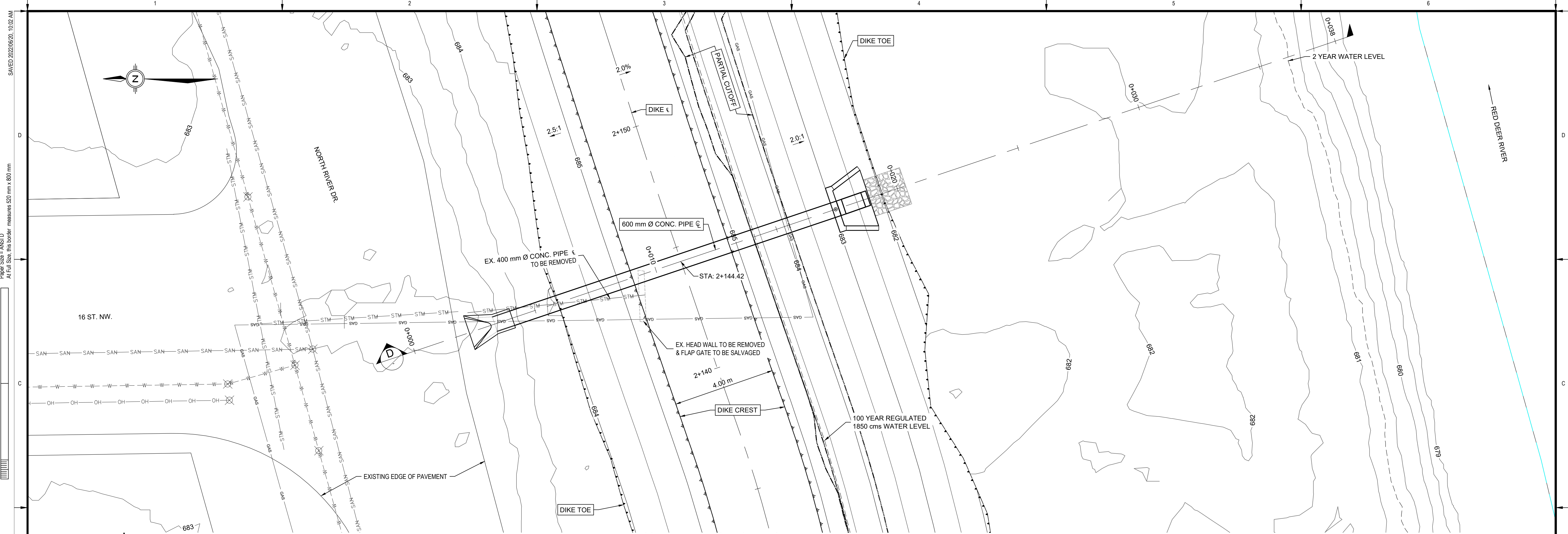


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RM SIGNATURE: *L. Hernandez*  
RM APEGA ID #: 48789  
DATE: Jun. 20 2022  
**PERMIT NUMBER: P009196**  
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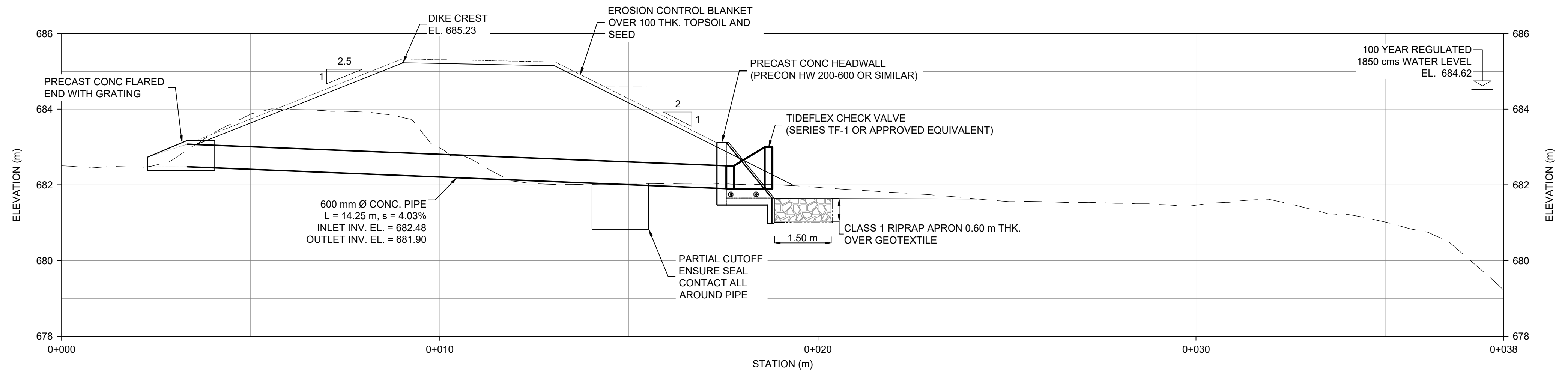
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<b>DRUMHELLER RESILIENCY &amp; FLOOD MITIGATION OFFICE</b>		
<b>MIDLAND PROJECT</b>		
<b>MIDLAND DOWNSTREAM</b>		
<b>OVERLAND FLOW ESCAPE ROUTE B-1</b>		
<b>PLAN AND PROFILE</b>		
Project No.	22.06.20A	Drawing No.
Group	CIVIL	Rev.
		<b>C-402 A</b>

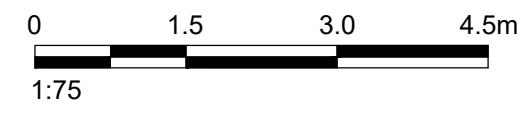




**STORM CROSSDRAIN B-12 - PLAN**  
SCALE = 1:75



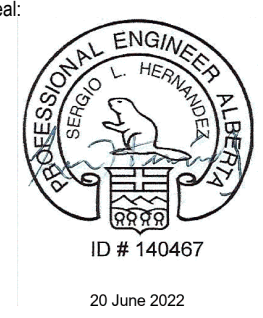
**STORM CROSSDRAIN B-12 - SECTION D**  
SCALE = 1:75



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ARE BASED ON 22" X 34" FORMAT DRAWINGS

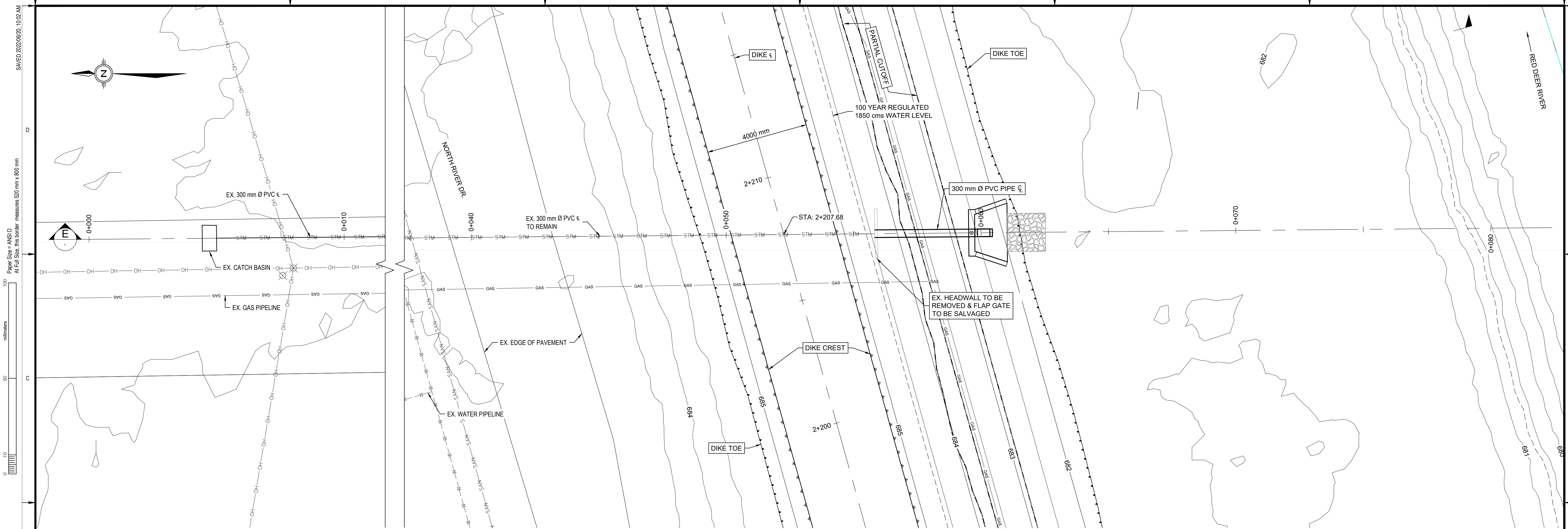
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 At Full Size, this border measures 320 mm x 800 mm



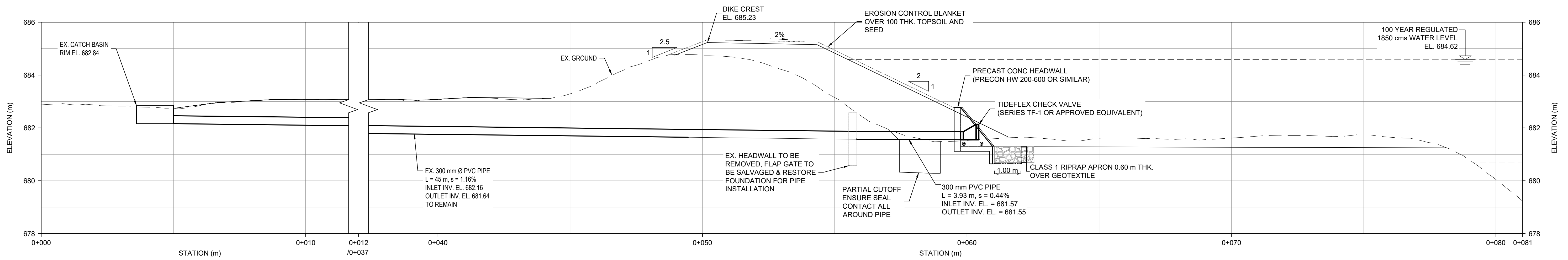
**PERMIT TO PRACTICE**  
**KLOHN CRIPPEN BERGER LTD.**  
 RM SIGNATURE: *K. L. Hernandez*  
 RM APEGA ID #: 48789  
 DATE: Jun. 20 2022  
**PERMIT NUMBER: P009196**  
 The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

Rev	Date	Des	Dwn	Chk	Description	Rev	Date	Des	Dwn	Chk	Description
A	2022-05-31	PB	SH	RC	ISSUED FOR TENDER						

<b>DRUMHELLER RESILIENCY &amp; FLOOD MITIGATION OFFICE</b>			
<b>MIDLAND PROJECT</b>			
<b>MIDLAND DOWNSTREAM</b>			
<b>STORM CROSSDRAIN B-12</b>			
<b>PLAN AND PROFILE</b>			
Project No.	22.06.20A	Drawing No.	
Group	CIVIL		
		<b>C-404</b>	<b>A</b>



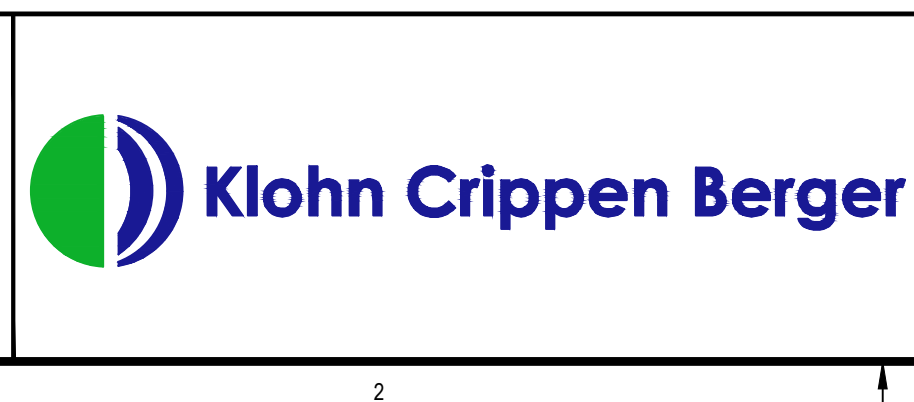
**CROSSDRAIN B-13 - PLAN**  
SCALE = 1:75



**CROSSDRAIN B-13 - SECTION E**  
SCALE = 1:75

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RM APEGA ID #: 48789  
DATE: Jun. 20 2022  
**PERMIT NUMBER: P009196**  
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

Rev	Date	Des	Dwn	Chk	Description
A	2022-06-20	PB	SH	RC	ISSUED FOR TENDER

Rev	Date	Des	Dwn	Chk	Description

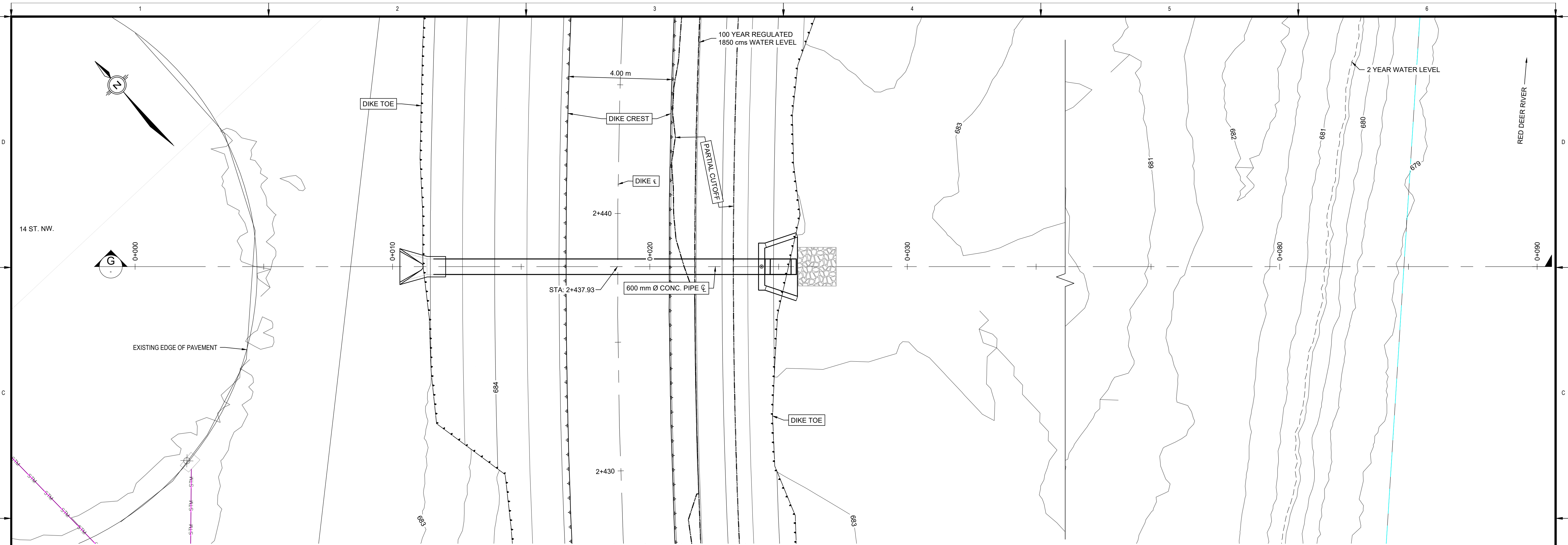
**DRUMHELLER RESILIENCY & FLOOD MITIGATION OFFICE**  
**MIDLAND PROJECT**  
**MIDLAND DOWNSTREAM**  
**STORM CROSSDRAIN B-13**  
**PLAN AND PROFILE**

Project No. **22.06.20A** Drawing No. **C-405** Rev. **A**  
Group **CIVIL**

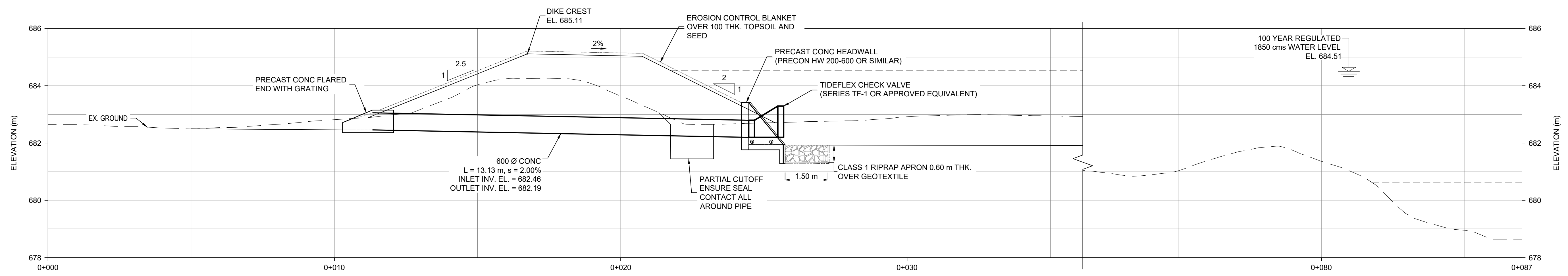




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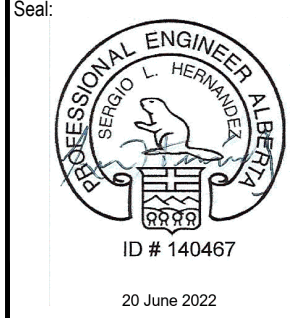
OVERLAND FLOW ESCAPE ROUTE B-15 - PLAN  
SCALE = 1:75



OVERLAND FLOW ESCAPE ROUTE B-15 - SECTION G  
SCALE = 1:75

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RM APEGA ID #: 48789  
DATE: Jun. 20 2022  
**PERMIT NUMBER: P009196**  
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

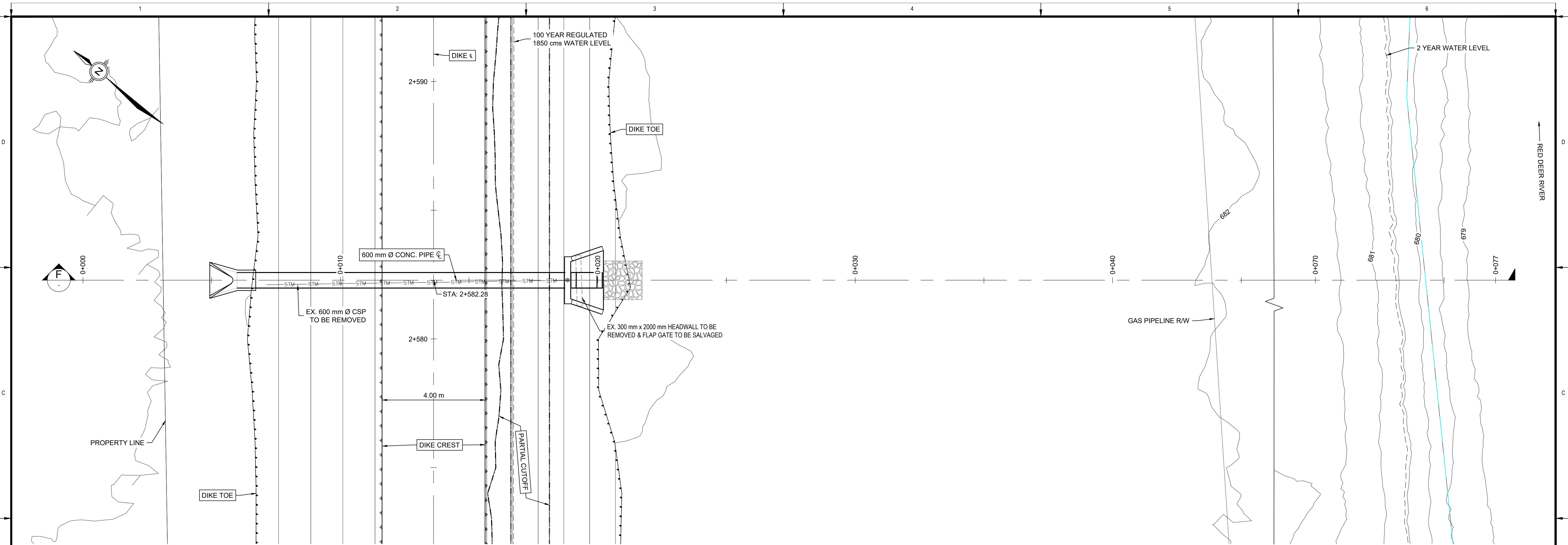
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Rev	Date	Des	Dwn	Chk	Description

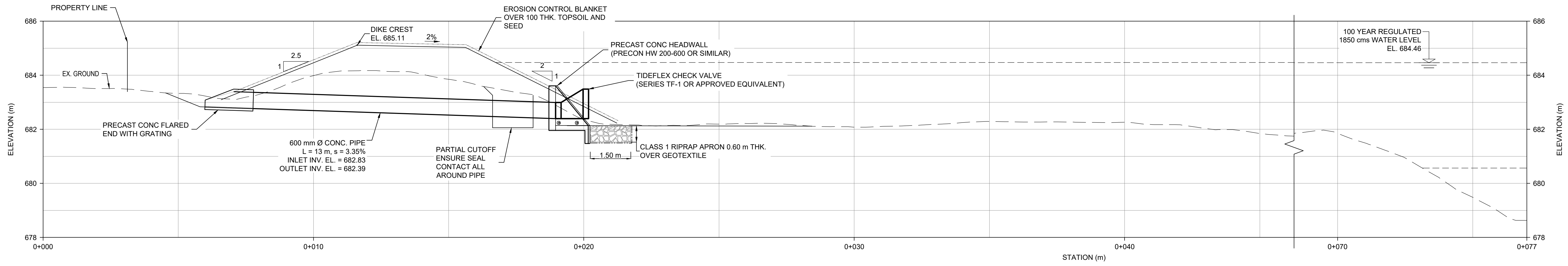
**DRUMHELLER RESILIENCY & FLOOD MITIGATION OFFICE**  
**MIDLAND PROJECT**  
**MIDLAND DOWNSTREAM**  
**STORM CROSSDRAIN B-15**  
**PLAN AND PROFILE**

Project No. **22.06.20A** Drawing No. **C-407** Rev. **A**  
Group **CIVIL**

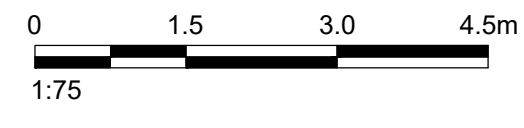
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**STORM CROSSDRAIN B-15A - PLAN**  
SCALE = 1:75

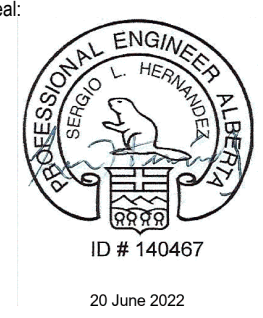


**OVERLAND FLOW ESCAPE ROUTE B-15A - SECTION H**  
SCALE = 1:75



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 RM SIGNATURE: *[Signature]*  
 RM APEGA ID #: 48789  
 DATE: Jun. 20 2022  
**PERMIT NUMBER: P009196**  
 The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

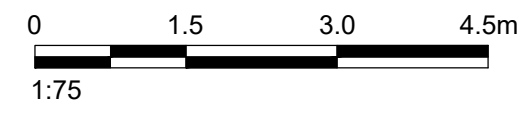
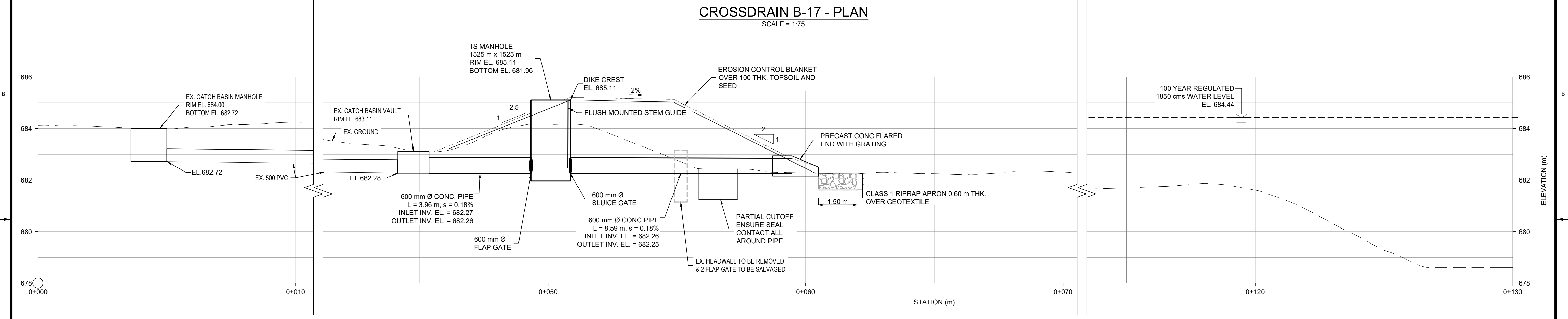
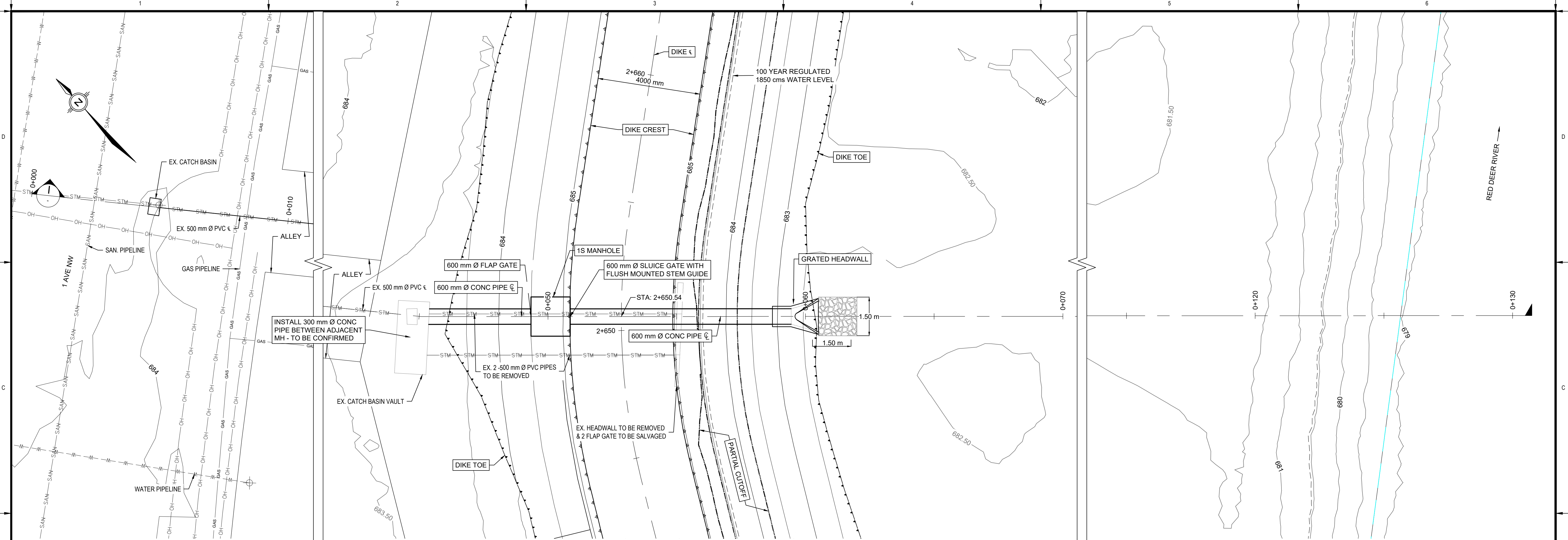
Rev	Date	Des	Dwn	Chk	Description
A	2022-06-20	PB	SH	RC	ISSUED FOR TENDER

Rev	Date	Des	Dwn	Chk	Description

**DRUMHELLER RESILIENCY & FLOOD MITIGATION OFFICE**  
**MIDLAND PROJECT**  
**MIDLAND DOWNSTREAM**  
**STORM CROSSDRAIN B-15A**  
**PLAN AND PROFILE**

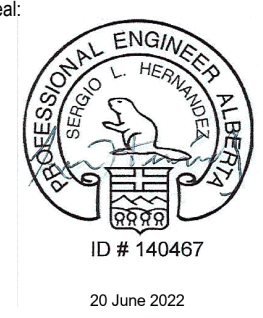
Project No. **22.06.20A**      Drawing No. **C-408**      Rev. **A**  
 Group **CIVIL**

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 At Full Size, this border measures 320 mm x 800 mm  
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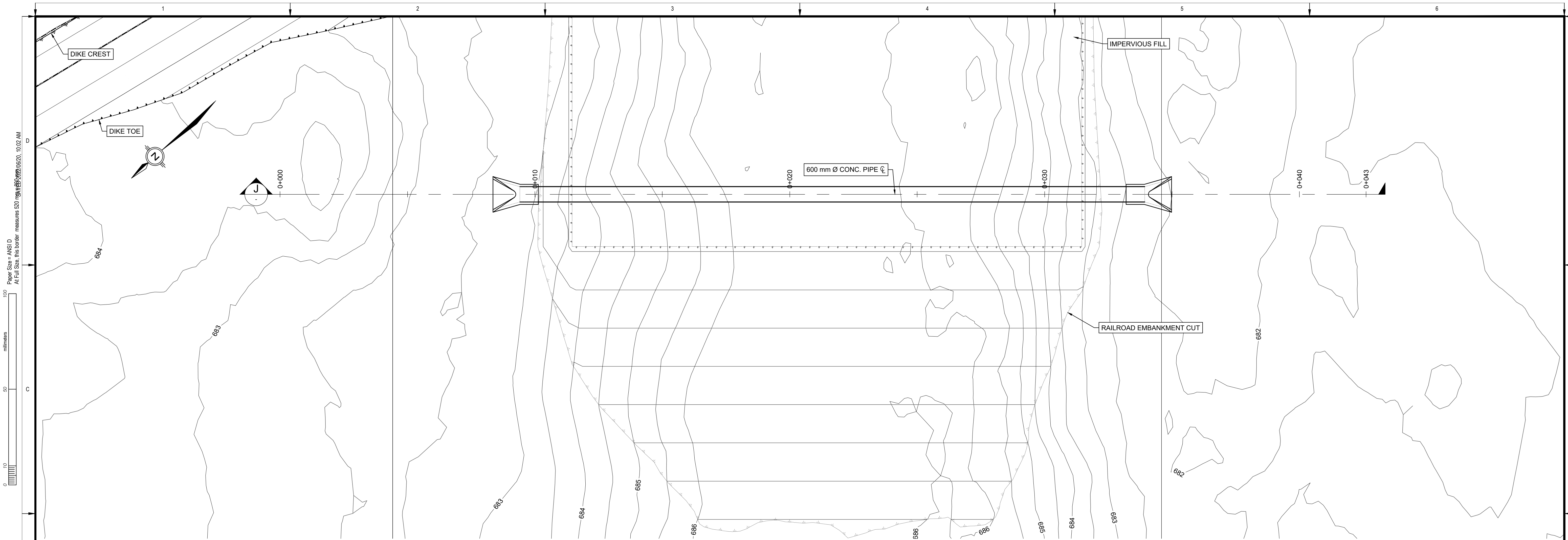


**PERMIT TO PRACTICE**  
**KLOHN CRIPPEN BERGER LTD.**  
 RM SIGNATURE: *[Signature]*  
 RM APEGA ID #: 48789  
 DATE: Jun. 20 2022  
**PERMIT NUMBER: P009196**  
 The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

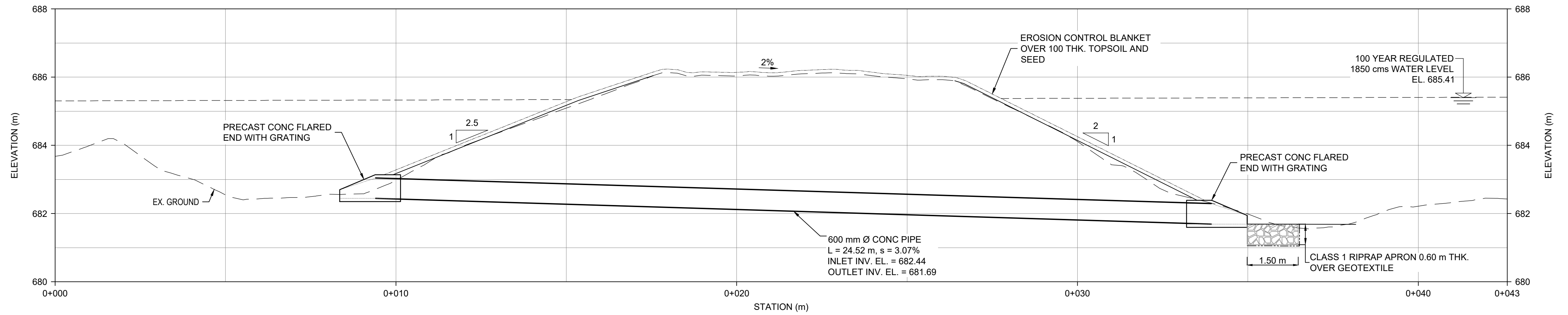
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A	2022-06-20	PB	SH	RC	ISSUED FOR TENDER						

**DRUMHELLER RESILIENCY & FLOOD MITIGATION OFFICE**  
**MIDLAND PROJECT**  
**MIDLAND DOWNSTREAM**  
**STORM CROSSDRAIN B-17**  
**PLAN AND PROFILE**

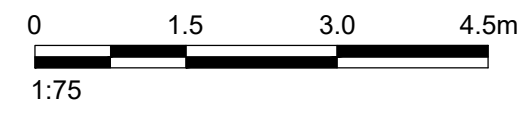
Project No. **22.06.20A** Drawing No. **C-409** Rev. **A**  
 Group **CIVIL**



**RAILROAD EMBANKMENT CROSSING - PLAN**  
SCALE = 1:75



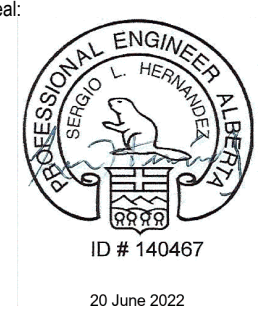
**RAILROAD EMBANKMENT CROSSING - SECTION J**  
SCALE = 1:75



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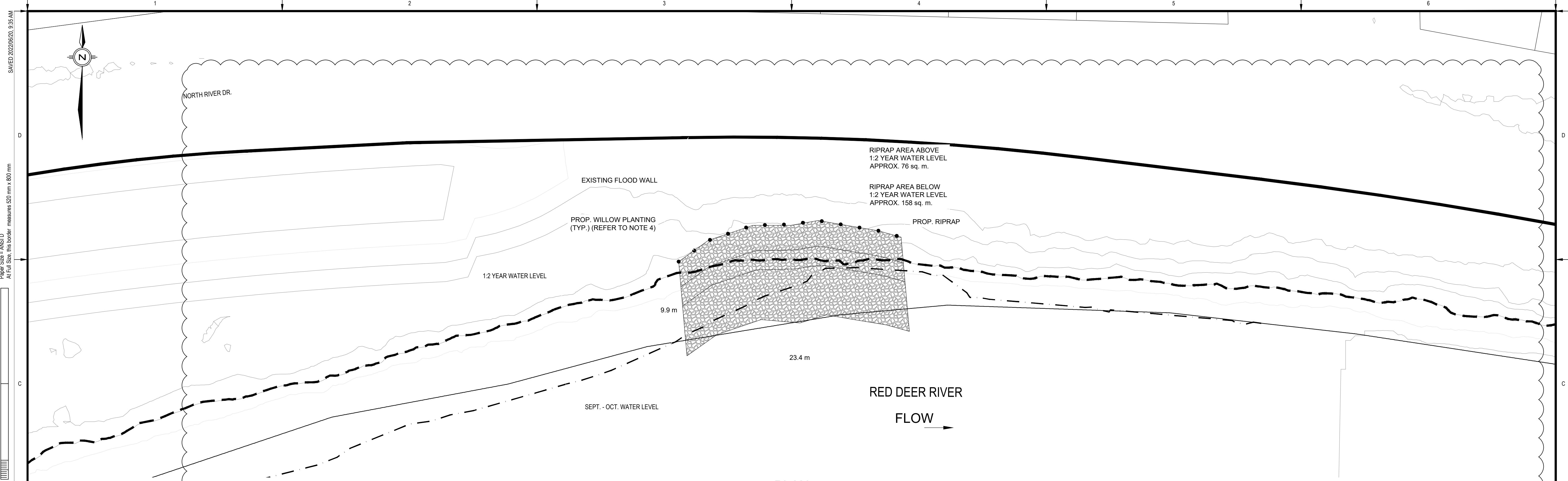
**PERMIT TO PRACTICE**  
**KLOHN CRIPPEN BERGER LTD.**  
RM SIGNATURE: *[Signature]*  
RM APEGA ID #: 48789  
DATE: Jun. 20 2022  
**PERMIT NUMBER: P009196**  
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

Rev	Date	Des	Dwn	Chk	Description
A	2022-06-20	PB	SH	RC	ISSUED FOR TENDER

Rev	Date	Des	Dwn	Chk	Description

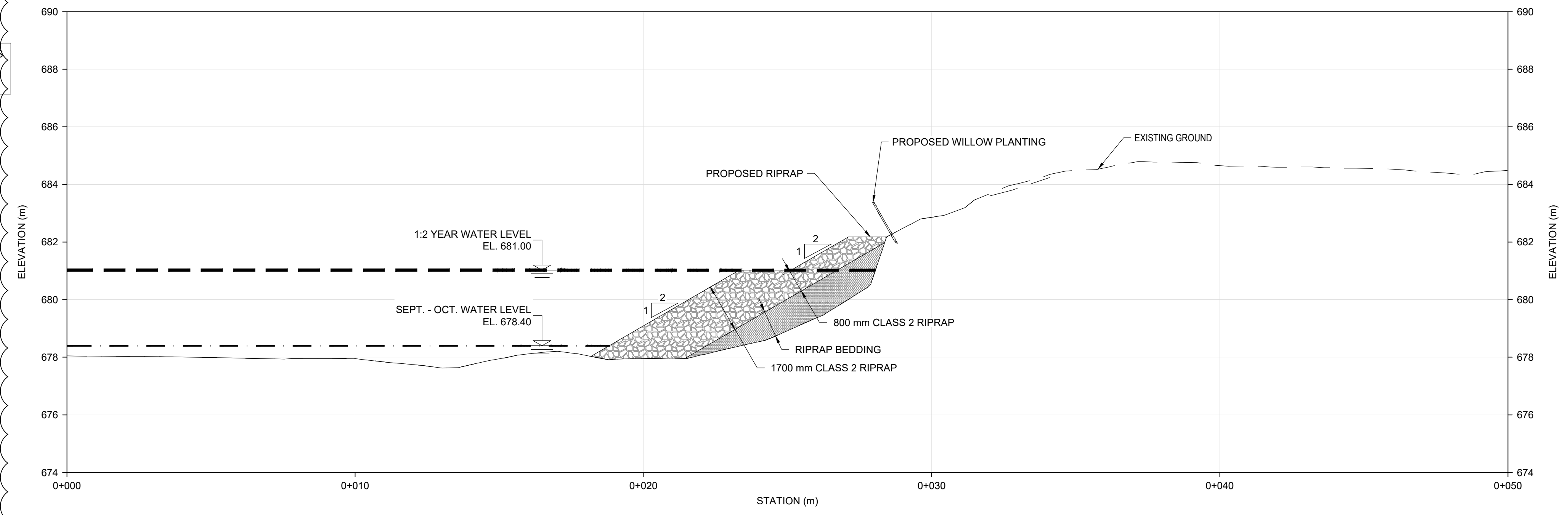
**DRUMHELLER RESILIENCY & FLOOD MITIGATION OFFICE**  
**MIDLAND PROJECT**  
**MIDLAND UPSTREAM**  
**RAILROAD EMBANKMENT CROSSING**  
**PLAN AND PROFILE**

Project No. **22.06.20A** Drawing No. **C-410** Rev. **A**  
Group **CIVIL**



PLAN  
SCALE = 1:200

PROPOSED CONSTRUCTION TIMELINES  
SEPTEMBER/OCTOBER 2022 APPROX.  
3 WEEKS CONSTRUCTION DURATION



NOTES:

- 2019 AERIAL IMAGE (PROVIDED BY DRUMHELLER RESILIENCY AND FLOOD MITIGATION OFFICE).
- PROJECT COORDINATE SYSTEM CANA93-3TM114.
- ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE NOTED.
- MINIMIZE REMOVAL OF HEALTHY TREES FOR RIPRAP PLACEMENT.

LEGEND:

- EXISTING GROUND
- EXISTING FLOOD WALL
- 1:2 YEAR WATER LEVEL
- SEPT. - OCT. WATER LEVEL
- CLASS 2 RIPRAP
- RIPRAP BEDDING
- PROPOSED WILLOW TREE PLANTING



WORK PENDING REGULATORY AUTHORIZATION

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MIDLAND  
HOR: 1:100  
VER: 1:100



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KLOHN CRIPPEN BERGER LTD.  
RM SIGNATURE: *Robert Cheung*  
RM APEGA ID #: 48789  
DATE: Jun. 20 2022  
PERMIT NUMBER: P009196  
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

Rev	Date	Des	Dwn	Chk	Description
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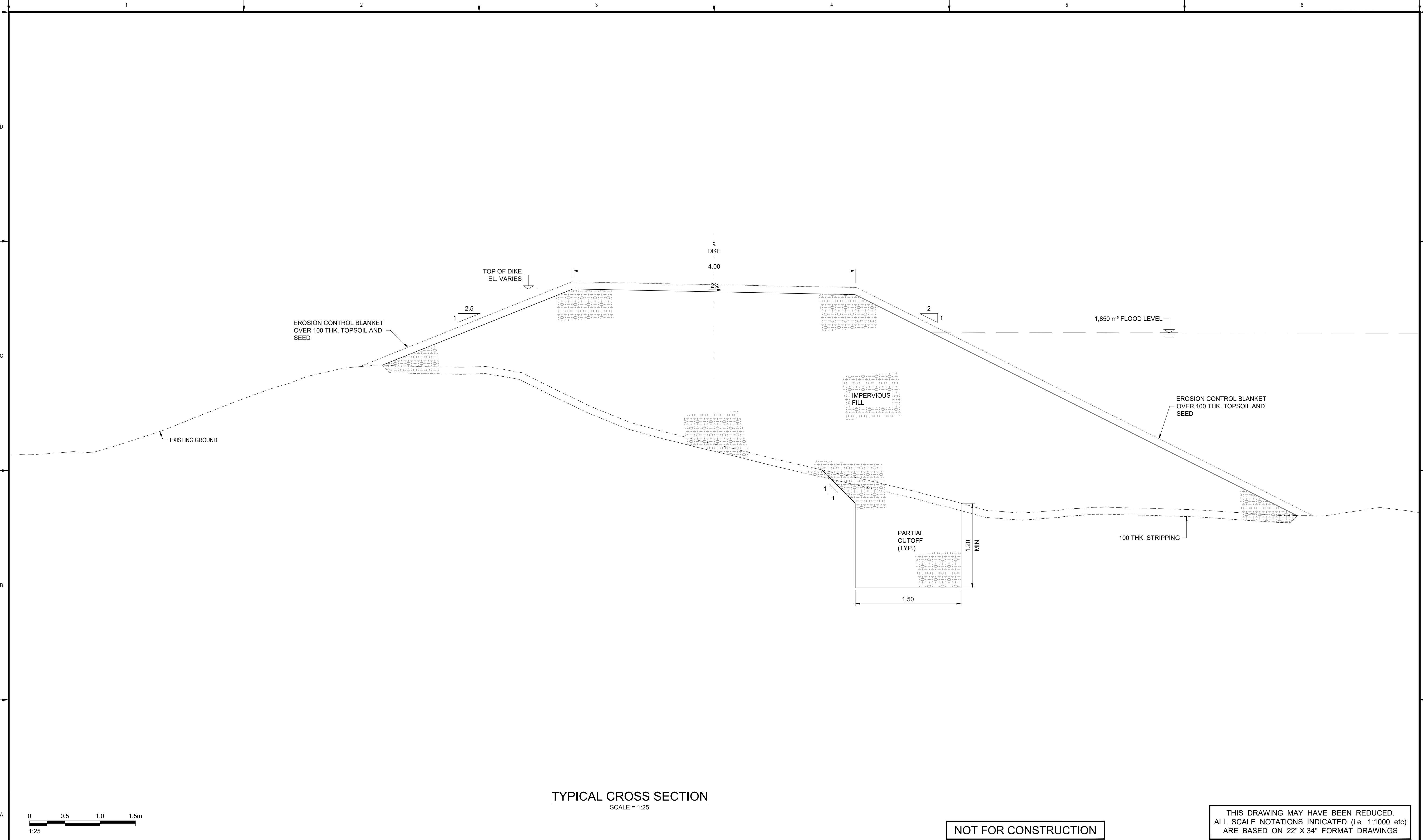
Rev	Date	Des	Dwn	Chk	Description

DRUMHELLER RESILIENCY & FLOOD MITIGATION OFFICE  
MIDLAND PROJECT

UPSTREAM  
INSTREAM RIPRAP PROTECTION  
PLAN AND SECTION

Project No. 22.06.20A  
Group CIVIL

Drawing No. C-501  
Rev. A

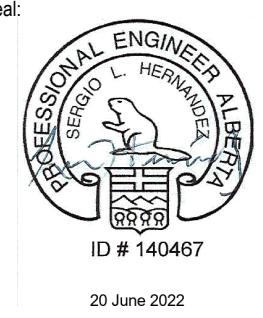


TYPICAL CROSS SECTION  
SCALE = 1:25



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 RM SIGNATURE: *[Signature]*  
 RM APEGA ID #: 48789  
 DATE: Jun. 20 2022  
**PERMIT NUMBER: P009196**  
 The Association of Professional Engineers and Geoscientists of Alberta (APEGGA)

Rev	Date	Des	Dwn	Chk	Description
A	2022-06-20	SH	SH	RC	ISSUED FOR TENDER

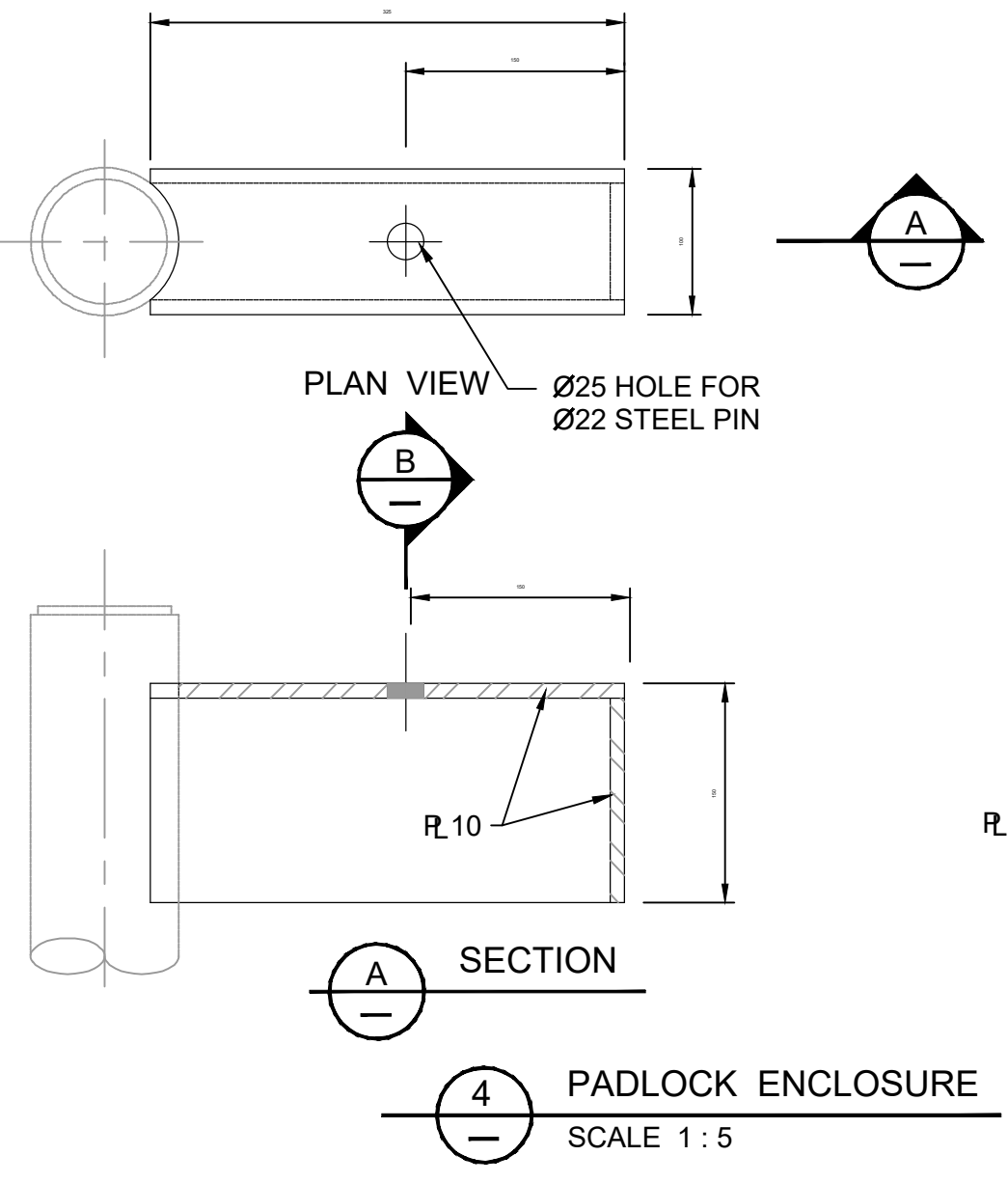
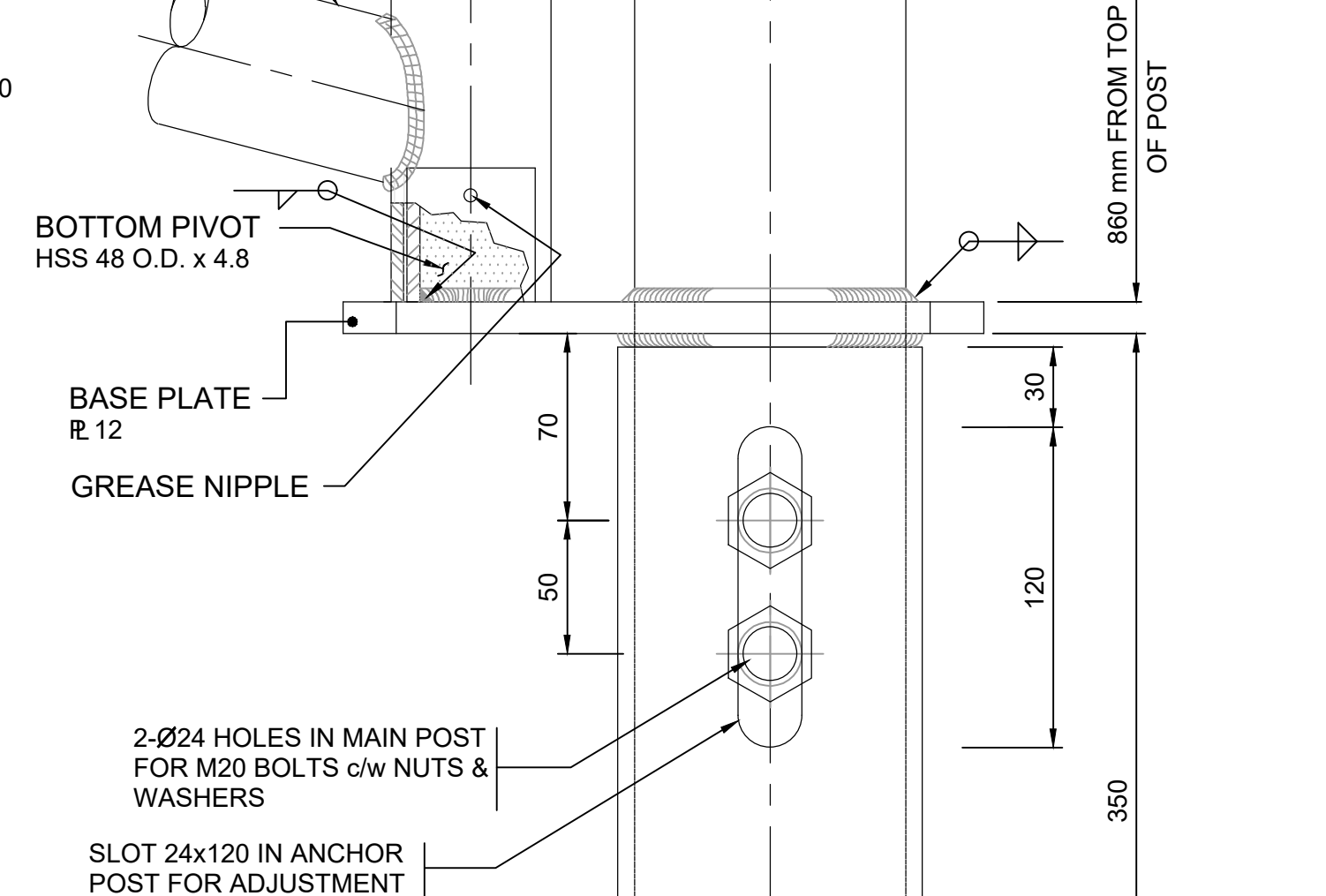
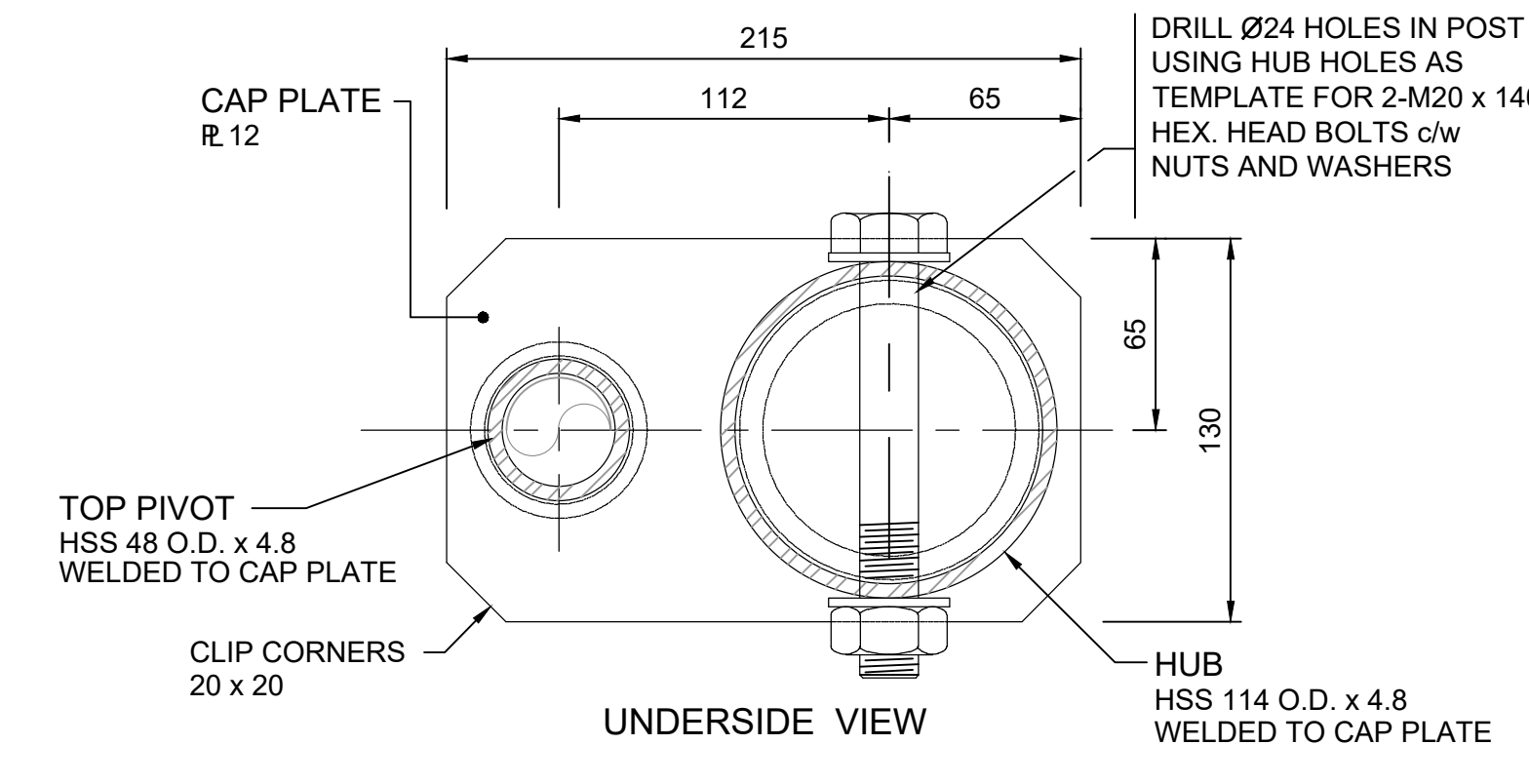
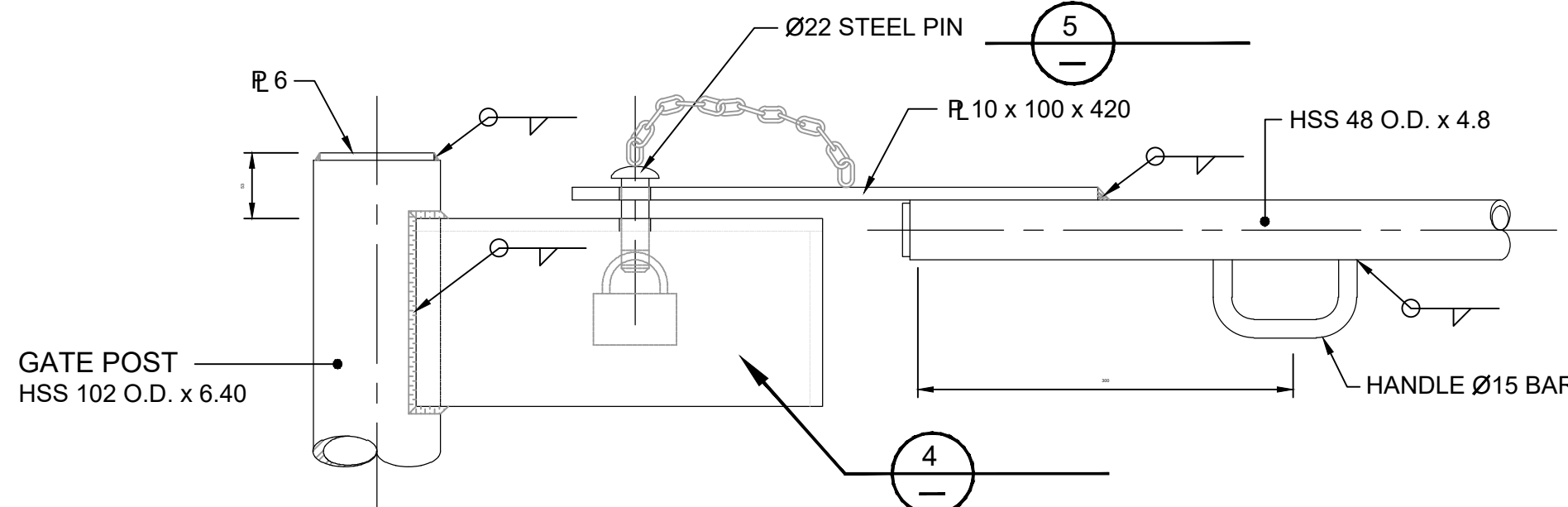
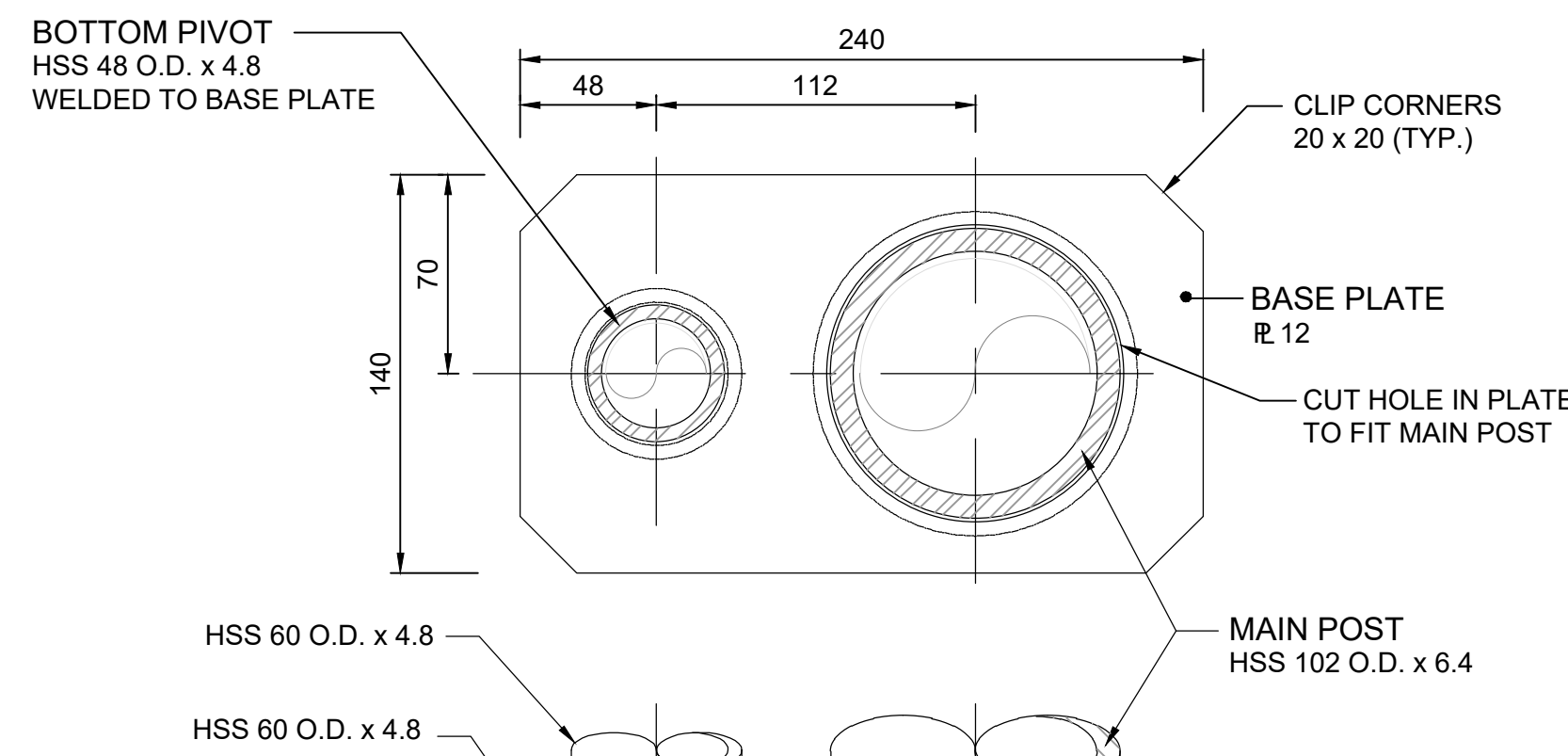
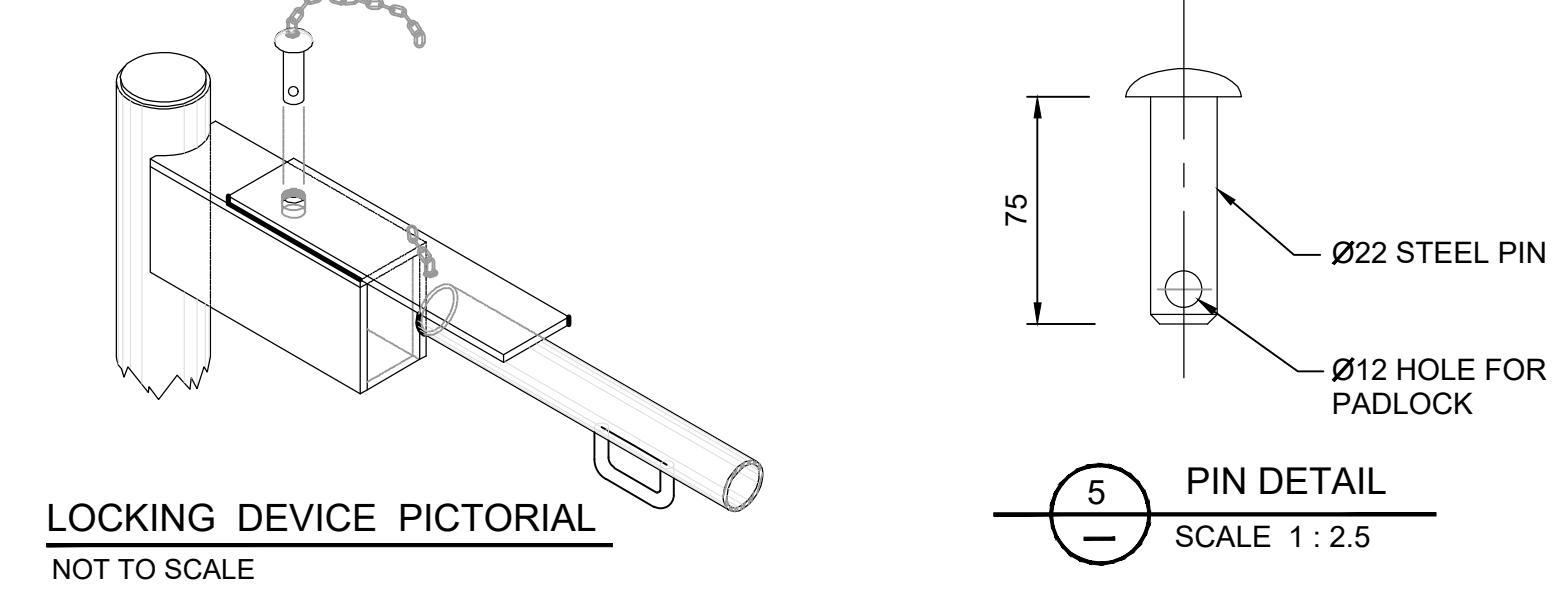
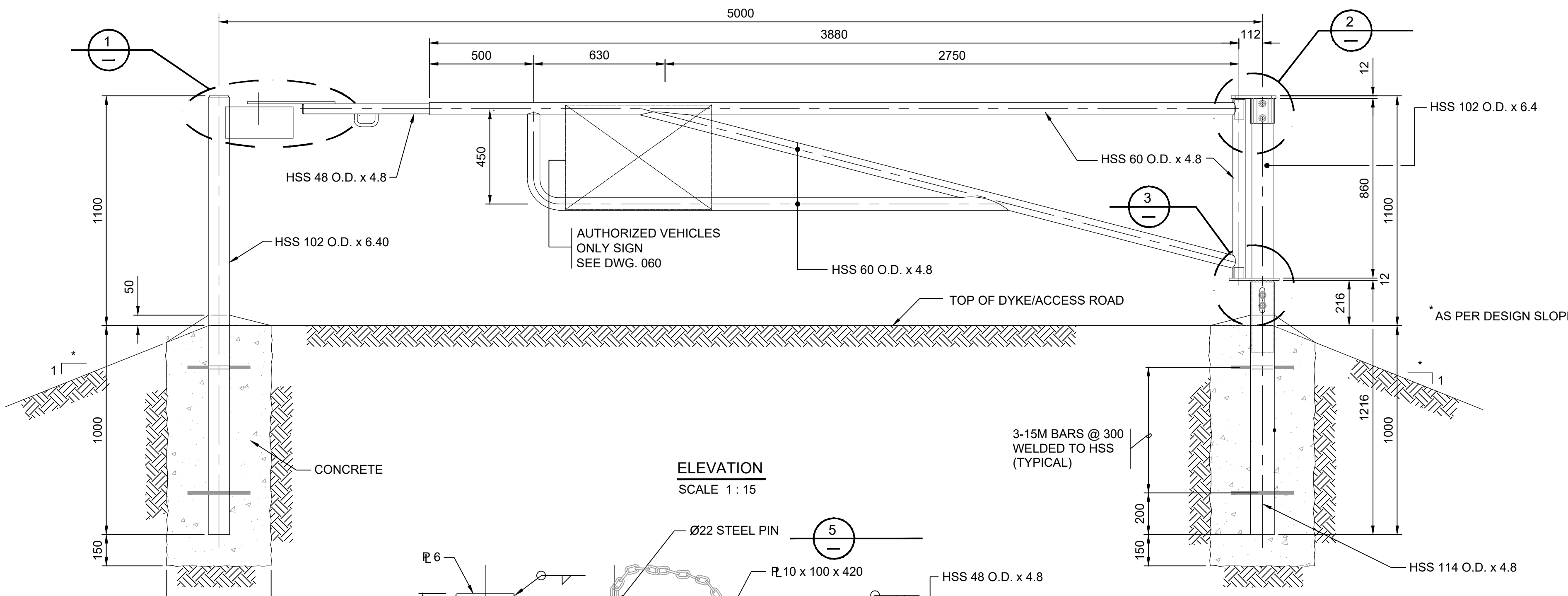
Rev	Date	Des	Dwn	Chk	Description

**DRUMHELLER RESILIENCY & FLOOD MITIGATION OFFICE**  
**MIDLAND PROJECT**

**TYPICAL CROSS SECTION**

Project No.	22.06.20A	Drawing No.	C-502	Rev.	A
Group	CIVIL				

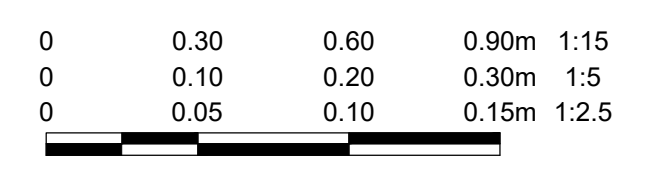
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 At Full Size, this border measures 320 mm x 80 mm



**TABLE: Fill Concrete**

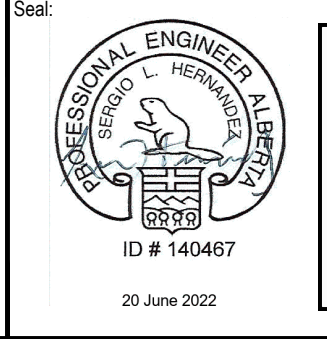
Minimum Compressive Strength	20 MPa @ 28 days
Fly Ash by Mass of Cementitious Materials	Minimum 25%
Nominal Size of Coarse Aggregate	20 - 5 mm
Maximum Water/Cementing Materials Ratio	0.550
Air Content	5-8%
Specified Slump	Maximum 100 mm

- NOTES:**
- ALL DIMENSIONS SHOWN IN MILLIMETRES.
  - FOR DOUBLE LEAF GATE WELD PADLOCK ENCLOSURE BOX TO ONE GATE END INSTEAD OF ADJUSTABLE END.
  - INSTALL THE VEHICLE ACCESS CONTROL GATES AT THE LOCATIONS, OF THE SIZES, AND TO THE ELEVATIONS SPECIFIED.
  - EXCAVATE THE POST HOLES, PLACE THE FILL CONCRETE, EMBED THE POSTS TO THE SPECIFIED DEPTH, AND COMPACT THE CONCRETE. EXTEND THE CONCRETE 50 MM ABOVE THE GROUND SURFACE AND SLOPE TO DRAIN AWAY FROM THE POSTS.
  - BRACE THE POSTS IN A PLUMB POSITION AND IN TRUE ALIGNMENT UNTIL THE CONCRETE HAS CURED FOR A MINIMUM OF 7 DAYS AT AMBIENT TEMPERATURES ABOVE 10°C.
  - INSTALL THE GATE ON THE POSTS AFTER THE FILL CONCRETE HAS ATTAINED ITS SPECIFIED COMPRESSIVE STRENGTH.



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RM SIGNATURE: *Albert L. Hernandez*  
RM APEGA ID #: 48789  
DATE: Jun. 20 2022  
**PERMIT NUMBER: P009196**  
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

Rev	Date	Des	Dwn	Chk	Description	Rev	Date	Des	Dwn	Chk	Description
A	2022-06-20	SH	SH	RC	ISSUED FOR TENDER						

**DRUMHELLER RESILIENCY & FLOOD MITIGATION OFFICE**  
**MIDLAND PROJECT**

**VEHICLE ACCESS CONTROL GATE**

Project No. **22.06.20A** Drawing No. **C-503** Rev. **A**  
Group **CIVIL**