City of Kingston

Third Crossing of the Cataraqui River

Volume 3 - Preliminary Design Summary Report

Draft Final Drawing Set: May 3, 2017

JLR File No.: 27143

PARSONS dtah J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS Golder Associates CSW

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DWG. NO.	DESCRIPTION
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THIRD CROSSING OF THE CATARAQUI RIVER
PRELIMINARY DESIGN

INDEX

Mark Van Buren, P.Eng
Director of Engineering and Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.: 27143
Drawing No.: C001
Sheet No.: 1 of 2

Des:	Chk'd:
LM/AM	SS/LJ
Dwn:	Chk'd:
LM/AM	SS/LJ

Scale:
Utility Circ. No.
Code:
Load:

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
1	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	S.S.	03/05/17

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

OVERALL ALIGNMENT MONTREAL ST. TO HIGHWAY No. 15

Mark Van Buren, P.Eng	Dan Franco, P.Eng.
Director of Engineering and Deputy Commissioner	*Project Engineer*

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J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

Project No.:	27143
Drawing No.:	C002
Sheet No.:	2 of 2
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Utility Circ. No.	
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Load:	

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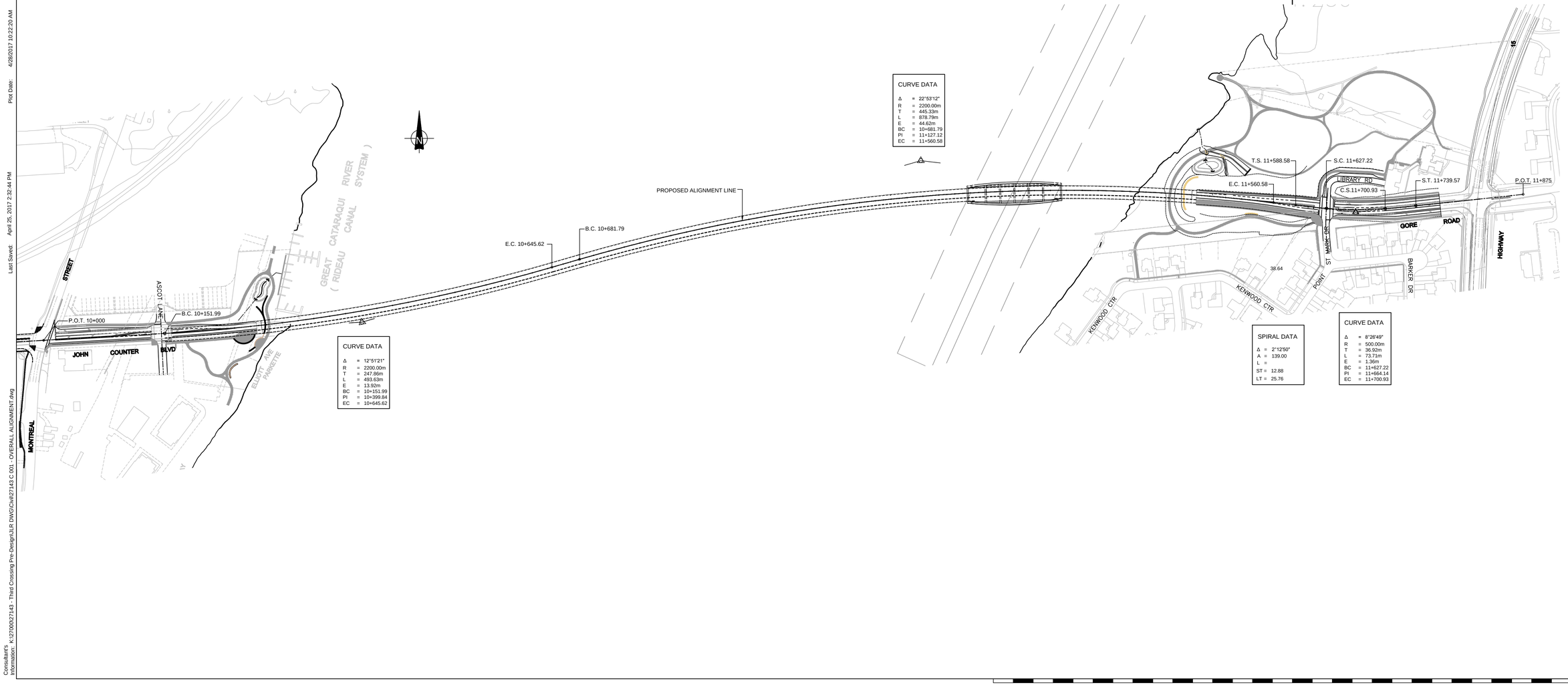

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THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

EXISTING CONDITIONS
JOHN COUNTER BLVD WEST OF MONTREAL STREET

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering and Deputy Commissioner	*Project Engineer*

KINGSTON

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

Project No.:	27143
Drawing No.:	C101
Sheet No.:	1 of 7
Des: LM/AM	Chk'd: SS/LJ
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Utility Circ. No.	
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Load:	

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REVISIONS

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1	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	S.S.	03/05/17

LEGEND

ANC	ANCHOR
BB	BELL BOX
BF	BOARD FENCE
BD	BOLLARD
BS	BOTTOM OF SLOPE
CG	CURB & GUTTER
CB	CATCH BASIN
DICB	DITCH INLET CATCH BASIN
CL	CENTRE LINE
CLF	CHAIN LINK FENCE
B	BUILDING
D	DITCH
EG	EDGE OF GRAVEL
EP	EDGE OF PAVEMENT
ET	EDGE OF TREES
FH	FIRE HYDRANT
FP	FENCE POST
G	GROUND
C	CONCRETE
GR	GRAVEL
GV	GAS VALVE
HL	HYDRO LINE
HP	HYDRO POLE
LP	LIGHT POLE
MH	MANHOLE
MW	MONITORING WELL
OHTL	OVERHEAD TRANSMISSION LINE
P	PAVEMENT
PT	PAINT
RW	RETAINING WALL
SW	SIDEWALK
TC	CONIFEROUS TREE
TD	DECIDUOUS TREE
TS	TOP OF SLOPE
UGH	UNDERGROUND HYDRO
UGW	UNDERGROUND WATER
UGG	UNDERGROUND GAS
WE	WATER'S EDGE
WF	WIRE FENCE
WV	WATER VALVE
GV	GAS VALVE
GM	GAS METER
CUL	CULVERT
INV	INVERT
	SANITARY SEWER
	STORM SEWER
	UNDERGROUND HYDRO
	WATERMAIN
	GAS

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THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

EXISTING CONDITIONS
MONTREAL STREET TO STA. 10+140

Mark Van Buren, P.Eng. *Director of Engineering and Deputy Commissioner*	Dan Franco, P.Eng. *Project Engineer*

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PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	C102
Sheet No.:	2 of 7
Des: LM/AM	Chk'd: SS/LJ
Dwn: LM/AM	Chk'd: SS/LJ
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Utility Circ. No.	
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Load:	

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1	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	S.S.	03/05/17

LEGEND

ANC	ANCHOR
BB	BELL BOX
BF	BOARD FENCE
BD	BOLLARD
BS	BOTTOM OF SLOPE
CG	CURB & GUTTER
CB	CATCH BASIN
DICB	DITCH INLET CATCH BASIN
CL	CENTRE LINE
CLF	CHAIN LINK FENCE
B	BUILDING
D	DITCH
EG	EDGE OF GRAVEL
EP	EDGE OF PAVEMENT
ET	EDGE OF TREES
FH	FIRE HYDRANT
FP	FENCE POST
G	GROUND
C	CONCRETE
GR	GRAVEL
GV	GAS VALVE
HL	HYDRO LINE
HP	HYDRO POLE
LP	LIGHT POLE
MH	MANHOLE
MW	MONITORING WELL
OHTL	OVERHEAD TRANSMISSION LINE
P	PAVEMENT
PT	PAINT
RW	RETAINING WALL
SW	SIDEWALK
TC	CONIFEROUS TREE
TD	DECIDUOUS TREE
TS	TOP OF SLOPE
UGH	UNDERGROUND HYDRO
UGW	UNDERGROUND WATER
UGG	UNDERGROUND GAS
WE	WATER'S EDGE
WF	WIRE FENCE
WV	WATER VALVE
GV	GAS VALVE
GM	GAS METER
CUL	CULVERT
INV	INVERT
	SANITARY SEWER
	STORM SEWER
H	UNDERGROUND HYDRO
W	WATERMAIN
G	GAS

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THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

EXISTING CONDITIONS STA. 10+140 TO 10+300

Mark Van Buren, P.Eng. *Director of Engineering and Deputy Commissioner*	Dan Franco, P.Eng. *Project Engineer*

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KINGSTON

Project No.:	27143
Drawing No.:	C103
Sheet No.:	3 of 7
Des: LM/AM	Chk'd: SS/LJ
Dwn: LM/AM	Chk'd: SS/LJ
Scale:	1:250
Utility Circ. No.	
Code:	
Load:	

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REVISIONS

No.	Description	By	Date (dd/mm/yy)
1	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	S,S,	03/05/17

LEGEND

ANC	ANCHOR
BB	BELL BOX
BF	BOARD FENCE
BD	BOLLARD
BS	BOTTOM OF SLOPE
CG	CURB & GUTTER
CB	CATCH BASIN
DICB	DITCH INLET CATCH BASIN
CL	CENTRE LINE
CLF	CHAIN LINK FENCE
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WV	WATER VALVE
GV	GAS VALVE
GM	GAS METER
CUL	CULVERT
INV	INVERT
	SANITARY SEWER
	STORM SEWER
H	UNDERGROUND HYDRO
W	WATERMAIN
G	GAS

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Plot Date: 4/28/2017 10:25:19 AM

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

EXISTING CONDITIONS
STA. 11+440 TO 11+590

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering and Deputy Commissioner	*Project Engineer*

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PARSONS

Project No.:	27143
Drawing No.:	C104
Sheet No.:	4 of 7
Des: LM/AM	Chk'd: SS/LJ
Dwn: LM/AM	Chk'd: SS/LJ
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Utility Circ. No.	
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Load:	

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LEGEND

ANC	ANCHOR
BB	BELL BOX
BF	BOARD FENCE
BD	BOLLARD
BS	BOTTOM OF SLOPE
CG	CURB & GUTTER
CB	CATCH BASIN
DICB	DITCH INLET CATCH BASIN
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WV	WATER VALVE
GV	GAS VALVE
GM	GAS METER
CUL	CULVERT
INV	INVERT
——	SANITARY SEWER
——	STORM SEWER
—— H ——	UNDERGROUND HYDRO
—— W ——	WATERMAIN
—— G ——	GAS

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

EXISTING CONDITIONS STA. 11+590 TO 11+680

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering and Deputy Commissioner	*Project Engineer*

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	C105
Sheet No.:	5 of 7
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LEGEND

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CG	CURB & GUTTER
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GV	GAS VALVE
GM	GAS METER
CUL	CULVERT
INV	INVERT
	SANITARY SEWER
	STORM SEWER
H	UNDERGROUND HYDRO
W	WATERMAIN
G	GAS

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THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

EXISTING CONDITIONS
STA. 11+680 TO HIGHWAY 15

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering and Deputy Commissioner	*Project Engineer*

KINGSTON

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

Project No.:	27143
Drawing No.:	C106
Sheet No.:	6 of 7
Des: LM/AM	Chk'd: SS/LJ
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LEGEND

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CUL	CULVERT
INV	INVERT
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	STORM SEWER
H	UNDERGROUND HYDRO
W	WATERMAIN
G	GAS

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THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

EXISTING CONDITIONS GORE ROAD EAST OF HIGHWAY 15

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering and Deputy Commissioner	*Project Engineer*

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	C107
Sheet No.:	7 of 7
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LEGEND

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CUL	CULVERT
INV	INVERT
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	STORM SEWER
H	UNDERGROUND HYDRO
W	WATERMAIN
G	GAS

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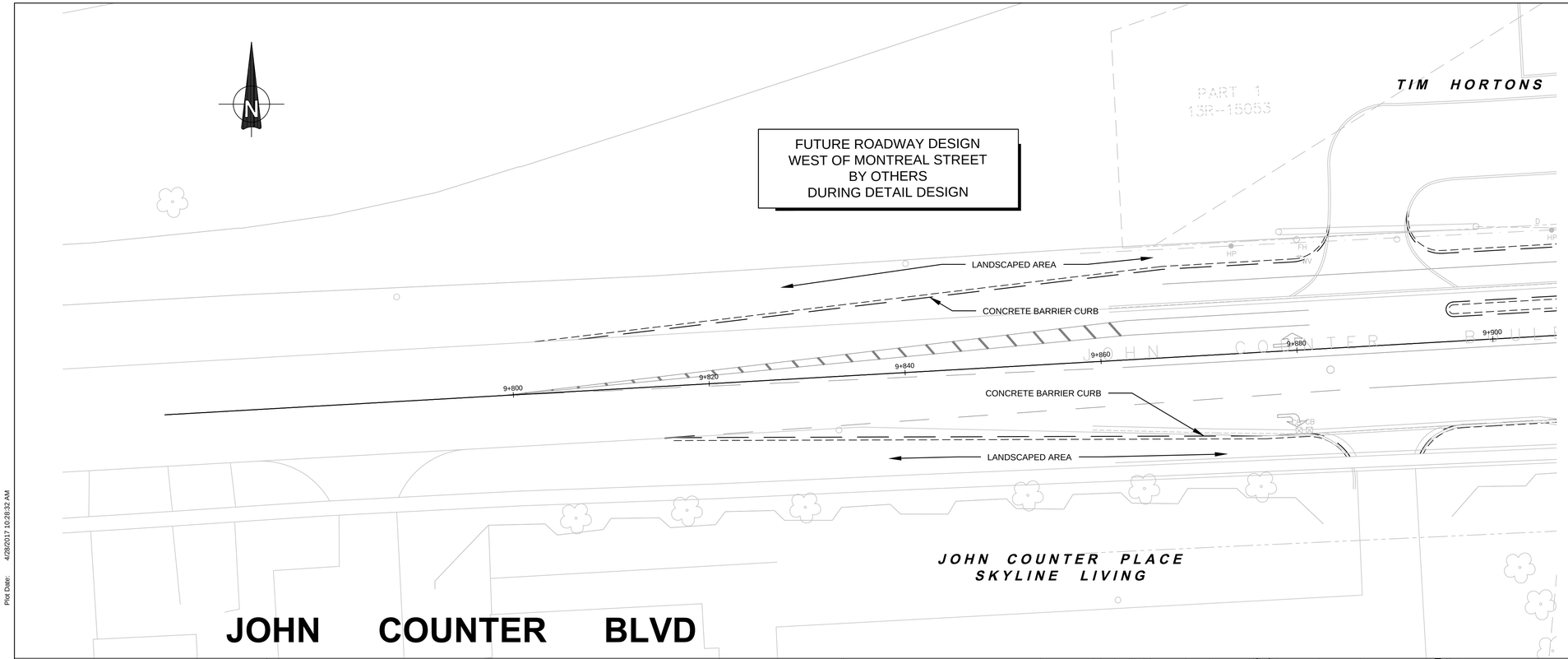

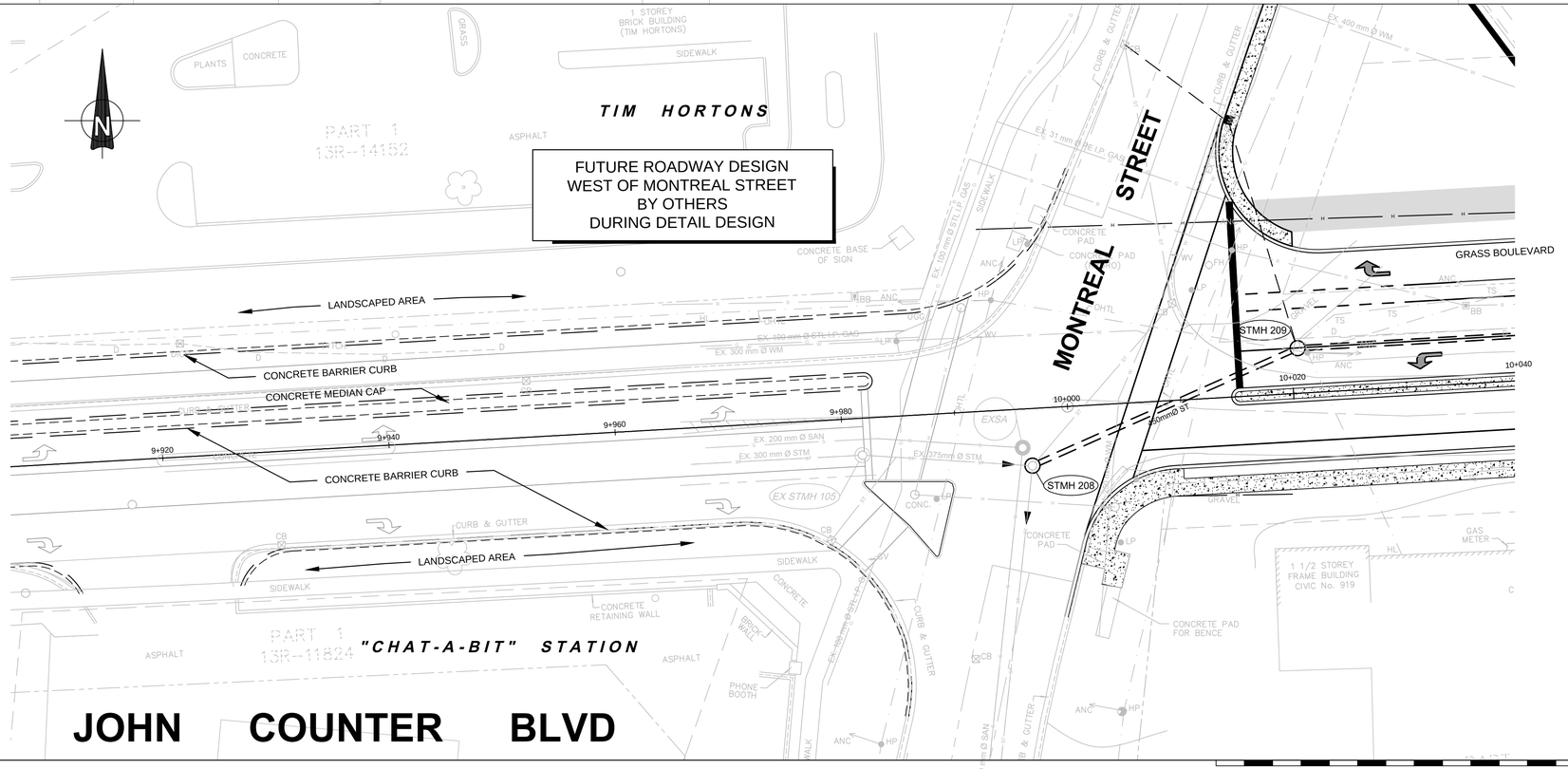

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

PLAN AND PROFILE
JOHN COUNTER BLVD WEST OF MONTREAL STREET

Mark Van Buren, P.Eng.
Director of Engineering and Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

KINGSTON

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

Project No.:	27143
Drawing No.:	C 201
Sheet No.:	1 of 6
Des: LM/AM	Chk'd: SS/LJ
Dwn: LM/AM	Chk'd: SS/LJ
Scale:	1:250
Utility Circ. No.	
Code:	
Load:	

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REVISIONS

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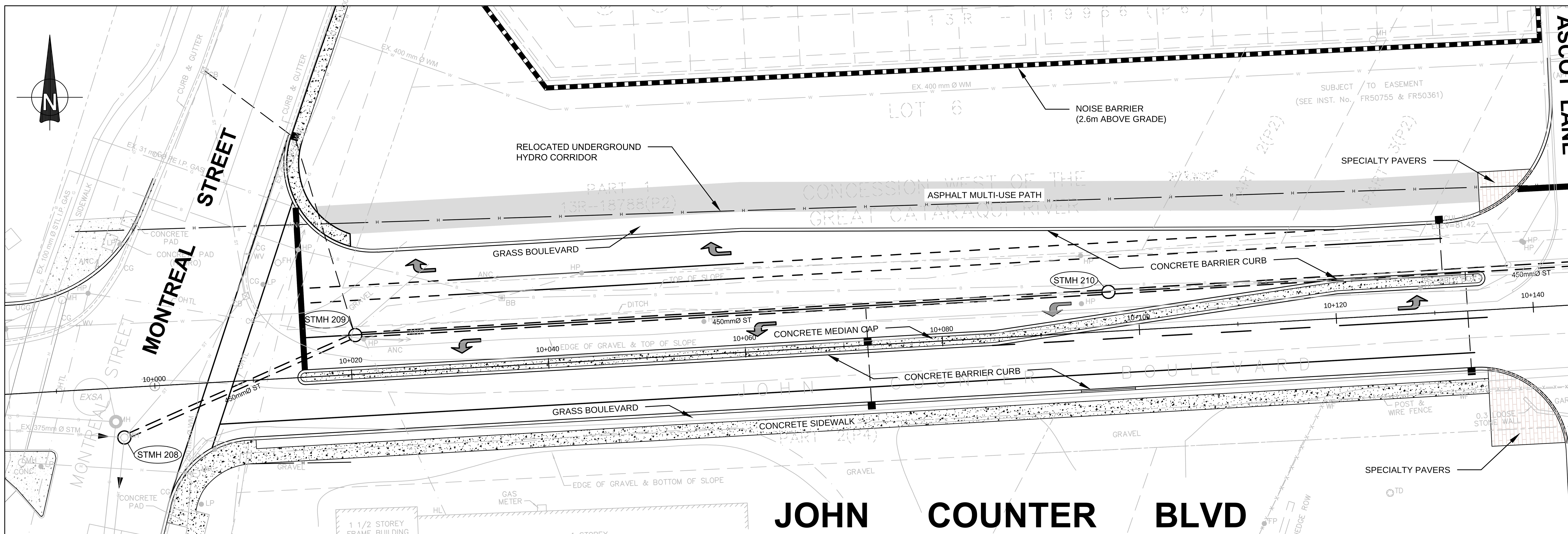
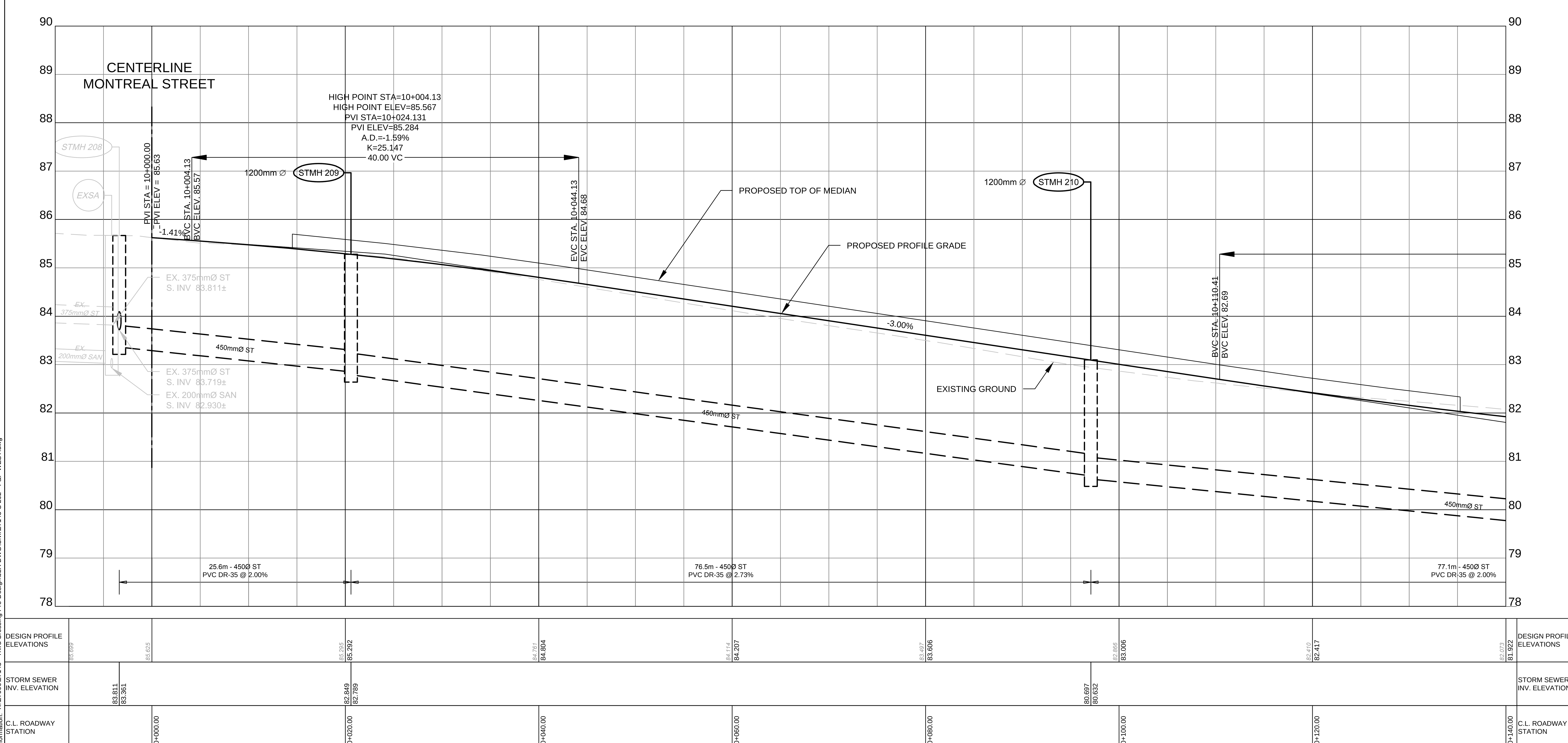
1	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	S,S,	03/05/17





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Last Saved: April 27, 2017 8:42:47 AM
Consultant's Information: K:\27000\27143 - Third Crossing Pre-Design\JLR DWG\Civil\27143 C 202 - P&P WEST.dwg

THIRD CROSSING OF THE CATARAQUI RIVER
PRELIMINARY DESIGN

PLAN & PROFILE
MONTREAL STREET TO STA 10+140

Mark Van Buren, P.Eng.
Director of Engineering and Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

KINGSTON

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

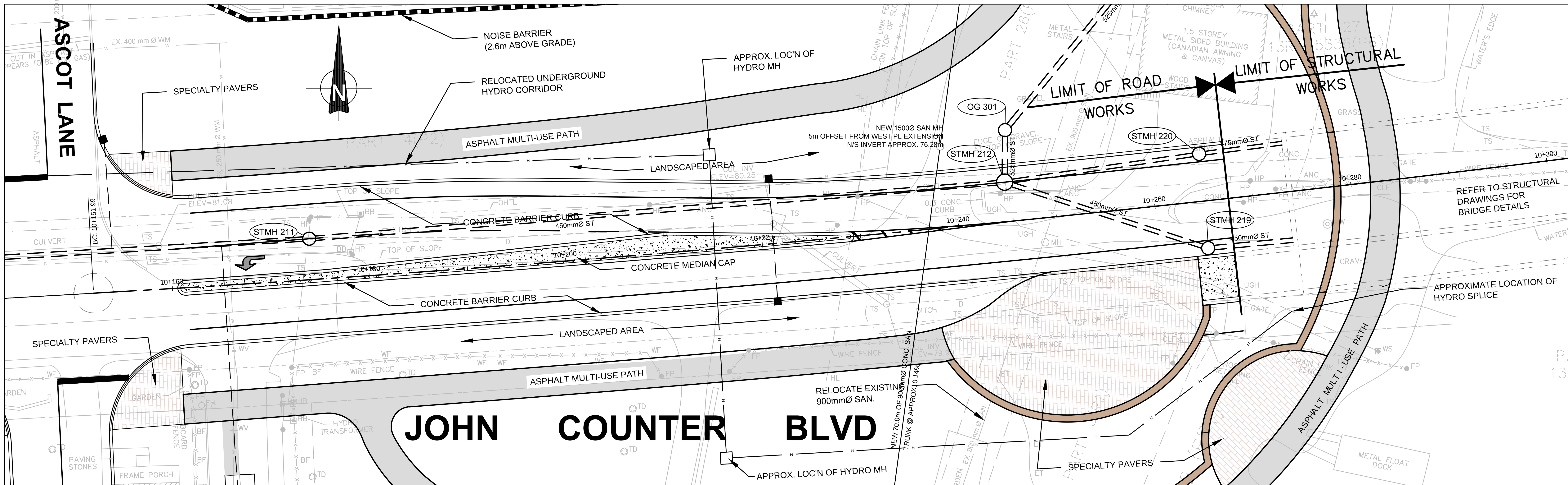
PARSONS

Project No.:	27143
Drawing No.:	C202
Sheet No.:	2 of 6
Des: LM/AM	Chk'd: SS/LJ
Dwn: LM/AM	Chk'd: SS/LJ
Scale:	HORIZ. 1:250 VERT. 1:50
Utility Circ. No.	
Code:	
Load:	

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
1	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	S.S.	03/05/17



THIRD CROSSING OF THE CATARAQUI RIVER PRELIMINARY DESIGN	KINGSTON
PLAN AND PROFILE STA. 10+140 TO 10+300	
Mark Van Buren, P.Eng. *Director of Engineering and Deputy Commissioner*	Dan Franco, P.Eng. *Project Engineer*
J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS	Project No.: 27143
	Drawing No.: C203
	Sheet No.: 3 of 6
PARSONS	Des: LM/AM — Chk'd: SS/LJ
	Dwn: LM/AM — Chk'd: SS/LJ
	Scale: HORIZ. 1:250 VERT. 1:50
	Utility Circ. No.
	Code:
	Load:

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
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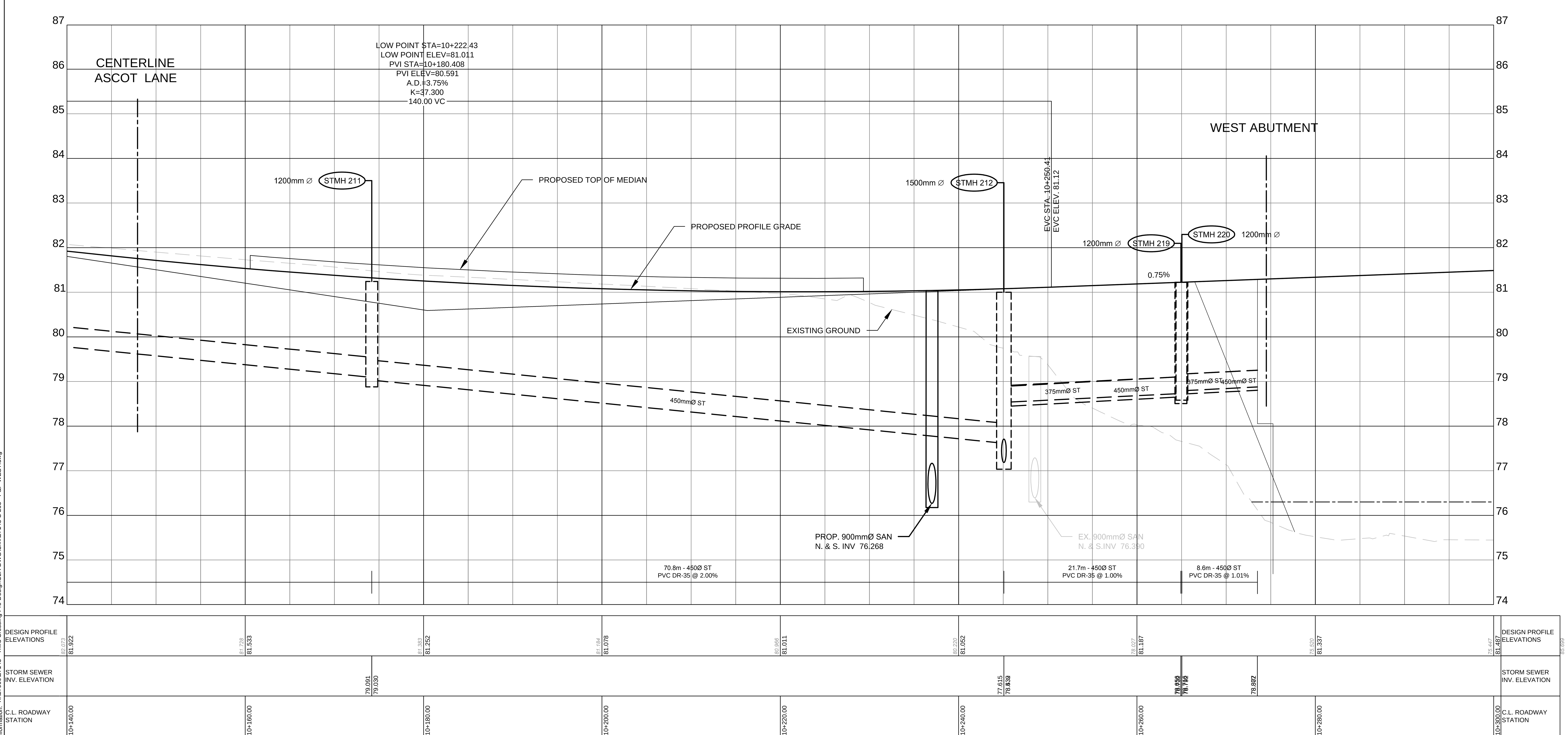

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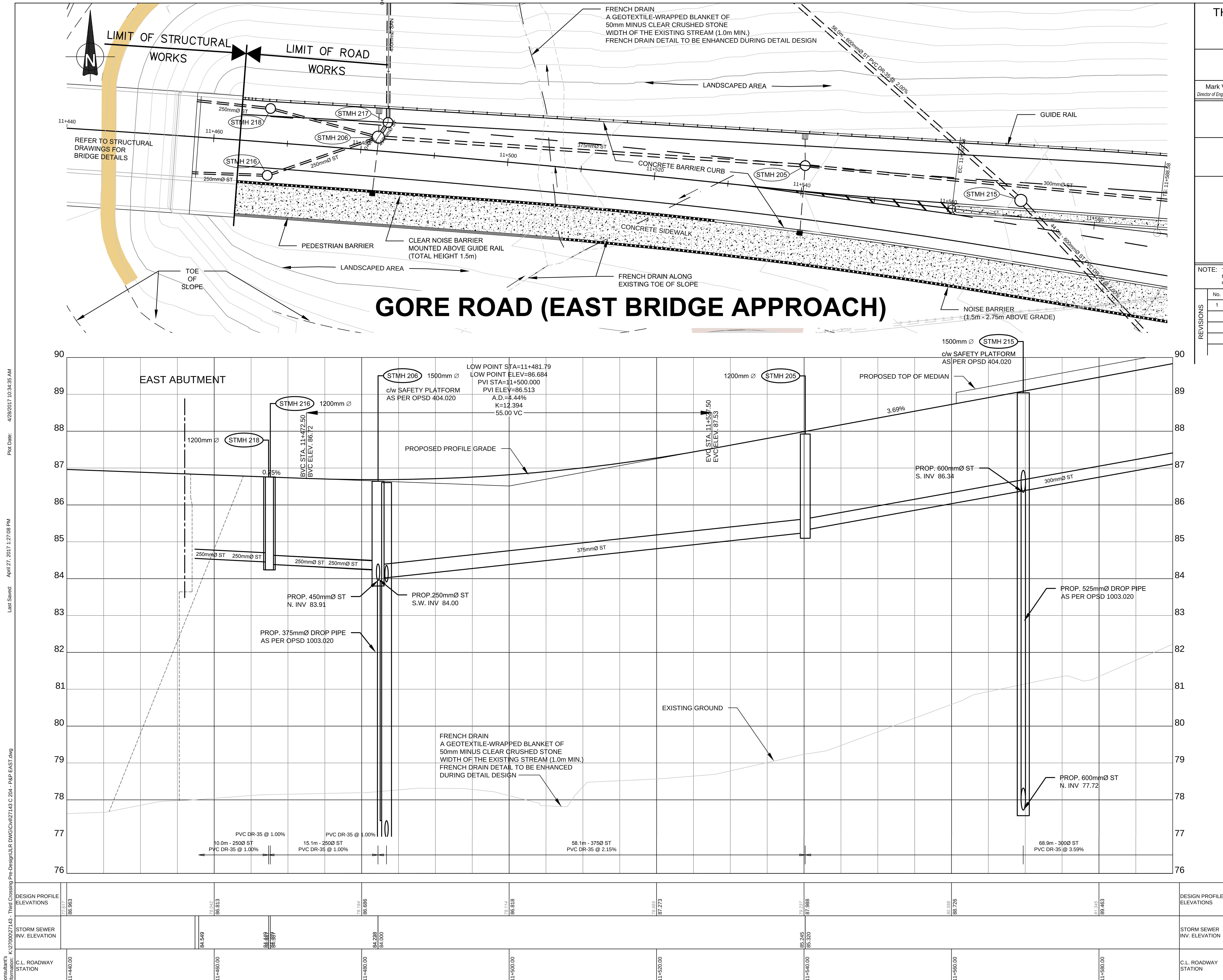

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THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

PLAN & PROFILE
STA 11+440 TO 11+590

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering and Deputy Commissioner	*Project Engineer*

KINGSTON

J.L.Richards — ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

Project No.:	27143
Drawing No.:	C204
Sheet No.:	4 of 6
Des: LM/AM	Chk'd: SS/LJ
Dwn: LM/AM	Chk'd: SS/LJ
Scale:	HORIZ. 1:250 VERT. 1:50
Utility Circ. No.	
Code:	
Load:	

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
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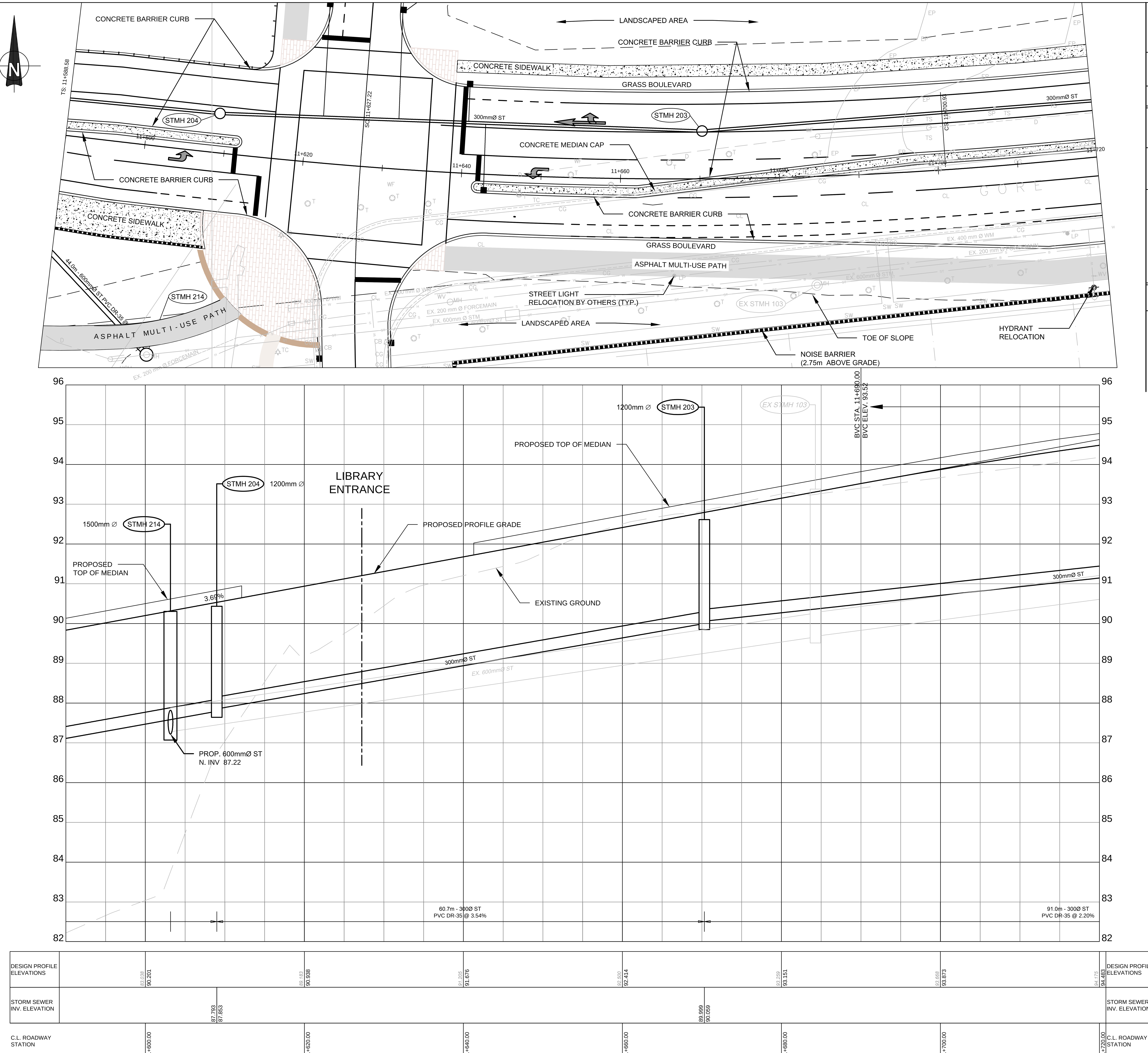

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

PLAN & PROFILE
STA 11+590 TO 11+680

Mark Van Buren, P.Eng.
Director of Engineering and Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

KINGSTON

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

Project No.:	27143
Drawing No.:	C205
Sheet No.:	5 of 6
Des: LM/AM	Chk'd: SS/LJ
Dwn: LM/AM	Chk'd: SS/LJ
Scale:	HORIZ. 1:250 VERT. 1:50
Utility Circ. No.	
Code:	
Load:	

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
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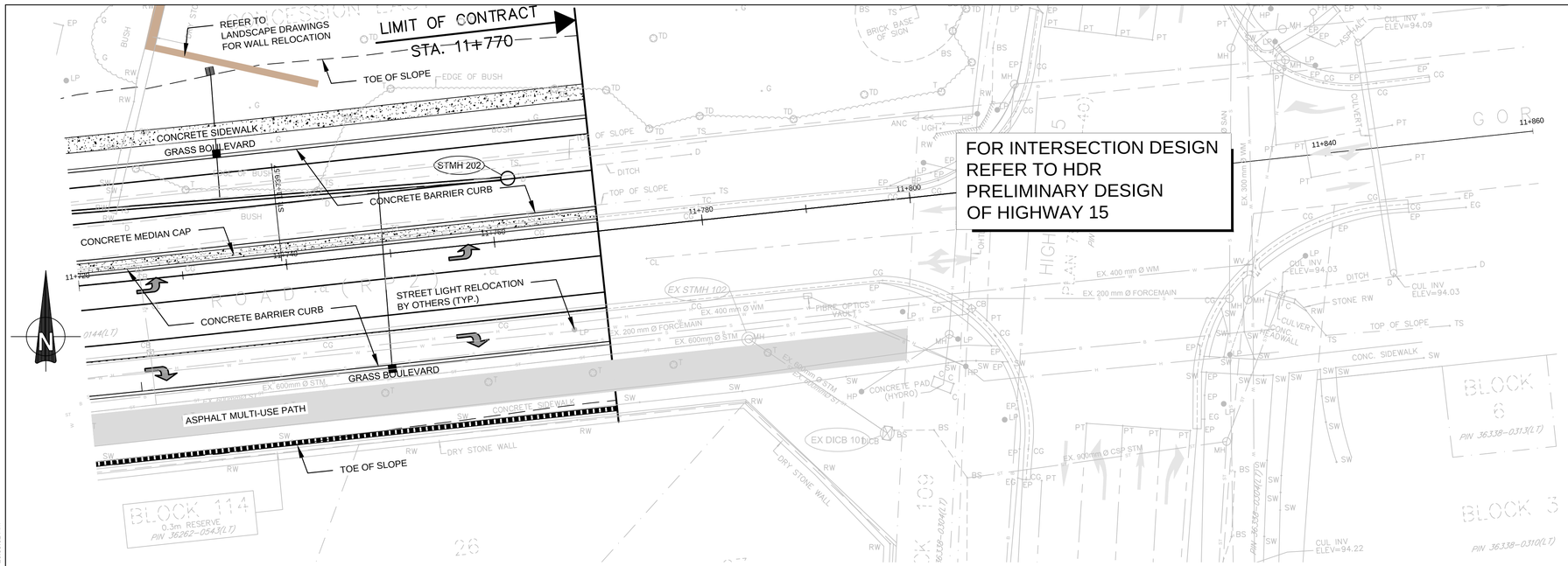

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

PLAN & PROFILE STA 11+680 TO HIGHWAY 15

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering and Deputy Commissioner	*Project Engineer*

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	C206
Sheet No.:	6 of 6
Des: LM/AM	Chk'd: SS/LJ
Dwn: LM/AM	Chk'd: SS/LJ
Scale:	HORIZ. 1:250 VERT. 1:50
Utility Circ. No.	
Code:	
Load:	

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
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Plot Date: 4/28/2017 10:38:02 AM
Last Saved: April 26, 2017 6:52:35 PM
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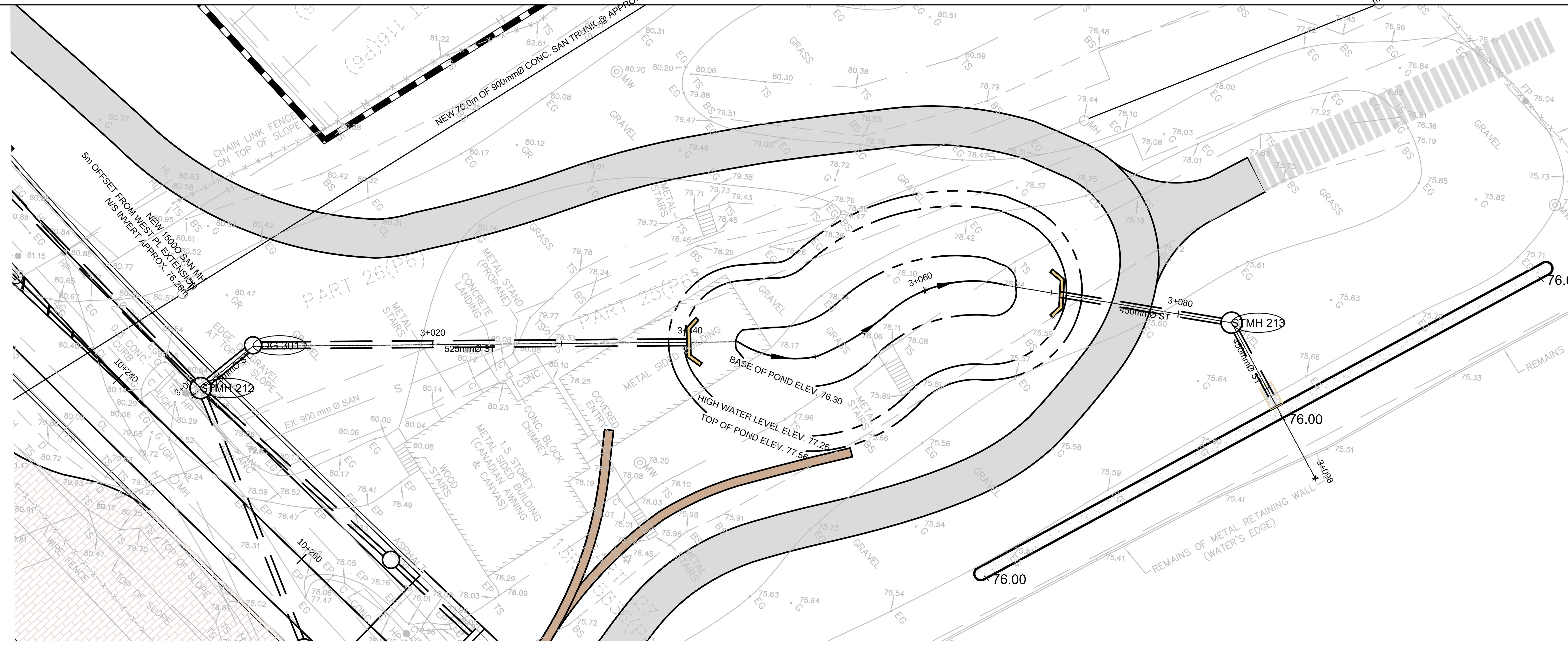
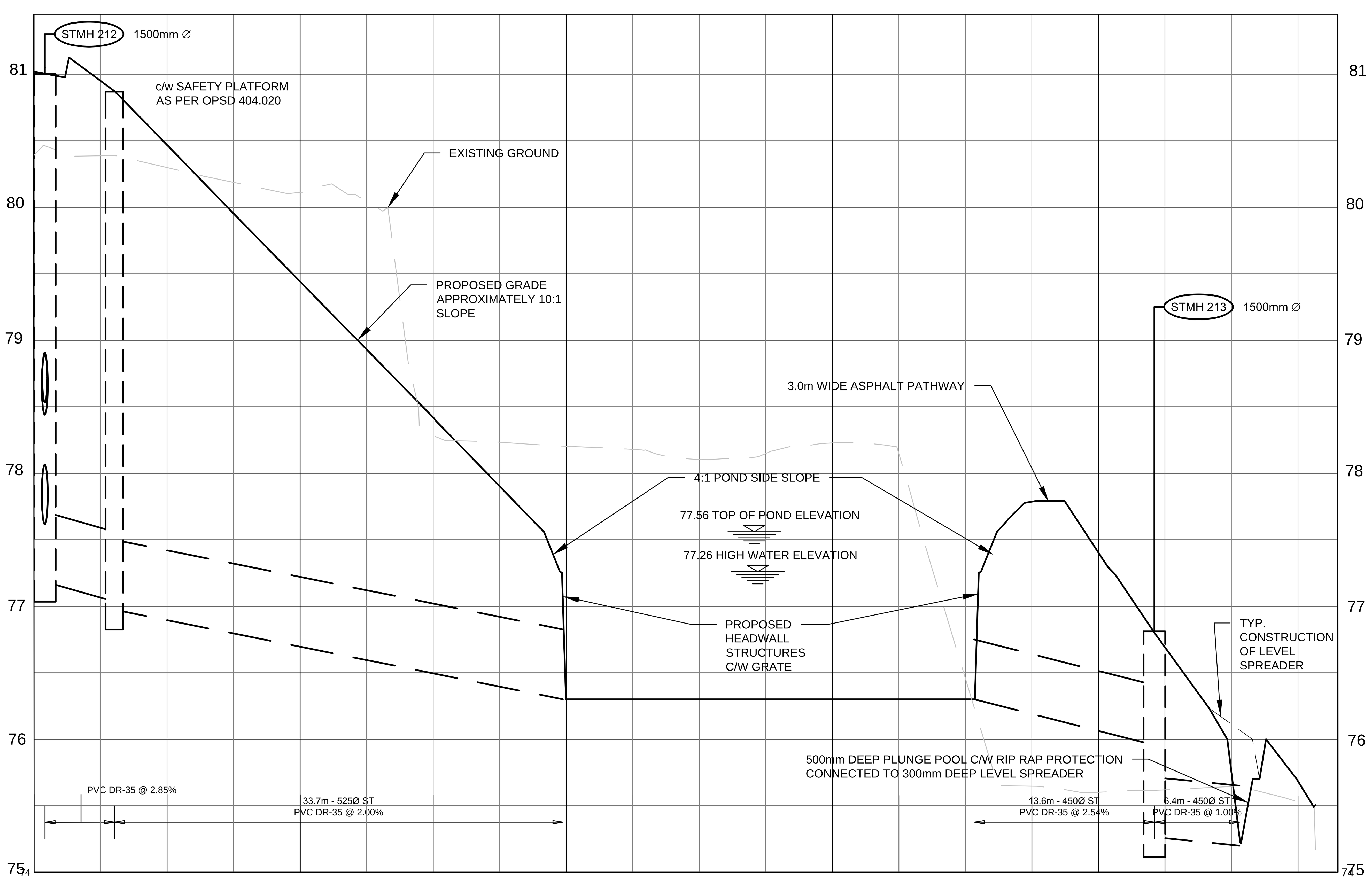




DESIGN PROFILE ELEVATIONS	80.388 / 81.020			80.111 / 79.440	78.203 / 76.300	78.227 / 76.300		75.601 / 77.403			74.919	DESIGN PROFILE ELEVATIONS 80.388
STORM SEWER INV. ELEVATION		77.184	77.034 / 76.974		76.300		76.300		75.956 / 75.264	75.200		STORM SEWER INV. ELEVATION
C.L. ROADWAY STATION	3+000.00	3+000.81	3+006.04	3+020.00	3+040.00	3+060.00		3+080.00	3+084.21		3+097.96	C.L. ROADWAY STATION

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

WEST STORMWATER MANAGEMENT POND PLAN & PROFILE

Mark Van Buren, P.Eng. *Director of Engineering and Deputy Commissioner*	Dan Franco, P.Eng. *Project Engineer*

KINGSTON

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

Project No.:	27143
Drawing No.:	C301
Sheet No.:	1 of 2
Des: LM/AM	Chk'd: SS/LJ/BP
Dwn: LM/AM	Chk'd: SS/LJ/BP
Scale:	HORIZ. 1:250 VERT. 1:50
Utility Circ. No.	
Code:	
Load:	

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

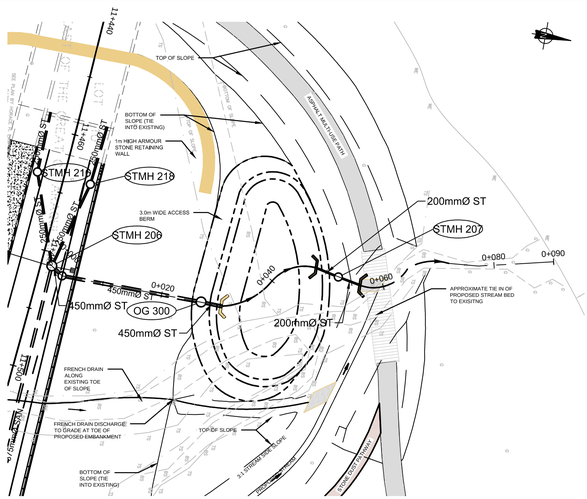
REVISIONS

No.	Description	By	Date (dd/mm/yy)
1	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	S.S.	03/05/17

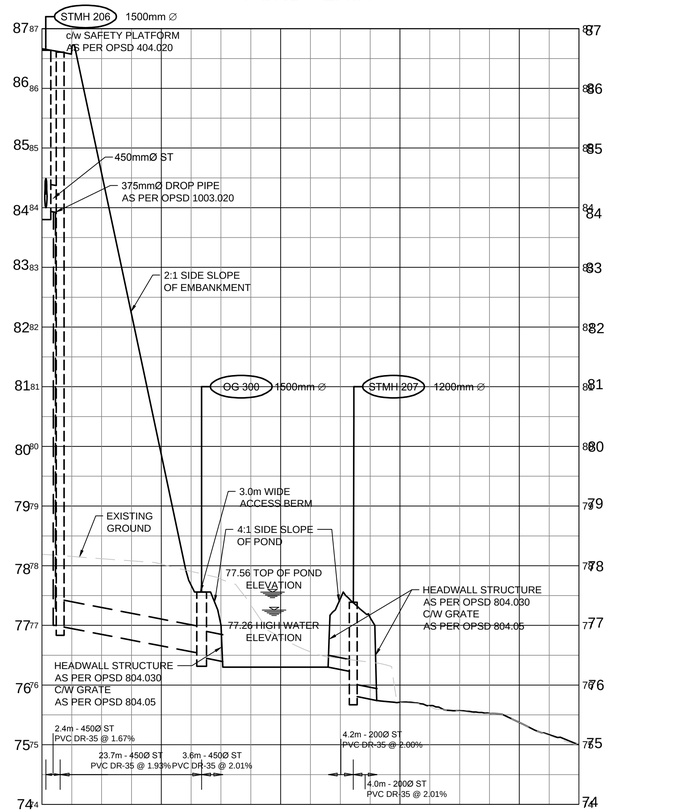
Plot Date: 4/28/2017 10:40:27 AM

Last Saved: April 28, 2017 10:11:54 AM

Consultant's Information: K:\27000\27143 - Third Crossing Pre-Design\JLR DWG\Civil\27143 C 301 - SWM WEST.dwg



POND - EAST



DESIGN PROFILE ELEVATIONS	78.197	86.665	81.697	79.864	75.799	76.300	74.696	75.713	75.374	74.914	75.002	DESIGN PROFILE ELEVATIONS	80.388
STORM SEWER INV. ELEVATION		83.850	83.650	76.984		76.536	76.469	76.394		76.300	76.216	75.830	75.740			STORM SEWER INV. ELEVATION	
C.L. ROADWAY STATION	0+000.00	0+000.00	0+000.00	0+003.05	0+020.00	0+026.76		0+040.00		0+052.17		0+060.00		0+080.00	0+090.00	C.L. ROADWAY STATION	

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

EAST STORMWATER MANAGEMENT POND PLAN & PROFILE

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering and Deputy Commissioner	*Project Engineer*

KINGSTON

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

Project No.:	27143
Drawing No.:	C302
Sheet No.:	2 of 2
Des: LM/AM	Chk'd: SS/LJ/BP
Dwn: LM/AM	Chk'd: SS/LJ/BP
Scale:	HORIZ. 1:250 VERT. 1:50
Utility Circ. No.	
Code:	
Load:	

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
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Consultant's Information: K:\27000\27143 - Third Crossing Pre-Design\LILR DWG\Civil\27143 C 302 - SWM EAST.dwg Last Saved: April 28, 2017 9:42:02 AM Plot Date: 4/28/2017 10:42:58 AM

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

LANE ARRANGEMENT MONTREAL ST. TO STA 10+300

Mark Van Buren, P.Eng.
Director of Engineering and Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	C401
Sheet No.:	1 of 3
Des: AM	Chk'd: SS/LJ
Dwn: AM	Chk'd: SS/LJ
Scale:	1:250
Utility Circ. No.	
Code:	
Load:	

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
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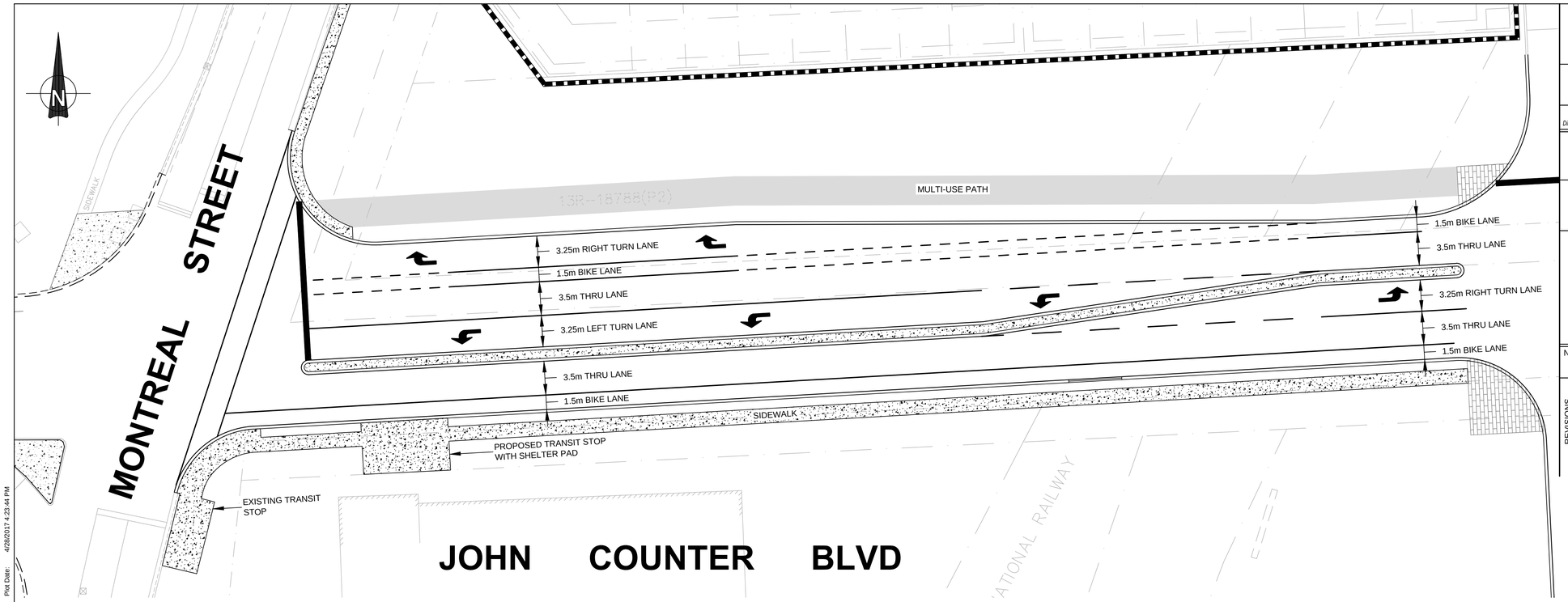

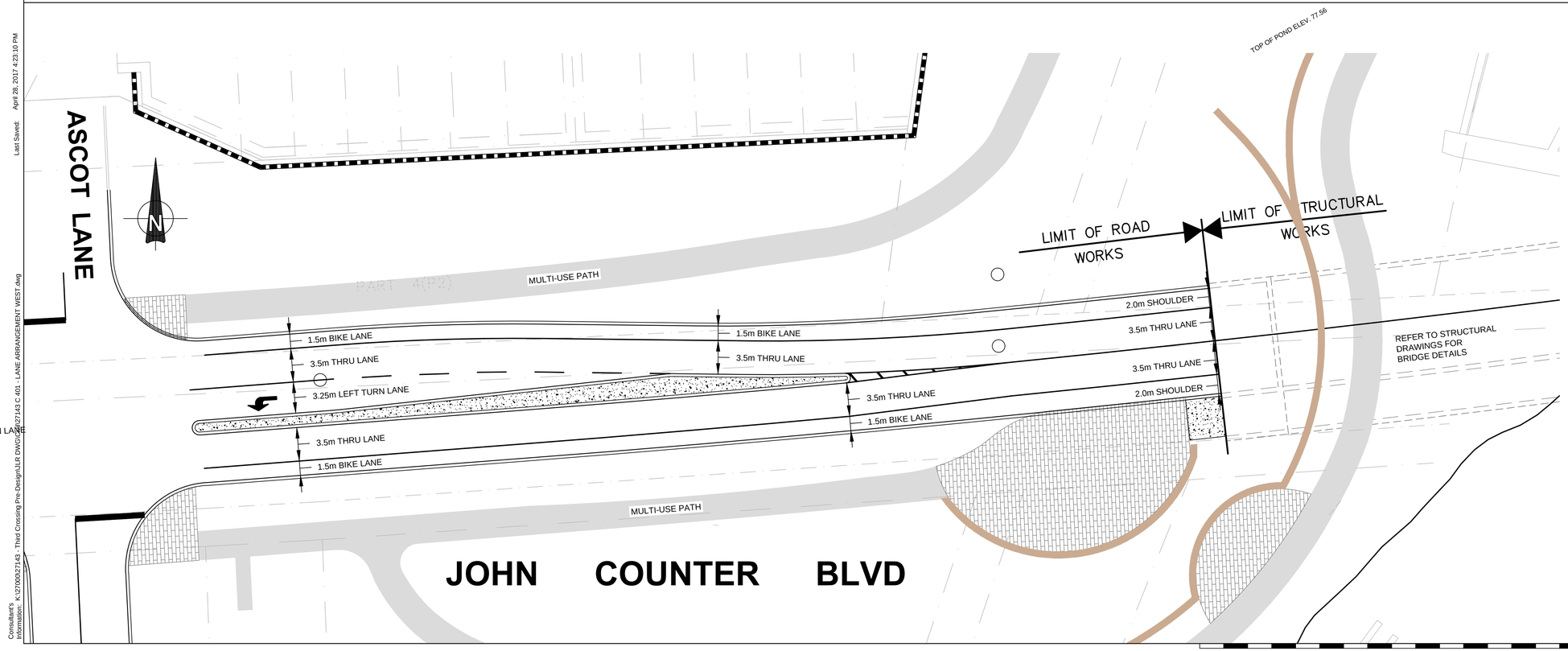

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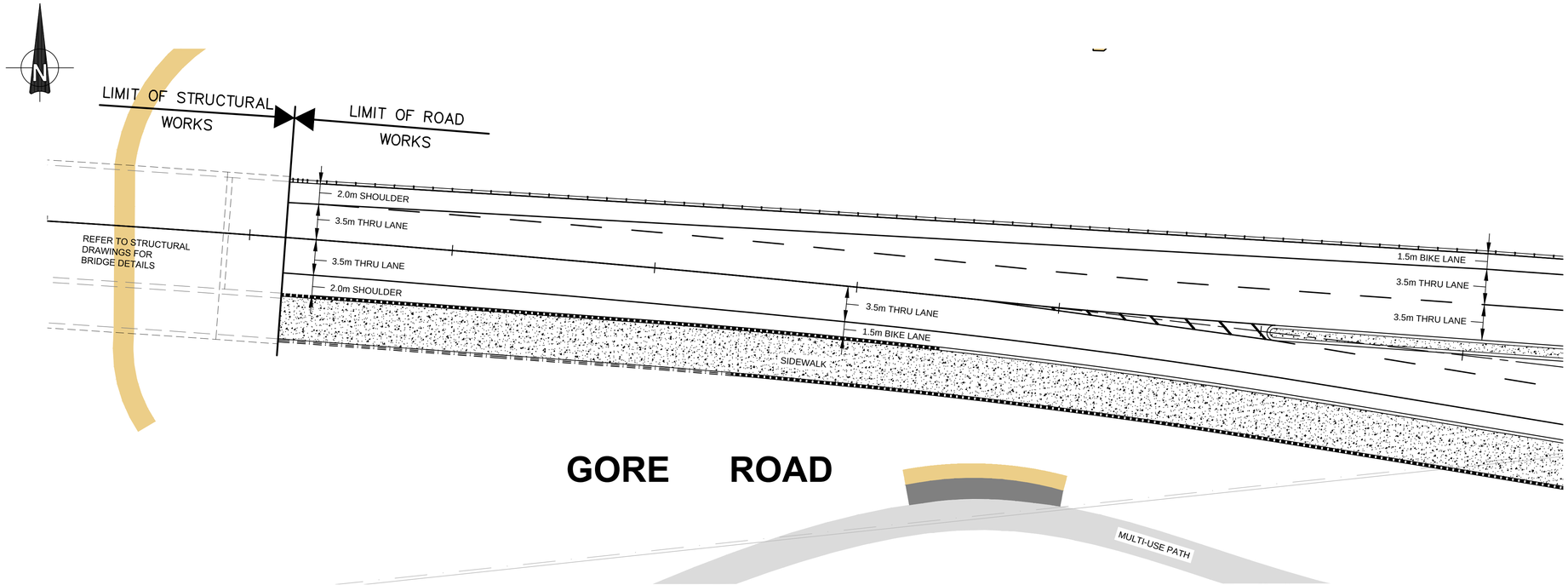

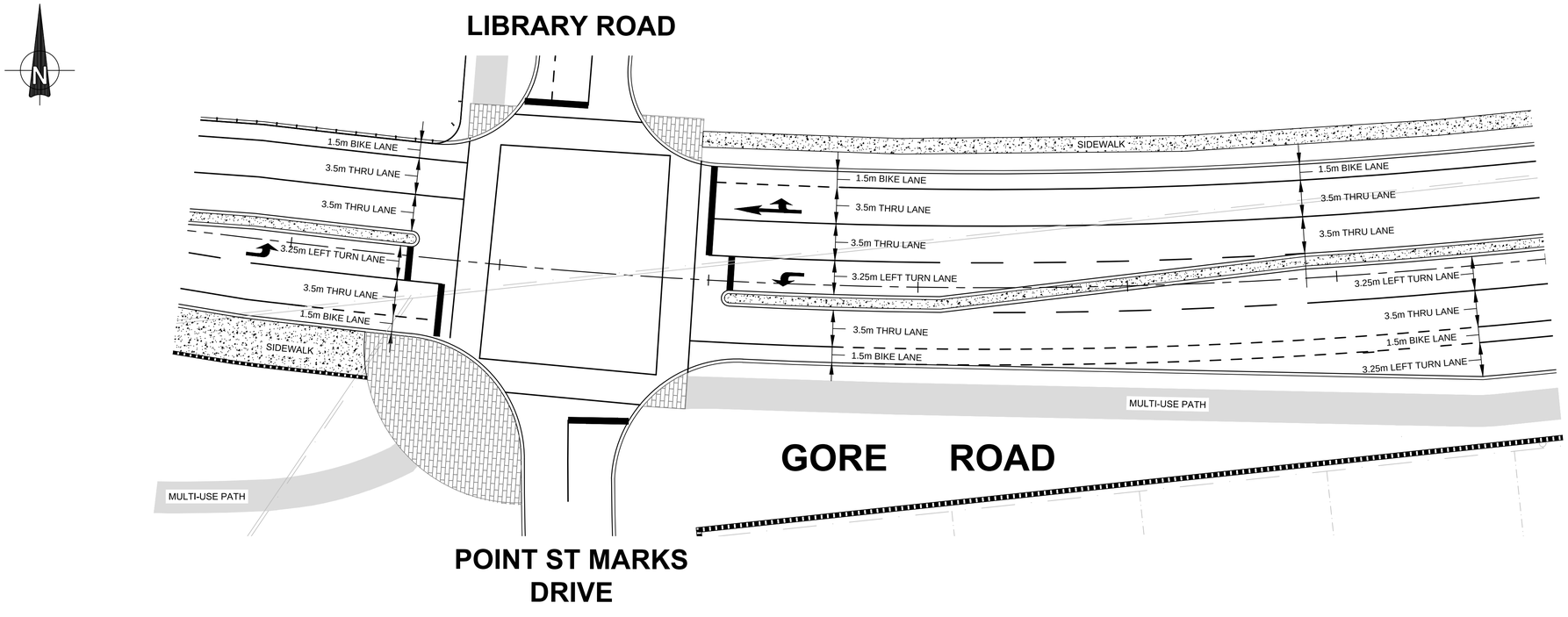

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

LANE ARRANGEMENT
STA 11+440 TO STA 11+720

Mark Van Buren, P.Eng.
Director of Engineering and Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	C402
Sheet No.:	2 of 3
Des: ARM	Chk'd: LJ
Dwn: ARM	Chk'd: SS
Scale:	1:250
Utility Circ. No.	
Code:	
Load:	

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
1	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	S.S.	03/05/17

Plot Date: 4/28/2017 10:45:30 AM
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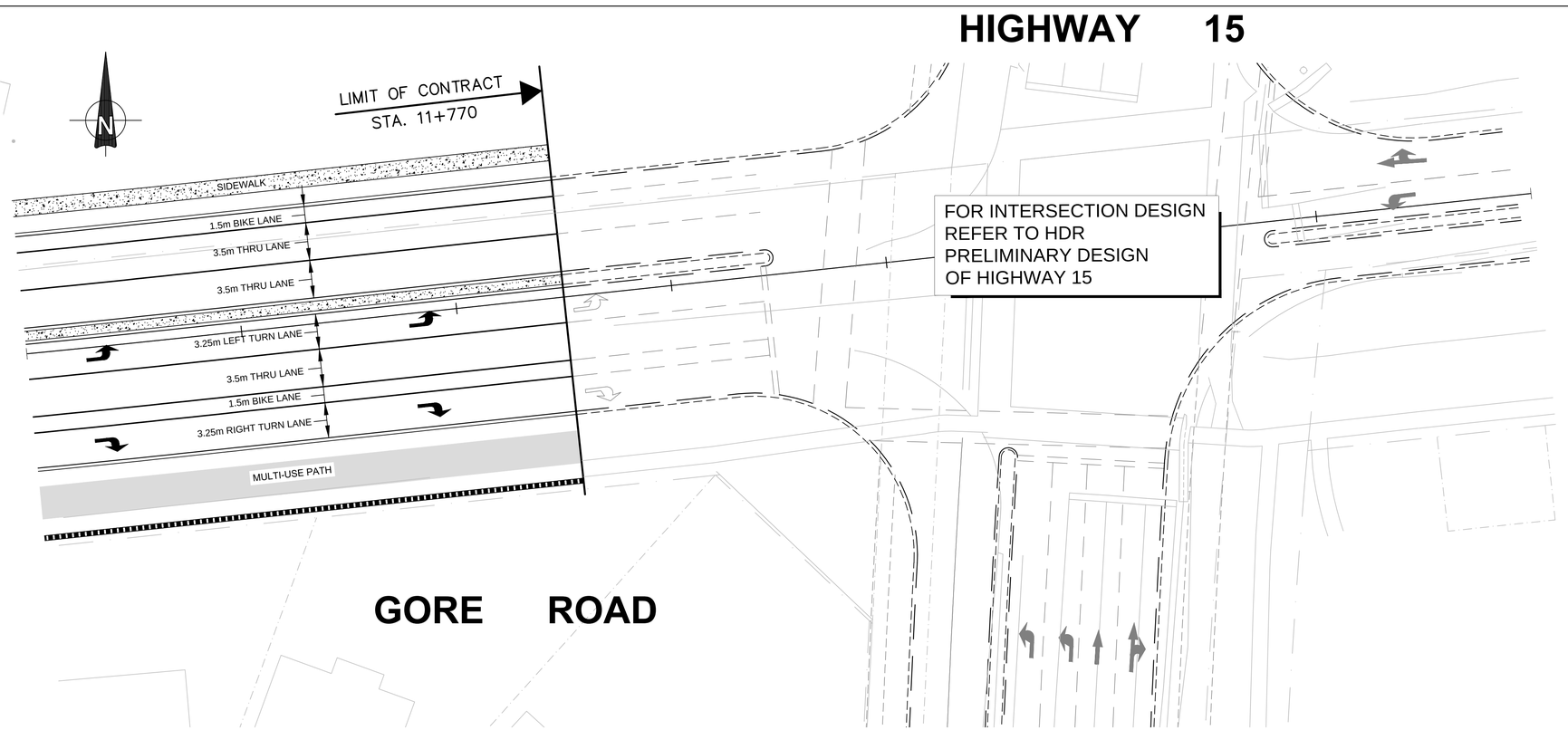

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

LANE ARRANGEMENT
STA 11+720 TO HIGHWAY No. 15

Mark Van Buren, P.Eng.
Director of Engineering and Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	C403
Sheet No.:	3 of 3
Des: ARM	Chk'd: LJ
Dwn: ARM	Chk'd: SS
Scale:	1:250
Utility Circ. No.	
Code:	
Load:	

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
1	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	S.S.	03/05/17

THIRD CROSSING OF THE CATARAQUI RIVER
PRELIMINARY DESIGN

GRADING
MONTREAL STEET TO STA 10+140

Mark Van Buren, P.Eng.
Director of Engineering and Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

KINGSTON

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

Project No.:	27143
Drawing No.:	C501
Sheet No.:	2 of 2
Des: LM/AM	Chk'd: SS/LJ
Dwn: LM/AM	Chk'd: SS/LJ
Scale:	1:250
Utility Circ. No.	
Code:	
Load:	

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
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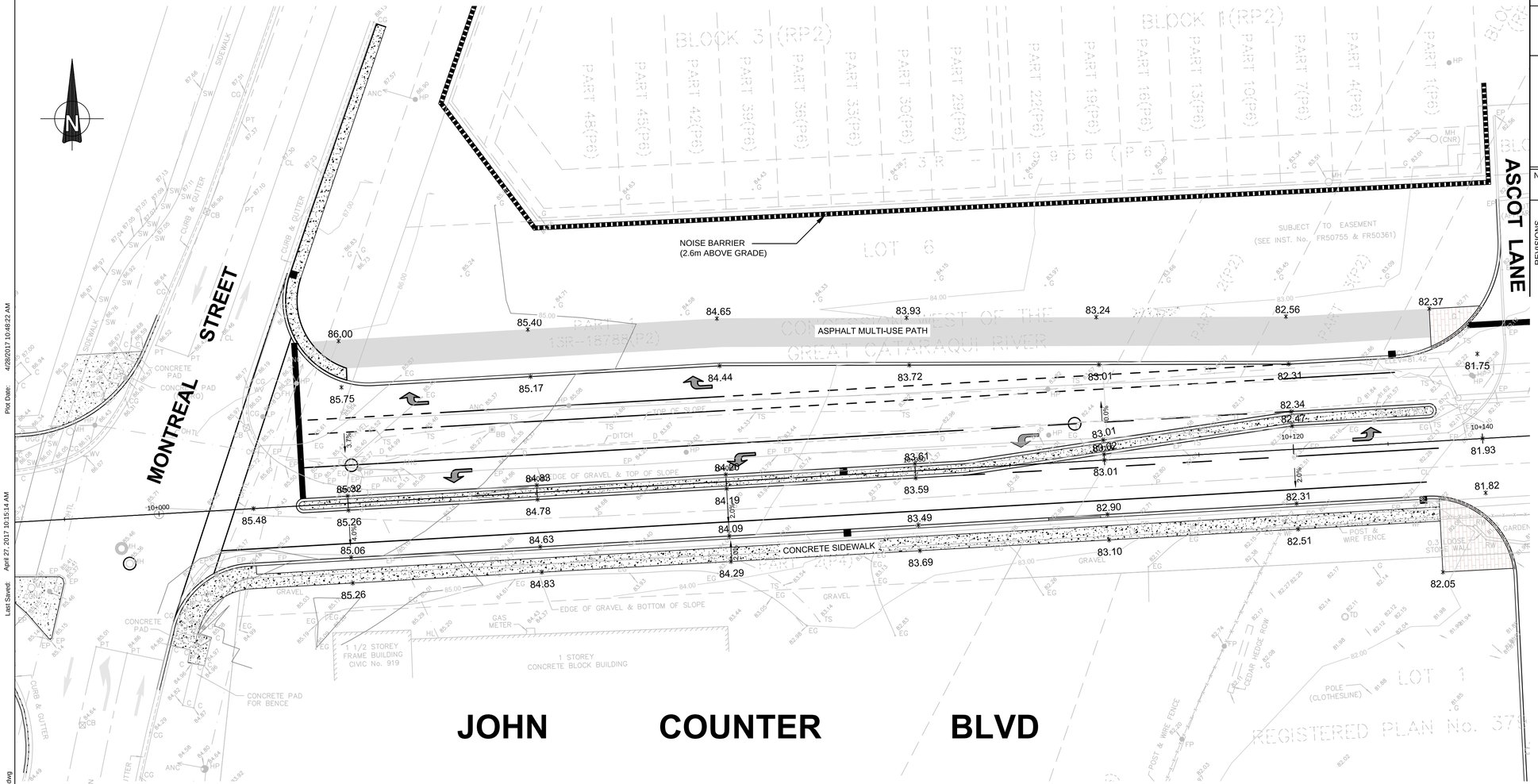

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Consultant's Information: K:\27000\27143 - Third Crossing Pre-Design\JLR DWG\Civil\27143 C 501 - GRADING WEST.dwg

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

GRADING PLAN
STA. 10+140 TO 10+300

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering and Deputy Commissioner	*Project Engineer*

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	C502
Sheet No.:	2 of 5
Des: LM/AM	Chk'd: SS/LJ
Dwn: LM/AM	Chk'd: SS/LJ
Scale:	1:250
Utility Circ. No.	
Code:	
Load:	

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REVISIONS

No.	Description	By	Date (dd/mm/yy)
1	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	S.S.	03/05/17

JOHN COUNTER BLVD

NOISE BARRIER (2.6m ABOVE GRADE)

ASPHALT MULTI-USE PATH

POND OUTLET HEADWALL STRUCTURE C/W GRATE

POND INLET HEADWALL STRUCTURE C/W GRATE

BASE OF POND ELEV. 76.30

HIGH WATER LEVEL ELEV. 77.56

TOP OF POND ELEV. 77.56

50m LONG LEVEL SPREADER MIN. 300mm DEEP WITH 800mm DEEP PLUNGE POOL AT STORM SEWER DISCHARGE C/W RIP-RAP EROSION PROTECTION

ARMOUR STONE RETAINING WALL

LIMIT OF ROAD WORKS

LIMIT OF STRUCTURAL WORKS

REFER TO STRUCTURAL DRAWINGS FOR BRIDGE DETAILS

SPECIALTY PAVERS

ARMOUR STONE RETAINING WALL

ASPHALT MULTI-USE PATH

PROJECT TO EASEMENT (SEE INST. No. FR070398 & FR120360)

Plot Date: 4/28/2017 4:29:13 PM
Last Saved: April 28, 2017 4:28:52 PM
Consultant's Information: K:\27000\27143 - Third Crossing Pre-Design\LR DWG\Civil\27143 C 502 - GRADING WEST.dwg

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

GRADING PLAN
STA. 11+400 TO STA. 11+560

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering and Deputy Commissioner	*Project Engineer*

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	C503
Sheet No.:	3 of 5
Des: LM/AM	Chk'd: SS/LJ
Dwn: LM/AM	Chk'd: SS/LJ
Scale:	1:250
Utility Circ. No.	
Code:	
Load:	

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
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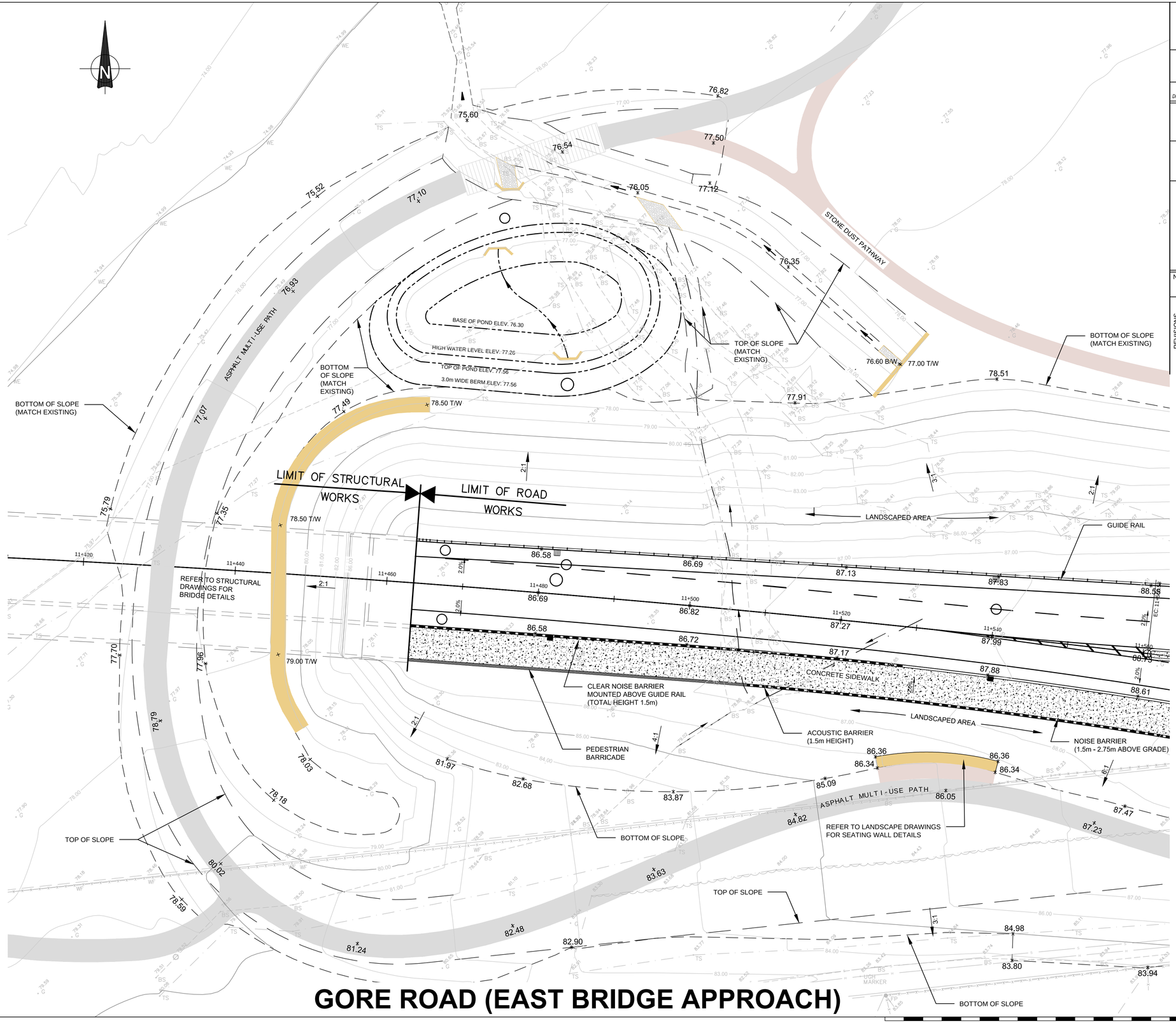


GORE ROAD (EAST BRIDGE APPROACH)

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

GRADING PLAN
STA. 11+560 TO STA. 11+720

Mark Van Buren, P.Eng. *Director of Engineering and Deputy Commissioner*	Dan Franco, P.Eng. *Project Engineer*

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	C504
Sheet No.:	4 of 5
Des: LM/AM	Chk'd: SS/LJ
Dwn: LM/AM	Chk'd: SS/LJ
Scale:	1:250
Utility Circ. No.	
Code:	
Load:	

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
1	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	S.S,	03/05/17

BOTTOM OF SLOPE (MATCH EXISTING)

GUIDE RAIL

STONE DUST PATHWAY

ASPHALT MULTI-USE PATH

BC: 0+025.63

PI: 0+020.05

EC: 0+044.85

BC: 0+082.55

EC: 0+088.57

EP: 0+116.17

GUIDE RAIL

BOTTOM OF SLOPE (MATCH EXISTING

CONCRETE SIDEWALK

EC: 11+560

BC: 11+580.88

PI: 0+010.88

EC: 0+001.24

BC: 0+020.00

SC: 11+627.22

CS: 11+740.08

Length=38.64
CPI Station=1+713.82
Δ=139.00

NOISE BARRIER (1.5m ABOVE GRADE)

BOTTOM OF SLOPE

ASPHALT MULTI-USE PATH

TOP OF SLOPE

BOTTOM OF SLOPE

NOISE BARRIER (2.75m ABOVE GRADE)

NOISE BARRIER (2.75m ABOVE GRADE)

BOTTOM OF SLOPE (MATCH EXISTING)

ASPHALT MULTI-USE PATH

GORE ROAD (EAST BRIDGE APPROACH)

Plot Date: 4/28/2017 10:53:42 AM
Last Saved: April 27, 2017 12:01:03 PM
Consultant's Information: K:\27000\27143 - Third Crossing Pre-Design\JLR DWG\Civil\27143 C 504 - GRADING EAST.dwg

THIRD CROSSING OF THE CATARAQUI RIVER
PRELIMINARY DESIGN

GRADING PLAN
STA. 11+720 TO HIGHWAY 15

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering and Deputy Commissioner	*Project Engineer*

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	C505
Sheet No.:	5 of 5
Des: LM/AM	Chk'd: SS/LJ
Dwn: LM/AM	Chk'd: SS/LJ
Scale:	1:250
Utility Circ. No.	
Code:	
Load:	

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
1	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	S.S,	03/05/17

HIGHWAY 15

REFER TO LANDSCAPE DRAWINGS FOR WALL RELOCATION

BOTTOM OF SLOPE (MATCH EXISTING

LIMIT OF CONTRACT STA. 11+770

CONCRETE SIDEWALK

ASPHALT MULTI-USE PATH

2.0%

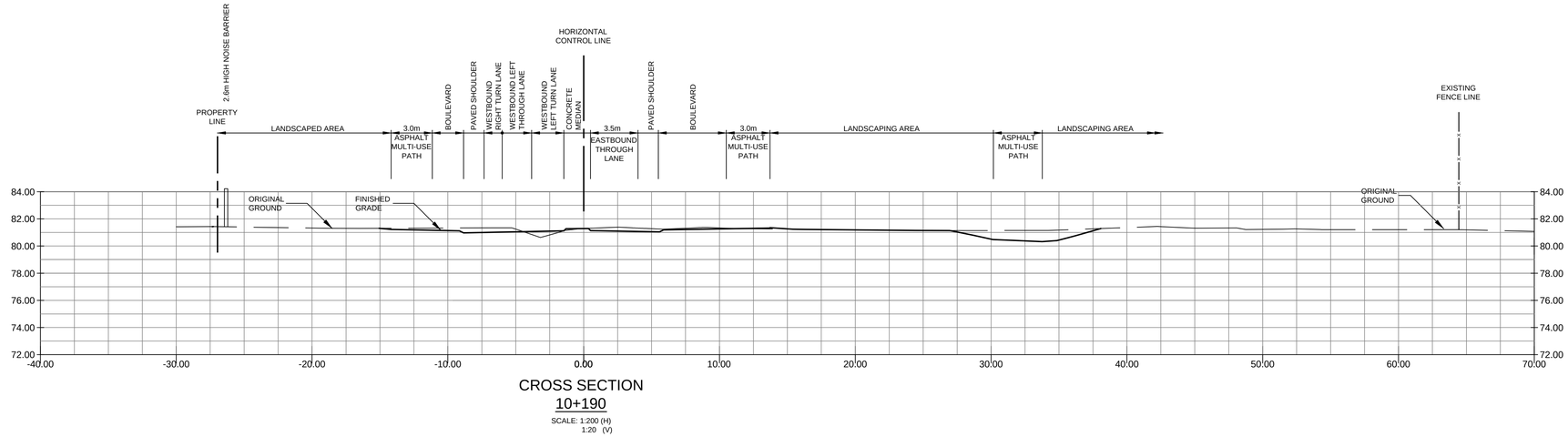
BOTTOM OF SLOPE (MATCH EXISTING

NOISE BARRIER (2.75m ABOVE GRADE)

FOR INTERSECTION DESIGN REFER TO HDR PRELIMINARY DESIGN OF HIGHWAY 15

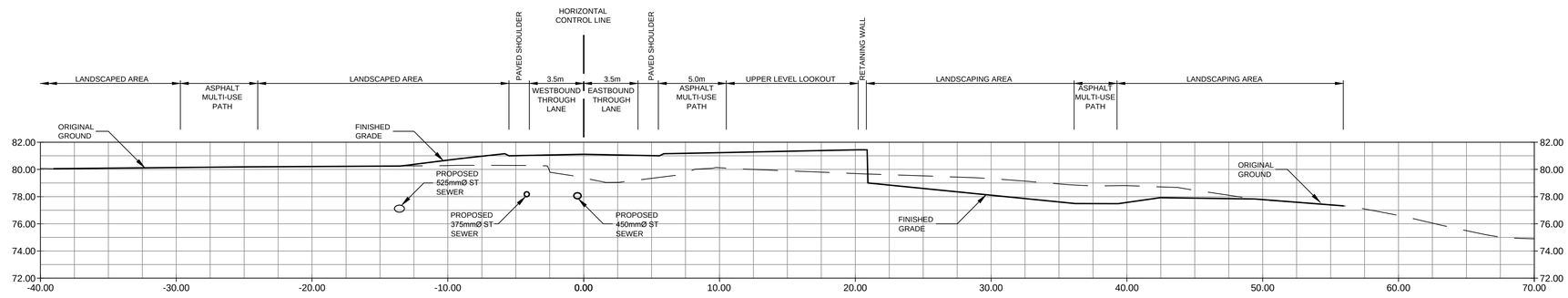
GORE ROAD (EAST BRIDGE APPROACH)

Plot Date: 4/28/2017 10:55:38 AM
Last Saved: April 27, 2017 1:20:06 PM
Consultant's Information: K:\27000\27143 - Third Crossing Pre-Design\ULR DWG\Civil\27143 C 505 - GRADING EAST.dwg



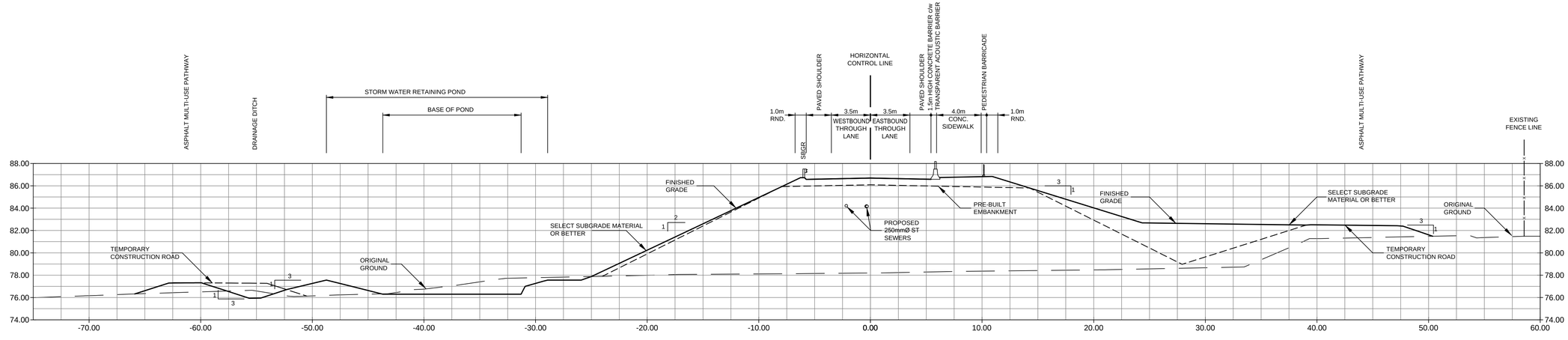
CROSS SECTION
10+190

SCALE: 1:200 (H)
1:20 (V)



CROSS SECTION
10+250

SCALE: 1:200 (H)
1:20 (V)



CROSS SECTION
11+480

SCALE: 1:200 (H)
1:20 (V)

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

SECTION VIEWS
STA. 10+190, 10+250 & 11+480

Mark Van Buren, P.Eng
Director of Engineering and Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	C 601
Sheet No.:	1 of 2
Des:	Chk'd:
Dwn: AM	Chk'd:
Scale:	AS NOTED
Utility Circ. No.	
Code:	
Load:	

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
1	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	S.S.	03/05/17

Plot Date: 4/28/2017 10:56:11 AM
Last Saved: April 28, 2017 8:31:09 AM
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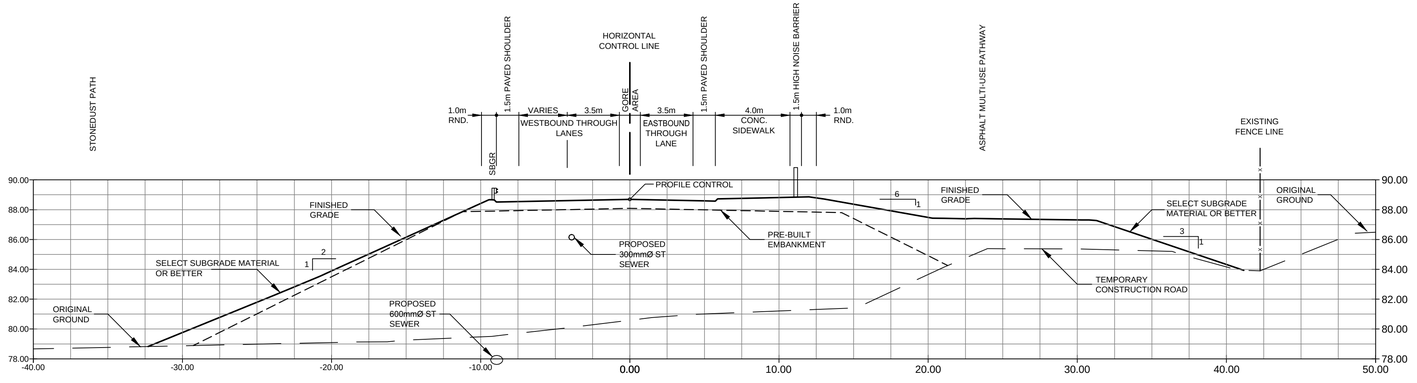
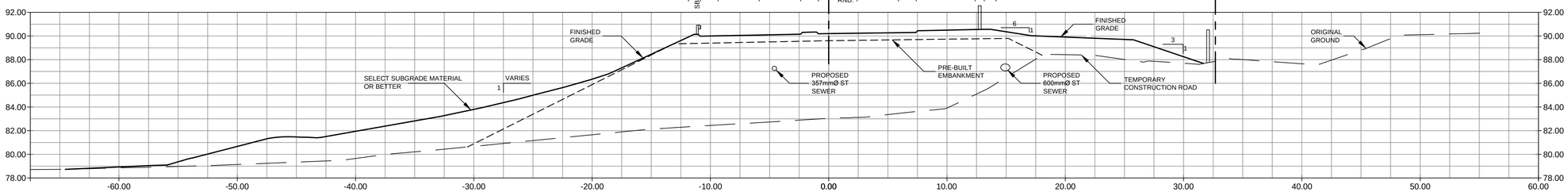


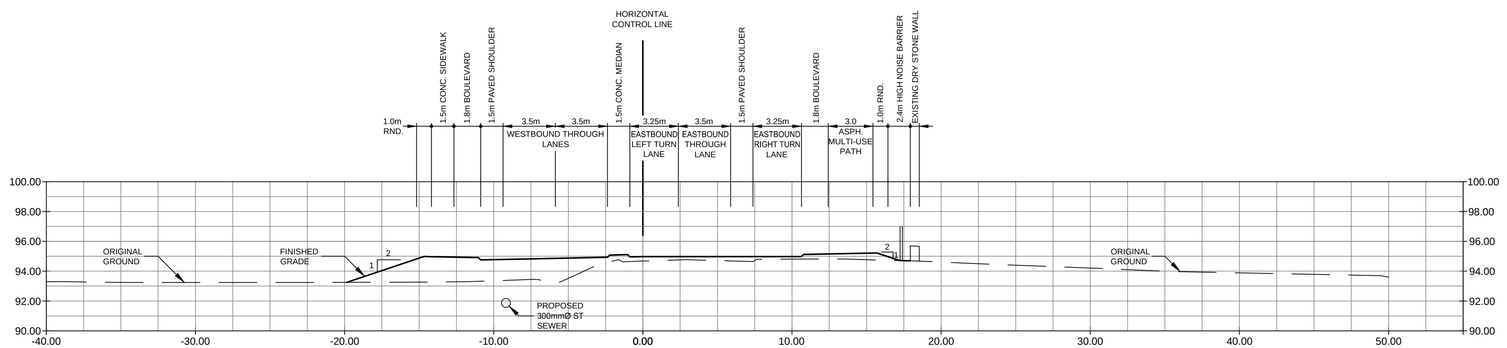
CROSS SECTION
11+560

SCALE: 1:200 (H)
1:20 (V)



CROSS SECTION
11+600

SCALE: 1:200 (H)
1:20 (V)



CROSS SECTION
11+740

SCALE: 1:200 (H)
1:20 (V)

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

SECTION VIEWS
STA. 11+560, 11+600 & 11+740

Mark Van Buren, P.Eng
Director of Engineering and Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	C 602
Sheet No.:	2 of 2
Des:	Chk'd:
Dwn: AM	Chk'd:
Scale:	AS NOTED
Utility Circ. No.	
Code:	
Load:	

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
1	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	S.S.	03/05/17

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

STAGING AND LAYDOWN ACCESS / EGRESS WEST

Mark Van Buren, P.Eng	Dan Franco, P.Eng.
Director of Engineering and Deputy Commissioner	*Project Engineer*

KINGSTON

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

Project No.:	27143
Drawing No.:	C701
Sheet No.:	1 of 2
Des: LM/AM	Chk'd: SS/LJ
Dwn: LM/AM	Chk'd: SS/LJ
Scale:	1:500
Utility Circ. No.	
Code:	
Load:	

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
1	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	S.S.	03/05/17

LAYDOWN AREAS

AREA No. 1 = 0.2 Ha.
AREA No. 2 = 0.8 Ha.
AREA No. 3 (LOW ACTIVITY - EG. PARKING) = (0.3 Ha)
AREA No. 4 (LOW ACTIVITY - EG. TRAILERS/OFFICES) = (0.4 Ha)

NOTE & LEGEND:

NAD83 UTM CONTROL COORDINATES (ZONE 18)

ACCESS TO ASCOT LANE TO REMAIN THROUGHOUT CONSTRUCTION

CONSTRUCTION NOISE BARRIER AT START OF PROJECT

CONSTRUCTION NOISE BARRIER AT START OF PROJECT

TRUCK TURNING

SWM AREA

MONTREAL STREET

ASCOT LANE

JOHN COUNTER BLVD

AREA No. 3 (0.3 Ha)

AREA No. 4 (0.4 Ha)

AREA No. 1 (0.2 Ha)

AREA No. 2 (0.8 Ha)

CONSTRUCTION ACCESS GATE

CONSTRUCTION ACCESS/EGRESS AND PUBLIC ACCESS TO ASCOT LANE AND APARTMENTS

ACCESS TO APARTMENTS TO BE RE-ALIGNED AT START OF PROJECT

TRUCK TURNING

10+000 10+020 10+040 10+060 10+080 10+100 10+120 10+140 10+160 10+180 10+200 10+220 10+240 10+260 10+280 10+300 10+320 10+340 10+360 10+380

REGISTERED PLAN No. 13M-82 (RP2)

CONCESSION WEST OF THE GREAT CATARAQUI RIVER

LOT 5

LOT 7 (SOMETIMES KNOWN AS LOT 5)

BLOCK 36 (RP2)

PART 90(PB)

PART 92(PB)

PART 51 PLAN 13R-19815

PART 1 13R-13481

Plot Date: 4/28/2017 4:30:40 PM

Last Saved: April 28, 2017 2:40:21 PM

Consultant's Information: K:\27000\27143 - Third Crossing Pre-Design\JLR DWG\Civil\27143 C 701 - LAYDOWN AREA WEST.dwg

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

STAGING AND LAYDOWN ACCESS / EGRESS EAST

Mark Van Buren, P.Eng.
Director of Engineering and Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

KINGSTON

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

Project No.:	27143
Drawing No.:	C702
Sheet No.:	2 2
Des: LM/AM	Chk'd: SS/LJ
Dwn: LM/AM	Chk'd: SS/LJ
Scale:	1:1000
Utility Circ. No.	
Code:	
Load:	

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REVISIONS

No.	Description	By	Date (dd/mm/yy)
1	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	S.S.	03/05/17

LAYDOWN AREAS

AREA No. 1 (MEADOW) = 0.9 Ha.
AREA No. 2 (DOG PARK) = 0.3 Ha.
AREA No. 3 (LIBRARY) = 0.02 Ha.

CONSTRUCTION ACCESS ROAD

AREA No. 2
DOG PARK
(0.3 Ha)

AREA No. 1
MEADOW
(0.9 Ha)

TEMPORARY ACCESS
TO WATERFRONT
DURING CONSTRUCTION

AREA No. 3 LIBRARY
(0.02 Ha)

LIBRARY ACCESS TO REMAIN
UNTIL APPROACH ROADWORK
IS COMPETED (LATE STAGE)

3:1 SLOPE (TYP.)

CONSTRUCTION EGRESS ROAD

TEMPORARY GABION
RETAINING WALL

HIGHWAY 15

BARKER DR

MACLEAN CRT

KENWOOD CTR

SAINT MARK DR

CONCESSION EAST OF THE GREAT CATARAQUI RIVER

REGISTERED PLAN No. 1953 (RP1)

REGISTERED PLAN 1948 (RP2)

REGISTERED PLAN No. 13M-48

Plot Date: 4/28/2017 10:58:26 AM

Last Saved: April 27, 2017 4:03:45 PM

Consultant's Information: K:\27000\27143 - Third Crossing Pre-Design\JLR DWG\Civil\27143-C 702 - LAYDOWN AREA EAST.dwg

THIRD CROSSING OF THE CATARAQUI RIVER
PRELIMINARY DESIGN

EROSION AND SEDIMENT CONTROL WEST

Mark Van Buren, P.Eng	Dan Franco, P.Eng.
Director of Engineering and Deputy Commissioner	*Project Engineer*

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	C801
Sheet No.:	1 of 2
Des: LM/AM	Chk'd: SS/LJ
Dwn: LM/AM	Chk'd: SS/LJ
Scale:	1:500
Utility Circ. No.	
Code:	
Load:	

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REVISIONS

No.	Description	By	Date (dd/mm/yy)
1	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	S.S.	03/05/17

NOTE & LEGEND:

NAD83 UTM CONTROL COORDINATES (ZONE 18)

MONTREAL STREET

JOHN COUNTER BLVD

ASCOT LANE

ELLIOTT AVE

PARKETTE

GREAT CATARAQUI RIVER

ROCK CHECK DAM

STRAWBALE CHECK DAM

SILT FENCE

CONSTRUCT STORMWATER MANAGMENT FACILITIES AT ONSET OF PROJECT

SILT FENCE

SILT FENCE

10+000 10+020 10+040 10+060 10+080 10+100 10+120 10+140 10+160 10+180 10+200 10+220 10+240 10+260 10+280 10+300 10+320 10+340 10+360 10+380

NOTE:
1) EROSION AND SEDIMENT CONTROL PLAN TO BE PROVIDED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION TO THE SATISFACTION OF THE CITY OF KINGSTON AND CRCA
2) TEMPORARY PIPING OF STORMWATER MAY BE REQUIRED DURING CONSTRUCTION

Plot Date: 4/28/2017 4:33:07 PM
Last Saved: April 28, 2017 2:45:42 PM
Consultant's Information: K:\27000\27143 - Third Crossing Pre-Design\JLR DWG\Civil\27143 C 801 - ESC WEST.dwg

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

EROSION AND SEDIMENT CONTROL EAST

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering and Deputy Commissioner	*Project Engineer*

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	C802
Sheet No.:	2 2
Des: LM/AM	Chk'd: SS/LJ
Dwn: LM/AM	Chk'd: SS/LJ
Scale:	1:1000
Utility Circ. No.	
Code:	
Load:	

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
1	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	S.S.	03/05/17

SILT FENCE

STRAWBALE CHECK DAM

CONSTRUCTION ACCESS ROAD

STRAWBALE CHECK DAM

ROCK CHECK DAM

STRAWBALE CHECK DAM

TEMPORARY CULVERT CROSSING UNDER CONSTRUCTION EGRESS ROAD

CONSTRUCT STORMWATER MANAGMENT FACILITIES AT ONSET OF PROJECT

SILT FENCE

HIGHWAY 15

11+350 11+400 11+450 11+500 11+550 11+600 11+650 11+700 11+750 11+800 11+850 11+875

GORE ROAD

CONSTRUCTION EGRESS ROAD

STRAWBALE CHECK DAM

TEMPORARY BYPASS PIPING OF EXISTING STORM SEWERS MAY BE REQUIRED DURING CONSTRUCTION OF EARTH FILL EMBANKMENT

SILT FENCE

BARKER DR

MACLEAN CRT

KENWOOD CIR

NOTE:
1)EROSION AND SEDIMENT CONTROL PLAN TO BE PROVIDED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION TO THE SATISFACTION OF THE CITY OF KINGSTON AND CRCA
2) TEMPORARY PIPING OF STORMWATER MAY BE REQUIRED DURING CONSTRUCTION

Plot Date: 4/28/2017 4:55:28 PM
Last Saved: April 28, 2017 4:55:14 PM
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THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

PRELIMINARY GENERAL ARRANGEMENT

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	B-101
Sheet No.:	-- of ---
Des: JJA	Chk'd: RO
Dwn: KRS	Chk'd: JJA
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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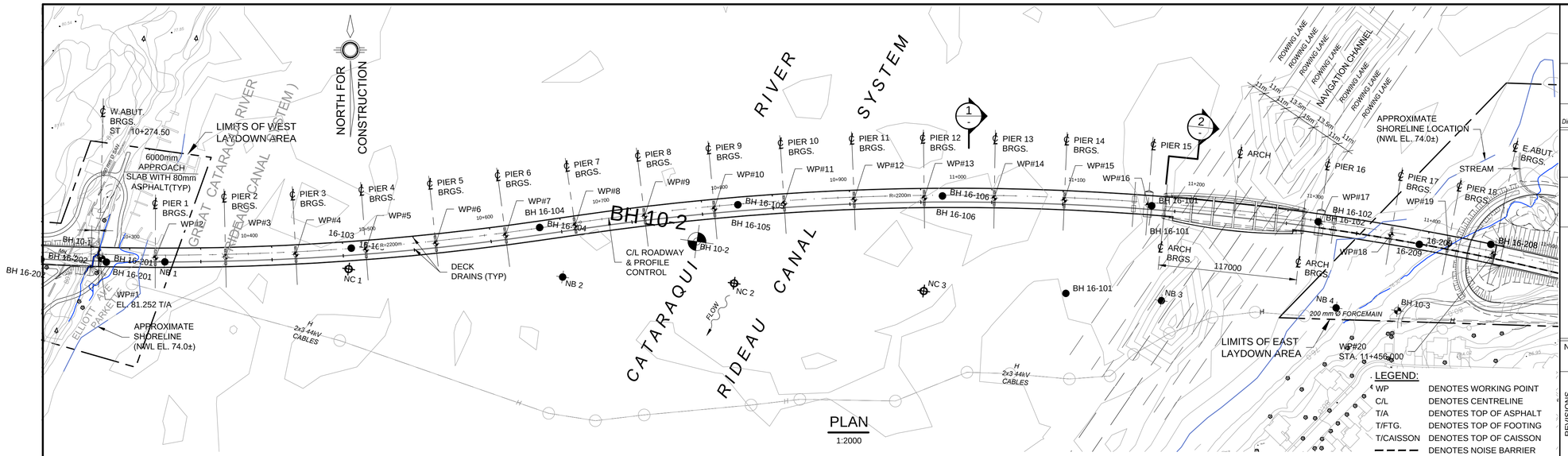
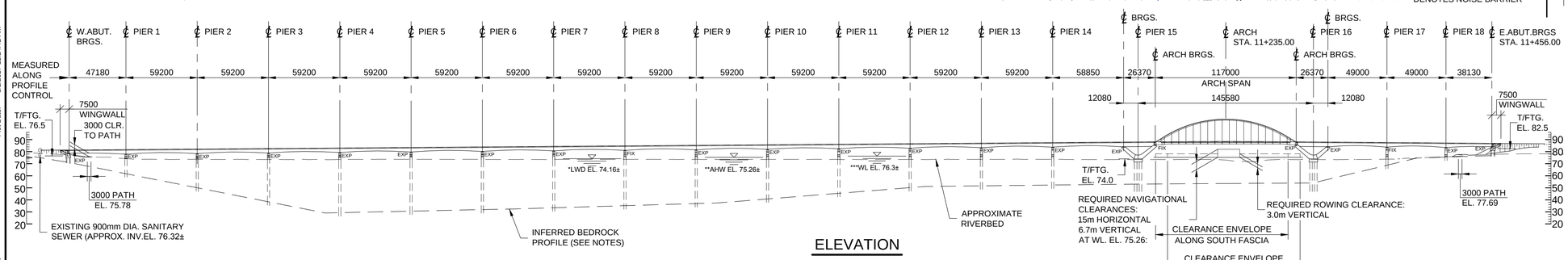
REVISIONS

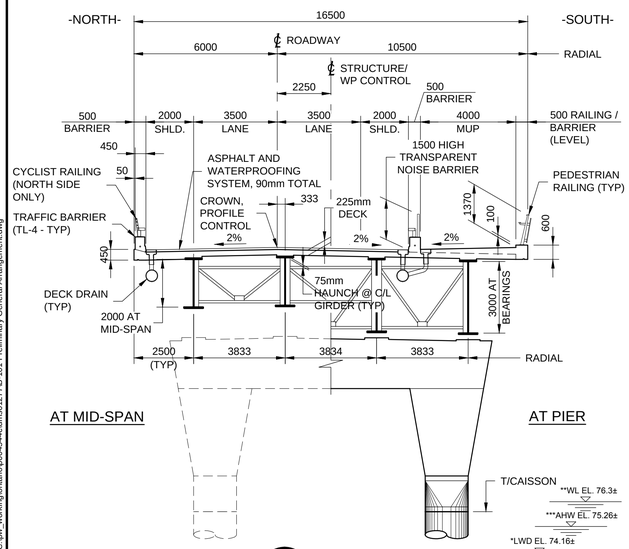
No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017



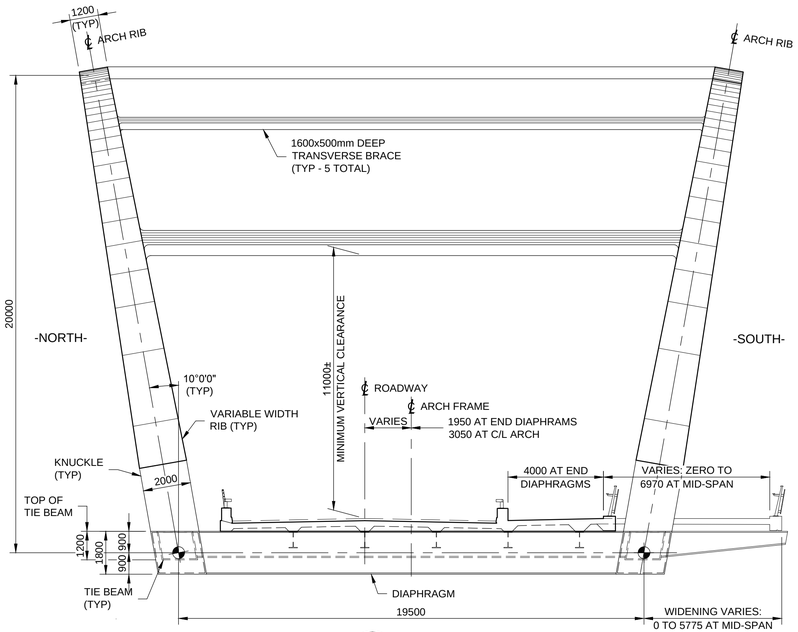
PLAN
1:2000



ELEVATION
1:2000



SECTION 1 - APPROACH SPANS
1:125

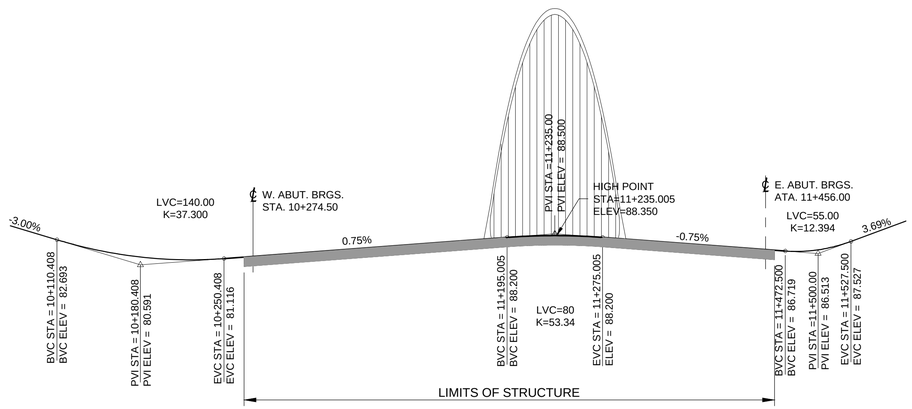


SECTION 2 - ARCH SPAN
1:125

NOTE:
SEE SECTION 1 FOR ROADWAY DIMENSIONS

NOTE:

*	LOW WATER DATUM	EL. 74.16	CANADIAN HYDROGRAPHIC SERVICE (LAKE ONTARIO)
**	AVERAGE HIGH WATER	EL. 75.26	MINISTRY OF NATURAL RESOURCES (LAKE ONTARIO)
***	REGULATORY WATER LEVEL	EL. 76.3	CATARAQUI REGION CONSERVATION AUTHORITY "REGULATORY LIMIT WITHIN THE STUDY AREA"



PROFILE THIRD CROSSING
N.T.S.

GENERAL NOTES:

DESIGN LOADS

BRIDGE: CL-625-ONT TRUCK LOAD, CL-625-ONT LANE LOAD OF CHBDC.
SIDEWALK: PEDESTRIAN LOADS AND MAINTENANCE VEHICLE OF CHBDC S6-14.

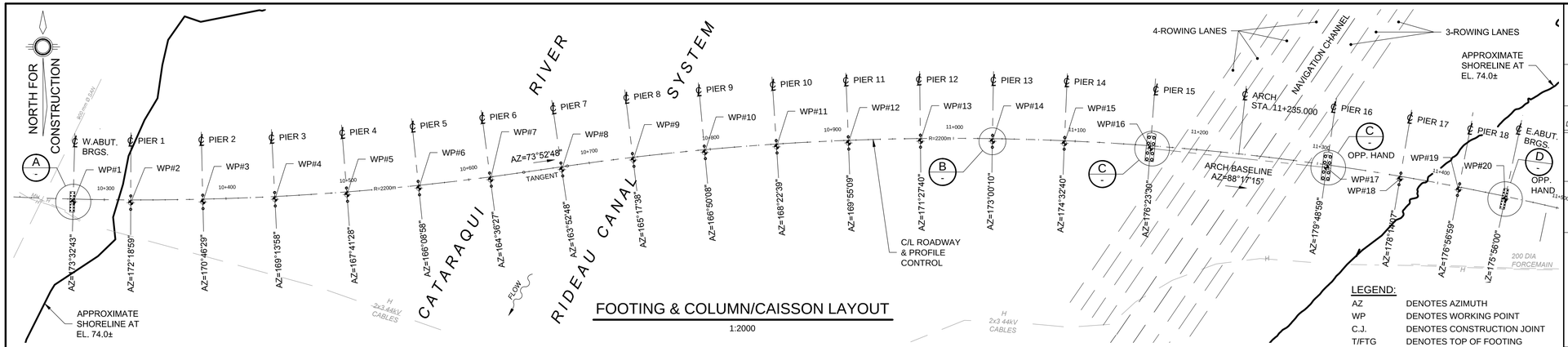
CONSTRUCTION NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. CHAINAGES AND ELEVATIONS ARE IN METRES.
2. MAINTAIN FULL NAVIGATIONAL CLEARANCE THROUGHOUT CONSTRUCTION.
3. INFERRED BEDROCK PROFILE IS BASED ON BOREHOLE LOGS FROM GOLDER ASSOCIATES REPORT ENTITLED "PRELIMINARY GEOTECHNICAL INVESTIGATION - THIRD CROSSING OF CATARAQUI RIVER - JOHN COUNTER BOULEVARD TO GORE ROAD, KINGSTON, ONTARIO", DATED MARCH 2017, REPORT NO. 1541774/2000/003.

LEGEND:

WP	DENOTES WORKING POINT
C/L	DENOTES CENTRELINE
T/A	DENOTES TOP OF ASPHALT
T/FTG.	DENOTES TOP OF FOOTING
T/CAISSON	DENOTES TOP OF CAISSON
- - -	DENOTES NOISE BARRIER

Consultants:
Information: C:\pw_working\ontario\op0045444\dms\012778-101 Preliminary General Arrangement.dwg
Last Saved: Monday, May 01, 2017 11:19:30 AM
Plot Date: 5/1/2017 11:24:42 AM

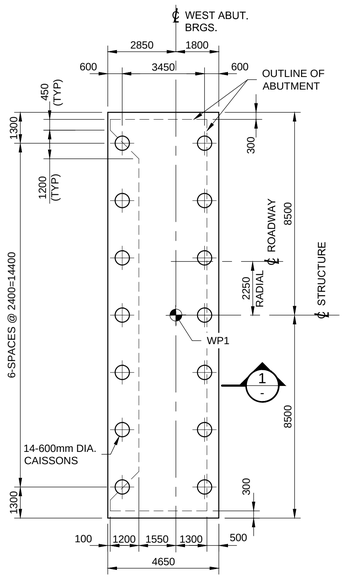


FOOTING & COLUMN/CAISSON LAYOUT

1:2000

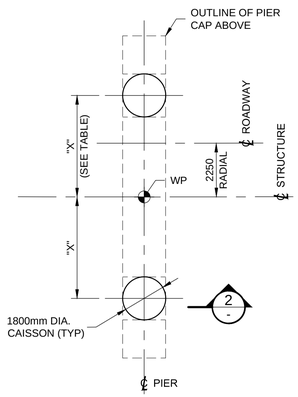
LEGEND:

AZ	DENOTES AZIMUTH
WP	DENOTES WORKING POINT
C.J.	DENOTES CONSTRUCTION JOINT
T/FTG	DENOTES TOP OF FOOTING
T/CAISSON	DENOTES TOP OF CAISSON
OPP. HAND	DENOTES OPPOSITE HAND



DETAIL A - WEST ABUTMENT FOOTING

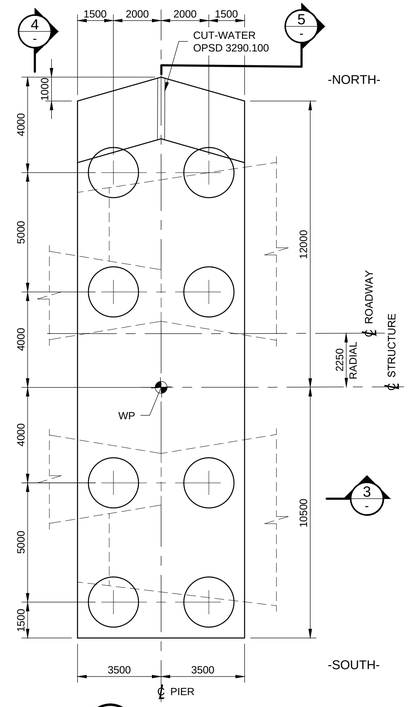
1:125



DETAIL B - PIER CAISSONS

1:125

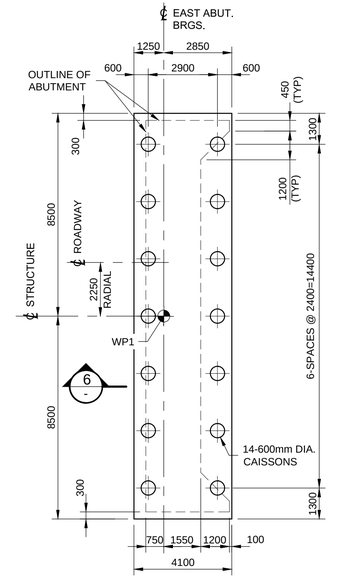
(PIERS 1 TO 14, 17 AND 18)



DETAIL C - ARCH PIER CAISSONS

1:125

(PIER 15 SHOWN PIER 16 SIMILAR)

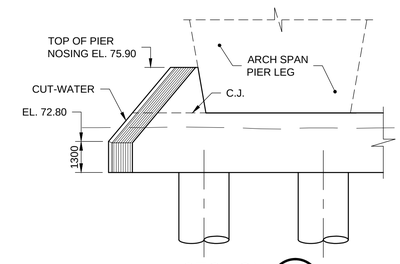


DETAIL D - EAST ABUTMENT FOOTING

1:125

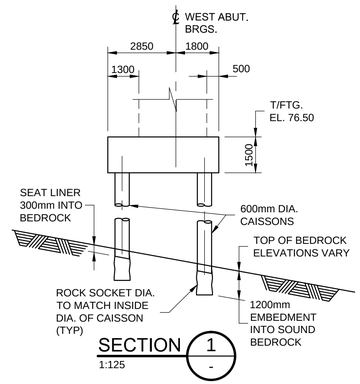
1800mm DIA. CAISSON LOCATIONS

PIER NO.	TOP OF CAISSON ELEVATION (m±)	DIMENSION X (mm)
1	74.23	5478
2	74.68	5478
3	75.12	5478
4	75.65	5478
5	75.90	5479
6	75.90	5400
7	75.90	5322
8	75.90	5251
9	75.90	5167
10	75.90	5087
11	75.90	5009
12	75.90	4931
13	75.90	4652
14	75.90	4773
17	75.90	4776
18	75.90	4825



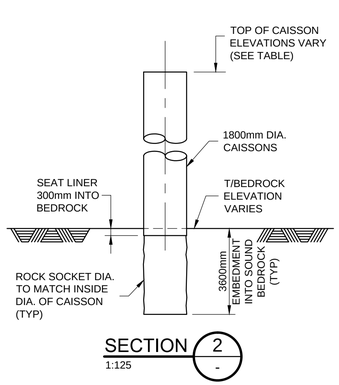
SECTION 5

1:125



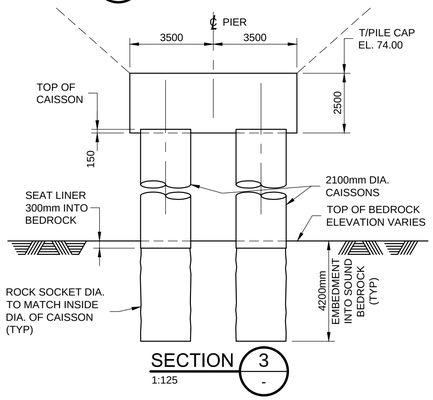
SECTION 1

1:125



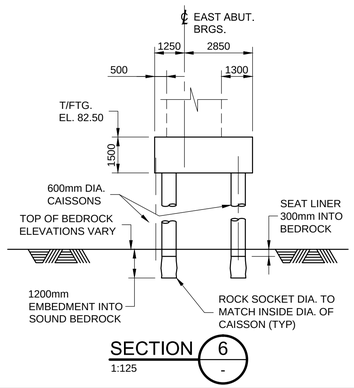
SECTION 2

1:125



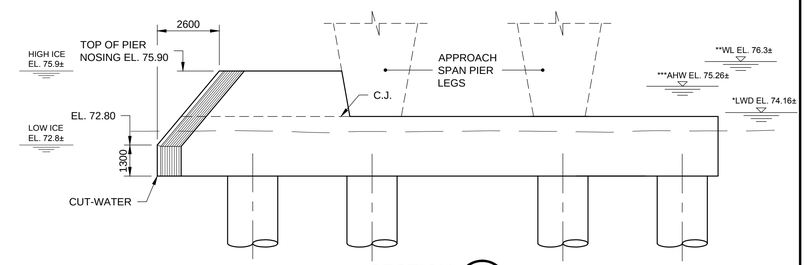
SECTION 3

1:125



SECTION 6

1:125



SECTION 4

1:125

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

FOOTING / CAISSON LAYOUT AND DETAILS

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering & Deputy Commissioner	*Project Engineer*

KINGSTON

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

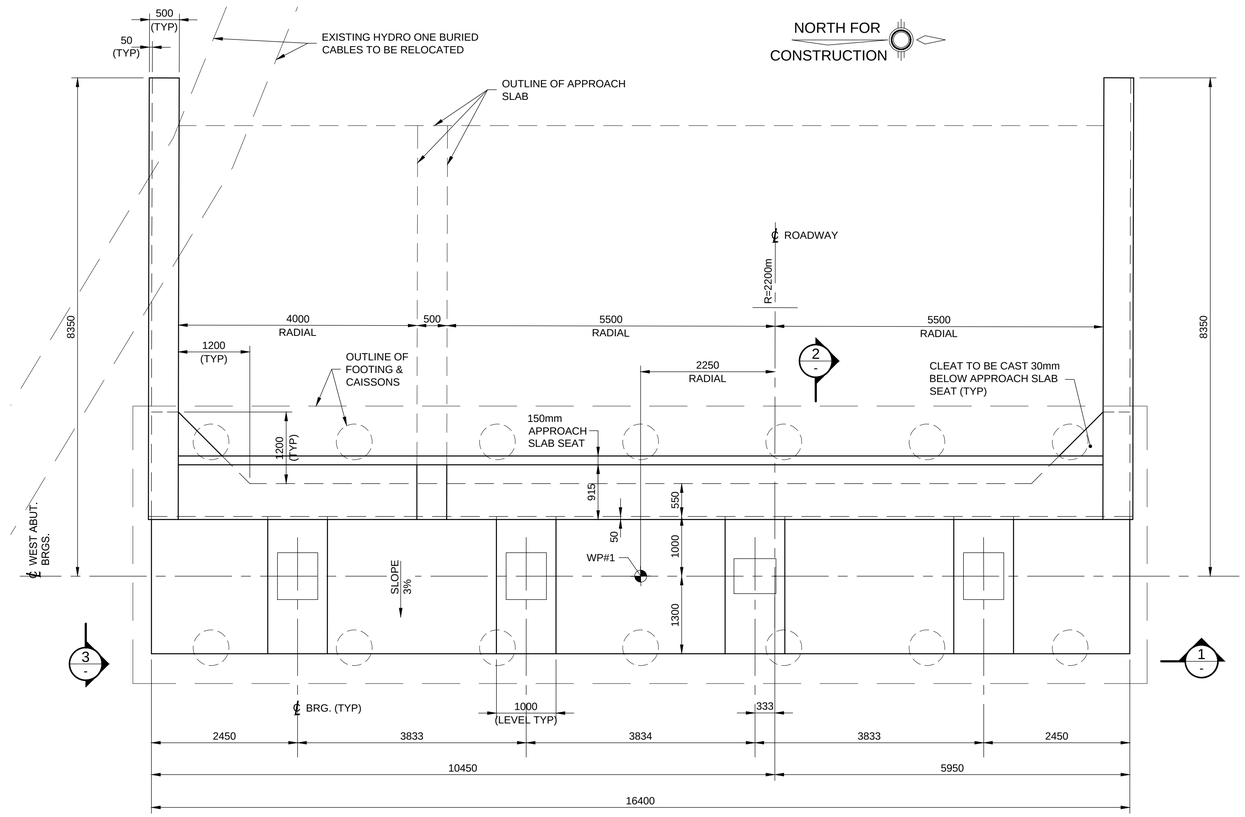
PARSONS

Project No.:	27143
Drawing No.:	B-102
Sheet No.:	-- of ---
Des: JJA	Chk'd: RO
Dwn: KRS	Chk'd: JJA
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

Plot Date: 5/1/2017 11:40:23 AM

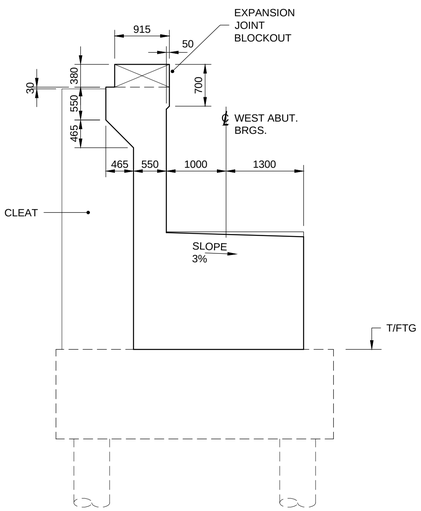
Last Saved: Monday, May 01, 2017 11:36:42 AM

Consultant's Information: C:\pw_working\ontario\p0045440\dms0127\B-102 Footing-Caisson Layout And Details.dwg



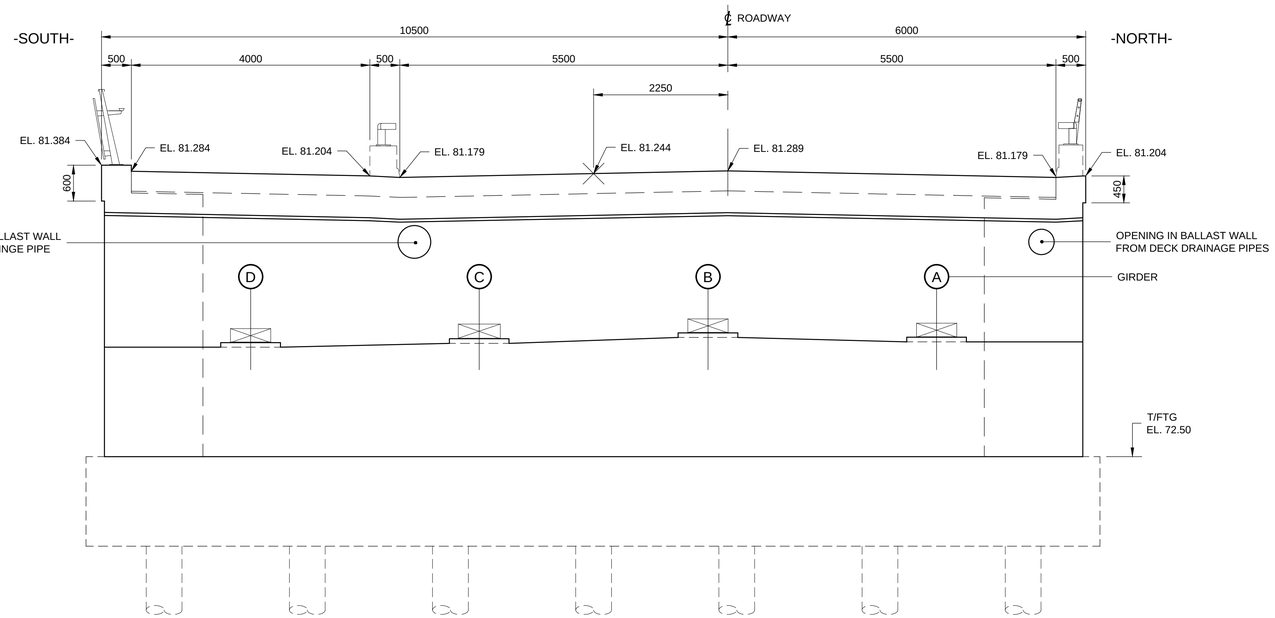
PLAN - WEST ABUTMENT

1:50



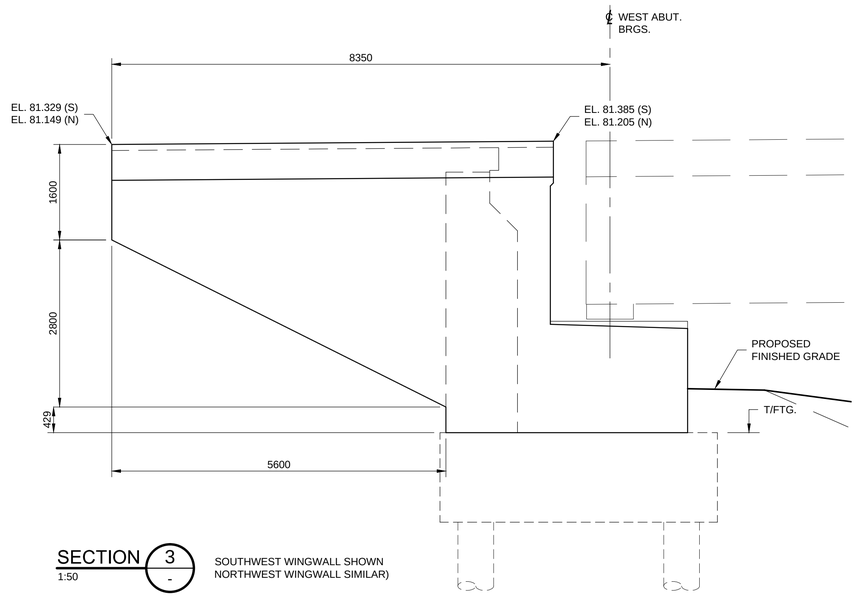
SECTION 2 / -

1:50



ELEVATION 1 / -

1:50



SECTION 3 / -

1:50

SOUTHWEST WINGWALL SHOWN
NORTHWEST WINGWALL SIMILAR)

LEGEND:

WP	DENOTES WORKING POINT
T/FTG	DENOTES TOP OF FOOTING

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

WEST ABUTMENT

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

Project No.:	27143
Drawing No.:	B-103
Sheet No.:	-- of ---
Des: JJA	Chk'd: RO
Dwn: KRS	Chk'd: JJA
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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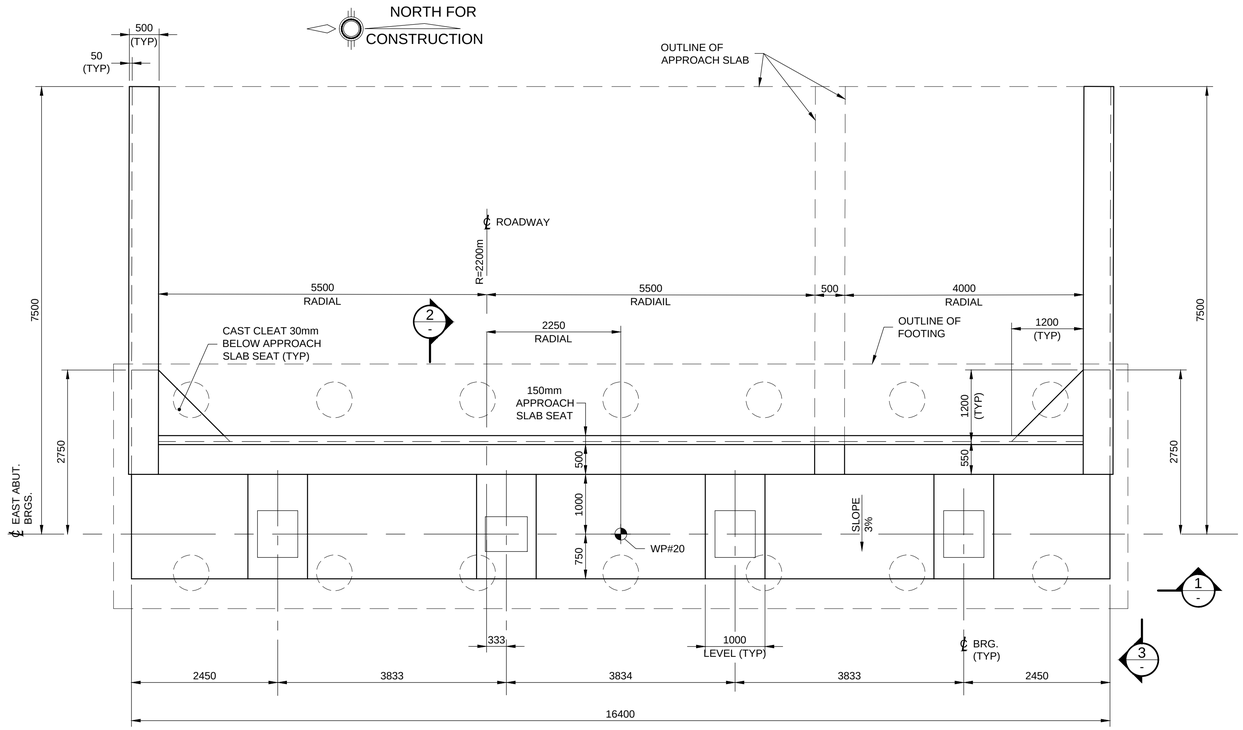
REVISIONS

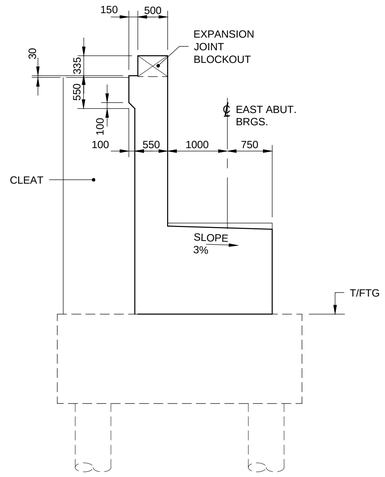
No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

Last Saved: Monday, May 01, 2017 11:03:41 AM
Plot Date: 5/1/2017 11:42:47 AM
Consultant's Information: C:\pw_working\ontario\jp004544c\dms\81277\B-103 West Abutment.dwg



PLAN - EAST ABUTMENT

1:50

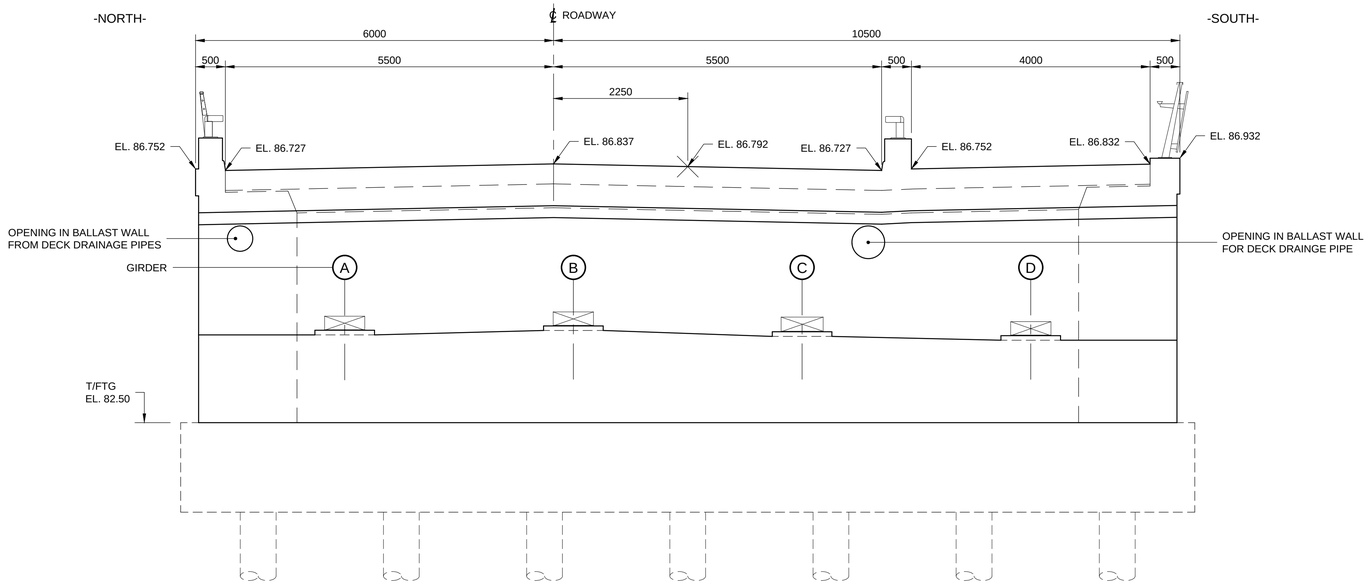


SECTION 2

1:50

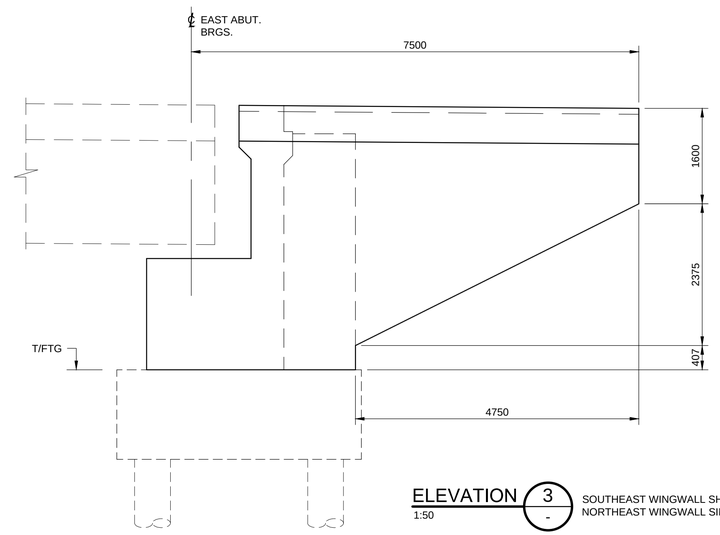
LEGEND:

WP	DENOTES WORKING POINT
T/FTG	DENOTES TOP OF FOOTING



ELEVATION 1

1:50



ELEVATION 3

1:50

SOUTHEAST WINGWALL SHOWN
NORTHEAST WINGWALL SIMILAR

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

EAST ABUTMENT

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

KINGSTON

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

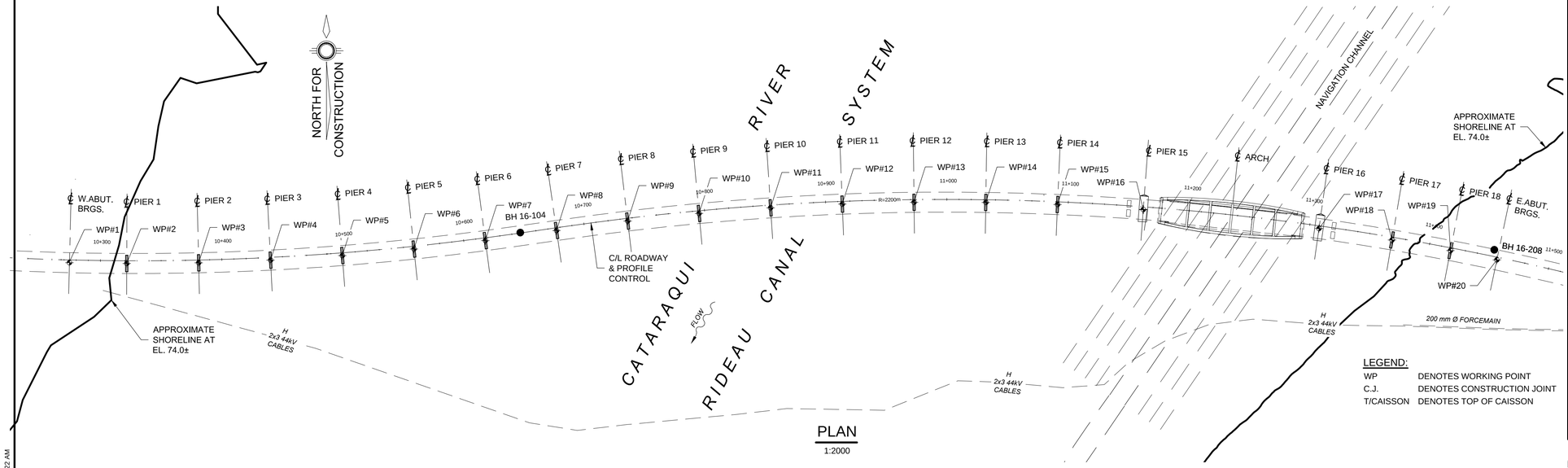
PARSONS

Project No.:	27143
Drawing No.:	B-104
Sheet No.:	-- of ---
Des: JJA	Chk'd: RO
Dwn: KRS	Chk'd: JJA
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017



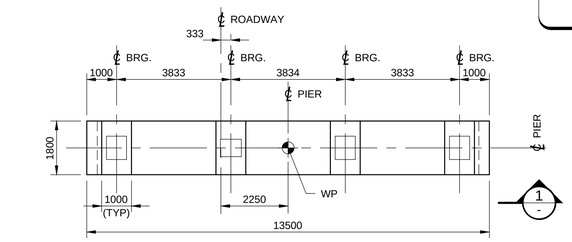
PLAN
1:2000

LEGEND:

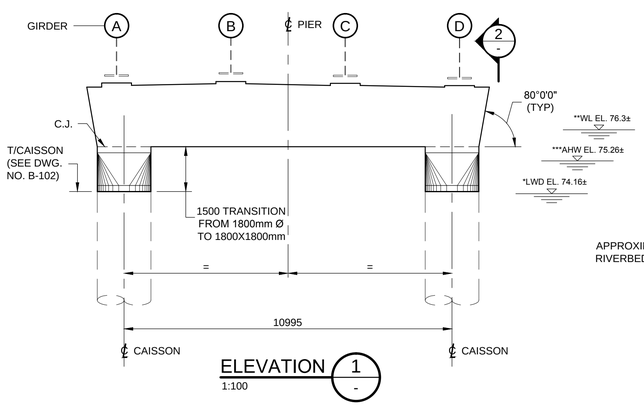
WP	DENOTES WORKING POINT
C.J.	DENOTES CONSTRUCTION JOINT
T/CAISSON	DENOTES TOP OF CAISSON

NOTE:

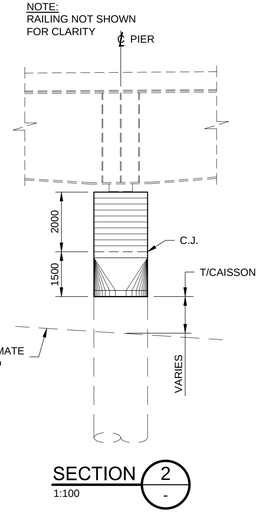
*	LOW WATER DATUM	EL. 74.16	CANADIAN HYDROGRAPHIC SERVICE (LAKE ONTARIO)
**	AVERAGE HIGH WATER	EL. 75.26	MINISTRY OF NATURAL RESOURCES (LAKE ONTARIO)
***	REGULATORY WATER LEVEL	EL. 76.3	CATARAQUI REGION CONSERVATION AUTHORITY "REGULATORY LIMIT WITHIN THE STUDY AREA"



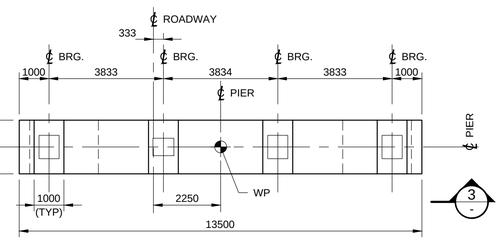
PLAN
1:100
(PIER 1 SHOWN PIERS 2, 3 & 4 SIMILAR)



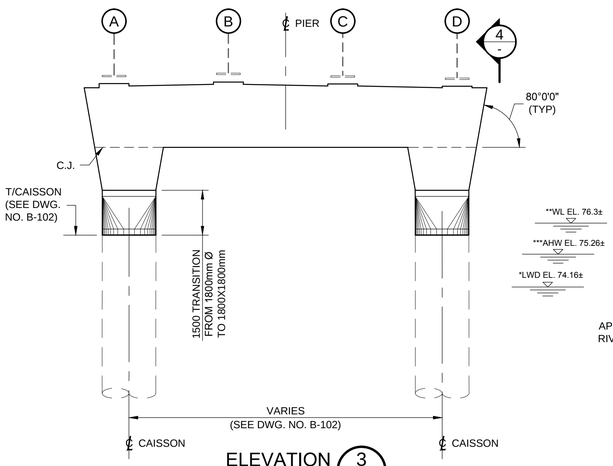
ELEVATION 1
1:100



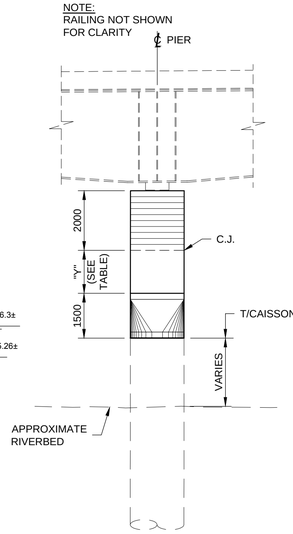
SECTION 2
1:100



PLAN
1:100
(PIER 8 SHOWN PIERS 5 TO 7, 9 TO 14, 17 & 18 SIMILAR)



ELEVATION 3
1:100



SECTION 4
1:100

PIERS 5 TO 14, 17 AND 18			
PIER NO.	DIMENSION "Y" (mm)	PIER NO.	DIMENSION "Y" (mm)
5	108	11	2772
6	552	12	3216
7	996	13	3660
8	1440	14	4104
9	1884	17	4181
10	2328	18	3813

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

APPROACH SPANS PIER

Mark Van Buren, P.Eng. — Director of Engineering & Deputy Commissioner
Dan Franco, P.Eng. — Project Engineer

KINGSTON

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

Project No.:	27143
Drawing No.:	B-105
Sheet No.:	-- of ---
Des: JJA	Chk'd: RO
Dwn: KRS	Chk'd: JJA
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

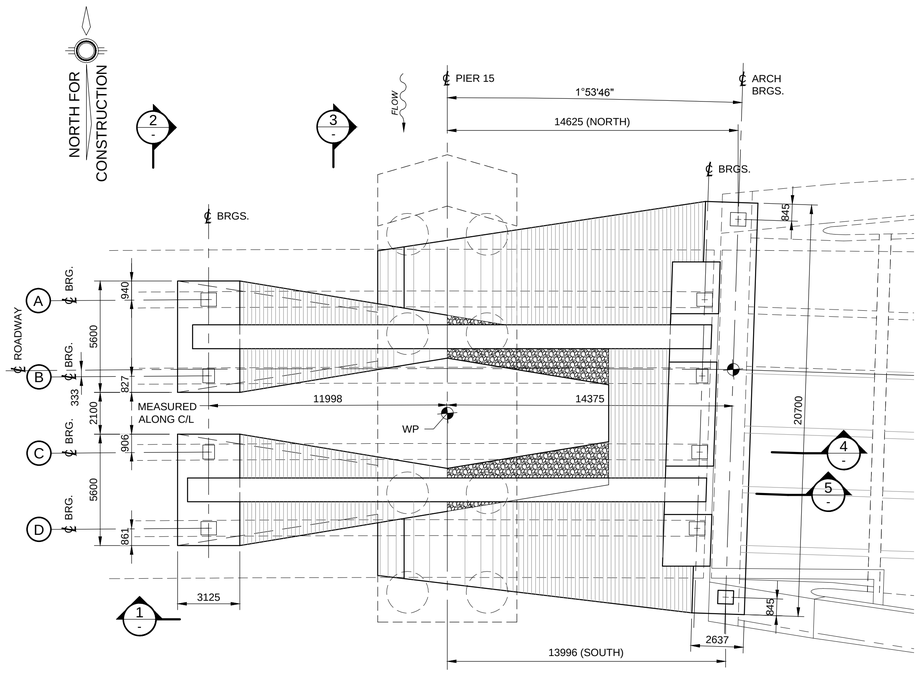
NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

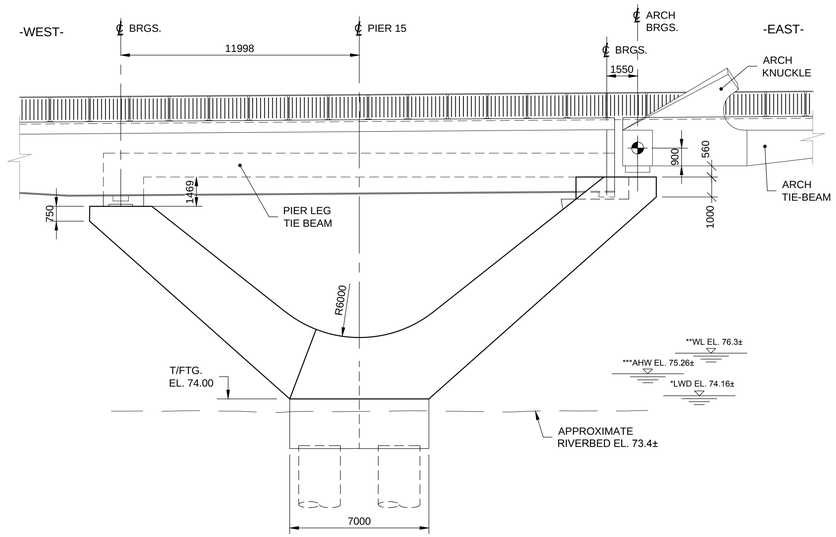
NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DWG. NO. B-102.



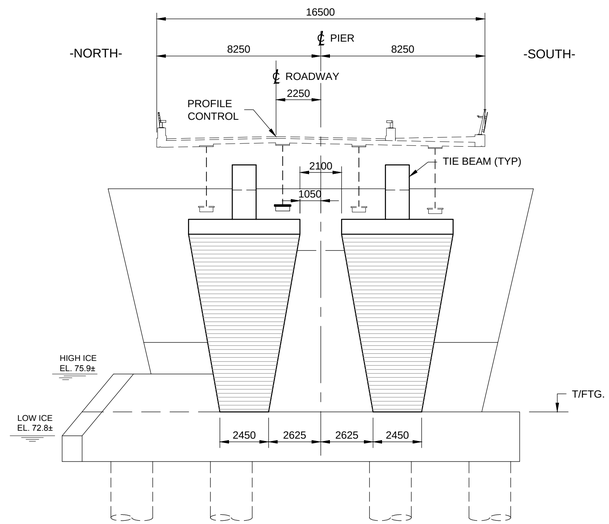
PLAN - ARCH PIER

1:150 (WEST ARCH PIER 15 SHOWN
EAST ARCH PIER 16 OPP. HAND)



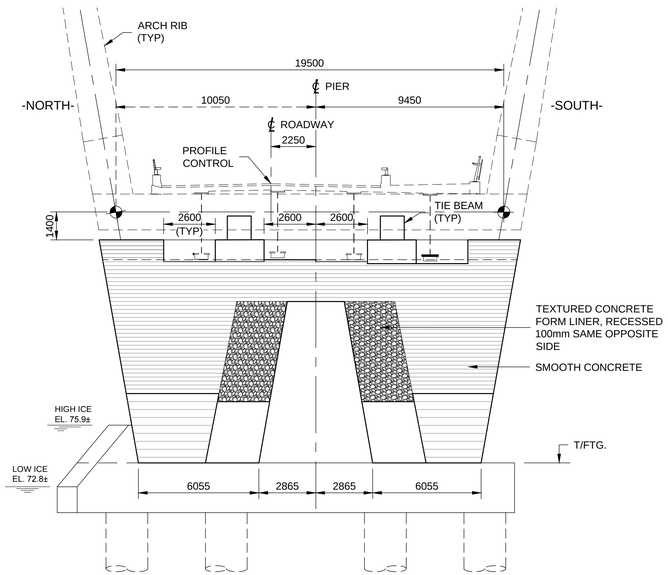
ELEVATION 1 -

1:150 (PIER 15 SHOWN
PIER 16 OPPOSITE HAND)



SECTION 2 -

1:150



SECTION 3 -

1:150

LEGEND:
T/FTG DENOTES TOP OF FOOTING

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

ARCH PIERS

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	B-106
Sheet No.:	-- of ---
Des: JJA	Chk'd: RO
Dwn: KRS	Chk'd: JJA
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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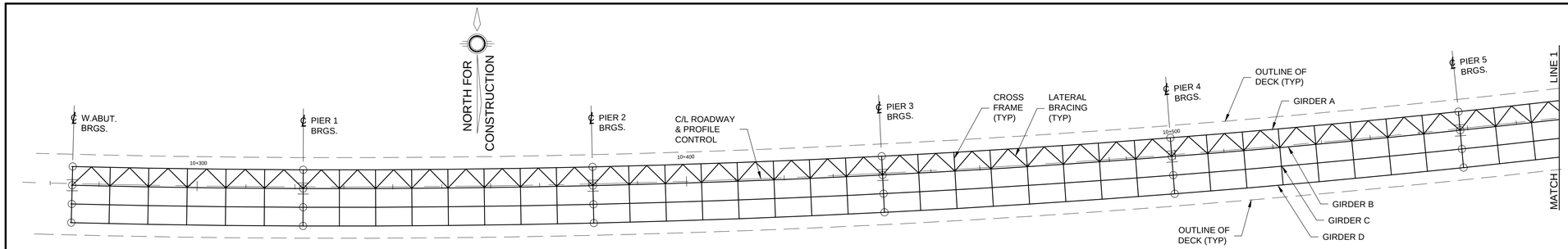
REVISIONS

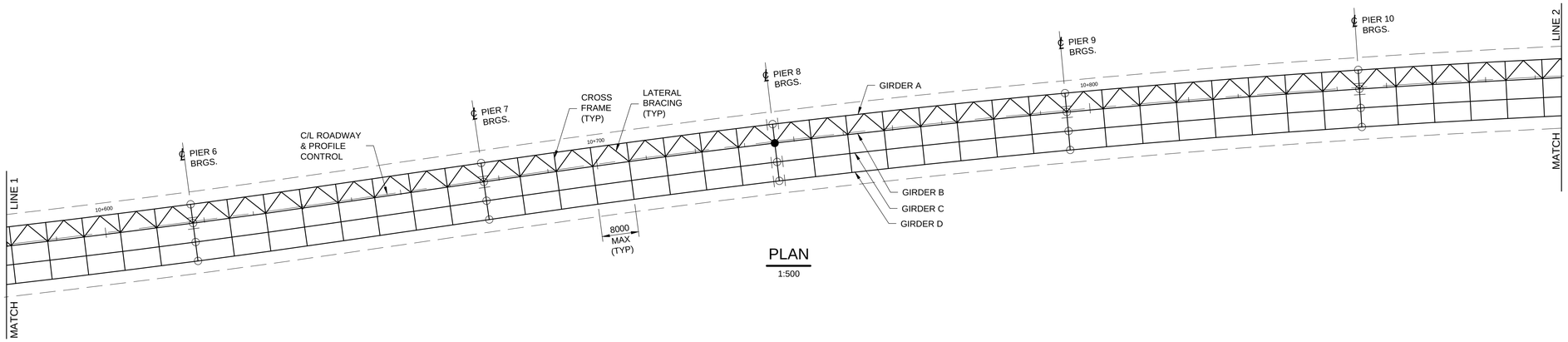
No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DWG. NO. B-102.

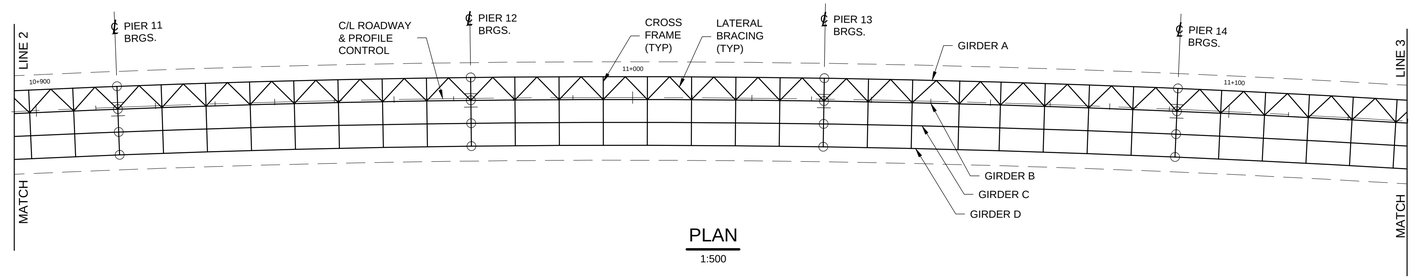


PLAN



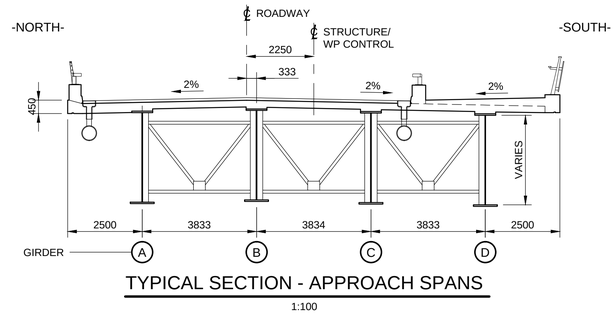
PLAN

1:500



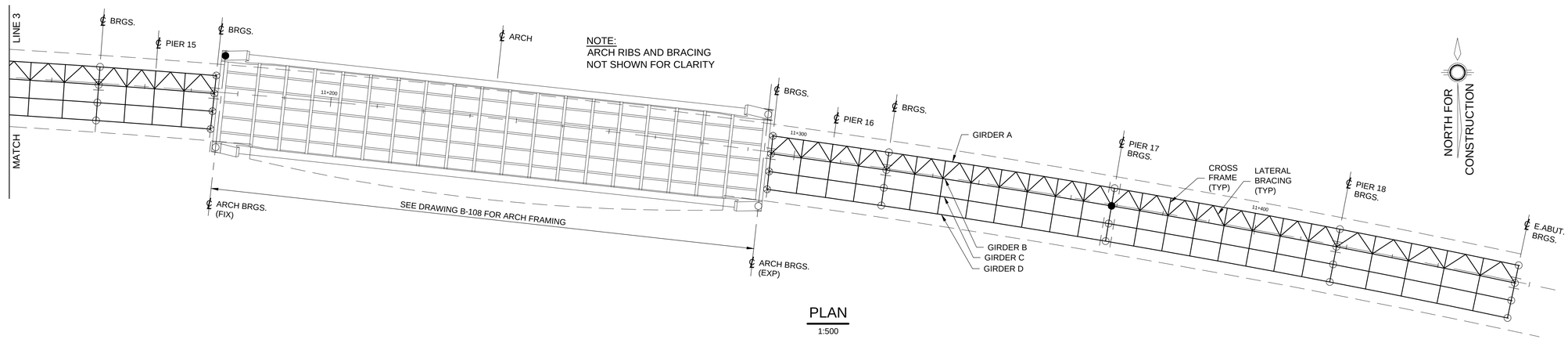
PLAN

1:500



TYPICAL SECTION - APPROACH SPANS

1:100



PLAN

1:500

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

BEARING AND GIRDER LAYOUT

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	B-107
Sheet No.:	-- of ---
Des: JJA	Chk'd: RO
Dwn: KRS	Chk'd: JJA
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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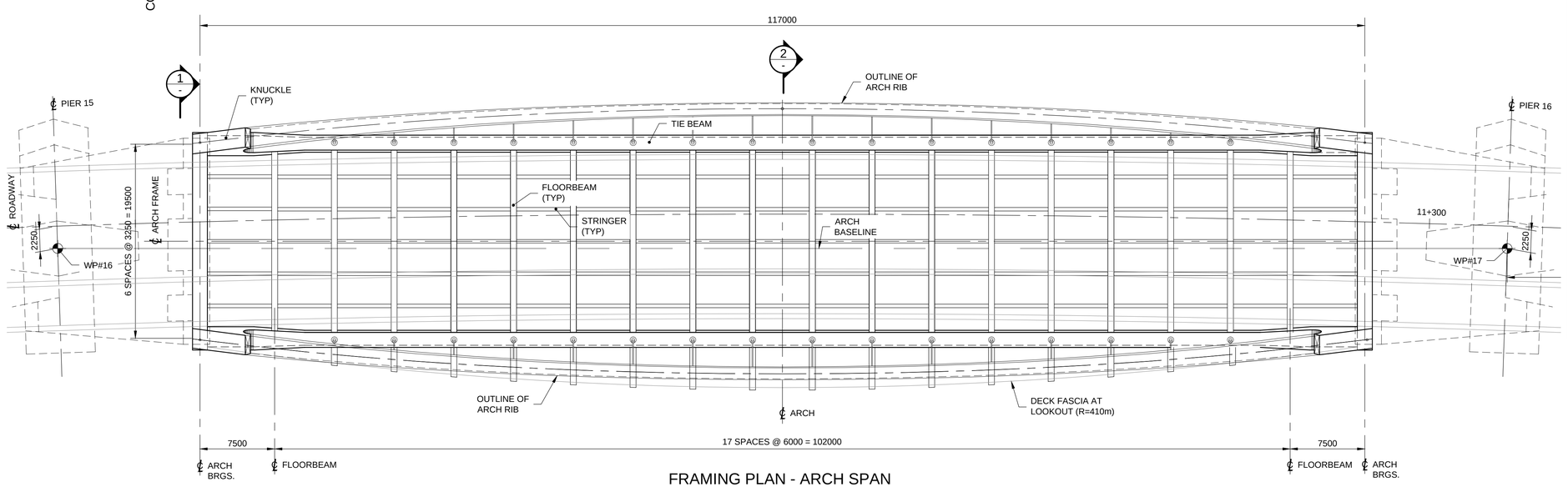
REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

LEGEND:

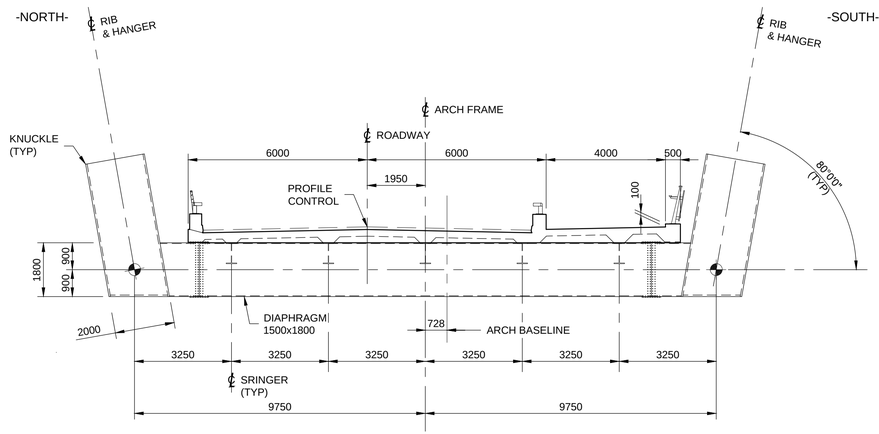
- DENOTES FIXED BEARING
- DENOTES LONGITUDINALLY FIXED BEARING
- DENOTES TRANSVERSELY FIXED BEARING
- DENOTES MULTI-DIRECTIONAL BEARING
- DENOTES TRANSVERSELY FIXED BEARING WITH UPLIFT RESTRAINT
- DENOTES MULTI-DIRECTIIONAL BEARING WITH UPLIFT RESTRAINT

NORTH FOR CONSTRUCTION



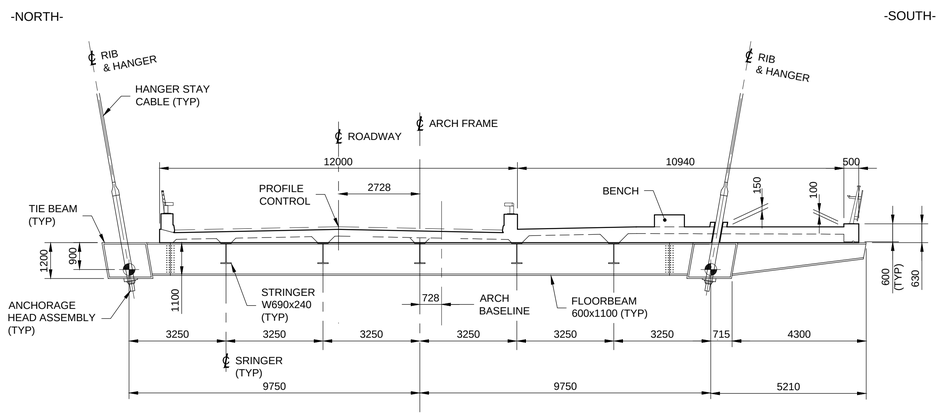
FRAMING PLAN - ARCH SPAN

1:250



SECTION 1 - AT DIAPHRAGM

1:100



SECTION 2 - AT MID-SPAN

1:100

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

ARCH SPAN
FRAMING PLAN

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering & Deputy Commissioner	*Project Engineer*

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	B-108
Sheet No.:	-- of ---
Des: JJA	Chk'd: RO
Dwn: KRS	Chk'd: JJA
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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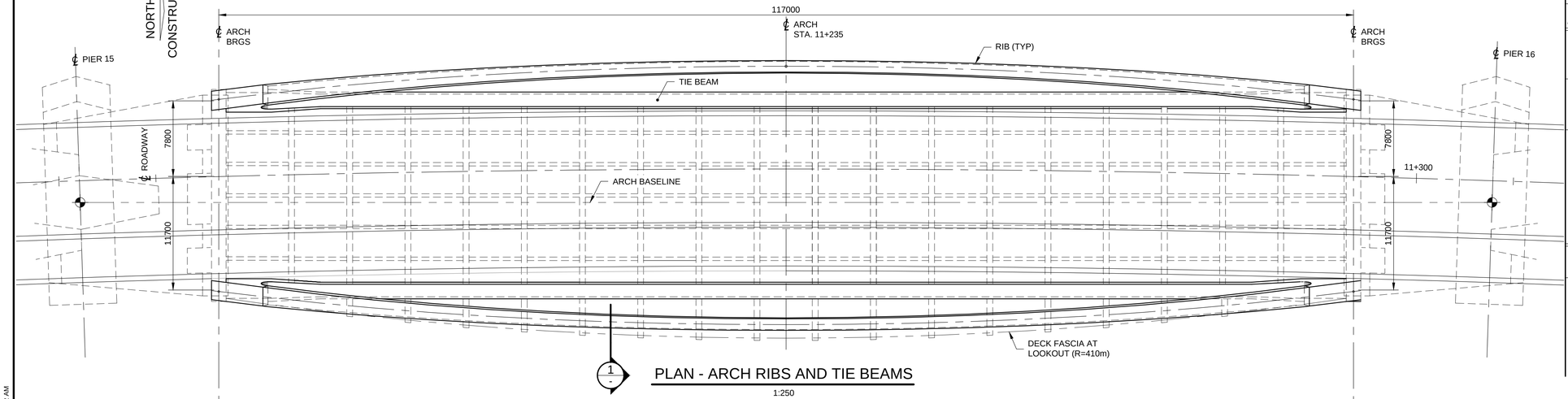
REVISIONS

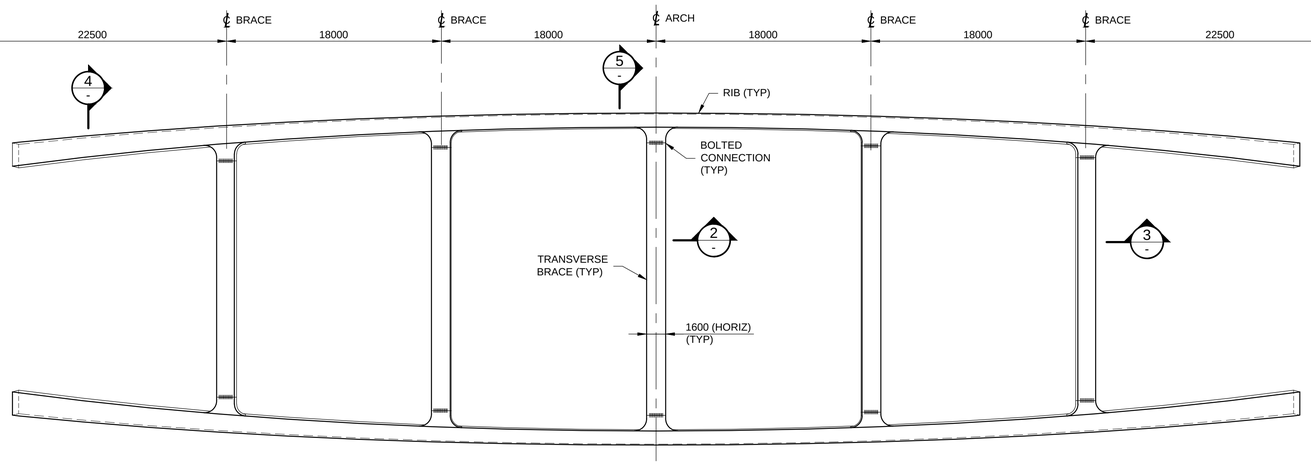
No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

NORTH FOR CONSTRUCTION



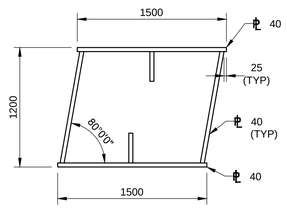
1 - PLAN - ARCH RIBS AND TIE BEAMS

1:250



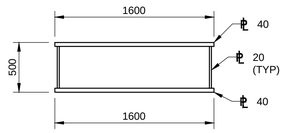
PLAN - ARCH RIBS AND TRANSVERSE BRACING

1:250



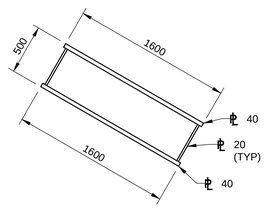
SECTION 1 - TIE BEAM

1:30



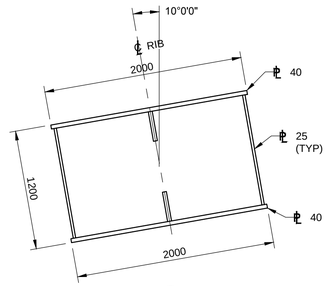
SECTION 2 - TRANSVERSE BRACE

1:30



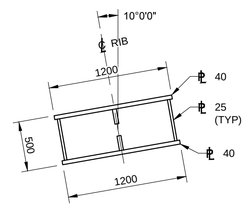
SECTION 3 - TRANSVERSE BRACE

1:30



SECTION 4 - ARCH RIB

1:30



SECTION 5 - ARCH RIB AT MID-SPAN

1:30

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

ARCH DETAILS I

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering & Deputy Commissioner	*Project Engineer*

J.L.Richards ENGINEERS • ARCHITECTS • PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	B-109
Sheet No.:	-- of ---
Des: JJA	Chk'd: RO
Dwn: KRS	Chk'd: JJA
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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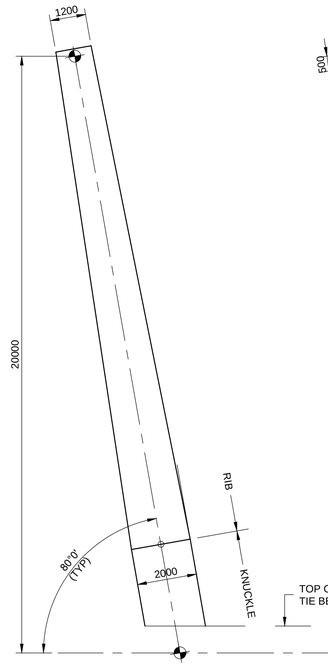
REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

Plot Date: 5/1/2017 11:58:52 AM
Last Saved: Friday, April 28, 2017 2:50:28 PM
Consultant's Information: C:\jlw_working\ontario\p0045\44cd\dms0127\B-109 Arch Details I.dwg

-NORTH-



RIB INCLINATION

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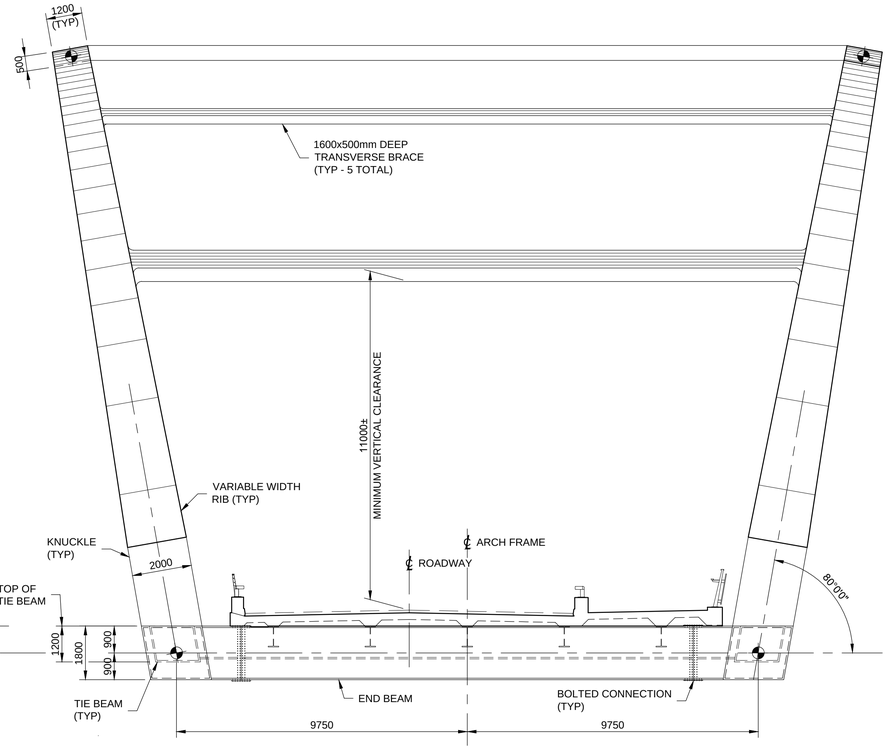
-SOUTH-

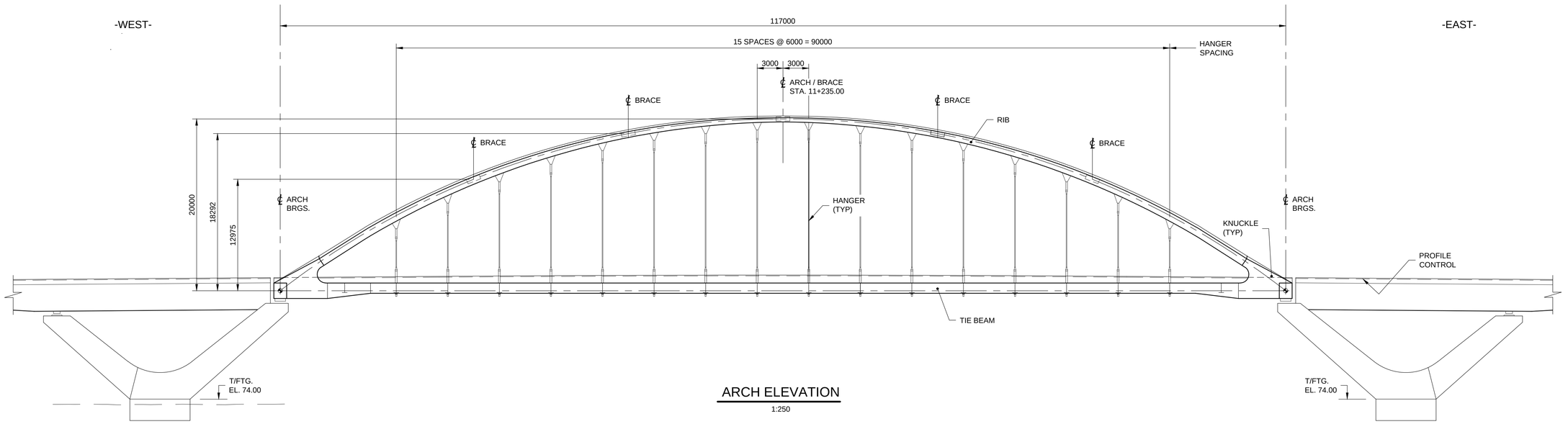


SECTION AT DIAPHRAGM

1:100

-WEST-

-EAST-



ARCH ELEVATION

1:250

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

ARCH DETAILS II

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering & Deputy Commissioner	*Project Engineer*

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	B-110
Sheet No.:	-- of ---
Des: JJA	Chk'd: RO
Dwn: KRS	Chk'd: JJA
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

Consultants
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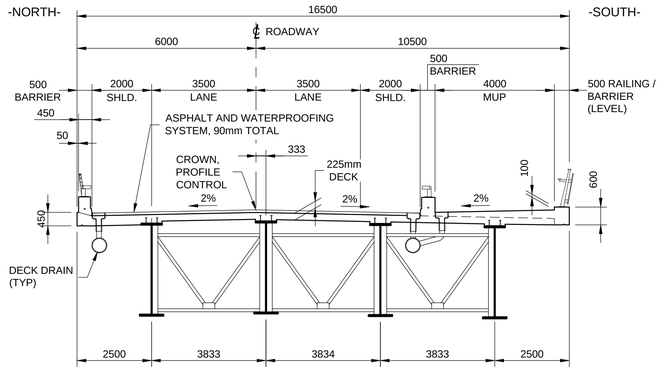
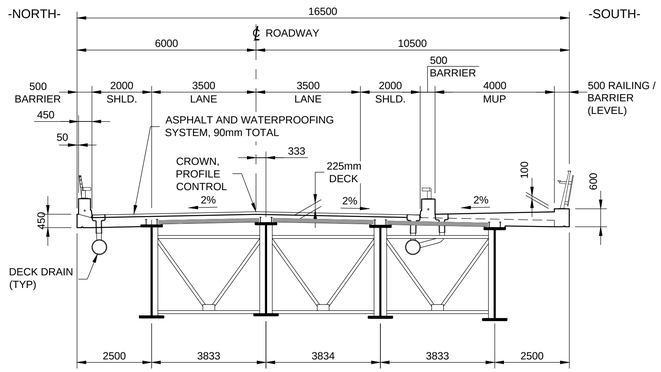


TYPICAL SECTION - CAST-IN-PLACE DECK

1:100



TYPICAL SECTION - PARTIAL DEPTH PRECAST PANELS

1:100

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

DECK DETAILS

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS • ARCHITECTS • PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	B-111
Sheet No.:	-- of ---
Des: JJA	Chk'd: RO
Dwn: KRS	Chk'd: JJA
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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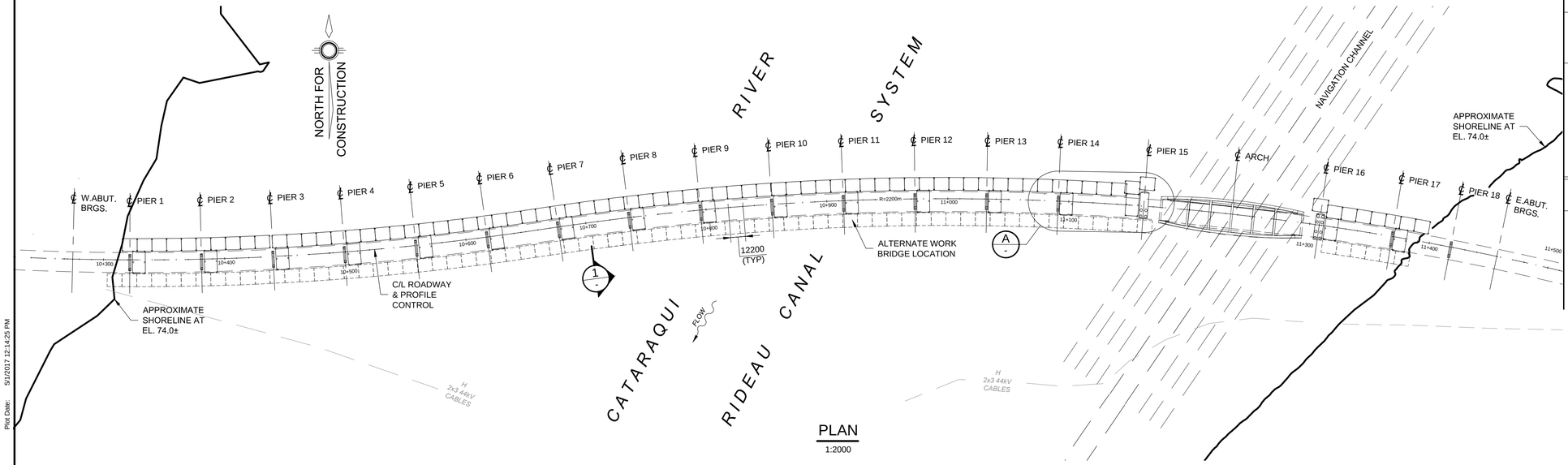
REVISIONS

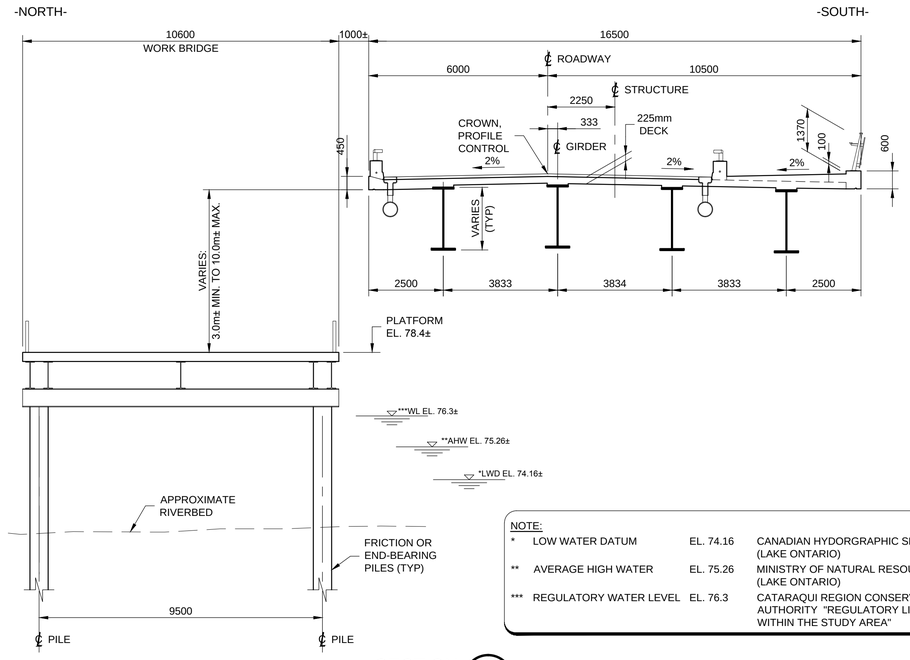
No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

LEGEND:
AREA OF RIVERBED IMPACTED BY CONSTRUCTION



PLAN
1:2000

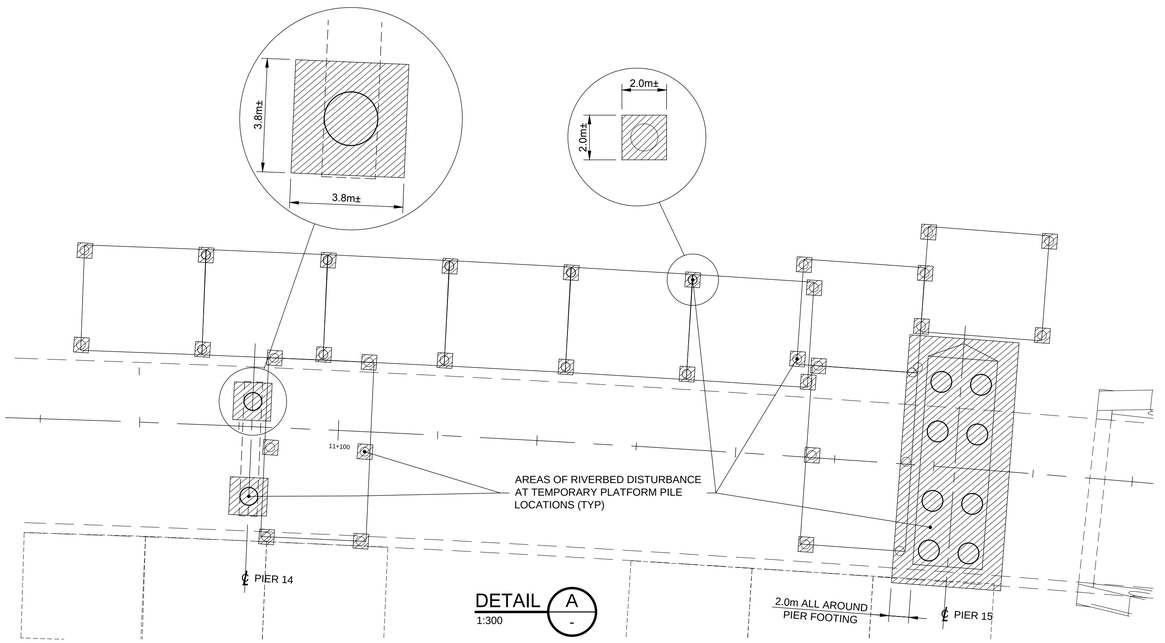
-NORTH- -SOUTH-



SECTION 1 / -
1:100

NOTE:

*	LOW WATER DATUM	EL. 74.16	CANADIAN HYDORGRAPHIC SERVICE (LAKE ONTARIO)
**	AVERAGE HIGH WATER	EL. 75.26	MINISTRY OF NATURAL RESOURCES (LAKE ONTARIO)
***	REGULATORY WATER LEVEL	EL. 76.3	CATARAQUI REGION CONSERVATION AUTHORITY "REGULATORY LIMIT WITHIN THE STUDY AREA"



DETAIL A / -
1:300

THIRD CROSSING OF THE CATARAQUI RIVER
PRELIMINARY DESIGN

TEMPORARY WORK BRIDGE AND CONSTRUCTION IMPACT ON RIVERBED

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	B-112
Sheet No.:	-- of ---

Des: JJA	Chk'd: RO
Dwn: KRS	Chk'd: JJA
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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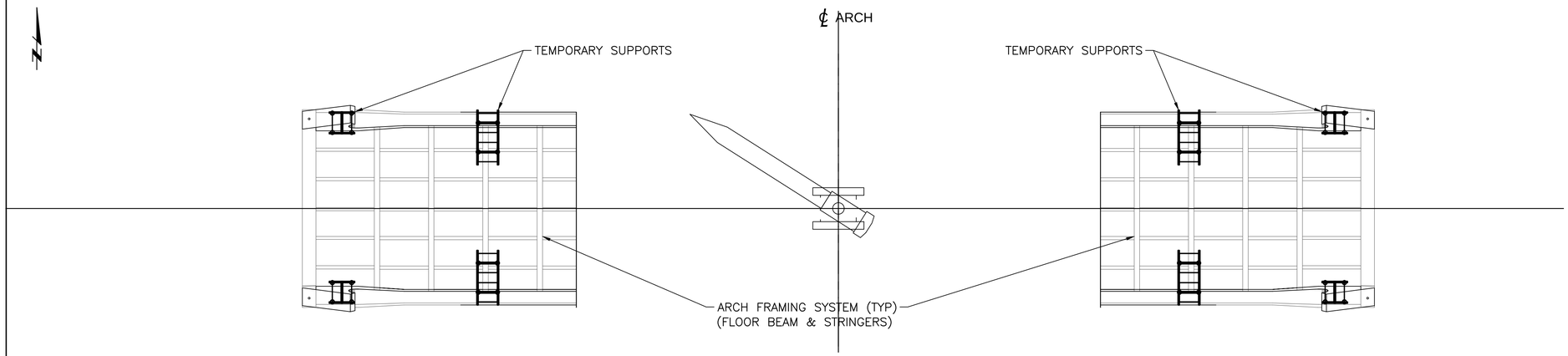
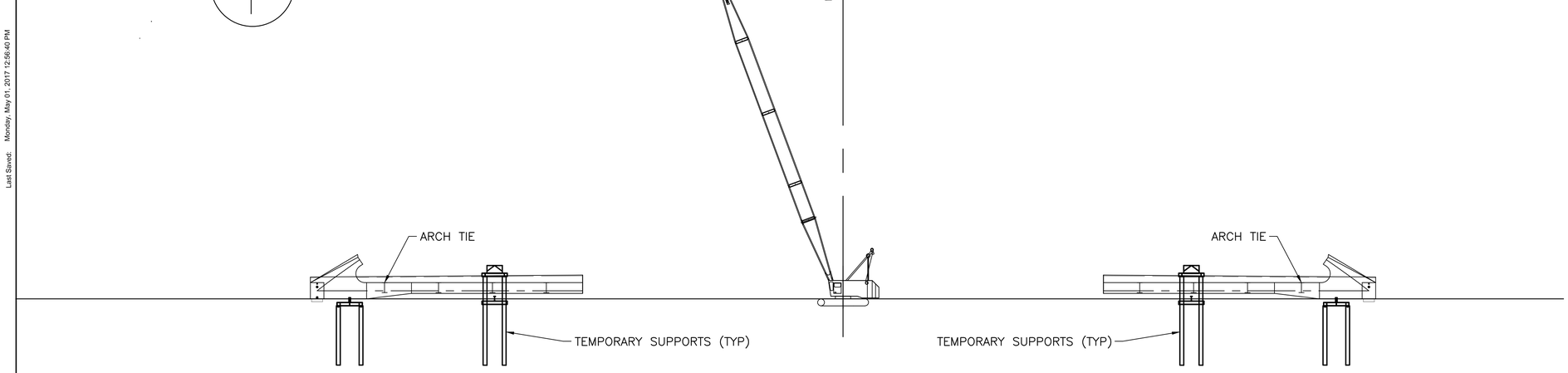
REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

NOTES:
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH SUGGESTED CONSTRUCTION SEQUENCE DRAWINGS.



PLAN



ARCH TIE BEAMS AND FLOOR BEAMS ARE SUPPORTED ON TEMPORARY PILES

ELEVATION

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

ARCH CONSTRUCTION SEQUENCE

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	SEQ-101
Sheet No.:	1 of 20
Des: MLC	Chk'd: MLC
Dwn: TT	Chk'd: MLC
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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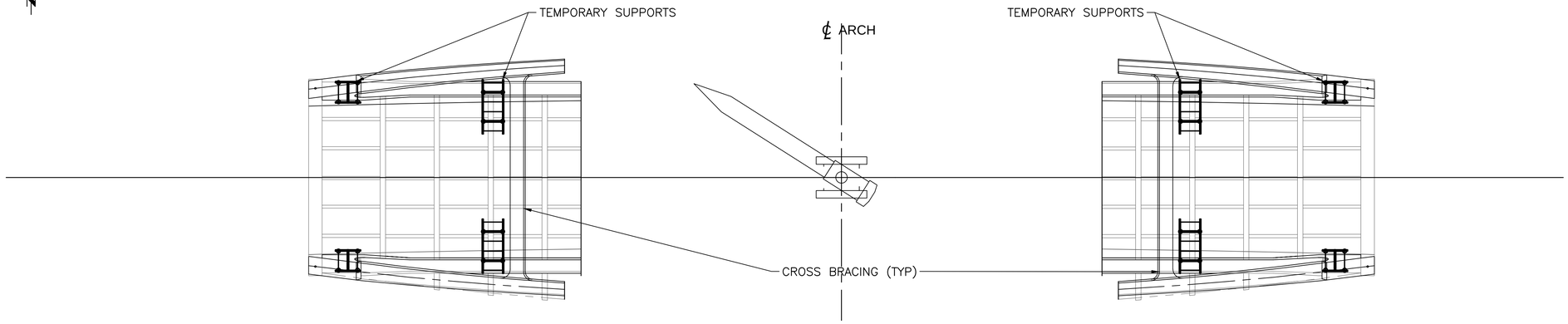
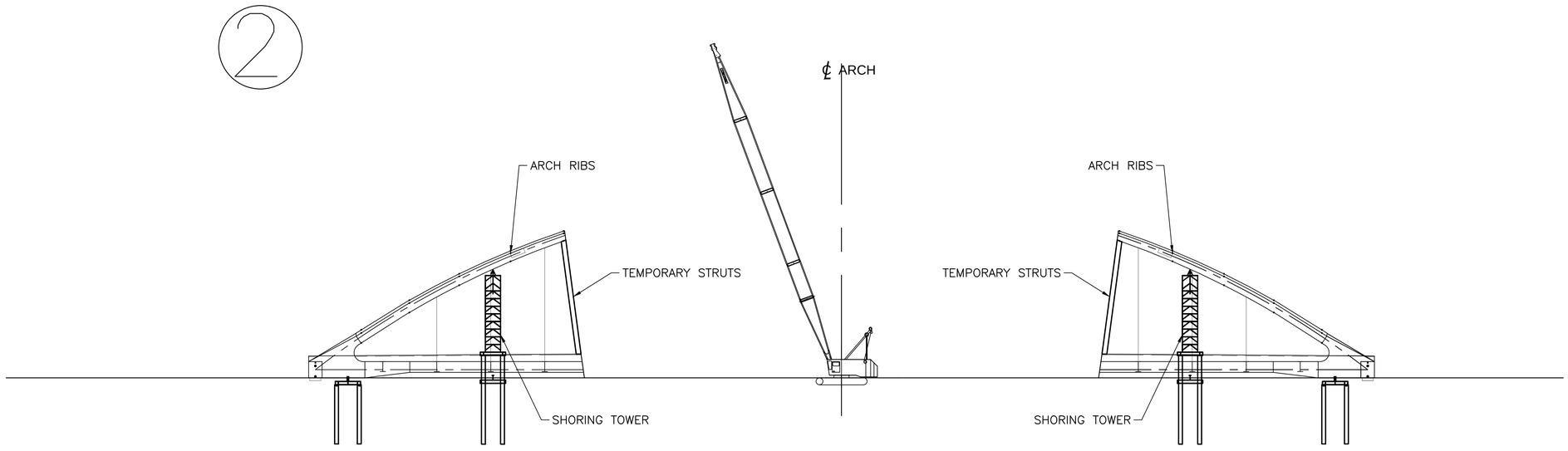
REVISIONS

No.	Description	By	Date (dd/mm/yy)
	!SSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

SUGGESTED CONSTRUCTION SEQUENCE





ARCH RIB SUPPORTED BY SHORING TOWERS, BRACING, AND TEMPORARY STRUT

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

ARCH CONSTRUCTION SEQUENCE

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	SEQ-102
Sheet No.:	2 of 20
Des: MLC	Chk'd: MLC
Dwn: TT	Chk'd: MLC
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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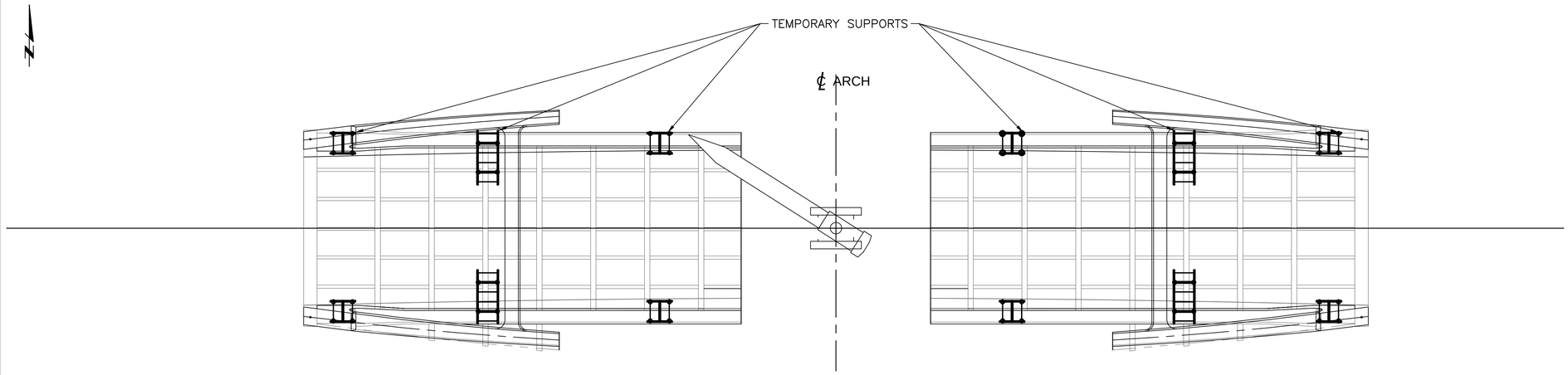
REVISIONS

No.	Description	By	Date (dd/mm/yy)
	!SSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

SUGGESTED CONSTRUCTION SEQUENCE



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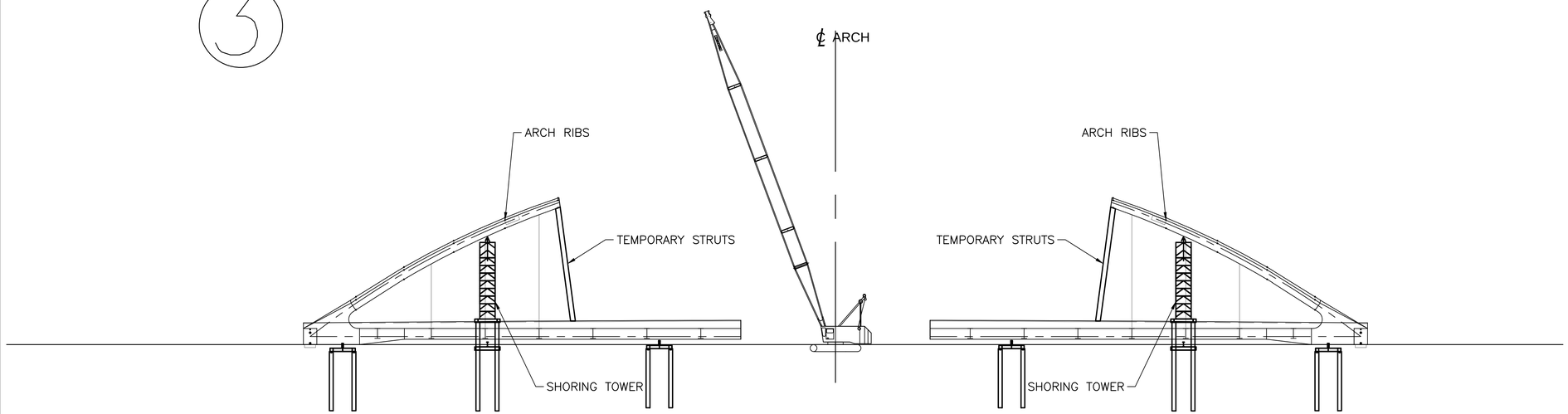

TIE SECTION ADDED

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

ARCH CONSTRUCTION SEQUENCE

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	SEQ-103
Sheet No.:	3 of 20
Des: MLC	Chk'd: MLC
Dwn: TT	Chk'd: MLC
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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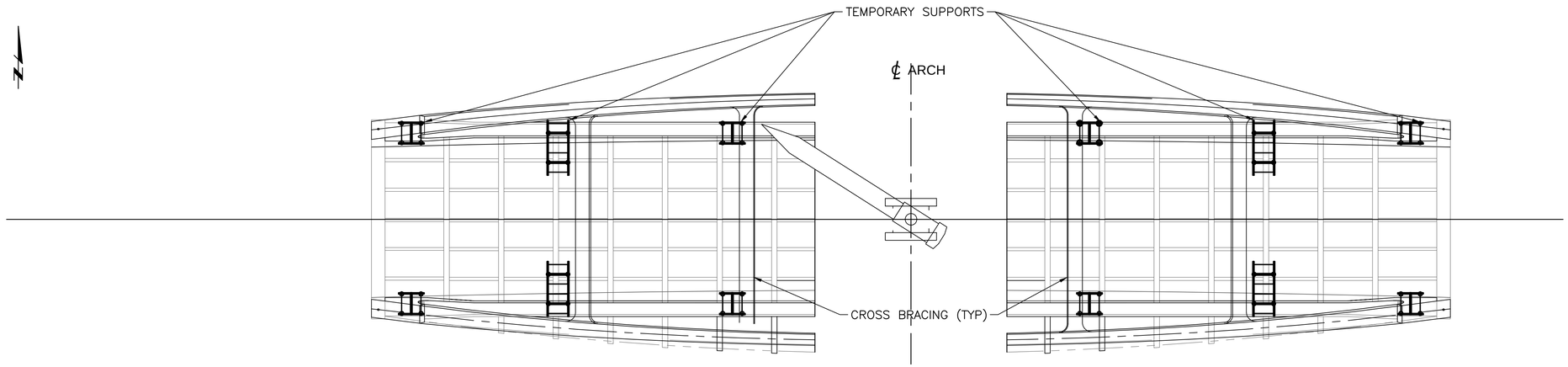
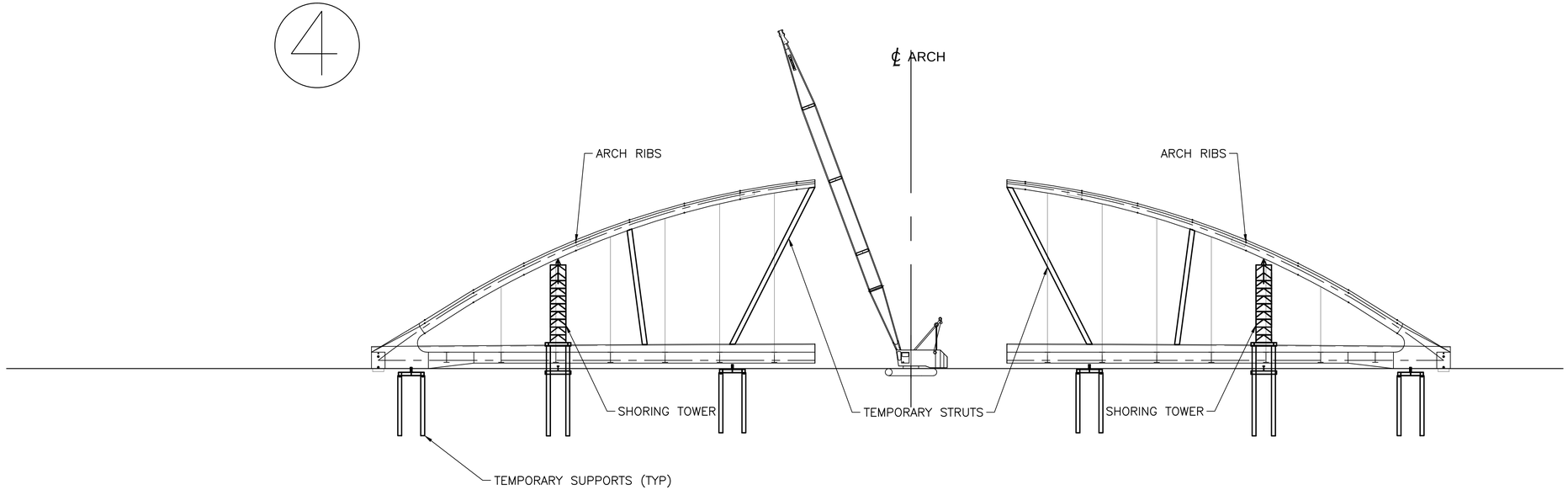
REVISIONS

No.	Description	By	Date (dd/mm/yy)
	!SSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

SUGGESTED CONSTRUCTION SEQUENCE





RIB SECTION AND TEMPORARY STRUTS ADDED

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

ARCH CONSTRUCTION SEQUENCE

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	SEQ-104
Sheet No.:	4 of 20
Des: MLC	Chk'd: MLC
Dwn: TT	Chk'd: MLC
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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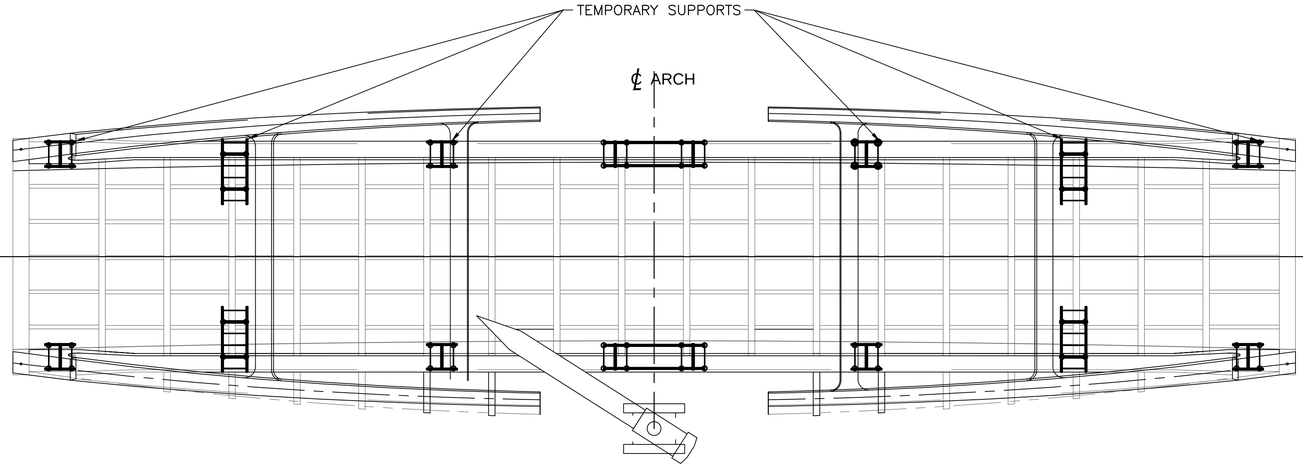
REVISIONS

No.	Description	By	Date (dd/mm/yy)

SUGGESTED CONSTRUCTION SEQUENCE



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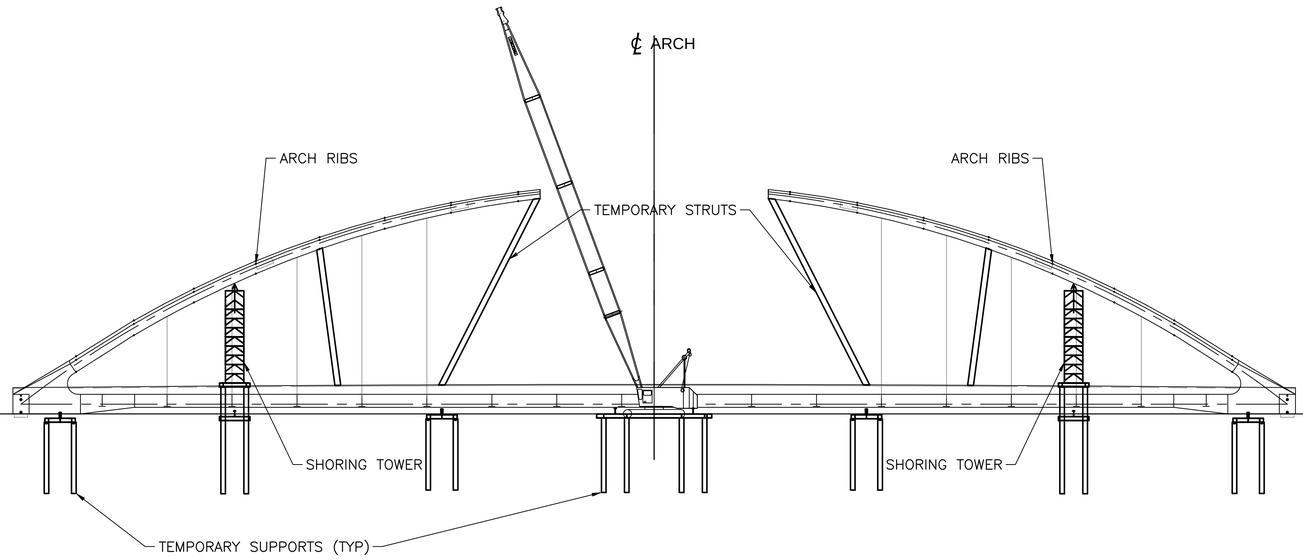

COMPLETE TIE INSTALLATION

SUGGESTED CONSTRUCTION SEQUENCE

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

ARCH CONSTRUCTION SEQUENCE

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	SEQ-105
Sheet No.:	5 of 20
Des: MLC	Chk'd: MLC
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Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

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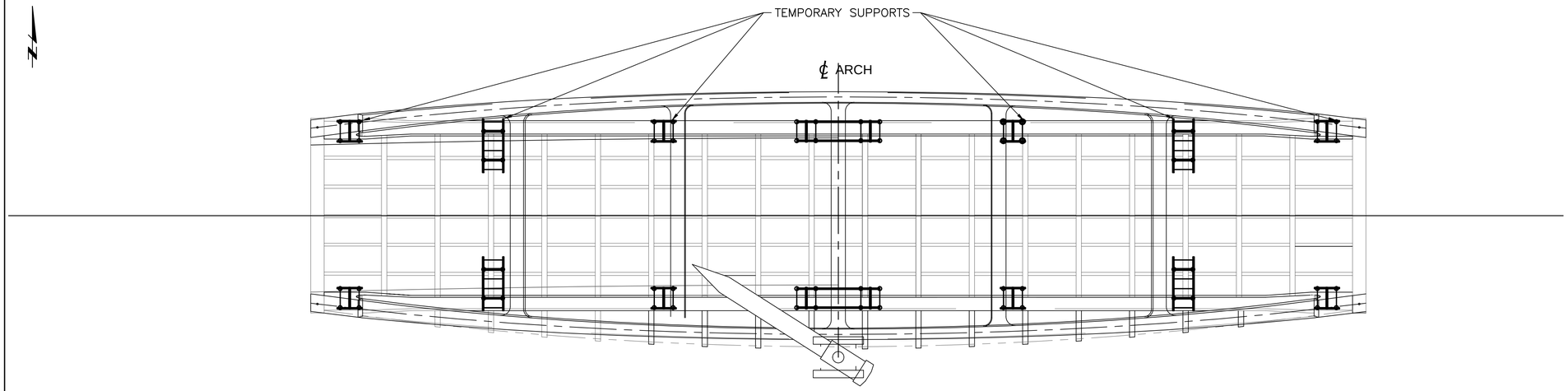

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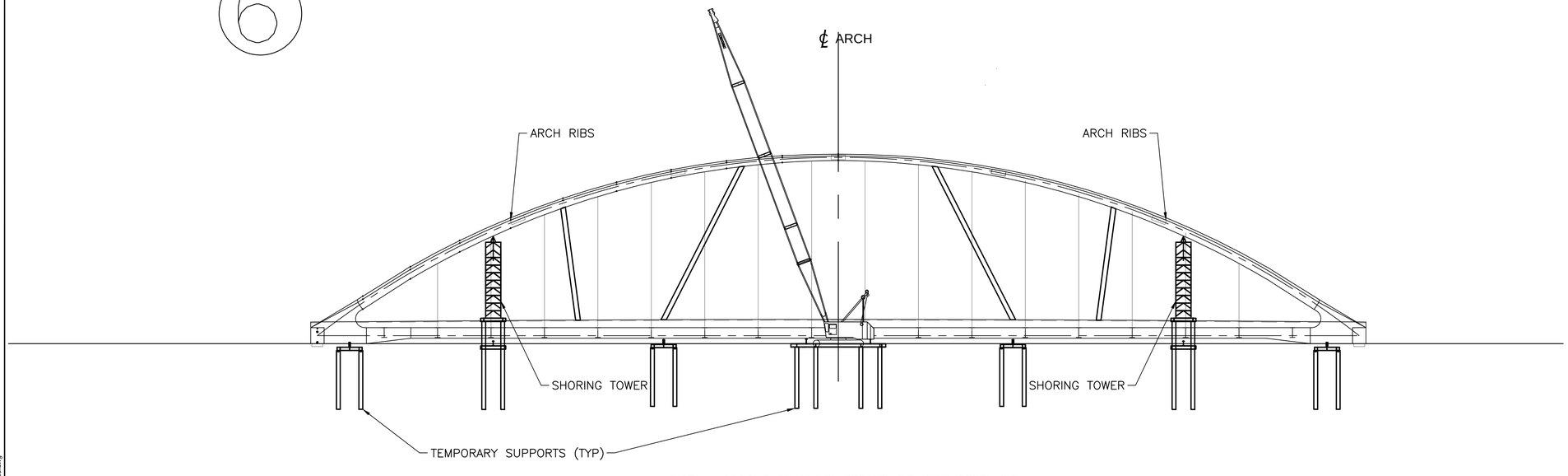

INSTALL SECONDARY MULTI–STRAND TIE WITH STEEL TIE AND COMPLETE THE ARCH INCLUDING TENSIONING THE MULTI–STRAND HANGERS

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

ARCH CONSTRUCTION SEQUENCE

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	SEQ-106
Sheet No.:	6 of 20
Des: MLC	Chk'd: MLC
Dwn: TT	Chk'd: MLC
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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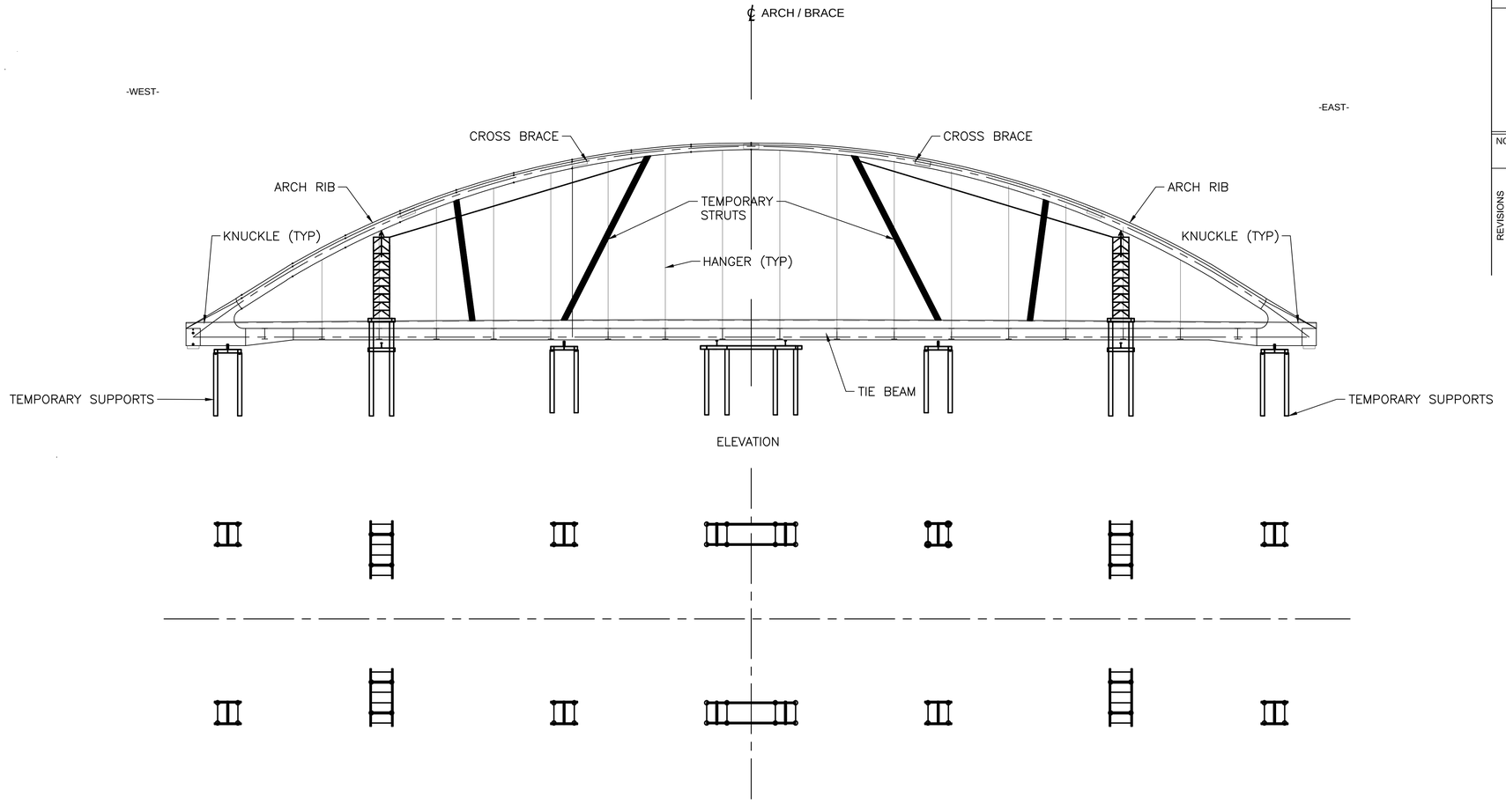
REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

SUGGESTED CONSTRUCTION SEQUENCE



THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

ARCH CONSTRUCTION SEQUENCE

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	SEQ-107
Sheet No.:	7 of 20
Des: MLC / Chk'd: MLC	
Dwn: TT / Chk'd: MLC	
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

SUGGESTED CONSTRUCTION SEQUENCE

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Plot Date: 5/1/2017 2:23:11 PM

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

ARCH CONSTRUCTION SEQUENCE

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	SEQ-108
Sheet No.:	8 of 100
Des: MLC	Chk'd: MLC
Dwn: TT	Chk'd: MLC
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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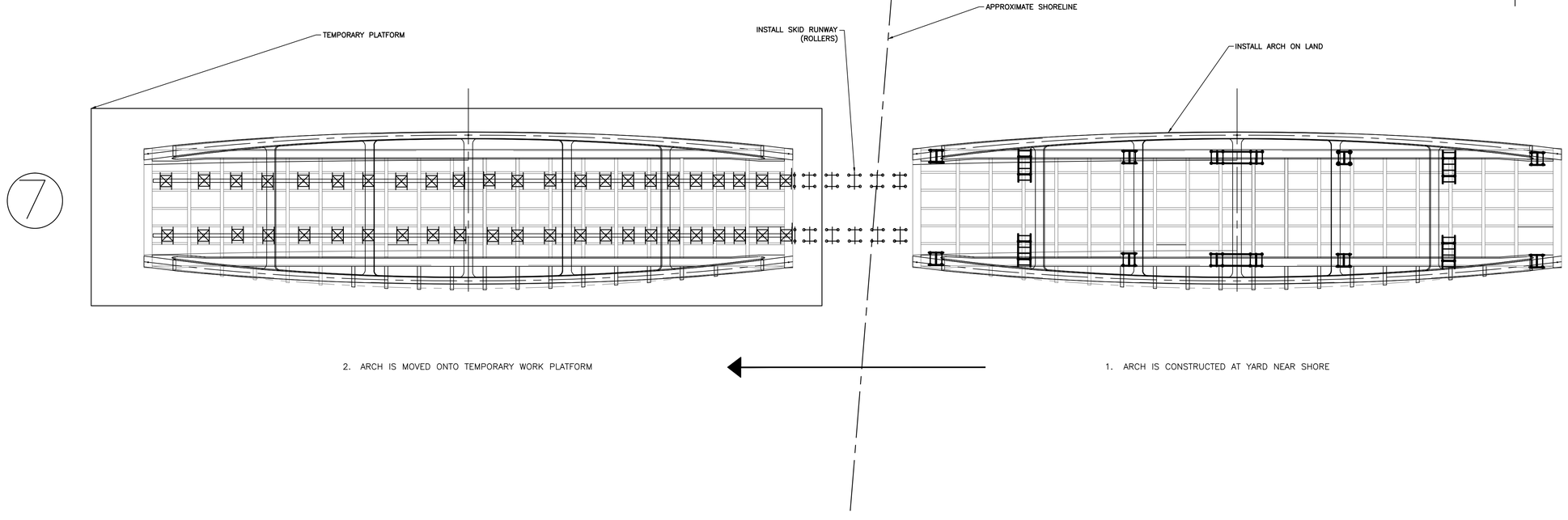
REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017



ARCH MOVED ONTO TEMPORARY WORK PLATFORM

SUGGESTED CONSTRUCTION SEQUENCE

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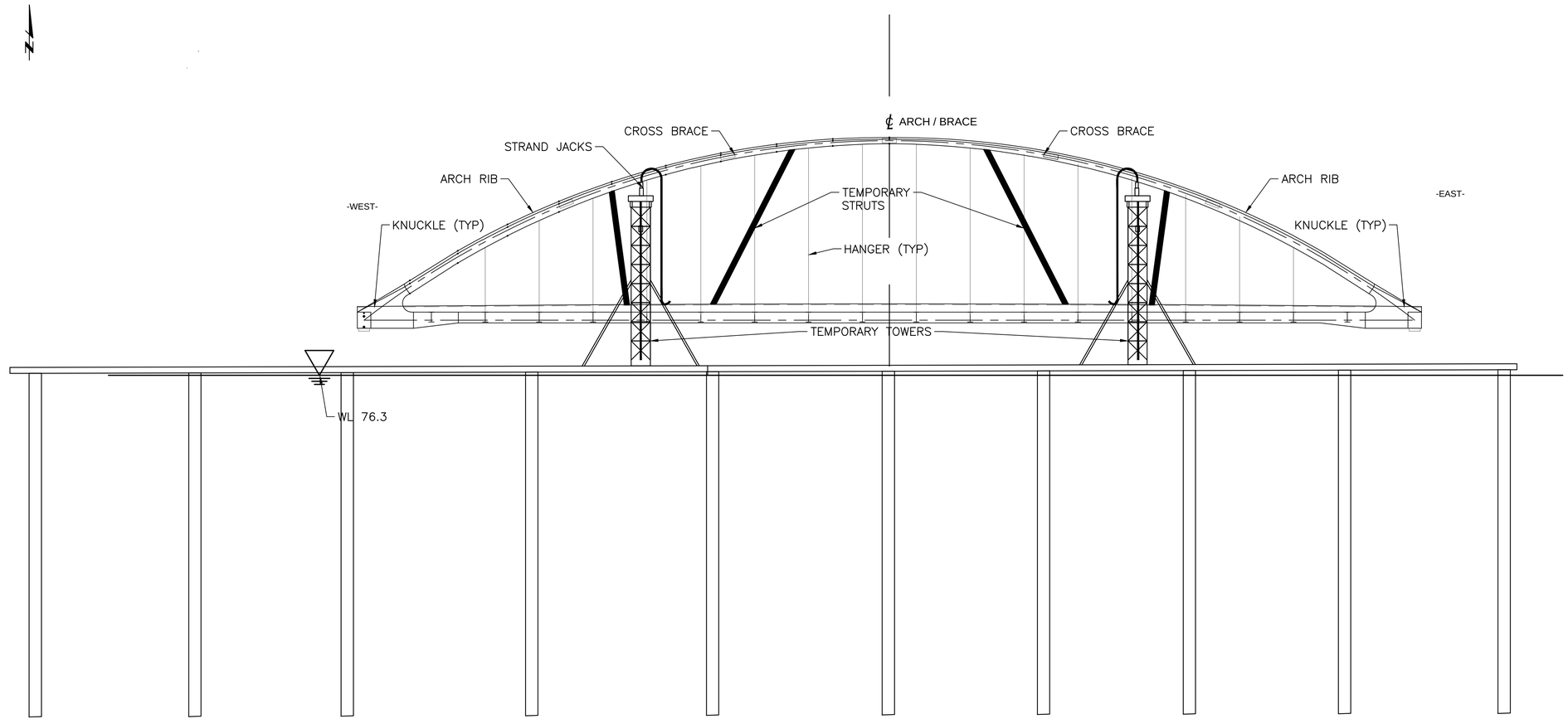
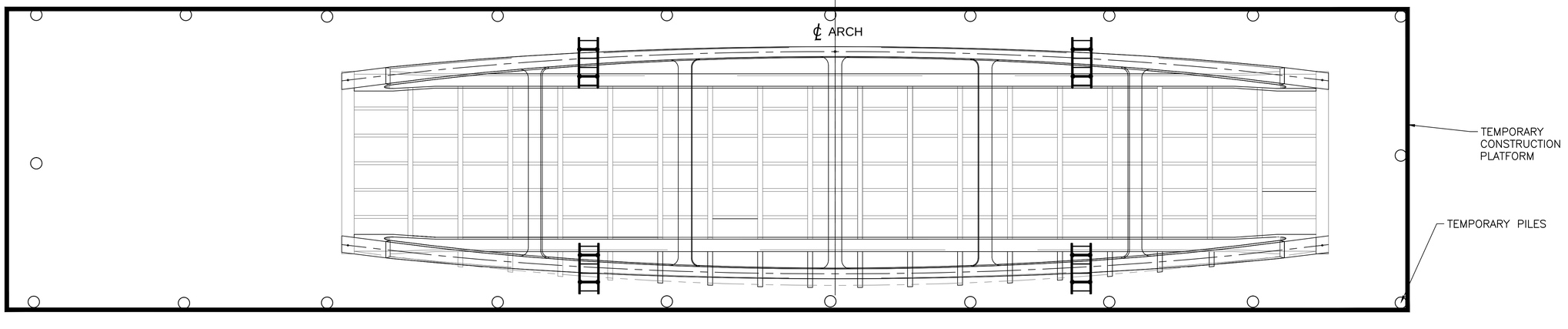


ELEVATION



PLAN

SUGGESTED CONSTRUCTION SEQUENCE

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

ARCH CONSTRUCTION SEQUENCE

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	SEQ-109
Sheet No.:	9 of 20
Des: MLC	Chk'd: MLC
Dwn: TT	Chk'd: MLC
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

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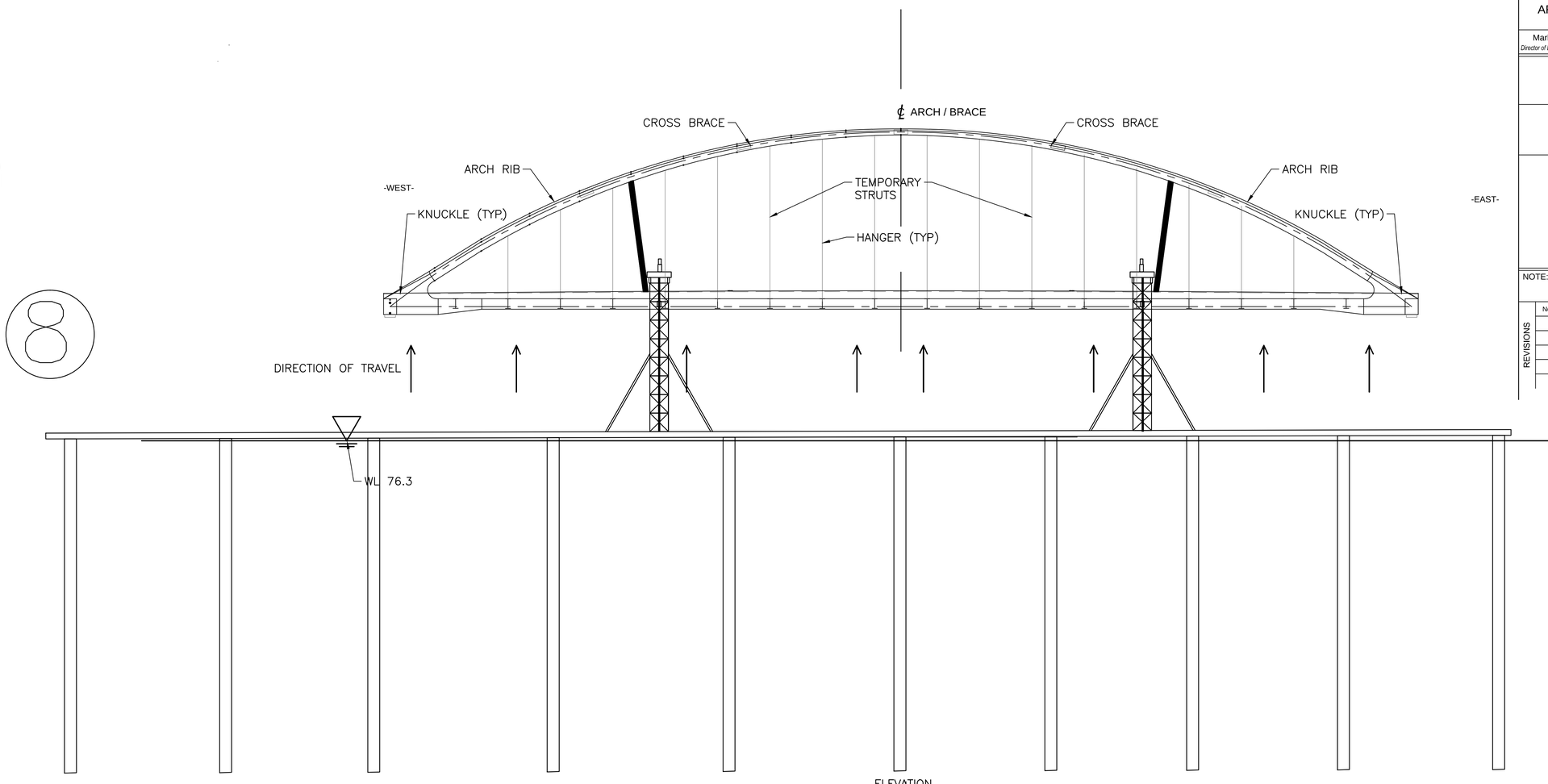
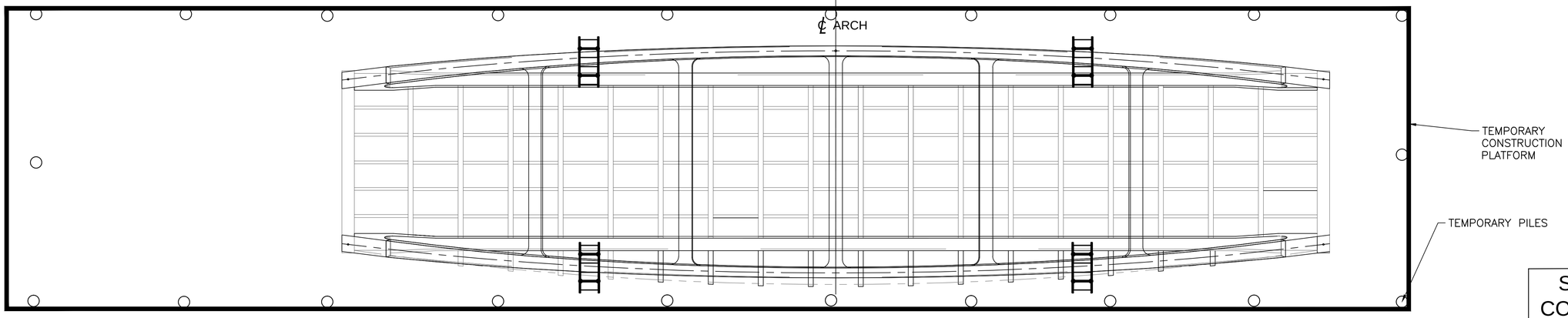


ELEVATION



RAISE THE ARCH UPWARDS IN THE PREPARATION FOR LONGITUDINAL SLIDE TOWARDS NAVIGATION CHANNEL

PLAN

SUGGESTED CONSTRUCTION SEQUENCE

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

ARCH CONSTRUCTION SEQUENCE

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	SEQ-110
Sheet No.:	10 of 20
Des: MLC	Chk'd: MLC
Dwn: TT	Chk'd: MLC
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

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Last Saved: Monday, May 01, 2017 2:08:12 PM
Plot Date: 5/1/2017 2:29:54 PM

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

ARCH MOVEMENT SEQUENCE

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering & Deputy Commissioner	*Project Engineer*

KINGSTON

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

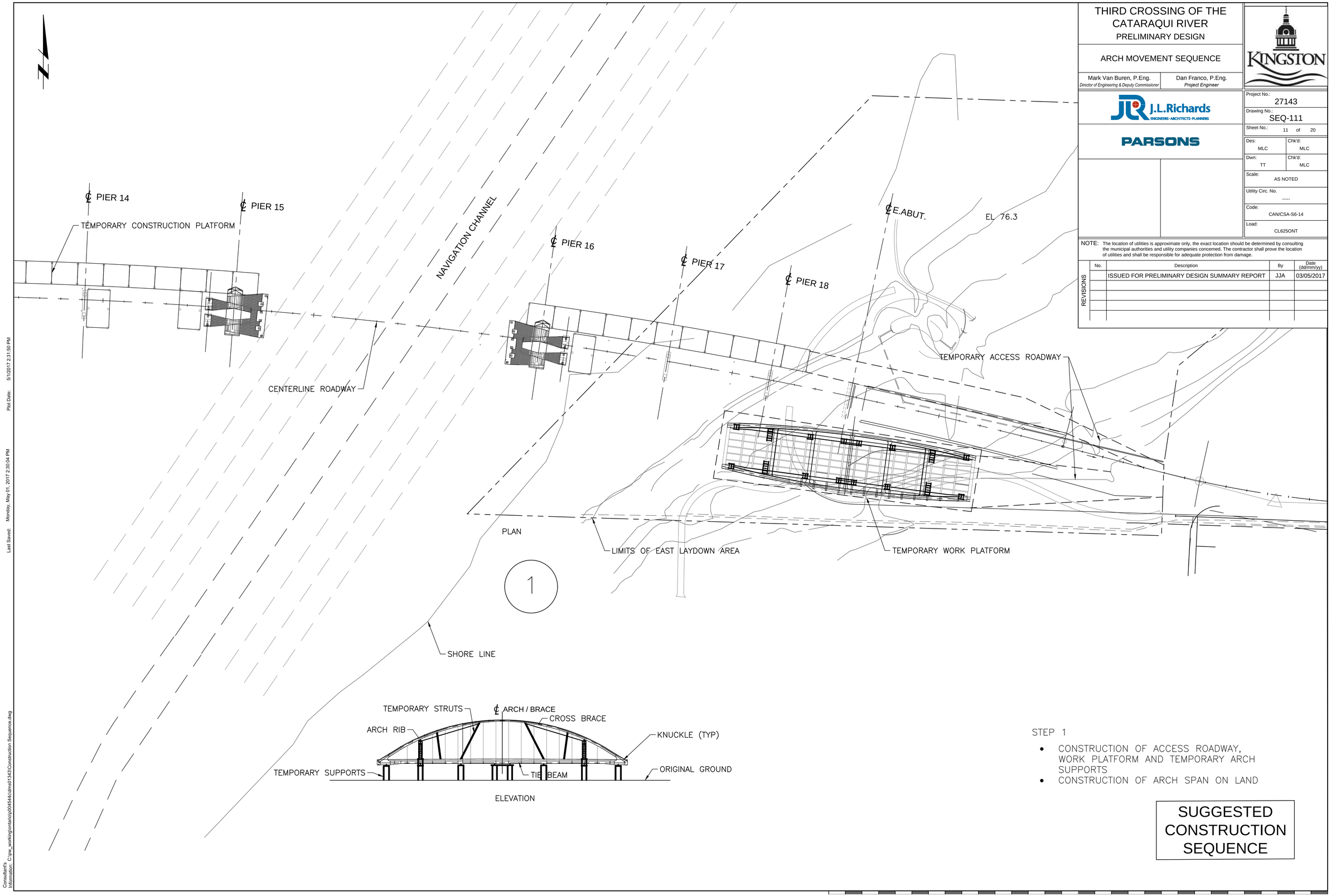
PARSONS

Project No.:	27143
Drawing No.:	SEQ-111
Sheet No.:	11 of 20
Des: MLC	Chk'd: MLC
Dwn: TT	Chk'd: MLC
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017



PLAN

1

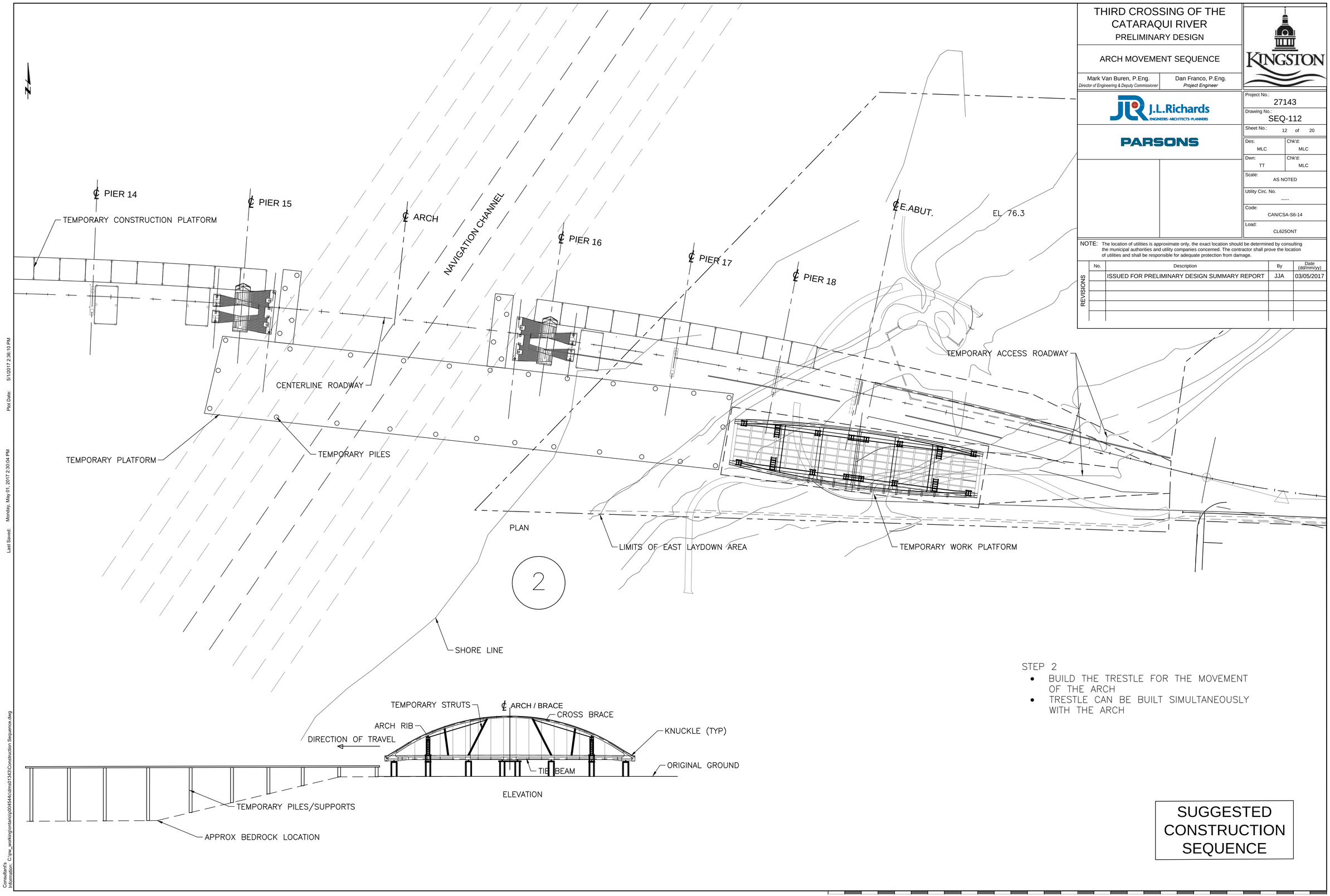
ELEVATION

STEP 1

- CONSTRUCTION OF ACCESS ROADWAY, WORK PLATFORM AND TEMPORARY ARCH SUPPORTS
- CONSTRUCTION OF ARCH SPAN ON LAND

SUGGESTED CONSTRUCTION SEQUENCE

Plot Date: 5/1/2017 2:31:50 PM
Last Saved: Monday, May 01, 2017 2:30:04 PM
Consultant's Information: C:\prw_work\engl\ontario\p0045\44c\dms01343\Construction Sequence.dwg



THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

ARCH MOVEMENT SEQUENCE

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering & Deputy Commissioner	*Project Engineer*

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	SEQ-112
Sheet No.:	12 of 20
Des: MLC	Chk'd: MLC
Dwn: TT	Chk'd: MLC
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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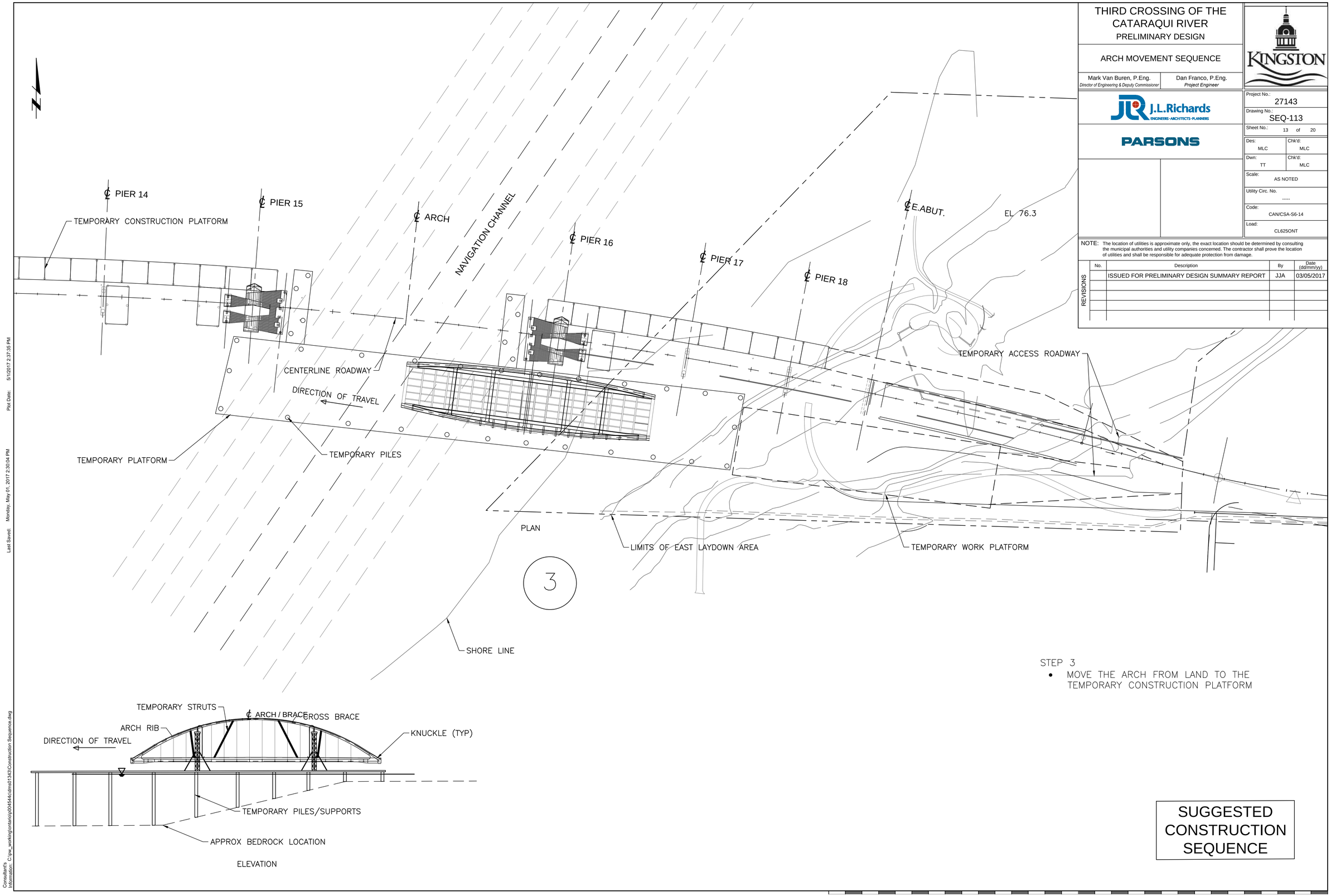
REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

STEP 2
- BUILD THE TRESTLE FOR THE MOVEMENT OF THE ARCH
- TRESTLE CAN BE BUILT SIMULTANEOUSLY WITH THE ARCH

SUGGESTED CONSTRUCTION SEQUENCE

Plot Date: 5/1/2017 2:36:10 PM
Last Saved: Monday, May 01, 2017 2:30:04 PM
Consultant's Information: C:\pw_working\ontario\p0045\44cd\ms01343\Construction Sequence.dwg



STEP 3
- MOVE THE ARCH FROM LAND TO THE TEMPORARY CONSTRUCTION PLATFORM

SUGGESTED CONSTRUCTION SEQUENCE

THIRD CROSSING OF THE CATARAQUI RIVER
PRELIMINARY DESIGN

ARCH MOVEMENT SEQUENCE

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering & Deputy Commissioner	*Project Engineer*

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	SEQ-113
Sheet No.:	13 of 20
Des: MLC	Chk'd: MLC
Dwn: TT	Chk'd: MLC
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

Plot Date: 5/1/2017 2:37:35 PM
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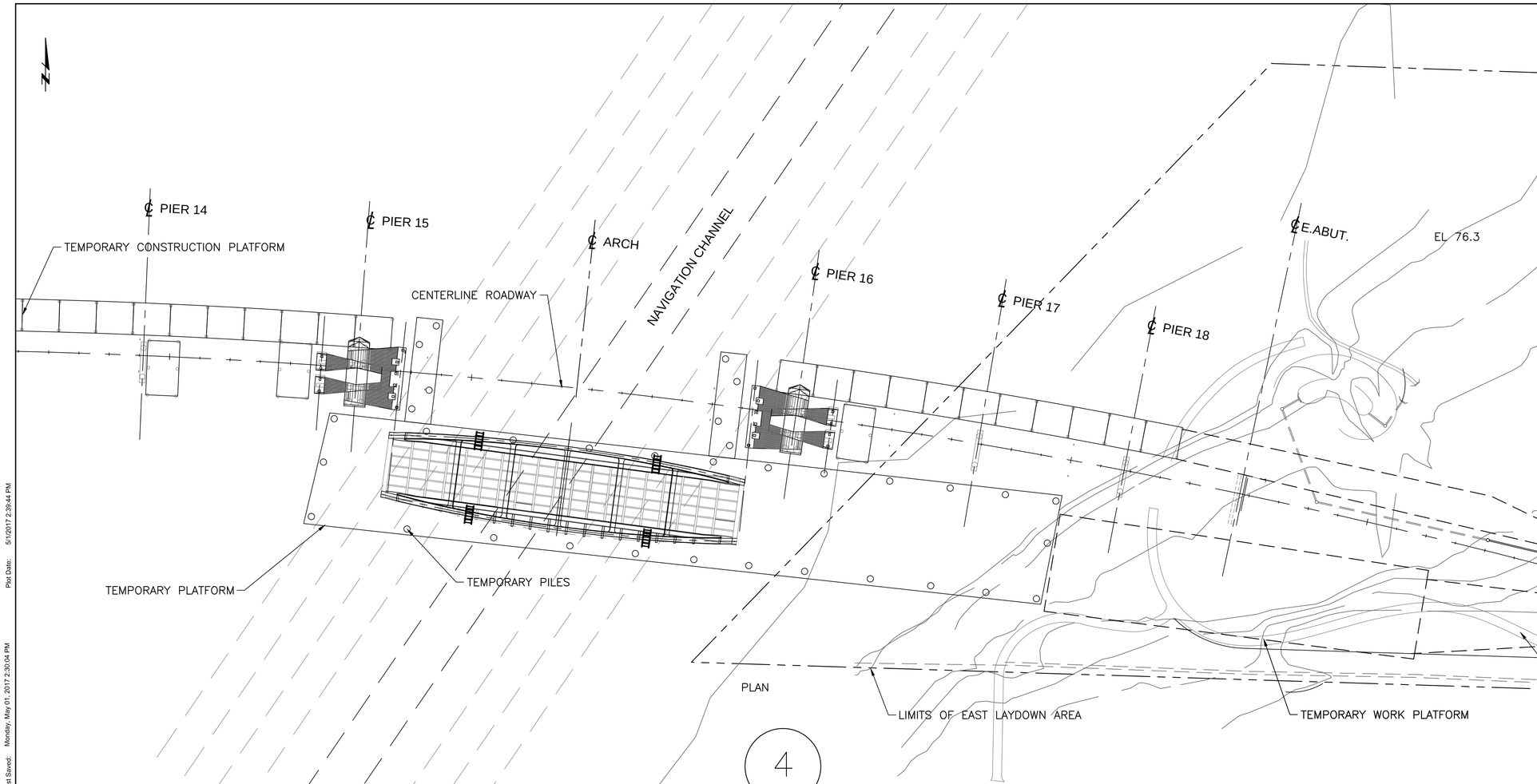
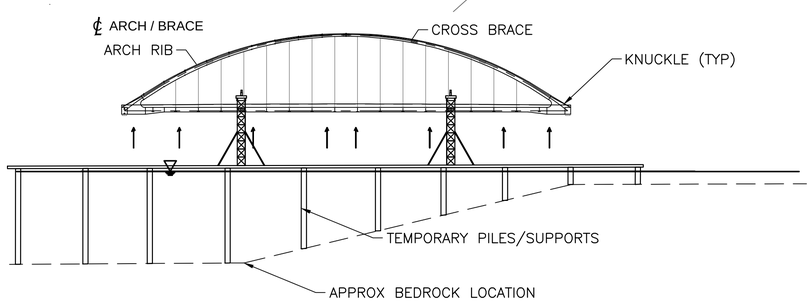


PLAN

4



ELEVATION

STEP 4
- CONSTRUCT THE TEMPORARY JACKING TOWERS
- LIFT THE ARCH USING JACKING TOWERS

SUGGESTED CONSTRUCTION SEQUENCE

THIRD CROSSING OF THE CATARAQUI RIVER
PRELIMINARY DESIGN

ARCH MOVEMENT SEQUENCE

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering & Deputy Commissioner	*Project Engineer*

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	SEQ-114
Sheet No.:	14 of 20
Des: MLC	Chk'd: MLC
Dwn: TT	Chk'd: MLC
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

Plot Date: 5/1/2017 2:39:44 PM
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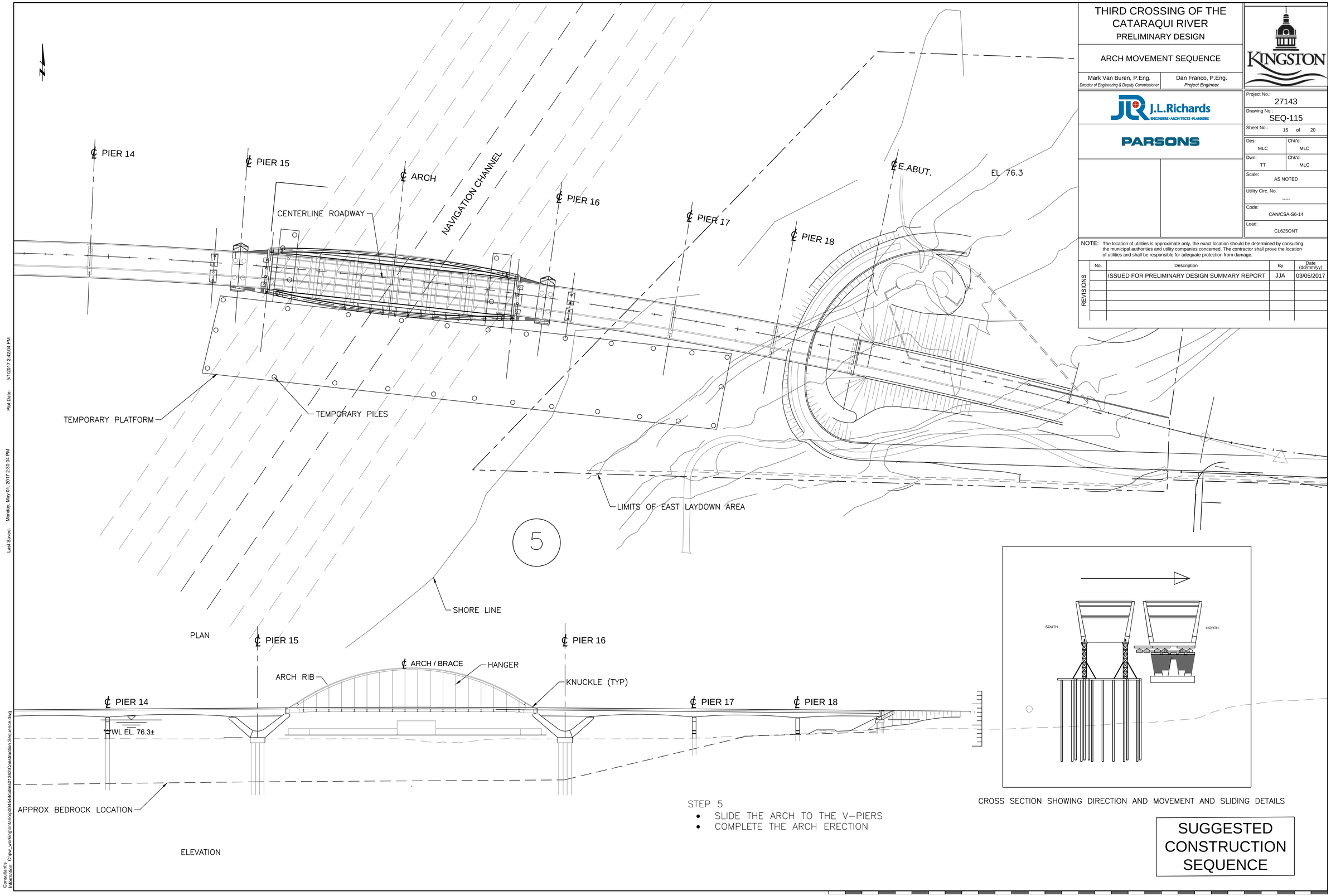

STEP 5
- SLIDE THE ARCH TO THE V–PIERS
- COMPLETE THE ARCH ERECTION

CROSS SECTION SHOWING DIRECTION AND MOVEMENT AND SLIDING DETAILS

SUGGESTED CONSTRUCTION SEQUENCE

THIRD CROSSING OF THE CATARAQUI RIVER
PRELIMINARY DESIGN

ARCH MOVEMENT SEQUENCE

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering & Deputy Commissioner	*Project Engineer*

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	SEQ-115
Sheet No.:	15 of 20
Des: MLC	Chk'd: MLC
Dwn: TT	Chk'd: MLC
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

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Last Saved: Monday, May 01, 2017 2:30:04 PM
Plot Date: 5/1/2017 2:42:04 PM

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

ARCH MOVEMENT SEQUENCE

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

Project No.:	27143
Drawing No.:	SEQ-116
Sheet No.:	16 of 20
Des: MLC	Chk'd: MLC
Dwn: TT	Chk'd: MLC
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

℄ PIER 14
℄ PIER 15
℄ ARCH
NAVIGATION CHANNEL
CENTERLINE ROADWAY
℄ PIER 16
℄ PIER 17
℄ PIER 18
℄ E.ABUT.
EL 76.3
LIMITS OF EAST LAYDOWN AREA
SHORE LINE
6

PLAN

℄ PIER 14
℄ PIER 15
℄ PIER 16
℄ PIER 17
℄ PIER 18
℄ ARCH / BRACE
HANGER
ARCH RIB
KNUCKLE (TYP)
WL EL. 76.3±
APPROX BEDROCK LOCATION

ELEVATION

STEP 6
- REMOVE THE TEMPORARY CONSTRUCTION PLATFORM, OTHER TEMPORARY WORKS INCLUDING BRACES, RAILS AND TOWERS.

SUGGESTED CONSTRUCTION SEQUENCE

Consultant's Information: C:\pw_working\ontario\jp004544c\dms\31343\Construction Sequence.dwg
Last Saved: Monday, May 01, 2017 2:42:19 PM
Plot Date: 5/1/2017 2:44:19 PM

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

SPAN CONSTRUCTION SEQUENCE

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

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PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	SEQ-117
Sheet No.:	17 of 20
Des: MLC	Chk'd: MLC
Dwn: TT	Chk'd: MLC
Scale:	AS NOTED
Utility Circ. No.	------
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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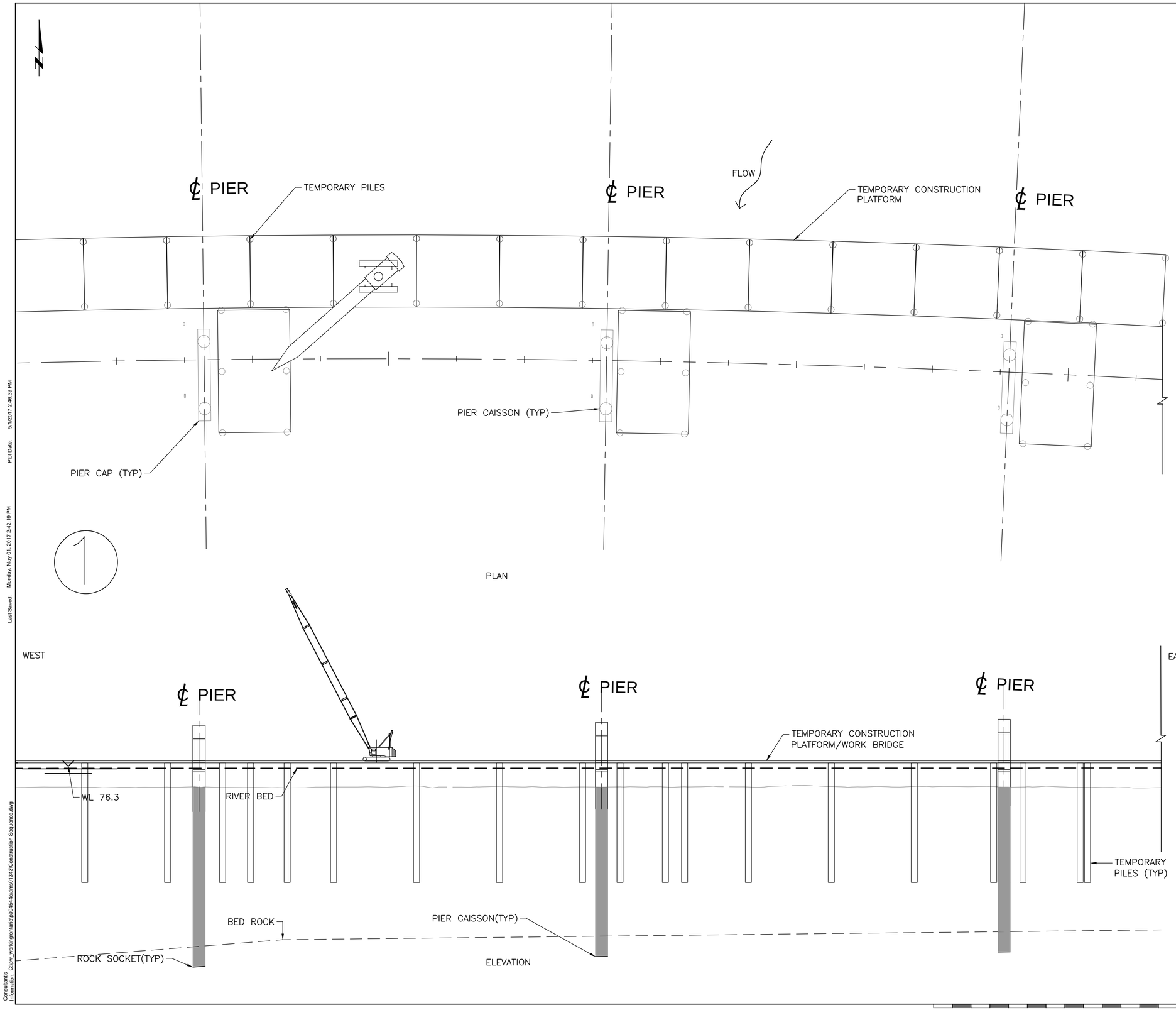
REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017



STEP 1

- TRESTLE AND SUBSTRUCTURE WORK IS COMPLETED

SUGGESTED CONSTRUCTION SEQUENCE

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

SPAN CONSTRUCTION SEQUENCE

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	SEQ-118
Sheet No.:	18 of 20
Des: MLC	Chk'd: MLC
Dwn: TT	Chk'd: MLC
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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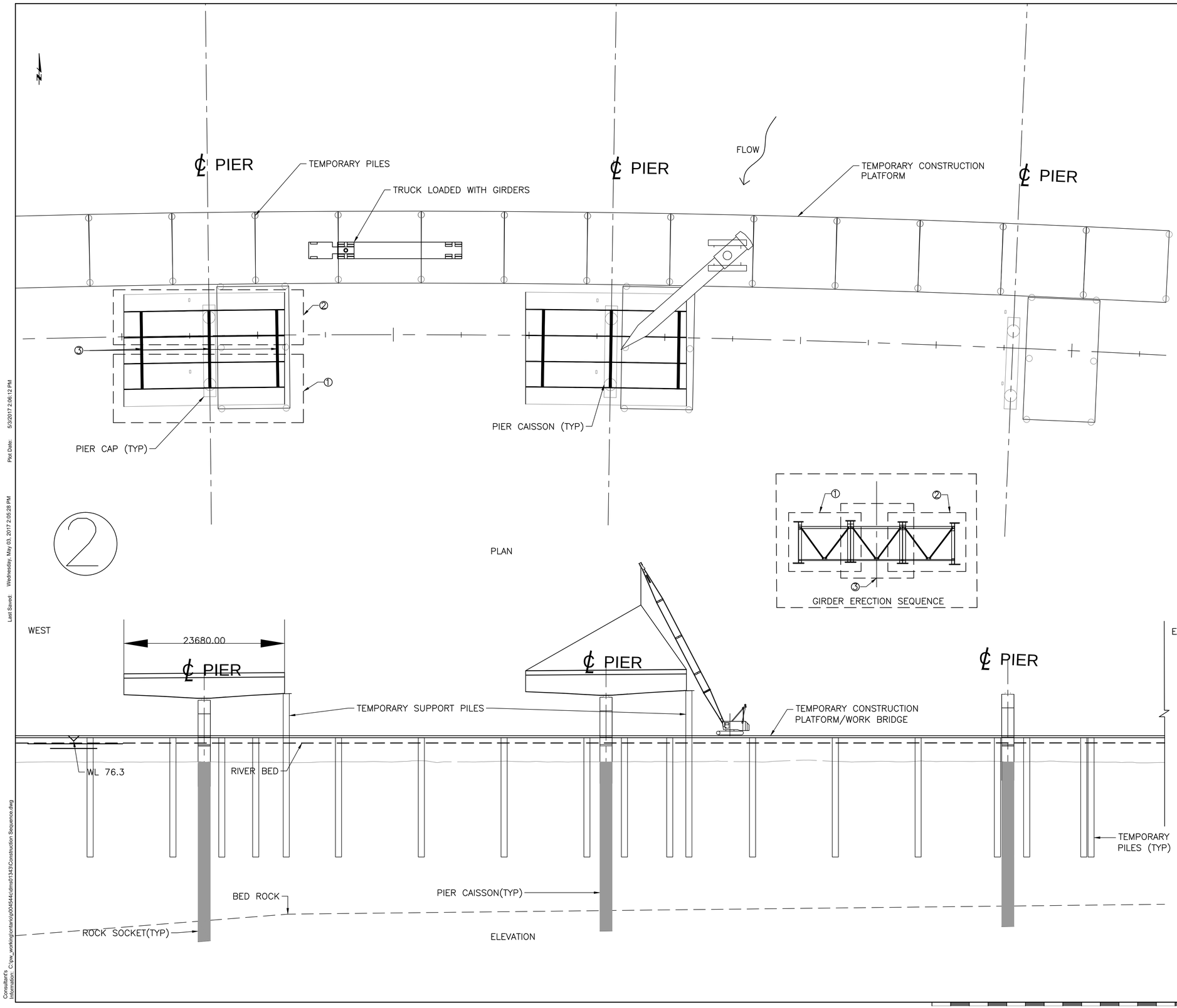
REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017



STEP 2

- ERECT PIER GIRDERS AT TWO ADJACENT PIERS
- PROVIDE SUPPORT FOR GIRDER SEGMENTS UTILIZING TRESTLE PILES

SUGGESTED CONSTRUCTION SEQUENCE

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

SPAN CONSTRUCTION SEQUENCE

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	SEQ-119
Sheet No.:	19 of 20
Des: MLC	Chk'd: MLC
Dwn: TT	Chk'd: MLC
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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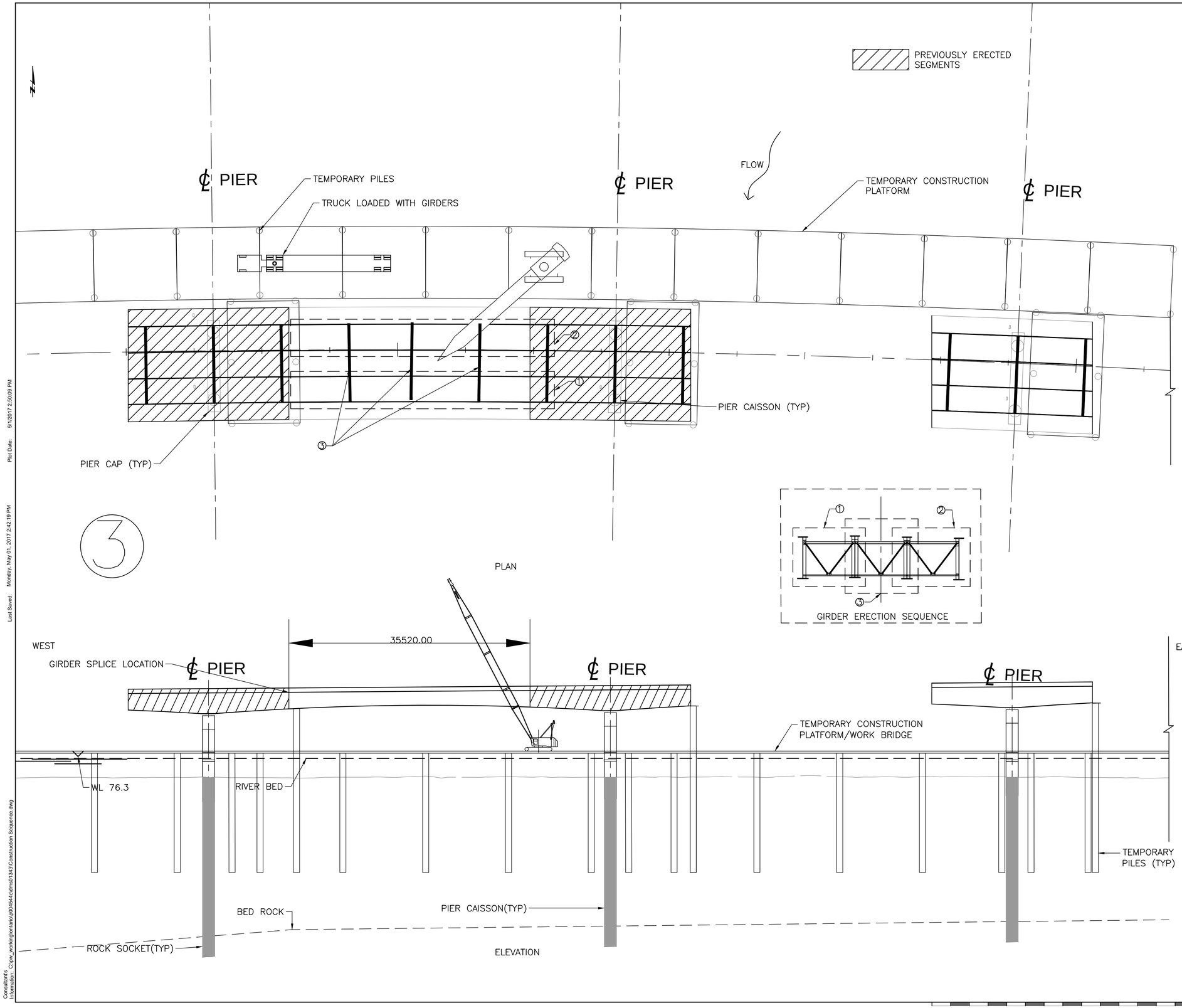
REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017



STEP 3

- ERECT DROP IN GIRDERS MID–SPAN
- ERECT THE NEXT PIER GIRDER

SUGGESTED CONSTRUCTION SEQUENCE

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

SPAN CONSTRUCTION SEQUENCE

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

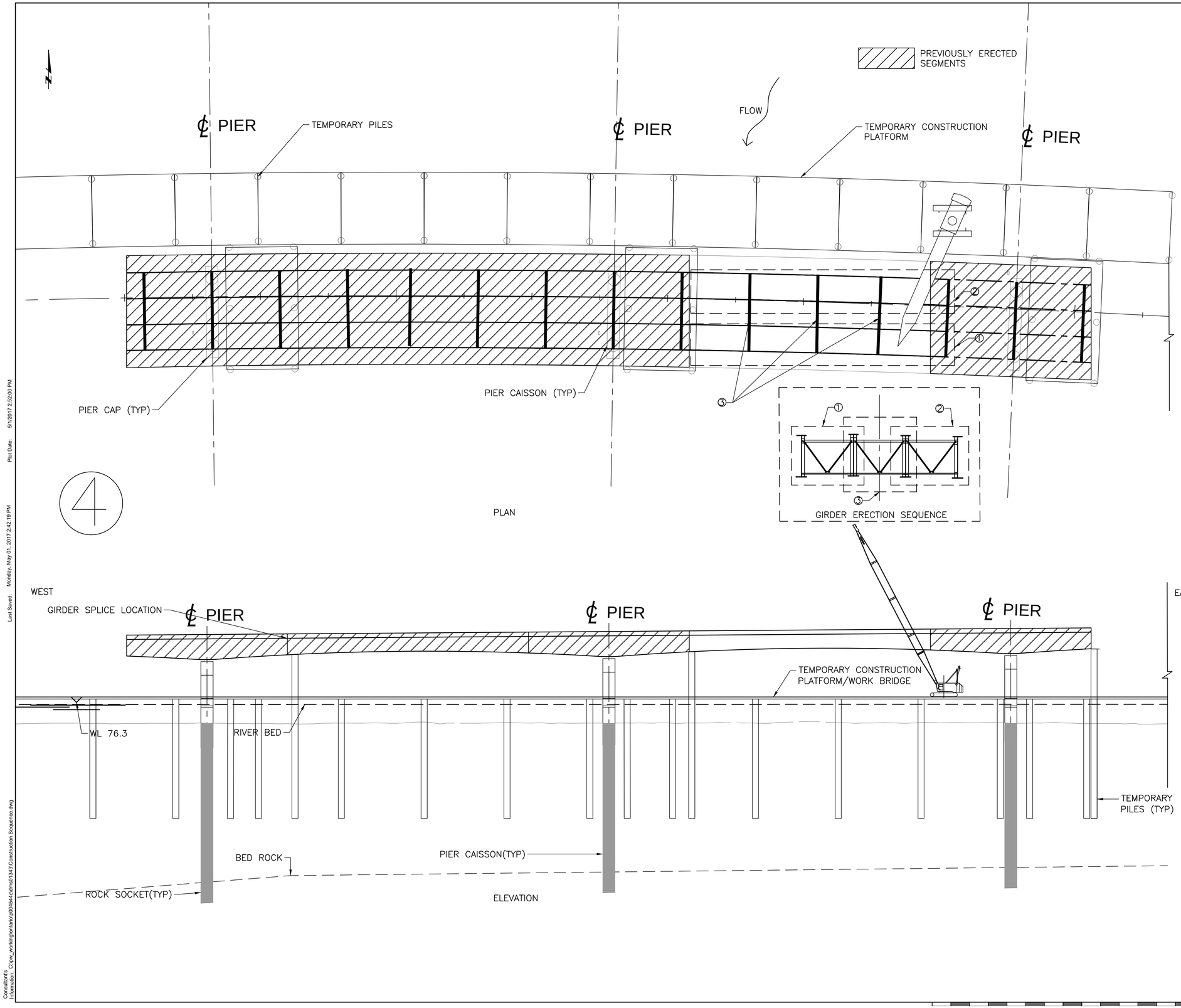
KINGSTON

Project No.:	27143
Drawing No.:	SEQ-120
Sheet No.:	20 of 20
Des: MLC	Chk'd: MLC
Dwn: TT	Chk'd: MLC
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017



4

STEP 4

- ERECT THE MID-SPAN DROP IN GIRDERS

SUGGESTED CONSTRUCTION SEQUENCE

Last Saved: Monday, May 01, 2017 2:42:19 PM Plot Date: 5/1/2017 2:52:00 PM

Consultant's Information: C:\pw_working\ontario\job\04544\dms01343\Construction Sequence.dwg

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

PRELIMINARY GENERAL ARRANGEMENT V-PIER OPTION

Mark Van Buren, P.Eng. — Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng. — Project Engineer

KINGSTON

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

Project No.:	27143
Drawing No.:	V-101
Sheet No.:	-- of ---
Des: JJA	Chk'd: RO
Dwn: KRS	Chk'd: JJA
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

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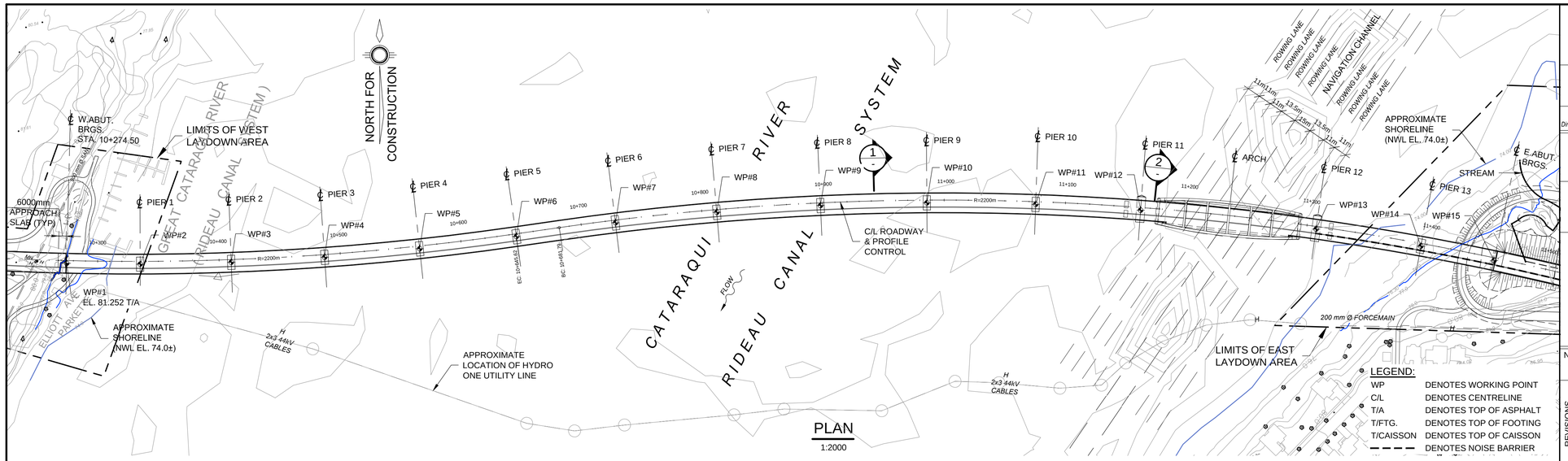
REVISIONS

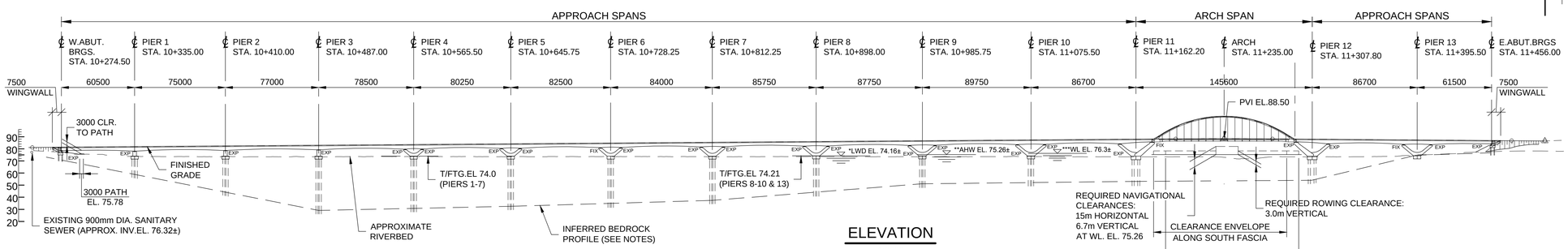
No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017



PLAN
1:2000

LEGEND:

WP	DENOTES WORKING POINT
C/L	DENOTES CENTRELINE
T/A	DENOTES TOP OF ASPHALT
T/FTG.	DENOTES TOP OF FOOTING
T/CAISSON	DENOTES TOP OF CAISSON
- - -	DENOTES NOISE BARRIER



ELEVATION
1:2000

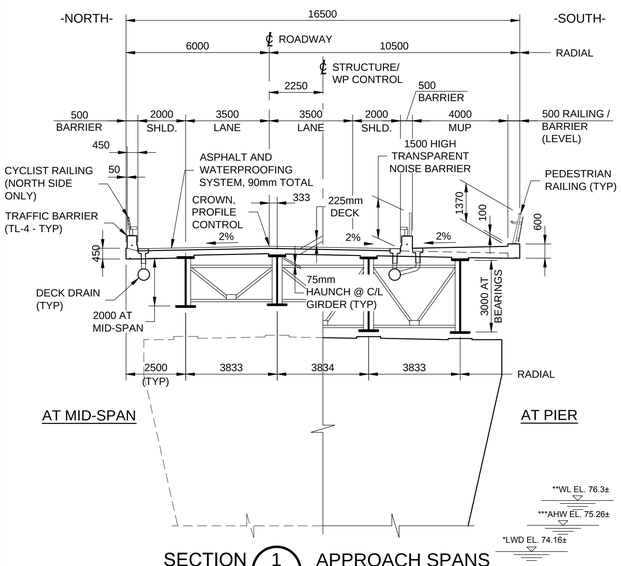
GENERAL NOTES:

DESIGN LOADS

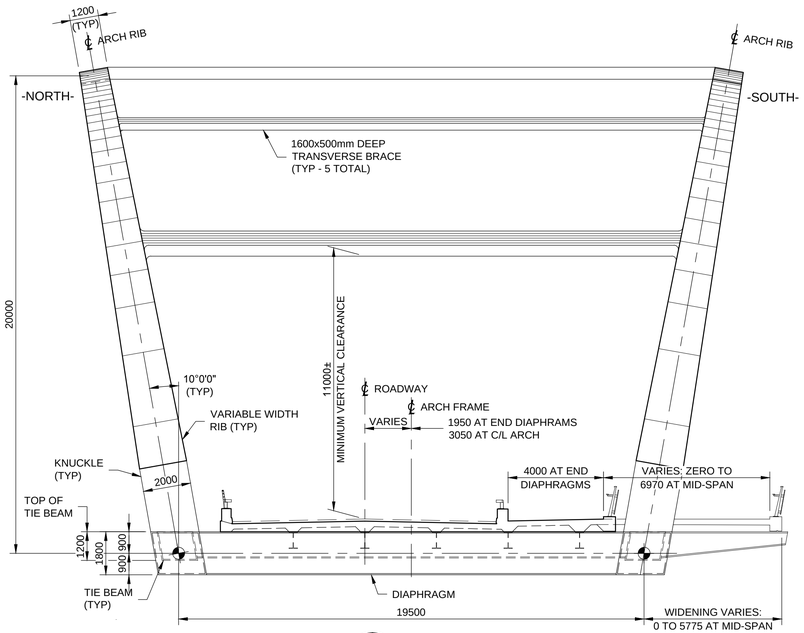
BRIDGE: CL-625-ONT TRUCK LOAD, CL-625-ONT LANE LOAD OF CHBDC.
SIDEWALK: PEDESTRIAN LOADS AND MAINTENANCE VEHICLE OF CHBDC S6-14.

CONSTRUCTION NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. CHAINAGES AND ELEVATIONS ARE IN METRES.
2. MAINTAIN FULL NAVIGATIONAL CLEARANCE THROUGHOUT CONSTRUCTION.
3. INFERRED BEDROCK PROFILE IS BASED ON BOREHOLE LOGS FROM GOLDER ASSOCIATES REPORT ENTITLED "PRELIMINARY GEOTECHNICAL INVESTIGATION - THIRD CROSSING OF CATARAQUI RIVER - JOHN COUNTER BOULEVARD TO GORE ROAD, KINGSTON, ONTARIO", DATED MARCH 2017, REPORT NO. 1541774/2000/003.



SECTION 1-1 APPROACH SPANS
1:125

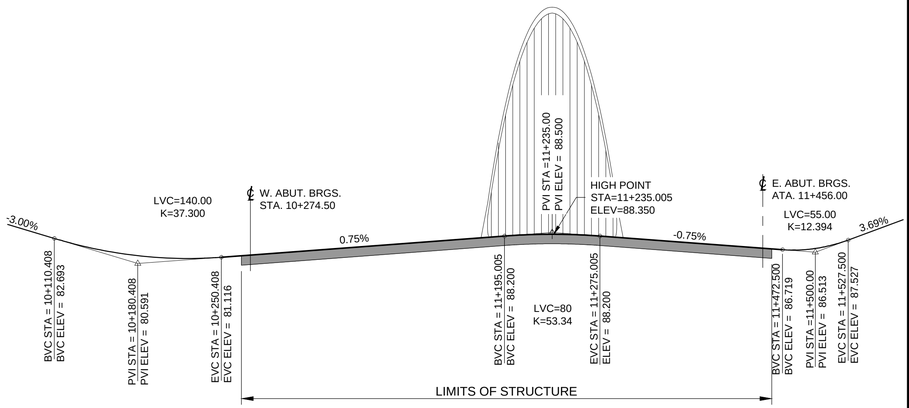


NOTE:
SEE SECTION 1 FOR ROADWAY DIMENSIONS

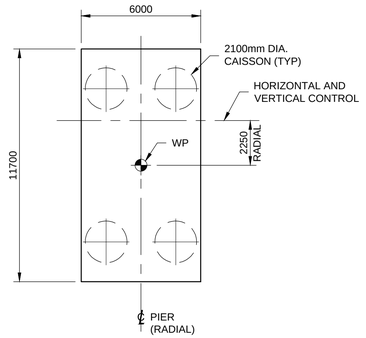
SECTION 2-2 ARCH SPAN
1:125

NOTE:

*	LOW WATER DATUM	EL. 74.16	CANADIAN HYDROGRAPHIC SERVICE (LAKE ONTARIO)
**	AVERAGE HIGH WATER	EL. 75.26	MINISTRY OF NATURAL RESOURCES (LAKE ONTARIO)
***	REGULATORY WATER LEVEL	EL. 76.3	CATARAQUI REGION CONSERVATION AUTHORITY "REGULATORY LIMIT WITHIN THE STUDY AREA"

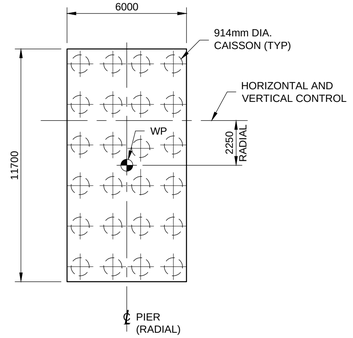


PROFILE THIRD CROSSING
N.T.S.



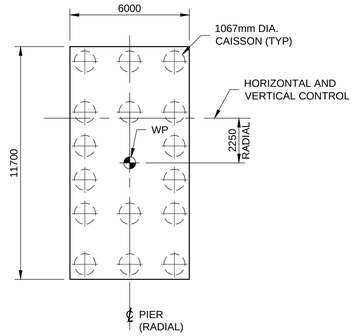
PIER FOUNDATION OPTION 1

1:150



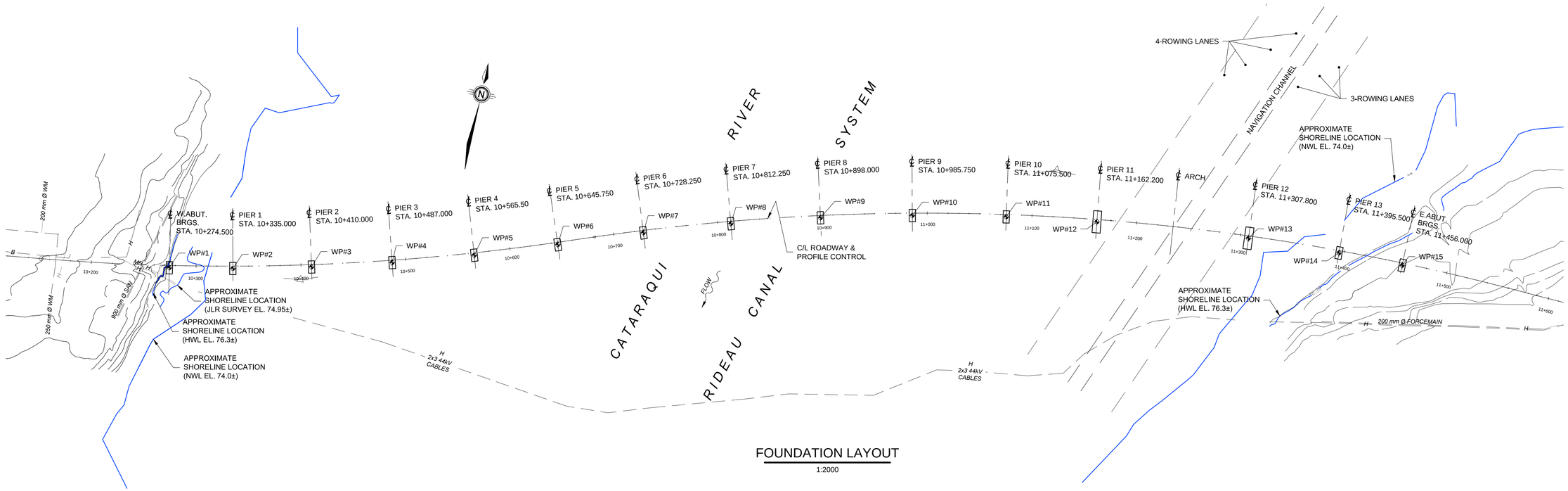
PIER FOUNDATION OPTION 2

1:150



PIER FOUNDATION OPTION 3

1:150



FOUNDATION LAYOUT

1:2000

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

FOOTING LAYOUT AND DETAILS

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering & Deputy Commissioner	*Project Engineer*

J.L.Richards ENGINEERS • ARCHITECTS • PLANNERS

PARSONS

KINGSTON

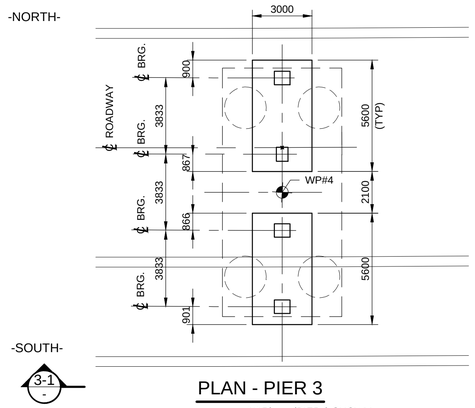
Project No.:	27143
Drawing No.:	V-102
Sheet No.:	-- of ---
Des: JJA / Chk'd: RO	
Dwn: KRS / Chk'd: JJA	
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

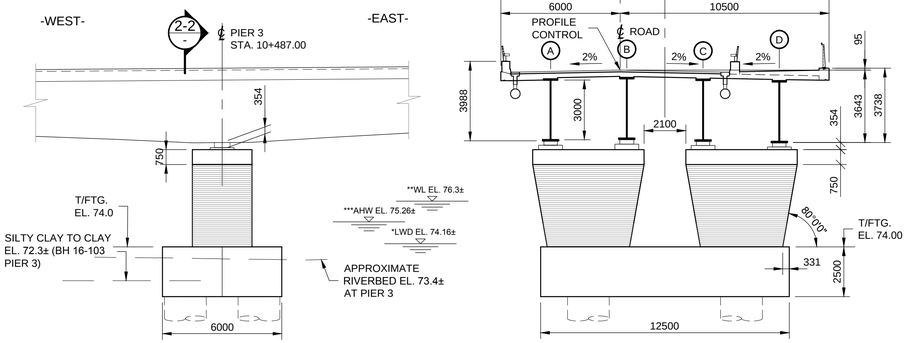
No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

Consultant's Information: C:\pw_working\ontario\p004544\dms01279\V-102 Footing Layout & Details.dwg
Last Saved: Friday, April 28, 2017 3:41:45 PM
Plot Date: 5/1/2017 10:02:55 AM



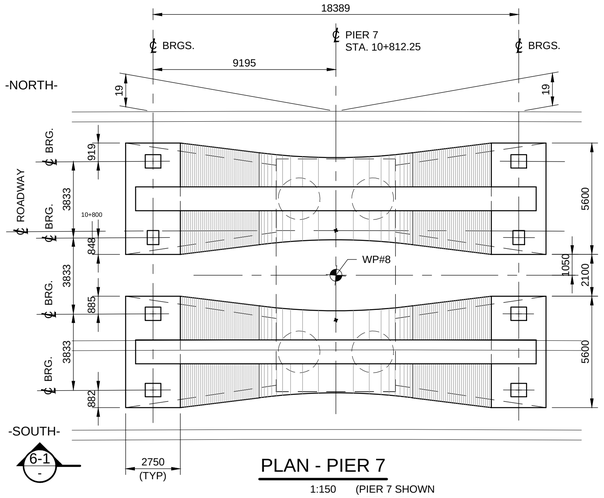
PLAN - PIER 3

1:150 (PIER 3 SHOWN PIERS 1, 2, & 4 SIMILAR)



ELEVATION 3-1

1:150

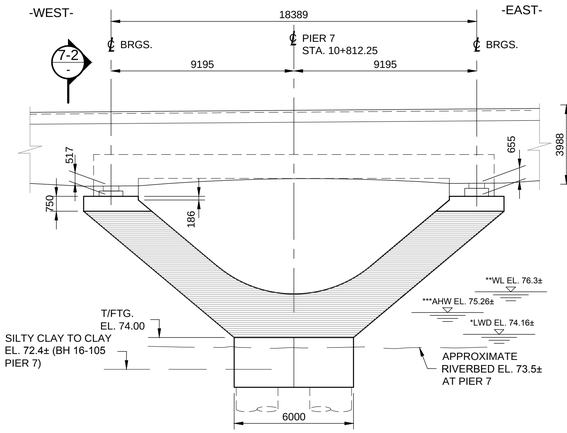


PLAN - PIER 7

1:150 (PIER 7 SHOWN PIERS 4 TO 13)

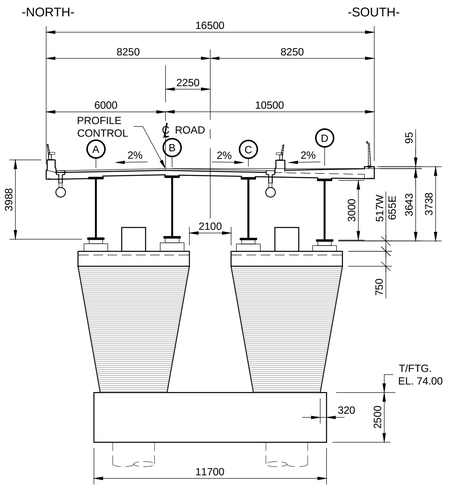
SECTION 3-2

1:150



ELEVATION 7-1

1:150



SECTION 7-2

1:150

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

PIERS

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

KINGSTON

Project No.:	27143
Drawing No.:	V-103
Sheet No.:	-- of ---
Des: JJA	Chk'd: RO
Dwn: KRS	Chk'd: JJA
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

AREAS OF RIVERBED DISTURBANCE DUE TO CONSTRUCTION

Mark Van Buren, P.Eng.
Director of Engineering & Deputy Commissioner

Dan Franco, P.Eng.
Project Engineer

KINGSTON

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

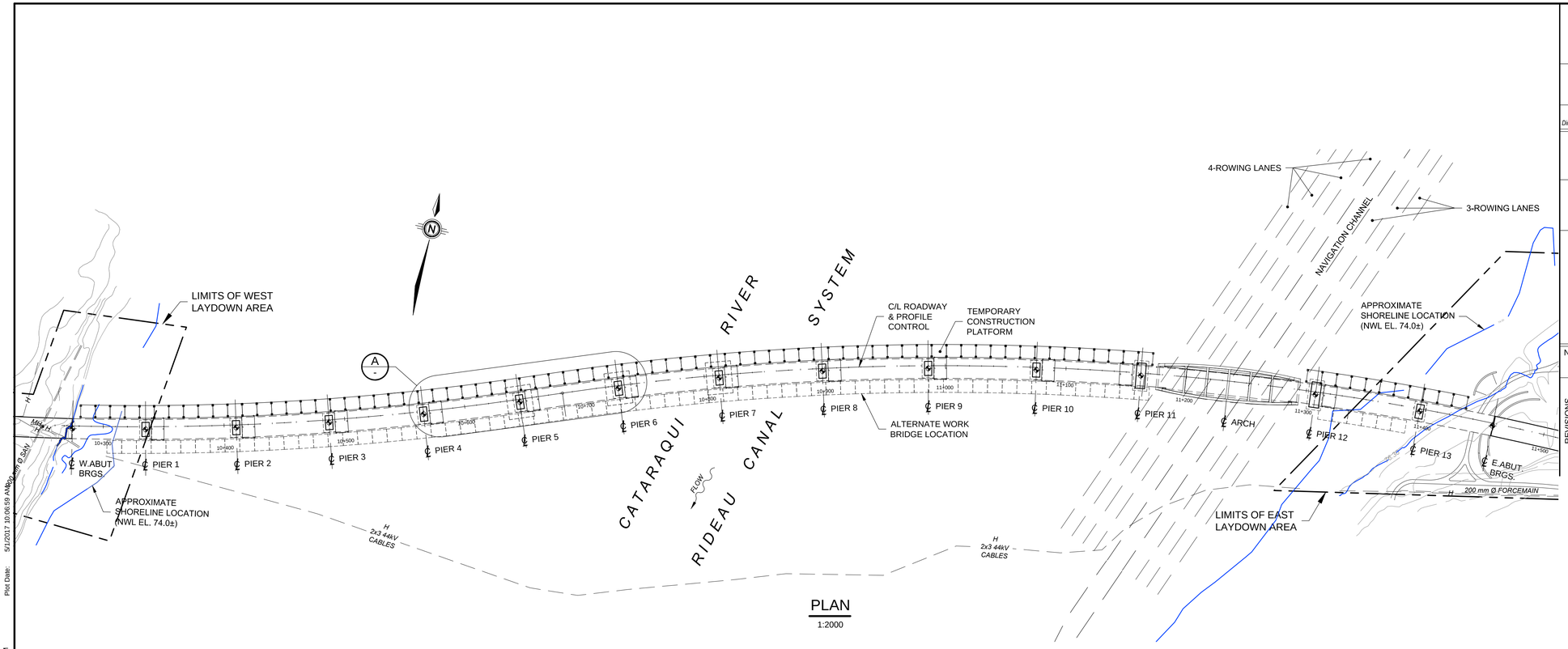
PARSONS

Project No.:	27143
Drawing No.:	V-104
Sheet No.:	-- of ---
Des: JJA	Chk'd: RO
Dwn: KRS	Chk'd: JJA
Scale:	AS NOTED
Utility Circ. No.	-----
Code:	CAN/CSA-S6-14
Load:	CL625ONT

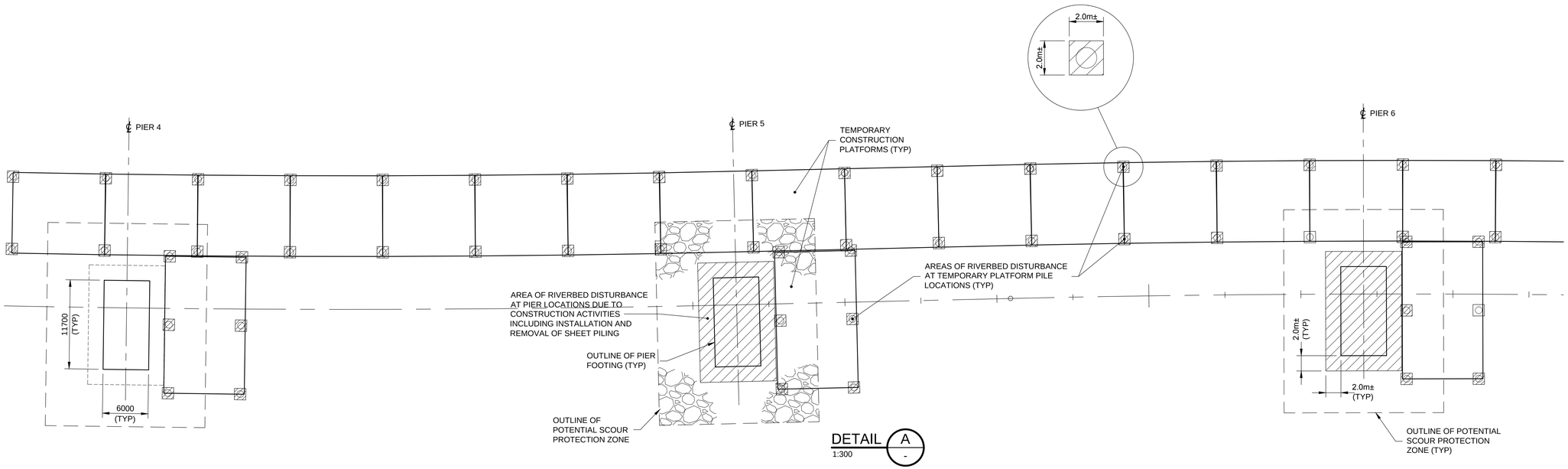
NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
	ISSUED FOR PRELIMINARY DESIGN SUMMARY REPORT	JJA	03/05/2017

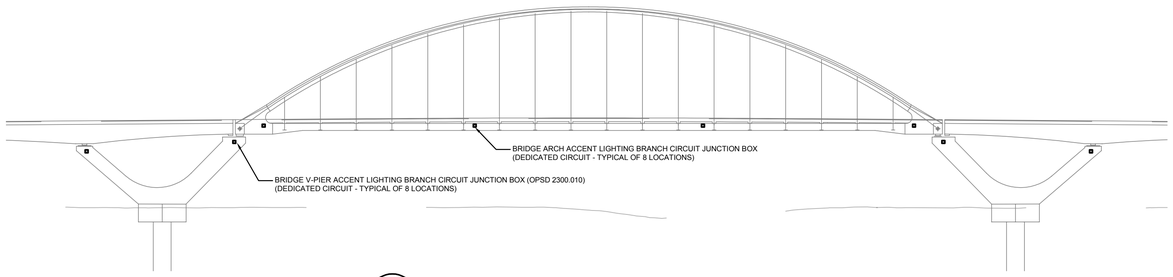


PLAN
1:2000



DETAIL A
1:300

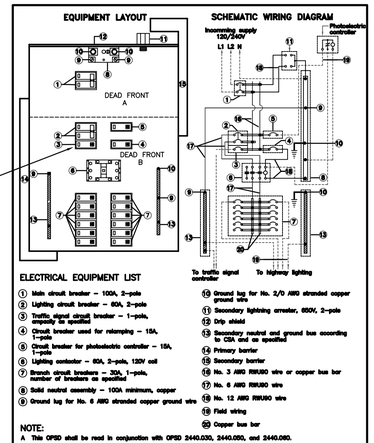
Plot Date: 5/1/2017 10:06:59 AM
Last Saved: Saturday, April 29, 2017 2:53:12 PM
Consultant's Information: C:\pw_working\ontario\olp004544\dms01279\V-104 Riverbed Impact.dwg



1 ESK-01 ACCENT LIGHTING BRANCH CIRCUIT PROVISIONS

SCALE: N/A

MODIFY TO SUIT 60A-2P BREAKER FOR BRANCH CIRCUIT SUB-PANEL



ELECTRICAL EQUIPMENT LIST

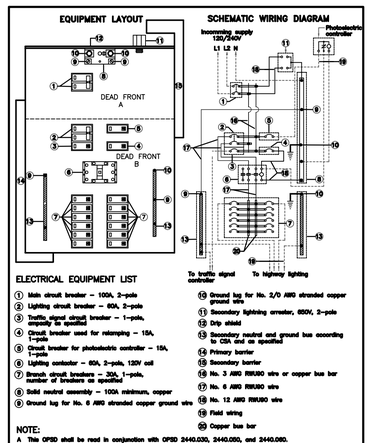
1. Main circuit breaker – 100A, 2–pole
2. Lighting circuit breaker – 60A, 2–pole
3. Traffic signal circuit breaker – 1–pole, capacity as specified
4. Circuit breaker used for relamping – 15A, 1–pole
5. Circuit breaker for photoelectric controller – 15A, 1–pole
6. Lighting contactor – 60A, 2–pole, 120V coil
7. Branch circuit breakers – 20A, 1–pole, number of breakers as specified
8. Solid neutral assembly – 100A minimum, copper
9. Ground lug for No. 6 AWG stranded copper ground wire
10. Ground lug for No. 2/0 AWG stranded copper ground wire
11. Secondary lightning arrester, 650V, 2–pole
12. Drip shield
13. Secondary neutral and ground bus according to CSA and as specified
14. Primary barrier
15. Secondary barrier
16. No. 3 AWG RWU90 wire or copper bus bar
17. No. 6 AWG RWU90 wire
18. No. 12 AWG RWU90 wire
19. Field wiring
20. Copper bus bar

NOTE:
A This OPSD shall be read in conjunction with OPSD 2440.030, 2440.050, and 2440.060.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2014	Rev	1
SUPPLY CONTROL CABINET ASSEMBLY TYPE 1 120/240V, 100A, 1–PHASE, 3–WIRE	----------		
	OPSD 2440.010		

3 ESK-01 PANELBOARD "P2", "P3", "P4"

SCALE: N/A



ELECTRICAL EQUIPMENT LIST

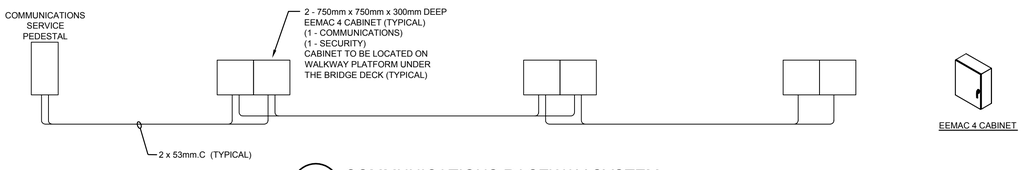
1. Main circuit breaker – 100A, 2–pole
2. Lighting circuit breaker – 60A, 2–pole
3. Traffic signal circuit breaker – 1–pole, capacity as specified
4. Circuit breaker used for relamping – 15A, 1–pole
5. Circuit breaker for photoelectric controller – 15A, 1–pole
6. Lighting contactor – 60A, 2–pole, 120V coil
7. Branch circuit breakers – 20A, 1–pole, number of breakers as specified
8. Solid neutral assembly – 100A minimum, copper
9. Ground lug for No. 6 AWG stranded copper ground wire
10. Ground lug for No. 2/0 AWG stranded copper ground wire
11. Secondary lightning arrester, 650V, 2–pole
12. Drip shield
13. Secondary neutral and ground bus according to CSA and as specified
14. Primary barrier
15. Secondary barrier
16. No. 3 AWG RWU90 wire or copper bus bar
17. No. 6 AWG RWU90 wire
18. No. 12 AWG RWU90 wire
19. Field wiring
20. Copper bus bar

NOTE:
A This OPSD shall be read in conjunction with OPSD 2440.030, 2440.050, and 2440.060.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2014	Rev	1
SUPPLY CONTROL CABINET ASSEMBLY TYPE 1 120/240V, 100A, 1–PHASE, 3–WIRE	----------		
	OPSD 2440.010		

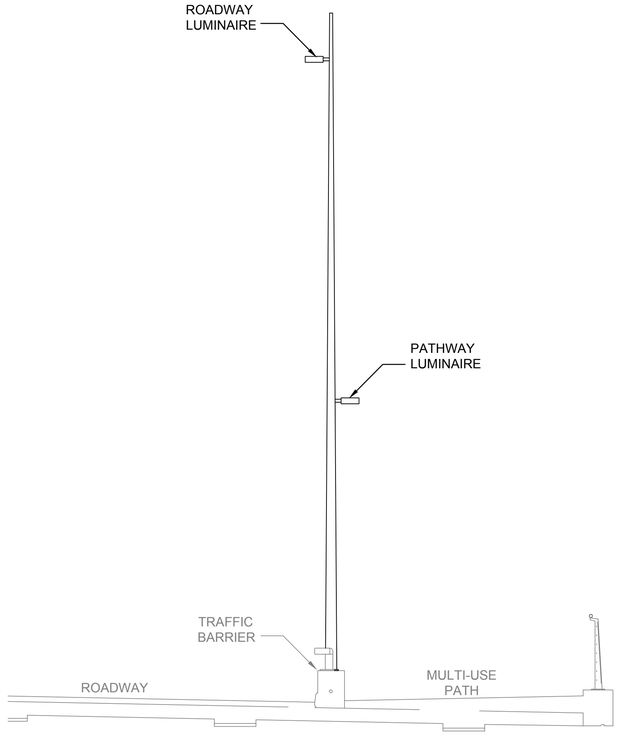
4 ESK-01 PANELBOARD "P1", P5"

SCALE: N/A



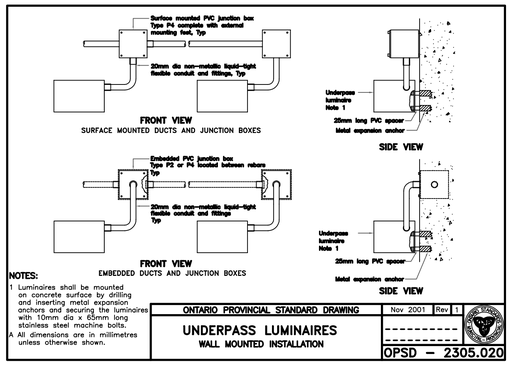
4 ESK-01 COMMUNICATIONS RACEWAY SYSTEM

SCALE: N/A



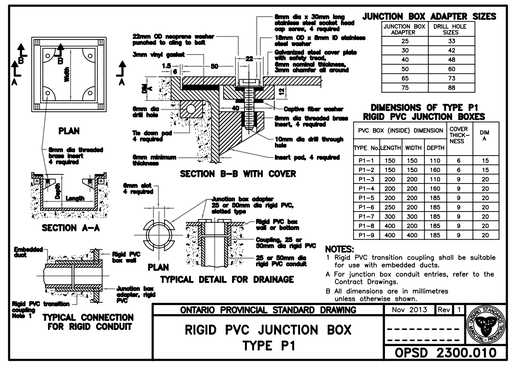
2 ESK-01 ROADWAY / MUP LUMINAIRE ASSEMBLY

SCALE: N/A



NOTES:
1 Luminaires shall be mounted on concrete surface by drilling and inserting metal expansion anchors and securing the luminaires with 10mm dia x 65mm long stainless steel machine bolts.
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2001	Rev	1
UNDERPASS LUMINAIRES WALL MOUNTED INSTALLATION	----------		
	OPSD – 2305.020		

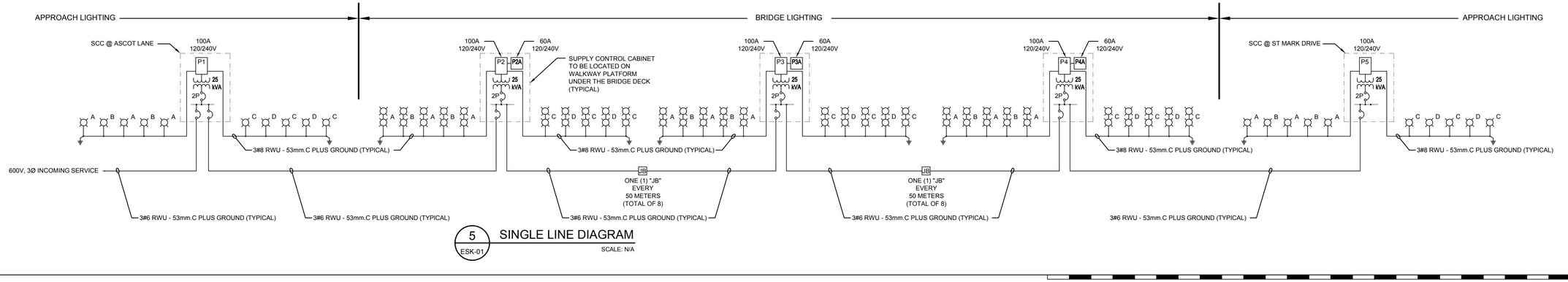


JUNCTION BOX ADAPTER	DRILL HOLE SIZES
25	33
30	42
40	48
50	60
65	73
75	88

PVC BOX (INSIDE) DIMENSION				COVER THICKNESS	DIM A
TYPE No.	LENGTH	WIDTH	DEPTH		
P1–1	150	150	110	6	15
P1–2	150	150	160	6	15
P1–3	200	200	110	9	20
P1–4	200	200	160	9	20
P1–5	200	200	185	9	20
P1–6	250	200	185	9	20
P1–7	300	300	185	9	20
P1–8	400	200	185	9	20
P1–9	400	400	185	9	20

NOTES:
1 Rigid PVC transition coupling shall be suitable for use with embedded ducts.
A For junction box conduit entries, refer to the Contract Drawings.
B All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2013	Rev	1
RIGID PVC JUNCTION BOX TYPE P1	----------		
	OPSD 2300.010		



5 ESK-01 SINGLE LINE DIAGRAM

SCALE: N/A

THIRD CROSSING OF THE CATARAQUI RIVER

PRELIMINARY DESIGN

ELECTRICAL AND COMMUNICATIONS SINGLE LINE DIAGRAM AND DETAILS

Mark Van Buren, P.Eng.
Director, Infrastructure Services

Dan Franco, P.Eng.
Manager, Construction Services - West

KINGSTON

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

Project No.:	27143
Drawing No.:	E101
Sheet No.:	1 of 1
Des:	Chk'd:
Dwn:	Chk'd:
Scale:	AS NOTED
Utility Circ. No.	
Code:	
Load:	

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS	No.	Description	By	Date (dd/mm/yy)
	01	ISSUED FOR PRELIMINARY DESIGN REPORT	-	03/05/17

FORM PH–M–125 – Revised 1990 AutoCAD ver 12

REVISIONS	DATE	ANALYST	DESCRIPTION OF REVISIONS	RECOMMENDED BY

COLLISION DIAGRAM NUMBER OF ANGLE COLLISIONS

Year	Nº
_ _	_ _
_ _	_ _
_ _	_ _

TOTAL _ _ _

AVERAGE PER YEAR _ _

MINIMUM REQUIREMENTS FOR INSTALLATION OF TRAFFIC SIGNALS
(WARRANT ANALYSIS FORMS SHOULD BE ATTACHED)

LOCATION: JOHN COUNTER BLVD AT MONTREAL STREET

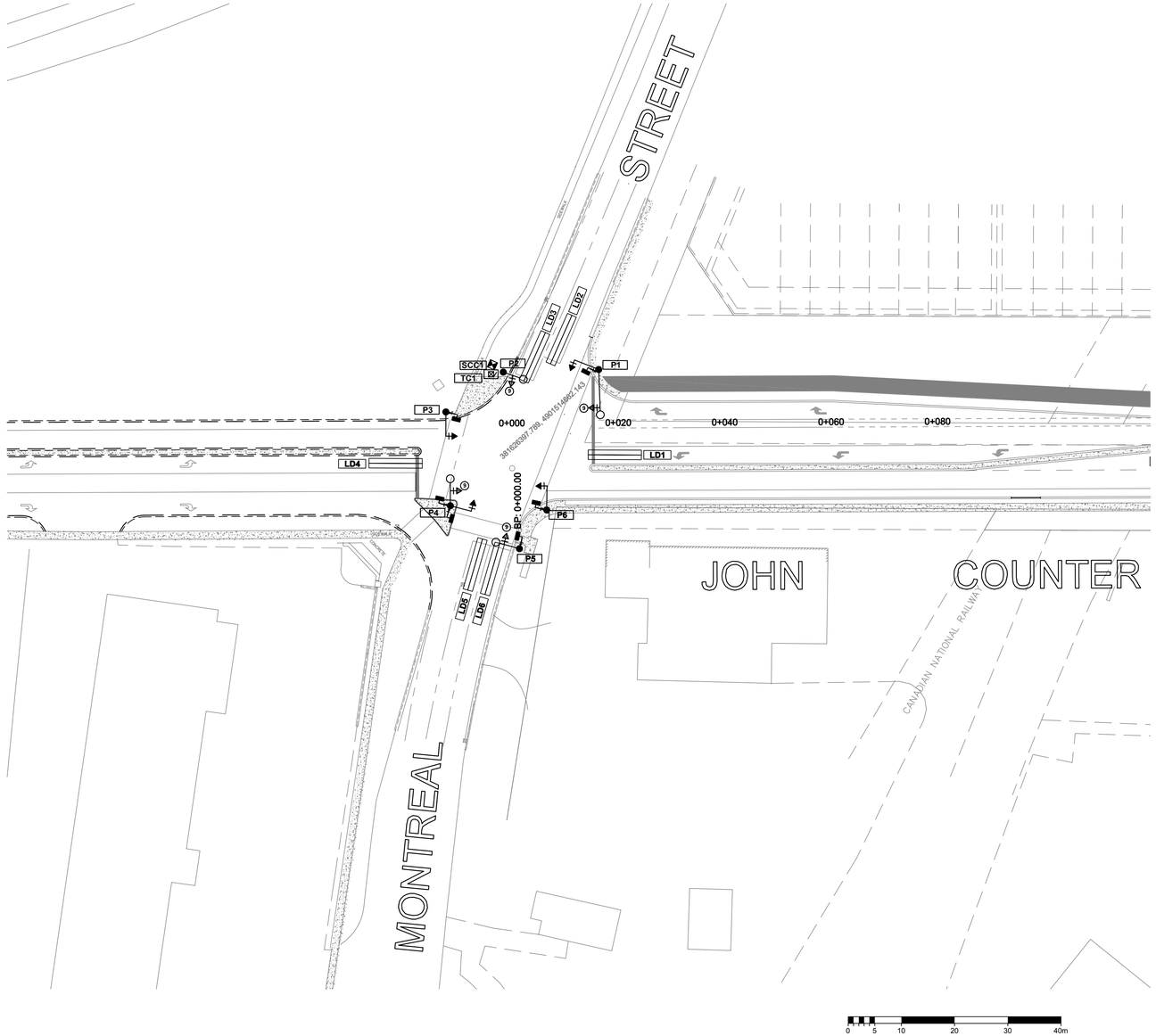
MUNICIPALITY: KINGSTON, ONTARIO DATE OF SURVEY: _____

	WARRANT	DESCRIPTION	MINIMUM REQUIREMENT FOR TWO–LANE ROADWAYS: FREE FLOW, OPERATING SPEED GREATER THAN OR EQUAL TO 70 km/h	MINIMUM REQUIREMENT FOR TWO–LANE ROADWAYS: RESTRICTED FLOW, OPERATING SPEED LESS THAN 70 km/h	COMPLIANCE: SECTIONAL %	COMPLIANCE: ③ ENTIRE %
INTERSECTION	1. MINIMUM VEHICULAR VOLUME	①A Vehicle Volume, All Approaches for Each of the Heaviest 8 hours of an Average Day, and	480	720		
		④B Vehicle Volume, Along Minor Streets for Each of the Same 8 hours	120	170		
	2. DELAY TO CROSS TRAFFIC	①A Vehicle Volume, Along Major Street for Each of the Heaviest 8 Hours of an Average Day, and	480	720		
		②B Combined Vehicle and Pedestrian Volume Crossing the Major Street for Each of the Same 8 hours	50	75		
	3. ACCIDENT HAZARD	A Total Reported Accidents of Types Susceptible to Correction by a Traffic Signal, per 12 Month Period Averaged Over a 36 Month Period, and	5			
		B Adequate Trial of Less Restrictive Remedies, Where Satisfactory Observance and Enforcement Have Failed to Reduce the Number of Accidents, and	Yes ☐ No ☐			
		C Fulfilment of Either of the Above Warrants (Minimum Vehicular Volume or Delay to Cross Traffic) to the Extent of 80% or More.	Yes ☐ No ☐			
	4. COMBINATION WARRANT	Two or More of the Above Warrants (1, 2, or 3) Satisfied to the Extent of 80% or More.	Yes ☐ No ☐			
MID–BLOCK	5. ⑤ MINIMUM PEDESTRIAN VOLUME	A Pedestrian Volume Crossing the Major Street Average per Hour for the Heaviest 8 Hours of an Average Day, and	120	240		
		① B Vehicle Volume Along Major Street Average Per Hour for the Same 8 Hours.	290	575		

NOTES:
① Vehicle Volume Warrants (1A), (2A) and (5B) for Roadways Having Two or More Moving Lanes in one Direction Should Be 25% Higher Than Values Given Above.
② For Definition of Crossing Volume Refer to Note ④ on the Signal Warrant Analysis Form B2.03.08
③ The Lowest Sectional Percentage Governs the Entire Warrant.
④ For 'T' Intersections the Values for Warrant (1B) Should Be Increased by 50%
⑤ Pedestrian Mid Block Signals may also be warranted based on a Pedestrian cross over warrant

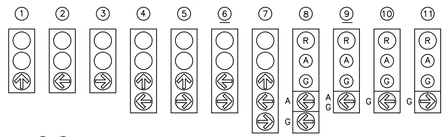
LEGEND

- HIGHWAY SIGNAL HEAD (30 cm. Red) WITH BACKBOARD AND MAST ARM
- HIGHWAY SIGNAL HEAD (30 cm. Red) WITH BACKBOARD AND OVERHEAD CABLE
- HIGHWAY SIGNAL HEAD WITH BACKBOARD AND MAST ARM (ALL 30 cm. LENSES)
- SPECIAL HEAD WITH ARROW INDICATION AND BACKBOARD (Example shows Type ② Head)
- SPECIAL HEAD WITH BACKBOARD AND ONE OR MORE PROGRAMMABLE LENSES (Example shows Type ② Head)
- STANDARD SIGNAL HEAD WITH BACKBOARD AND MAST ARM (ALL 20 cm. LENSES)
- STANDARD SIGNAL HEAD WITH MAST ARM, WITHOUT BACKBOARD
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- VEHICLE PASSAGE LOOP DETECTOR
- VEHICLE LOOP DETECTOR
- DUPLEX LOOP DETECTOR
- DIAMOND LOOP DETECTOR
- MICRO–LOOP DETECTOR
- EMERGENCY VEHICLE PRE–EMPTION DETECTOR
- MICRO–WAVE DETECTOR
- MAGNETIC VEHICLE DETECTOR
- TRAFFIC CONTROLLER
- TRAFFIC SIGN
- TRAFFIC SIGN WITH FLASHING BEACON
- ILLUMINATED TRAFFIC SIGN



CLASSIFICATION OF ROADWAY		TRAFFIC SIGNAL HEADS: TYPE	SIZE	BACKBOARD	LOCATION: MOUNTING HT.	OFFSET FROM POLE
ROADWAY: JOHN COUNTER BLVD		PRIMARY	HIGHWAY	YES	5.0m	TBD
		SECONDARY	HIGHWAY	YES	5.0m	TBD
		AUXILIARY				
MULTILANE ☐	SEPARATE LT TURN ARROWS	PRIMARY				
TWO–LANE ☒		SECONDARY				
ROADWAY: MONTREAL STREET		PRIMARY	HIGHWAY	YES	5.0m	TBD
		SECONDARY	HIGHWAY	YES	5.0m	TBD
		AUXILIARY				
MULTILANE ☐	SEPARATE LT TURN ARROWS	PRIMARY				
TWO–LANE ☒		SECONDARY				

TYPES OF SPECIAL ARROW HEADS WITH BACKBOARD
ALL 30 cm LENSES, EXCEPT AS NOTED



⑧ ⑨ AMBER ARROW MUST BE USED IN A PROTECTED/PERMISSIVE SIMULTANEOUS LEFT TURN OPERATION.

NOTE: FOR SPECIAL ARROW HEADS ⑧, ⑨, ⑩ AND ⑪, 20 cm AMBER BALL AND 20 cm GREEN BALL LENSES SHOULD BE USED

TRAFFIC DRAWING: E102

MUNICIPALITY: KINGSTON, ONTARIO

INTERSECTION: JOHN COUNTER BLVD & MONTREAL STREET

DATE: APRIL 2017 SCALE: 1:500

RECOMMENDED BY: _____
MUNICIPAL OFFICIAL (MUNICIPAL INSTALLATION)
REGIONAL TRAFFIC REPRESENTATIVE (MINISTRY INSTALLATION)

MINISTRY OF TRANSPORTATION, ONTARIO

SIGNALS WARRANTED: REPLACING EXISTING

SIGNAL DESIGN RECOMMENDED FOR APPROVAL:

SIGNAL INSTALLATION APPROVED AS PER SECTION 144 (31.1) H.TA.;

APPROVAL DATE:

FORM PH–M–125 – Revised 1990 AutoCAD ver 12

COLLISION DIAGRAM

NUMBER OF ANGLE COLLISIONS

Year	Nº
_ _	_ _
_ _	_ _
_ _	_ _

TOTAL _ _ _

AVERAGE PER YEAR _ _

MINIMUM REQUIREMENTS FOR INSTALLATION OF TRAFFIC SIGNALS
(WARRANT ANALYSIS FORMS SHOULD BE ATTACHED)

LOCATION: JOHN COUNTER BLVD AT ASCOT LANE

MUNICIPALITY: KINGSTON, ONTARIO DATE OF SURVEY: _____

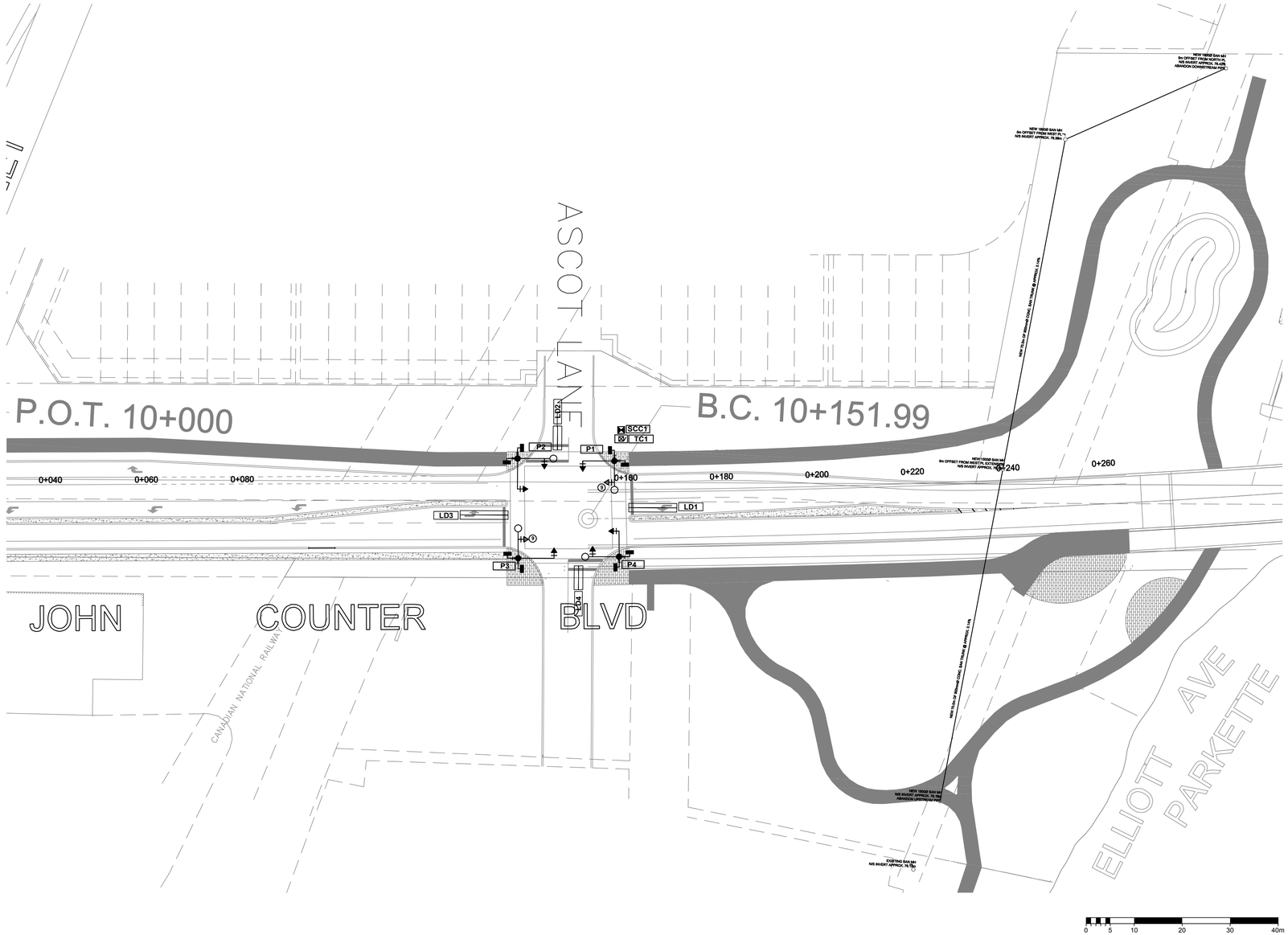
	WARRANT		DESCRIPTION	MINIMUM REQUIREMENT FOR TWO–LANE ROADWAYS: FREE FLOW, OPERATING SPEED GREATER THAN OR EQUAL TO 70 km/h	MINIMUM REQUIREMENT FOR TWO–LANE ROADWAYS: RESTRICTED FLOW, OPERATING SPEED LESS THAN 70 km/h	COMPLIANCE: SECTIONAL %	COMPLIANCE: ③ ENTIRE %
INTERSECTION	1.	MINIMUM VEHICULAR VOLUME	①A Vehicle Volume, All Approaches for Each of the Heaviest 8 hours of an Average Day, and	480	720		
			④B Vehicle Volume, Along Minor Streets for Each of the Same 8 hours	120	170		
	2.	DELAY TO CROSS TRAFFIC	①A Vehicle Volume, Along Major Street for Each of the Heaviest 8 Hours of an Average Day, and	480	720		
			②B Combined Vehicle and Pedestrian Volume Crossing the Major Street for Each of the Same 8 hours	50	75		
	3.	ACCIDENT HAZARD	A Total Reported Accidents of Types Susceptible to Correction by a Traffic Signal, per 12 Month Period Averaged Over a 36 Month Period, and	5			
			B Adequate Trial of Less Restrictive Remedies, Where Satisfactory Observance and Enforcement Have Failed to Reduce the Number of Accidents, and	Yes ☐ No ☐			
			C Fulfilment of Either of the Above Warrants (Minimum Vehicular Volume or Delay to Cross Traffic) to the Extent of 80% or More.	Yes ☐ No ☐			
	4.	COMBINATION WARRANT	Two or More of the Above Warrants (1, 2, or 3) Satisfied to the Extent of 80% or More.	Yes ☐ No ☐			
MID–BLOCK	5. ⑤	MINIMUM PEDESTRIAN VOLUME	A Pedestrian Volume Crossing the Major Street Average per Hour for the Heaviest 8 Hours of an Average Day, and	120	240		
			① B Vehicle Volume Along Major Street Average Per Hour for the Same 8 Hours.	290	575		

NOTES:
① Vehicle Volume Warrants (1A), (2A) and (5B) for Roadways Having Two or More Moving Lanes in one Direction Should Be 25% Higher Than Values Given Above.
② For Definition of Crossing Volume Refer to Note ④ on the Signal Warrant Analysis Form B2.03.08
③ The Lowest Sectional Percentage Governs the Entire Warrant.
④ For 'T' Intersections the Values for Warrant (1B) Should Be Increased by 50%
⑤ Pedestrian Mid Block Signals may also be warranted based on a Pedestrian cross over warrant

LEGEND

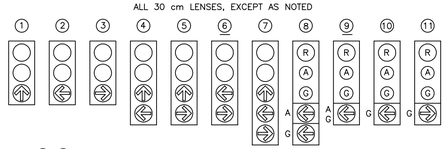
- HIGHWAY SIGNAL HEAD (30 cm. Red) WITH BACKBOARD AND MAST ARM
- HIGHWAY SIGNAL HEAD (30 cm. Red) WITH BACKBOARD AND OVERHEAD CABLE
- HIGHWAY SIGNAL HEAD WITH BACKBOARD AND MAST ARM (ALL 30 cm. LENSES)
- SPECIAL HEAD WITH ARROW INDICATION AND BACKBOARD (Example shows Type ② Head)
- SPECIAL HEAD WITH BACKBOARD AND ONE OR MORE PROGRAMMABLE LENSES (Example shows Type ② Head)
- STANDARD SIGNAL HEAD WITH BACKBOARD AND MAST ARM (ALL 20 cm. LENSES)
- STANDARD SIGNAL HEAD WITH MAST ARM, WITHOUT BACKBOARD
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- VEHICLE PASSAGE LOOP DETECTOR
- VEHICLE LOOP DETECTOR
- DUPLEX LOOP DETECTOR
- DIAMOND LOOP DETECTOR
- MICRO–LOOP DETECTOR
- EMERGENCY VEHICLE PRE–EMPTION DETECTOR
- MICRO–WAVE DETECTOR
- MAGNETIC VEHICLE DETECTOR
- TRAFFIC CONTROLLER
- TRAFFIC SIGN
- TRAFFIC SIGN WITH FLASHING BEACON
- ILLUMINATED TRAFFIC SIGN

REVISIONS	DATE	ANALYST	DESCRIPTION OF REVISIONS	RECOMMENDED BY



CLASSIFICATION OF ROADWAY		TRAFFIC SIGNAL HEADS: TYPE	SIZE	BACKBOARD	LOCATION: MOUNTING HT.	OFFSET FROM POLE
ROADWAY: JOHN COUNTER BLVD		PRIMARY	HIGHWAY	YES	5.0m	TBD
		SECONDARY	HIGHWAY	YES	5.0m	TBD
MULTILANE ☐		AUXILIARY				
TWO–LANE ☒	SEPARATE LT TURN ARROWS	PRIMARY				
		SECONDARY				
ROADWAY: ASCOT LANE		PRIMARY	HIGHWAY	YES	5.0m	TBD
		SECONDARY	HIGHWAY	YES	5.0m	TBD
MULTILANE ☐		AUXILIARY				
TWO–LANE ☒	SEPARATE LT TURN ARROWS	PRIMARY				
		SECONDARY				

TYPES OF SPECIAL ARROW HEADS WITH BACKBOARD
ALL 30 cm LENSES, EXCEPT AS NOTED



⑧ ⑨ AMBER ARROW MUST BE USED IN A PROTECTED/PERMISSIVE SIMULTANEOUS LEFT TURN OPERATION.

NOTE: FOR SPECIAL ARROW HEADS ⑧, ⑨, ⑩ AND ⑪, 20 cm AMBER BALL AND 20 cm GREEN BALL LENSES SHOULD BE USED

TRAFFIC DRAWING: E103

MUNICIPALITY: KINGSTON, ONTARIO

INTERSECTION: JOHN COUNTER BLVD & ASCOT LANE

DATE: APRIL 2017 SCALE: 1:500

RECOMMENDED BY: _____
MUNICIPAL OFFICIAL (MUNICIPAL INSTALLATION)
REGIONAL TRAFFIC REPRESENTATIVE (MINISTRY INSTALLATION)

MINISTRY OF TRANSPORTATION, ONTARIO

SIGNALS WARRANTED: NEW INTERSECTION

SIGNAL DESIGN RECOMMENDED FOR APPROVAL:

SIGNAL INSTALLATION APPROVED AS PER SECTION 144 (31.1) H.TA.;

APPROVAL DATE:

FORM PH–M–125 – Revised 1990 AutoCAD ver 12

COLLISION DIAGRAM NUMBER OF ANGLE COLLISIONS

Year	Nº
_ _	_ _
_ _	_ _
_ _	_ _

TOTAL _ _ _

AVERAGE PER YEAR _ _

MINIMUM REQUIREMENTS FOR INSTALLATION OF TRAFFIC SIGNALS
(WARRANT ANALYSIS FORMS SHOULD BE ATTACHED)

LOCATION: GORE ROAD AT ST MARK DRIVE

MUNICIPALITY: KINGSTON, ONTARIO DATE OF SURVEY: _____

	WARRANT		DESCRIPTION	MINIMUM REQUIREMENT FOR TWO–LANE ROADWAYS: FREE FLOW, OPERATING SPEED GREATER THAN OR EQUAL TO 70 km/h	MINIMUM REQUIREMENT FOR TWO–LANE ROADWAYS: RESTRICTED FLOW, OPERATING SPEED LESS THAN 70 km/h	COMPLIANCE: SECTIONAL %	COMPLIANCE: ③ ENTIRE %
INTERSECTION	1.	①A	Vehicle Volume, All Approaches for Each of the Heaviest 8 hours of an Average Day, and	480	720		
	MINIMUM VEHICULAR VOLUME	④B	Vehicle Volume, Along Minor Streets for Each of the Same 8 hours	120	170		
	2.	①A	Vehicle Volume, Along Major Street for Each of the Heaviest 8 Hours of an Average Day, and	480	720		
	DELAY TO CROSS TRAFFIC	②B	Combined Vehicle and Pedestrian Volume Crossing the Major Street for Each of the Same 8 hours	50	75		
	3.	A	Total Reported Accidents of Types Susceptible to Correction by a Traffic Signal, per 12 Month Period Averaged Over a 36 Month Period, and	5			
	ACCIDENT HAZARD	B	Adequate Trial of Less Restrictive Remedies, Where Satisfactory Observance and Enforcement Have Failed to Reduce the Number of Accidents, and	Yes ☐ No ☐			
		C	Fulfilment of Either of the Above Warrants (Minimum Vehicular Volume or Delay to Cross Traffic) to the Extent of 80% or More.	Yes ☐ No ☐			
	4. COMBINATION WARRANT		Two or More of the Above Warrants (1, 2, or 3) Satisfied to the Extent of 80% or More.	Yes ☐ No ☐			
MID–BLOCK	5. ⑤ MINIMUM PEDESTRIAN VOLUME	A	Pedestrian Volume Crossing the Major Street Average per Hour for the Heaviest 8 Hours of an Average Day, and	120	240		
		① B	Vehicle Volume Along Major Street Average Per Hour for the Same 8 Hours.	290	575		

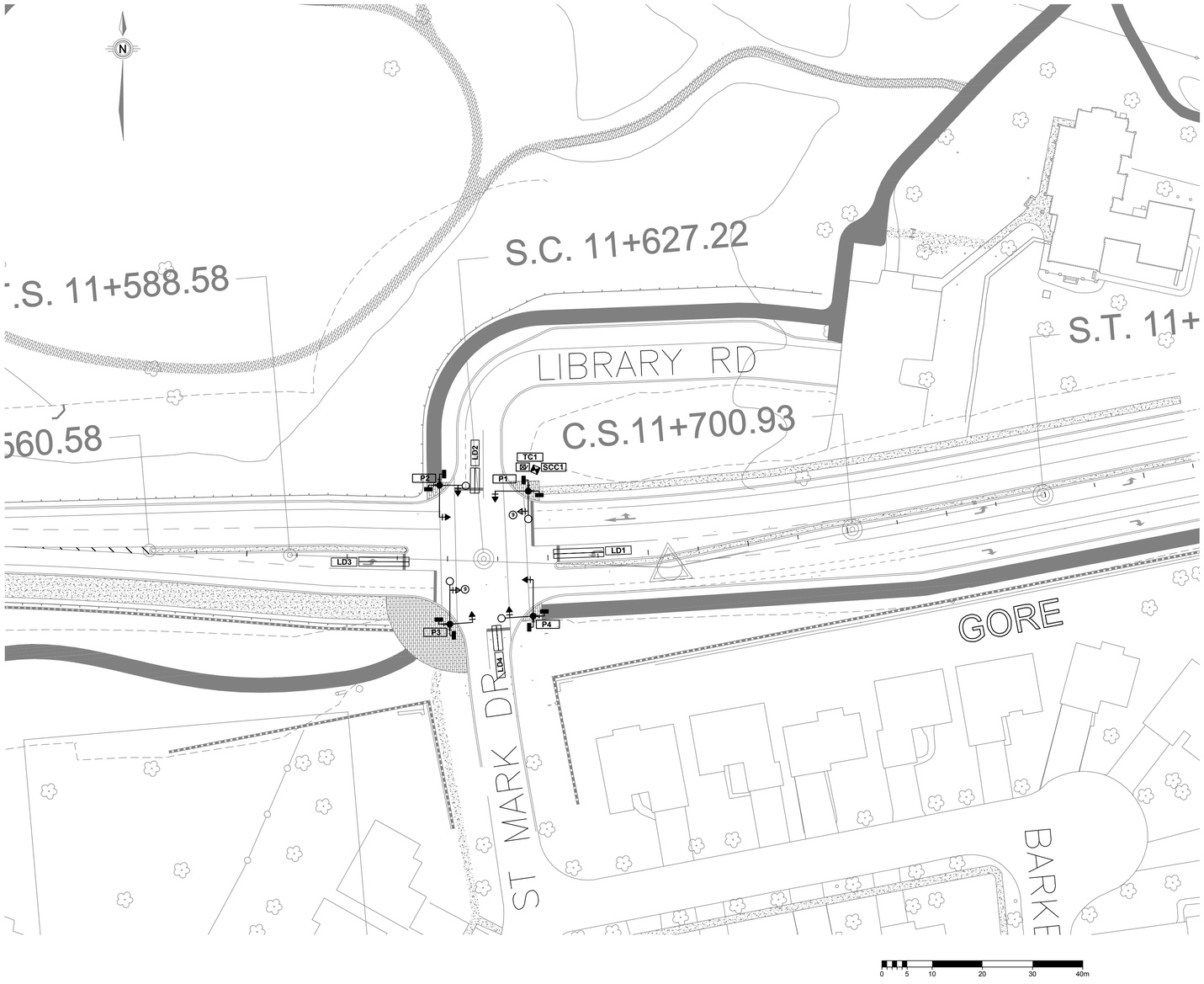
NOTES:
① Vehicle Volume Warrants (1A), (2A) and (5B) for Roadways Having Two or More Moving Lanes in one Direction Should Be 25% Higher Than Values Given Above.
② For Definition of Crossing Volume Refer to Note ④ on the Signal Warrant Analysis Form B2.03.08
③ The Lowest Sectional Percentage Governs the Entire Warrant.
④ For 'T' Intersections the Values for Warrant (1B) Should Be Increased by 50%
⑤ Pedestrian Mid Block Signals may also be warranted based on a Pedestrian cross over warrant

LEGEND

- HIGHWAY SIGNAL HEAD (30 cm. Red) WITH BACKBOARD AND MAST ARM
- HIGHWAY SIGNAL HEAD (30 cm. Red) WITH BACKBOARD AND OVERHEAD CABLE
- HIGHWAY SIGNAL HEAD WITH BACKBOARD AND MAST ARM (ALL 30 cm. LENSES)
- SPECIAL HEAD WITH ARROW INDICATION AND BACKBOARD (Example shows Type ② Head)
- SPECIAL HEAD WITH BACKBOARD AND ONE OR MORE PROGRAMMABLE LENSES (Example shows Type ⑫ Head)
- STANDARD SIGNAL HEAD WITH BACKBOARD AND MAST ARM (ALL 20 cm. LENSES)
- STANDARD SIGNAL HEAD WITH MAST ARM, WITHOUT BACKBOARD
- PEDESTRIAN SIGNAL HEAD
- PEDESTRIAN PUSH BUTTON
- VEHICLE PASSAGE LOOP DETECTOR
- VEHICLE LOOP DETECTOR
- DUPLEX LOOP DETECTOR
- DIAMOND LOOP DETECTOR
- MICRO–LOOP DETECTOR
- EMERGENCY VEHICLE PRE–EMPTION DETECTOR
- MICRO–WAVE DETECTOR
- MAGNETIC VEHICLE DETECTOR
- TRAFFIC CONTROLLER
- TRAFFIC SIGN
- TRAFFIC SIGN WITH FLASHING BEACON
- ILLUMINATED TRAFFIC SIGN

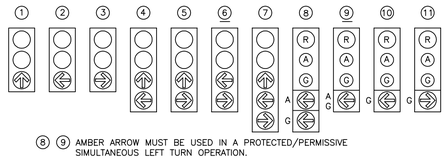
REVISIONS

DATE	ANALYST	DESCRIPTION OF REVISIONS	RECOMMENDED BY



CLASSIFICATION OF ROADWAY	TRAFFIC SIGNAL HEADS: TYPE	SIZE	BACKBOARD	LOCATION: MOUNTING HT.	OFFSET FROM POLE
ROADWAY: GORE ROAD	PRIMARY	HIGHWAY	YES	5.0m	TBD
	SECONDARY	HIGHWAY	YES	5.0m	TBD
MULTILANE ☐	AUXILIARY				
TWO–LANE ☒	SEPARATE LT TURN ARROWS PRIMARY				
	SEPARATE LT TURN ARROWS SECONDARY				
ROADWAY: ST MARK DRIVE	PRIMARY	HIGHWAY	YES	5.0m	TBD
	SECONDARY	HIGHWAY	YES	5.0m	TBD
MULTILANE ☐	AUXILIARY				
TWO–LANE ☒	SEPARATE LT TURN ARROWS PRIMARY				
	SEPARATE LT TURN ARROWS SECONDARY				

TYPES OF SPECIAL ARROW HEADS WITH BACKBOARD
ALL 30 cm LENSES, EXCEPT AS NOTED



⑧ ⑨ AMBER ARROW MUST BE USED IN A PROTECTED/PERMISSIVE SIMULTANEOUS LEFT TURN OPERATION.

NOTE: FOR SPECIAL ARROW HEADS ⑧, ⑨, ⑩ AND ⑪, 20 cm AMBER BALL AND 20 cm GREEN BALL LENSES SHOULD BE USED

TRAFFIC DRAWING: E104

MUNICIPALITY: KINGSTON, ONTARIO

INTERSECTION: GORE ROAD & ST. MARK DRIVE

DATE: APRIL 2017 SCALE: 1:500

RECOMMENDED BY: _____
MUNICIPAL OFFICIAL (MUNICIPAL INSTALLATION)
REGIONAL TRAFFIC REPRESENTATIVE (MINISTRY INSTALLATION)

MINISTRY OF TRANSPORTATION, ONTARIO

SIGNALS WARRANTED: NEW INTERSECTION

SIGNAL DESIGN RECOMMENDED FOR APPROVAL:

SIGNAL INSTALLATION APPROVED AS PER SECTION 144 (31.1) H.TA.;

APPROVAL DATE:

LEGEND:

EXISTING WOODLOT

EXISTING TREES

PROPOSED TREES
Specimen tree planting at 3m to 4.5m height (2m conifers).
Typical native tree species:
Shagbark Hickory, Red Oak, Pin Oak, Red Maple, Sugar Maple, Hackberry, Serviceberry, White Pine, White Spruce, Blue Spruce

SHRUB PLANTING
Native shrub species appropriate to each location.
Typical species: Fragrant Sumac, Staghorn Sumac, Elderberry, Bush Honeysuckle, Serviceberry, Dogwood, Chokecherry, Ninebark, Whitch Hazel, Juniper

REFORESTATION PLANTING
Mixed deciduous woodland planting, native tree and shrub mix with species as above.

RIPARIAN PLANTING
Mix of riparian shrubs, native grasses and forbs such as Speckled Alder, Black Cherry Chokeberry, Dogwood, Elderberry, Nannyberry, Bebb's Willow, Pussy Willow, Soft Rush, Cattail, and Sedges.

WILDFLOWER MEADOW
Mix of native grasses and perennials such as Big Bluestem, Canada Wild Rye, Switch Grass, Indian Grass, Little Bluestem, Prairie Dropseed, Azure Aster, Butterfly Weed, Common Mountain Mint, Golden Alexander, Giant Hyssop, Pearly Everlasting, Wild Columbine, Swamp Milkweed, Purple Coneflower, Joe Pye Weed, Yellow Coneflower, Black Eyed Susan

NOISE ATTENUATION BARRIER

LIMESTONE BLOCK WALL

SPECIALITY PAVING

GENERAL LOCATION FOR WILDLIFE MICRO-HABITAT

THIRD CROSSING OF THE CATARAQUI RIVER
PRELIMINARY DESIGN

LANDSCAPE LAYOUT - WEST

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering and Deputy Commissioner	*Project Engineer*

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

CSW

KINGSTON

Project No.:	27143
Drawing No.:	L101
Sheet No.:	of
Des: SE	Chk'd: ML
Dwn: SE	Chk'd: ML
Scale:	1:750
Utility Circ. No.	111222333
Code:	CAN/CSA-S6-06
Load:	CL625ONT

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

REVISIONS

No.	Description	By	Date (dd/mm/yy)
01	ISSUED FOR PRELIMINARY DESIGN REPORT	SE	3 MAY 2017

0 10 25 50 100 200 Meters

LEGEND:

EXISTING WOODLOT

EXISTING TREES

PROPOSED TREES
Specimen tree planting at 3m to 4.5m height (2m conifers).
Typical native tree species:
Shagbark Hickory, Red Oak, Pin Oak, Red Maple, Sugar Maple, Hackberry, Serviceberry, White Pine, White Spruce, Blue Spruce

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Typical species: Fragrant Sumac, Staghorn Sumac, Elderberry, Bush Honeysuckle, Serviceberry, Dogwood, Chokecherry, Ninebark, Whitch Hazel, Juniper

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NOISE ATTENUATION BARRIER

LIMESTONE BLOCK WALL

SPECIALITY PAVING

GENERAL LOCATION FOR WILDLIFE MICRO-HABITAT

CATARAQUI RIVER
OBSERVATION NODE
- POSSIBLE INTERPRETIVE AREAS FOR RIVER ECOLOGY, RIDEAU CANAL AND FIRST NATIONS HISTORY
TURTLE NESTING
3m WIDE RECREATION PATH
2m WIDE STONEDUST PATH
DUCK BOXES
LAYDOWN AREA LIMIT
STORM WATER (DRY POND)
TURTLE NESTING
BAT HOUSES
SNAKE HIBERNACULA
MEADOW
LOG BANK STABILIZATION
SNAKE HIBERNACULA
WIDEN LINES-OF-SIGHT TO EXPOSE VIEWS OF RIVER
3m WIDE RECREATION PATH
DUCK BOXES
ACCESSIBLE ROUTE TO WATERFRONT (VIA KENWOODS CIRCLE)
1.5m HEIGHT TRANSPARENT NOISE BARRIER
SEATING WALL
2.75 m HEIGHT SOLID NOISE BARRIER GATEWAY FEATURE AND COMMUNITY GARDEN
POINT ST. MARK DRIVE
2.75 m HEIGHT SOLID NOISE BARRIER
GORE ROAD
BARN
PUBLIC LIBRARY
HIGHWAY No. 15
REINSTATE EXISTING DOG PARK
TEMPORARY HOARDING DURING CONSTRUCTION
RETAIN AND PROTECT EXISTING COMMUNITY GARDENS
PROPOSED PARKING
REMOVAL AND RECONSTRUCTION OF AFFECTED PORTION OF STONE WALL
1.5m WIDE SIDEWALK
POTENTIAL MUP EAST SIDE OF HWY 15
3m WIDE MULTI-USE PATH

THIRD CROSSING OF THE CATARAQUI RIVER
PRELIMINARY DESIGN

LANDSCAPE LAYOUT - EAST

Mark Van Buren, P.Eng. — Director of Engineering and Deputy Commissioner
Dan Franco, P.Eng. — Project Engineer
J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS
PARSONS
CSW

KINGSTON

Project No.: 27143
Drawing No.: L100
Sheet No.: - of -

Des:	Chk'd:
SE	ML
Dwn:	Chk'd:
SE	ML

Scale: AS NOTED
Utility Circ. No.: 111222333
Code: CAN/CSA-S6-06
Load: CL625ONT

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REVISIONS

No.	Description	By	Date (dd/mm/yy)
01	ISSUED FOR PRELIMINARY DESIGN REPORT	SE	3 MAY 2017

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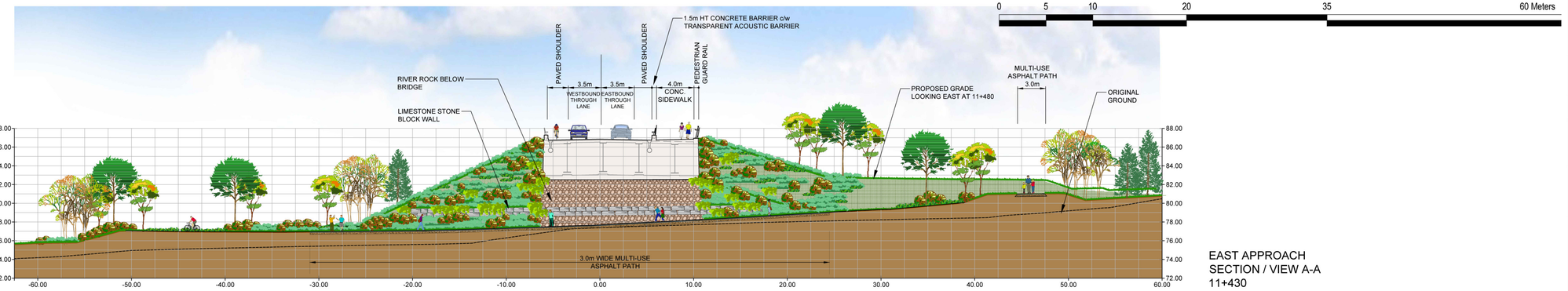
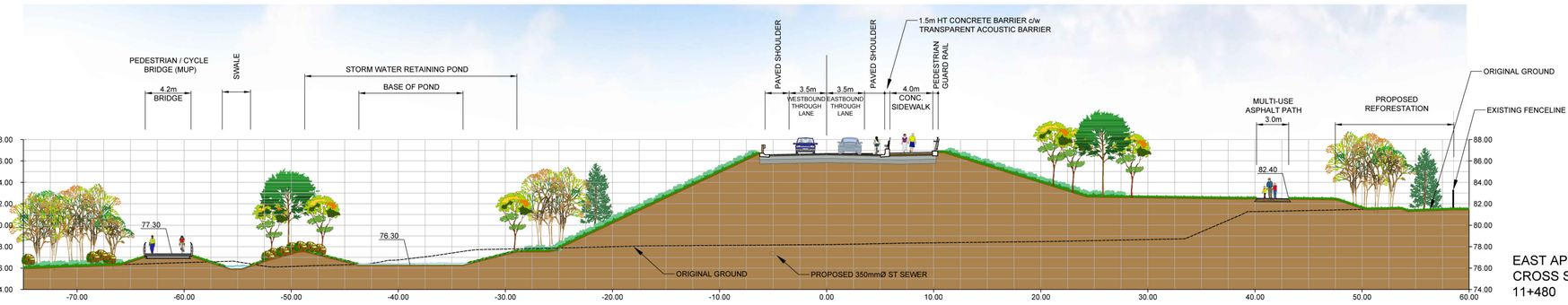
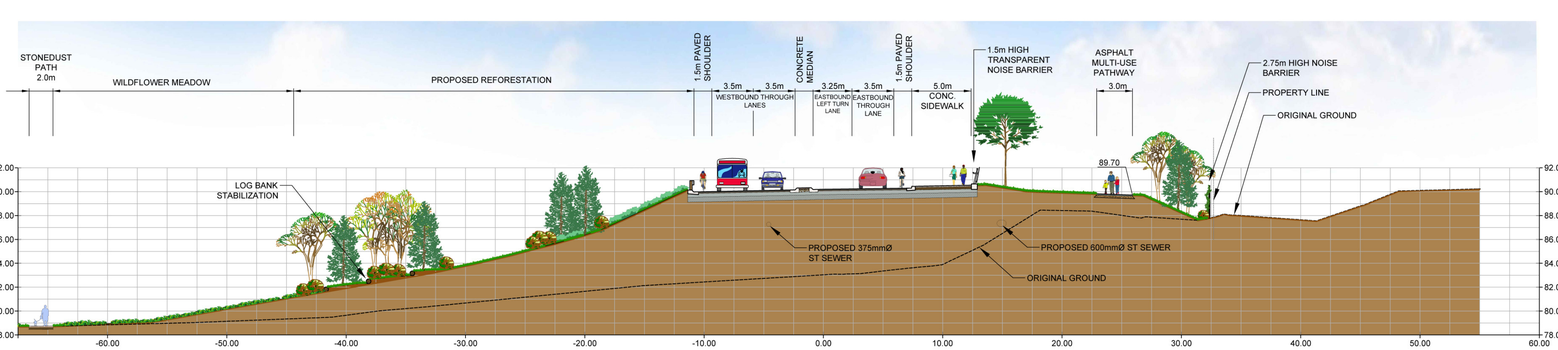


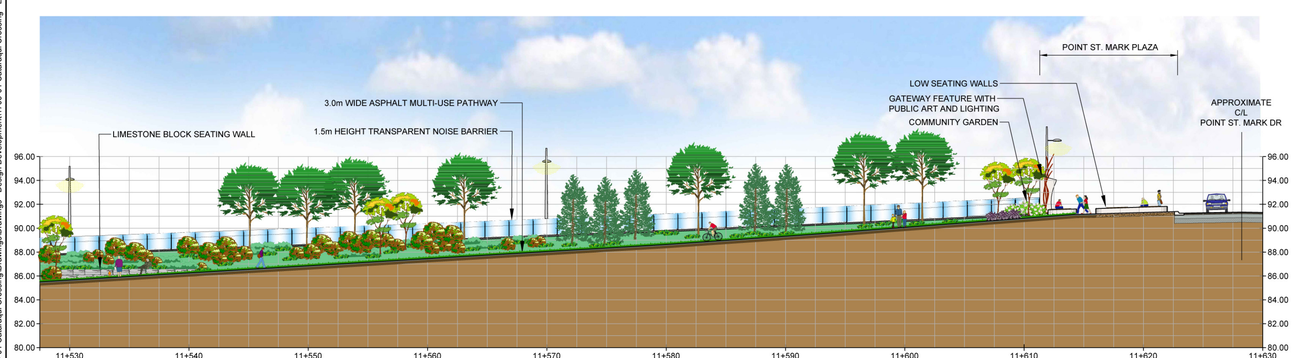
EAST APPROACH
SECTION / VIEW A-A
11+430



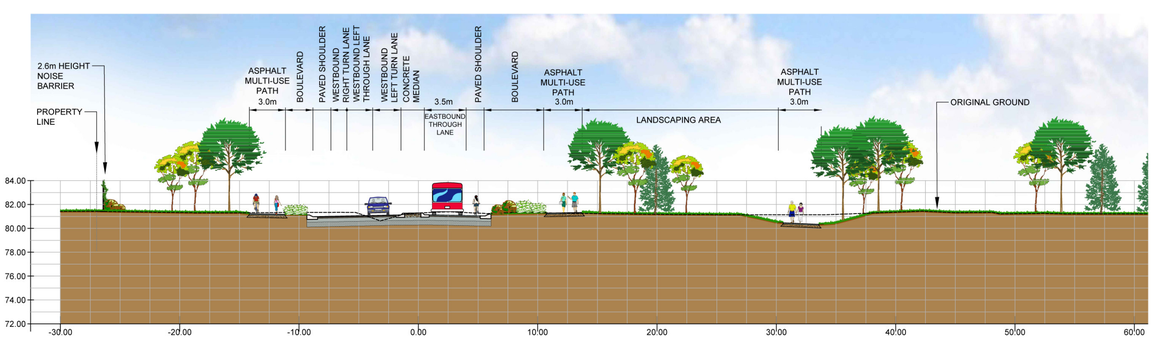
EAST APPROACH
CROSS SECTION B-B
11+480



EAST APPROACH
CROSS SECTION C-C
11+600



EAST APPROACH - POINT ST. MARK PLAZA - ELEVATION D-D



WEST APPROACH CROSS SECTION A-A 10+190

THIRD CROSSING OF THE CATARAQUI RIVER
PRELIMINARY DESIGN

LANDSCAPE CROSS SECTIONS

Mark Van Buren, P.Eng.	Dan Franco, P.Eng.
Director of Engineering and Deputy Commissioner	*Project Engineer*

KINGSTON

J.L.Richards ENGINEERS · ARCHITECTS · PLANNERS

PARSONS

CSW

Project No.:	27143
Drawing No.:	L200
Sheet No.:	- of -
Des: SE	Chk'd: ML
Dwn: SE	Chk'd: ML
Scale:	AS NOTED
Utility Circ. No.	111222333
Code:	CAN/CSA-S6-06
Load:	CL625ONT

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REVISIONS

No.	Description	By	Date (dd/mm/yy)
01	ISSUED FOR PRELIMINARY DESIGN REPORT	SE	3 MAY 2017

Plot Date: 4/28/2017 12:19:05 PM
Last Saved: Friday, April 28, 2017 12:03:57 PM
Consultant's Information: C:\Projects\1705-01 Cataraqui Crossing\Drawings\Drawings - Design Development\1705-01 Cataraqui Crossing - Landscape Layout 18.dwg

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J.L.Richards
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