

CONTRACT DRAWINGS
CONTRACT NO. 2012-4014

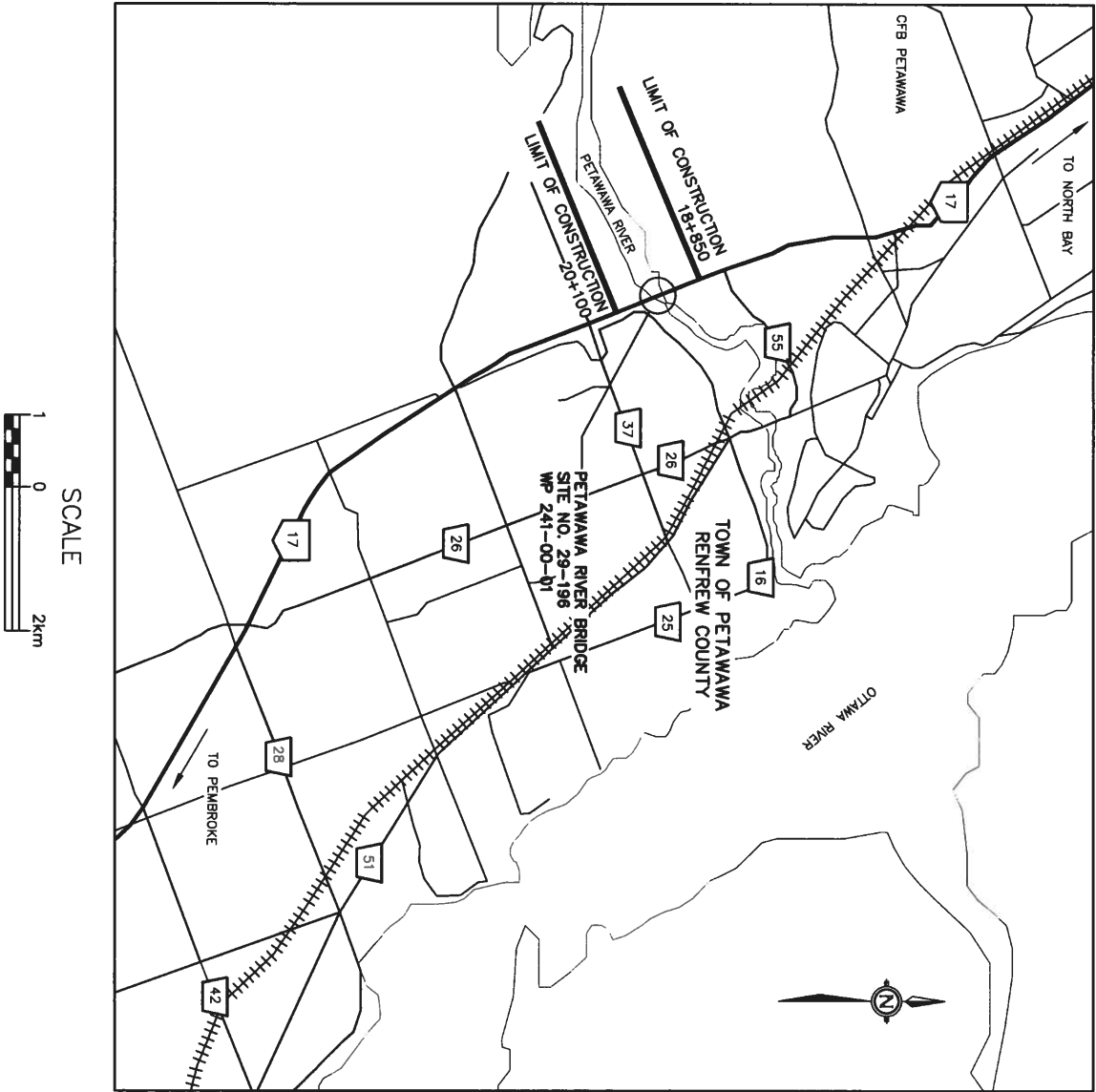
EASTERN REGION

BOOK 1 OF 1

Ministry of Transportation



Ministry of Transportation



GWP No 4059-01-00
WP No 241-00-01 Contract No 2012-4014

Work of PETAWAWA RIVER BRIDGE, STRUCTURE

REHABILITATION, SITE NO. 29-196

Hwy No 17 Region EASTERN

Location FROM 0.4km EAST OF COUNTY ROAD 55 TO
0.4km WEST OF COUNTY ROAD 37

Length 1.25 km.

Reference Plans

Date _____ Manager, Engineering _____ P. Eng.

Date _____ Regional Director _____



INDEX

W.P. No. 4059-01-00

Contract No. 2012-4014

[illegible][illegible]

Horizontal and Vertical Control

TWP Petawawa (607)
HWY 17

WOIWP 4059-01-00

Station: 18+700

607.-17/1-0

Zone MTM/Z9
To Station: 20+500

Survey Date: Apr-10

Description: Centreline Alignment for Hwy 17
Consultant Name: J. D. Barnes Limited

Date Revised: CSF 0.999932

PREPARED FOR THE MINISTRY OF TRANSPORTATION

Sdsk Point	ID	Chainage	Northing	Easting	Elevation	Distance	Offset	Description	Angle	Bear Bk	Bear AH	Curve1	Curve	Curve2
		18+700.000	5084243.647	241805.039										
522	HOT													
	BM	18+747.592	5084193.094	241806.322	144.097	47.592	17.097	RIB						
8043	HCM	18+872.854	5084085.775	241876.009	144.246	125.263	-9.035	00819800043						
12500	SIB	18+958.295	5083992.293	241871.291		85.440	29.189							
12501	SIB	18+960.281	5083984.750	241857.347		1.986	44.918							
521	BM	18+965.212	5083980.634	241886.133	145.654	4.931	15.954	RIB						
103	HCP	19+058.429	5083913.343	241944.622		93.218	-10.604							
503	BM	19+058.429	5083913.343	241944.622	145.278		-10.604	2.0m X 0.019m RIB						
12502	SIB	19+058.936	5083933.653	241998.348		0.507	-68.039							
12503	SIB	19+058.956	5083897.955	241906.432		0.019	30.566							
8042	HCM	19+243.492	5083743.737	242019.099		184.536	-18.663	00819800042						
525	BM	19+243.492	5083743.737	242019.099	145.172		-18.663							
12505	RIB	19+244.100	5083726.046	241975.202		0.608	28.661							
12504	RIB	19+247.422	5083743.952	242030.514		3.322	-29.382							
12506	RIB	19+338.461	5083673.092	242099.552		91.040	-68.102							
102	HCP	19+414.195	5083574.984	242056.092		75.734	7.914							
502	BM	19+414.195	5083574.984	242056.092	147.501		7.914	2.0m X 0.019m RIB						
8061	GBM	19+418.514	5083571.775	242059.759	147.875	4.318	5.656	00819868061						
12508	RIB	19+546.102	5083470.844	242152.330		127.588	-44.120							
12509	RIB	19+546.106	5083475.412	242164.109			-56.754							
101	HCP	19+553.162	5083451.314	242121.524		7.056	-8.335							
501	BM	19+553.162	5083451.314	242121.524	148.403		-8.335	2.0m X 0.019m RIB						
12511	SIB	19+634.709	5083361.162	242114.626		81.550	30.717	BENT						
12510	RP	19+634.776	5083396.871	242206.810		0.067	-68.141							
8041	HCM	19+666.004	5083346.900	242164.371		31.228	-10.496	00819800041						
524	BM	19+666.004	5083346.900	242164.371	148.795		-10.496							
12514	SIB	19+831.687	5083213.313	242278.087		165.683	-68.168							
520	BM	19+837.596	5083188.787	242231.231	150.711	5.909	-15.613	C.C. in Rock Outcrop						
100	HCP	19+868.138	5083158.220	242236.885		30.542	-9.823							
500	BM	19+868.138	5083158.220	242236.885	150.074		-9.823	2.0m X 0.019m RIB						
12516	SIB	20+064.323	5082986.433	242362.246		196.185	-68.147							
12515	SIB	20+064.330	5082960.688	242270.174		0.007	30.620							
8040	HCM	20+070.000	5082970.705	242311.650		5.670	-11.670	00819800040						
523	BM	20+070.000	5082970.705	242311.650	151.048		-11.670							
12518	SIB	20+279.603	5082760.548	242349.476		209.603	29.112							
12519	SIB	20+280.011	5082755.312	242337.114		0.408	42.531							
8017	HCM	20+489.766	5082579.389	242463.557	154.147	209.755	-11.686	00819800017						
	HOT	20+500.000	5082565.620	242456.366		10.233								

METRIC
DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN



PLATE No
WP 241-00-01
CONT 2012-4014



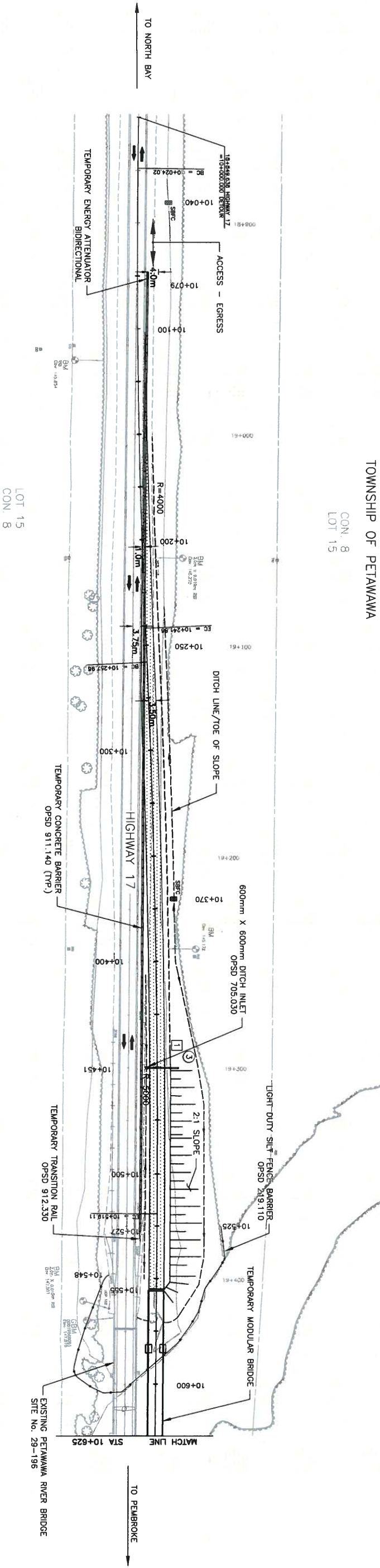
PETAWAWA RIVER BRIDGE
PRE-STAGE 1
DETOUR STA 10+000 TO STA 10+625

SHEET 02

WILKS
D.J. Wilks Associates Limited
Professional Engineers
Petawawa, Ontario
Canada, K7J 0B7
P: 705.742.2297
F: 705.741.3568
E: info@dwilks.com

Survey	
Revised	

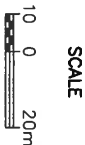
- NOTES:
1. TRAFFIC CONTROL SIGNING TO BE AS PER OTM BOOK 7
 2. TEMPORARY CONDITIONS
 3. TEMPORARY CONCRETE BARRIER TO BE ADJUSTED/SHIFTED, AS REQUIRED TO MAINTAIN WORK UNDER DAILY LANE CLOSURES.
 4. TEMPORARY CONCRETE BARRIER MUST BE RETURNED TO PROVIDE MIN 1.0m SHOULDER AT END OF DAY.



TRAFFIC STAGING	CONSTRUCTION
PRE-STAGE 1 • TRAFFIC IN ORIGINAL CONFIGURATION • DAILY SINGLE LANE CLOSURES AS REQUIRED	• CONSTRUCT DETOUR • INSTALL TEMPORARY MODULAR BRIDGE

SUPPLEMENTARY LEGEND

- ASPHALT PAVING
SILT FENCE
STRAW BALE
FLOW CHECK DAMS



HWY 17 STA 18+849.638 = STA 10+000 PETAWAWA BRIDGE DETOUR

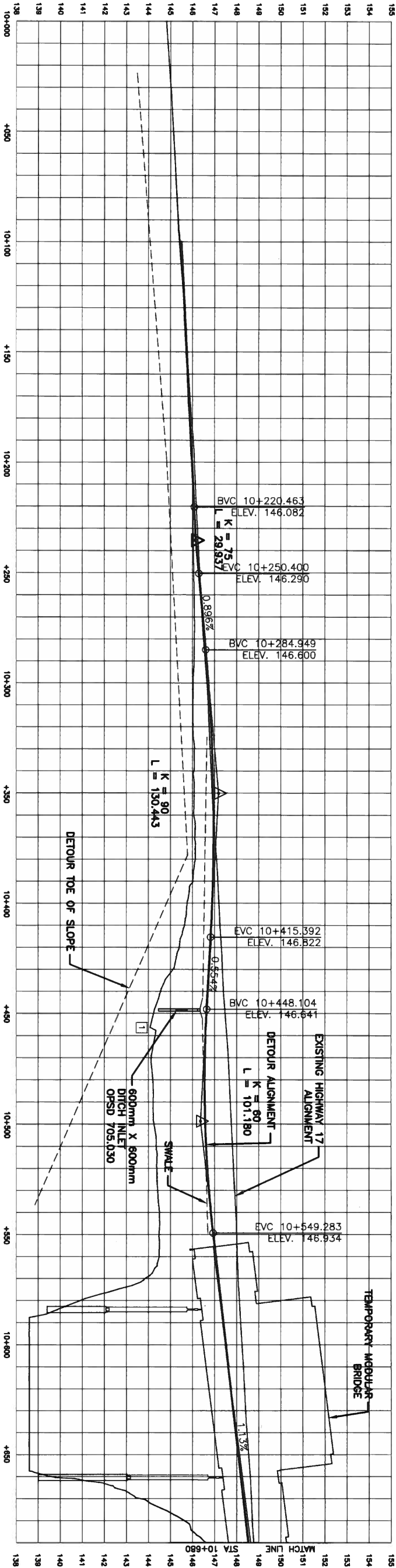
BC 10+024.02

EC 10+241.86

BC 10+257.96

R=5000

EC 10+519.11



METRIC
DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN



PLATE No
WP 241-00-01
CONT 2012-4014

PETAWAWA RIVER BRIDGE
DETOUR PROFILE
DETOUR STA 10+000 TO STA 10+680

Survey

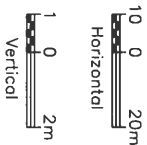
Revised

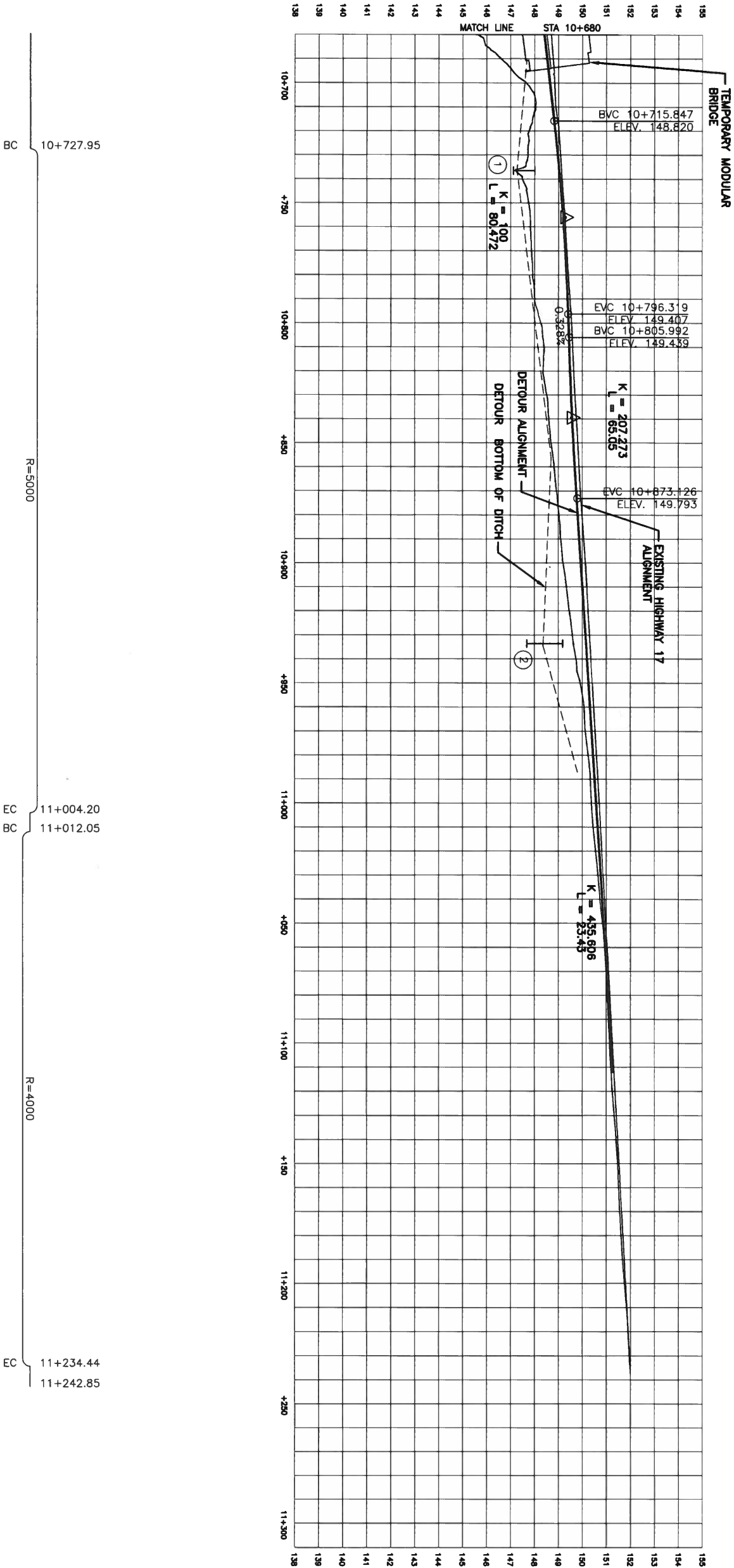
D.L.K. WILSON ASSOCIATES LTD.
80 Jamboree Drive
Burlington, Ontario
Canada L7R 4B7
P: 705.742.2297
F: 705.741.3568
E: info@dwilco.com



SHEET
04

SCALE

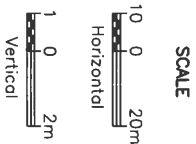




METRIC
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PLATE No	WP 241-00-01 CONT 2012-4014		
PETAWAWA RIVER BRIDGE DETOUR PROFILE			
DETOUR STA 10+680 TO STA 11+300			
Survey _____			
Revised _____			
D.M. WIS Associates Limited 150 Jamison Drive Petawawa, Ontario Canada K9J 0B9 P: 705.462.2997 F: 705.461.3568 E: info@dmwis.com			
WILLS			
SHEET 05			



METRIC
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WP 241-00-01
CONT 2012-4014



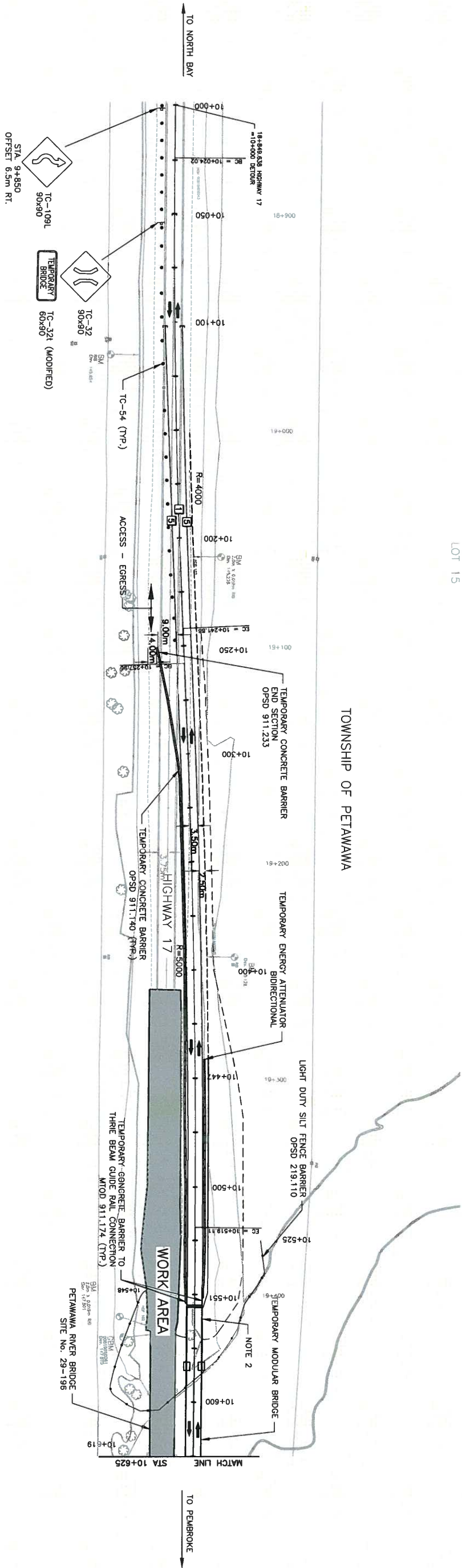
PETAWAWA RIVER BRIDGE
STAGE 1
DETOUR STA 10+000 TO STA 10+625

SHEET
06

D.J.A. Webb Associates Limited
Professional Engineer
Petawawa, Ontario
Canada, K2J 6B9
P: 705.742.2297
F: 705.741.3586
E: webb@dwjwa.com

Survey	
Revised	

- NOTES:
1. TRAFFIC CONTROL, SIGNING TO BE AS PER OTM BOOK 7
 2. TEMPORARY CONDITIONS
 3. THREE BEAM GUIDE RAIL TO BE CLAMPED TO MODULAR BRIDGE
 4. INNER TRUSS LINE PANELS AT 2.25m CENTRE TO CENTRE USING WOOD OR PLASTIC STANDOFF BLOCKS, PER BRIDGE SUPPLIER INSTRUCTION.
 5. DETOUR PAVEMENT MARKINGS TO BE PLACED PRIOR TO OPENING DETOUR TO TRAFFIC



TRAFFIC STAGING	CONSTRUCTION
STAGE 1 • TRAFFIC SHIFTED ONTO DETOUR	• RELOCATE TEMPORARY CONCRETE BARRIER • OBLITERATE EXISTING PAVEMENT MARKINGS, PLACE NEW • TEMPORARY PAVEMENT MARKINGS • SHIFT TRAFFIC ONTO DETOUR • REHABILITATE PETAWAWA RIVER BRIDGE

SUPPLEMENTARY LEGEND

— SILT FENCE



PAVEMENT MARKINGS
AS PER MTD 101.070

SCALE

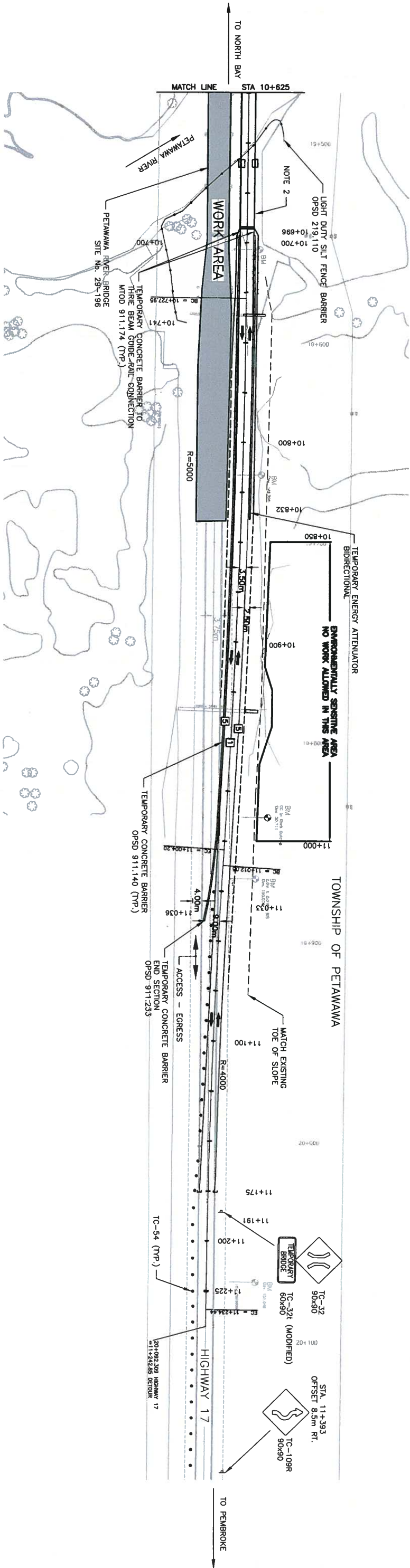


TRAFFIC STAGING	CONSTRUCTION
STAGE 1 • TRAFFIC SHIFTED ONTO DETOUR	• RELOCATE TEMPORARY CONCRETE BARRIER • OBLITERATE EXISTING PAVEMENT MARKINGS, PLACE NEW • TEMPORARY PAVEMENT MARKINGS • SHIFT TRAFFIC ONTO DETOUR • REHABILITATE PETAWAWA RIVER BRIDGE

SUPPLEMENTARY LEGEND

— SILT FENCE
[] PAVEMENT MARKINGS
AS PER MTO 101.070

SCALE



- NOTES:
1. TRAFFIC CONTROL, SIGNING TO BE AS PER OTM BOOK 7
 2. TEMPORARY CONDITIONS
 3. THREE BEAM GUIDE RAIL TO BE CLAMPED TO MODULAR BRIDGE INNER TRUSS LINE PANELS AT 2.25m CENTRE TO CENTRE USING WOOD OR PLASTIC STANDOFF BLOCKS, PER BRIDGE SUPPLIER INSTRUCTION.
 3. DETOUR PAVEMENT MARKINGS TO BE PLACED PRIOR TO OPENING DETOUR TO TRAFFIC



METRIC
DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

PLATE No	WP 241-00-01	
	CONT 2012-4014	
PETAWAWA RIVER BRIDGE	STAGE 1	SHEET 07
DETOUR STA 10+625 TO STA 11+300		
Survey	Revised	
D.M. Wills Associates Limited Professional Engineers Petawawa, Ontario Canada K9V 1B7 P. 705.742.2987 F. 705.741.3566 E. info@dmwills.com		

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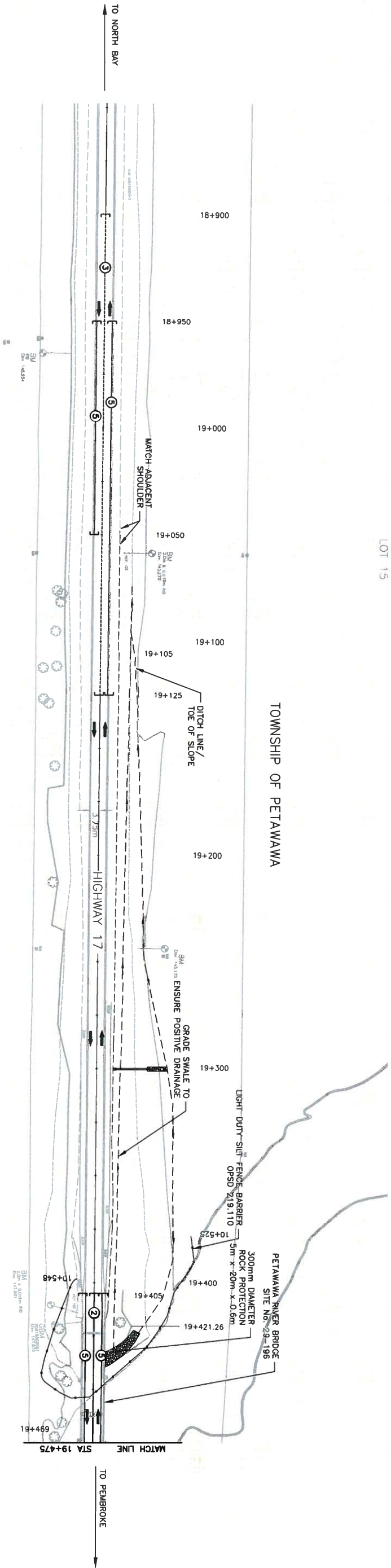
PLATE No
WP 241-00-01
CONT 2012-4014



PETAWAWA RIVER BRIDGE
FINAL CONFIGURATION
DETOUR STA 18+850 TO STA 19+475

SHEET 08

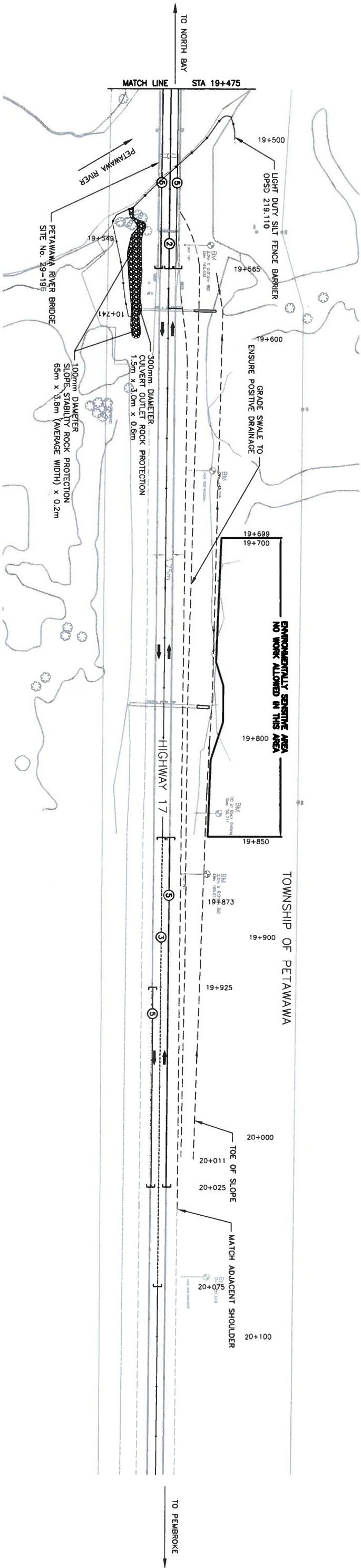
WILLS
D.L.K. Wills Associates Limited
Professional Engineer
Ontario
Canada, E3189
P: 705.742.2297
F: 705.741.3566
E: wilks@wills.com



TRAFFIC STAGING	CONSTRUCTION
<ul style="list-style-type: none">FINAL CONFIGURATIONTRAFFIC SHIFTED TO ORIGINAL CONFIGURATION ON HIGHWAY 17	<ul style="list-style-type: none">OBTERATE TEMPORARY PAVEMENT MARKINGS, PLACE NEWPERMANENT PAVEMENT MARKINGS (MATCH ORIGINAL CONDITIONS)TEMPORARY CONCRETE BARRIERREGRADE DETOUR PLATFORM

SUPPLEMENTARY LEGEND
— SILT FENCE
[] PAVEMENT MARKINGS
AS PER MTOD 101.070

SCALE
10 0 20m

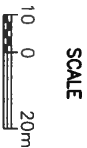


TRAFFIC STAGING	CONSTRUCTION
<ul style="list-style-type: none">FINAL CONFIGURATIONTRAFFIC SHIFTED TO ORIGINAL CONFIGURATION ON HIGHWAY 17	<ul style="list-style-type: none">OBLITERATE TEMPORARY PAVEMENT MARKINGS, PLACE NEW PERMANENT PAVEMENT MARKINGS (MATCH ORIGINAL CONDITIONS)REMOVE TEMPORARY MODULAR BRIDGE, DETOUR ASPHALT AND REGRADE DETOUR PLATFORM

SUPPLEMENTARY LEGEND

— SILT FENCE

□ PAVEMENT MARKINGS AS PER MTD 101.070



METRIC

DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN

PLATE No	WP 241-00-01	
	CONT 2012-4014	
	PETAWAWA RIVER BRIDGE	
	FINAL CONFIGURATION	
DETOUR STA 19+475 TO STA 20+170		SHEET 09
Survey		
Revised		
 D.J.M. Wilcox Associates Limited 1000 Highway 10 Pembroke, Ontario Canada K9J 1A9 P: 705.742.2297 F: 705.741.3544 E: info@wilcox.com		

SUPPLEMENTARY LEGEND

- GUIDE RAIL REMOVAL
- CONCRETE CURB REMOVAL
- REMOVAL OF ASPHALT PAVEMENT PARTIAL DEPTH
- REMOVAL OF ASPHALT PAVEMENT
- REMOVAL OF ASPHALT PAVEMENT FROM CONCRETE SURFACES
- CLEARING AND GRUBBING
- CLOSE CUT CLEARING

METRIC

DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN



PLATE No

WP 241-00-01
CONT 2012-4014

PETAWAWA RIVER BRIDGE
REMOVALS

STA 19+230 TO STA 19+475

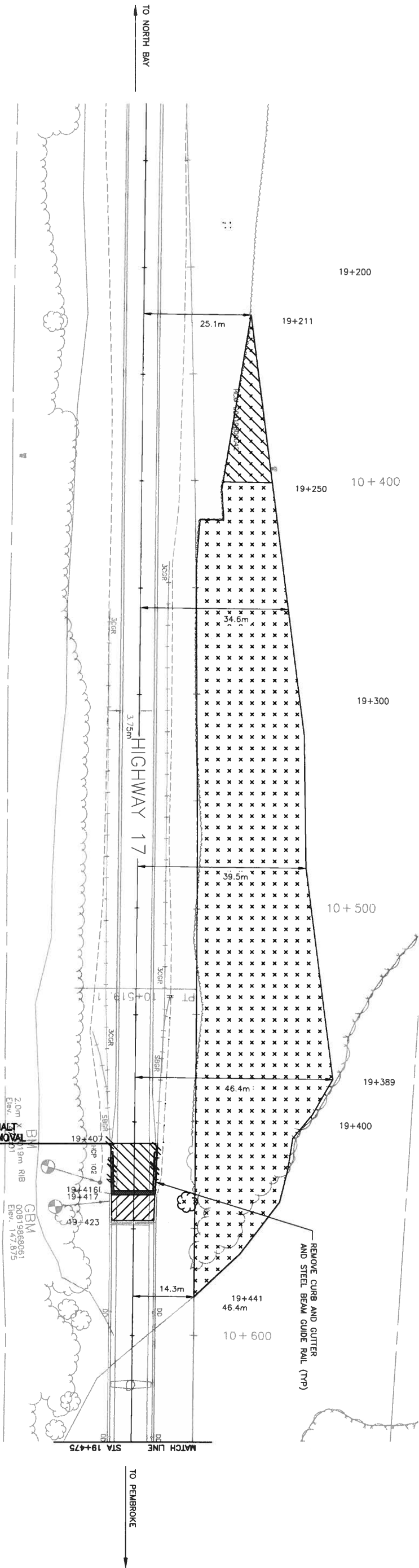
Survey

Revised

D.L.K. WILSON ASSOCIATES LTD.
100 JENNIFER DRIVE
PETAWAWA, ONTARIO
CANADA K9J 1B9
P: 705.742.2297
F: 705.741.3268
E: wilson@wilson.ca



SHEET
10



SCALE

5 0 10m

SUPPLEMENTARY LEGEND

- GUIDE RAIL REMOVAL
- CONCRETE CURB REMOVAL
- REMOVAL OF ASPHALT PAVEMENT PARTIAL DEPTH
- REMOVAL OF ASPHALT PAVEMENT
- REMOVAL OF ASPHALT PAVEMENT FROM CONCRETE SURFACES
- CLEARING AND GRUBBING
- CLOSE CUT CLEARING

METRIC

DIMENSIONS ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE SHOWN



PLATE No

WP 241-00-01
CONT 2012-4014

PETAWAWA RIVER BRIDGE
REMOVALS

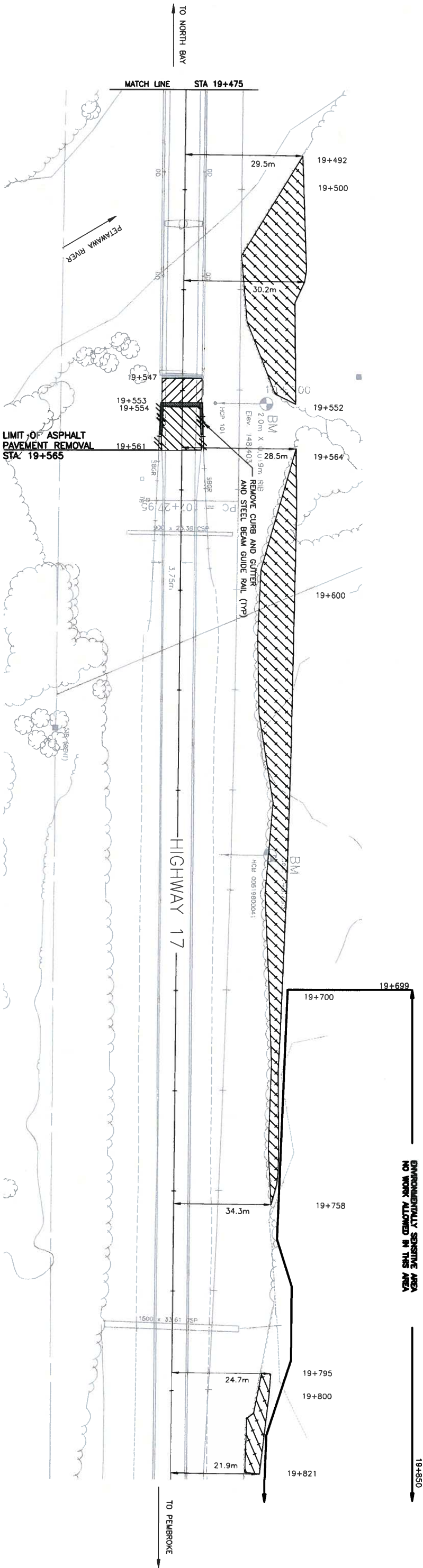
STA 19+475 TO STA 19+620

Survey

Revised

D.K. WEBB Associates Limited
100 Innovation Drive
Mississauga, Ontario L4V 1V6
Canada, M7J 1B9
P: 705.462.2297
F: 705.741.3868
E: info@dkwa.com

SHEET
11



SCALE



ASPHALT PAVEMENT

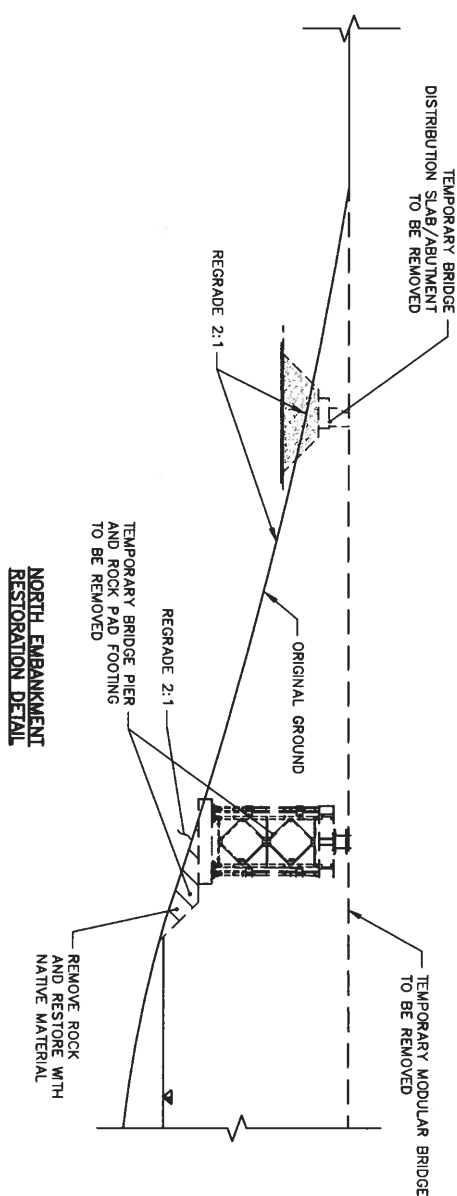


12 SHEET

D.M. Wells Associates Limited
150 Jamieson Drive
Peterborough, Ontario
Canada K9J 0B9
P. 705.742.2297
F. 705.741.3568
E. info@dmwells.com

NOTES:

1. SEE STRUCTURAL DRAWINGS FOR ABUTMENT SLOPE
EMBANKMENT PROTECTION DETAILS AND LIMITS



SCALE



SUPPLEMENTARY LEGEND
 ASPHALT PAVEMENT



METRIC
DIMENSIONS ARE IN METRES
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UNLESS OTHERWISE SHOWN

PLATE No
WP 241-00-01
CONT 2012-4014

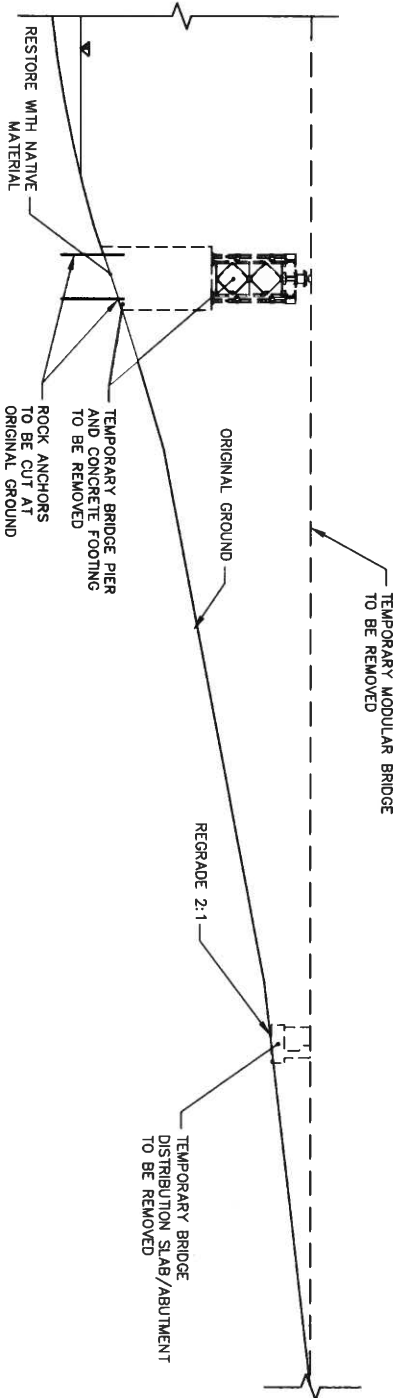
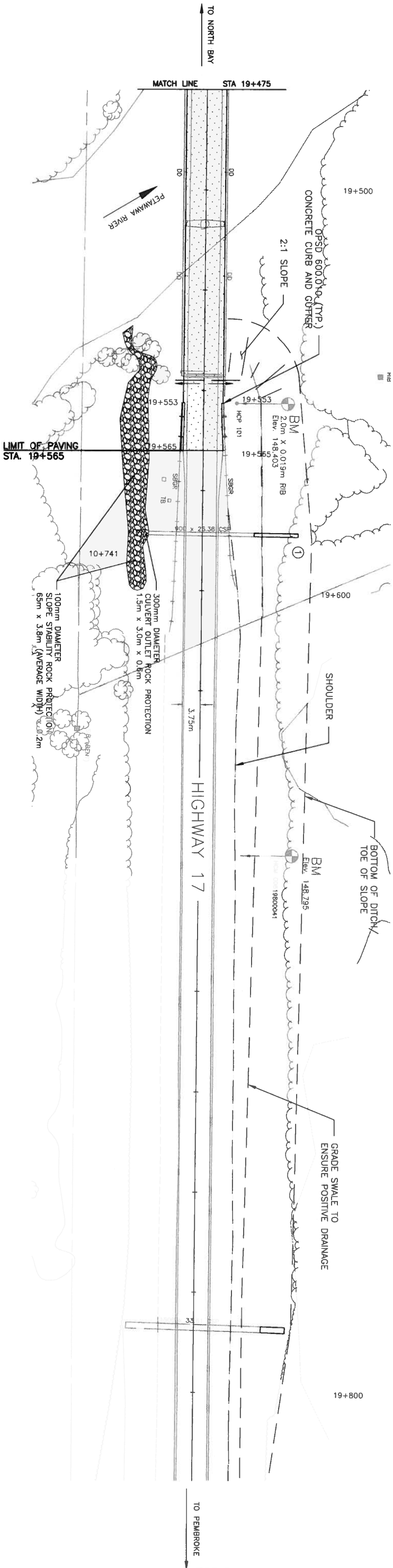


PETAWAWA RIVER BRIDGE
NEW CONSTRUCTION
STA 19+475 TO STA 20+170

SHEET
13

W
MILLER
D.L. WEBB Associates Limited
150 Somerset Drive
Somerset, Ontario
Canada, N0T 1B7
P: 705.462.2977
F: 705.741.3668
E: webb@dwwebb.com

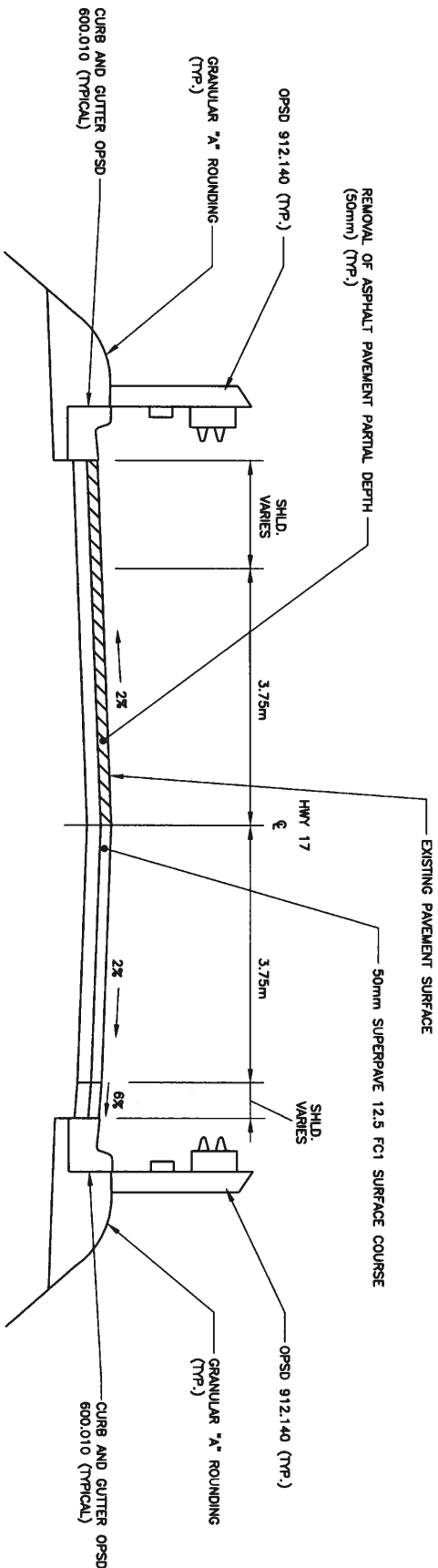
NOTES:
1. SEE STRUCTURAL DRAWINGS FOR ABUTMENT SLOPE
EMBANKMENT PROTECTION DETAILS AND LIMITS



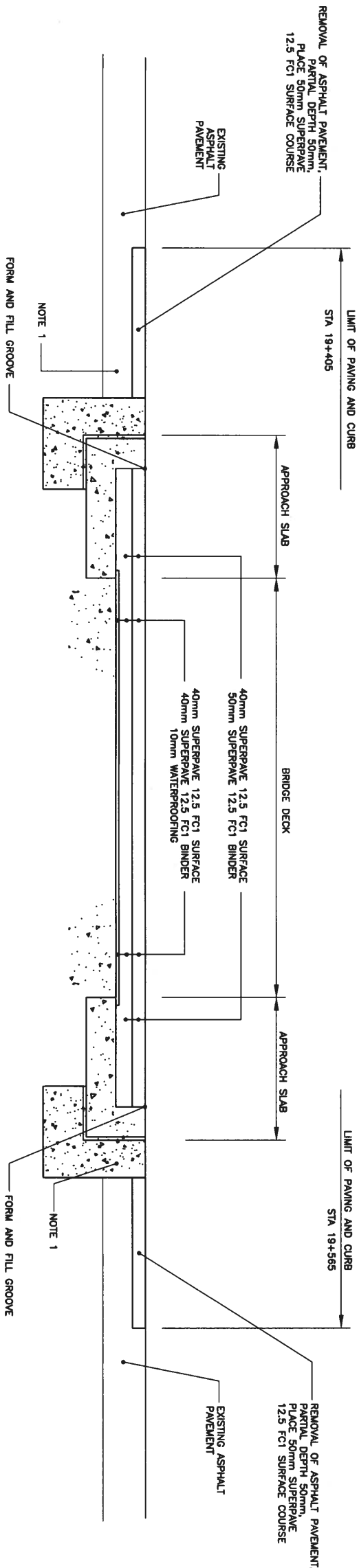


METRIC
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PLATE No	WP 241-00-01 CONT 2012-4014	
TYPICAL SECTIONS	SHEET 14	
D.A. Wilsa Associates Limited 150 Lakeshore Blvd. East Scarborough, Ontario Canada M1S 1B9 P: 705.442.2297 F: 705.441.3668 E: wilsa@wilsa.com		



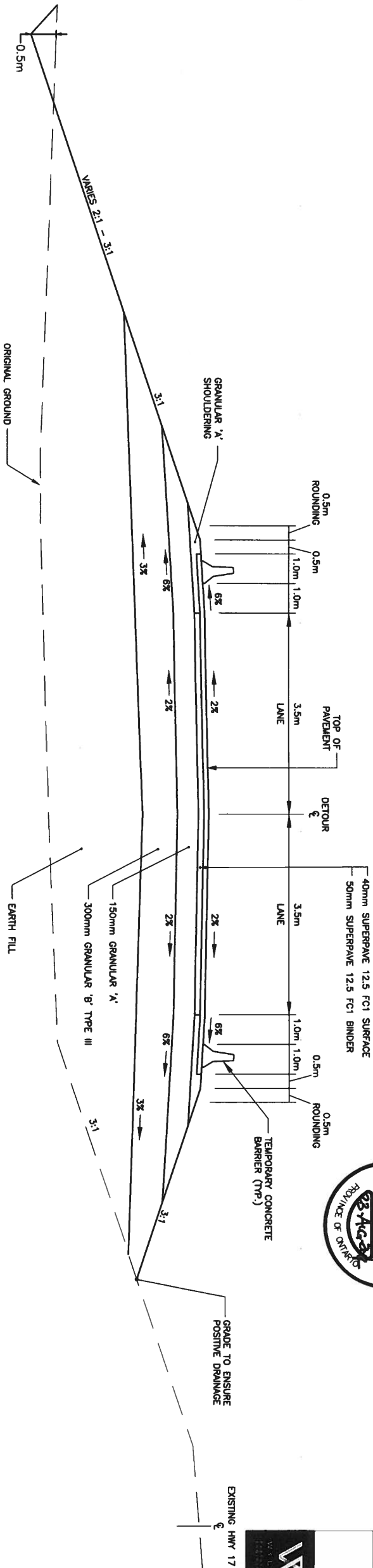
TYPICAL HIGHWAY 17 CURB SECTIONS
 STA. 19+405 TO 19+416
 STA. 19+554 TO 19+565



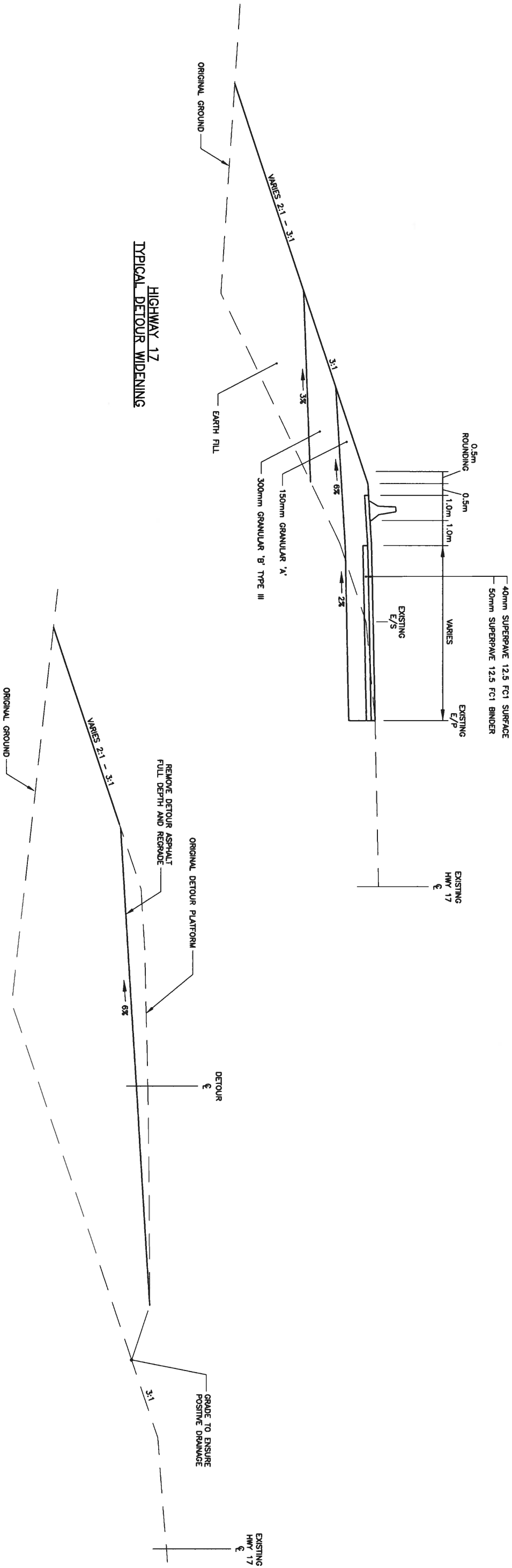
TYPICAL TRANSITION TREATMENT
 AT PETAWAWA RIVER BRIDGE

NOTE:
 1. SEE STRUCTURAL DRAWING FOR DETAILS AT APPROACH SLABS.

N.T.S.



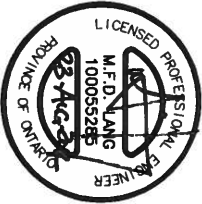
HIGHWAY 17
TYPICAL DETOUR CROSS SECTION



HIGHWAY 17
TYPICAL DETOUR WIDENING

HIGHWAY 17
TYPICAL FINAL DETOUR CONFIGURATION

N.T.S.



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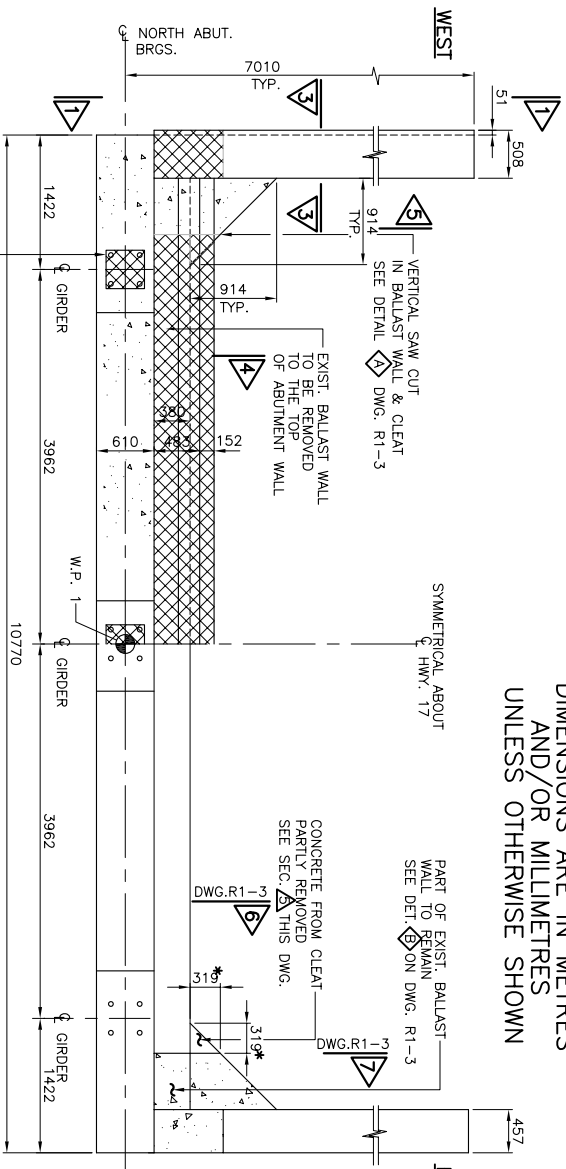


PLATE No
WP 241-00-01
CONT 2012-4014

TYPICAL SECTIONS

SHEET
15

METRIC
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UNLESS OTHERWISE SHOWN

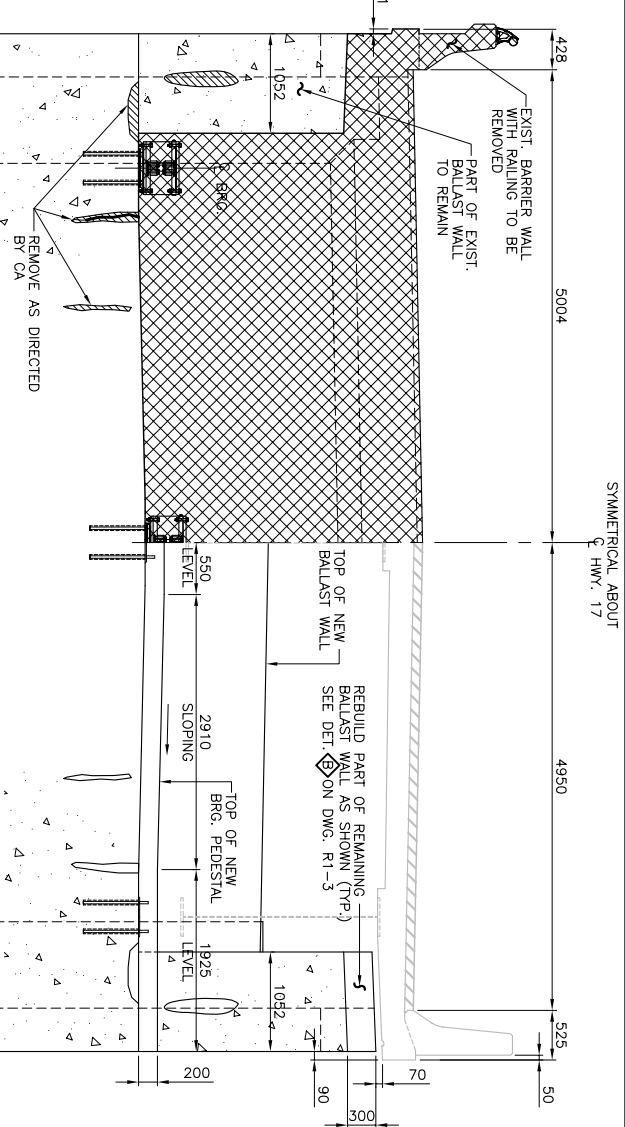


EXIST. BEARINGS TO BE REMOVED.
IF POSSIBLE RETAIN BRG. ANCHOR
BOLTS FROM ABUTMENT-DO NOT CUT (TYP.)

EXISTING *SEE NOTE 2.

PLAN
SCALE 1:40

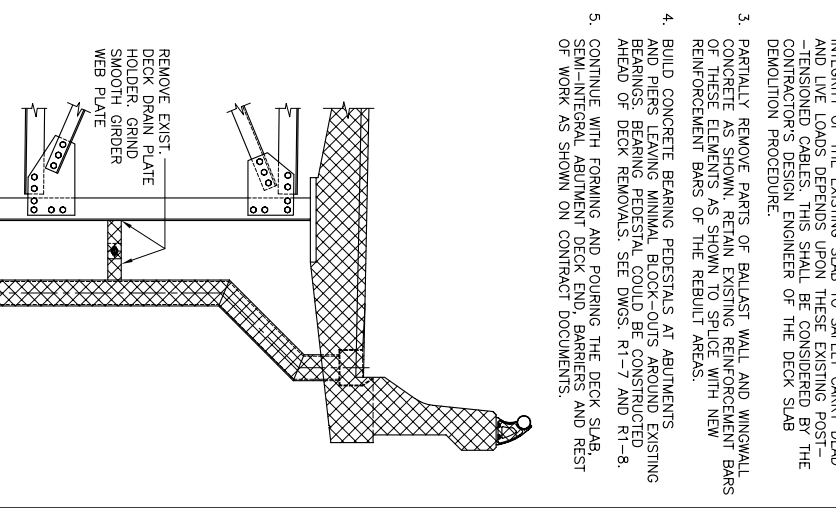
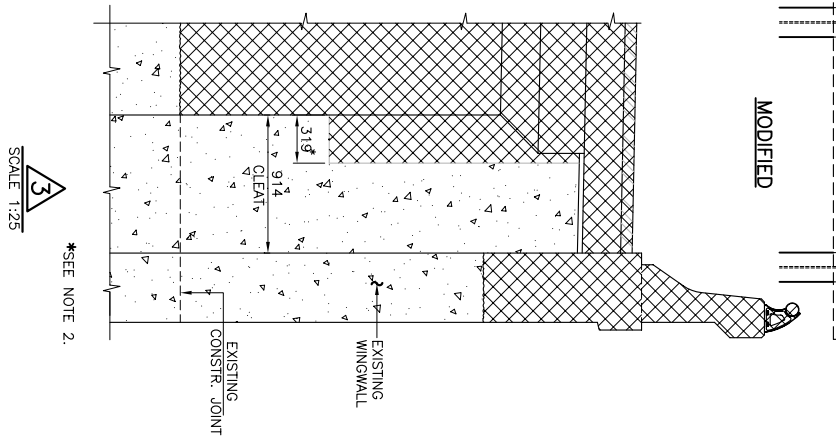
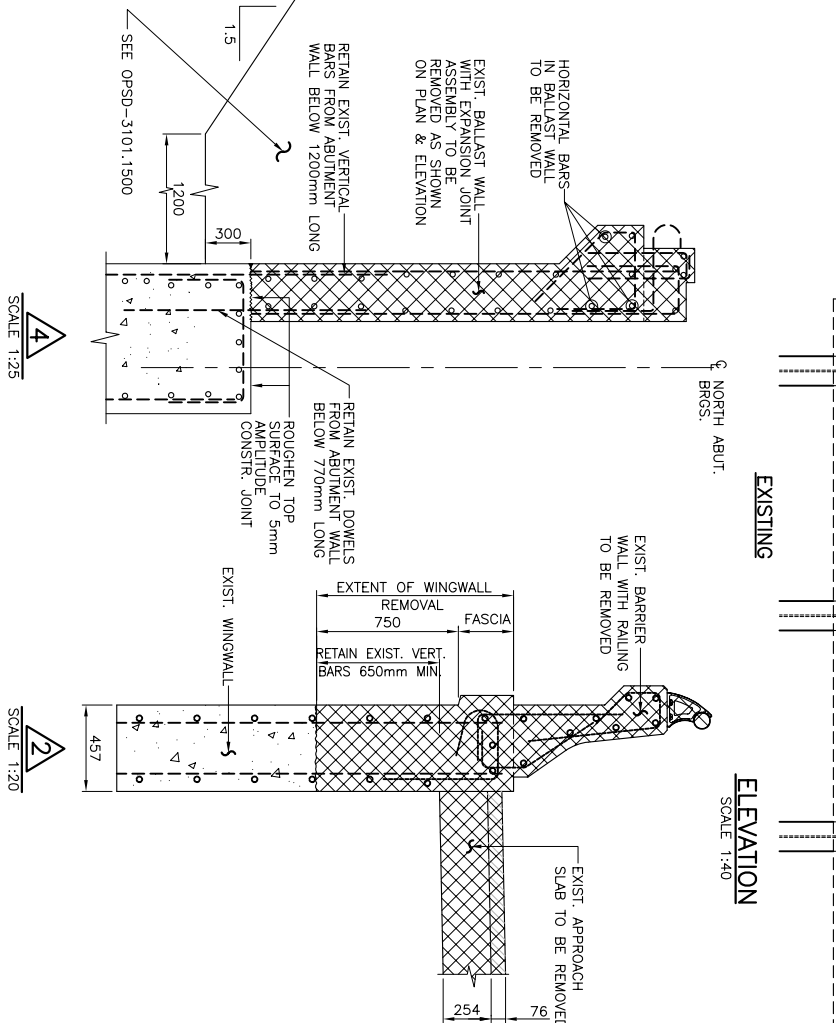
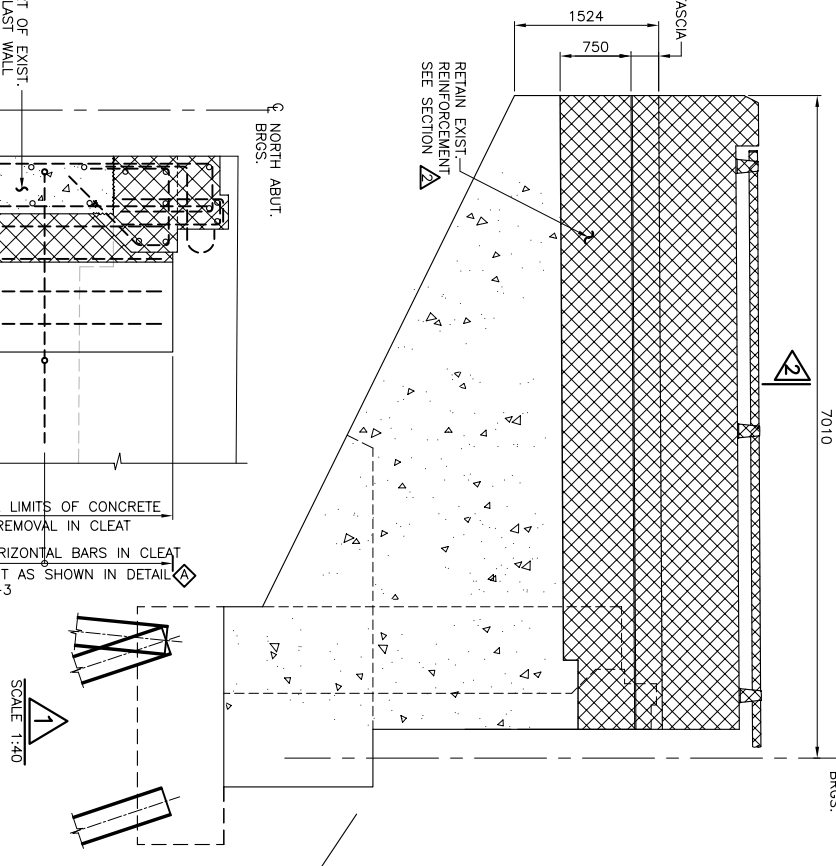
MODIFIED



EXISTING

ELEVATION
SCALE 1:40

MODIFIED



DECK DRAIN REMOVAL DETAIL
SCALE 1:25

LEGEND

CONCRETE REMOVAL

EXIST. CONCRETE

CONCRETE TO BE REPAIRED

NEW CONCRETE

EXISTING REBAR

DRAWING NOT TO BE SCALED
100 mm ON ORIGINAL DRAWING

REVISIONS			
DESIGN M.M.	CHK S.U.	CODE	DESCRIPTION
DRAWN A.P.	CHK M.M.	SITE	29-196
DATE JUNE 2012			
DWG			
R1-2			

CONT 2012-4014
WP No 4059-01-00

HIGHWAY 17
PETAWAWA RIVER BRIDGE
REHABILITATION
NORTH ABUTMENT
REMOVALS

SHEET
17

Ontario
Ministry of Transportation
Highway Standards Branch
Bridge Office

NOTES:

- THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING R1-3.
- ADJUST DIMENSIONS BASED ON AS-BUILT CONDITION SO THAT 70mm GAP IS LEFT BETWEEN VERTICAL FACE OF CUT CLEAT AND SIDE FACE OF NEW SEMI-INTEGRAL DECK OVERHANG OVER BALLAST WALL.

CONSTRUCTION SEQUENCE

- TAKE ELEVATIONS OF THE EXISTING CONCRETE DECK SLAB AT THE INTERSECTION OF THE BRIDGE CENTRELINE LONGITUDINALLY AND THE CENTRELINE OF THE BEARINGS OF THE ABUTMENTS AND PIERS TRANSVERSELY. SUBMIT ELEVATIONS TO THE CONTRACT ADMINISTRATION'S BUSINESS DAYS PRIOR TO THE START OF THE DECK SLAB REMOVAL OPERATIONS.
- FULLY REMOVE THE EXISTING BRIDGE DECK SLAB, TRAFFIC BARRIERS, APPROACH SLABS AND DECK DRAINS. THE CONTRACTOR IS REMINDED THAT THE EXISTING DECK SLAB IS POST-TENSIONED OVER THE PIERS AND CENTRE SPAN AS SHOWN ON THE EXISTING BRIDGE DRAWINGS. STRUCTURAL INTEGRITY OF THE EXISTING SLAB TO SAFELY CARRY DEAD AND LIVE LOADS DEPENDS UPON THESE EXISTING POST-TENSIONED CABLES. THIS SHALL BE CONSIDERED BY THE CONTRACTOR'S DESIGN ENGINEER OF THE DECK SLAB DEMOLITION PROCEDURE.
- PARTIALLY REMOVE PARTS OF BALLAST WALL AND WINGWALL OF THESE ELEMENTS AS SHOWN TO SPICE WITH NEW REINFORCEMENT BARS OF THE REBUILT AREAS.
- BUILD CONCRETE BEARING PEDESTALS AT ABUTMENTS AND PIERS LEAVING MINIMAL BLOCK-OUTS AROUND EXISTING BEARINGS. BEARING PEDESTALS SHOULD BE CONSTRUCTED AHEAD OF DECK REMOVALS. SEE DWGS. R1-7 AND R1-8.
- CONTINUE WITH FORMING AND POURING THE DECK SLAB, SEMI-INTEGRAL ABUTMENT DECK END, BARRIERS AND REST OF WORK AS SHOWN ON CONTRACT DOCUMENTS.

METRIC
DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

CONT 2012-4014
WP No 4059-01-00

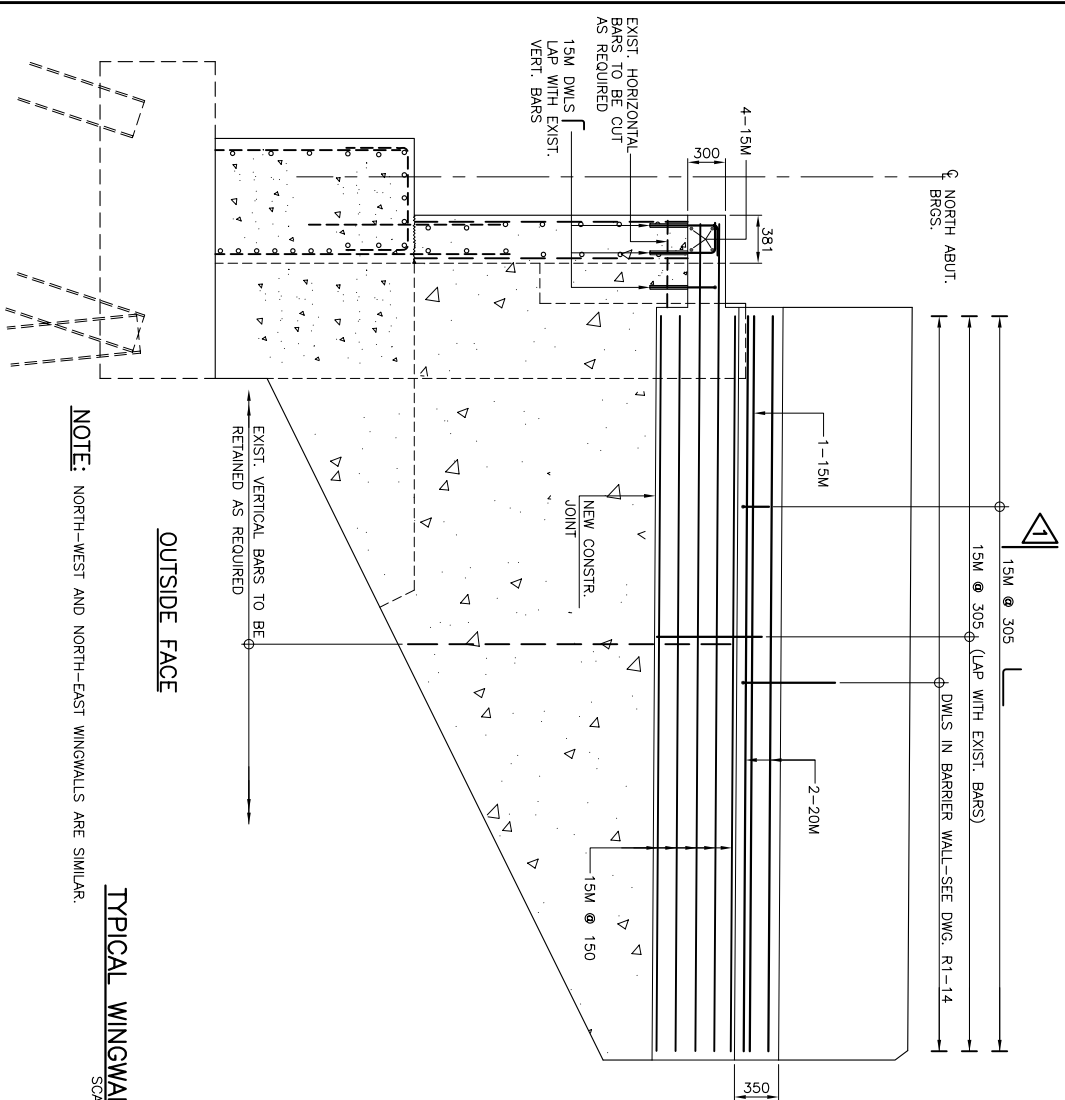
HIGHWAY 17
PETAWAWA RIVER BRIDGE
REHABILITATION
AND WINGWALLS
REPAIR DETAILS

SHEET
18

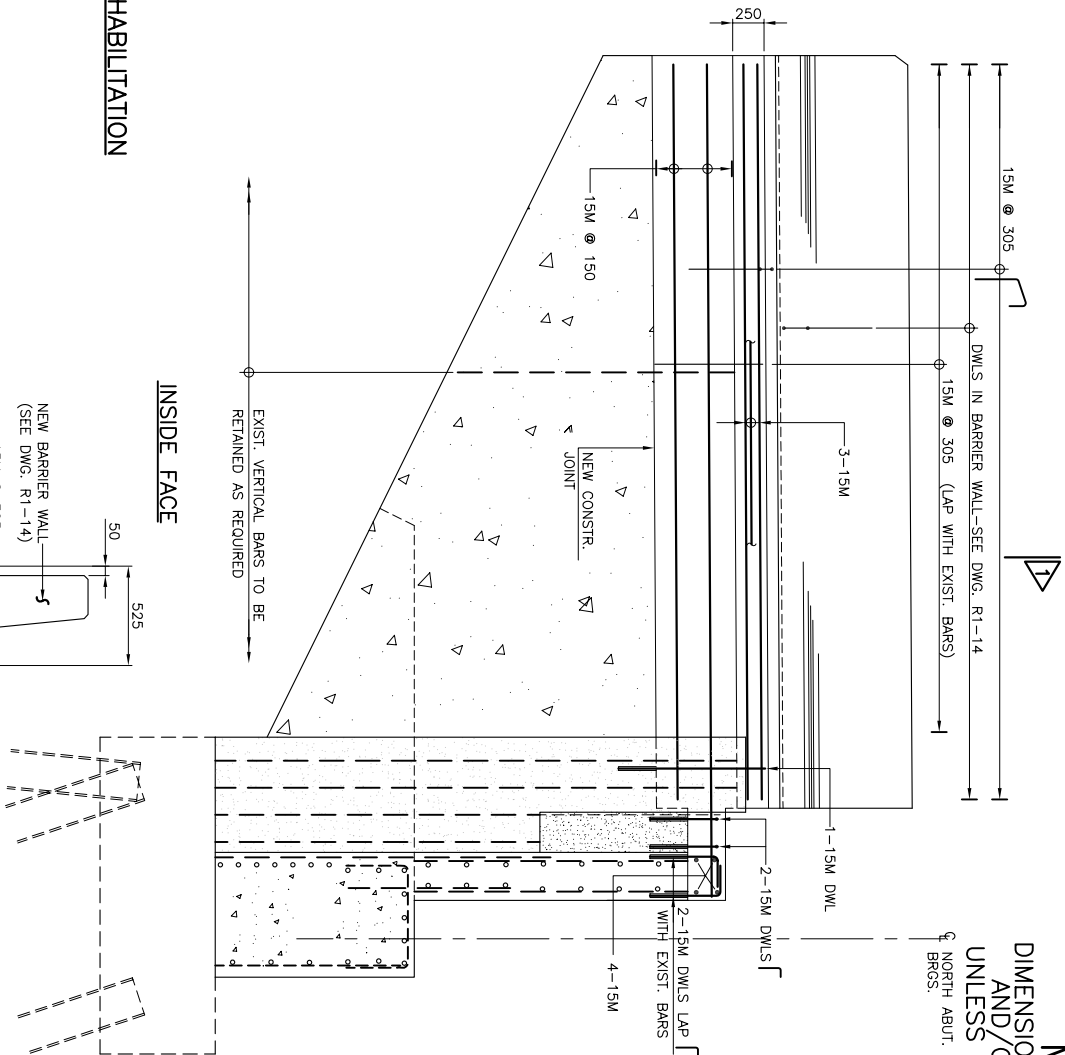
Ministry of Transportation
Highway Standards Branch
Bridge Office

NOTES:

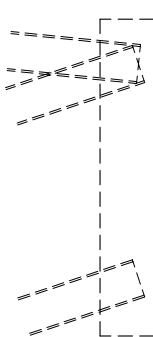
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH
DRAWINGS R1-2 AND R1-10.



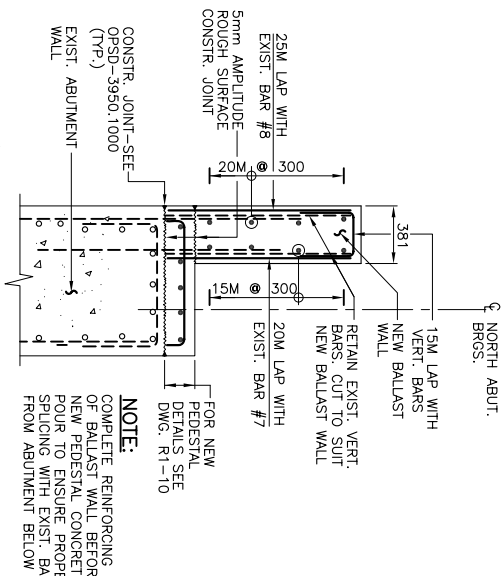
TYPICAL WINGWALL REHABILITATION
SCALE 1:30



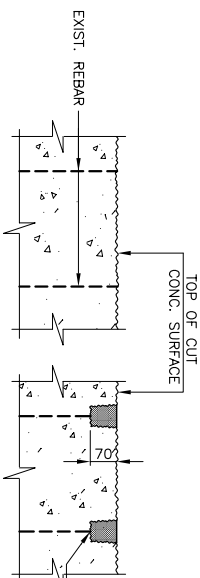
INSIDE FACE



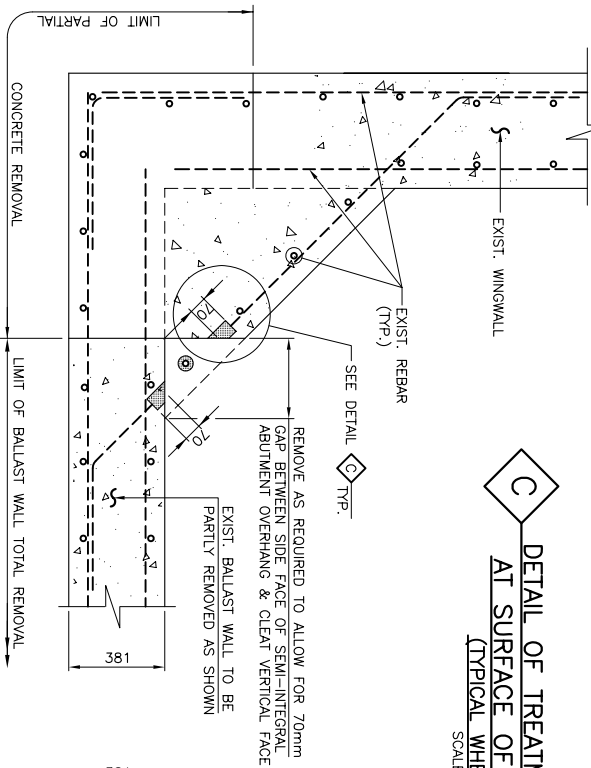
AT BALLAST WALL
AWAY FROM CLEAT
DWG:R1-2
SCALE 1:25



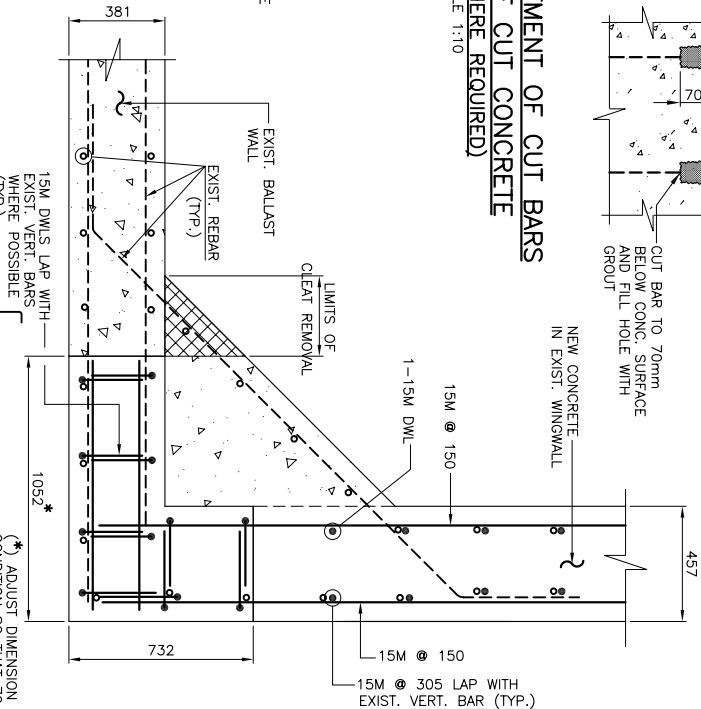
DETAIL OF TREATMENT OF CUT BARS
AT SURFACE OF CUT CONCRETE
(TYPICAL WHERE REQUIRED)
SCALE 1:10



SCALE 1:10

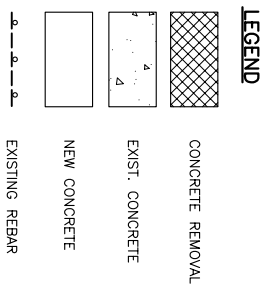


TYPICAL DETAIL TO RECESS EXIST. BARS
INSIDE FINISHED SURFACES
SCALE 1:15

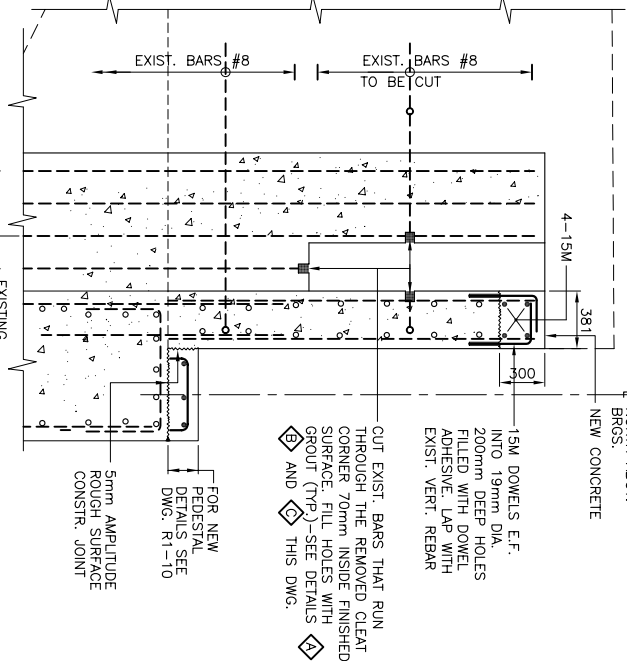


TYPICAL DETAIL AT CLEAT
SCALE 1:15

SCALE 1:20



AT CLEAT
DWG:R1-2
SCALE 1:25

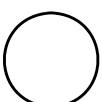


DRAWING NOT TO BE SCALED
100 mm ON ORIGINAL DRAWING

REVISIONS	DESIGN M.M.	CHK S.U.	CODE	CHBD-00	CL	625-ONT	DATE	JUNE 2012

DRAWN A.P. CHK M.M. SITE 29-196
DWG R1-3

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DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

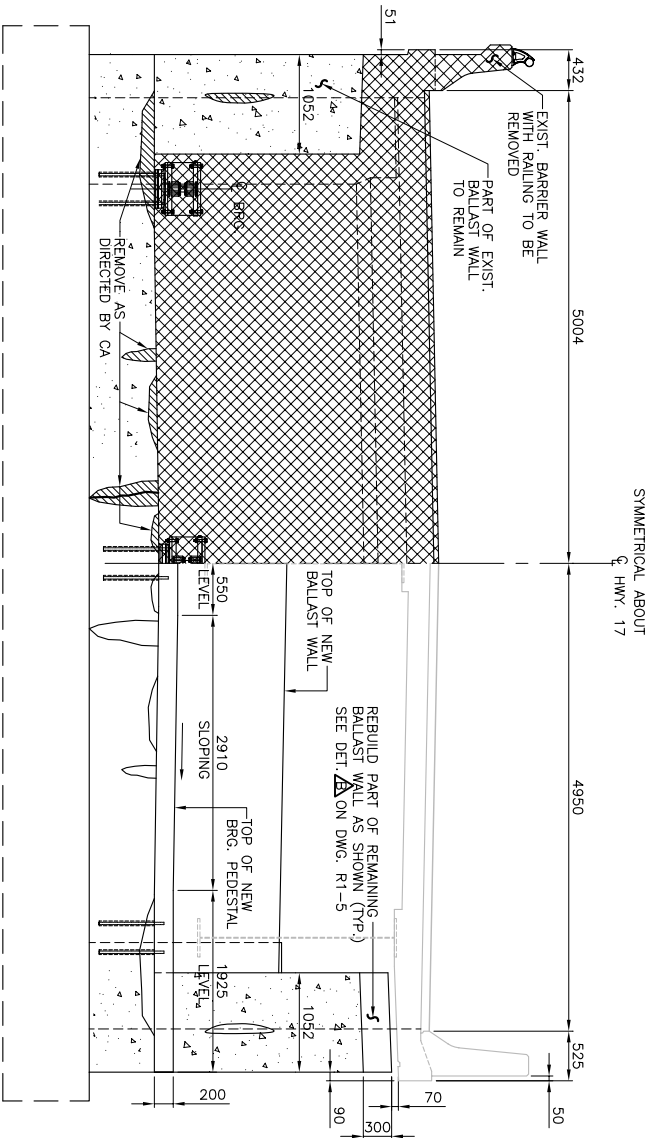
CONT 2012-4014		
WP No 4059-01-00		
HIGHWAY 17 PETAWAWA RIVER BRIDGE REHABILITATION SOUTH ABUTMENT REMOVALS		SHEET 19
Ontario Ministry of Transportation Highway Standards Branch Bridge Office		

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING R1-5.
2. ADJUST DIMENSIONS BASED ON EXISTING CONDITION SO THAT 70mm GAP IS LEFT BETWEEN VERTICAL FACE OF CUT CLEAT AND SIDE FACE OF NEW SEMI-INTERVAL DECK OVERHANG OVER BALLAST WALL.

LEGEND

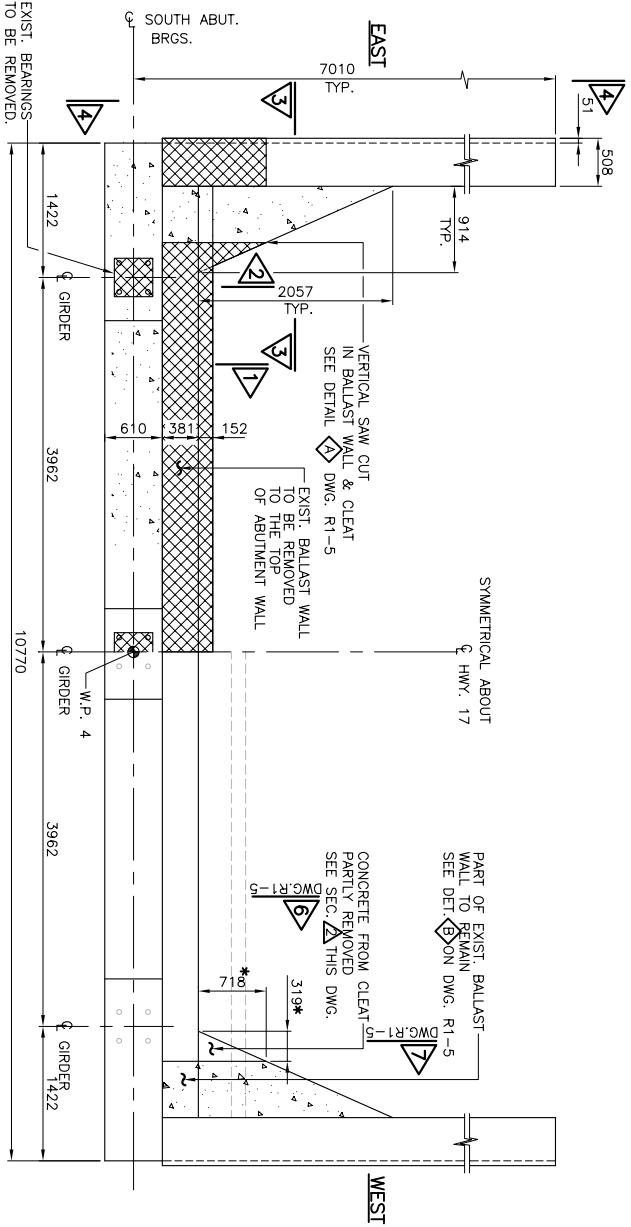
- CONCRETE REMOVAL
- EXIST. CONCRETE
- CONCRETE TO BE REPAIRED
- NEW CONCRETE
- EXISTING REBAR



EXISTING

ELEVATION

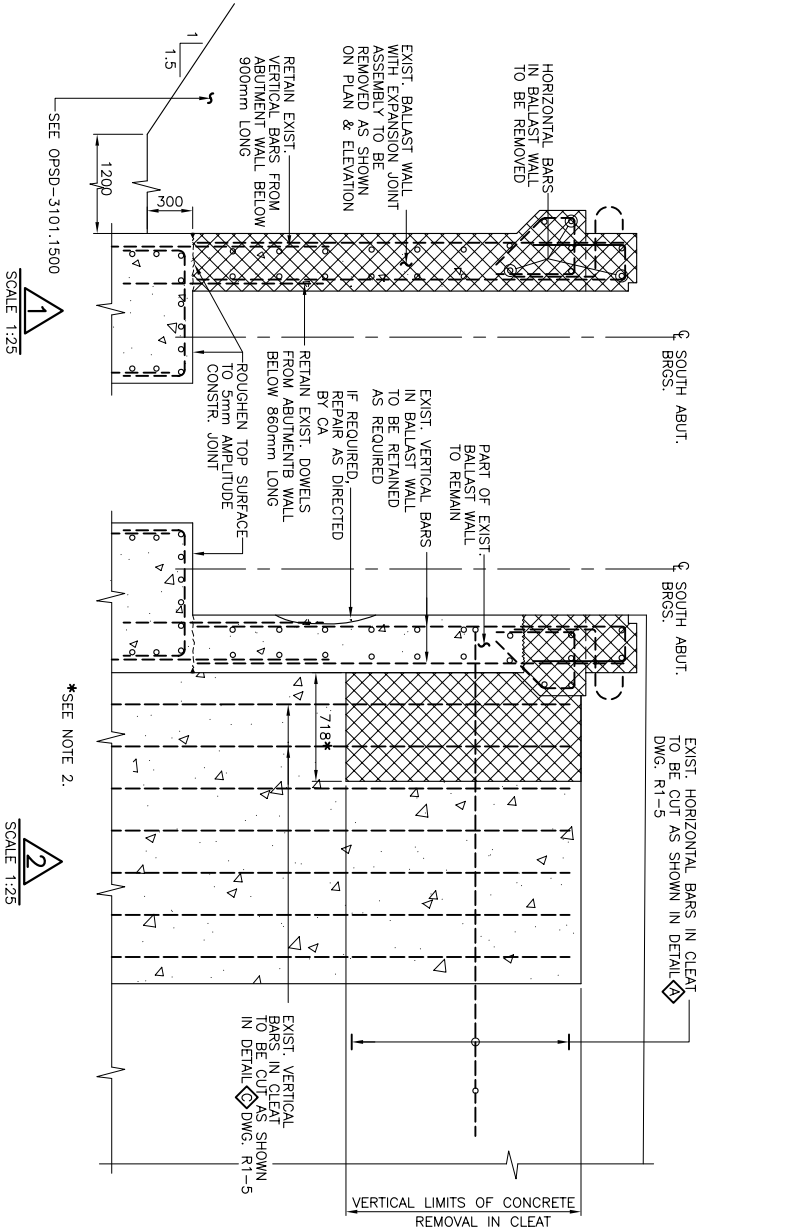
MODIFIED



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


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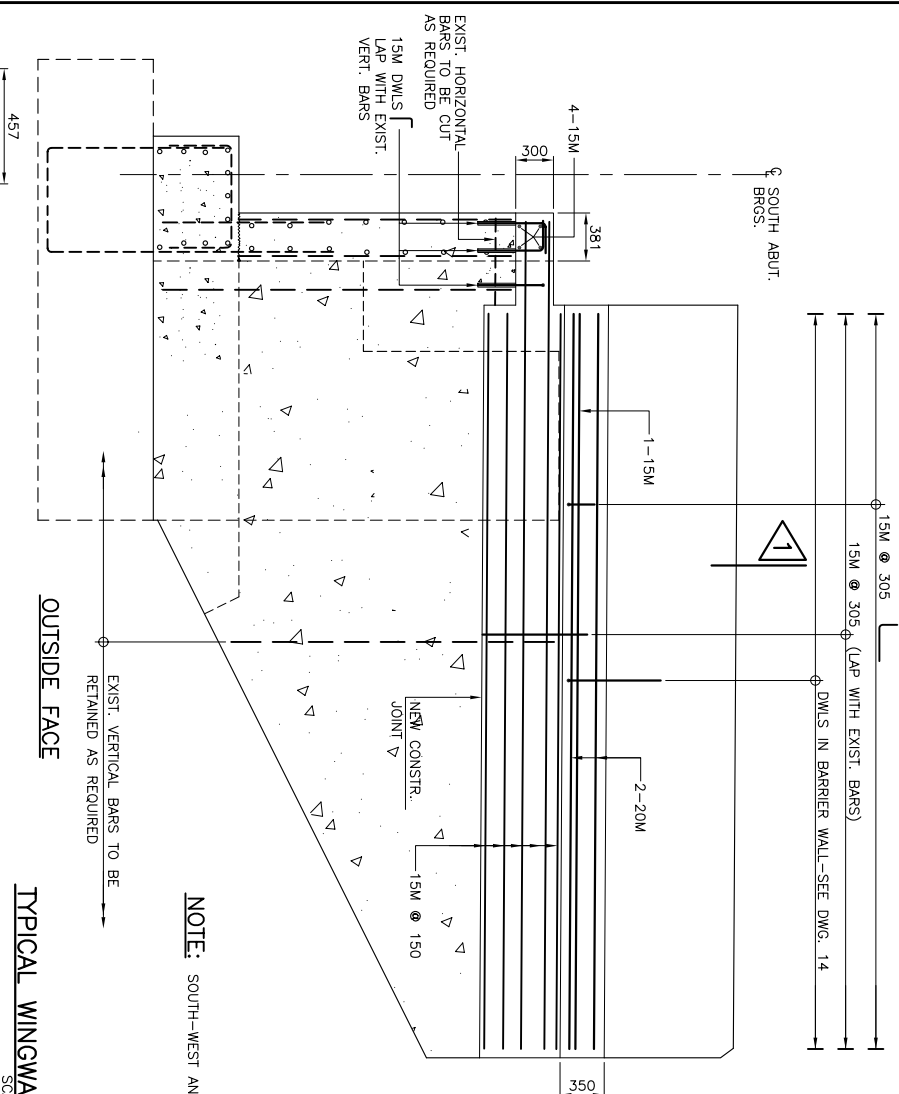
NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWINGS RT-4 AND RT-10.

METRIC
DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

LEGEND

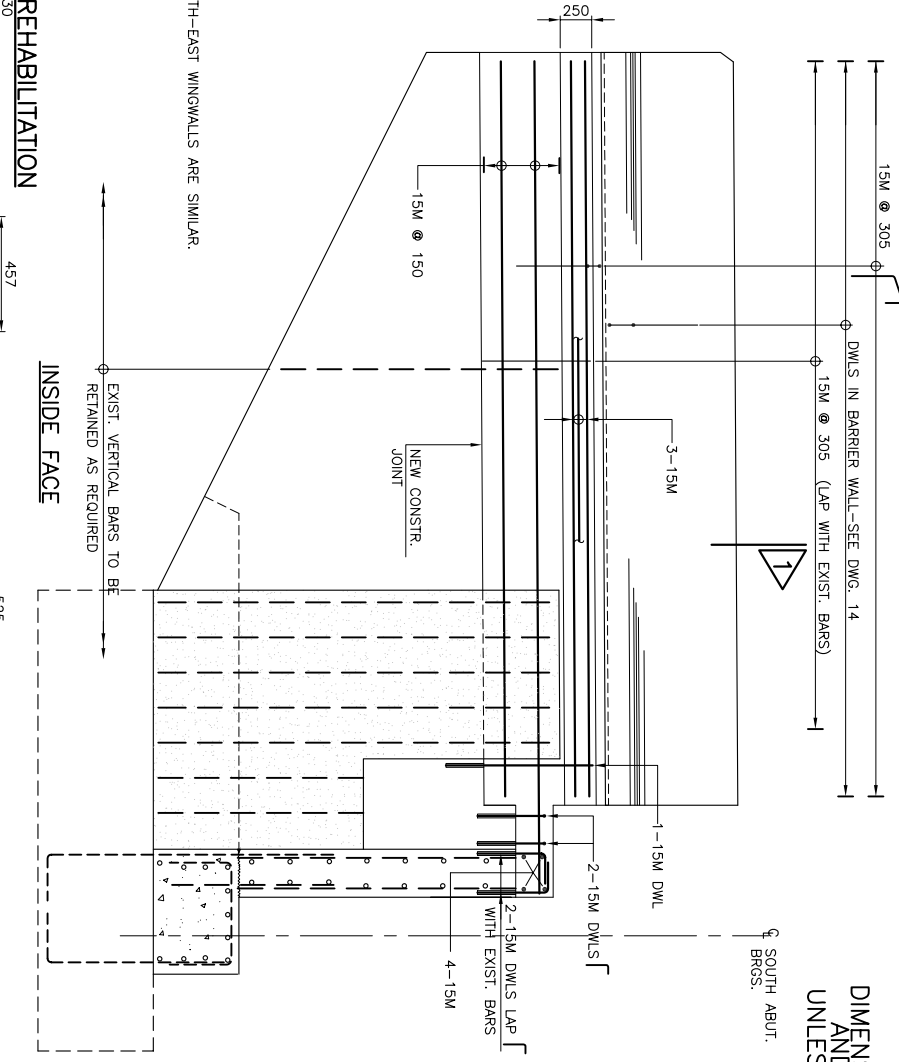
-  CONCRETE REMOVAL
-  EXIST. CONCRETE
-  NEW CONCRETE
-  EXISTING REBAR



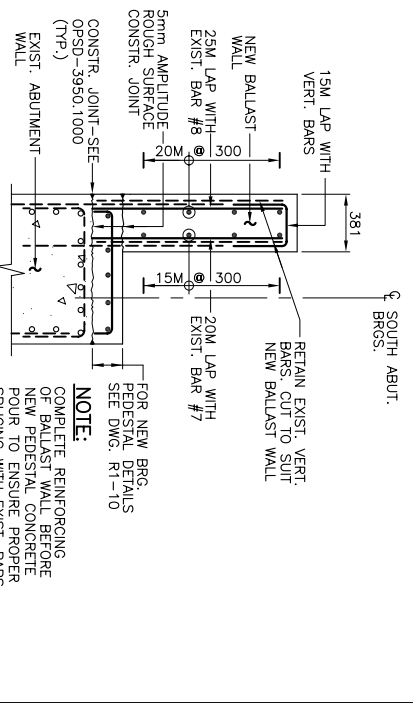
OUTSIDE FACE

TYPICAL WINGWALL REHABILITATION
SCALE 1:30

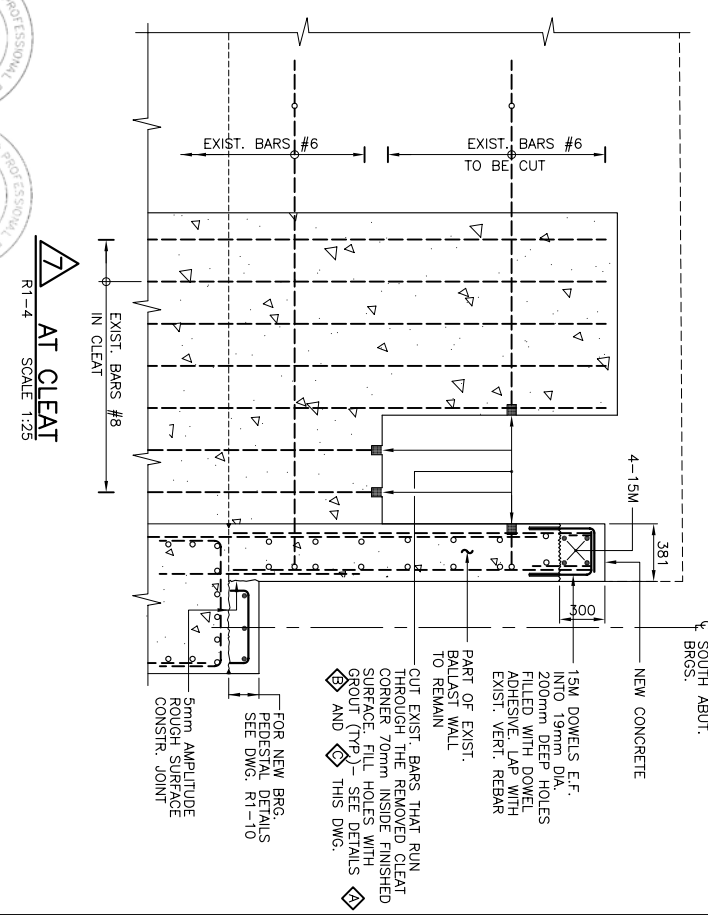
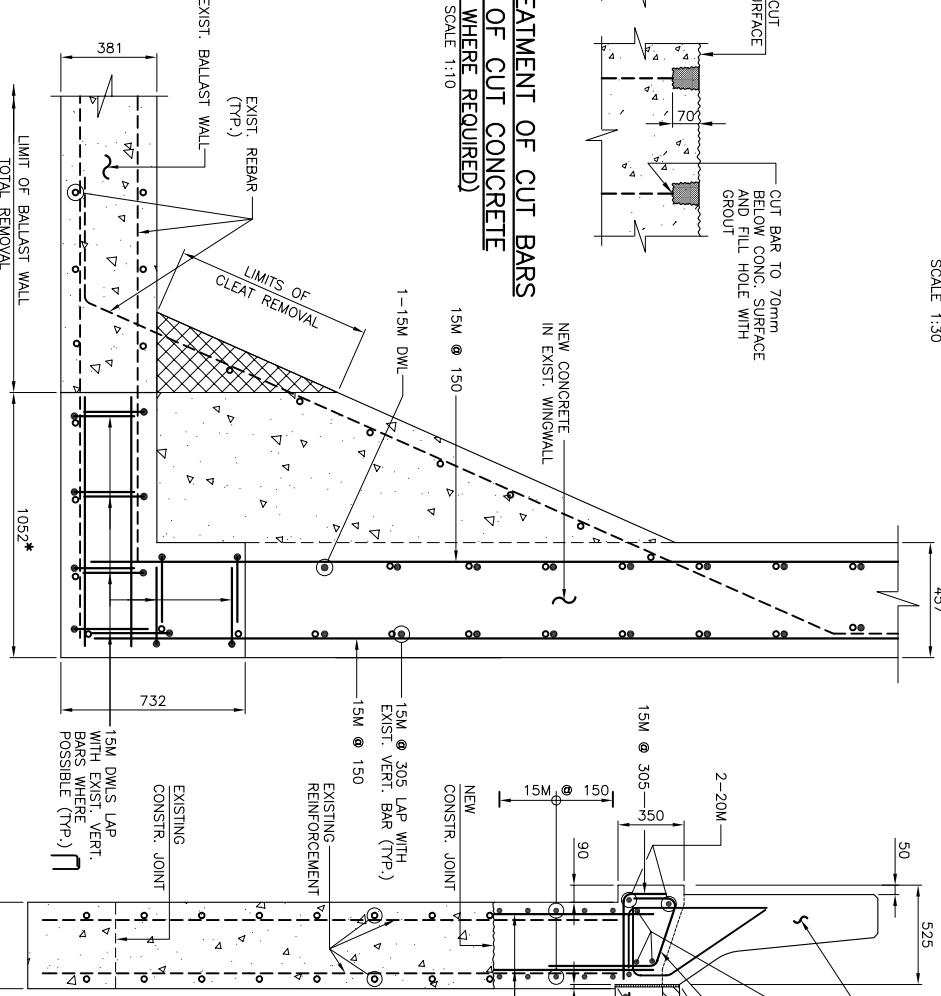
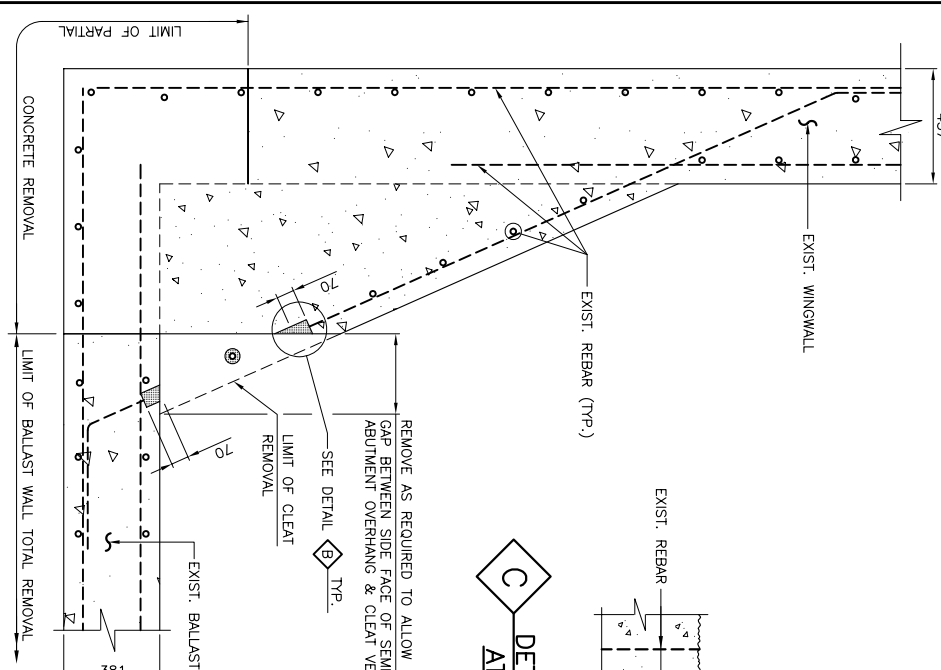
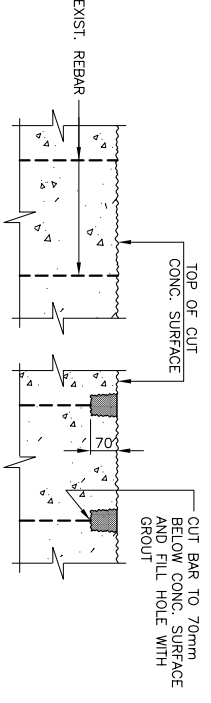
INSIDE FACE



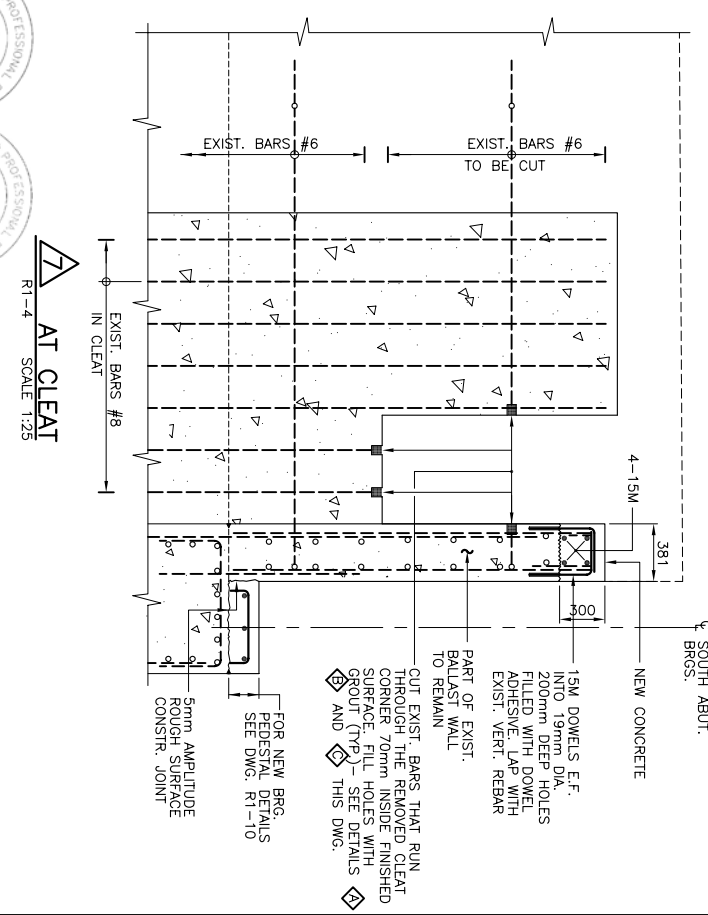
AT BALLAST WALL
AWAY FROM CLEAT
DWG. RT-4
SCALE 1:25



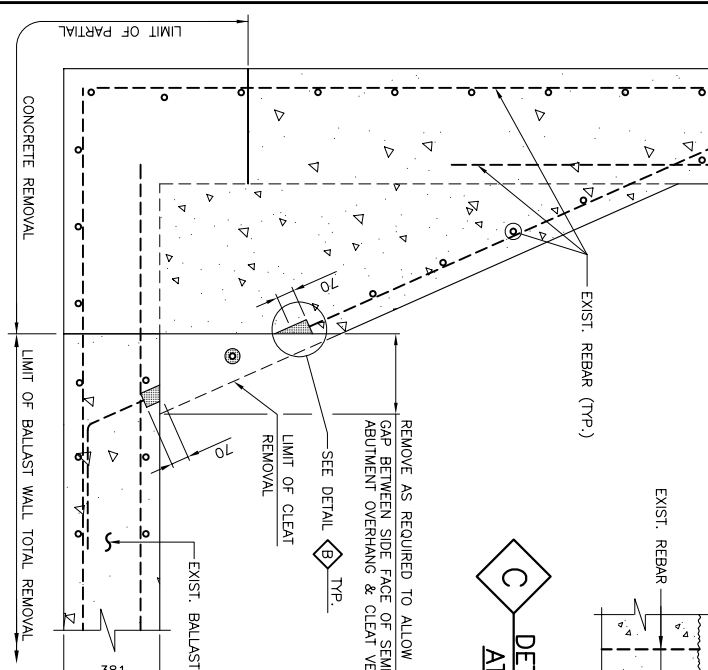
DETAIL OF TREATMENT OF CUT BARS
AT SURFACE OF CUT CONCRETE
(TYPICAL WHERE REQUIRED)
SCALE 1:10



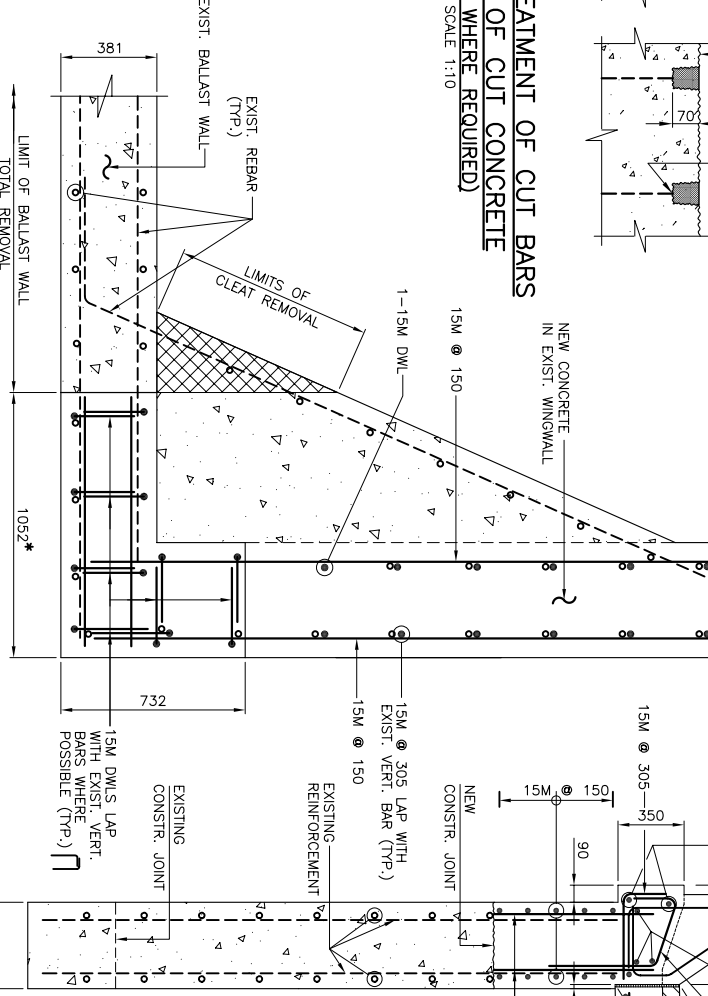
AT CLEAT
RT-4
SCALE 1:25

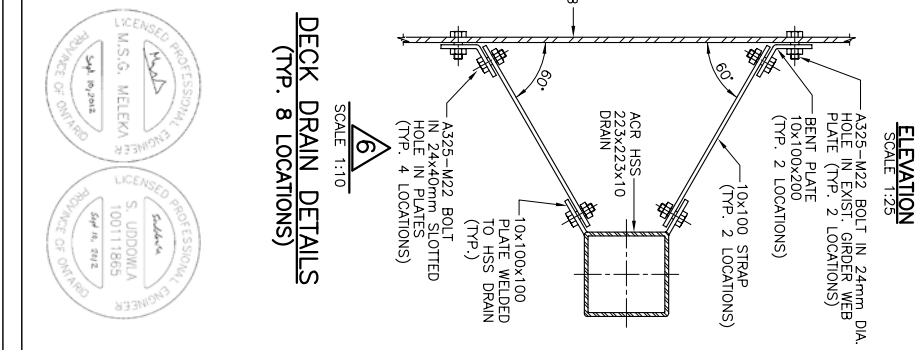
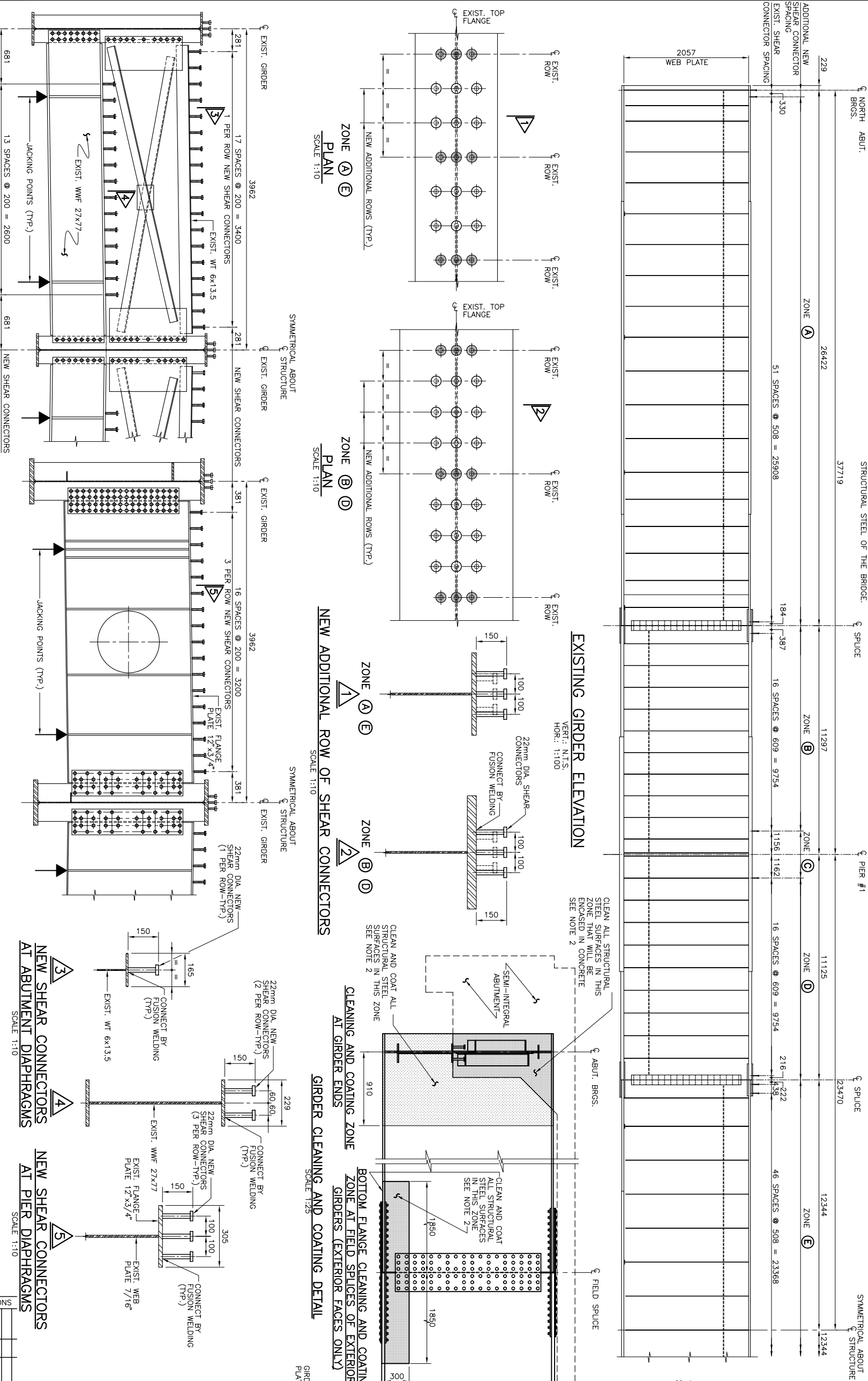


A TYPICAL DETAIL TO RECESS EXIST. BARS
INSIDE FINISHED SURFACES
SCALE 1:15



B TYPICAL DETAIL AT CLEAT
SCALE 1:15





NOTES:

1. NEW SHEAVE CONNECTORS SHALL BE 25mm DIA. AND CONFORM TO ASTM STANDARD A108 AND CSA W59.
2. ALL STRUCTURAL STEEL SURFACES WITHIN THE SHOWN HATCHED AREAS SHALL BE CLEANED. STRUCTURAL STEEL SURFACES WITHIN THE HATCHED AREAS THAT WILL NOT BE ENGAGED IN CONCRETE SHALL BE SUBSEQUENTLY COATED AFTER BEING CLEANED. THE COLOUR OF THE COATING SHALL BE GREY.
3. AFTER THE COMPLETE REMOVAL OF THE EXISTING BRIDGE DECK SLAB, THE CONTRACTOR SHALL SURVEY THE TOP ELEVATIONS OF THE TOP PLANE OF ALL THE THREE BRIDGE GIRDERS AT MID AND QUARTER ELEVATIONS TO THE CONTRACT ADMINISTRATOR WITHIN ONE WEEK OF THE COMPLETION OF THE DECK SLAB REMOVAL. THE DATA SHALL BE IN A TABULATED FORM WITH A SKETCH/DETAIL REFERRING THE TAKEN SPECIFIC ELEVATIONS TO SPECIFIC LOCATIONS ON A PLAN VIEW OF THE STRUCTURAL STEEL OF THE BRIDGE.

ADDITIONAL NEW SHEAR CONNECTOR NOTES:

- ZONE (A) AND (E) ADD TWO NEW ROWS OF SHEAR CONNECTORS EQUALLY SPACED BETWEEN EXISTING ROWS
- ZONE (B) AND (D) ADD THREE ROWS OF SHEAR CONNECTORS EQUALLY SPACED BETWEEN EXISTING ROWS
- ZONE (C) NO ADDITIONAL SHEAR CONNECTORS REQUIRED

METRIC
DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

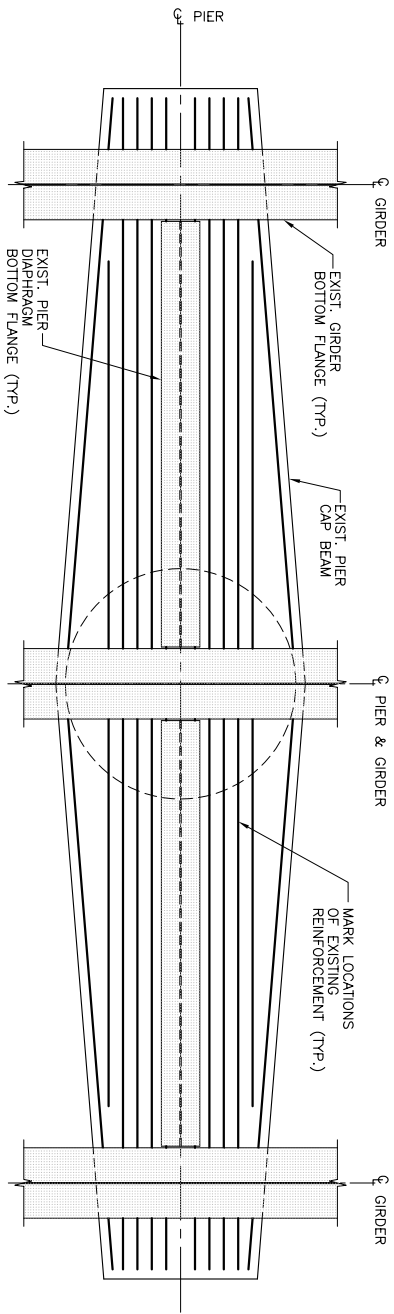
CONT 2012-4014
WP No 4059-01-00

HIGHWAY 17 PETAWAWA RIVER BRIDGE REHABILITATION STRUCTURAL STEEL

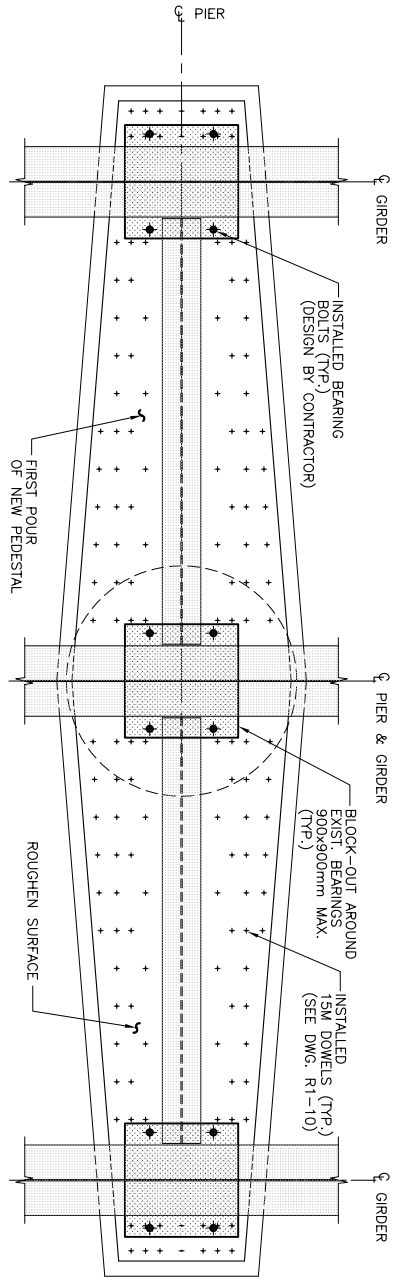
 **Ontario**
Ministry of Transportation
Highway Standards Branch
Bridge Office

REVISIONS			
DESIGN M.M.	CHK S.U.	CODE	DESCRIPTION
DESIGN A.P.	CHK M.M.	CHBDC-00	CL 625-ONT
		29-196	
	DWG		JUNE 2012
			R1-6

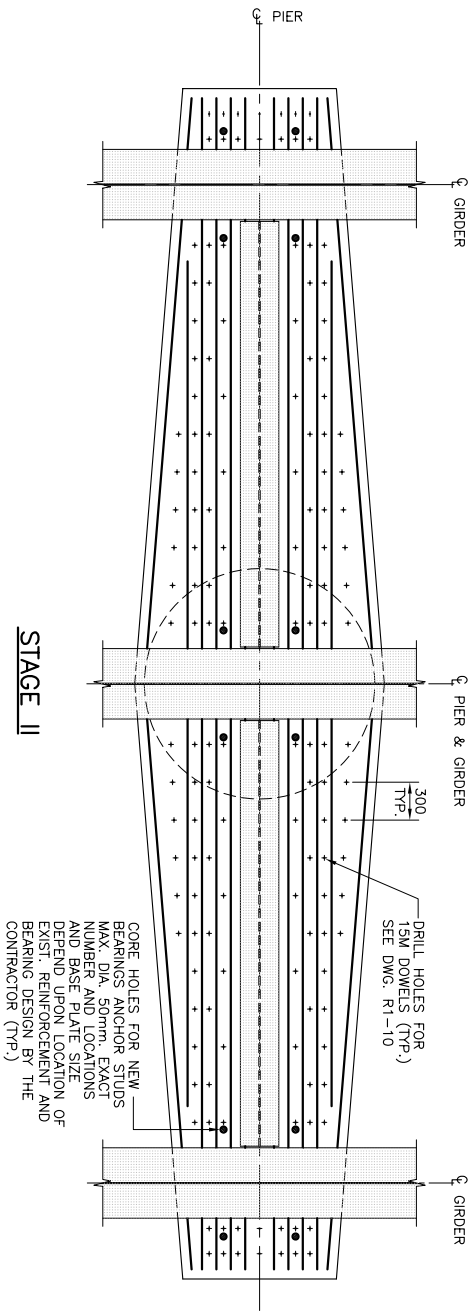
ANY CUTTING OR DAMAGING OF EXISTING PIER CAP BEAM TOP REINFORCEMENT DURING DRILLING/CORING FOR DOWELS OR FOR NEW BEARING'S STUDS SHALL RESULT IN DEMOLISHING AND CONSTRUCTING A NEW PIER CAP BEAM AT THE EXPENSE OF THE CONTRACTOR



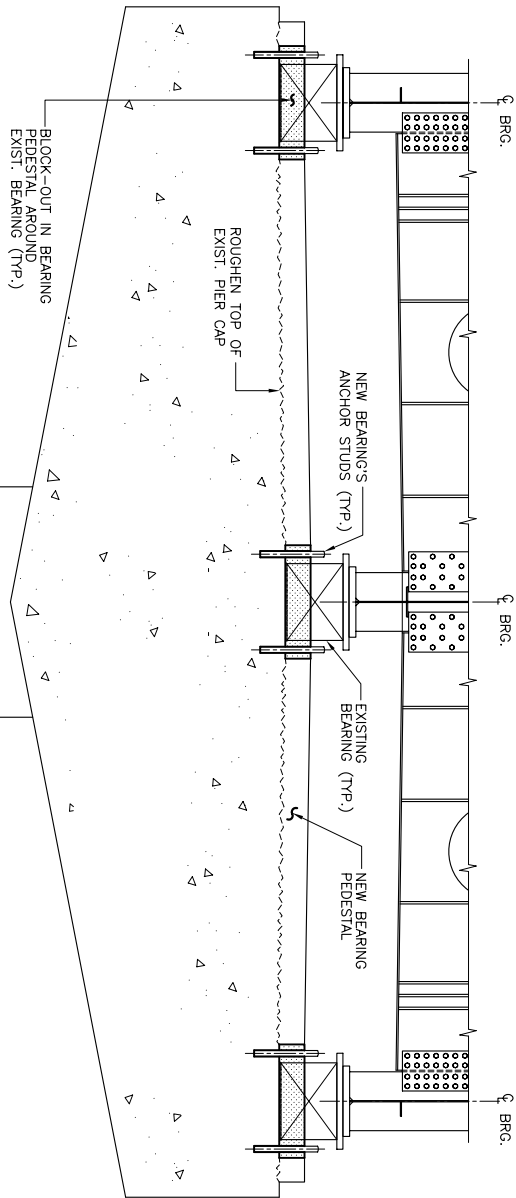
STAGE I



PLAN
STAGE III



STAGE II



ELEVATION
STAGE III

LEGEND

- EXIST. CONCRETE
- NEW CONCRETE

METRIC
DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

CONT 2012-4014
WP No 4059-01-00

HIGHWAY 17
PETAWAWA RIVER BRIDGE
REHABILITATION
ABUTMENT AND PIER PEDESTALS
CONSTRUCTION STAGING I

SHEET
22

Ontario
Ministry of Transportation
Highway Standards Branch
Bridge Office

NOTES:

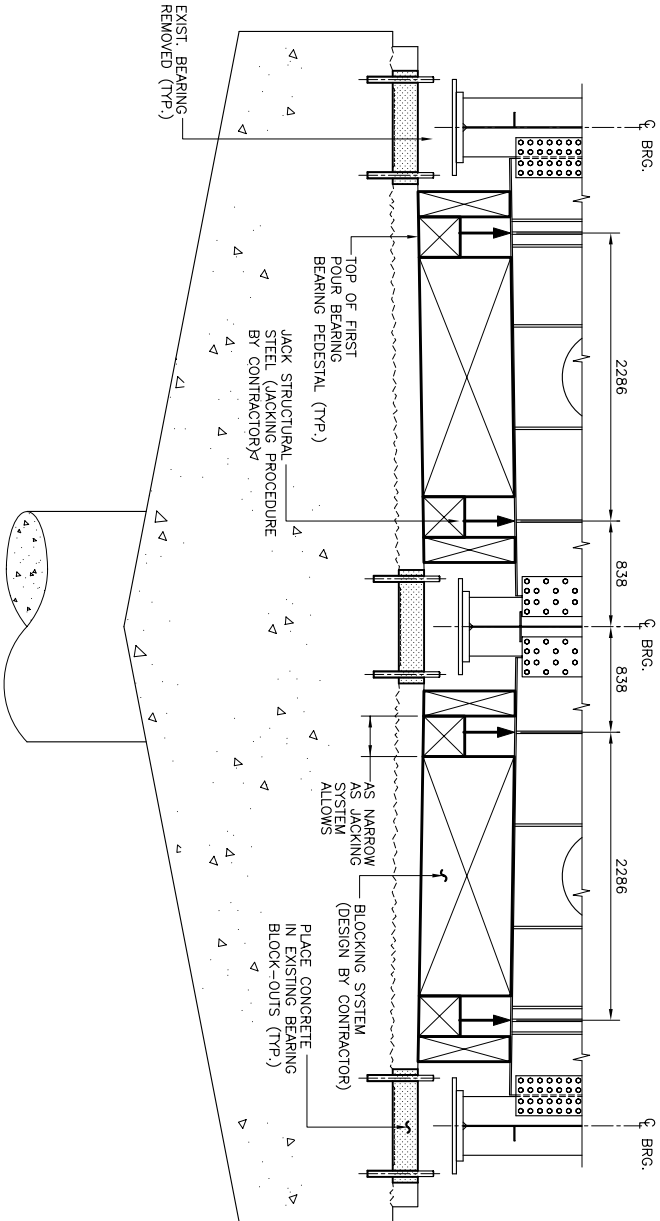
- THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWINGS R1-8 AND R1-10.
- ALL SHOWN EXISTING DIMENSIONS, BAR SIZES, ETC. SHALL BE CHECKED BY CONTRACTOR AGAINST DRAWINGS OF EXISTING BRIDGE AND AS-BUILT CONDITIONS.
- DETAILS SHOWN ON THIS DRAWING ARE IN SCALE 1:30.

DRAWING NOT TO BE SCALED
100 mm ON ORIGINAL DRAWING

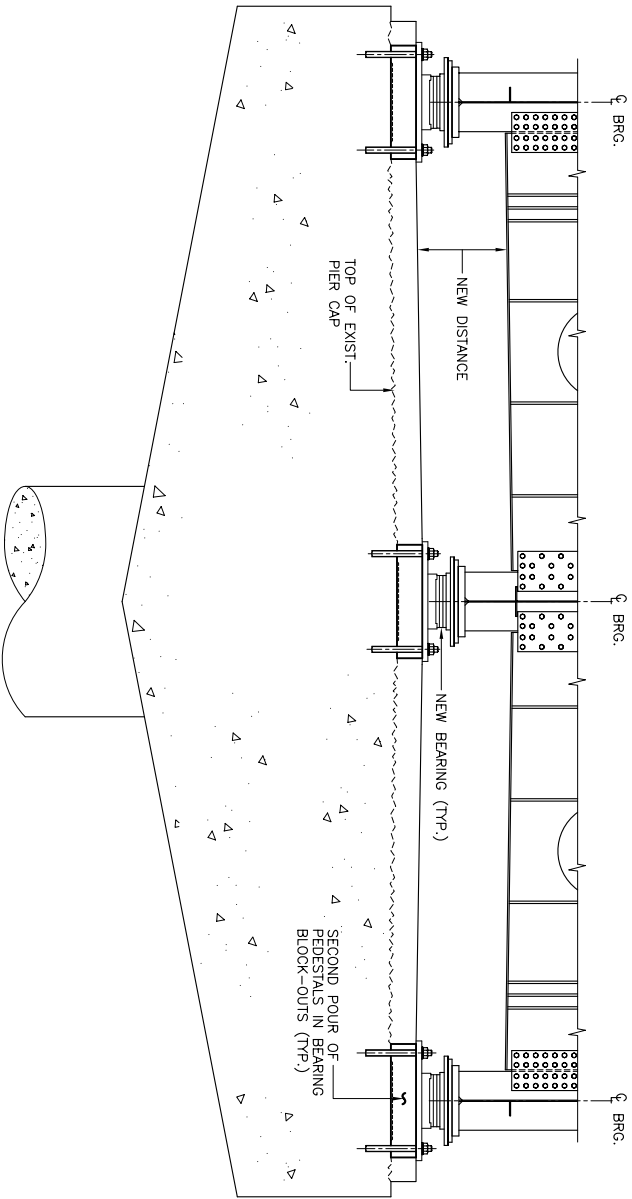
REVISIONS				DESCRIPTION	
DESIGN M.M.	CHK S.U.	CODE	CHBDC-00 CL 625-ONT	DATE	JUNE 2012
DRAWN A.P.	CHK M.M.	SITE	29-196	DWG	R1-7

REMOVE EXISTING CONCRETE DECK SLAB FULLY LEAVING NAKED
STRUCTURAL STEEL ONLY AS-IS SITTING ON EXISTING BEARINGS

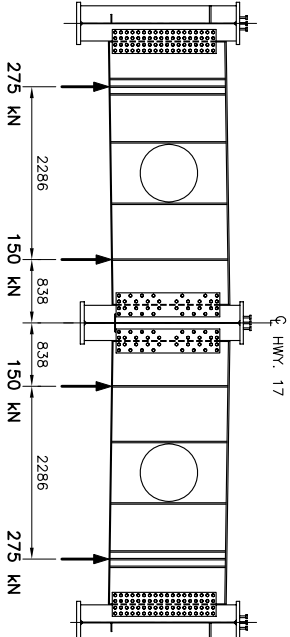
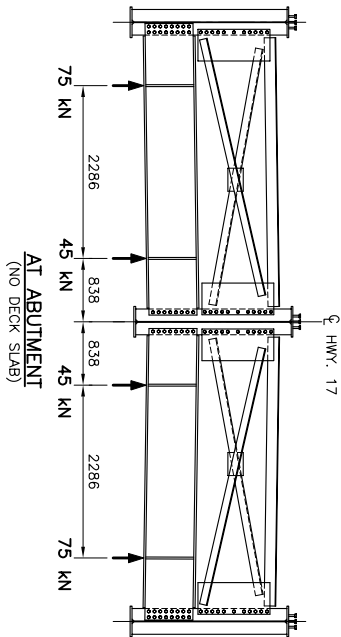
STAGE IV



STAGE V



BRIDGE LOWERED ON NEW BEARINGS



STRUCTURAL STEEL ONLY JACKING FORCES
(AT DIAPHRAGM JACKING POINTS)

SCALE 1:50

METRIC

DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

LEGEND



NOTES:

- THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWINGS R1-7, R1-10 AND R1-11.
- ALL SHOWN EXISTING DIMENSIONS, BAR SIZES, ETC. SHALL BE CHECKED BY CONTRACTOR AGAINST DRAWINGS OF EXISTING BRIDGE AND AS-BUILT CONDITIONS.
- DETAILS SHOWN ON THIS DRAWING ARE IN SCALE 1:30 EXCEPT WHERE NOTED

BEARING PEDESTALS CONSTRUCTION STAGING

(AT PIERS SHOWN, AT ABUTMENTS SIMILAR)
NOTE: STAGES I, II AND III CAN BE DONE WITH THE TRAFFIC STILL ON THE BRIDGE

STAGE I

- SCAN TOP OF EXISTING PIER CAP BEAM USING TECHNOLOGICAL MEANS TO LOCATE ACCURATELY THE EXISTING TOP REINFORCEMENT IN THE CAP BEAM. REFER TO EXISTING BRIDGE DRAWINGS TO HAVE INFORMATION ABOUT THE NOMINAL REINFORCEMENT BAR SIZES AND SPACING
- MARK CAREFULLY ON THE TOP SURFACE OF THE CAP BEAM BARS INSIDE THE CAP BEAM

STAGE II

- BEARING DESIGNER TO VISIT THE SITE AND DECIDE, BASED ON THE MARKED LOCATIONS OF EXISTING REINFORCEMENT, THE NUMBER, SIZE AND LOCATION OF THE NEW BEARING BASE PLATE, ANCHOR STUDS AND CORE HOLES. REINFORCEMENT OF THE EXISTING CAP BEAM AND ANCHOR STUDS SHALL BE 15mm DIA. BARS SPACED AT 114mm I.E. CLEAR DISTANCE BETWEEN EXISTING BARS IS 69mm. THIS SHOULD BE CONSIDERED AS THEORETICAL. AS-BUILT PIER CAP BEAM MIGHT BE DIFFERENT. ACCORDINGLY, CORED HOLES FOR THE NEW BEARING ANCHOR STUDS SHOULD NOT BE MORE THAN 50mm IN DIAMETER. BEARING DESIGNER TO PREPARE DRAWING FOR NEW BEARINGS BASE PLATE AND ANCHOR STUDS
- CORE HOLES FOR NEW BEARING ANCHOR STUDS CAREFULLY BETWEEN MARKS OF EXISTING REINFORCEMENT BARS AS REQUIRED. CORING SHALL BE DONE UNDER DIRECT SUPERVISION OF THE CONTRACTOR'S STRUCTURAL INSPECTOR. IF DURING CORING A STEEL REINFORCEMENT BAR IS ENCOUNTERED, CORING SHALL STOP IMMEDIATELY AND THE CONTRACTOR'S ENGINEER AND THE CA SHALL BE NOTIFIED
- DRILL HOLES FOR THE 15M DOWELS FOR THE BEARING PEDESTAL AS REQUIRED

STAGE III

- INSTALL AND GROUT THE 15M DOWELS
- INSTALL THE FORMWORK FOR THE BEARING PEDESTAL
- INSTALL BLOCK-OUTS AROUND THE EXISTING BEARINGS
- ROUGHEN THE TOP SURFACE OF EXISTING PIER CAP BEAM WITHIN THE BEARING PEDESTAL AREA
- PLACE FIRST CONCRETE POUR OF THE BEARING PEDESTAL (ALL EXCEPT THE BLOCK-OUTS AROUND EXISTING BEARING)

STAGE IV

- REMOVE EXISTING CONCRETE DECK SLAB FULLY LEAVING NAKED STRUCTURAL STEEL ONLY AS-IS SUPPORTED ON EXISTING BEARINGS. EXISTING BARRIER TO BE REMOVED BEFORE DECK SLAB REMOVAL

STAGE V

- WHEN CONCRETE IN THE FIRST POUR OF THE BEARING PEDESTAL REACHES 75% OF ITS SPECIFIED STRENGTH, JACK THE BRIDGE STRUCTURAL STEEL TO ALLOW FOR EXISTING BARRIERS TO BE REMOVED. DESIGN AND PROCEDURE SHALL BE DONE BY THE CONTRACTOR
- LOWER AND SUPPORT THE BRIDGE ON BLOCKING AND SHIMMING SYSTEM. THE BLOCKING AND SHIMMING SYSTEM DESIGN AND SPECIFICATIONS SHALL BE DONE BY THE CONTRACTOR
- BRIDGE STABILITY THROUGHOUT THE CONSTRUCTION PROCESS IN BOTH LONGITUDINAL AND TRANSVERSE DIRECTIONS SHALL BE MONITORED AT ALL TIMES. SHIMMING AND BLOCKING SHALL BE WELDED, CLAMPED, STRUTTED, DEAD MAN, ETC. COULD BE USED TO ACHIEVE THIS PURPOSE
- REMOVE EXISTING BEARINGS INCLUDING BASE PLATES, SHOE PLATES, ETC. PROTECT EXISTING STRUCTURAL STEEL, CONCRETE NEW BEARING ANCHOR STUDS, ETC. FROM ANY HEAT IF USED. AFTER THEIR REMOVAL, PLACE THE SECOND CONCRETE POUR OF THE BEARING PEDESTALS IN THE BLOCK-OUTS
- MAKE A TEMPLATE OF THE AS-BUILT NEW BEARING ANCHOR STUDS AND SEND IT TO THE SHOP FOR THE FABRICATION OF THE NEW BEARING BASE PLATES
- WHEN CONCRETE REACHES 75% OF ITS STRENGTH INSTALL NEW BEARINGS
- JACK THE BRIDGE AT ALL SUPPORTS AT THE SAME TIME AND LOWER IT TO BE SUPPORTED BY THE NEW BEARINGS

STAGE VI (NOT SHOWN)

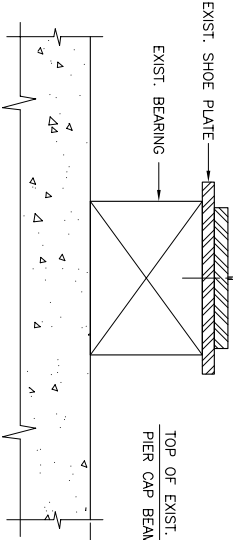
- FORM AND POUR THE NEW BRIDGE CONCRETE DECK SLAB AND CONTINUE WITH THE REST OF THE WORK

ONTARIO
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Highway Standards Branch
Bridge Office

PETAWAWA RIVER BRIDGE
REHABILITATION
ABUTMENT AND PIER PEDESTALS
CONSTRUCTION STAGING II

SHEET 23

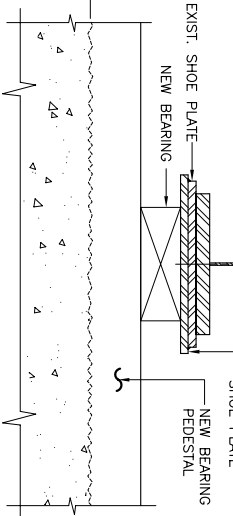
EXISTING DECK DETAIL



DECK DETAIL

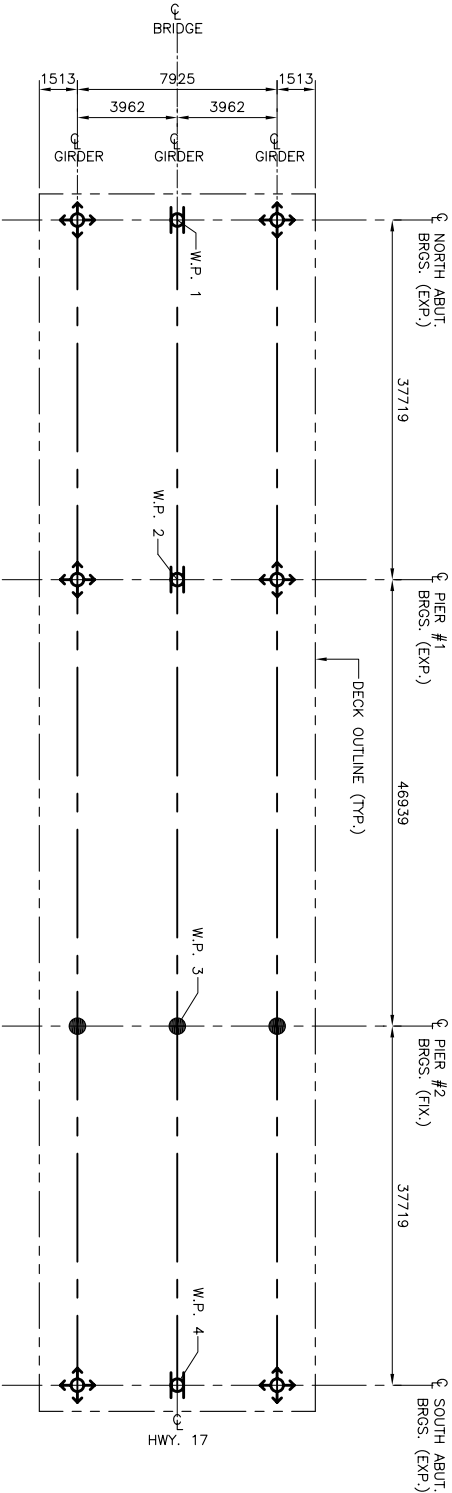
SCALE 1:15

NEW DECK DETAIL



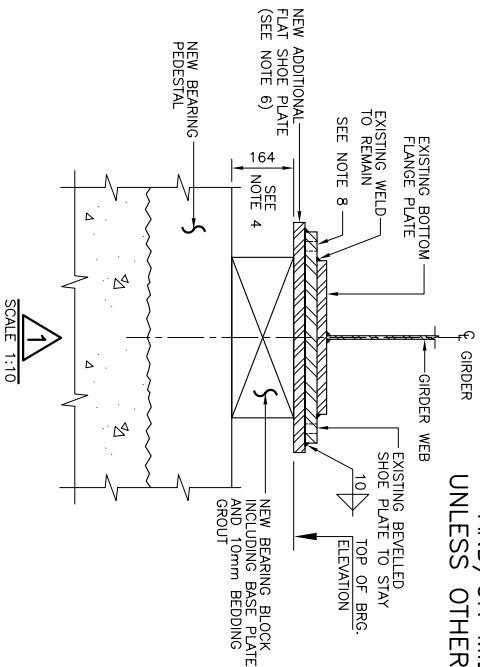
DRAWING NOT TO BE SCALED
100 mm ON ORIGINAL DRAWING

REVISIONS			
NO.	DESCRIPTION	DATE	BY
1	DESIGN M.M. CHK S.U. CODE CHBDC-00 CL 625-ONT	JUNE 2012	DWG
2	DRAWN A.P. CHK M.M. SITE	29-196	



BEARING BASE PLATE SIZE AND ANCHOR STUD NUMBER AND LOCATION SHALL BE DECIDED IN FIELD BASED ON LOCATION OF EXISTING PIER CAP BEAM REINFORCEMENT

BEARING LAYOUT
N.T.S.

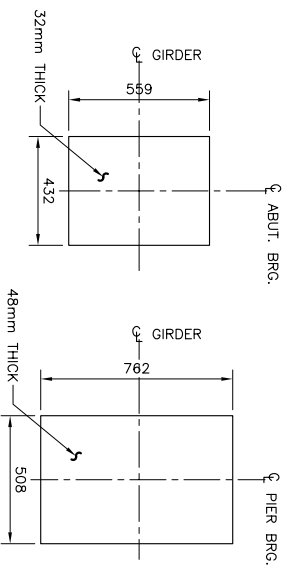


NOTES:

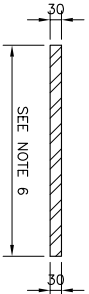
- THIS DRAWING TO BE READ IN CONJUNCTION WITH DMS. R1-7, R1-8 AND R1-10.
- BEARING DESIGN TO ALLOW FOR FUTURE JACKING OF THE BRIDGE AND BEARING REPLACEMENT.
- ROTATIONAL BEARINGS SHALL BE IN ACCORDANCE WITH DSM 9.15.71 UNDER THE HEADING "ROTATIONAL, POT. CLASS 1A".
- HEIGHT OF BEARINGS "D" (INCLUDED BASE PLATES AND 10mm BEDDING GROUT) ASSUMED IN ESTABLISHING THE TOP BEARING ELEVATION IS 164mm.
- THE CONTRACTOR SHALL COORDINATE WITH THE BEARING SUPPLIER THE LOCATION OF THE BEARING PINS IN THE PIER CAP BEAM. PLANS ARE TO BE MADE IN ADVANCE TO ENSURE THAT PIER REINFORCING BARS SHALL NOT BE DAMAGED OR CUT DURING CORING.
- SIZES OF GIRDERS' NEW ADDITIONAL FLAT SHOE PLATES SHALL BE SELECTED BY THE BEARINGS DESIGNER TO SUIT BEARING DESIGN AND TO BE ABLE TO WELD THEM TO EXISTING SHOE PLATES.
- TOP AND BASE PLATES SHALL BE DESIGNED TO SUIT BEARINGS.
- THE CONTRACTOR TO VERIFY EXISTING SHOE PLATE DIMENSIONS AND TO CONFIRM TO THE BEARING DESIGNER THE AS-BUILT DIMENSIONS. POWER TOOL CLEAN THE EXISTING SHOE PLATES IN ACCORDANCE WITH SP 11 BEFORE WELDING THE NEW ADDITIONAL SHOE PLATE TO THEM. PLUS EXISTING BOLT HOLES IN EXISTING SHOE PLATES WITH MATCHING SIZE ROUND STEEL BAR, SEAL TOP WITH WELD AND GRIND FLUSH.

LEGEND:

- W.P. DENOTES WORKING POINT
- UNI-DIRECTIONAL BEARING
- ⊕ MULTI-DIRECTIONAL BEARING
- FIXED BEARING



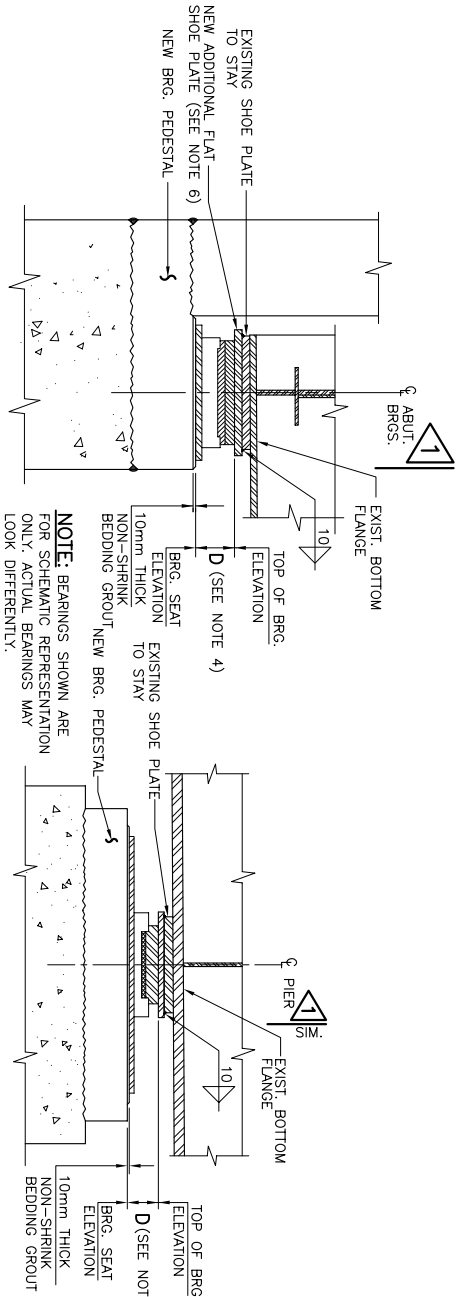
NEW ADDITIONAL SHOE PLATE AT ABUTMENTS AND PIERS
SCALE 1:10








AT ABUTMENTS
SCALE 1:15

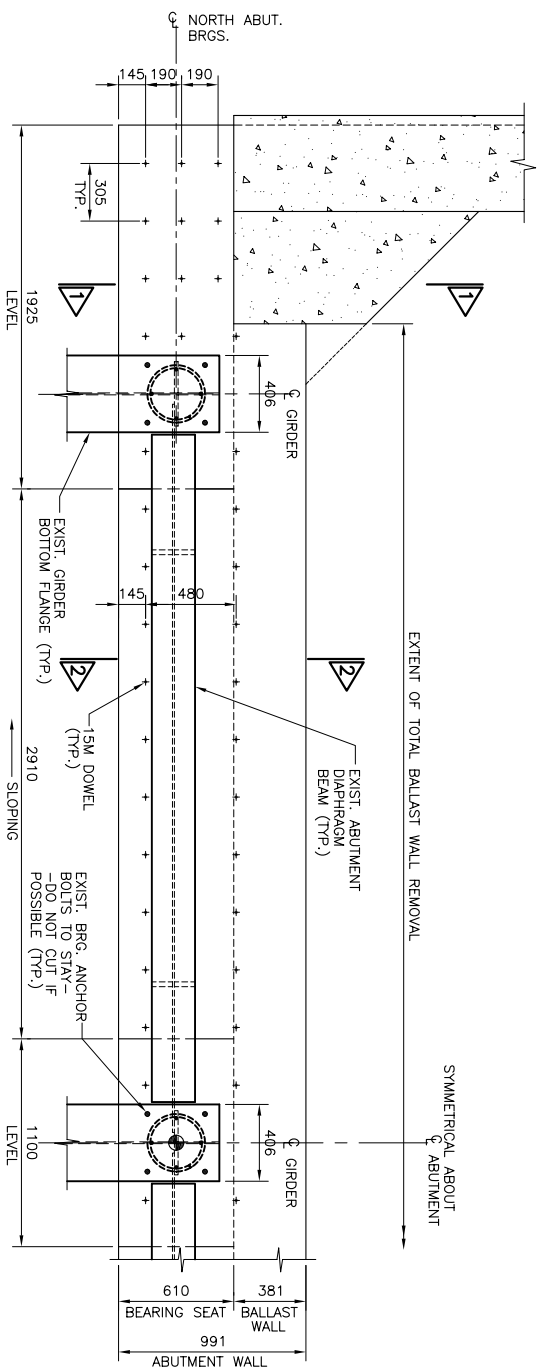
BEARING DETAILS

AT PIERS
SCALE 1:20



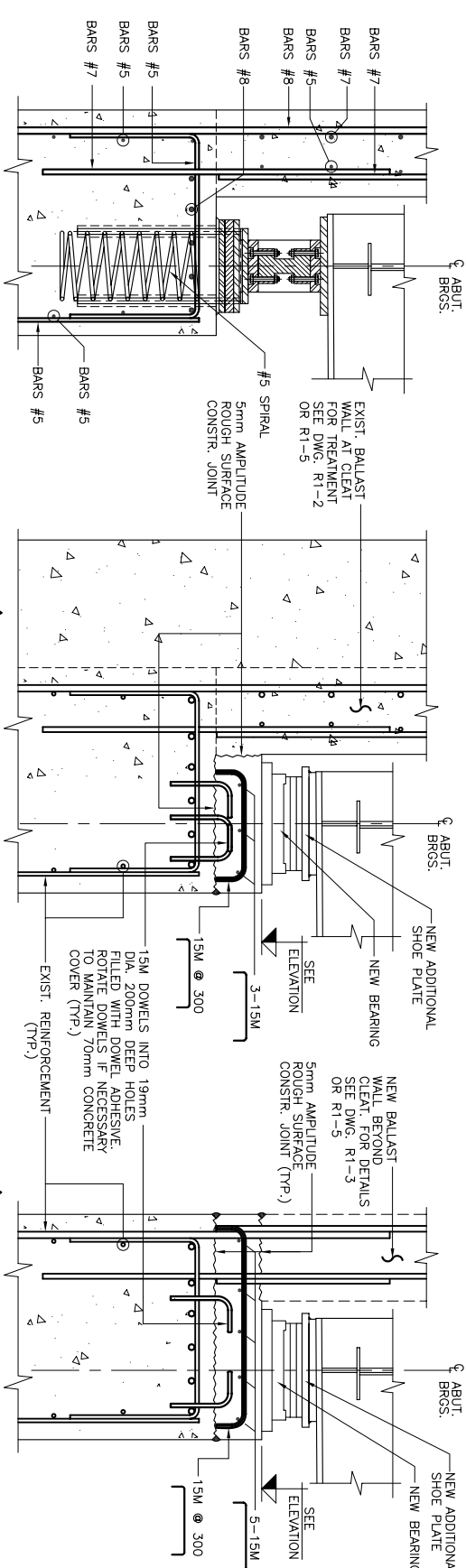
NORTH & SOUTH ABUTMENTS ROTATIONAL BEARING DESIGN DATA (EXP.)

TYPE	LIMIT STATE	LOADING COMBINATION	AXIAL LOAD (kN)	MAX. HORIZ. LOAD (kN)		MAX. ROTATION (DEG.)		MAX. TRANSLATION (mm)	
				LONGIT.	TRANSV.	ABOUT HORIZ. AXIS	ABOUT VERT. AXIS	LONGIT.	TRANSV.
 MULTI-DIRECTIONAL (2 REQUIRED PER ABUTMENT)	S.L.S.	PERMANENT	700	—	70	±1.1	±1.0	N. ±32	±0.0
		PERMANENT & TRANSITORY MAX.	1350	—	135				
		PERMANENT & TRANSITORY MIN.	600	—	60				
	U.L.S.	PERMANENT	850	—	85	±1.2	±1.0	S. ±15	
		PERMANENT & TRANSITORY MAX.	2060	—	205				
		PERMANENT & TRANSITORY MIN.	430	—	43				
		PERMANENT & EXCEPTIONAL MAX.	—	—	—				
		PERMANENT & EXCEPTIONAL MIN.	—	—	—				
	S.L.S.	PERMANENT	700	—	—	±1.1	±1.0	N. ±32	
		PERMANENT & TRANSITORY MAX.	1350	—	—				
PERMANENT & TRANSITORY MIN.		600	—	—					
PERMANENT		850	—	—					
PERMANENT & TRANSITORY MAX.		2060	—	—					
 UNI-DIRECTIONAL (1 REQUIRED PER ABUTMENT)	S.L.S.	PERMANENT	700	—	—	±1.1	±1.0	N. ±32	±3.0
		PERMANENT & TRANSITORY MAX.	1350	—	—				
		PERMANENT & TRANSITORY MIN.	600	—	—				
	U.L.S.	PERMANENT	850	—	—	±1.2	±1.0	S. ±23	
		PERMANENT & TRANSITORY MAX.	2060	—	205				
		PERMANENT & TRANSITORY MIN.	430	—	43				
		PERMANENT & EXCEPTIONAL MAX.	—	—	—				
		PERMANENT & EXCEPTIONAL MIN.	—	—	—				
	S.L.S.	PERMANENT	700	—	—	±1.1	±1.0	N. ±32	
		PERMANENT & TRANSITORY MAX.	1350	—	—				
PERMANENT & TRANSITORY MIN.		600	—	—					
PERMANENT		850	—	—					
PERMANENT & TRANSITORY MAX.		2060	—	—					
 MULTI-DIRECTIONAL (2 REQUIRED PER ABUTMENT)	S.L.S.	PERMANENT	700	—	—	±1.1	±1.0	N. ±32	±5.0
		PERMANENT & TRANSITORY MAX.	1350	—	—				
		PERMANENT & TRANSITORY MIN.	600	—	—				
	U.L.S.	PERMANENT	850	—	—	±1.2	±1.0	N. ±50	
		PERMANENT & TRANSITORY MAX.	2060	—	—				
		PERMANENT & TRANSITORY MIN.	430	—	—				
		PERMANENT & EXCEPTIONAL MAX.	—	—	—				
		PERMANENT & EXCEPTIONAL MIN.	—	—	—				
	S.L.S.	PERMANENT	700	—	—	±1.1	±1.0	S. ±23	
		PERMANENT & TRANSITORY MAX.	1350	—	—				
PERMANENT & TRANSITORY MIN.		600	—	—					
PERMANENT		850	—	—					
PERMANENT & TRANSITORY MAX.		2060	—	—					
 UNI-DIRECTIONAL (1 REQUIRED PER ABUTMENT)	S.L.S.	PERMANENT	700	—	—	±1.1	±1.0	N. ±32	±0.0
		PERMANENT & TRANSITORY MAX.	1350	—	—				
		PERMANENT & TRANSITORY MIN.	600	—	—				
	U.L.S.	PERMANENT	850	—	—	±1.2	±1.0	S. ±23	
		PERMANENT & TRANSITORY MAX.	2060	—	205				
		PERMANENT & TRANSITORY MIN.	430	—	43				
		PERMANENT & EXCEPTIONAL MAX.	—	—	—				
		PERMANENT & EXCEPTIONAL MIN.	—	—	—				
	S.L.S.	PERMANENT	700	—	—	±1.1	±1.0	N. ±32	
		PERMANENT & TRANSITORY MAX.	1350	—	—				
PERMANENT & TRANSITORY MIN.		600	—	—					
PERMANENT		850	—	—					
PERMANENT & TRANSITORY MAX.		2060	—	—					
 MULTI-DIRECTIONAL (2 REQUIRED PER ABUTMENT)	S.L.S.	PERMANENT	700	—	—	±1.1	±1.0	N. ±32	±5.0
		PERMANENT & TRANSITORY MAX.	1350	—	—				
		PERMANENT & TRANSITORY MIN.	600	—	—				
	U.L.S.	PERMANENT	850	—	—	±1.2	±1.0	N. ±50	
		PERMANENT & TRANSITORY MAX.	2060	—	—				
		PERMANENT & TRANSITORY MIN.	430	—	—				
		PERMANENT & EXCEPTIONAL MAX.	—	—	—				
		PERMANENT & EXCEPTIONAL MIN.	—	—	—				
	S.L.S.	PERMANENT	700	—	—	±1.1	±1.0	S. ±23	
		PERMANENT & TRANSITORY MAX.	1350	—	—				
PERMANENT & TRANSITORY MIN.		600	—	—					
PERMANENT		850	—	—					
PERMANENT & TRANSITORY MAX.		2060	—	—					



NOTE: NORTH ABUTMENT SHOWN,
SOUTH ABUTMENT SIMILAR

PEDESTAL DOWELS IN ABUTMENT - PLAN
SCALE 1:20
(TOTAL NO. OF DOWELS PER ABUTMENT: 72)



EXIST. ABUTMENT DETAIL
(SEE EXIST. BRIDGE DWGS.)

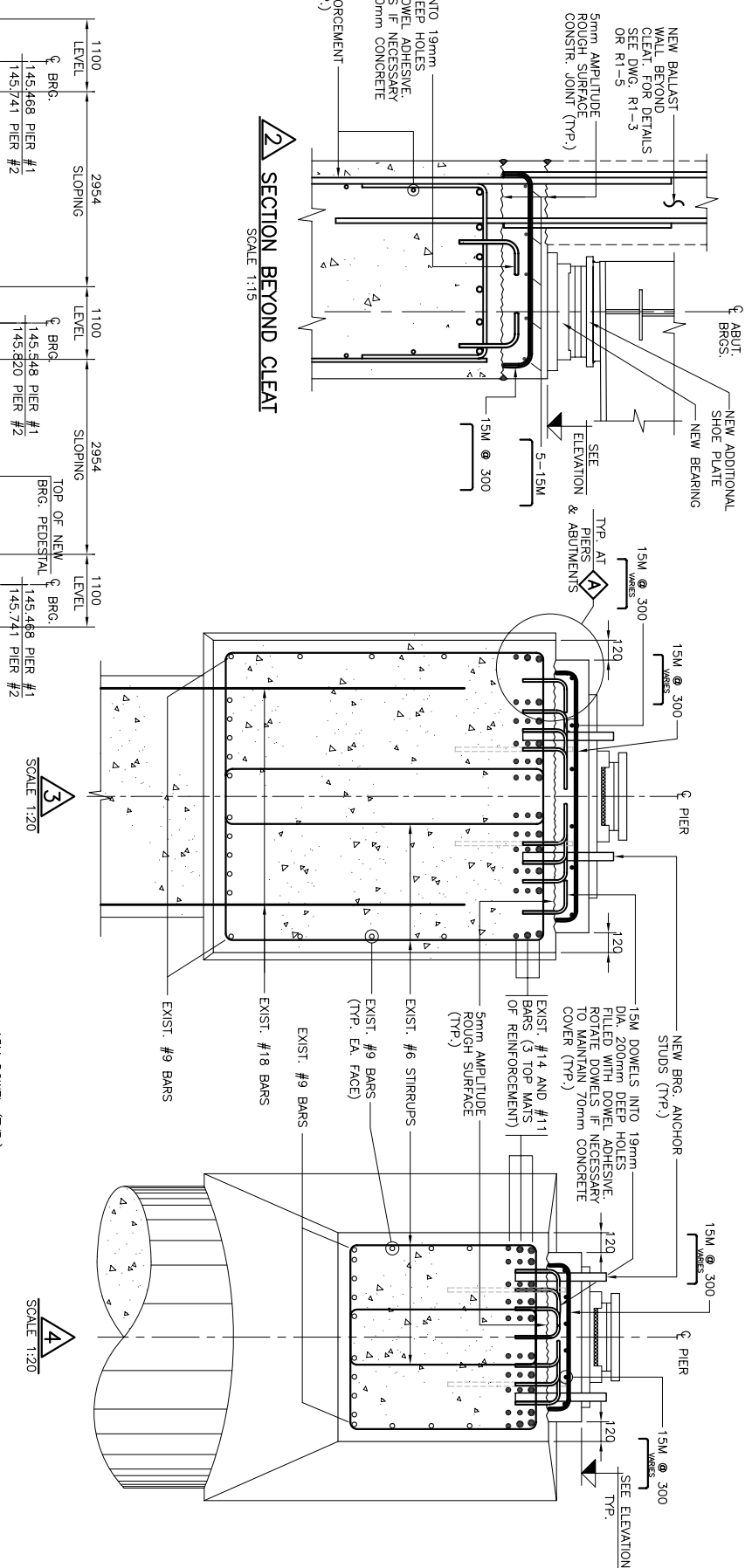
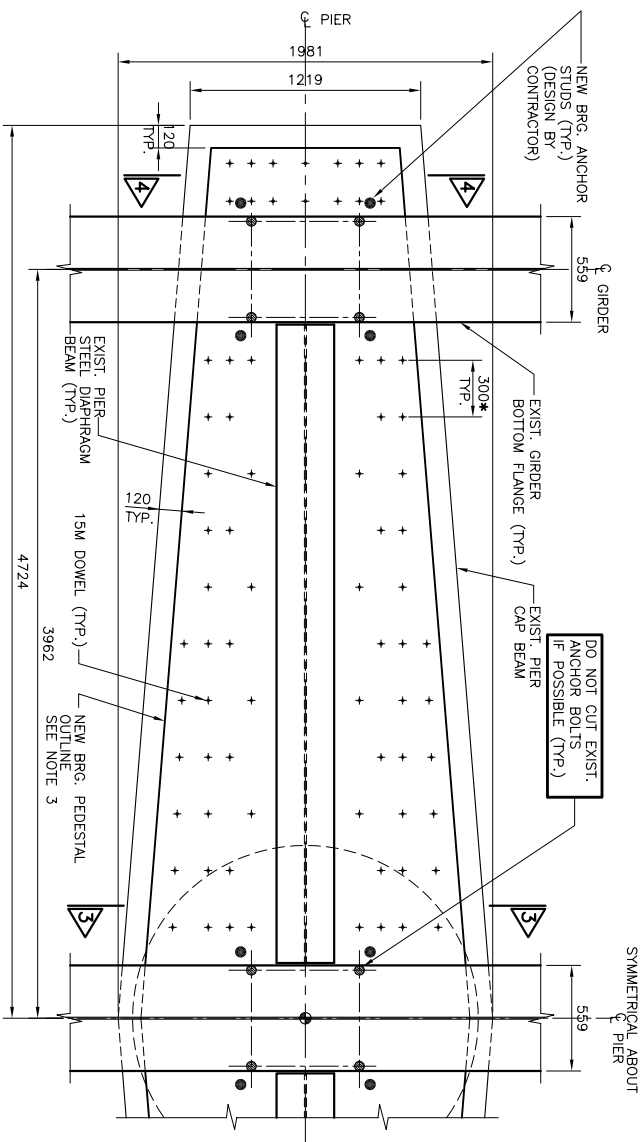
SCALE 1:15

SECTION AT CLEAT
SCALE 1:15

SCALE 1:15

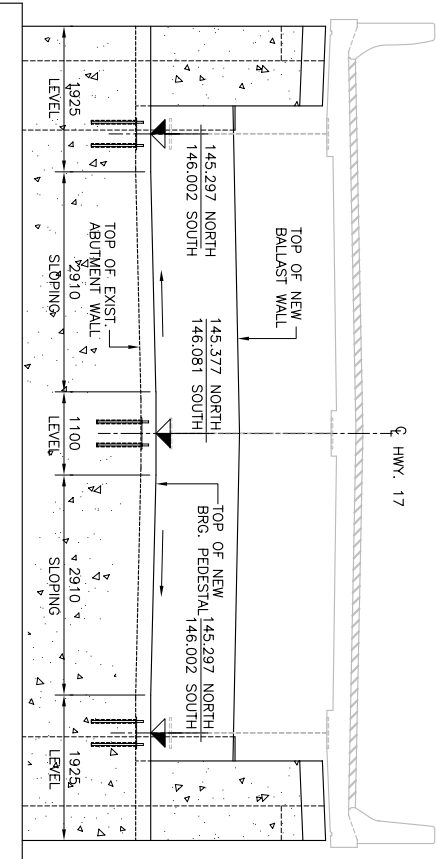
SECTION BEYOND CLEAT
SCALE 1:15

SCALE 1:15



ELEVATION
SCALE 1:50


SCALE 1:50



METRIC
DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

CONT 2012-4014
WP No 4059-01-00

**HIGHWAY 17
PETAWAWA RIVER BRIDGE
REHABILITATION
BEARING PEDESTALS
AT ABUTMENTS AND PIERS**

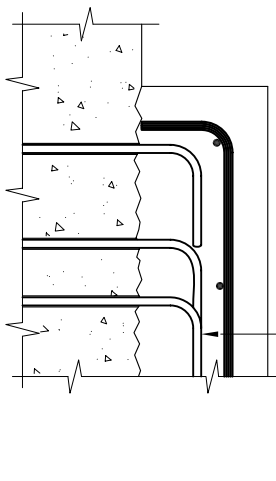
 **Ontario**
Ministry of Transportation
Highway Standards Branch
Bridge Office

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWINGS R1-7, R1-8 AND R1-9.
 2. ALL SHOWN EXISTING DIMENSIONS, BAR SIZES, ETC., SHALL BE CHECKED BY CONTRACTOR AGAINST DRAWINGS OF EXISTING BRIDGE AND AS-BUILT CONDITIONS.
 3. THE CONTRACTOR SHALL CONSTRUCT THE BEARING PEDISTALAS AT ABUTMENTS AND PIERS SO THAT THEIR TOP ELEVATIONS AT THE BEARING LOCATIONS ARE AS SHOWN ON THE ELEVATION VIEWS.
- FOR REFERENCE PURPOSES ONLY, THE THEORETICAL HEIGHT OF THE NEW BEARING PEDISTALS AT ABUTMENTS AND PIERS ARE AS FOLLOWS:

a. NORTH ABUTMENT APPROX. 227mm
b. PIER #1 APPROX. 222mm
c. PIER #2 APPROX. 184mm
d. SOUTH ABUTMENT APPROX. 237mm

ACTUAL HEIGHTS REQUIRED COULD BE DIFFERENT DUE TO AS-BUILT CONDITIONS.



DETAIL
TYP. AT ABUTMENTS & PIERS

N.T.S.

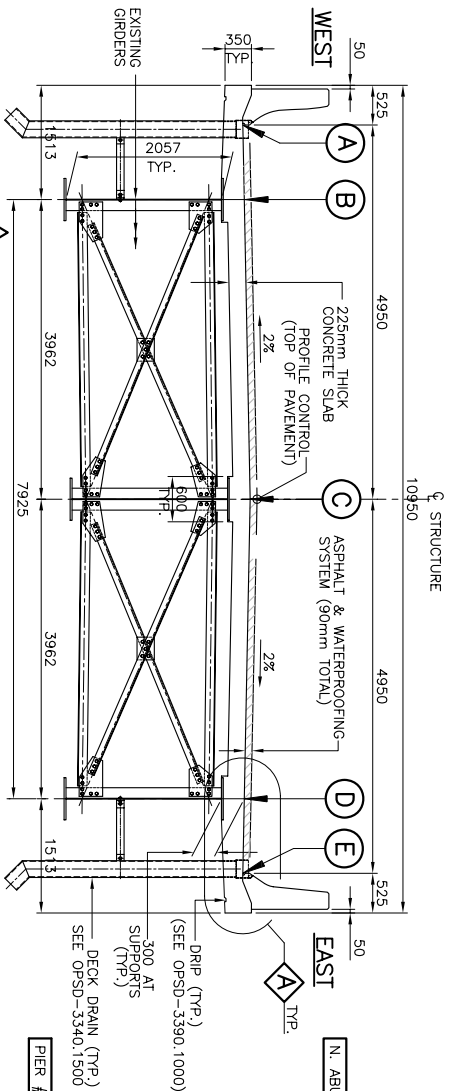


LEGEND

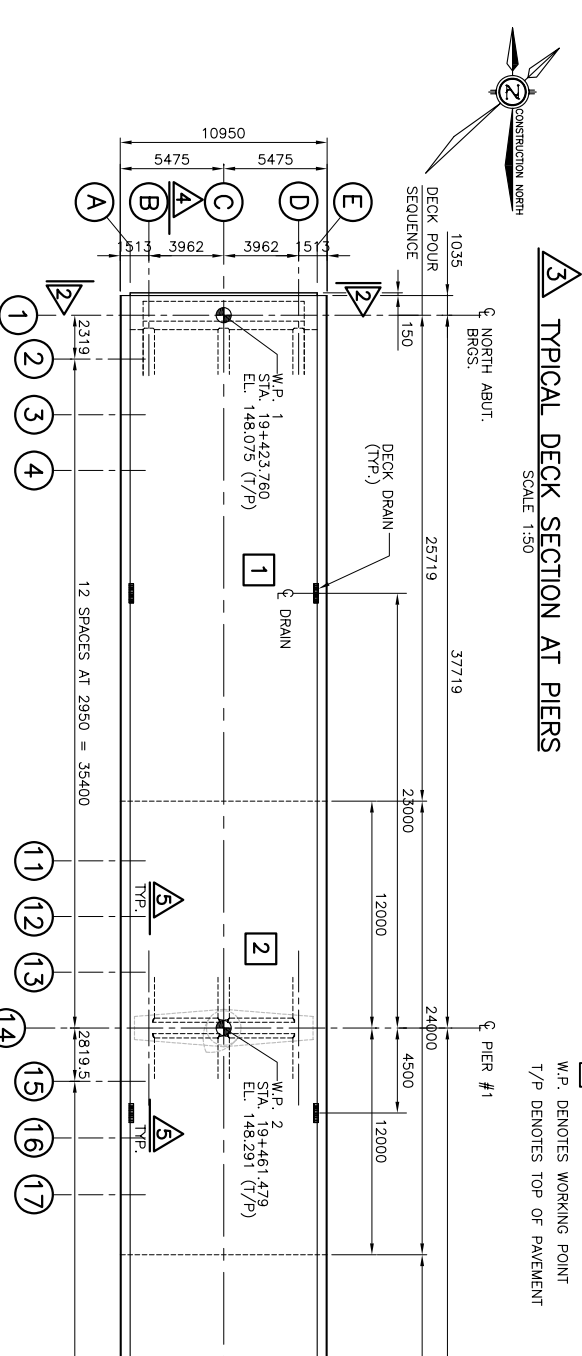
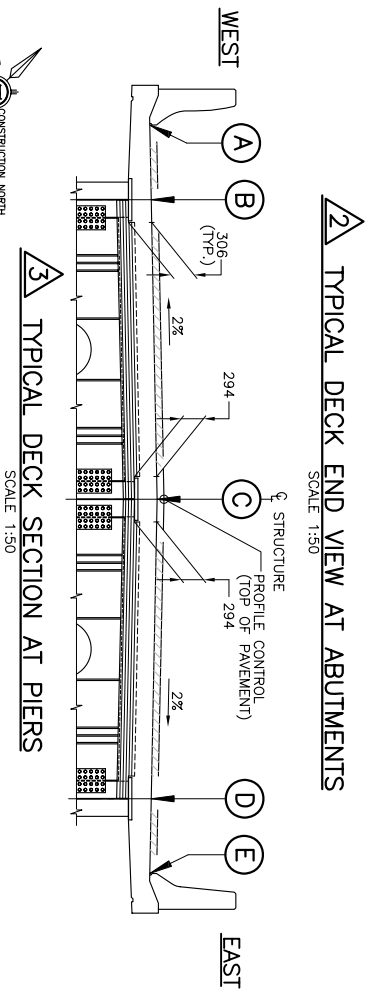
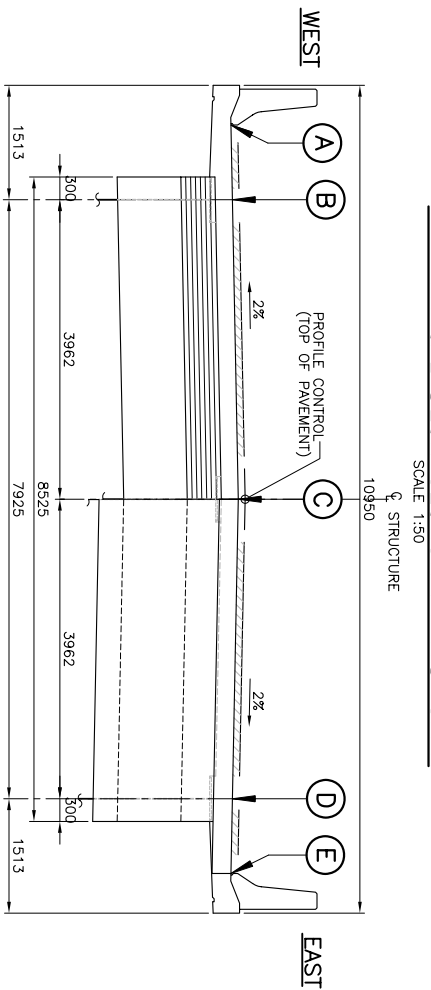
EXIST. CONCRETE

NEW CONCRETE

DESIGN M.M.		CHK S.U.	CODE	DESCRIPTION		DATE
DESIGN A.P.	CHK M.M.	SITE	CHBDC-10	CL	625-ONT	JUNE 2012
			29-196			
		DWG				RT-10



PIER #1	(TYP.) 0.1500	SCREED LINE	SCREED ELEVATIONS*				
			A	B	C	D	E
N. ABUT.		1	147.886	147.906	147.985	147.906	147.886
		2	147.902	147.922	148.001	147.922	147.902
		3	147.916	147.936	148.015	147.936	147.916
		4	147.933	147.953	148.032	147.953	147.933
		5	147.950	147.970	148.049	147.970	147.950
		6	147.967	147.987	148.066	147.987	147.967
		7	147.985	148.005	148.084	148.005	147.985
		8	148.001	148.021	148.100	148.021	148.001
		9	148.018	148.038	148.117	148.038	148.018
		10	148.035	148.055	148.134	148.055	148.035
		11	148.052	148.072	148.151	148.072	148.052
		12	148.069	148.089	148.168	148.089	148.069
		13	148.089	148.109	148.188	148.109	148.089
		14	148.103	148.123	148.202	148.123	148.103

[illegible]

*SEE NOTE 2

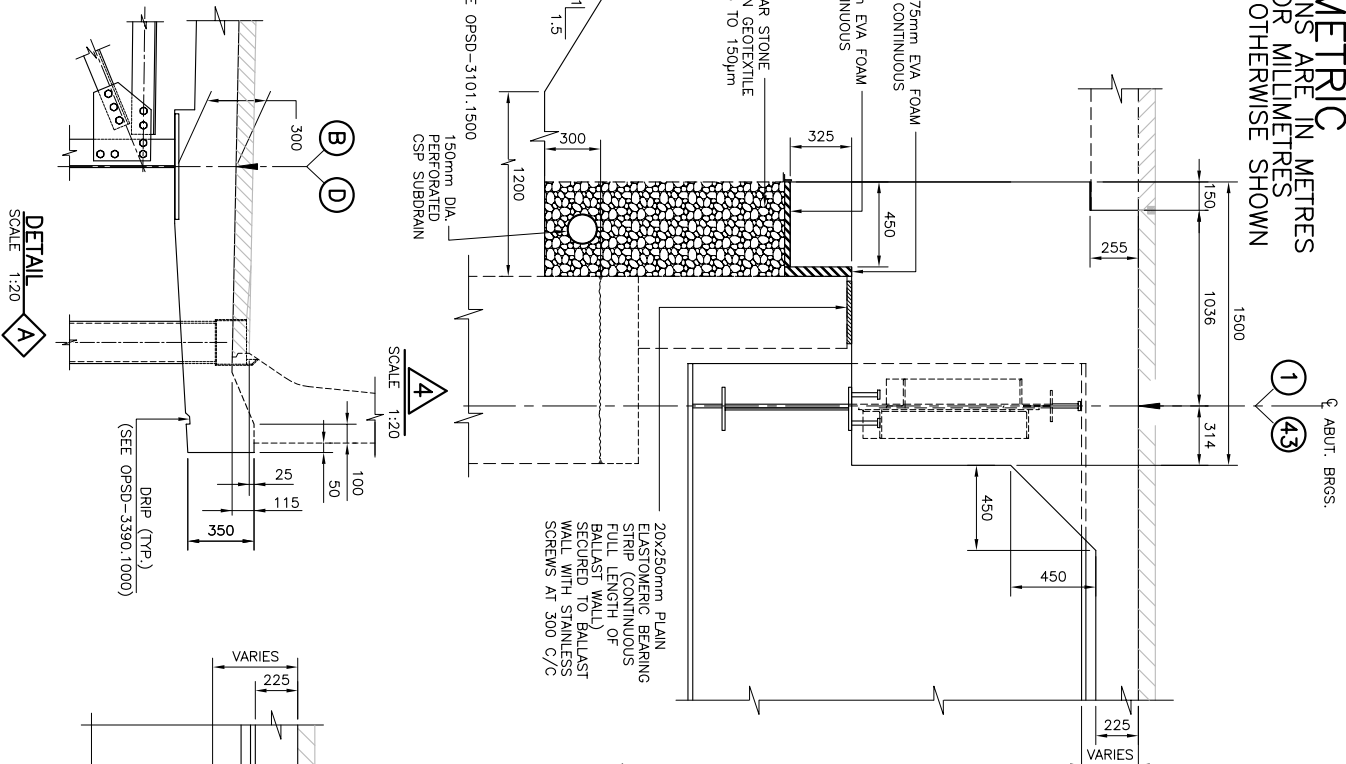
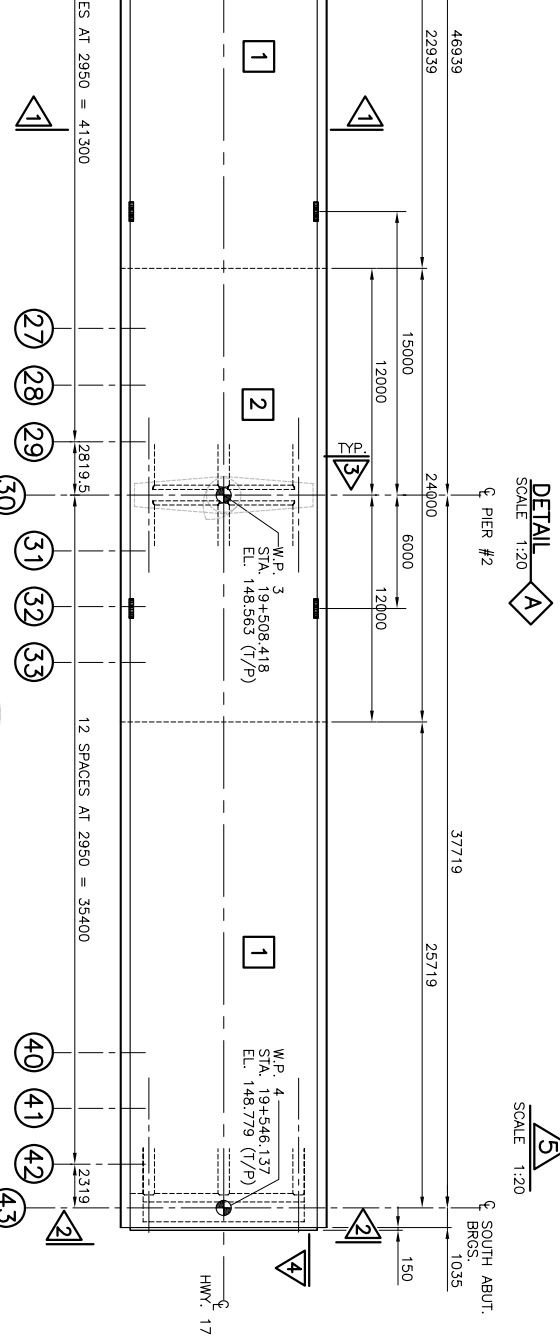
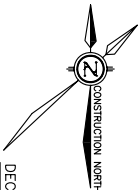
LEGEND

(A) LONGITUDINAL SCREED LINE SYMBOL

(2) TRANSVERSE SCREED LINE SYMBOL

1 POUR SEQUENCE NUMBER

T/P DENOTES TOP OF PAVEMENT



- ## NOTES

1. SCREEN ELEVATIONS ARE TO TOP OF CONCRETE.
2. SCREEN ELEVATIONS SHOWN IN TABLE ARE SUBJECT TO CHANGE DUE TO SLOTTED ELEVATIONS OF TOP OF DECK. VERIFY ELEVATIONS OF TOP OF DECK WITH THE ARCHITECT PRIOR TO DECK REMOVAL AS PER NOTE ON DWG. R-1-0.
3. TYPE B OR D DECK SLAB SHALL BE RETIARDED USING CONCRETE IN ADDITION TO ENSURE THAT THE CONCRETE REMAINS PLASTIC FOR THE DURATION OF THE POUR.
4. CONCRETE SHALL REMAIN PLASTIC IN POURING OF SECTIONS WITH THE SAME SEQUENCE NUMBER.
5. MINIMUM CONCRETE STRENGTH OF PERVIOUS DECK POUR SHALL BE 30 MPa BEFORE PROCEEDING WITH THE NEXT POUR.
6. CONCRETE IN BARRIER WALLS SHALL NOT BE PLACED UNTIL ALL CONCRETE IN DECK SLAB HAS REACHED A STRENGTH OF 30 MPa.

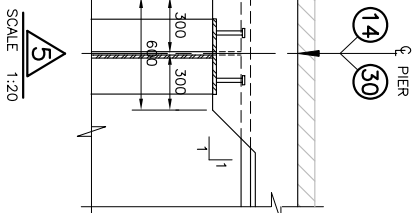
APPLICABLE STANDARD DRAWINGS



0P5D--3311.1000 DECK GIRDERS, STEEL, METHOD OF OBTAINING
SORED ELEVATIONS

0P5D--3370.1010 DECK, WATERPROOFING, HOT APPLIED ASPHALT
MEMBRANE AT ACTIVE CRACKS GREATER THAN
2mm WIDE AND CONSTRUCTION JOINTS

0P5D--3390.1000 DECK, DRIP CHANNEL

0P5D--3950.1000 JOINTS--CONCRETE EXPANSION AND CONSTRUCTION
ON STRUCTURE



 <p>Ontario</p> <p>Ministry of Transportation Highway Standards Branch Bridge Office</p>	<p>CONTRACT 2012-4014</p> <p>WP No 4059-01-00</p>	
<p>HIGHWAY 17 PETAWAWA RIVER BRIDGE REHABILITATION DECK DETAILS</p>	<p>SHEET 26</p>	

DRAWING NAME: DeckDet.dwg
CREATED: 2004/06/08

PLAN

SCALE 1:200

DRAWING NOT TO BE SCALED
100 mm ON ORIGINAL DRAWING

[illegible]




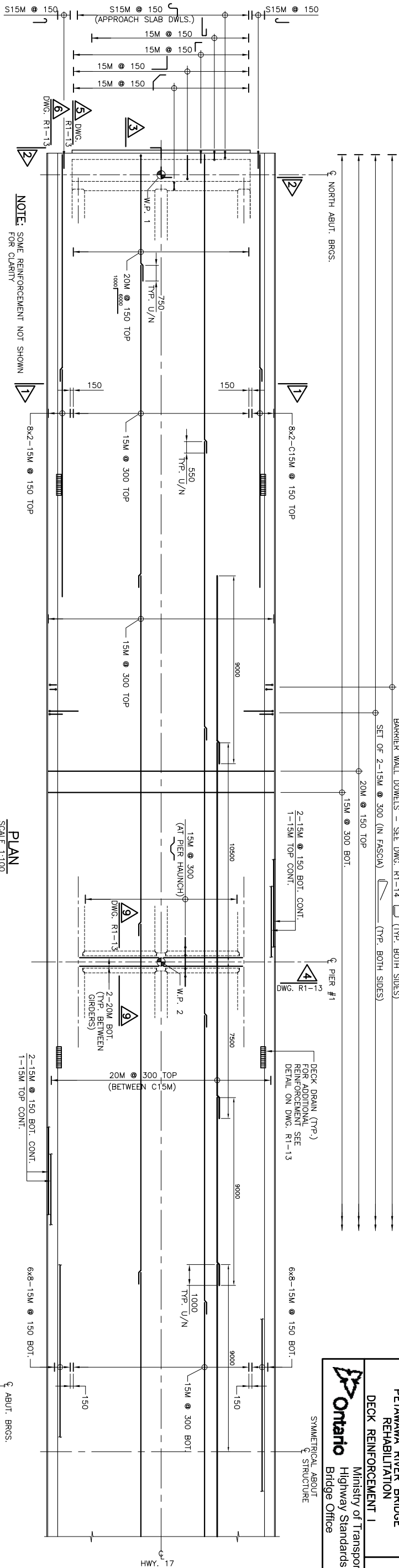
NOTES

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DWG. No's R1-11 AND R1-13.

METRIC

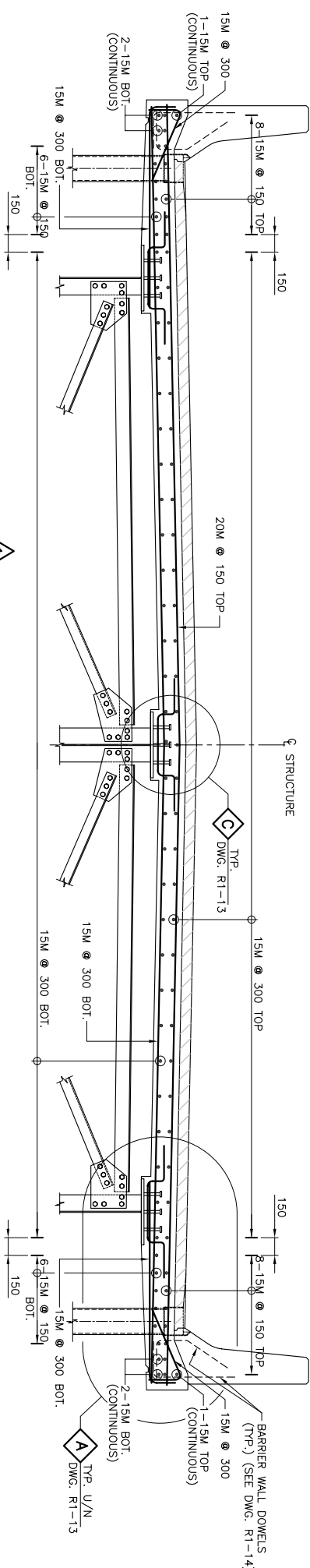
DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

 Ontario	HIGHWAY 17 PETAWAWA RIVER BRIDGE REHABILITATION DECK REINFORCEMENT 1	SHEET 27
Ministry of Transportation Highway Standards Branch Bridge Office	CONT 2012-4014 WP No 4059-01-00	



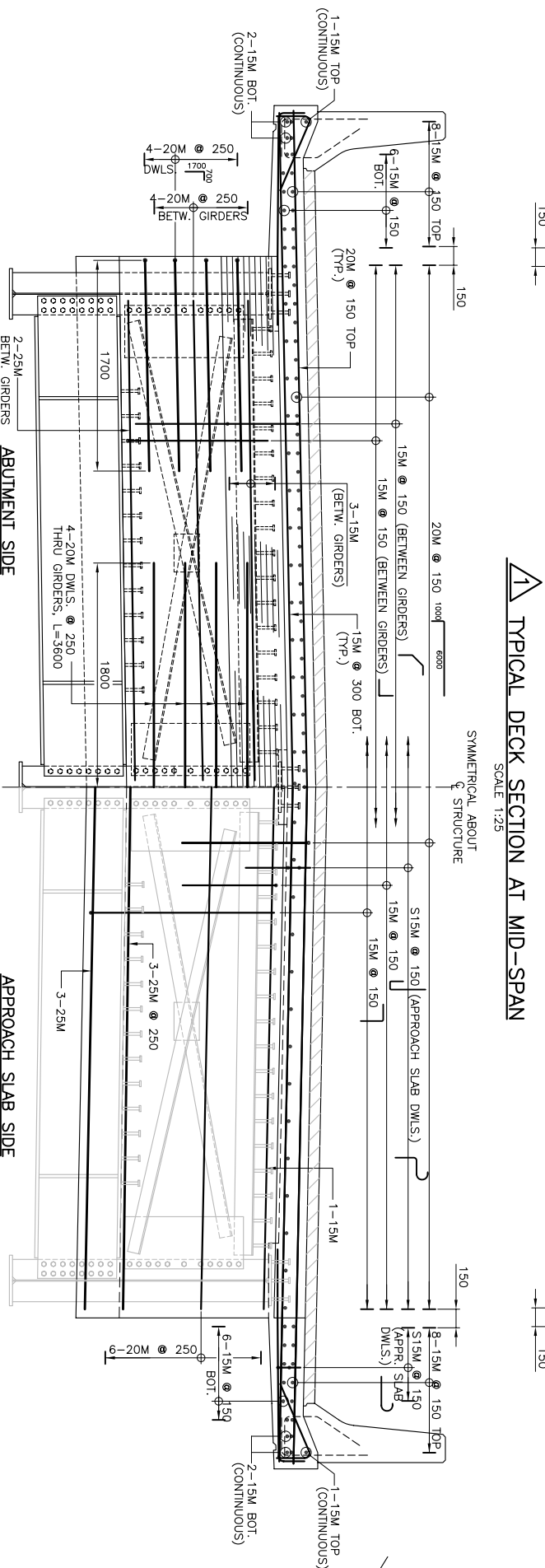
NOTE: SOME REINFORCEMENT NOT SHOWN FOR CLARITY

PLAN
SCALE 1:100



1-15M TOP CONT.

6x8-15M @ 150 BOT.



71 TYPICAL DECK SECTION AT MID-SPAN
SCALE 1:25

SCALE 1:25

SYMMETRICAL ABOUT
STRICTLINER

ABUTMENT SIDE

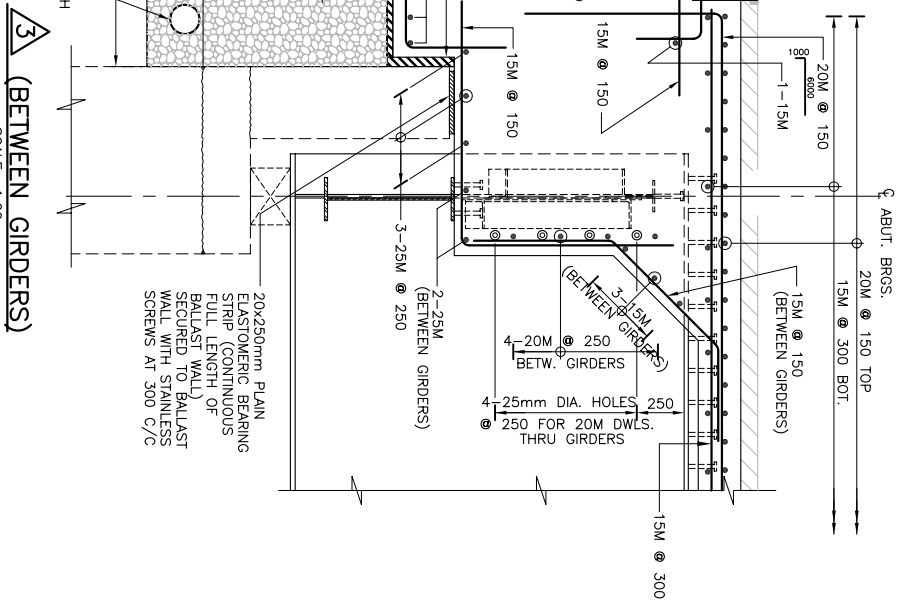
APPROACH SLAB SIDE

NOTE: SOME REINFORCEMENT NOT SHOWN FOR CLARITY

2 TYPICAL DECK SECTION AT ABUTMENT

SCALE 1:25

150mm DIA. PERFORATED _____
CSP SUBRAIN TO GO THROUGH
EXIST. WINGWALL TO DRAIN
WATER AWAY FROM ABUTMENT



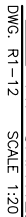
3 (BETWEEN GIRDERS)

SCALE 1:20

APPLICABLE STANDARD DRAWINGS

OPSD-3329.1000 DECK, REINFORCEMENT, SUPPORTS FOR REINFORCING STEEL FOR SLAB DEPTHS 300mm OR LESS.
OPSD-3340.1500 DECK DRAINS WITH TRANSVERSE BAR OPENINGS.

[illegible]



METRIC
DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

CONT 2012-4014
WP No 4059-01-00

HIGHWAY 17
PETAWAWA RIVER BRIDGE
REHABILITATION
DECK REINFORCEMENT II

Ministry of Transportation
Highway Standards Branch
Bridge Office

NOTES

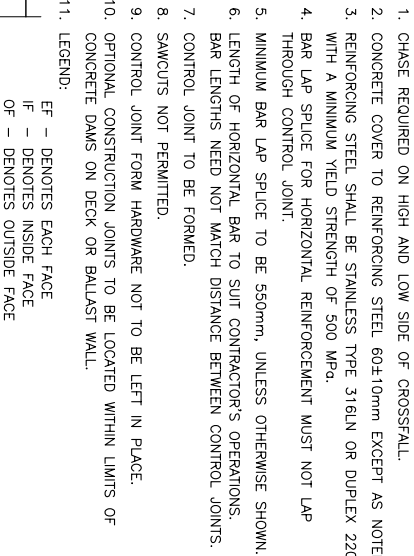
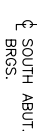
1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DWG No's R1-11 AND R1-12.

APPLICABLE STANDARD DRAWINGS

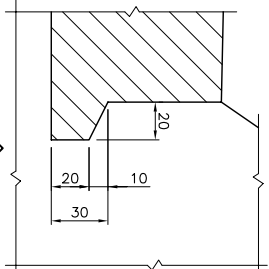
OPSD-3329.1000 DECK, REINFORCEMENT, SUPPORTS FOR REINFORCING STEEL FOR SLAB DEPTHS 300mm OR LESS.
OPSD-3340.1500 DECK DRAINS WITH TRANSVERSE BAR OPENINGS.

[illegible]

CHK	M.M.	SITE	29-196	DWG	R1
DRAWN A.P.					



BARRIER WALL ON DECK



DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

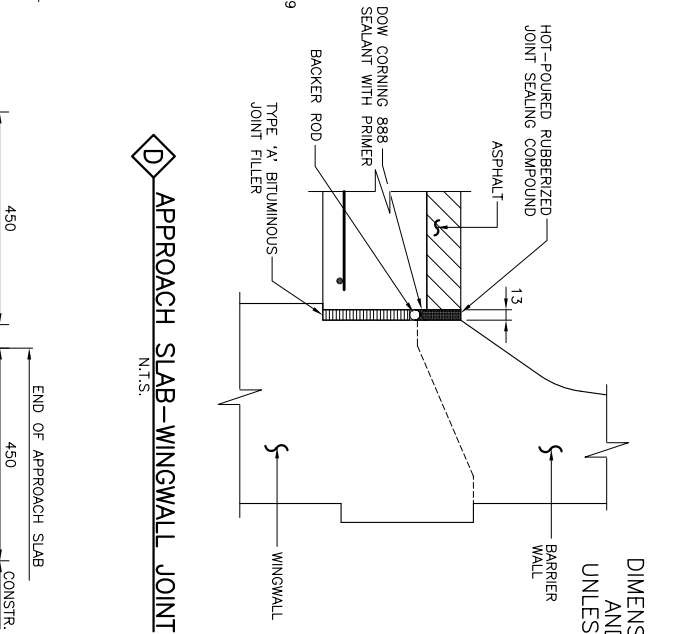
METRIC
DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN



CONT 2012-4014
WP No 4059-01-00

HIGHWAY 17
PETAWAWA RIVER BRIDGE
REHABILITATION
BARRIER WALL W/O RAILING-PL3
STAINLESS STEEL REBAR

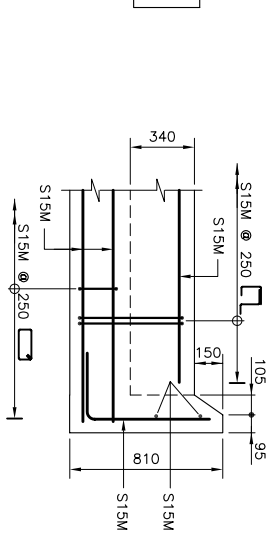
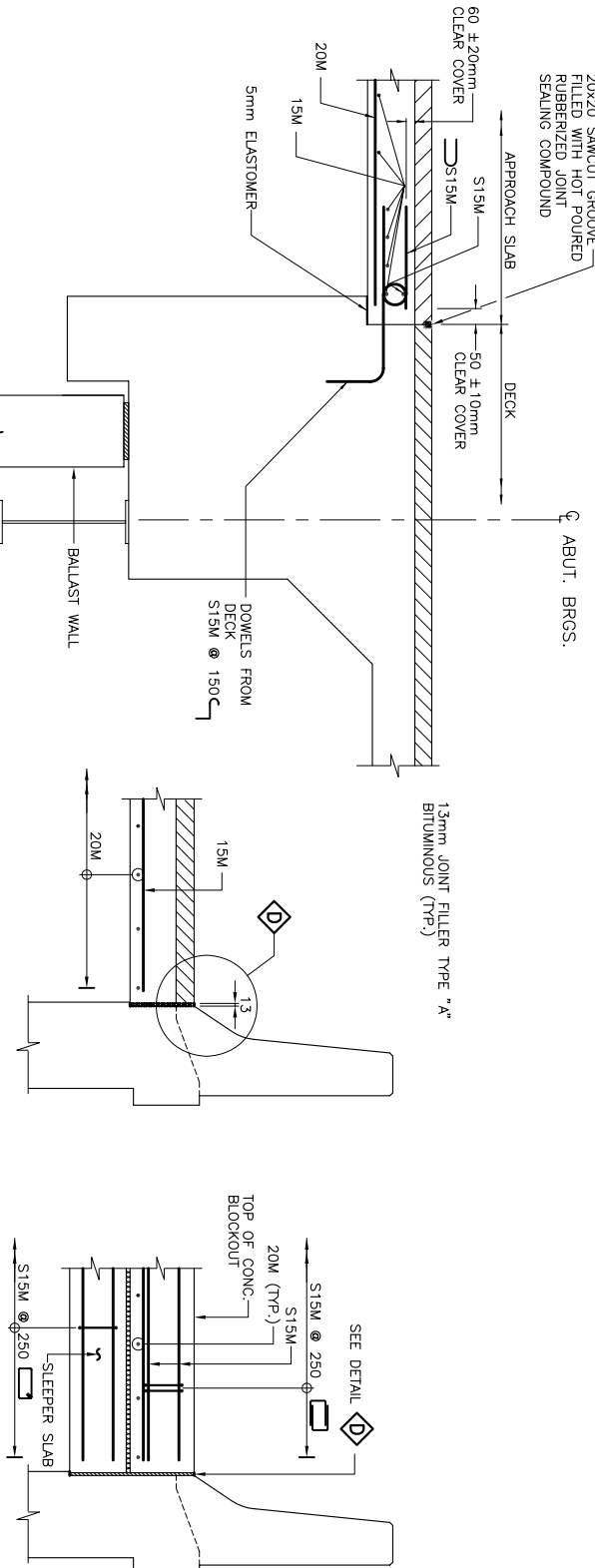
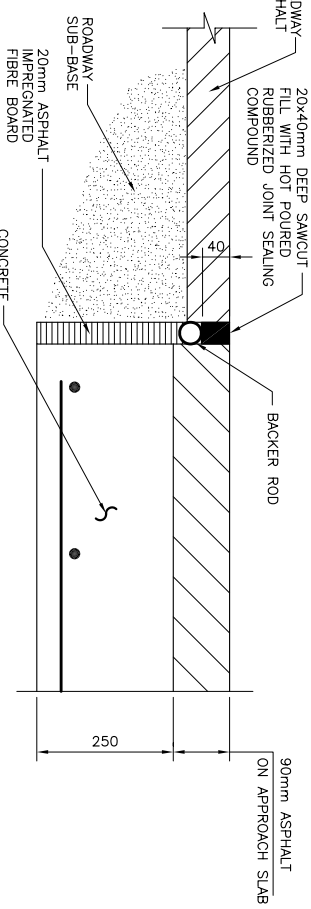
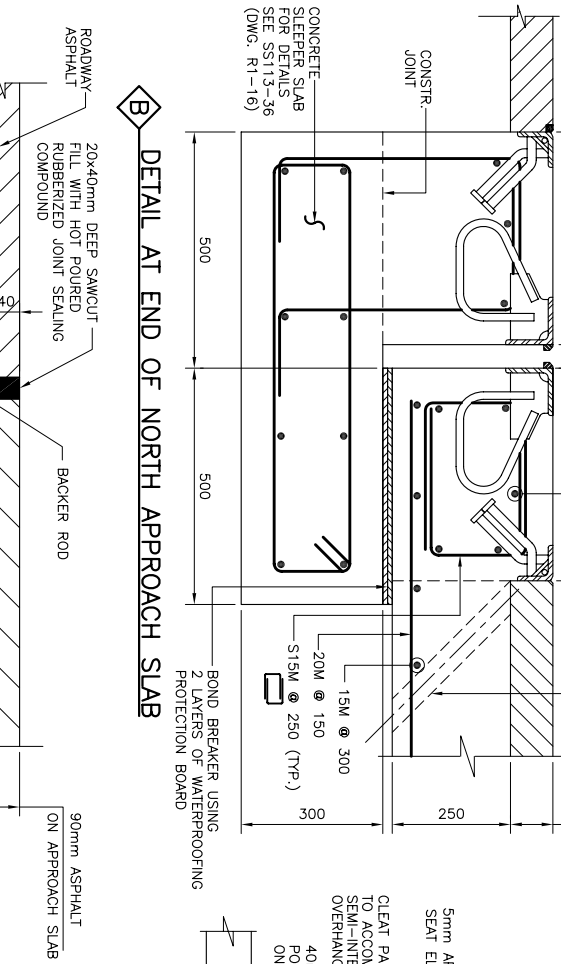
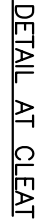
 **Ontario**
Ministry of Transportation
Highway Standards Branch
Bridge Office

NOTES:



 Ontario	CONTRACT 2012-4014 WP No 4059-01-00	
Highway 17 PETAWAWA RIVER BRIDGE REHABILITATION 6000 mm APPROACH SLAB	SHEET 30	
Ministry of Transportation Highway Standards Branch Bridge Office		

-
- Technical drawing of a bridge deck cross-section showing the construction of a new ballast wall and abutment. The drawing includes dimensions and labels for various components:
- Dimensions:**
 - Overall width: 500
 - Overall height: 500
 - Blockout width: 450
 - Blockout height: 450
 - Asphalt drainage tubes: 90mm
 - Asphalt thickness: 150
 - Approach slab width: 150
 - Approach slab height: 150
 - Abutment width: 150
 - Abutment height: 150
 - Labels:**
 - CONSTR. JOINT
 - CONCRETE SLEEPER SLAB FOR DETAILS SEE S313-36 (DWG. R1-16)
 - BOND BREAKER USING 2 LAYERS OF WATERPROOFING PROTECTION BOARD
 - ASPHALT DRAINAGE TUBES
 - 90mm ASPHALT
 - 5mm APPROACH SLAB SEAT ELASTOMER
 - CLEAT PARTLY REMOVED TO ACCOMMODATE SEMI-INTEGRAL ABUTMENT OVERHANG
 - 40mm EXPANDED POLYSTYRENE ON CLEAT
 - WINGWALL
 - ABUTMENT
 - NEW BALLAST WALL
 - ABUT. BRGS.



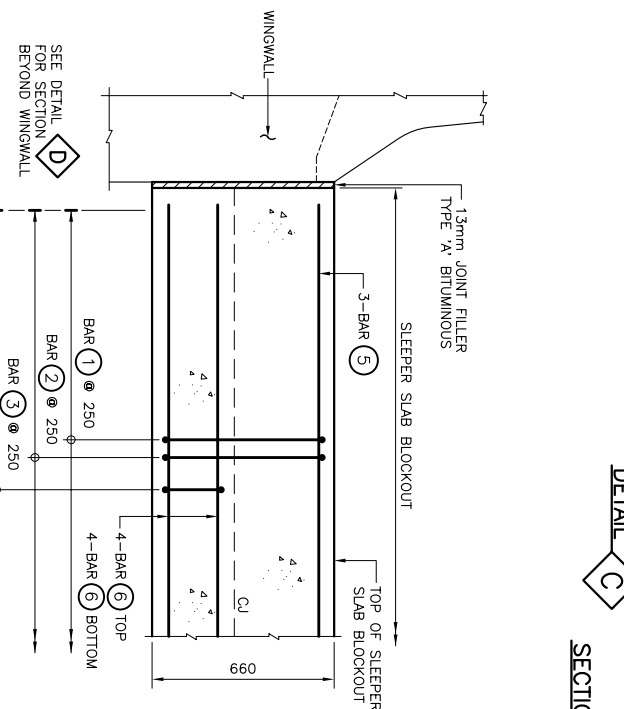
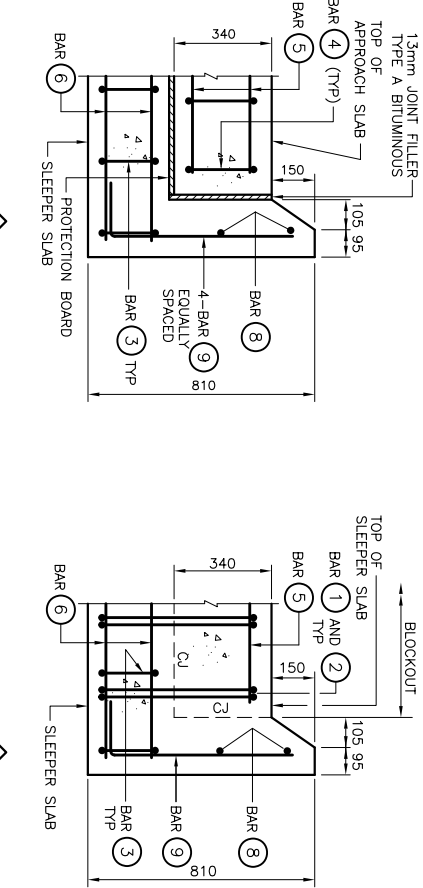
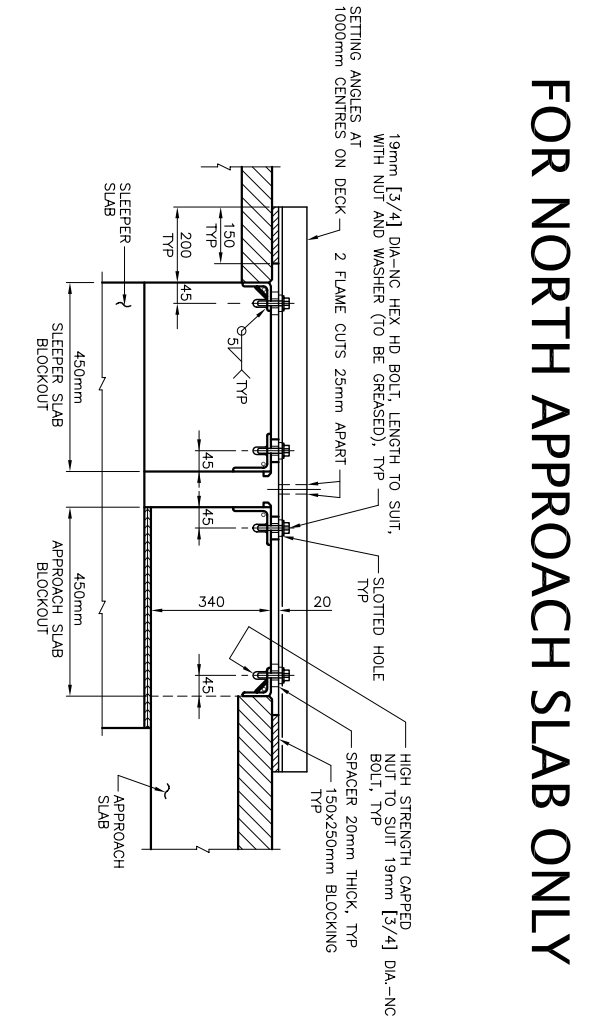
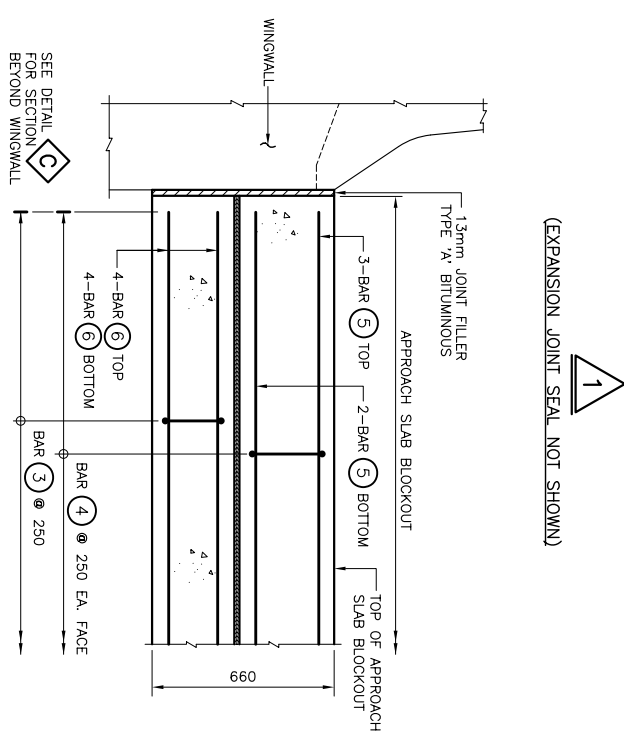
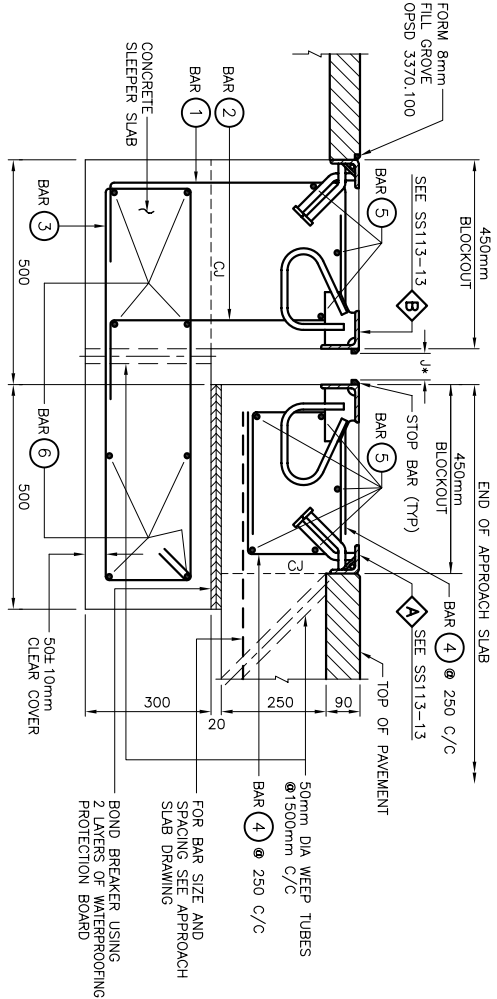
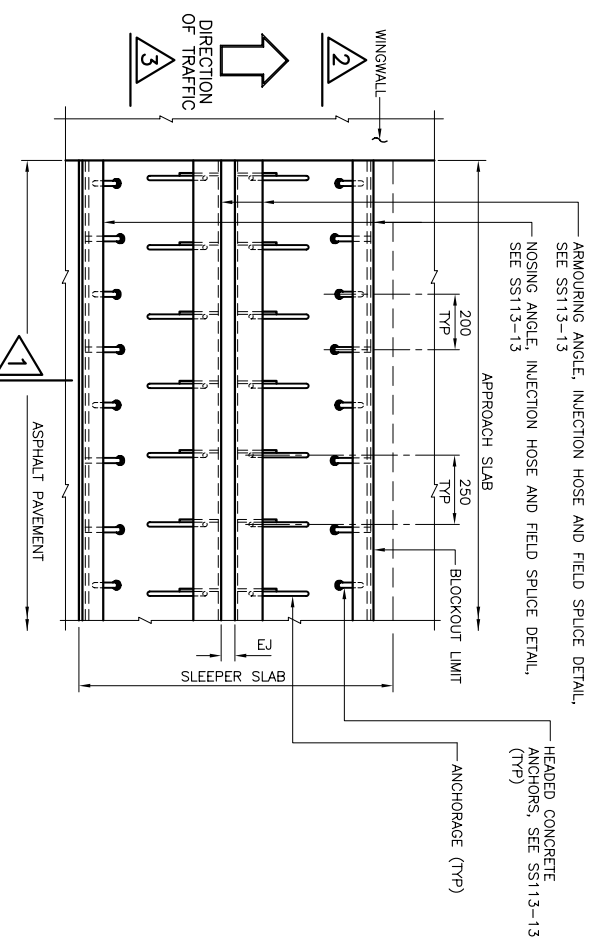
D APPROACH SLAB-WINGWALL JOINT
N.T.S.

N.T.S.

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH DWGS. SS113-13 (DWG. R1-17) AND SS113-36 (DWG. R1-16).
2. CLEAR COVER TO REINFORCING STEEL 70 ± 20 mm EXCEPT AS NOTED.
3. BARS MARKED WITH PREFIX C DENOTE EPOXY COATED BARS.
4. WATERPROOFING AT JOINT BETWEEN BRIDGE AND APPROACH SLAB TO BE IN ACCORDANCE WITH OPSD-3370.1000.
5. WATERPROOFING FOR BRIDGES WITHOUT EXPANSION JOINTS (RIGID FRAMES AND INTERNAL ABUTMENTS) TO BE IN ACCORDANCE WITH OPSD-3370.1010.

MODIFIED	
STANDARD DRAWING APRIL 2008	SS116-1
6000 mm APPROACH SLAB	

REVISIONS			
DATE	BY	DESCRIPTION	
DESIGN	STD	CHK M.M.	CODE
DEANN	A.P.	CHK M.M.	SITE
		29-196	CL 625-ONT
			DWG
			R1-15
			DATE
			JUNE 2012



FOR NORTH APPROACH SLAB ONLY

METRIC
DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

BAR MARK	SIZE	SHAPE
1	S15M	500 310 180
2	S15M	500 300 180
3	S15M	160 310 860
4	S15M	200 310
5	S15M	STRAIGHT
6	S15M	STRAIGHT
7	S15M	180 445
8	S15M	STRAIGHT
9	S15M	180 670

NOTES:

- THIS DRAWING SHOWS EXPANSION JOINT AND SLEEPER SLAB AT THE END OF APPROACH SLAB OF INTEGRAL AND SEMI-INTEGRAL ABUTMENT BRIDGES AND THIS DETAIL IS ONLY APPLICABLE FOR CONCRETE BRIDGES GREATER THAN 100m IN LENGTH AND STEEL BRIDGES GREATER THAN 75m IN LENGTH.
- CLASS OF CONCRETE TO BE 30 MPa.
- REINFORCING STEEL TO BE GRADE 400 EXCEPT AS NOTED.
- COVER TO REINFORCING STEEL 70x20mm EXCEPT AS NOTED.
- EXPANSION JOINT SHALL BE IN ACCORDANCE WITH THE DESIGNATED SOURCES FOR MATERIALS LIST DSM 9.4027, TYPE C.
- EXPANSION JOINT ASSEMBLY CONSTRUCTION AND MATERIAL SHALL BE ACCORDING TO OPSS 920 AND OPSS 1210, AND AS SPECIFIED IN THE CONTRACT DOCUMENTS.
- JOINT ASSEMBLY SHALL BE COMPLETELY SHOP ASSEMBLED (EXCEPT FOR SEALS) AND PRESET TO DIMENSION 'J' FOR 15°C AND ADJUSTED IN THE FIELD TO SUIT INSTALLATION TEMPERATURE.
- JOINT ASSEMBLY INSTALLATION TEMPERATURE SHALL BE TAKEN AS MEAN SHADE AIR TEMPERATURE AT STRUCTURE PRIOR TO JOINT INSTALLATION AS FOLLOWS:
 - FOR CONCRETE STRUCTURES - 48 HOURS
 - FOR STEEL STRUCTURES - 24 HOURS
- FIELD SPLICES IN JOINT ASSEMBLY ARE ONLY PERMITTED AT STAGED CONSTRUCTION, AND/OR AS SHOWN ON THE CONTRACT DRAWINGS.
- FIELD SPLICE DETAILS AT STAGED CONSTRUCTION FOR ARMOURING PLATES AND NOSING ANGLES SHALL REFER TO DRAWING SS113-13.
- IF THE JOINT ARMOURING FOR A SKEW STRUCTURE IS SPLICED AT A CROWN, THE SPLICE SHALL BE DETAILED PARALLEL TO THE CENTRELINE OF THE TRAFFIC LANE.
- SETTING ANGLES SHALL BE FLAME CUT ACCORDING TO OPSS 920, BUT IN NO CASE PRIOR TO CONCRETE REACHING INITIAL SET.
- AFTER CURING OF THE CONCRETE FOR A MINIMUM OF 7 DAYS, THE SETTING DEVICES MAY BE REMOVED, THE VIDS UNDER THE ARMOURING ANGLE AND NOSING ANGLE SHALL THEN BE PRESSURE INJECTED.
- PREFORMED SEALS SHALL HAVE MINIMUM THICKNESS OF 50mm OR AS PER DSM.
- ALL STEEL RETAINER SURFACES COMING IN CONTACT WITH PREFORMED SEAL SHALL BE CLEANED PRIOR TO INSTALLATION OF THE SEAL.
- PREFORMED SEALS SHALL BE INSTALLED AFTER JOINT ASSEMBLY HAS BEEN CAST PLACE, STYROFOAM OR FILLER BETWEEN APPROACH SLAB AND SLEEPER SLAB REMOVED, AND EXPANSION GAP CLEARED OF ANY DEBRIS.
- HEADED CONCRETE ANCHORS IN NOSING ANGLES SHALL BE LOCATED WITHIN 75mm OF EITHER SIDE OF FIELD SPLICES.
- PROTECT INJECTION HOSE AND FITTINGS ADJACENT TO FIELD SPLICE DURING WELDING AND REMOVE PROTECTION PRIOR TO PLACING OF CONCRETE IN BLOCKOUT.
- FOR SKEWED STRUCTURE, WORKING DRAWING SHALL BE DETAILED TO SUIT GEOMETRY OF STRUCTURE.
- ALL JOINT ANCHORAGES SHALL BE DETAILED ON WORKING DRAWINGS PERPENDICULAR TO THE EXPANSION JOINT ON BOTH THE APPROACH SLAB SIDE AND THE SLEEPER SLAB SIDE EXCEPT AS FOLLOWS: STRUCTURE SKEWED FROM OVER 15° AND UP TO 45° SHALL HAVE ANCHORAGES DETAILED 30° OFFSET FROM THE PERPENDICULAR TO THE EXPANSION JOINT ON THE APPROACH SLAB SIDE.
- THIS DRAWING TO BE READ IN CONJUNCTION WITH DWG.: 6000mm APPROACH SLAB (DWG. R1-15) AND SS113-13 (DWG. R1-17).

LEGEND:

[] DENOTED FASTENER SIZE IN INCHES

TABLE OF DESIGN REQUIREMENTS (TO BE FULLY COMPLETED BY DESIGNER)									
EXP. JOINT LOCATION	MTO GAP **		DESIGN ***		* "J" AT INSTALLATION		TEMPERATURE (°C)		
	MIN	MAX	MOVEMENT				-5°	0°	15°
NORTH APPROACH	40	100	60	80	76	72	68	63	59

* DIMENSION 'J' MEASURED PERPENDICULAR TO CENTRELINE OF EXPANSION JOINT, WHERE MIN. AND MAX. FOR JOINT SUPPLIED DIFFER FROM THOSE SHOWN IN TABLE. 'J' DIMENSIONS SHALL BE REVISED BY CONTRACTOR AND SHOWN ON SHOP DRAWINGS. FOR STAGED CONSTRUCTION ON STRUCTURES OTHER THAN POST-TENSIONED, THE CONTRACTOR SHALL USE THE FIRST STAGE OBSERVED 'J' GAP TO INSTALL THE SECOND STAGE.

** MTO GAP, MEASURED BETWEEN PROJECTING FACES OF STEEL CLAMPING BAR, IS TAKEN FROM DSM 9.4027, TYPE 'C'.

*** CALCULATED TOTAL MOVEMENT AT SIS OCCURRING AFTER TIME OF JOINT INSTALLATION. (MEASURED PARALLEL TO CENTRELINE OF STRUCTURE)

MODIFIED	
STANDARD DRAWING NOVEMBER 2010	SS113-36
TYPE 'C' STRIP SEAL EXPANSION JOINT AND SLEEPER SLAB FOR INTEGRAL AND SEMI-INTEGRAL ABUTMENT BRIDGES	



REVISIONS			
DESIGN STD	CHK	M.M. [CODE]	DATE
DESIGN STD	CHK	M.M. [SITE]	29-196

DRAWING NOT TO BE SCALED
100mm ON ORIGINAL DRAWING

METRIC

DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

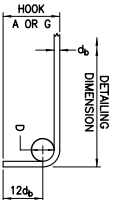
CONT 2012-4014
WP No 4059-01-00



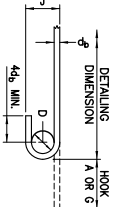
HIGHWAY 17
PETAWAWA RIVER BRIDGE
REHABILITATION
STANDARD DRAWINGS

SHEET
33

 **Ontario**
Ministry of Transportation
Highway Standards Branch
Bridge Office



STANDARD 90° HOOK



STANDARD 180° HOOK

MINIMUM BENDING PIN DIAMETER, D, mm		
BAR SIZE	STEEL GRADE	400W
10M	70	60
15M	100	90
20M	120	100
25M	150	150
30M	250	200
35M	300	250
45M	450 (1)	400
55M	600 (1)	550

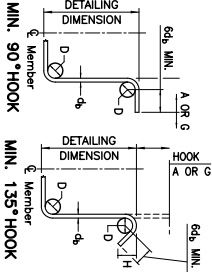
(1) Special fabrication is required for bends exceeding 90° for bars of these sizes and grade.
(2) For stainless steel, with $F_y = 420$, use the same D as for 400R.

STANDARD HOOK DIMENSIONS			
BAR SIZE	90° HOOKS		180° HOOKS
	A OR G (mm)	A OR G (mm)	J (mm)
400R	400R	400W	400R 400W
10M	180	180	130 90 80
15M	260	250	180 170 130 120
20M	310	300	220 200 160 140
25M	400	400	280 280 200 200
30M	510	490	400 350 310 260
35M	610	590	480 430 370 320
45M	790	770	680 630 540 490
55M	1030	1010	900 850 710 660

NOTE: All Hook Dimensions are according to the CHBDC-2000.

MINIMUM STIRRUP AND TIE HOOK DIMENSIONS

BAR SIZE	BAR DIAM. d_b (mm)	PIN DIAM. D (mm)	90°		135°	
			A OR G (mm)	A OR G (mm)	H (approx.) (mm)	
10M	11.3	45	100	100	70	
15M	16.0	65	140	140	100	
20M	19.5	80	180	175	115	
25M	25.2	100	230			



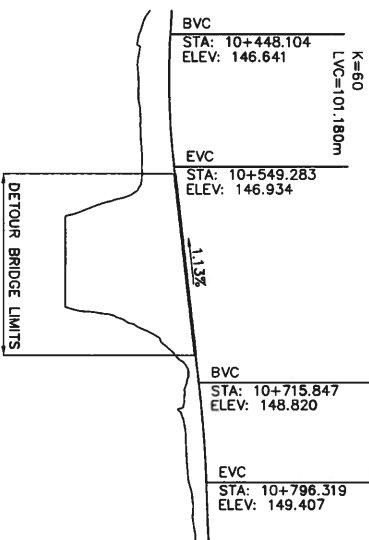
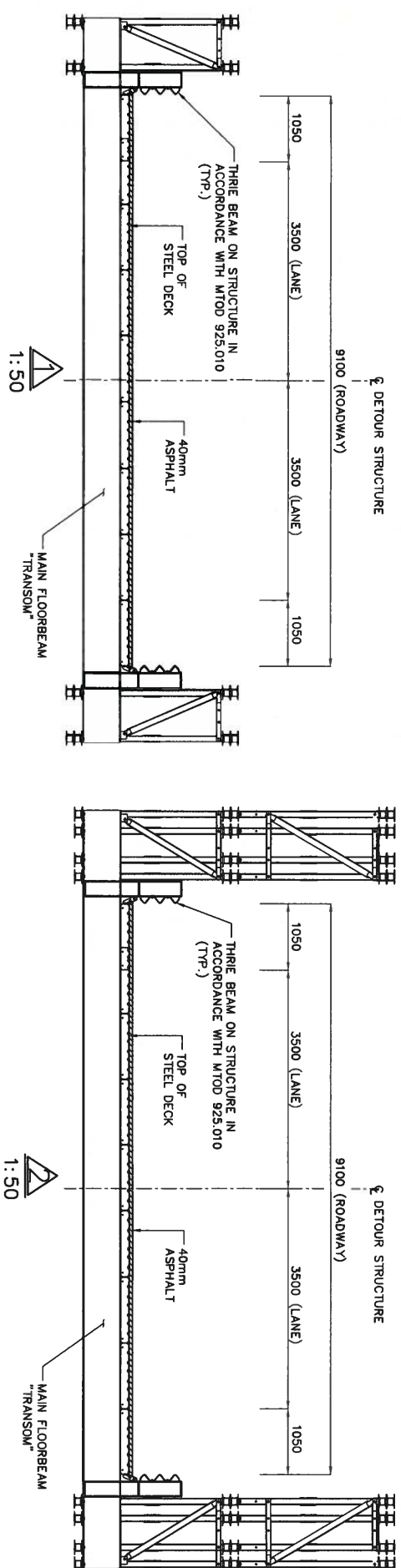
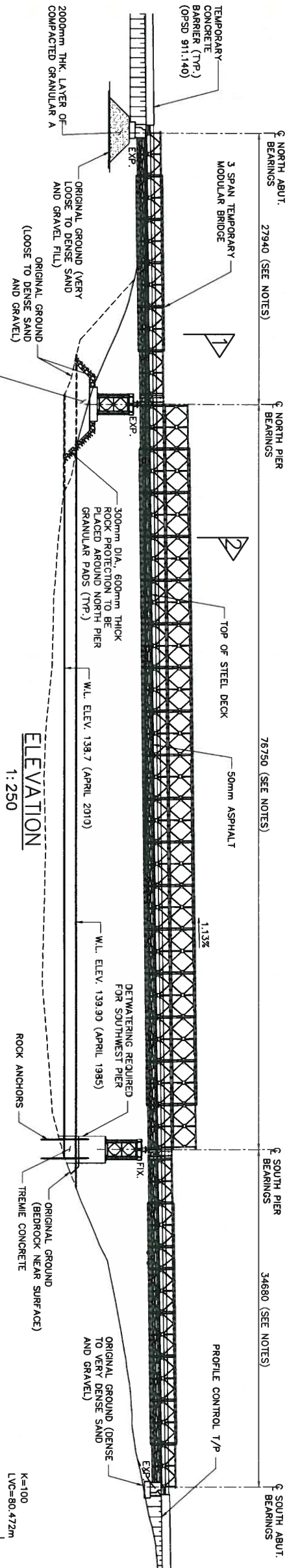
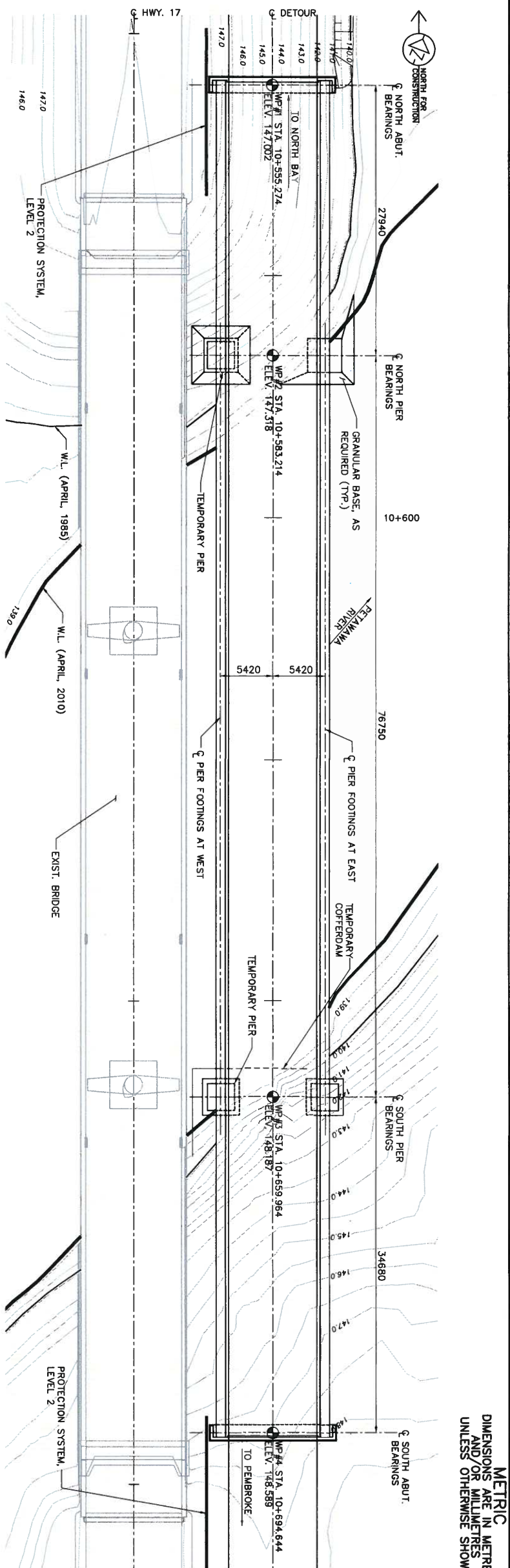
HOOK DIMENSIONS
FOR UNCOATED BARS

SS12-1

Date	JUNE 2002	Rev	
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DRAWING NOT TO BE SCALED
100 mm ON ORIGINAL DRAWING

REVISIONS			
DESIGN	STD	CHK M.M.	CODE CHBDC-06 ICL 625-ONT DATE JUNE 2012
DRAWN	STD	CHK M.M.	SITE 29-196 DWG R1 -18



METRIC
DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

HIGHWAY 17
CONT No 2012-4014
WP No 241-00-01

TEMPORARY BRIDGE OVER
PETAWAWA RIVER

GENERAL ARRANGEMENT

WILLIS

D.M. Willis, Attorndes
150 Jemison Drive
Petersborough, Ontario
Canada, K9J 0B9

P: 705.742.2297
F: 705.741.3568
E: willis@dmwillis.com

GENERAL NOTES:

1. CLASS OF CONCRETE
ALL CONCRETE - 30 MPa
2. CLEAR COVER TO REINFORCING STEEL - 100±25 UNLESS OTHERWISE NOTED.
3. REINFORCING STEEL SHALL BE GRADE 400W UNLESS OTHERWISE NOTED. BARS MARKED WITH PREFIX 'C' DENOTE COATED BARS.
4. UNLESS OTHERWISE SHOWN, TENSION LAP SPLICES SHALL BE CLASS B.
5. BARS HOOKS SHALL HAVE STANDARD HOOK DIMENSIONS USING MINIMUM BEND DIAMETERS, WHILE STRUTS AND TIES SHALL HAVE MINIMUM HOOK DIMENSIONS. ALL HOOKS SHALL BE IN ACCORDANCE WITH THE STRUCTURAL STANDARD DRAWINGS SS12-1 AND SS12-2, UNLESS INDICATED OTHERWISE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ERECTION, LAUNCHING, MAINTENANCE, AND REMOVAL OF THE TEMPORARY MODULAR BRIDGE (TMAB) AND SHALL SUBMIT TO THE SPECIAL PROVISIONS SHOWING THE NECESSARY DETAILS AND REQUIREMENTS TO CARRY OUT THESE OPERATIONS. THIS WILL INCLUDE THE CONSTRUCTION SEQUENCE OF THE ABUTMENTS, PIERS AND GRADING TO FACILITATE THE ERECTION AND LAUNCHING OF THE BRIDGE.
7. DIMENSIONS OF TMAB COMPONENTS TO BE CONFIRMED BEFORE ESTABLISHING ELEVATION AND LOCATION OF BEARING SEATS.

MAINTENANCE

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE STRUCTURE AND APPROACHES, INCLUDING THE FOLLOWING

- a) CHECK THAT ALL BRACING BOLTS, CHORD BOLTS AND DECK BOLTS ARE, AND REMAIN, FULLY TIGHTENED
- b) KEEP BASE PLATES AND BEARINGS FREE OF DEBRIS
- c) INSPECT BASE PLATES AND SUBSTRUCTURE PERIODICALLY, AND CORRECT UNDESIRABLE SETTLEMENT TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR
- d) NOTIFY THE CONTRACT ADMINISTRATOR IMMEDIATELY OF ANY DAMAGE TO THE BRIDGE OR ITS SUPPORTS.

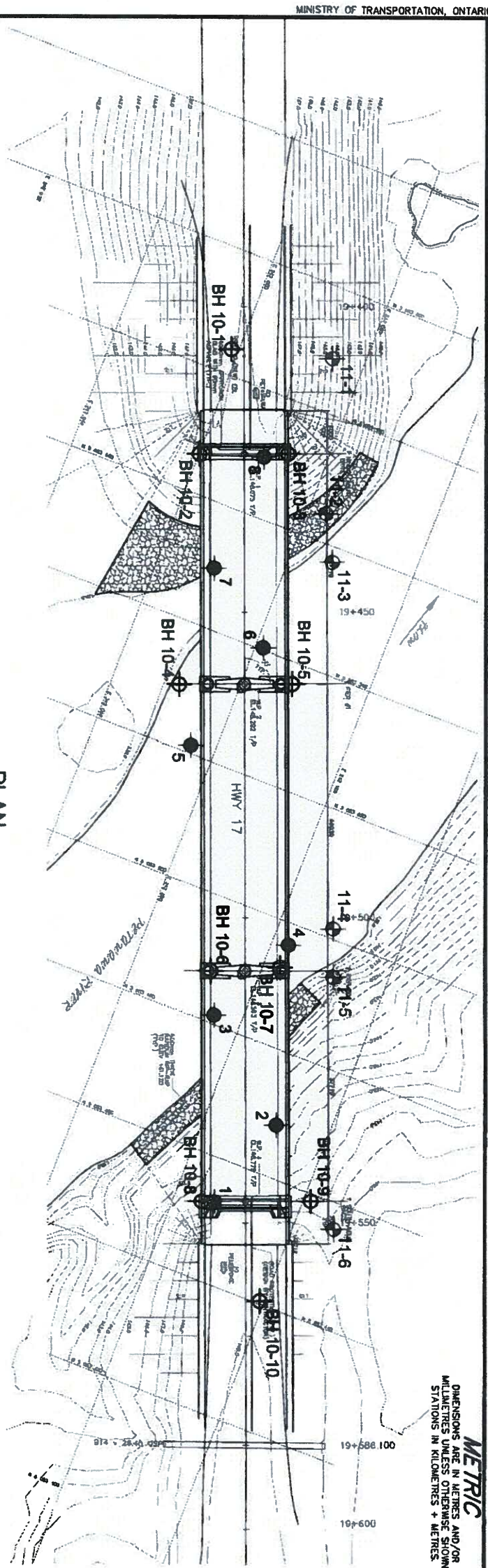
LIST OF ABBREVIATIONS

- WP - DENOTES WORKING POINT
- W.L. - DENOTES WATER LEVEL
- CL - DENOTES CENTRE LINE

LIST OF DRAWINGS:

1. GENERAL ARRANGEMENT
2. BOREHOLE LOCATIONS AND SOIL STRAT.
3. NORTH ABUTMENT DETAILS I
4. NORTH ABUTMENT DETAILS II
5. SOUTH ABUTMENT DETAILS
6. NORTH PIER DETAILS
7. SOUTH PIER DETAILS
8. STANDARD DETAILS

REVISIONS			
DATE	BY	DESCRIPTION	
DESIGN QZ	CHK DB	CODE CHBC-2006	LOAD CL-625-ONT
AWARD JP	CHK DB	SITE	STRUCT
		SCHEME	DATE 03-2012
			OMG 1



METRIC

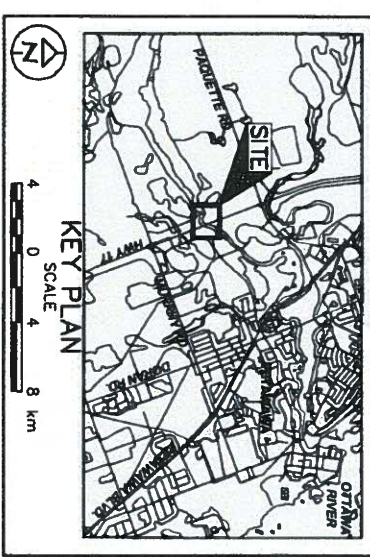
DIMENSIONS ARE IN METRES AND/OR
MILES UNLESS OTHERWISE SHOWN.
STATIONS IN KILOMETRES + METRES

CONT No.
WP No. 4059-01-00

PETAWAWA RIVER BRIDGE
BOREHOLE LOCATIONS AND SOIL STRATA

SHEET
35

Golder Associates Ltd.
OTTAWA, ONTARIO, CANADA



LEGEND

- Current Investigation
- Previous Golder Associates Ltd. Investigation
- Previous MTO Investigation
- Geocres No. 31F-91
- Standard Penetration Test Value
- Blows/0.3m unless otherwise stated
- (Std. Pen. Test, 475 j/blow)
- Rock Quality Designation

No.	ELEVATION	CO-ORDINATES	
		NORTHING	EASTING
11-1	144.5	5083588.6	242074.7
11-2	140.5	5083564.6	242082.9
11-3	137.4	5083557.5	242086.7
11-4	137.4	5083501.6	242108.5
11-5	139.4	5083494.2	242111.3
11-6	147.7	5083455.7	242128.3
10-1	148.0	5083384.0	242088.6
10-2	148.0	5083371.2	242093.6
10-3	148.0	5083359.6	242098.6
10-4	137.6	5083529.9	242070.6
10-5	137.6	5083536.6	242087.8
10-6	137.4	5083488.0	242092.3
10-7	137.4	5083492.6	242102.7
10-8	145.2	5083452.3	242104.6
10-9	146.9	5083438.7	242121.1
10-10	145.9	5083440.7	242119.2
9-1	146.2	5083435.0	242106.4
9-2	146.2	5083448.3	242105.3
9-3	138.3	5083446.5	242107.6
9-4	137.5	5083521.2	242075.9
9-5	137.6	5083540.4	242081.2
9-6	139.1	5083549.6	242069.1
9-7	139.4	5083569.6	242070.1

NOTES

This drawing is for subsurface information only. The proposed structure details/works are shown for illustration purposes only and may not be consistent with the final design configuration as shown elsewhere in the Preliminary Design Report.

The boundaries between soil strata have been established only at borehole locations. Between boreholes the boundaries are assumed from geological evidence.

The complete Preliminary Foundation Investigation and Design Report for this project and other related documents may be examined at the Materials Engineering and Research Office, Downsview, Information Services, in the presence of the project engineer. Information excluded in accordance with Section 2.01 of OPS Service Conditions.

L 125

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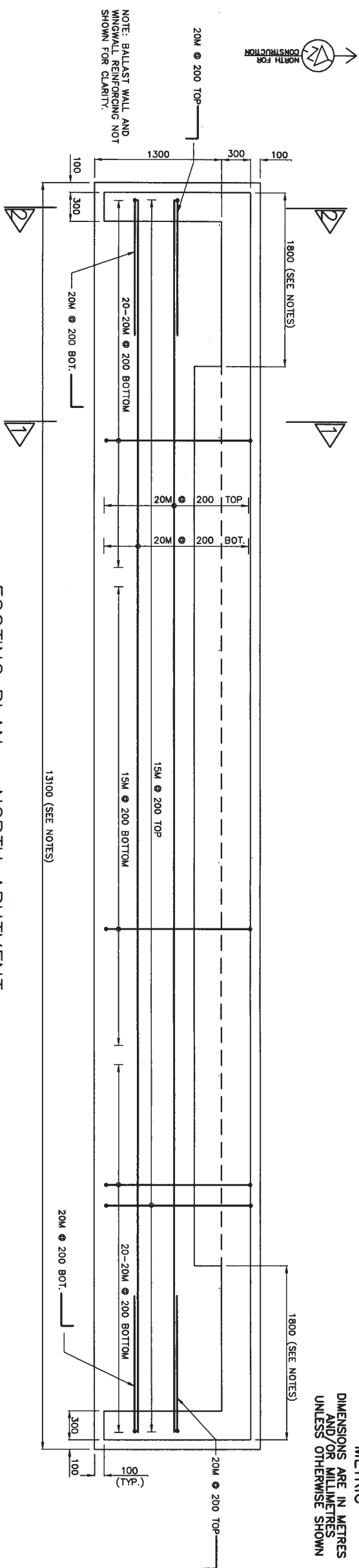
1485 -

1490 -

1495 -

1500 -

1505 -



METRIC
DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

CONT No 2012-4014
WP No 241-00-01

TEMPORARY BRIDGE OVER
PETAWAWA RIVER

TEMPORARY BRIDGE
NORTH ABUTMENT DETAILS

WILKS

D. M. Wilks Associates
150 Jameson Drive
Peterborough, Ontario
Canada, K9J 0B9

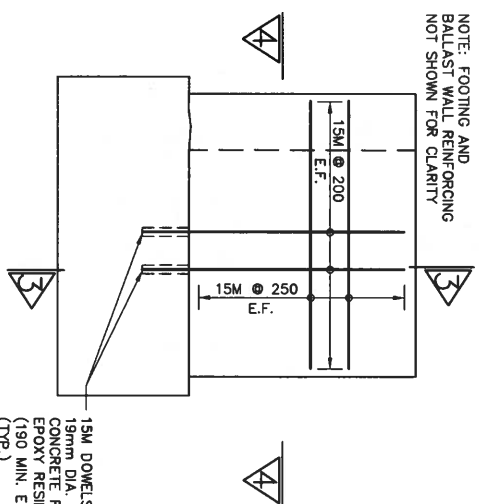
P. 705.742.2297
F. 705.741.3568
E. info@dmwilks.com

NOTES:

1. DIMENSIONS AND ELEVATIONS TO BE VERIFIED BASED ON THE TMB DESIGN.
2. SEE SHEET 12 FOR RESTORATION DETAILS.

FOOTING PLAN - NORTH ABUTMENT

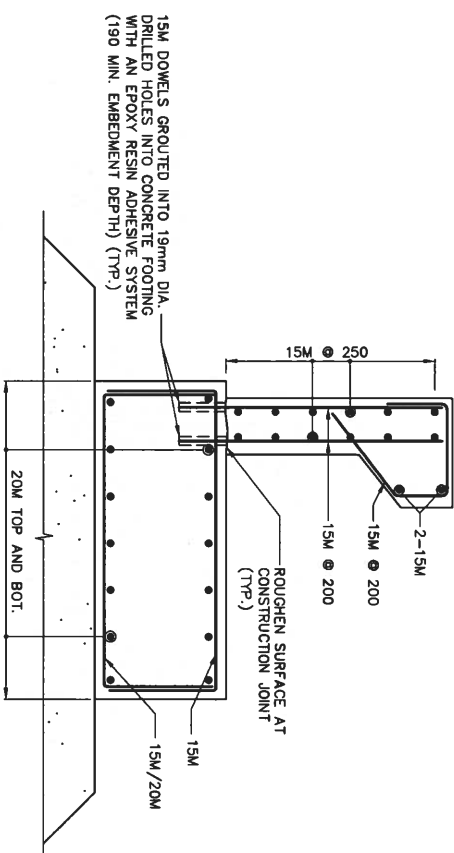
1:25



- 15M DOWELS GROUTED INTO 19mm DIA. DRILLED HOLES INTO CONCRETE FOOTING WITH AN EPOXY RESIN ADHESIVE SYSTEM (190 MIN. EMBEDMENT DEPTH) (TYP.)

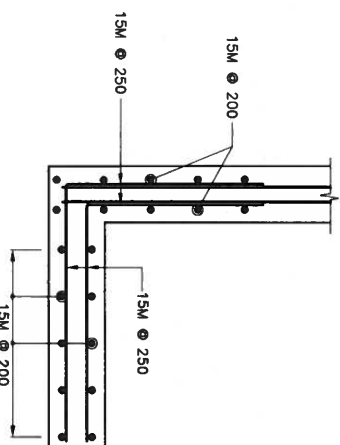
2 WINGWALL DETAILS

1:20



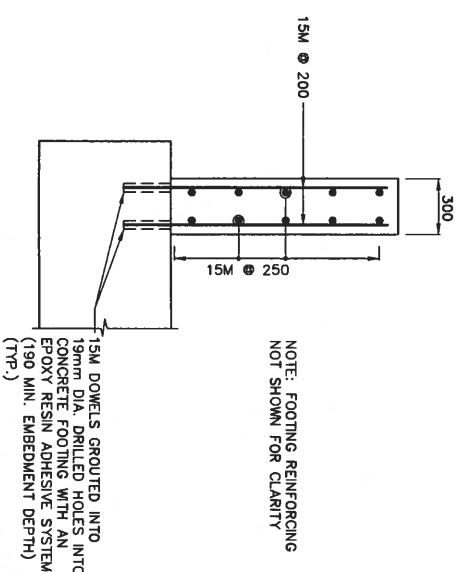
1 REINFORCEMENT DETAILS

1:20



4 WINGWALL DETAILS

1:20



3 REINFORCEMENT DETAILS

1:20

EXISTING EMBANKMENT -
(VERY LOOSE TO DENSE
SAND AND GRAVEL FILL)

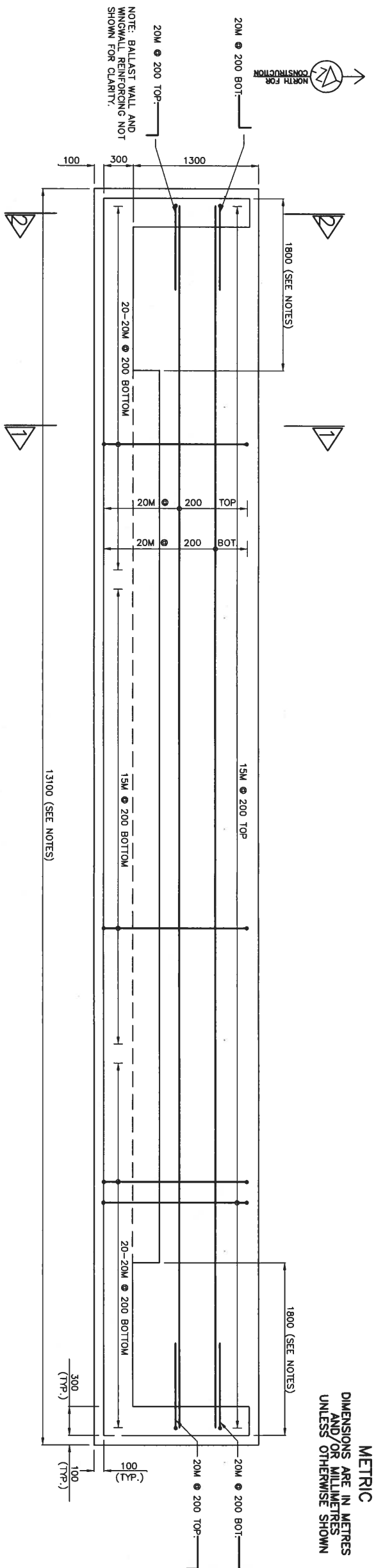
DIMENSIONS

1:20

ALL LOOSE, ORGANIC, AND
DELETERIOUS MATERIAL TO BE
SUBEXCAVATED PRIOR TO
CONSTRUCTION OF GRANULAR
PAD

REVISIONS				
DATE	BY	DESCRIPTION		
DESIGN Q2	CHM DB	CODE CHABC-2006	LOAD CL-625-ONT	DATE 03-2012
ISSUING JP	CHM DB	SITE	STRUCT	SCHEDULE
				DWG 3





METRIC
DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

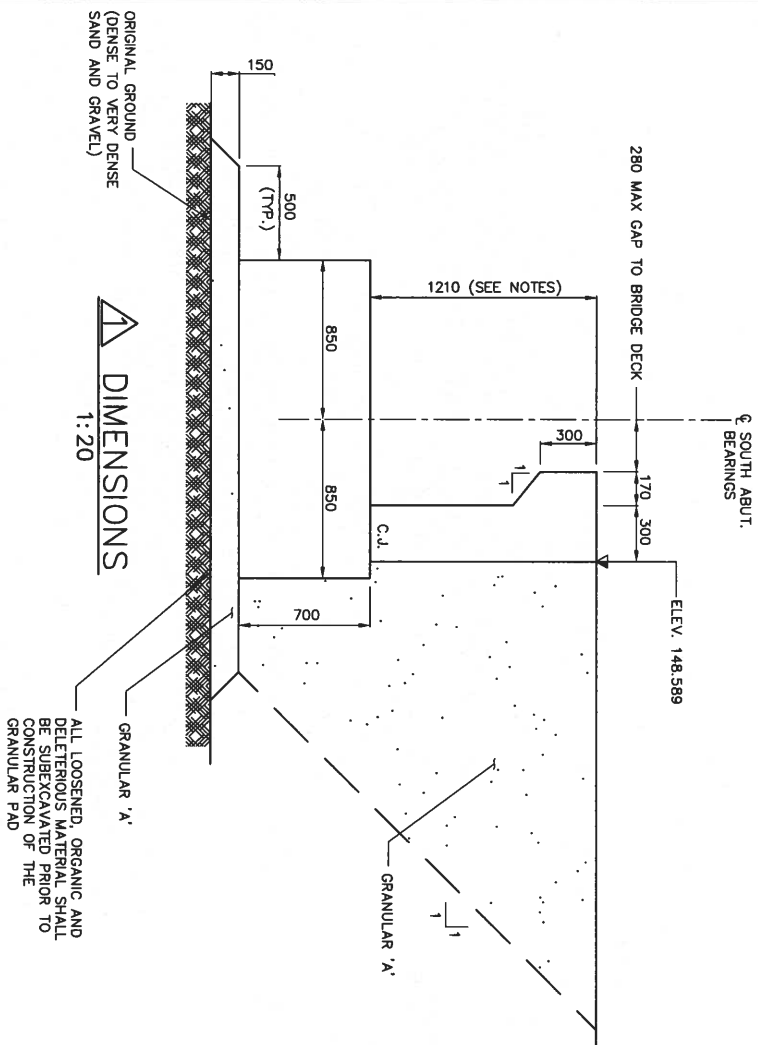
CONT No 2012-4014
WP No 241-00-01

TEMPORARY BRIDGE OVER DETAWANA RIVER

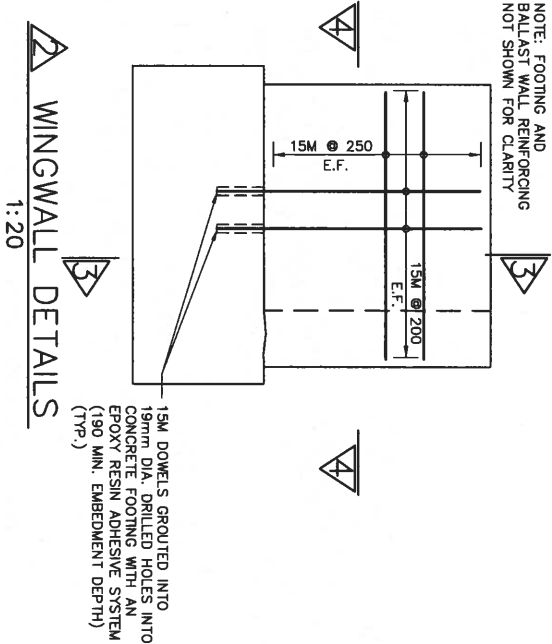
**TEMPORARY BRIDGE
SOUTH ABUTMENT DETAIL**

W
W W Associates Limited
150 Jamison Drive
Peterborough, Ontario
Canada, K7J 0B5
P. 705.742.2297
F. 705.741.3546
E. wwa@wwa.com

1. DIMENSIONS AND ELEVATIONS TO BE VERIFIED BASED ON THE TMB DESIGN.
2. SEE SHEET 13 FOR RESTORATION DETAILS.

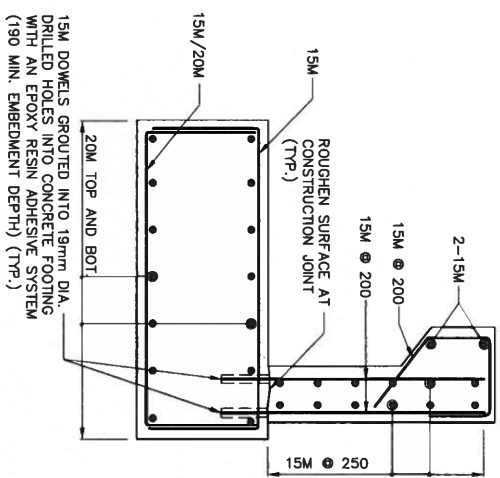


FOOTING PLAN – SOUTH ABUTMENT
1:25

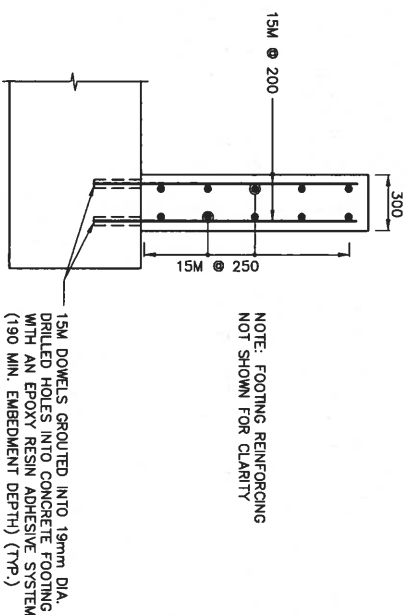


2 WINGWALL DETAILS
1:20

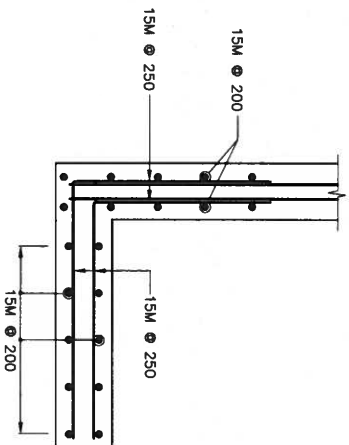
VOIDS (300 mm DEEP) TO BE LEFT IN FOOTING FOR ANCHOR BOLT ASSEMBLIES OR MODULAR BRIDGE BEARINGS. SIZE AND ARRANGEMENT OF ANCHORS TO BE OBTAINED FROM TMB MANUFACTURER PRIOR TO FORMING VOIDS (TYP. EAST AND WEST)



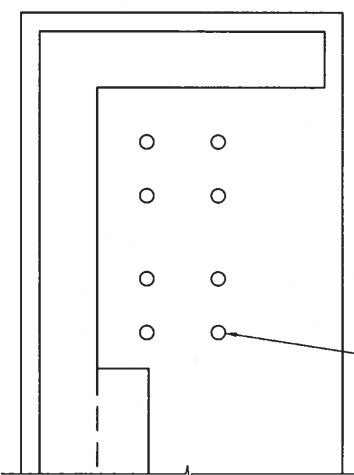
REINFORCEMENT DETAILS



3 REINFORCEMENT DETAILS



4 WINGWALL DETAILS

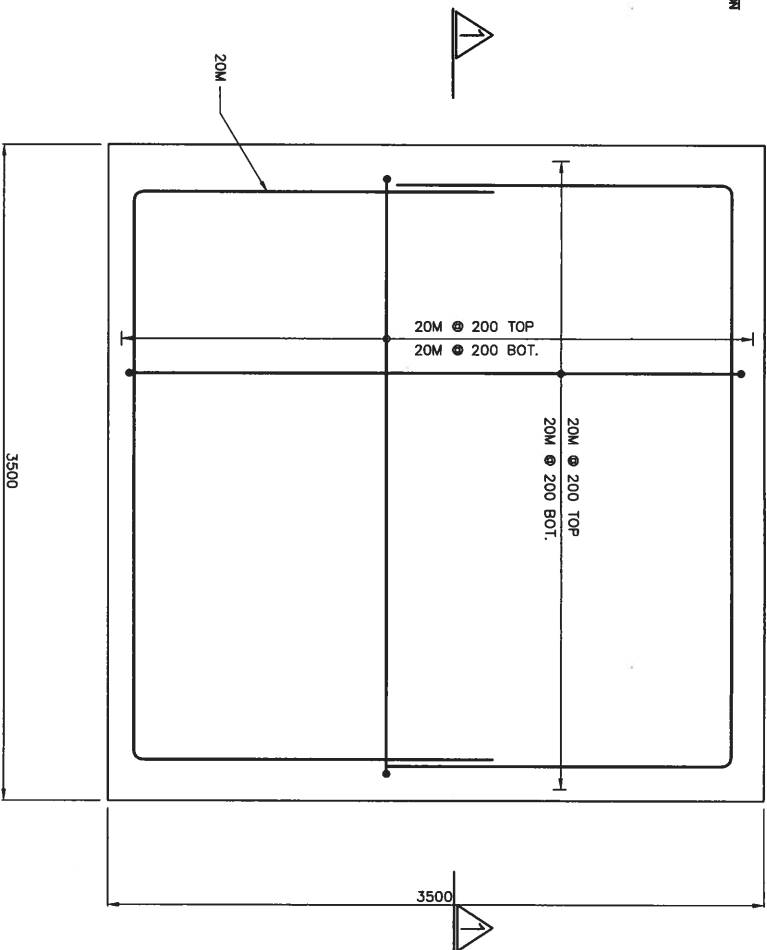


FOOTING VOID LOCATIONS

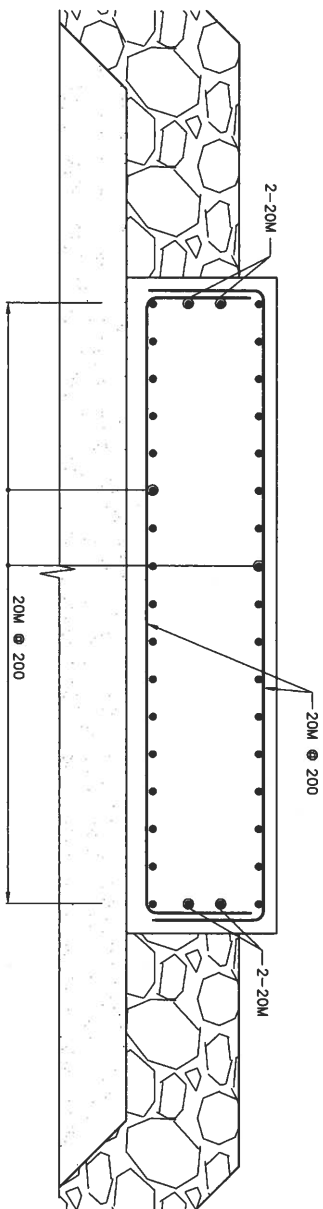


**DRAWING NOT TO BE SCALED
100 mm ON ORIGINAL DRAWING**

REVISIONS		DESCRIPTION			
DATE	BY	CHK	DB	CODE	DATE
				CHBDC-2006	03-2012
				SITE	
				STRUCT	
				SCHDME	
				IMG 5	



NORTH PIER FOOTING PLAN
1:20



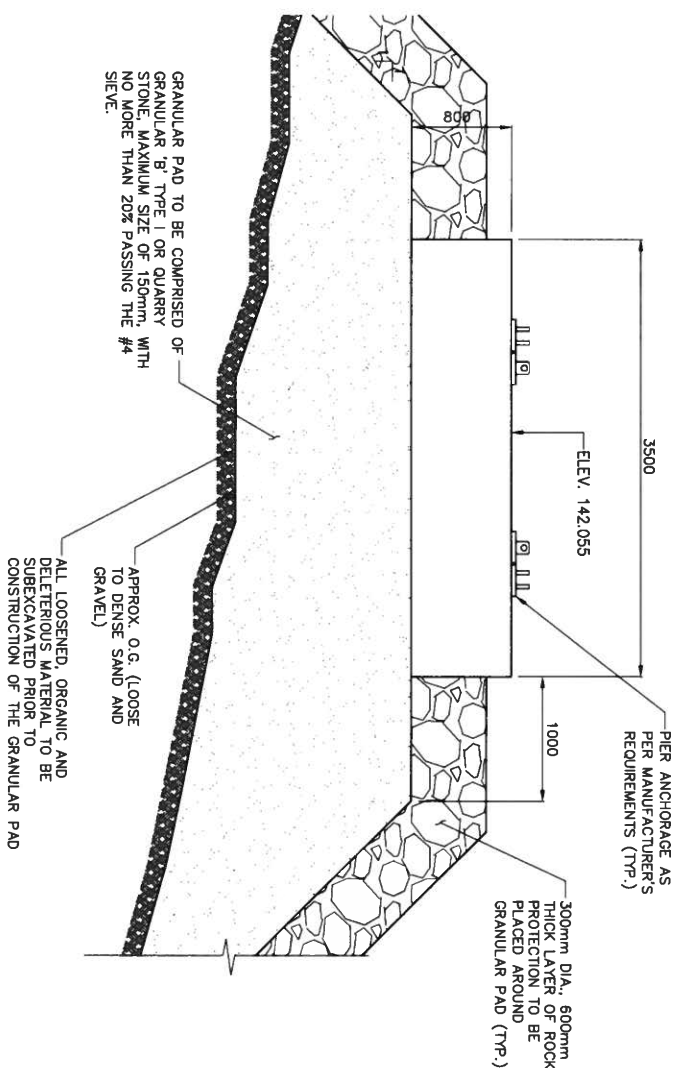
REINFORCEMENT DETAILS

METRIC
DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

<p>CONT NO 2012-4014</p> <p>TEMPORARY BRIDGE OVER PETAMAWA RIVER</p> <p>TEMPORARY BRIDGE NORTH PIER DETAILS</p> <p>SHEET</p> <p>39</p>	<p>WP NO 241-00-01</p>
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NOTES:

1. SEE SHEET 12 FOR RESTORATION DETAILS.

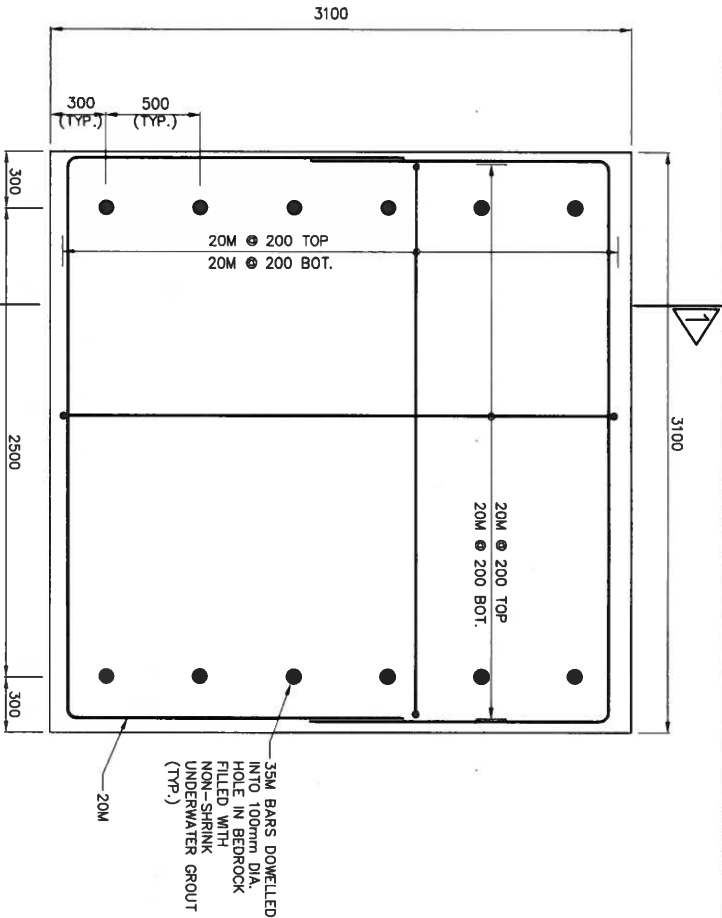


1 DIMENSIONS
1:30



**DRAWING NOT TO BE SCALED
100 mm ON ORIGINAL DRAWING**

[illegible]



METRIC
DIMENSIONS ARE IN METRES
AND/OR MILLIMETRES
UNLESS OTHERWISE SHOWN

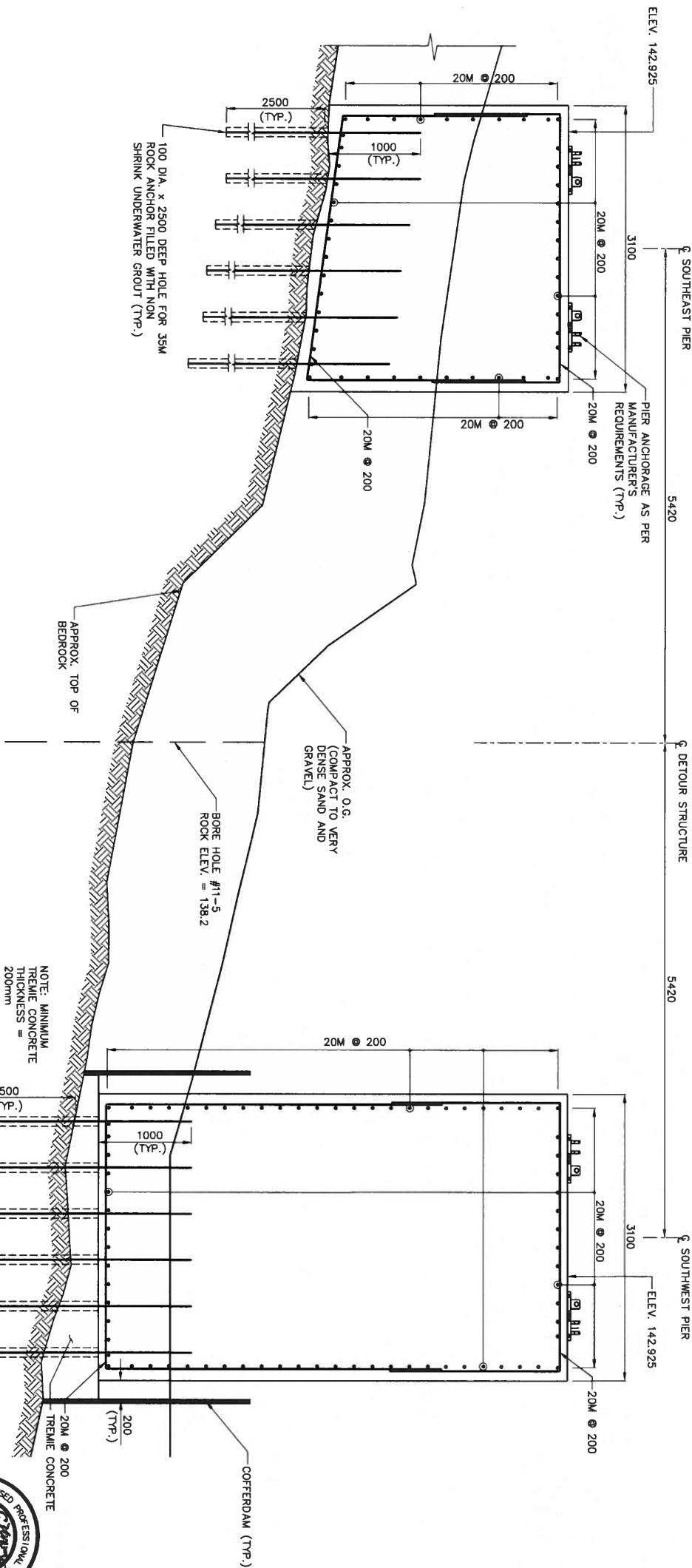
CONT No 2012-4014		SHEET 40
WP No 241-00-01		
TEMPORARY BRIDGE OVER PETAWAMA RIVER		
TEMPORARY BRIDGE SOUTH PIER DETAILS		

D.A. Webb Associates Limited
150 Jamboulin Drive
Peterborough, Ontario
Canada K7J 8B7
P 705.742.2297
F 705.742.2298
E webb@dwba.com

NOTES:

1. ROCK SURFACE TO BE CLEANED OF ALL MATERIAL PRIOR TO PLACEMENT OF CONCRETE. CONTRACTOR TO INSPECT ROCK SURFACE AND ISSUE CERTIFICATE OF CONFORMANCE TO CONTRACT ADMINISTRATOR PRIOR TO PLACING CONCRETE.
2. CORING FOR ROCK ANCHORS SHALL NOT TAKE PLACE UNTIL 72 HOURS AFTER TREMIE CONCRETE HAS BEEN CAST.
3. INSTALL DOWELS USING NON SHRINK UNDER WATER GROUT WITH ANTI-WASHOUT AGENT.
4. FORMWORK AT PIERS CANNOT BE UNWATERED UNTIL DOWELS INTO ROCK HAVE BEEN GROUTED INTO TREMIE CONCRETE.
5. SEE SHEET 13 FOR RESTORATION DETAILS.

SOUTH PIER FOOTING
1:20



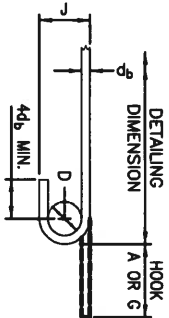
DETAILS
1:30

100 DIA. x 2500 DEEP HOLE CORED
THROUGH TREMIE CONCRETE FOR 35M
ROCK ANCHOR FILLED WITH NON
SHRINK UNDERWATER GROUT (TYP.)



DRAWING NOT TO BE SCALED
100 mm ON ORIGINAL DRAWING

REVISIONS			
DATE	BY	DESCRIPTION	DATE
DESIGN Q2	CHK DB	CODE CHNG-2008	LOAD CL-405-ONT
DRAWN JP	SITE	STRUCT	SCHDUC
			WPG 7



STANDARD 180° HOOK

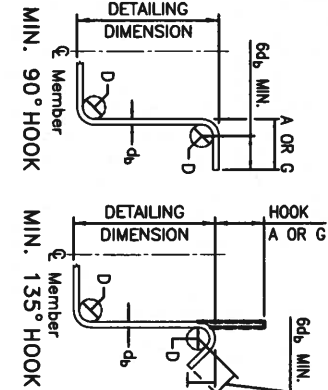
- (1) Special fabrication is required for bends exceeding 90° for bars of these sizes and grade.
- (2) For stainless steel, with $F_y = 420$, use the same D as for 400R.

STANDARD HOOK DIMENSIONS

STANDARD HOOK DIMENSIONS				
BAR SIZE	90° HOOKS A O R G (mm)	180° HOOKS A O R G (mm)	J (mm)	
10M	190	210 *	110 *	
15M	270	280 *	160 *	
20M	330	300 *	200	
25M	430	330	250	
30M	510	460 *	300	
35M	640	700 *	430 *	
45M	790	850 *	540	
55M	1010	1050 *	680 *	

NOTE: All Hook Dimensions are according to the CHBDC-2000.

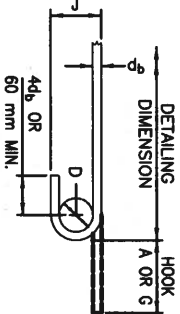
MINIMUM STIRRUP AND TIE HOOK DIMENSIONS						
BAR SIZE	BAR DIAM. d _b (mm)	PIN DIAM. D(mm)	90°		135°	
			A O R G (mm)	A O R G (mm)	H (approx.) (mm)	
10M	11.3	90	180	190	120	
15M	16.0	130	190	220	130	
20M	19.5	160	230	260	150	
25M	25.2	200	280			



MIN. 90° HOOK MIN. 135° HOOK

HOOK DIMENSIONS FOR COATED BARS

Date	JUNE 2002	Rev	
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STANDARD 180° HOOK

DIAMETER, D, mm

100

NOTE: Tabulated values for Standard Hook Dimensions are the larger of calculated (according to CHBDC-2000) and Reinforcing Steel Institute of Canada (RSIC) requirements. Value marked by "*" indicate RSIC recommended minimum.

MINIMUM STIRUP AND TIE HOOK DIMENSIONS

½ Member ½ Member
 MIN. 90° HOOK MIN. 135° HOOK

NOTE. Value marked by '*' indicates RSIC recommended minimum, based on the average of 90° and 180° hooks.

[illegible]