NIAGARA FALLS BRIDGE COMMISSION

AS-BUILTS

OWNER CONTACT:
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BRIDGE COMMISSION
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WSP USA INC. (WSP Contract 187774)

SHEET LIST - TOTAL NUMBER OF SHEETS 29

RAINBOW BRIDGE			
1	G000	TITLE SHEET	
2	G-001	GENERAL NOTES (1 OF 2)	
3	G-002	GENERAL NOTES (2 OF 2)	
4	RB-101	RAINBOW BRIDGE REPAIRS - GENERAL PLAN (1 OF 2)	
~~5~~	~~RB-102~~	~~RAINBOW BRIDGE REPAIRS - GENERAL PLAN (2 OF 2)~~	N.I.C.
6	RB-103	RAINBOW BRIDGE REPAIRS - PLAN REPAIRS AREA 1	
7	RB-104	RAINBOW BRIDGE REPAIRS - PLAN REPAIRS AREA 2	
8	RB-105	RAINBOW BRIDGE REPAIRS - PLAN REPAIRS AREA 3	
~~9~~	~~RB-106~~	~~RAINBOW BRIDGE REPAIRS - PLAN REPAIRS AREA 4~~	N.I.C.
~~10~~	~~RB-107~~	~~RAINBOW BRIDGE REPAIRS - PLAN REPAIRS AREA 5~~	N.I.C.
11	RB-108	RAINBOW BRIDGE REPAIRS - PLAN REPAIRS AREA 6 AND AREA 7	
12	RB-111	RAINBOW BRIDGE REPAIRS - MAINTENANCE & PROTECTION OF TRAFFIC - STAGE 1	
13	RB-112	RAINBOW BRIDGE REPAIRS - MAINTENANCE & PROTECTION OF TRAFFIC - STAGE 2	
14	RB-113	RAINBOW BRIDGE REPAIRS - MAINTENANCE & PROTECTION OF TRAFFIC - STAGE 3	
15	RB-501	RAINBOW BRIDGE REPAIRS - DETAILS (1 OF 6)	
16	RB-502	RAINBOW BRIDGE REPAIRS - DETAILS (2 OF 6)	
17	RB-503	RAINBOW BRIDGE REPAIRS - DETAILS (3 OF 6)	
18	RB-504	RAINBOW BRIDGE REPAIRS - DETAILS (4 OF 6)	
~~19~~	~~RB-505~~	~~RAINBOW BRIDGE REPAIRS - DETAILS (5 OF 6)~~	N.I.C.
~~20~~	~~RB-506~~	~~RAINBOW BRIDGE REPAIRS - DETAILS (6 OF 6)~~	N.I.C.
21	RB-901	RAINBOW BRIDGE REPAIRS - FIBER OPTIC CABLE INSTALLATION	
WHIRLPOOL RAPIDS BRIDGE			
22	WP-101	WHIRLPOOL BRIDGE REPAIRS - GENERAL PLAN	
~~23~~	~~WP-102~~	~~WHIRLPOOL BRIDGE REPAIRS - PLAN REPAIRS AREA 1~~	N.I.C.
24	WP-501	WHIRLPOOL BRIDGE REPAIRS - DETAILS	
LEWISTON-QUEENSTON BRIDGE			
25	LQ-101	LEWISTON QUEENSTON BRIDGE REPAIRS - GENERAL PLAN (CANADA)	
~~26~~	~~LQ-102~~	~~LEWISTON QUEENSTON BRIDGE REPAIRS - PLAN REPAIRS AREA 1 (USA)~~	N.I.C.
~~27~~	~~LQ-102A~~	~~LEWISTON QUEENSTON BRIDGE REPAIRS - PLAN REPAIRS AREA 2 (USA)~~	N.I.C.
28	LQ-103	LEWISTON QUEENSTON BRIDGE REPAIRS - PLAN REPAIR AREAS AND MISC. DETAILS	
OTHER - NFBC ADMINISTRATION BUILDING			
~~29~~	~~AD-101~~	~~NFBC ADMININSTRATION BUILDING - PAVEMENT REPAIRS~~	N.I.C.

ASSOCIATED ENGINEERING

SHEET LIST - TOTAL NUMBER OF SHEETS 2

RAINBOW BRIDGE		
1	S-301	RAINBOW BRIDGE - JOINT REPAIR GENERAL LAYOUT
2	S-302	RAINBOW BRIDGE - JOINT REPAIR DETAILS AND SPECIFICATIONS

ALL WORK COMPLETED UNDER THIS CONTRACT TO BE COVERED AND IN CONFORMITY WITH THE NYSDOT STANDARD SPECIFICATIONS OF MAY 1, 2008 WITH REVISIONS THROUGH MAY 1, 2017, EXCEPT AS MODIFIED OR SUPPLEMENTED ON THESE PLANS AND IN THE BID ITEM DOCUMENTATION.

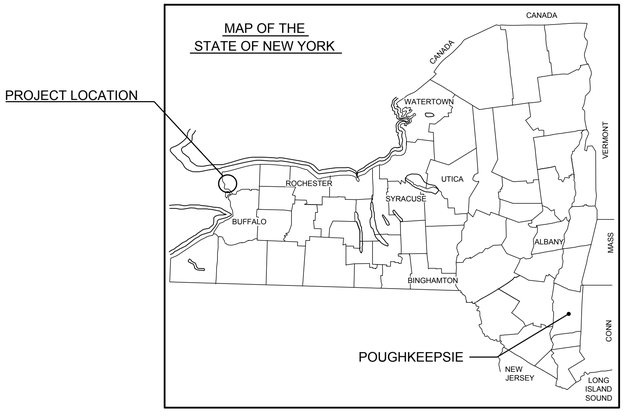
THE LATEST REVISIONS OF THE STANDARD SHEETS MAINTAINED BY NYSDOT, WHICH ARE CURRENT ON THE DATE OF ADVERTISEMENT FOR BIDS, SHALL BE CONSIDERED TO BE IN EFFECT.

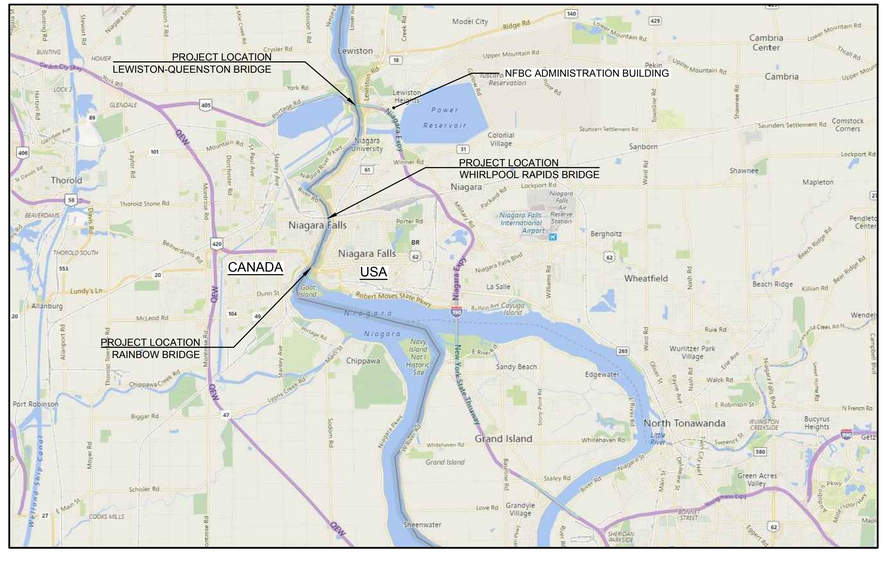
RAINBOW BRIDGE DECK REPAIR AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL RAPIDS AND LEWISTON-QUEENSTON BRIDGES - CANADIAN SIDE

NFBC Project #2016-02-2B

JANUARY 30, 2018

CONTRACT DRAWINGS - FOR CANADIAN CONTRACTOR





PROJECT LOCATION

J:\187774 - nfcb rainbow - whirlpool-lq bridge repair\02-rainbow\-CAD\G-000 - TITLESHEET.dwg Wed, 31 Jan 2018 - 11:47am frechetteb

GENERAL

1. THE CONTRACTOR SHALL CONDUCT THE WORK IN A MANNER THAT WILL ENSURE, AS FAR AS PRACTICABLE, THE LEAST OBSTRUCTION TO TRAFFIC AND SHALL PROVIDE FOR THE CONVENIENCE AND SAFETY OF THE GENERAL PUBLIC AND VISITORS, ALONG AND ADJACENT TO THE CONSTRUCTION AREA, IN AN ADEQUATE AND SATISFACTORY MANNER.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THIS PROJECT AND RELATED WORK COMPLIES WITH ALL APPLICABLE LOCAL, STATE, PROVINCIAL AND FEDERAL SAFETY CODES AND REGULATIONS GOVERNING THIS WORK
3. ALL REFERENCES TO OWNER IN THESE DOCUMENTS REFER TO THE NIAGARA FALLS BRIDGE COMMISSION (NFBC)
4. ALL MATERIALS, FABRICATION AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE MAY 1, 2017 VERSION OF THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AS SUPPLEMENTED BY THE TECHNICAL PROVISIONS OF THE CONTRACT DOCUMENTS.
5. REFERENCES TO THE NYSDOT STANDARDS SHALL MEAN THE MAY 1, 2017 VERSION OF THE "STANDARD SPECIFICATIONS, CONSTRUCTION AND MATERIALS, OFFICE OF ENGINEERING, NEW YORK STATE DEPARTMENT OF TRANSPORTATION."
6. ALL WORK PRESENTED ON THESE DRAWINGS MUST BE COMPLETED BY THE CONTRACTOR UNLESS NOTED OTHERWISE. THE CONTRACTOR MUST HAVE CONSIDERABLE EXPERIENCE IN PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED HEREIN. BY ACCEPTANCE OF THIS ASSIGNMENT, THE CONTRACTOR IS ATTESTING THAT HE DOES HAVE SUFFICIENT EXPERIENCE AND ABILITY, THAT HE IS KNOWLEDGEABLE OF THE WORK TO BE PERFORMED AND THAT HE IS PROPERLY LICENSED AND PROPERLY REGISTERED TO DO THIS WORK IN THE ~~STATE OF NEW YORK (USA)~~ PROVINCE OF ONTARIO (CANADA).
7. THE CONTRACTOR SHALL VISIT THE SITE BEFORE BIDDING TO BECOME FAMILIAR WITH THE PRESENT FIELD CONDITIONS AND TO JUDGE THE EXTENT AND NATURE OF THE WORK TO BE DONE UNDER THIS CONTRACT. NO EXTRA COMPENSATION WILL BE CONSIDERED BECAUSE OF FAILURE TO INCLUDE IN THE BID ALL ITEMS AND MATERIALS WHICH ARE REQUIRED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
8. ALL DIMENSIONS, ELEVATIONS, AND EXISTING CONDITIONS SHOWN ON THE DRAWINGS SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO BEGINNING ANY MATERIALS ORDERING, FABRICATION, OR CONSTRUCTION WORK ON THIS PROJECT. CONTRACTOR SHALL NOT SCALE CONTRACT DRAWINGS IN LIEU OF FIELD VERIFICATION. ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD. THE DISCREPANCIES MUST BE RESOLVED BEFORE THE CONTRACTOR IS TO PROCEED WITH THE WORK.
9. THE NIAGARA FALLS BRIDGE COMMISSION RETAINS THE ABILITY TO REMOVE BID ITEMS FROM THE PROJECT AFTER CONTRACT HAS BEEN AWARDED TO THE CONTRACTOR PRIOR TO THE CONTRACTOR COMMENCING WORK ON THE SUBJECT BID ITEM.
10. THE CONTRACT DOCUMENTS DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. OBSERVATION VISITS TO THE SITE BY THE ENGINEER WILL NOT INCLUDE INSPECTION OF THE PROTECTIVE MEASURES OR THE PROCEDURES. THE NFBC MAY CONDUCT SAFETY INSPECTIONS AT THEIR DISCRETION WITHOUT PRIOR NOTICE. THE CONTRACTOR SHALL CONFORM TO SITE SAFETY REQUIREMENTS AND TO ANY DIRECTION FROM THE NFBC RESULTING FROM A SAFETY INSPECTION. THE CONTRACTOR SHALL PROVIDE A COMPETENT PERSON THAT WILL BE RESPONSIBLE FOR SAFETY.
11. ALL MATERIALS AND EQUIPMENT FURNISHED SHALL BE NEW AND OF GOOD QUALITY, FREE FROM FAULTS AND DEFECTS AND IN CONFORMANCE WITH THE CONTRACT DOCUMENTS. ANY AND ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED IN WRITING BY THE OWNER AND ENGINEER PRIOR TO INSTALLATION.
12. ACCESS TO THE PROPOSED WORK SITE MAY BE RESTRICTED. THE CONTRACTOR SHALL COORDINATE INTENDED CONSTRUCTION ACTIVITY, INCLUDING WORK SCHEDULE AND MATERIALS ACCESS, WITH NFBC FOR APPROVAL
13. PART NUMBERS LISTED ON CONSTRUCTION DRAWINGS ARE INTENDED TO AID THE CONTRACTOR. CONTRACTOR SHALL VERIFY PARTS AND QUANTITIES WITH MANUFACTURER PRIOR TO BIDDING AND/OR ORDERING MATERIALS
14. REFER TO BID PACKAGE FOR INFORMATION REGARDING WARRANTY OF ALL MATERIALS AND WORKMANSHIP.
15. THE CONTRACTOR SHALL CALL "DIG SAFE" (CALL 811) AT LEAST SEVEN (7) FULL WORKING DAYS PRIOR TO THE START OF ANY WORK. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING ANY AND ALL UTILITY COMPANIES THAT ARE NOT A MEMBER OF THE "DIG SAFE" PROGRAM. THE CONTRACTOR SHALL PAY FOR THE REPAIR OR REPLACEMENT OF ANY DAMAGED UTILITY LINES OR LOSS OF SERVICE RESULTING FROM FAILURE TO LOCATE THE UTILITY.
16. THE CONTRACTOR SHALL PERFORM ALL WORK WITH CARE SO THAT ANY MATERIALS WHICH ARE TO REMAIN IN PLACE, OR THAT ARE TO REMAIN THE PROPERTY OF THE COMMISSION, WILL NOT BE DAMAGED. ANY DAMAGED SURFACES/MATERIALS SHALL BE REPAIRED OR REPLACED IN A MANNER SATISFACTORY TO THE ENGINEER, AT THE CONTRACTOR'S EXPENSE.
17. ALL AREAS OUTSIDE THE LIMITS OF WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO ORIGINAL CONDITION BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
18. THE CONTRACTOR SHALL RESTORE ANY DISRUPTED PAVEMENT SURFACE AREAS AND LANDSCAPING TO THEIR ORIGINAL STATE. COSTS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN THE BID PRICE.
19. THE COST OF FURNISHING, INSTALLING, MAINTAINING. REMOVING, AND DISPOSING OF ALL PLATFORMS, NETS, SCREENS. OR OTHER PROTECTIVE DEVICES SHALL BE INCLUDED IN THE UNIT BID PRICE OF THE APPROPRIATE ITEMS OF WORK.
20. NYSDOT SUBSTITUTION MATERIALS OR RECYCLED MATERIAL ALTERNATIVES SHALL NOT BE PERMITTED FOR USE WITHOUT THE WRITTEN APPROVAL OF THE NIAGARA FALLS BRIDGE COMMISSION.
21. ALL MATERIALS INSTALLED AS PART OF THIS WORK SHALL BE INSTALLED WITH NEW HARDWARE.
22. ALL ASPHALT REPAIR AREAS TO BE SAWCUT AND TACK COATED IN ACCORDANCE WITH NYSDOT SPECIFICATIONS.
23. NYSDOT ITEM 304.12 SHALL BE COMPACTED TO 95% PER STANDARD PROCTOR IN ALL INSTALLATIONS.
24. CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING NEW CONCRETE AND ASPHALT PAVEMENT TO MATCH GRADE OF EXISTING PAVEMENT SECTIONS UNLESS OTHERWISE NOTED IN PLANS AND DETAILS. CONTRACTOR SHALL ENSURE THAT EXISTING DRAINAGE PATTERNS ARE MAINTAINED TO PREVENT PONDING OF WATER ON PROPOSED PAVEMENT SURFACES. IN THE EVENT THAT EXISTING DRAINAGE PATTERNS ARE NOT CONDUCIVE TO DRAINAGE, THE CONTRACTOR SHALL NOTIFY THE NIAGARA FALLS BRIDGE COMMISSION TO PROPOSE CORRECTIVE CHANGES.
25. CONTRACTOR IS RESPONSIBLE FOR MATCHING ADJACENT COATING SYSTEMS AND COLORS FOR ANY STEEL REHABILITATION AND FOR MATCHING ADJACENT FINISHES AND COLORS FOR ANY CONCRETE REHABILITATION, UNLESS DIRECTED OTHERWISE.
26. CATCH BASINS LOCATED DOWN GRADE OF WORK AREAS SHALL BE PROTECTED FROM SEDIMENT LADEN RUNOFF WHEN REQUIRED BY CONSTRUCTION OPERATIONS IN ACCORDANCE WITH THE NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROLS.
27. DEWATERING AND FLOW DIVERSION WILL BE PERFORMED AT THE EXPENSE OF THE CONTRACTOR WHEN REQUIRED BY CONSTRUCTION OPERATIONS.
28. CONTRACTOR SHALL BE RESPONSIBLE FOR SHORING AND PROTECTION OF EXCAVATIONS TO BE IN COMPLIANCE WITH OSHA REGULATIONS.
29. CONTRACTOR SHALL PROVIDE THE NIAGARA FALLS BRIDGE COMMISSION EXISTING GROUND ELEVATION SURVEY OF CONCRETE AND ASPHALT PAVEMENT REPLACEMENT AREAS PRIOR TO COMMENCING WORK AND UTILIZE SURVEY TO REPLACE PAVEMENT COURSES IN KIND, NOT APPLICABLE TO CONCRETE PATCHES OR AREAS SMALLER THAN 200 SF.
30. ALL REPAIR LOCATIONS THAT ARE NOT SPECIFICALLY LOCATED ON THE PLANS MAY BE FIELD LOCATED BY THE NIAGARA FALLS BRIDGE COMMISSION OR THE ENGINEER WITH QUANTITIES AS STATED ON THE DRAWINGS OR BID FORM.
31. CONTRACTOR IS RESPONSIBLE FOR PROVIDING FENCING AND GATE MATERIALS AS REQUIRED TO SECURE STAGING AREAS.
32. REFER TO THE BID PACKAGE FOR OTHER WORK RESTRICTIONS.
33. WHERE PRODUCTS ARE NAMED FOR USE WITHIN THE CONTRACT DOCUMENTS A REQUEST FOR SUBSTITUTION CAN BE MADE. UNLESS EXPLICITLY STATED OTHERWISE, EQUAL SUBSTITUTIONS WILL BE CONSIDERED AND ARE SUBJECT TO APPROVAL.
34. CONSTRUCTION EQUIPMENT TO BE USED ON THE RAINBOW BRIDGE DECK, SIDEWALKS, AND APPROACHES IS SUBJECT TO APPROVAL BY THE NFBC DUE TO LOAD RESTRICTIONS ON THE BRIDGE. CONTRACTOR IS RESPONSIBLE FOR GAINING APPROVAL PRIOR TO BEGINNING WORK.

EXCAVATION, DEMOLITION AND DISPOSAL

1. THE CONTRACTOR IS RESPONSIBLE FOR THE SAFE REMOVAL AND DISPOSAL OF ALL DEBRIS FROM THE SITE IN A TIMELY MANNER AND WHERE APPLICABLE PER ~~NYSDOT ITEM 203.02/~~OPSS 510.
2. CONCRETE REMOVAL OPERATIONS SHALL BE PER ASSOCIATED NYSDOT ITEM/OPSS 928.
3. PRIOR TO DEMOLITION AND REMOVAL ACTIVITIES THE CONTRACTOR SHALL PROVIDE ALL FALSEWORK AND TRAFFIC CONTROL REQUIRED IN ACCORDANCE WITH THE CONTRACT DRAWINGS AND SPECIFICATIONS AND PER APPROVED CONTRACTOR PLANS.
4. DURING REMOVAL OPERATIONS, THE CONTRACTOR SHALL NOT ALLOW DEBRIS TO BECOME AIRBORNE OR DROP ONTO THE GROUND, OR INTO THE RIVER BELOW. IF THE FIELD INSPECTOR DETERMINES THAT ADEQUATE PROTECTIVE DEVICES ARE NOT BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE PROTECTION IS PROVIDED.
5. THE CONTRACTOR SHALL TAKE MEASURES TO PROVIDE DUST CONTROL AND KEEP ADJACENT AREAS FREE OF DEBRIS FROM THE CONSTRUCTION SITE.
6. THE CONTRACTOR SHALL NOTIFY THE NIAGARA FALLS BRIDGE COMMISSION IF THEY ENCOUNTER CONTAMINATED SOIL OR MATERIALS ON SITE.
7. WHENEVER ITEMS IN THE CONTRACT REQUIRE MATERIALS TO BE REMOVED AND DISPOSED OF, THE COST OF TRANSPORTATION TO THE DISPOSAL AREAS AND DISPOSAL FEES SHALL BE INCLUDED IN THE BID PRICE FOR THOSE ITEMS. FOR MATERIALS DISPOSED OF OUTSIDE THE PROJECT LIMITS, THE CONTRACTOR MUST NOTIFY THE NIAGARA FALLS BRIDGE COMMISSION IN WRITING OF THE PROPOSED DISPOSAL SITE AND THE CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED BY THE GOVERNING BODY OF THE DISPOSAL AREA.

ASPHALT PAVEMENT REPAIRS:

1. USA - ASPHALT REPAIR WORK SHALL MEET NYSDOT SPECIFICATIONS FOR MATERIALS AND INSTALLATION AS INDICATED IN THE DETAILS.
2. CANADA - ASPHALT REPAIR WORK SHALL MEET OPSS SPECIFICATIONS FOR MATERIALS AND INSTALLATION AS INDICATED IN THE DETAILS. HMA MIXES SHALL MEET OPSS 1150, WHILE INSTALLATION SHALL MEET OPSS 310.
3. TACK COATS SHALL BE APPLIED PER ~~NYSDOT ITEM 407.01/~~OPSS SPECS. TO ALL CONCRETE AND ASPHALT CONTACT SURFACES PRIOR TO PAVING.
4. BETWEEN STAGES, AN ASPHALT ADHESIVE IS REQUIRED TO BOND THE BUTTED ENDS OF ASPHALT.

CONCRETE AND REINFORCING STEEL:

1. ABRASIVE BLAST CLEANING OF REBAR AND/OR CONCRETE OR CONCRETE JOINT SURFACES SHALL BE PER ASSOCIATED NYSDOT ITEM 582/ OPSS 929
2. CONCRETE - MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 5,000 PSI/35 MPa UNLESS OTHERWISE NOTED OR SPECIFIED BY APPLICABLE ITEM.
3. BAR REINFORCEMENT AND DOWELS SHALL BE GALVANIZED AND SHALL BE ASTM A615 GRADE 60/400, AND SHALL BE INSTALLED PER NYSDOT ITEM 556.0203/OPSS 905.
4. DRILLING AND GROUTING BAR REINFORCEMENT AND DOWELS SHALL BE PER NYSDOT ITEM 586.02
5. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY TIES, CHAIRS, SPACERS AND ALL OTHER RELATED APPURTENANCES FOR THE CORRECT PLACEMENT OF REINFORCEMENT.
6. CONTRACTOR SHALL FOLLOW COLD WEATHER CONCRETE PAVING REQUIREMENTS STATED IN NYSDOT SPECIFICATIONS SECTION 500 DURING COLD WEATHER CONDITIONS.
7. CONTRACTOR SHALL SEAL NEW CONCRETE WITH PENETRATING SEALER PER NYSDOT ITEM 559.16960118, UNLESS OTHERWISE NOTED.

STRUCTURAL STEEL NOTES

1. ALL CONNECTIONS SHALL BE MADE WITH $\frac{7}{8}$" DIAMETER BOLTS UNLESS OTHERWISE NOTED. HIGH-STRENGTH BOLTS SHALL CONFORM TO ASTM A325, TYPE 1. HIGH-STRENGTH BOLTS SHALL BE PROVIDED WITH ONE HARDENED WASHER UNDER THE HEAD AND ONE HARDENED WASHER UNDER THE NUT. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH ASTM A153.

SECURITY AND GUIDELINES

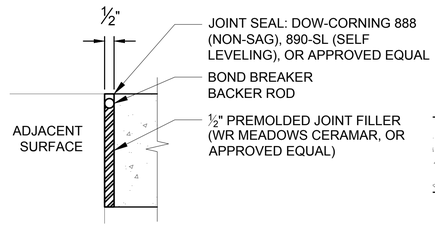
1. CONTRACTOR SHALL COOPERATE IN ALL RESPECTS WITH UNITED STATES CUSTOMS AND BORDER PROTECTION, CANADA BORDER SERVICES AGENCY, NEW YORK STATE OFFICE OF THE PARKS, AND NIAGARA FALLS BRIDGE COMMISSION OFFICIALS AND PERSONNEL SO THAT BORDER SECURITY AND TRAFFIC ARE MAINTAINED
2. CONTRACTOR IS RESPONSIBLE FOR OBTAINING BADGES FOR ALL EMPLOYEES, SUBS, SUPPLIERS AND ANY OTHER VISITORS THAT WILL BE ON SITE ON THE CONTRACTOR'S BEHALF. VETTING OF PARTIES SHALL BE COORDINATED WITH THE NIAGARA FALLS BRIDGE COMMISSION.
3. THE CONTRACTOR SHALL ENSURE THAT ALL SECURITY CLEARANCES ARE OBTAINED IF REQUIRED AND THAT ALL CUSTOMS AND BORDER PATROL GUIDELINES AND REQUIREMENTS ARE MET. THE CONTRACTOR SHALL OBTAIN APPROVALS, BADGES, AND ESCORTS PRIOR TO COMMENCEMENT OF ANY WORK, IF NECESSARY, WITHIN THE INTERNATIONAL BRIDGE CROSSING AREA.

COORDINATION WITH OTHER ONGOING PROJECTS

1. THE CONTRACTOR SHALL BE FAMILIAR WITH ANY ONGOING PROJECT WHICH MAY IMPACT THIS PROJECT AND SHALL BE RESPONSIBLE FOR COORDINATION OF ALL OPERATIONS WHICH MAY BE IMPACTED.

ACCEPTANCE TESTING AND INSPECTION

1. THE CONTRACTOR SHALL FURNISH AND INSTALL ITEMS AND MATERIALS SPECIFIED IN THE CONTRACT DOCUMENTS PER THE CONTRACT DOCUMENTS AND SPECIFICATIONS. ANY PRODUCTS OR INSTALLATION FOUND TO BE UNACCEPTABLE SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER AND WILL BE SUBJECT TO SUBSEQUENT ACCEPTANCE TESTING AND INSPECTION.
2. THE CONTRACTOR SHALL PROVIDE SAFE ACCESS FOR INSPECTION AND TESTING OF ALL WORK AS REQUIRED BY THE ENGINEER AND NFBC.



1 - 1/2" EXPANSION JOINT - TYPICAL
3" = 1'-0"

2 - CRACK CONTROL JOINT - TYPICAL
3" = 1'-0"

ABBREVIATIONS

ADA	AMERICANS WITH DISABILITIES ACT
AOBE	AS ORDERED BY ENGINEER
APPROX.	APPROXIMATE
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BOT.	BOTTOM
BM	BENCHMARK
CEC	CANADIAN ELECTRICAL CODE
CECA	CANADIAN ELECTRICAL CONTRACTORS ASSOCIATION
CEIS	CANADIAN ELECTRICAL INSTALLATIONS STANDARDS
CSA	CANADIAN STANDARDS ASSOCIATION
CY	CUBIC YARD
CONC.	CONCRETE
EIC	ENGINEER IN CHARGE
ELEV.	ELEVATION
EW	EACH WAY
GALV	GALVANIZED
HDG	HOT DIPPED GALVANIZED
HES	HIGH EARLY STRENGTH
HMA	HOT MIX ASPHALT
LF	LINEAR FEET
MANU.	MANUFACTURER
MAX.	MAXIMUM
MECH.	MECHANICAL
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MPT	MAINTENANCE AND PROTECTION OF TRAFFIC
NFBC	NIAGARA FALLS BRIDGE COMMISSION
NIC	NOT IN CONTRACT
NYSMUTCD	NEW YORK STATE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES
NTS	NOT TO SCALE
NYSDOT	NEW YORK STATE DEPARTMENT OF TRANSPORTATION
O.C.	ON CENTER
O.D.	OUTER DIAMETER
OPSS	ONTARIO PROVINCIAL STANDARD SPECIFICATION
OTDR	OPTICAL TIME DOMAIN REFLECTOMETER
PCC	PORTLAND CEMENT CONCRETE
PSI	POUNDS PER SQUARE INCH
PREP.	PREPARATION
R	RADIUS
REINF	REINFORCED
SS	STAINLESS STEEL
SF	SQUARE FEET
T&B	TOP AND BOTTOM
TOS	TOP OF STEEL
TYP.	TYPICAL
UHPC	ULTRA HIGH PERFORMANCE CONCRETE
VIF	VERIFY IN FIELD

ENGINEER'S STAMP

LICENSED PROFESSIONAL ENGINEER
J. C. SHERLOCK
PROVINCE OF ONTARIO

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MARK	DESCRIPTION	DATE	APPR.

IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECT SUPERVISION OF A LICENSED ENGINEER, TO ALTER THIS DOCUMENT IN ANY WAY. IF AN ITEM BEARING THE SEAL OF AN ARCHITECT OR ENGINEER IS ALTERED, THE ALTERING ARCHITECT OR ENGINEER SHALL AFFIX TO THEIR ITEM THE SEAL AND SIGNATURE AND THE DATE OF SUCH ALTERATION AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

DISCLAIMER

DATE: 1/30/2018
SOLICITATION NO.:
CONTRACT NO.: 187774
DESIGNED BY: COLLANA
DWN BY: W.F.
CKD BY: K.H.
SUBMITTED BY: WSP USA INC.
PLOTTED BY: PROSPETE.VASILEVB
FILE NAME: G-001 - GENERAL NOTES_RB.dwg
SIZE: ANSI D
PLOT DATE: 1/30/2018

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NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02-2B

GENERAL NOTES (1 OF 2)

SHEET REFERENCE NUMBER
G-001
SHEET 02 OF 29

J:\187774 - nfcb rainbow - whirlpool-ln_bridge repair\02-rainbow\~CAD\G-001 - GENERAL NOTES_RB.dwg Wed, 31 Jan 2018 - 11:47pm fmichelhweb

NOT IN CONTRACT

WORK AREA 1: RAINBOW BRIDGE AND PLAZA - USA SIDE

ITEM	DESCRIPTION	UNIT	QUANT.	SCHED
1.1	REPAIR BREATHER JOINTS IN DECK WITH UHPC LINK SLABS	CY	29	PH.1-2
1.2	REPAIR BRIDGE CURBS AND REPLACE CURBS OVER LINK SLABS	CY	4	PH.1-2
1.3	SURFACE PATCHING CONCRETE DECK REPAIRS IN ROADWAY OVERLAY	SF	10	PH.1-2
1.4	CRACK REPAIRS ON CONCRETE DECK IN ROADWAY OVERLAY	LF	331	PH.1-2
1.5	SURFACE PATCHING CONCRETE REPAIRS IN SIDEWALK	SF	220	PH.3
1.6	CRACK REPAIRS IN CONCRETE SIDEWALK	LF	2060	PH.3
1.7	CONCRETE SURFACE PATCH REPAIRS TO MEDIAN	SF	170	PH.1-2
1.8	SEAL BRIDGE DECK, MEDIAN, AND SIDEWALK	SF	27161	PH.1-3
1.9	JOINT RESEALING IN BRIDGE CONCRETE MEDIAN AND SIDEWALK	LF	1157	PH.1-3
1.10	MISC. CONCRETE SPALL REPAIRS TO UNDERSIDE OF DECK & MEDIAN	SF	165	-
1.11	CLEAN AND RECOAT TOP FLANGES OF FLOOR BEAMS	LS	1	-
1.12	SANDBLAST AND RECOAT STEEL BARRIER AND SIDEWALK EDGE	SF	4451	PH.3
1.13	STEEL SIDEWALK PLATE	EA	1	PH.3
1.14	REHABILITATION OF UTILITY HAND HOLES IN SIDEWALK	EA	2	PH.3*
1.15	NEW PAVEMENT MARKINGS ON BRIDGE	LF	2216	PH.1-2
1.16	REPAIR DOWN SPOUT	EA	1	-
1.17	CONCRETE PATCH REPAIRS TO SIDEWALK BARRIER	EA	2	-
1.18	SEAL MANHOLE COVERS	LS	1	SPR.
1.19	MILL AND PAVE PLAZA ASPHALT	SF	33000	SPR.
1.20	INSTALL (1) NEW SPEED CONTROL DEVICES (HUMPS)	EA	1	SPR.
1.21	PAVEMENT MARKING IN PLAZA	LS	1	SPR.
1.22	SEALING NARROW (<1.5") ASPHALT CRACKS IN PLAZA	LF	2500	SPR.
1.23	SEALING WIDE (>1.5") ASPHALT CRACKS IN PLAZA	LF	500	SPR.
1.24	MISC. ASPHALT PAVEMENT MILL AND PAVE REPAIRS	T/M ALLOW	$50,000	SPR.
1.25	MAINTENANCE AND PROTECTION OF TRAFFIC	LS	1	-
1.26	MOBILIZATION	LS	1	-

WORK AREA 3: WHIRLPOOL RAPIDS BRIDGE PLAZA - USA SIDE

ITEM	DESCRIPTION	UNIT	QUANT.	SCHED.
3.1	REPLACE CONCRETE PAVEMENT AROUND TRENCH DRAIN	CY	10	-
3.2	ASPHALT PAVEMENT PATCH	SF	34	-
3.3	MILL AND PAVE ASPHALT	SF	1650	-
3.4	MAINTENANCE AND PROTECTION OF TRAFFIC	LS	1	-
3.5	MOBILIZATION	LS	1	-

WORK AREA 5: LEWISTON-QUEENSTON BRIDGE AND PLAZA - USA SIDE

ITEM	DESCRIPTION	UNIT	QUANT.	SCHED.
5.1	ASPHALT PAVEMENT REPAIRS (FULL DEPTH)	SF	1400	-
5.2	MAINTENANCE AND PROTECTION OF TRAFFIC	LS	1	-
5.3	MOBILIZATION	LS	1	-

OTHER - USA SIDE

ITEM	DESCRIPTION	UNIT	QUANT.	SCHED.
7.1	ENGINEER'S LAPTOP COMPUTER	LS	1	SPR.
7.2	CONTINGENCY	LS	SEE BID FORMS	-
7.3A1	(ADMIN. BLDG) MILL/PAVE PARKING LOT W/ REINF. GRID	SF	34,700	ALT. 1
7.3A2	(ADMIN. BLDG) MILL/PAVE PARKING LOT W/ REINF. GRID	SF	34,700	ALT. 2
7.4A1	(ADMIN. BLDG) NEW PAVEMENT MARKINGS	LF	750	ALT. 1
7.4A2	(ADMIN. BLDG) NEW PAVEMENT MARKINGS	LF	750	ALT. 2
7.5A1	(ADMIN. BLDG) TRENCH DRAIN	LS	1	ALT. 1
7.5A2	(ADMIN. BLDG) TRENCH DRAIN	LS	1	ALT. 2
7.6A3	(LQ) SECURITY FENCE	LF	512	-

WORK AREA 2: RAINBOW BRIDGE AND PLAZA - CANADA SIDE

ITEM	DESCRIPTION	UNIT	QUANT.	SCHED.
2.1	REPAIR BREATHER JOINTS IN DECK WITH UHPC LINK SLABS	CY	29	PH.1-2
2.2	REPAIR BRIDGE CURBS AND REPLACE CURBS OVER LINK SLABS	CY	2	PH.1-2
2.3	SURFACE PATCHING CONCRETE DECK REPAIRS IN ROADWAY OVERLAY	SF	2	PH.1-2
2.4	CRACK REPAIRS ON CONCRETE DECK IN ROADWAY OVERLAY	LF	132	PH.1-2
2.5	SURFACE PATCHING CONCRETE REPAIRS IN SIDEWALK	SF	25	PH.3
2.6	CRACK REPAIRS IN CONCRETE SIDEWALK	LF	180	PH.3
2.7	CONCRETE SURFACE PATCH REPAIRS TO MEDIAN	SF	30	PH.1-2
2.8	SEAL BRIDGE DECK, MEDIAN, AND SIDEWALK	SF	26923	PH.1-3
2.9	JOINT RESEALING IN BRIDGE CONCRETE MEDIAN AND SIDEWALK	LF	1144	PH.1-3
2.10	MISC. CONCRETE SPALL REPAIRS TO UNDERSIDE OF DECK & MEDIAN	SF	85	-
2.11	CLEAN AND RECOAT TOP FLANGES OF FLOOR BEAMS	LS	1	-
2.12	SANDBLAST AND RECOAT STEEL BARRIER AND SIDEWALK EDGE	SF	4390	PH.3
2.13	STEEL SIDEWALK PLATE	EA	1	PH.3
2.14	REHABILITATION OF UTILITY HAND HOLES IN SIDEWALK	EA	1	PH.3*
2.15	NEW PAVEMENT MARKINGS ON BRIDGE	LF	2216	PH.1-2
2.16	JOINT REPAIR AND NEW DRAIN TROUGH	LS	1	-
2.17	FIBER OPTIC CABLE INSTALLATION	LS	1	-
2.18	FIBER OPTIC CABLE TERMINATION AND TESTING	LS	1	-
2.19	REPAIRS AT DECK INVESTIGATION LOCATIONS	SF	24	SPR.
2.20	REPAIRS IN NW CORNER OF PLAZA (AE DRAWINGS)	LS	1	SPR.
2.21	CONCRETE PATCH REPAIRS IN TUNNELS	SF	60	-
2.22	HYDROPHILIC POLYURETHANE INJECTION TO TUNNEL CEILING	LF	100	-
2.23	REPAIRS AROUND SCUPPER DRAIN IN OLD ARCHIVE ROOM	LS	1	-
2.24	MAINTENANCE AND PROTECTION OF TRAFFIC	LS	1	-
2.25	MOBILIZATION	LS	1	-

WORK AREA 4: WHIRLPOOL RAPIDS BRIDGE - CANADA SIDE

ITEM	DESCRIPTION	UNIT	QUANT.	SCHED.
4.1	MODIFY SIDEWALK SECURITY GATES	LS	1	-

WORK AREA 6: LEWISTON-QUEENSTON BRIDGE - CANADA SIDE

ITEM	DESCRIPTION	UNIT	QUANT.	SCHED.
6.1	MILL/PAVE AREA 13B	SF	11012	-
6.2	MILL/PAVE AREA 3	SF	350	-
6.3	MISC. CONCRETE PAVEMENT PATCHES	SF	150	-
6.4	CONCRETE JOINT SEALING	LF	3710	-
6.5	CONCRETE CRACK SEALING	LF	500	-
6.6	DRAIN TROUGH MODIFICATIONS UNDER FINGER JOINT	LS	1	-
6.7	MAINTENANCE AND PROTECTION OF TRAFFIC	LS	1	-
6.8	MOBILIZATION	LS	1	-

OTHER - CANADA SIDE

ITEM	DESCRIPTION	UNIT	QUANT.	SCHED.
8.1	ENGINEER'S LAPTOP COMPUTER	LS	1	SPR.
8.2	CONTINGENCY	LS	SEE BID FORMS	-
8.3A1	(LQ) CONCRETE JOINT SEALING	LF	4790	-
8.4A1	(LQ) MISC. CONCRETE PAVEMENT PATCHES	SF	150	

SCHEDULE

1. ALL COMPLETION DATES ARE DATES OF SUBSTANTIAL COMPLETION. ALL WORK WITHOUT A COMPLETION DATE SPECIFICALLY IDENTIFIED ON THIS DRAWINGS SHALL BE SUBSTANTIALLY COMPLETE BY NOVEMBER 16, 2018:
2. THE CONTRACTOR SHALL NOTE THAT THE RAINBOW BRIDGE IS AN INTERNATIONAL BRIDGE; THE THROUGHPUT OF BOTH VEHICULAR AND PEDESTRIAN TRAFFIC ACROSS THE BRIDGE IS OF PARAMOUNT IMPORTANCE TO THE NFBC AND THE GOVERNMENTS OF BOTH THE UNITED STATES AND CANADA.
3. THE NFBC MAY ENGAGE OTHER CONTRACTORS TO PERFORM WORK ASSOCIATED WITH THE PROJECT, THE CONTRACTOR SHALL COORDINATE ITS WORK WITH THE NFBC'S OTHER CONTRACTORS TO AVOID ANY NEGATIVE IMPACTS ON THEIR WORK. THE WORK ON THE RAINBOW BRIDGE REQUIRES DETAILED COORDINATION BETWEEN THE CONTRACTOR AND THE NFBC'S OTHER CONTRACTORS AS THE CONTRACTOR WILL BE WORKING ON ONE HALF OF THE STRUCTURE WHILE THE COMMISSION MAY ENGAGE OTHER CONTRACTORS TO PERFORM WORK ON THE OTHER HALF OF THE STRUCTURE AT THE SAME TIME.
4. REFERENCE SECTION 17 - LATE COMPLETION/LIQUIDATED DAMAGES - OF THE GENERAL TERMS AND CONDITIONS; THE CONTRACTOR WILL BE ASSESSED LIQUIDATED DAMAGES AND BE RESPONSIBLE FOR ALL COSTS INCURRED BY THE NFBC ASSOCIATED WITH DELAYS TO THE SCHEDULE CAUSED BY THE CONTRACTOR.
5. THE CONTRACTOR SHALL WORK EXTENDED OR ADDITIONAL WORK SHIFTS AS REQUIRED TO MEET THE PROJECT SCHEDULE.
   - 5.1. SHOULD THE CONTRACTOR DETERMINE THAT EXTENDED OR ADDITIONAL WORK SHIFTS ARE REQUIRED TO MEET THE PROJECT SCHEDULE A NIGHT OPERATIONS WORK PLAN SHALL BE SUBMITTED AND APPROVED BY THE NFBC PRIOR TO THE START OF EXTENDED OR ADDITIONAL SHIFTS. THE PLAN SHALL ADDRESS ITEMS SUCH AS LIGHTING/NOISE MITIGATION, SAFETY, LOGISTICS AND OTHER PERTINENT ISSUES; THE NFBC RESERVES THE RIGHT TO ISSUE A STOP WORK ORDER AT ANY TIME AND REQUIRE CHANGES TO THE PLAN.
   - 5.2. THE CONTRACTOR WILL NOT BE ENTITLED TO ADDITIONAL COMPENSATION FOR ANY MEASURES NECESSARY TO MEET THE PROJECT SCHEDULE.

MAINTENANCE AND PROTECTION OF TRAFFIC

1. THE CONTRACTOR SHALL PROTECT AND MAINTAIN VEHICULAR TRAFFIC WITHIN THE PROJECT AREA. ALL COSTS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN THE BID PRICE.
2. ALL MAINTENANCE AND PROTECTION OF TRAFFIC WORK SHALL CONFORM TO THE NYSMUTCD AND NYS STANDARD SPECIFICATION 619 INCLUDING CURRENT ADDENDA. TRAFFIC CONTROL SCHEMES SHOWN ON THE PLANS OR IN THE NYSMUTCD ARE TO BE CONSIDERED MINIMUM REQUIREMENTS. THE ENGINEER MAY ORDER ADDITIONAL SIGNS, FLAGGERS, CONES, REFLECTORIZATION, ETC. IF THE ENGINEER DEEMS IT NECESSARY, AT NO ADDITIONAL COST TO THE NFBC. PAYMENT FOR ALL SUCH WORK SHALL BE INCLUDED IN BID ITEM.
3. THE CONTRACTOR SHALL SUBMIT A MAINTENANCE AND PROTECTION OF TRAFFIC PLAN TO THE NIAGARA FALLS BRIDGE COMMISSION FOR REVIEW AND APPROVAL AT LEAST SEVEN (7) DAYS PRIOR TO COMMENCING WORK. APPROVAL OF THE MPT PLAN IS ALSO SUBJECT TO APPROVAL BY AND COORDINATION WITH USA AND CANADIAN CUSTOMS AND BORDER PROTECTION. SUBSEQUENT MAINTENANCE AND PROTECTION OF TRAFFIC PLANS FOR ADDITIONAL AREAS OR MODIFIED PLANS SHALL BE SUBMITTED SEVEN (7) DAYS PRIOR TO COMMENCING ADDITIONAL WORK.
4. THE CONTRACTOR SHALL COORDINATE ANY AND ALL TRAFFIC DISRUPTIONS FOR CONSTRUCTION (INCLUDING DELIVERIES) WITH THE NIAGARA FALLS BRIDGE COMMISSION AND USA AND CANADIAN CUSTOMS AND BORDER PROTECTION. THIS INCLUDES, BUT MAY NOT BE LIMITED TO THE PROVISION OF ESCORTS AND MPT MEASURES (TO BE PROVIDED BY THE CONTRACTOR) FOR OVERSIZE VEHICLES TO AND FROM THE SITE, AND THE PLANNING OF LANE CLOSURES TO COMPLETE THE WORK. ALTERATIONS TO APPROVED LANE CLOSURES WILL BE AT THE DISCRETION OF THE NIAGARA FALLS BRIDGE COMMISSION.
5. UNLESS OTHERWISE NOTED, ALL WORK ZONE SIGNS USED SHALL BE THE LARGEST SIZE AVAILABLE IN ACCORDANCE WITH THE NYSMUTCD. WHERE THERE IS INADEQUATE CLEARANCE FOR THE LARGEST AVAILABLE SIZE SIGN, THE ENGINEER MAY APPROVE A SMALLER SIGN.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL ALL SIGNS, BARRIERS, SAND BARRELS, CONES AND PAVEMENT STRIPES NECESSARY TO MAINTAIN TRAFFIC DURING CONSTRUCTION, AND TO PROVIDE DAILY PATROLS TO ENSURE THAT THE PROPER SIGNS, STRIPES, AND OTHER EQUIPMENT ARE IN GOOD CONDITION.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING MPT AND CLOSURES IN AREAS THAT ARE NOT READY TO BE OPENED TO TRAFFIC. THIS INCLUDES, BUT IS NOT LIMITED TO CURING CONCRETE AND ASPHALT PAVEMENT.
8. WHERE REQUIRED, ROAD PLATES MUST BE RATED FOR HS-25 AXLE LOADING.
9. THE NIAGARA FALLS BRIDGE COMMISSION SHALL BE NOTIFIED A MINIMUM OF FORTY EIGHT (48) HOURS IN ADVANCE OF ANTICIPATED LANE CLOSURES.
10. NO LANE CLOSURES WILL BE ALLOWED ON THE BRIDGE ON THE DATES SHOWN IN EXHIBIT D OF THE BID DOCUMENTS. IF AT ANY TIME THE ENGINEER DETERMINES THAT LANE CLOSURES ARE CREATING EXCESSIVE DELAYS TO TRAFFIC OR ARE CREATING A SAFETY CONCERN, THE CLOSURES SHALL BE REMOVED AND THE ROADWAY OPENED TO TRAFFIC.
11. CHANNELIZING DEVICES USED IN TAPERS AND IN THE TANGENT SECTION OF LANE CLOSURES SHALL BE UNIFORM.

SCHEDULE ABBREVIATIONS :

-	INDICATES AN ITEM THAT CAN BE EXECUTED ANY TIME DURING CONSTRUCTION PERIOD. EXECUTION OF THESE ITEMS SHALL NOT IMPACT RAINBOW BRIDGE TRAFFIC
SPR.	INDICATES WORK TO BE COMPLETED IN THE SPRING: MAY 30, 2018 - JUNE 29, 2018
PH. 1	INDICATES PHASE 1 WORK: SEPT. 5, 2018 TO SEPT. 25, 2018
PH. 2	INDICATES PHASE 2 WORK: SEPT. 26, 2018 TO OCT. 16, 2018
PH. 3	INDICATES PHASE 3 WORK: OCT. 17, 2018 TO NOV. 2, 2018
ALT. 1	INDICATES WORK TO BE EXECUTED BETWEEN MAY 1, 2018 TO OCT. 1, 2018
ALT. 2	INDICATES WORK TO BE EXECUTED BETWEEN MAY 1, 2019 TO OCT. 1, 2019
*	RIVET REPLACEMENT CAN BE COMPLETED PRIOR TO PHASE 3, AS LONG AS IT DOES NOT DISRUPT PEDESTRIAN TRAFFIC ON THE SIDEWALK

ENGINEER'S STAMP

LICENSED PROFESSIONAL ENGINEER — J. C. SHERLOCK — PROVINCE OF ONTARIO

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MARK	DESCRIPTION	DATE	APPR.
	DISCLAIMER		

DESIGNED BY: DONALD A. WARD
DRAWN BY: W.F.
CHKD BY: K.H.
SUBMITTED BY: WSP USA INC.
DATE: 1/30/2018
SOLICITATION NO.: 187774
CONTRACT NO.: 187774
FILE NAME: G-001 - GENERAL NOTES_RB.dwg
SIZE: ANSI D
PLOTTED BY: FRECHETTE, HEATHER
PLOT DATE: 1/30/2018

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NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02.2B

GENERAL NOTES (2 OF 2)

SHEET REFERENCE NUMBER
G-002
SHEET 03 OF 29

J:\187774 - rfcb, rainbow ■whirlpool—lq, bridge, repair\02--rainbow\--CAD\G--001 - GENERAL NOTES_RB.dwg Wed, 31 Jan, 2018 - 11:47pm frechetteab

BID ITEM 2.20
REPAIR DECK JOINTS IN THIS AREA. SEE DRAWINGS BY ASSOCIATED ENGINEERING.

BID ITEMS 2.17 AND 2.18
FURNISH, INSTALL, TERMINATE, AND TEST FIBER OPTIC CABLE. ROUTE FROM BRIDGE OVERHEAD SIGN STRUCTURE TO NFBC SERVER ROOM PER DETAILS ON DWG. RB-901.

INCLUDE IN BID ITEM 2.19
REPAIR ASPHALT IN 24'x24" TEST AREA (TYP., 4 LOCATIONS) PER DETAIL 4/RB-502

CONCRETE MEDIAN

BID ITEM 2.16
REPAIR JOINT AND INSTALL DRAIN TROUGH PER DETAIL 6/RB502

BID ITEM 2.15
OVERCOAT EXISTING PAVEMENT MARKINGS ON BRIDGE AND APPROACHES PER DETAIL 7/RB502.

BID ITEM 2.8
SEAL ENTIRE BRIDGE DECK, MEDIAN, AND SIDEWALK SURFACE WITH SIKAGARD 705L, INCLUDING PREP. BY MECH. MEANS PER MANU. RECOMMENDATIONS.

REPAIR DECK, MEDIAN, AND SIDEWALK CRACKS ON BRIDGE

REPAIR DECK, MEDIAN, AND SIDEWALK SPALLS AND AREAS OF DELAMINATION ON AND UNDER BRIDGE

OVERHEAD SIGN STRUCTURE

ALL WORK THIS SIDE BY CANADIAN CONTRACTOR

ALL WORK THIS SIDE BY USA CONTRACTOR

CANADA

USA

NIAGARA RIVER

NOT IN CONTRACT

BID ITEM 1.15
OVERCOAT EXISTING PAVEMENT MARKINGS ON BRIDGE AND APPROACHES PER DETAIL 7/RB502.

BID ITEM 1.8
SEAL ENTIRE BRIDGE DECK, MEDIAN, AND SIDEWALK SURFACE WITH SIKAGARD 705L, INCLUDING PREP. BY MECH. MEANS PER MANU. RECOMMENDATIONS.

REPAIR DECK, MEDIAN, AND SIDEWALK CRACKS ON BRIDGE

PERFORM CONCRETE REPAIRS TO ABUTMENT BACKWALL (UNDER DECK)

REPAIR DECK, MEDIAN, AND SIDEWALK SPALLS AND AREAS OF DELAMINATION ON AND UNDER BRIDGE

REPAIR SCUPPER DOWNSPOUT

1 RB103 | 2 RB104 | 3 RB105 | 4 RB106 | 5 RB107 | 6 RB108 | 7 RB108

℄ ARCH

13W 12W 11W 10W 9W 8W 7W 6W 5W 4W 3W 2W 1W 1E 2E 3E 4E 5E 6E 7E 8E 9E 10E 11E 12E 13E

489'-6"±

983'-4"± BRIDGE

39'-4"± TYP.

493'-10"±

985'-0"±

FOR CONTINUATION SEE DWG. RB-102

PERFORM CONCRETE REPAIRS TO ABUTMENT BACKWALL (UNDER DECK)

REPAIR HAND HOLE

REPLACE SLIDING COVER PLATE

REPAIR SCUPPER DRAIN FROM ROADWAY DRAINAGE INLET TO BELL HOUSING INSIDE NFBC ARCHIVE ROOM CEILING BELOW.

REPAIR AREA OF SPALLED CONCRETE IN TUNNEL BELOW

REPAIR AREA OF SPALLED CONCRETE IN TUNNEL BELOW

REPAIR AREA OF SPALLED CONCRETE IN TUNNEL BELOW

INCLUDE IN BID ITEM 2.19
REPAIR ASPHALT IN 24"x24" TEST AREA (TYP., 2 LOCATIONS) PER DETAIL 5/RB-502

CLEAN AND RECOAT ALL TRANSVERSE FLOOR BEAM TOP FLANGE STEEL ON BRIDGE (UNDER DECK) WITH TERMARUST

REPLACE EXISTING SIDEWALK AND MEDIAN COMPRESSIBLE JOINT MATERIAL ON BRIDGE

REPLACE EACH BREATHER JOINT ON BRIDGE WITH A LINK SLAB

CLEAN AND RECOAT STEEL SIDEWALK/ROADWAY BARRIER AND SIDEWALK EDGE ON BRIDGE

REPAIR HAND HOLE

CLEAN AND RECOAT ALL TRANSVERSE FLOOR BEAM TOP FLANGE STEEL ON BRIDGE (UNDER DECK) WITH TERMARUST

REPLACE EXISTING SIDEWALK AND MEDIAN COMPRESSIBLE JOINT MATERIAL ON BRIDGE

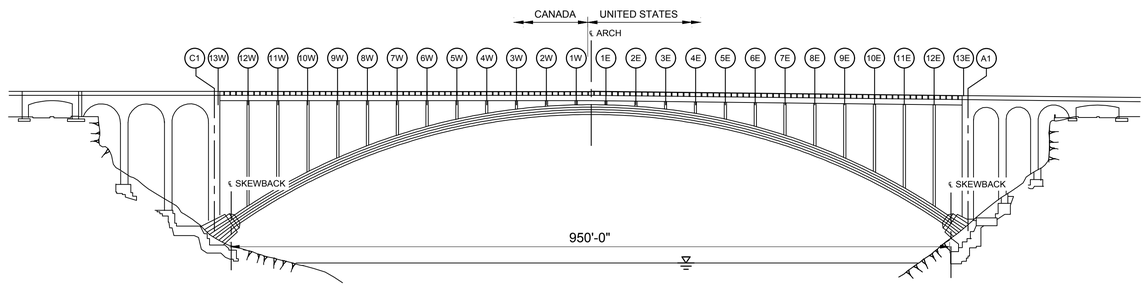
REPLACE EACH BREATHER JOINT ON BRIDGE WITH A LINK SLAB

CLEAN AND RECOAT STEEL SIDEWALK/ROADWAY BARRIER AND SIDEWALK EDGE ON BRIDGE

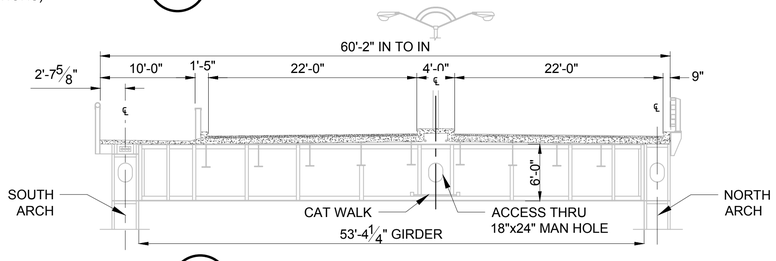
REPAIR HAND HOLE

REPLACE SLIDING COVER PLATE

1 - RAINBOW BRIDGE REPAIRS - GENERAL PLAN (1 OF 2) - CANADIAN PLAZA AND BRIDGE DECK
1" = 50'



2 - ELEVATION - RAINBOW BRIDGE
1" = 100'



3 - TYPICAL SECTION - RAINBOW BRIDGE
1/16" = 1'-0"

NOTES:

1. THE CONTRACTOR IS REQUIRED TO SUBMIT MAINTENANCE AND PROTECTION OF TRAFFIC (MPT) PLAN(S) FOR APPROVAL BY NFBC PER THE GENERAL NOTES PAGES G-001, G-002 AND RB-111, RB-112, AND RB-113.
   ~~-ON THE USA SIDE OF THE BRIDGE, INCLUDE MPT IN BID ITEM 1.25~~ N.I.C.
   -ON THE CANADIAN SIDE OF THE BRIDGE, INCLUDE MPT IN BID ITEM 2.24
2. ~~ON THE USA SIDE OF THE BRIDGE, INCLUDE MOBILIZATION COSTS IN BID ITEM 1.26.~~ N.I.C.
3. ON THE CANADIAN SIDE OF THE BRIDGE, INCLUDE MOBILIZATION IN BID ITEM 2.25.

ENGINEER'S STAMP

LICENSED PROFESSIONAL ENGINEER
C. SHERLOCK
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MARK	DESCRIPTION	DATE	APPR.

DISCLAIMER

DATE: 1/30/2018
SOLICITATION NO.:
CONTRACT NO.: 187774
DESIGNED BY: C.O'LEARY
CKD BY: K.H.
DWN BY: W.F.
SUBMITTED BY: WSP USA INC.
FILE NAME: RB-S101.dwg
SIZE: ANSI D
PLOTTED BY: PLOT DATE: 1/30/2018
RESETTLE HDS.DVB.

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NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02-2B

RAINBOW BRIDGE REPAIRS
GENERAL PLAN (1 OF 2)

SHEET REFERENCE NUMBER
RB-101
SHEET 04 OF 29

J:\187774 - nfbc rainbow - w#bridge_repair\Q2--rainbow_C4D\RB-S101.dwg Wed, 31 Jan 2018 - 11:47pm frechelfereb

NOT IN CONTRACT

INCLUDE IN BID ITEM 1.26
CONTRACTOR STAGING AREA
OPTION AT BACK OF DUTY
FREE PARKING AREA (3500 SF).

INCLUDE IN BID ITEM 1.21
INSTALL (7) WHITE EPOXY
REFLECTORIZED SPEED CONTROL
SYMBOLS ON THE APPROACH SIDE
OF THE HUMP PER DETAIL 3/RB-505

INCLUDE IN BID ITEM 1.21
INSTALL (12) WHITE PAINTED
PAVEMENT SYMBOLS
PER DETAIL 3/RB-506.

INCLUDE IN BID ITEM 1.20
INSTALL NEW SPEED CONTROL
DEVICE (HUMP). SEE SECTION A AND
SECTION B ON DRAWING RB-505

A RB505

B RB505

BID ITEM 1.24
MILL AND PAVE MISCELLANEOUS AREAS OF
ASPHALT PER DETAIL 5/RB-506 IN AREAS AOBE

DO NOT DAMAGE EXISTING PAINTED SPEED
CONTROL DEVICE (HUMP)

D RB505

C RB505

INCLUDE IN BID ITEM 1.21
INSTALL (8) WHITE PAINTED PAVEMENT SYMBOLS
PER DETAIL 3/RB-506

INCLUDE IN BID ITEM 1.21
INSTALL NEW 4" WHITE EPOXY REFLECTORIZED
PARKING SPACE LINES (APPROX. 660 LF).

BID ITEM 1.19
MILL AND PAVE 2" PARKING LOT TOP COURSE, PER
NYSDOT 402.128903 (APPROX. 34,000 SF TOTAL)

INCLUDE IN BID ITEM 1.21
INSTALL (2) NEW WHITE PAINTED CURVED ARROWS
PER DETAIL 1/RB-505.

INCLUDE IN BID ITEM 1.21
INSTALL NEW 12" WIDE WHITE EPOXY
REFLECTORIZED CROSSWALK MARKINGS
PER DETAIL 2/RB-505
(APPROX. 2600 LF OF 12" STRIPING)

EXISTING MOVEABLE
CONCRETE BARRIERS

FOR CONTINUATION SEE DWG. RB-101

BID ITEM 1.18
SEAL MANHOLE COVERS PER
DETAIL 4/RB-506

BID ITEM 1.17
REPAIR SPALLED CONCRETE AT EMBEDDED FENCE
POSTS IN SIDEWALK BARRIER PER DETAIL 3/RB-503

BID ITEM 1.22
IN PLAZA, REPAIR NARROW (<1.5") ASPHALT CRACKS
PER NYSDOT ITEM 412.76030001 AND MANUFACTURER'S
RECOMMENDATIONS (ASSUME 2500 LF)
BID ITEM 1.23
IN PLAZA, REPAIR LARGE (>1.5") ASPHALT CRACKS WITH
CRAFCO MASTIC ONE PER NYSDOT ITEM 412.10010010
PER MANUFACTURER'S RECOMMENDATIONS (ASSUME
500LF).

INCLUDE IN BID ITEM 1.26
CONTRACTOR STAGING
AREA OPTION
(1000 SF)

TEMPORARY
CONSTRUCTION FENCE
TO BE PROVIDED BY THE
CONTRACTOR

NOTES:

1. THE CONTRACTOR IS REQUIRED TO SUBMIT MAINTENANCE AND PROTECTION OF TRAFFIC PLAN(S) FOR APPROVAL BY NFBC PER THE GENERAL NOTES PAGES G-001, G-002 AND RB-111, RB-112, AND RB-113. INCLUDE MPT IN BID ITEM 1.25 FOR WORK ON THE USA SIDE OF THE BRIDGE.
2. INCLUDE MOBILIZATION IN BID ITEM 1.26.
3. UNLESS NOTED OTHERWISE, PAVEMENT MARKINGS SHALL BE WHITE EPOXY REFLECTORIZED, 15 MILS PER NYSDOT ITEM 685.01. CLEAN AND PREPARE SURFACES PER NYSDOT ITEM 635.0103 PRIOR TO APPLICATION OF NEW MARKINGS.

1 / - RAINBOW BRIDGE REPAIRS - GENERAL PLAN (2 OF 2) - USA PLAZA
1" = 30'

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MARK	DESCRIPTION	DATE	APPR.
	DISCLAIMER		

DESIGNED BY: SHAILAJA
DRAWN BY: W.F.
CHKD BY: K.H.
SUBMITTED BY: WSP USA INC.
DATE: 1/30/2018
SOLICITATION NO.:
CONTRACT NO.: 187774
FILE NAME: CS101 - Rainbow Bridge Plan Sheet.dwg
SIZE: ANSI D
PLOTTED BY: PROCHETTE, WESLEY B.
PLOT DATE: 1/30/2018

NIAGARA FALLS BRIDGE COMMISSION
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NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02-2B
RAINBOW BRIDGE REPAIRS
GENERAL PLAN (2 OF 2)

SHEET REFERENCE NUMBER
RB-102
SHEET 05 OF 29

J:\187774 - rfdb rainbow whirlpool-lq bridge repair\02-rainbow\C4D\CS101- Rainbow Bridge Plan Sheet.dwg Wed, 31 Jan 2018 - 11:48am frechettewb

13W 12W 11W 10W 9W 8W

MATCHLINE A-A
DWG. RB-104

CANADA

CONCRETE PAVEMENT

BID ITEM 2.8
SEAL ENTIRE BRIDGE DECK, MEDIAN, AND SIDEWALK SURFACE WITH ~~SIKAGARD 705L~~ Sikagard SN-100, INCLUDING PREP. BY MECH. MEANS PER MANU. RECOMMENDATIONS.

INCLUDE IN BID ITEMS 2.4
CHASE EXISTING CRACK WITH SIKADUR 55SLV EPOXY IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS (TYP.)

STEEL RAILING
EDGE OF CONCRETE CURB

MICROSILICA OVERLAY OVER CONCRETE DECK

INCLUDE IN BID ITEM 2.1
INSTALL LINK SLAB PER DETAILS ON DRAWING RB-501 (TYP.)

INCLUDE IN BID ITEM 2.11
CLEAN AND RECOAT TOP FLANGE OF FLOOR BEAMS PER DETAIL 4/RB503 (TYP.)

39'-4"±
TYP.

3'-0"
TYP.

INCLUDE IN BID ITEM 2.2
REPLACE CURB OVER LINK SLAB PER DETAIL 2/RB-503 (TYP.)

INCLUDE IN BID ITEM 2.3
REPAIR SPALLED CONCRETE, TINED FINISH PER DETAIL 11/RB503.

INCLUDE IN BID ITEM 2.7
REPAIR SPALLED CONCRETE PER DETAIL 1/RB503 (TYP.)

~~INCLUDE IN BID ITEM 2.10~~
~~REPAIR SPALLED CONCRETE (UNDER DECK) PER DETAIL 1/RB504. THIS REPAIR MAY REQUIRE HANGING SCAFFOLDING/FALSEWORK.~~
Removed loose concrete. Patching not required.

INCLUDE IN BID ITEM 2.9
REMOVE JOINT SEAL MATERIAL, SANDBLAST JOINT AND REPLACE WITH DOW CORNING 888 SILICONE PER MANUFACTURER'S RECOMMENDATIONS. INSTALL BACKER ROD IF NEEDED (TYP.)

DOW 890SL on horizontal. DOW 888 on vertical.

59'-5"
22'-0" 2 LANES
4'-0" MEDIAN
22'-0" 2 LANES
9½"± CURB
10'-8" SIDEWALK
11'-0" (VIF)

ASPHALT PAVEMENT
CONCRETE MEDIAN
ASPHALT PAVEMENT

INCLUDE IN BID ITEM 2.2
REPAIR SPALLED CONCRETE CURB PER DETAIL 1/RB503

INCLUDE IN BID ITEM 2.10
PERFORM CONCRETE REPAIRS TO ABUTMENT BACKWALL (UNDER DECK) PER DETAIL 1/RB504 AND PHOTO 1/RB504 (ASSUME 50 SF).

INCLUDE IN BID ITEM 2.10
REPAIR SPALLED CONCRETE (UNDER DECK) PER DETAIL 1/RB504.

FACE OF CURB

INCLUDE IN ITEM 2.12
CLEAN AND RECOAT STEEL BARRIER PER DETAIL 3/RB502

~~INCLUDE IN BID ITEM 2.3~~
~~REPAIR MICROSILICA OVERLAY PER DETAIL 11/RB503~~
Not required in link slab

INCLUDE IN BID ITEM 2.10
REPAIR SPALLED CONCRETE (UNDER DECK) PER DETAIL 1/RB504.

INCLUDE IN BID ITEM 2.10
REPAIR SPALLED CONCRETE (UNDER DECK) PER DETAIL 1/RB504.

CONCRETE SIDEWALK

1/RB502

Curbs not removed on the south side. Patching where required.

STEEL RAILING

INCLUDE IN BID ITEM 2.14
REPAIR EXISTING PULLBOX PER DETAIL 1/RB-502

BID ITEM 2.13
REPLACE EXISTING SIDEWALK PLATE WITH ~~NEW BENT PLATE~~ WITH NON-SLIP COATING, PER ADA. SEE DETAIL 5/RB-503.

Used Existing Plate

INCLUDE IN BID ITEM 2.12
REMOVE EXISTING ½" EXPANSION JOINT MATERIAL, CLEAN TOP FACE AND EXPOSED CORNER OF STEEL SIDEWALK EDGE AND RECOAT. SEE DETAIL 3/RB-502

INCLUDE IN BID ITEM 2.5
REPAIR SPALLED CONCRETE PER DETAIL 10/RB503. REPLACE EXPANSION JOINT MATERIAL WITH CLOSED CELL FILLER (WR MEADOWS CERAMAR) AND DOW CORNING 888 SILICONE AS NEEDED

1'-4" 7'-0" 10'-9" 2'-3" 4'-5" 7'-3" 19'-4" 16'-8" 14'-0" 8'-0" 1'-0" 1'-9" 2'-8" 1'-4"± 1'-0"± 10" 2'-1" 5'-2" 5'-2" 2'-0" 1'-2" 7'-5" 1'-9" 1'-3" 2'-6¼" 10" 1'-8" 5'-0" 8"

1/RB101 PLAN REPAIR AREA (1 OF 6)
1/8" = 1'-0"

ENGINEER'S STAMP
LICENSED PROFESSIONAL ENGINEER #33
C. SHERLOCK
Feb 5/18
PROVINCE OF ONTARIO

NIAGARA FALLS BRIDGE COMMISSION
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MARK	DESCRIPTION	DATE	APPR.

DISCLAIMER

DATE: 1/30/2018
SOLICITATION NO.:
CONTRACT NO.: 187774
PLOT DATE: 1/30/2018

DESIGNED BY: S. DOLLANIA
DRAWN BY: W.F.
CHKD BY: K.H.
SUBMITTED BY: WSP USA INC.
FILE NAME: RB-S121.dwg
PLOTTED BY: REGOETE WESLER
SIZE: ANSI D

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NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02-2B

RAINBOW BRIDGE REPAIRS
PLAN REPAIRS AREA 1

SHEET REFERENCE NUMBER
RB-103
SHEET 06 OF 29

J:\187774 - nfcb rainbow - whirlpool-q bridge repair\02-rainbow\-CAD\RB-S121.dwg Wed, 31 Jan 2018 - 11:48pm freshelrweb

8W
7W
6W
5W
4W
3W

MATCHLINE A-A
DWG. RB-103

MATCHLINE B-B
DWG. RB-105

BID ITEM 2.8
SEAL ENTIRE BRIDGE DECK, MEDIAN, AND SIDEWALK SURFACE WITH ~~SIKAGARD 705L~~, INCLUDING PREP. BY MECH. MEANS PER MANU. RECOMMENDATIONS.

Sikagard SN-100

Removed loose concrete. Patching not required.

~~INCLUDE IN BID ITEM 2.10 REPAIR SPALLED CONCRETE (UNDER DECK) PER DETAIL 1/RB504. THIS REPAIR MAY REQUIRE HANGING SCAFFOLDING/FALSEWORK.~~

39'-4"±
TYP.

3'-0"
TYP.

Curb poured with link slab.

~~INCLUDE IN BID ITEM 2.2 REPLACE CURB OVER LINK SLAB PER DETAIL 2/RB-503 (TYP.)~~

INCLUDE IN BID ITEM 2.11
CLEAN AND RECOAT TOP FLANGE OF FLOOR BEAMS PER DETAIL 4/RB503 (TYP.)

STEEL RAILING
EDGE OF CONCRETE CURB

~~INCLUDE IN BID ITEM 2.4 CHASE EXISTING CRACK WITH SIKADUR 55SLV EPOXY IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS (TYP.)~~

Cracks were not visible. Work not done.

INCLUDE IN BID ITEM 2.7
REPAIR SPALLED CONCRETE PER DETAIL 1/RB-503

OVERHEAD STEEL GANTRY STRUCTURE

PULL FIBER OPTIC CABLE FROM CABINET RBCAB1 TO SERVER ROOM IN CANADIAN MAINT. TUNNEL, TERMINATE, AND TEST. SEE DWG. RB-901.

INCLUDE IN BID ITEM 2.1
INSTALL LINK SLAB PER DETAILS ON DRAWING RB-501 (TYP.)

INCLUDE IN BID ITEM 2.9
CAULK AROUND EXISTING PEDESTAL BASE WITH DOW CORNING 888 SILICONE

NFBC CABINET RBCAB1

MICROSILICA OVERLAY OVER CONCRETE DECK

EDGE OF CONCRETE MEDIAN

~~INCLUDE IN BID ITEM 2.10 REPAIR SPALLED CONCRETE (UNDER DECK) PER DETAIL 1/RB504. THIS REPAIR MAY REQUIRE HANGING SCAFFOLDING/FALSEWORK.~~

Removed loose concrete. Patching not required.

INCLUDE IN BID ITEM 2.7
REPAIR SPALLED CONCRETE PER DETAIL 1/RB-503

1'-4"
7'-9"
12'-10"
17'-10"
4'-0"
3'-0"

CONCRETE MEDIAN

INCLUDE IN BID ITEM 2.9
REMOVE JOINT SEAL MATERIAL, SANDBLAST JOINT AND REPLACE WITH DOW CORNING 888 SILICONE PER MANUFACTURER'S RECOMMENDATIONS. INSTALL BACKER ROD IF NEEDED (TYP.)

INCLUDE IN BID ITEM 2.2
REPAIR SPALLED CONCRETE CURB PER DETAIL 1/RB503

1'-7"
9'-1"

~~INCLUDE IN BID ITEM 2.2 REPLACE CURB OVER LINK SLAB PER DETAIL 2/RB-503 (TYP.)~~

MICROSILICA OVERLAY OVER CONCRETE DECK

FACE OF CONCRETE CURB

INCLUDE IN BID ITEM 2.10
REPAIR SPALLED CONCRETE (UNDER DECK) PER DETAIL 1/RB504.

STEEL EXPANSION JOINT PLATE

INCLUDE IN BID ITEM 2.12
CLEAN AND RECOAT STEEL BARRIER PER DETAIL 3/RB502

CONCRETE SIDEWALK

5'-8"

10"

Curbs not removed on south side. Patching where required.

8"

4"

STEEL RAILING

INCLUDE IN BID ITEM 2.5
REPAIR SPALLED CONCRETE PER DETAIL 10/RB503. REPLACE EXPANSION JOINT MATERIAL WITH CLOSED CELL FILLER (WR MEADOWS CERAMAR) AND DOW CORNING 888 SILICONE AS NEEDED

INCLUDE IN BID ITEM 2.12
REMOVE EXISTING ½" EXPANSION JOINT MATERIAL, CLEAN TOP FACE AND EXPOSED CORNER OF STEEL SIDEWALK EDGE AND RECOAT. SEE DETAIL 3/RB-502

INCLUDE IN BID ITEM 2.5
REPAIR SPALLED CONCRETE PER DETAIL 10/RB503. REPLACE EXPANSION JOINT MATERIAL WITH CLOSED CELL FILLER (WR MEADOWS CERAMAR) AND DOW CORNING 888 SILICONE AS NEEDED

59'-5"
22'-0" 2 LANES
4'-0" MEDIAN
22'-0" 2 LANES
9½" ± CURB
10'-8" SIDEWALK

2 RB101 PLAN REPAIR AREA (2 OF 6)
1/8" = 1'-0"

ENGINEER'S STAMP
LICENSED PROFESSIONAL ENGINEER
C. SHERLOCK
Feb-5/18
PROVINCE OF ONTARIO

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DISCLAIMER

MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY: D.NOVOLANA
DRAWN BY: W.F.
CKD BY: K.H.
SUBMITTED BY: WSP USA INC.
FILE NAME: RB-S121.dwg
SIZE: ANSI D
PLOTTED BY: PROVETTE, WESLEY B.
DATE: 1/30/2018
SOLICITATION NO.:
CONTRACT NO.: 187774
PLOT DATE: 1/30/2018

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NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02-2B

RAINBOW BRIDGE REPAIRS
PLAN REPAIRS AREA 2

SHEET REFERENCE NUMBER
RB-104
SHEET 07 OF 29

J:\187774 - rfcb rainbow - whirlpool-ls bridge repair\02-rainbow\C-CAD\RB-S121.dwg Wed, 31 Jan 2018 - 11:48pm freshetl\wb

ALL WORK THIS SIDE BY CANADIAN CONTRACTOR

ALL WORK THIS SIDE BY USA CONTRACTOR

CANADA

USA

NOT IN CONTRACT

3W

2W

1W

1E

2E

3E

MATCHLINE B-B DWG. RB-104

MATCHLINE C-C DWG. RB-106

39'-4"± TYP.

39'-4"± TYP.

Poured with link slabs

~~INCLUDE IN BID ITEM 2.2 REPLACE CURB OVER LINK SLAB PER DETAIL 2/RB-503 (TYP.)~~

INCLUDE IN BID ITEM 2.11 CLEAN AND RECOAT TOP FLANGE OF FLOOR BEAMS PER DETAIL 4/RB503 (TYP.)

INCLUDE IN BID ITEM 2.1 INSTALL LINK SLAB PER DETAILS ON DRAWING RB-501 (TYP.)

3'-0" TYP.

BID ITEM 2.8 SEAL ENTIRE BRIDGE DECK, MEDIAN, AND SIDEWALK SURFACE WITH ~~SIKAGARD 705L,~~ Sikagard SN-100 INCLUDING PREP. BY MECH. MEANS PER MANU. RECOMMENDATIONS.

~~INCLUDE IN BID ITEM 2.4. CHASE EXISTING CRACKS WITH SIKADUR 55SLV EPOXY IN STRICT ACCORDANCE WITH MANUFACTURER'S REC'S. (TYP.)~~ Cracks were not visible. Work not done.

9'-0"

INCLUDE IN BID ITEM 1.11 CLEAN AND RECOAT TOP FLANGE OF FLOOR BEAMS PER DETAIL 4/RB503 (TYP.)

℄ ARCH

INCLUDE IN BID ITEM 1.1 INSTALL LINK SLAB PER DETAILS ON DRAWING RB-501 (TYP.)

INCLUDE IN BID ITEM 1.2 ADD 1" DIA. WEEP HOLE THRU CURB TO DRAIN LOW AREA. DO NOT DAMAGE REBAR.

3'-0" TYP.

INCLUDE IN BID ITEM 1.2 ADD 1" DIA. WEEP HOLE THRU CURB TO DRAIN LOW AREA. DO NOT DAMAGE REBAR.

INCLUDE IN BID ITEM 1.2 REPLACE CURB OVER LINK SLAB PER DETAIL 2/RB-503 (TYP.)

3'-0" VIF

12'-0"

12'-8"

INCLUDE IN BID ITEM 1.2 REPAIR SPALLED CONCRETE CURB PER DETAIL 2/RB503.

2'-0"

17'-8"

21'-9"

17'-8"

INCLUDE IN BID ITEM 2.9 REMOVE JOINT SEAL MATERIAL, SANDBLAST JOINT AND REPLACE WITH DOW CORNING 888 SILICONE PER MANUFACTURER'S RECOMMENDATIONS. INSTALL BACKER ROD IF NEEDED (TYP.)

INCLUDE IN BID ITEM 2.2 ADD 1" DIA. WEEP HOLE THRU CURB TO DRAIN LOW AREA. DO NOT DAMAGE REBAR.

15'-0"

14'-0"

17'-8"

21'-9"

10'-10"

INCLUDE IN BID ITEM 1.10 REPAIR SPALLED CONCRETE (UNDER DECK) PER DETAIL 1/RB504.

FLAG POLE

INCLUDE IN BID ITEM 1.4. CHASE EXISTING CRACKS WITH SIKADUR 55SLV EPOXY IN STRICT ACCORDANCE WITH MANUFACTURER'S REC'S. (TYP.)

INCLUDE IN BID ITEM 1.10 REPAIR SPALLED CONCRETE (UNDER DECK) PER DETAIL 1/RB504. (TYP.).

INCLUDE IN BID ITEM 1.2. REPAIR SPALLED CONCRETE CURB PER DETAIL 1/RB503 (TYP)

3'-4"

59'-5"

4'-0" MEDIAN ℄

22'-0" 2 LANES

CONCRETE MEDIAN

FLAG POLE

2'-1"

1'-8"

1'-3"

8'-4"

10'-0"

1'-3"

INCLUDE IN BID ITEM 1.7 REPAIR SPALLED CONCRETE PER DETAIL 1/RB503 (TYP.)

INCLUDE IN BID ITEM 2.2 REPAIR SPALLED CONCRETE CURB PER DETAIL 1/RB503 (TYP.)

INCLUDE IN BID ITEM 1.10 REPAIR SPALLED CONCRETE (UNDER DECK) PER DETAIL 1/RB504.

INCLUDE IN BID ITEM 1.7 REMOVE CONCRETE AROUND EXPOSED REBAR AND RECAST PER DETAIL 1/RB503

INCLUDE IN BID ITEM 1.10 REPAIR SPALLED CONCRETE (UNDER DECK) PER DETAIL 1/RB504.

INCLUDE IN BID ITEM 1.2 REPLACE CURB OVER LINK SLAB PER DETAIL 2/RB-503 (TYP.)

STEEL EXPANSION JOINT PLATE

INCLUDE IN BID ITEM 2.12 CLEAN AND RECOAT STEEL BARRIER PER DETAIL 3/RB502

1'-0"

INCLUDE IN BID ITEM 1.12 CLEAN AND RECOAT STEEL RAILING PER DETAIL 3/RB502

1'-3"

1'-3"

1'-3"

1'-3"

10"

1'-6½"

10"

$9\frac{1}{2}$" ± CURB

10'-8" SIDEWALK

2'-10"

5'-6"

1'-10"

10"

1'-0"

2'-8"

4'-4"

6"

1'-2"

13'-8"

1'-5"

4'-4"

2'-10"

1'-5"

3'-11"

2'-1"

10"

1'-0"

1 RB502

INCLUDE IN BID ITEM 2.12 REMOVE EXISTING ½" EXPANSION JOINT MATERIAL, CLEAN TOP FACE AND EXPOSED CORNER OF STEEL SIDEWALK EDGE AND RECOAT. SEE DETAIL 3/RB-502

~~INCLUDE IN BID ITEM 2.2 REPLACE CURB OVER LINK SLAB PER DETAIL 2/RB-503 (TYP.)~~ Curbs not removed on south side. Patching where required.

INCLUDE IN BID ITEM 2.5 REPAIR SPALLED SIDEWALK CONCRETE PER DETAIL 10/RB503 (TYP.)

~~INCLUDE IN BID ITEM 2.6 CHASE EXISTING SIDEWALK CRACKS WITH SIKADUR 55SLV EPOXY IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS (TYP.)~~ Cracks not visible. 3 coats of Sikagard SN-100 applied over this area.

INCLUDE IN BID ITEM 1.12 REMOVE EXISTING ½" EXPANSION JOINT MATERIAL, CLEAN TOP FACE AND EXPOSED CORNER OF STEEL SIDEWALK EDGE AND RECOAT. SEE DETAIL 3/RB-502

INCLUDE IN BID ITEM 1.14 REPAIR EXISTING PULLBOX PER DETAIL 1/RB-502

BID ITEM 1.8 SEAL ENTIRE BRIDGE DECK, MEDIAN, AND SIDEWALK SURFACE WITH SIKAGARD 705L, INCLUDING PREP. BY MECH. MEANS PER MANU. RECOMMENDATIONS.

INCLUDE IN BID ITEM 1.6 CHASE EXISTING SIDEWALK CRACKS WITH SIKADUR 55SLV EPOXY IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS (TYP.)

INCLUDE IN BID ITEM 1.5 REPAIR SPALLED SIDEWALK CONCRETE PER DETAIL 10/RB503 (TYP.)

3 RB101 PLAN REPAIR AREA (3 OF 6)

1/8" = 1'-0"

ENGINEER'S STAMP

LICENSED PROFESSIONAL ENGINEER J. C. SHERLOCK PROVINCE OF ONTARIO

NIAGARA FALLS BRIDGE COMMISSION

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MARK	DESCRIPTION	DATE	APPR.
	DISCLAIMER		

DESIGNED BY: S.GOLLANA
DRAWN BY: W.F.
CHKD BY: K.H.
SUBMITTED BY: WSP USA INC.
FILE NAME: RB-S121.dwg
SIZE: ANSI D
PLOTTED BY: PROPETTE,MSGLEB
DATE: 1/30/2018
SOLICITATION NO.
CONTRACT NO.: 187774
PLOT DATE: 1/30/2018

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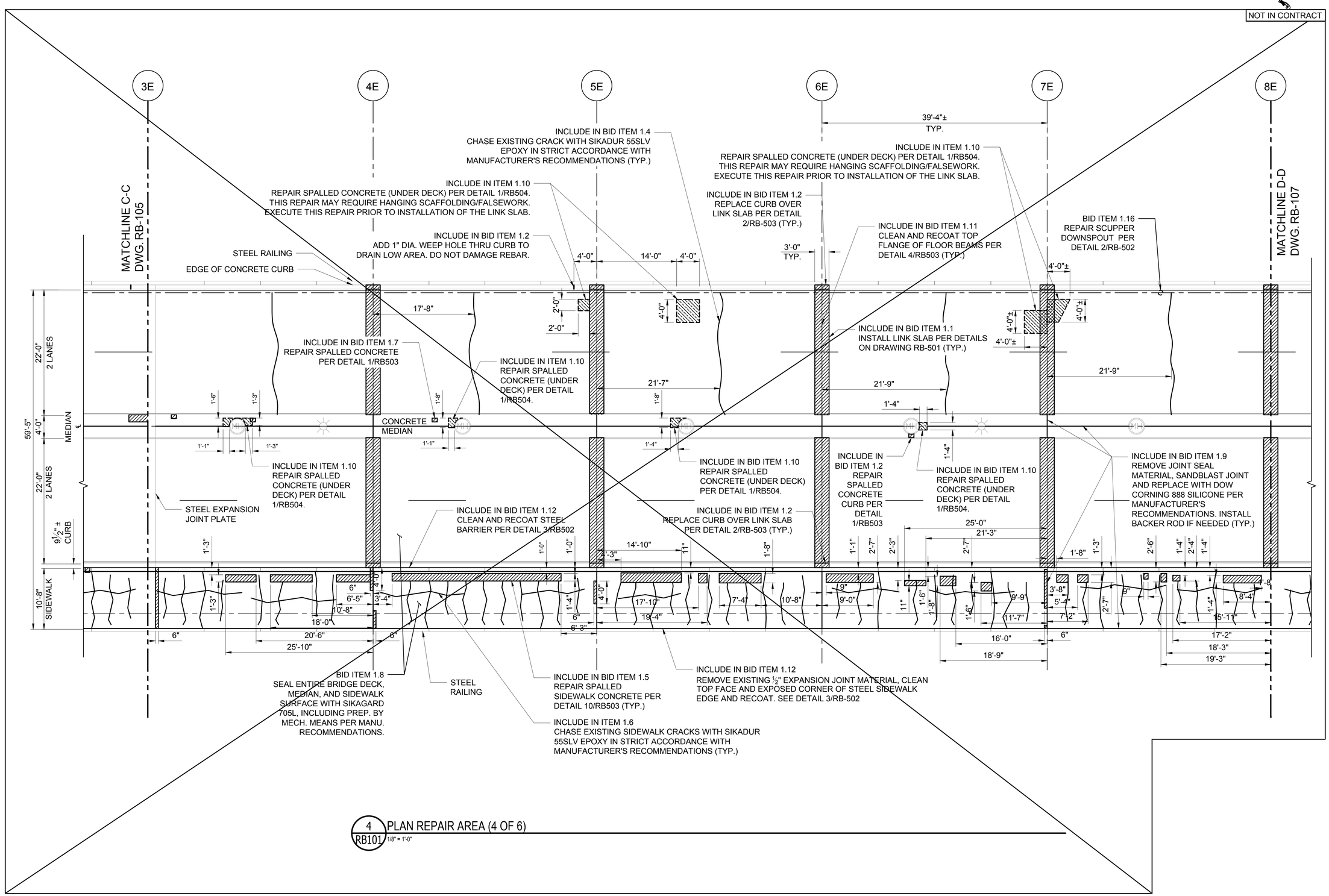
NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02-2B

RAINBOW BRIDGE REPAIRS
PLAN REPAIRS AREA 3

SHEET REFERENCE NUMBER
RB-105
SHEET 08 OF 29

J:\187774 - ntdb rainbow - whirlpool-lq bridge report\02-rainbow\1-CAD\RB-S121.dwg Wed, 31 Jan, 2018 - 11:48pm frechette\mb

NOT IN CONTRACT



4 RB101 PLAN REPAIR AREA (4 OF 6)
1/8" = 1'-0"

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MARK	DESCRIPTION	DATE	APPR.
	DISCLAIMER		

DESIGNED BY: S. GOLLAN
DRAWN BY: W.F.
CKD BY: K.H.
SUBMITTED BY: WSP USA INC.
DATE: 1/30/2018
SOLICITATION NO.:
CONTRACT NO.: 187774
FILE NAME: RB-S121.dwg
SIZE: ANSI D
PLOTTED BY: PRODETTE.WESLER
PLOT DATE: 1/30/2018

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NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02-2B

RAINBOW BRIDGE REPAIRS
PLAN REPAIRS AREA 4

SHEET REFERENCE NUMBER
RB-106
SHEET 09 OF 29

J:\187774 - nfcb rainbow - whirlpool-lq bridge repair\02-rainbow_CAD\RB-S121.dwg Wed, 31 Jan 2018 - 11:48pm frechettewb

NOT IN CONTRACT

8E 9E 10E 11E 12E 13E

MATCHLINE D-D
DWG. RB-106

UNITED STATES

39'-4"±
TYP.

3'-0"
TYP.

STEEL RAILING

EDGE OF CONCRETE CURB

EDGE OF CONCRETE MEDIAN

CONCRETE DECK

CONCRETE SIDEWALK

CONCRETE PAVEMENT

ASPHALT PAVEMENT

CONCRETE MEDIAN

CONCRETE MEDIAN

CONCRETE PAVEMENT

STEEL EXPANSION JOINT PLATE

STEEL RAILING

59'-5"

22'-0" 2 LANES

4'-0" MEDIAN

22'-0" 2 LANES

9½"± CURB

10'-8" SIDEWALK

21'-8"

23'-8"

17'-8"

11'-0"

15'-0"

17'-9"

21'-10"

13'-6"

7'-4"

6'-8"

7'-10"

1'-8"

1'-6"

1'-0"

1'-0"

21'-9"

25'-6"

21'-6"

17'-6"

3'-6"

10"

2'-0"

1'-4"

1'-5"

14'-9"

2'-7"

1'-4"

5'-7"

1'-6"

10"

1'-8"

2'-4"

1'-0"

1'-0"

6"

1 RB502

INCLUDE IN BID ITEM 1.4
CHASE EXISTING CRACKS WITH SIKADUR 55SLV EPOXY IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS (TYP.)

INCLUDE IN BID ITEM 1.2
REPAIR SPALLED CONCRETE CURB PER DETAIL 2/RB503.

INCLUDE IN BID ITEM 1.3
REPAIR MICROSILICA OVERLAY PER DETAIL 11/RB503.

INCLUDE IN BID ITEM 1.2
REPLACE CURB OVER LINK SLAB PER DETAIL 2/RB-503 (TYP.)

INCLUDE IN BID ITEM 1.11
CLEAN AND RECOAT TOP FLANGE OF FLOOR BEAMS PER DETAIL 4/RB503 (TYP.)

INCLUDE IN BID ITEM 1.3
REPAIR MICROSILICA OVERLAY PER DETAIL 11/RB503 (TYP.).

INCLUDE IN BID ITEM 1.1
INSTALL LINK SLAB PER DETAILS ON DRAWING RB-501 (TYP.)

INCLUDE IN BID ITEM 1.7
REPAIR SPALLED CONCRETE PER DETAIL 1/RB503 (TYP.)

INCLUDE IN BID ITEM 1.12
CLEAN AND RECOAT STEEL BARRIER PER DETAIL 3/RB502

INCLUDE IN BID ITEM 1.10
REPAIR SPALLED CONCRETE (UNDER DECK) PER DETAIL 1/RB504.

INCLUDE IN BID ITEM 1.2
REPAIR SPALLED CONCRETE CURB PER DETAIL 1/RB503 (TYP.).

INCLUDE IN BID ITEM 1.2
REPLACE CURB OVER LINK SLAB PER DETAIL 2/RB-503 (TYP.)

INCLUDE IN BID ITEM 1.9
REMOVE JOINT SEAL MATERIAL, SANDBLAST JOINT AND REPLACE WITH DOW CORNING 888 SILICONE PER MANUFACTURER'S RECOMMENDATIONS. INSTALL BACKER ROD IF NEEDED (TYP.)

INCLUDE IN BID ITEM 1.10
PERFORM CONCRETE REPAIRS TO ABUTMENT BACKWALL (UNDER DECK) PER DETAIL 1/RB504 AND PHOTO 2/RB504 (ASSUME 50 SF).

BID ITEM 1.8
SEAL ENTIRE BRIDGE DECK, MEDIAN, AND SIDEWALK SURFACE WITH SIKAGARD 705L, INCLUDING PREP. BY MECH. MEANS PER MANU. RECOMMENDATIONS.

INCLUDE IN BID ITEM 1.12
REMOVE EXISTING ½" EXPANSION JOINT MATERIAL, CLEAN TOP FACE AND EXPOSED CORNER OF STEEL SIDEWALK EDGE AND RECOAT. SEE DETAIL 3/RB-502

INCLUDE IN BID ITEM 1.6
CHASE EXISTING SIDEWALK CRACKS WITH SIKADUR 55SLV EPOXY IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS (TYP.)

INCLUDE IN BID ITEM 1.5
REPAIR SPALLED SIDEWALK CONCRETE PER DETAIL 10/RB503 (TYP.)

INCLUDE IN BID ITEM 1.14
REPAIR EXISTING PULLBOX PER DETAIL 1/RB-502

INCLUDE IN BID ITEM 1.13
REPLACE EXISTING SIDEWALK PLATE WITH NEW BENT PLATE WITH NON-SLIP COATING, PER ADA. SEE DETAIL 5/RB-503.

INCLUDE IN BID ITEM 1.13
REMOVE EXISTING 2" GROUT PATCH AND REPLACE WITH MGKRETE.

5 RB101 PLAN REPAIR AREA (5 OF 6)
1/8" = 1'-0"

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5365 Military Road, Lewiston, NY 14092
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MARK	DESCRIPTION	DATE	APPR.
	DISCLAIMER		

DATE: 1/30/2018
SOLICITATION NO.:
CONTRACT NO.: 187774
PLOT DATE: 1/30/2018

DESIGNED BY: S.VOLLMAN
CHKD BY: K.H.
DRWN BY: W.F.
SUBMITTED BY: WSP USA INC.
FILE NAME: RB-S121.dwg
SIZE: ANSI D
PLOTTED BY: PROPETTE,WESLEY B.

NIAGARA FALLS BRIDGE COMMISSION
Administration Building
5365 Military Road
Lewiston, NY 14092

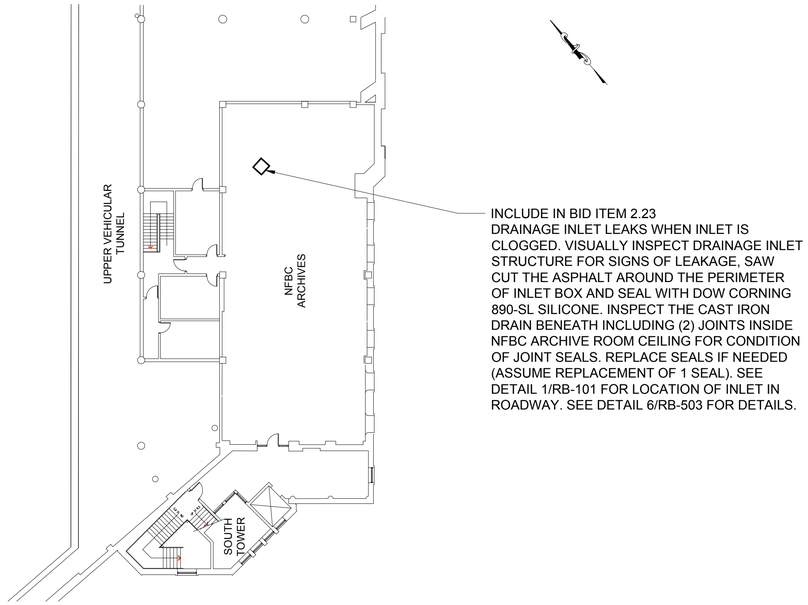
WSP USA Inc.
50 Main Street
Suite 111
White Plains, NY 10606
(716) 853-1220

NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02-2B

RAINBOW BRIDGE REPAIRS
PLAN REPAIRS AREA 5

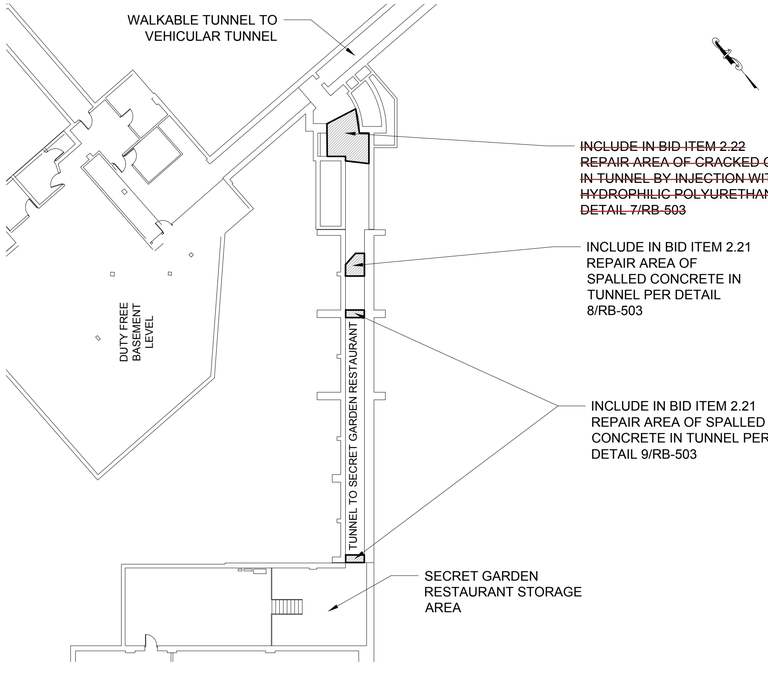
SHEET REFERENCE NUMBER
RB-107
SHEET 10 OF 29

J:\187774 - rfdb rainbow - whirlpool-lq bridge repair\02-rainbow\C4D\RB-S121.dwg Wed, 31 Jan 2018 - 11:48am frechettejb



INCLUDE IN BID ITEM 2.23
DRAINAGE INLET LEAKS WHEN INLET IS CLOGGED. VISUALLY INSPECT DRAINAGE INLET STRUCTURE FOR SIGNS OF LEAKAGE, SAW CUT THE ASPHALT AROUND THE PERIMETER OF INLET BOX AND SEAL WITH DOW CORNING 890-SL SILICONE. INSPECT THE CAST IRON DRAIN BENEATH INCLUDING (2) JOINTS INSIDE NFBC ARCHIVE ROOM CEILING FOR CONDITION OF JOINT SEALS. REPLACE SEALS IF NEEDED (ASSUME REPLACEMENT OF 1 SEAL). SEE DETAIL 1/RB-101 FOR LOCATION OF INLET IN ROADWAY. SEE DETAIL 6/RB-503 FOR DETAILS.

6 RB101 PLAN REPAIRS AREA 6 - RAINBOW BRIDGE PLAZA LEVEL 2
1" = 20'



~~INCLUDE IN BID ITEM 2.22
REPAIR AREA OF CRACKED CONCRETE IN TUNNEL BY INJECTION WITH HYDROPHILIC POLYURETHANE PER DETAIL 7/RB-503~~

Item removed from contract. Work not complete, deemed unnecessary/ improper repair.

INCLUDE IN BID ITEM 2.21
REPAIR AREA OF SPALLED CONCRETE IN TUNNEL PER DETAIL 8/RB-503

INCLUDE IN BID ITEM 2.21
REPAIR AREA OF SPALLED CONCRETE IN TUNNEL PER DETAIL 9/RB-503

SECRET GARDEN RESTAURANT STORAGE AREA

7 RB101 PLAN REPAIRS AREA 7 - RAINBOW BRIDGE PLAZA BASEMENT/TUNNEL
1" = 20'

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DISCLAIMER

MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY: SOLLANA
DWN BY: W.F.
CKD BY: K.H.
SUBMITTED BY: WSP USA INC.
FILE NAME: RB-S101.dwg
SIZE: ANSI D
PLOTTED BY: ROCHETTE, HEIDI B.
DATE: 1/30/2018
SOLICITATION NO.:
CONTRACT NO.: 187774
PLOT DATE: 1/30/2018

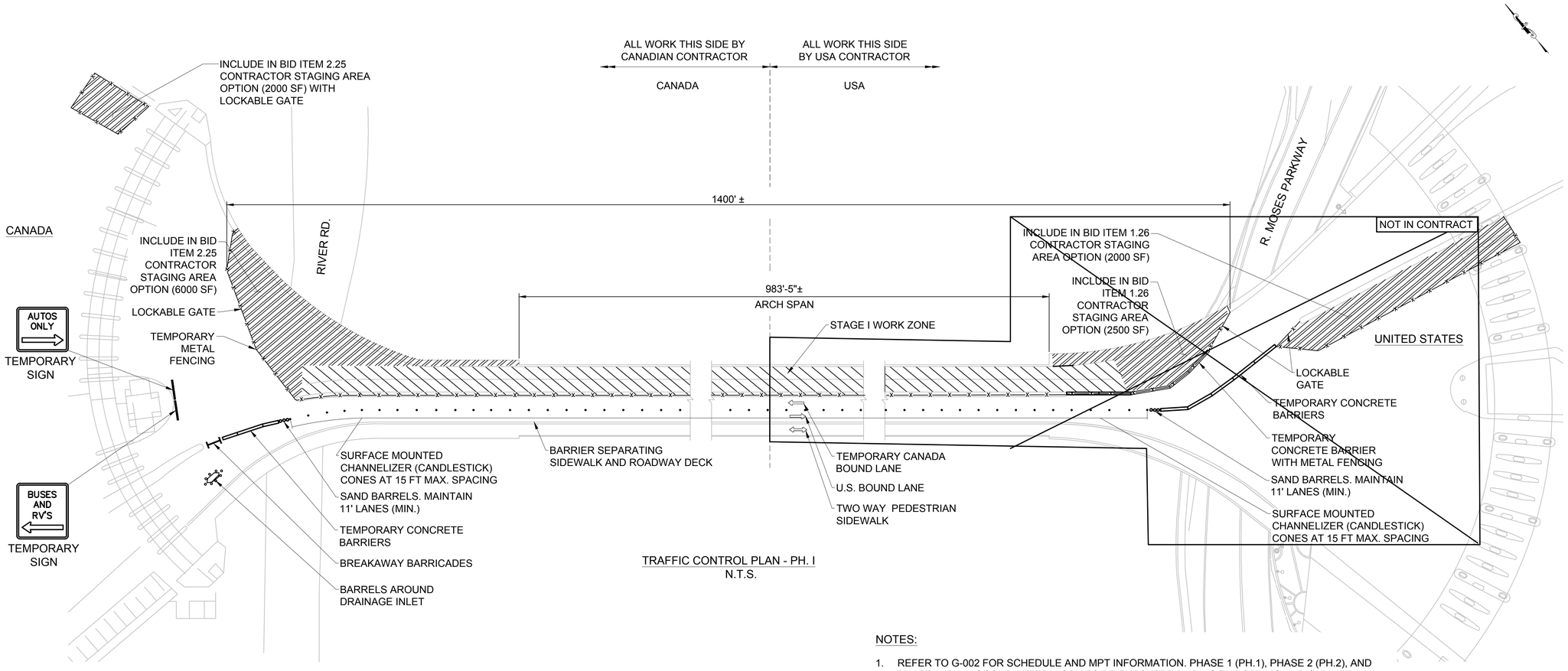
NIAGARA FALLS BRIDGE COMMISSION
Administration Building
5365 Military Road
Lewiston, NY 14092

WSP USA Inc.
1 Penn Plaza, West
Suite 711
Lewiston, NY 14220
(716) 853-1220

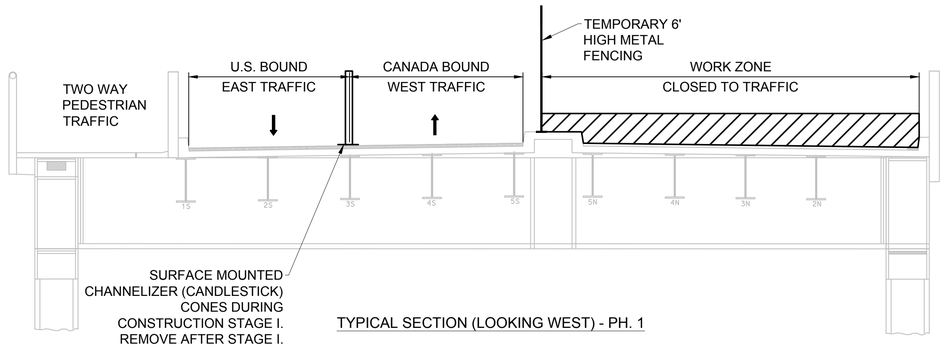
NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02-2B
RAINBOW BRIDGE REPAIRS
PLAN REPAIRS AREA 6 AND AREA 7

ENGINEER'S STAMP
LICENSED PROFESSIONAL ENGINEER
C. SHERLOCK
PROVINCE OF ONTARIO

SHEET REFERENCE NUMBER
RB-108
SHEET 11 OF 29



TRAFFIC CONTROL PLAN - PH. I
N.T.S.



TYPICAL SECTION (LOOKING WEST) - PH. 1

NOTES:

1. REFER TO G-002 FOR SCHEDULE AND MPT INFORMATION. PHASE 1 (PH.1), PHASE 2 (PH.2), AND PHASE 3 (PH.3) OCCUR AFTER WORK TO BE EXECUTED DURING THE SPRING AND SUMMER MONTHS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL. MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE PLANS, THE NEW YORK STATE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (NYSMUTCD), NYSDOT SPECIFICATION 619, AND AS APPROVED OR DIRECTED BY THE ENGINEER. TRAFFIC CONTROL SCHEMES SHOWN ON THE PLANS OR IN THE NYSMUTCD ARE TO BE CONSIDERED MINIMUM REQUIREMENTS. THE ENGINEER MAY ORDER ADDITIONAL SIGNS, FLAGGERS, CONES, REFLECTORIZATION, ETC. IF THE ENGINEER DEEMS IT NECESSARY, AT NO ADDITIONAL COST TO THE NFBC.
3. THE PLAN SHOWN IS SUGGESTED. THE CONTRACTOR IS RESPONSIBLE FOR MEETING SCHEDULE AND MPT REQUIREMENTS AND MAY SUBMIT REVISIONS TO THIS PLAN FOR APPROVAL BY THE NFBC.
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6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL ALL SIGNS, BARRIERS, SAND BARRELS, CONES AND PAVEMENT STRIPES NECESSARY TO MAINTAIN TRAFFIC DURING CONSTRUCTION, AND TO PROVIDE DAILY PATROLS TO ENSURE THAT THE PROPER SIGNS, STRIPES, AND OTHER EQUIPMENT ARE IN GOOD CONDITION.

1 / - MAINTENANCE AND PROTECTION OF TRAFFIC PLAN - PHASE 1 (PH. 1)
1" = 50'

~~-INCLUDE MPT IN BID ITEM 1.25 (USA)~~ N.I.C.
-INCLUDE MPT IN BID ITEM 2.24 (CANADA)

ENGINEER'S STAMP
LICENSED PROFESSIONAL ENGINEER
C. SHERLOCK
PROVINCE OF ONTARIO

NIAGARA FALLS BRIDGE COMMISSION
5365 Military Road, Lewiston, NY 14092
P: (716) 285-6322 • F: (716) 282-3292

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DISCLAIMER

MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY: S. SHERLOCK
DRAWN BY: W.F.
CHKD BY: K.H.
DATE: 1/30/2018
SOLICITATION NO.: 2016-02-2B
CONTRACT NO.: 187774
SUBMITTED BY: WSP USA INC.
PLOTTED BY: ROCHETTE, MEGHEN
PLOT DATE: 1/30/2018
FILE NAME: RB-S101.dwg
SIZE: ANSI D

NIAGARA FALLS BRIDGE COMMISSION
Administration Building
5365 Military Road
Lewiston, NY 14092

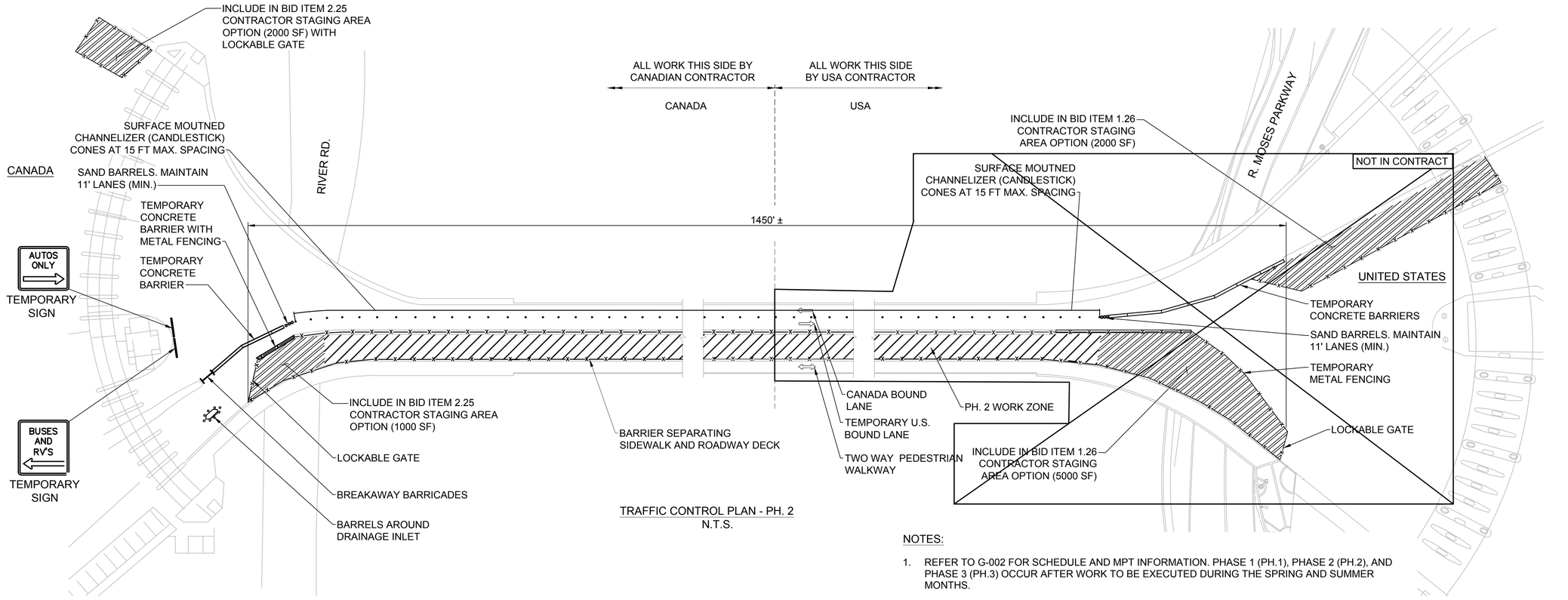
WSP USA Inc.
1400 Liberty Blvd.
Suite 111
Niagara Falls, NY 14302
(716) 853-1228

NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02-2B

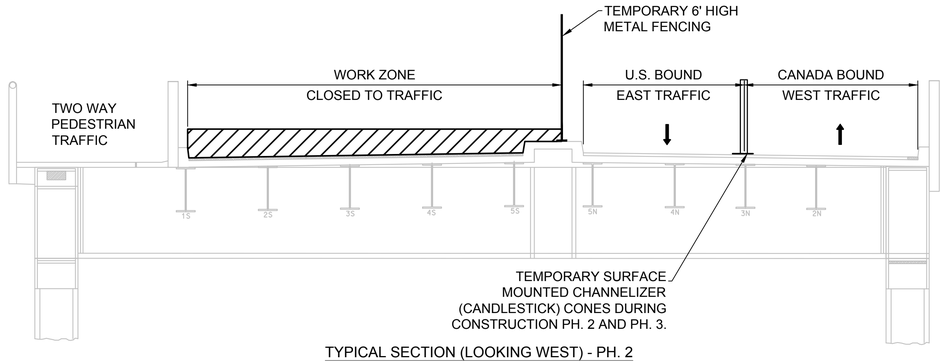
RAINBOW BRIDGE REPAIRS
MAINTENANCE & PROTECTION OF TRAFFIC
STAGE 1

SHEET REFERENCE NUMBER
RB-111
SHEET 12 OF 29

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TRAFFIC CONTROL PLAN - PH. 2
N.T.S.



TYPICAL SECTION (LOOKING WEST) - PH. 2

NOTES:

1. REFER TO G-002 FOR SCHEDULE AND MPT INFORMATION. PHASE 1 (PH.1), PHASE 2 (PH.2), AND PHASE 3 (PH.3) OCCUR AFTER WORK TO BE EXECUTED DURING THE SPRING AND SUMMER MONTHS.
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1 / - MAINTENANCE AND PROTECTION OF TRAFFIC PLAN - PHASE 2 (PH. 2)

1" = 50'

~~-INCLUDE MPT IN BID ITEM 1.25 (USA)~~ N.I.C.

-INCLUDE MPT IN BID ITEM 2.24 (CANADA)

ENGINEER'S STAMP

LICENSED PROFESSIONAL ENGINEER
C. SHERLOCK
PROVINCE OF ONTARIO

NIAGARA FALLS BRIDGE COMMISSION
5365 Military Road, Lewiston, NY 14092
P: (716) 285-6322 • F: (716) 282-3292

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DISCLAIMER

MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY: S. SHERLOCK
DRAWN BY: W.F.
CHKD BY: K.H.
DATE: 1/30/2018
SOLICITATION NO.
SUBMITTED BY: WSP USA INC.
CONTRACT NO.: 187774
FILE NAME: RB-S101.dwg
SIZE: ANSI D
PLOTTED BY: FRECHETTEL.MSGER
PLOT DATE: 1/30/2018

NIAGARA FALLS BRIDGE COMMISSION
Administration Building
5365 Military Road
Lewiston, NY 14092

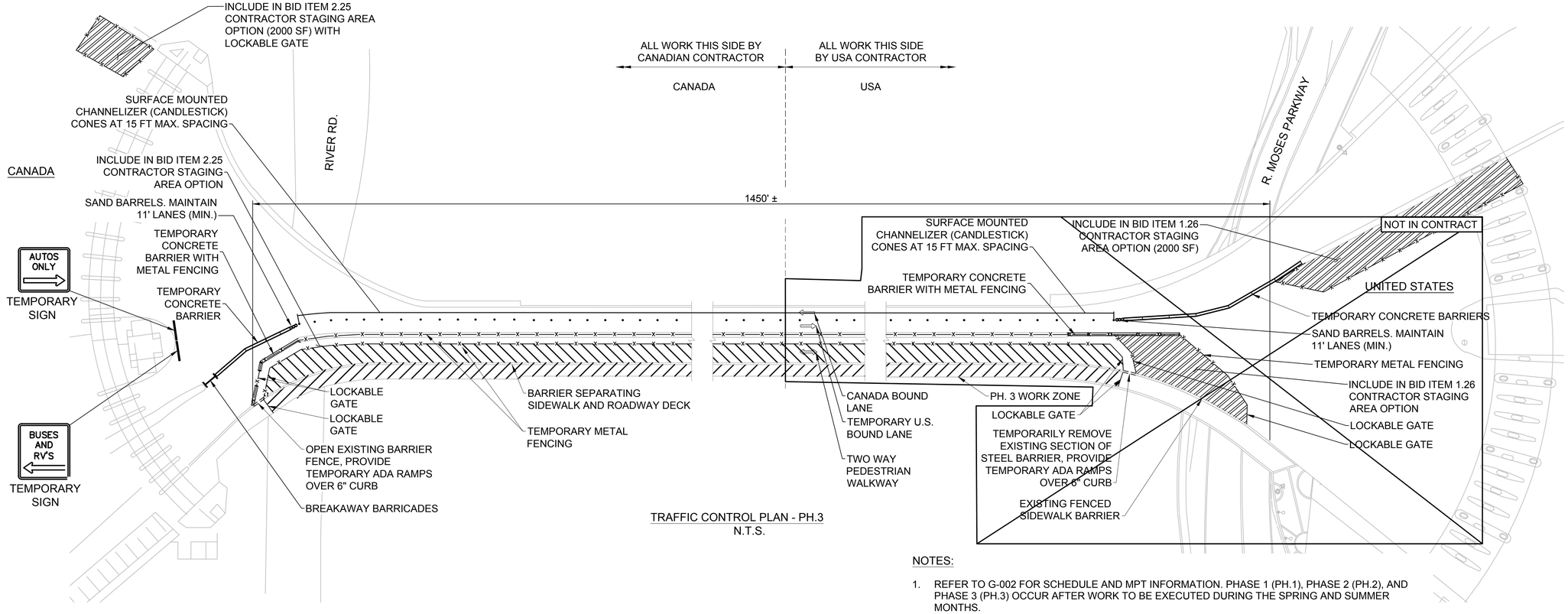
WSP USA Inc.
300 Pearl Street, Suite 111, Buffalo, NY 14202
(716) 853-1220

NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02-2B

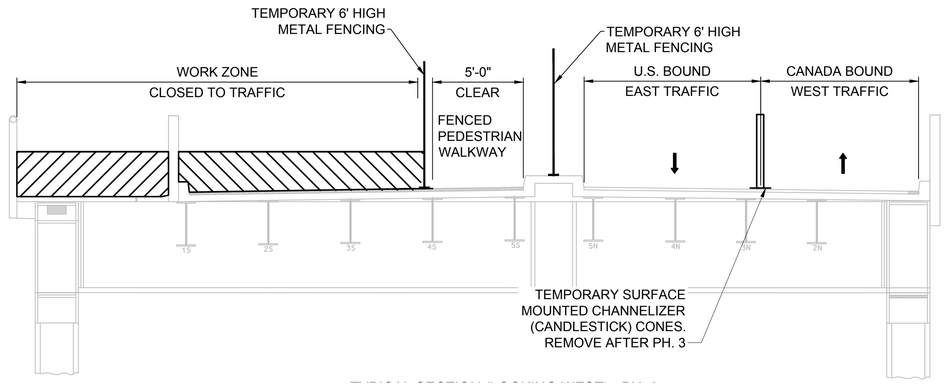
RAINBOW BRIDGE REPAIRS
MAINTENANCE & PROTECTION OF TRAFFIC
STAGE 2

SHEET REFERENCE NUMBER
RB-112
SHEET 13 OF 39

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TRAFFIC CONTROL PLAN - PH.3
N.T.S.



NOTES:

1. REFER TO G-002 FOR SCHEDULE AND MPT INFORMATION. PHASE 1 (PH.1), PHASE 2 (PH.2), AND PHASE 3 (PH.3) OCCUR AFTER WORK TO BE EXECUTED DURING THE SPRING AND SUMMER MONTHS.
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1 / - MAINTENANCE AND PROTECTION OF TRAFFIC PLAN - PHASE 3 (PH.3)

1" = 50'

~~-INCLUDE MPT IN BID ITEM 1.25 (USA)~~ N.I.C.

-INCLUDE MPT IN BID ITEM 2.24 (CANADA)

ENGINEER'S STAMP

LICENSED PROFESSIONAL ENGINEER
C. SHERLOCK
PROVINCE OF ONTARIO

NIAGARA FALLS BRIDGE COMMISSION
5365 Military Road, Lewiston, NY 14092
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DISCLAIMER

MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY: S. SOLLAND
DRAWN BY: W. F.
CHD BY: K.H.
SUBMITTED BY: WSP USA INC.
DATE: 1/30/2018
SOLICITATION NO.
CONTRACT NO.: 187774
FILE NAME: RB-S101.dwg
SIZE: ANSI D
PLOTTED BY: PEGFETTE,VESSELB
PLOT DATE: 1/30/2018

NIAGARA FALLS BRIDGE COMMISSION
Administration Building
5365 Military Road
Lewiston, NY 14092

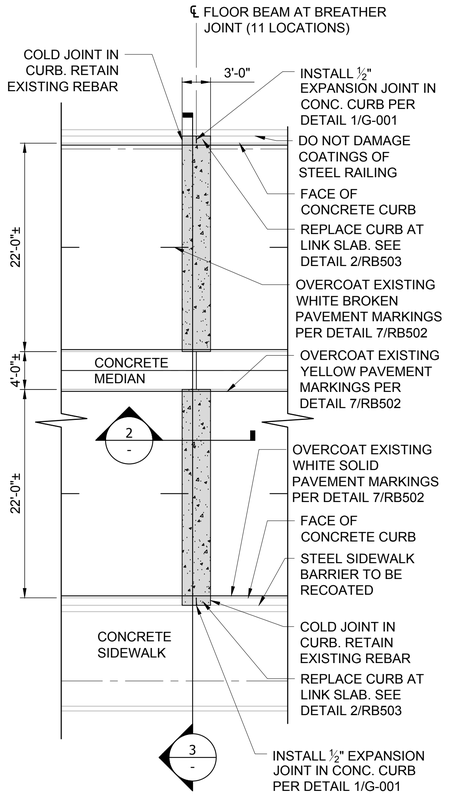
WSP USA Inc.
300 Pearl Street
Buffalo, NY 14202
Suite 111
(716) 853-1220

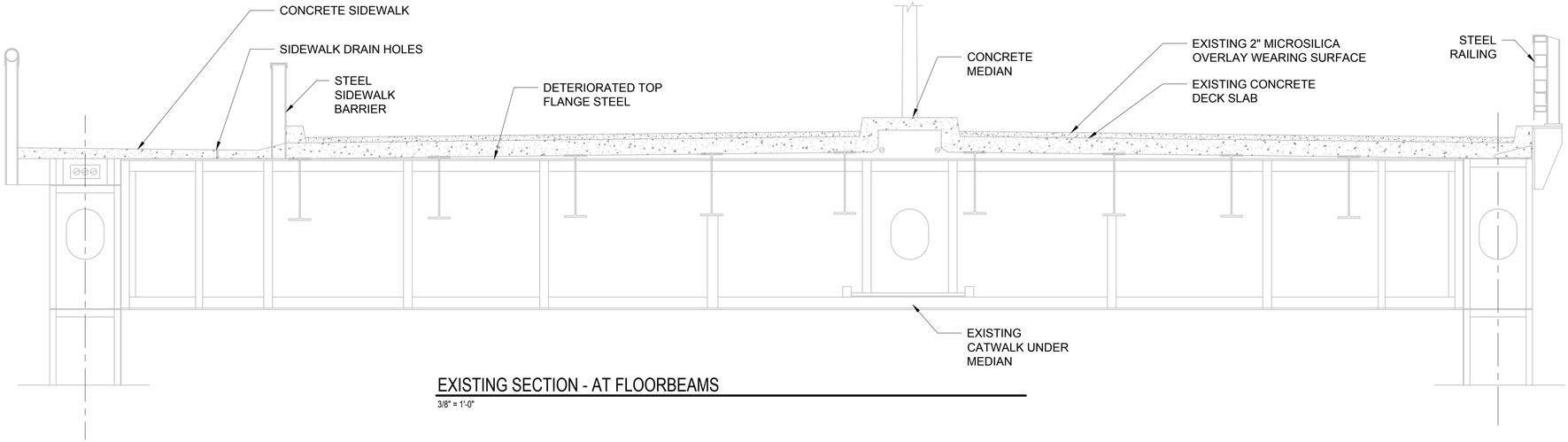
NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02-2B

RAINBOW BRIDGE REPAIRS
MAINTENANCE & PROTECTION OF TRAFFIC
STAGE 3

SHEET REFERENCE NUMBER
RB-113
SHEET 14 OF 29

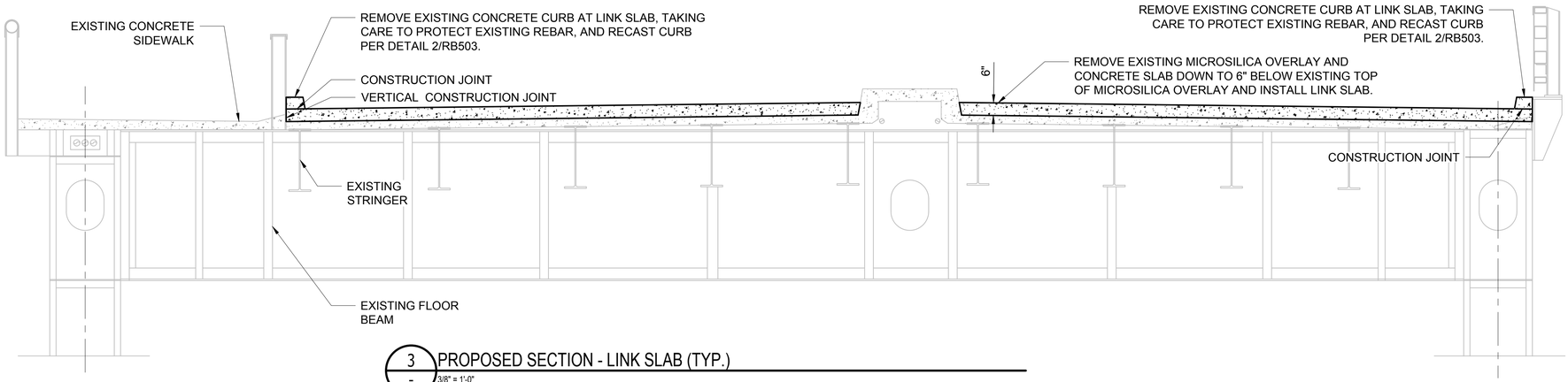
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EXISTING SECTION - AT FLOORBEAMS

3/8" = 1'-0"

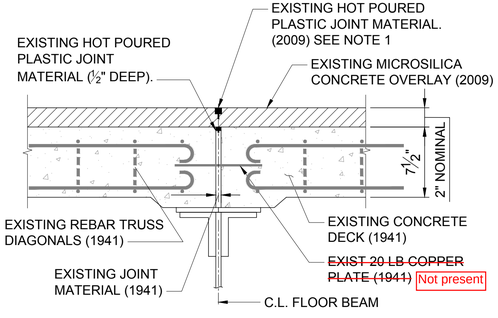


1 / RB103 PLAN - LINK SLAB (TYP.)

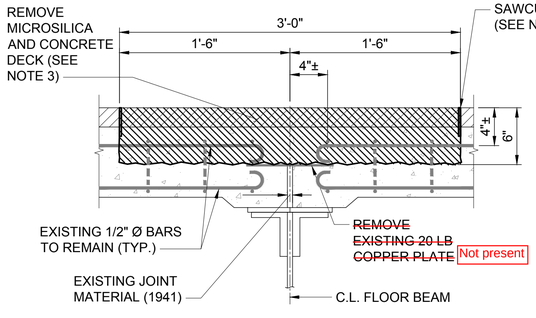
1" = 1/8" = 1'-0"

3 / - PROPOSED SECTION - LINK SLAB (TYP.)

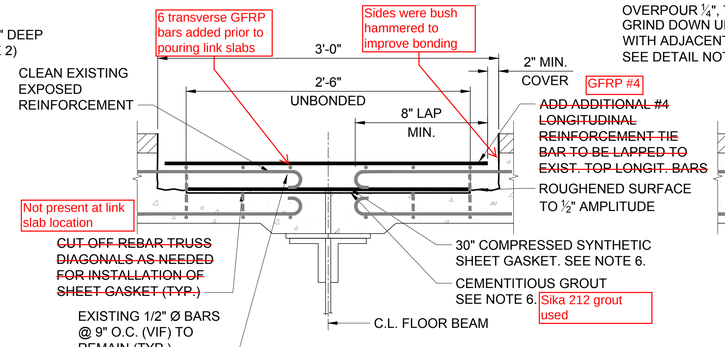
3/8" = 1'-0"



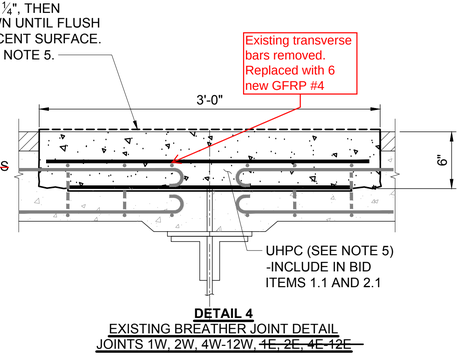
DETAIL 1
EXISTING BREATHER JOINT DETAIL
JOINTS 1W, 2W, 4W-12W, ~~4E, 2E, 4E-12E~~



DETAIL 2
EXISTING BREATHER JOINT DETAIL
JOINTS 1W, 2W, 4W-12W, ~~4E, 2E, 4E-12E~~



DETAIL 3
EXISTING BREATHER JOINT DETAIL
JOINTS 1W, 2W, 4W-12W, ~~4E, 2E, 4E-12E~~



DETAIL 4
EXISTING BREATHER JOINT DETAIL
JOINTS 1W, 2W, 4W-12W, ~~4E, 2E, 4E-12E~~

2 / - DETAIL - LINK SLAB INSTALLATION

NTS

~~BID ITEM 1.1 (USA)~~ N.I.C.
BID ITEM 2.1 (CANADA)

Lafarge recommended pre-wetting prior to pouring. No bonding agent required.

NOTES:

1. HOT POURED PLASTIC JOINT MATERIAL INSTALLED IN 2009 MAY NOT LINE UP DIRECTLY OVER ORIGINAL 1941 JOINT.
2. SAWCUT TO DEPTH OF 3". TAKE CARE NOT TO CUT OR DAMAGE EXISTING REINFORCEMENT.
3. REMOVE MICROSILICA AND STRUCTURAL CONCRETE DECK TO DEPTH BELOW TOP MAT OF REINFORCEMENT. METHOD OF REMOVAL SHALL ~~NOT DAMAGE~~ EXISTING REINFORCEMENT OR CONCRETE TO REMAIN.
4. REFER TO NYSDOT ITEM 557.20010010.
5. PREP SURFACES AND APPLY ~~BONDING AGENT~~ PER LAFARGE RECOMMENDATIONS FOR THE ULTRA HIGH PERFORMANCE CONCRETE PRODUCT (UHPC). FORM AND FILL VOID WITH UHPC (LAFARGE DUCTAL JS1212). OVERPOUR ¼" USING CLOSED FORMS WITH PORTS TO ALLOW AIR TO ESCAPE DURING SUBSIDENCE, AND ALLOW IT TO SET UNTIL IT REACHES 10KSI (DO NOT WAIT UNTIL IT REACHES 28 KSI) TO GRIND DOWN SURFACE SO THAT THE SURFACE IS FLUSH WITH TOP OF ADJACENT MICROSILICA OVERLAY SURFACE.
6. GASKET SHALL BE PROVIDED ON A LEVEL SURFACE AND PROTECTED FROM DAMAGE DURING CONCRETE POURING.
7. LINK SLAB AREA SHALL BE PREHEATED AND TEMPERATURE CONTROLLED DURING POURING AND CURING. TEMPERATURE SHALL BE CLOSELY MONITORED USING THERMOCOUPLES. TEMPERATURE CONTROL MAY INVOLVE THE USE OF HEATED INSULATING BLANKETS, ENCLOSURES, OR OTHER METHODS UNTIL THE MATERIAL REACHES 10KSI.
8. LINK SLABS MAY BE OPEN TO TRAFFIC WHEN THE MATERIAL REACHES AT LEAST 12 KSI.

Use of blankets was not required at this time of year as per Lafarge. Thermocouples were inserted by RCI

ENGINEER'S STAMP

LICENSED PROFESSIONAL ENGINEER
P.A. SCALZO
40860017
01/27/18
PROVINCE OF ONTARIO

NIAGARA FALLS BRIDGE COMMISSION
5365 Military Road, Lewiston, NY 14092
P: (716) 285-6322 • F: (716) 282-3292

IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECT SUPERVISION OF A LICENSED ARCHITECT OR ENGINEER, TO ALTER IN ANY WAY ANY ITEM BEARING THE SEAL OF AN ARCHITECT OR ENGINEER IS ALTERED, THE ALTERING ARCHITECT OR ENGINEER SHALL AFFIX TO THEIR ITEM THE SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY THEIR NAME AND SIGNATURE AND THE DATE OF SUCH ALTERATION AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

DISCLAIMER

MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY: S.CIOLANKA
DRAWN BY: W.F.
CHKD BY: K.H.
DATE: 1/30/2018
SOLICITATION NO.: 187774
CONTRACT NO.: 187774
SUBMITTED BY: WSP USA INC.
FILE NAME: RB-S501.dwg
SIZE: ANSI D
PLOTTED BY: RECHETTE, MEGHEN
PLOT DATE: 1/30/2018

NIAGARA FALLS BRIDGE COMMISSION
Administration Building
5365 Military Road
Lewiston, NY 14092

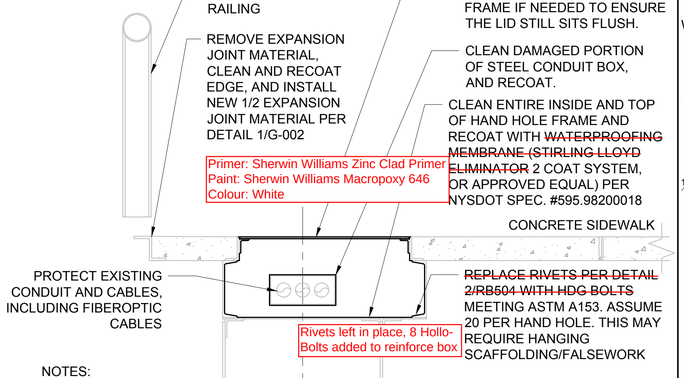
WSP USA Inc.
300 Pearl Street, Suite 111 - 14202
Buffalo, NY
(716) 853-1220

NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02-2B

RAINBOW BRIDGE REPAIRS
DETAILS (1 OF 6)

SHEET REFERENCE NUMBER
RB-501
SHEET 15 OF 29

J:\187774 - nfcb rainbow + whirlpool-lq bridge reports\02-rainbow_CAD\RB-S501.dwg Wed, 31 Jan 2018 - 11:48pm rechettewb



NOTES:

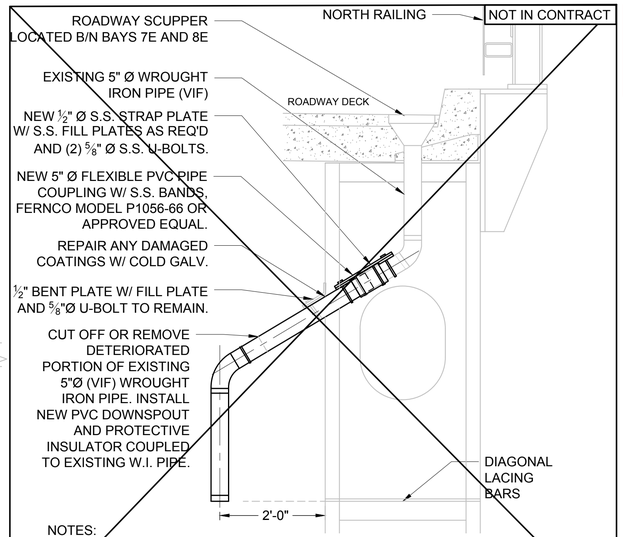
1. RIVET REPLACEMENT CAN OCCUR PRIOR TO PH. 3, AS LONG AS IT DOES NOT DISRUPT PEDESTRIAN TRAFFIC ON THE SIDEWALK. ALL OTHER WORK ASSOCIATED WITH THIS BID ITEM SHALL BE COMPLETED DURING PH. 3.

1/RB101 DETAIL - SIDEWALK UTILITY HAND HOLE REPAIRS (TYP.)

3/4" = 1'-0"

~~BID ITEM 1.14 (USA) - 2 LOCATIONS~~ N.I.C.

BID ITEM 2.14 (CANADA) - 1 LOCATION



NOTES:

1. THIS REPAIR MAY REQUIRE HANGING SCAFFOLDING/FALSEWORK FOR ACCESS

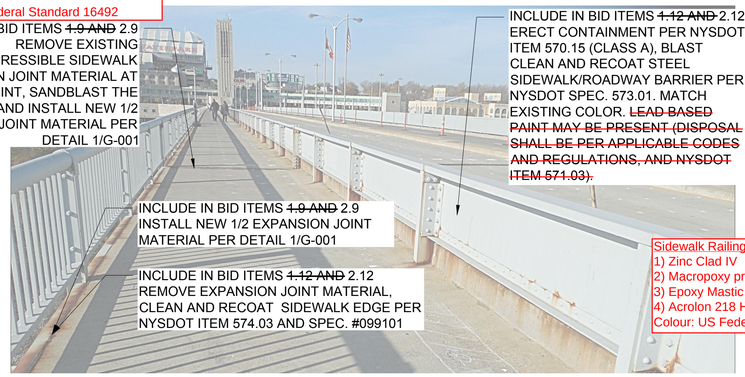
2/RB106 DETAIL - DOWNSPOUT REPAIR @ BAY 7E-8E

3/4" = 1'-0"

BID ITEM 1.16 (USA)

Sidewalk Angle Iron Paint System:
1)Corothane 1 Mio/Aluminum Spot Prime & Intermediate Coat
2)Corothane 1 HS Moisture Cure Urethane Topcoat
Colour: US Federal Standard 16492

INCLUDE IN BID ITEMS ~~1.9 AND~~ 2.9 REMOVE EXISTING COMPRESSIBLE SIDEWALK EXPANSION JOINT MATERIAL AT EACH JOINT, SANDBLAST THE JOINT, AND INSTALL NEW 1/2 EXPANSION JOINT MATERIAL PER DETAIL 1/G-001



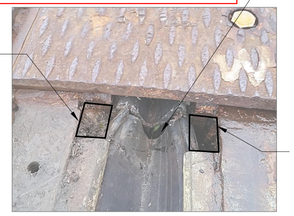
3/RB103 CLEAN AND RECOAT STEEL SIDEWALK COMPONENTS

N.T.S.

~~BID ITEMS 1.9 AND 1.12 (USA)~~ N.I.C.

BID ITEMS 2.9 AND 2.12 (CANADA)

Removed and replaced rubber seal with Watson Bowman FS Bridge Seal FS-400

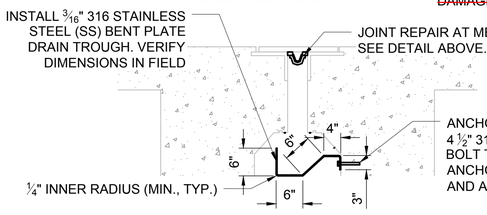


~~CLEAN DEBRIS OUT FROM GAP AND WELD STEEL TAB TO ARMOR ANGLE TO FILL THE GAP. SEAL ALL AROUND WITH 100% SILICONE TO COMPLETELY SEAL OFF THE JOINT.~~

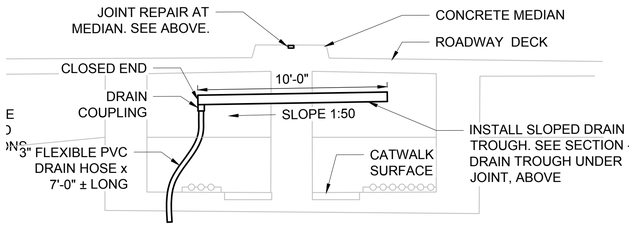
~~CAREFULLY TRIM OFF DAMAGED PORTION OF NEOPRENE JOINT AND REPAIR BY SPLICING WITH RJ WATSON SILICOFLEX SF400 UTILIZING SILICOFLEX PRIMERS AND APPROPRIATE LOCKING ADHESIVE, OR APPROVED EQUAL. JOINT SPLICE REPAIRS SHALL BE COMPLETED BY OR SUPERVISED BY JOINT SPLICE MANUFACTURER.~~

~~CLEAN DEBRIS OUT FROM GAP AND WELD STEEL TAB (APPROX. 2"x1"x½", VIF) TO ARMOR ANGLE TO FILL THE GAP. SEAL ALL AROUND WITH SILICONE TO COMPLETELY SEAL OFF THE JOINT. DO NOT DAMAGE JOINT SEAL~~

DETAIL - JOINT REPAIR AT MEDIAN
-INCLUDE IN BID ITEM 2.16



SECTION - DRAIN TROUGH UNDER JOINT



ELEVATION - DRAIN TROUGH UNDER JOINT (LOOKING EAST)
-INCLUDE IN BID ITEM 2.16

6/RB101 CANADIAN JOINT REPAIR AND DRAIN TROUGH

N.T.S.

BID ITEM 2.16 (CANADA)

REPAIR WATERPROOFING MEMBRANE WITH MATERIAL MEETING OPSS 1213 PER OPSS 914 AND MANUFACTURER'S RECOMMENDATIONS.

Waterproofing membrane repaired with W.R. Meadows Hydralastic 836 with reinforcing HCR fabric.

REPAIR PROTECTION BOARD IF NEEDED.

EXISTING ASPHALT OVERLAY

EXISTING WATERPROOFING MEMBRANE

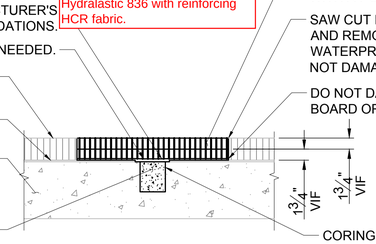
EXISTING 9" STRUCTURAL CONCRETE SLAB

REPAIR CORE HOLE WITH MASTEREMACO T1060 (RAPID SET MORTAR). ALLOW TO CURE 4 HRS. BEFORE COATING

APPLY TACK COATS AND PAVE WITH ASPHALT MIX HL3 (MEETING OPSS 1150, INSTALL PER OPSS 310) IN 2 LIFTS. COMPACT BINDER WITH A POWER TAMPER AND TOP COURSE WITH A ROLLER

SAW CUT EXISTING ASPHALT TOP COURSE AND REMOVE ASPHALT OVERLAY DOWN TO WATERPROOFING LAYER. TAKE CARE TO NOT DAMAGE THE WATERPROOFING LAYER.

DO NOT DAMAGE EXISTING PROTECTION BOARD OR WATERPROOFING LAYER.



CORING PERFORMED BY OTHERS. SEE NOTES.

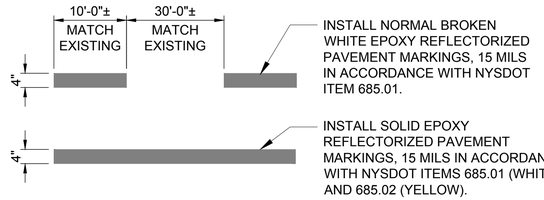
NOTES:

1. LOCATIONS SHOWN IN CONTRACT DRAWINGS ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE WITH ENGINEER AND VECTOR CORROSION SERVICES ON INVESTIGATION LOCATIONS AND DATES FOR THE WORK.
2. CONTRACTOR SHALL REMOVE ASPHALT WHERE INDICATED, TAKING CARE NOT TO DAMAGE THE WATERPROOF MEMBRANE.
3. VECTOR CORROSION SERVICES WILL PENETRATE THE WATERPROOF MEMBRANE AND PERFORM THE CORING

4/RB101 ASPHALT PAVEMENT PATCHING AT FOUR (4) INVESTIGATION LOCATIONS

1/2" = 1'-0"

INCLUDE IN BID ITEM 2.19 (CANADA)



NOTES:

1. ALL PAVEMENT MARKINGS INSTALLED SHALL BE EPOXY REFLECTORIZED MEETING NYSDOT SPECIFICATIONS.
2. ALL PAVEMENT MARKINGS SHALL BE PLACED IN THE SAME LOCATIONS AS EXISTING PAVEMENT MARKINGS ON THE BRIDGE PER MANUFACTURER'S RECOMMENDATIONS FOR OVERCOATING. SEE PLAN FOR LAYOUT.
3. REMOVE ANY FOREIGN DEBRIS FROM THE SURFACE PRIOR TO APPLICATION (WASH, BRUSH).

7/RB101 PAVEMENT MARKINGS - OVERCOATING

N.T.S.

~~-INCLUDE IN BID ITEM 1.15 (USA)~~ N.I.C.

-INCLUDE IN BID ITEM 2.15 (CANADA)

INSTALL WATERPROOFING MEMBRANE MATERIAL MEETING OPSS 1213 PER OPSS 914 AND MANUFACTURER'S RECOMMENDATIONS.

EXISTING ASPHALT OVERLAY

EXISTING 5" (VIF) LIGHTWEIGHT CONCRETE

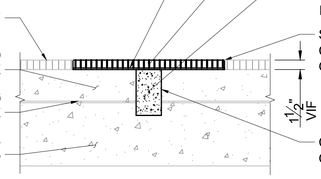
EXISTING WATERPROOFING MEMBRANE

EXISTING STRUCTURAL CONCRETE SLAB

REPAIR ASPHALT WITH ASPHALT MIX HL3 (MEETING OPSS 1150, INSTALL PER OPSS 310). APPLY TACK COATS AND COMPACT WITH A ROLLER.

REPAIR CORE HOLE WITH MASTEREMACO T1060 (RAPID SET MORTAR). ALLOW TO CURE 4 HRS. BEFORE COATING

SAW CUT EXISTING ASPHALT TOP COURSE AND REMOVE ASPHALT OVERLAY DOWN TO CONCRETE.



CORING PERFORMED BY OTHERS. SEE NOTES.

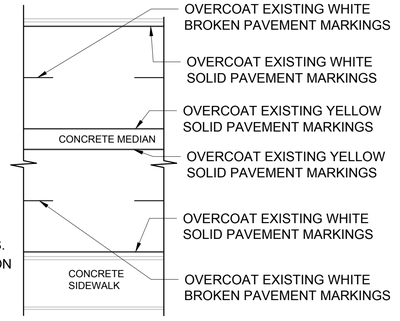
NOTES:

1. LOCATIONS SHOWN IN CONTRACT DRAWINGS ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE WITH ENGINEER AND VECTOR CORROSION SERVICES ON INVESTIGATION LOCATIONS AND DATES FOR THE WORK.
2. CONTRACTOR SHALL REMOVE ASPHALT WHERE INDICATED.
3. VECTOR CORROSION SERVICES WILL PERFORM THE CORING

5/RB101 ASPHALT PAVEMENT PATCHING AT TWO (2) INVESTIGATION LOCATIONS

1/2" = 1'-0"

INCLUDE IN BID ITEM 2.19 (CANADA)



PLAN - PAVEMENT MARKINGS LAYOUT

ENGINEER'S STAMP

LICENSED PROFESSIONAL ENGINEER
C. SHERLOCK
PROVINCE OF ONTARIO

NIAGARA FALLS BRIDGE COMMISSION
5365 Military Road, Lewiston, NY 14092
P: (716) 285-6322 • F: (716) 282-3292

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DISCLAIMER

MARK	DESCRIPTION	DATE	APPR.

DATE: 1/30/2018
SOLICITATION NO.: 2016-02-2B
CONTRACT NO.: 187774
PLOT DATE: 1/30/2018
DESIGNED BY: S. ANA
DRAWN BY: W.F.
CHKD BY: K.H.
SUBMITTED BY: WSP USA INC.
FILE NAME: RB-S501.dwg
SIZE: ANSI D
PLOTTED BY: ROCHETTE MESUR'R

NIAGARA FALLS BRIDGE COMMISSION
5365 Military Road
Lewiston, NY 14092

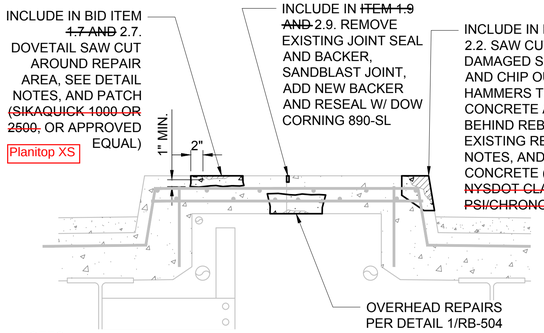
WSP USA Inc.
3600 Alt. Blvd.
Suite 111
Lewiston, NY 14092
(716) 853-1228

NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02-2B

RAINBOW BRIDGE REPAIRS
DETAILS (2 OF 6)

SHEET REFERENCE NUMBER
RB-502
SHEET 16 OF 29

J:\187774 - nfcb rainbow - whirlpool-q bridge report\02-rainbow\-CAD\RB-S501.dwg Wed, 31 Jan 2018 - 11:48pm frochettewb



NOTES:

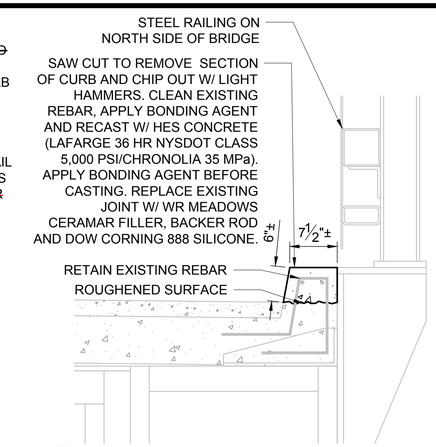
1. REMOVE MATERIAL TO COMPETENT CONCRETE. DO NOT DAMAGE EXISTING REBAR. IF REBAR IS ENCOUNTERED, REMOVE MATERIAL 1.5 " BEHIND REBAR PRIOR TO CASTING.
2. APPLY BONDING AGENT TO ROUGHENED SURFACE PRIOR TO CASTING CONCRETE REPAIRS.
3. CONCRETE COLOR SHALL BE MATCHED TO EXISTING ADJACENT CONCRETE SURFACES.
4. CONCRETE CURB MUST REACH 3,000 PSI/20MPa BEFORE OPENING TO TRAFFIC.

1 RB103 DETAIL - CONCRETE MEDIAN REPAIRS

1" = 1'-0"

~~-INCLUDE IN BID ITEMS 1.2, 1.7, 1.9 (USA)~~ N.I.C.

-INCLUDE IN BID ITEMS 2.2, 2.7, 2.9 (CANADA)



NOTES:

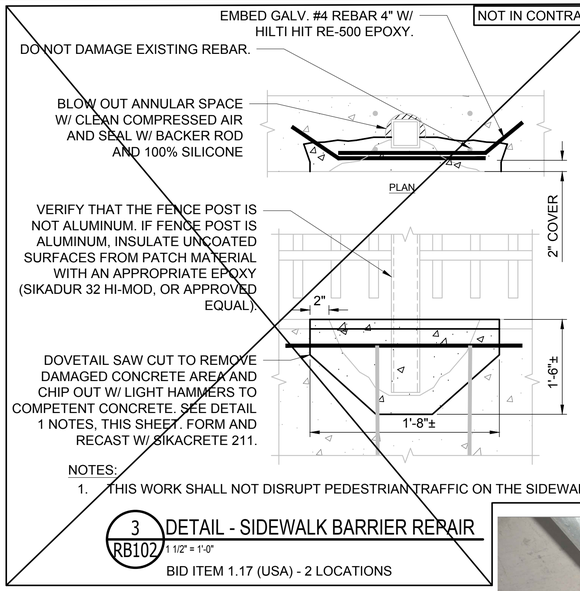
CONCRETE CURB MUST REACH 3,000 PSI/20 MPa BEFORE OPENING TO TRAFFIC

2 RB103 DETAIL - CURB REPLACEMENT/REPAIR

1" = 1'-0"

~~BID ITEM 1.2 (USA)~~ N.I.C.

BID ITEM 2.2 (CANADA)



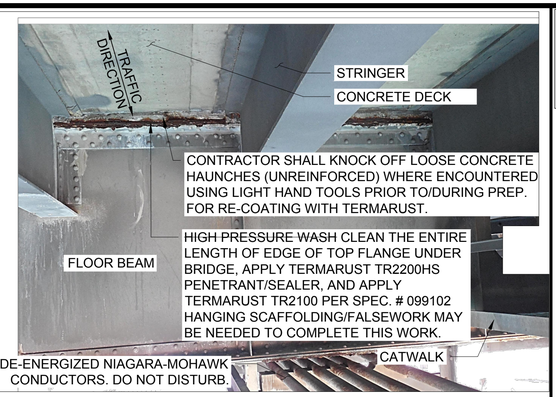
NOTES:

1. THIS WORK SHALL NOT DISRUPT PEDESTRIAN TRAFFIC ON THE SIDEWALK

3 RB102 DETAIL - SIDEWALK BARRIER REPAIR

1 1/2" = 1'-0"

BID ITEM 1.17 (USA) - 2 LOCATIONS



4 RB103 DETAIL - RECOAT TOP FLANGE OF FLOOR BEAMS

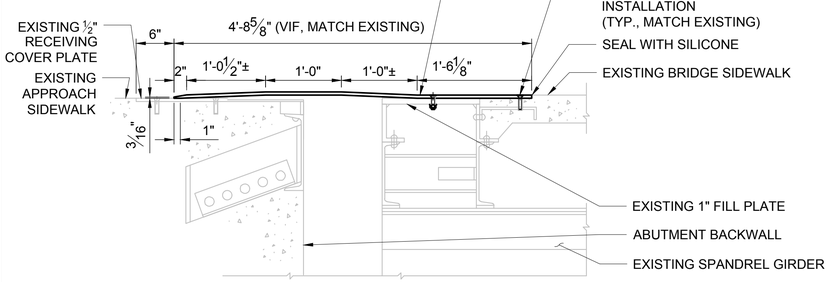
1/2" = 1'-0"

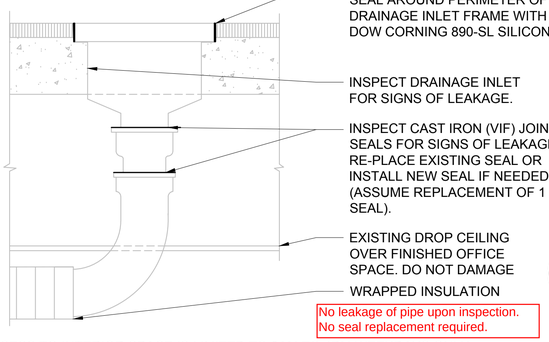
~~BID ITEM 1.11 (USA)~~ N.I.C.

BID ITEM 2.11 (CANADA)

Existing plate used, Slip-Not coating applied.
Plate was bent by Nichols Long & Moore

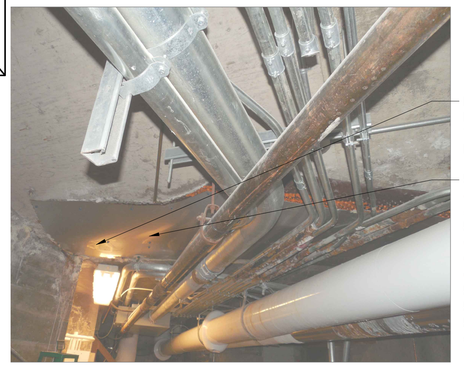
~~REMOVE AND RETURN EXISTING ½" SLIDING COVER PLATE TO NFBC. REPLACE WITH NEW HDG ½" BENT PLATE WITH~~ ANTI-SLIP SURFACE MEETING ADA GUIDELINES (SLIP-NOT, GALVAGRIT OR APPROVED EQUAL). MATCH EXISTING COLOR.





No leakage of pipe upon inspection. No seal replacement required.

NOTE: ACCESS TO INTERIOR SPACE IS LIMITED TO 8AM TO 4PM WEEKDAYS ONLY



Item removed from contract. Not complete. Deemed unnecessary/ improper repair.

7 RB108 DETAIL - CONCRETE CRACK REPAIRS IN TUNNEL

SCALE:3/4"=1'-0"

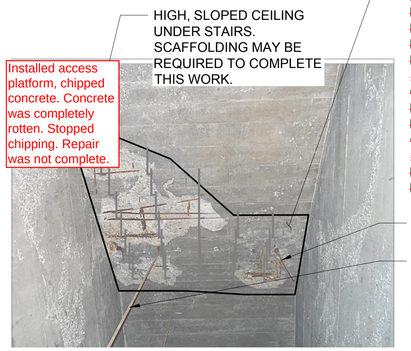
BID ITEM 2.22

5 RB103 DETAIL - STEEL SIDEWALK EXPANSION PLATES

1" = 1'-0"

~~-INCLUDE IN BID ITEM 1.13 (USA)~~ N.I.C.

-INCLUDE IN BID ITEM 2.13 (CANADA)



HIGH, SLOPED CEILING UNDER STAIRS. SCAFFOLDING MAY BE REQUIRED TO COMPLETE THIS WORK.

~~DOVETAIL SAW CUT AROUND PERIMETER, REMOVE CONCRETE PER DETAIL 1/RB-504 AND DOWEL INTO EXISTING CONCRETE W/ #4 HOOKED REBAR @ 12" O.C.. SANDBLAST EXISTING REBAR AND TIE SACRIFICIAL ANODE PUCKS (VECTOR GALVASHIELD XP, OR APPROVED EQUAL) TO EXISTING REBAR AS NEEDED TO PROVIDE GALVANIC CONTINUITY IN REPAIR AREA REBAR. APPLY BONDING AGENT AND RECAST REPAIR AREA PER DETAIL 1/RB-504. PROVIDE 2" COVER, MIN.~~

REMOVE EXISTING EMBEDDED HANGER

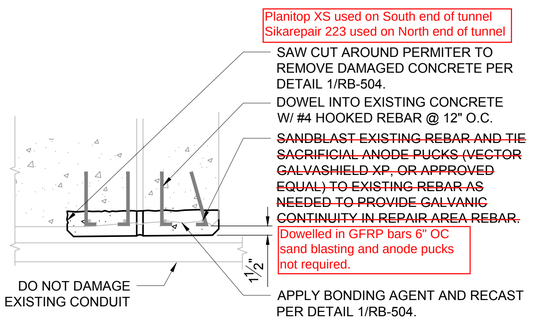
PIPE HANGER IN USE. TEMPORARILY SUPPORT PIPES TO RELIEVE PIPE HANGER OF LOADING WHILE REMOVING CONCRETE, AND PROTECT THIS HANGER DURING THE WORK.

NOTE: ACCESS TO TUNNEL IS LIMITED TO 8AM TO 4PM WEEKDAYS ONLY

8 RB108 DETAIL - CONCRETE REPAIR UNDER STAIRS

1 1/2" = 1'-0"

-INCLUDE IN BID ITEM 2.21 (CANADA)



NOTE: ACCESS TO TUNNEL IS LIMITED TO 8AM TO 4PM WEEKDAYS ONLY

9 RB108 DETAIL - CONCRETE REPAIR IN SECRET GARDEN TUNNEL

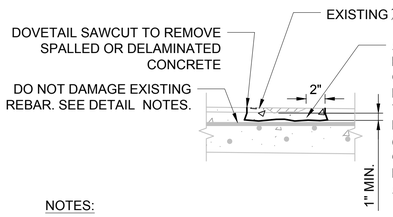
1" = 1'-0"

-INCLUDE IN BID ITEM 2.21 (CANADA) - 2 LOCATIONS

6 RB101 DETAIL - REPAIR SCUPPER ABOVE ARCHIVE ROOM

3/4" = 1'-0"

-INCLUDE IN BID ITEM 2.23



NOTES:

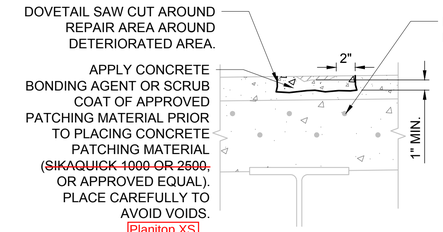
1. REMOVE MATERIAL TO COMPETENT CONCRETE. DO NOT DAMAGE EXISTING REBAR. IF REBAR IS ENCOUNTERED, REMOVE MATERIAL 1 ½ " BEHIND REBAR PRIOR TO CASTING.
2. IF REPAIR IS ALONG EXPANSION JOINT, REPLACE FILLER W/ WR MEADOWS CERAMAR AND BACKER ROD, AND SEAL WITH DOW CORNING 890-SL SILICONE.
3. CONCRETE COLOR SHALL BE MATCHED TO EXISTING ADJACENT CONCRETE SURFACES.

10 RB103 TYPICAL SIDEWALK CONCRETE REPAIR

1 1/2" = 1'-0"

~~-INCLUDE IN BID ITEM 1.5 (USA)~~ N.I.C.

-INCLUDE IN BID ITEM 2.5 (CANADA)



NOTES:

1. CONCRETE COLOR SHALL BE MATCHED TO EXISTING ADJACENT CONCRETE SURFACES.

11 RB103 TYPICAL MICROSILICA REPAIR ON BRIDGE DECK

1 1/2" = 1'-0"

~~-INCLUDE IN BID ITEM 1.3 (USA)~~ N.I.C.

-INCLUDE IN BID ITEM 2.3 (CANADA)

ENGINEER'S STAMP

LICENSED PROFESSIONAL ENGINEER
C. SHERLOCK
PROVINCE OF ONTARIO

NIAGARA FALLS BRIDGE COMMISSION
5365 Military Road, Lewiston, NY 14092
P: (716) 285-6322 • F: (716) 282-3292

IT IS A VIOLATION OF THE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECT SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER OR ARCHITECT, TO ALTER IN ANY WAY, IF AN ITEM BEARING THE SEAL OF AN ARCHITECT OR ENGINEER IS ALTERED, THE ALTERING ARCHITECT OR ENGINEER SHALL AFFIX TO THEIR ITEM THE SEAL AND SIGNATURE AND THE DATE OF SUCH ALTERATION AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

DISCLAIMER

MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY: SANJAY JAIN
DRAWN BY: W.F.
CHKD BY: K.H.
SUBMITTED BY: WSP USA INC.
FILE NAME: RB-S501.dwg
SIZE: ANSI D
PLOTTED BY: FECHETE,MISSY
PLOT DATE: 1/30/2018
DATE: 1/30/2018
SOLICITATION NO.:
CONTRACT NO.: 187774

NIAGARA FALLS BRIDGE COMMISSION
Administration Building
5365 Military Road
Lewiston, NY 14092

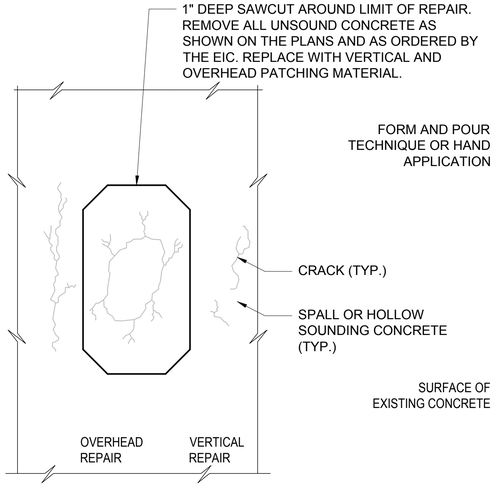
WSP
WSP USA Inc.
Rochester Office Blvd.
Suite 111
Rochester, NY 14622
(716) 853-1220

NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02-2B

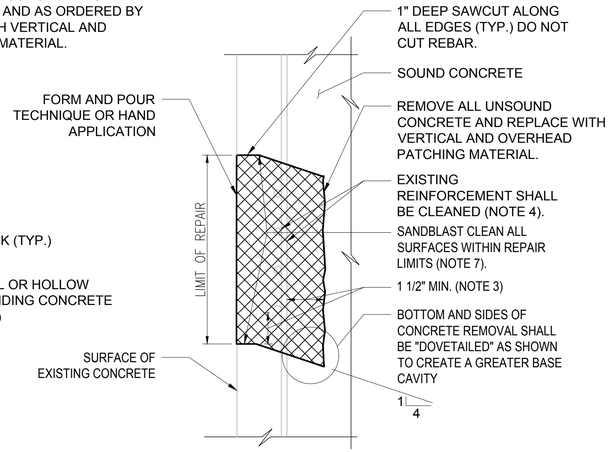
RAINBOW BRIDGE REPAIRS
DETAILS (3 OF 6)

SHEET REFERENCE NUMBER
RB-503
SHEET 17 OF 29

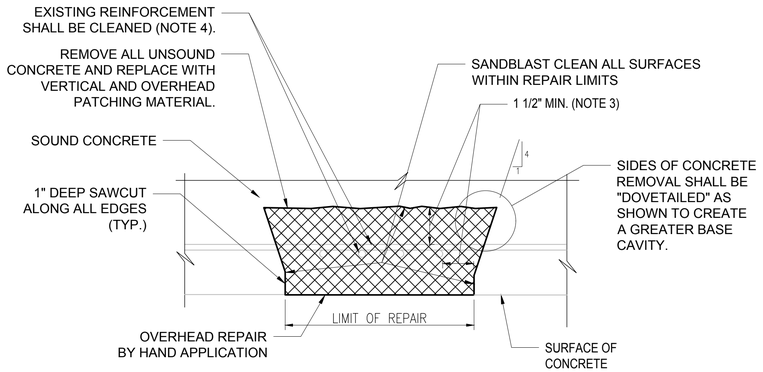
J:\187774 - nfdc rainbow - whirlpool-lq_bridge_repair\02-cad\rainbow\-CAD\RB-S501.dwg Wed, 31 Jan 2018 - 11:49pm frechetteab



PLAN - SPALL REPAIR



SECTION - VERTICAL REPAIR



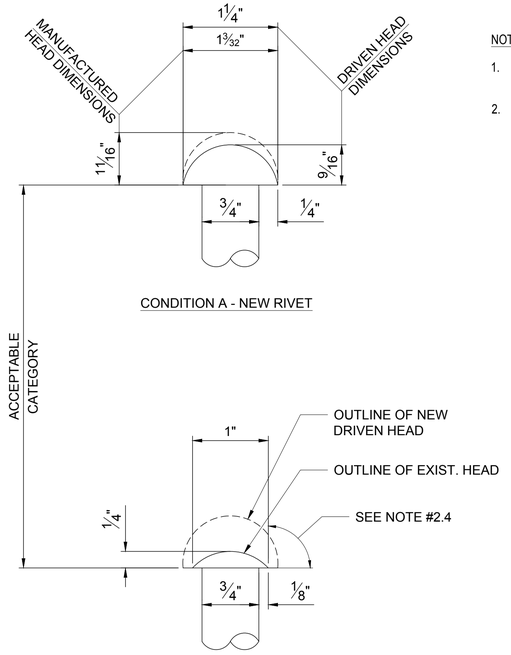
SECTION - OVERHEAD REPAIR

NOTES:

1. REHABILITATION OF EXISTING CONCRETE SURFACES SHALL BE PATCHED WITH VERTICAL AND OVERHEAD PATCHING MATERIAL (~~SIKA TOP 111, 123 PLUS, SIKA REPAIR 223,~~ Planitop XS OR APPROVED EQUAL IN 1.5" MAX LIFTS) PER NYSDOT 582.06 OR WITH APPROPRIATE FORMWORK AND SIKACRETE 211 OR NYSDOT CLASS D CONCRETE PER NYSDOT 582.07. THE CONTRACTOR SHALL PROTECT AREAS BENEATH, INCLUDING WATERWAYS FROM FALLING DEBRIS AND POLLUTION AT ALL TIMES.
2. THE CONTRACTOR SHALL INSPECT AND HAMMER-SOUND EXISTING SURFACES AND MARK PROPOSED REPAIR AREAS FOR THE ENGINEER'S APPROVAL. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH ACCESS TO OBSERVE THIS WORK. REPAIR LIMITS SHALL BE AS DIRECTED BY THE ENGINEER IN THE FIELD.
3. AT ALL CONCRETE REMOVAL LOCATIONS WHERE REINFORCEMENT IS EXPOSED, THE MINIMUM DEPTH OF REMOVAL SHALL BE NO LESS THAN 1 1/2" FROM THE REARMOST POINT OF EXPOSED REINFORCEMENT BAR, OR TO SOUND CONCRETE, WHICHEVER IS GREATER.
4. UNLESS OTHERWISE APPROVED BY THE ENGINEER, EXISTING REINFORCEMENT ENCOUNTERED IN REPAIR AREAS SHALL BE RETAINED. REINFORCEMENT SHALL BE CLEANED BY MECHANICAL MEANS.
5. WHEN REINFORCING STEEL IS HEAVILY CORRODED OR SAGGED OUT OF POSITION, BARS SHALL BE CUT OFF AND REPLACED WITH EQUIVALENT SIZE BAR. NEW BARS SHALL BE LAPPED A MINIMUM OF 12 INCHES TO ADJACENT DAMAGED BARS IN ACCORDANCE WITH NYSDOT SPEC. 719-01
6. IF REQUIRED, NEW BAR REINFORCEMENT SHALL BE ASTM A615, GRADE 60, AND SHALL BE GALVANIZED IN ACCORDANCE WITH NEW YORK STATE STANDARD SPECIFICATION SECTION 709-11.
7. IMMEDIATELY PRIOR TO THE APPLICATION OF NEW CONCRETE, THE EXISTING CONCRETE AND REBAR SHALL BE CLEANED BY MECHANICAL MEANS AND PRE-WETTED. APPLY BONDING AGENT SIKA ARMATEC 110 EPOCEM, OR APPROVED EQUAL (DO NOT USE SIKA ARMATEC 110 EPOCEM AS BONDING AGENT FOR REPAIRS WITH SIKAQUICK).
8. THE EXTENT OF CONCRETE REMOVAL FOR ANY COMPONENT SHALL NOT JEOPARDIZE STRUCTURAL INTEGRITY.

1 - TYPICAL CONCRETE SPALL REPAIR - VERTICAL AND OVERHEAD

1 1/2" = 1'-0"



CONDITION A - NEW RIVET

CONDITION B - MINIMUM UNCONDITIONALLY ACCEPTABLE

NOTES:

1. RIVETS REPLACED WITH HIGH STRENGTH BOLTS SHALL BE REMOVED AND PAID FOR UNDER THE ASSOCIATED ITEM OF WORK AS NOTED IN THE PLANS.
2. DETERIORATED RIVETS TO BE REPLACED WILL BE INSPECTED BY THE ENGINEER, WHO WILL ORDER THAT SPECIFIC RIVETS BE REPLACED WITH HIGH STRENGTH BOLTS IN ACCORDANCE WITH THE FOLLOWING GUIDELINES:

2.1 RIVETS WITH DIMENSIONS OF BOTH HEADS MEETING OR SURPASSING EACH OF THE MINIMUM REQUIREMENTS SHOWN FOR CONDITION B MAY BE LEFT IN PLACE SUBJECT TO CONDITIONS DESCRIBED IN NOTES 2.3 AND 2.4.

2.2 RIVETS NOT MEETING THE REQUIREMENTS OF CONDITION B AT EITHER HEAD SHALL BE REPLACED.

2.3 REPLACEMENT WILL ALSO BE REQUIRED FOR ANY RIVET EXHIBITING ADDITIONAL LOSS IN THE FORM OF PITS OR GOUGES AT THE EDGE OF EITHER HEAD PROJECTING BEYOND THE SHANK WHERE SUCH LOSS REDUCES THE SECTION BELOW THE LIMITS SHOWN FOR CONDITION B.

2.4 WHERE CREVICE OR INTERFERENCE CORROSION BETWEEN CONNECTED PARTS IS PRESENT, THE RIVETS ADJACENT TO THAT AREA SHALL BE REPLACED AFTER CLEANING BETWEEN THE PARTS REGARDLESS OF THE CONDITION OF THE RIVETS.

2.6 DIMENSIONS SHOWN ON THESE SKETCHES FOR CONDITIONS B ARE MINIMUM REQUIREMENTS FOR BOTH DRIVEN AND MANUFACTURED HEADS. THE MINIMUM HEIGHT OF HEAD IS MEASURED TO THE CENTER OF THE RIVET. THE MINIMUM DIAMETER APPLIES TO THAT DIRECTION IN WHICH IT IS THE SMALLEST.

2.7 ALL HIGH STRENGTH BOLT CONNECTIONS SHALL BE ASSEMBLED WITH HARDENED WASHER UNDER BOTH THE BOLT HEAD AND NUT. WHERE NECESSARY WASHERS MAY BE CLIPPED ON THE SIDE TO A POINT NOT CLOSER THAN (7/8") OF THE BOLT DIAMETER FROM THE CENTER OF THE WASHER.

2.8 IF REAMING IS REQUIRED TO DRESS UP THE RIVET HOLES, THE COST OF THIS REAMING SHALL BE INCLUDED IN THE PRICE BID FOR THE ITEM UNDER WHICH THE BOLT IS BEING REPLACED. IF AFTER REAMING THE HOLES EXCEED THE TOLERANCES SHOWN IN THE N.Y.S. STEEL CONSTRUCTION MANUAL, THE CONTRACTOR SHALL INSTALL THE NEXT LARGER SIZED BOLT AT NO ADDITIONAL COST TO THE OWNER.

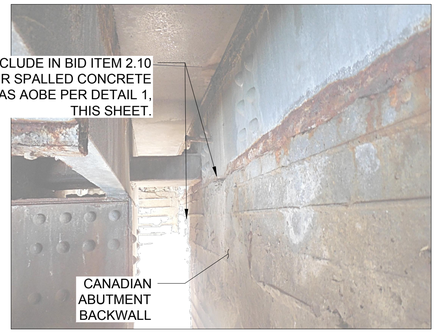
Rivets left in place. 8 Hollo-bolts installed between rivets to strengthen utility box.

2 - RIVET REPLACEMENT CRITERIA

RB502 N.T.S.

~~-INCLUDE IN BID ITEM 1.11 (USA) SEE DETAIL 1/RB502~~ N.I.C.

-INCLUDE IN BID ITEM 2.11 (CANADA) - SEE DETAIL 1/RB502



NOTES:

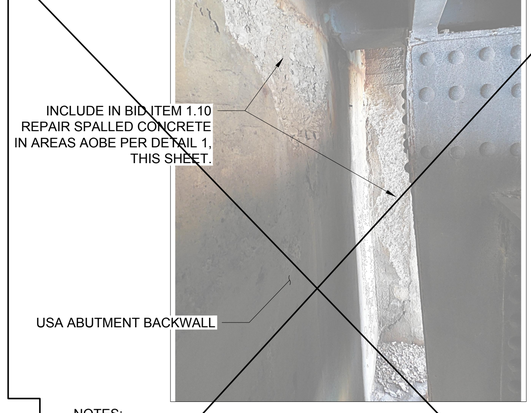
1. THIS WORK ITEM IS WITHIN A CONFINED SPACE. CONTRACTOR PERSONNEL WORKING IN THE CONFINED SPACE SHALL BE TRAINED AND CERTIFIED TO WORK WITHIN A CONFINED SPACE, AND SHALL SUBMIT PROOF OF CERTIFICATION.

1 - PHOTO 1: CONCRETE SPALL REPAIR CANADA ABUTMENT BACKWALL (LOOKING SOUTH)

RB103 N.T.S.

-INCLUDE IN BID ITEM 2.10 (CANADA)

NOT IN CONTRACT



NOTES:

1. THIS WORK ITEM IS WITHIN A CONFINED SPACE. CONTRACTOR PERSONNEL WORKING IN THE CONFINED SPACE SHALL BE TRAINED AND CERTIFIED TO WORK WITHIN A CONFINED SPACE, AND SHALL SUBMIT PROOF OF CERTIFICATION.

2 - PHOTO 2: CONCRETE SPALL REPAIR USA ABUTMENT BACKWALL (LOOKING SOUTH)

RB107 N.T.S.

-INCLUDE IN BID ITEM 1.10 (USA)

ENGINEER'S STAMP

LICENSED PROFESSIONAL ENGINEER C. SHERLOCK PROVINCE OF ONTARIO

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DISCLAIMER

MARK	DESCRIPTION	DATE	APPR.

DATE: 1/30/2018
SOLICITATION NO.:
CONTRACT NO.: 187774
PLOT DATE: 1/30/2018
DESIGNED BY: SHADI LAKA
DRAWN BY: W.F.
CKD BY: K.H.
SUBMITTED BY: WSP USA INC.
FILE NAME: RB-S501.dwg
SIZE: ANSI D
PLOTTED BY: ROCHETTE,MEGHEN

NIAGARA FALLS BRIDGE COMMISSION
Administration Building
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Lewiston, NY 14092

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300 Pearl Street, Buffalo
Suite 111, 14202
(716) 853-1220

NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02-2B

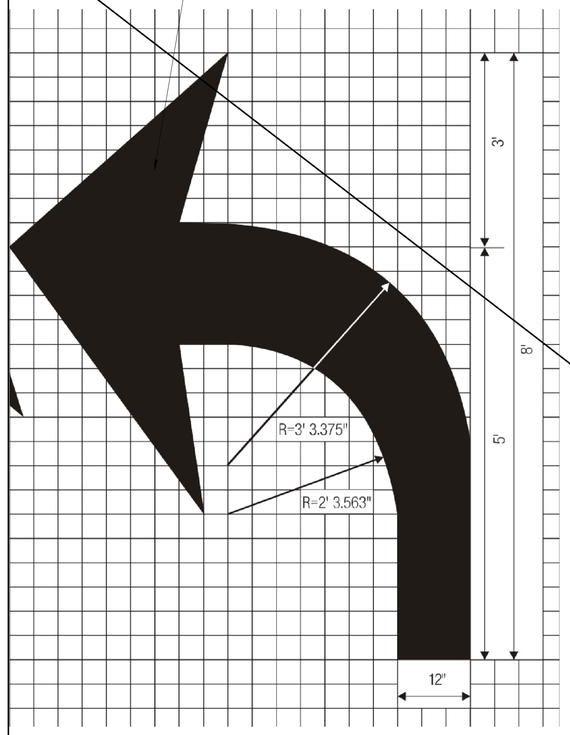
RAINBOW BRIDGE REPAIRS
DETAILS (4 OF 6)

SHEET REFERENCE NUMBER
RB-504
SHEET 18 OF 39

J:\187774 - nfcb rainbow whirlpool-lq bridge repair\02-rainbow\~CAD\RB-S501.dwg Wed, 31 Jan 2018 - 11:49pm frechettewb

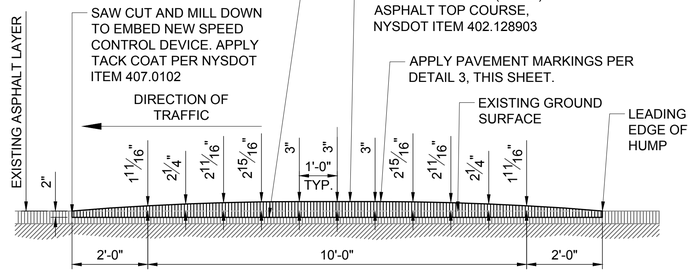
NOT IN CONTRACT

WHITE EPOXY REFLECTORIZED PAVEMENT STRIPES - 15 MILS NYSDOT ITEM 685.01
-CLEAN AND PREPARE SURFACES PER NYSDOT ITEM 635.0103 PRIOR TO APPLICATION OF NEW EPOXY PAVEMENT MARKING

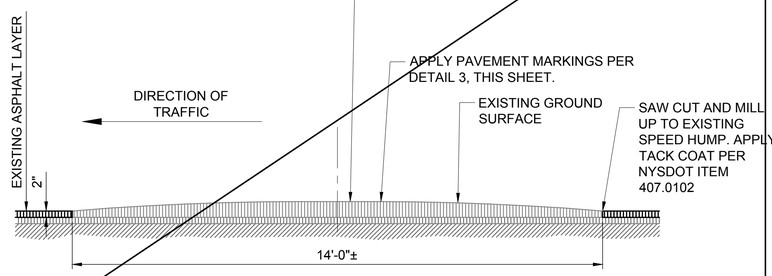


1 RB102 PAVEMENT SYMBOL DETAIL - TURN ARROW
1" = 1'-0"
INCLUDE IN BID ITEM 1.21 (USA)

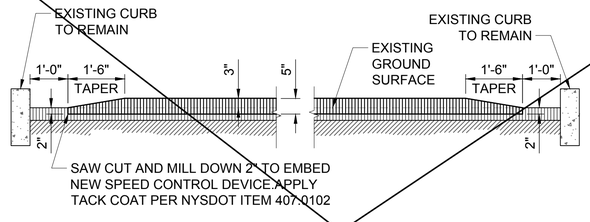
NOTES:
ASPHALT THICKNESS DIMENSIONS SHOWN ON HUMP ARE ALL RELATIVE TO THE GROUND SURFACE. ACTUAL THICKNESS INSTALLED WILL INCLUDE ADDITIONAL 2" TO FILL MILLED LAYER.



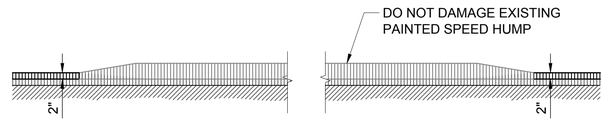
A RB102 SECTION A-A: SPEED CONTROL DEVICE (HUMP)
1/2" = 1'-0"
INCLUDE IN BID ITEM 1.20 (USA)



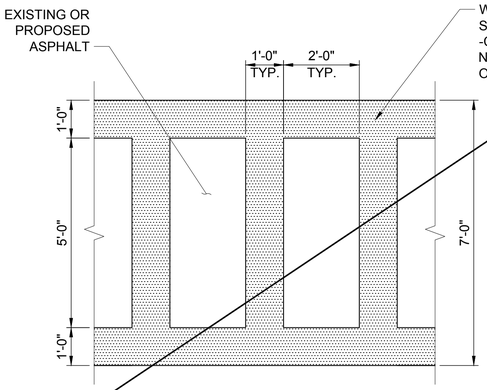
C RB102 SECTION C-C: SPEED CONTROL DEVICE (HUMP)
1/2" = 1'-0"
INCLUDE IN BID ITEM 1.20 (USA)



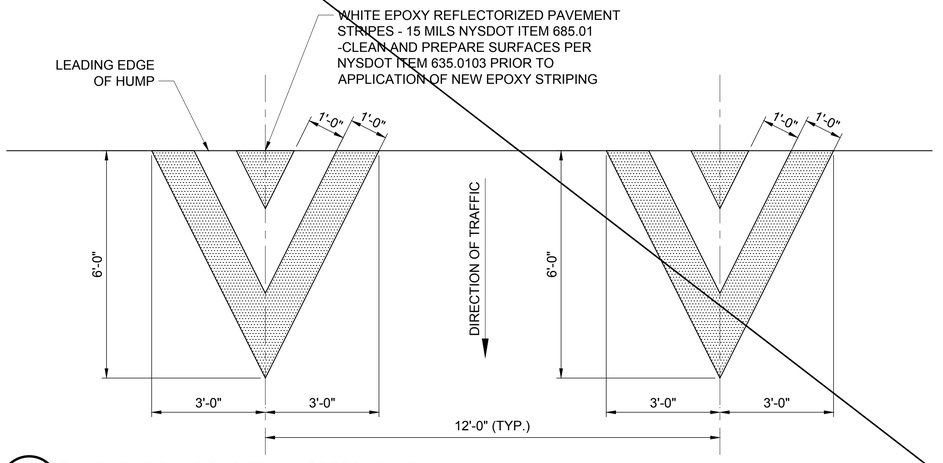
B RB102 SECTION B-B: SPEED CONTROL DEVICE (HUMP)
1/2" = 1'-0"
INCLUDE IN BID ITEM 1.20 (USA)



D RB102 SECTION D-D: SPEED CONTROL DEVICE (HUMP)
1/2" = 1'-0"
INCLUDE IN BID ITEM 1.20 (USA)



2 RB102 PAVEMENT MARKING DETAIL - CROSSWALKS
1/2" = 1'-0"
INCLUDE IN BID ITEM 1.21 (USA)



3 RB102 PAVEMENT SYMBOL DETAIL - SPEED HUMP
1/2" = 1'-0"
INCLUDE IN BID ITEM 1.21 (USA)

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MARK	DESCRIPTION	DATE	APPR.

DISCLAIMER

DESIGNED BY: S.COLAVITA
DRN BY: W.F.
CKD BY: K.H.
DATE: 1/30/2018
SOLICITATION NO.:
CONTRACT NO.: 187774
SUBMITTED BY: WSP USA INC.
PLOTTED BY: REQUETTE, LESSER B.
PLOT DATE: 1/30/2018
FILE NAME: RB-S505.dwg
SIZE: ANSI D

NIAGARA FALLS BRIDGE COMMISSION
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5365 Military Road
Lewiston, NY 14092

WSP USA Inc.
1395 Wehrle Blvd.
Suite 1-117
Amherst, NY 14221
(716) 853-1220

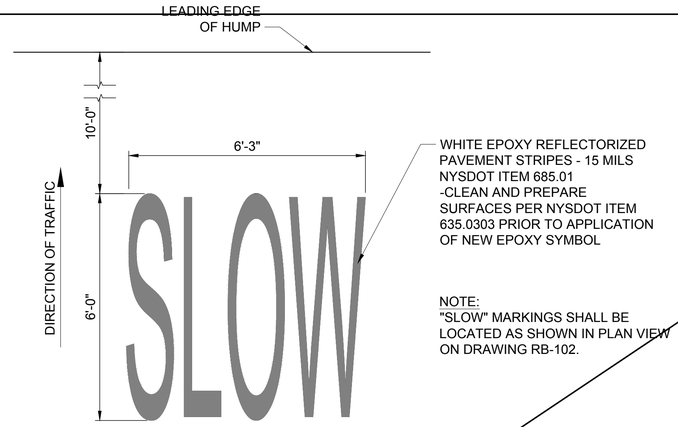
NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02-2B

RAINBOW BRIDGE REPAIRS
DETAILS (5 OF 6)

SHEET REFERENCE NUMBER
RB-505
SHEET 19 OF 29

J:\187774 - nfcb rainbow - whirlpool+lq bridge_report\02-rainbow_CAD\RB-S505.dwg Wed, 31 Jan 2018 - 11:49pm frechettewb

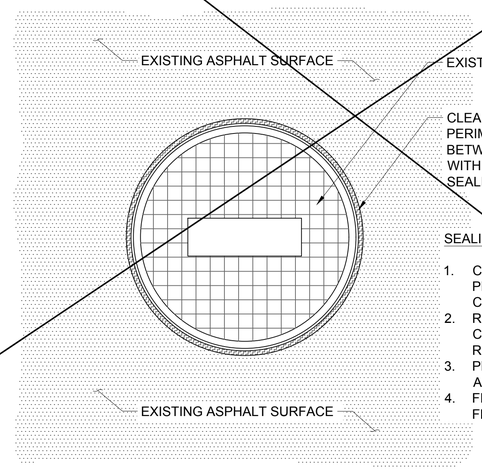
NOT IN CONTRACT



WHITE EPOXY REFLECTORIZED PAVEMENT STRIPES - 15 MILS
NYSDOT ITEM 685.01
-CLEAN AND PREPARE SURFACES PER NYSDOT ITEM 635.0303 PRIOR TO APPLICATION OF NEW EPOXY SYMBOL

NOTE:
"SLOW" MARKINGS SHALL BE LOCATED AS SHOWN IN PLAN VIEW ON DRAWING RB-102.

3 RB102 PAVEMENT MARKING LETTERS
1/2" = 1'-0"
INCLUDE IN BID ITEM 1.21 (USA)

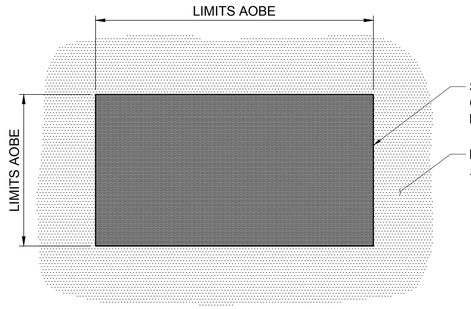


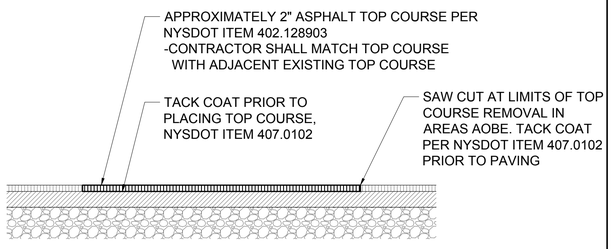
CLEAN LOOSE DEBRIS FROM OUTER PERIMETER OF MAN HOLE FRAME AND SEAL BETWEEN FRAME AND EXISTING ASPHALT WITH DOW CORNING 890-SL SILICONE PER SEALING NOTES

SEALING NOTES:

1. COORDINATE WORK WITH MANHOLE OWNER PRIOR TO PERFORMING ANY SEALING WORK IN CONTACT WITH COVER.
2. REMOVE RIM AND CLEAN AROUND MANHOLE COVER FRAME PER SILICONE MANUFACTURER'S RECOMMENDATIONS.
3. PLACE BEAD OF DOW CORNING 890-SL SILICONE AROUND FRAME AND REPLACE COVER.
4. FILL ANNULAR SPACE BETWEEN COVER AND FRAME WITH DOW CORNING 890-SL SILICONE.

4 RB102 SEAL MANHOLE COVER
1 1/2" = 1'-0"
INCLUDE IN BID ITEM 1.18 (USA) - 2 LOCATIONS





5 RB102 MISC. ASPHALT PAVEMENT MILL AND PAVE REPAIRS
1/2" = 1'-0"
INCLUDE IN BID ITEM 1.24 (USA)

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MARK	DESCRIPTION	DATE	APPR.

DISCLAIMER

DESIGNED BY: S.COLANNA
DWN BY: W.F.
CKD BY: K.H.
DATE: 1/30/2018
SOLICITATION NO.:
SUBMITTED BY: WSP USA INC.
CONTRACT NO.: 187774
PLOTTED BY: ROCHETTE, LESLEY B.
PLOT DATE: 1/30/2018
FILE NAME: RB-5505.dwg
SIZE: ANSI D

NIAGARA FALLS BRIDGE COMMISSION
Administration Building
6365 Military Road
Lewiston, NY 14092

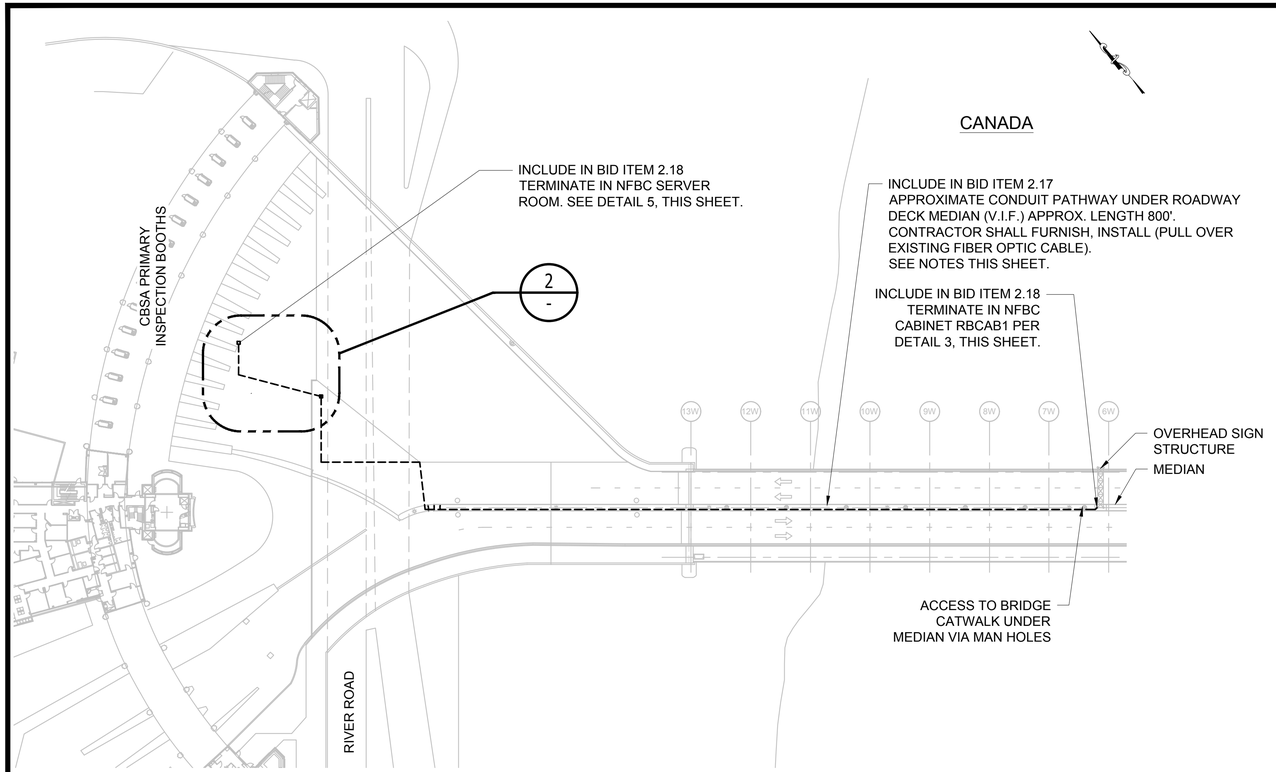
WSP USA Inc.
300 Pearl Street
Suite 111, NY 14202
(716) 853-1220

NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02-2B

RAINBOW BRIDGE REPAIRS
DETAILS (6 OF 6)

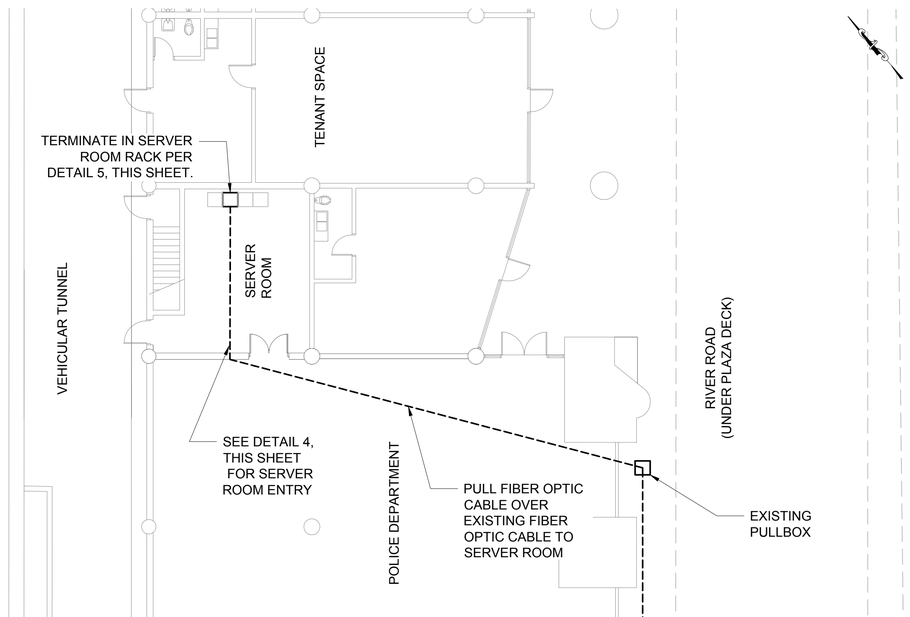
SHEET REFERENCE NUMBER
RB-506
SHEET 20 OF 29

J:\187774 - ehlb rainbow - whirlpool-lq bridge repair\02-rainbow_CAD\RB-5505.dwg Wed, 31 Jan 2018 - 11:49am frechettelesb



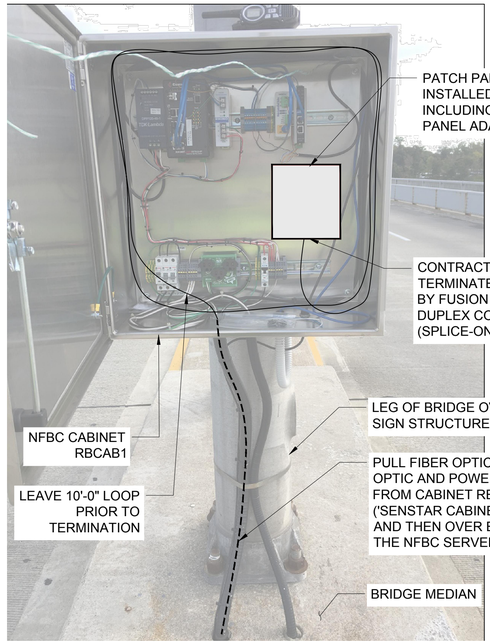
1 - PLAN - RAINBOW BRIDGE FIBER OPTIC CABLE INSTALLATION (BRIDGE LEVEL)

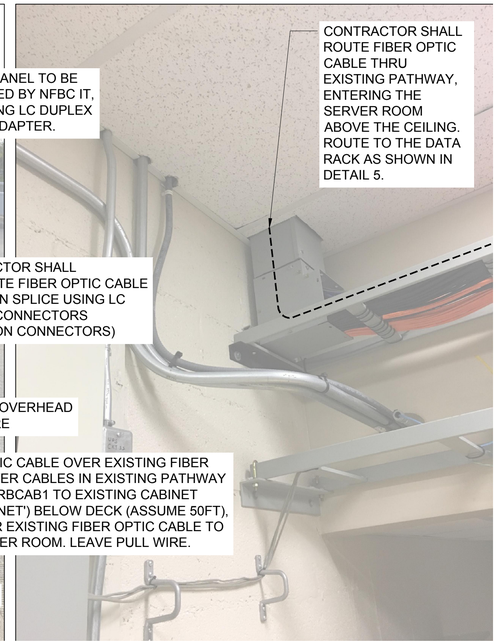
1" = 50'



2 - PLAN DETAIL - FIBER OPTIC CABLE INSTALLATION ROUTING TO SERVER ROOM (RIVER RD. LEVEL)

1" = 20'





NOTES:

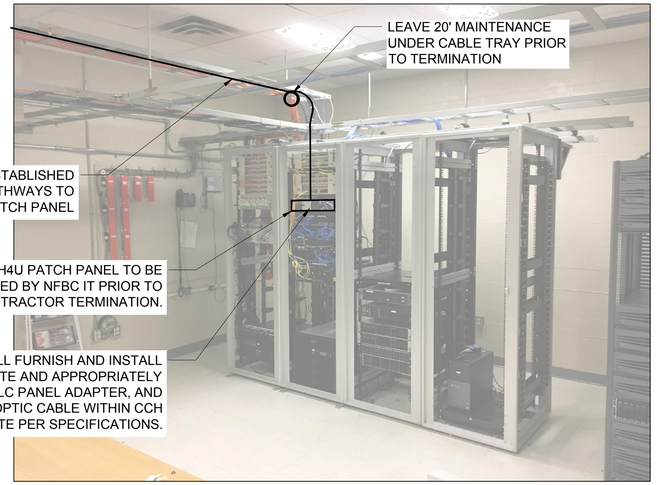
1. WORK SHALL BE COORDINATED WITH NFBC IT PRIOR TO STARTING DUE TO ACTIVE EQUIPMENT.

3 - DETAIL - TERMINATION IN RBCAB1

SCALE: NTS

4 - DETAIL - SERVER ROOM ENTRY

SCALE: NTS



5 - DETAIL - TERMINATION IN SERVER ROOM

SCALE: NTS

NOTES:

1. WORK SHALL BE COORDINATED WITH NFBC IT PRIOR TO STARTING DUE TO ACTIVE EQUIPMENT.
2. CONTRACTOR SHALL FURNISH AND INSTALL ALL OTHER NECESSARY ITEMS TO COMPLETE THE WORK. THIS INCLUDES, BUT IS NOT LIMITED TO SINGLE MODE FIBER OPTIC CABLE DX012DSLX9KR (OR APPROVED EQUIVALENT), LC DUPLEX CONNECTORS (SPLICE ON CONNECTORS), AND CCH CASSETTE. ALL TERMINATIONS SHALL BE FUSION SPLICE USING LC DUPLEX CONNECTORS (SPLICE-ON CONNECTORS).
3. ALL ITEMS AND INSTALLATIONS SHALL MEET INDUSTRY STANDARDS FOR SAFETY (EG. CSA Z462), AS WELL AS CURRENT VERSIONS OF THE CEC, CEIS, AND CECA 301-2011. ALL INSTALLATIONS SHALL BE COMPLETED BY A CERTIFIED FIBER OPTIC CABLE INSTALLER.
4. ALL FIBER SHALL BE TESTED WITH OTDR BY CERTIFIED OTDR TESTER. ELECTRONIC TEST RESULTS IN PDF FORMAT SHALL BE SUBMITTED TO NFBC FOR ACCEPTANCE.
5. IT IS VERY IMPORTANT THAT THE CONTRACTOR TAKE ALL NECESSARY PRECAUTIONS TO NOT MAKE ANY DUST IN THE SERVER ROOM. THIS MAY NECESSITATE ISOLATING THE WORK AREA DURING ACTIVITIES WHERE ANY DUST MAY BE GENERATED.

BID ITEM NOTES:

BID ITEM 2.17 INCLUDES:
FURNISHING AND INSTALLING THE FIBER OPTIC CABLE AND ALL OTHER ITEMS NECESSARY TO INSTALL THE CABLE THAT ARE NOT INCLUDED IN BID ITEM 2.18.

BID ITEM 2.18 INCLUDES:
FURNISHING AND INSTALLING ALL ITEMS NECESSARY TO COMPLETE TERMINATIONS AND TESTING WITH OTDR

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MARK	DESCRIPTION	DATE	APPR.

DISCLAIMER

DATE: 1/30/2018
SOLICITATION NO.:
CONTRACT NO.: 187774
DESIGNED BY: SCOTT LAW
DWN BY: W.F.
CKD BY: K.H.
SUBMITTED BY: WSP USA INC.
PLOTTED BY: RENETTE HESSLER
PLOT DATE: 1/30/2018
FILE NAME: RB-901.dwg
SIZE: ANSI D

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Subcontractor Building
6365 Military Road
Lewiston, NY 14092

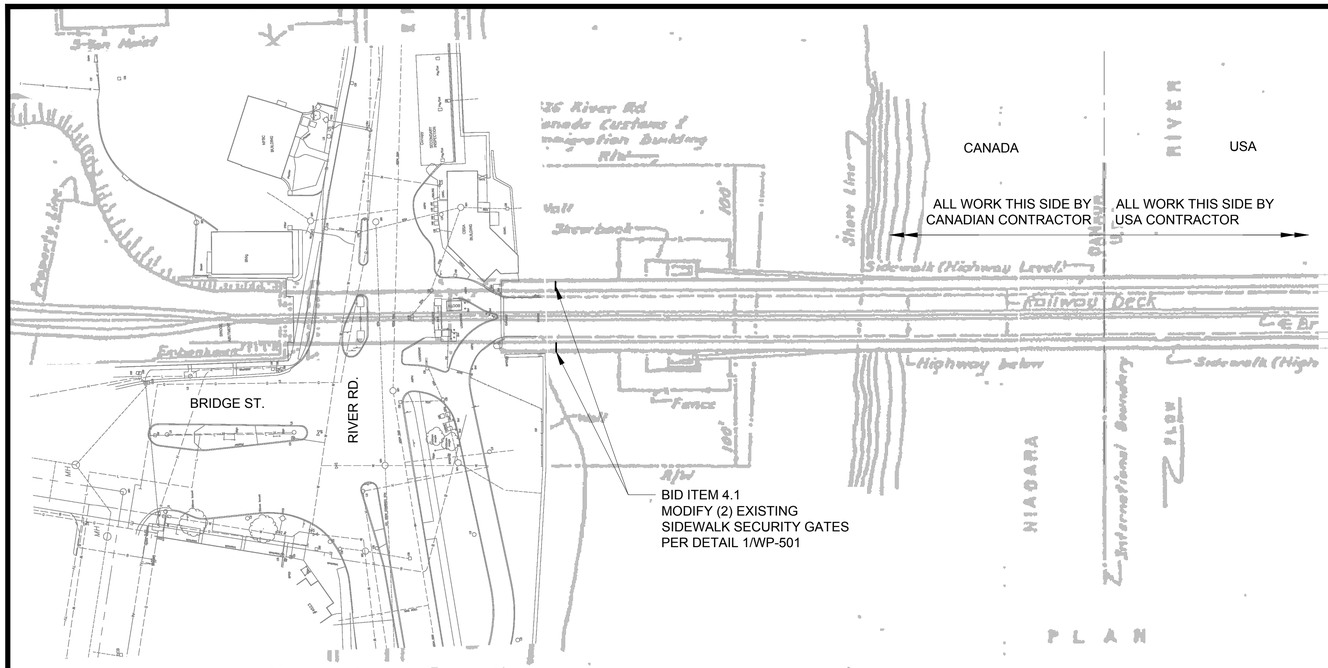
WSP USA Inc.
50 Main Street, Suite 1100
White Plains, NY 10606
(716) 853-1220

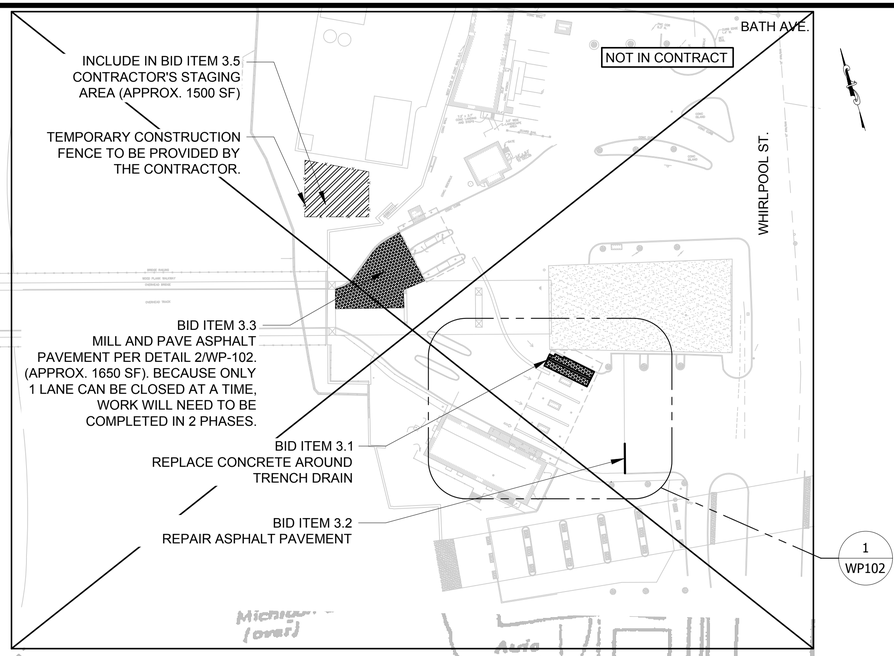
NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES PROJECT # 2016-02-2B

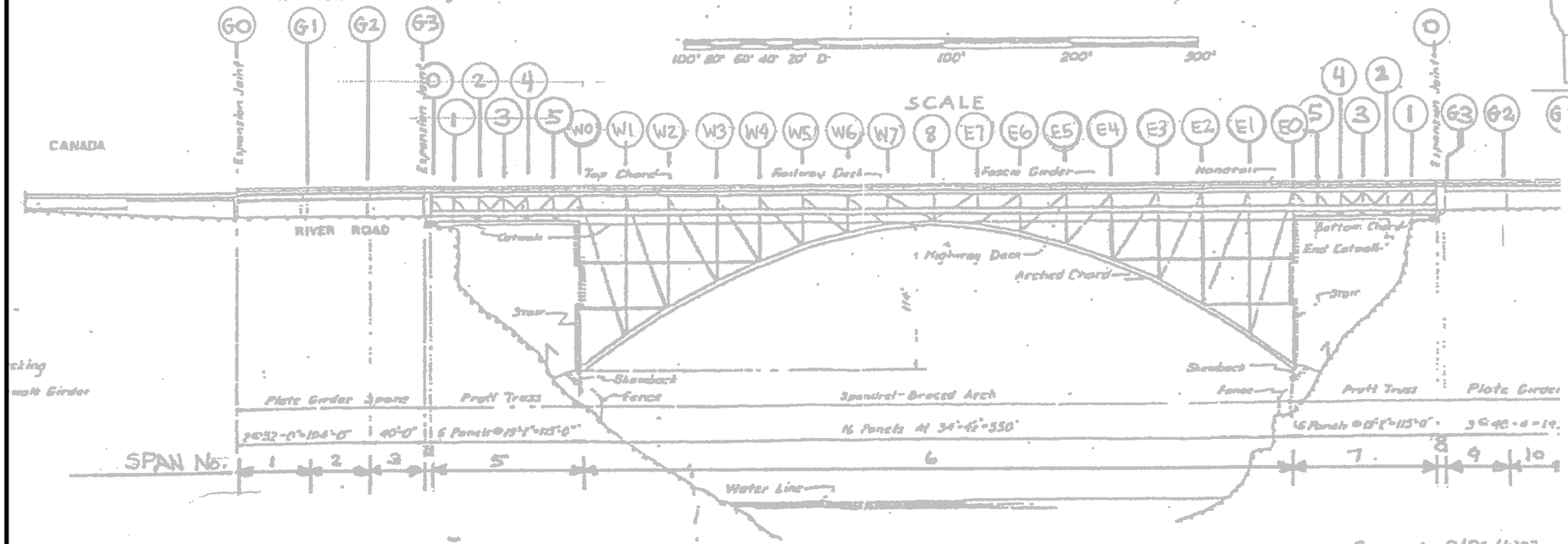
RAINBOW BRIDGE REPAIRS
FIBER OPTIC CABLE INSTALLATION

SHEET REFERENCE NUMBER
RB-901
SHEET 21 OF 29

J:\187774 - nfcb rainbow - whirlpool-lq bridge repair\02-rainbow_CAD\RB-901.dwg Wed, 31 Jan 2018 - 11:50am frechettewb







1 PLAN AND ELEVATION- WHIRLPOOL RAPIDS BRIDGE REPAIRS
1" = 50'

NOT IN CONTRACT

NOTES:

1. THE CONTRACTOR IS REQUIRED TO SUBMIT MAINTENANCE AND PROTECTION OF TRAFFIC PLAN(S) FOR APPROVAL BY NFBC PER THE GENERAL NOTES PAGES G-001 AND G-002. INCLUDE MPT IN BID ITEM 3.4 FOR WORK ON THE USA SIDE OF THE BRIDGE
2. INCLUDE MOBILIZATION IN BID ITEM 3.5

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MARK	DESCRIPTION	DATE	APPR.

DISCLAIMER

DATE: 1/30/2018
SOLICITATION NO.:
CONTRACT NO.: 187774
DESIGNED BY: S.COLLINA
DWN BY: W.F.
CKD BY: K.H.
SUBMITTED BY: WSP USA INC.
PLOT DATE: 1/30/2018
PLOTTED BY: ROCHETTE,MISSEYB.
FILE NAME: WP-S101.dwg
SIZE: ANSI D

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Lewiston, NY 14092

WSP USA Inc.
300 Pearl Street, Suite 111, 14202
Buffalo, NY
(716) 853-1220

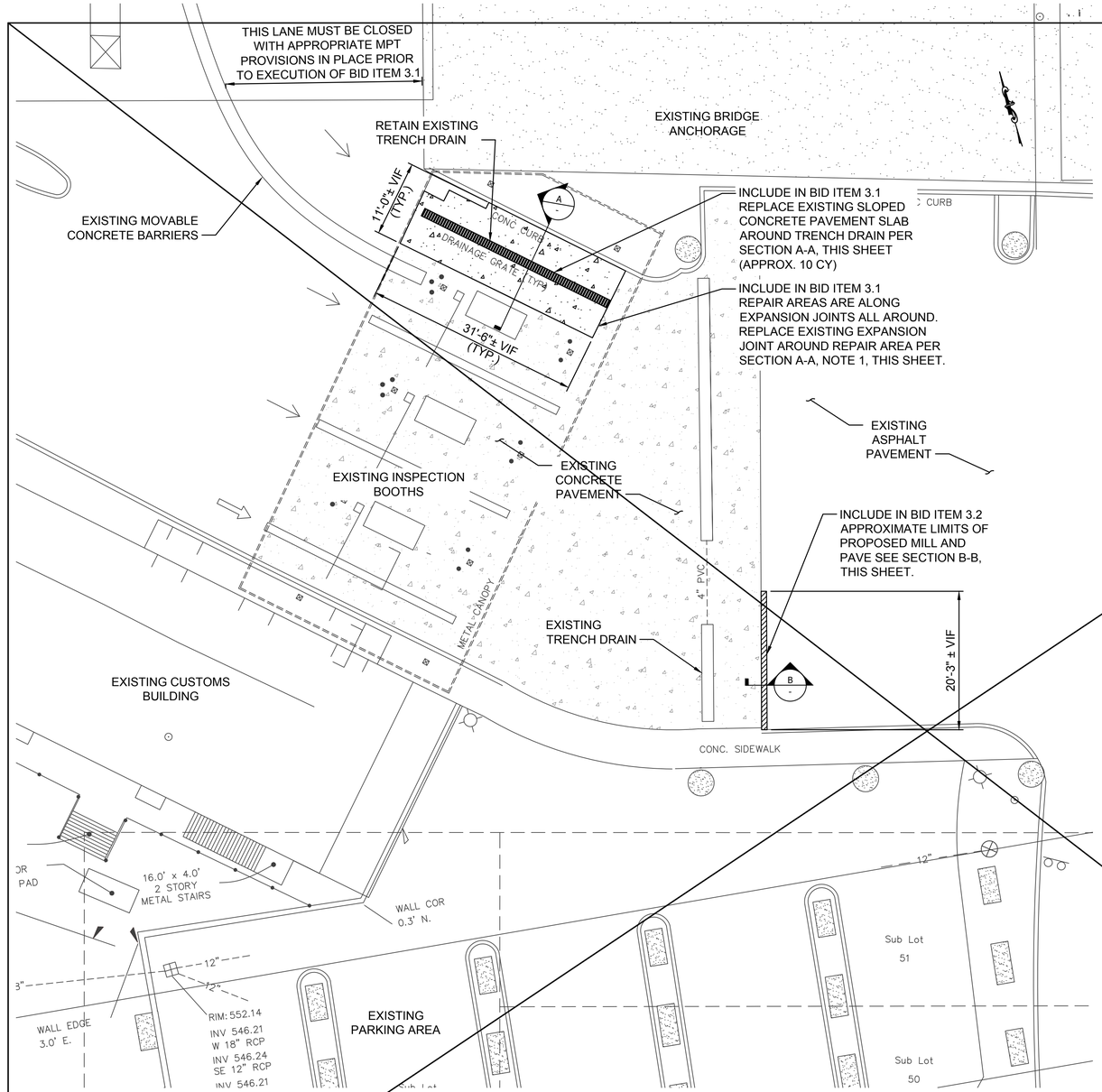
NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02-2B

WHIRLPOOL BRIDGE REPAIRS
GENERAL PLAN

SHEET REFERENCE NUMBER
WP-101
SHEET 22 OF 29

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NOT IN CONTRACT

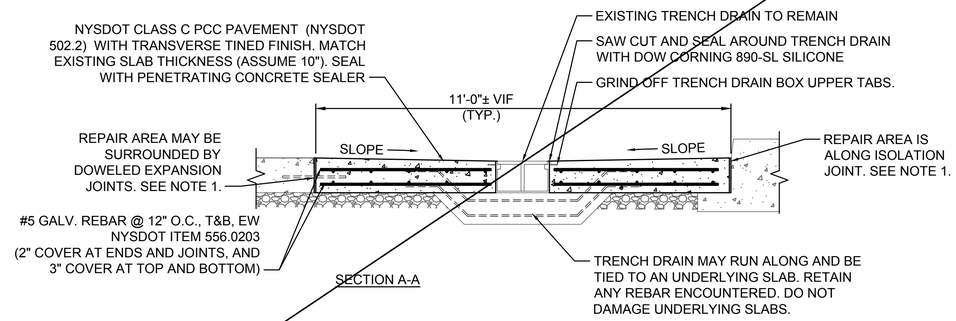


1 WP101 WHIRLPOOL RAPIDS REPAIR LOCATION PLAN

1/4" = 1'-0"

NOTES:

1. ANY CONCRETE REPAIRED OUTSIDE OF AREAS APPROVED BY ENGINEER WILL BE AT NO ADDITIONAL COST TO OWNER.
2. ALL DIMENSIONS SHOWN ARE APPROXIMATE.
3. ALL WORK ON THIS SHEET SHALL BE COMPLETED BY USA CONTRACTOR.



SECTION A-A

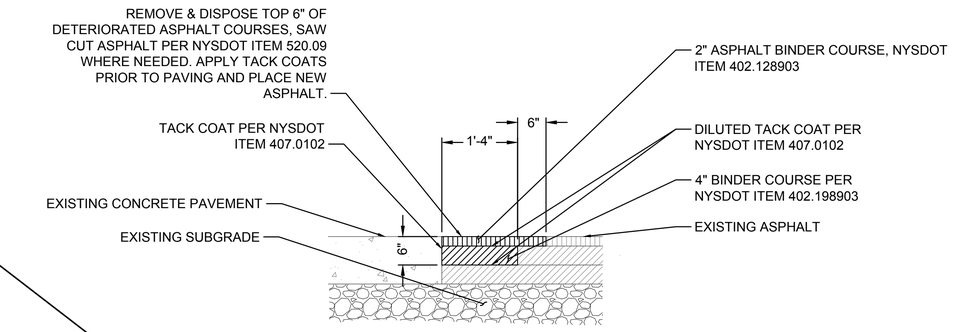
NOTES:

1. REPAIR AREA MAY BE SURROUNDED BY DOWELED EXPANSION JOINTS. RETAIN ANY REBAR OR DOWELS ENCOUNTERED AND THEIR FUNCTIONALITY REGARDING EXPANSION/CONTRACTION (EG. DOWELS DE-BONDED ON ALTERNATING SIDES OF JOINT, ETC.). REPLACE JOINT FILLER WITH WR MEADOWS CERAMAR FILLER, BACKER ROD, AND APPLY DOW CORNING 890-SL JOINT SEALANT PER MANU.'S RECOMMENDATIONS.
2. NEW REBAR SHALL BE STAINLESS STEEL OR GALVANIZED.
3. CONCRETE PAVEMENT MUST ACHIEVE 3,000 PSI PRIOR TO OPENING TO VEHICULAR TRAFFIC.

A - SECTION A-A: TRENCH DRAIN SLAB REPLACEMENT

1/2" = 1'-0"

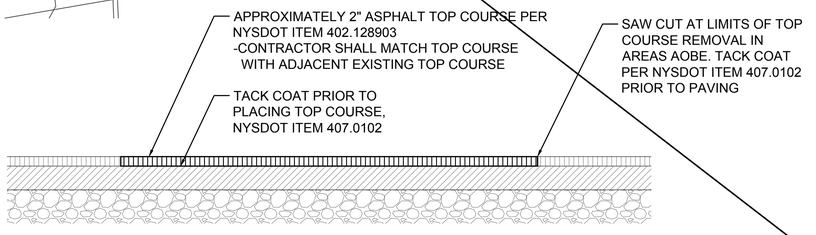
-INCLUDE IN BID ITEM 3.1



B - SECTION B-B: ASPHALT PAVEMENT REPAIR

3/4" = 1'-0"

-INCLUDE IN BID ITEM 3.2



2 WP101 ASPHALT PAVEMENT MILL AND PAVE REPAIRS

3/4" = 1'-0"

INCLUDE IN BID ITEM 3.3 (USA)

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MARK	DESCRIPTION	DATE	APPR.

DISCLAIMER

DATE: 1/30/2018
SOLICITATION NO.:
CONTRACT NO.: 187774
DESIGNED BY: S.C.M.A.
CKD BY: K.H.
DWN BY: W.F.
SUBMITTED BY: WSP USA INC.
FILE NAME: CS111 - Whirlpool Rapids Plaza Plan Sheet.dwg
SIZE: ANSI D
PLOTTED BY: PRESCOTT, WESLEY B.
PLOT DATE: 1/30/2018

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Lewiston, NY 14092

WSP USA Inc.
300 Pearl Street, Suite 111, Buffalo, NY 14202
(716) 853-1220

NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02.2B

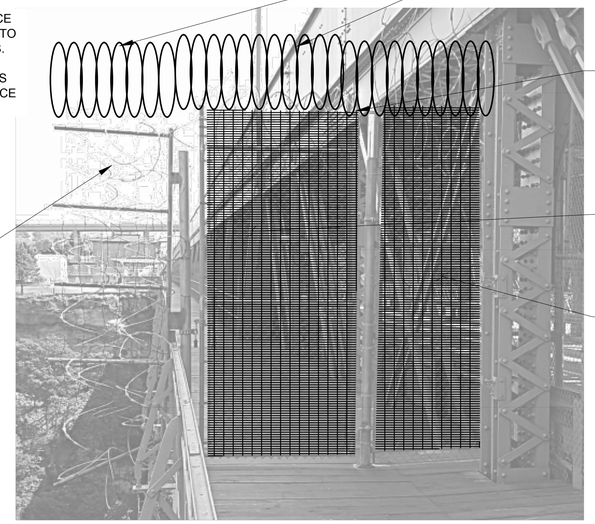
WHIRLPOOL BRIDGE REPAIRS
PLAN REPAIRS AREA 1

SHEET REFERENCE NUMBER
WP-102
SHEET 23 OF 29

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SOUTH SIDEWALK



NORTH SIDEWALK

NOTES:

1. RAZOR WIRE WILL BE SUPPLIED BY THE OWNER FOR INSTALLATION BY CONTRACTOR. ALL OTHER MATERIALS AND FASTENERS SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.
2. GATE SHALL REMAIN IN GOOD OPERATION AFTER INSTALLATION.
3. FASTEN NEW COMPONENTS TO EXISTING FRAMEWORK WITH TAMPER-PROOF FASTENERS.
4. SOME EXISTING FASTENERS AND FENCE COMPONENTS MAY NEED TO BE REMOVED TO PERFORM THE WORK. IN SUCH CASES, THE CONTRACTOR SHALL RE-INSTALL THOSE COMPONENTS WITH NEW FASTENERS OF EQUAL QUALITY AND FINISH AS THE EXISTING FASTENERS.
5. ALL FENCE MODIFICATIONS REQUIRED TO COMPLETE INSTALLATION OF NEW COMPONENTS SHALL BE DONE WITH HOT-DIPPED GALV. COMPONENTS.
6. TOUCH-UP DAMAGED COATINGS WITH COLD-GALV.

1 - SIDEWALK SECURITY FENCE MODIFICATIONS

SCALE: NTS

BID ITEM 4.1 (CANADA)

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MARK	DESCRIPTION	DATE	APPR.
	DISCLAIMER		

DESIGNED BY: SOLANA
DWN BY: W.F.
CKD BY: K.H.
SUBMITTED BY: WSP USA INC.
DATE: 1/30/2018
SOLICITATION NO.:
CONTRACT NO.: 187774
FILE NAME: WP-5501.dwg
PLOTTED BY: ROCHETTE, JESSE B.
PLOT DATE: 1/30/2018
SIZE: ANSI D

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PROJECT # 2016-02-2B

WHIRLPOOL BRIDGE REPAIRS
DETAILS

SHEET REFERENCE NUMBER
WP-501
SHEET 24 OF 29

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QUEENSTON HEIGHTS PARK

1
LQ103

Repaired as item 6.4. Sandblasted joint walls, and re-sealed with hot-poured rubberized joint sealing compound meeting opss 1212, installed per OPSS 369. Joint seal material used was: MCA Macseal BDM hot poured rubberized.

~~INCLUDE IN BID ITEM 6.5~~

~~SAW CUT CRACK IN CONCRETE PAVEMENT, INSTALL BACKER ROD AND SEAL WITH DOW CORNING 890SL SILICONE PER OPSS 369 AND SILICONE MANUFACTURER'S RECOMMENDATIONS (ASSUME WIDTH OF SAW CUT CRACK = ½", ASSUME 100 LF).~~

THIS CONCRETE PAVEMENT REPAIR REQUIRES TEMPORARILY MOVING JERSEY BARRIER

INCLUDE IN BID ITEM 6.5

SAW CUT LONGITUDINAL CRACK IN CONCRETE PAVEMENT, ~~INSTALL BACKER ROD AND SEAL WITH DOW CORNING 890SL SILICONE PER OPSS 369 AND SILICONE MANUFACTURER'S RECOMMENDATIONS (ASSUME WIDTH OF CRACK = ½", ASSUME 400 LF).~~

Crack very wide, stitched together crack with dowels as per OPSD 560.025. Sealed crack with DOW CORNING 890SL silicone.

Thickness of slab was 250mm, drilling angle at 35 degrees, tie bars spaced at 600mm c/c, drill hole 370mm long, tie bar 310mm long. Epoxy dowels installed grouted with Sikagrout 212.

INCLUDE IN BID ITEM 6.3

PERFORM CONCRETE PAVEMENT REPAIRS PER DETAIL 2/LQ-103 IN AREAS AOBE. (ASSUME 50 SF TOTAL FROM 3 LOCATIONS).

15M Stainless steel rebar used for repairs. Lafarge 36hr, 35MPa concrete.

BID ITEM 6.4

REMOVE EXISTING BITUMINOUS JOINT SEAL MATERIAL IN CONCRETE PAVEMENT JOINTS, SANDBLAST JOINT WALLS, AND RE-SEAL WITH HOT-POURED RUBBERIZED JOINT SEALING COMPOUND MEETING OPSS 1212, INSTALL PER OPSS 369.

Joint seal material used was: MCA Macseal BDM hot poured rubberized.

Joint seal material used was: MCA Macseal BDM hot poured rubber.

BID ITEM 8.3A1

REMOVE EXISTING BITUMINOUS JOINT SEAL MATERIAL IN CONCRETE PAVEMENT JOINTS, SANDBLAST JOINT WALLS, AND RE-SEAL WITH HOT-POURED RUBBERIZED JOINT SEALING COMPOUND MEETING OPSS 1212, INSTALL PER OPSS 369.

INCLUDE IN BID ITEM 6.3

PERFORM FULL DEPTH CONCRETE PAVEMENT REPAIRS PER DETAIL 2/LQ-103 IN AREAS AOBE. (APPROX. LOCATION OF 3 AREAS OF REPAIR ARE SHOWN, ASSUME 150 SF FROM 3 LOCATIONS TOTAL).

15M Stainless steel rebar used for repairs. Lafarge 36hr, 35MPa concrete.

BID ITEM 8.4A1

PERFORM FULL DEPTH CONCRETE PAVEMENT REPAIRS PER DETAIL 2/LQ-103 IN AREAS AOBE. (ASSUME 150 SF FROM 5 LOCATIONS TOTAL).

15M Stainless steel rebar used for repairs. Lafarge 36hr, 35MPa concrete.

BID ITEM 6.1

MILL AREA 13B AND APPLY TACK COAT, PAVE A SMOOTH LEVELING COURSE, INSTALL TENSAR GLASGRID 8511TF PER MANUFACTURER'S RECOMMENDATIONS, AND PAVE 40mm HL3 TOP COURSE (MEETING OPSS 1150, INSTALLATION PER OPSS 310). THIS WORK SHALL BE PERFORMED AT NIGHT (ASSUME 11,012 SF).

INCLUDE IN BID ITEM 6.7

WORK IN THE ROADWAY REQUIRES MPT AND COORDINATION WITH NFBC. ONLY 1 LANE WILL BE ALLOWED TO BE CLOSED AT A GIVEN TIME.

MATCHLINE A-A

MATCHLINE A-A

INCLUDE IN BID ITEM 6.6

INSTALL DRAIN IN LOW SPOT OF EXISTING STAINLESS STEEL DRAIN TROUGH UNDER FINGER JOINT. WELD STAINLESS STEEL DOWNSPOUT TO UNDERSIDE OF TROUGH AND ATTACH 3" FLEXIBLE PVC HOSE (ASSUME 12 FEET LONG). ACCESS TO THE WORK AREA REQUIRES A LANE CLOSURE, THEREFORE MPT AND COORDINATION WITH NFBC IS REQUIRED.

ACCESS LADDER DOWN TO DRAIN TROUGH

OVERHEAD LANE CONTROL GANTRY

GRAPHIC SCALE

80 0 40 80 160 320

(IN FEET)
1 inch = 80 ft.

NOTES:

1. THE CONTRACTOR IS REQUIRED TO SUBMIT MAINTENANCE AND PROTECTION OF TRAFFIC PLAN(S) FOR APPROVAL BY NFBC PER THE GENERAL NOTES PAGES G-001 AND G-002. INCLUDE MPT FOR WORK ON THE CANADA SIDE OF THE BRIDGE IN BID ITEM 6.7
2. INCLUDE MOBILIZATION COSTS IN BID ITEM 6.8.

1 - LEWISTON-QUEENSTON BRIDGE PLAZA REPAIR LOCATION KEY PLAN
1" = 80'

2 - LEWISTON-QUEENSTON BRIDGE
1" = 80'

ENGINEER'S STAMP

LICENCED PROFESSIONAL ENGINEER
J. C. SHERLOCK
PROVINCE OF ONTARIO

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MARK	DESCRIPTION	DATE	APPR.

DISCLAIMER

DATE: 1/30/2018
SOLICITATION NO.:

CONTRACT NO.: 187774

DESIGNED BY: S. DEL LAND
DRAWN BY: W. F.
CKD BY: K.H.
SUBMITTED BY: WSP USA INC.

FILE NAME: LQ Plaza Plan Sheet - Constr Mod #2.dwg
PLOTTED BY: PRESCHETTE, MISSLEY &
PLOT DATE: 1/30/2018
SIZE: ANSI D

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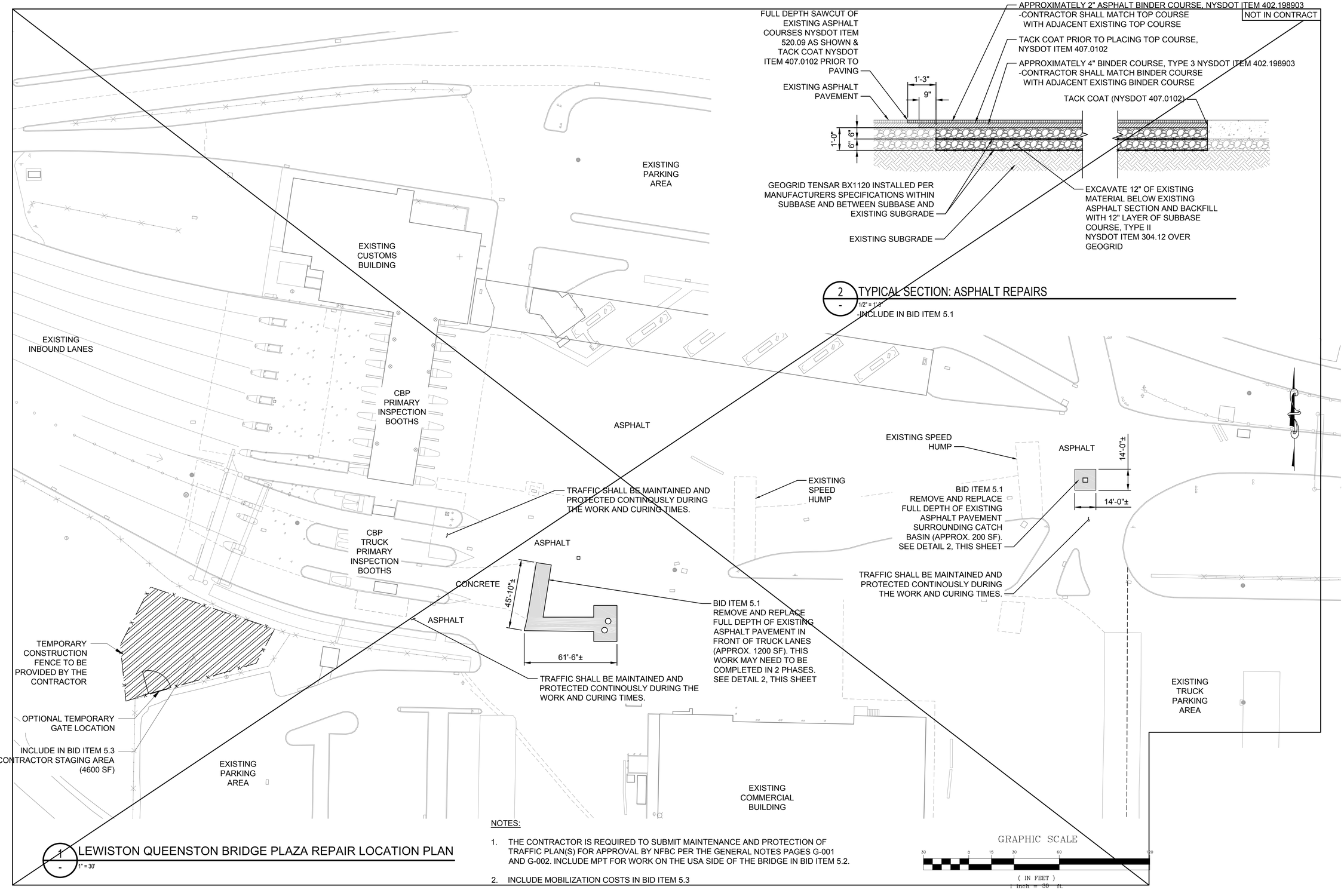
WSP USA Inc.
Main Place Tower
Suite 1111
Buffalo, NY 14202
(716) 853-1220

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PROJECT # 2016-02-2B

LEWISTON-QUEENSTON BRIDGE REPAIRS
GENERAL PLAN - CANADA

SHEET REFERENCE NUMBER
LQ-101
SHEET 25 OF 29

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1 - 1" = 30'
LEWISTON QUEENSTON BRIDGE PLAZA REPAIR LOCATION PLAN

NOTES:

1. THE CONTRACTOR IS REQUIRED TO SUBMIT MAINTENANCE AND PROTECTION OF TRAFFIC PLAN(S) FOR APPROVAL BY NFBC PER THE GENERAL NOTES PAGES G-001 AND G-002. INCLUDE MPT FOR WORK ON THE USA SIDE OF THE BRIDGE IN BID ITEM 5.2.
2. INCLUDE MOBILIZATION COSTS IN BID ITEM 5.3

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

NOT IN CONTRACT

2 - 1/2" = 1'-0"
TYPICAL SECTION: ASPHALT REPAIRS
-INCLUDE IN BID ITEM 5.1

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MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY: STAFF ENG.
DRAWN BY: W.F.
CKD BY: K.H.
SUBMITTED BY: WSP USA INC.
FILE NAME: LQ Plaza Plan Sheet - Constr Mod #2.dwg
SIZE: ANSI D
PLOTTED BY: FRECHETTE, WESLEY B.
DATE: 1/30/2018
SOLICITATION NO.
CONTRACT NO.: 187774
PLOT DATE: 1/30/2018

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Lewiston, NY 14092

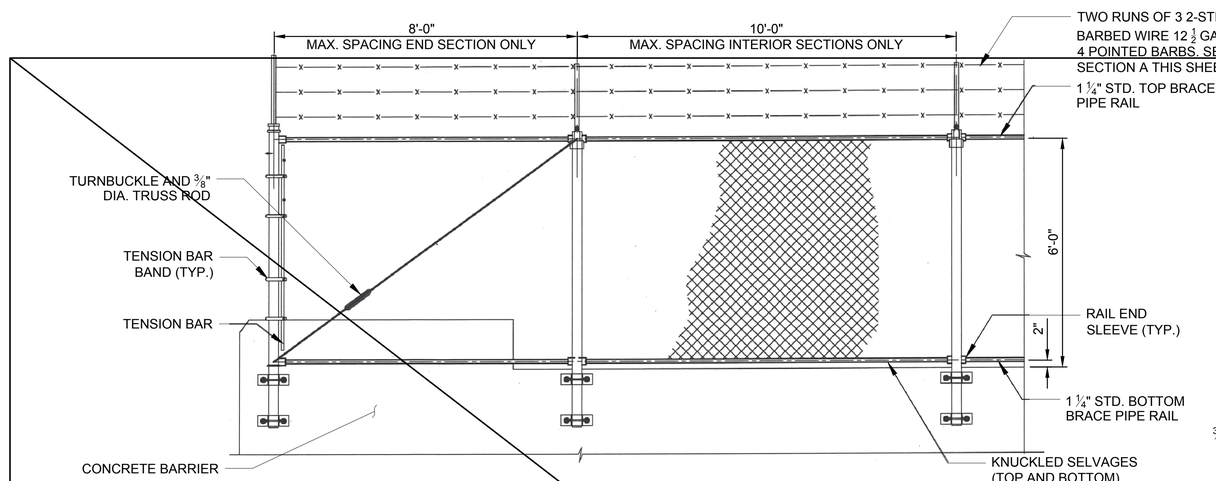
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(716) 853-1220

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PROJECT # 2016-02-2B

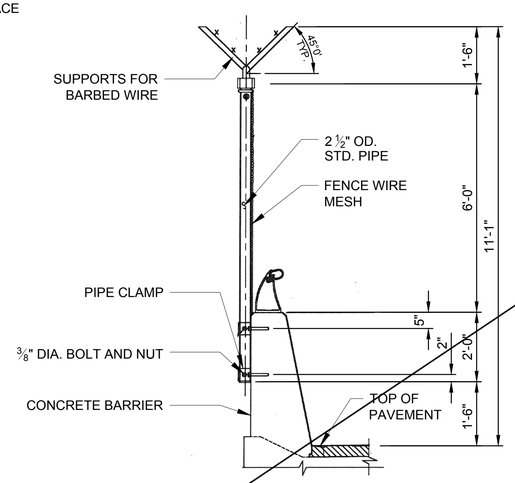
LEWISTON-QUEENSTON BRIDGE REPAIRS
PLAN REPAIRS AREA 1 - USA

SHEET REFERENCE NUMBER
LQ-102
SHEET 26 OF 29

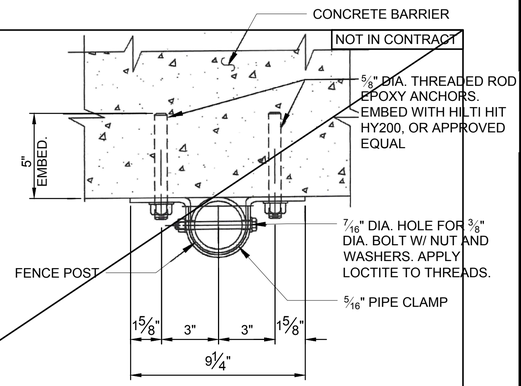
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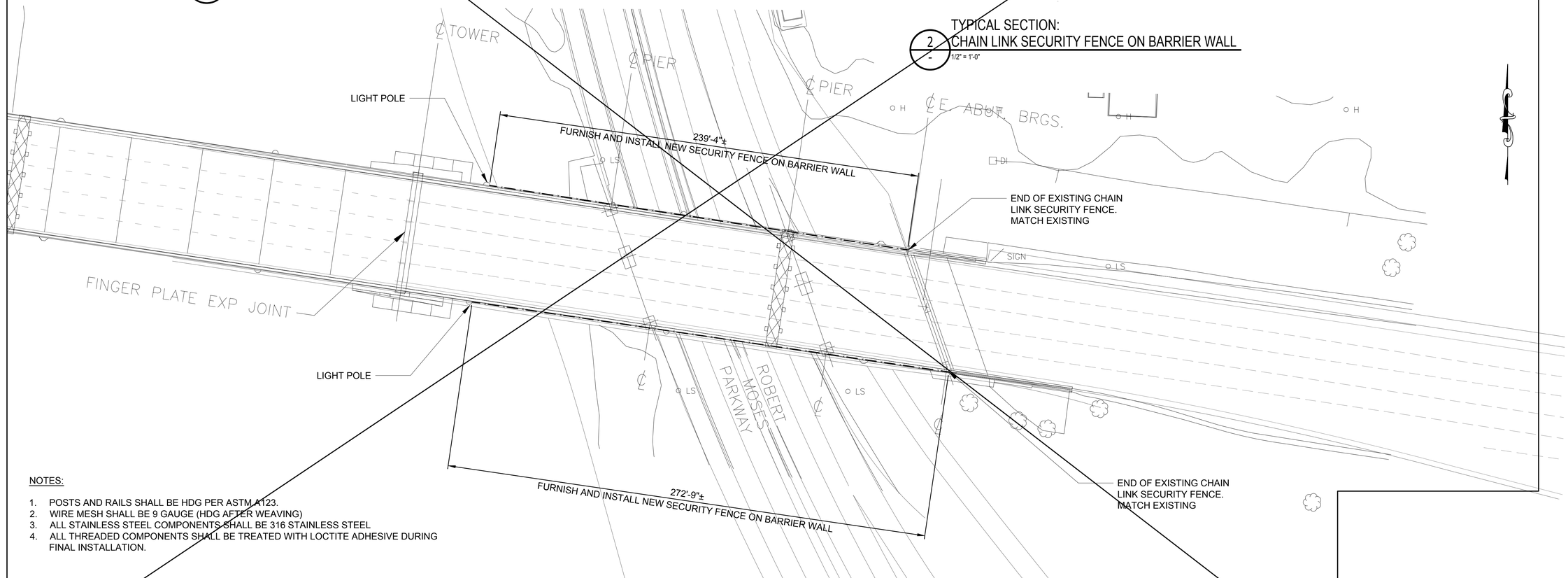
2 / - ELEVATION: CHAIN LINK SECURITY FENCE ON BARRIER WALL
1/2" = 1'-0"



TYPICAL SECTION:
2 / - CHAIN LINK SECURITY FENCE ON BARRIER WALL
1/2" = 1'-0"



2 / - DETAIL: SECURITY FENCE ATTACHMENT
1/2" = 1'-0"



NOTES:

1. POSTS AND RAILS SHALL BE HDG PER ASTM A123.
2. WIRE MESH SHALL BE 9 GAUGE (HDG AFTER WEAVING)
3. ALL STAINLESS STEEL COMPONENTS SHALL BE 316 STAINLESS STEEL
4. ALL THREADED COMPONENTS SHALL BE TREATED WITH LOCTITE ADHESIVE DURING FINAL INSTALLATION.

1 / - LEWISTON QUEENSTON BRIDGE PLAZA REPAIR LOCATION PLAN
1" = 30'
-INCLUDE IN BID ITEM 7.6A3

NOTES:

1. THE CONTRACTOR IS REQUIRED TO SUBMIT MAINTENANCE AND PROTECTION OF TRAFFIC PLAN(S) FOR APPROVAL BY NFBC PER THE GENERAL NOTES PAGES G-001 AND G-002. INCLUDE MPT FOR WORK ON THE USA SIDE OF THE BRIDGE IN BID ITEM 5.2.

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

NIAGARA FALLS BRIDGE COMMISSION
5365 Military Road, Lewiston, NY 14092
P: (716) 285-6322 • F: (716) 282-3292

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DISCLAIM

MARK	DESCRIPTION	DATE	APPR.

DATE: 1/30/2018
SOLICITATION NO.:
DESIGNED BY: S. GALLANA
DRAWN BY: W.F.
CHKD BY: K.H.
CONTRACT NO.: 187774
SUBMITTED BY: WSP USA INC.
FILE NAME: LQ Plaza Plan Sheet - Constr Mod #2.dwg
SIZE: ANSI D
PLOT DATE: 1/30/2018
PLOTTED BY: PROCHETTE, WESLEY B.

NIAGARA FALLS BRIDGE COMMISSION
Administration Building
5365 Military Road
Lewiston, NY 14092

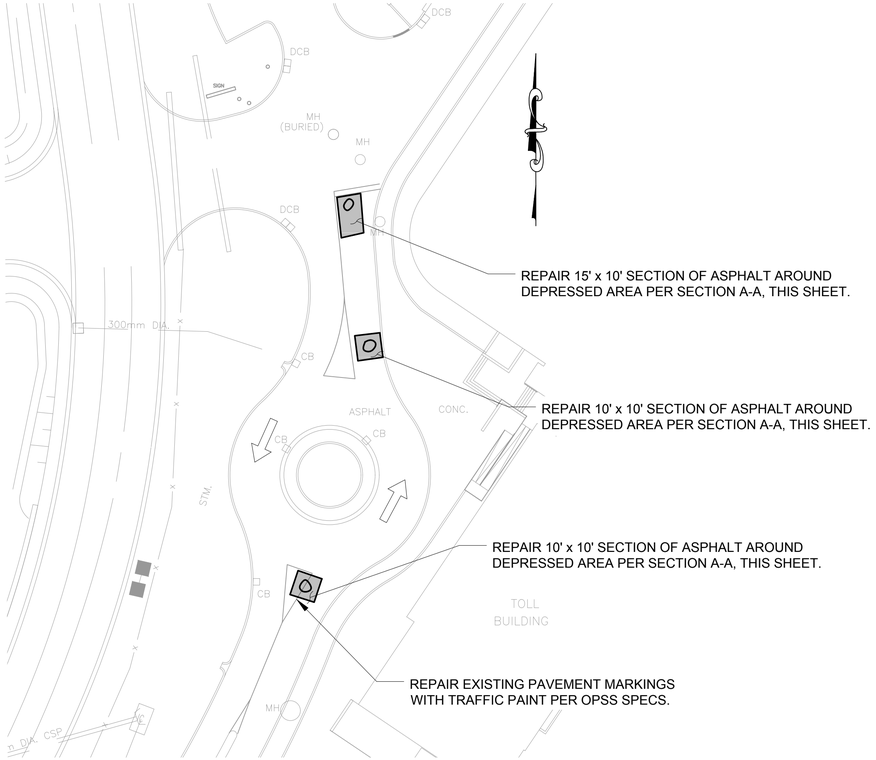
WSP USA Inc.
300 Pearl Street
Suite 111
Buffalo, NY 14202
(716) 853-1220

NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02-2B

LEWISTON-QUEENSTON BRIDGE REPAIRS
PLAN REPAIRS AREA 2 - USA

SHEET REFERENCE NUMBER
LQ-102A
SHEET 27 OF 29

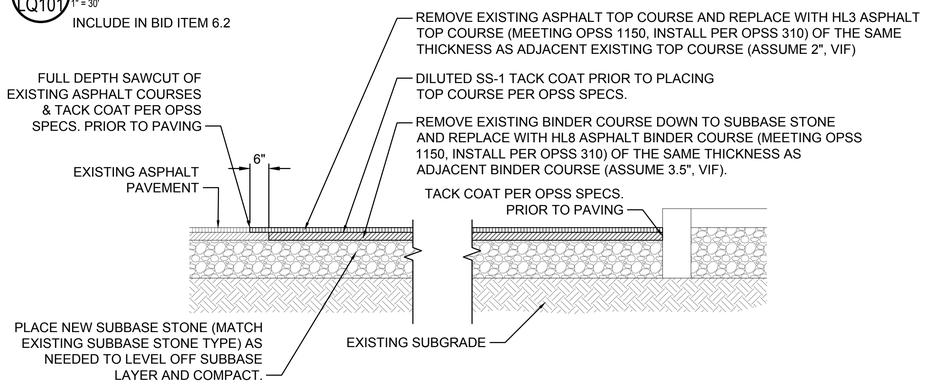
J:\187774 - 4rbb rainbow - whirlpool-lq bridge repair\02-rainbow\-CAD\LQ Plaza Plan Sheet - Constr Mod #2.dwg Wed, 31 Jan 2018 - 11:59pm freshetfrweb



1 LQ101 AREA 3 ASPHALT REPAIRS

1" = 30'

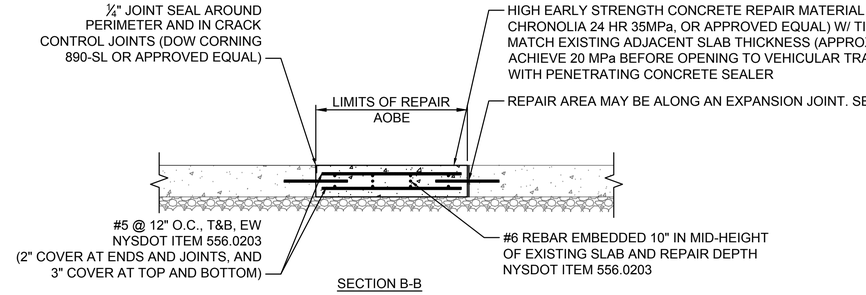
INCLUDE IN BID ITEM 6.2



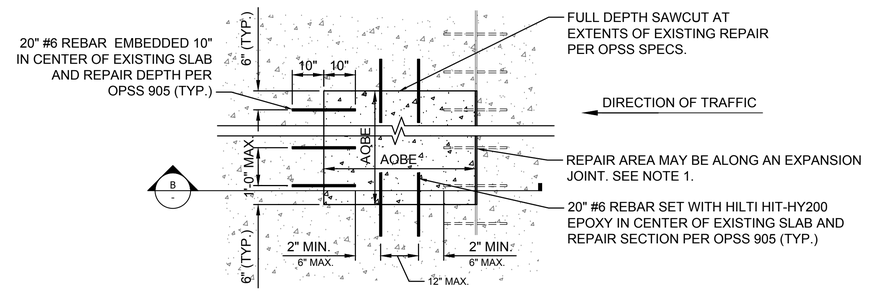
A - SECTION A-A: AREA 3 ASPHALT REPAIRS

1/2" = 1'-0"

INCLUDE IN BID ITEM 6.2



SECTION B-B



NOTES:

1. RETAIN ANY REBAR OR DOWELS ENCOUNTERED AND THEIR FUNCTIONALITY REGARDING EXPANSION/CONTRACTION (EG. DOWELS DE-BONDED ON ALTERNATING SIDES OF JOINT, ETC.). REPLACE JOINT BACKER ROD AND FILLER, AND APPLY DOW CORNING 890-SL JOINT SEALANT PER MANU.'S RECOMMENDATIONS.
2. NEW REBAR CAN BE STAINLESS STEEL OR GALVANIZED. Stainless Steel Rebar used
3. HS25 ROAD PLATES SHALL BE USED TO PROTECT CURING CONCRETE WITHOUT AFFECTING THE FINISH..

2 LQ101 DETAIL - CONCRETE PAVEMENT REPAIR (TYP.)

1/2" = 1'-0"

INCLUDE IN BID ITEM 6.3

ENGINEER'S STAMP

LICENSED PROFESSIONAL ENGINEER
C. SHERLOCK
PROVINCE OF ONTARIO

NIAGARA FALLS BRIDGE COMMISSION
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DISCLAIMER

MARK	DESCRIPTION	DATE	APPR.

DESIGNED BY: SOLANA
DRAWN BY: W.F.
CHD BY: K.H.
SUBMITTED BY: WSP USA INC.
DATE: 1/30/2018
SOLICITATION NO.:
CONTRACT NO.: 187774
FILE NAME: LQ Plaza Plan Sheet - Const Mod #2.dwg
PLOTTED BY: PRESCHETTE, WESLEY B.
PLOT DATE: 1/30/2018
SIZE: ANSI D

NIAGARA FALLS BRIDGE COMMISSION
Administration Building
5365 Military Road
Lewiston, NY 14092

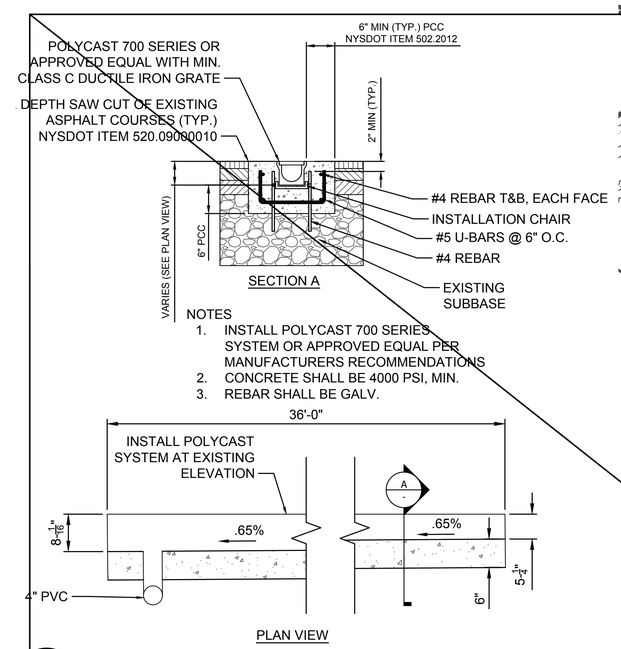
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PROJECT # 2016-02-2B

LEWISTON-QUEENSTON BRIDGE REPAIRS
PLAN REPAIR AREAS AND MISC. DETAILS

SHEET REFERENCE NUMBER
LQ-103
SHEET 28 OF 29

J:\187774 - nfcb rainbow - whirlpool-lq bridge repair\02-rainbow_CAD\LQ Plaza Plan Sheet - Constr Mod #2.dwg Wed, 31 Jan 2018 - 11:50pm hreichelt/wb



2 TRENCH DRAIN INSTALLATION
3/4" = 1'-0"

NOTES:

1. INCLUDE MAINTENANCE AND PROTECTION OF TRAFFIC PLAN(S) AND MOBILIZATION COSTS IN BID ITEMS.
2. THE CONTRACTOR SHALL PERFORM INSTRUMENT SURVEYS AS NEEDED TO ASCERTAIN FINAL ELEVATIONS OF BOTTOM OF TRENCH DRAIN TO ENSURE REQUIRED SLOPE OF BOTTOM OF TRENCH DRAIN IS MET. COSTS SHALL BE INCLUDED IN THE PRICE OF THE TRENCH DRAIN BID ITEM.

1 ADMINISTRATION BUILDING REPAIR LOCATION PLAN
1" = 20'

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft

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MARK	DESCRIPTION	DATE	APPR.

DISCLAIMER

DATE: 1/30/2018
SOLICITATION NO.:
CONTRACT NO.: 187774
DESIGNED BY: S.CIOLANA
DRAWN BY: W.F.
CHKD BY: K.H.
SUBMITTED BY: WSP
PLOTTED BY: WESLEY.B.
PLOT DATE: 1/30/2018
FILE NAME: CS101- Admin Building Plan Sheet.dwg
SIZE: ANSI D
PROJECT ENGINEER: WESLEY B.

NIAGARA FALLS BRIDGE COMMISSION
Administration Building
5365 Military Road
Lewiston, NY 14092

WSP USA Inc.
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NIAGARA FALLS BRIDGE COMMISSION RAINBOW BRIDGE DECK REPAIRS AND MISCELLANEOUS REPAIRS AT THE WHIRLPOOL AND LEWISTON-QUEENSTON BRIDGES
PROJECT # 2016-02-2B

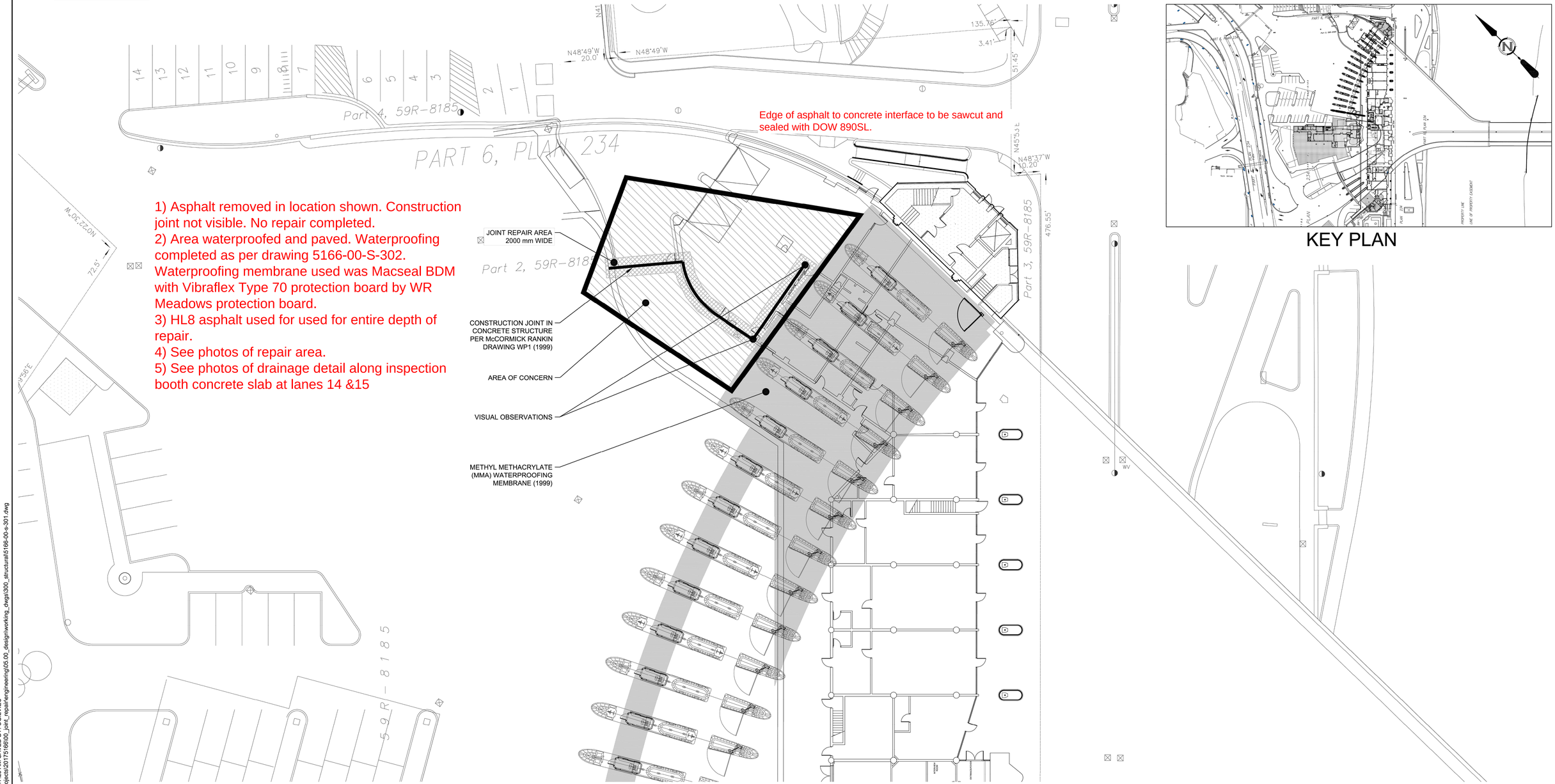
NFBC ADMINISTRATION BUILDING
PAVEMENT REPAIRS

SHEET REFERENCE NUMBER
AD101
SHEET 29 OF 29

J:\187774 – nfcb rainbow - whirlpool-lq bridge repair\03-NFBC Admin. Bldg\~CAD\CS101- Admin. Building Plan Sheet.dwg Wed, 31 Jan 2018 – 11:50am frechette.tarb

IF NOT 50 mm ADJUST SCALES
50 mm

SCALE(S) SHOWN ARE INTENDED FOR ANSI D (22X34) SIZE DRAWINGS, TABLOID (11X17) SIZE DRAWINGS ARE 1/2 OF SCALE(S) SHOWN UNLESS NOTED OTHERWISE



KEY PLAN

1 / - PLAN 1:200
WORK SITE

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SAVE DATE: 11/21/2017 9:17:26 AM SAVED BY: OGILVIEC
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C. R. A. CURN
PROVINCE OF ONTARIO

REV	DATE	DESIGN	DRAWN	DESCRIPTION
0	2017NOV21	R. RIMANDO	CL. OGILVIE	ISSUED FOR TENDER

NIAGARA FALLS BRIDGE COMMISSION

JOINT REPAIR

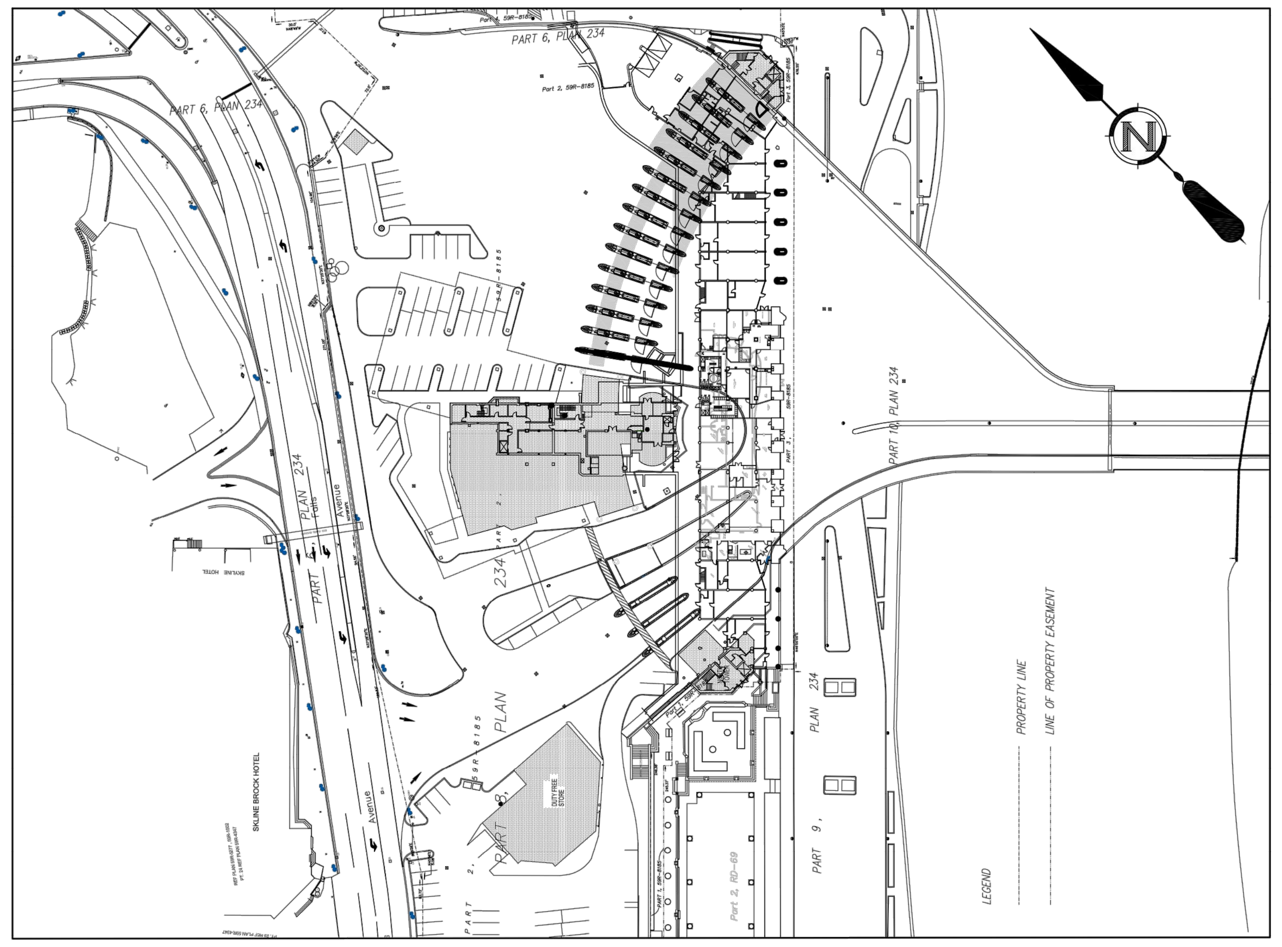
20175166-00

SCALE: AS SHOWN

STRUCTURAL
JOINT REPAIR GENERAL LAYOUT

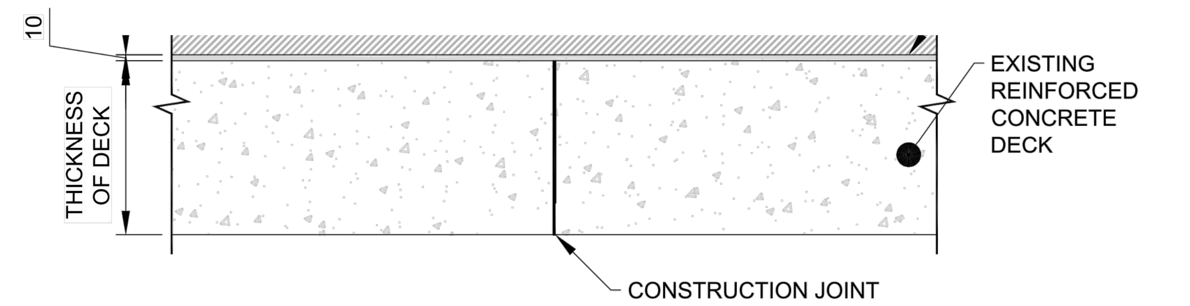
DRAWING	REVISION	SHEET
5166-00-S-301	0	1 / 2

IF NOT 50 mm ADJUST SCALES
50 mm
SCALE(S) SHOWN ARE INTENDED FOR ANSI D (22X34) SIZE DRAWINGS, TABLOID (11X17) SIZE DRAWINGS ARE 1/2 OF SCALE(S) SHOWN UNLESS NOTED OTHERWISE

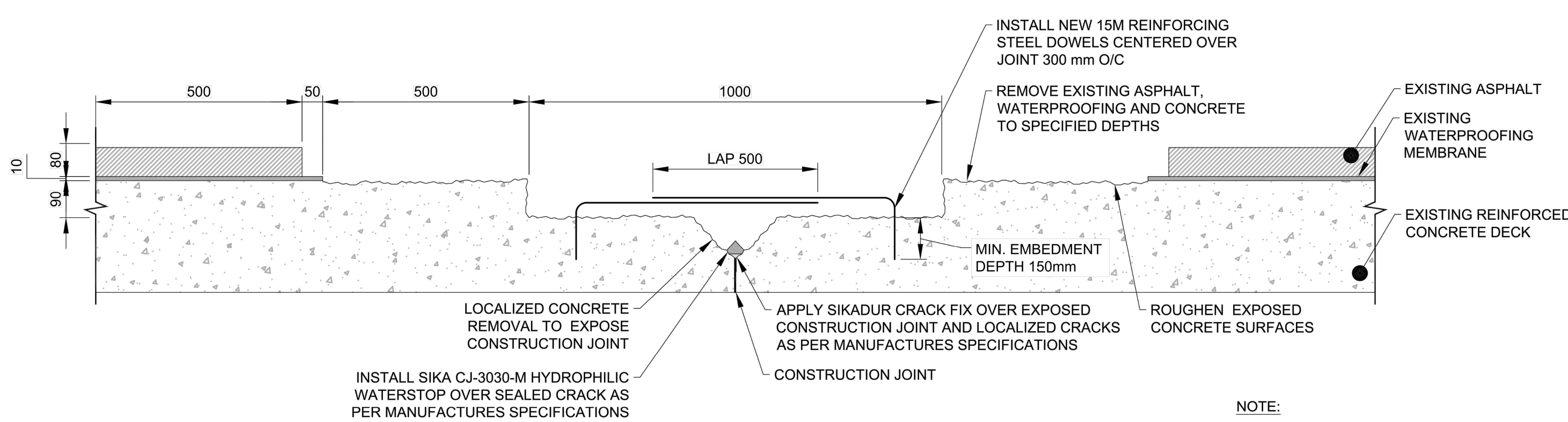


KEY PLAN

THIS REPAIR WAS NOT COMPLETED. ASPHALT REMOVED AND CONSTRUCTION JOINT COULD NOT BE FOUND.



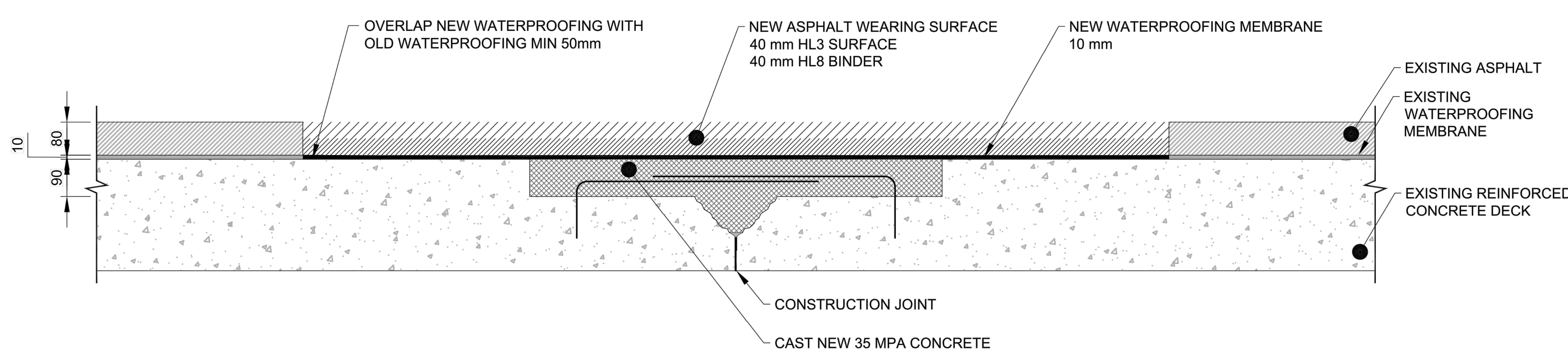
DETAIL 1 - N.T.S.
EXISTING CONSTRUCTION JOINT



NOTE:

1. DOWELS TO BE INSTALLED WITH HILTI HY200-A IN ACCORDANCE WITH MANUFACTURES SPECIFICATIONS.

DETAIL 2 - 1:10
PROPOSED SOLUTION FOR CONSTRUCTION JOINT



DETAIL 3 - 1:10
COMPLETED CONSTRUCTION JOINT

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SAVE DATE: 11/21/2017 9:59:48 AM SAVED BY: OGILVIEC
DWG PATH: \\s-stc-fs-01\projects\20175166\00_joint_repair\engineering\05.00_design\working_dwgs\300_structural\5166-00-s-302.dwg

PART A - SCOPE OF WORK:

THE FOLLOWING IS A DESCRIPTION OF THE WORK TO BE COMPLETED ON THE RAINBOW BRIDGE PLAZA JOINT REPAIR FOR THIS TENDER:

1. ASPHALT AND WATERPROOFING MEMBRANE REMOVAL AS SPECIFIED IN THESE CONTRACT DOCUMENTS, THE CONTRACT DRAWINGS, THE NIAGARA FALLS BRIDGE COMMISSION CONTRACT SPECIFICATIONS AND ANY APPLICABLE ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS.
2. CONCRETE REMOVAL TO A DEPTH OF 90 mm AS SPECIFIED IN THE CONTRACT DRAWINGS, LOCALIZED CONCRETE REMOVAL TO EXPOSE THE CONSTRUCTION JOINT.
3. APPLICATION OF SIKADUR CRACK FIX AND SIKA HYDROTITE CJ-3030-M HYDROPHILIC WATERSTOP TO SEAL THE CONSTRUCTION JOINT AND ANY EXPOSED CRACKS.
4. INSTALLATION OF STEEL REINFORCING DOWELS ANCHORED WITH HILTI HY200-A ADHESIVE.
5. CAST NEW 35 MPa CONCRETE ABOVE JOINT AND WHERE CONCRETE DECK WAS REMOVED.
6. PLACEMENT OF NEW HOT MIX ASPHALT AND WATERPROOFING MEMBRANE.
7. ALL PRICES FOR THE REPAIR PROJECT WILL INCLUDE ALL WORK NECESSARY TO COMPLETE THE PROJECT TO THE PROVIDED STANDARD AND SHALL BE ACCEPTED BY THE CONTRACT ADMINISTRATOR UPON COMPLETION.

PART B

REMOVAL OF EXISTING ASPHALT AND WATERPROOFING MEMBRANE

1. THE LUMP SUM PRICE INCLUDES ALL MATERIALS, LABOUR AND EQUIPMENT REQUIRED TO COMPLETE THE REMOVAL AND DISPOSAL OF THE EXISTING ASPHALT STRUCTURE AND EXISTING WATERPROOFING MEMBRANE.
2. REMOVAL OF EXISTING ASPHALT AND WATERPROOFING MEMBRANE SHALL BE CARRIED OUT IN ACCORDANCE WITH OPSS 510 CONSTRUCTION SPECIFICATION FOR REMOVAL, THE CONTRACT DRAWINGS AND THE FOLLOWING SPECIAL PROVISIONS.
3. WORK IN THIS SECTION INCLUDES THE COMPLETE REMOVAL AND OFFSITE DISPOSAL OF THE ASPHALT SURFACE.
4. ALL REMOVED MATERIALS BECOME THE PROPERTY OF THE CONTRACTOR AND FROM THEREON, UNLESS OTHERWISE STATED, THE CONTRACTOR HAS FULL RESPONSIBILITY TO ARRANGE FOR ITS REMOVALS AND DISPOSAL OUTSIDE THE AREA OF WORK TO AN APPROVED RECYCLING FACILITY APPROVED BY THE CONTRACT ADMINISTRATOR.
5. PAYMENT WILL BE BASED ON PERCENTAGE (%) COMPLETED DETERMINED BY THE CONTRACT ADMINISTRATOR.

CONCRETE REMOVALS

1. THE UNIT PRICE INCLUDES ALL MATERIALS, LABOUR AND EQUIPMENT REQUIRED TO COMPLETE THE REMOVAL AND DISPOSAL OF CONCRETE LOCATED OVER THE JOINT IN NEED OF REPAIR.
2. REMOVAL OF MATERIAL FOR CONCRETE SHALL BE CARRIED OUT IN ACCORDANCE WITH OPSS 928 CONSTRUCTION SPECIFICATION FOR STRUCTURE REHABILITATION - CONCRETE REMOVAL, OPSS 929 CONSTRUCTION SPECIFICATION FOR ABRASIVE BLAST CLEANING - CONCRETE CONSTRUCTION, CONTRACT DRAWINGS AND THE FOLLOWING SUPPLEMENTARY SPECIAL PROVISIONS.
3. WORK IN THIS SECTION INVOLVES BUT NOT LIMITED TO SAWCUTTING, CHIPPING AND ROUGHENING OF EXISTING CONCRETE TO A UNIFORM DEPTH, INCLUDING OFF-SITE DISPOSAL AND ABRASIVE BLAST CLEANING OF CONCRETE SURFACES AND EXPOSED REINFORCING STEEL.
4. ALL REMOVED MATERIAL BECOMES PROPERTY OF THE CONTRACTOR AND FROM THEREON, HAS FULL RESPONSIBILITY AND LIABILITY TO ARRANGE FOR ITS REMOVAL AND DISPOSAL OUTSIDE TO AREA OF WORK. THE CONTRACTOR MUST OBTAIN ALL NECESSARY APPROVALS FROM VARIOUS GOVERNMENT AGENCIES INCLUDING, BUT NOT LIMITED TO, NIAGARA PENINSULA CONSERVATION AUTHORITY, THE NIAGARA ESCARPMENT COMMISSION, THE MINISTRY OF ENVIRONMENT AND THE MINISTRY OF NATURAL RESOURCES WHERE APPLICABLE.
5. PAYMENT WILL BE MADE AT THE UNIT BID PRICE. THIS PAYMENT WILL BE FULL COMPENSATION FOR ALL LABOUR, EQUIPMENT AND MATERIAL NECESSARY TO COMPLETE THE WORK.

APPLICATION OF JOINT SEALANT

1. THE UNIT PRICE INCLUDES ALL MATERIALS, LABOUR AND EQUIPMENT REQUIRED TO COMPLETE THE APPLICATION OF CONCRETE CRACK SEALANT AND HYDROPHILIC WATERSTOP OVER THE AREAS OF CONCRETE CRACKING AROUND THE JOINT LOCATED ON THE RAINBOW BRIDGE DECK.
2. THE CONTRACTOR SHALL APPLY SIKADUR CRACK FIX AS PER MANUFACTURERS SPECIFICATIONS TO THE AREAS WHERE CRACKING OCCURS. THE MATERIAL SHALL BE APPLIED UNTIL THE SATISFACTION OF THE CONTRACT ADMINISTRATOR TO ENSURE THE EXPOSED CRACKS HAVE BEEN SEALED.
3. THE CONTRACTOR SHALL INSTALL A SIKA HYDROTITE CJ-3030-M HYDROPHILIC WATERSTOP ABOVE THE SEALED CRACK AS PER MANUFACTURERS SPECIFICATIONS.
4. PAYMENT WILL BE MADE AT THE UNIT BID PRICE. THIS PAYMENT WILL BE FULL COMPENSATION FOR ALL LABOUR, EQUIPMENT AND MATERIAL NECESSARY TO COMPLETE THE WORK.

REINFORCING STEEL DOWELS

1. THE UNIT BID PRICE SHALL INCLUDE ALL MATERIAL, LABOUR, EQUIPMENT AND INCIDENTALS REQUIRED FOR THE INSTALLATION OF REINFORCING STEEL DOWELS AS INDICATED ON THE DRAWINGS.
2. REINFORCING STEEL DOWELS SHALL BE GRADE 400 AND BE IN ACCORDANCE WITH OPSS 905 CONSTRUCTION SPECIFICATION FOR STEEL REINFORCEMENT FOR CONCRETE.
3. ALL STEEL REINFORCING DOWELS SHALL BE EMBEDDED TO A DEPTH AS SHOWN ON THE CONTRACT DRAWINGS AND SHALL BE INSTALLED USING HILTI HY200-A ADHESIVE. THE CONTRACTOR SHALL RETAIN A HILTI REPRESENTATIVE TO PROVIDE ONSITE ANCHOR INSTALLATION TRAINING FOR ALL THE HILTI PRODUCTS SPECIFIED. THE CONTRACT ADMINISTRATOR MUST RECEIVE DOCUMENTED CONFIRMATION THAT THE CONTRACTOR'S PERSONNEL ARE TRAINED PRIOR TO THE COMMENCEMENT OF INSTALLING ANY ANCHORS.
4. PAYMENT WILL BE MADE ON THE BASIS OF THE UNIT BID PRICE AND WILL BE FIELD VERIFIED BY THE CONTRACT ADMINISTRATOR UPON SATISFACTORY COMPLETION OF INSTALLATION.

CONCRETE IN STRUCTURE

Concrete break results were 43.4, 44.3 and 46.2 MPa.

1. CONCRETE FOR THE BRIDGE DECK COMPONENTS SHALL BE CARRIED OUT IN ACCORDANCE WITH OPSS.PROV 904 CONSTRUCTION SPECIFICATIONS FOR CONCRETE STRUCTURES, THE CONTRACT DRAWINGS AND THE FOLLOWING SUPPLEMENTARY SPECIAL CONDITIONS.
2. THE WORK UNDER THIS ITEM INCLUDES THE SUPPLY AND PLACEMENT OF 35 MPa CONCRETE AND SUPPLY AND PLACING OF ALL REINFORCEMENT AS SHOWN ON THE CONTRACT DRAWINGS.
3. ALL TESTING REQUIREMENTS SHALL BE CARRIED OUT BY A QUALIFIED THIRD PARTY TESTING AGENCY AND SHALL BE DEEMED INCLUDED IN THE UNIT PRICE BID. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE TESTING AGENCY AND SCHEDULE ALL CONCRETE POURS ACCORDINGLY. THE CONTRACT ADMINISTRATOR WILL PUT A STOP WORK ORDER ON THE CONTRACTOR IF NO TESTING AGENCY IS PRESENT FOR A CONCRETE POUR.
4. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 35 MPa. IT SHALL BE TYPE GU. THE FOLLOWING PROPERTIES OF THE CONCRETE MUST BE OBTAINED BY TESTING PRIOR TO CONCRETE PLACEMENT:
    1. SLUMP = 50mm +/- 20mm; NOTE; THIS IS THE REQUIRED SLUMP WITH NO WATER REDUCING AGENTS. IF ANY ADDITIVES, SUCH AS SUPER PLASTICIZERS, ARE ADDED TO THE MIX, THE REQUIRED SLUMP WILL BE 120mm +/- 30mm. THE REQUIRED LOCATION FOR THE TESTING SHALL BE AT THE DISCHARGE POINT.
    2. AIR CONTENT = 6.5% +/- 1.5%
    3. TEMPERATURE = 10ºC TO 25ºC
5. PAYMENT WILL BE MADE AT THE UNIT BID PRICE AND SHALL INCLUDE FULL COMPENSATION FOR THE COST OF FURNISHING ALL MATERIALS, TOOLS, EQUIPMENT, FALSEWORK, FORMS, BRACING, LABOUR, CURING, HEATING, SURFACE FINISH AND ALL OTHER ITEMS REQUIRED TO COMPLETE THE CONCRETE WORK AS DETAILED ON THE CONTRACT DRAWINGS AND AS OUTLINED IN THESE SPECIFICATIONS. AN INTERIM PAYMENT IN THE AMOUNT OF 70% OF FULL UNIT PRICE WILL BE MADE ONCE THE CONCRETE HAS BEEN ACCEPTABLY PLACED, AND THE SEVEN (7) DAY TEST CYLINDER STRENGTHS INDICATES THE CONCRETE WILL REACH THE ACCEPTANCE RANGE OF SPECIFIED STRENGTH. FINAL PAYMENT WILL NOT BE MADE UNTIL THE SPECIFIED CONCRETE FINISH (IF REQUIRED) IS ACCEPTABLY COMPLETED, AND THE 28 DAY STRENGTH TESTS SHOW THE CONCRETE MEETS STRENGTH REQUIREMENTS.

WATERPROOFING

Waterproofing membrane used was Macseal BDM with Vibraflex Type 70 protection board by WR Meadows protection board.

1. THE UNIT PRICE BID INCLUDES ALL MATERIAL, LABOUR, EQUIPMENT AND INCIDENTALS REQUIRED FOR THE SUPPLY AND INSTALLATION OF WATERPROOFING IN ACCORDANCE WITH THESE SPECIFICATIONS AND THE CONTRACT DRAWINGS. ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH OPSS 914, CONSTRUCTION SPECIFICATION FOR WATERPROOFING BRIDGE DECKS WITH HOT APPLIED ASPHALT MEMBRANE.
2. MATERIAL FOR WATERPROOFING SYSTEM SHALL BE AS SPECIFIED IN OPSS 1213, MATERIAL SPECIFICATION FOR HOT APPLIED RUBBERIZED ASPHALT WATERPROOFING MEMBRANE OR EQUIVALENT AS APPROVED BY THE CONTRACT ADMINISTRATOR.
3. WATERPROOFING SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR.
4. THE SURFACE UPON WHICH THE WATERPROOFING MATERIAL IS APPLIED SHALL BE PREPARED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION TO ENSURE THE SURFACE IS CLEAN OF ANY DIRT, OIL AND GREASE TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR.
5. BRIDGE DECK PAVING MUST BE COMPLETED WITHIN 7 DAYS OF APPLYING THE WATERPROOFING. NO ADDITIONAL PAYMENT WILL BE CONSIDERED FOR THE REMOVAL AND REAPPLICATION OF THE WATERPROOFING SYSTEM IF THIS REQUIREMENT CANNOT BE MET.
6. PAYMENT WILL BE MADE ON THE BASIS OF THE UNIT PRICE BID AND WILL BE BY FIELD VERIFIED BY THE CONTRACT ADMINISTRATOR UPON SATISFACTORY COMPLETION OF INSTALLATION.

HL8 asphalt used for used for entire depth of repair.

SUPPLY, PLACEMENT AND COMPACTION OF HOT MIX ASPHALT

1. THE UNIT PRICE BID SHALL INCLUDE ALL MATERIALS, LABOUR, EQUIPMENT AND INCIDENTALS REQUIRED FOR THE SUPPLY, PLACEMENT AND COMPACTION OF HOT MIX ASPHALT INCLUDING BUT NOT LIMITED TO SAWCUTTING, POWER SWEEPING PRIOR TO ASPHALT PLACEMENT, DISPOSAL OF DEBRIS AND THE SUPPLY AND PLACEMENT OF TACK COAT IN ACCORDANCE WITH OPSS 310, CONSTRUCTION SPECIFICATION FOR HOT MIX ASPHALT.
2. ASPHALT SHALL BE PLACED TO THE DEPTHS AS INDICATED ON THE CONTRACT DRAWINGS. PLACEMENT OF ASPHALT SHALL BE AT A MAXIMUM OF 40mm LIFTS.
3. ALL ASPHALT SHALL BE COMPACTED TO A MINIMUM OF 97% MRD (MAXIMUM RELATIVE DENSITY).
4. TACK COAT TO BE APPLIED BETWEEN ASPHALT LAYERS AND ALONG EXISTING SAWCUTS.
5. PAYMENT WILL BE MADE ON THE BASIS OF THE UNIT PRICE BID AND WILL BASED ON GOVERNMENT APPROVED WEIGH BILLS CONFIRMED AND SIGNED BY THE CONTRACT ADMINISTRATOR.

SCHEDULE OF QUANTITIES

ITEM	QUANTITY	UNITS
ASPHALT REMOVAL	45	m^2
CONCRETE REMOVAL	5	m^3
JOINT SEALANT	30	m
CONCRETE	4	m^3
WATERPROOFING	45	m^2
ASPHALT	10	tonne
DOWELS	200	each

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REGISTERED PROFESSIONAL ENGINEER
G. R. A. CURN
PROVINCE OF ONTARIO

REV	DATE	DESIGN	DRAWN	DESCRIPTION
0	2017NOV21	R. RIMANDO	CL. OGILVIE	ISSUED FOR TENDER

NIAGARA FALLS BRIDGE COMMISSION
JOINT REPAIR
20175166-00
SCALE: AS SHOWN

STRUCTURAL
JOINT REPAIR DETAILS AND SPECIFICATIONS

DRAWING	REVISION	SHEET
5166-00-S-302	0	2 / 2