

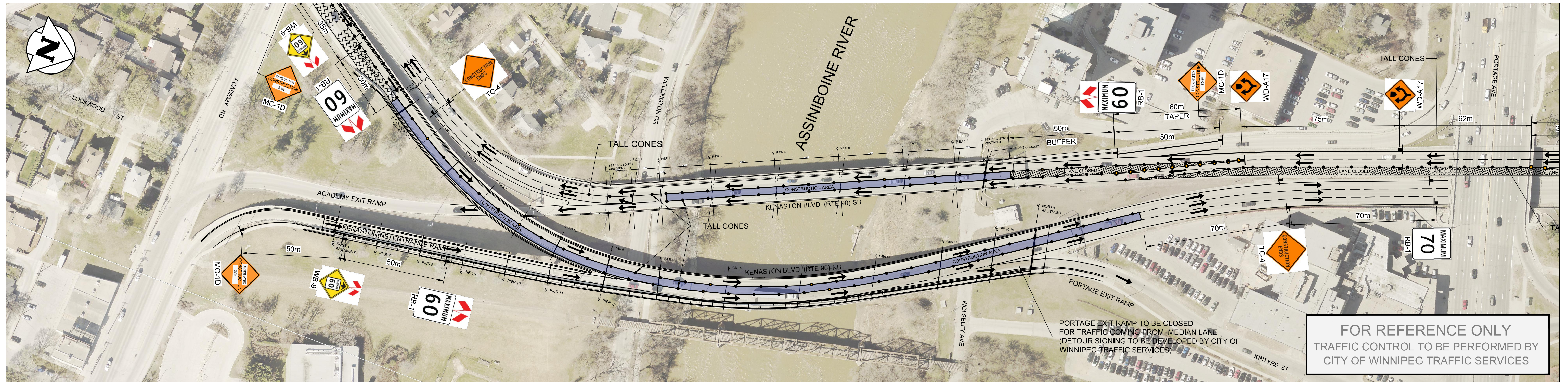
STAGE 2 NOTES :

MAJOR CONSTRUCTION ACTIVITIES

1. KENASTON BLVD (RTE 90)-NB MIDDLE LANE REPAIRS :
 - CONCRETE DECK DELAMINATIONS.
 - EXPANSION JOINT REPAIRS.
 - NORTH APPROACH ROADWAY CONCRETE JOINT REPAIRS.
 - KENASTON BLVD (RTE 90)-NB OUTER LANE(SOUTH END) CONCRETE BARRIER REPAIRS.
2. KENASTON BLVD (RTE 90)-SB MIDDLE LANE REPAIRS.
 - CONCRETE DECK DELAMINATIONS.
 - EXPANSION JOINT REPAIRS.

TRAFFIC AND PEDESTRIAN CONTROL

1. KENASTON BLVD (RTE 90)-NB MIDDLE LANE CLOSURE:
2. KENASTON BLVD (RTE 90)-SB MIDDLE LANE CLOSURE
3. KENASTON BLVD (RTE 90)-NB TO PORTAGE AVE(EB) SHALL BE CLOSED. DETOUR SIGN TO BE PROVIDED BY CITY OF WINNIPEG TRAFFIC SERVICES
4. KENASTON BLVD (RTE 90)-SB ENTRANCE RAMP (NORTH OF PORTAGE AVE) MERGE TO BE CONVERTED FROM YIELD TO STOP CONTROLLED.
5. ALL PEDESTRIAN ROUTES TO REMAIN OPEN.
6. ALL DETOUR SIGNING PLANS TO BE DEVELOPED BY CITY OF WINNIPEG, TRAFFIC SERVICES.



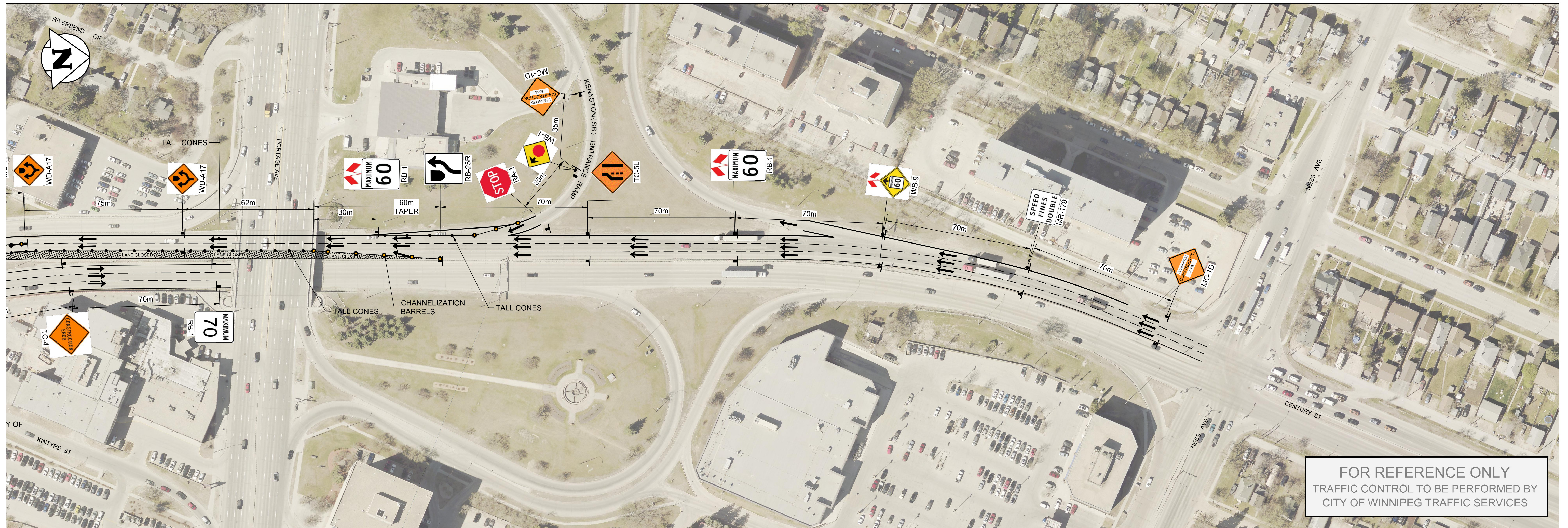
FOR REFERENCE ONLY
 TRAFFIC CONTROL TO BE PERFORMED BY
 CITY OF WINNIPEG TRAFFIC SERVICES

LEGEND :

- CONSTRUCTION AREA
- LANE CLOSURE
- CHANNELIZATION BARRIER
- TALL CONE
- VEHICULAR TRAFFIC

**ENGINEERS
 GEOSCIENTISTS
 MANITOBA**
 Certificate of Authorization
 Tetra Tech Canada Inc.
 No. 6499

B.M. ELEV.		TETRA TECH			THE CITY OF WINNIPEG PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION
DESIGNED BY	J.T.	CHECKED BY	J.N.C.		
DRAWN BY	J.T.	APPROVED BY	E.F.S.	MINOR REHABILITATION OF ST JAMES BRIDGES SOUTHBOUND AND NORTHBOUND BRIDGES	
HOR. SCALE: 1 : 3000		ACCEPTED BY	DATE	CONSTRUCTION STAGING 2 (SHEET 1 OF 2)	
VERTICAL:		DATE 22.12.06		CITY DRAWING NUMBER B101-22-014/B102-22-023	
0	ISSUED FOR TENDER	23.03.07	DATE	SHEET OF 3 5	
NO. REVISIONS				CONSULTANT DRAWING NO. 734-2200070500-DWG-C1103	
				9	



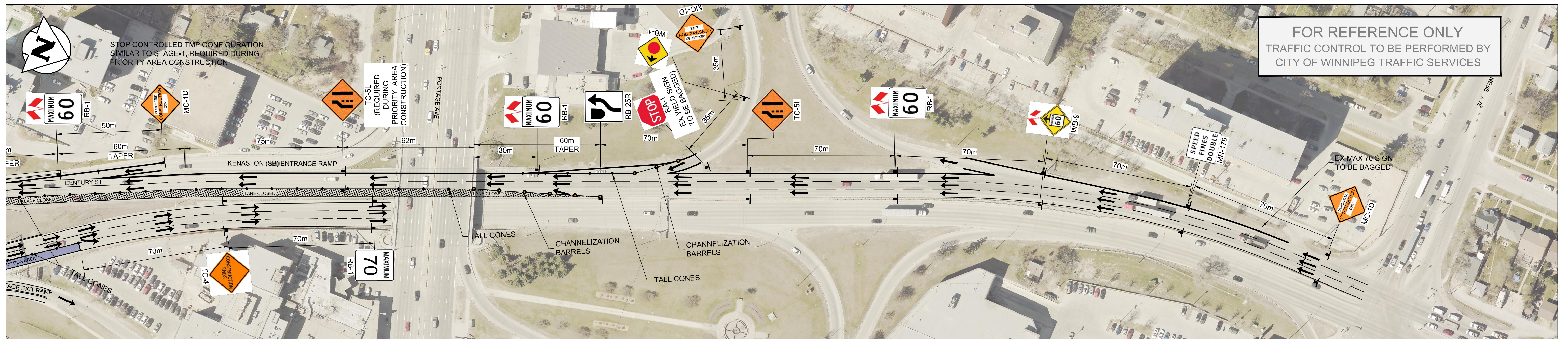
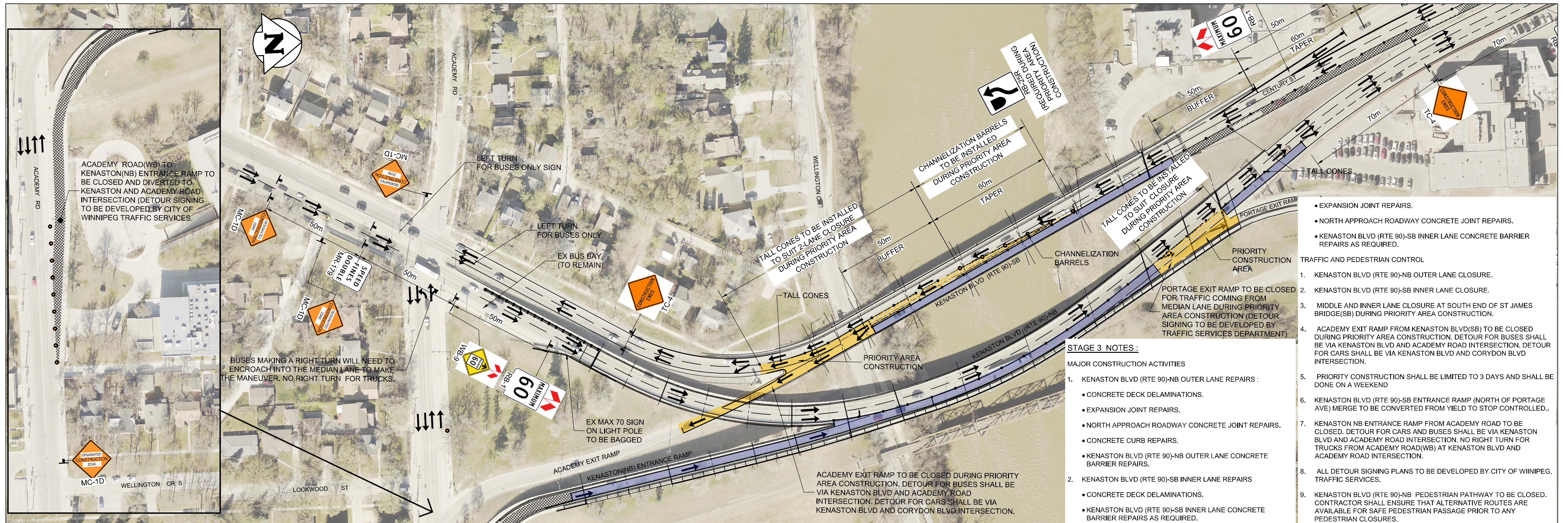
FOR REFERENCE ONLY
 TRAFFIC CONTROL TO BE PERFORMED BY
 CITY OF WINNIPEG TRAFFIC SERVICES

LEGEND:

- CONSTRUCTION AREA
- LANE CLOSURE
- CHANNELIZATION BARRIER
- TALL CONE
- VEHICULAR TRAFFIC

**ENGINEERS
 GEOSCIENTISTS
 MANITOBA**
 Certificate of Authorization
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B.M. ELEV.					THE CITY OF WINNIPEG PUBLIC WORKS DEPARTMENT ENGINEERING DIVISION		
					DESIGNED BY J.T. CHECKED BY J.N.C. DRAWN BY J.T. APPROVED BY E.F.S.		MINOR REHABILITATION OF ST JAMES BRIDGES SOUTHBOUND AND NORTHBOUND BRIDGES
		HOR. SCALE: 1 : 3000 VERTICAL:		ACCEPTED BY DATE		CITY DRAWING NUMBER B101-22-015/B102-22-024	
0 ISSUED FOR TENDER 23.03.07		DATE 22.12.06		CONSULTANT DRAWING NO. 734-2200070500-DWG-C1104		SHEET OF 4 5 CONSTRUCTION STAGING 2 (SHEET 2 OF 2)	
NO. REVISIONS		DATE BY		V. SANTHA M. SC. P. ENG. CIM PMP BRIDGE PROJECTS ENGINEER		4	



- LEGEND:**
- CONSTRUCTION AREA
 - LANE CLOSURE
 - CONSTRUCTION PRIORITY AREA
 - LANE CLOSURE FOR PRIORITY AREA
 - CHANNLEIZATION BARRIER
 - TALL CONE
 - VEHICULAR TRAFFIC

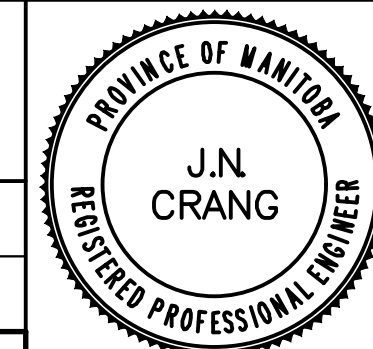
ENGINEERS GEOSCIENTISTS MANITOBA

Certificate of Authorization
Tetra Tech Canada Inc.
No. 6499

NO.	ISSUED FOR TENDER	DATE	BY
0	ISSUED FOR TENDER	23.03.07	
	REVISIONS	DATE	BY



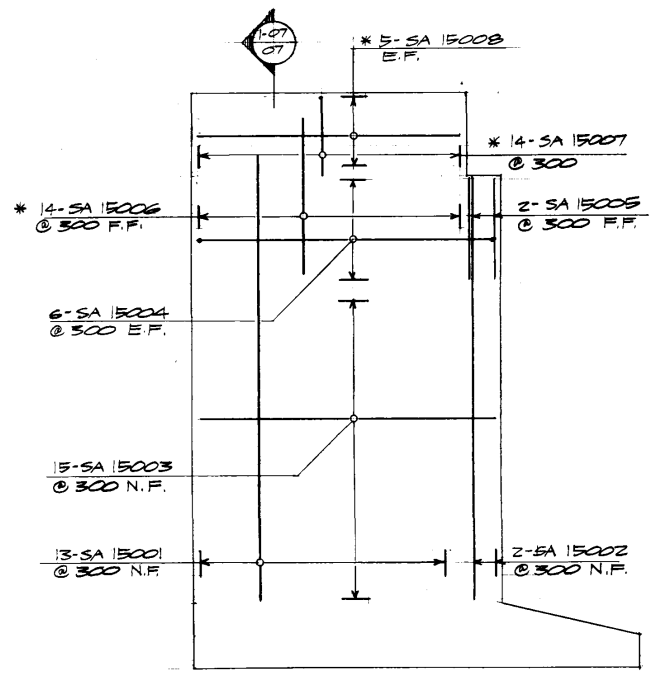
DESIGNED BY	J.T.	CHECKED BY	J.N.C.
DRAWN BY	J.T.	APPROVED BY	E.F.S.
HOR. SCALE:	1 : 3000	ACCEPTED BY	DATE
VERTICAL:			



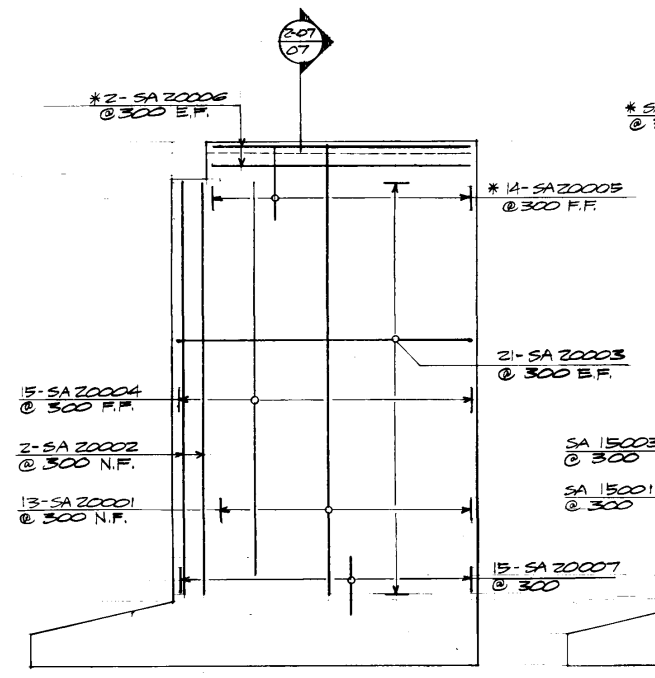
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734-2200070500-DWG-C1105

THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION

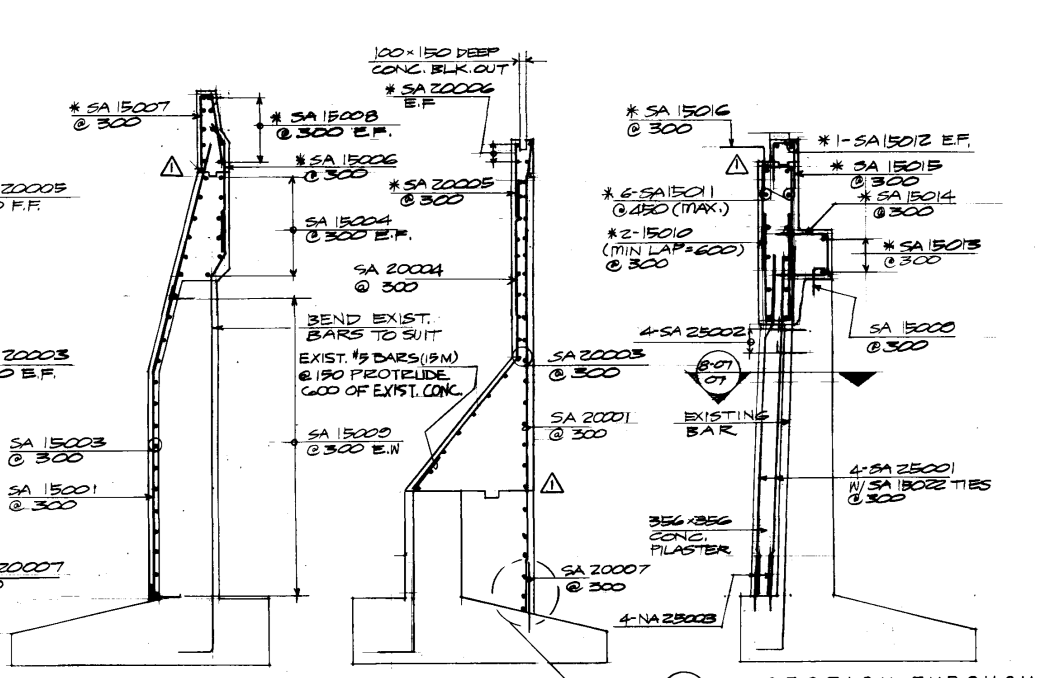
MINOR REHABILITATION OF ST JAMES BRIDGES SOUTHBOUND AND NORTHBOUND BRIDGES	CITY DRAWING NUMBER B101-22-016/B102-22-025
CONSTRUCTION STAGING 3	SHEET OF 5 5
	5



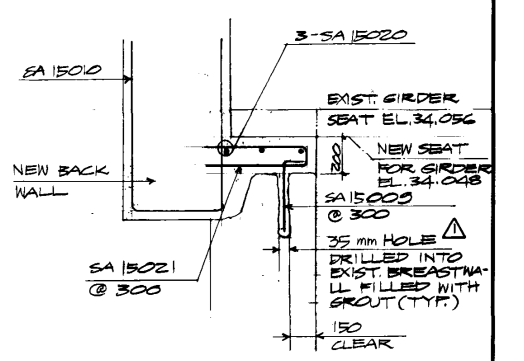
SOUTH EAST WING WALL



SOUTH WEST WING WALL

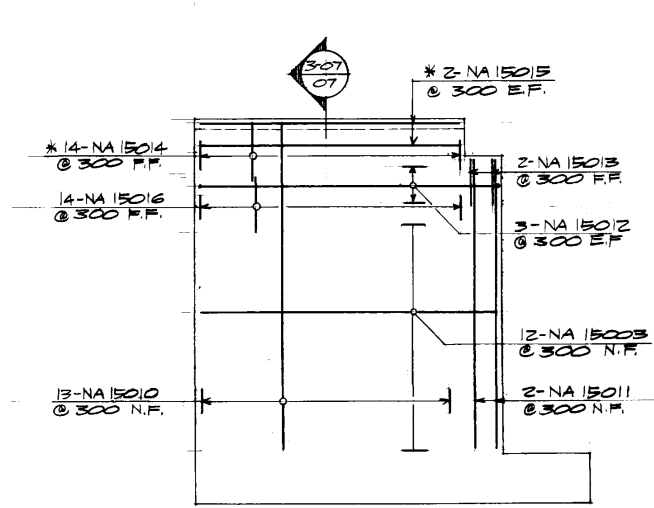


1-07 SECTION 2-07 SECTION DETAIL 7-07 SECTION THROUGH BACKWALL

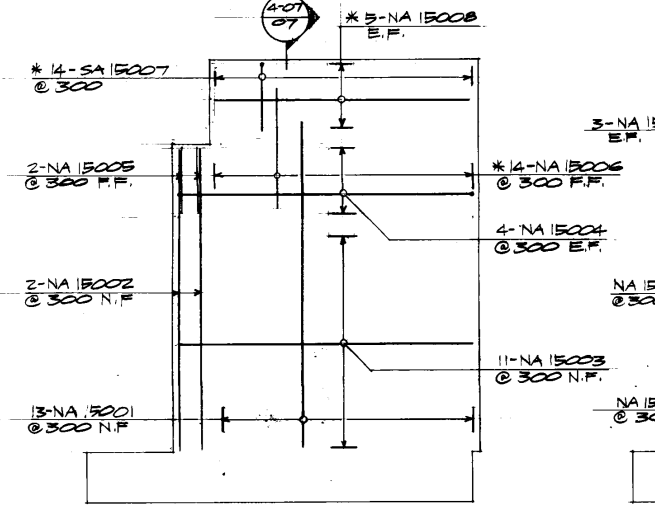


9-07 SECTION SCALE 1:10

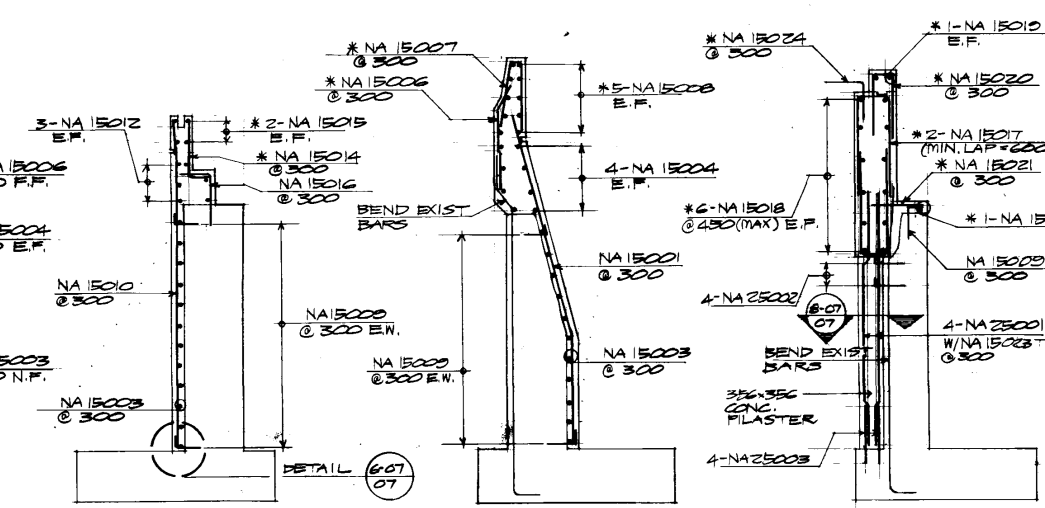
NOTE
1. SEE GENERAL NOTES
2. BARS MARKED WITH * SHALL BE EPOXY COATED



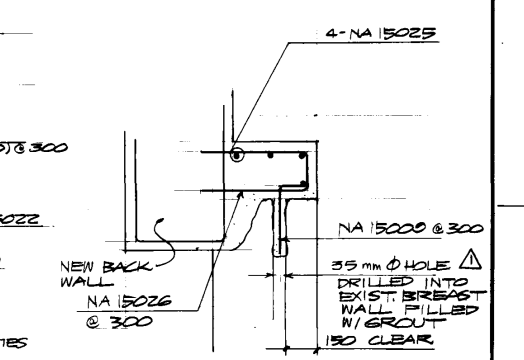
NORTH WEST WING WALL



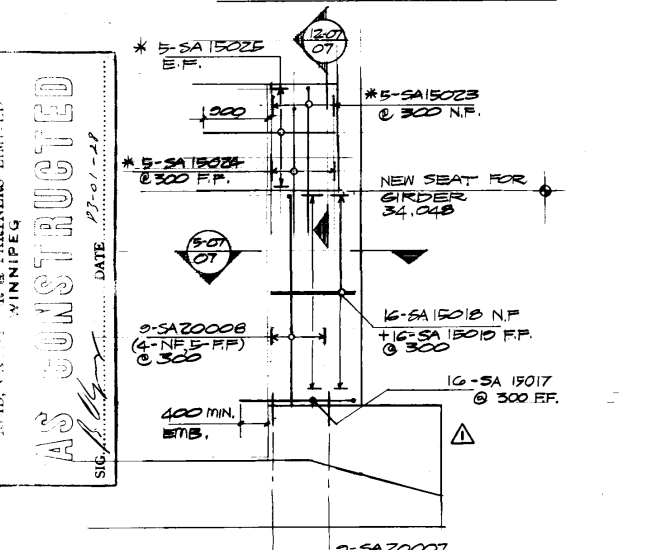
NORTH EAST WING WALL



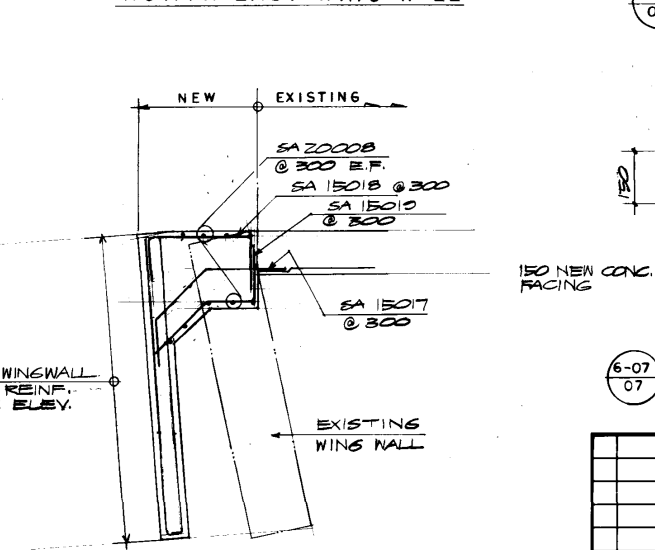
3-07 SECTION 4-07 SECTION SECTION THROUGH BACKWALL



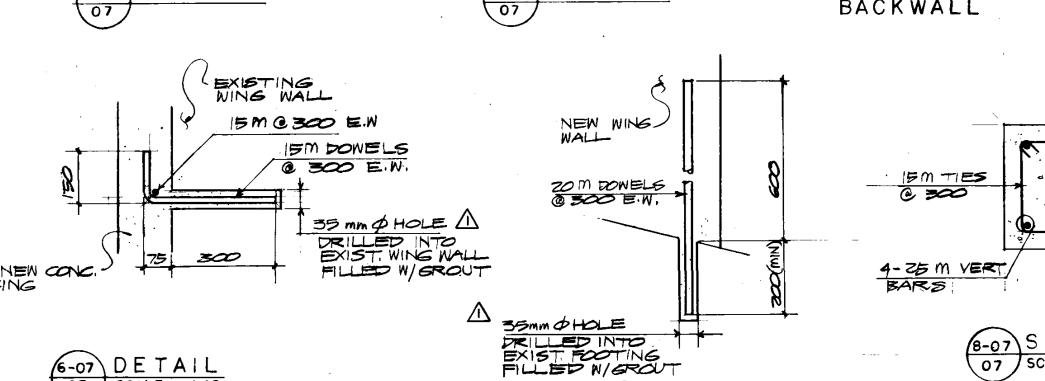
10-07 SECTION SCALE 1:10



11-07 DET. OF SOUTH ABUTMENT ADDITION

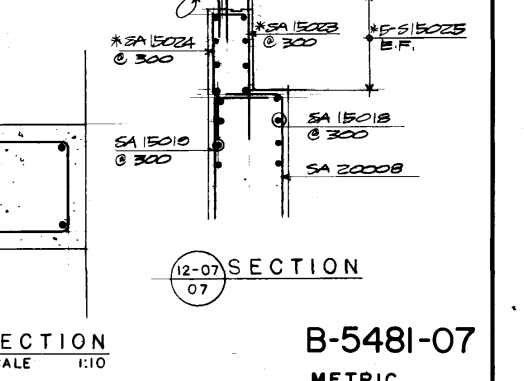


5-07 SECTION



6-07 DETAIL SCALE 1:10

7-07 DETAIL SCALE 1:10



12-07 SECTION

B-5481-07
METRIC

WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

REID, CROWTHER & PARTNERS LIMITED
 WINNIPEG
AS CONSTRUCTED
 DATE: 07-01-15

NO.	REVISIONS	DATE	APP.
1	AS CONSTRUCTED	02/06/15	

8/12/16
W.M. L...
ENGINEER'S SEAL

Reid, Crowther & Partners Limited
CONSULTING ENGINEERS AND PLANNERS
VANCOUVER CALGARY EDMONTON REGINA WINNIPEG TORONTO OTTAWA
MONTREAL YELLOWKNIFE RED DEER BRANDON

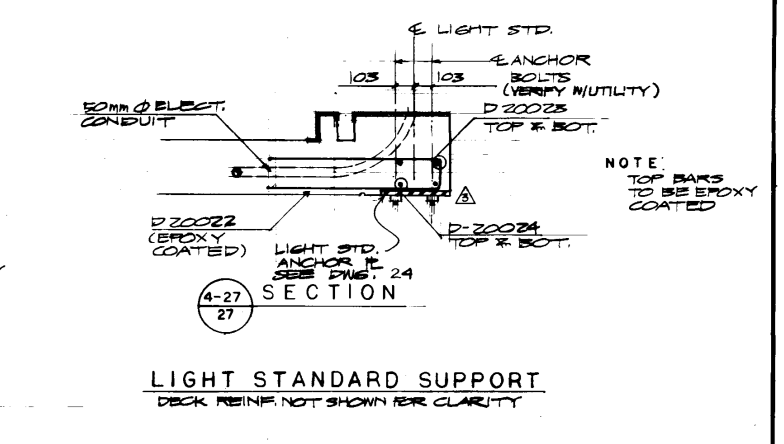
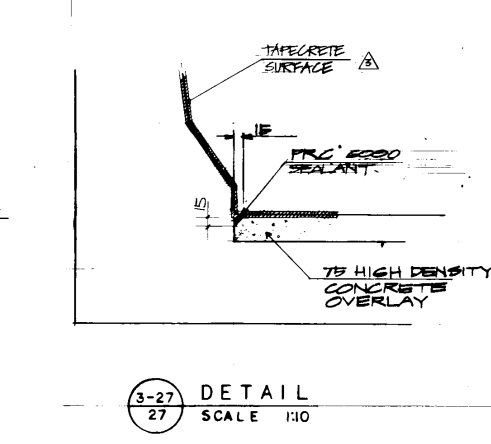
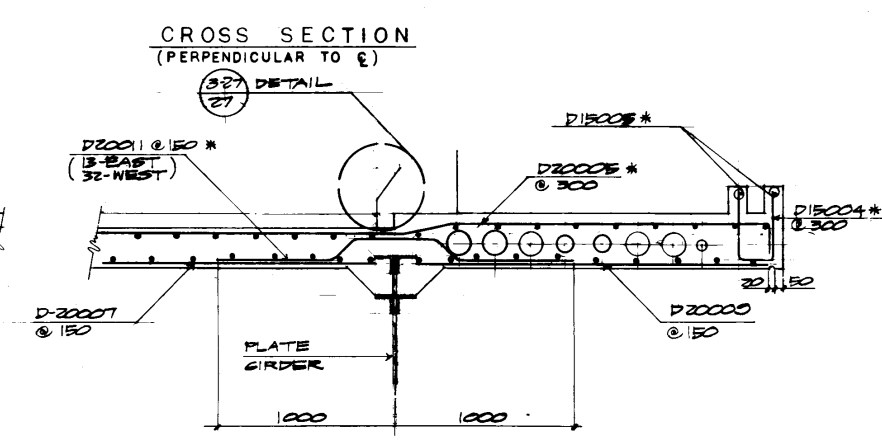
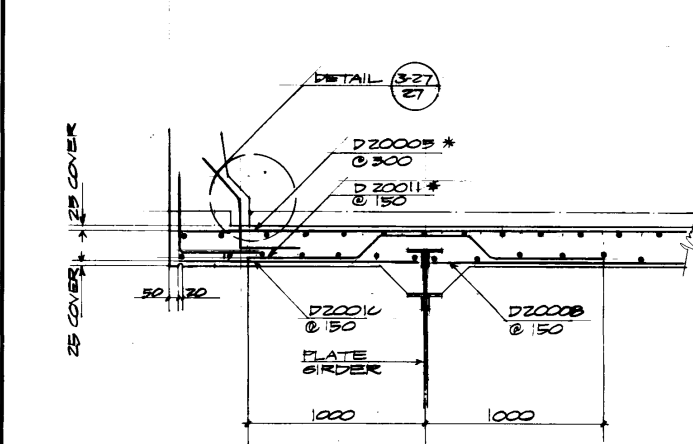
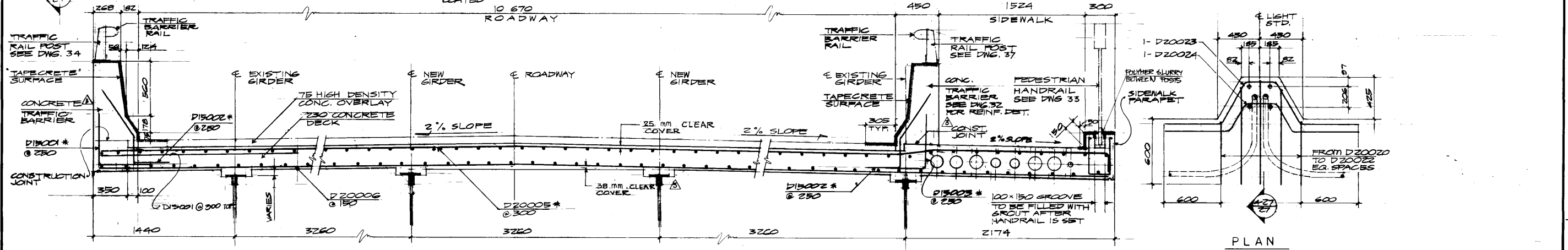
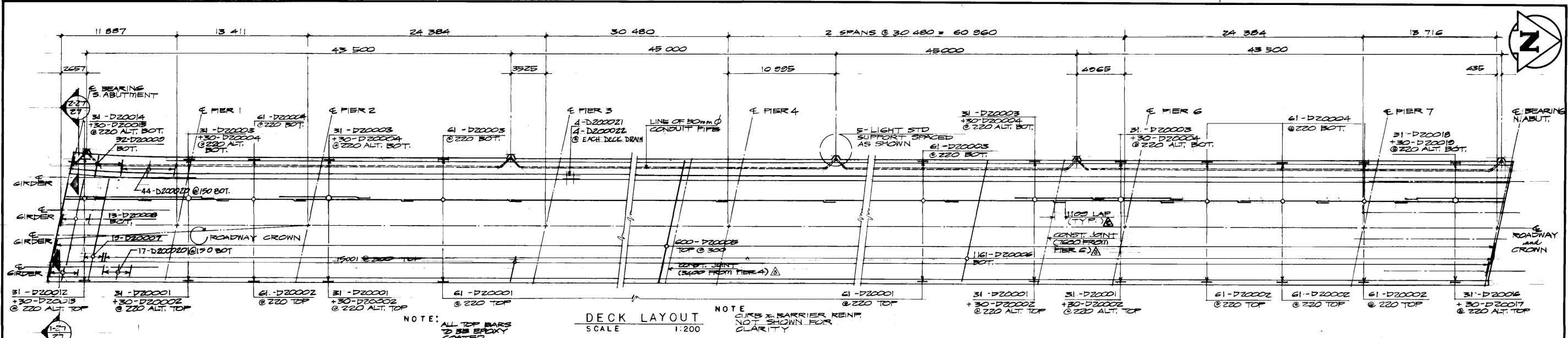
DESIGNED BY: W.J.M. DRAWN BY: R.C.S.
CHECKED BY: D.W.C. DATE: 01/04/15
APPROVED BY: [Signature] DATE: July 6/15

THE CITY OF WINNIPEG
WORKS & OPERATIONS DIVISION
STREETS & TRANSPORTATION DEPARTMENT

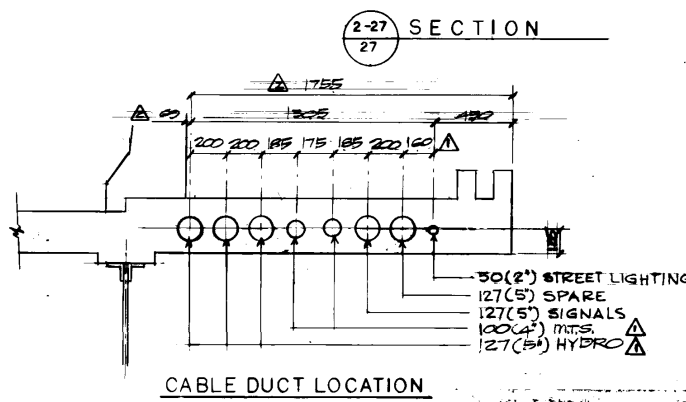
ST. JAMES BRIDGE SOUTHBOUND
STRUCTURAL STRENGTHENING AND RELATED WORKS

ABUTMENT REINFORCING

AUTHORIZED BY: [Signature] 1981-07-15
ACCEPTED BY: [Signature] DATE: [Signature]
SCALE: 1:50 U.N.O. DRAWING NO: B101-82-07



NOTE: ALL BARS MARKED THIS # TO BE EPOXY COATED.



REID, CROWTHER & PARTNERS LIMITED
WINNIPEG
AS CONSTRUCTED
DATE: 8/20/15

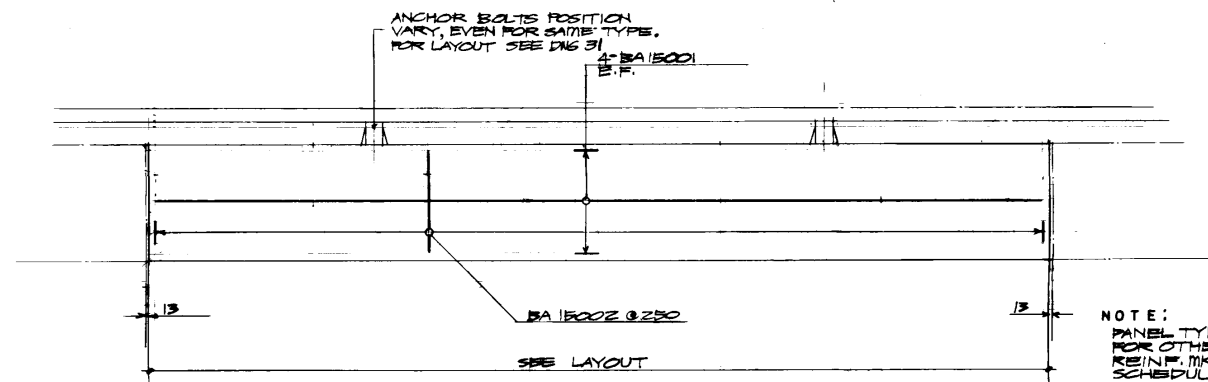
NO.	REVISIONS	DATE	APP.
1	AS CONSTRUCTED	82.10.28	[Signature]
2	DIMENSIONS REVISED	82.04.20	[Signature]
3	DUCTS RELOCATED	82.02.15	[Signature]

DESIGNED BY: W. J. M.
DRAWN BY: R. C. S.
CHECKED BY: D. W. C.
DATE: 81.04.16
APPROVED BY: [Signature]
DATE: April 21/15

THE CITY OF WINNIPEG
WORKS & OPERATIONS DIVISION
STREETS & TRANSPORTATION DEPARTMENT

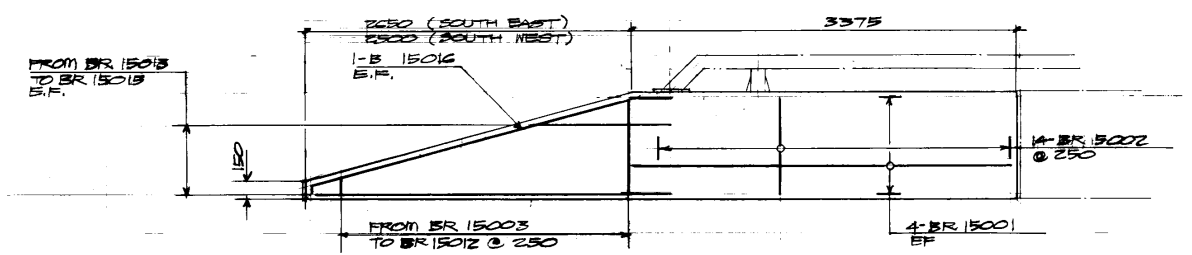
ST. JAMES BRIDGE SOUTHBOUND
STRUCTURAL STRENGTHENING
AND RELATED WORKS
DECK REINFORCEMENT
AUTHORIZED BY: [Signature] 1581-07-15
ACCEPTED BY: [Signature] 8-07-15
SCALE: 1:20 U.N.O. DRAWING NO. B101-82-27

NOTE:
ANCHOR BOLTS FOR LIGHT STD. TO BE 250 400 MPa BARS 3/8" DIA. N/175 THREAD EACH END C/N/2 LOCKWASHERS AND 2 NUTS. (ALL GALVANIZED).
ALL EXPOSED EDGES ARE CHAMFERED 20 mm
B-5481-27
METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

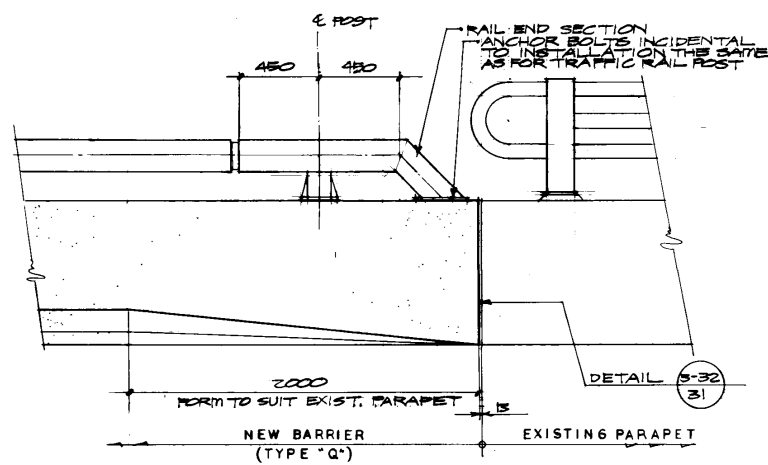


TYP. PANEL REINFORCEMENT (TYPE 'A' TO 'Q' INCLUSIVE)
SCALE 1:30

NOTE:
PANEL TYPE 'A' SHOWN FOR OTHER PANEL TYPE REINFORCING. SEE BAR SCHEDULE.
SECOND LETTER IN MK. NO. DENOTES PANEL TYPE. TYPICAL FOR BARRIER REINFORCING.



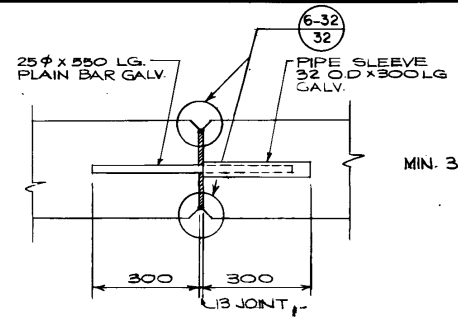
PANEL TYPE 'R' REINFORCEMENT
SCALE 1:30



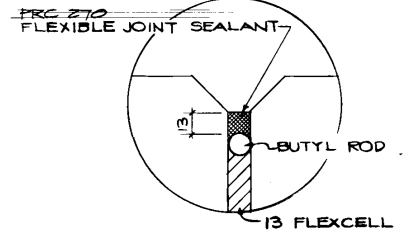
1-32 ELEVATION
N.T.S.

TYPE	NO. REQ'D.	LENGTH
A	24	7607
B	16	6083
C	6	6692
D	1	5401
E	2	6845
F	2	7077
G	1	5401
H	2	7339
I	2	4912
J	12	5987
K	2	5167
L	1	3872
M	1	4877
N	4	6087
O	1	3813
P	1	7097
Q	1	7701
R	2	5981
S	1	5981

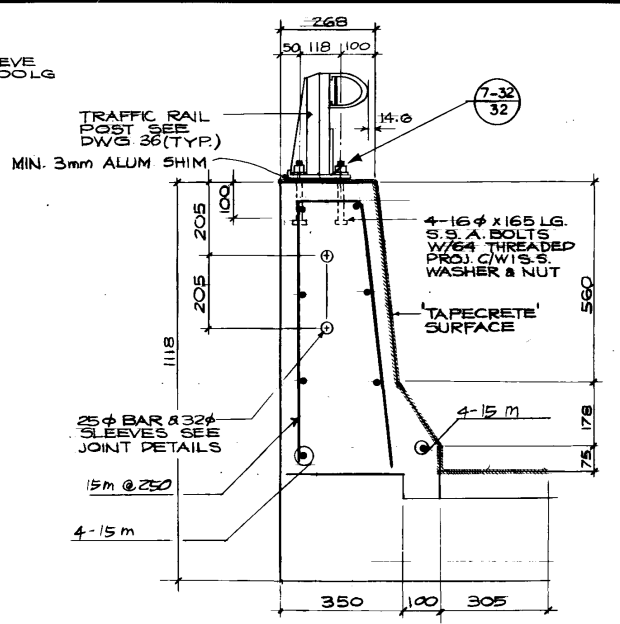
BEHN, CROWTHER & PARTNERS LIMITED
WINNIPEG
AS CONSTRUCTED
B. Dwyer
DATE: 11.01.11



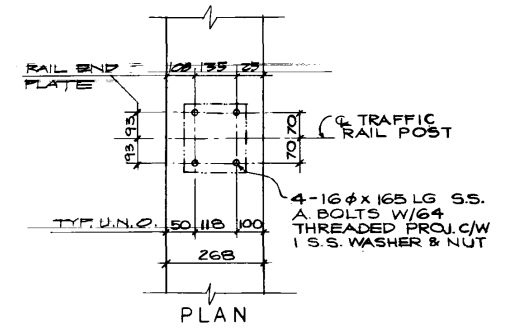
3-32 JOINT DETAIL
N.T.S.



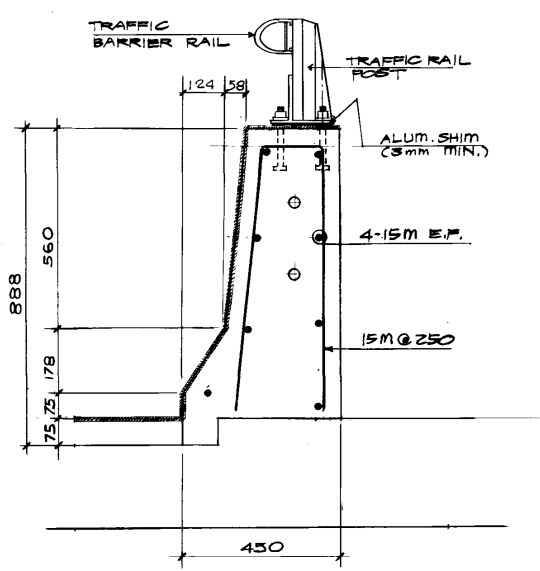
6-32 DETAIL
N.T.S.



4-32 SECTION
1:10



7-32 TRAFFIC RAIL POST
ANCHOR LOCATION
N.T.S.



5-32 SECTION
1:10

NOTE:
ASPHALT COATING SHALL BE APPLIED TO ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE.

B-5481-32
METRIC

WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

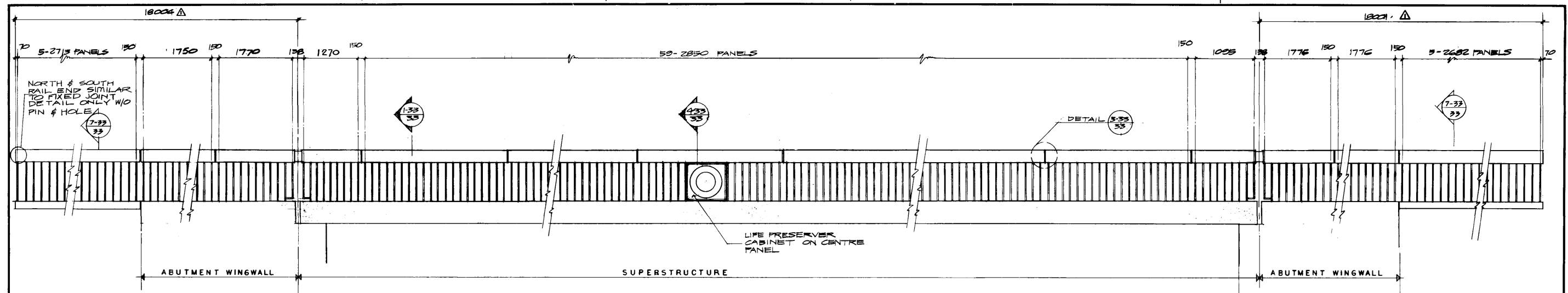
NO.	REVISIONS	DATE	APP.
Δ	AS CONSTRUCTED	02/10/14	JS

PROVINCE OF MANITOBA
8/16/16
W. J. M.
ENGINEER'S SEAL

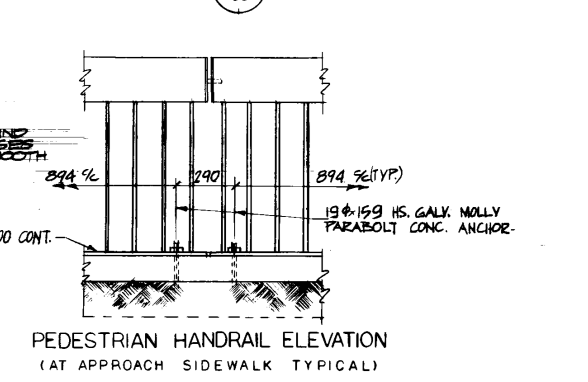
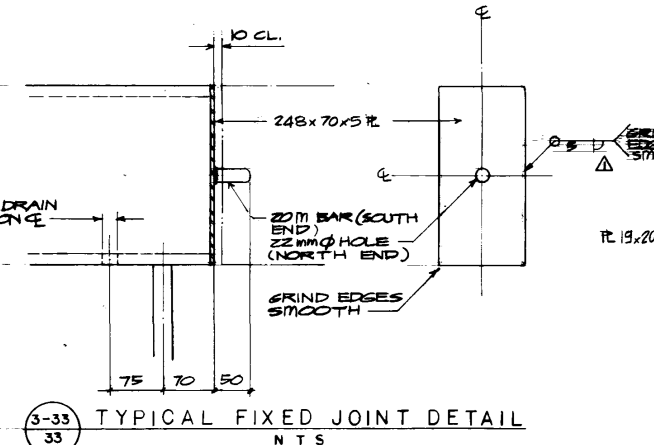
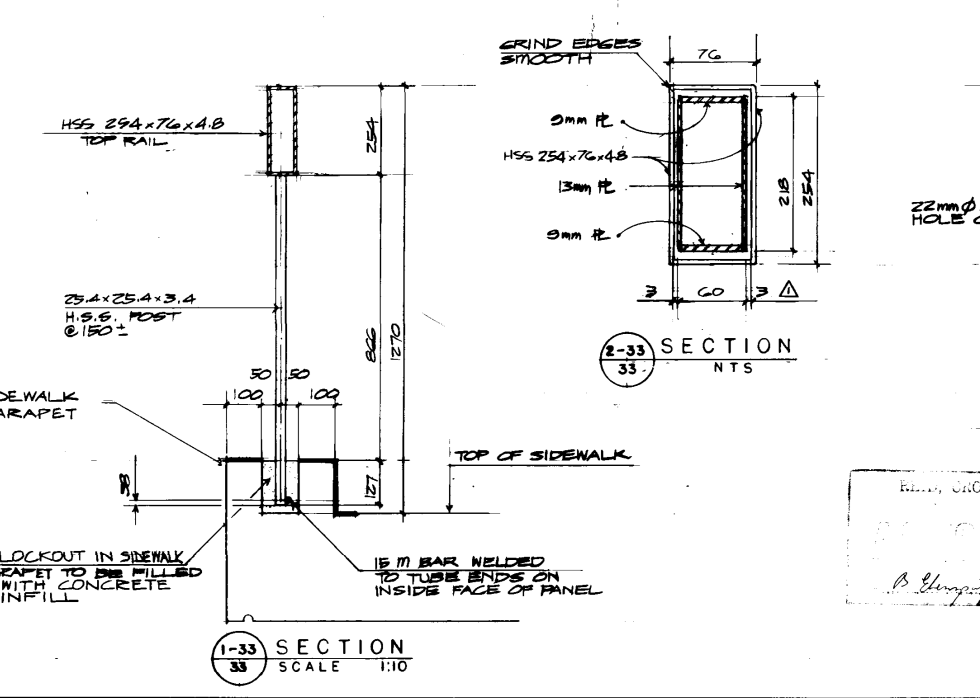
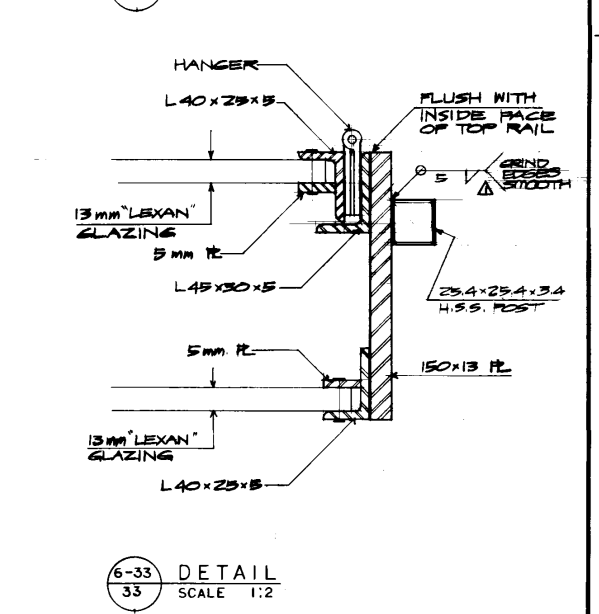
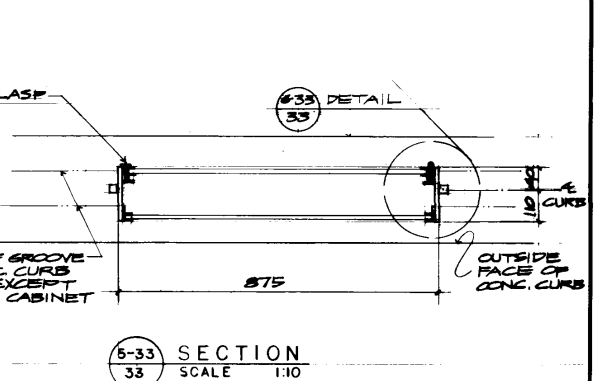
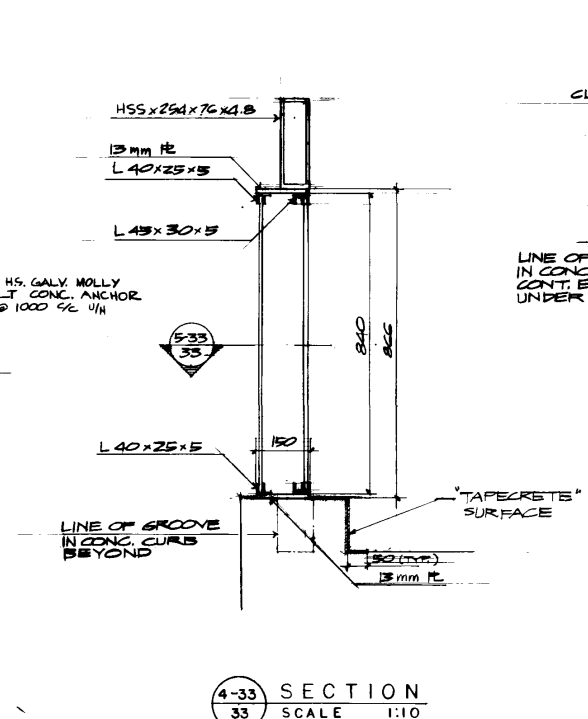
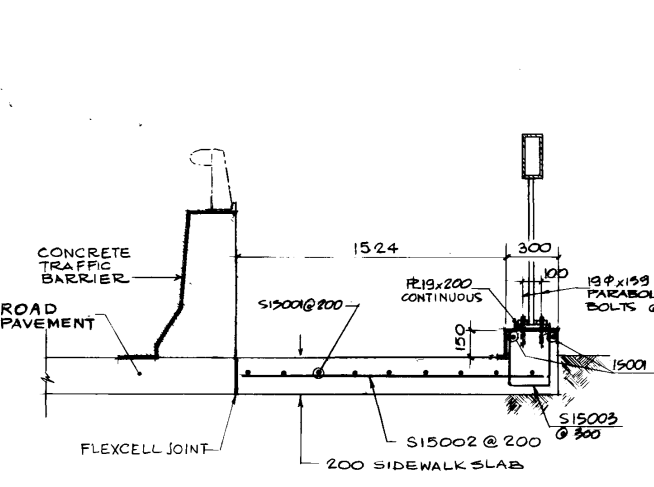
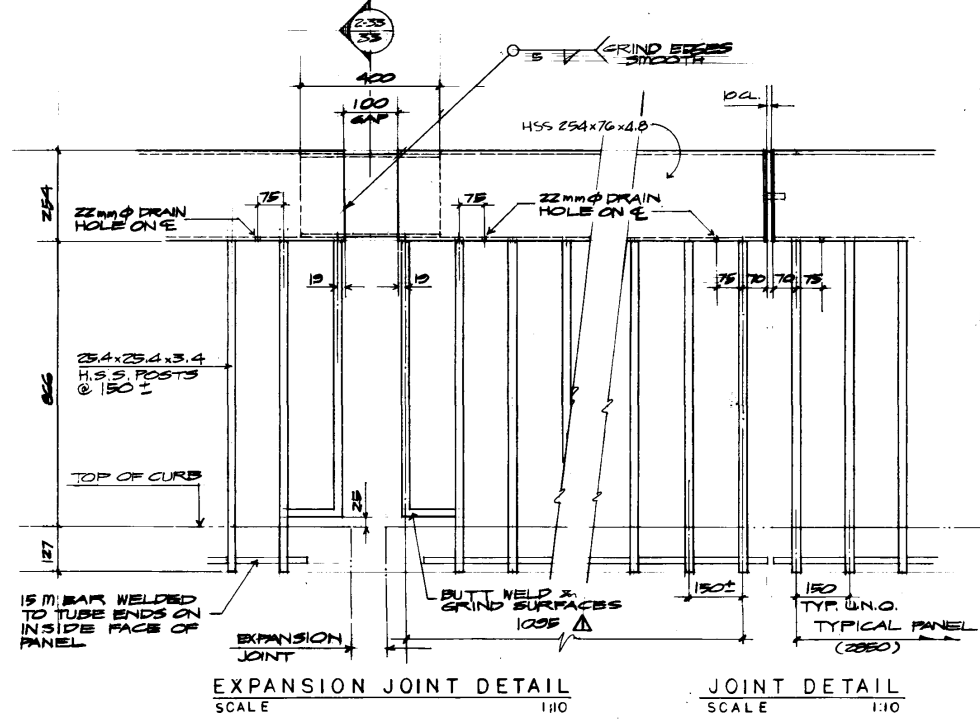
DESIGNED BY: W. J. M.	DRAWN BY: R. C. S.
CHECKED BY: D. W. C.	DATE: 01 04 16
APPROVED BY: L. Charbon	DATE: April 21 16

THE CITY OF WINNIPEG
WORKS & OPERATIONS DIVISION
STREETS & TRANSPORTATION DEPARTMENT

ST. JAMES BRIDGE SOUTHBOUND
STRUCTURAL STRENGTHENING AND RELATED WORKS
CONCRETE TRAFFIC BARRIER DETAILS
AUTHORIZED BY: [Signature] 1981-07-15
ACCEPTED BY: [Signature] 01-07-16
SCALE: AS SHOWN
DRAWING NO. B101-82-32



PEDESTRIAN HANDRAIL ELEVATION
LOOKING EAST
SCALE 1:400



NOTE:
1. ALL MATERIALS FOR PEDESTRIAN HANDRAIL SHALL BE GALVANIZED UNLESS OTHERWISE SPEC'D.
2. SEE GENERAL NOTES DWG. No 9

B-5481-33

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

BLM, GROWTH & PARTNERS LIMITED
WINNIPEG
AS CONSTRUCTED
B. Thompson

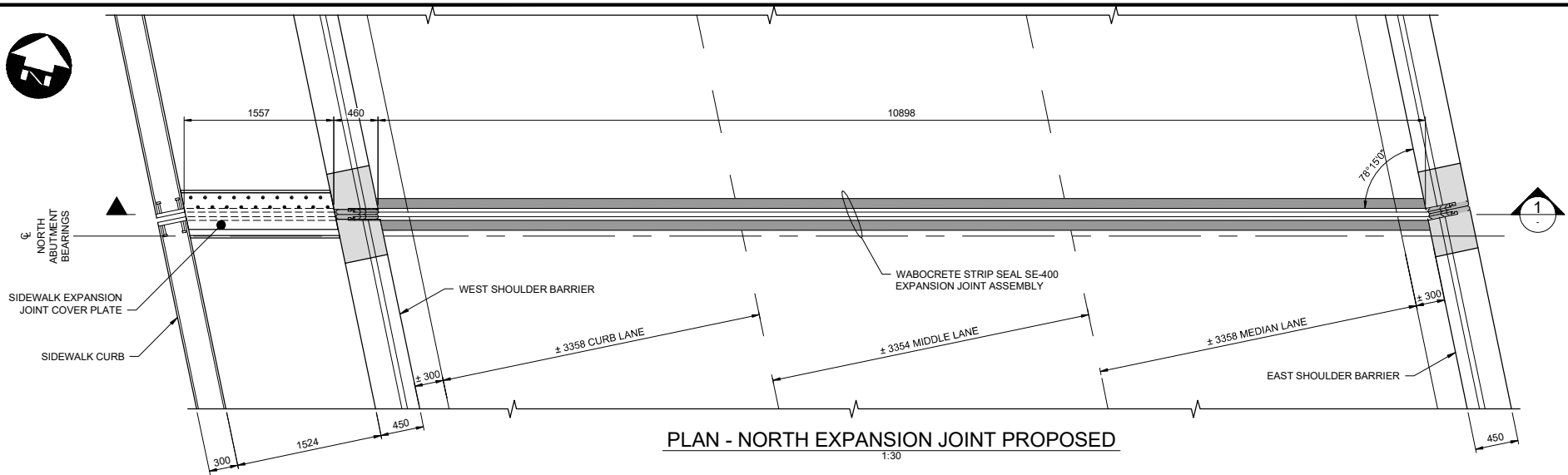
NO	REVISIONS	DATE	APP.
AS CONSTRUCTED		82-10-14	AS
REVISED		81-12-21	DM

PROVINCE OF MANITOBA
8/04/16
W.M. Caldwell
ENGINEER'S SEAL

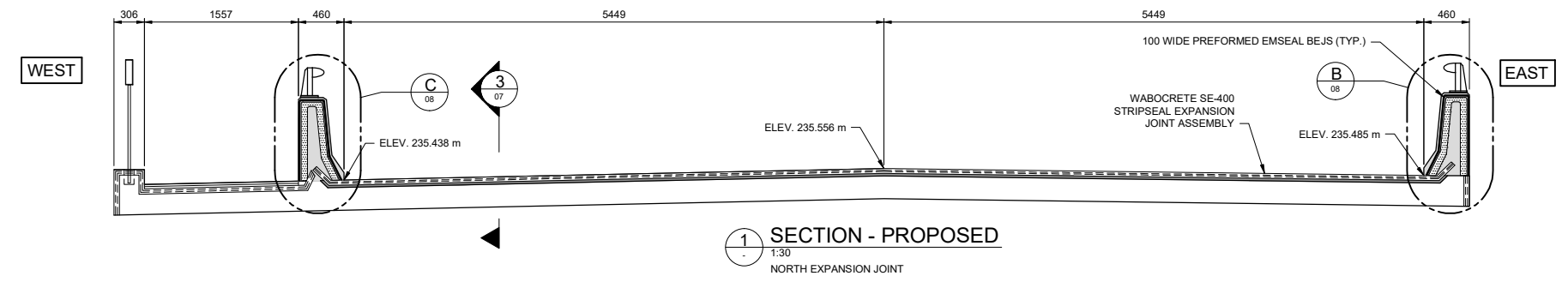
DESIGNED BY:	W. J. M.	DRAWN BY:	R. C. S.
CHECKED BY:	D. W. C.	DATE:	81 04 16
APPROVED BY:	<i>R. Walker</i>	DATE:	April 16/81

THE CITY OF WINNIPEG
WORKS & OPERATIONS DIVISION
STREETS & TRANSPORTATION DEPARTMENT

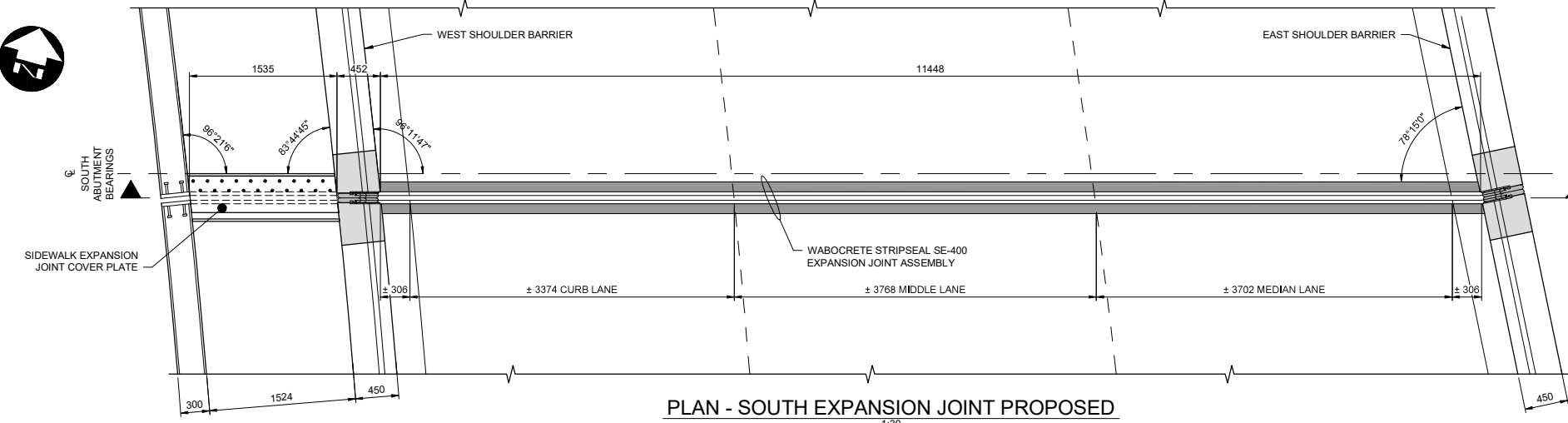
ST. JAMES BRIDGE SOUTHBOUND
STRUCTURAL STRENGTHENING
AND RELATED WORKS
PEDESTRIAN HANDRAIL
AUTHORIZED BY: [Signature] 1981-07-15
ACCEPTED BY: [Signature] 8-27-81
SCALE: AS SHOWN DRAWING NO. B101-82-33



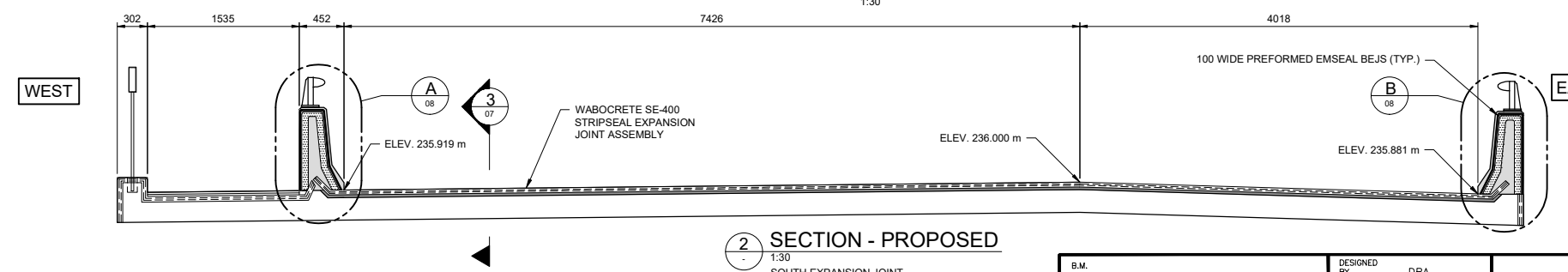
PLAN - NORTH EXPANSION JOINT PROPOSED
1:30



SECTION - PROPOSED
1:30
NORTH EXPANSION JOINT



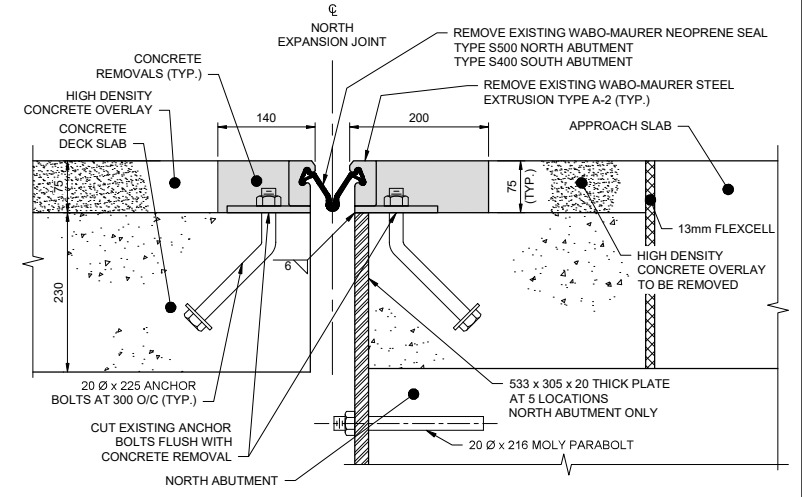
PLAN - SOUTH EXPANSION JOINT PROPOSED
1:30



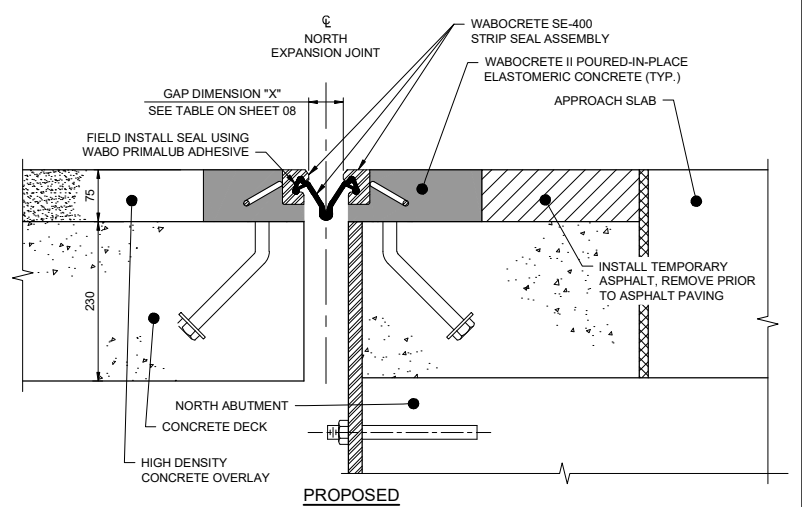
SECTION - PROPOSED
1:30
SOUTH EXPANSION JOINT

NOTES:

1. DIMENSIONS AND ELEVATIONS OF EXISTING EXPANSION JOINTS ARE APPROXIMATE.
2. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS OF EXPANSION JOINTS PRIOR TO FABRICATION OF THE REPLACEMENT EXPANSIONS JOINTS.
3. DIMENSIONS SHOWN OF REPAIR AREAS ARE APPROXIMATE, LAYOUT ACTUAL REPAIR AREAS WITH THE CONTRACT ADMINISTRATOR ON SITE.
4. SEE SPECIFICATION FOR REPAIR PREPARATION AND CONCRETE REPLACEMENT DETAILS.



EXISTING



PROPOSED

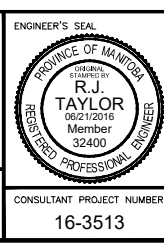
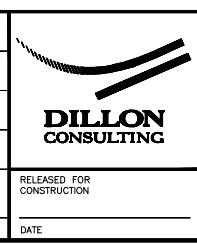
SECTION
1:5
NORTH EXPANSION JOINT SHOWN, SOUTH EXPANSION JOINT SIMILAR

METRIC

WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES



B.M. ELEV.	DESIGNED BY	DRA
	DRAWN BY	KB
	CHECKED BY	RJT
	APPROVED BY	SSR
	HOR. SCALE	-
	VERTICAL	-
0 ISSUED FOR TENDER	6/21/16	RJT
NO. REVISIONS	DATE	BY
	DATE	JUNE 21, 2016



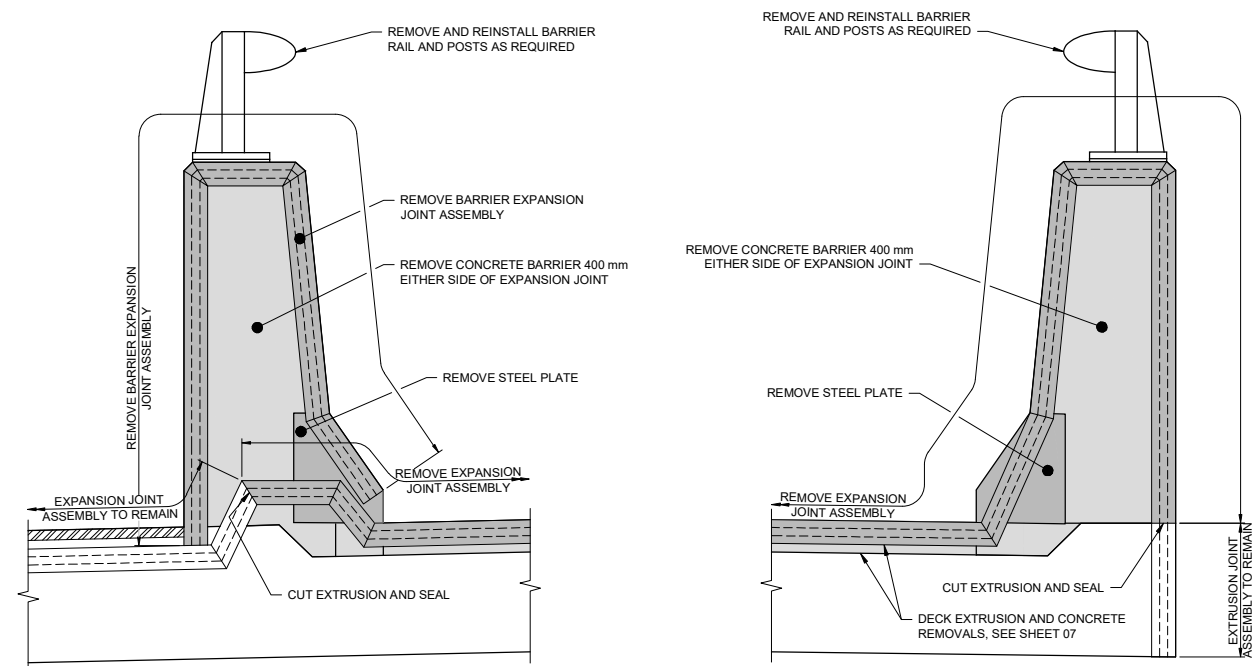
THE CITY OF WINNIPEG PUBLIC WORKS DEPARTMENT

2016 BRIDGE MAINTENANCE - ST. JAMES SOUTHBOUND BRIDGE REPAIRS

ST. JAMES SB EXPANSION JOINT LAYOUT - PROPOSED

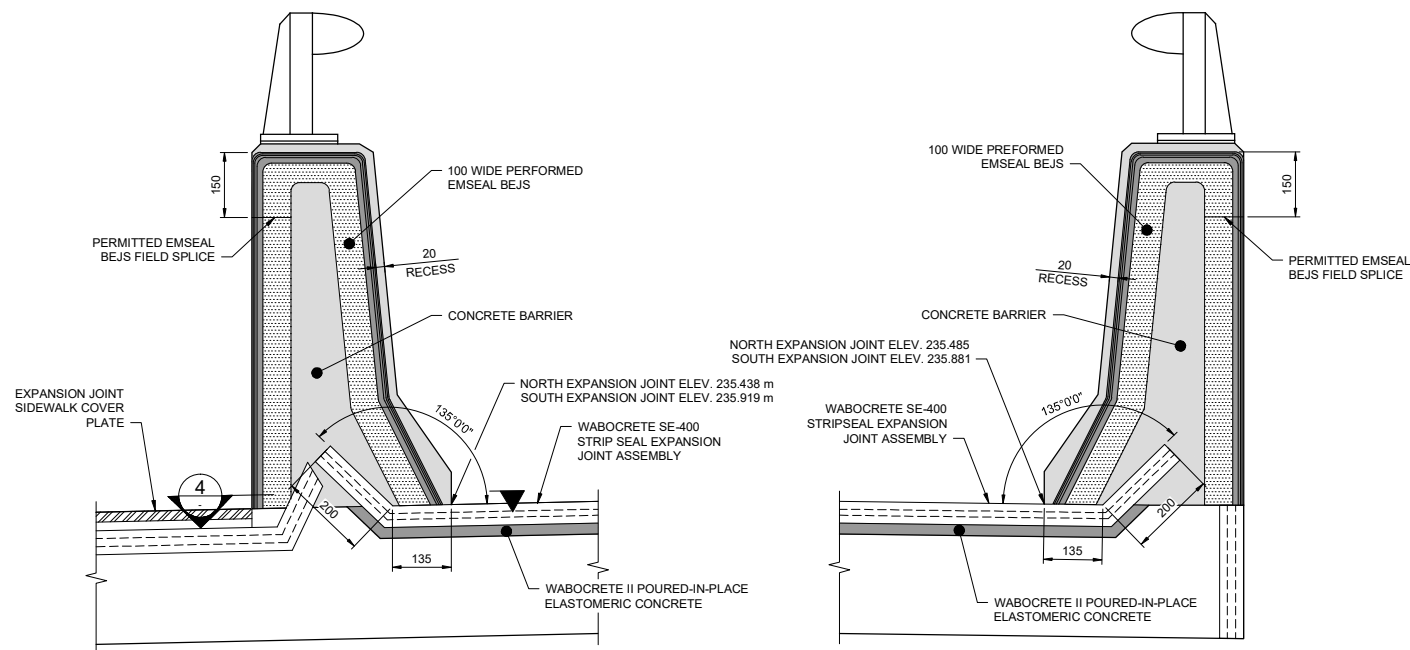
CITY DRAWING NUMBER B101-16-07
SHEET 07 OF 11

CONSULTANT PROJECT NUMBER 16-3513
CONSULTANT DRAWING NUMBER --



EXISTING

EXISTING



PROPOSED

PROPOSED

A DETAIL
1:8
NORTH EXPANSION JOINT SHOWN,
SOUTH EXPANSION JOINT SIMILAR

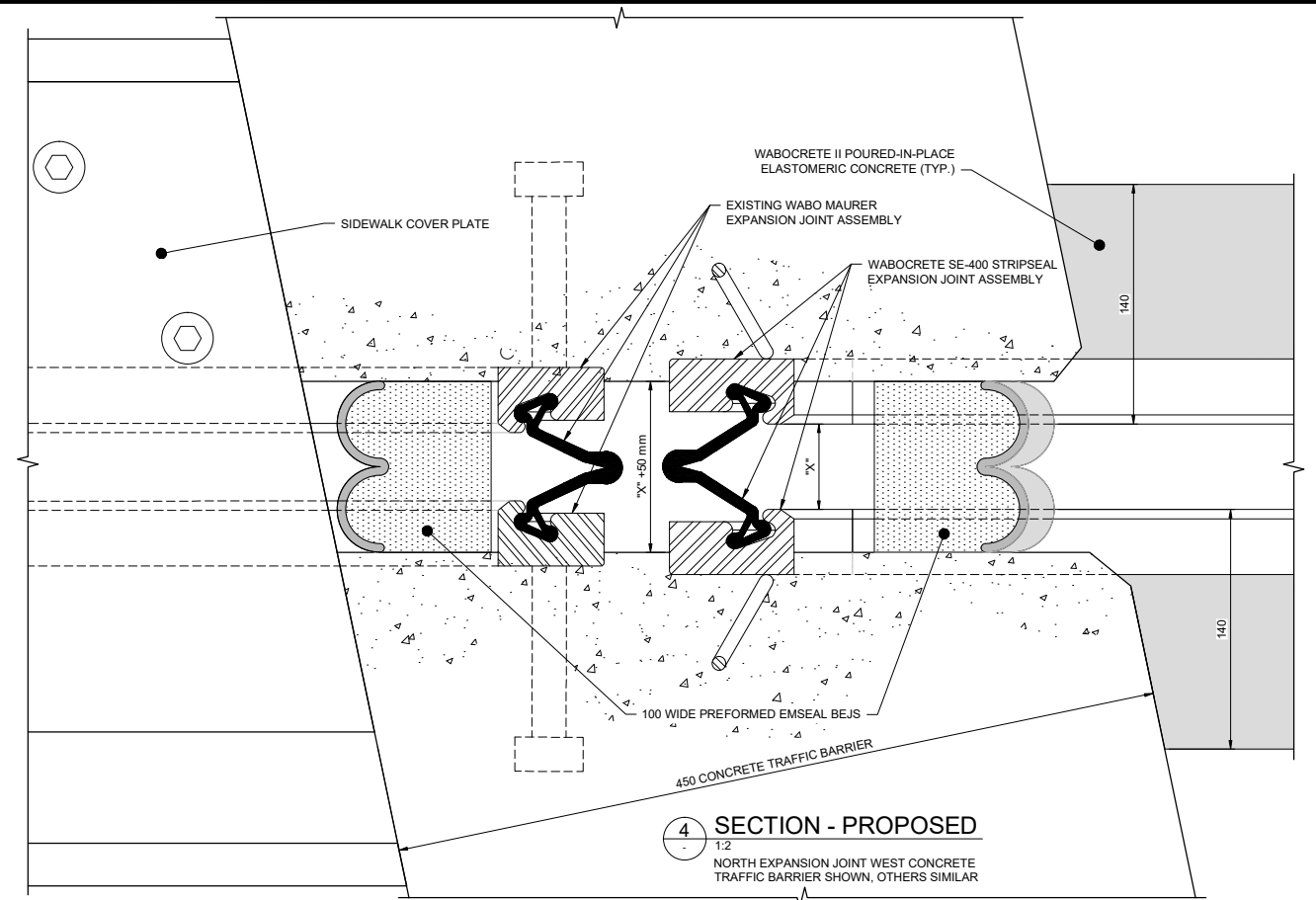
B DETAIL
1:8
NORTH EXPANSION JOINT SHOWN,
SOUTH EXPANSION JOINT SIMILAR

NOTES:

- DIMENSIONS AND ELEVATIONS OF EXISTING EXPANSION JOINTS ARE APPROXIMATE.
- CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS OF EXPANSION JOINTS PRIOR TO FABRICATION OF THE REPLACEMENT EXPANSION JOINTS.
- DIMENSIONS SHOWN OF REPAIR AREAS ARE APPROXIMATE. LAYOUT ACTUAL REPAIR AREAS WITH THE CONTRACT ADMINISTRATOR ON SITE.
- CONCRETE BARRIER REMOVALS AND REPAIRS AT EXPANSION JOINTS SHALL BE SIMILAR TO TYPE 1B CONCRETE BARRIER REPAIRS. SEE SHEETS 03 TO 05 FOR DETAILS.
- SEE SPECIFICATION FOR REPAIR PREPARATION AND CONCRETE REPLACEMENT DETAILS.

GAP DIMENSION "X" SETTING TABLE

AMBIENT TEMPERATURE (°C)	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25	30	35	40
NORTH (mm)	98	92	86	80	74	68	62	56	50	44	38	32	26	20	14	8	2
SOUTH (mm)	89	84	79	74	70	65	60	55	50	45	40	35	30	26	21	16	11



GENERAL NOTES:

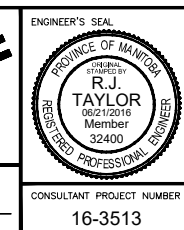
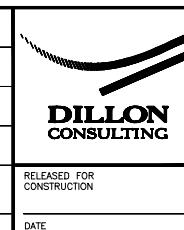
- MANUFACTURER'S SHOP DRAWINGS SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR FOR APPROVAL AT LEAST SEVEN (7) WORKING DAYS PRIOR TO FABRICATION. THE EXPANSION JOINT ASSEMBLIES SHALL BE DESIGNED TO CARRY CAN/CSA-S6-06 CL-625 LIVE LOADING.
- EXPANSION JOINTS SHALL BE WABOCRETE SE-400 STRIPSEAL JOINTS OR APPROVED EQUAL IN ACCORDANCE WITH B7 OF THE SPECIFICATIONS.
- STEEL SHALL BE IN ACCORDANCE WITH THE LATEST CSA STANDARD CAN/CSA G40.21M GRADE 300W OR EQUAL AND ALL SUBSEQUENT REVISIONS.
- STEEL EXTRUSIONS SHALL BE IN ACCORDANCE WITH THE LATEST CSA STANDARD CAN/CSA G40.21M GRADE 230G MINIMUM AND ALL SUBSEQUENT REVISIONS.
- ALL STEEL SURFACES SHALL BE HOT DIP GALVANIZED TO A NET RETENTION OF 610g/m² AFTER FABRICATION.
- JOINT ASSEMBLY SHALL BE FABRICATED AND COMPLETELY SHOP ASSEMBLED PRIOR TO SHIPMENT.
- EXPANSION JOINT UNITS AND RELATED MATERIALS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- EXPANSION JOINTS SHALL BE INSTALLED IN THREE PIECES ACCORDING TO CONSTRUCTION STAGING AND FIELD WELDED DURING INSTALLATION. REFER TO THE MANUFACTURER'S PROCEDURE FOR INSTALLATION.
- WELDING SHALL BE LOW OXYGEN CLASSIFICATION. MANUAL ELECTRODES SHALL BE E7018 OR E7018. ALL WELDING SHALL BE IN ACCORDANCE WITH CSA STANDARD W59.
- SEAL SHALL BE EXTRUDED NEOPRENE RUBBER AS SPECIFIED. EACH SEAL SHALL BE SUPPLIED & INSTALLED IN ONE CONTINUOUS PIECE. NO SPLICE IN THE RUBBER SEAL WILL BE PERMITTED.
- UNLESS NOTED, ROADWAY AND BARRIER DIMENSIONS SHOWN ARE TO CONCRETE FACES. EXPANSION JOINT MANUFACTURER SHALL MAKE APPROPRIATE ADJUSTMENTS FOR CHAMFERS AND OFFSETS AS SHOWN ON DETAILS.
- INSTALLATION TEMPERATURE SHALL BE TAKEN AS THE MEAN SHADE AIR TEMPERATURE 48 HOURS PRIOR TO JOINT INSTALLATION.
- ALL AREAS OF DAMAGED GALVANIZING SHALL BE REPAIRED BY USING THE GALVALLOY PROCEDURE AS SPECIFIED.
- PRIOR TO PLACING CONCRETE, THE EXPANSION JOINT WORKS INSTALLATION SHALL BE APPROVED BY THE CONTRACT ADMINISTRATOR.
- IMMEDIATELY PRIOR TO PLACEMENT OF CONCRETE, ALL EXISTING CONCRETE SURFACES THAT WILL BE IN CONTACT WITH THE EXPANSION JOINT CONCRETE SHALL BE COATED WITH PRIMER IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.
- LOOSEN ERECTION BOLTS WITHIN 3 HOURS OF CONCRETING TO ALLOW JOINT MOVEMENT DUE TO TEMPERATURE CHANGE.
- AFTER REMOVAL OF CLAMPING CHANNELS AND SPACER DAM, BOLT HOLES TO BE FILLED WITH AN APPROVED EPOXY GROUT.
- ALL FIELD WELDING AND ASSOCIATED FIELD GALVANIZING SHALL TAKE PLACE PRIOR TO INSTALLATION OF EXPANSION JOINT SEALS.
- ALL SURFACES IN CONTACT WITH JOINT SEALS SHALL BE CLEANED PRIOR TO INSTALLATION OF SEALS.

METRIC

WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES



B.M. ELEV.	DESIGNED BY	DRA
	DRAWN BY	KB
	CHECKED BY	RJT
	APPROVED BY	SSR
	HOR. SCALE	-
	VERTICAL	-
0 ISSUED FOR TENDER	6/21/16	RJT
NO. REVISIONS	DATE	BY
	DATE	JUNE 21, 2016



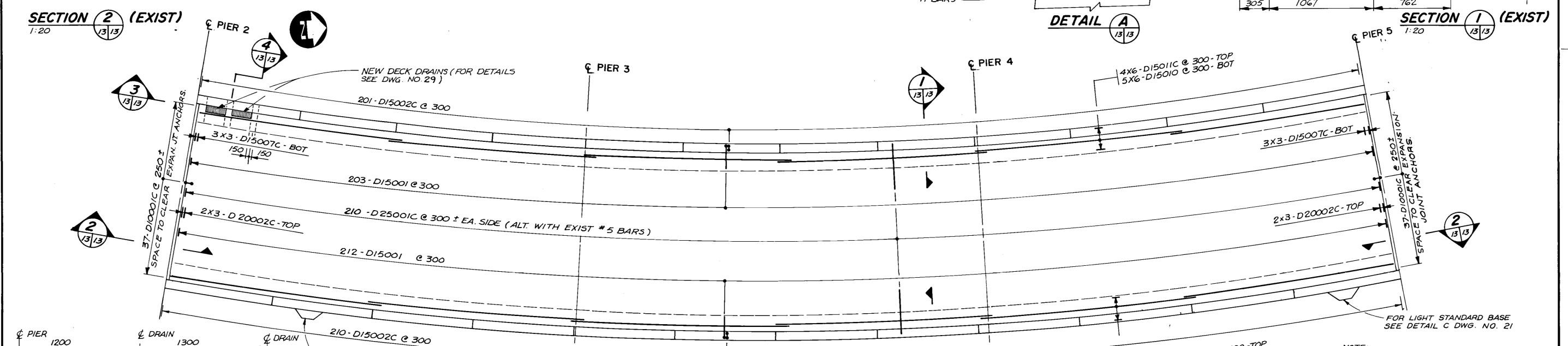
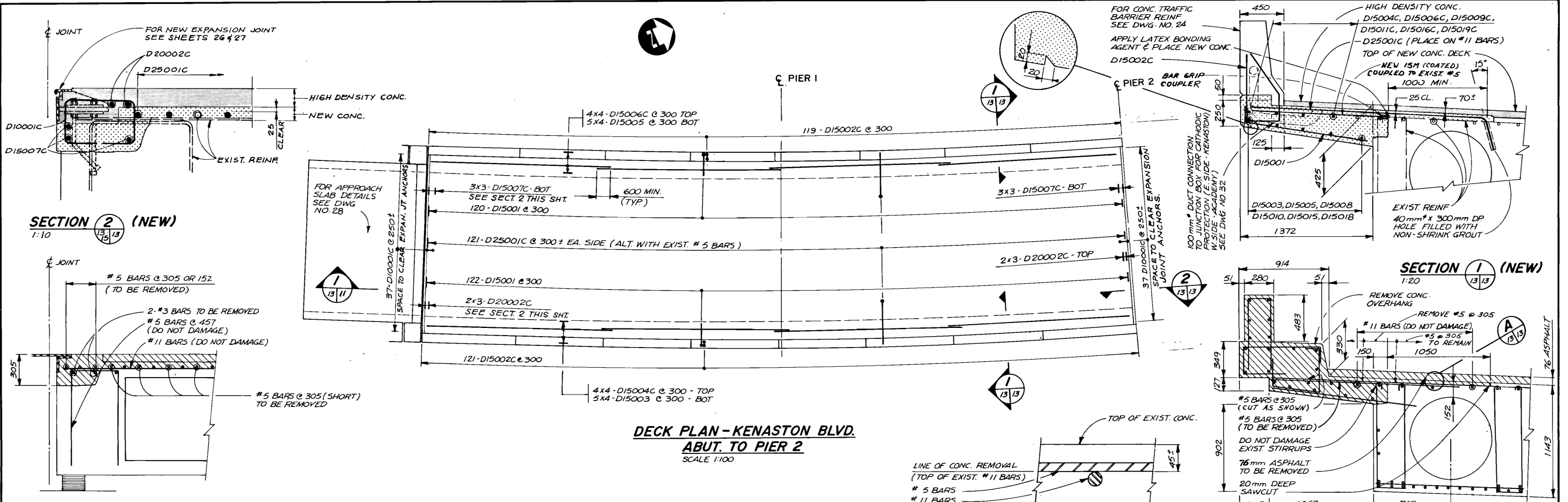
THE CITY OF WINNIPEG
PUBLIC WORKS DEPARTMENT

2016 BRIDGE MAINTENANCE - ST. JAMES SOUTHBOUND BRIDGE REPAIRS

ST. JAMES SB EXPANSION JOINT DETAILS

CITY DRAWING NUMBER B101-16-08
SHEET 08 OF 11
CONSULTANT DRAWING NUMBER ---

CONSULTANT PROJECT NUMBER 16-3513



SECTION 3 1:20
SECTION 4 1:20

PROVINCE OF MANITOBA
 9/11/87
 F.A.
 KEM
 REGISTERED ENGINEER

74 chdlt 88 01 21

B-5708

DILLON
 Consulting Engineers - Planners
 Environmental Scientists

DESIGNED BY: S.S.R./F.A.K. DRAWN BY: C.R.B./D.M.W.
 CHECKED BY: DATE: DEC 1986
 R.A.W. APPROVED BY: DATE: 9 Jan 87

THE CITY OF WINNIPEG
 WORKS & OPERATIONS DIVISION
 STREETS & TRANSPORTATION DEPARTMENT

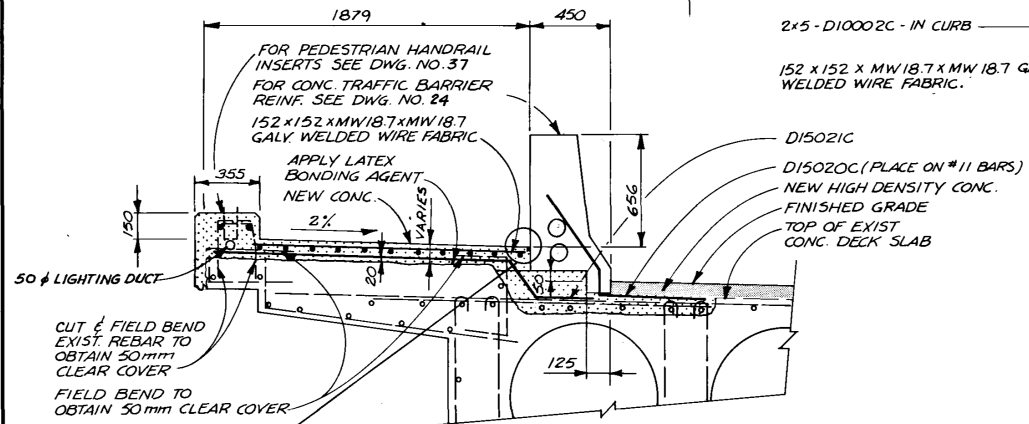
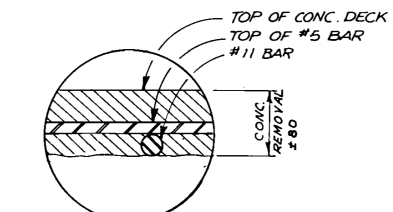
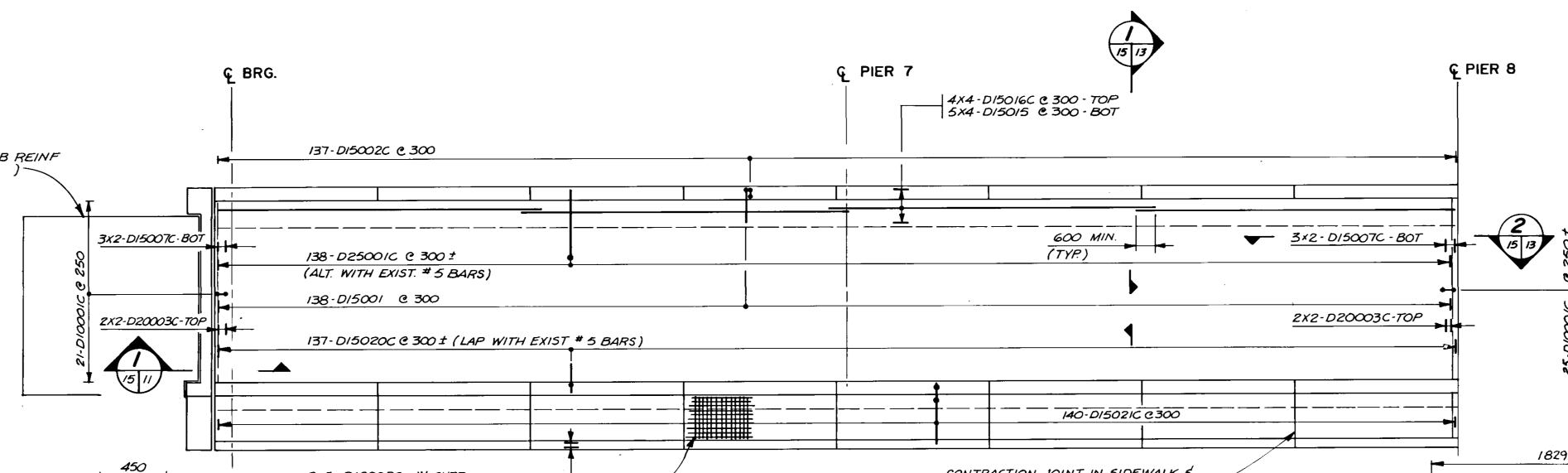
ST. JAMES BRIDGE NORTHBOUND
 DECK REHABILITATION, STRUCTURAL STRENGTHENING AND RELATED WORKS
KENASTON ABUT. TO PIER 5
 DECK REINFORCING

AUTHORIZED BY: [Signature] 1587-21-12
 ACCEPTED BY: [Signature] 87 01 12
 SCALE: 1:100 DRAWING NO. B102-87-13

NO.	REVISIONS	DATE	APP.

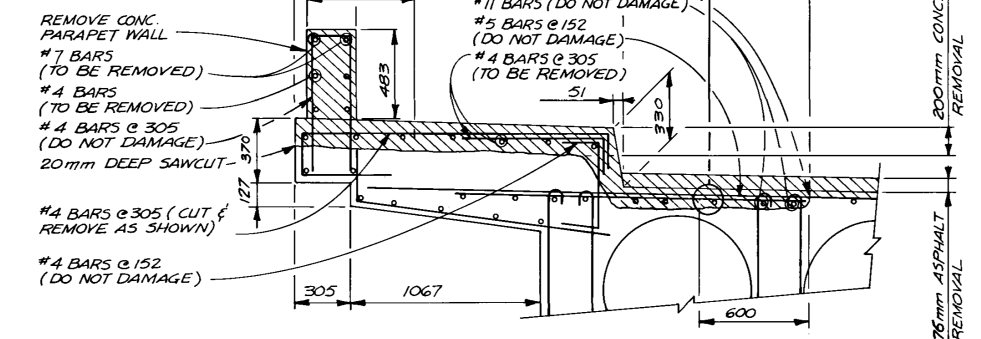


FOR APPROACH SLAB REINF (SEE DWG. NO. 28)



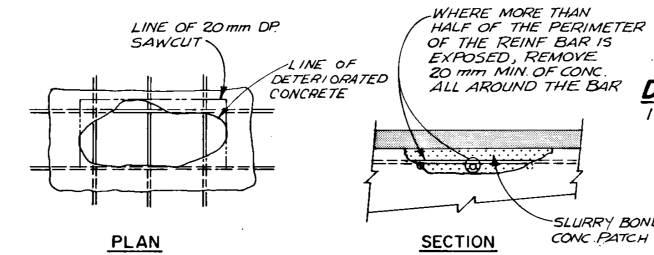
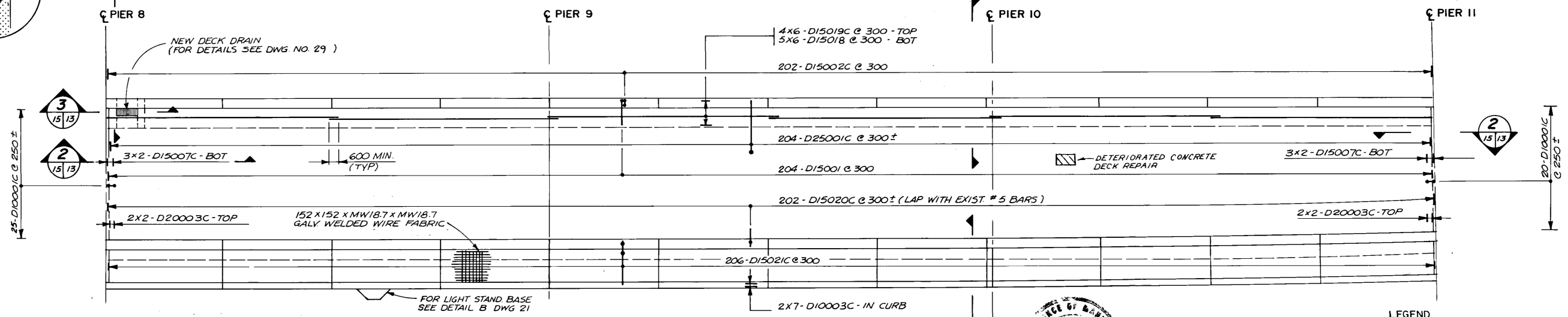
DECK PLAN-ACADEMY RD. ABUT. TO PIER 8
1:100

- NOTES
1. FIELD EPOXY COAT ALL EXIST. EXPOSED REINF. EXCEPT BOTTOM OF BARS WITH LESS THAN 50mm CLEAR TO EXIST. CONC.
 2. BAR MARK D25001C IS EXIST. LONGITUDINAL REBAR TO BE FIELD CUT WHERE THEY INTERFERE WITH DECK DRAIN



SECTION 1 (NEW)
1:20

SECTION 1 (EXIST)
1:20



DETERIORATED CONC. DECK REPAIR



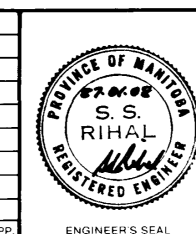
8/11/87
F.A.
NEW
APPROVED BY: [Signature]
DATE: 88 01 21

LEGEND

- [Hatched Box] CONCRETE REMOVAL
- [Dotted Box] NEW CONCRETE
- [Solid Box] HIGH DENSITY CONCRETE

B-5710

NO.	REVISIONS	DATE	APP.



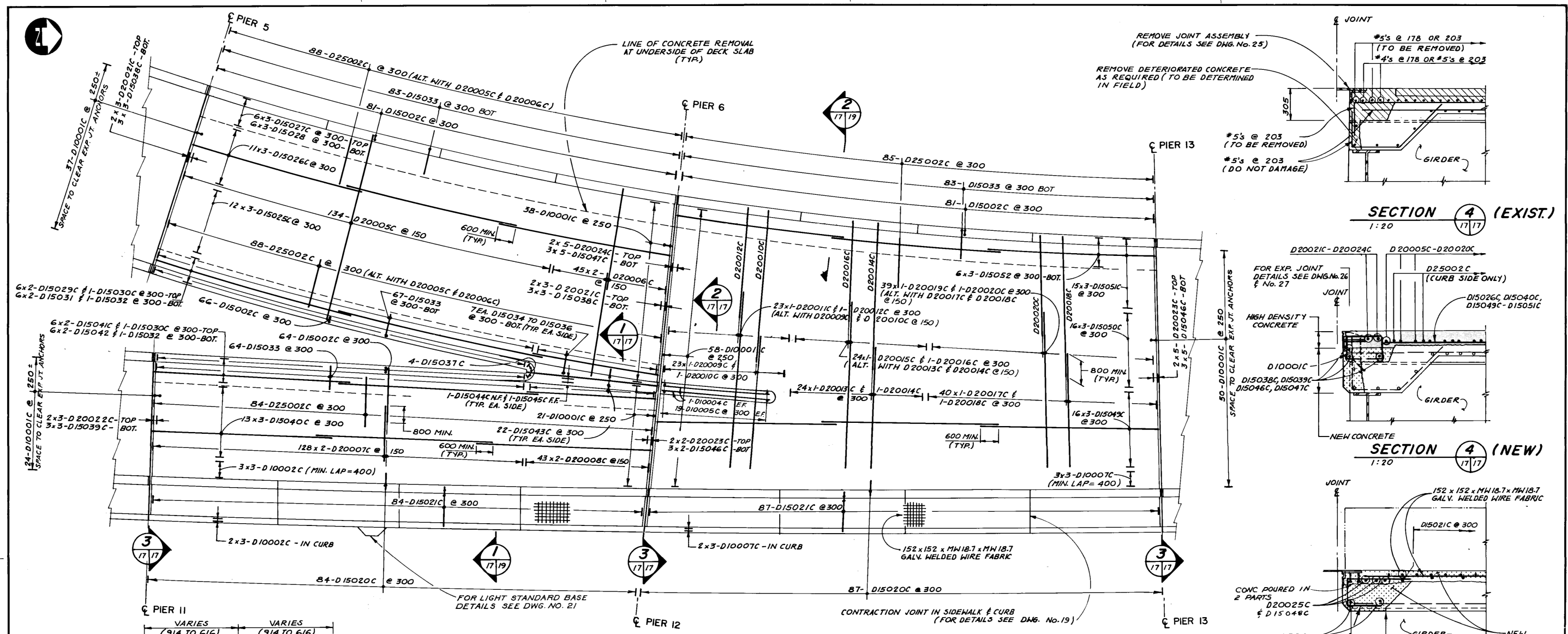
DILLON
Consulting Engineers - Planners
Environmental Scientists

DESIGNED BY: S.S.R./F.A.K. DRAWN BY: C.R.B. / D.M.W.
CHECKED BY: R.A.W./N.B.U. DATE: DEC. 1986
APPROVED BY: [Signature] DATE: 9 Jan 87

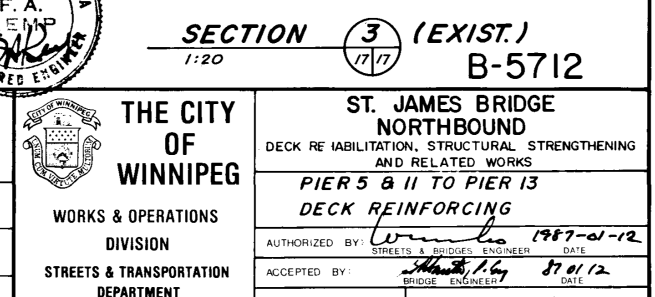
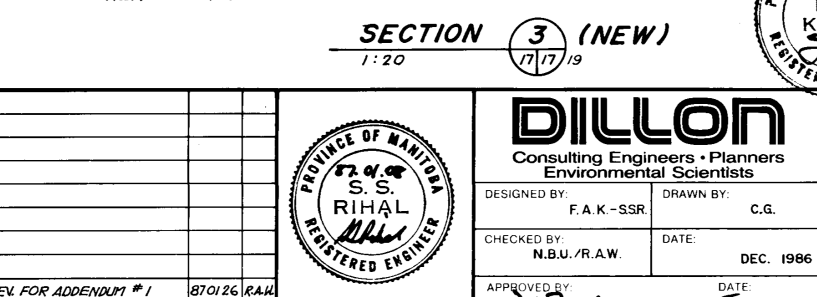
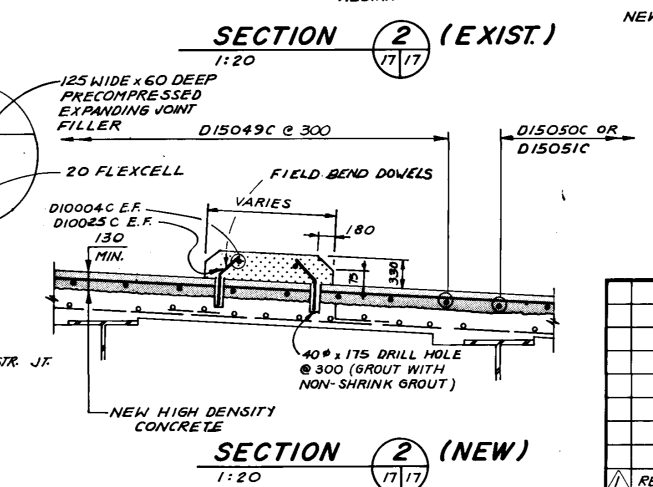
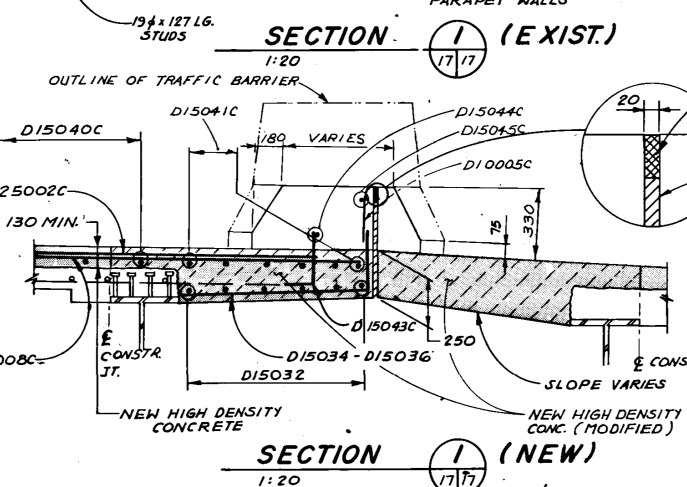
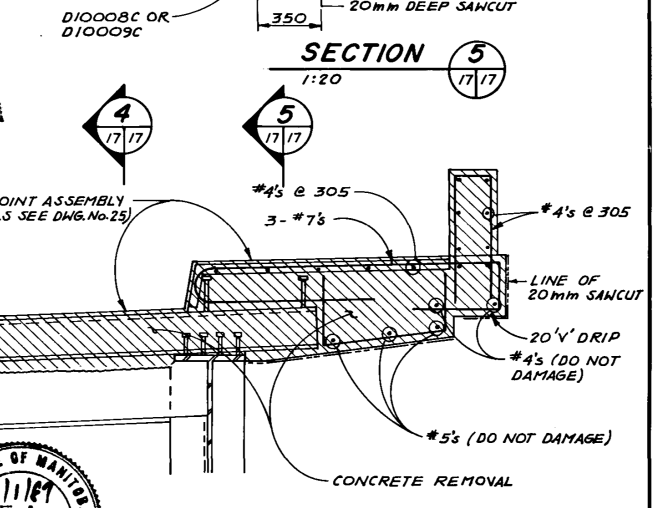
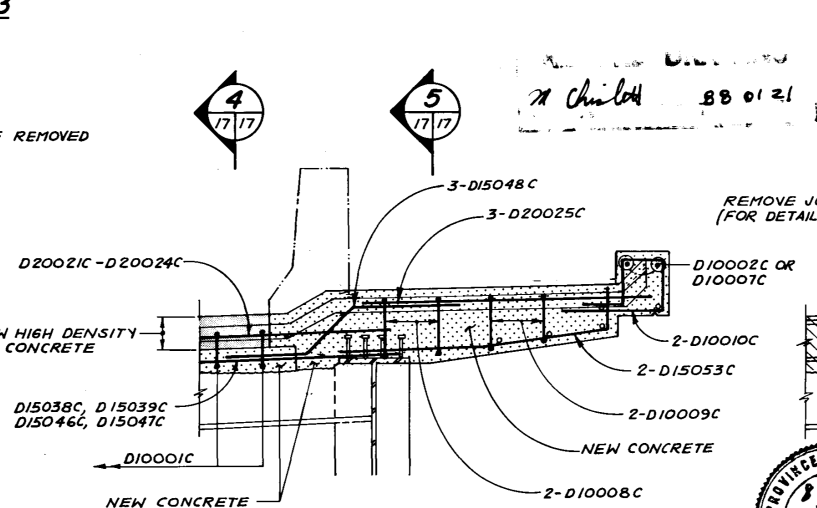
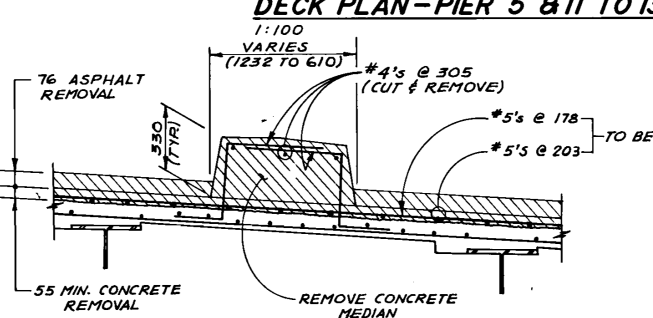
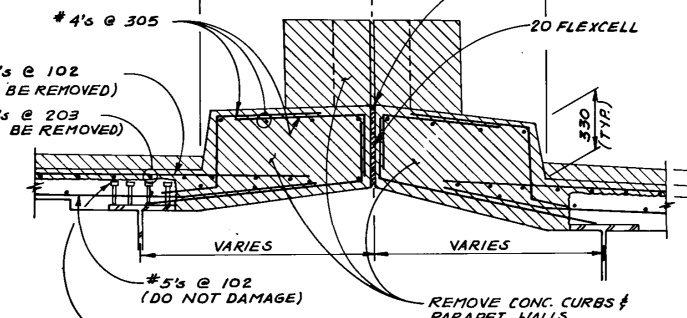
THE CITY OF WINNIPEG
WORKS & OPERATIONS
DIVISION
STREETS & TRANSPORTATION
DEPARTMENT

ST. JAMES BRIDGE NORTHBOUND
DECK REHABILITATION, STRUCTURAL STRENGTHENING AND RELATED WORKS
ACADEMY RD. ABUT TO PIER 11
DECK REINFORCING

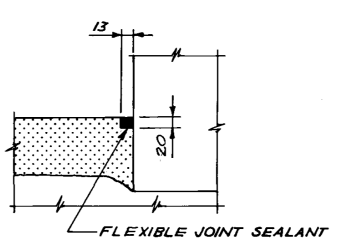
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ACCEPTED BY: [Signature] 87/1/12
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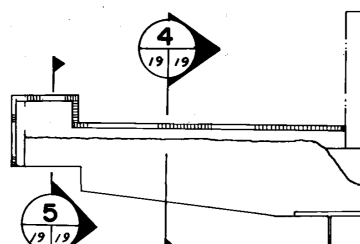
DECK PLAN-PIER 5 & 11 TO 13



<p>DILLON Consulting Engineers • Planners Environmental Scientists</p>					
DESIGNED BY: F.A.K.-SSR		DRAWN BY: C.G.		<p>THE CITY OF WINNIPEG WORKS & OPERATIONS DIVISION STREETS & TRANSPORTATION DEPARTMENT</p>	
CHECKED BY: N.B.U./R.A.W.		DATE: DEC. 1986		<p>ST. JAMES BRIDGE NORTHBOUND DECK REABILITATION, STRUCTURAL STRENGTHENING AND RELATED WORKS PIER 5 & 11 TO PIER 13 DECK REINFORCING</p>	
APPROVED BY: <i>[Signature]</i>		DATE: 9 Jan 87		<p>AUTHORIZED BY: <i>[Signature]</i> 1987-01-12 ACCEPTED BY: <i>[Signature]</i> 87 01 12 SCALE: AS NOTED DRAWING NO: B102-87-17</p>	
REV. FOR ADDENDUM #1	870126	RAJ			
NO	REVISIONS	DATE	APP	ENGINEER'S SEAL	



DETAIL 'A'
N.T.S.



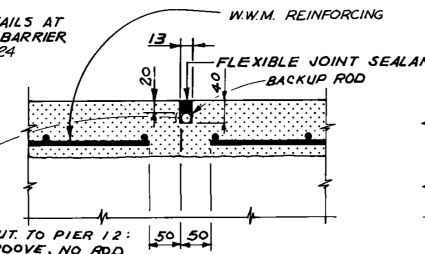
ELEVATION

CONTRACTION JOINT DETAIL

N.T.S.

FOR JOINT DETAILS AT CONC. TRAFFIC BARRIER SEE DWG. No. 24

ACADEMY ABUT. TO PIER 12: 20 DEEP GROOVE, NO ROD
PIER 12 TO NORTH ABUT.: 40 DEEP GROOVE WITH BACKUP ROD



SECTION 4

SECTION 5

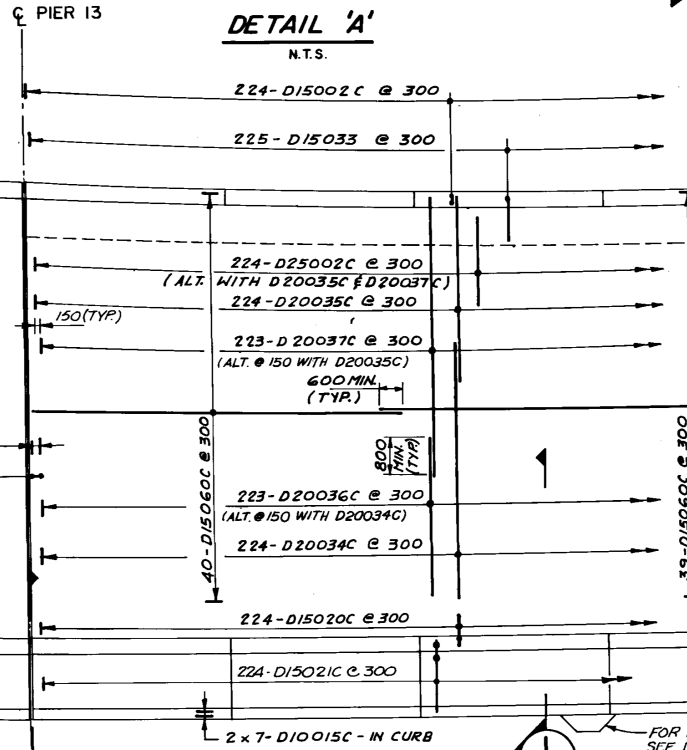
EXIST. CONSTRUCTION JOINT (TYP)

6x6-D15062 @ 300-BOT. (MIN. LAP=600)

LINE OF CONC. REMOVAL AT UNDERSIDE OF DECK SLAB (TYP)

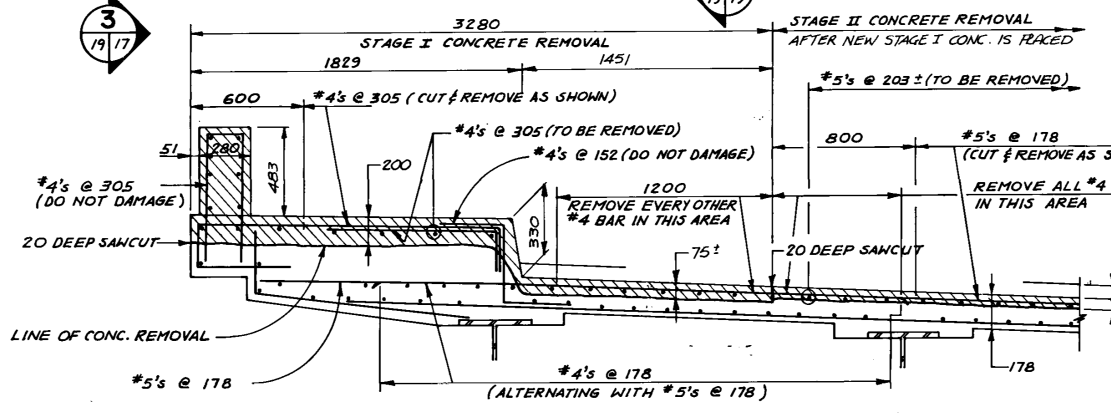
PIER 15

50-D10001C @ 2501
SPACE TO CLEAR EXPANSION JT. ANCHORS.

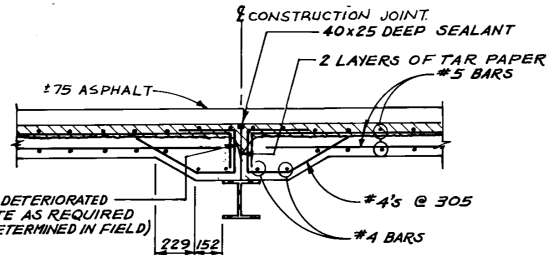


DECK PLAN - PIER 13 TO PIER 15

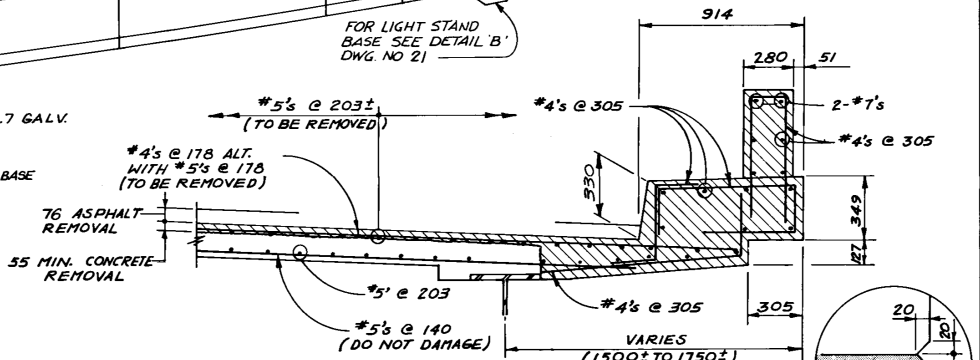
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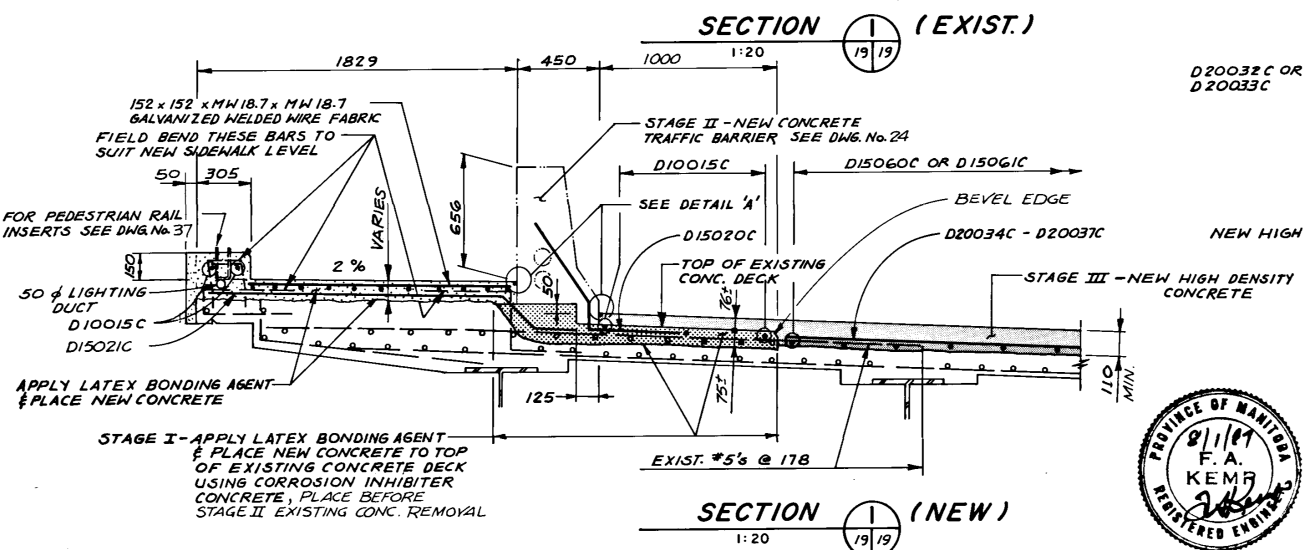
SECTION 1 (EXIST.)



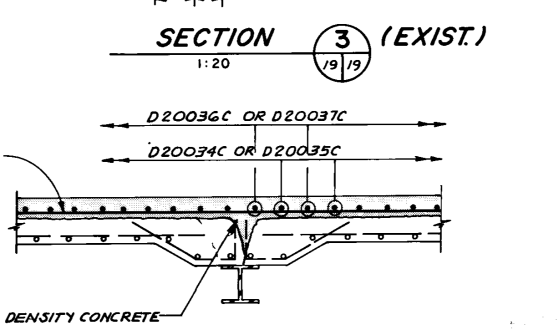
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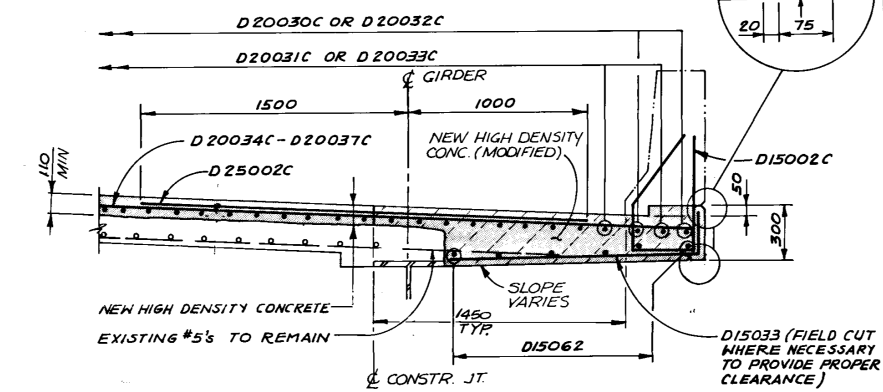
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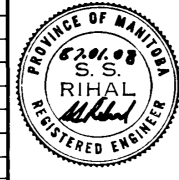
SECTION 1 (NEW)



SECTION 3 (NEW)



SECTION 2 (NEW)



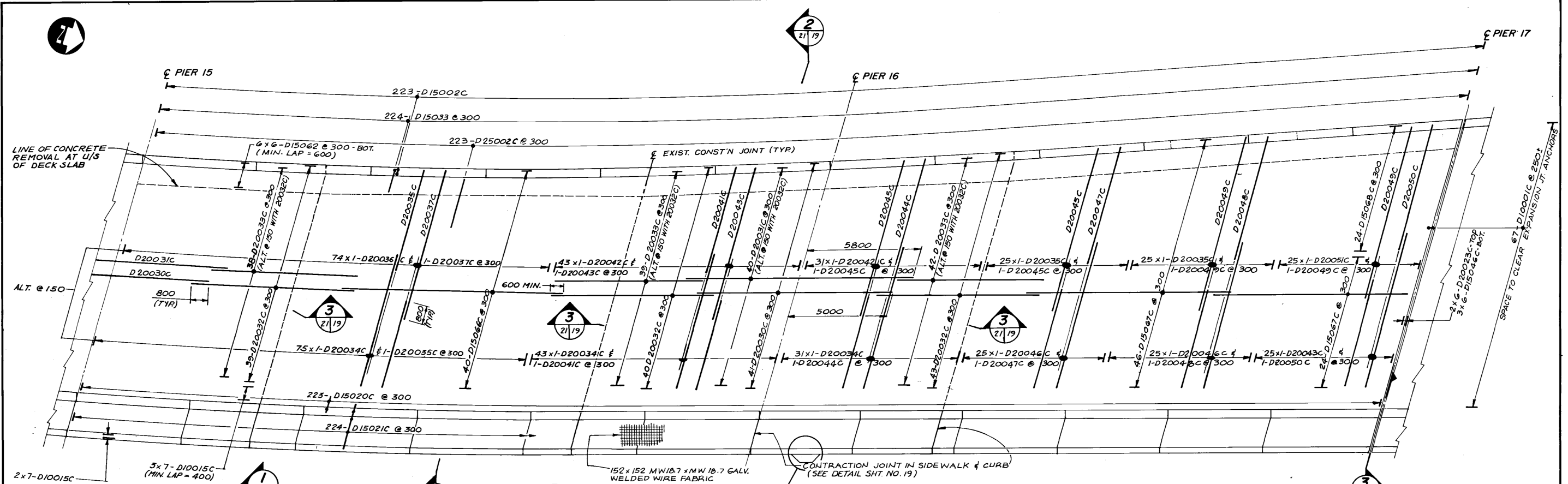
DILLON
Consulting Engineers • Planners
Environmental Scientists

DESIGNED BY: S.S.R./P.A.K. DRAWN BY: C.G.
CHECKED BY: N.B.U./R.A.W. DATE: DEC. 1986
APPROVED BY: W.B. [Signature] DATE: 9 JAN 87

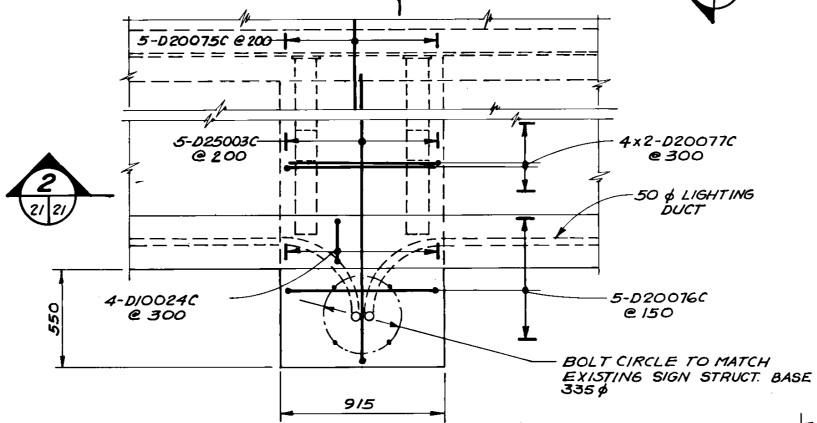
THE CITY OF WINNIPEG
WORKS & OPERATIONS DIVISION
STREETS & TRANSPORTATION DEPARTMENT

B-5714
ST. JAMES BRIDGE NORTHBOUND
DECK REHABILITATION, STRUCTURAL STRENGTHENING AND RELATED WORKS
PIER 13 TO PIER 15 DECK REINFORCING
AUTHORIZED BY: [Signature] DATE: 1987-01-12
ACCEPTED BY: [Signature] DATE: 87 JAN 12
SCALE: AS NOTED DRAWING NO. B102-87-19

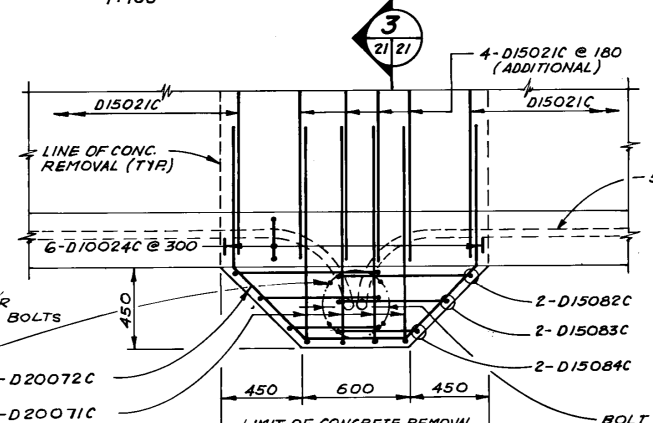
NO.	REVISIONS	DATE	APP.



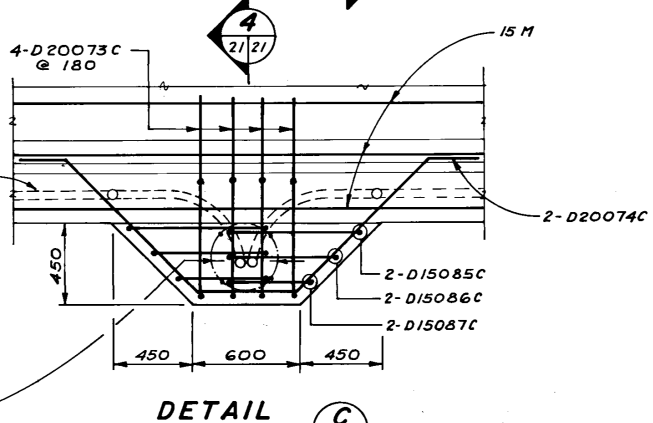
DECK PLAN - PIER 15 TO PIER 17
1:100



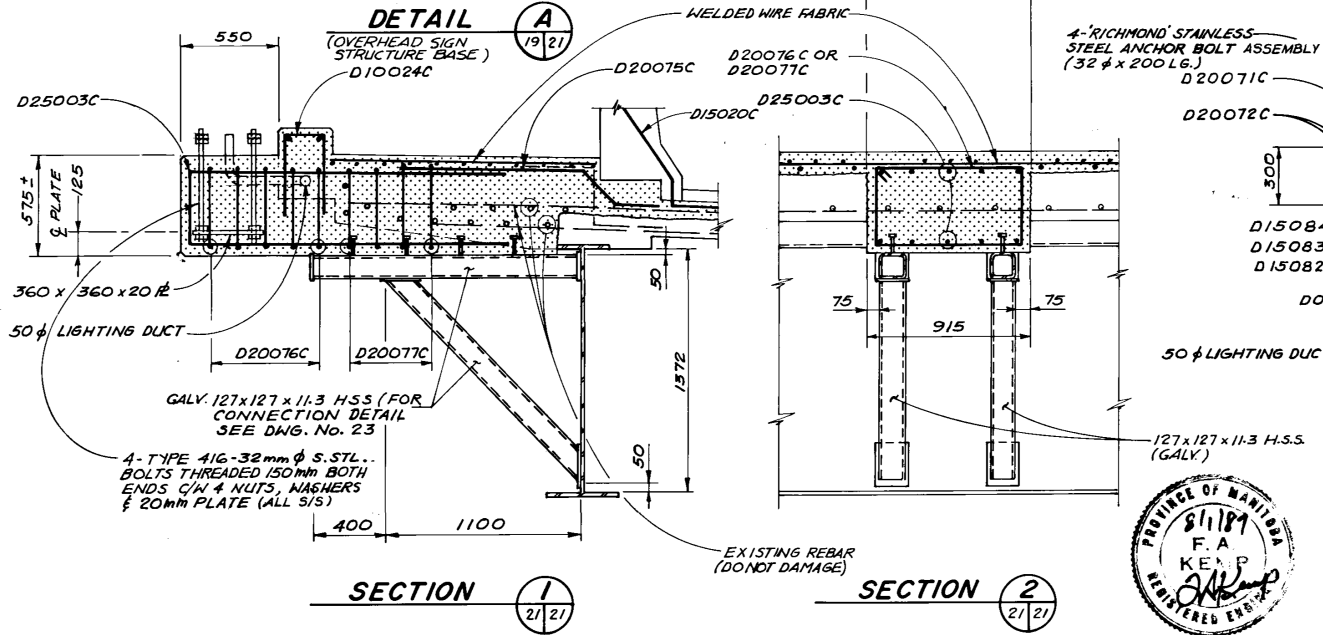
DETAIL A
1:20



DETAIL B
1:20

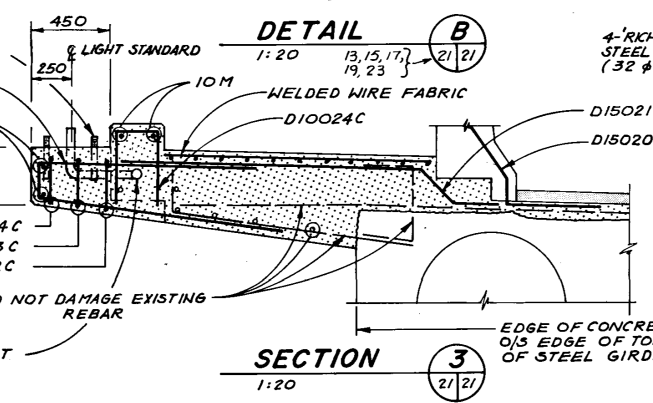


DETAIL C
1:20

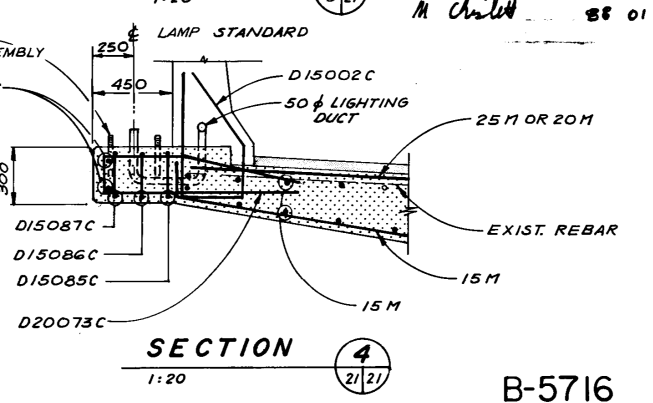


SECTION 1
1:20

SECTION 2
1:20



SECTION 3
1:20

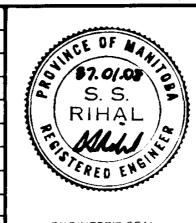


SECTION 4
1:20

NOTE:
CORRECT BOLT CIRCLE FOR LAMP STANDARD ANCHOR BOLTS WAS 375 φ. HOWEVER, AS CONSTRUCTED WAS 280 φ.



NO.	REVISIONS	DATE	APP.



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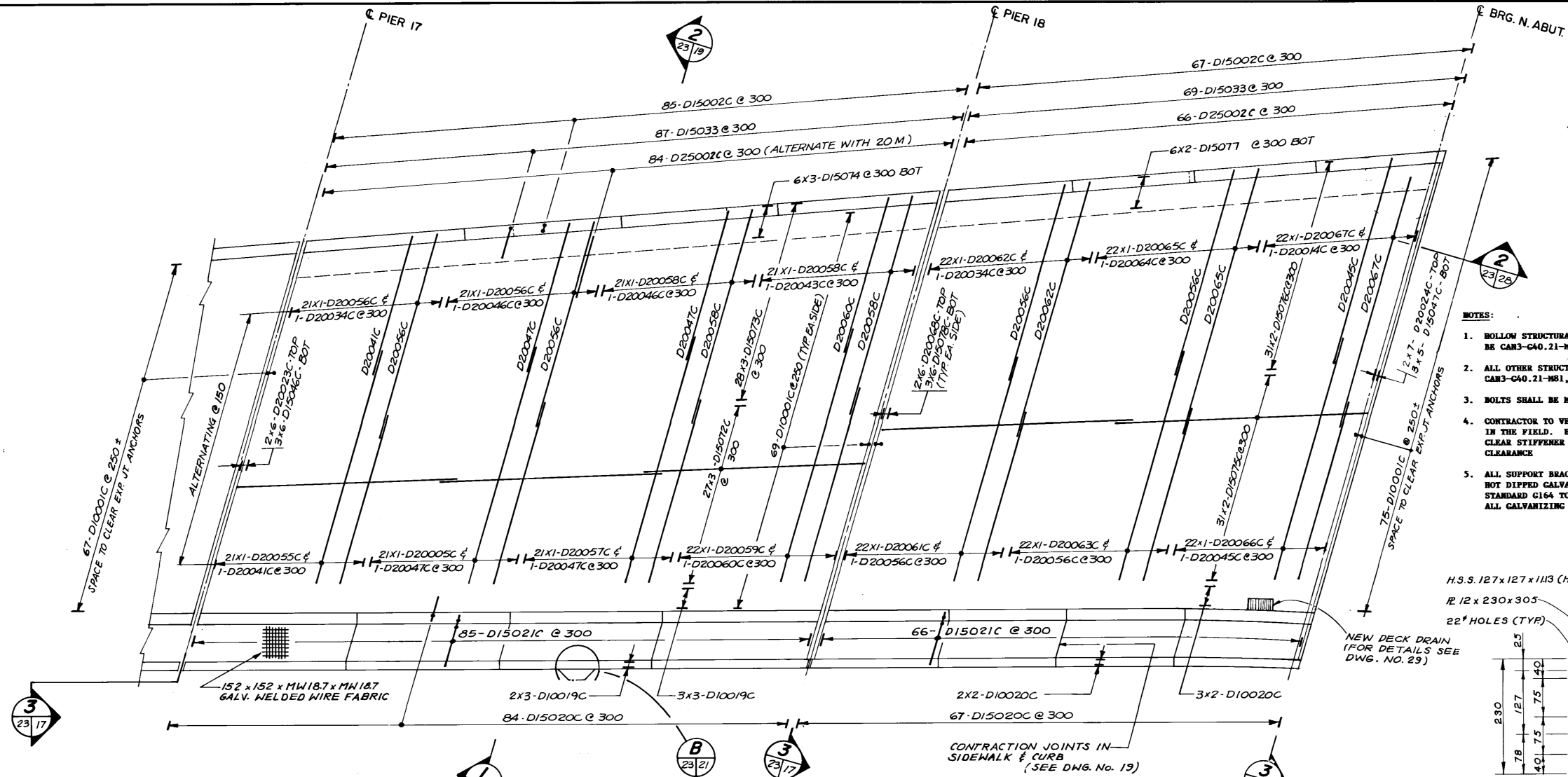
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CHECKED BY: N.B.U./R.A.W. DATE: DEC. 1986
APPROVED BY: V.B. Wray DATE: 9 Jan 87

THE CITY OF WINNIPEG
WORKS & OPERATIONS
DIVISION
STREETS & TRANSPORTATION
DEPARTMENT

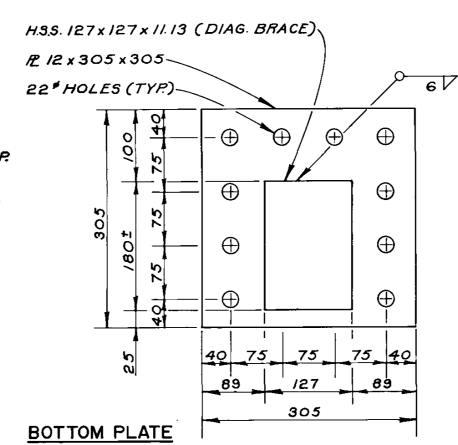
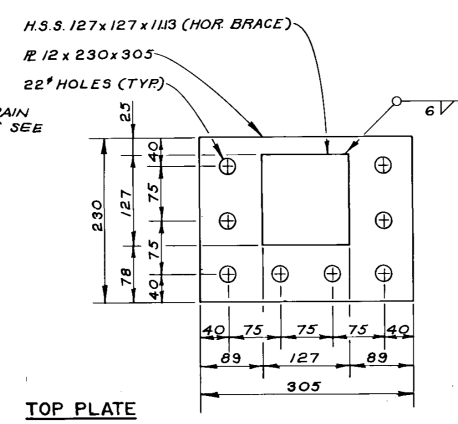
ST. JAMES BRIDGE NORTHBOUND
DECK REHABILITATION, STRUCTURAL STRENGTHENING
AND RELATED WORKS

PIER 15 TO PIER 17
DECK REINFORCING

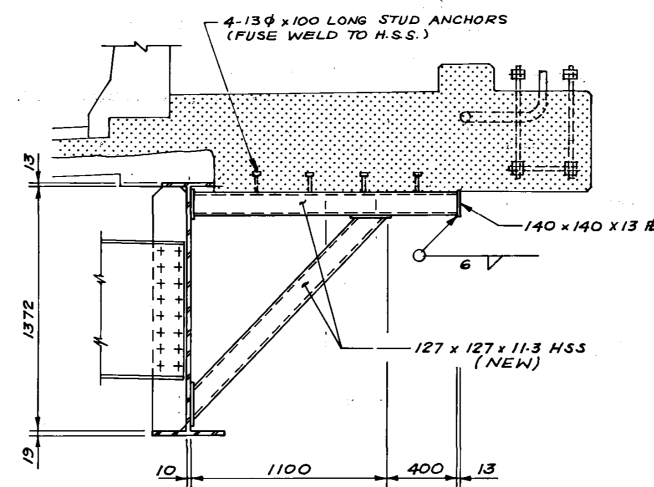
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ACCEPTED BY: [Signature] 17/1/12
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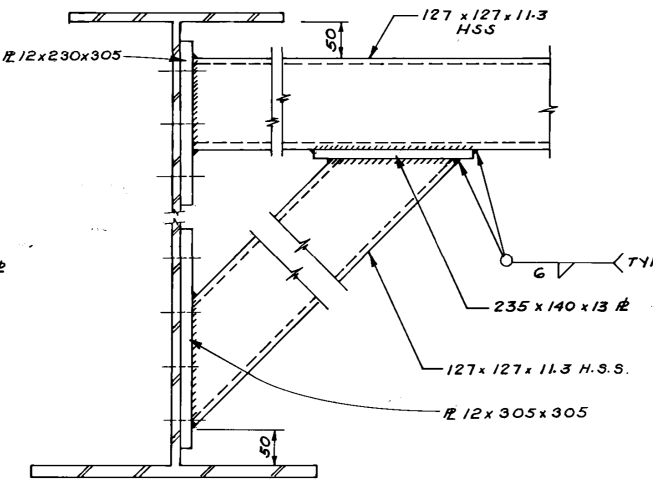
- NOTES:**
1. BOLLOW STRUCTURAL SECTIONS FOR BRACKETS SHALL BE CAN3-C40.21-M81, 350W, CLASS H
 2. ALL OTHER STRUCTURAL STEEL SHALL BE CAN3-C40.21-M81, 350W.
 3. BOLTS SHALL BE M20 (3/4") A-325 BOLTS
 4. CONTRACTOR TO VERIFY EXACT LOCATION OF BRACKETS IN THE FIELD. BOLT SPACING MAY BE ADJUSTED TO CLEAR STIFFENER PLATES TO PROVIDE MINIMUM 75MM CLEARANCE
 5. ALL SUPPORT BRACKETS AND CONNECTORS SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH C.S.A. STANDARD C164 TO A RESTRICTION OF 600 G/M². ALL GALVANIZING TO BE DONE AFTER FABRICATION.



DECK PLAN-PIER 17 TO NORTH ABUTMENT
1:100



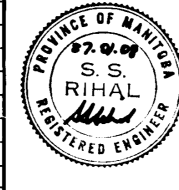
STEEL SUPPORT FOR OVERHEAD SIGN BASE
SCALE: 1:20



CONNECTIONS DETAIL
1:5

BOLTED FIELD CONNECTION PLATE DETAILS B-5718
SCALE: 1:5

RECORD
M. Chabot 88.01.21



NO.	REVISIONS	DATE	APP.

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Environmental Scientists

DESIGNED BY: F.A.K./S.S.R.
DRAWN BY: C.R.B./D.M.W.
CHECKED BY: R.A.W./N.B.U.
DATE: DEC. 1986

APPROVED BY: *V.B. Wright* 9 Jan. 87

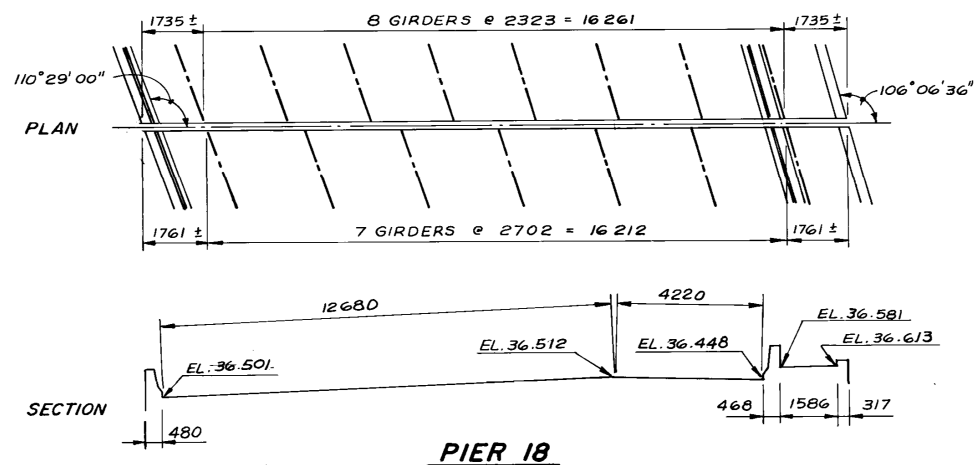
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ST. JAMES BRIDGE NORTHBOUND
DECK REHABILITATION, STRUCTURAL STRENGTHENING AND RELATED WORKS

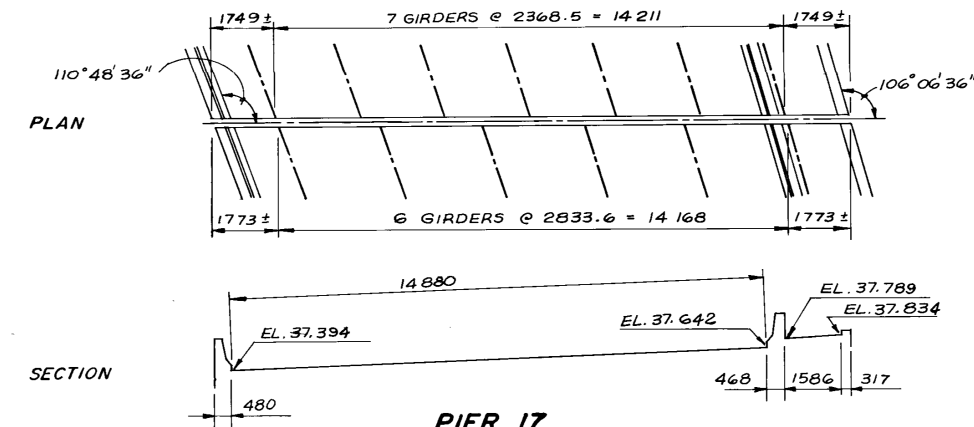
PIER 17 TO NORTH ABUTMENT DECK REINFORCING

AUTHORIZED BY: *Winnipeg* 1987-01-12
ACCEPTED BY: *Winnipeg* 11/12

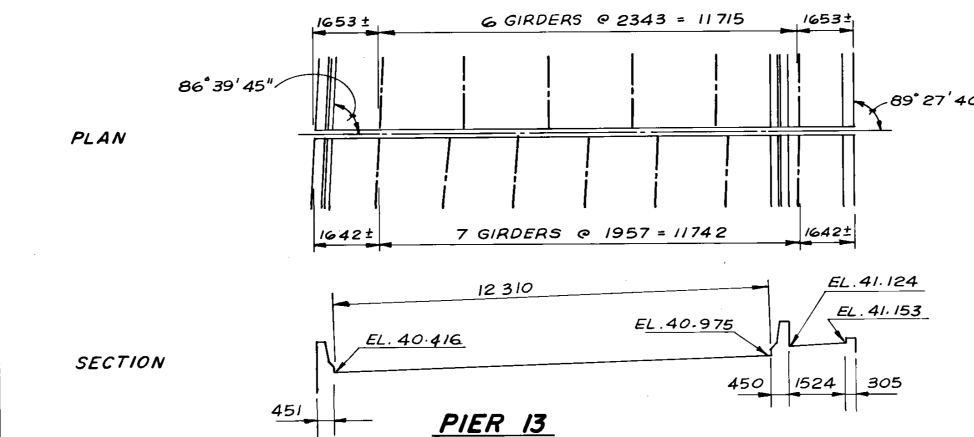
SCALE: AS NOTED
DRAWING NO. B102-87-23



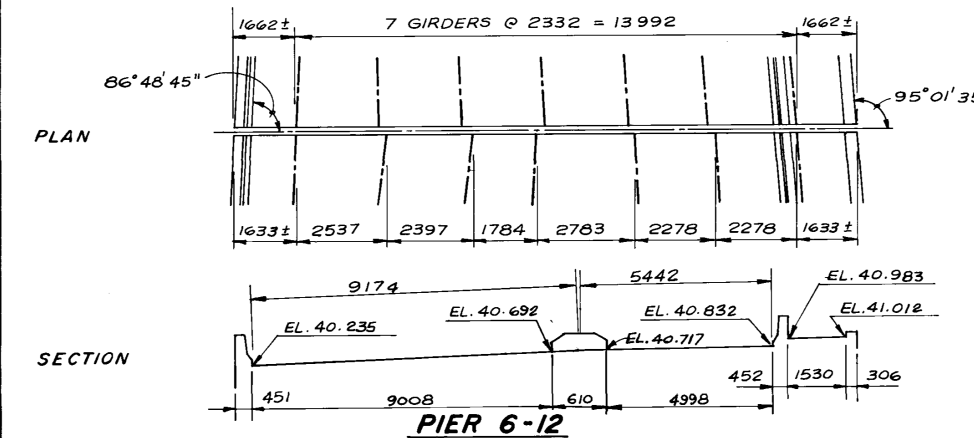
PIER 18



PIER 17

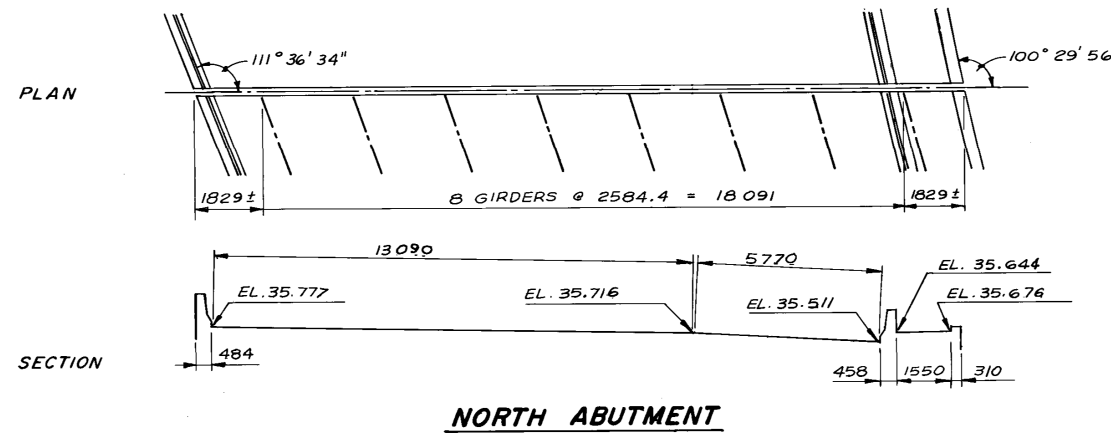


PIER 13

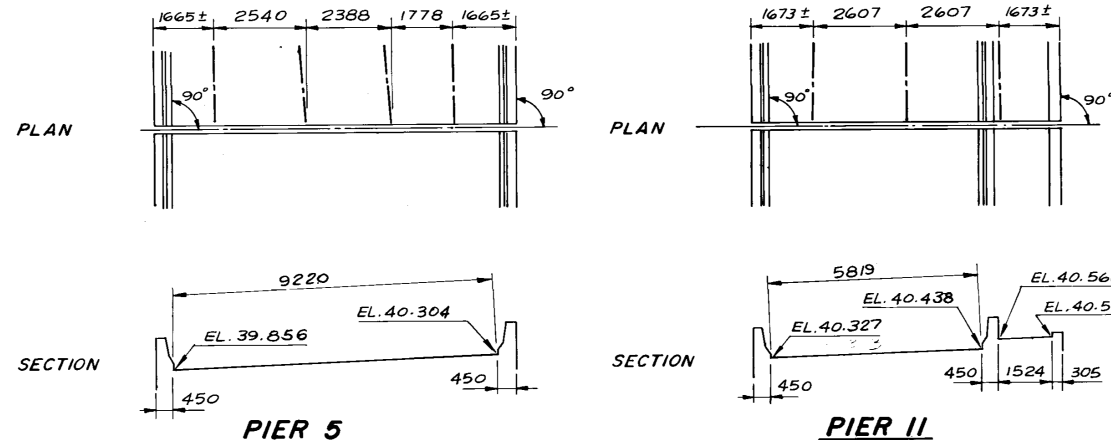


PIER 6-12

EXPANSION JOINT LAYOUTS
STEEL GIRDERS BOTH SIDES OF JOINT
SCALE 1:100



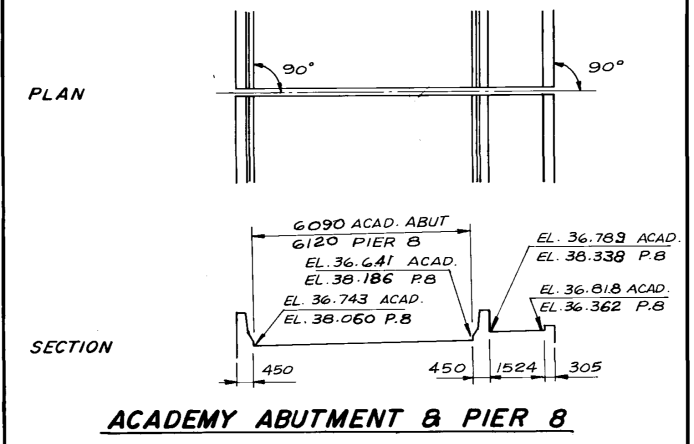
NORTH ABUTMENT



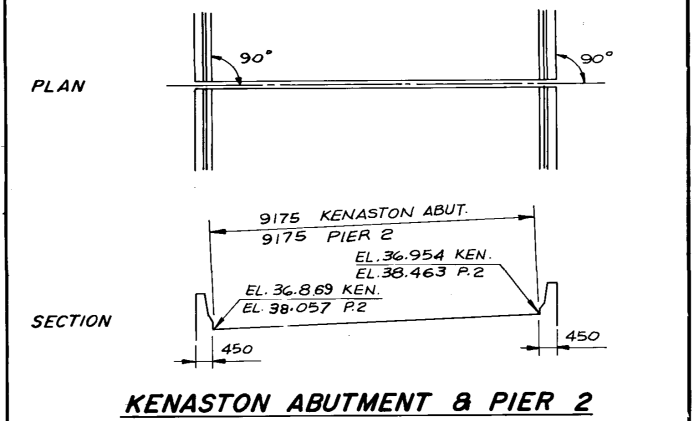
PIER 5

PIER 11

EXPANSION JOINT LAYOUTS
CONCRETE STRUCTURE ONE SIDE & STEEL GIRDERS OTHER SIDE OF JOINT
SCALE 1:100

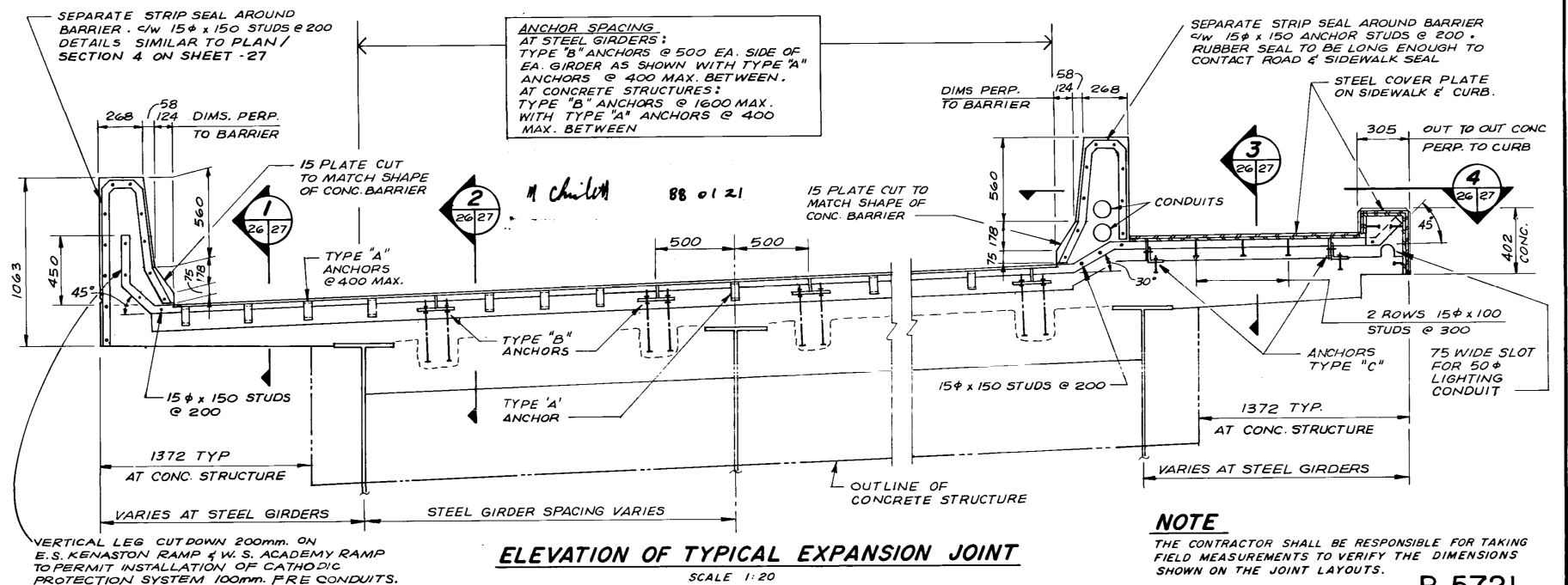


ACADEMY ABUTMENT & PIER 8



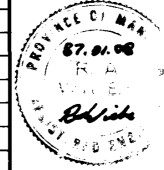
KENASTON ABUTMENT & PIER 2

EXPANSION JOINT LAYOUTS
CONCRETE STRUCTURE BOTH SIDES OF JOINT
SCALE 1:100



ELEVATION OF TYPICAL EXPANSION JOINT
SCALE 1:20

NOTE
THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING FIELD MEASUREMENTS TO VERIFY THE DIMENSIONS SHOWN ON THE JOINT LAYOUTS.



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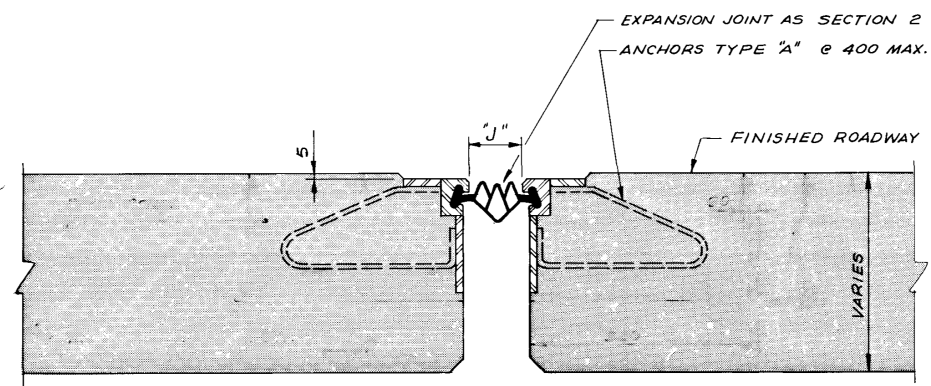
DESIGNED BY: W.P.S. DRAWN BY: W.P.S.
CHECKED BY: R.A.W. DATE: JAN. 87
APPROVED BY: W.P.S. DATE: 9 Jan 87

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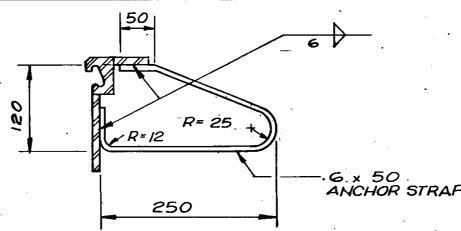
NEW EXPANSION JOINTS
1 OF 2

AUTHORIZED BY: W.P.S. 1987-01-12
ACCEPTED BY: W.P.S. 87/01/12
SCALE: AS NOTED DRAWING NO. B102-87-26

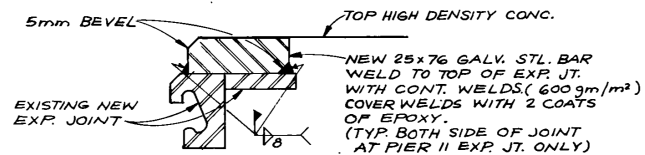


EXPANSION JOINT IN CANTILEVERED ROADWAY

SECTION 1
26/27

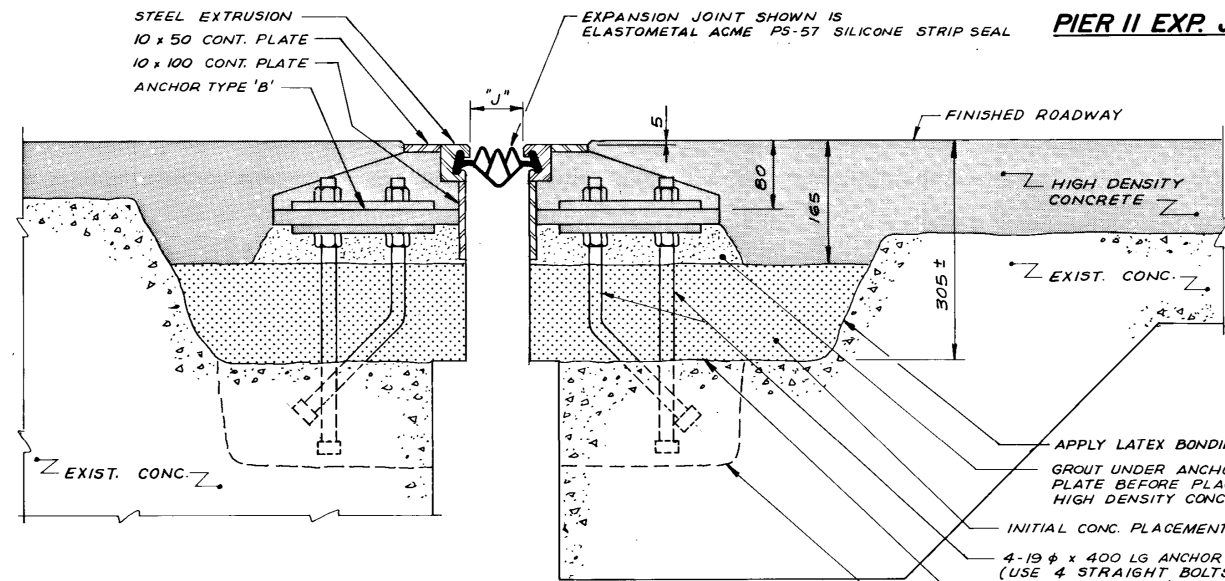


ELEVATION
ANCHOR TYPE "A"



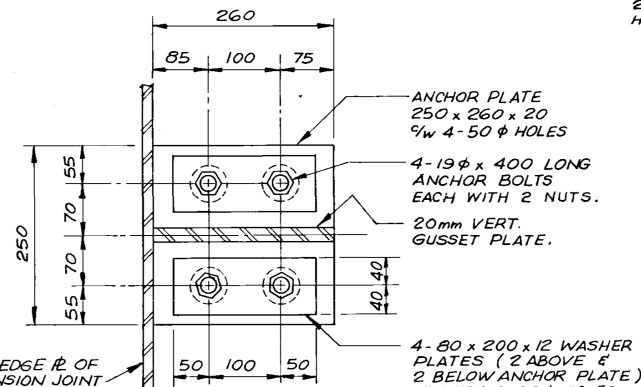
PIER II EXP. JT. RISER PLATES

LOCATION	DIM. 'J'				
	5°	10°	15°	20°	30°
KENASTON ABUTMENT	78	77	75	74	73
PIER 2	83	79	75	71	67
PIER 5	81	78	75	72	69
ACADEMY ABUTMENT	78	77	75	74	73
PIER 8	83	79	75	71	67
PIER II	81	78	75	72	69
PIER 6-12	79	77	75	73	71
PIER 13	84	79	75	70	65
PIER 17	84	79	75	70	65
PIER 18	80	77	75	71	67
NORTH ABUTMENT	75	75	75	75	75

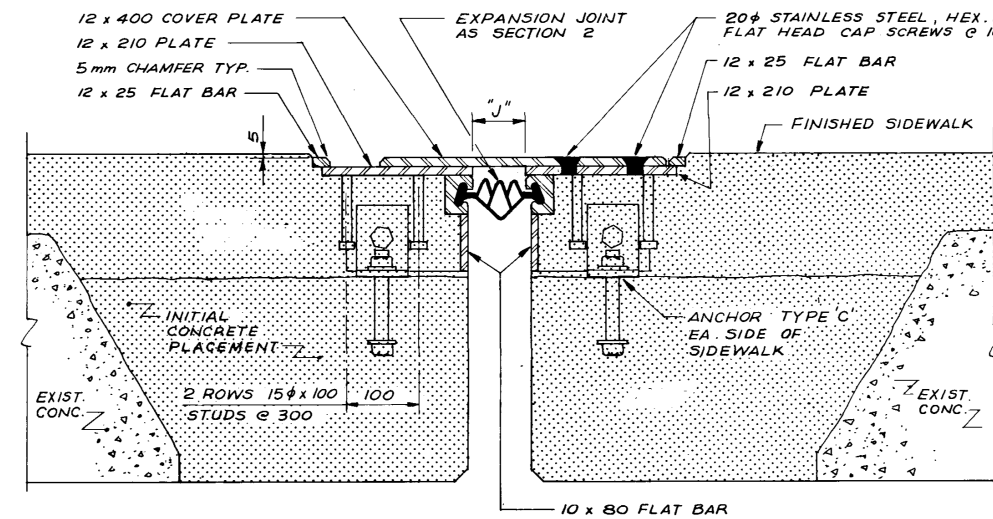


EXPANSION JOINT IN NON-CANTILEVERED ROADWAY

SECTION 2
26/27

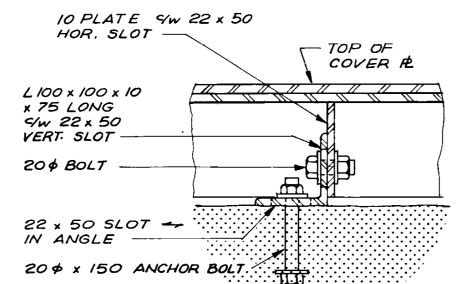


PLAN
ANCHOR TYPE "B"



EXPANSION JOINT IN SIDEWALK

SECTION 3
26/27



ELEVATION
ANCHOR TYPE "C"

SEPARATE STRIP SEAL & STEEL EXTRUSION 1/4" x 15 phi x 150 ANCHOR STUDS @ 200 AROUND FACES OF BARRIER. (SEAL AS PER SECTION 2)

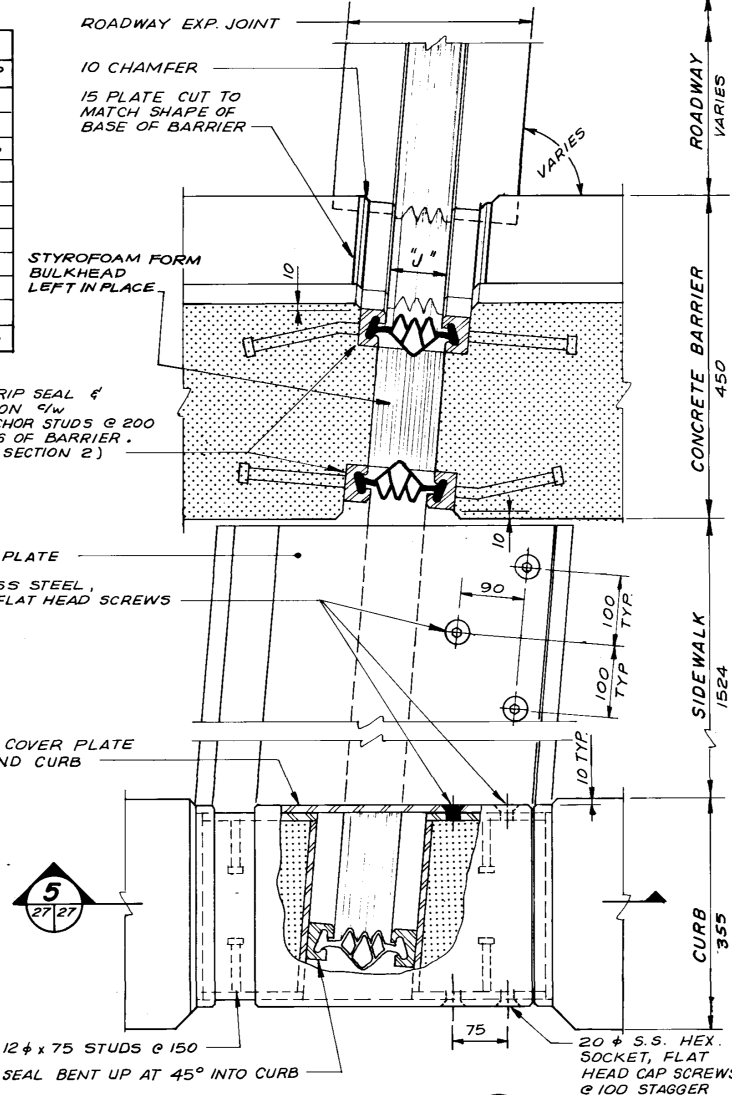
STEEL COVER PLATE
20 phi STAINLESS STEEL, HEX. SOCKET, FLAT HEAD SCREWS

10mm COVER PLATE AROUND CURB

5
27/27

12 phi x 75 STUDS @ 150
SEAL BENT UP AT 45° INTO CURB

PLAN / SECTION 4
26/27



EXPANSION JOINT IN CURB

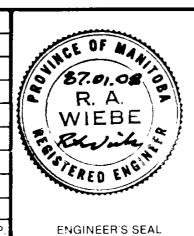
SECTION 5
27/27

B-5722

NOTES

- MANUFACTURER'S SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL AT LEAST FOURTEEN (14) WORKING DAYS PRIOR TO FABRICATION. THE EXPANSION JOINT ASSEMBLIES SHALL BE DESIGNED TO CARRY AASHTO HS20-44 LIVE LOADING.
- STEEL SHALL CONFORM TO CSA STANDARD C40.21M, GRADE 300M OR EQUAL.
- STEEL EXTRUSIONS SHALL CONFORM TO CSA C40.21 M GRADE 230C MINIMUM.
- ALL STEEL SURFACES SHALL BE HOT DIP GALVANIZED TO A NET RETENTION OF 600 CM² IN ACCORDANCE WITH CSA STANDARD C 164 AFTER FABRICATION AND INSTALLED IN ONE CONTINUOUS PIECE.
- JOINT ASSEMBLY SHALL BE FABRICATED AND COMPLETELY SHOP ASSEMBLED AND PRESET TO DIMENSION "J" FOR 15°C PRIOR TO SHIPMENT.
- WELDING SHALL BE OF LOW HYDROGEN CLASSIFICATION. MANUAL ELECTRODES SHALL BE E7016 OR E7018. ALL WELDING SHALL BE IN ACCORDANCE WITH CSA STANDARD W59.
- SEAL SHALL BE PERFORMED SILICON RUBBER SEAL. EACH RUBBER SEAL SHALL BE SUPPLIED AND INSTALLED IN ONE CONTINUOUS PIECE. NO SPLICES IN THE RUBBER SEAL WILL BE PERMITTED.
- JOINT ASSEMBLY SHALL BE INSTALLED 5mm BELOW ELEVATION AND GRADE OF BRIDGE DECK.
- AFTER REMOVAL OF CLAMPING CHANNELS AND SPACER DAM, BOLT AND BLEEDER HOLES TO BE FILLED WITH AN APPROVED EPOXY GROUT.
- INSTALLATION TEMPERATURE SHALL BE TAKEN AS THE MEAN SHADE AIR TEMPERATURE PRIOR TO JOINT INSTALLATION AT THE STRUCTURE.
- ALL AREAS OF DAMAGED GALVANIZING SHALL BE REPAIRED BY USING THE GALVALLOY PROCEDURE AS SPECIFIED.

NO	REVISIONS	DATE	APP



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DESIGNED BY: W.P.S. DRAWN BY: W.P.S.
CHECKED BY: R.A.W. DATE: JAN 87
APPROVED BY: *W.B. Ulyatt* DATE: 7 Jan 87

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ST. JAMES BRIDGE NORTHBOUND
DECK REHABILITATION, STRUCTURAL STRENGTHENING AND RELATED WORKS
NEW EXPANSION JOINTS
2 OF 2

AUTHORIZED BY: *Winnipeg* 1987-01-12
ACCEPTED BY: *Winnipeg* 1/11/87
SCALE: 1:5 DRAWING NO: B102-87-27



W. Dillon 88 01 21