



THE CITY OF WINNIPEG

WORKS AND OPERATIONS DIVISION

STREETS AND TRANSPORTATION DEPARTMENT

REID, CROWTHER & PARTNERS LIMITED
WINNIPEG

AS CONSTRUCTED

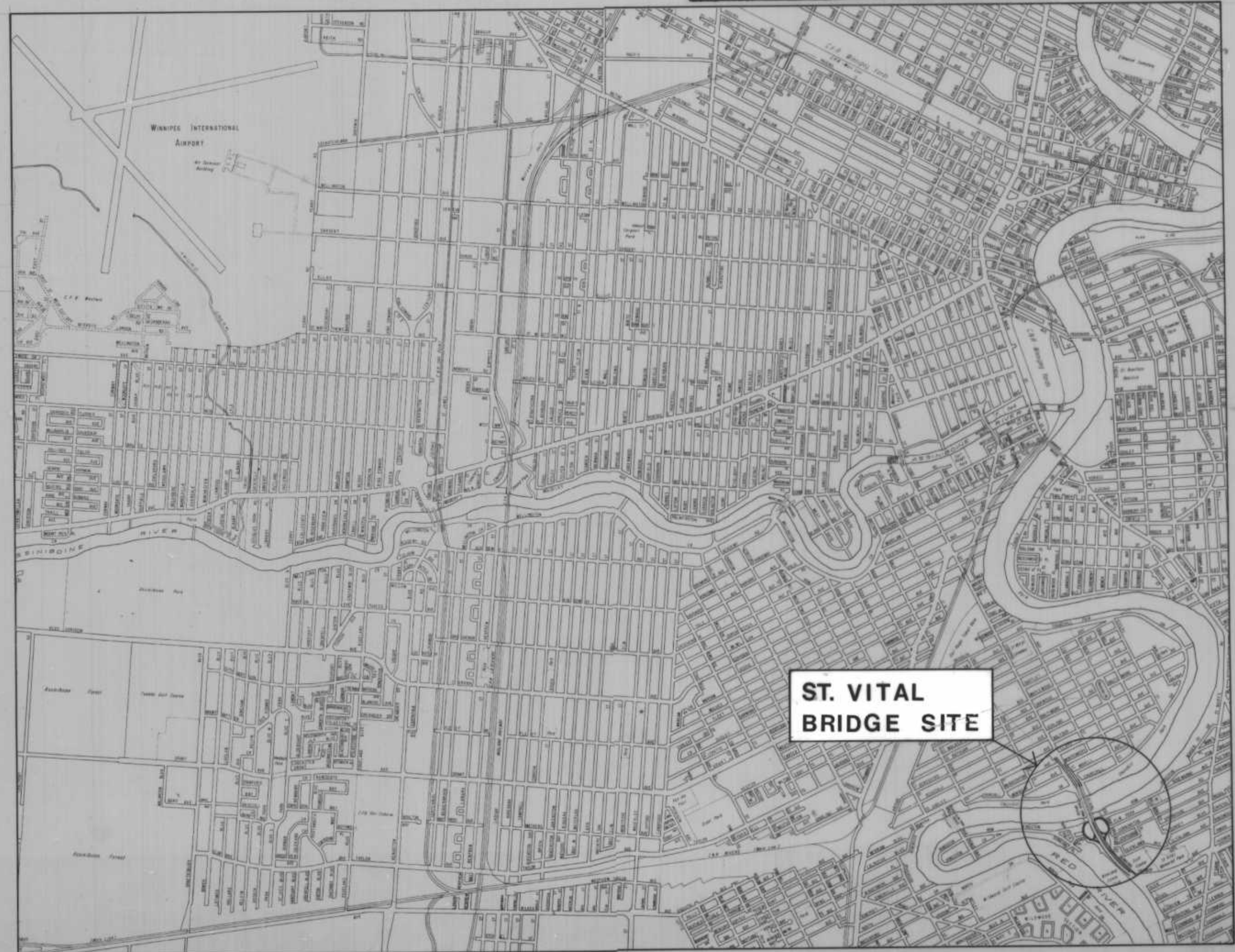
SIG. *[Signature]* DATE *9/27/88*



P.D. NO. 88-1

ST. VITAL TWIN BRIDGE OVER RED RIVER

STRUCTURE REHABILITATION AND RELATED WORKS



Reid Crowther

Reid Crowther & Partners Ltd.
Engineers • Planners • Scientists
Winnipeg, Manitoba



RELEASED FOR CONSTRUCTION BY:

[Signature]
MANAGER OF STREETS AND TRAFFIC

08 04 88
DATE

LOCATION PLAN

SET NO.

B-5826-1

DESIGN DATA

DESIGN SPECIFICATION AASHTO 1983

LIVE LOADING HSS 25 TRUCK LOADING
 HS25 - 44 LANE LOADING
 LIVE LOAD DISTRIBUTION FACTORS
 0.80 TRUCKS / INTERIOR GIRDER
 0.50 TRUCKS / EXTERIOR GIRDER

CONCRETE $f'_c = 30 \text{ MPa}$

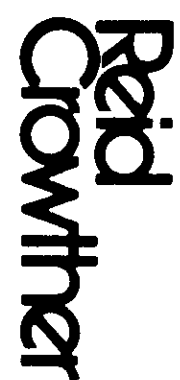
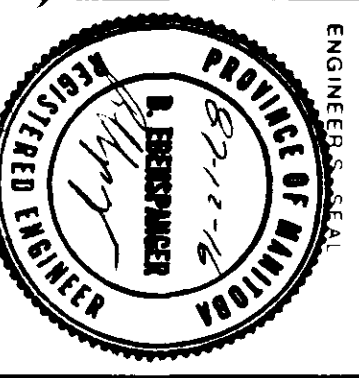
REINFORCING STEEL CSA G30.12 - M77 GRADE 400, all reinforcing steel is epoxy - coated

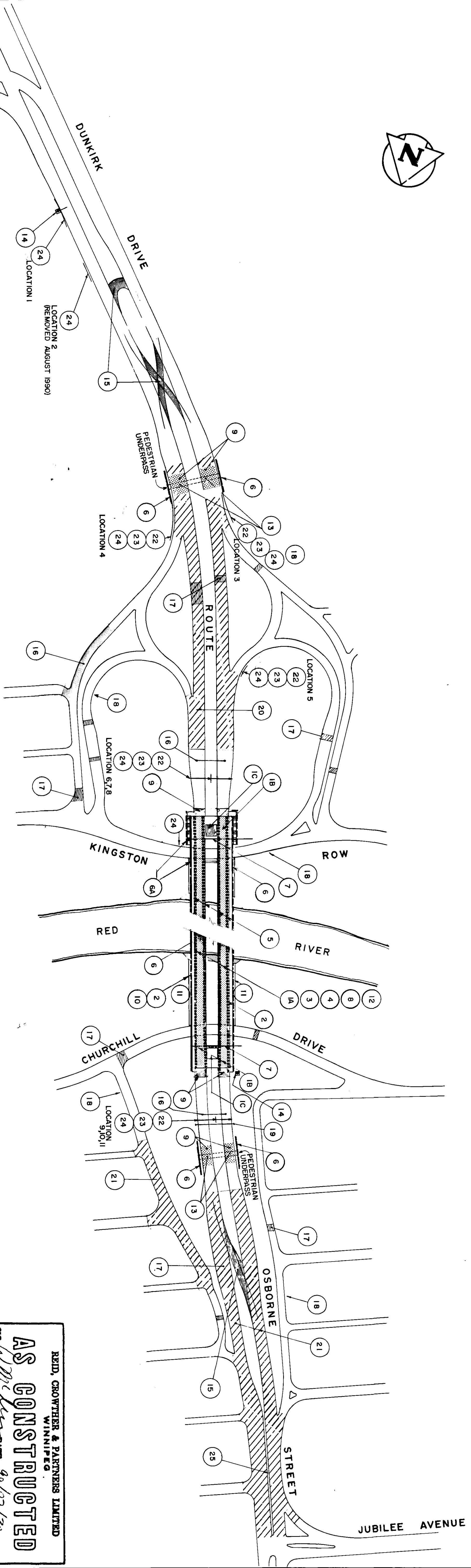
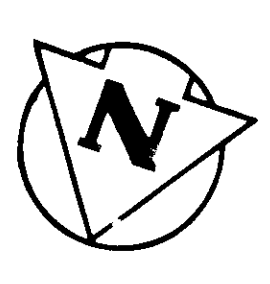
STRUCTURAL STEEL CSA CAN3 - G40.21 - M81, GRADE 300W

CLEAR COVER TO REINFORCING STEEL 80 ± 20 ABUTMENT WALLS
 65 ± 5 TOP DECK SLAB
 70 ± 20 SIDEWALK & STRUCTURAL APPROACH SLAB
 50 ± 10 TRAFFIC BARRIERS
 25 ± 5 UNDERSIDE OF DECK
 OTHERS AS NOTED ON DRAWINGS

DRAWING LIST

GENERAL		GENERAL	
B116 - 88 - 01	COVER SHEET	B116 - 88 - 28	PEDESTRIAN UNDERPASS ALUMINUM PEDESTRIAN HANDRAIL LAYOUT AND SIDEWALK DETAILS
B116 - 88 - 02	DESIGN DATA AND DRAWING LIST	B116 - 88 - 29	REINFORCING SCHEDULE
B116 - 88 - 03	GENERAL ARRANGEMENT AND ITEMS OF PROPOSED WORKS	B116 - 88 - 49	DRAIN INLET MODIFICATIONS
B116 - 88 - 04	CONSTRUCTION STAGING	ROAD DRAWINGS	
B116 - 88 - 05	DETOUR CROSS - OVERS	B116 - 88 - 30	DUNKIRK DRIVE (SOUTH OF BRIDGE) STATION 4+30 TO STATION 5+80
B116 - 88 - 05A	TRANSIT U-TURN CROSSOVER	B116 - 88 - 31	DUNKIRK DRIVE (SOUTH OF BRIDGE) STATION 5+80 TO STATION 7+11.570
BRIDGE DRAWINGS		B116 - 88 - 32	"ON" RAMP FROM KINGSTON ROW TO DUNKIRK DR. SOUTHBOUND STATION 0+90 TO DUNKIRK DRIVE
B116 - 88 - 06	PLAN AND GENERAL ELEVATION OF EXISTING BRIDGE	B116 - 88 - 33	"OFF" RAMP FROM DUNKIRK DR. NORTHBOUND TO KINGSTON ROW DUNKIRK DRIVE TO STATION 0+70
B116 - 88 - 07	PLAN AND GENERAL ELEVATION OF PROPOSED BRIDGE	B116 - 88 - 34	"ON" RAMP FROM KINGSTON ROW TO DUNKIRK DR. SOUTHBOUND DUNKIRK DRIVE TO STATION 0+90
B116 - 88 - 08	EXISTING ABUTMENTS	B116 - 88 - 35	"OFF" RAMP FROM DUNKIRK DR. NORTHBOUND TO KINGSTON ROW STATION 0+70 TO KINGSTON ROW
B116 - 88 - 09	ABUTMENT MODIFICATIONS 1	B116 - 88 - 36	OSBORNE STREET (NORTH OF BRIDGE) STATION 9+92.850 TO STATION 11+10
B116 - 88 - 10	ABUTMENT MODIFICATIONS 2	B116 - 88 - 37	OSBORNE STREET (NORTH OF BRIDGE) STATION 11+10 TO STATION 12+40
B116 - 88 - 11	DECK LAYOUT	B116 - 88 - 38	OSBORNE STREET (NORTH OF BRIDGE) STATION 12+40 TO JUBILEE AVENUE
B116 - 88 - 12	DECK REINFORCING DETAILS	STRUCTURAL APPROACH SLAB	
B116 - 88 - 13	JACKING BEAM AND BEARING MODIFICATIONS	B116 - 88 - 39	"OFF" RAMP FROM OSBORNE ST. SOUTHBOUND TO CHURCHILL DR. STATION 1+60 TO CHURCHILL DRIVE
B116 - 88 - 14	EXPANSION JOINT LAYOUT AND DETAILS	B116 - 88 - 40	"ON" RAMP FROM CHURCHILL DR. TO OSBORNE ST. NORTHBOUND CHURCHILL DRIVE TO STATION 0+70
B116 - 88 - 15	CONCRETE TRAFFIC BARRIER LAYOUT	B116 - 88 - 41	CHURCHILL DRIVE - WEST AND EAST OF ST. VITAL BRIDGE
B116 - 88 - 16	CONCRETE TRAFFIC BARRIER DETAILS	B116 - 88 - 42	ALUMINUM BALANCED TRAFFIC BARRIER - LAYOUT AND DETAILS LOCATIONS 1, 2, 3, & 4
B116 - 88 - 17	CONCRETE TRAFFIC BARRIER DETAILS	B116 - 88 - 43	ALUMINUM BALANCED TRAFFIC BARRIER - LAYOUT AND DETAILS LOCATIONS 5, 6, & 7
B116 - 88 - 18	DECK DRAINS AND NAVIGATIONAL LIGHTING DETAILS	B116 - 88 - 44	ALUMINUM BALANCED TRAFFIC BARRIER - LAYOUT AND DETAILS LOCATIONS 8, 9, 10, & 11
B116 - 88 - 19	ALUMINUM PEDESTRIAN HANDRAIL DETAILS 1	B116 - 88 - 45	ALUMINUM BALANCED SHOULDER BARRIER STANDARD DETAILS
B116 - 88 - 20	ALUMINUM PEDESTRIAN HANDRAIL DETAILS 2	B116 - 88 - 46	DETAILS OF ALUMINUM BRIDGE RAIL POSTS
B116 - 88 - 21	ALUMINUM PEDESTRIAN HANDRAIL DETAILS 3	SEWAGE FORCEMAIN DRAWINGS	
B116 - 88 - 22	ALUMINUM PEDESTRIAN HANDRAIL LIFE PRESERVER ENCLOSURE	B116 - 88 - 47	LAYOUT AND DETAILS
B116 - 88 - 23	ALUMINUM TRAFFIC BARRIER STANDARD DETAILS	B116 - 88 - 48	SECTIONS AND DETAILS
B116 - 88 - 24	UTILITY CONDUIT LAYOUT AND DETAILS	PEDESTRIAN UNDERPASS STRUCTURAL SLABS	
B116 - 88 - 25	SLOPE PROTECTION AND DRAINAGE CHANNEL LAYOUT		
B116 - 88 - 26	DRAINAGE CHANNEL DETAILS		
B116 - 88 - 27	PEDESTRIAN UNDERPASS STRUCTURAL SLABS		

NO.	REVISIONS	DATE	BY	DATE	BY	DATE	BY
							
DESIGNED BY: B.E. DRAWN BY: R.C.S. CHECKED BY: W.J.M. APPROVED BY: <i>[Signature]</i> AUTHORIZED BY: <i>[Signature]</i>				CONSULTANT DRAWING NO. 60814-02			
THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION STREETS AND TRANSPORTATION DEPARTMENT				AS CONSTRUCTED KEHD, GROUWER & PARTNERS LIMITED WINNIPEG			
DESIGN DATA AND DRAWING LIST				CITY DRAWING NUMBER B116-88-02 SHEET 2 OF 48 B-5826-2			



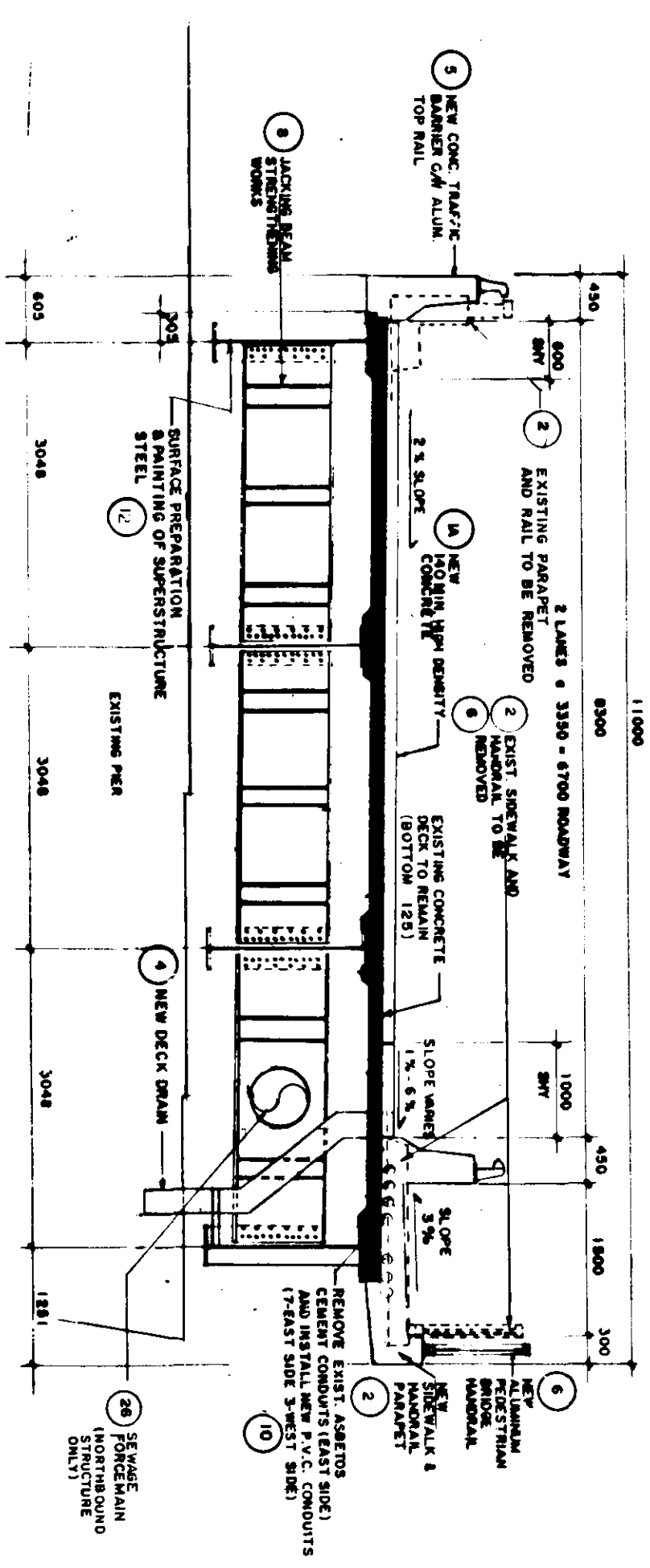
PROPOSED WORKS

REFERENCE DRAWING NUMBER

PROPOSED WORKS

REFERENCE DRAWING NUMBER

1A	REMOVE EXISTING DECK ASPHALT, BRIDGE RAIL AND CONCRETE PARAPET AND DECK CONCRETE TO AT LEAST THE BOTTOM OF THE TOP REINFORCING STEEL AND DETERIORATED CONCRETE BELOW THAT POINT BETWEEN THE NORTH ABUTMENT AND SOUTH ABUTMENT JOINTS AND PLACE HIGH DENSITY CONCRETE OVERLAY.	B116-88-06	11	CONSTRUCT CONCRETE DRAINAGE CHANNELS AND REPAIR SLOPE PROTECTION (NORTH RIVERBANK)	B116-88-25, 28
1B	REMOVE EXISTING ASPHALTIC CONCRETE OVERLAY AND DETERIORATED CONCRETE TO AT LEAST 25mm BELOW FINISHED CONCRETE ELEVATION, AND PLACE HIGH DENSITY CONCRETE WITHIN THE OUT TO OUT BRIDGE WIDTH ON STRUCTURAL PAVEMENTS.	B116-88-09	12	SURFACE PREPARATION AND PAINTING OF SUPERSTRUCTURE STEEL.	B116-88-07
1C	REMOVE EXISTING PLANT BOX WALLS, REMOVE EXISTING TREES, REMOVE EARTH AND SOIL, AND DEMOLISH EXISTING STRUCTURAL SLABS.	B116-88-09	13	RECONSTRUCT EXISTING PEDESTRIAN UNDERPASS STRUCTURAL ROAD WAY SLABS	B116-88-30, 33, 27
2	REMOVE EXISTING BRIDGE SIDEWALK AND REPLACE WITH NEW.	B116-88-06	14	PAINT EXISTING CANTILEVER SIGN STRUCTURE (2 LOCATIONS)	B116-88-04
3	REMOVE EXISTING TOP LAYER OF DECK REINFORCING STEEL, REED EPOXY-COATED REINFORCING STEEL BETWEEN THE NORTH AND SOUTH ABUTMENT EXPANSION JOINTS.	B116-88-11	15	CONSTRUCT TRAFFIC DIVERSION AND TRANSIT U-TURN CROSSOVERS.	B116-88-05
4	REMOVE EXISTING DECK DRAINAGE SYSTEM AND INSTALL NEW DECK DRAINAGE SYSTEM.	B116-88-06, 07	16	REMOVE EXISTING PAVEMENT AND CONSTRUCT NEW 200mm REINFORCED CONCRETE PAVEMENT.	B116-88-30, 31, 34, 35
5	REMOVE EXISTING PARAPET & CONSTRUCT NEW CONCRETE SHOULDER TRAFFIC BARRIERS C/W ALUMINUM TRAFFIC RAIL BETWEEN ENDS OF STRUCTURAL APPROACH SLABS.	B116-88-16	17	FULL DEPTH REPLACEMENT OF EXISTING PAVEMENT SLABS AND JOINTS.	B116-88-30, 31, 36, 37
6	REMOVE EXISTING HANDRAIL ON STRUCTURES AND INSTALL NEW ALUMINUM PEDESTRIAN HANDRAIL.	B116-88-20	18	REMOVE EXISTING ASPHALTIC CONCRETE OVERLAY AND RESURFACE WITH NEW ASPHALTIC CONCRETE PAVEMENT OVERLAY.	B116-88-35, 36, 37, 38, 40
6A	REMOVE EXISTING STAIR HANDRAIL AND PIER 6 (KINGSTON ROW) HANDRAIL AND INSTALL NEW ALUMINUM PEDESTRIAN HANDRAIL.	B116-88-20, 21	19	RELOCATE EXISTING SPRINKLER SYSTEM.	B116-88-30, 31
7	REMOVE EXISTING EXPANSION JOINTS, MODIFY ABUTMENT BACKWALLS AND INSTALL NEW EXPANSION JOINTS AT THE NORTH AND SOUTH ABUTMENTS.	B116-88-14	20	CONSTRUCTION OF NEW CONCRETE SIDEWALK.	B116-88-35, 36, 38
8	STRENGTHEN EXISTING JACKING BEAMS AT PIER LOCATIONS 1 THRU 6.	B116-88-13	21	REMOVE EXISTING ASPHALTIC CONCRETE OVERLAY.	B116-88-35, 36, 37, 42, 43, 44
9	REMOVE EXISTING AND CONSTRUCT NEW STRUCTURAL APPROACH SLABS.	B116-88-15	22	INSTALL NEW OR SALVAGED ALUMINUM BALANCED BARRIER RAIL (9 LOCATIONS).	B116-88-27, 30, 35
9A	REMOVE EXISTING ASPHALTIC DECK CONDUITS AND INSTALL NEW PVC CONDUITS IN SIDEWALK.	B116-88-24	23	CONSTRUCT CONCRETE SAFETY MEDIUM.	B116-88-04
9B			24	REMOVE EXISTING ASPHALTIC CONCRETE OVERLAY AND RESURFACE WITH NEW ASPHALTIC CONCRETE PAVEMENT OVERLAY.	B116-88-47, 48



HALF SECTION

THESE REVISIONS ARE TO SUPPLEMENT OR CLARIFY THE CONTRACT DOCUMENTS, NEITHER THE CONTRACT PRICE NOR THE CONTRACT TIME ARE AFFECTED

NO.	REVISIONS	DATE	BY
1	GENERAL REVISIONS	980212	B.E.

DESIGNED BY: **Reid Crowther** (B.E.)
 CHECKED BY: **Reid Crowther & Partners Ltd.** (D.A.K.)
 DRAWN BY: **R.C.S.**
 APPROVED BY: **[Signature]**
 AUTHORIZED BY: **[Signature]**
 ACCEPTED BY: **[Signature]**
 CONSULTANT DRAWING NO. 60814-03

THE CITY OF WINNIPEG
 WORKS AND OPERATIONS DIVISION

ST. VITAL TWIN BRIDGE OVER RED RIVER
 STRUCTURE REHABILITATION AND
 RELATED WORKS

GENERAL ARRANGEMENT AND
 LOCATION OF PROPOSED WORKS

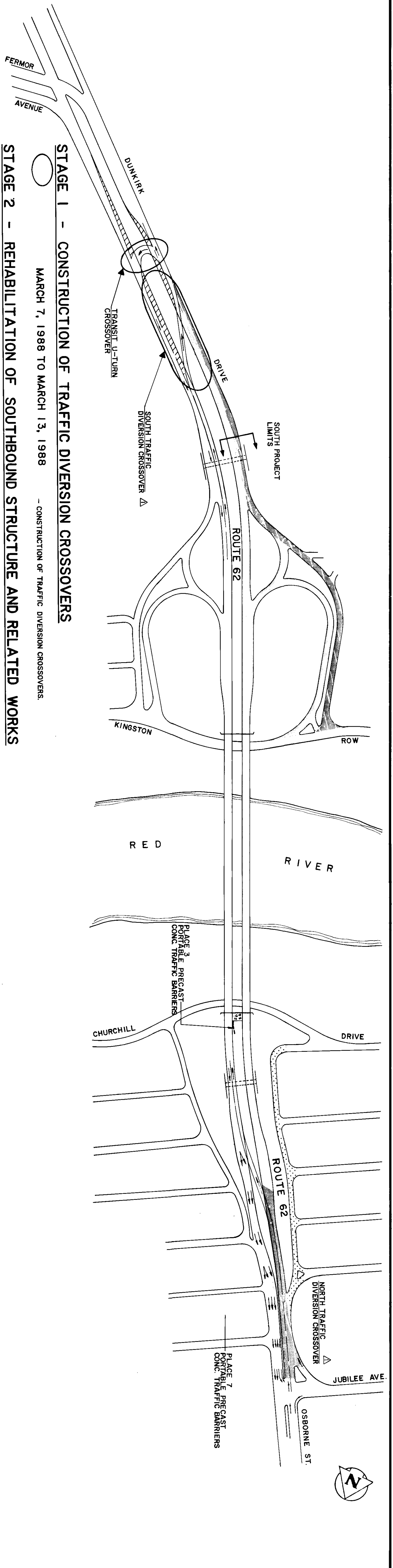
CITY DRAWING NUMBER: B116-88-03
 SHEET 3 OF 48
 REFERENCE STRUCTURE DRAWING NUMBER: U216-88-01
 U217-88-01

AS CONSTRUCTED

REID, CROWTHER & PARTNERS LIMITED
 WINNIPEG

DATE: 98/02/12

B-5826-3
METRIC
WHOLE NUMBERS INDICATE MILLIMETERS
DECIMALIZED NUMBERS INDICATE METERS



STAGE 1 - CONSTRUCTION OF TRAFFIC DIVERSION CROSSOVERS

MARCH 7, 1988 TO MARCH 13, 1988

- CONSTRUCTION OF TRAFFIC DIVERSION CROSSOVERS.

STAGE 2 - REHABILITATION OF SOUTHBOUND STRUCTURE AND RELATED WORKS

PHASE 1 - MARCH 13, 1988 TO JUNE 25, 1988

- TOTAL CLOSURE OF SOUTHBOUND STRUCTURE AND "OFF" RAMP FROM DUNKIRK DRIVE (SOUTHBOUND) TO KINGSTON ROW.

PHASE 2 - MAY 8, 1988 TO JUNE 25, 1988

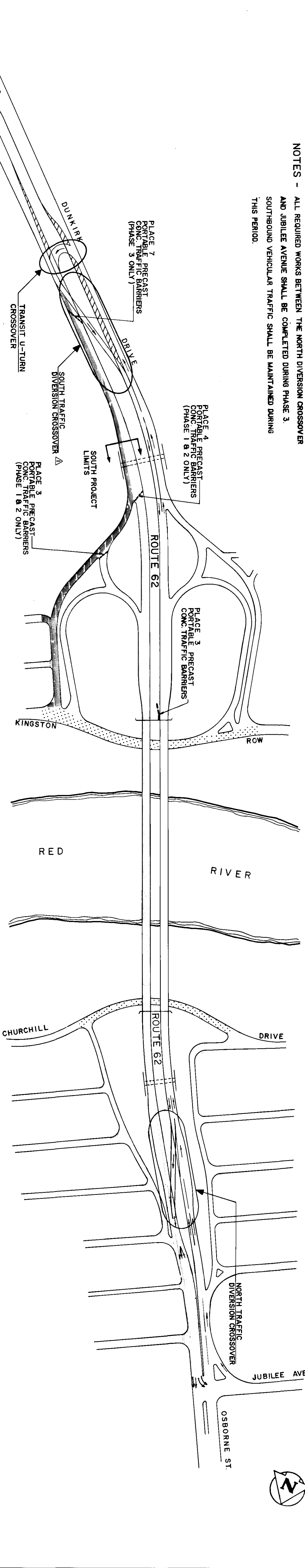
- ADDITIONAL CLOSURE OF "OFF" RAMP FROM OSBORNE STREET (SOUTHBOUND) TO CHURCHILL DRIVE.

PHASE 3 - MAY 29, 1988 TO JUNE 25, 1988

- ADDITIONAL CLOSURE OF "ON" RAMP FROM KINGSTON ROW TO DUNKIRK DRIVE (SOUTHBOUND).

NOTES - ALL REQUIRED WORKS BETWEEN THE NORTH DIVERSION CROSSOVER AND JUBILEE AVENUE SHALL BE COMPLETED DURING PHASE 3.

SOUTHBOUND VEHICULAR TRAFFIC SHALL BE MAINTAINED DURING THIS PERIOD.



STAGE 3 - REHABILITATION OF NORTHBOUND STRUCTURE AND RELATED WORKS

PHASE 1 - JUNE 26, 1988 TO SEPTEMBER 24, 1988

- TOTAL CLOSURE OF NORTHBOUND STRUCTURE, "ON" RAMP FROM KINGSTON ROW TO DUNKIRK DRIVE (NORTHBOUND) AND "ON" RAMP FROM CHURCHILL DRIVE TO OSBORNE STREET (NORTHBOUND).

PHASE 2 - JULY 24, 1988 TO SEPTEMBER 24, 1988

- ADDITIONAL CLOSURE OF CHURCHILL DRIVE AND PARTIAL CLOSURE OF KINGSTON ROW.

PHASE 3 - AUGUST 21, 1988 TO SEPTEMBER 24, 1988

- ADDITIONAL CLOSURE OF "OFF" RAMP FROM DUNKIRK DRIVE (NORTHBOUND) TO KINGSTON ROW.

NOTES - ALL REQUIRED WORKS BETWEEN THE NORTH DIVERSION CROSSOVER AND JUBILEE AVENUE SHALL BE COMPLETED DURING PHASE 1 AND BE COMPLETED BY AUGUST 1, 1988. NORTHBOUND VEHICULAR TRAFFIC SHALL BE MAINTAINED DURING THIS PERIOD.

- ONE LANE OF VEHICULAR TRAFFIC WESTBOUND SHALL BE MAINTAINED ON KINGSTON ROW AT ALL TIMES.

STAGE 4 - FINAL SITE CLEAN-UP AND COMPLETION OF PROJECT

SEPTEMBER 25, 1988 TO OCTOBER 8, 1988 - FINAL CLEAN-UP AND COMPLETION OF PROJECT

NO.	REVISIONS	DATE	BY
1	REVISED CROSSOVERS	29-02-88	BAAR

DESIGNED	DAK.	CHECKED	DAK.
DRAWN	S.F.G.	APPROVED	[Signature]
HOR. SCALE	N.T.S.	VERTICAL	N.T.S.
DATE	DEC. 87	DATE	DEC. 87

REID, CROWTHER & PARTNERS LIMITED
WINNIPEG

AS CONSTRUCTED
DATE: 70-07-20

ENGINEER: [Signature]
REGISTERED ENGINEER

CONSULTANT DRAWING NO. 60814-04

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

ST. VITAL TWIN BRIDGE OVER RED RIVER
STRUCTURE REHABILITATION AND
RELATED WORKS

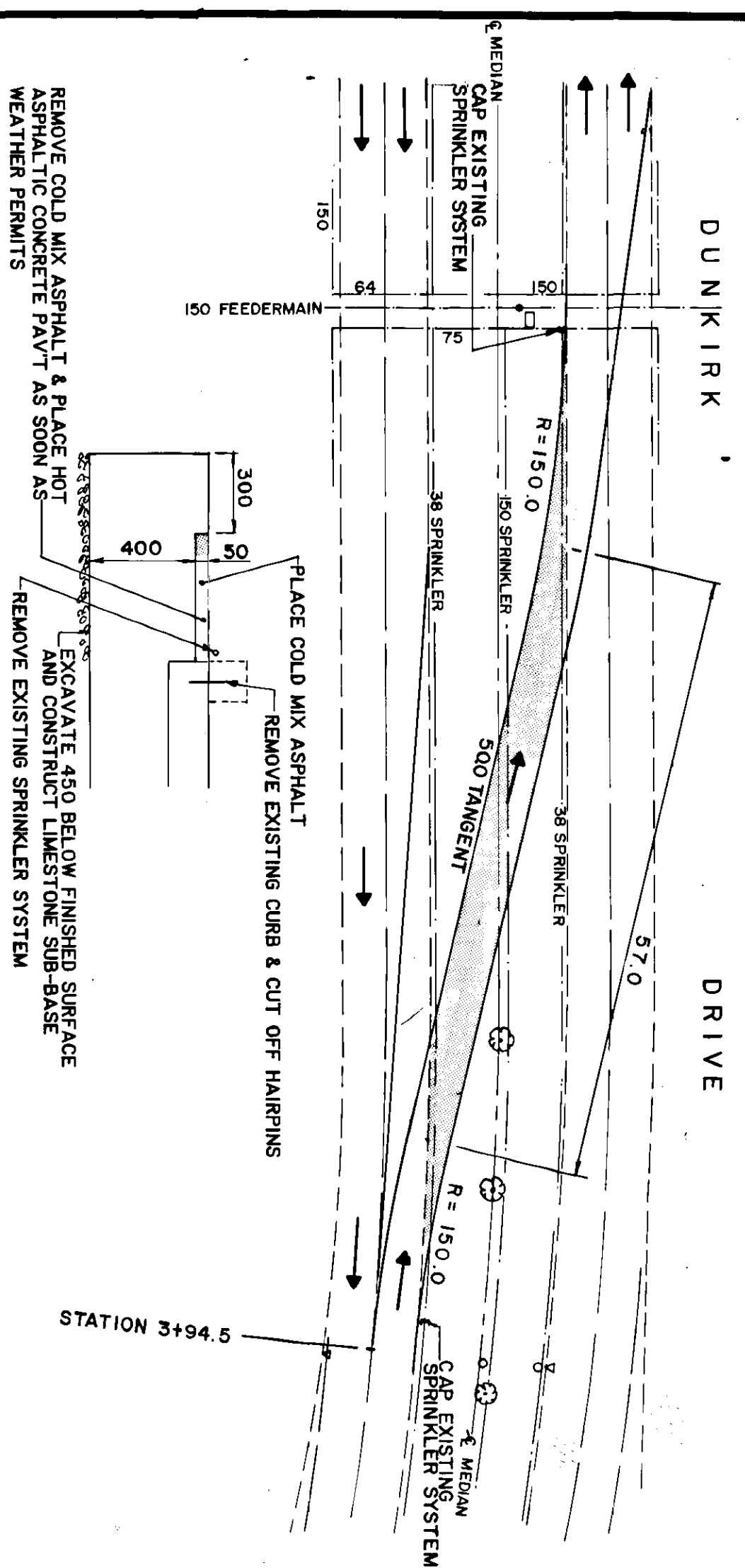
CONSTRUCTION STAGING

METRIC
WHOLE NUMBERS INDICATE M.L. METRES
DECIMALIZED NUMBERS INDICATE METRES

CITY DRAWING NUMBER: B116-88-04
SHEET 4 OF 48

B-5826-4

SOUTH TRAFFIC DIVERSION STAGE 2



REMOVE HOT MIX ASPHALT & PLACE HOT ASPHALTIC CONCRETE PAVT AS SOON AS WEATHER PERMITS

REMOVE EXISTING SPRINKLER SYSTEM

REMOVE EXISTING CURB & CUT OFF HAIRPINS

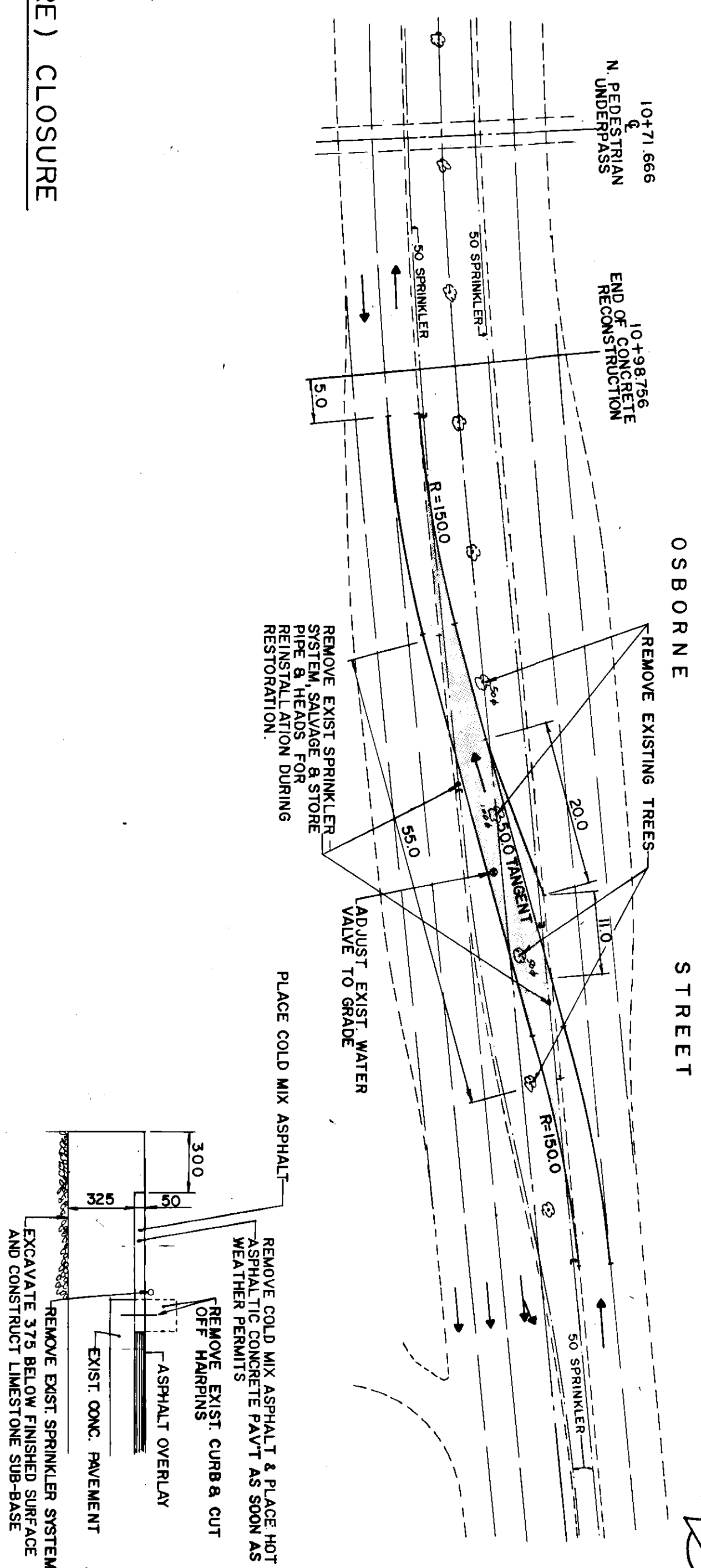
PLACE COLD MIX ASPHALT

EXCAVATE 450 BELOW FINISHED SURFACE AND CONSTRUCT LIMESTONE SUB-BASE

STAGE 2 (SOUTHBOUND STRUCTURE) CLOSURE

- NOTES:
1. GRADES TO BE SET IN FIELD
 2. DIVERSION LANE WIDTH = 4.0 M
 3. DESIGN SPEED = 60 km/hr
 4. CONTRACTOR TO CAREFULLY REMOVE & SALVAGE ALL SPRINKLER HEADS.

NORTH TRAFFIC DIVERSION STAGE 2



REMOVE EXISTING SPRINKLER SYSTEM, SALVAGE PIPE & HEADS FOR REINSTALLATION DURING RESTORATION.

ADJUST EXIST WATER VALVE TO GRADE

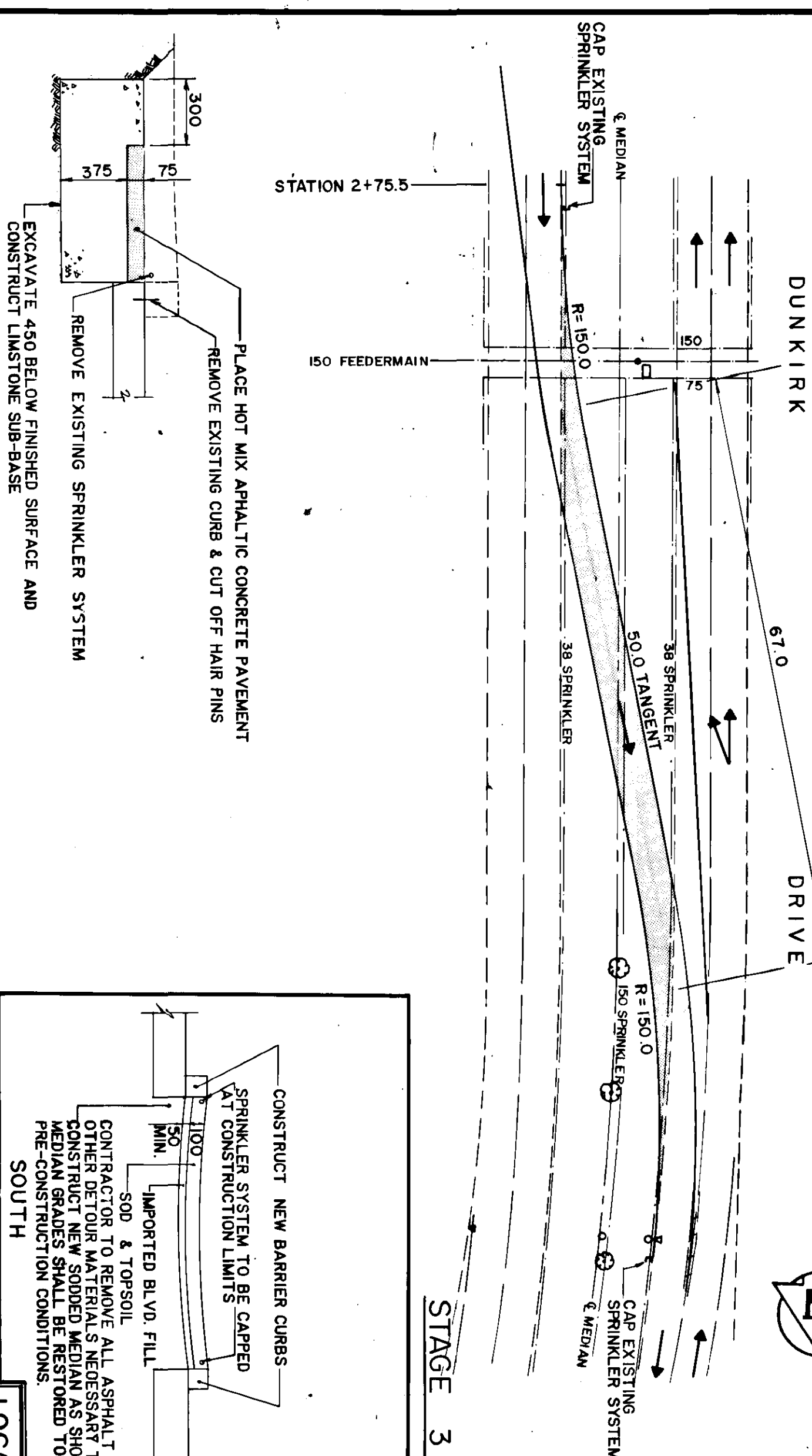
PLACE COLD MIX ASPHALT

REMOVE HOT MIX ASPHALT & PLACE HOT ASPHALTIC CONCRETE PAVT AS SOON AS WEATHER PERMITS

REMOVE EXIST CURB & CUT OFF HAIRPINS

REMOVE EXIST SPRINKLER SYSTEM AND CONSTRUCT LIMESTONE SUB-BASE

SOUTH TRAFFIC DIVERSION STAGE 3



PLACE HOT MIX ASPHALTIC CONCRETE PAVEMENT

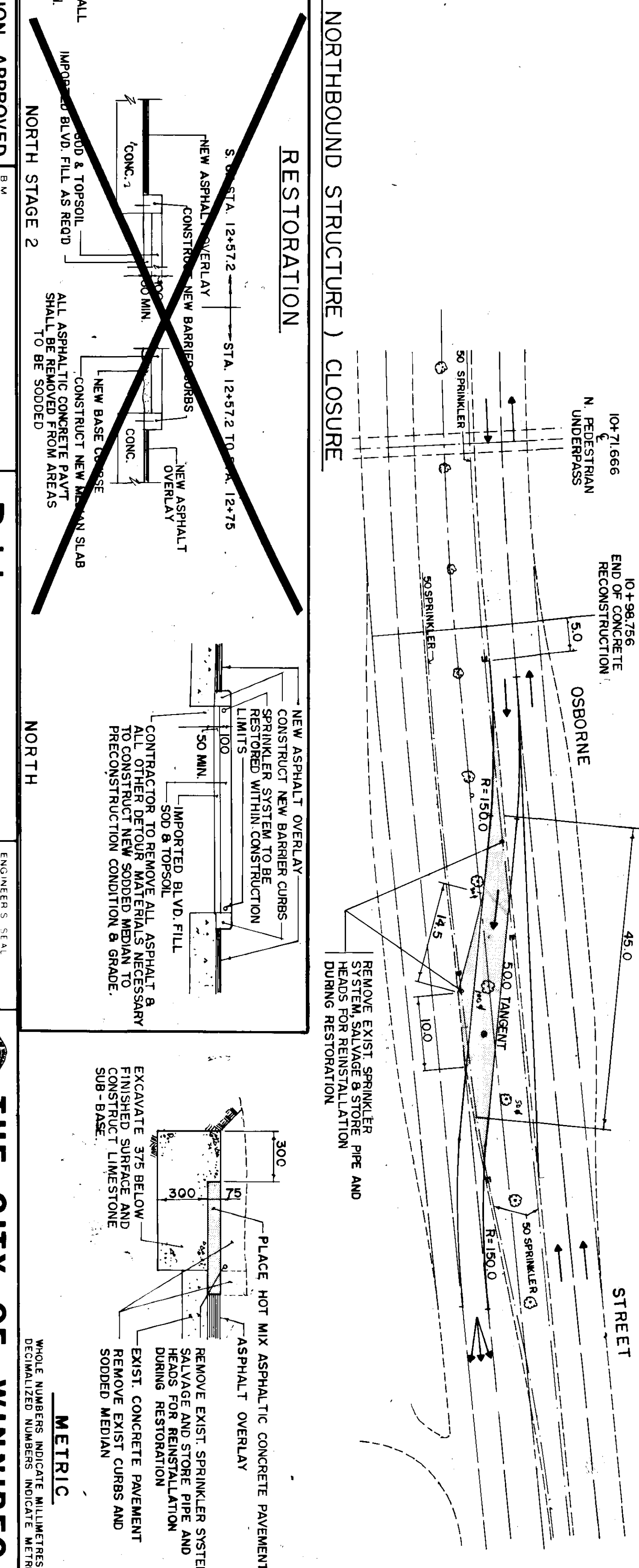
REMOVE EXISTING CURB & CUT OFF HAIR PINS

REMOVE EXISTING SPRINKLER SYSTEM

EXCAVATE 450 BELOW FINISHED SURFACE AND CONSTRUCT LIMESTONE SUB-BASE

STAGE 3 (NORTHBOUND STRUCTURE) CLOSURE

NORTH TRAFFIC DIVERSION STAGE 3



REMOVE EXIST SPRINKLER SYSTEM SALVAGE AND STORE PIPE AND HEADS FOR REINSTALLATION DURING RESTORATION

REMOVE EXIST SPRINKLER SYSTEM AND CONSTRUCT LIMESTONE SUB-BASE

PLACE HOT MIX ASPHALTIC CONCRETE PAVEMENT

ASPHALT OVERLAY

EXCAVATE 375 BELOW FINISHED SURFACE AND CONSTRUCT LIMESTONE SUB-BASE

REMOVE EXIST SPRINKLER SYSTEM SALVAGE AND STORE PIPE AND HEADS FOR REINSTALLATION DURING RESTORATION

EXIST CONCRETE PAVEMENT REMOVE EXIST CURBS AND SODDED MEDIAN

METRIC

WHOLE NUMBERS INDICATE MILLIMETERS
DECIMALS INDICATE METERS

LOCATION APPROVED

UNDERGROUND STRUCTURES
DATE: 12/1/87

DESIGNED BY: DRK
CHECKED BY: DRK
DATE: DEC 87

REGISTERED ENGINEER
KUPSKAY
DATE: 12/1/87

THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
STREETS AND TRANSPORTATION DEPARTMENT
ST. VITAL TWIN BRIDGE OVER RED RIVER
STRUCTURE REHABILITATION AND
RELATED WORKS
TRAFFIC DIVERSION CROSSOVERS

REID, CROWTHER & PARTNERS LIMITED
WINNIPEG
AS CONSTRUCTED
DATE: 07-02-70

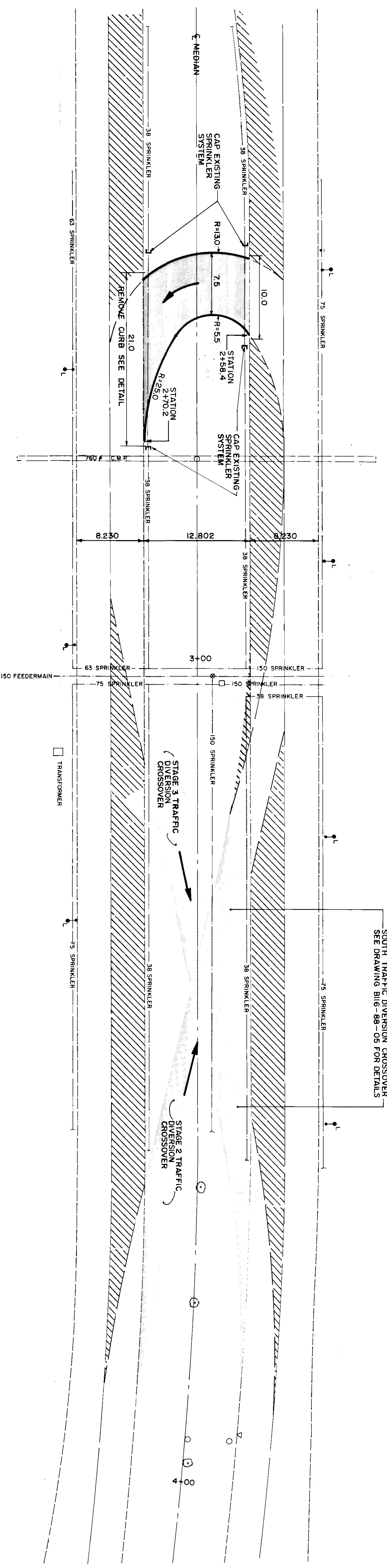
NOTE: LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE. BUILDING OWNERS ARE ADVISED THAT THE EXACT LOCATION OF ALL SERVICES, AND BEING OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

NO.	REVISIONS	DATE	BY
1	N TRAFFIC DIVERSION-STAGE 2&3 SF&G	26/02/88	SFG

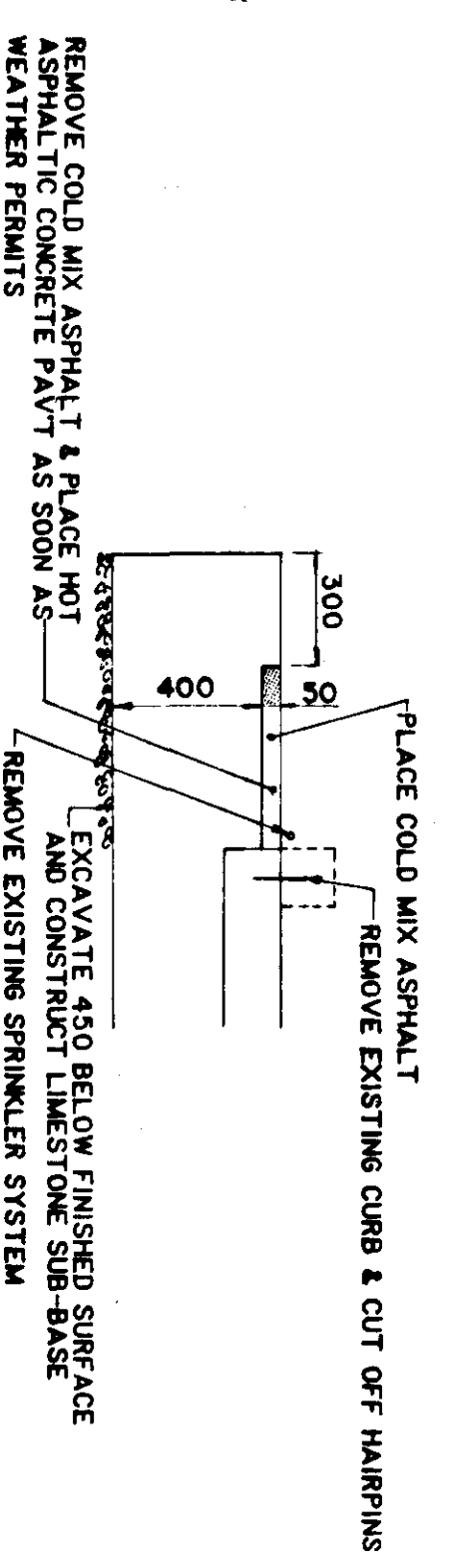
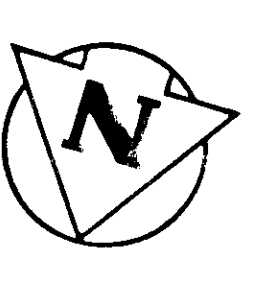
CONSULTANT DRAWING NO. 63814-05

REGISTERED ENGINEER
KUPSKAY
DATE: 12/1/87

PROJECT NO. B-5826-5
SHEET 5 OF 48

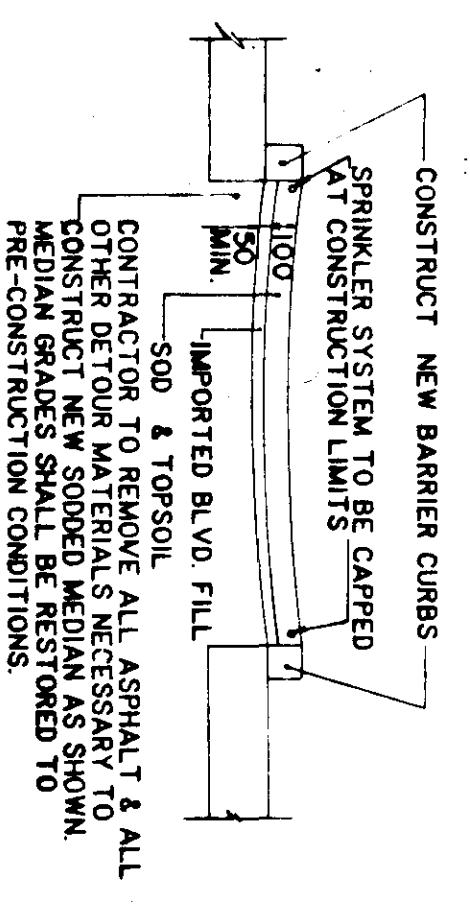


SOUTH TRAFFIC DIVERSION CROSSOVER
SEE DRAWING B116-88-05 FOR DETAILS



CONSTRUCTION DETAILS
N.T.S.

- NOTES:
1. GRADES TO BE SET IN FIELD.
 2. PAVEMENT DIMENSIONS ARE TO BACK OF CURB.
 3. CONTRACTOR TO CAREFULLY REMOVE AND SALVAGE ALL SPRINKLER HEADS.

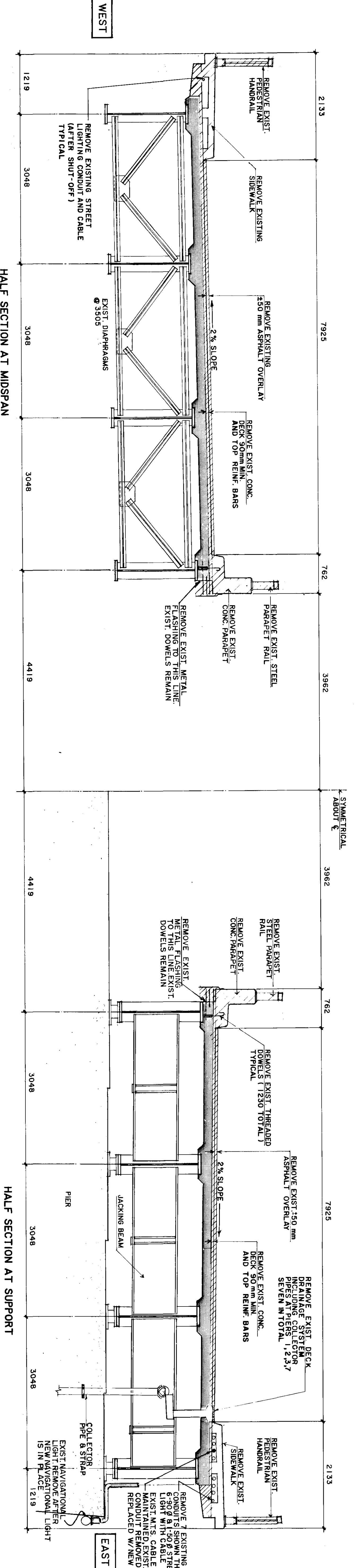
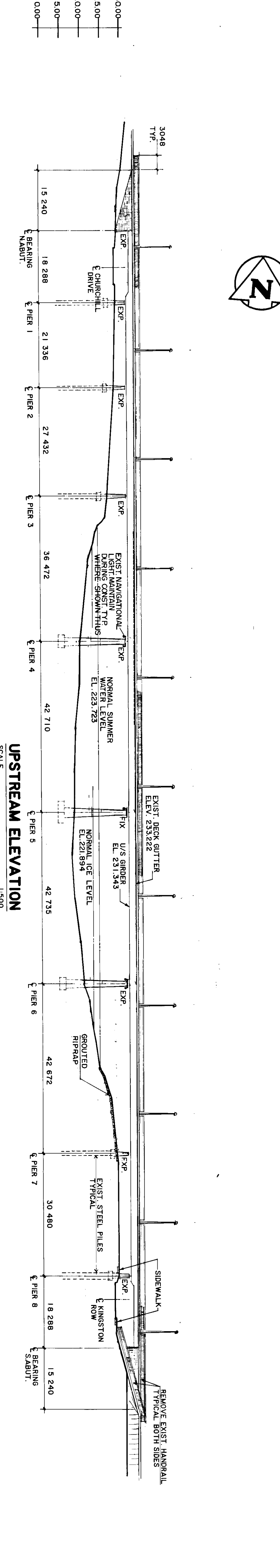
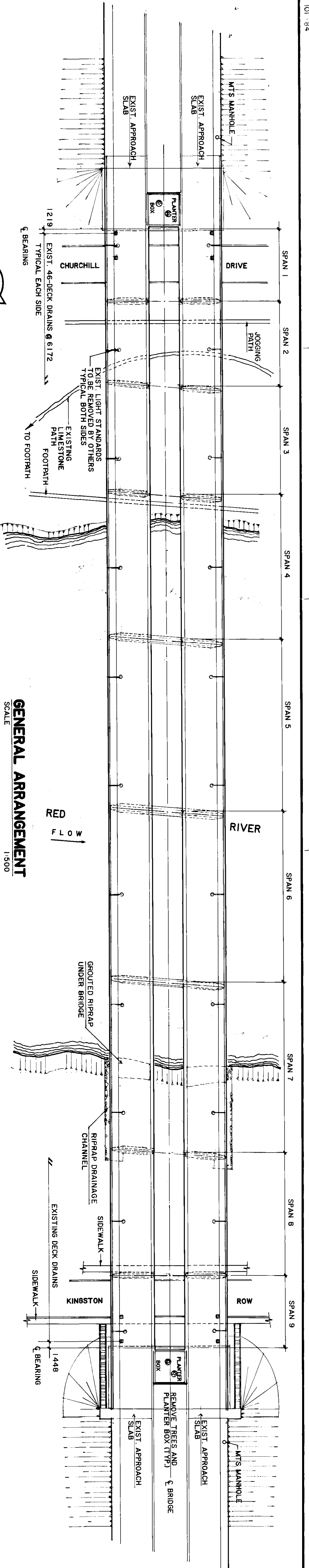


REMOVAL AND RESTORATION DETAILS
N.T.S.

AS CONSTRUCTED
SIGNED: *Michael* DATE: 94-07-10

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

LOCATION APPROVED UNDERGROUND STRUCTURES <i>Michael</i> DATE: 94-07-10 SUPV. U/G STRUCTURES COMMITTEE		B.M. ELEV.
NOTE: All underground structures shown are based on the best information available but no guarantee is given for the accuracy of the information. The location of existing and exact location of all underground utilities before proceeding with construction.		
DESIGNED BY: G.A.C. DRAWN BY: PAAP HOR. SCALE: 1:250 VERTICAL: FEB. 88	CHECKED BY: D.R.K. APPROVED BY: <i>[Signature]</i> DATE: 94-07-10 ACCEPTED BY: <i>[Signature]</i> DATE: 94-07-10 PROJECT ENGINEER	REVISIONS NO. DATE BY
REID, GROWTH & PARTNERS LIMITED WINNIPEG AS CONSTRUCTED		CONSULTANT DRAWING NO. 60814-05A
THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION STREETS AND TRANSPORTATION DEPARTMENT ST. VITAL TWIN BRIDGE OVER RED RIVER STRUCTURE REHABILITATION AND RELATED WORKS		CITY DRAWING NUMBER B116-88-05A SHEET 5A OF 48
TRANSIT U-TURN CROSSOVER		B-5826-5A



AS CONSTRUCTED
 BEID, CROWTHER & PARTNERS LIMITED
 WINNIPEG
 DATE: 2017

△ THESE REVISIONS ARE TO SUPPLEMENT OR CLARIFY THE CONTRACT DOCUMENTS. NEITHER THE CONTRACT PRICE NOR THE CONTRACT TIME ARE AFFECTED.

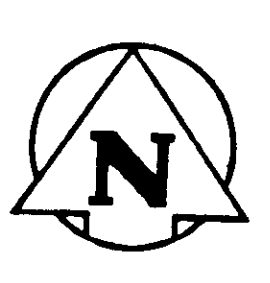
NO.	REVISIONS	DATE	BY
2	AS CONSTRUCTED GENERAL REVISIONS	8/10/11	R.C.S. B.I.E.
1			

DESIGNED BY	BE	BEID CROWTHER & PARTNERS LTD
CHECKED BY	W.A.M.	
DRAWN BY	R.C.S.	
APPROVED BY		
DATE	DEC 87	AS SHOWN

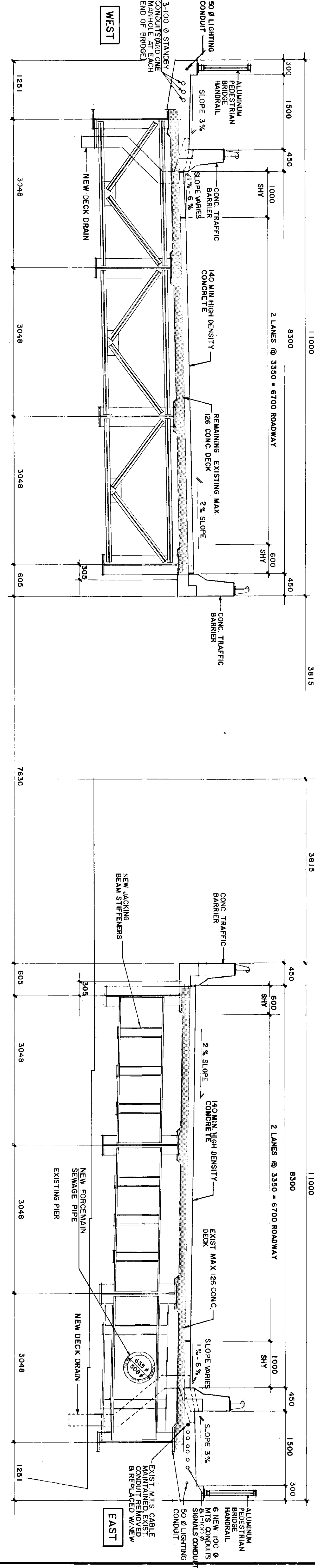
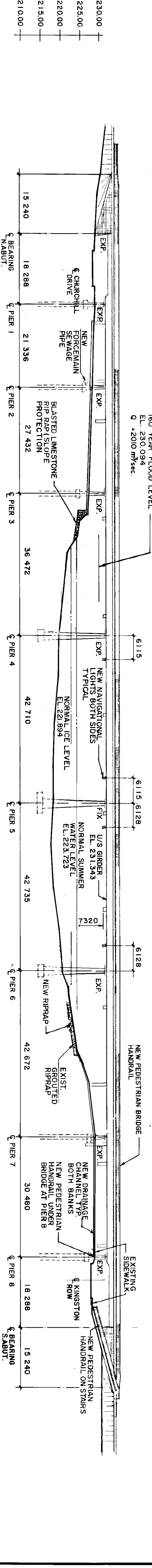
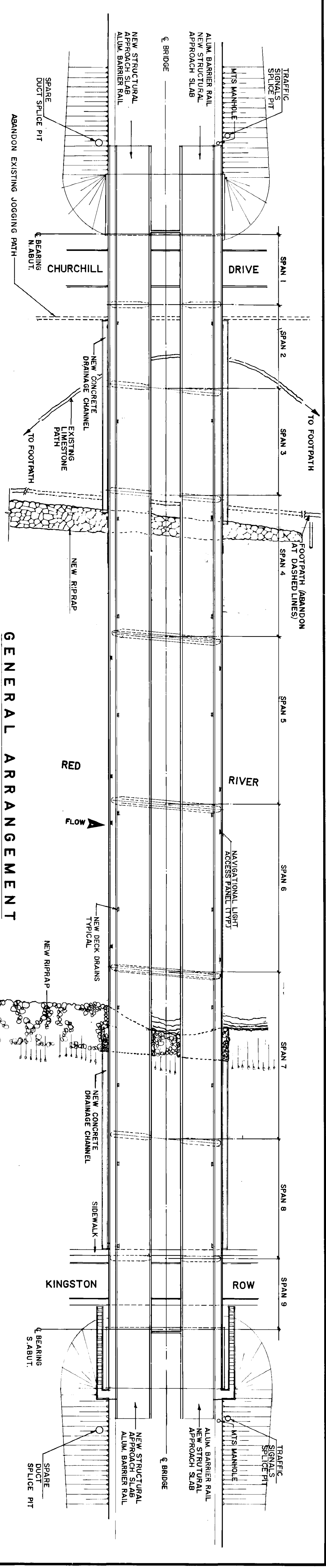
ENGINEER
 REGISTERED ENGINEER
 60814 - 06

THE CITY OF WINNIPEG
 WORKS AND OPERATIONS DIVISION
 ST. VITAL TWIN BRIDGE OVER RED RIVER
 STRUCTURE REHABILITATION AND RELATED WORKS
 PLAN AND GENERAL ELEVATION OF EXISTING BRIDGE
 SHEET 6 OF 48
 CITY DRAWING NUMBER: B116 - 88 - 06
 B-5826-6

METRIC
 WHOLE NUMBERS INDICATE MILLIMETRES
 DECIMALIZED NUMBERS INDICATE METRES



GENERAL ARRANGEMENT
SCALE 1:500



AS CONSTRUCTED
REID, CROWTHER & PARTNERS LIMITED
WINNIPEG

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

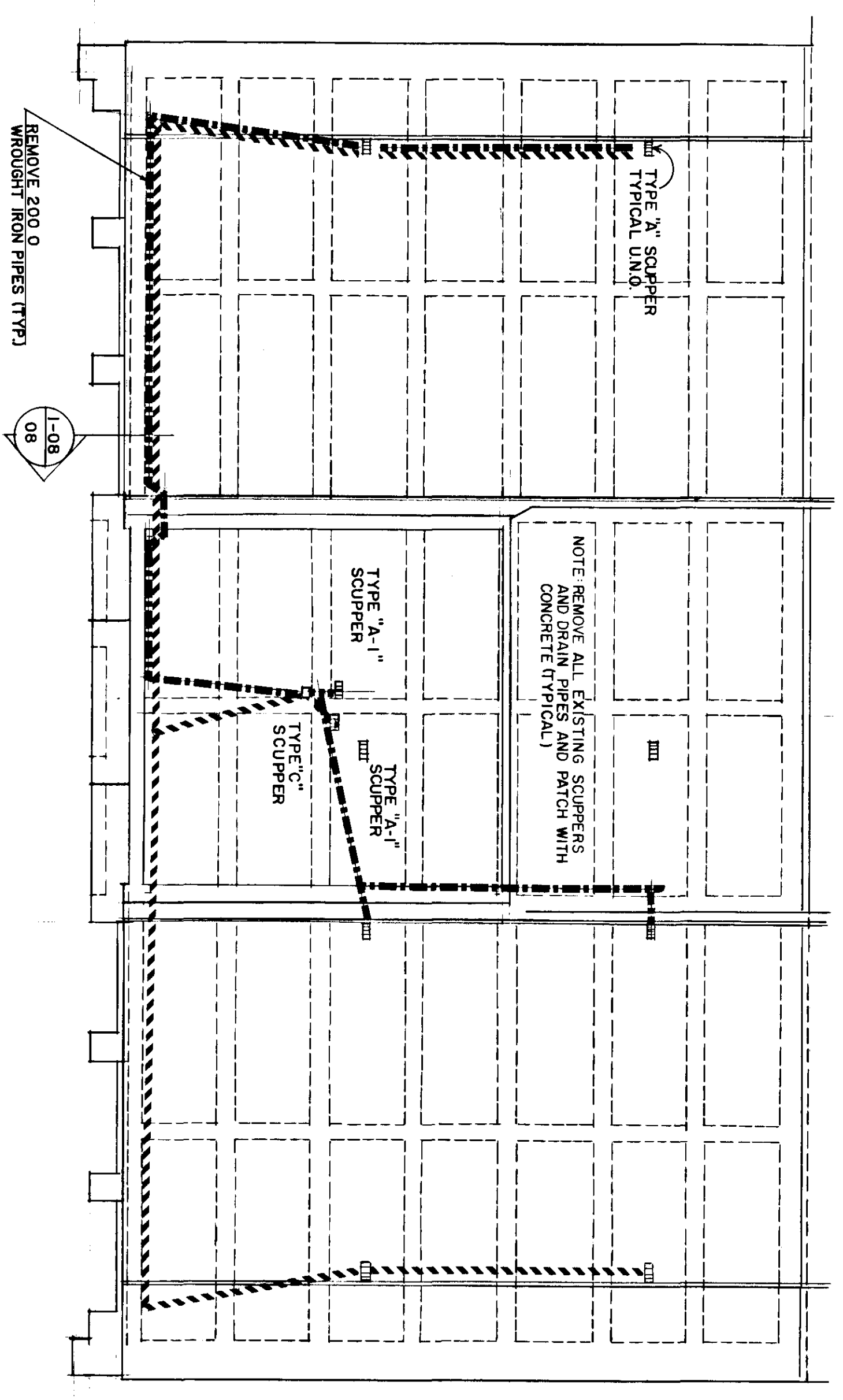
△ THESE REVISIONS ARE TO SUPPLEMENT OR CLARIFY THE CONTRACT DOCUMENTS NEITHER THE CONTRACT PRICE NOR THE CONTRACT TIME ARE AFFECTED

NO.	REV.	DESCRIPTION	DATE	BY
2	AS CONSTRUCTED	GENERAL REVISIONS	BR0212	BE

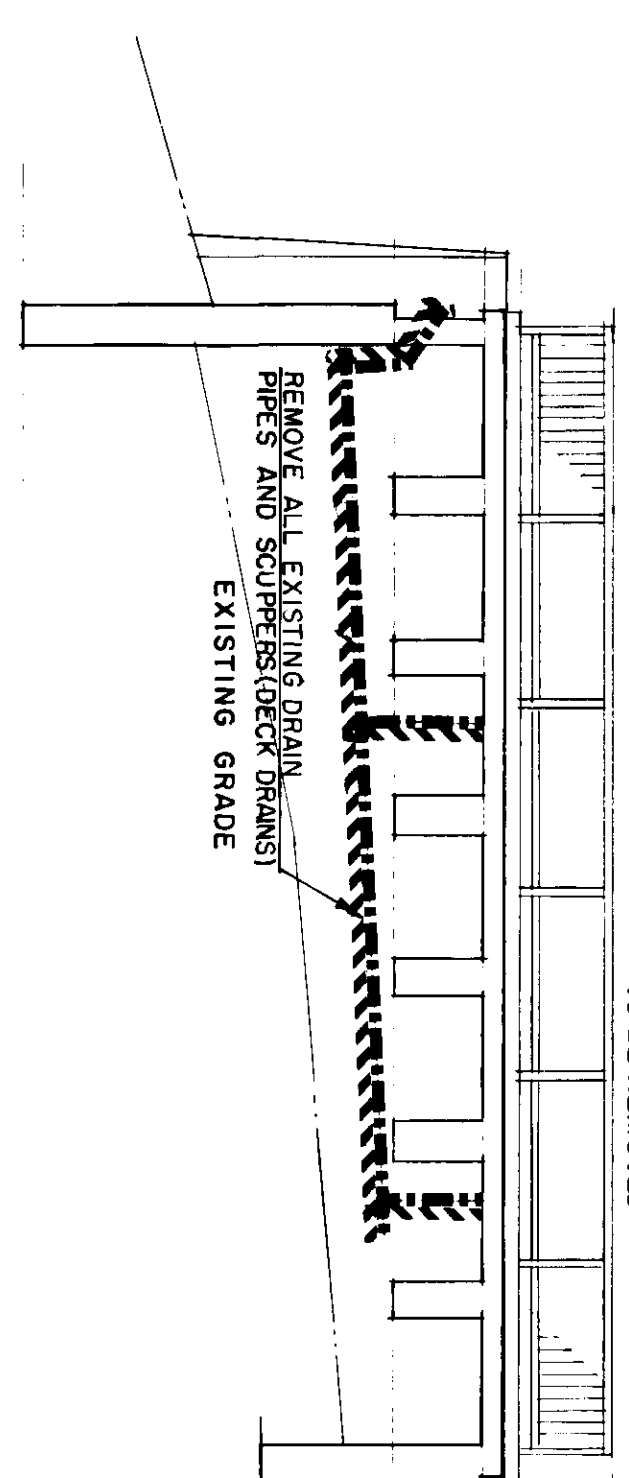
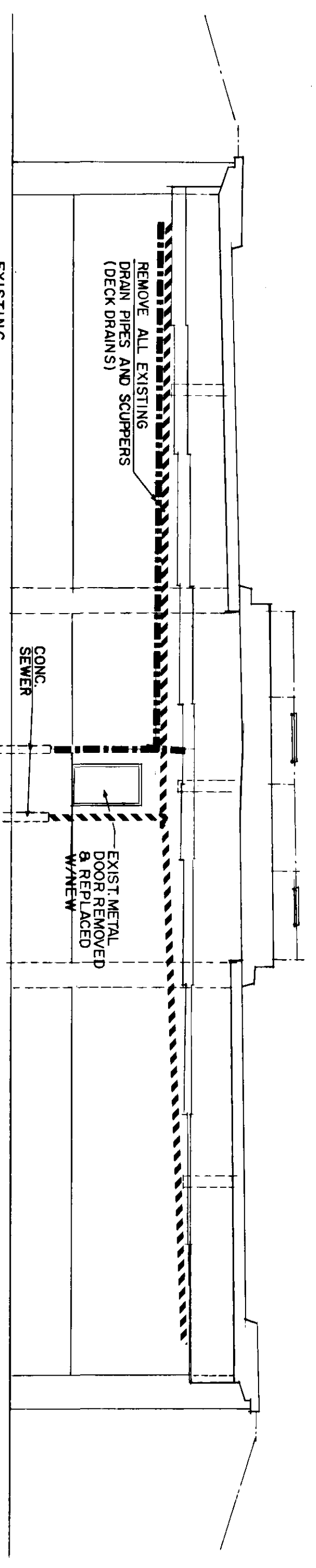
Reid Crowther
ENGINEER'S SEAL
CONSULTANT DRAWING NO. 60814-07

THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
ST. VITAL TWIN BRIDGE OVER RED RIVER
STRUCTURE REHABILITATION AND RELATED WORKS
PLAN AND GENERAL ELEVATION OF PROPOSED BRIDGE

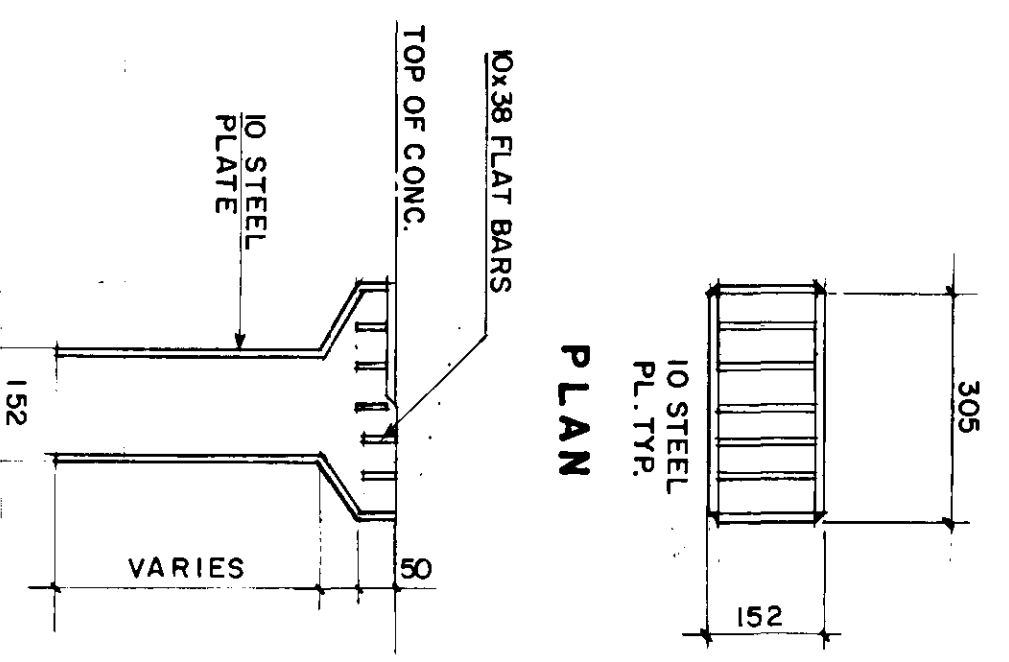
CITY DRAWING NUMBER: 8116 - 88 - 07
SHEET 7 OF 48
B-5826-7



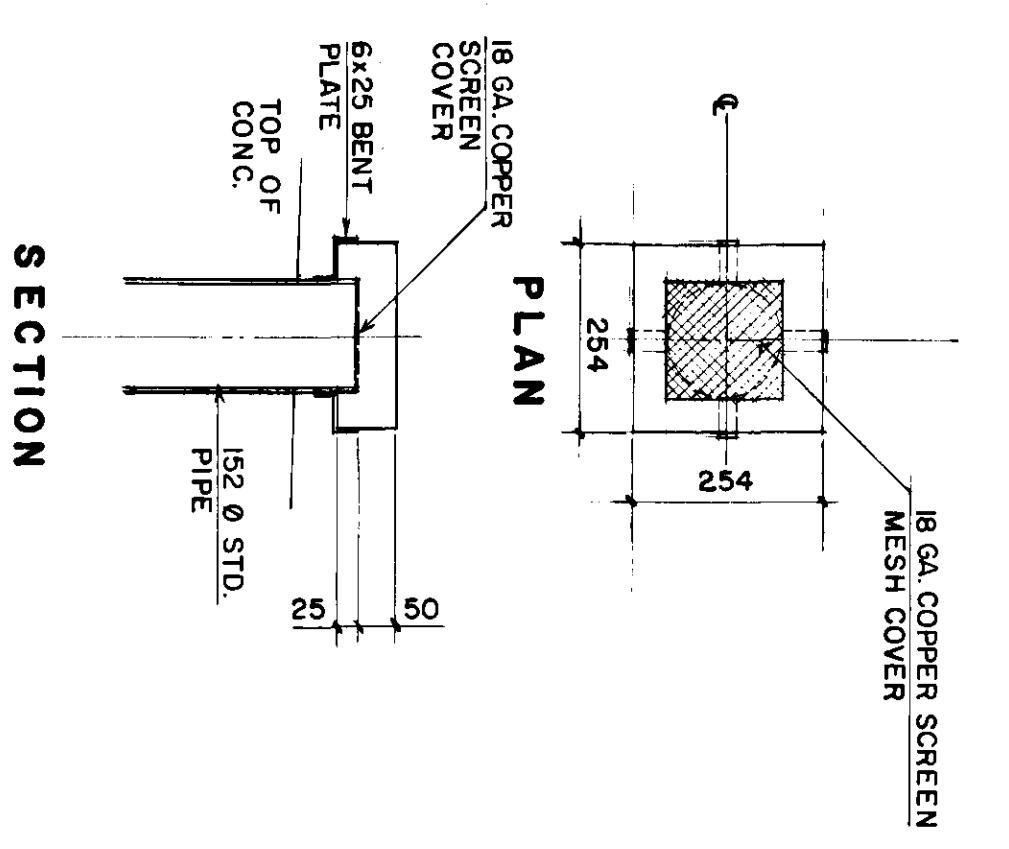
LEGEND
 NORTH ABUTMENT - - -
 SOUTH ABUTMENT - - -



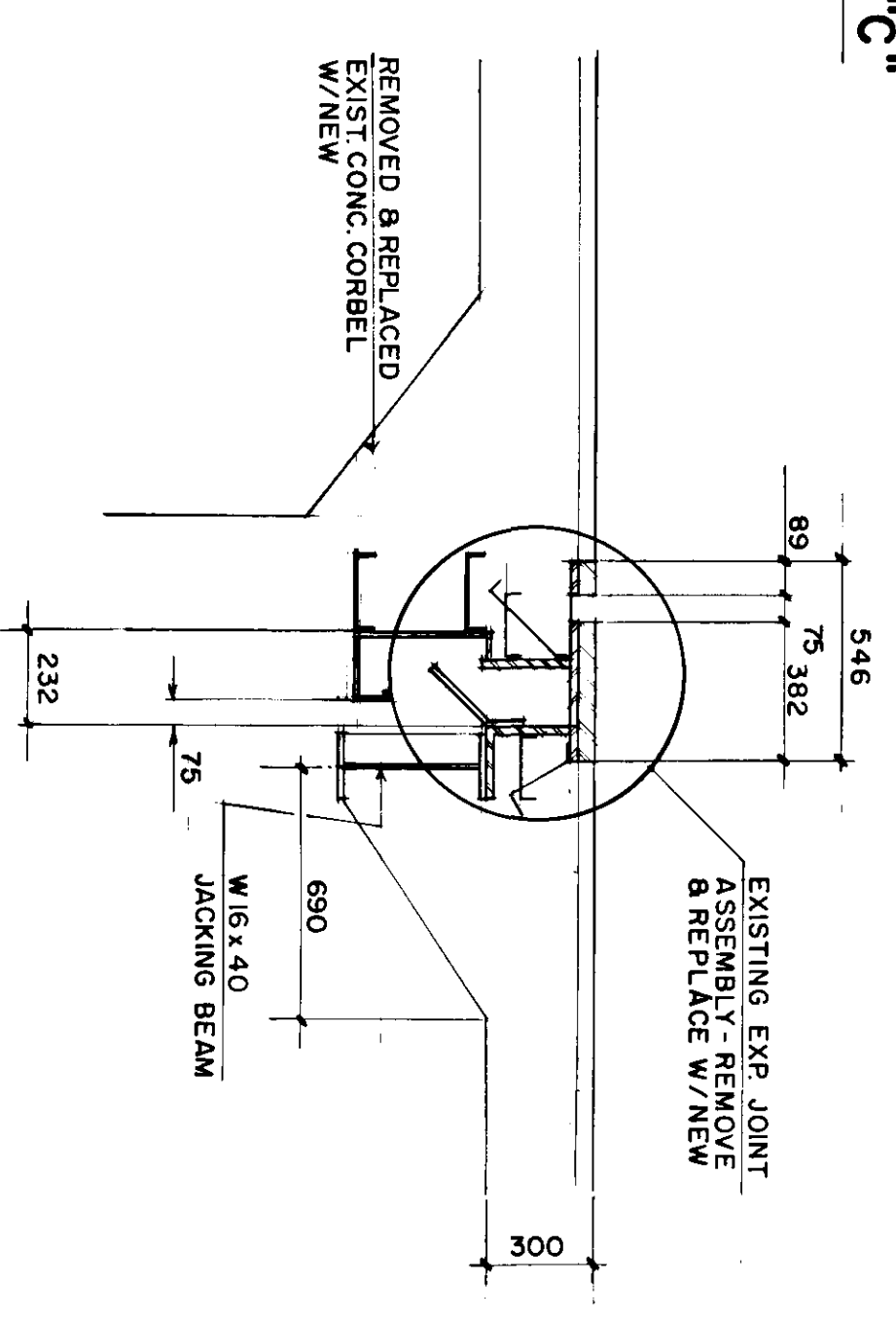
SECTION



SECTION
 SCUPPER TYPE "A-1"



SECTION
 SCUPPER TYPE "C"



SECTION

METRIC
 WHOLE NUMBERS INDICATE MILLIMETRES
 DECIMALIZED NUMBERS INDICATE METRES

A-B A. DETAIL NO.
C B. DRAWING WHERE DETAIL SHOWN
 C. DRAWING WHERE DETAIL TAKEN

NO.	REVISIONS	DATE	BY	DATE
1	AS CONSTRUCTED			

DESIGNED BY	B.E.	DESIGNED BY	W.J.M.
DRAWN BY	R.C.S.	CHECKED BY	
HOR. SCALE	NTS	APPROVED BY	
VERTICAL		DATE	DEC. 87

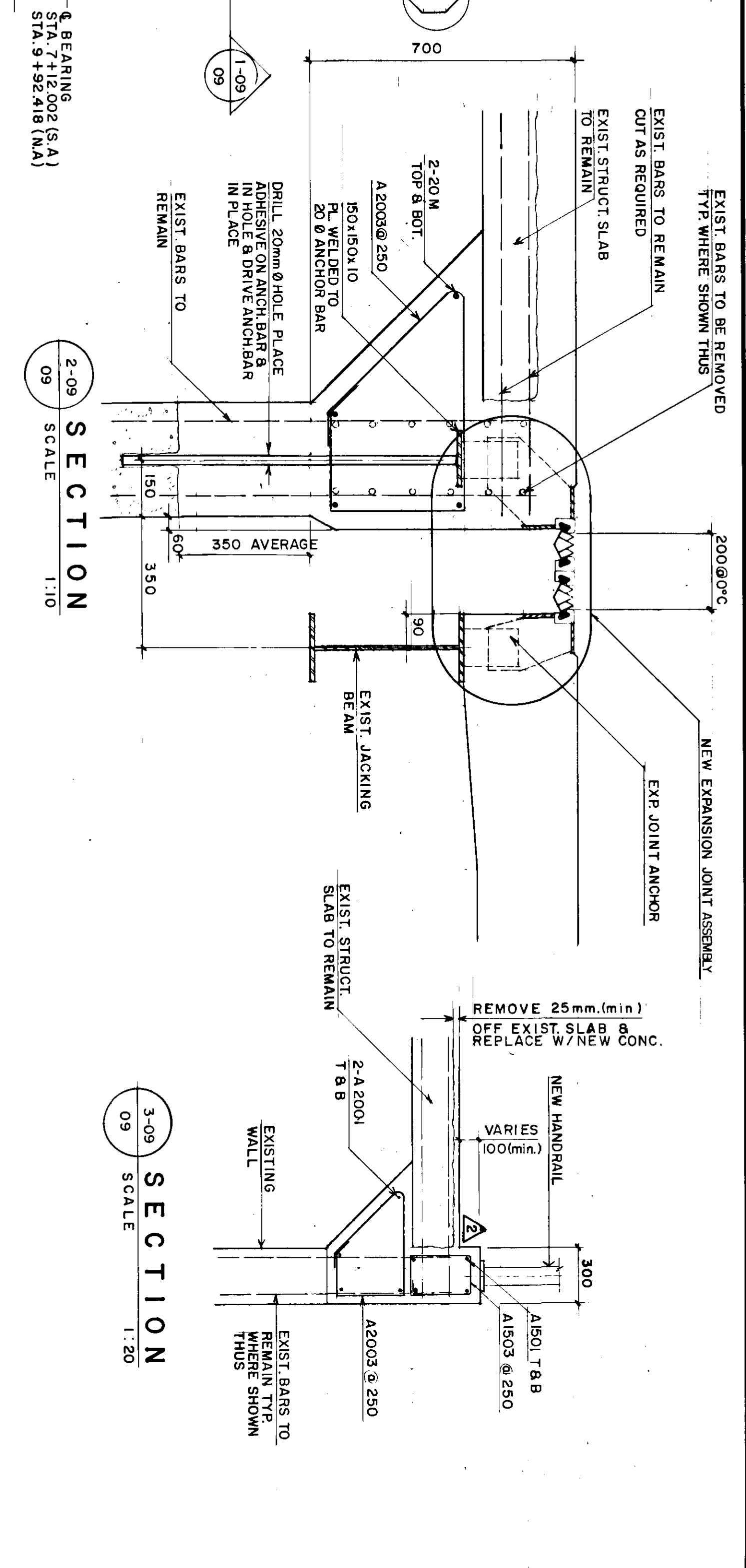
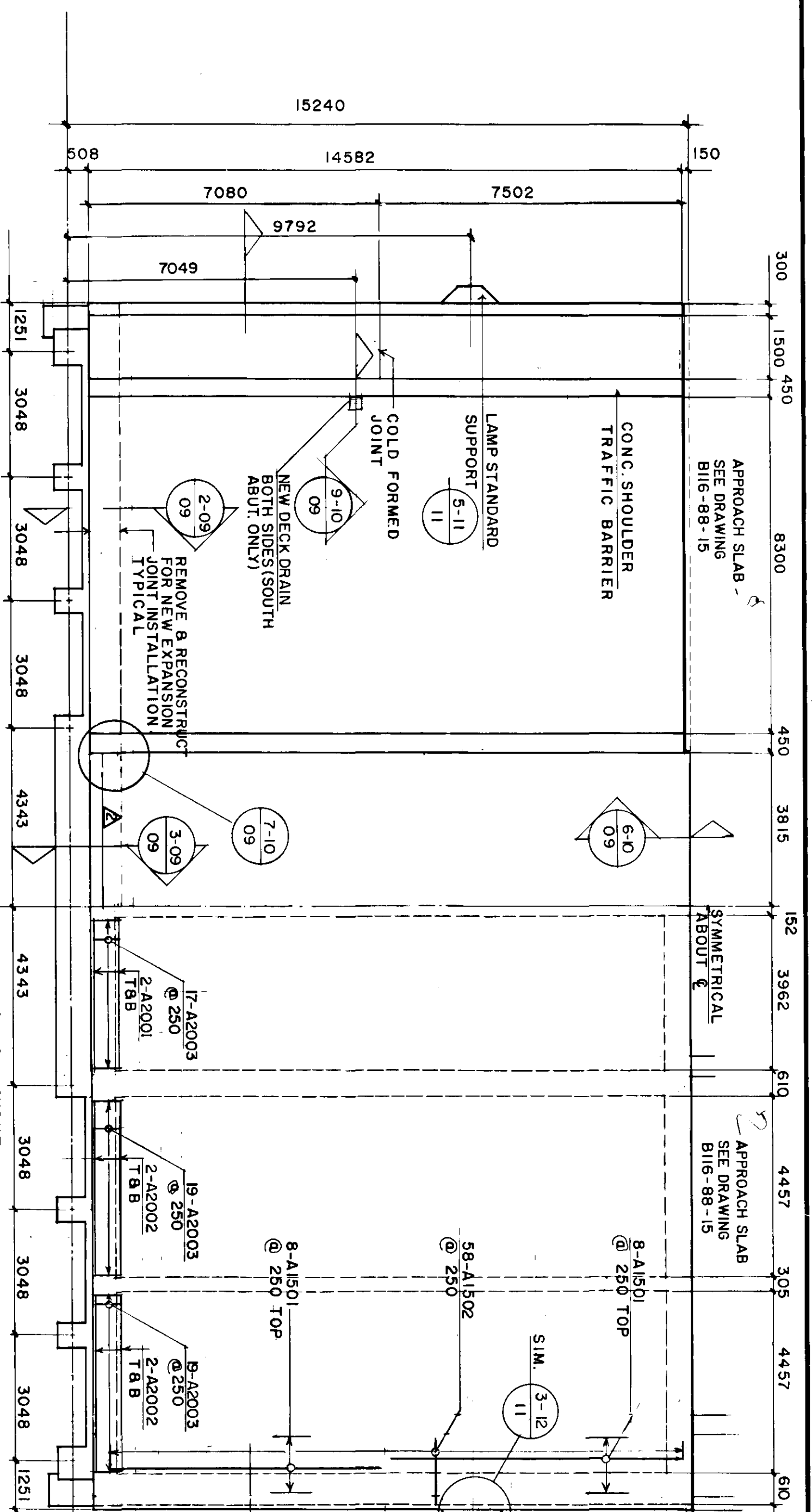
ENGINEER'S SEAL
PROF. OF ENGINEERING
 L. BERGQUIST
 CONSULTANT DRAWING NO. 60814 - 08

THE CITY OF WINNIPEG
 WORKS AND OPERATIONS DIVISION
 STREETS AND TRANSPORTATION DEPARTMENT
 ST. VITAL TWIN BRIDGE OVER RED RIVER
 STRUCTURE REHABILITATION AND
 RELATED WORKS
 EXISTING ABUTMENTS

CITY DRAWING NUMBER
 B116 - 88 - 08
 SHEET 8 OF 48

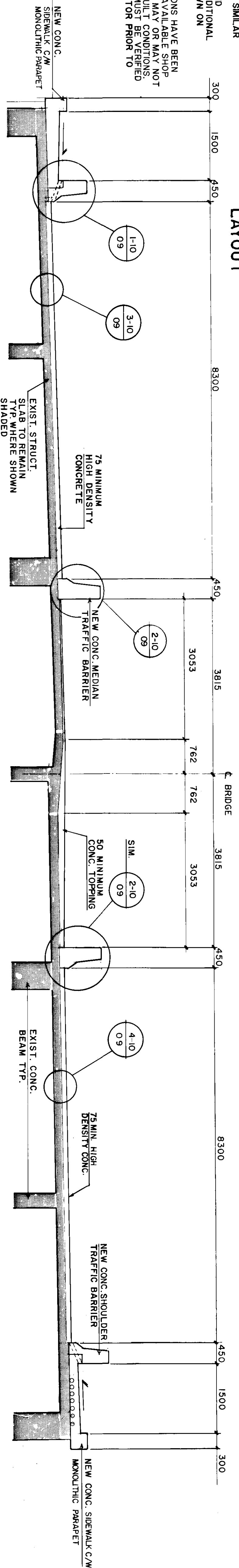
B-5826-8

REID, CROWTHER & PARTNERS LIMITED
 WINNIPEG
AS CONSTRUCTED
 SIGNED: *L.M.M.* DATE: 90/12/20

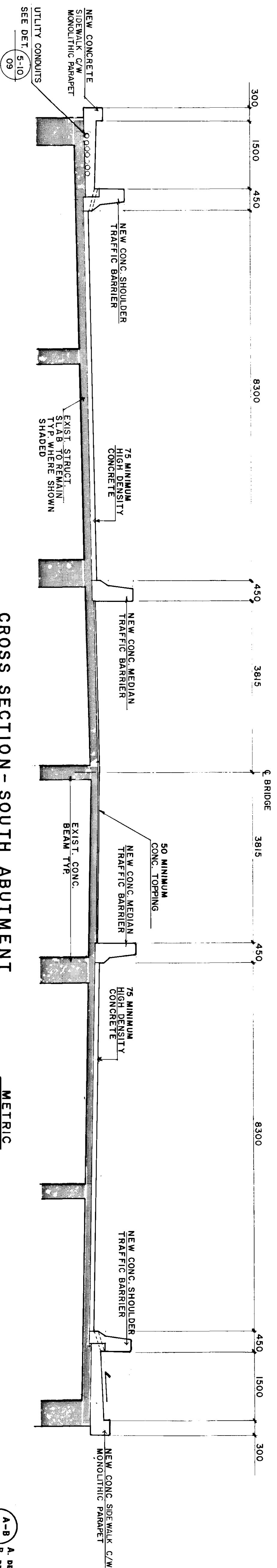


HALF CONCRETING HALF REINFORCING LAYOUT

- NOTES:
- 1) NORTH ABUTMENT SHOWN, SOUTH ABUTMENT SIMILAR.
 - 2) SEE SECTIONS AND DETAILS FOR ADDITIONAL REBAR NOT SHOWN ON PLAN.
 - 3) EXISTING DIMENSIONS HAVE BEEN OBTAINED FROM AVAILABLE SHOP DRAWINGS WHICH MAY OR MAY NOT REPRESENT AS-BUILT CONDITIONS. ALL DIMENSIONS MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.



CROSS SECTION - NORTH ABUTMENT
SCALE 1:50



CROSS SECTION - SOUTH ABUTMENT
SCALE 1:50

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

A-B A. DETAIL NO.
C B. DRAWING WHERE DETAIL SHOWN
C. DRAWING WHERE DETAIL TAKEN

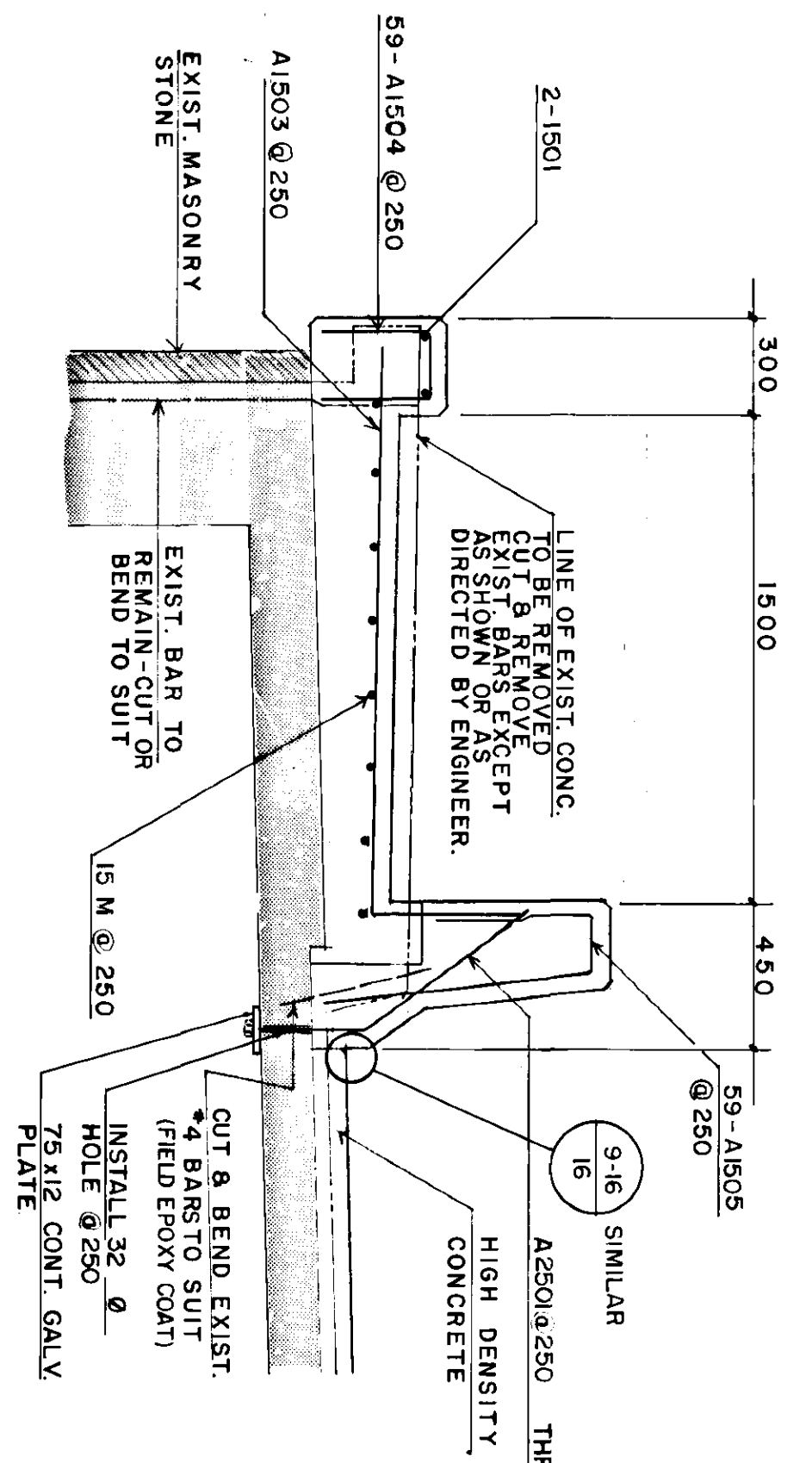
THESE REVISIONS ARE TO SUPPLEMENT OR CLARIFY THE CONTRACT DOCUMENTS. NEITHER THE CONTRACT PRICE NOR THE CONTRACT TIME ARE AFFECTED.

AS CONSTRUCTED
REID, CROWTHER & PARTNERS LIMITED
WINNIPEG
DATE: 2/2/87

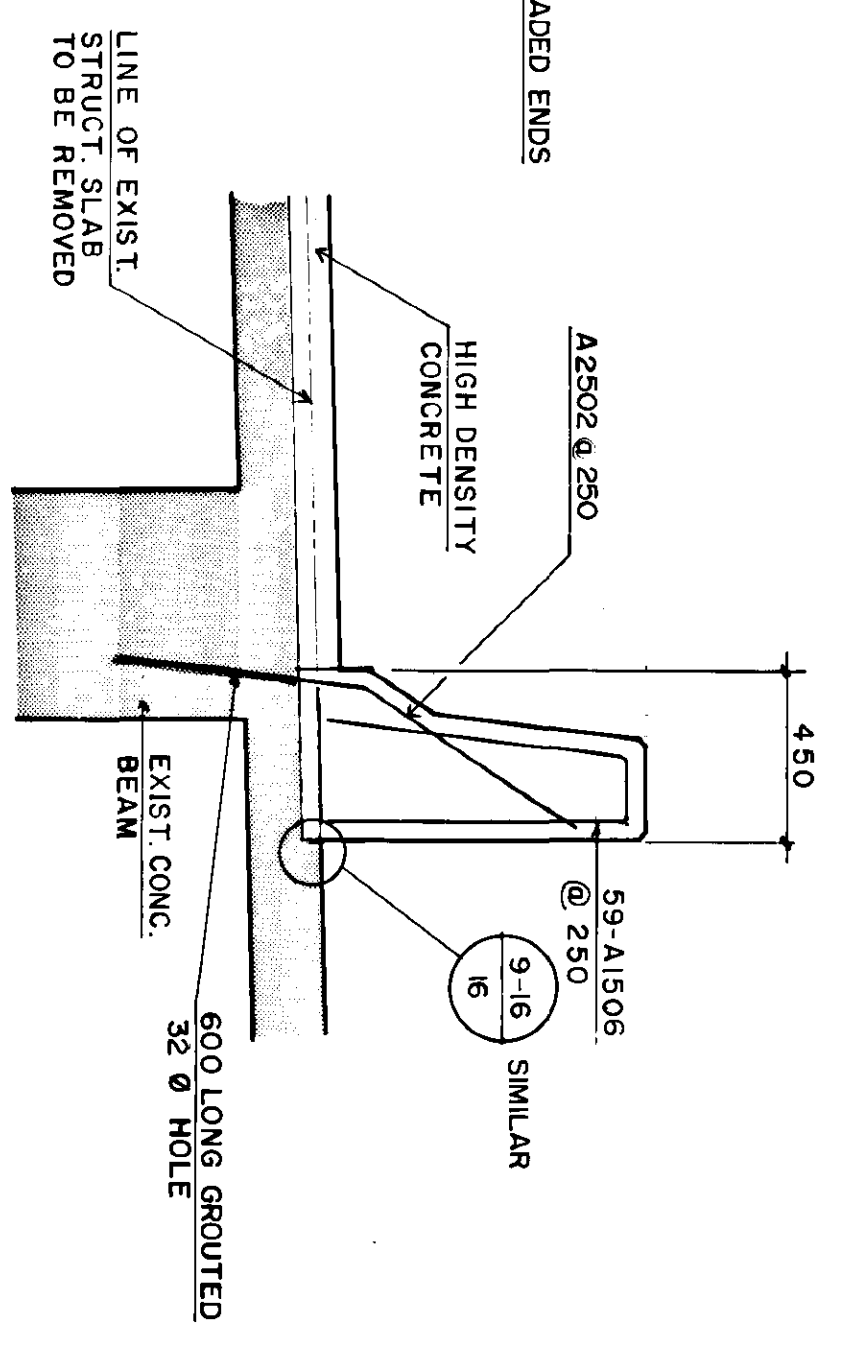
NO.	REVISIONS	DATE	BY
3	AS CONSTRUCTED	881101	RCS
3	SHIFT CURB	880212	B.E.
3	GENERAL REVISIONS	880212	B.E.

Reid Crowther
DESIGNED BY BE
DRAWN BY WJM
CHECKED BY WJM
APPROVED BY [Signature]
REGISTERED PROFESSIONAL ENGINEER
CONSULTANT DRAWING NO. 60814-09

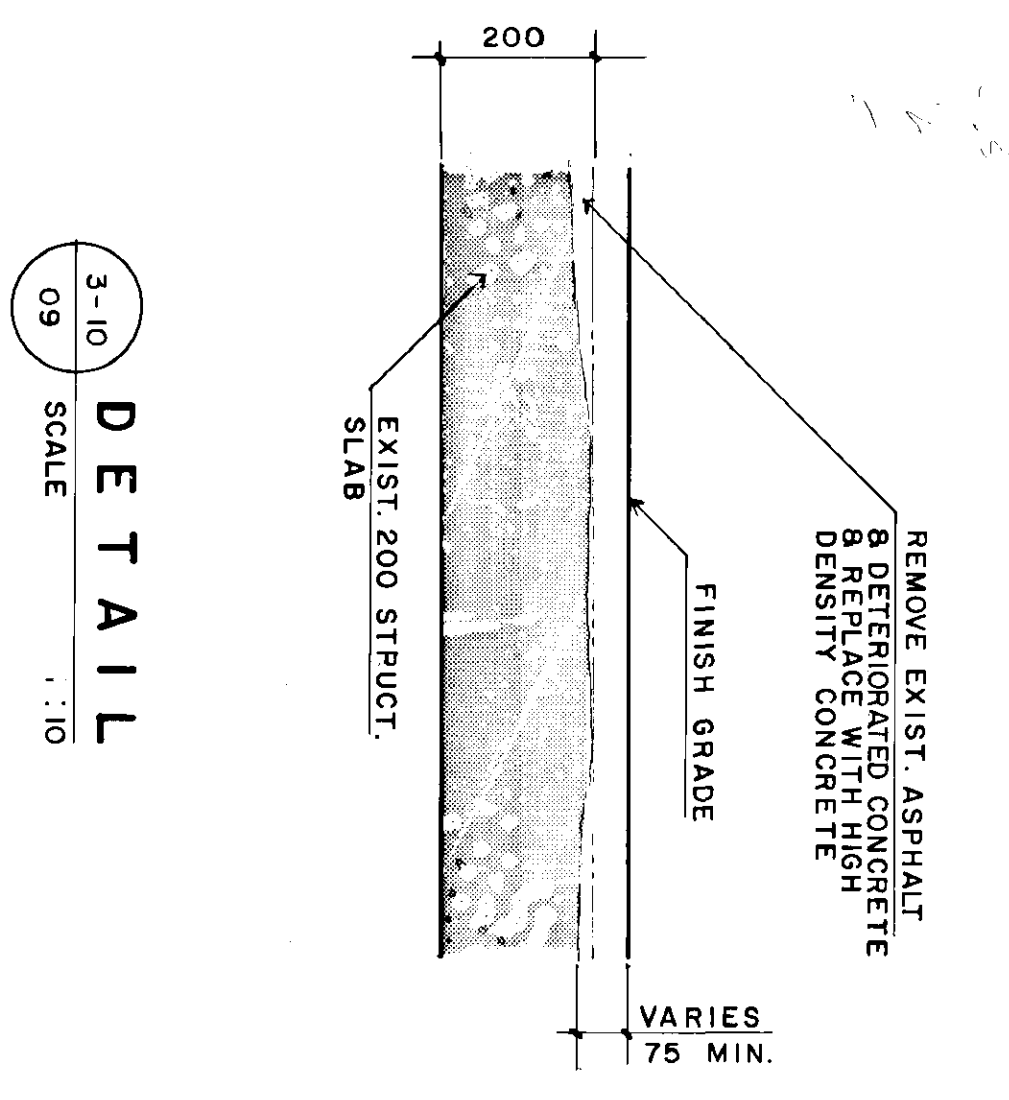
THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
STREETS AND TRANSPORTATION DEPARTMENT
ST. VITAL TWIN BRIDGE OVER RED RIVER
STRUCTURE REHABILITATION AND
RELATED WORKS
ABUTMENT MODIFICATIONS I
SHEET 9 OF 45
DRAWING NUMBER B16-88-09
PROJECT NO. B-5826-9



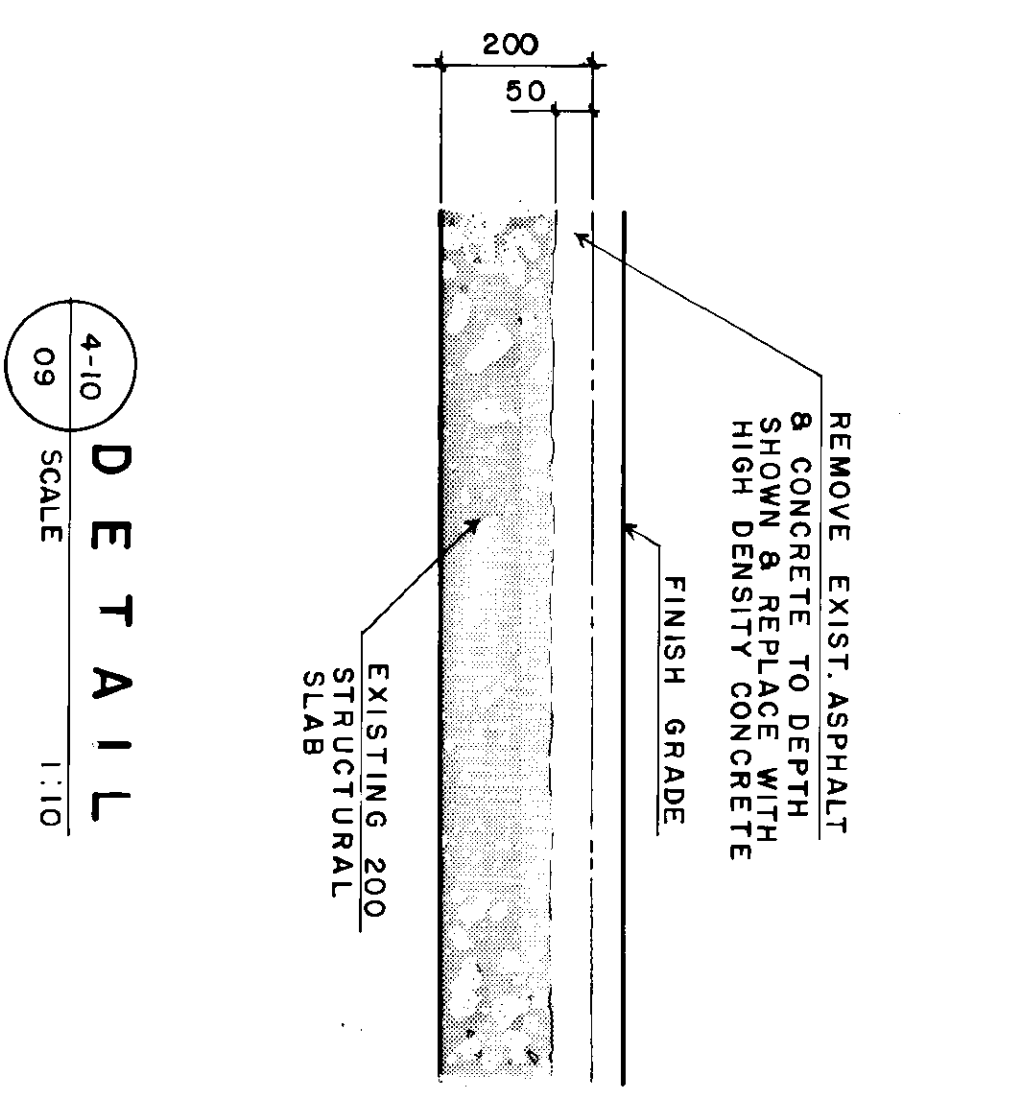
1-10 09
DETAIL



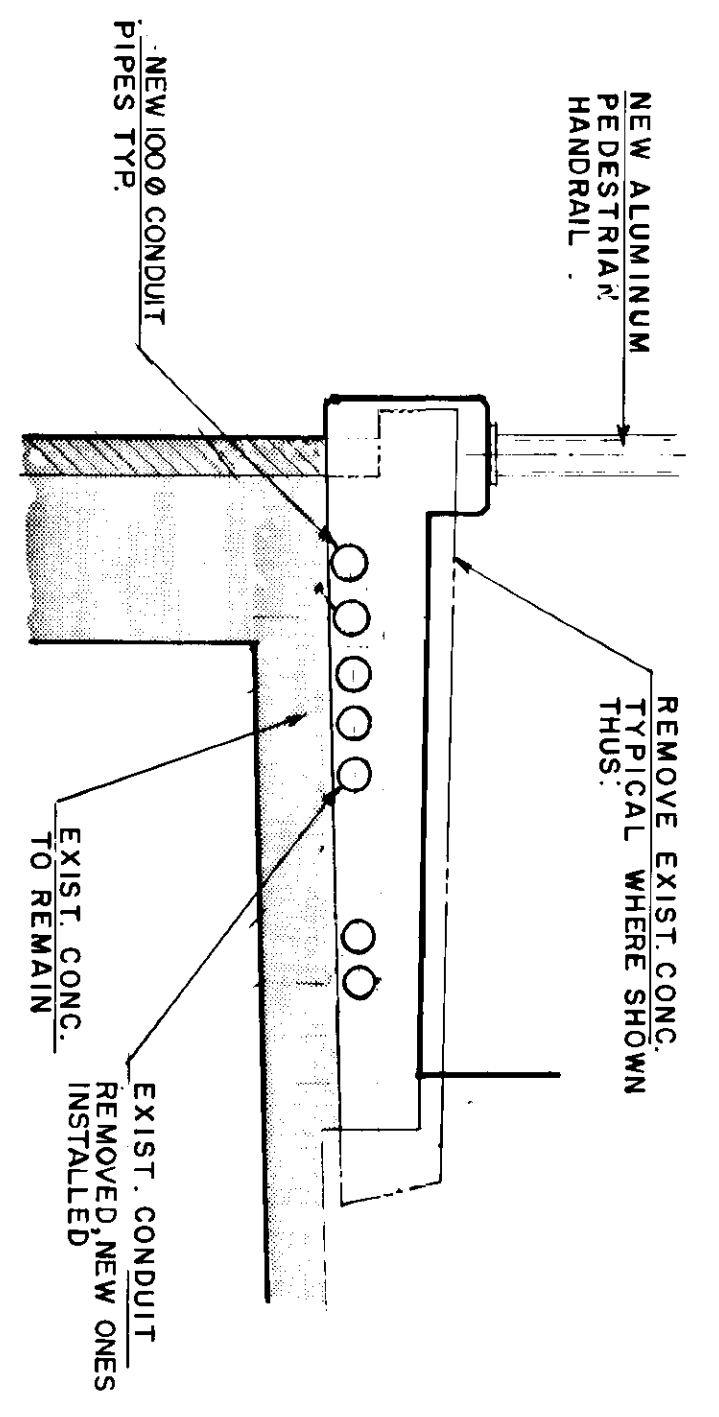
2-10 09
DETAIL



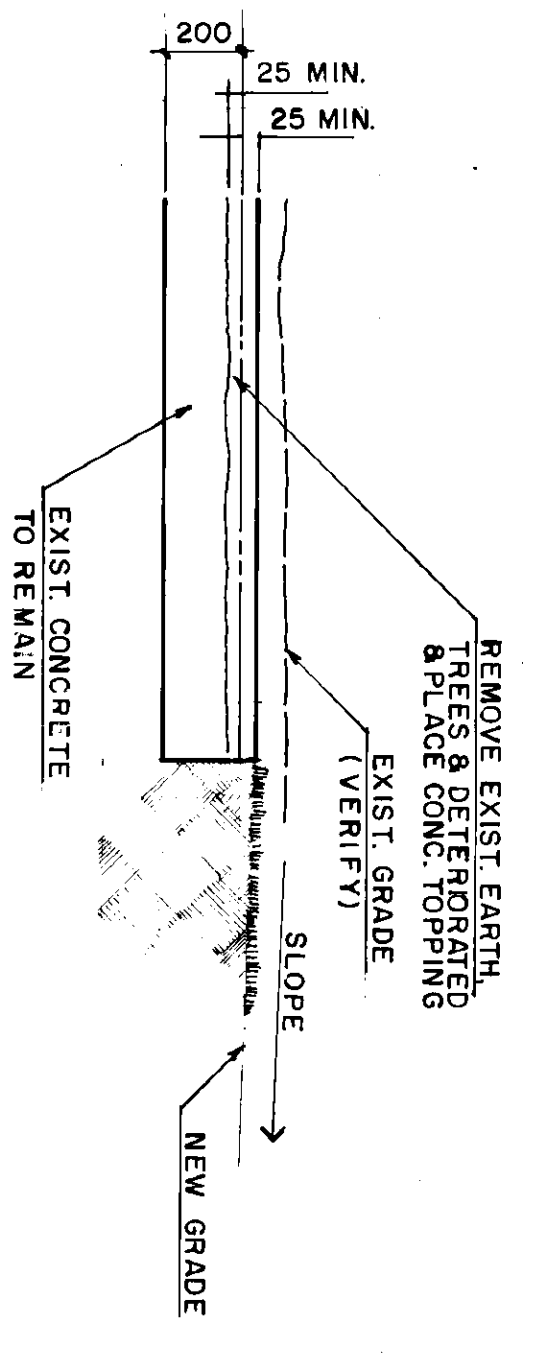
3-10 09
DETAIL



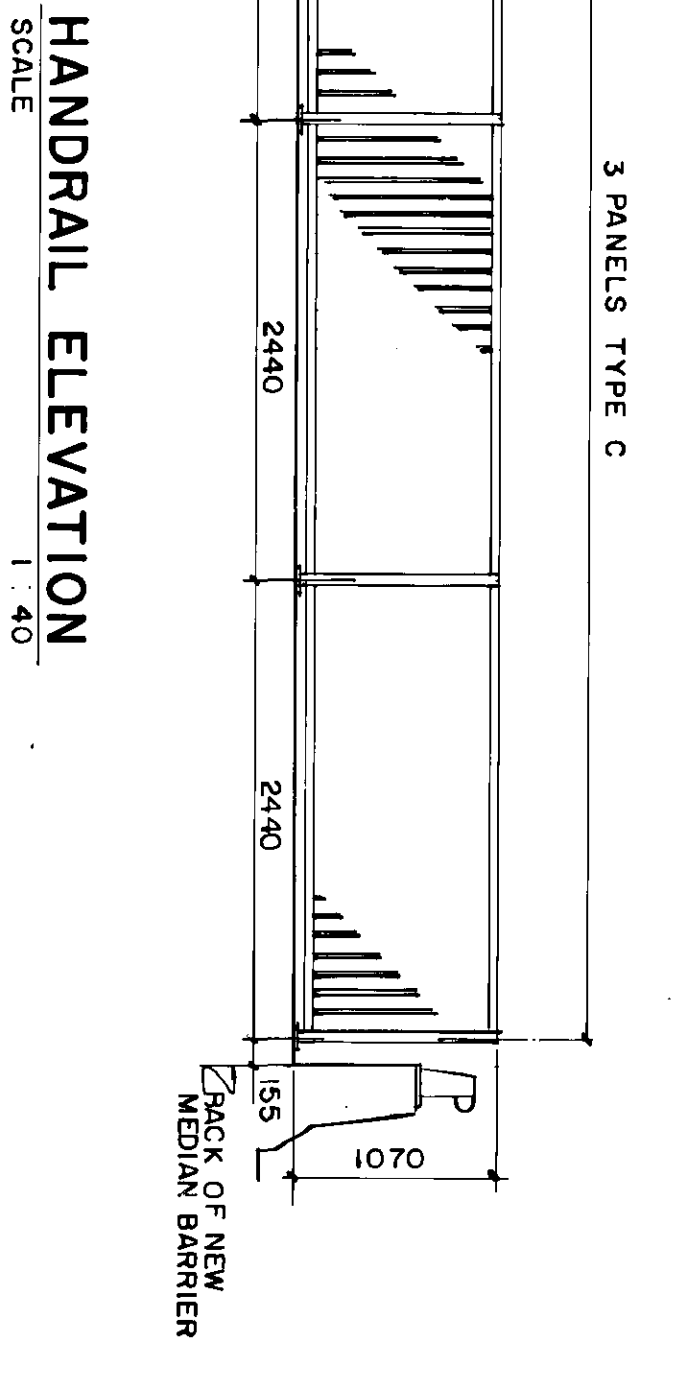
4-10 09
DETAIL



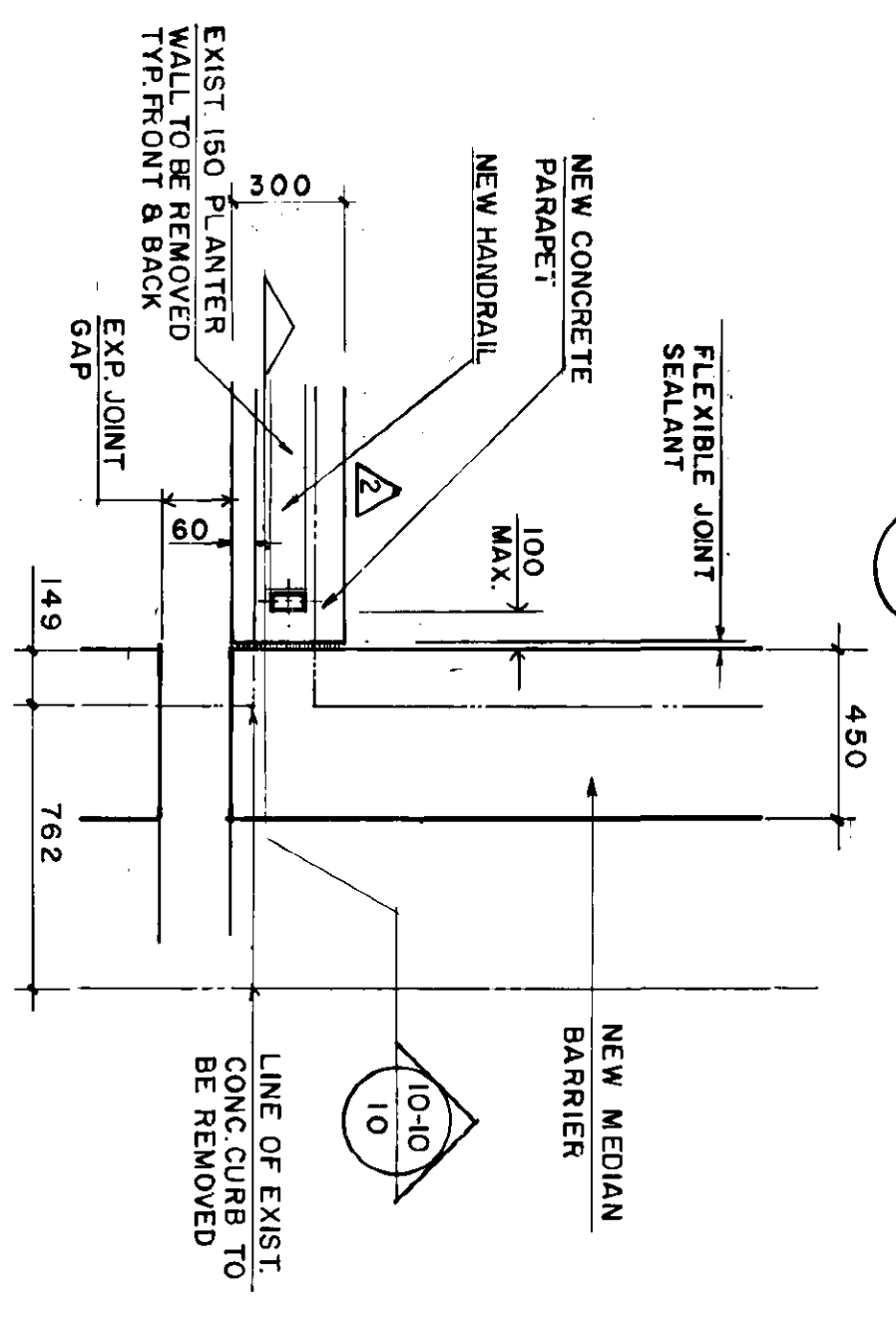
5-10 09
DETAIL



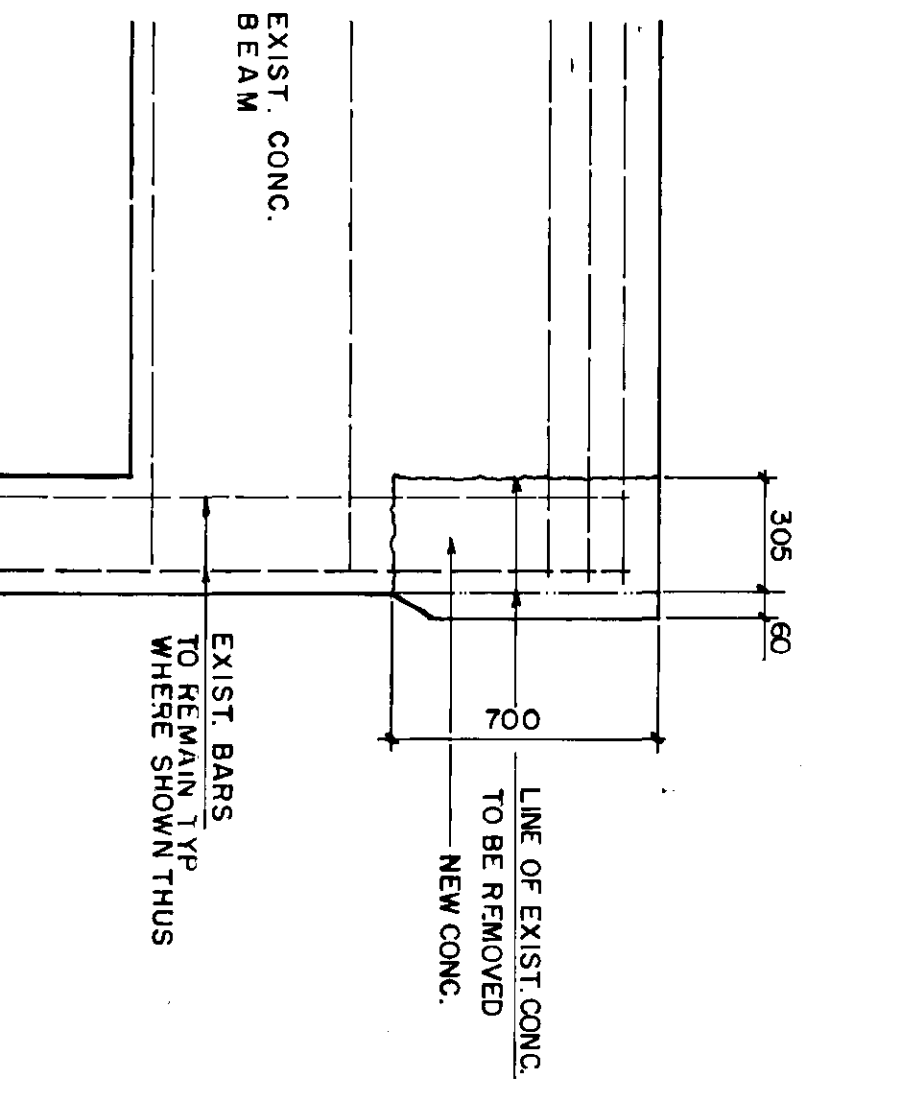
6-10 09
SECTION



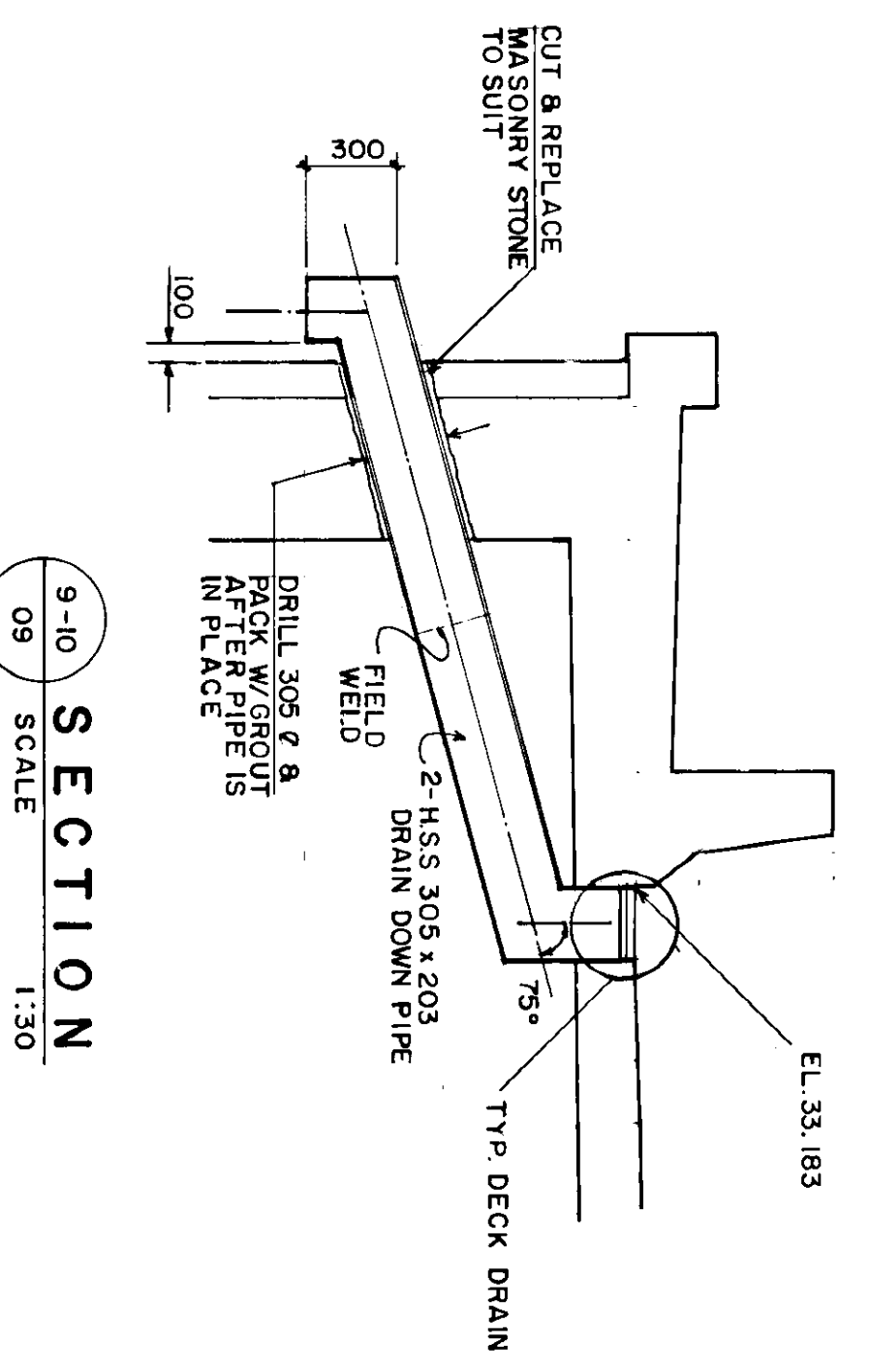
HANDRAIL ELEVATION
SCALE 1:40



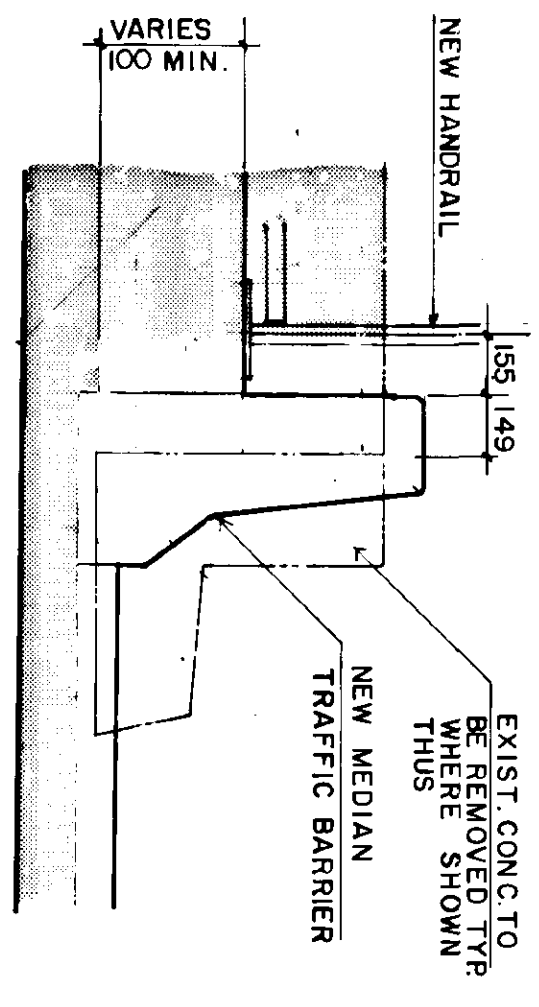
7-10 09
DETAIL



8-10 09
DETAIL



9-10 09
SECTION



10-10 10
SECTION

△ THESE REVISIONS ARE TO SUPPLEMENT OR CLARIFY THE CONTRACT DOCUMENTS. NEITHER THE CONTRACT PRICE NOR THE CONTRACT TIME ARE AFFECTED.

NO.	REVISIONS	DATE	BY
3	AS CONSTRUCTED	881101	RCS
2	SHIFT HANDRAIL	880216	BE
1	GENERAL REVISIONS	880216	BE

Reid Crowther
ENGINEERS & ARCHITECTS
DESIGNED BY B.E.
DRAWN BY W.J.M.
CHECKED BY W.J.M.
DATE DEC. 87

REGISTERED PROFESSIONAL ENGINEER
60814-10

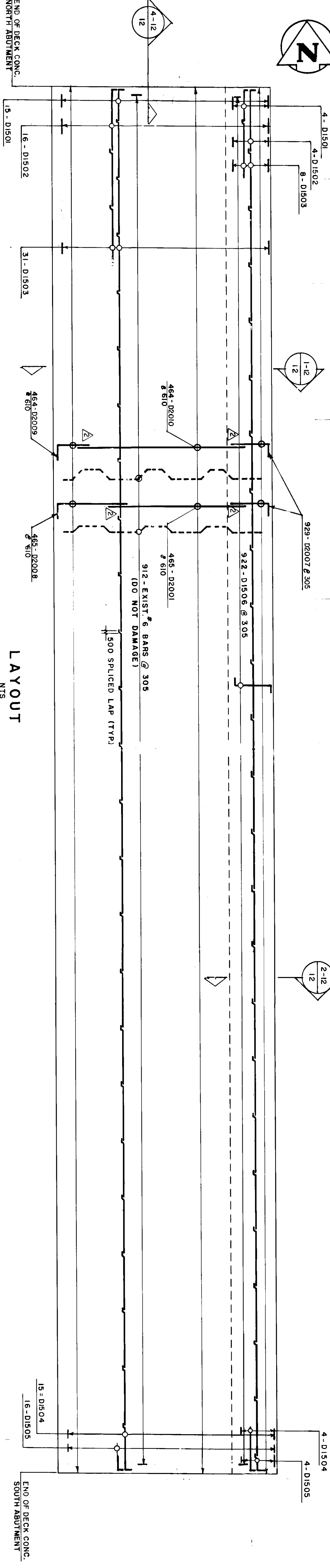
THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
STREETS AND TRANSPORTATION DEPARTMENT
ST. VITAL TWIN BRIDGE OVER RED RIVER
STRUCTURE REHABILITATION AND RELATED WORKS
ABUTMENT MODIFICATIONS 2

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

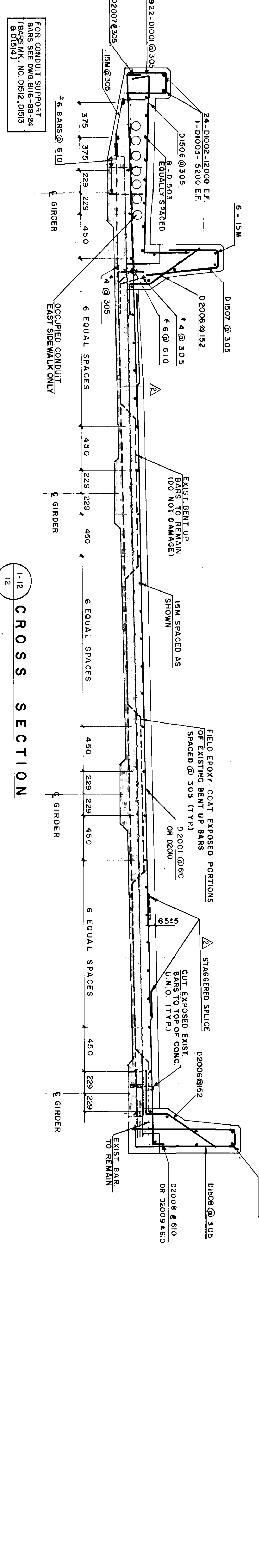
A-B A. DETAIL NO.
C B. DRAWING WHERE DETAIL SHOWN
C. DRAWING WHERE DETAIL TAKEN

REID, CROWTHER & PARTNERS LIMITED
WINNIPEG
AS CONSTRUCTED
DATE: 8/2/87

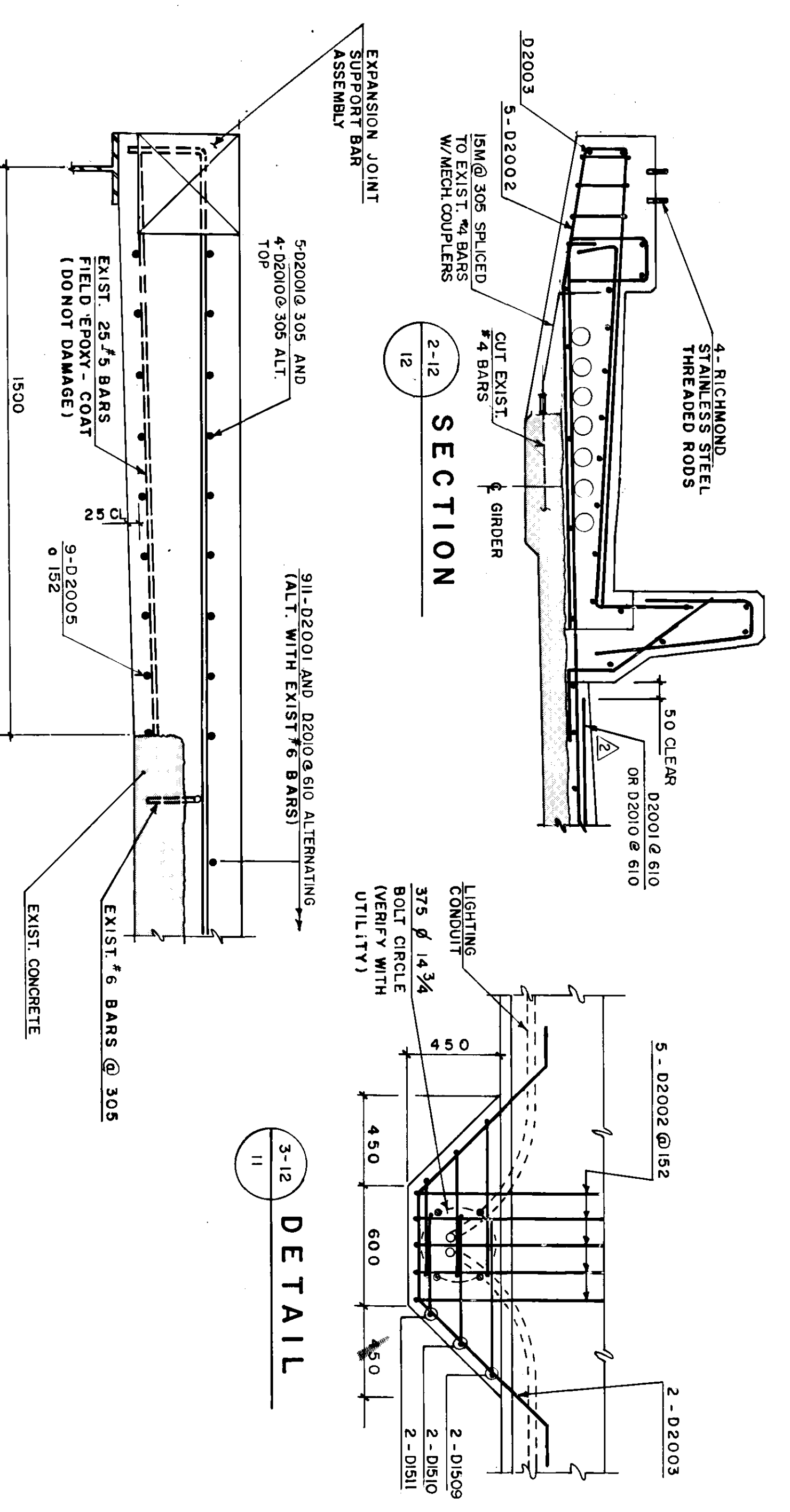
CITY DRAWING NUMBER B116-88-10
SHEET 10 OF 48
B-5826-10



LAYOUT
NTS



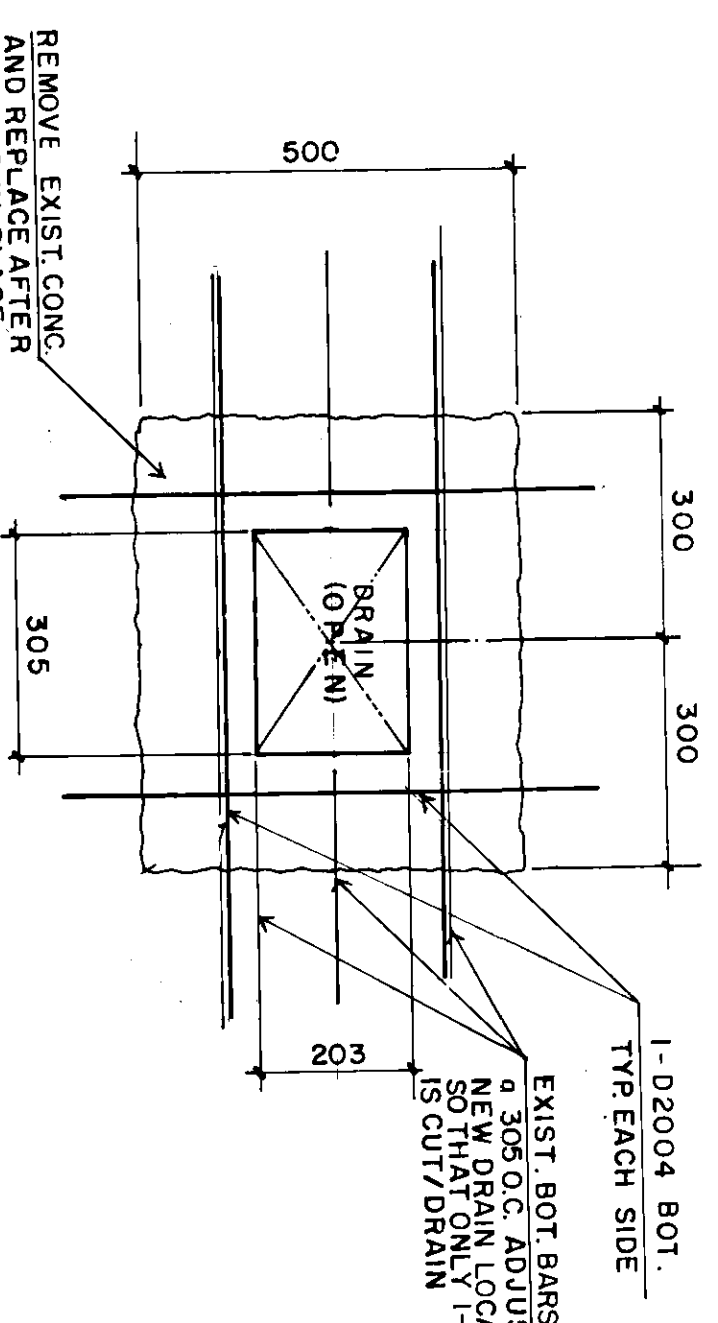
CROSS SECTION
1-12



SECTION
2-12

SECTION
4-12

DETAIL
3-12



DETAIL
5-12 SCALE 1:10

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALISED NUMBERS INDICATE METRES

AS CONSTRUCTED
REID, CROWTHER & PARTNERS LIMITED
WINNIPEG
DATE 2/2/87

NO.	REVISIONS	DATE	BY	DATE
3	AS CONSTRUCTED	8/11/01	RCS	
2	ADD SPLICES TO BARS	8/02/91	BE	
1	GENERAL REVISIONS	8/02/91	BE	

DESIGNED BY BE
DRAWN BY R.C.S.
CHECKED BY W.J.M.
DATE DEC. 87

HON SCALE 1:20 UNO.

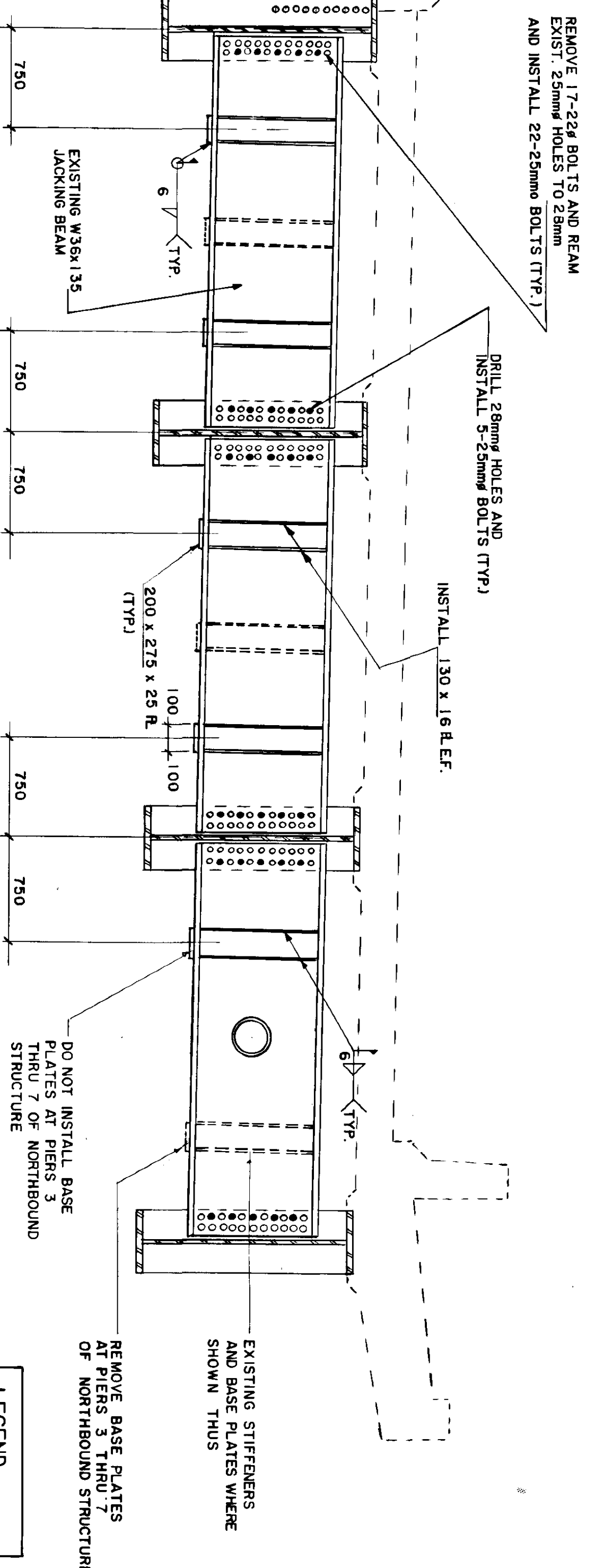
PROFESSIONAL SEAL

CONSULTANT DRAWING NO. 60814-12

THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
STREETS AND TRANSPORTATION DEPARTMENT
ST. VITAL TWIN BRIDGE OVER RED RIVER
STRUCTURE REHABILITATION AND RELATED WORKS
DECK REINFORCING DETAILS

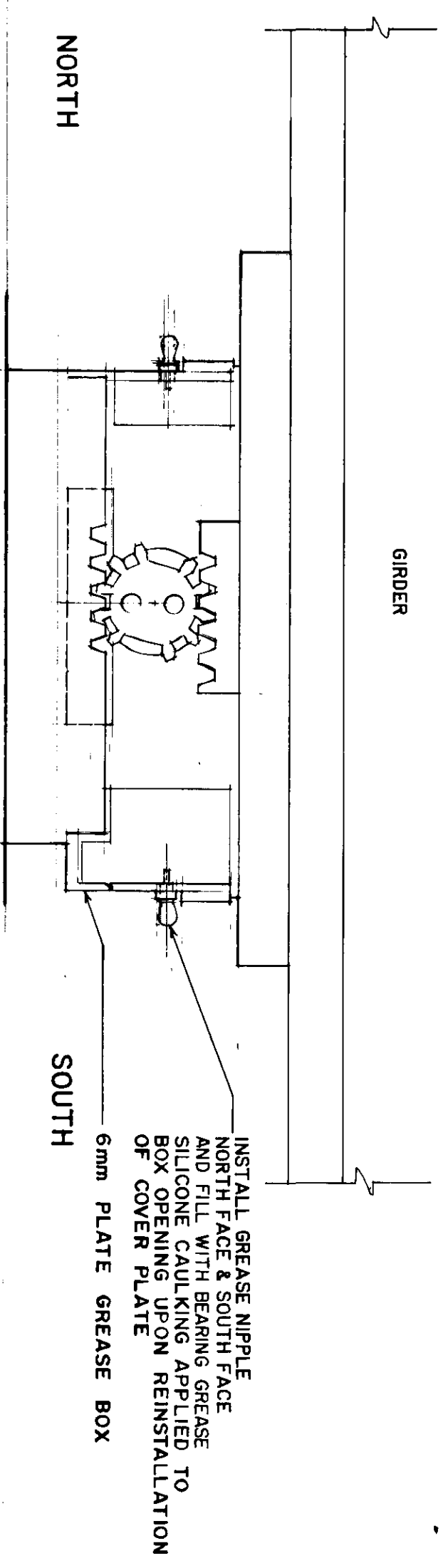
SHEET 12 OF 48
CITY DRAWING NUMBER B116-88-12
B-5826-12

THESE REVISIONS ARE TO SUPPLEMENT OR CLARIFY THE CONTRACT DOCUMENTS. NEITHER THE CONTRACT PRICE NOR THE CONTRACT TIME ARE AFFECTED.

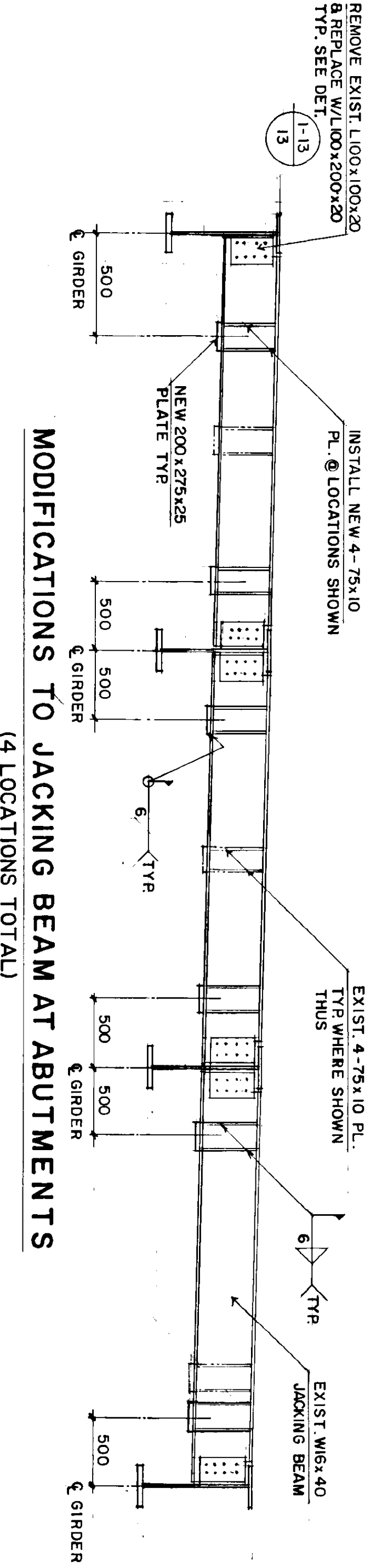


MODIFICATIONS TO JACKING BEAMS AT PIERS
(16 LOCATIONS TOTAL)

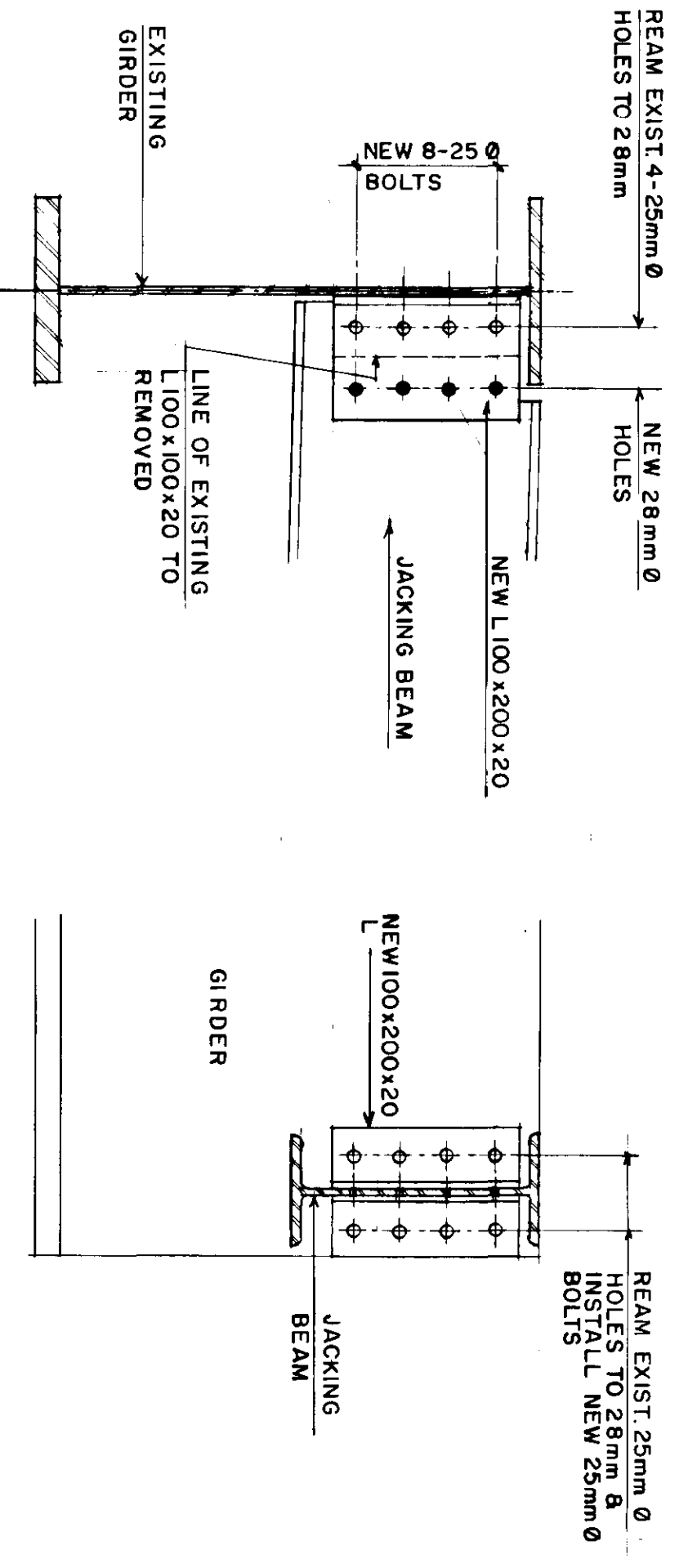
LEGEND
 ○ EXISTING HOLE
 ● NEW HOLE/BOLT
 ALL BOLTS SHALL BE 22Ø A325



ELEVATION - TYPICAL ROLLER BEARING
(72 TOTAL)

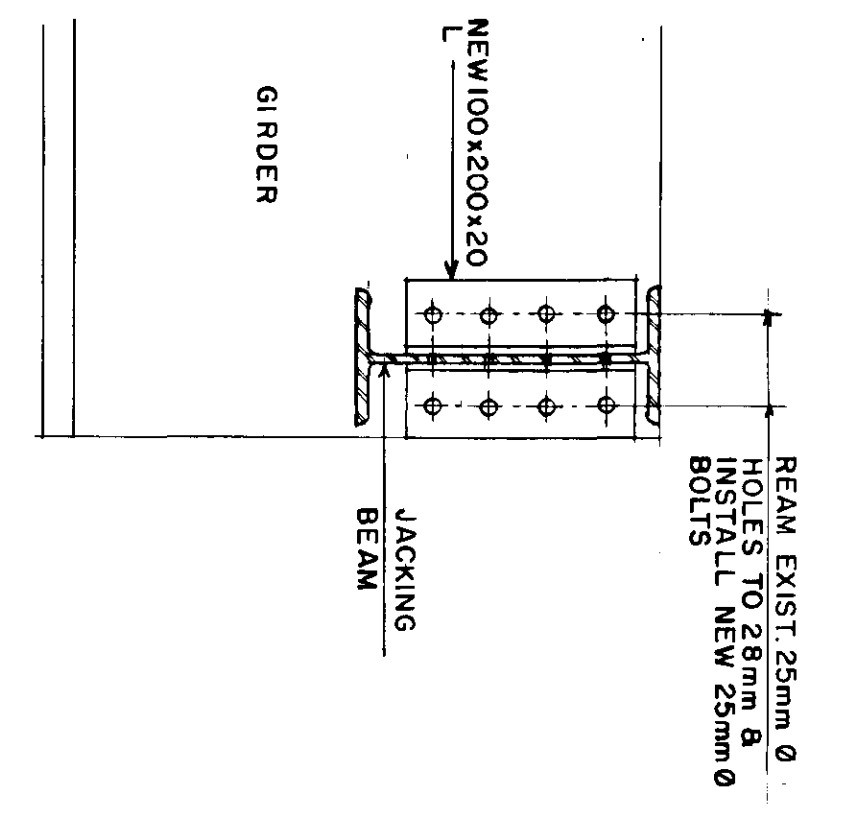


MODIFICATIONS TO JACKING BEAM AT ABUTMENTS
(4 LOCATIONS TOTAL)



FRONT ELEVATION

**1-13
13
DETAIL**



SECTION

NOTE: SEE DWG. NO. B116-88-47 FOR ADDITIONAL MODIFICATIONS TO JACKING BEAMS AT PIERS 2 THRU 7 OF THE NORTHBOUND STRUCTURE ASSOCIATED WITH CONSTRUCTION OF THE SEWAGE FORCEMAIN.

REID, CROWTHER & PARTNERS LIMITED
 WINNIPEG
AS CONSTRUCTED
 DATE: 6/28/87

NO.	REVISIONS	DATE	BY	RCS
1	AS CONSTRUCTED			

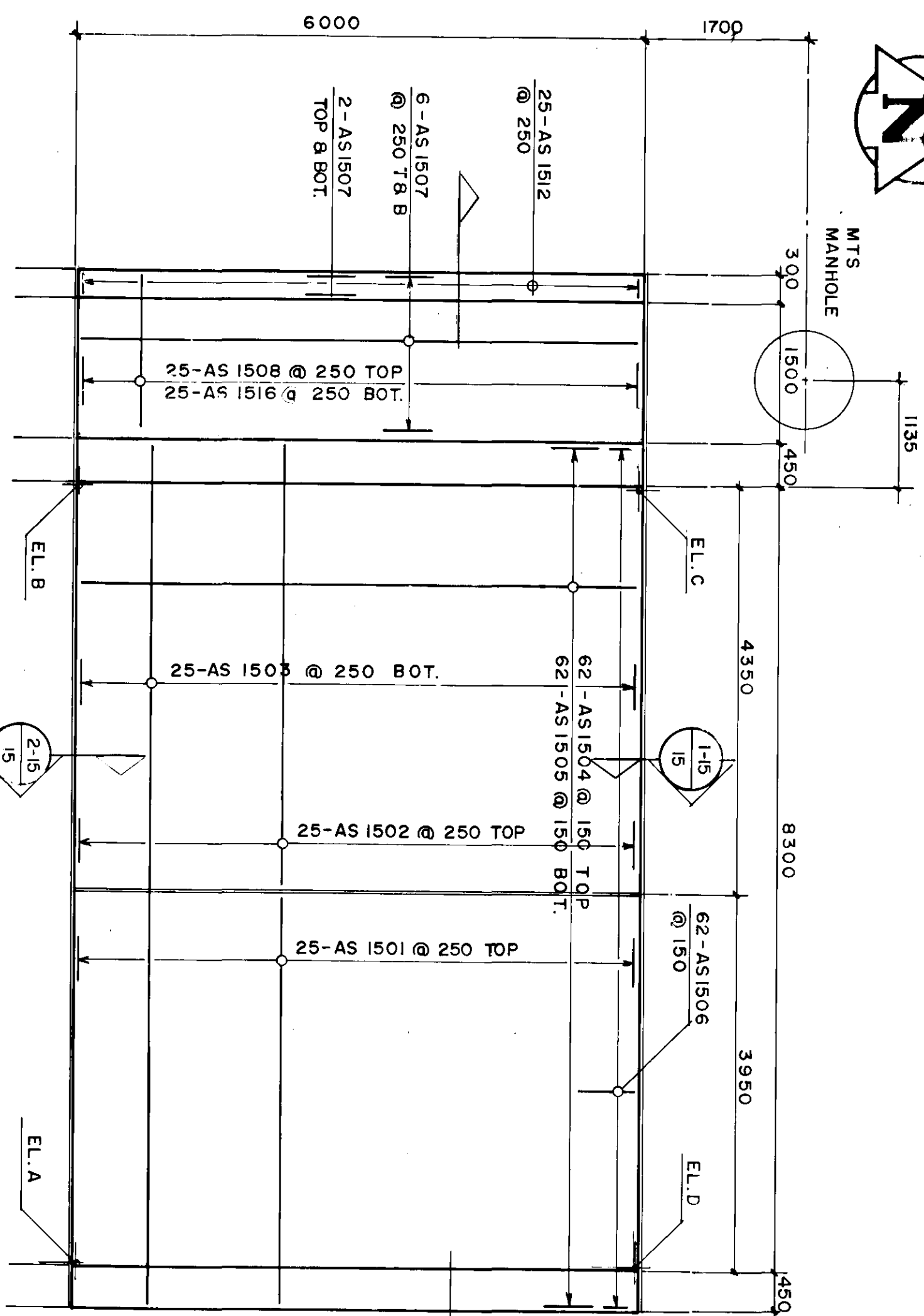
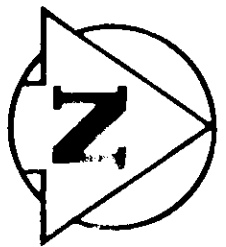
Reid Crowther
 REID, CROWTHER & PARTNERS LTD.
 ENGINEERS, ARCHITECTS, PLANNERS
 1587 ST. JAMES ST. W. WINNIPEG, R3B 2G5
 DESIGNED BY B.E. CHECKED BY W.A.M.
 DRAWN BY R.C.S. APPROVED BY [Signature]
 HOR. SCALE N.T.S. VERTICAL SCALE [Signature]
 DATE DEC. 87

REGISTERED PROFESSIONAL ENGINEER
 CONSULTANT DRAWING NO. 60814-13

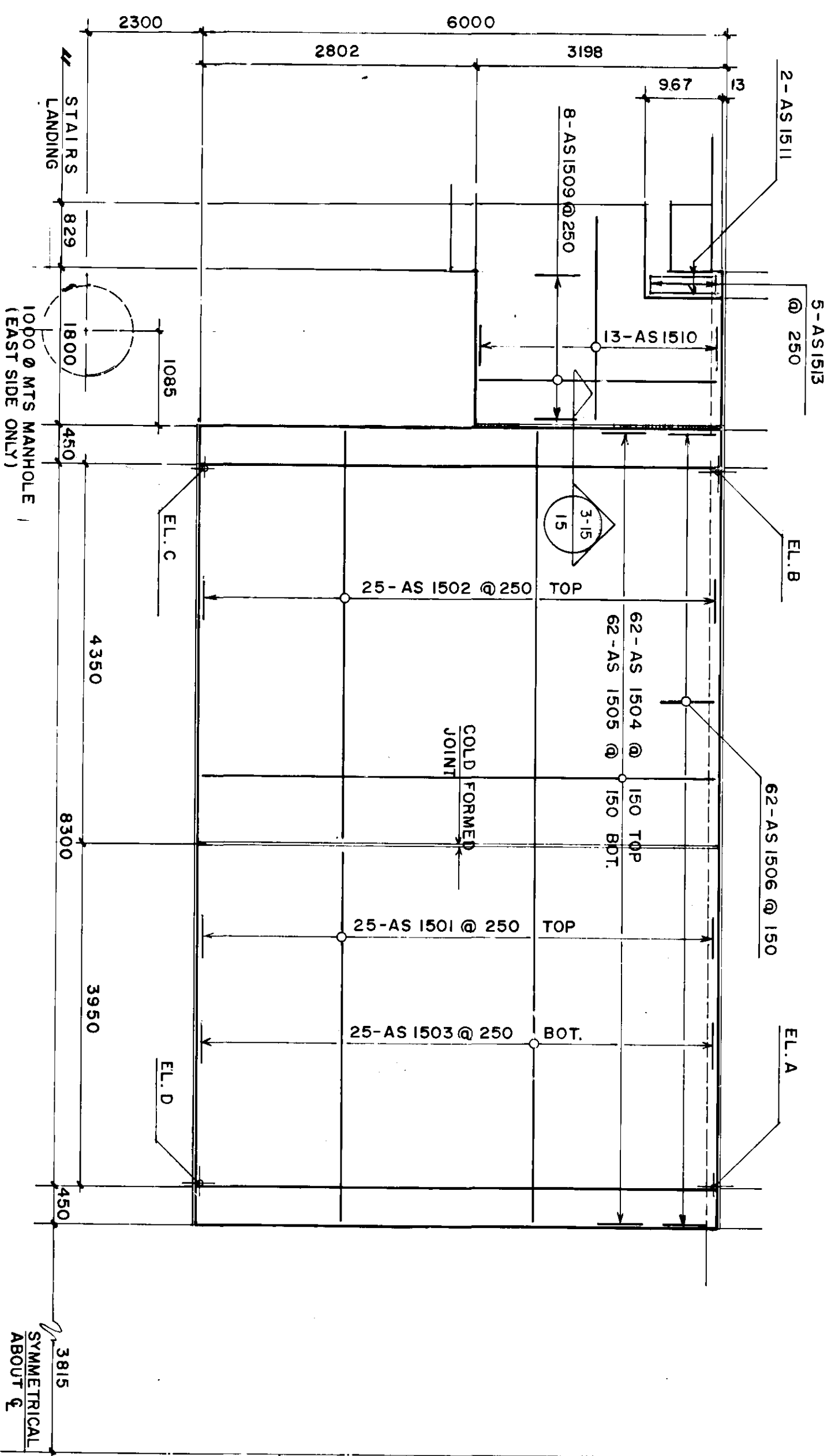
THE CITY OF WINNIPEG
 WORKS AND OPERATIONS DIVISION
 ST. VITAL TWIN BRIDGE OVER RED RIVER
 STREETS AND TRANSPORTATION DEPARTMENT
 JACKING BEAM AND BEARING MODIFICATIONS
 CITY DRAWING NUMBER B116-88-13
 SHEET 13 OF 48
B-5826-13

METRIC
 WHOLE NUMBERS INDICATE MILLIMETRES
 DECIMALIZED NUMBERS INDICATE METRES

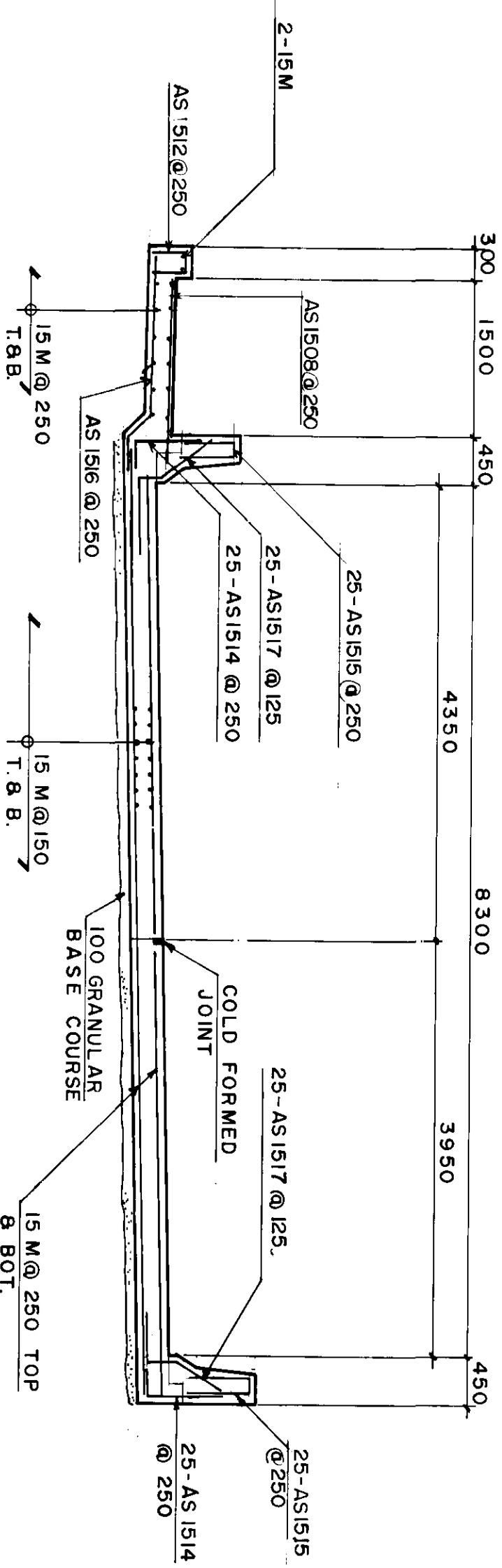
A-B A. DETAIL NO.
 C B. DRAWING WHERE DETAIL SHOWN
 C. DRAWING WHERE DETAIL TAKEN



HALF NORTH STRUCTURAL APPROACH
SLAB REINFORCING PLAN
SCALE 1:50

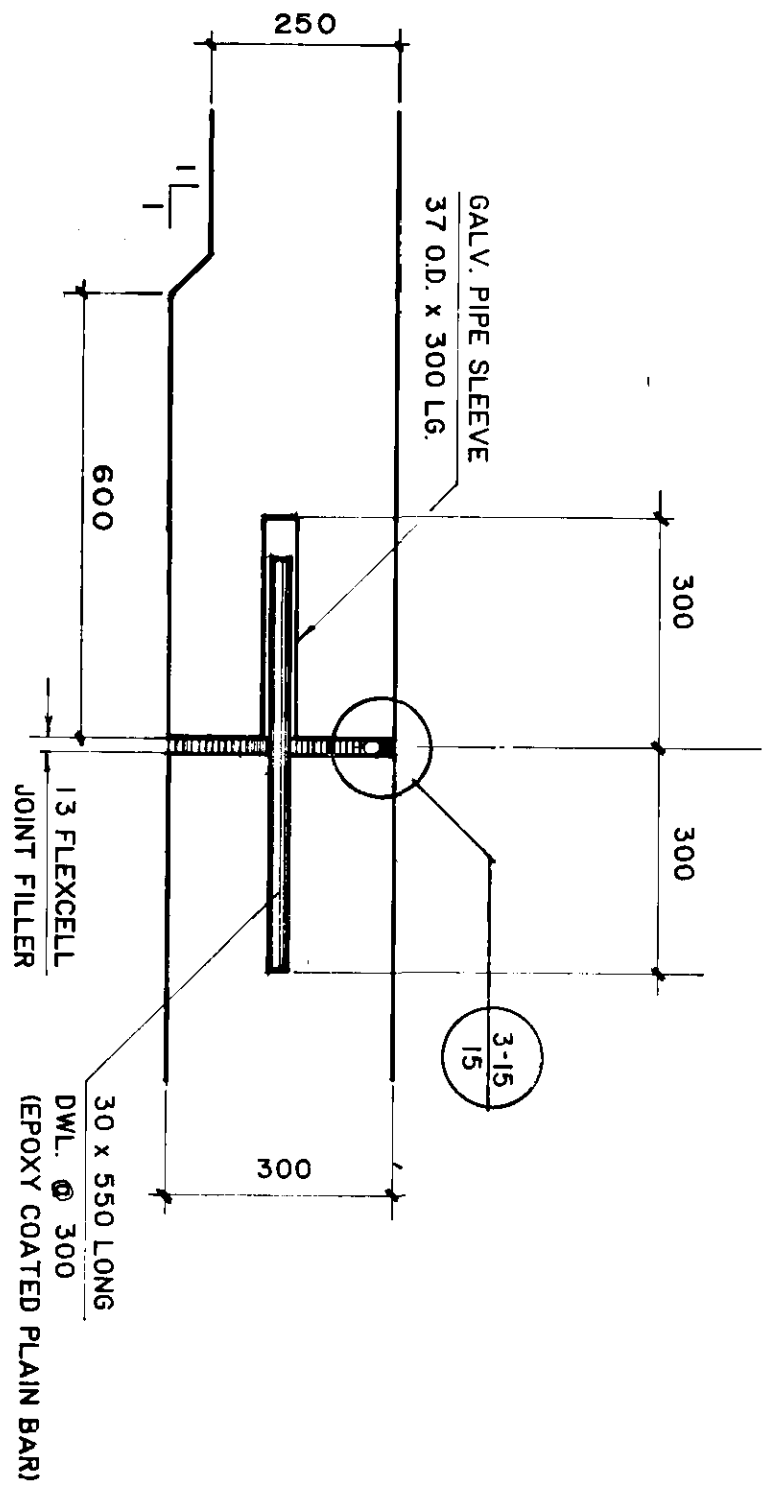


HALF SOUTH STRUCTURAL APPROACH
SLAB REINFORCING PLAN
SCALE 1:50

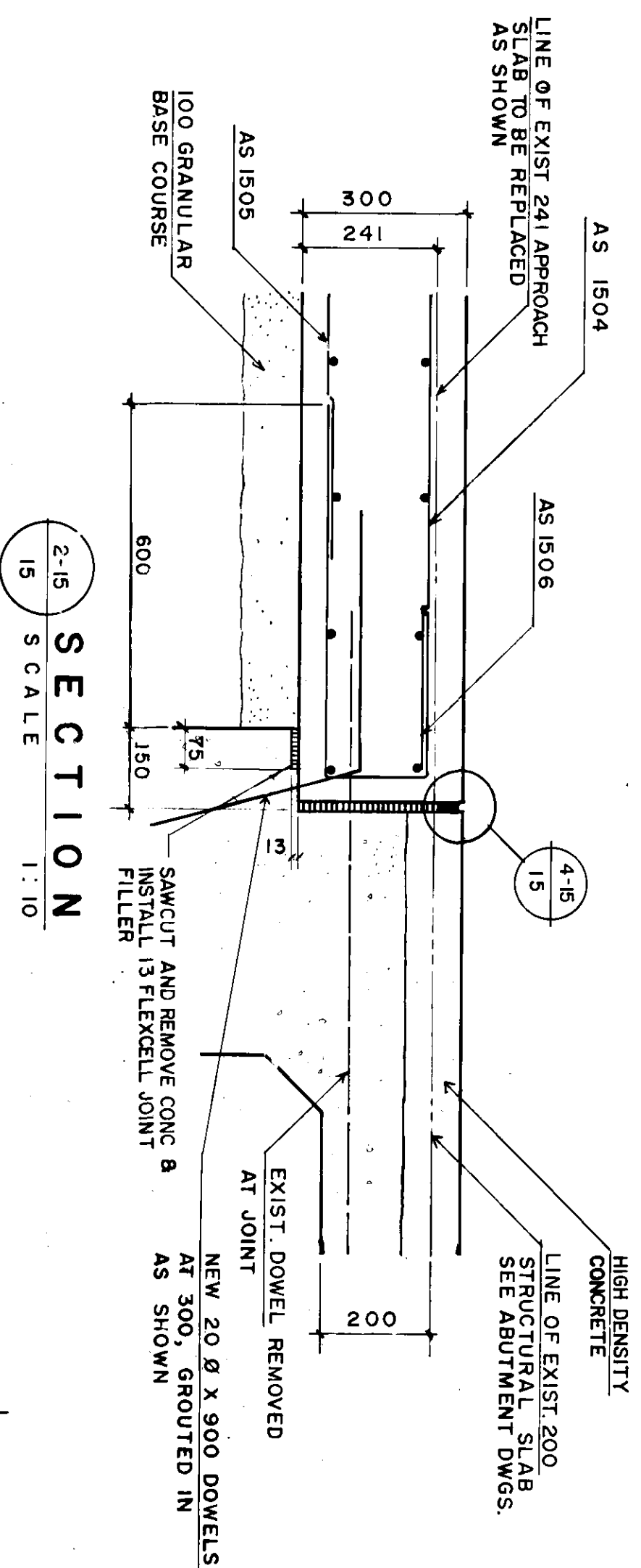


NOTE:
SEE DWG 24 FOR CONDUITS
THROUGH SIDEWALK

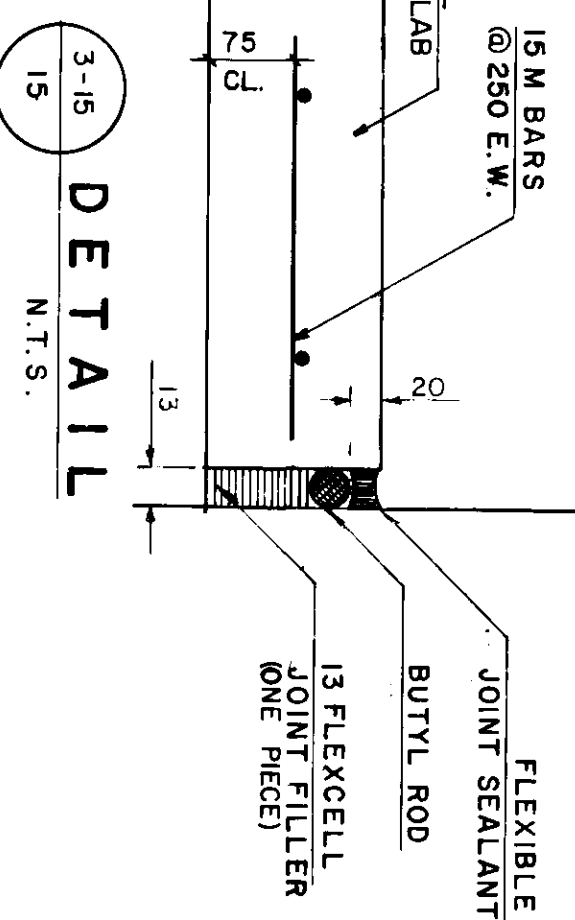
5-15
TYPICAL HALF CROSS SECTION
NORTH APPROACH (SOUTH APPROACH SIMILAR BUT
WITH SEPARATE SIDEWALK)
SCALE 1:50



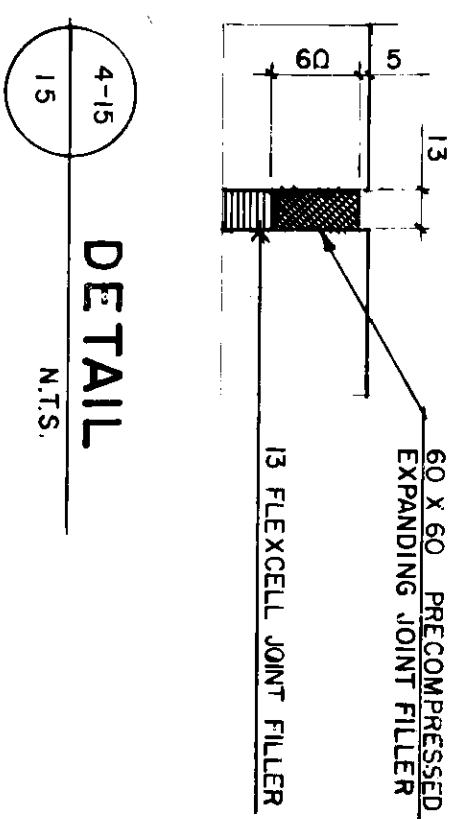
1-15
SECTION
SCALE 1:10



COLD FORMED JOINT DETAIL
SCALE 1:2



3-15
DETAIL
SCALE 1:5



4-15
DETAIL
SCALE N.T.S.

ELEVATIONS				
LOCATION	A	B	C	D
SW SLAB	233.389	233.312	233.233	233.389
NW SLAB	233.030	232.860	232.830	233.002
SE SLAB	233.389	233.212	233.233	233.389
NE SLAB	233.084	233.218	233.197	233.082

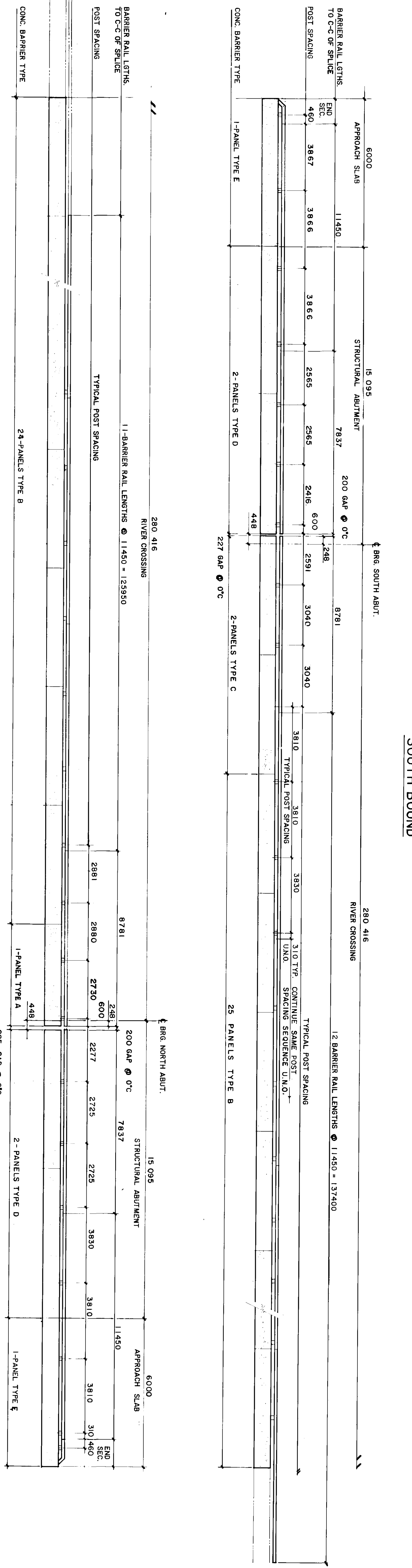
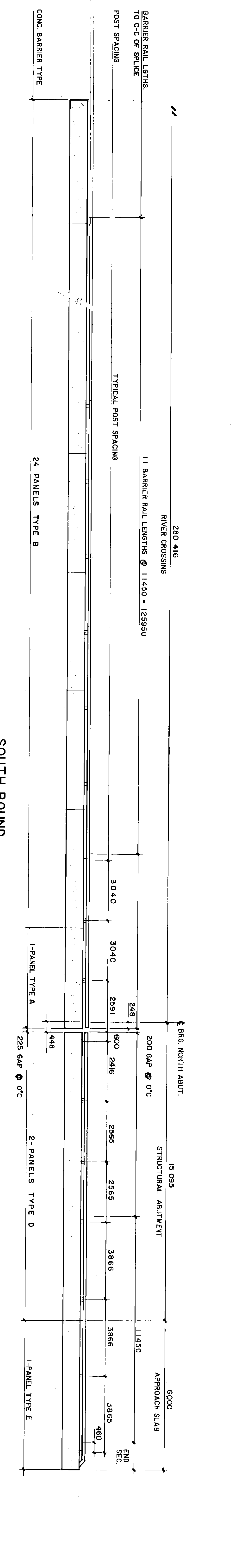
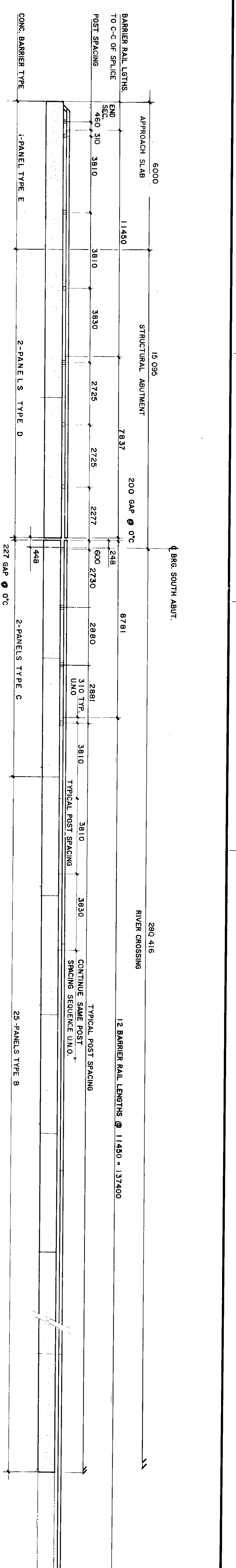
THESE REVISIONS ARE TO SUPPLEMENT
OR CLARIFY THE CONTRACT DOCUMENTS.
NEITHER THE CONTRACT PRICE NOR THE
CONTRACT TIME ARE AFFECTED

- A-B A. DETAIL NO.
- B. DRAWING WHERE DETAIL SHOWN
- C. DRAWING WHERE DETAIL TAKEN

AS CONSTRUCTED
REID, CROWTHER & PARTNERS LIMITED
WINNIPEG
DATE: 5/2/79

NO.	REVISIONS	DATE	BY	DESIGNED	CHECKED	APPROVED	ACCEPTED	CONSULTANT DRAWING NO.	ST. VITAL TWIN BRIDGE OVER RED RIVER STRUCTURE REHABILITATION AND RELATED WORKS	REFERENCE STRUCTURE DRAWING NUMBER U216-88-02 U217-88-02
2	AS CONSTRUCTED	8/10/01	RCS	B.E.	W.M.			63814-15	THE CITY OF WINNIPEG WORKS AND TRANSPORTATION DEPARTMENT	
1	GENERAL REVISION	8/20/99	RCS	RCS						

REGISTERED ENGINEER
60814-15



ALUMINUM TRAFFIC BARRIER	
COMPONENT	QUANTITY
RAIL END SECTION	8
11450 RAIL SECTION	100
7827 RAIL SECTION	8
7827 RAIL SECTION	8
SPLICE BAR 700 MM	8
SPLICE BAR 457 MM	112
RAIL CLAMP BAR	696
CAP SCREW	1856
WASHER	1856
TRAFFIC BARRIER RAIL POST	348
SHIMS	AS REQUIRED

CONCRETE TRAFFIC BARRIER			
PANEL TYPE	NO. REQUIRED	LENGTH	
A	2	5993	
B	98	3830	
C	8	7312	
D	8	7312	
E	4	5994	

NORTH BOUND

SOUTH BOUND

METRIC

WHOLE NUMBERS INDICATE MILLIMETRES
FR. NUM. DEC. NUMBERS INDICATE METRES

NO.	REVISIONS	DATE	BY
2	AS CONSTRUCTED GENERAL REVISION	88/02/22	RCS

DESIGNED BY: B.E.
DRAWN BY: R.C.S.
CHECKED BY: W.J.M.
DATE: DEC. 97

REID CROWTHER
ENGINEERS & ARCHITECTS
1888-4-4
60814-16

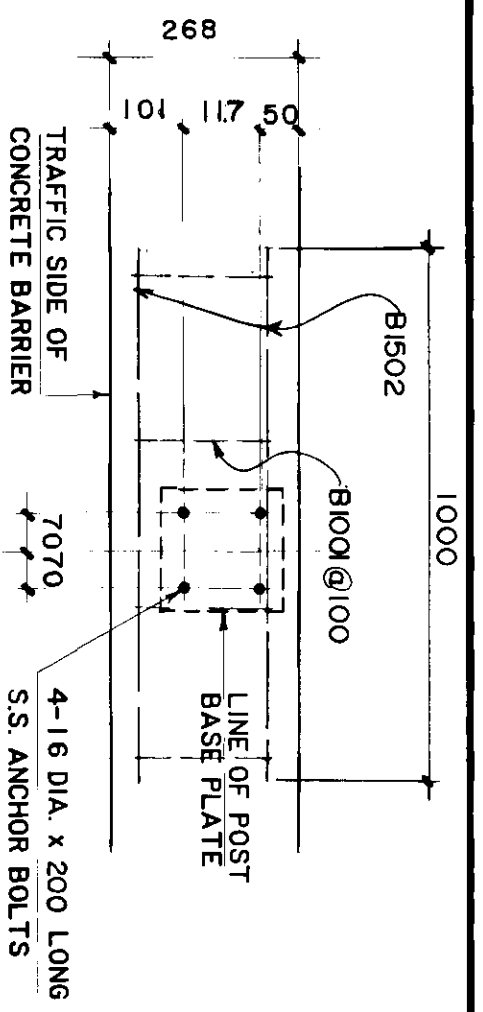
AS CONSTRUCTED
DATE: 8/10/98

THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
ST. VITAL TWIN BRIDGE OVER RED RIVER
STRUCTURE REHABILITATION AND RELATED WORKS

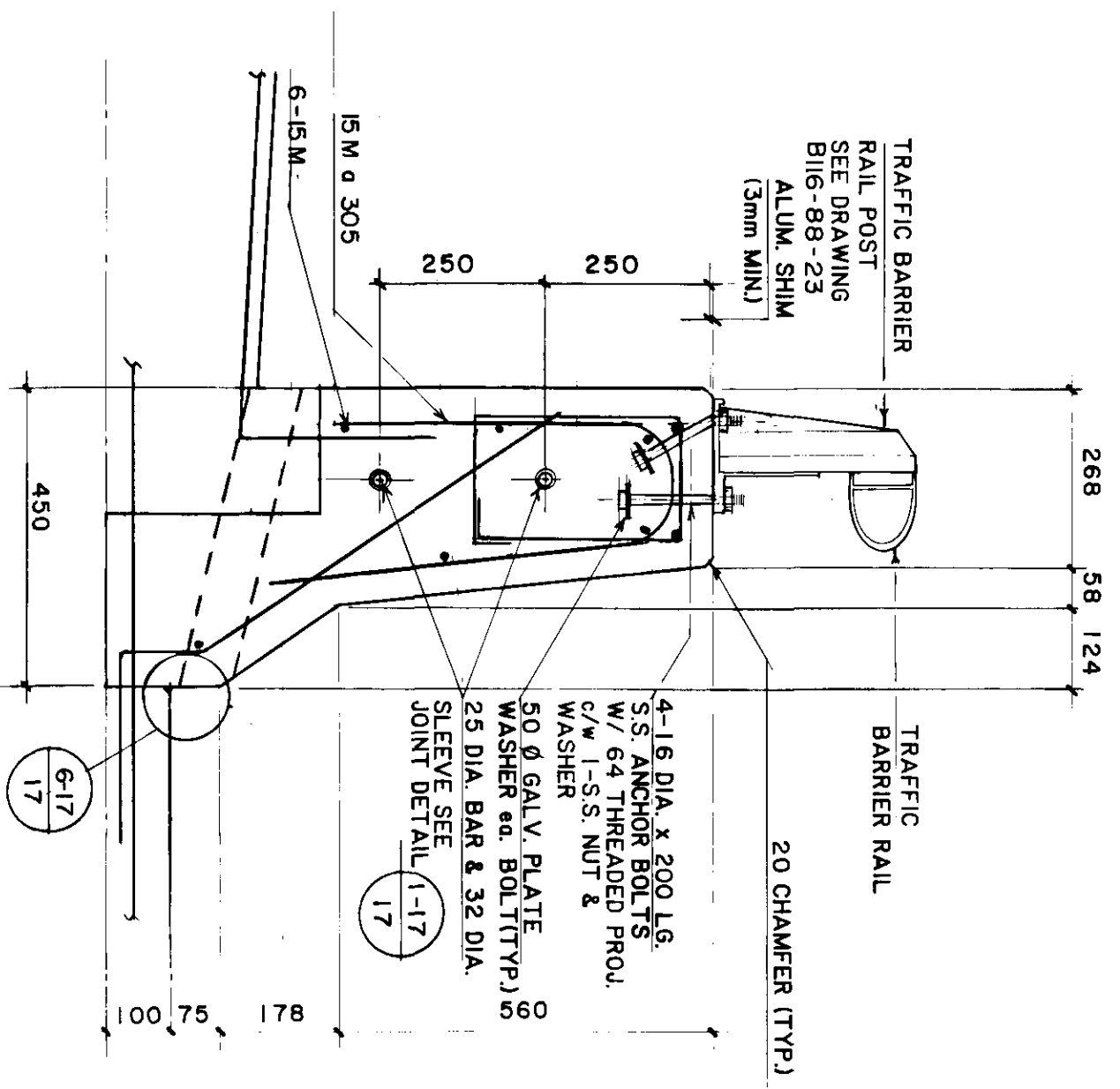
CITY DRAWING NUMBER: 8116-88-16
SHEET: 16 OF 48

B-5826-16

△ THESE REVISIONS ARE TO SUPPLEMENT OR CLARIFY THE CONTRACT DOCUMENTS. NEITHER THE CONTRACT PRICE NOR THE CONTRACT TIME ARE AFFECTED



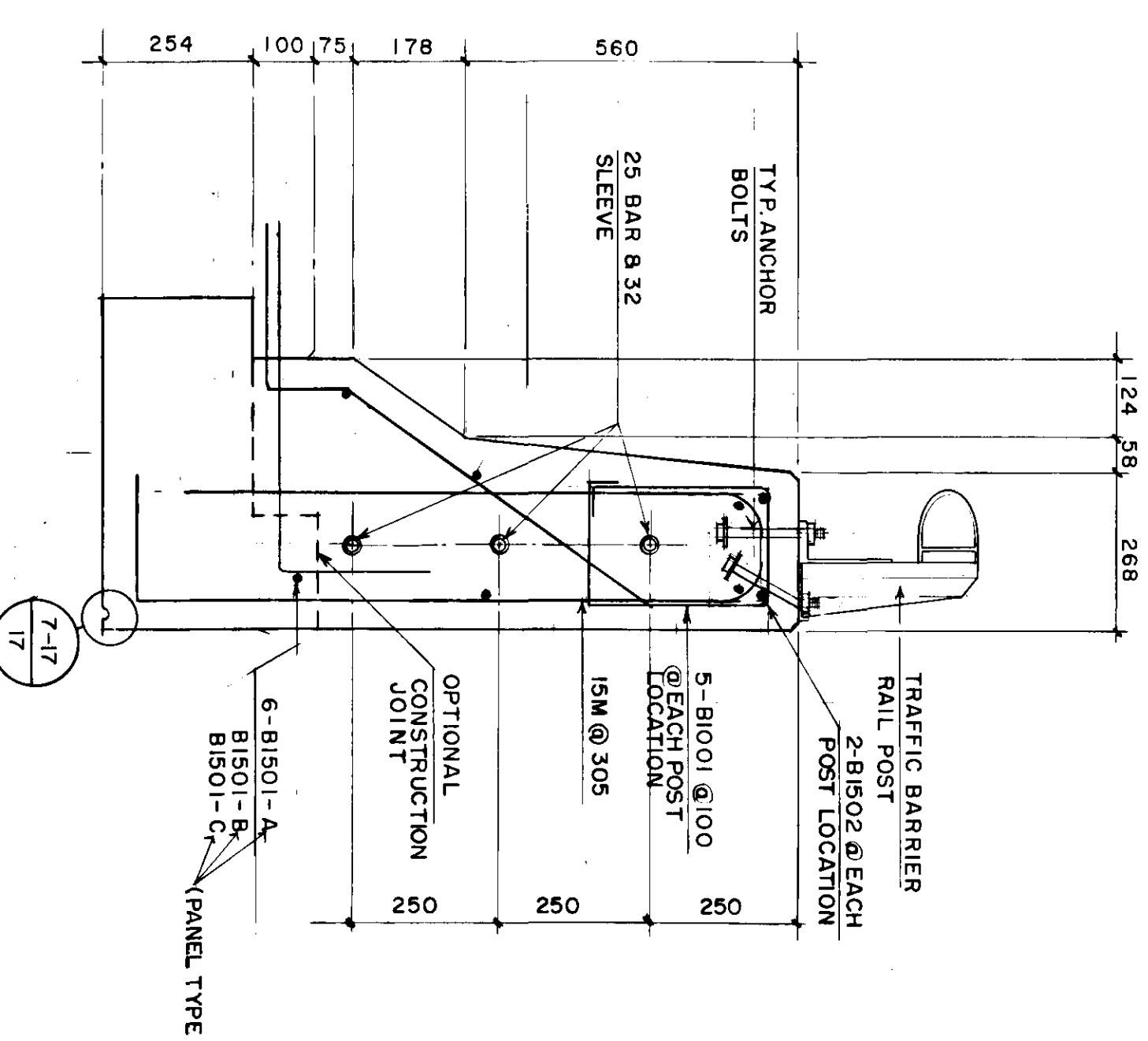
TRAFFIC BARRIER RAIL POST ANCHOR BOLT LAYOUT



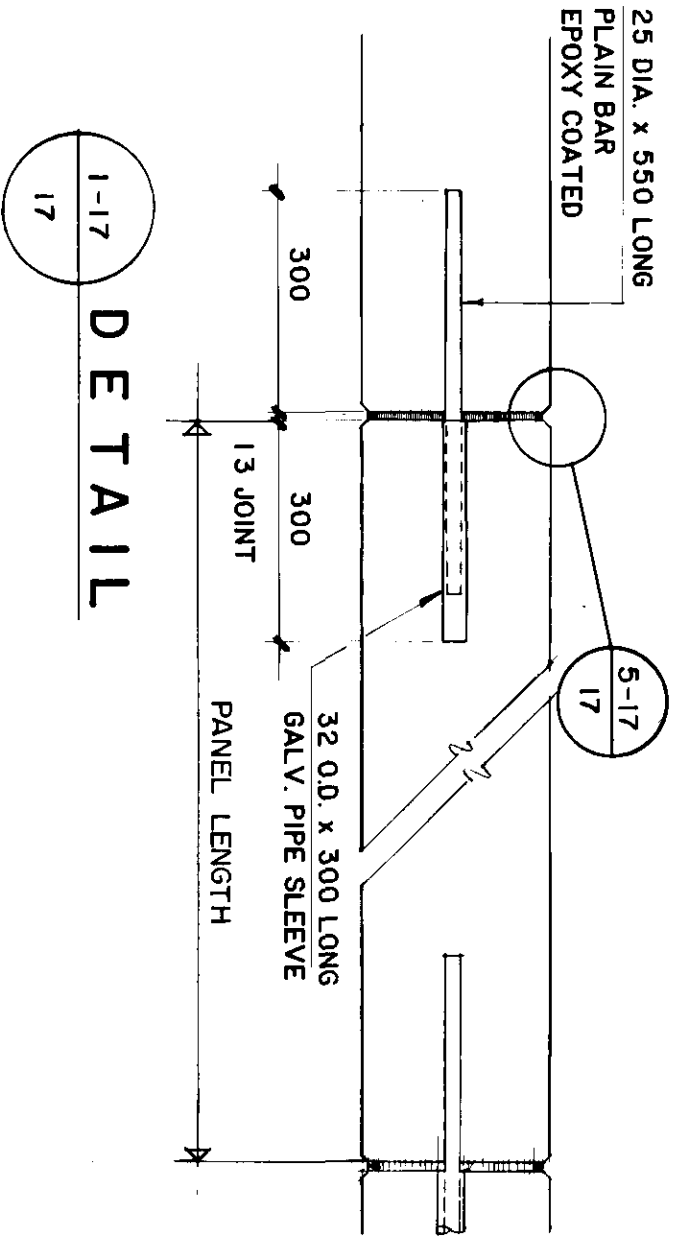
SHOULDER TRAFFIC BARRIER (SIDEWALK SIDE)

SECTION 16

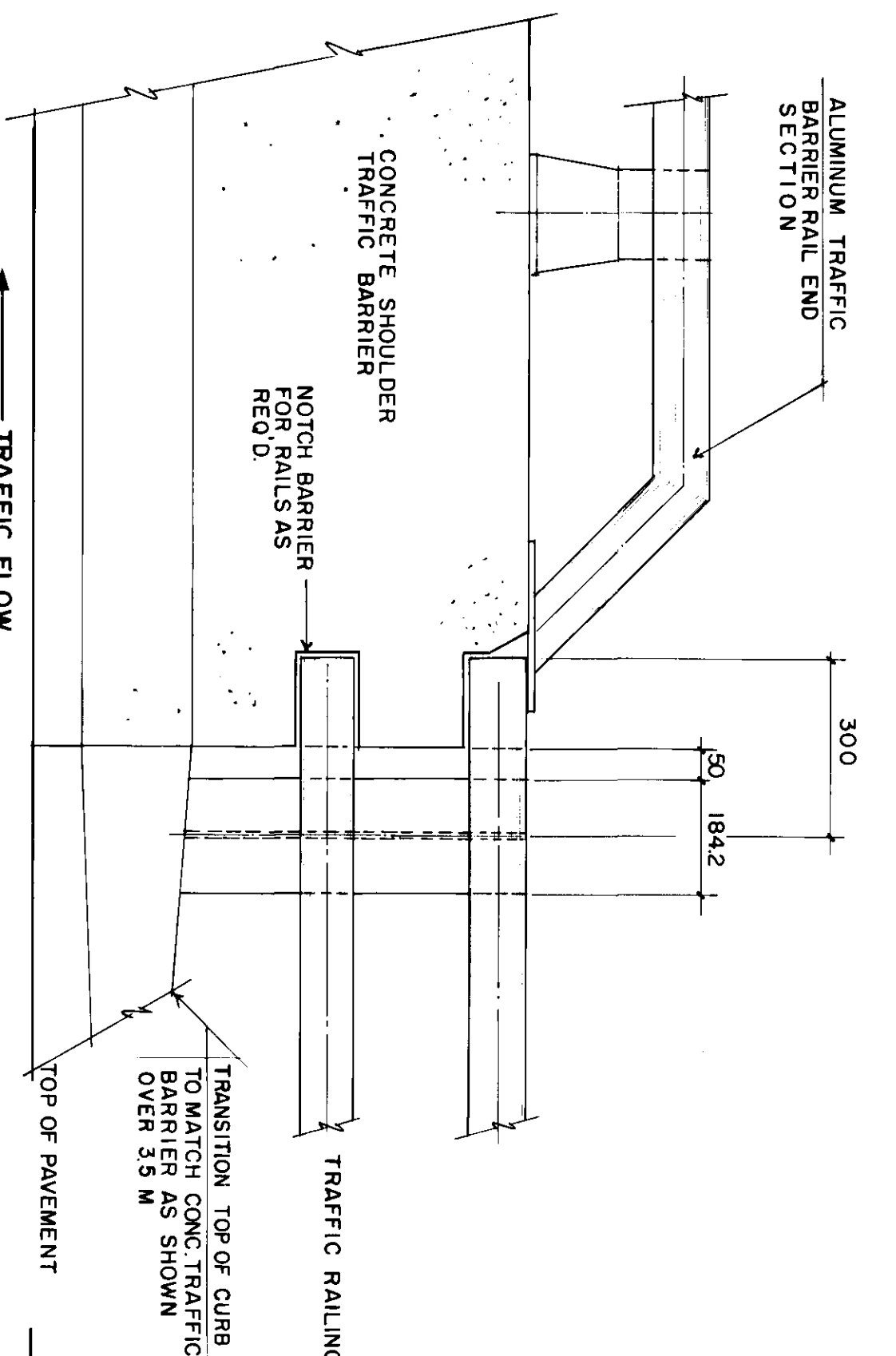
SECTION 17



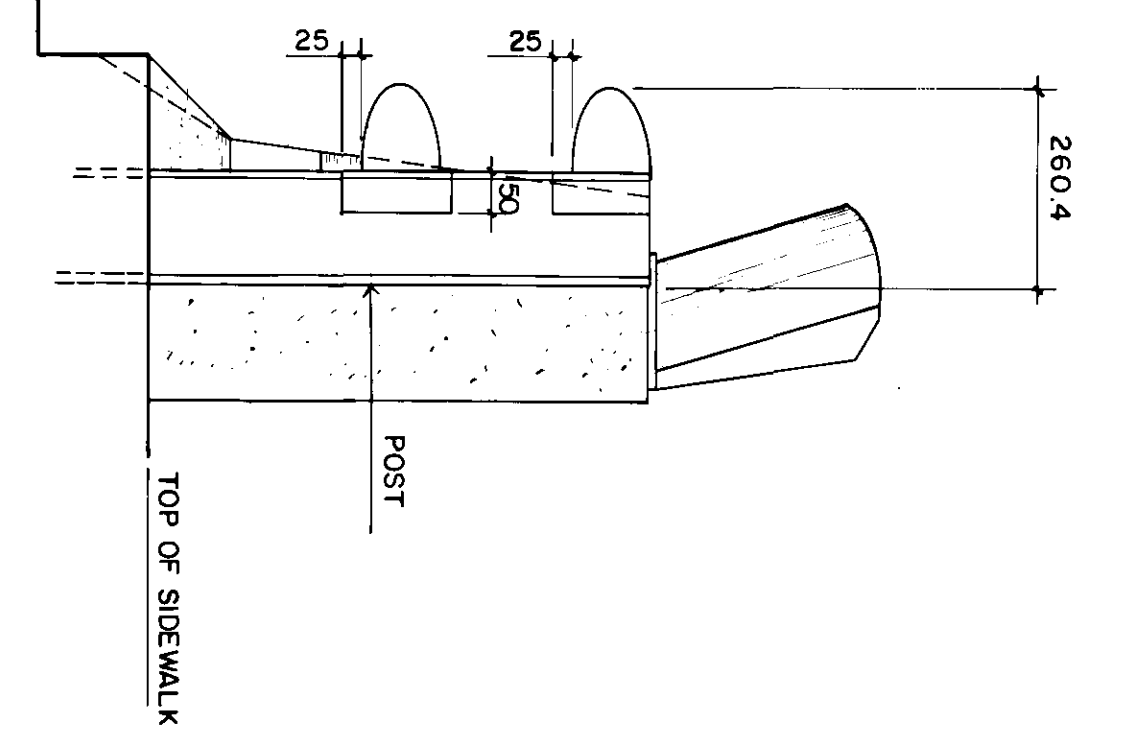
SHOULDER TRAFFIC BARRIER (MEDIAN SIDE)



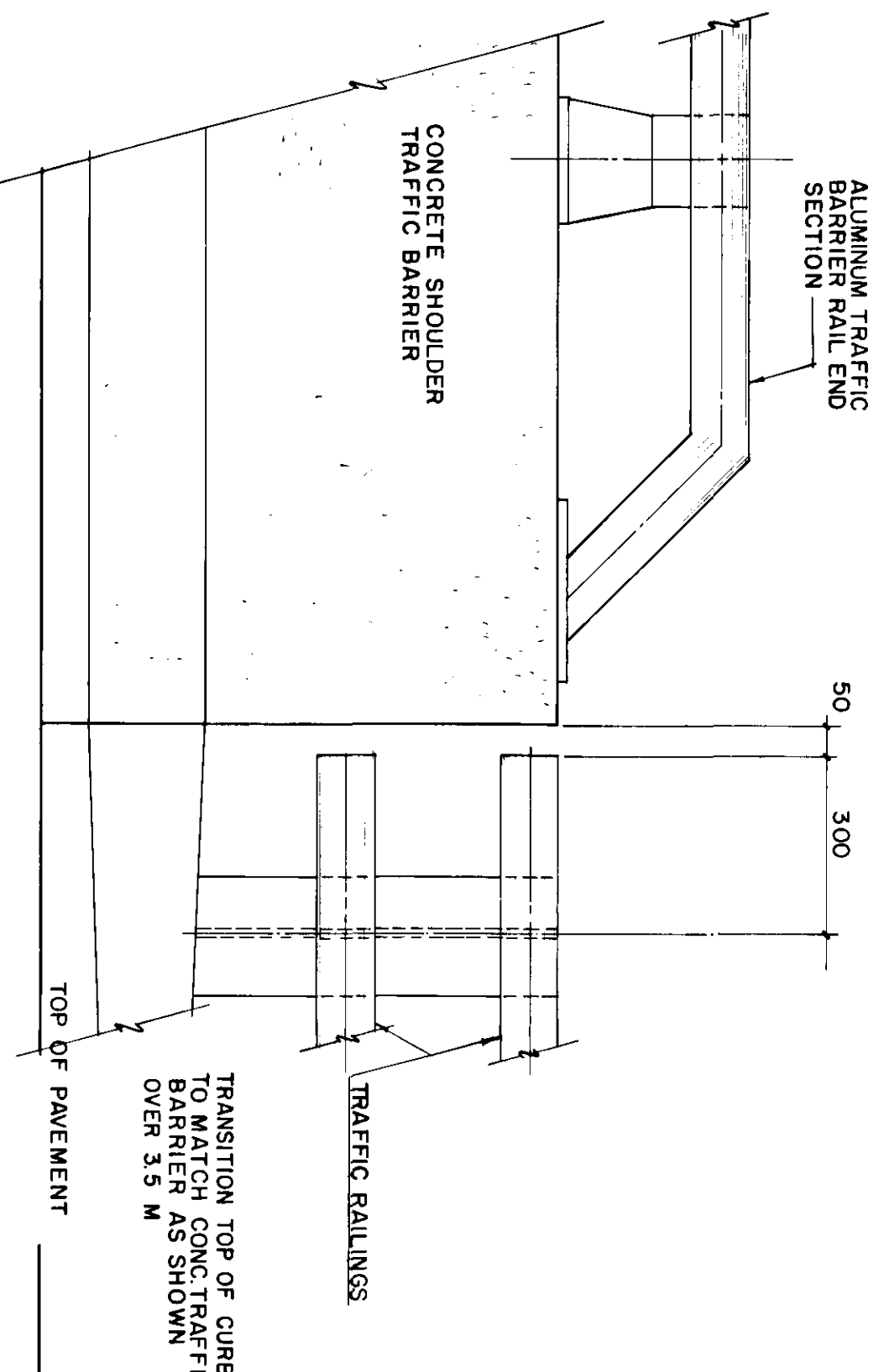
DETAIL 1-17



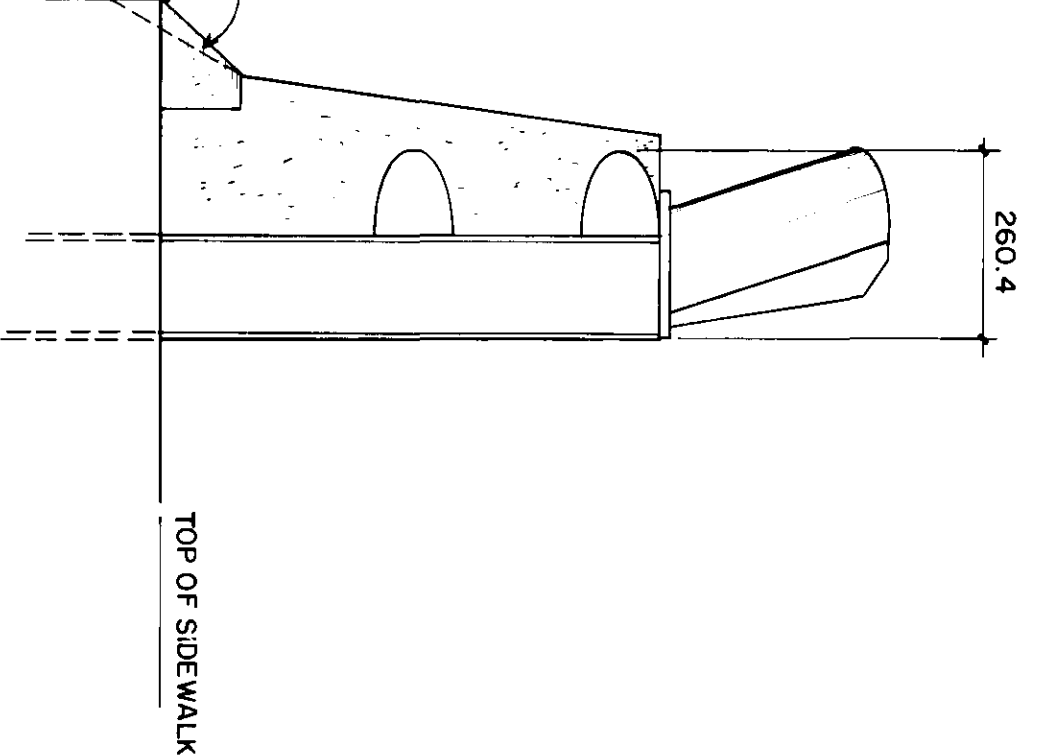
FRONT ELEVATION



SIDE ELEVATION

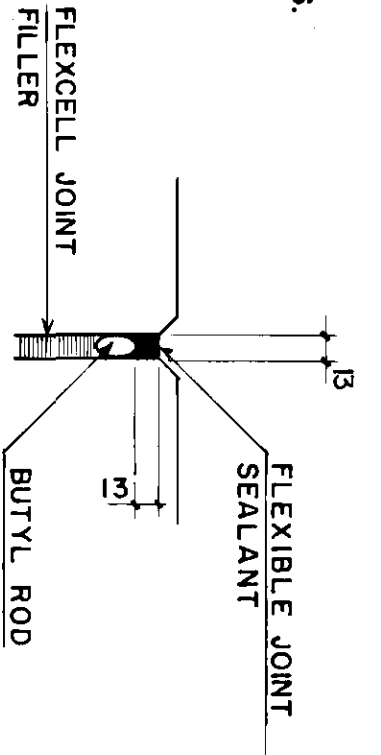


FRONT ELEVATION

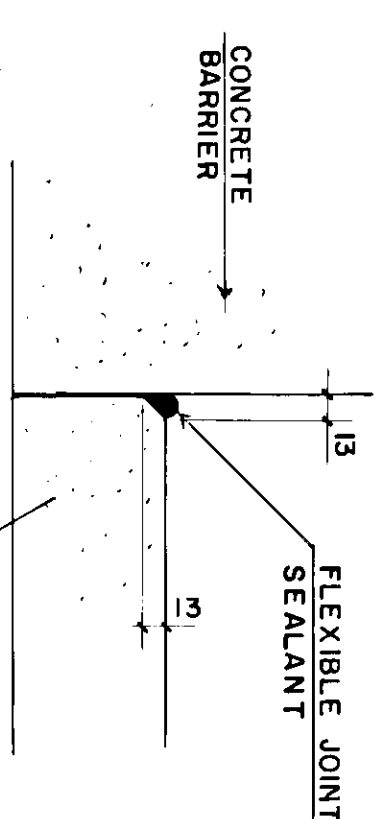


SIDE ELEVATION

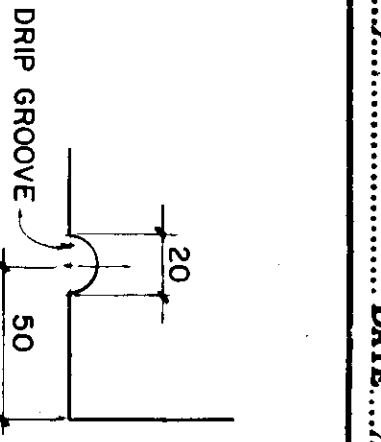
CONCRETE TRAFFIC BARRIER TRANSITION DETAIL



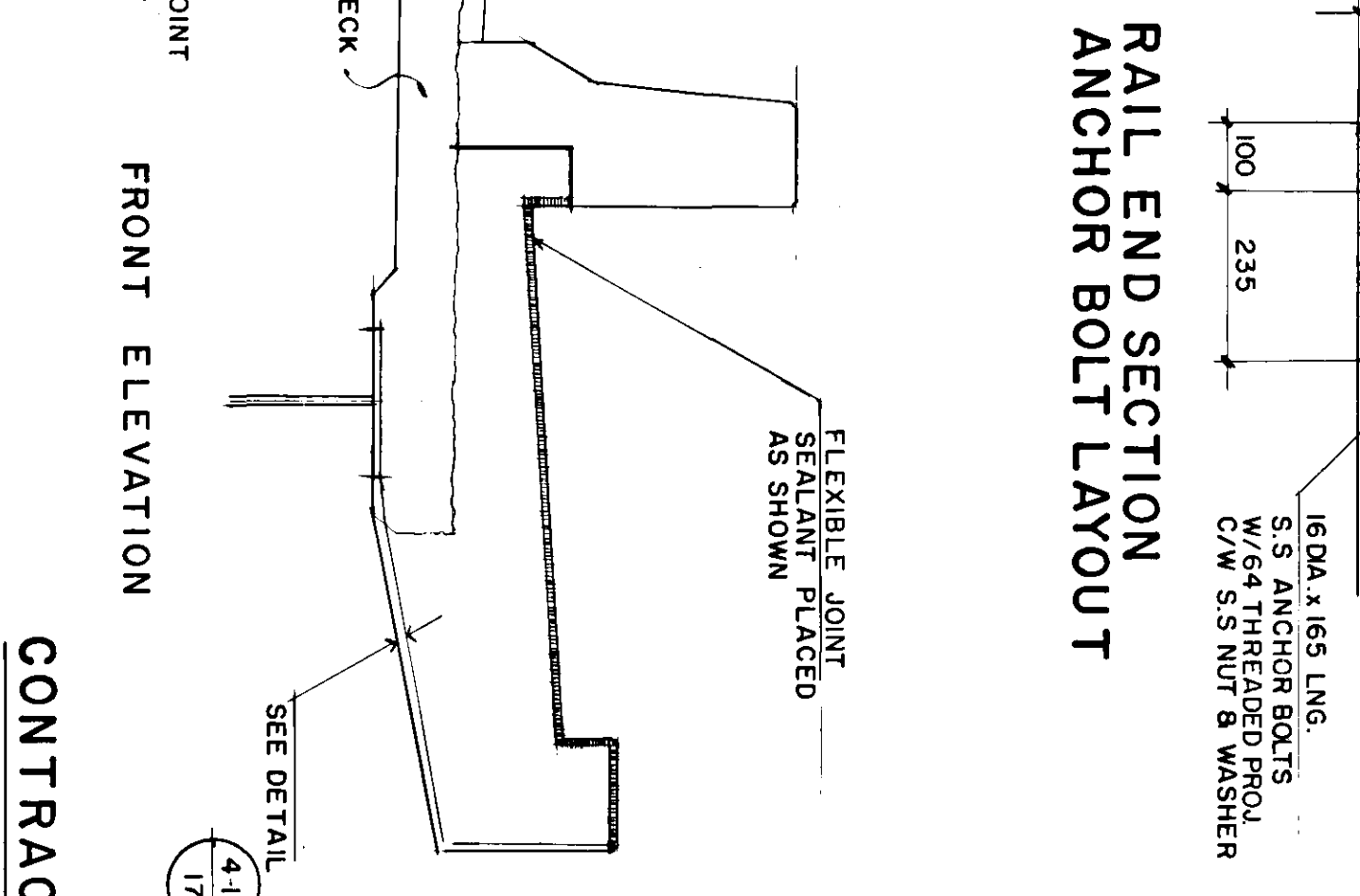
DETAIL 5-17



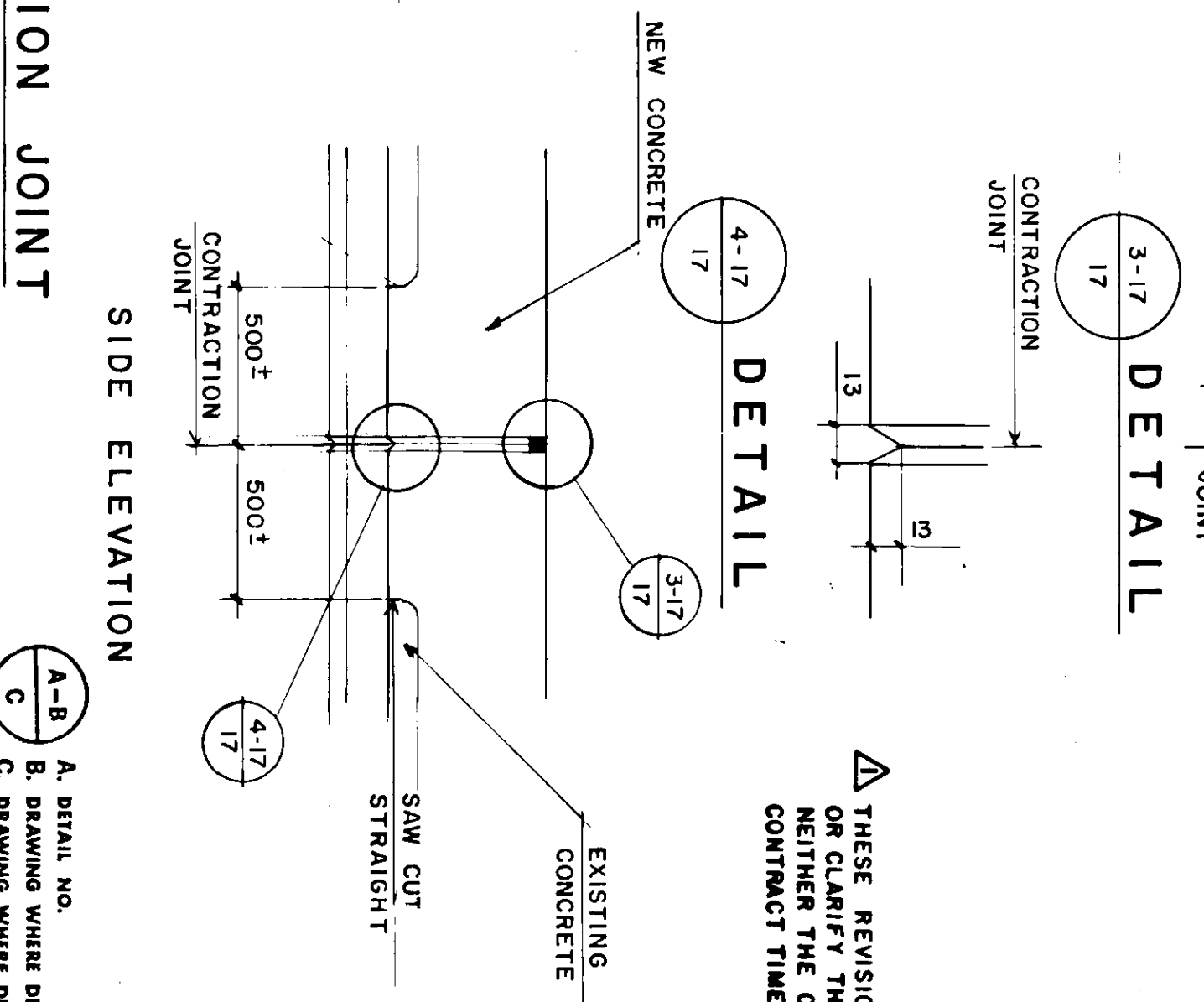
DETAIL 6-17



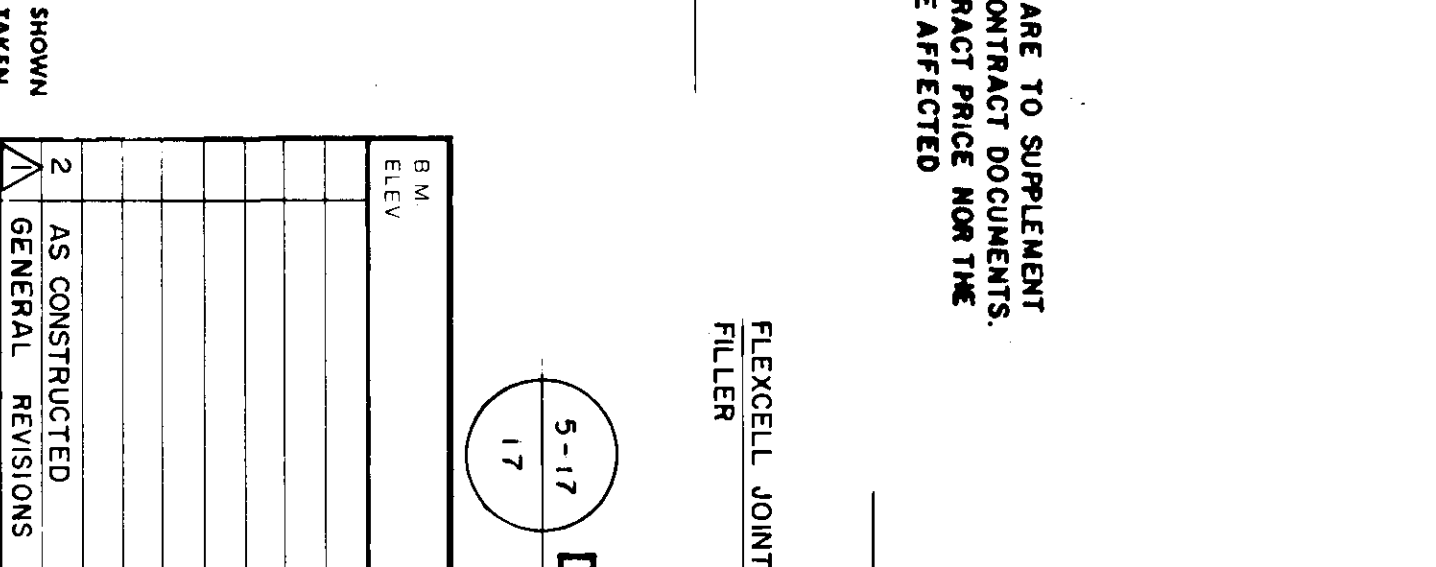
DETAIL 7-17



RAIL END SECTION ANCHOR BOLT LAYOUT



FRONT ELEVATION



SIDE ELEVATION

THESE REVISIONS ARE TO SUPPLEMENT OR CLARIFY THE CONTRACT DOCUMENTS. NEITHER THE CONTRACT PRICE NOR THE CONTRACT TIME ARE AFFECTED.

NO.	REVISIONS	DATE	BY
2	AS CONSTRUCTED		
1	GENERAL REVISIONS		

Reid Crowther
 DESIGNED BY BE
 DRAWN BY R.C.S.
 CHECKED BY W.J.M.
 APPROVED BY [Signature]
 REGISTERED PROFESSIONAL ENGINEER
 NO. 1788-4-0
 DATE DEC. 87

REGISTERED ENGINEER
 REID, CROWTHER & PARTNERS LIMITED
 WINNIPEG
 CONSULTANT DRAWING NO. 60814-17

THE CITY OF WINNIPEG
 WORKS AND OPERATIONS DIVISION
 STREETS AND TRANSPORTATION DEPARTMENT
 ST. VITAL TWIN BRIDGE OVER RED RIVER
 STRUCTURE REHABILITATION AND
 RELATED WORKS
 CITY DRAWING NUMBER B116-88-17
 SHEET 17 OF 48

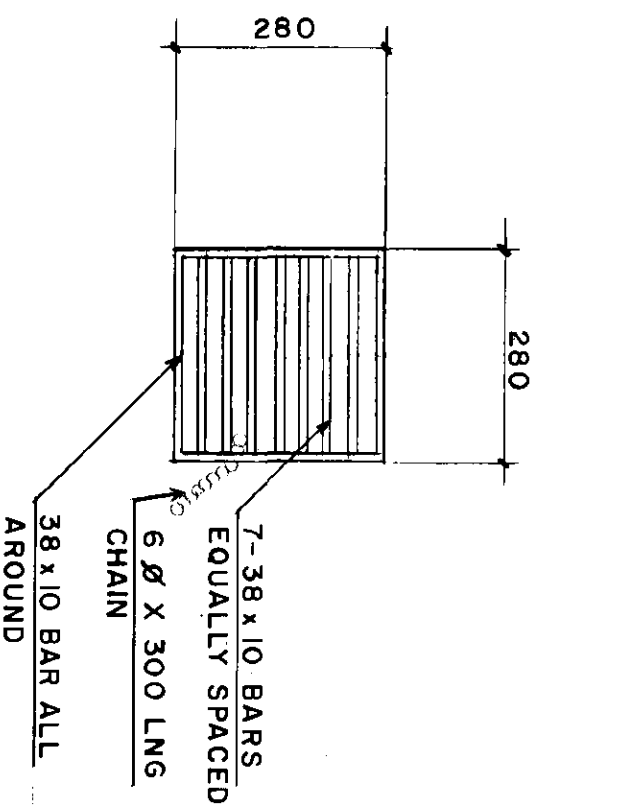
AS CONSTRUCTED
 REID, CROWTHER & PARTNERS LIMITED
 WINNIPEG
 DATE 20/07/12

FOR CONTRACTION JOINT LOCATION SEE DWG. B116-88-11

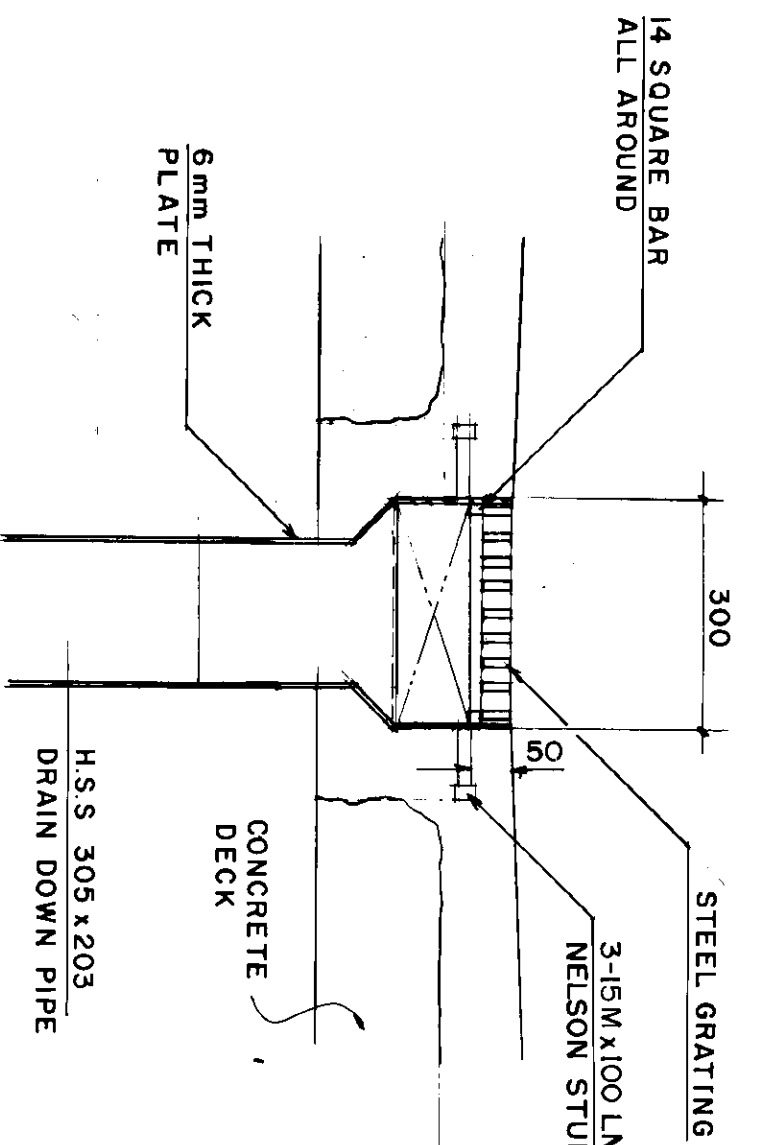
CONTRACTION JOINT

CONTRACTION JOINT

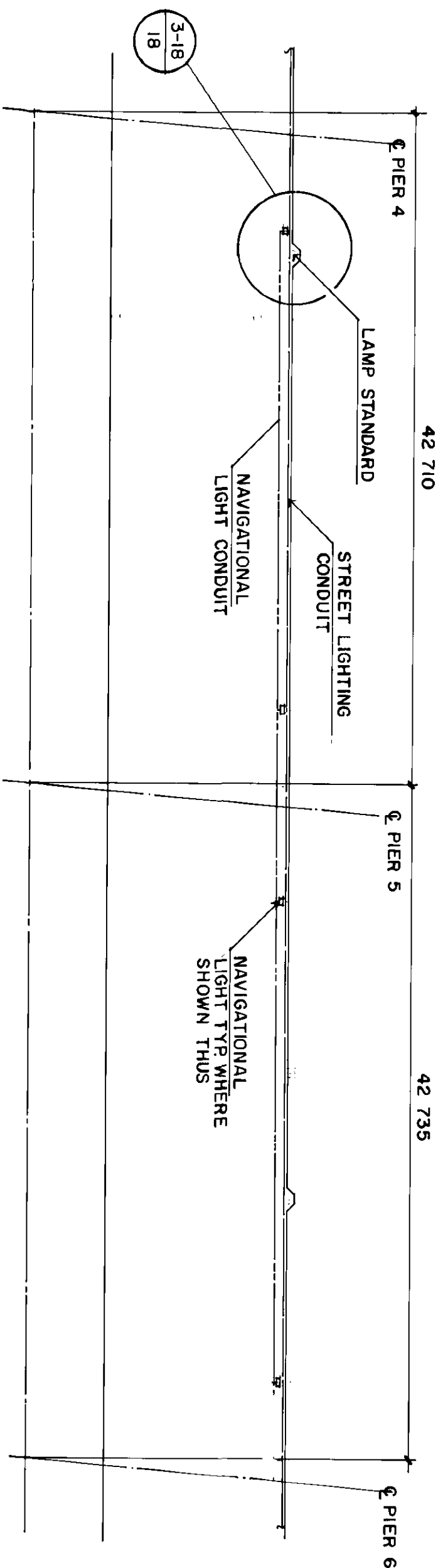
NO. REVISIONS
 AS CONSTRUCTED
 GENERAL REVISIONS
 DATE BY
 HOR. SCALE 1/10 U.N.O.
 VERTICAL SCALE 1/10 U.N.O.
 DATE BY



TYPICAL GRATING

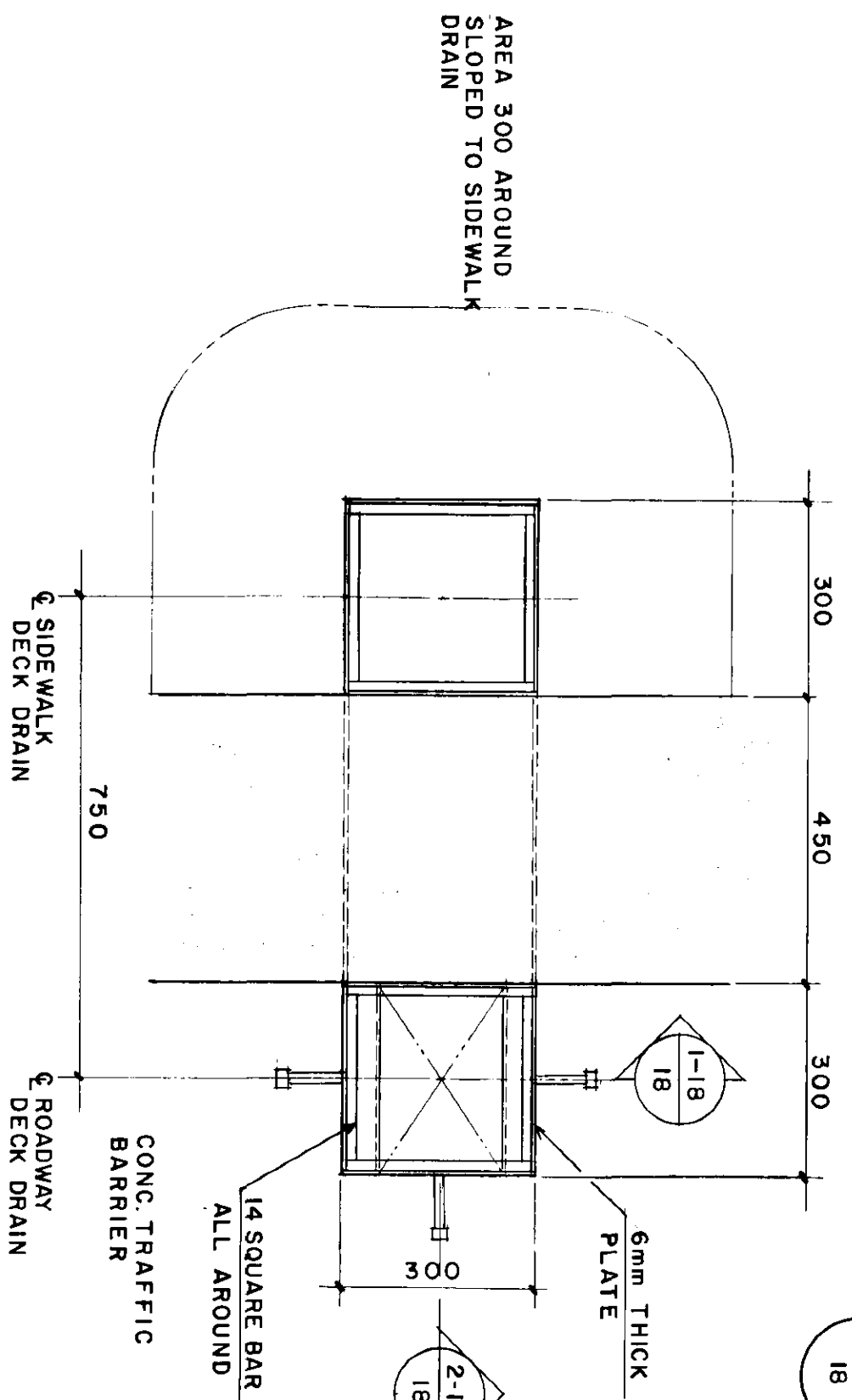


1-18 SECTION

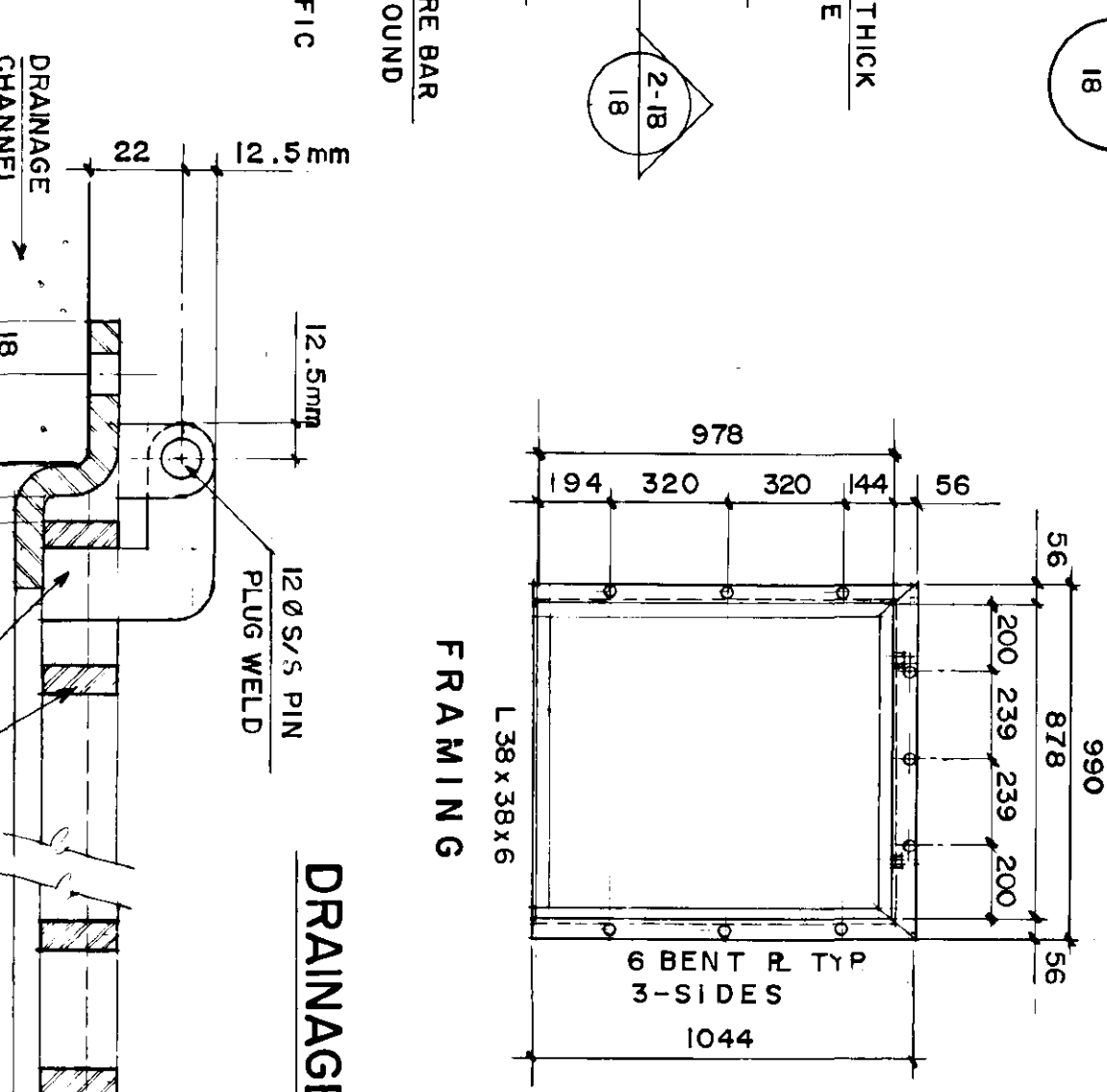


LIGHTING CONDUIT LAYOUT N.T.S.

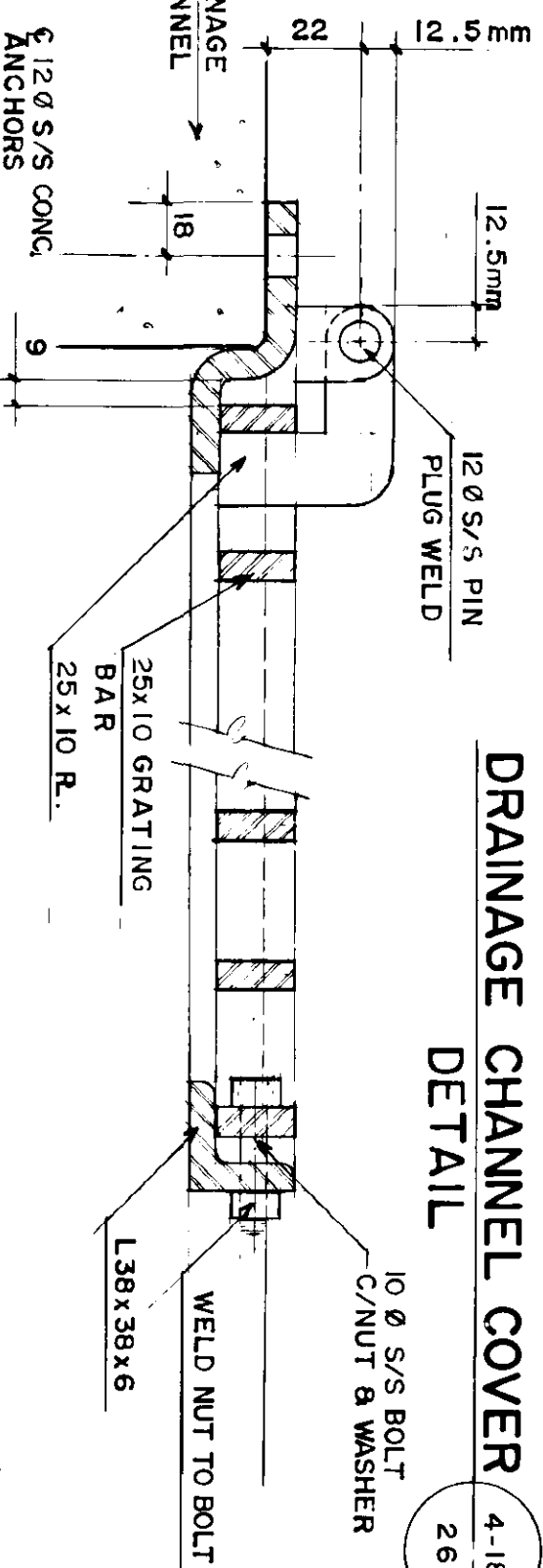
LIGHT CONDUITS LOCATIONS SHOWN IS FOR INFORMATION ONLY. FINAL LOCATION TO SUT BE DETERMINED BY ENGINEER.



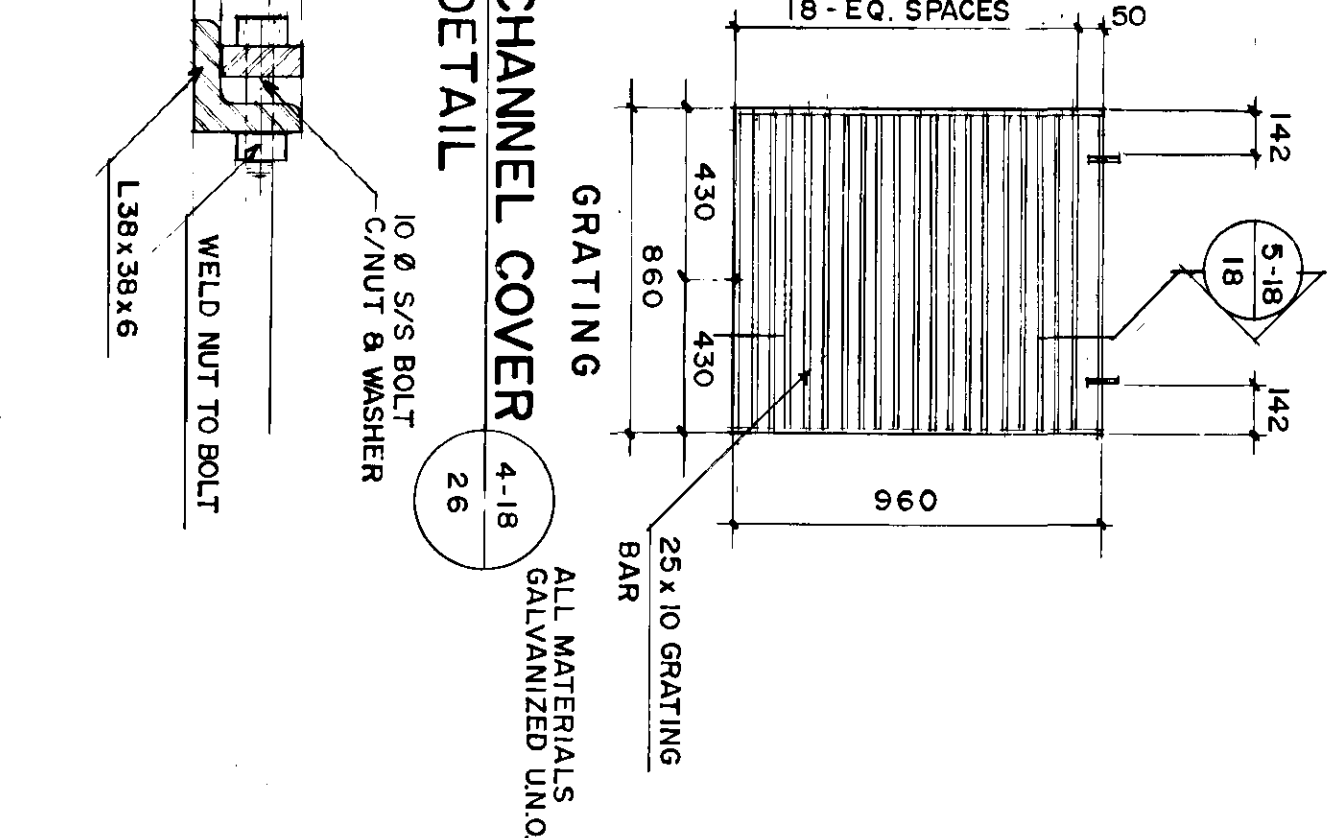
PLAN



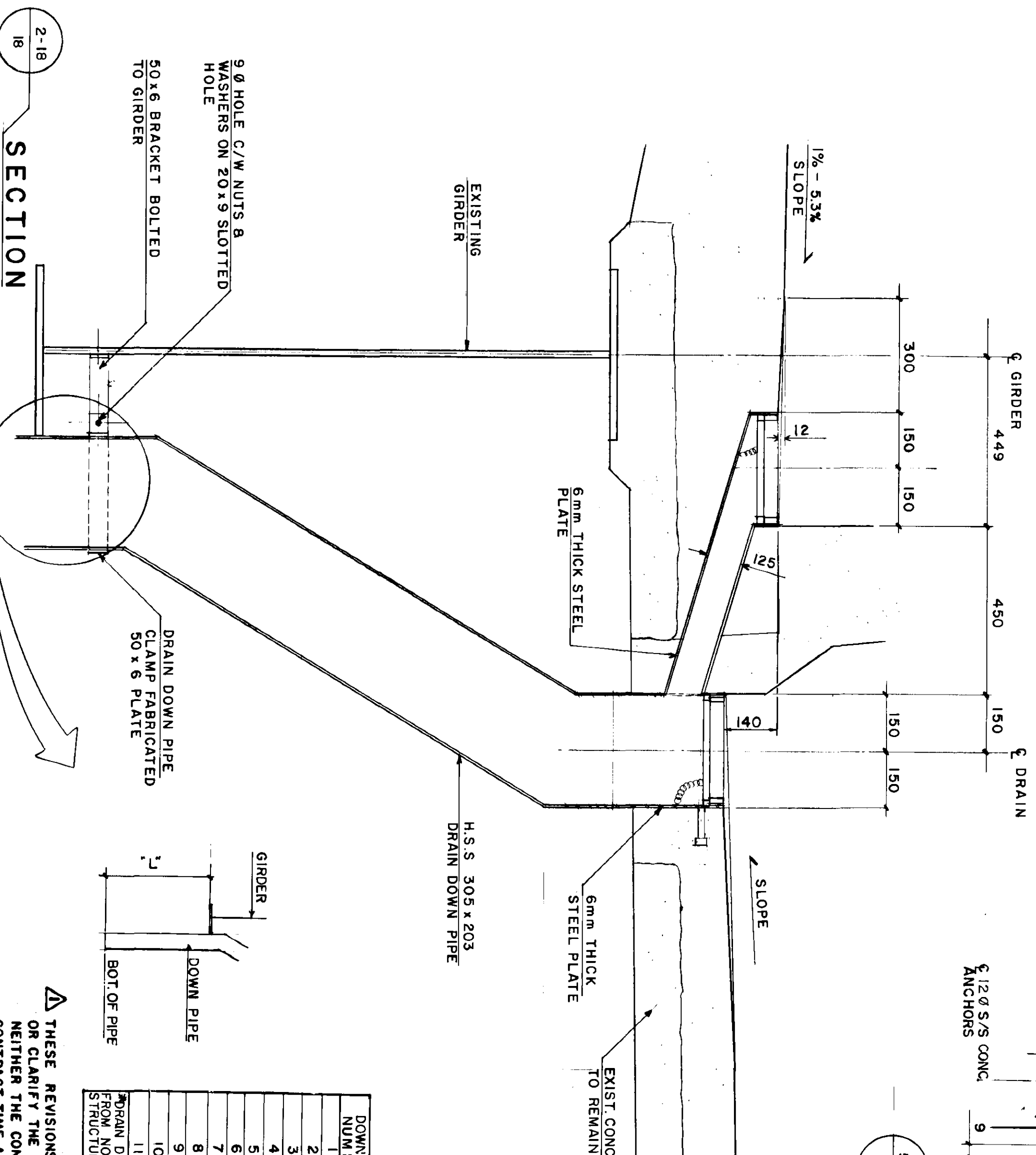
DRAINAGE CHANNEL DETAIL



5-18 SECTION N.T.S.



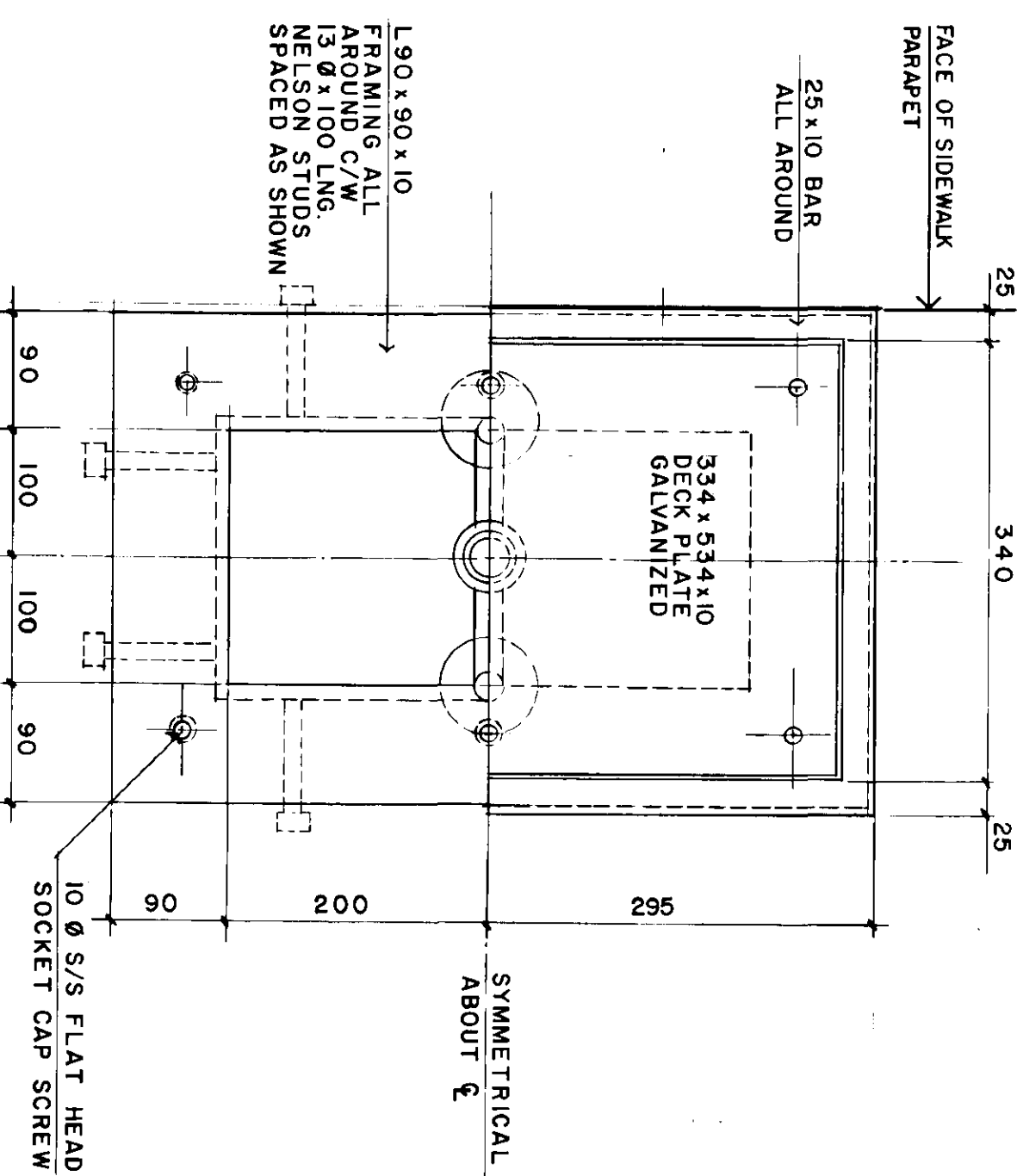
4-18



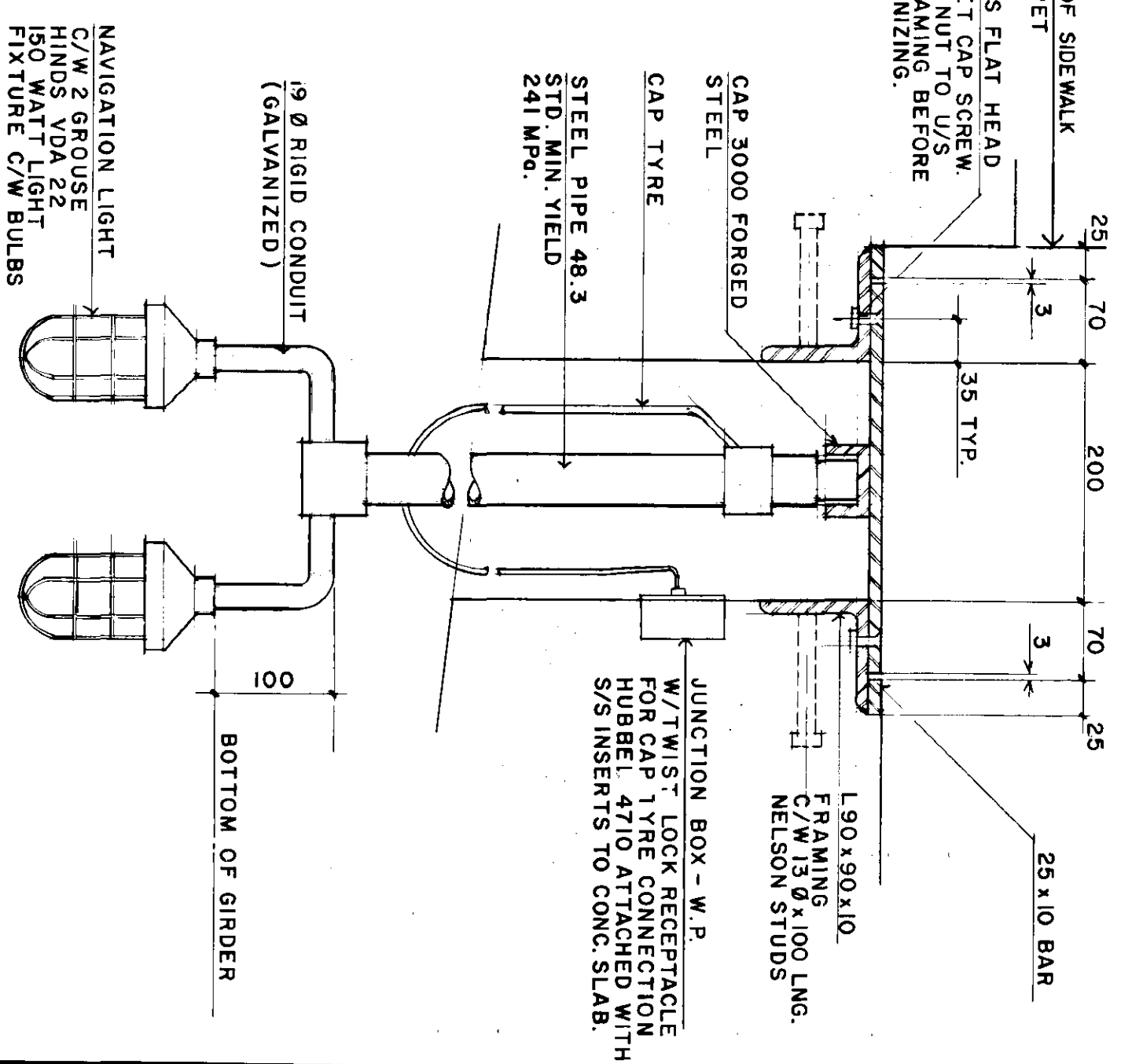
2-18 SECTION

DOWN PIPE NUM. SER.	LENGTH ("L")
1	450
2	1900
3	300
4	
5	
6	2000
7	300
8	2000
9	1000
10	600
11	
12	
13	
14	
15	
16	
17	
18	

THESE REVISIONS ARE TO SUPPLEMENT OR CLARIFY THE CONTRACT DOCUMENTS. NEITHER THE CONTRACT PRICE NOR THE CONTRACT TIME ARE AFFECTED.



PLAN SC. 1:5



SECTION SCALE 1:5

NAVIGATION LIGHT DETAIL

NO.	REVISIONS	DATE	BY	DATE
2	AS CONSTRUCTED	8/10/79	RCS	
1	GENERAL REVISIONS	8/10/79	B.E.	

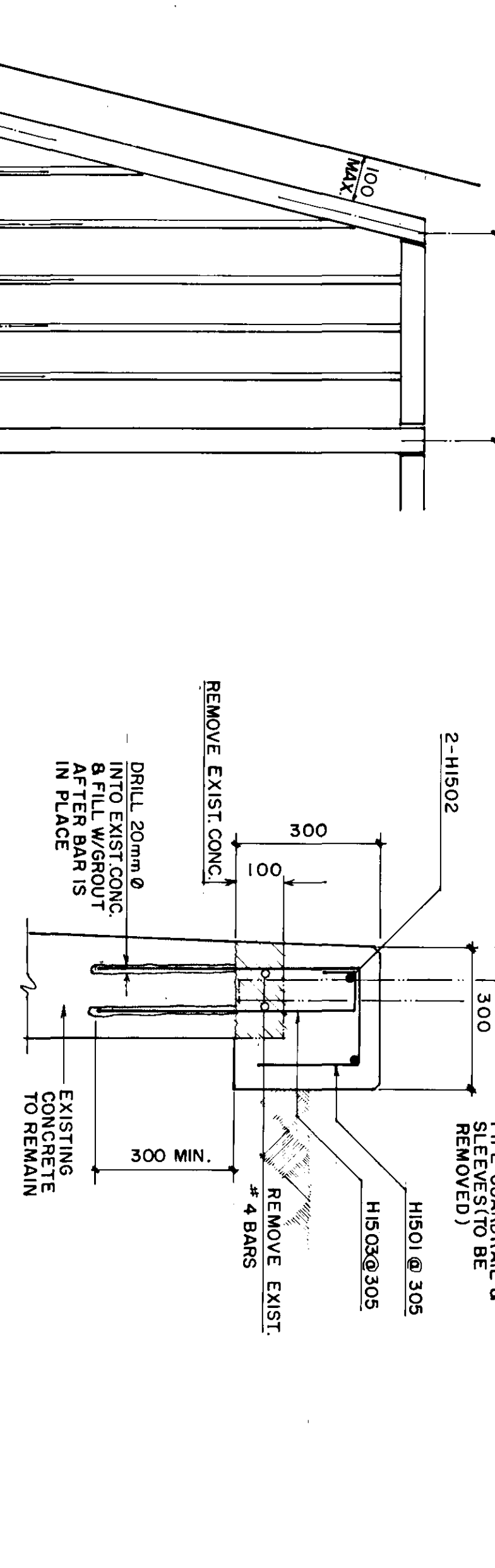
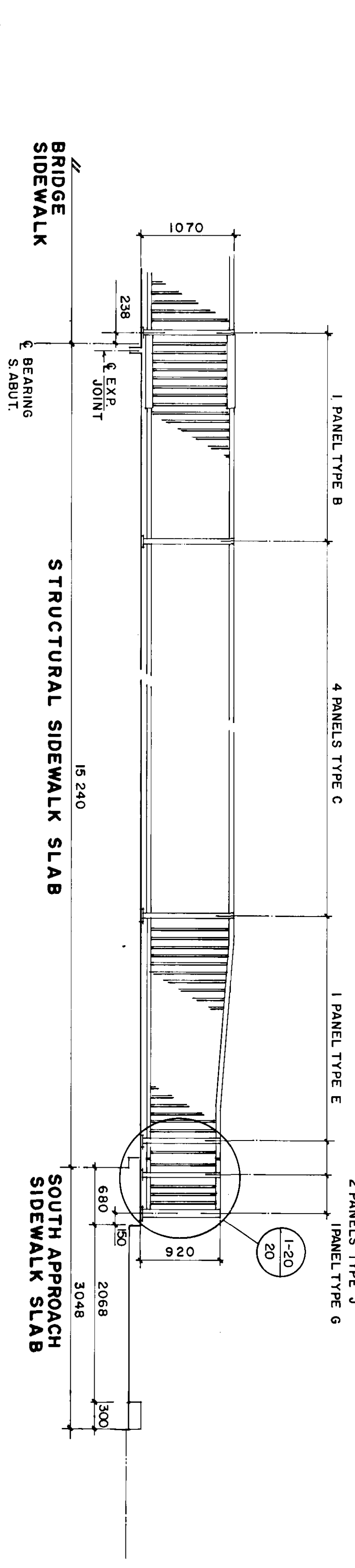
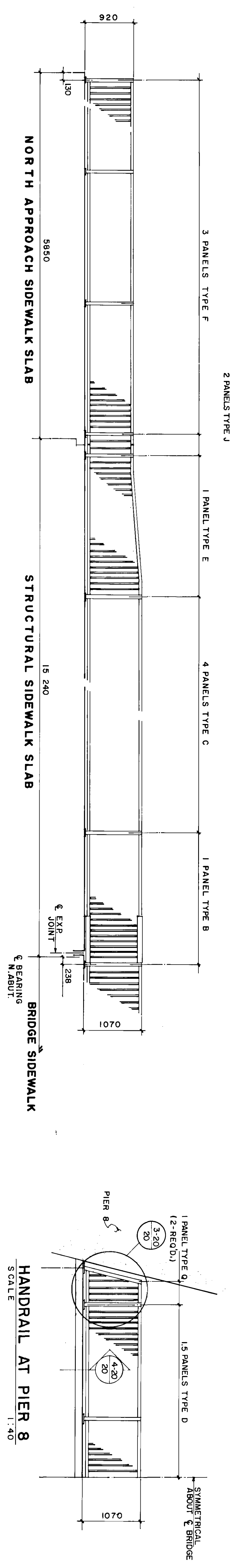
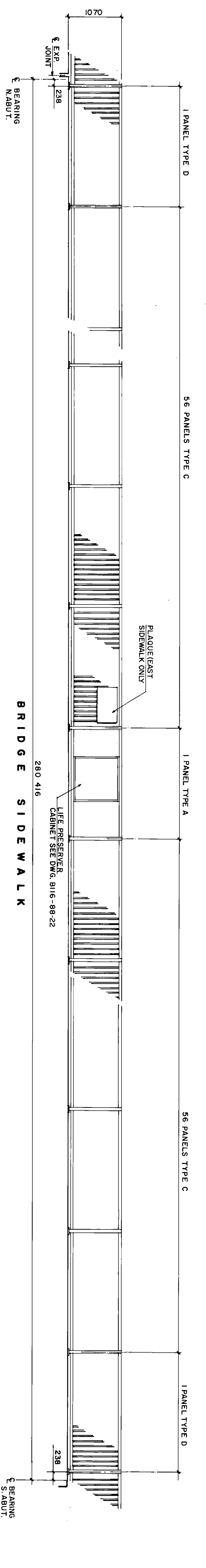
A-B	DETAIL NO.
C	DRAWING WHERE DETAIL TAKEN

METRIC

WHOLE NUMBERS INDICATE MILLIMETRES. DIMENSIONAL NUMBERS INDICATE METRES.

Red Crowther
 REGISTERED PROFESSIONAL ENGINEER
 DESIGNER: B.E.
 DRAWN: W.A.M.
 CHECKED: W.A.M.
 REGISTERED ENGINEER
 60814-118
 CONSULTANT DRAWING NO.

THE CITY OF WINNIPEG
 WORKS AND OPERATIONS DIVISION
 STREETS AND TRANSPORTATION DEPARTMENT
 ST. VITAL TWIN BRIDGE OVER RED RIVER
 STRUCTURE REHABILITATION AND RELATED WORKS
 SHEET 18 OF 48
 DECK DRAINS AND NAVIGATIONAL LIGHTING DETAILS
 B-5826-18



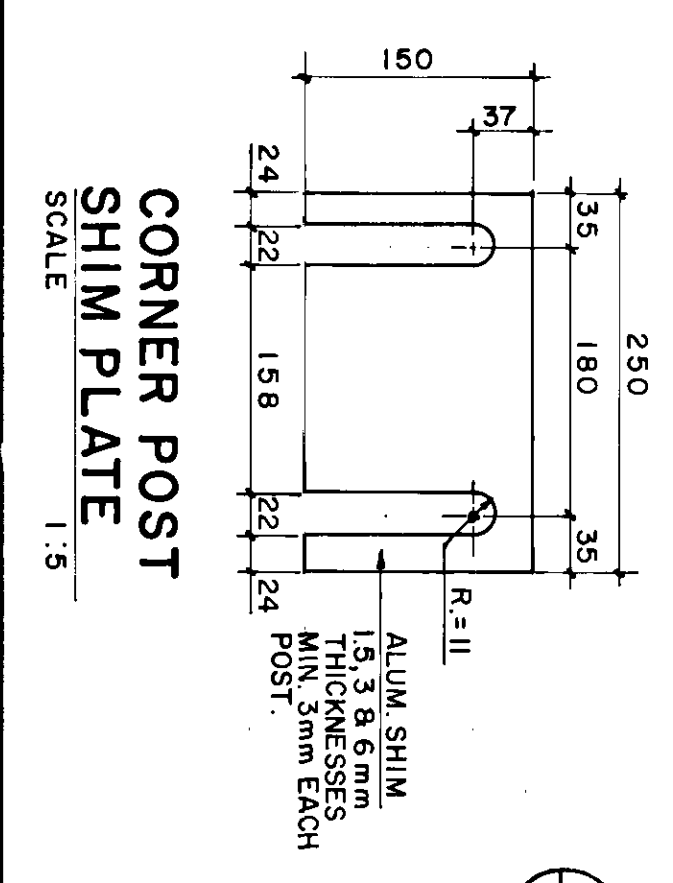
NOTE:
CORNER POST BASE PLATE ANCHOR BOLTS, INSERTS, TIE RODS & POSTS SHOWN AS SHOWN OTHERWISE.

PEDESTRIAN HANDRAIL LAYOUT
SCALE 1:40

PANEL TYPE Q
SCALE 1:10

PANEL TYPE	NO. REQUIRED	1	2	3	4
A	2	2440	SEE DETAIL		
B	4	2440	2380	SEE DETAIL	
C	246	2440	2380	20	110
D	7	2110	2050	17	110
E	4	2950	2890	24	112
F	6	1945	1885	15	113
G	2	500	SEE DETAIL		
J	8	176	SEE DETAIL		

PLAN - CORNER POST BASE PLATE
SCALE 1:5



AS CONSTRUCTED
REID, CROWTHER & PARTNERS LIMITED
WINNIPEG
DATE: 8/23/87
SIGNED: [Signature]

DETAIL NO.

A. DETAIL NO.
B. DRAWING WHERE DETAIL SHOWN
C. DRAWING WHERE DETAIL TAKEN

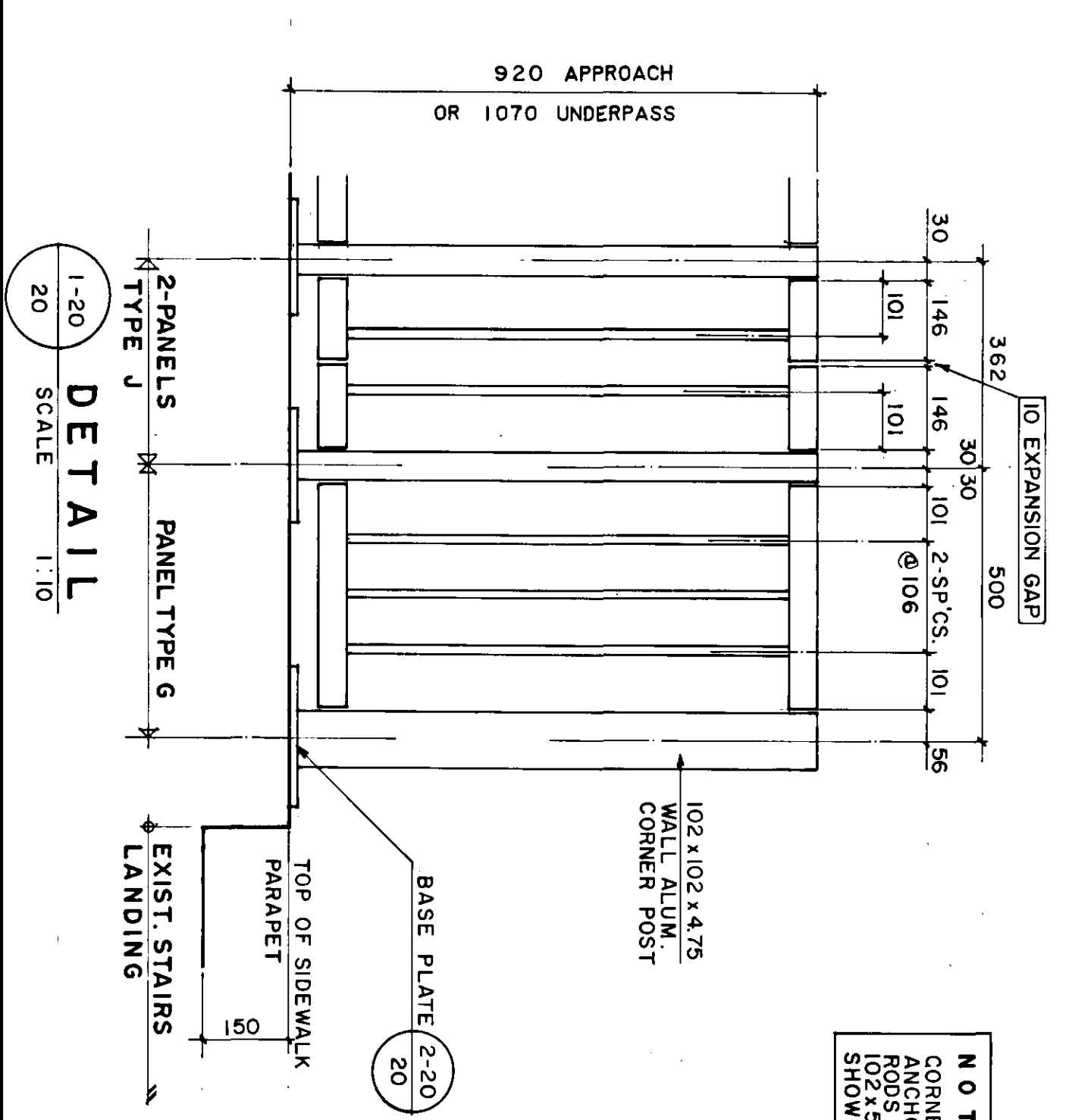
SCALE: METRIC
UNITS: MILLIMETRES

NO.	REVISIONS	DATE	BY
1	AS CONSTRUCTED		
	881101 RCS		

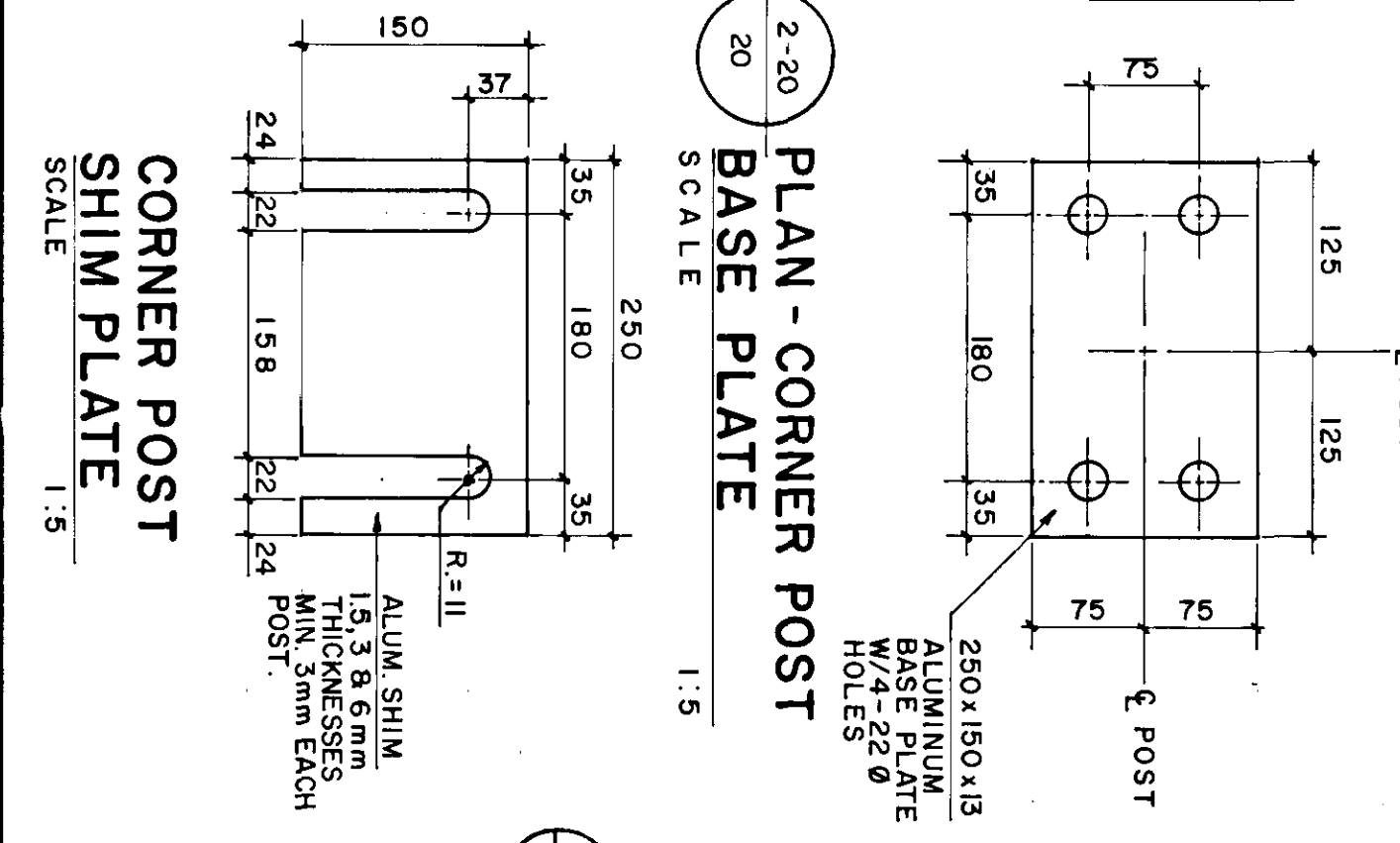
DESIGNED BY	BE.	W.A.M.
CHECKED BY		
DRAWN BY	RCS.	
SCALE	HOR. SCALE	AS SHOWN
	VERTICAL	
DATE		DEC. 87

REGISTERED ENGINEER
60814-20

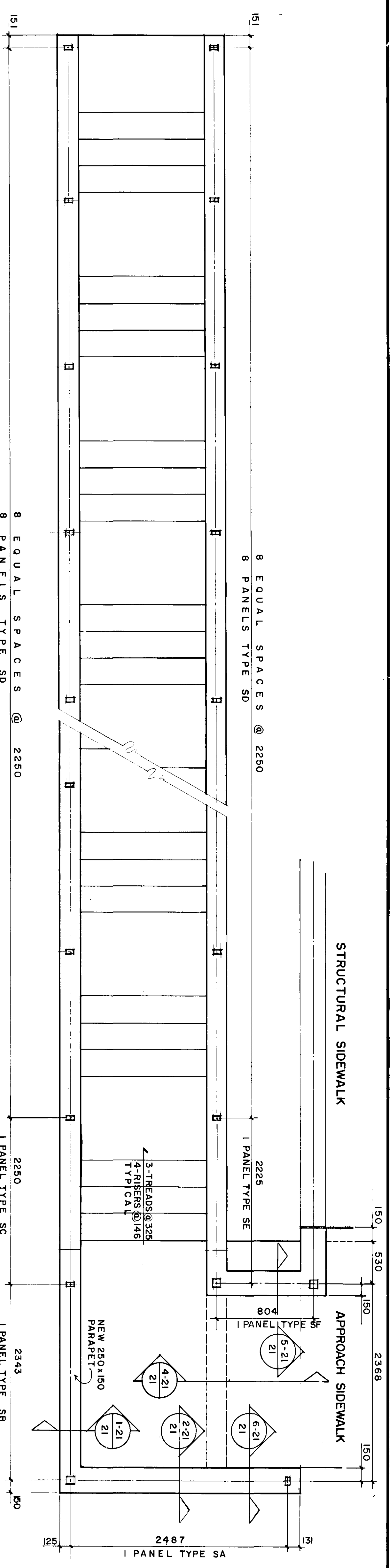
THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
STREETS AND TRANSPORTATION DEPARTMENT
ST. VITAL TWIN BRIDGE OVER RED RIVER
STRUCTURE REHABILITATION AND RELATED WORKS
ALUMINIUM PEDESTRIAN HANDRAIL DETAILS 2



DETAIL
SCALE 1:10

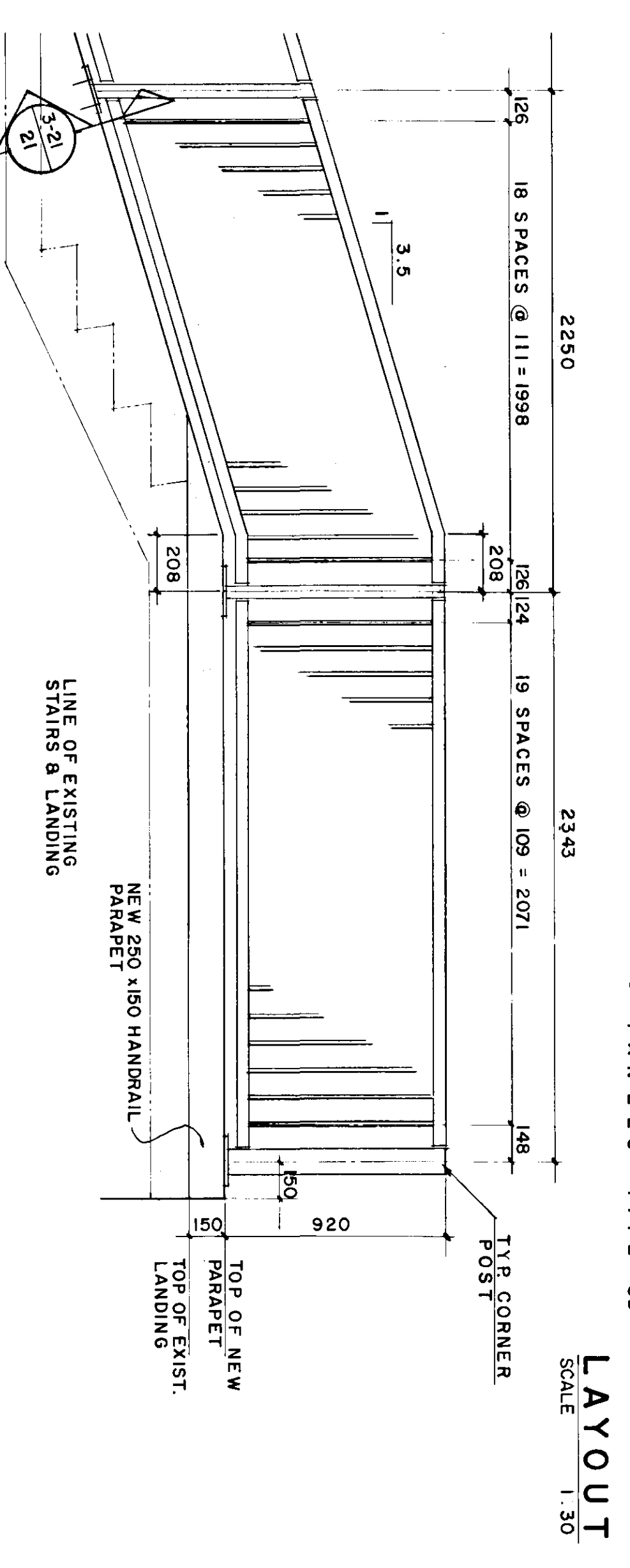


CORNER POST SHIM PLATE
SCALE 1:5



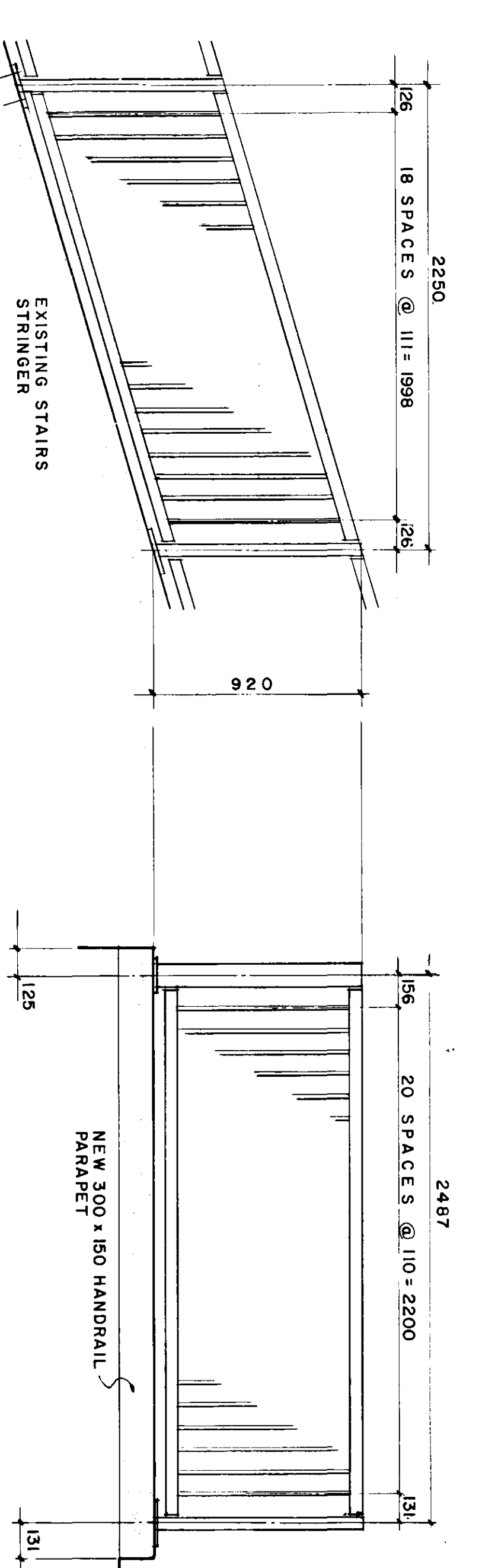
REID, CROWTHER & PARTNERS LIMITED
AS CONSTRUCTED
 WINNIPEG
 DATE 9/21/2010

- NOTES:**
1. DETAILS SHOWN ARE FOR WEST SIDE STAIRS OF SOUTH ABUTMENT. EAST SIDE STAIRS ARE SIMILAR.
 2. EXISTING STAIRWAY DIMENSIONS HAVE BEEN OBTAINED FROM AVAILABLE SHOP DRAWINGS WHICH MAY OR MAY NOT REPRESENT AS-BUILT CONDITIONS. ALL DIMENSIONS MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO FABRICATION OF HANDRAILS.
 3. CONNECTIONS, INSERTS AND HANDRAIL PANEL DETAILS SAME AS BRIDGE PEDESTRIAN HANDRAIL DETAILS UNLESS NOTED OTHERWISE. REFER TO DRWG. NO. 19.
 4. REMOVE EXISTING STEEL PIPE HANDRAIL AND REPLACE WITH NEW ALUMINUM PEDESTRIAN HANDRAIL AS SHOWN.



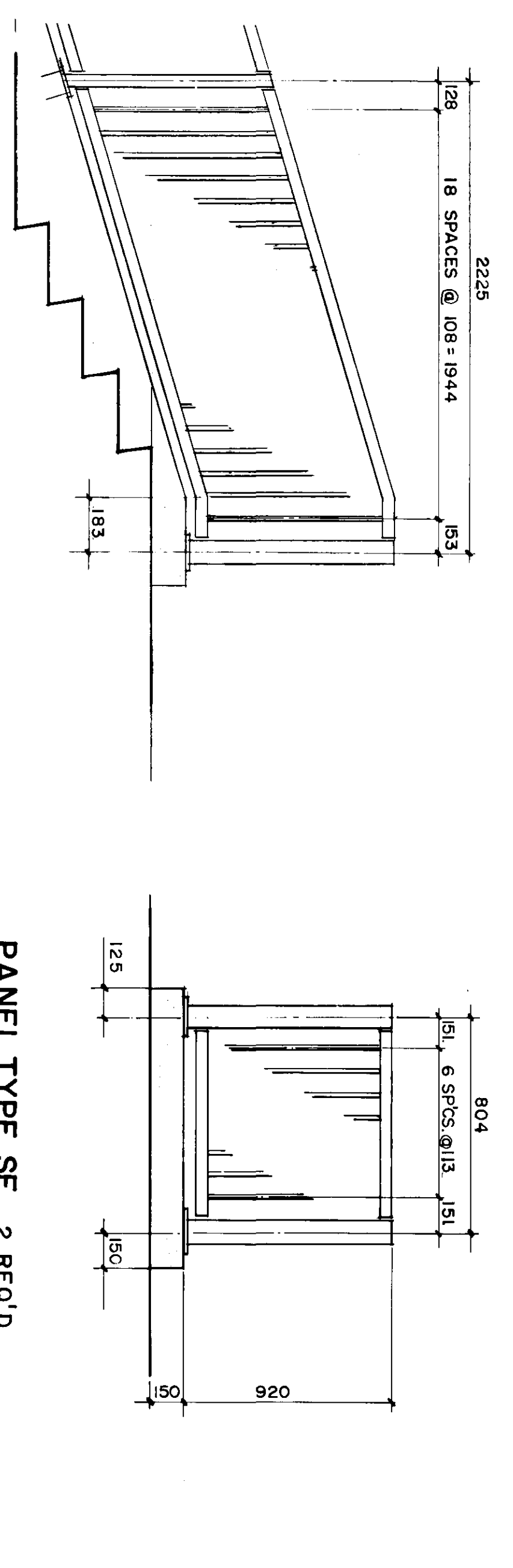
PANEL TYPE SC 2 REQ'D.

PANEL TYPE SB 2 REQ'D.



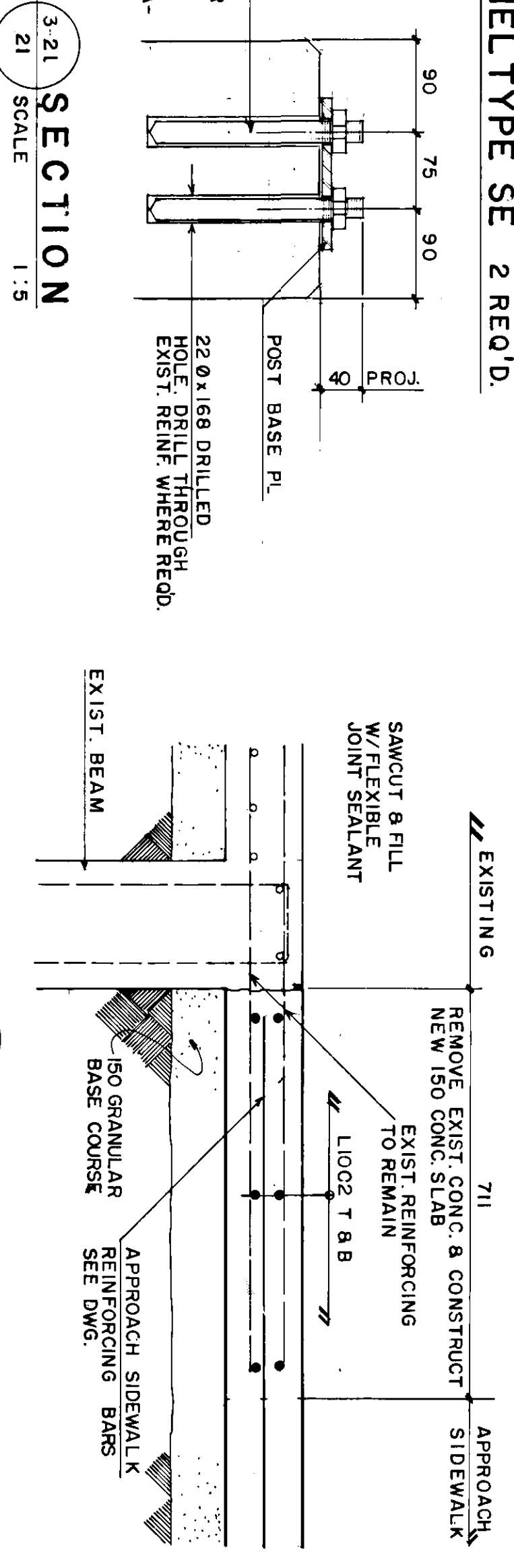
PANEL TYPE SD 32 REQ'D.

PANEL TYPE SA 2 REQ'D.



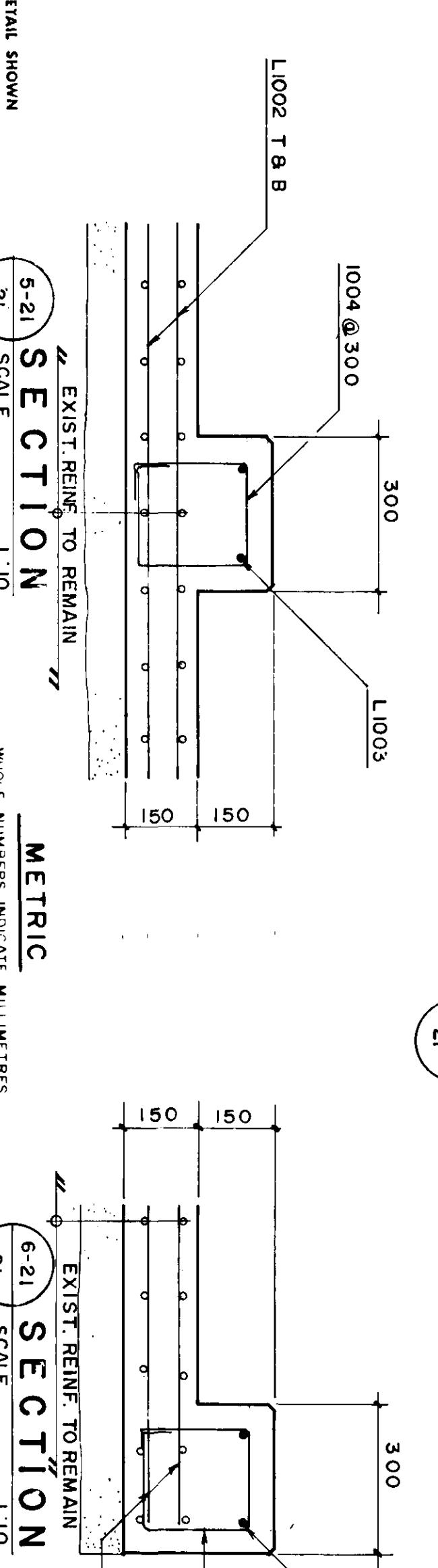
PANEL TYPE SE 2 REQ'D.

PANEL TYPE SF 2 REQ'D.



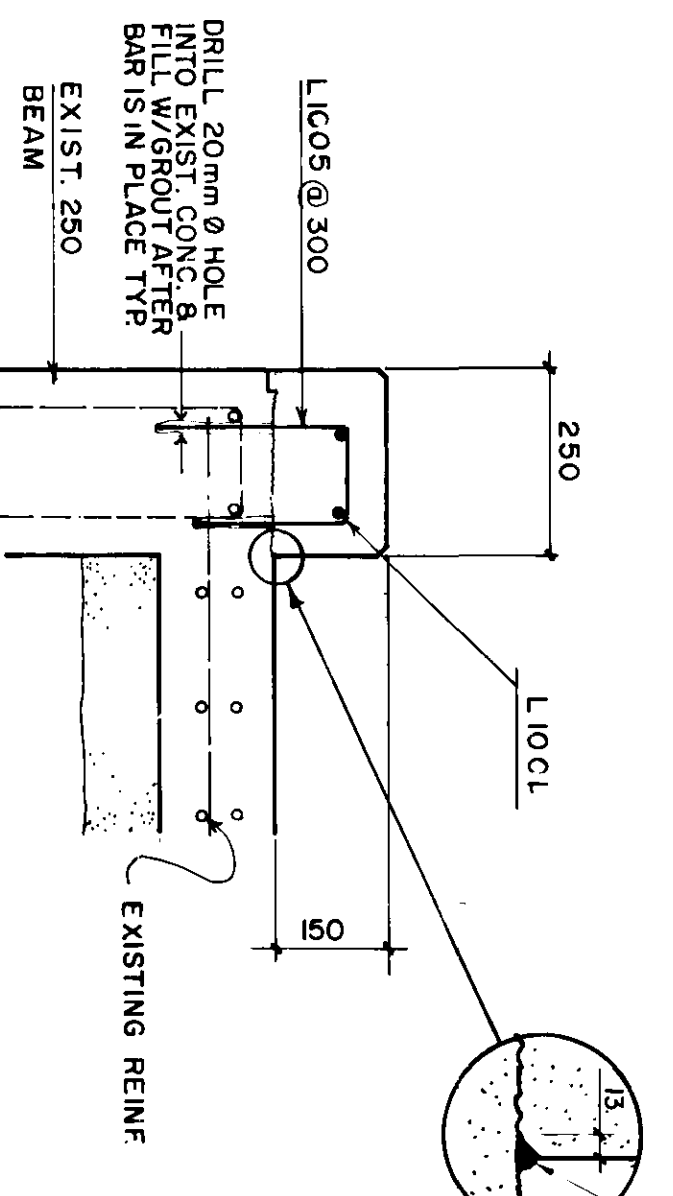
3-21 SECTION SCALE 1:5

4-21 SECTION SCALE 1:10

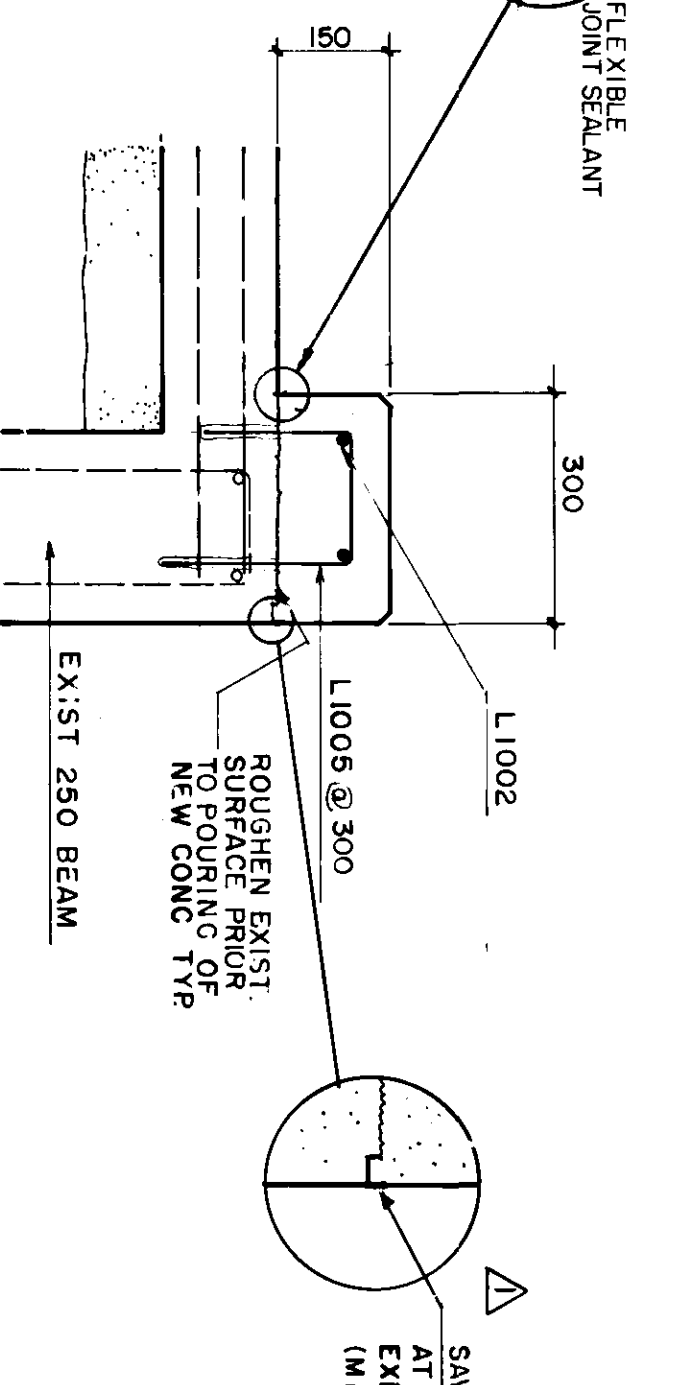


5-21 SECTION SCALE 1:10

6-21 SECTION SCALE 1:10



1-21 SECTION SCALE 1:10



2-21 SECTION SCALE 1:10

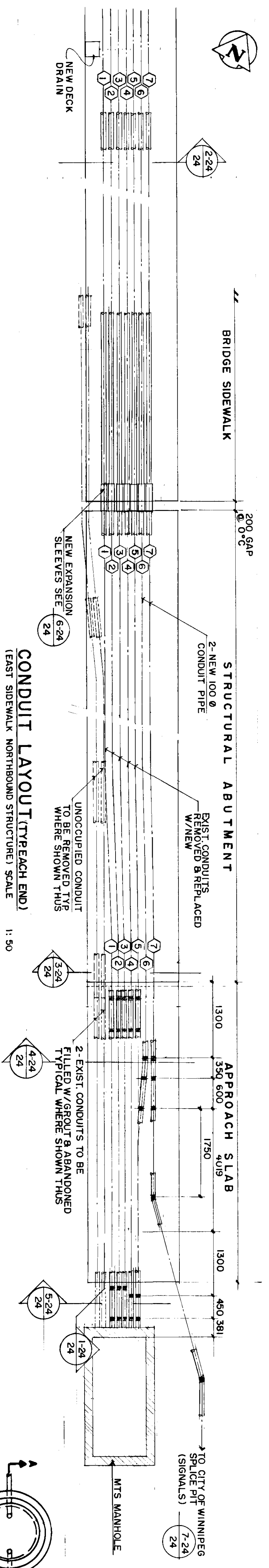
NO.	REVISIONS	DATE	BY
2	AS CONSTRUCTED	8/11/10 R.C.S.	
1	ADD SAWCUT	8/30/09 B.E.	

Reid Crowther
 REID, CROWTHER & PARTNERS LIMITED
 ENGINEERING ARCHITECTURE INTERIOR DESIGN

PROVINCE OF MANITOBA
 REGISTERED PROFESSIONAL ENGINEER
 WINNIPEG

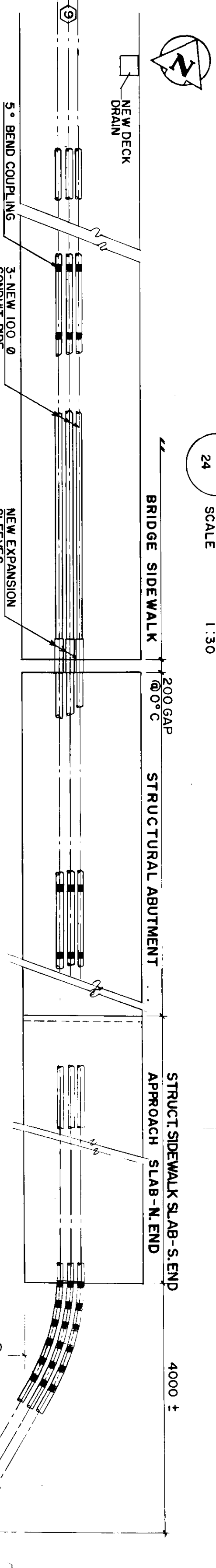
THE CITY OF WINNIPEG
 WORKS AND OPERATIONS DIVISION
 ST. VITAL TWIN BRIDGE OVER RED RIVER
 STRUCTURE REHABILITATION AND RELATED WORKS

ALUMINUM PEDESTRIAN HANDRAIL DETAILS 3
 B-5826-21

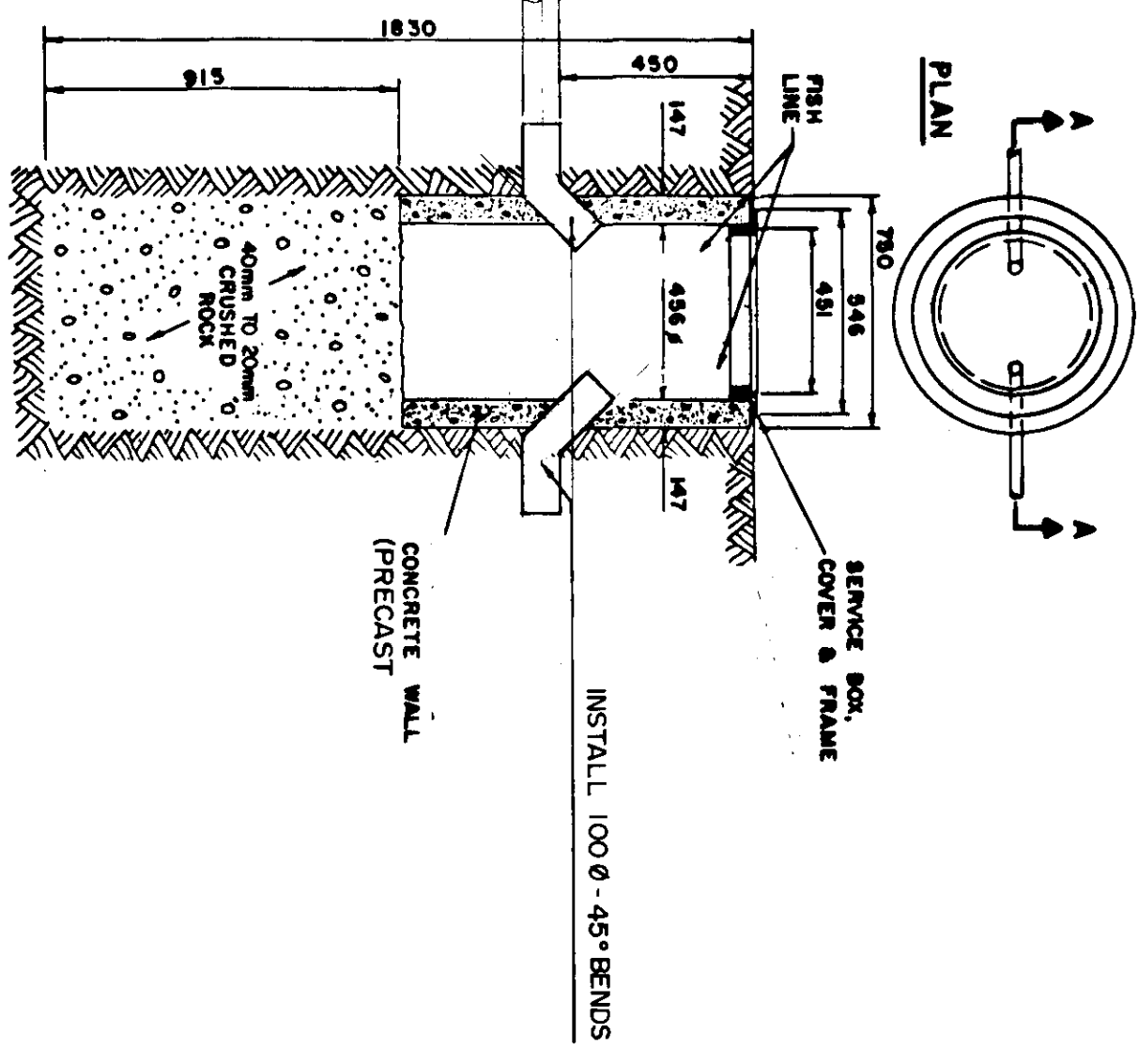


- NOTES:
1. CONDUITS NO. 1 THRU TO NO. 6 - M.T.S.
 2. CONDUIT NO. 7 - CITY OF WINNIPEG TRAFFIC SIGNALS
 3. CONDUITS NO. 1 THRU TO NO. 7 LOCATED ON EAST SIDEWALK ONLY
 4. 50 Ø LIGHTING CONDUIT LOCATED ON EAST AND WEST SIDEWALK.
 5. CONDUITS 5 & 6 THRU TO LOCATED IN WEST SIDEWALK CITY OF WINNIPEG (SPRINKS)

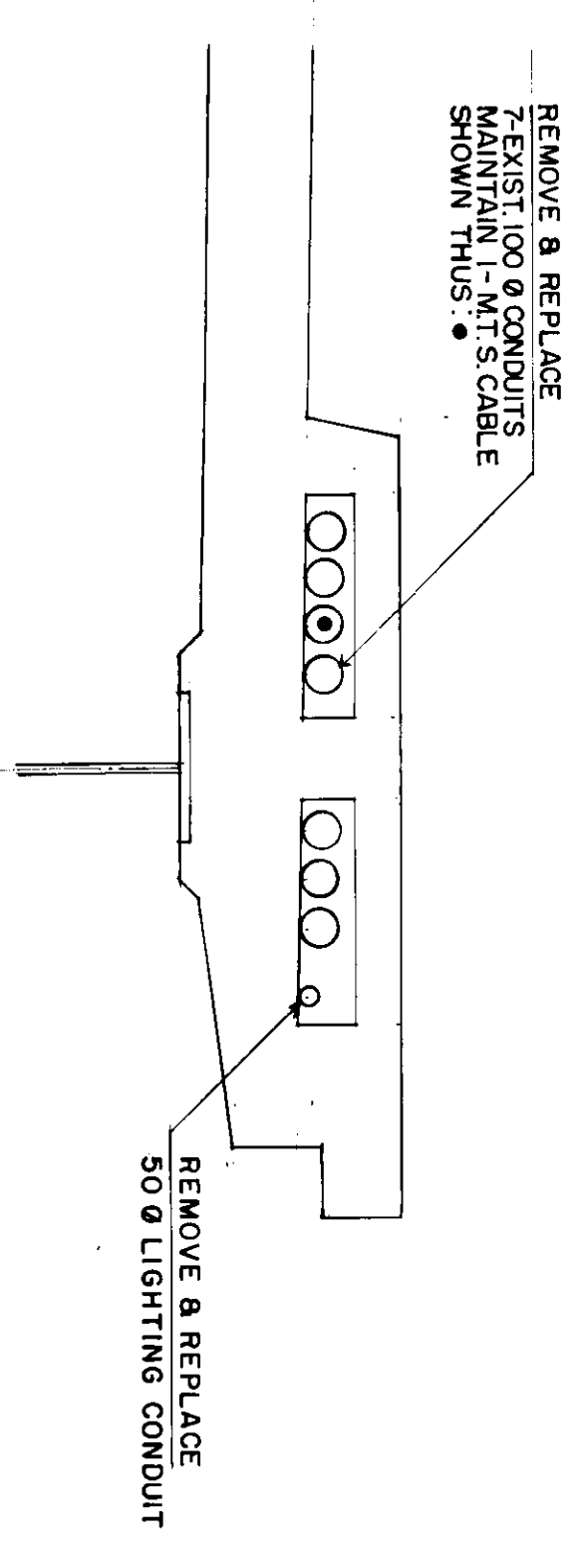
1-24 SECTION
SCALE 1:30



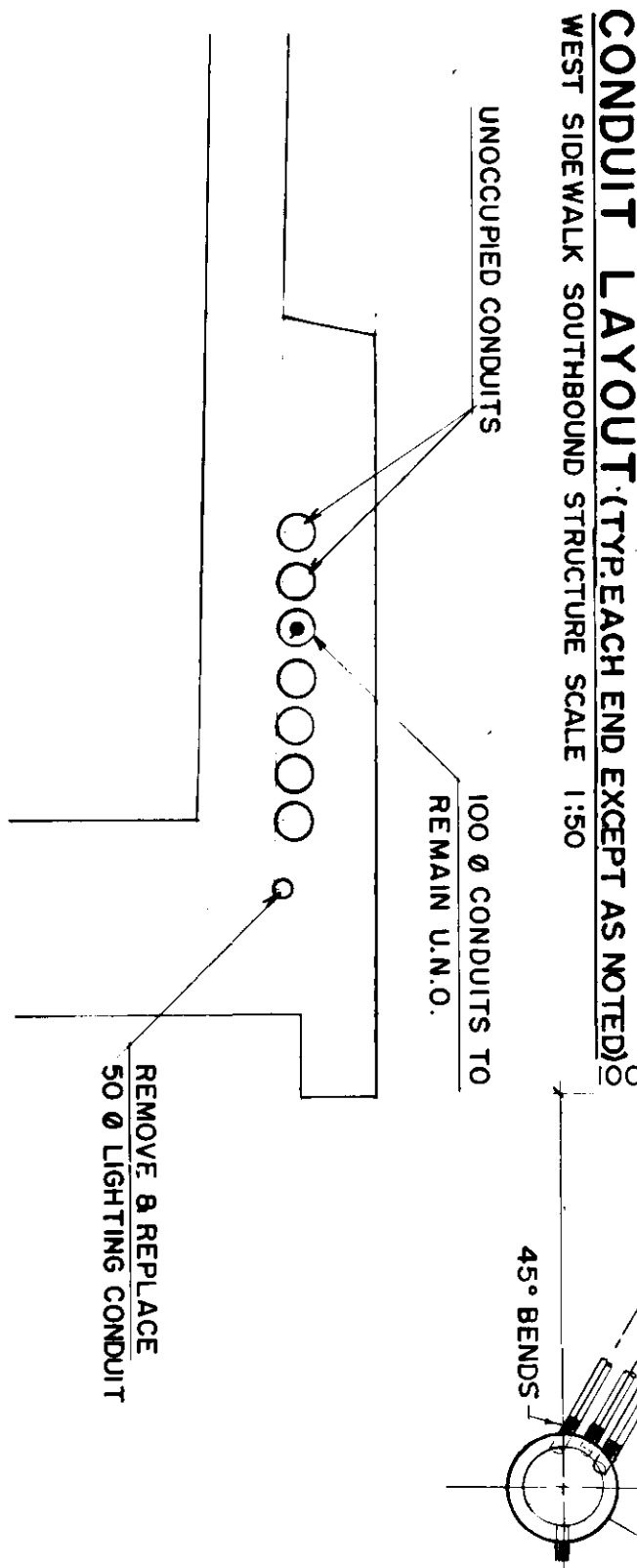
7-24 SECTION A-A
(FOR CITY/SPARE UTILITY DUCTS)



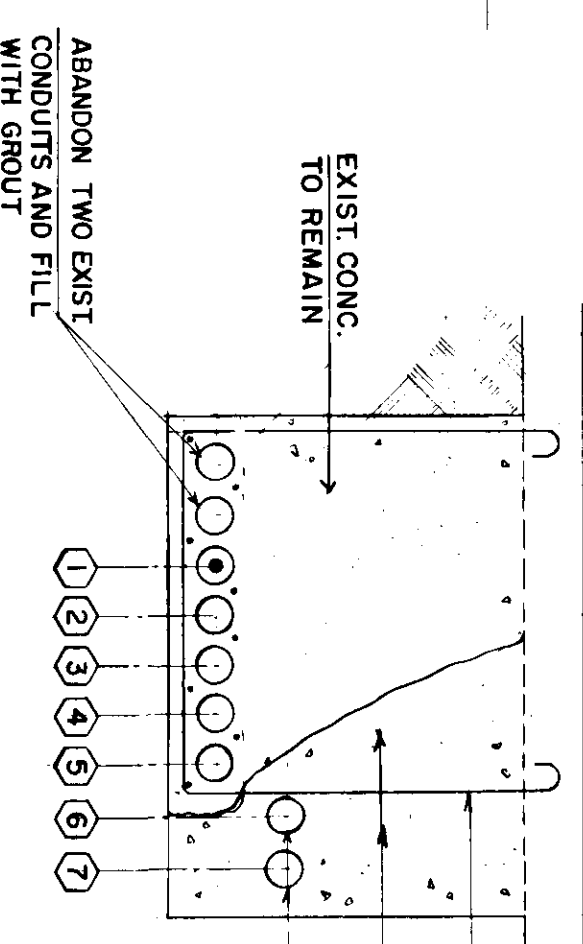
EXISTING



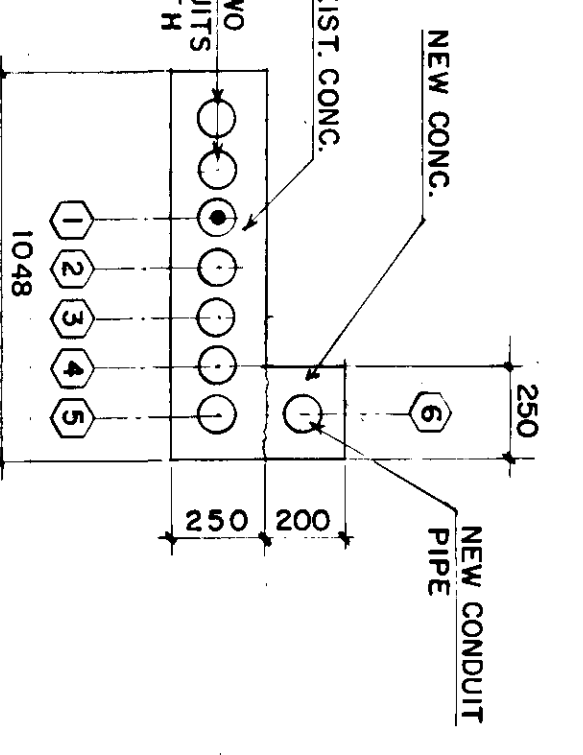
EXISTING



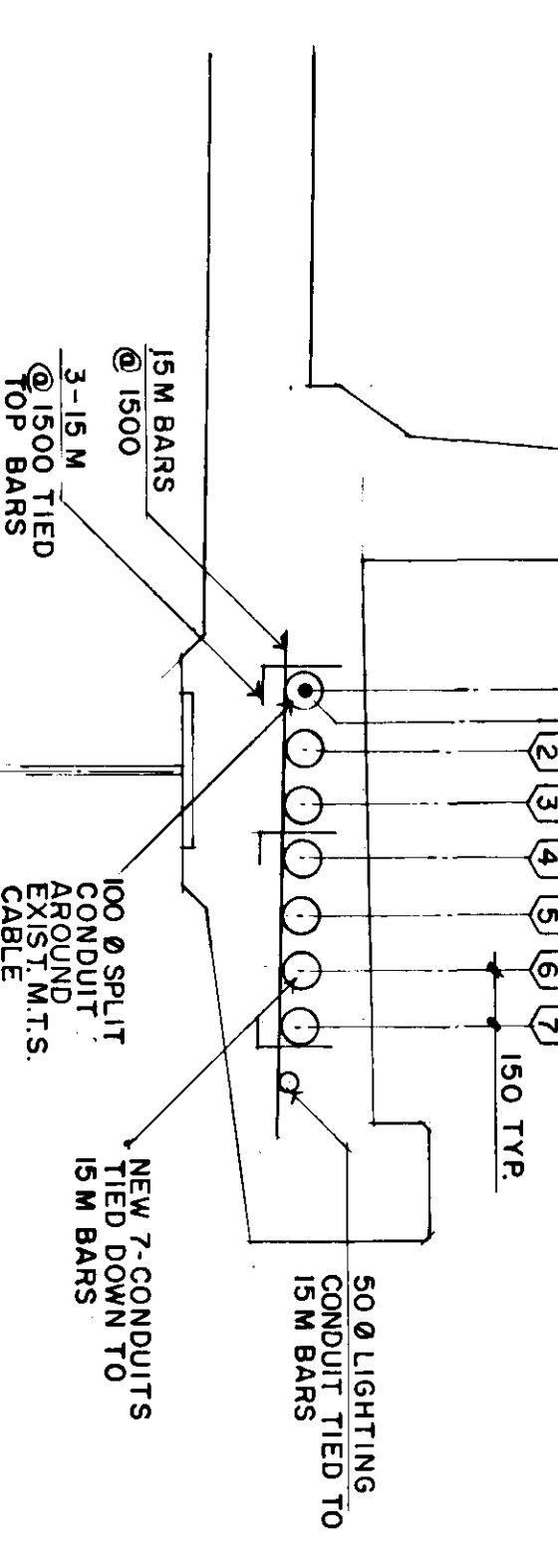
4-24 SECTION



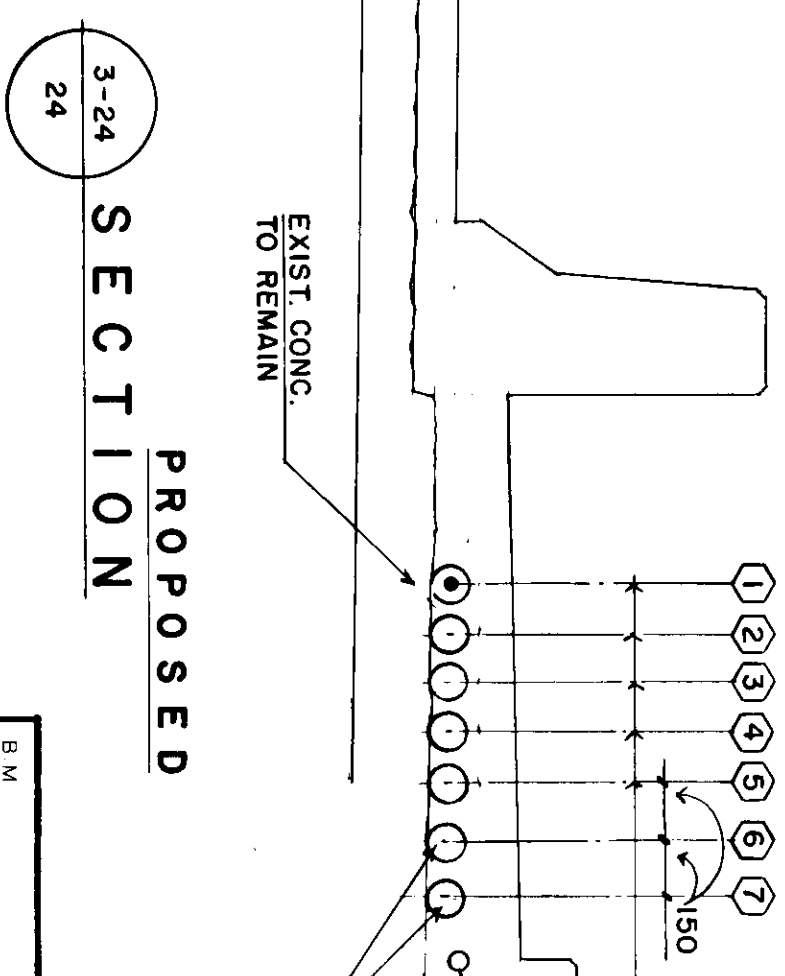
5-24 SECTION



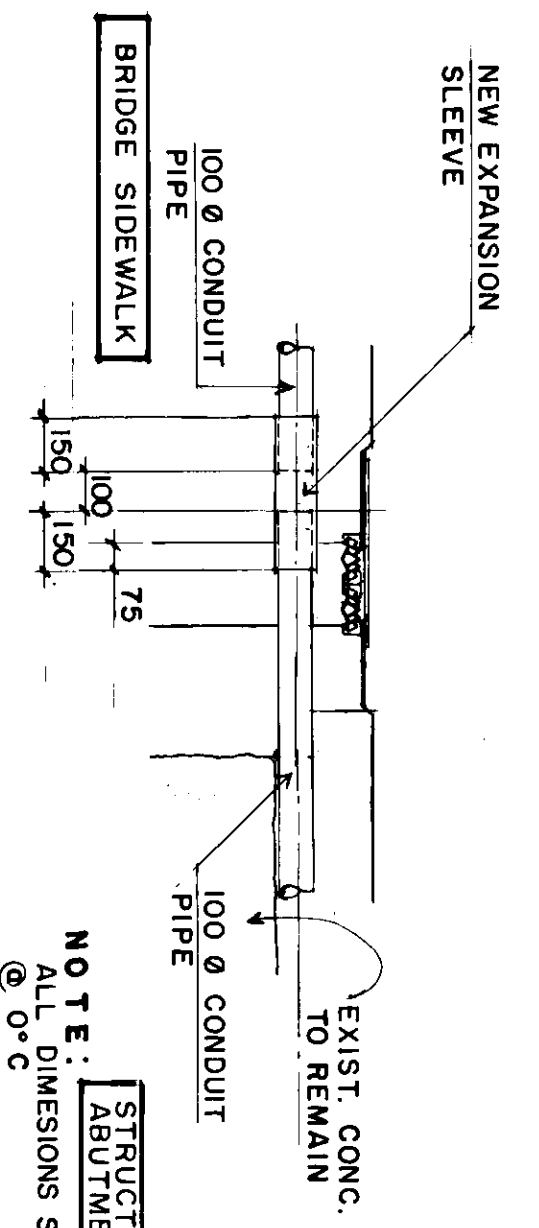
EXISTING



PROPOSED



6-24 DETAIL



BEID, CROWTHER & PARTNERS LIMITED
WINNIPEG

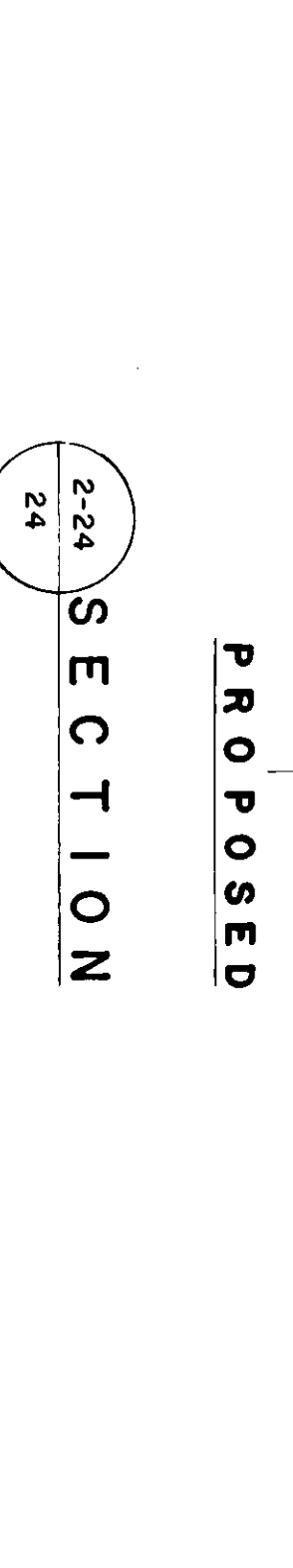
AS CONSTRUCTED

SIG. DATE: 9/26/87

METRIC

WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

2-24 SECTION



NO.	REVISIONS	DATE	BY
2	AS CONSTRUCTED GENERAL REVISION	98 02 19	RCS
1	GENERAL REVISION	98 02 19	RCS

Reid Crowther
Engineers & Architects Ltd.
Professional Engineers
188-2-4-8

DESIGNED BY: BE
DRAWN BY: R.C.S.
CHECKED BY: W.J.M.
APPROVED BY: [Signature]

DATE: DEC. 97

PROVIDED BY
L. BERNARDI
REGISTERED PROFESSIONAL ENGINEER

CONSULTANT DRAWING NO. 60814-24

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

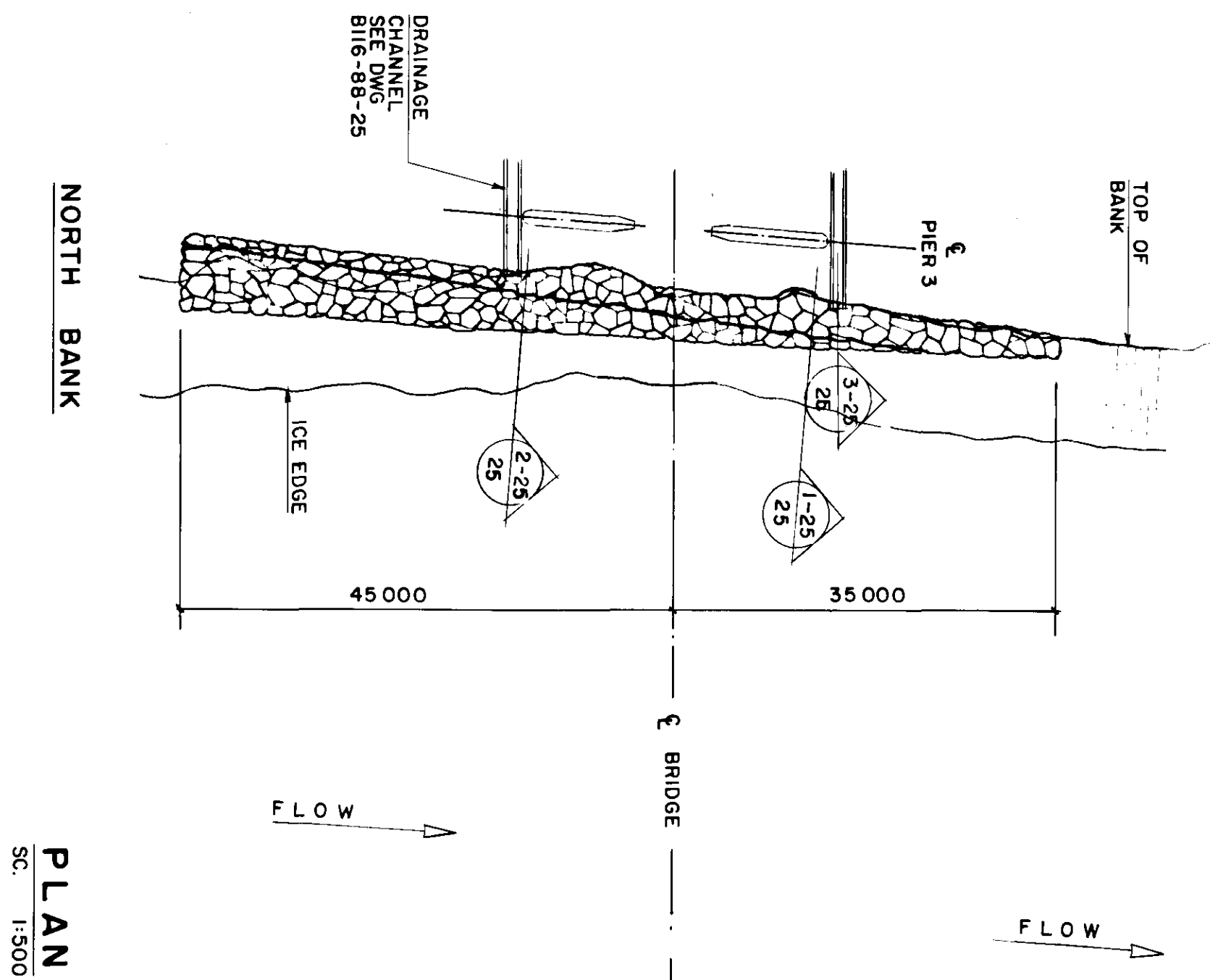
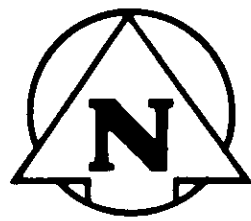
ST. VITAL TWIN BRIDGE OVER RED RIVER
STRUCTURE REHABILITATION AND RELATED WORKS

UTILITY CONDUIT LAYOUT AND DETAILS

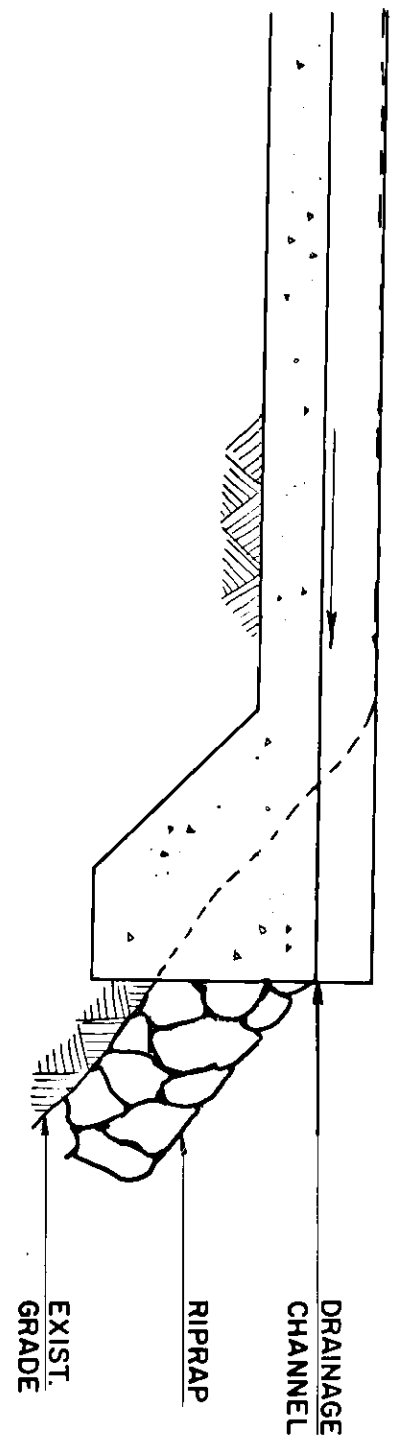
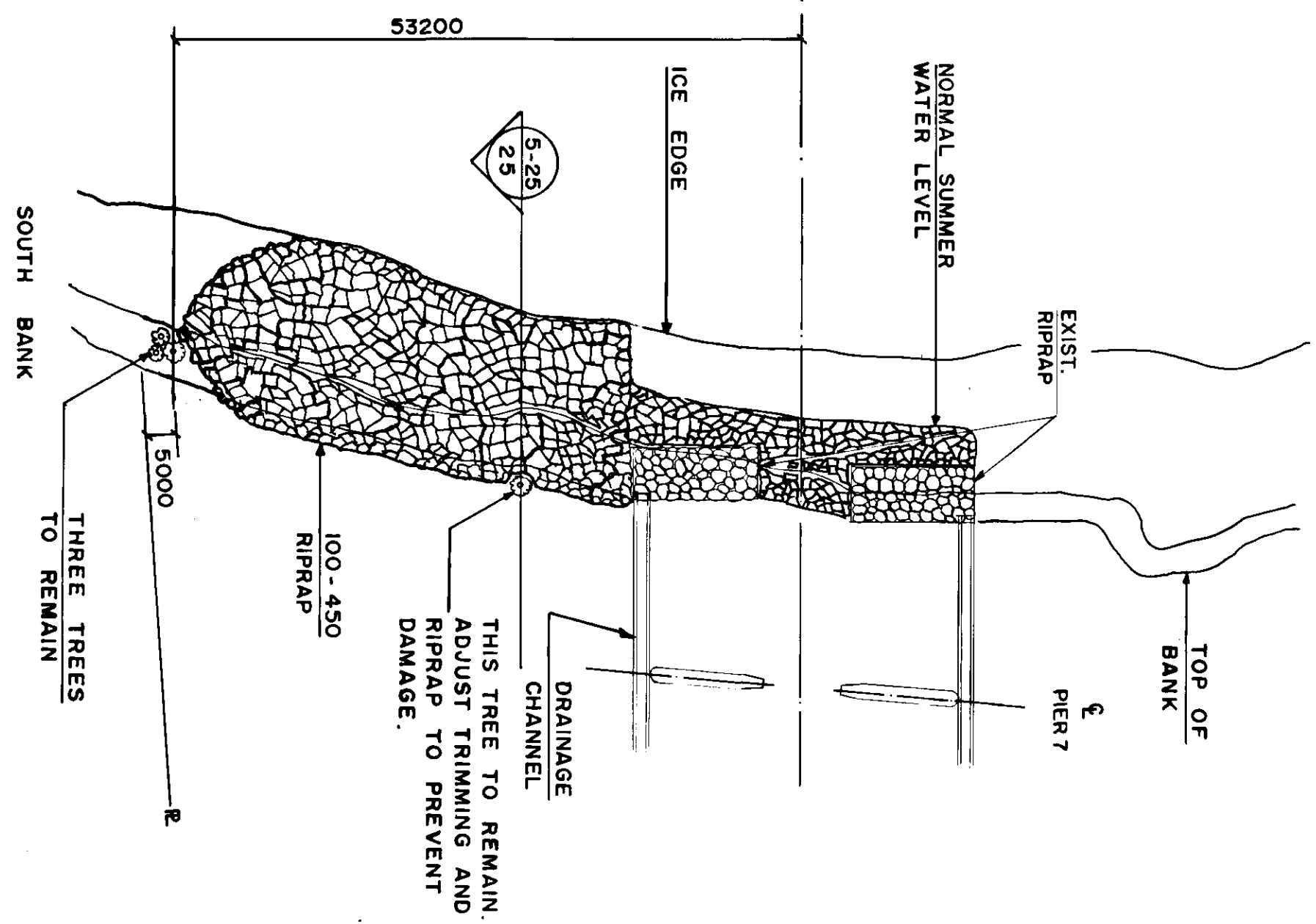
CITY DRAWING NUMBER: B116-88-24
SHEET 24 OF 46

B-5826-24

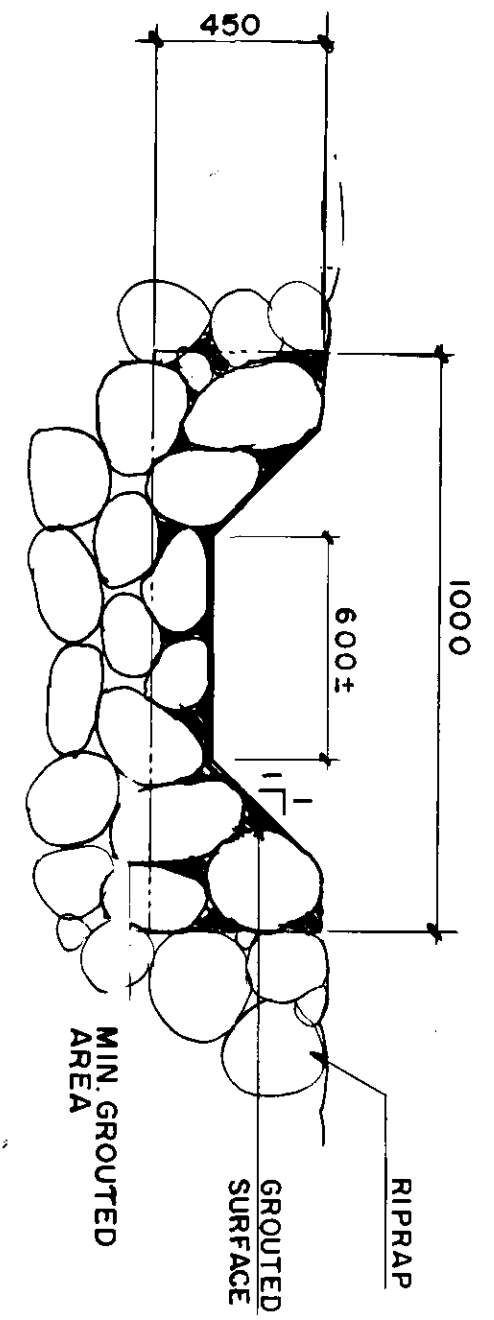
△ THESE REVISIONS ARE TO SUPPLEMENT OR CLARIFY THE CONTRACT DOCUMENTS. NEITHER THE CONTRACT PRICE NOR THE CONTRACT TIME ARE AFFECTED.



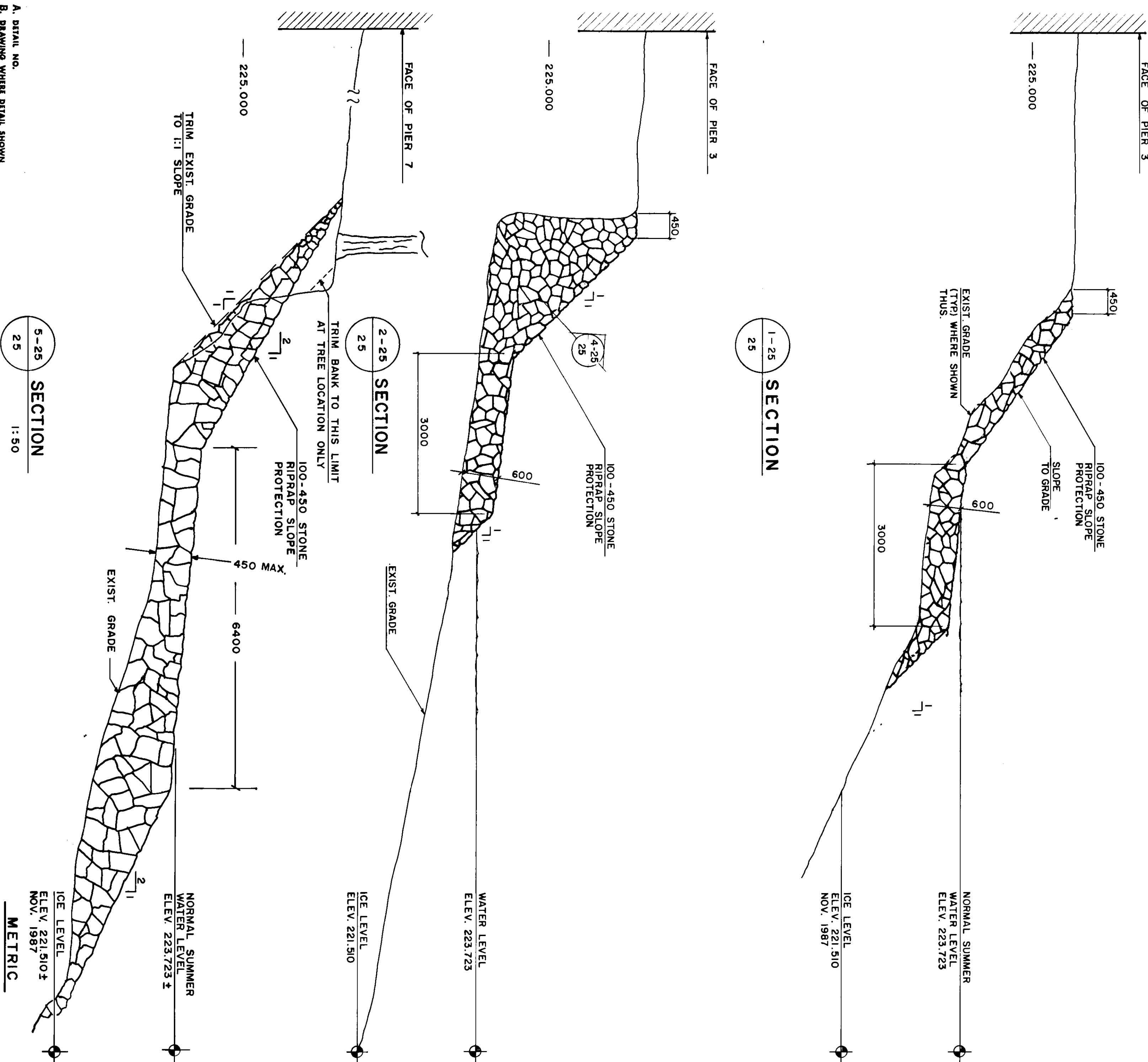
PLAN
SC. 1:500



3-25 SECTION
1:20



4-25 SECTION
1:20



1-25 SECTION
1:25

2-25 SECTION
1:25

5-25 SECTION
1:50

REID, CROWTHER & PARTNERS LIMITED
WINNIPEG
AS CONSTRUCTED

△ THESE REVISIONS ARE TO SUPPLEMENT OR CLARIFY THE CONTRACT DOCUMENTS. NEITHER THE CONTRACT PRICE NOR THE CONTRACT TIME ARE AFFECTED.

A-B	A. DETAIL NO.		
B	B. DRAWING WHERE DETAIL SHOWN		
C	C. DRAWING WHERE DETAIL TAKEN		
NO.	REVISIONS	DATE	BY
1	GENERAL REVISIONS	8/22/88	B.E.
2	ADDED S. BANK RIPRAP	8/22/88	B.E.

Reid Crowther
DESIGNED BY: B.E.
DRAWN BY: P.A.F./K.K.
APPROVED BY: [Signature]
CHECKED BY: W.J.M.
DATE: JAN. 88

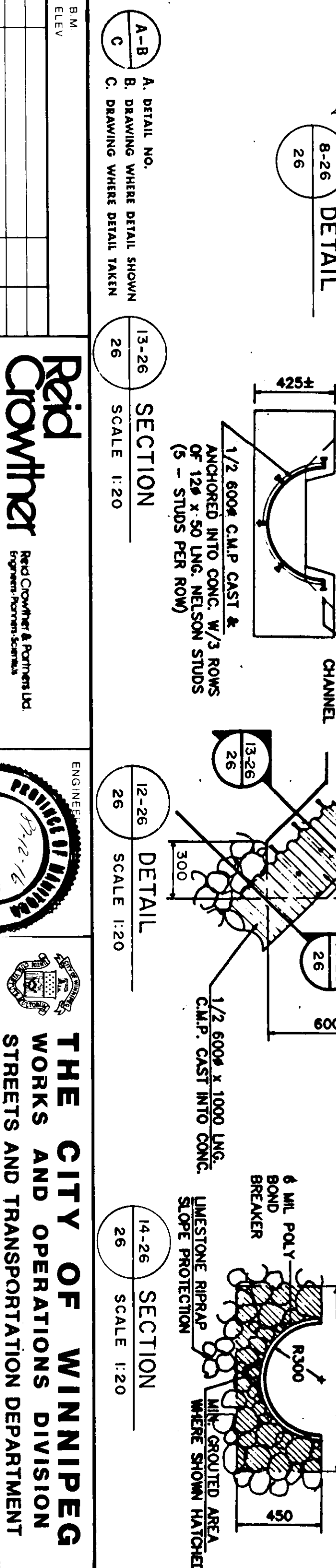
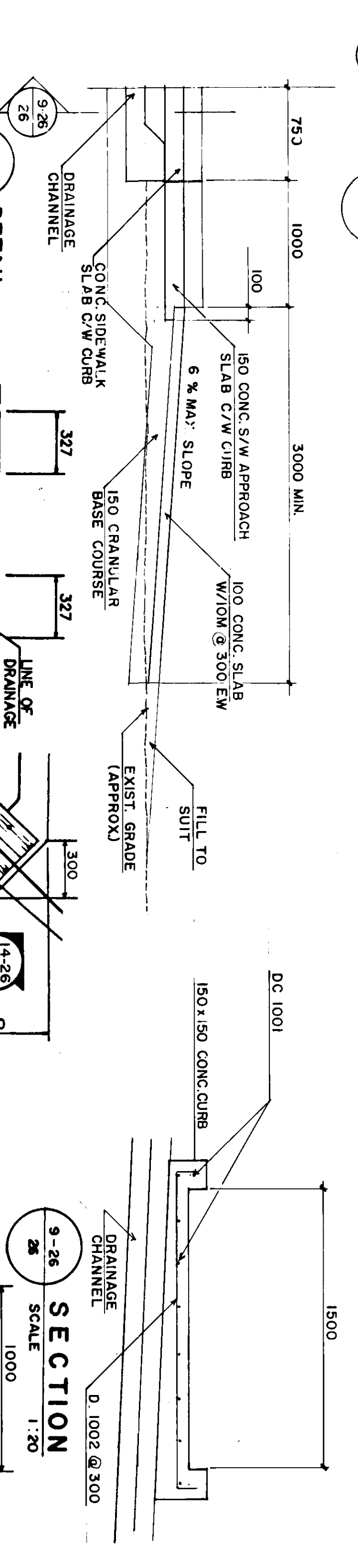
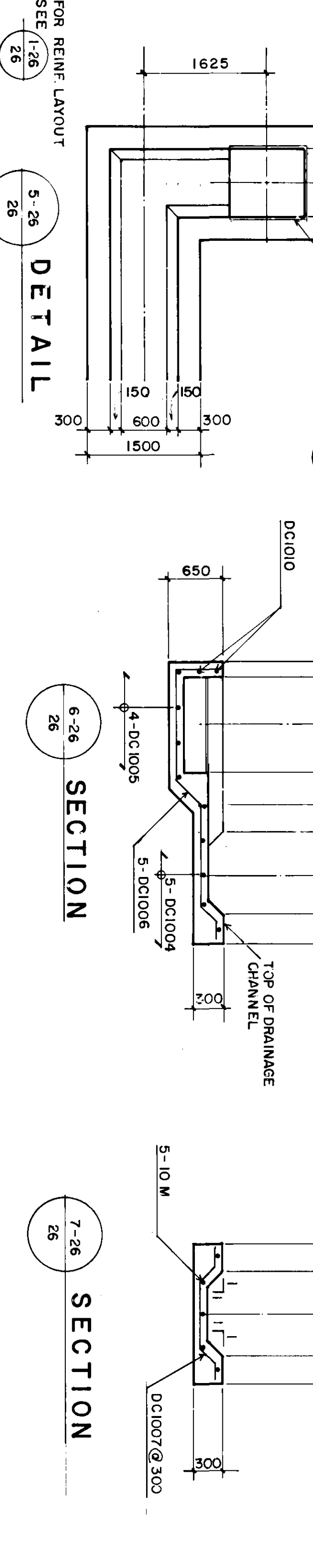
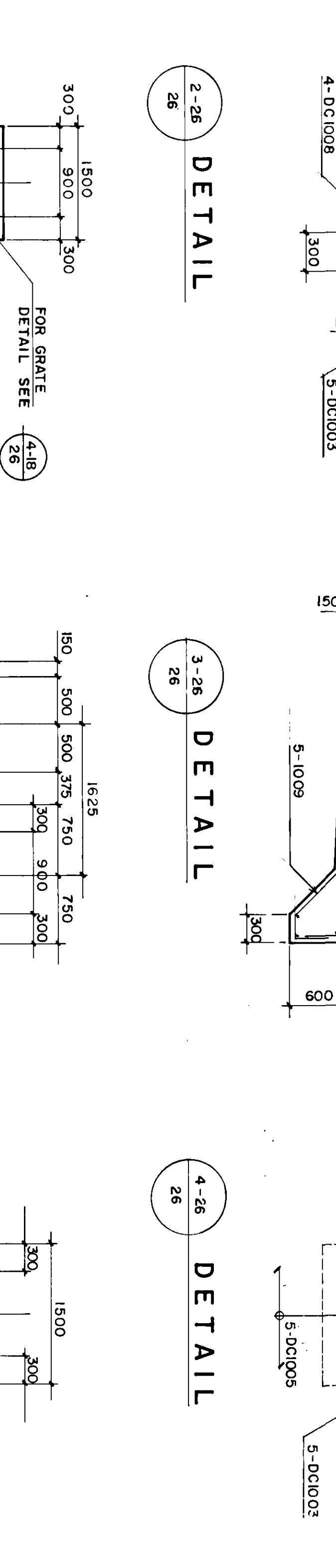
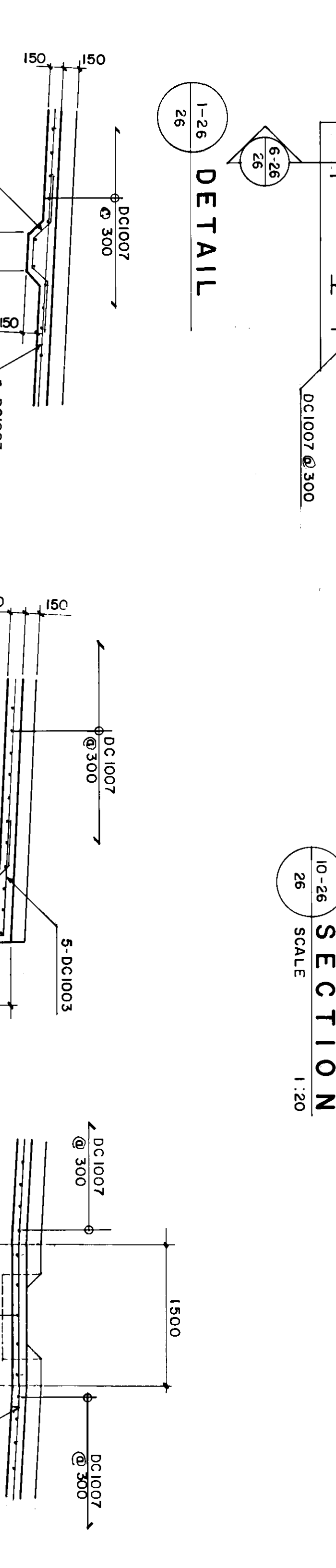
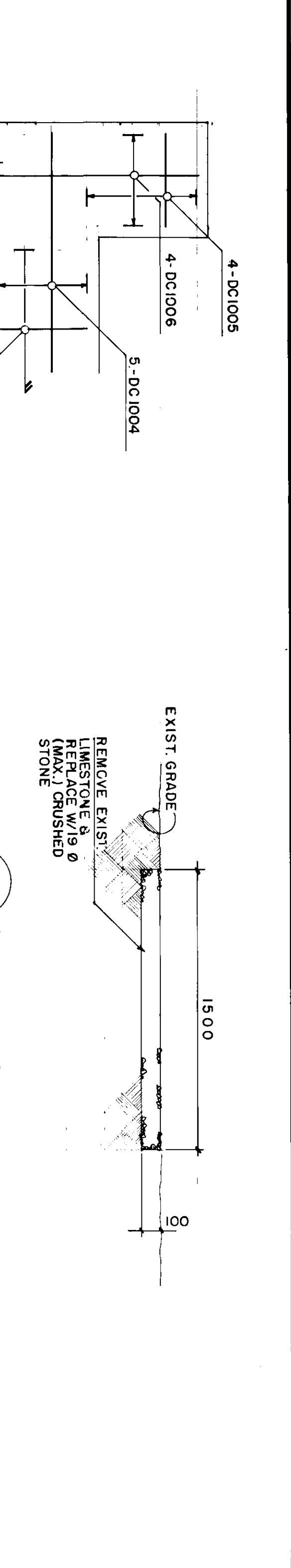
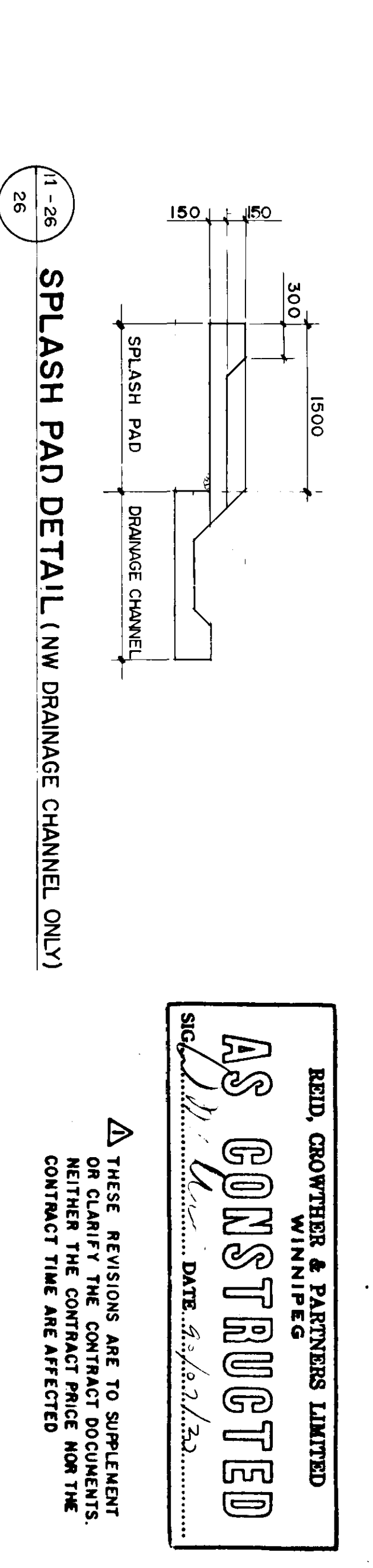
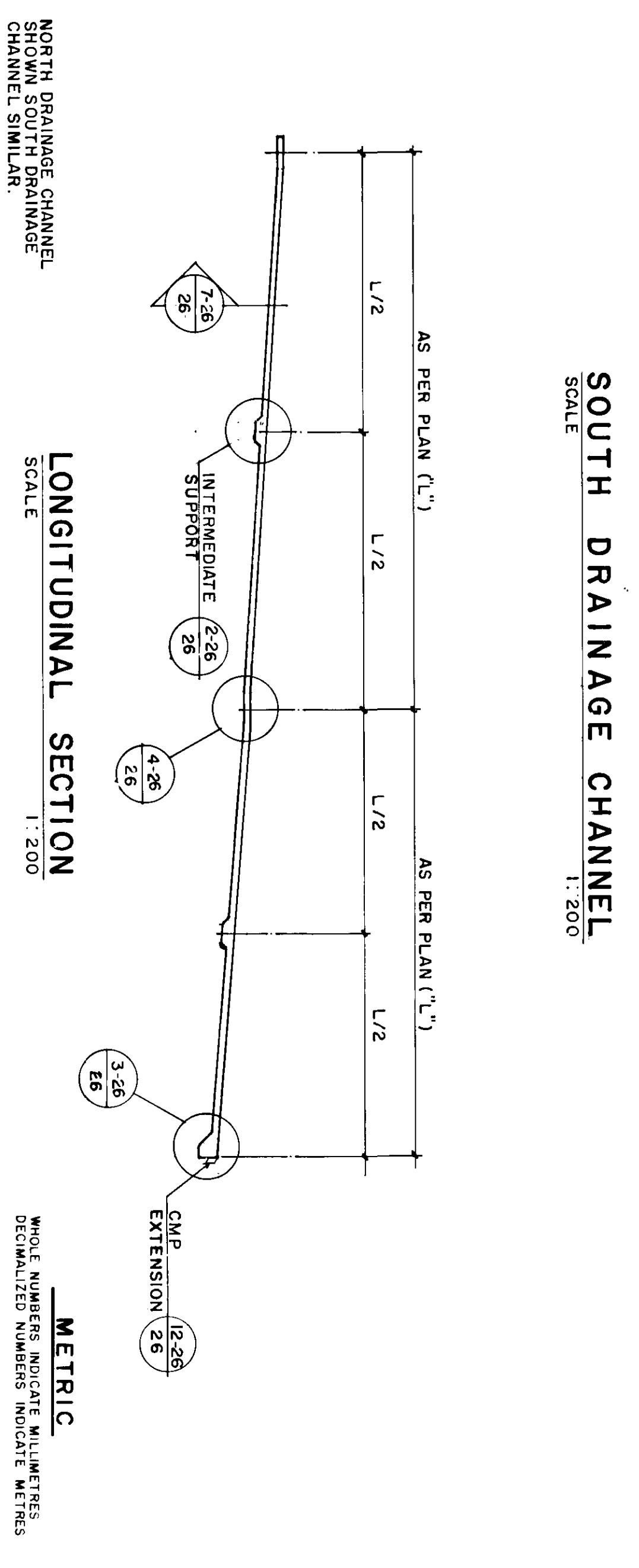
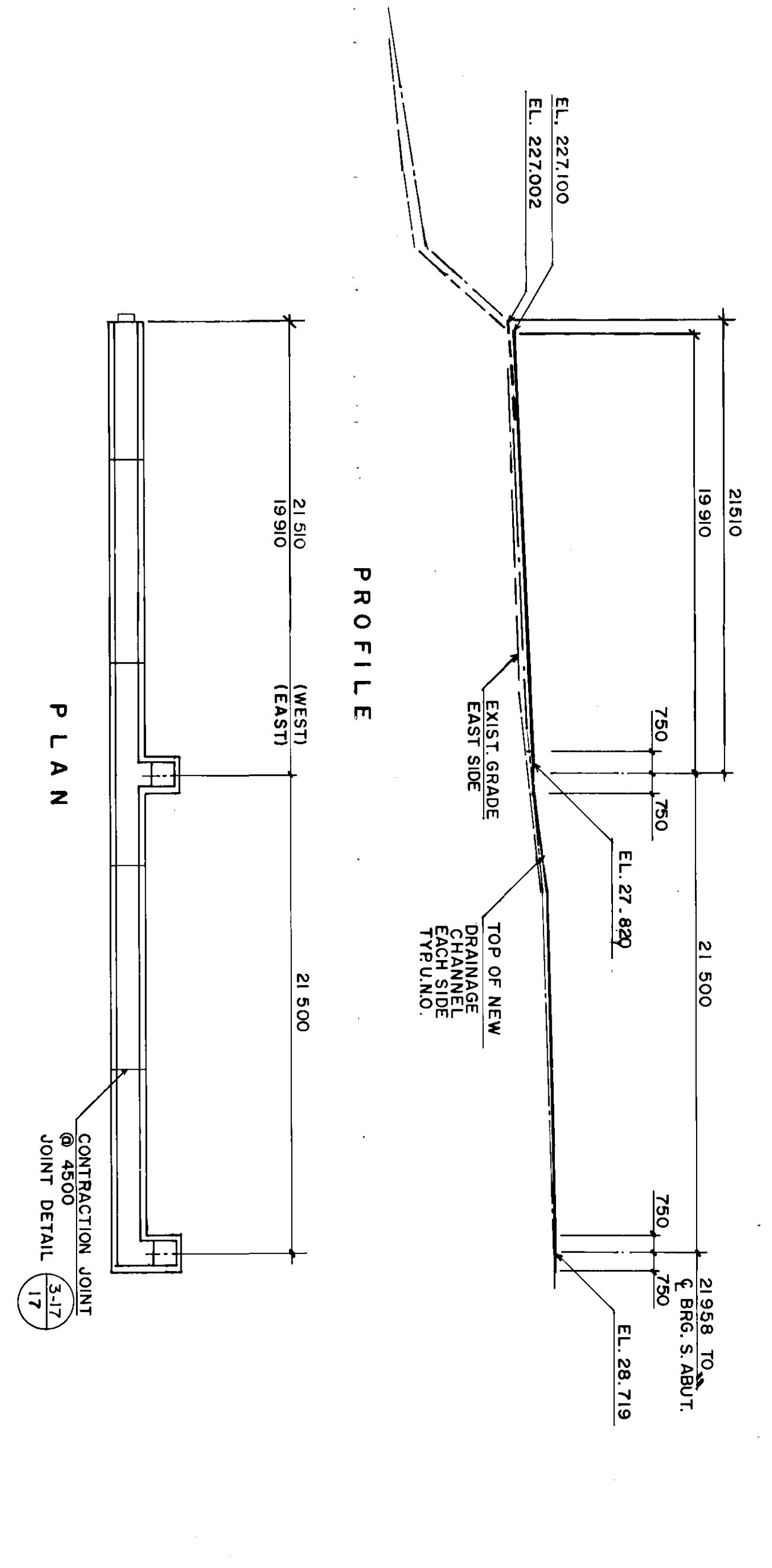
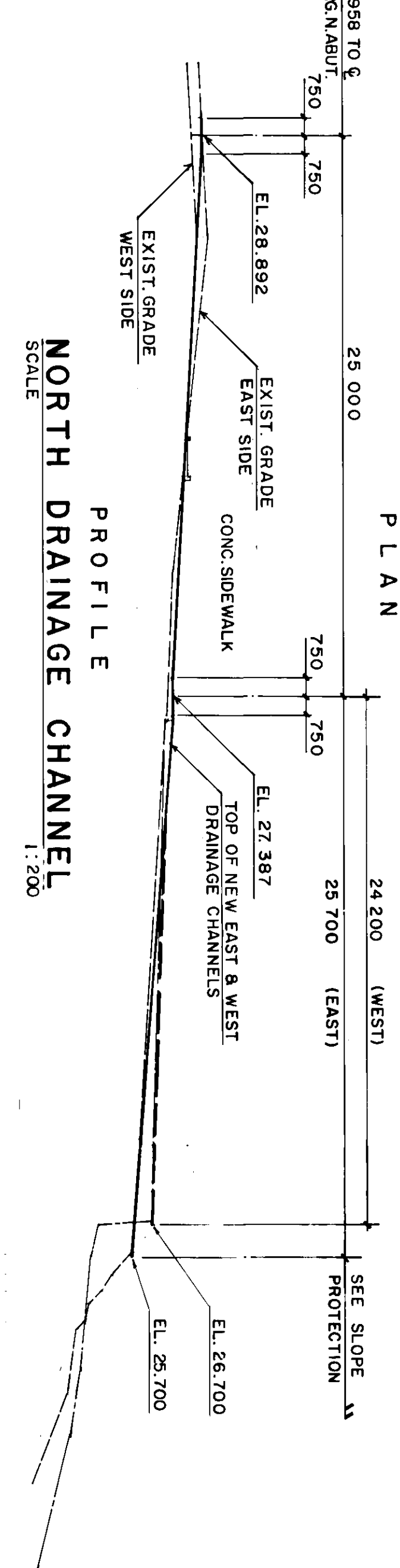
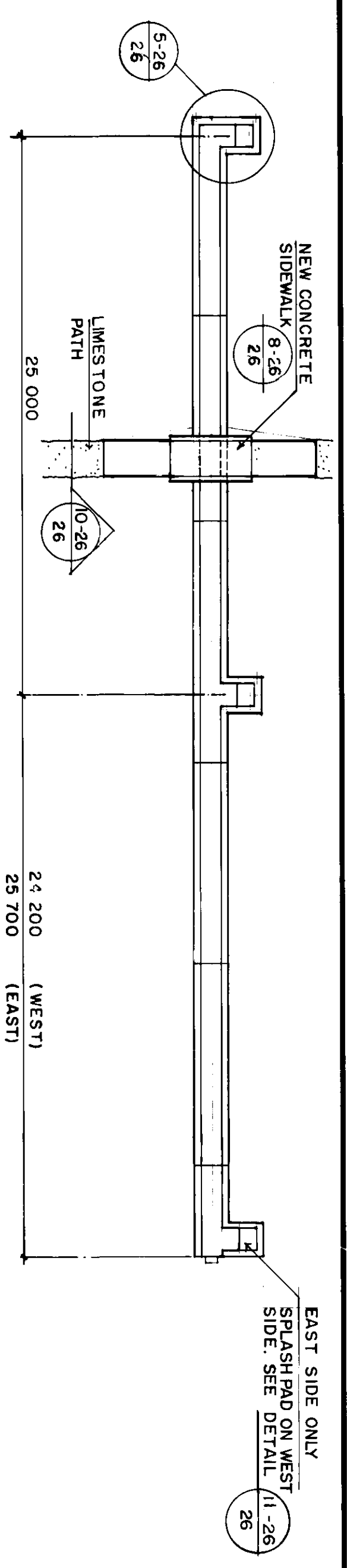
PROFESSIONAL ENGINEER
REGISTERED
60814-25

THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
STREETS AND TRANSPORTATION DEPARTMENT
ST. VITAL TWIN BRIDGE OVER RED RIVER
STRUCTURE REHABILITATION AND
SLOPE PROTECTION AND
DRAINAGE CHANNEL LAYOUT

CITY DRAWING NUMBER: 8116-88-26
SHEET: 25 OF 48

B-5826-25

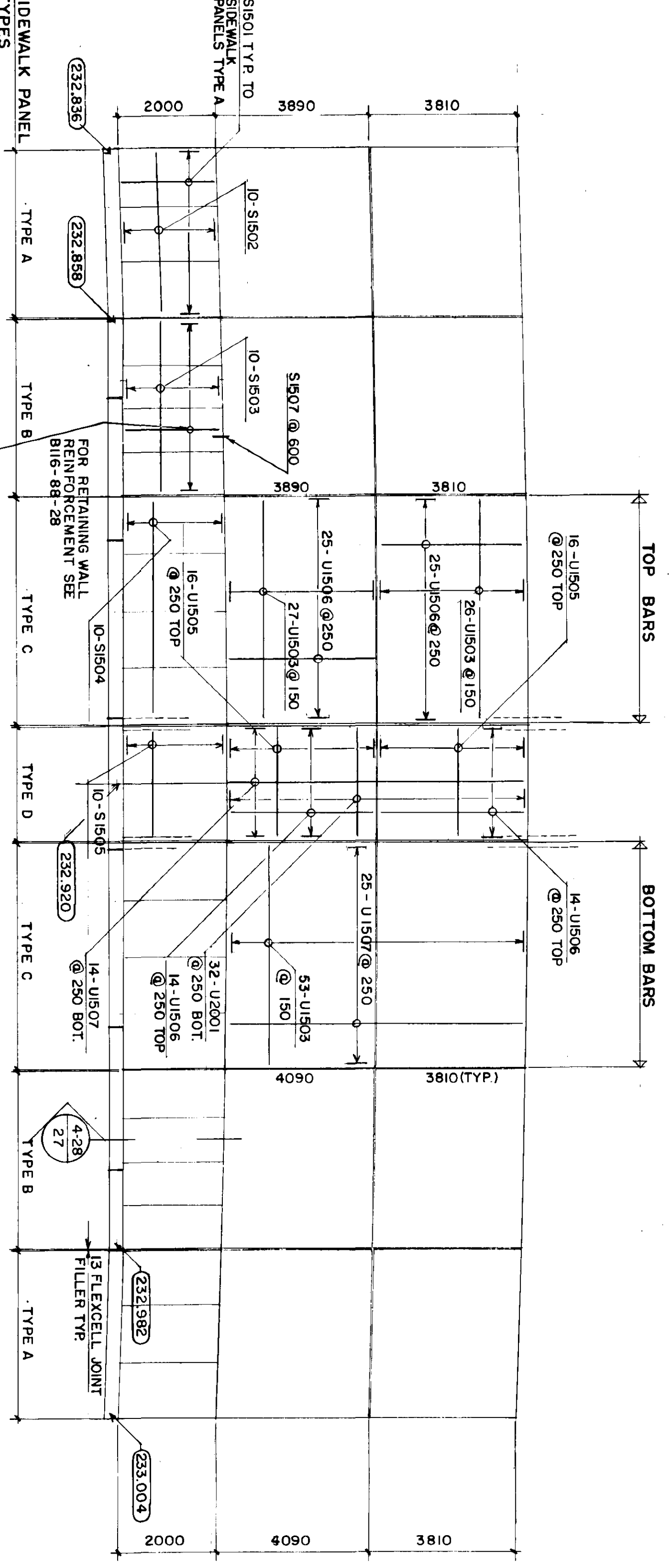
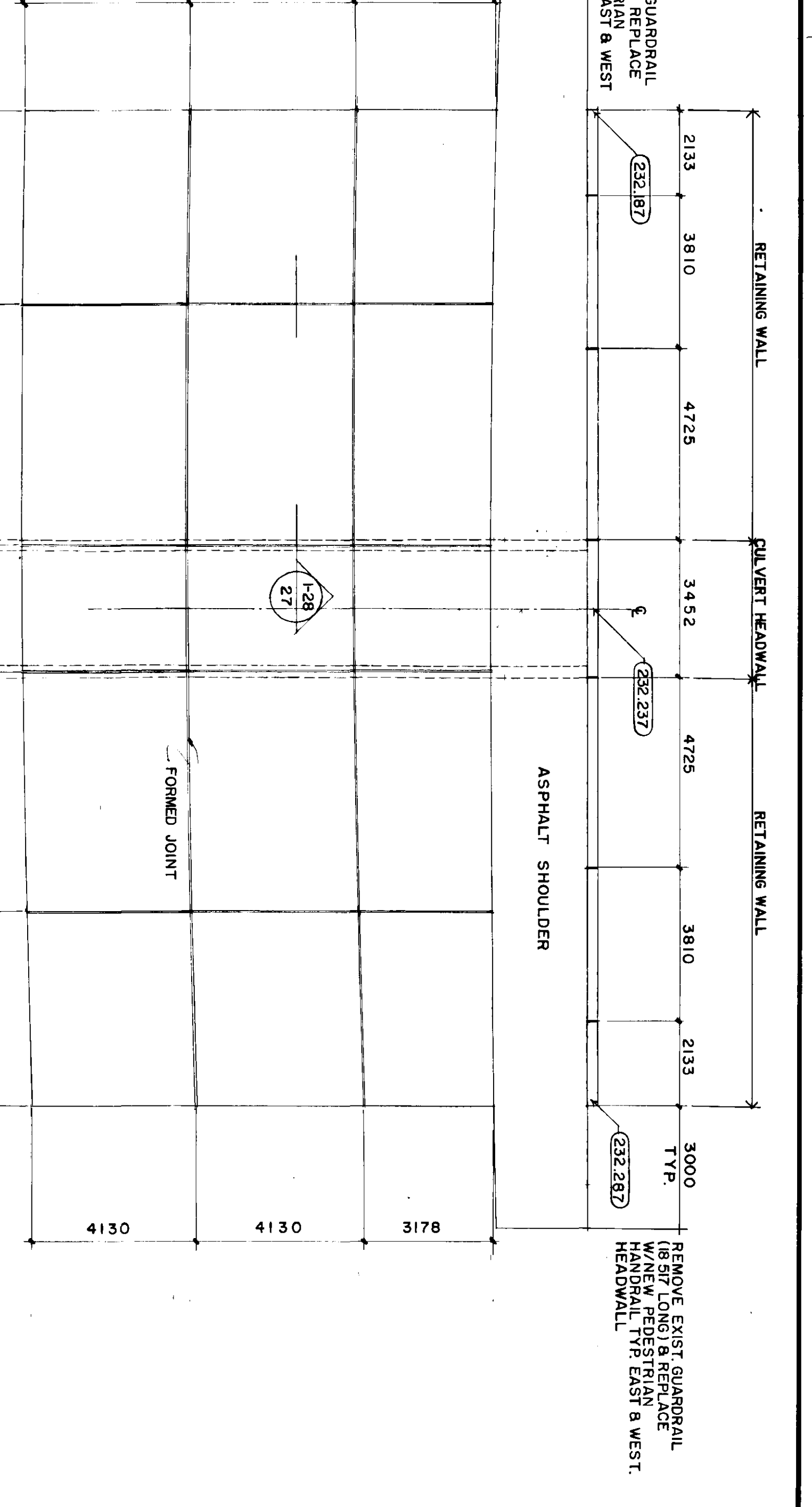
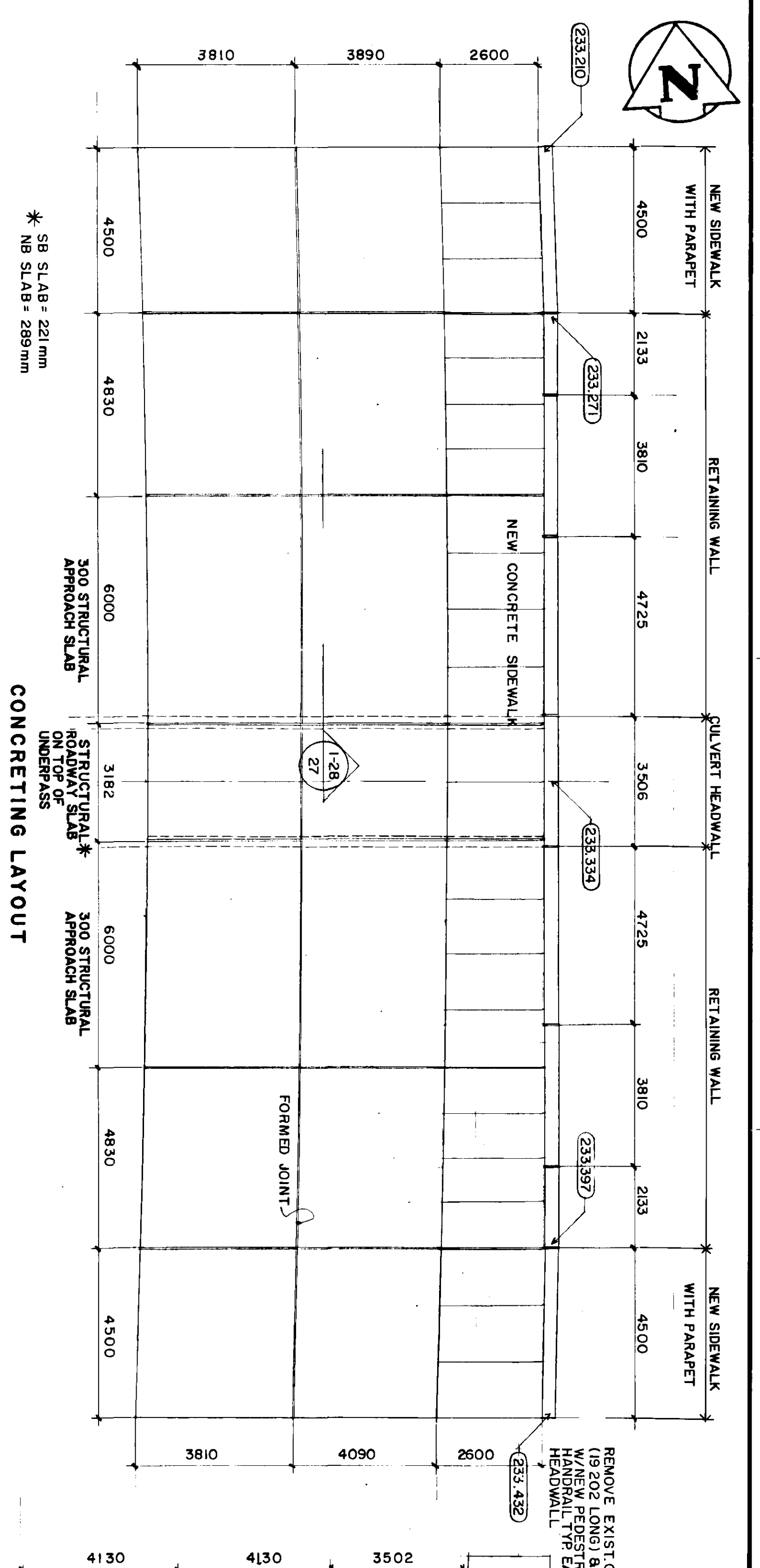
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

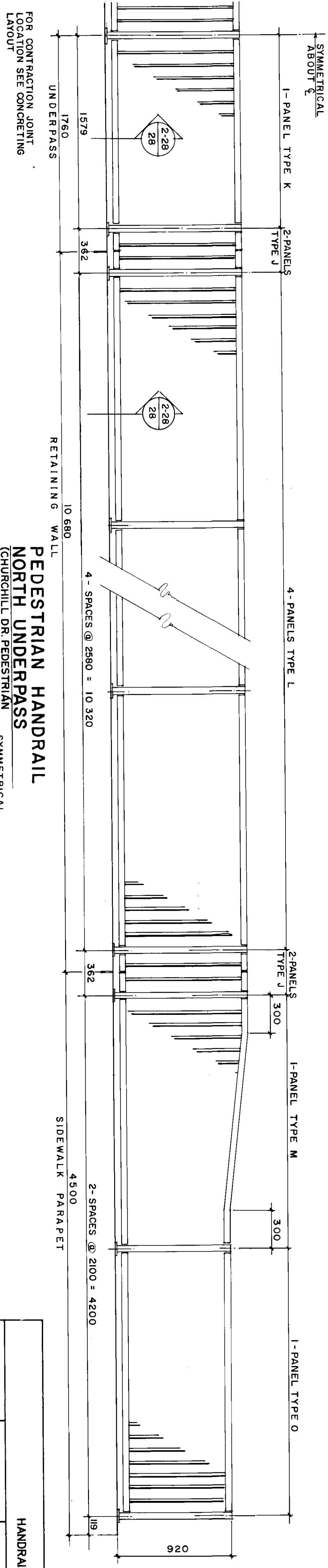


REID, GROWTHER & PARTNERS LIMITED WINNIPEG AS CONSTRUCTED DATE: 8/18/20		THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION ST. VITAL TWIN BRIDGE OVER RED RIVER STREETS AND TRANSPORTATION DEPARTMENT RELATED WORKS DRAINAGE CHANNELS	
DESIGNED BY: B.E. DRAWN BY: B.S. R.C.S.	CHECKED BY: W.A.M. APPROVED BY: [Signature] ACCEPTED BY: [Signature]	HOR SCALE: 1:50 U.N.O. VERTICAL SCALE: 1:20	CONSULTANT DRAWING NO.: 60814-26 SHEET 26 OF 48 CITY DRAWING NUMBER: B116-88-25

THESE REVISIONS ARE TO SUPPLEMENT OR CLARIFY THE CONTRACT DOCUMENTS. NEITHER THE CONTRACT PRICE NOR THE CONTRACT TIME ARE AFFECTED.

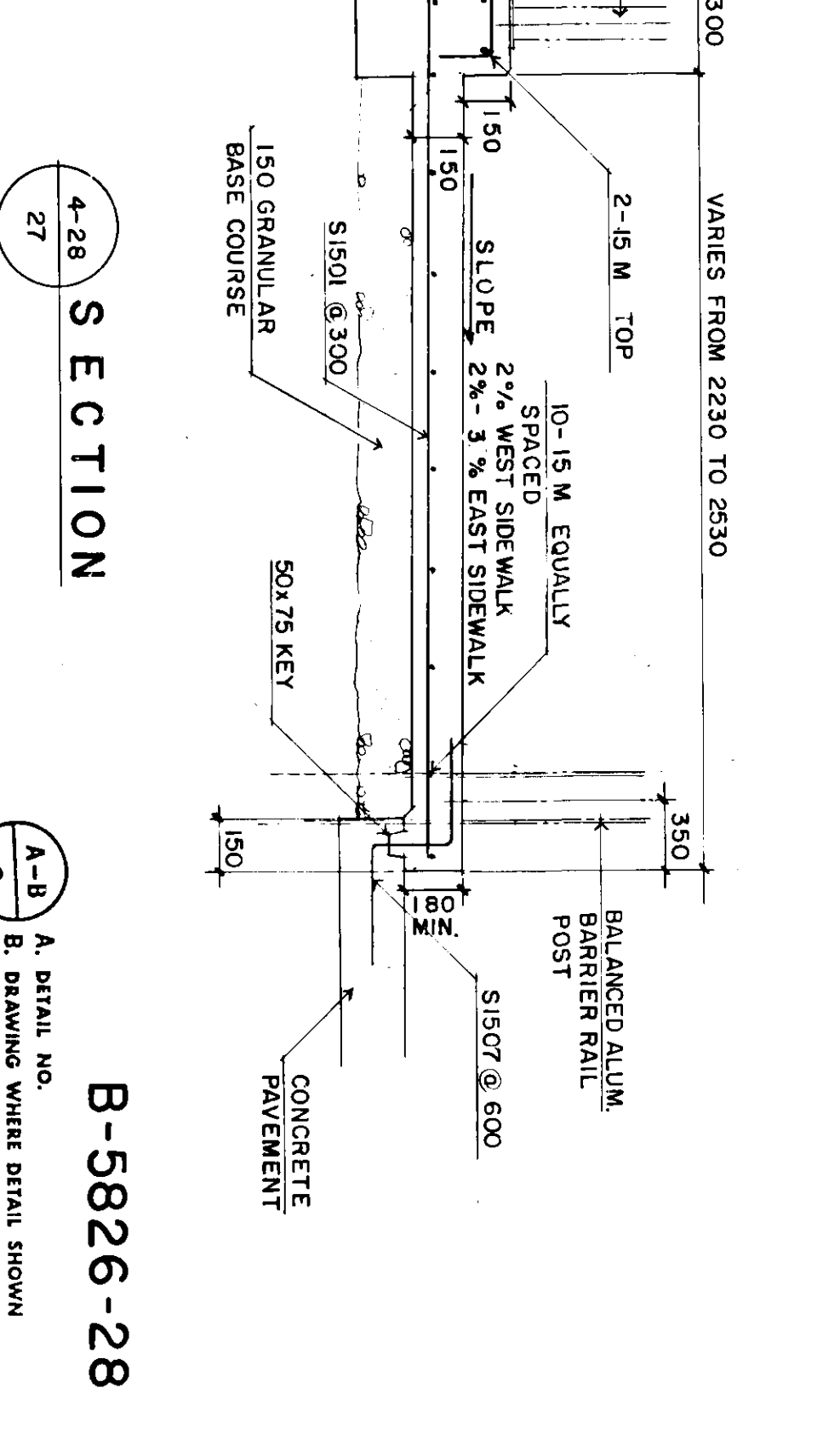
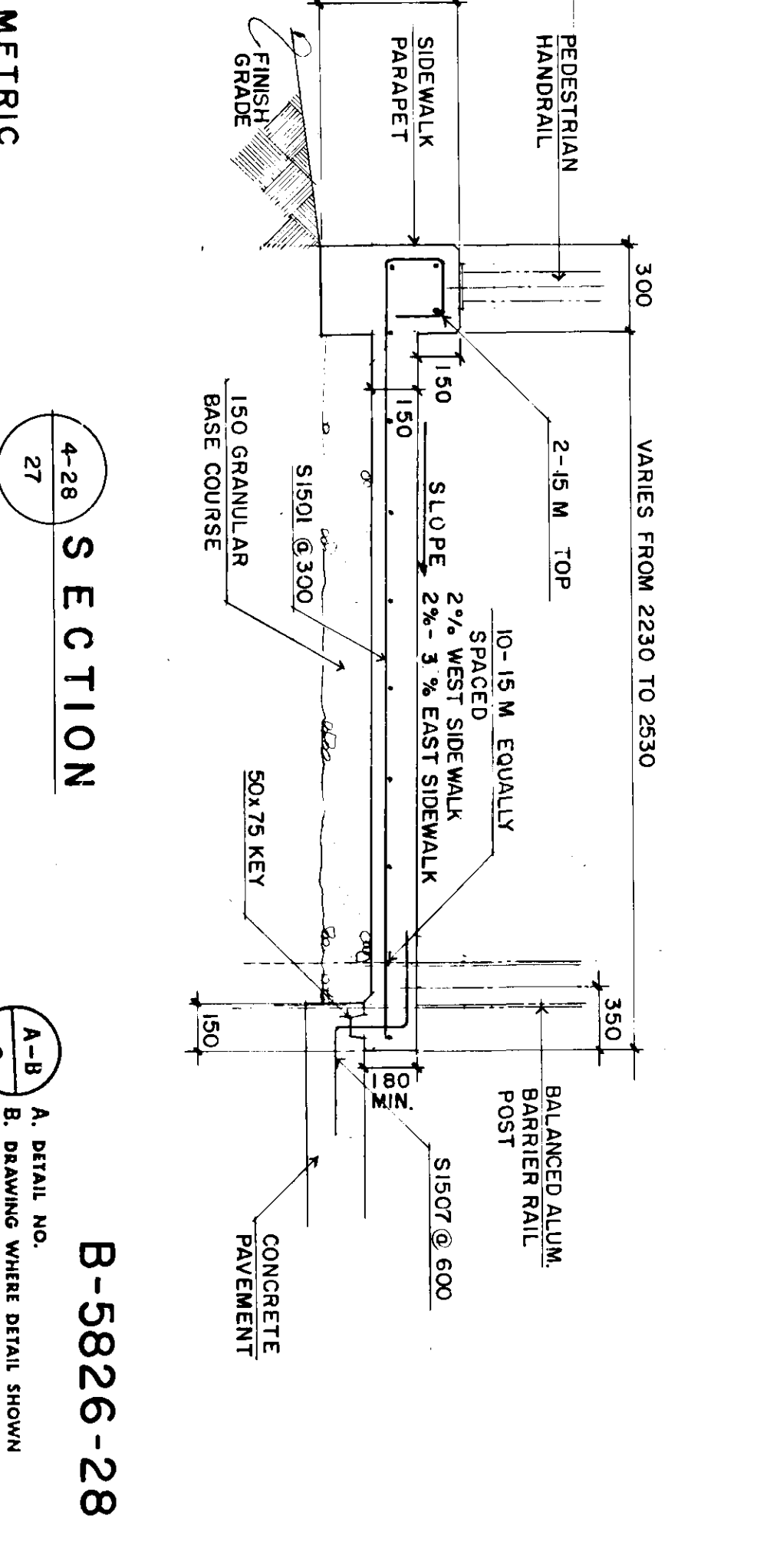
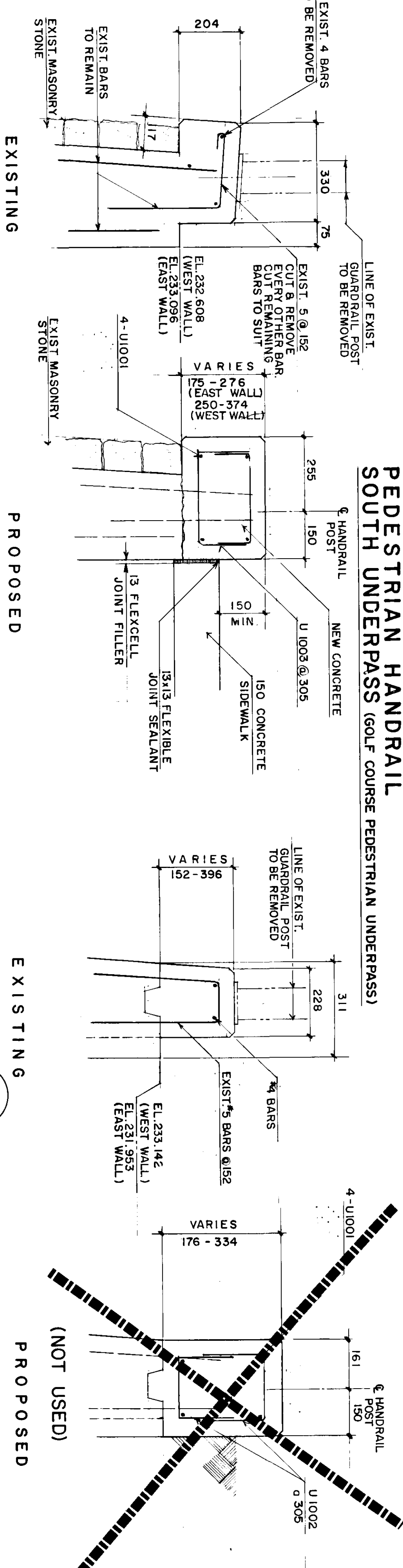
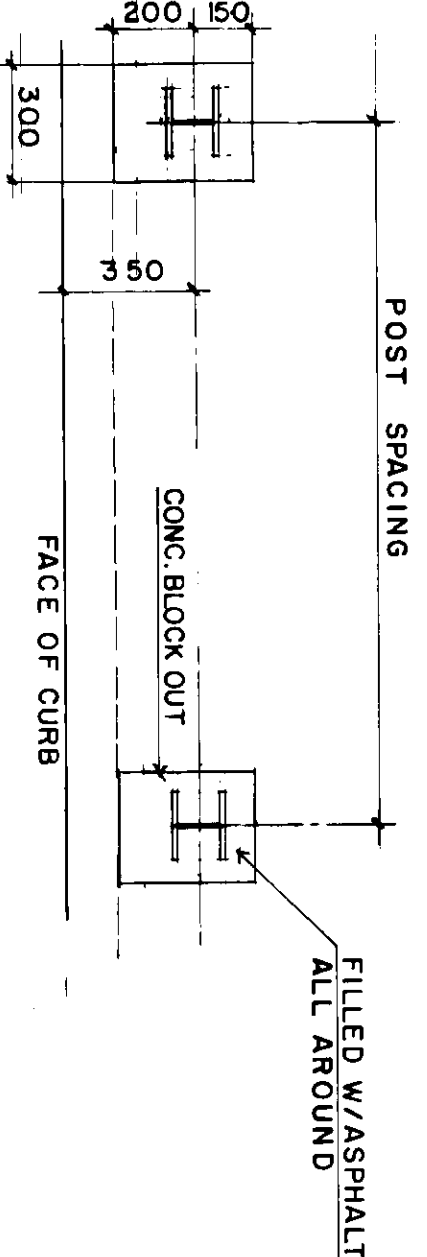
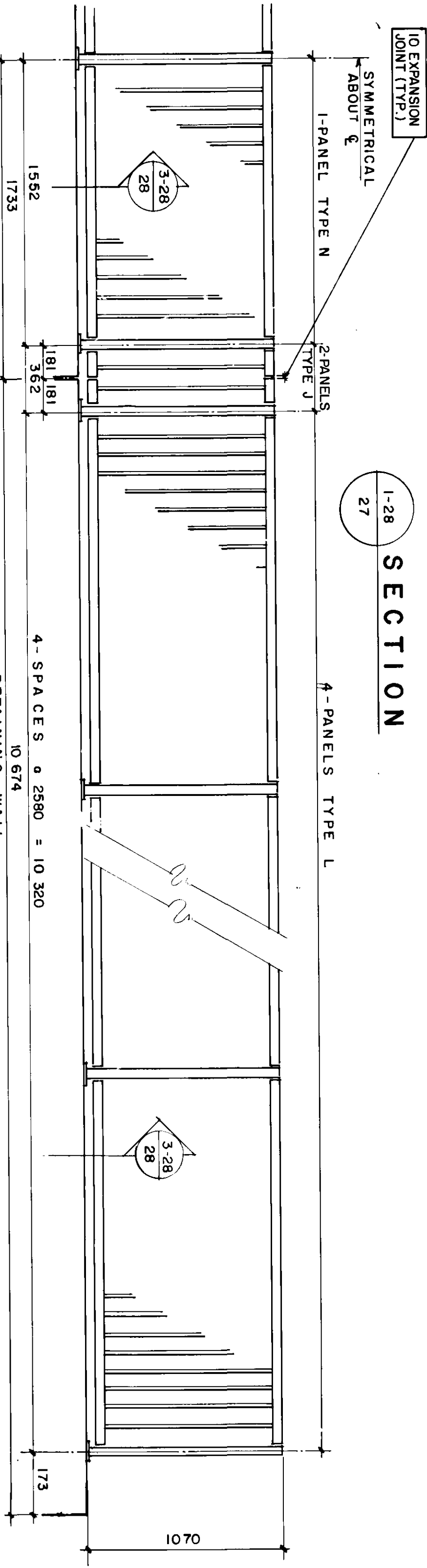
METRIC
 WHOLE NUMBERS INDICATE MILLIMETRES.
 DECIMALIZED NUMBERS INDICATE METRES.





HANDRAIL PANEL DATA

PANEL TYPE	No. REQUIRED	1	2	3	4
J	24	176	1519	12	110
K	4	1579	2320	17	111
L	32	2380	2040	21	109
M	4	2100	1492	12	108
N	4	1552	2040	21	109
O	4	2100			



SECTION 28 SCALE 1:10

SECTION 28 SCALE 1:10

SECTION 27

SECTION 27

REID, CROWTHER & PARTNERS LIMITED
WINNIPEG
AS CONSTRUCTED
DATE: 12/27/87

THESE REVISIONS ARE TO SUPPLEMENT OR CLARIFY THE CONTRACT DOCUMENTS. NEITHER THE CONTRACT PRICE NOR THE CONTRACT TIME ARE AFFECTED.

NO.	REVISIONS	DATE	BY
1	GENERAL REVISIONS	DEC. 87	REID, CROWTHER & PARTNERS LIMITED

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

ST. VITAL TWIN BRIDGE OVER RED RIVER
STRUCTURE REHABILITATION AND RELATED WORKS

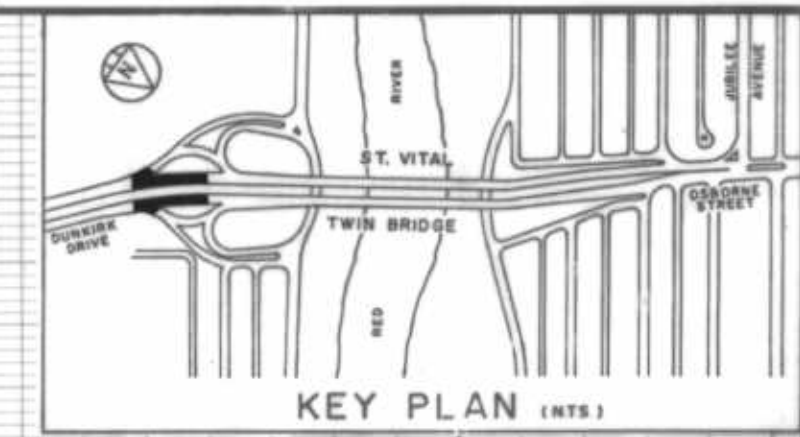
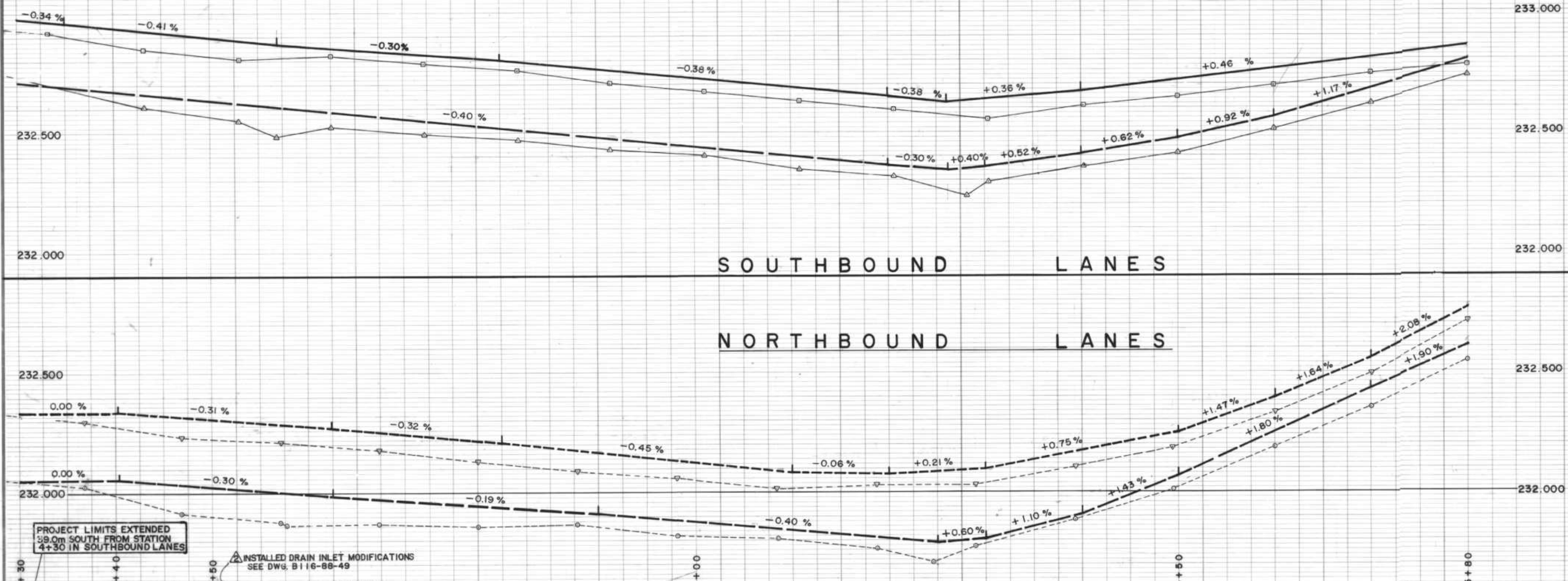
PEDESTRIAN UNDERPASS ALUMINUM
PEDESTRIAN HANDRAIL LAYOUT AND
SIDEWALK DETAILS

ENGINEER'S REGISTRATION NUMBER: 60814 - 23

CITY DRAWING NUMBER: B115-88-28

SHEET 28 OF 48

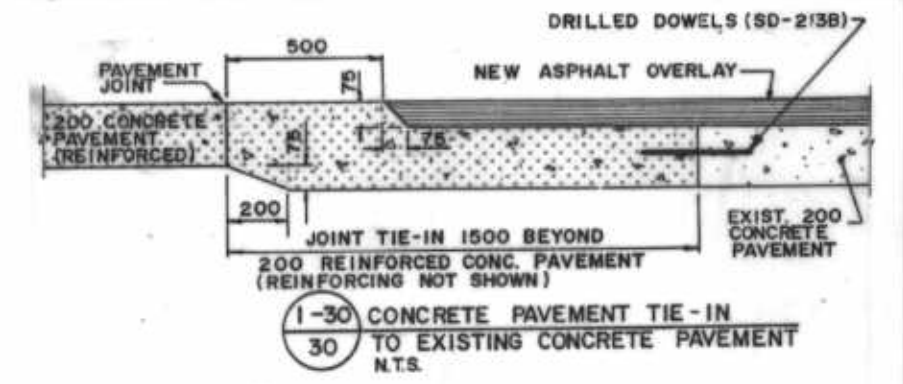
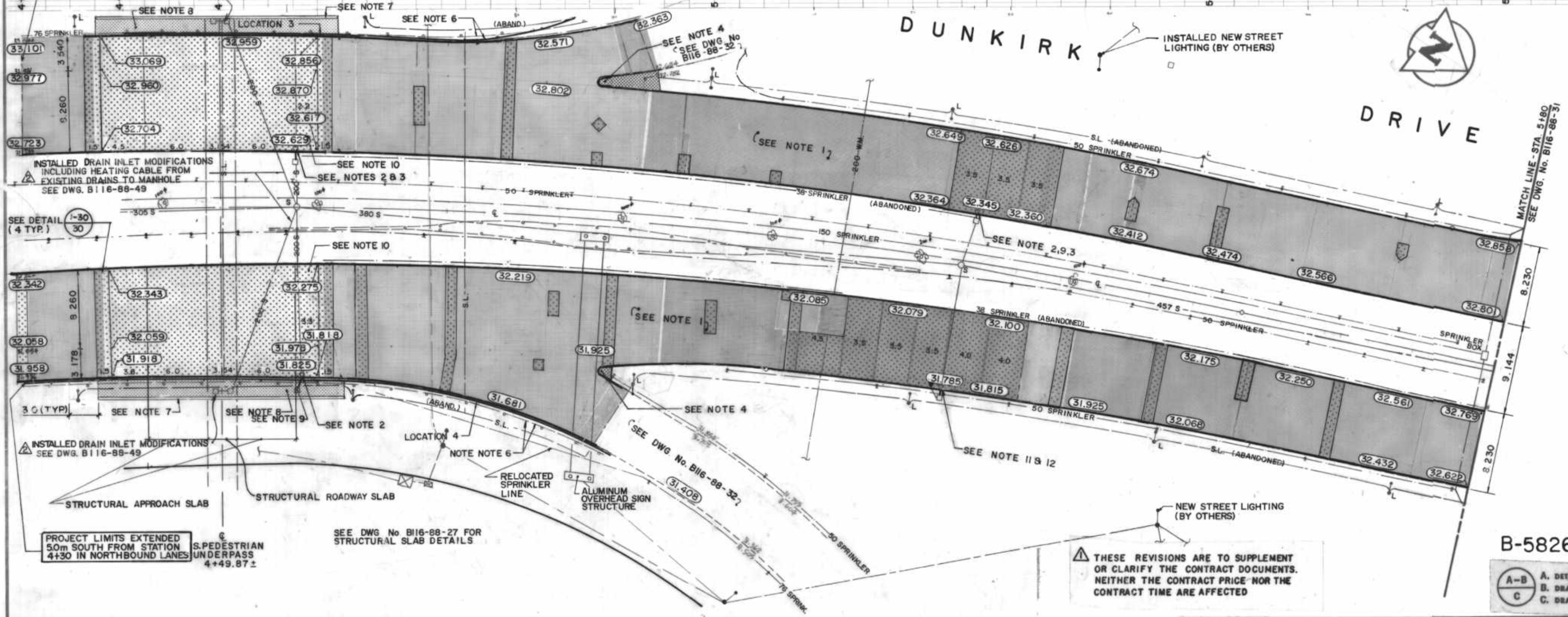
REFERENCE STRUCTURE DRAWING NUMBER: U216-88-06, U217-88-06



REID, CROWTHER & PARTNERS LIMITED
WINNIPEG
AS CONSTRUCTED
SIG. *[Signature]* DATE: *Nov 8/87*

VERTICAL CURVE DATA

LOCATION	STA. P.V.I.	ELEV. P.V.I.	L	A	e
EAST GUTTER	5+36.3	31.771	58.75	2.35	0.173
EAST MEDIAN GUTTER	5+37.4	31.981	57.50	2.30	0.165
WEST MEDIAN GUTTER	5+17.2	32.310	37.50	1.50	0.070



- CONSTRUCTION NOTES:
- OVERLAYED EXISTING CONCRETE PAVEMENT WITH ASPHALTIC CONCRETE OVERLAY.
 - ADJUSTED EXISTING CURB INLET TO GRADE AND INSTALL NEW INLET BOX c/w 250mm LEAD TO EXISTING CATCHBASIN.
 - INSTALLED NEW CURB INLET FRAME.
 - CONSTRUCTED NEW MONOLITHIC CONCRETE BULLNOSE.
 - JOINT SPACING IS 4.5m UNLESS OTHERWISE INDICATED.
 - SALVAGED EXISTING ALUMINUM BALANCED BARRIER RAIL & INSTALLED ALUMINUM BALANCED BARRIER RAIL - SEE DRAWING No. B116-88-42 FOR DETAILS.
 - REMOVED EXISTING GUARDRAIL & REPLACED WITH NEW PEDESTRIAN HANDRAIL - SEE DRAWING No. B116-88-20.

- CONSTRUCTED NEW ASPHALTIC CONCRETE PAVEMENT - SEE DRAWING No. B116-88-27.
 - ADJUSTED EXISTING CATCHBASIN TO GRADE.
 - CONSTRUCTED NEW 200mm REINFORCED PAVEMENT
 - INSTALLED NEW CURB AND GUTTER INLET c/w 250mm LEAD
 - ABANDONED EXISTING DRAINAGE INLET
- REFERENCE NOTES:
- BASELINE - CENTRELINE OF DUNKIRK DRIVE.
 - LEGAL PLANS 8990, 879, 18016; ATLAS SHEET NO. AE26.
 - ADD 200.000 TO OBTAIN GEODETIC DATUM.
 - R.C.P.L FIELD BOOK NO.'S 3256, 3265, 3397, 3427, 3429, 3511, 3514, 3525, 3530, 3531, 3554.
 - PAVEMENT DIMENSIONS ARE TO BACK OF CURB.

B-5826-30

A. DETAIL NO.
B. DRAWING WHERE DETAIL SHOWN
C. DRAWING WHERE DETAIL TAKEN

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

150 mm W.M.	WATERMAIN	150 mm W.M.	HYDRO	150 mm W.M.	WATERMAIN
300 mm L.D.S.	LAND DRAINAGE SEWER	300 mm L.D.S.	M.T.S.	300 mm L.D.S.	LAND DRAINAGE SEWER
250 mm W.W.S.	WASTE WATER SEWER	250 mm W.W.S.	CONCRETE	250 mm W.W.S.	WASTE WATER SEWER
MANHOLE		PROPERTY LINE		PROPERTY LINE	
CATCH BASIN		ASPHALTIC CONC SIDEWALK		ASPHALTIC CONC SIDEWALK	
CURB INLET		SPRINKLER HEAD		SPRINKLER HEAD	
JUNCTIONS		SPRINKLER		SPRINKLER	
CULVERT		CURB		CURB	
GAS		ELEVATIONS		ELEVATIONS	
EXISTING	LEGEND-PLAN	PROPOSED	EXISTING	LEGEND-PLAN	PROPOSED

LOCATION APPROVED UNDERGROUND STRUCTURES
[Signature]
DATE: *[Date]*

NOTE:
LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION

B.M. ELEV.	54 - 006	228.166
DESIGNED BY	L.R.V.	CHECKED BY D.R.K.
DRAWN BY	S.F.S.	APPROVED BY <i>[Signature]</i>
HOR. SCALE	1:250	AUTHORIZED BY <i>[Signature]</i>
VERTICAL	1:10	STREETS & BRIDGE ENGINEER / DATE
DATE	DEC. 87	ACCEPTED BY <i>[Signature]</i>
NO. REVISIONS		DATE

Reid Crowther
Reid Crowther & Partners Ltd.
Engineers Planners Scientists

DESIGNED BY L.R.V. CHECKED BY D.R.K.
DRAWN BY S.F.S. APPROVED BY *[Signature]*
AUTHORIZED BY *[Signature]*
STREETS & BRIDGE ENGINEER / DATE
ACCEPTED BY *[Signature]*
BRIDGE ENGINEER / DATE



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

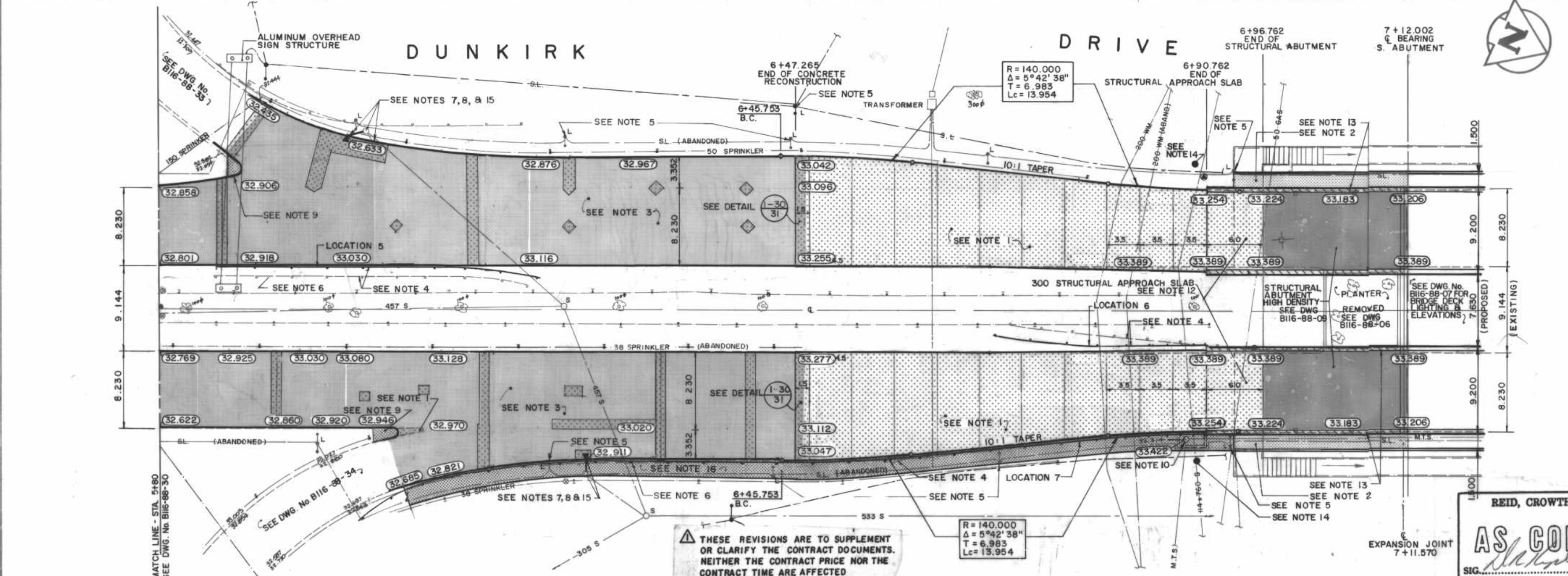
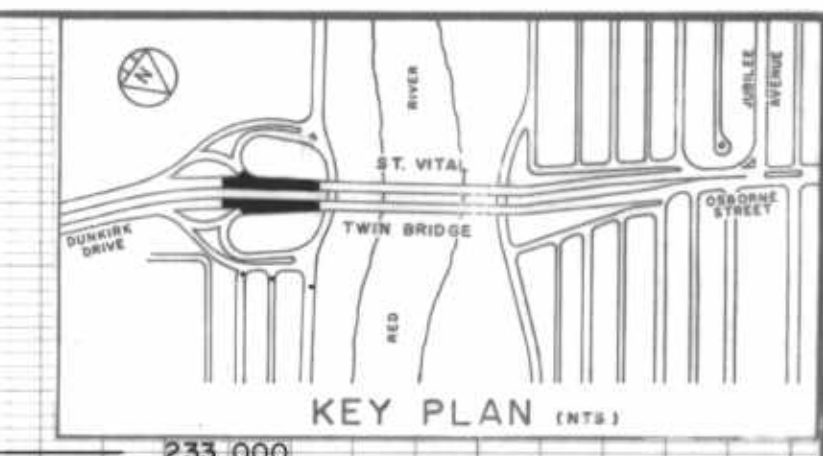
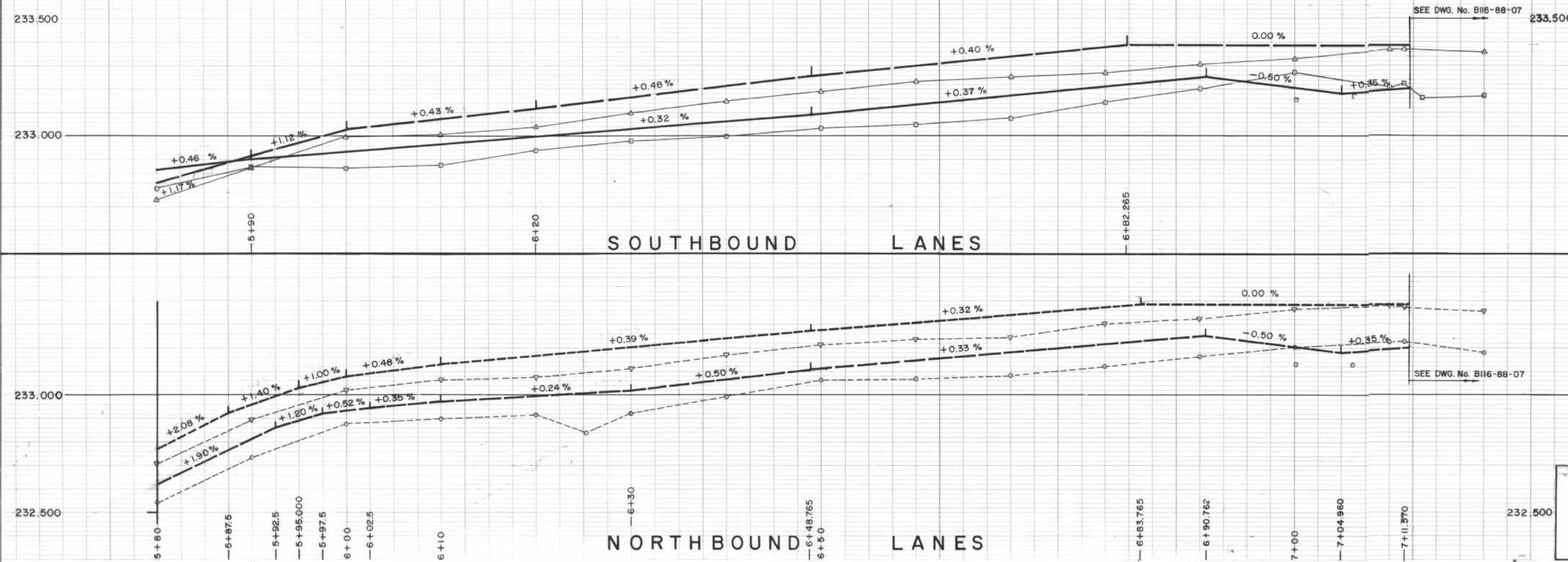
ST. VITAL TWIN BRIDGE OVER RED RIVER
STRUCTURE REHABILITATION AND RELATED WORKS

DUNKIRK DRIVE (SOUTH OF BRIDGE)
STATION 4+30 TO STATION 5+80

CITY DRAWING NUMBER
B116-88-30
SHEET 30 OF 48

REFERENCE STRUCTURE
DRAWING NUMBER
U217-88-08

CONSULTANT DRAWING NO.
60814-30



- CONSTRUCTION NOTES:**
1. CONSTRUCTED NEW 200mm REINFORCED CONCRETE PAVEMENT.
 2. CONSTRUCTED NEW 150mm STRUCTURAL SIDEWALK SLAB c/w HANDRAIL. SEE DRAWING No. B116-88-15 FOR DETAILS.
 3. OVERLAYED EXISTING CONCRETE PAVEMENT WITH NEW ASPHALTIC CONCRETE OVERLAY.
 4. SALVAGED EXISTING ALUMINUM BALANCED BARRIER RAIL AND INSTALLED ALUMINUM BALANCED BARRIER RAIL - SEE DRAWING No. B116-88-43 FOR DETAILS.
 5. RELOCATED EXISTING STREET LIGHT STANDARDS (BY OTHERS).
 6. RELOCATED EXISTING SPRINKLER SYSTEM.
 7. ABANDONED EXISTING DRAINAGE INLET.
 8. INSTALLED NEW CURB & GUTTER INLET c/w NEW 250mm LEAD TO EXISTING CATCHBASIN.
 9. CONSTRUCTED NEW MONOLITHIC BULLNOSE.
 10. ADJUSTED EXISTING MANHOLE TO GRADE (BY OTHERS).
 11. JOINT SPACING TO BE 4.5m UNLESS OTHERWISE INDICATED.
 12. CONSTRUCTED NEW 300mm STRUCTURAL APPROACH SLAB SEE DRAWING No. B116-88-15 FOR DETAILS.
 13. CONSTRUCTED CONCRETE TRAFFIC BARRIERS - SEE DRAWING No. B116-88-16.
 14. INSTALLED SPLICE PIT - SEE DRAWING No. B116-88-24
 15. ADJUSTED EXISTING MANHOLE/CATCHBASIN TO GRADE
 16. CONSTRUCTED NEW 100mm CONCRETE SIDEWALK
- REFERENCE NOTES:**
1. BASELINE - CENTRELINE OF DUNKIRK DRIVE.
 2. LEGAL PLANS 8990, 879, 18016; ATLAS SHEET NO. AE26.
 3. ADD 200.000 TO OBTAIN GEODETIC DATUM.
 4. R.C.P.L. FIELD BOOK NO. S 3256, 3265, 3397, 3427, 3429. 3511, 3514, 3525, 3530, 3531, 3554
 5. PAVEMENT DIMENSIONS ARE TO BACK OF CURB.

⚠ THESE REVISIONS ARE TO SUPPLEMENT OR CLARIFY THE CONTRACT DOCUMENTS. NEITHER THE CONTRACT PRICE NOR THE CONTRACT TIME ARE AFFECTED

REID, CROWTHER & PARTNERS LIMITED
WINNIPEG

AS CONSTRUCTED

SIG: *[Signature]* DATE: *Nov 3/87*

150 mm W.M.	WATERMAIN	150 mm W.M.	HYDRO	150 mm W.M.	WATERMAIN
Hydrant	HYDRANT	Valve	M.T.S.	Hydrant	HYDRANT
Valve	VALVE	Manhole	CONCRETE	Valve	VALVE
Waste Water Sewer	WASTE WATER SEWER	Catch Basin	ASPHALT	Land Drainage Sewer	LAND DRAINAGE SEWER
Geodetic Ctrl. Monument	GEODETIC CTRL. MONUMENT	Curb Inlet	CONC. TRAFFIC BARRIER	Waste Water Sewer	WASTE WATER SEWER
Manhole	MANHOLE	Junctions	STRUCTURAL SIDEWALK	West Gutter	WEST GUTTER
Catch Basin	CATCH BASIN	Existing	SPRINKLER HEAD	East Gutter	EAST GUTTER
Curb Inlet	CURB INLET	Proposed	CONC. WALKS & MEDIANS	West Median Gutter	WEST MEDIAN GUTTER
Junctions	JUNCTIONS		CURB	East Median Gutter	EAST MEDIAN GUTTER
Gas	GAS		ELEVATIONS		
Existing	EXISTING		(33.000)		
Legend-Plan	LEGEND-PLAN				
Proposed	PROPOSED				
Existing	EXISTING				
Legend-Profile	LEGEND-PROFILE				
Proposed	PROPOSED				

LOCATION APPROVED UNDERGROUND STRUCTURES

[Signature] M.A. [Signature]

NOTE: LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION

B.M. ELEV. 54-006
228.166

DESIGNED BY: L.R.V.
CHECKED BY: D.R.K.

DRAWN BY: S.F.G.
APPROVED BY: *[Signature]*

HOR. SCALE: 1:250
VERTICAL: 1:10

2 AS-CONSTRUCTED NOV. 88 P.A.P.
GENERAL REVISIONS 02/22 B.C.
NO REVISIONS DATE BY DATE DEC. 87

Reid Crowther
Reid Crowther & Partners Ltd.
Engineers-Planners-Scientists

PROVINCE OF MANITOBA
C. A. COUTERMANN
REGISTERED PROFESSIONAL ENGINEER
97-12-16

CONSULTANT DRAWING NO. 60814-31

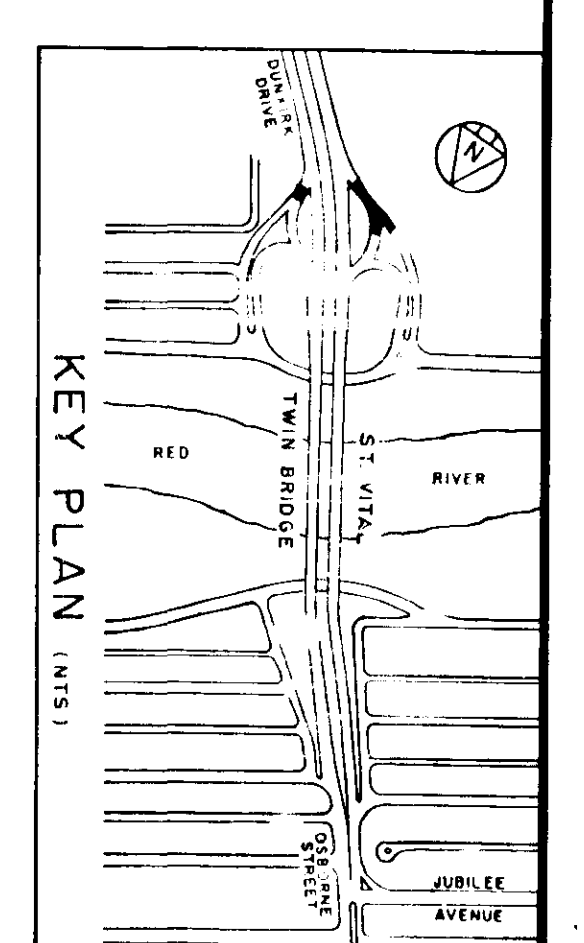
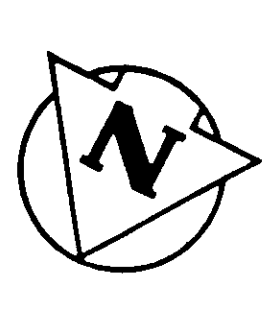
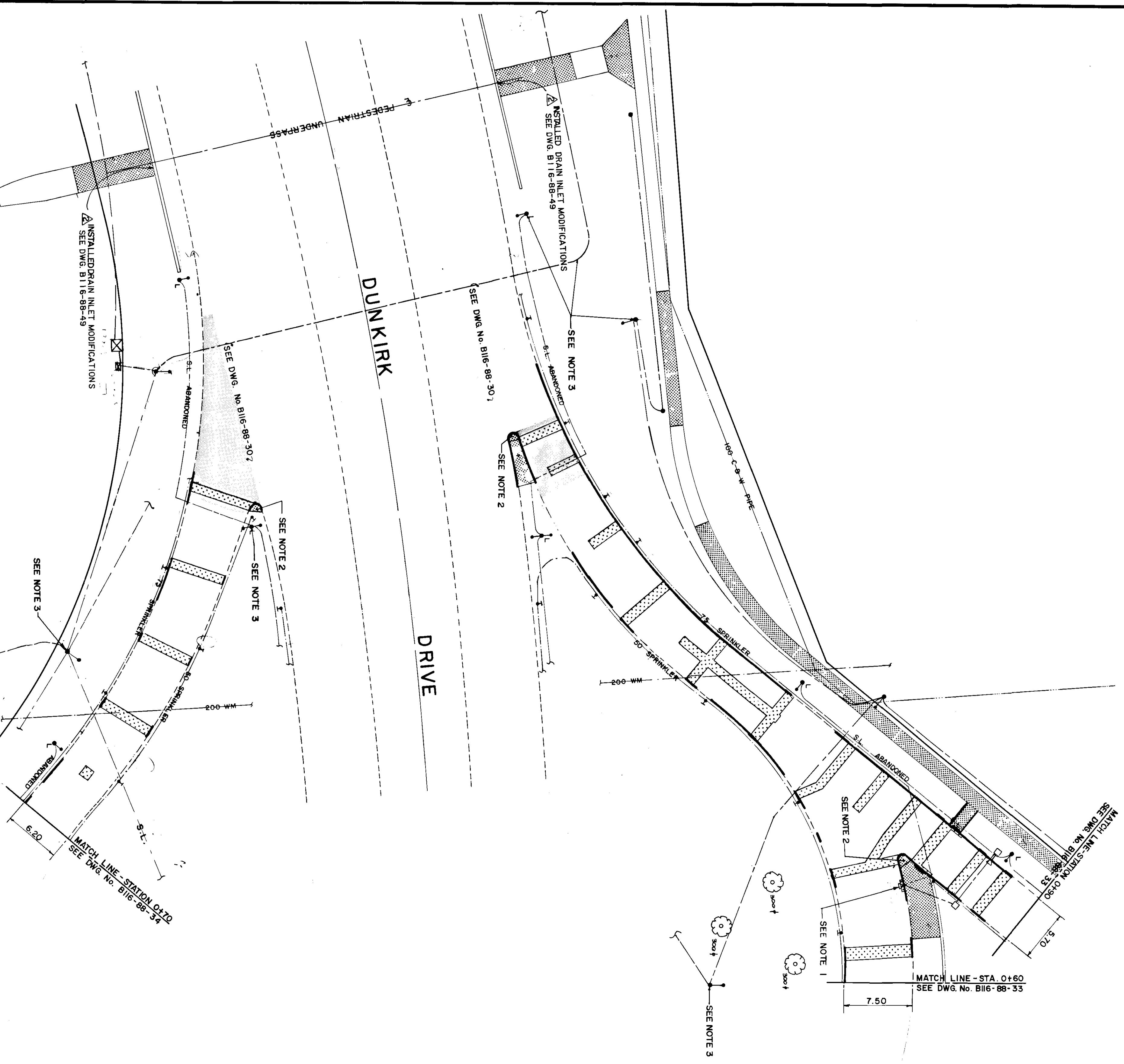
THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
STREETS AND TRANSPORTATION DEPARTMENT

ST. VITAL TWIN BRIDGE OVER RED RIVER
STRUCTURE REHABILITATION AND RELATED WORKS

CITY DRAWING NUMBER: B116-88-31
SHEET 31 OF 48

DUNKIRK DRIVE (SOUTH OF BRIDGE)
STATION 5+80 TO STATION 7+11.57

B-5826-31



LOCATION APPROVED UNDERGROUND STRUCTURES
 May 1988
 COMMITTEE
 DATE

NOTE:
 LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CITY ENGINEER'S OFFICE SHALL NOT BE RESPONSIBLE FOR THE LOCATION OF ALL EXISTING UTILITIES AND SHALL NOT BE RESPONSIBLE FOR THE LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

EXISTING	LEGEND-PLAN	PROPOSED	EXISTING	LEGEND-PLAN	PROPOSED
150 mm W.M.	WATERMAIN	150 mm W.M.	HYDRO	M.T.S.	CONCRETE
150 mm W.M.	HYDRANT	150 mm W.M.	CONCRETE	ASPHALT	CONC. TRAFFIC BARRIER
200 mm L.O.S.	LAND DRAINAGE SEWER	200 mm L.O.S.	CONC. TRAFFIC BARRIER	STRUCTURAL SIDEWALK	STRUCTURAL SIDEWALK
250 mm W.S.	WASTE WATER SEWER	250 mm W.S.	STRUCTURAL SIDEWALK	SPRINKLER HEAD	SPRINKLER HEAD
MANHOLE	MANHOLE	MANHOLE	SPRINKLER	SPRINKLER	SPRINKLER
CATCH BASIN	CATCH BASIN	CATCH BASIN	CURB	CURB	CURB
CURB INLET	CURB INLET	CURB INLET	SIDEWALK	SIDEWALK	SIDEWALK
JUNCTIONS	JUNCTIONS	JUNCTIONS	ELEVATIONS	ELEVATIONS	ELEVATIONS
CULVERT	CULVERT	CULVERT	LEGEND-PLAN	LEGEND-PLAN	LEGEND-PLAN
GAS	GAS	GAS	PROPOSED	PROPOSED	PROPOSED
			NO REVISIONS	NO REVISIONS	NO REVISIONS

B.M. NO.	54-006
ELEV.	228.165
DATE	NOV/88/P.A.P.
DESIGNED BY	G.A.C.
CHECKED BY	D.R.K.
APPROVED BY	[Signature]
DATE	DEC. 87

AS CONSTRUCTED
 REID, CROWTHER & PARTNERS LIMITED
 WINNIPEG
 DATE: May 8/85

THE CITY OF WINNIPEG
 WORKS AND OPERATIONS DIVISION
 STREETS AND TRANSPORTATION DEPARTMENT
 ST. VITAL TWIN BRIDGE OVER RED RIVER
 STRUCTURE REHABILITATION AND
 RELATED WORKS

ENGINEER'S SEAL
 CONSULTANT DRAWING NO. 60814-32

OFF RAMP FROM KINGSTON ROW TO DUNKIRK DR. SOUTHBOUND STATION 0+90 TO DUNKIRK DR.
 OFF RAMP FROM DUNKIRK DR. TO STATION 0+70

REFERENCE STRUCTURE DRAWING NUMBER U217-88-09

- CONSTRUCTION NOTES:**
- ADJUSTED EXISTING CURB INLET TO GRADE
 - CONSTRUCTED CONCRETE BULLNOSE
 - ABANDONED EXISTING STREET LIGHTING AND INSTALLED NEW STREET LIGHTING (BY OTHERS)
- REFERENCE NOTES:**
- BASELINE - EAST BACK OF CURB ON "OFF" RAMP & WEST BACK OF CURB ON "ON" RAMP.
 - LEGAL PLANS 8990, 879, 18016, ATLAS SHEET NO. A26.
 - ADD 200,000 TO OBTAIN GEODETIC DATUM.
 - R.C.P.L. FIELD BOOK NO. S, 3256, 3265, 3397, 3427, 3428, 3514, 3525, 3530, 3531, 3554.
 - PAVEMENT DIMENSIONS ARE TO BACK OF CURB.

B-5826-32
 METRIC

150 mm W.M.	WATERMAIN	150 mm W.M.	HYDRO
300 mm L.S.	VALVE	300 mm L.S.	M.T.S.
300 mm W.W.S.	LAND DRAINAGE SEWER	300 mm W.W.S.	CONCRETE
	WASTE WATER SEWER	300 mm W.W.S.	ASPHALT
	MANHOLE		CONC. TRAFFIC BARRIER
	CATCH BASIN		STRUCTURAL SIDEWALK
	CURB INLET		SPRINKLER HEAD
	JUNCTIONS		SPRINKLER
	CULVERT		CURB
	GAS		SIDEWALK
EXISTING	LEGEND-PLAN	PROPOSED	LEGEND-PLAN
		EXISTING	PROPOSED
			(3,000)

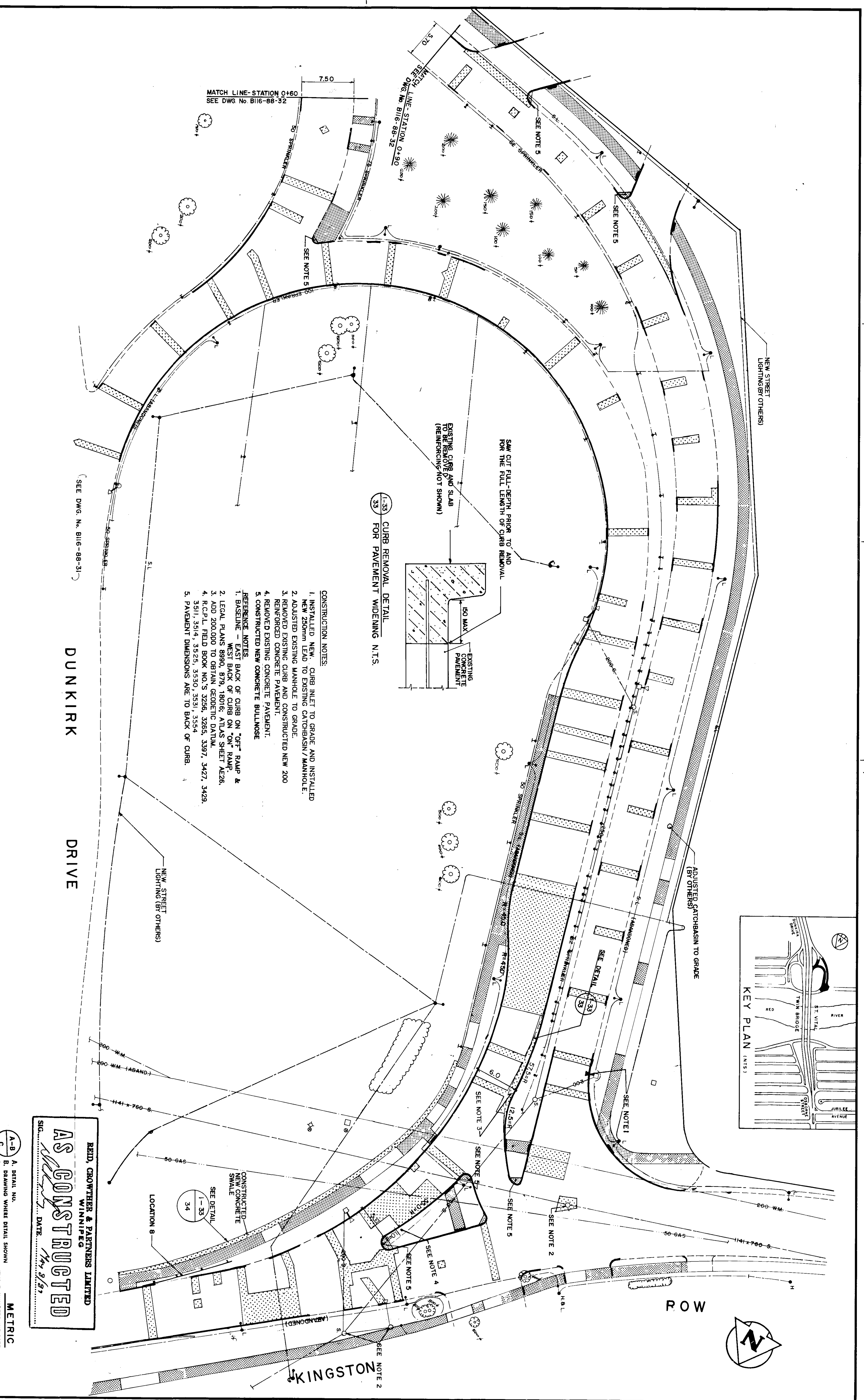
NO.	REVISIONS	DATE	BY
1	AS CONSTRUCTED	06/89 B.C.	

LOCATION APPROVED	B.M.	53-0374
UNDERGROUND STRUCTURES	ELEV.	232.792
DATE	DESIGNED	G.A.C.
DATE	DRAWN	PA.A.P.
DATE	CHECKED	D.R.K.
DATE	APPROVED	
DATE	APPROVED	
DATE	APPROVED	

DESIGNED	G.A.C.
DRAWN	PA.A.P.
CHECKED	D.R.K.
APPROVED	
APPROVED	
APPROVED	

ENGINEER	REGISTERED PROFESSIONAL ENGINEER
CONSULTANT DRAWING NO.	60814-33

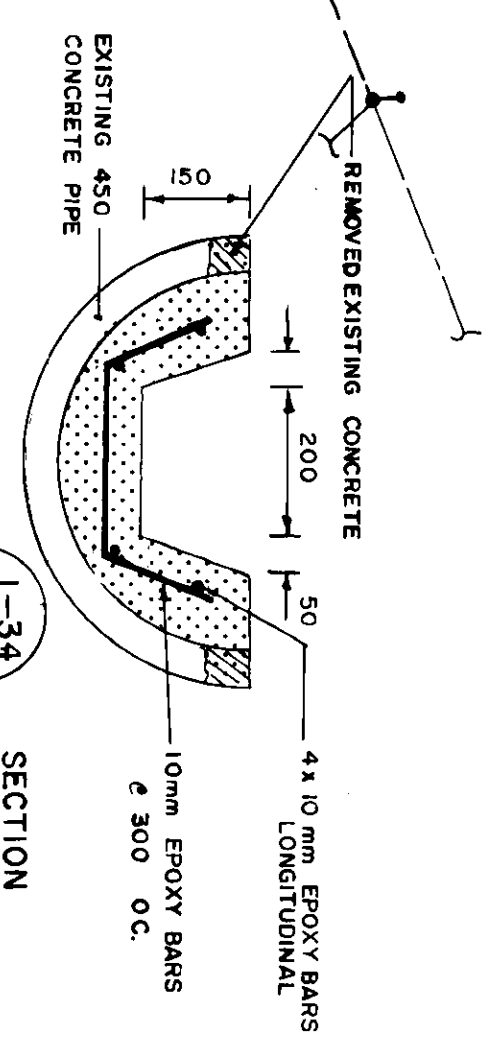
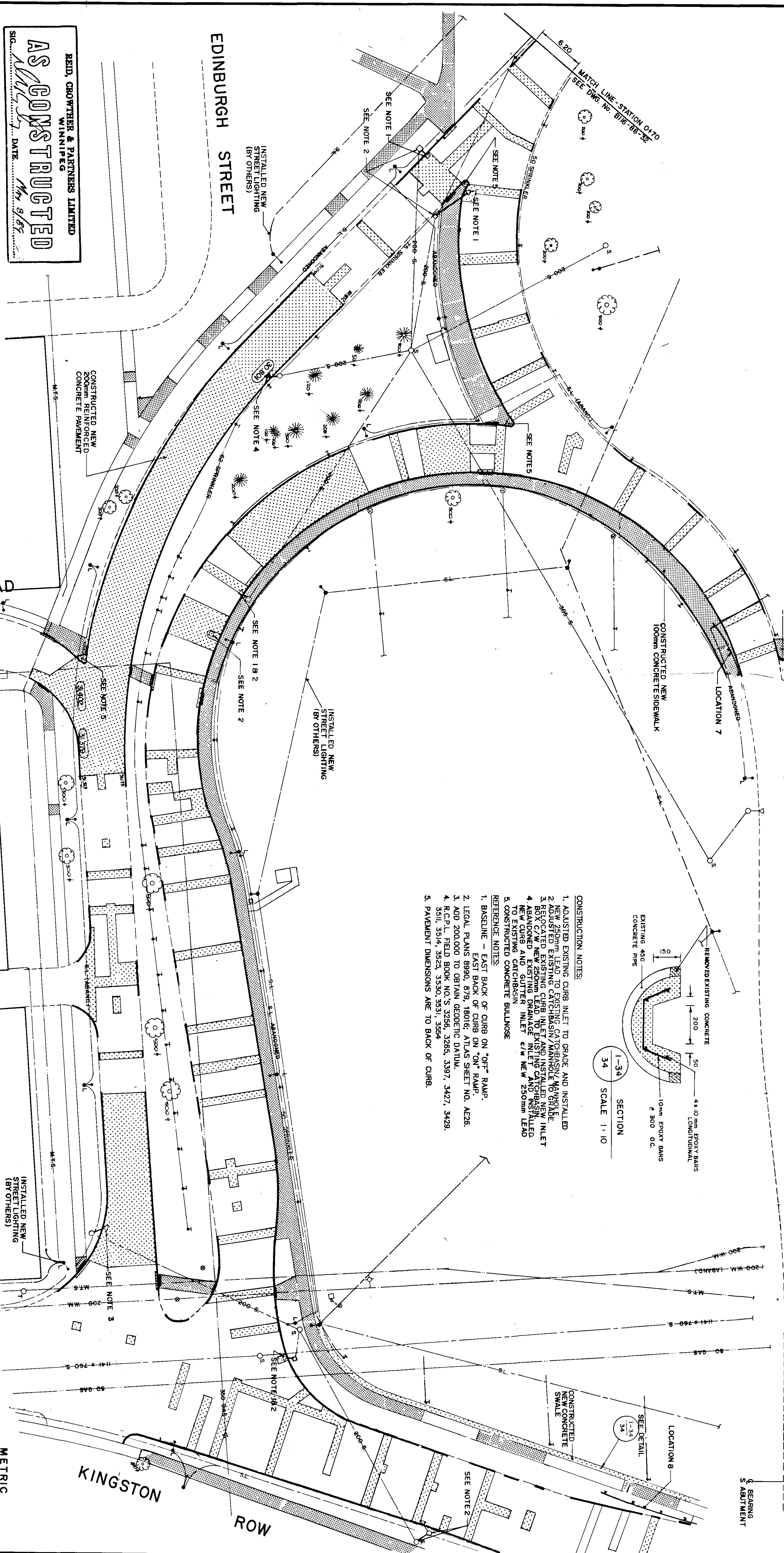
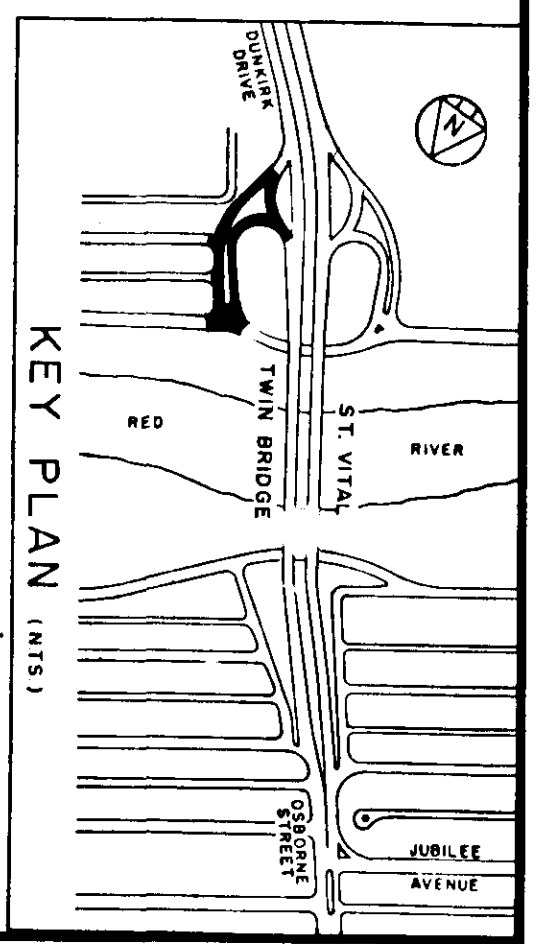
THE CITY OF WINNIPEG	WORKS AND OPERATIONS DIVISION
ST. VITAL TWIN BRIDGE OVER RED RIVER	STREETS AND TRANSPORTATION DEPARTMENT
RELATED WORKS	
CITY DRAWING NUMBER	B116-88-33
SHEET	33 OF 48
DATE	11/1/87
PROJECT	B-5826-33



DUNKIRK DRIVE

(SEE DWG. NO. B116-88-317)

DRIVE



- CONSTRUCTION NOTES:
1. ADJUSTED EXISTING CURB INLET TO GRADE AND INSTALLED NEW 250mm LEAD TO EXISTING CATCHBASIN/MANHOLE TO GRADE.
 2. ADJUSTED EXISTING CATCHBASIN/MANHOLE TO GRADE. BOX C/W NEW 250mm LEAD TO EXISTING CATCHBASIN.
 3. ABANDONED EXISTING DRAINAGE INLET AND INSTALLED NEW CURB AND GUTTER INLET C/W NEW 250mm LEAD TO EXISTING CATCHBASIN.
 4. CONSTRUCTED CONCRETE BULLNOSE.
- REFERENCE NOTES:
1. BASELINE - EAST BACK OF CURB ON "OFF" RAMP.
 2. LEGAL PLANS 8990, 879, 18016, ATLAS SHEET NO. A226.
 3. ADD 200.000 TO OBTAIN GEODEMIC DATUM.
 4. R.C.P. L. FIELD BOOK NO. S 3256, 3265, 3397, 3427, 3429.
 5. S111, S514, S523, S530, S531, S534.
5. PAVEMENT DIMENSIONS ARE TO BACK OF CURB.

AS CONSTRUCTED

REID, CROWTHER & PARTNERS LIMITED
WINNIPEG

SIG. DATE: May 9/89

EXISTING	LEGEND-PLAN	PROPOSED	EXISTING	LEGEND-PLAN	PROPOSED
150mm W.M.	WATERMAIN	150mm W.M.	HYDRO	M.T.S.	CONCRETE
300mm L.O.S.	VALVE	300mm L.O.S.	CONCRETE	ASPHALT	SIDEWALK RAMP
200mm W.M.S.	LAND DRAINAGE SEWER	200mm W.M.S.	STRUCTURAL SIDEWALK	CURB	SPRINKLER HEAD
250mm W.M.S.	WASTE WATER SEWER	250mm W.M.S.	SPRINKLER	CURB	SIDEWALK
MANHOLE	CATCH BASIN	MANHOLE	SPRINKLER	CURB	ELEVATIONS
JUNCTIONS	CURB INLET	JUNCTIONS	SPRINKLER	CURB	PROPOSED
CULVERT	CURB INLET	CULVERT	SPRINKLER	CURB	PROPOSED
GAS	CURB INLET	GAS	SPRINKLER	CURB	PROPOSED

LOCATION APPROVED UNDERGROUND STRUCTURES

DATE: May 9/89

NOTE: LOCATION OF UNDERGROUND STRUCTURES IS APPROVED BASED ON THE BEST INFORMATION AVAILABLE. NO GUARANTEE IS GIVEN THAT THE GIVEN LOCATIONS ARE EXACT. COORDINATION OF EXISTING AND PROPOSED UNDERGROUND UTILITIES WITH CONSTRUCTION BEFORE PROCEEDING WITH CONSTRUCTION.

B.M.	54-006
ELEV.	228.166
NO.	AS CONSTRUCTED
REVISIONS	

Reid Crowther

DESIGNED BY: G.A.C.

DRAWN BY: P.A.A.P.

CHECKED BY: D.R.K.

APPROVED BY: [Signature]

DATE: DEC. 87

ENGINEER'S SEAL

CONSULTANT DRAWING NO. 60814-34

THE CITY OF WINNIPEG

WORKS AND OPERATIONS DIVISION

ST. VITAL TWIN BRIDGE OVER RED RIVER

STREETS AND TRANSPORTATION DEPARTMENT

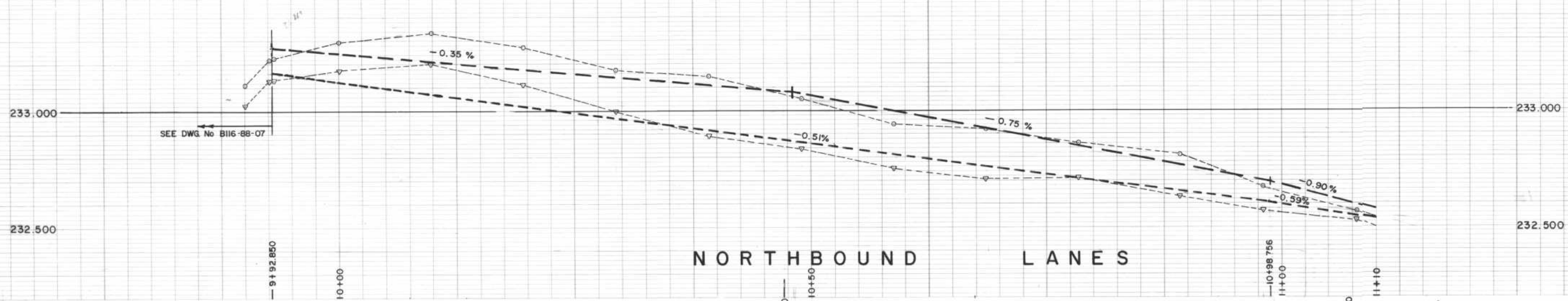
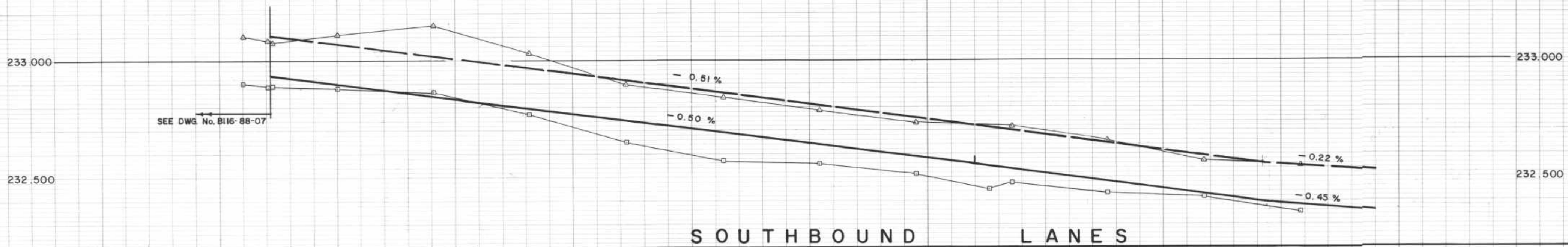
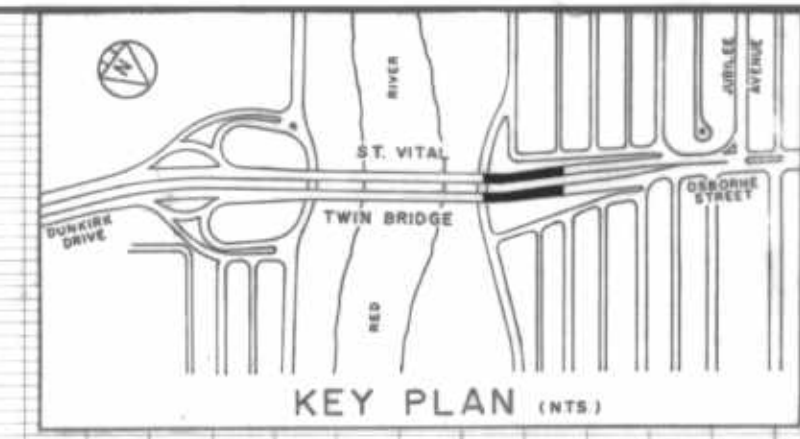
STRUCTURE REHABILITATION AND RELATED WORKS

CITY DRAWING NUMBER B116-88-34 SHEET 34 OF 48

B-5826-34

METRIC

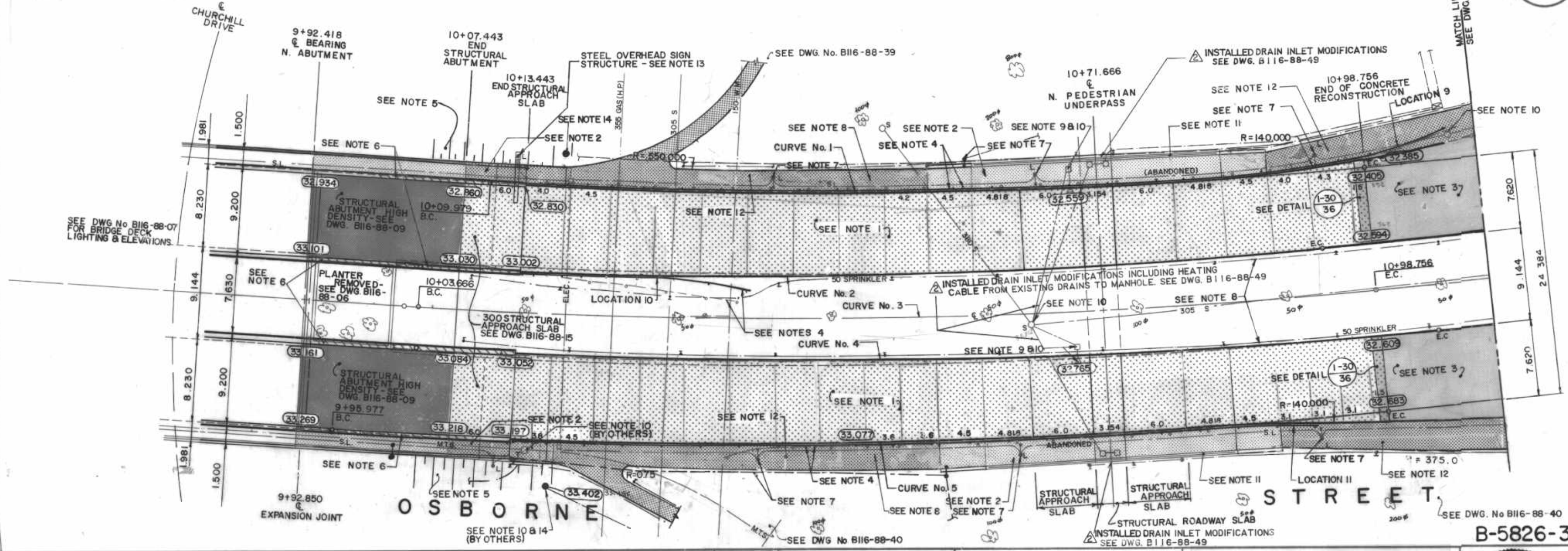
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES



REID, CROWTHER & PARTNERS LIMITED WINNIPEG AS CONSTRUCTED

CURVE DATA table with columns: No., R, T, Lc, Δ. Contains 5 rows of curve data.

THESE REVISIONS ARE TO SUPPLEMENT OR CLARIFY THE CONTRACT DOCUMENTS. NEITHER THE CONTRACT PRICE NOR THE CONTRACT TIME ARE AFFECTED



- CONSTRUCTION NOTES: 1. CONSTRUCTED NEW 200mm REINFORCED CONC. PAVEMENT. 2. CONSTRUCTED NEW 150mm STRUCTURAL SIDEWALK SLAB. 3. REMOVED EXISTING ASPHALT OVERLAY AND RESURFACED WITH NEW ASPHALTIC CONCRETE OVERLAY. 4. SALVAGED EXISTING ALUMINUM BALANCED BARRIER RAIL & INSTALLED ALUMINUM BALANCED BARRIER RAIL - SEE DRAWING No. B116-88-44. 5. REGRADED EMBANKMENT TO SUIT. 6. CONSTRUCTED CONCRETE TRAFFIC BARRIERS - SEE DRAWING No. B116-88-16. 7. RELOCATED EXISTING STREET LIGHT STANDARDS (BY OTHERS). 8. RELOCATED EXISTING SPRINKLER SYSTEM. 9. ABANDONED EXISTING DRAINAGE INLET AND INSTALLED NEW CURB AND GUTTER INLET c/w NEW 250mm LEAD TO CATCHBASIN. 10. ADJUSTED EXISTING CATCHBASIN/MANHOLE TO GRADE. 11. CONSTRUCTED NEW CONCRETE PARAPET, REMOVED EXISTING GUARDRAIL & REPLACED WITH NEW PEDESTRIAN HANDRAIL. SEE DRAWING B116-88-28 FOR DETAILS. 12. CONSTRUCTED NEW CONCRETE SIDEWALK. 13. PAINTED EXISTING STEEL OVERHEAD SIGN STRUCTURE. 14. INSTALLED SPLICE PIT - SEE DRAWING No. B116-88-24

- REFERENCE NOTES: 1. BASELINE - CENTRELINE OF OSBORNE STREET. 2. LEGAL PLAN - ATLAS SHEET No.'S 66,67. 3. ADD 200.000 TO OBTAIN GEODETIC DATUM. 4. R.C.P.L. FIELD BOOK No.'S 3256, 3265, 3397, 3427, 3429. 3511, 3514, 3625, 3630, 3531, 3554. 5. PAVEMENT DIMENSIONS ARE TO BACK OF CURB.

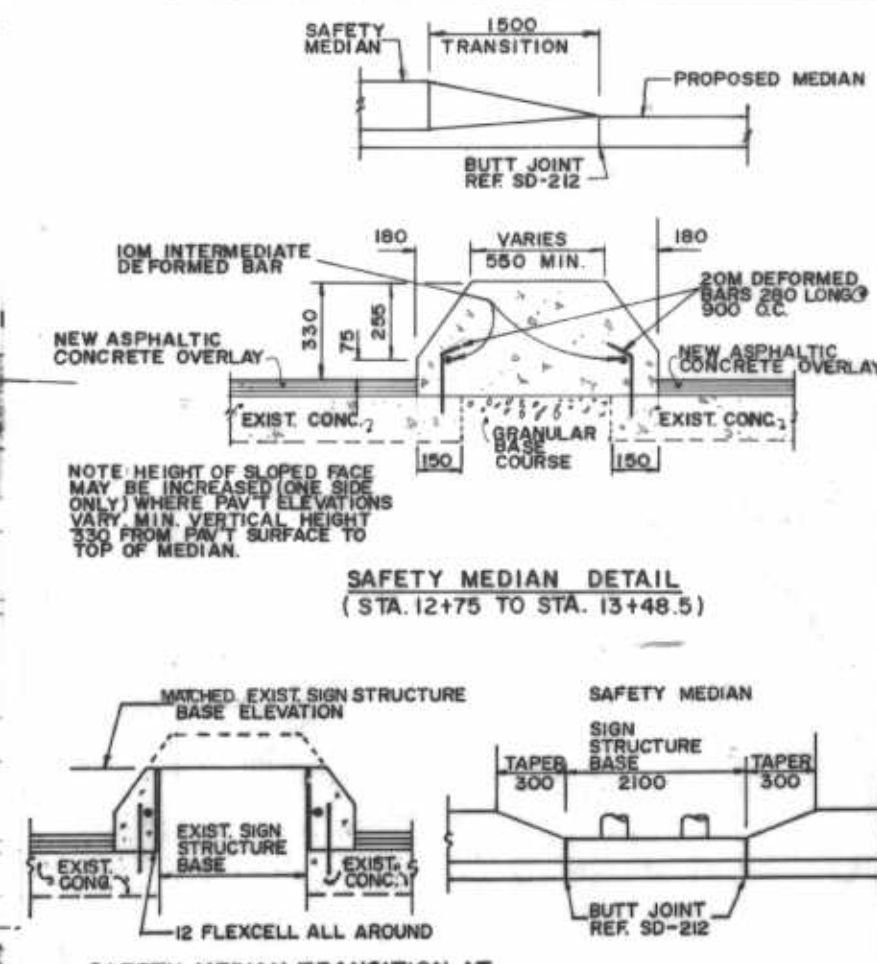
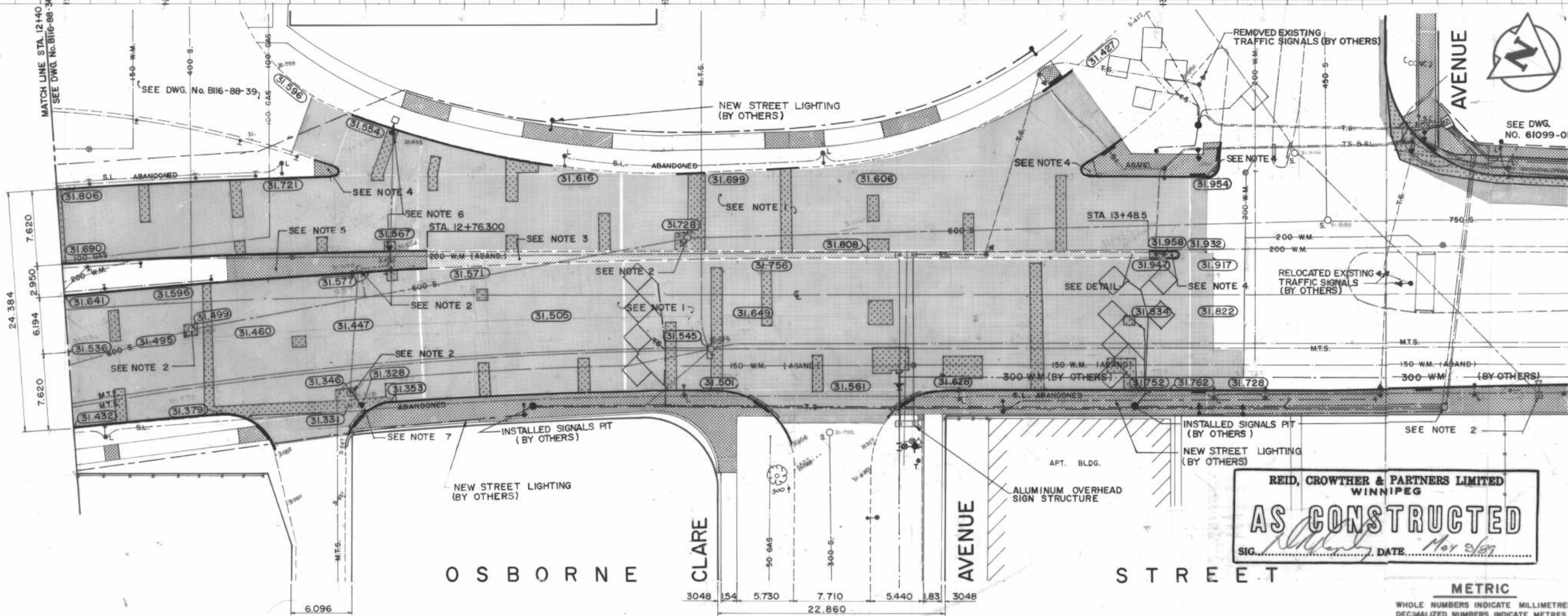
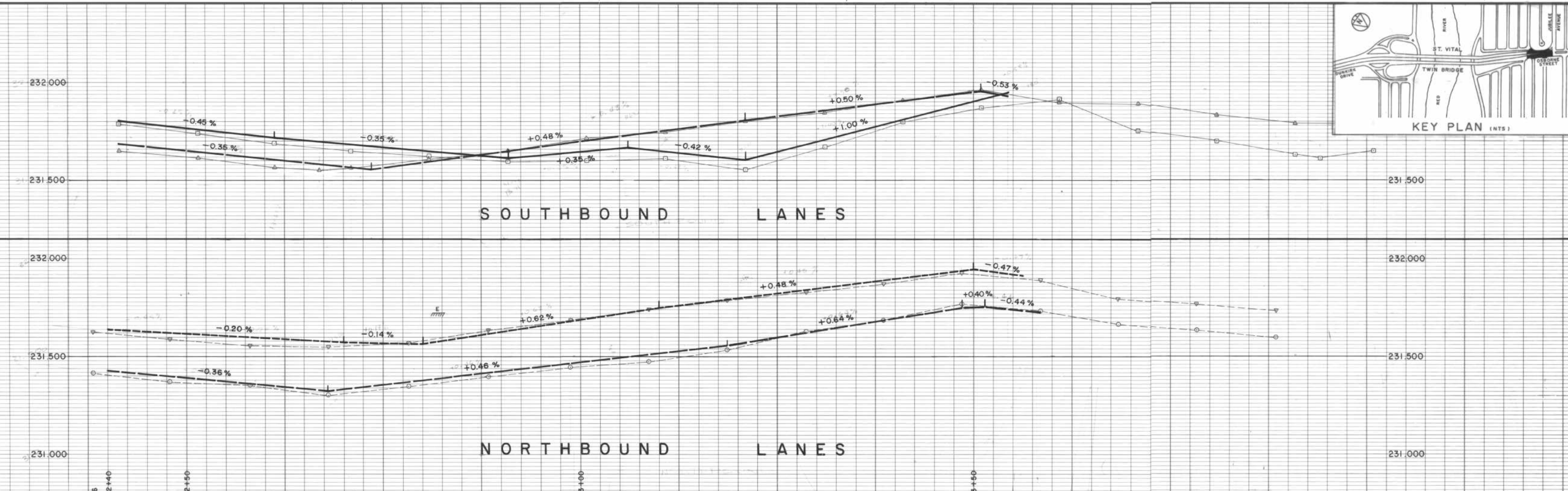
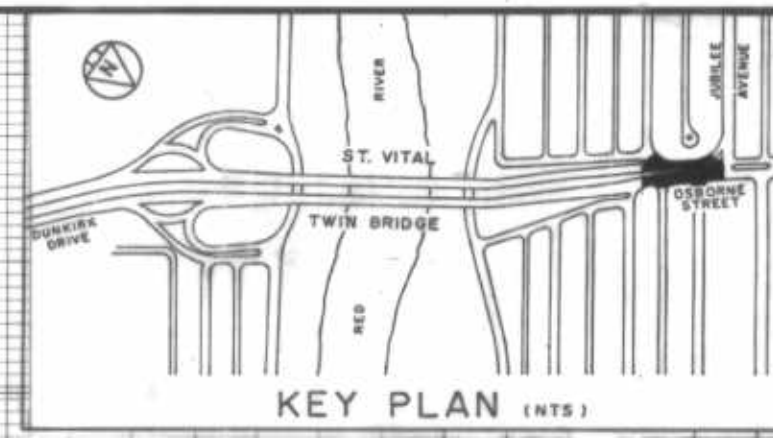
Legend table with columns: EXISTING, LEGEND-PLAN, PROPOSED, EXISTING, LEGEND-PLAN, PROPOSED. Lists symbols for WATERMAIN, HYDRANT, VALVE, LAND DRAINAGE SEWER, WASTE WATER SEWER, MANHOLE, CATCH BASIN, CURB INLET, JUNCTIONS, CULVERT, GAS, HYDRO, M.T.S., CONCRETE, ASPHALT, CONC. TRAFFIC BARRIER, STRUCTURAL SIDEWALK, SPRINKLER HEAD, SPRINKLER, CURB, SIDEWALK, ELEVATIONS, etc.

LOCATION APPROVED UNDERGROUND STRUCTURES SUPPLYING UTILITIES COMMITTEE

Table with columns: NO., REVISIONS, DATE, BY. Includes entries for 'AS CONSTRUCTED' and 'DRAIN INLET MODIFICATIONS'.

Reid Crowther logo and project information including 'DESIGNED BY L.R.V.', 'CHECKED BY D.R.K.', 'DRAWN BY S.F.G.', 'HOR. SCALE 1:250', 'VERTICAL 1:10', 'DATE DEC 87'.

THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION STREETS AND TRANSPORTATION DEPARTMENT. ST. VITAL TWIN BRIDGE OVER RED RIVER STRUCTURE REHABILITATION AND RELATED WORKS. CITY DRAWING NUMBER B116-88-35 SHEET 35 OF 48. OSBORNE STREET (NORTH OF BRIDGE) STATION 9+92.85 TO STATION 11+10. U216-88-08



REID, CROWTHER & PARTNERS LIMITED
WINNIPEG

AS CONSTRUCTED

SIG. *[Signature]* DATE *May 26/87*

- CONSTRUCTION NOTES:**
- REMOVED EXISTING ASPHALTIC CONCRETE OVERLAY AND RESURFACED WITH NEW ASPHALTIC CONCRETE OVERLAY.
 - ADJUSTED EXISTING CATCHBASIN/MANHOLE TO GRADE.
 - INSTALLED SAFETY MEDIAN CURB - SEE DETAIL.
 - CONSTRUCTED CONCRETE BULLNOSE.
 - CONSTRUCTED CONCRETE MEDIAN.
 - ADJUSTED EXISTING INLET TO GRADE AND INSTALLED NEW INLET BOX C/W NEW 250mm LEAD TO EXISTING CATCHBASIN
 - INSTALLED NEW GUTTER INLET C/W NEW 250 LEAD TO EXISTING CATCHBASIN
- REFERENCE NOTES:**
- BASELINE - CENTRELINE OF OSBORNE STREET.
 - LEGAL PLAN - ATLAS SHEET No.'s 66,67.
 - ADD 200.000 TO OBTAIN GEODETIC DATUM.
 - R.C.P.L. FIELD BOOK NO.'S 3256, 3265, 3397, 3427, 3429, 3511, 3514, 3525, 3530, 3531, 3554
 - PAVEMENT DIMENSIONS ARE TO BACK OF CURB.

150 mm W.M.	WATERMAIN	150 mm W.M.	HYDRANT	150 mm W.M.	WATERMAIN
300 mm L.D.S.	LAND DRAINAGE SEWER	300 mm L.D.S.	VALVE	300 mm L.D.S.	LAND DRAINAGE SEWER
250 mm W.W.S.	WASTE WATER SEWER	250 mm W.W.S.	MANHOLE	250 mm W.W.S.	WASTE WATER SEWER
	CATCH BASIN		SPRINKLER HEAD		WEST GUTTER
	CURB INLET		SPRINKLER		EAST GUTTER
	JUNCTIONS		CURB		WEST MEDIAN GUTTER
	SAFETY MEDIAN		SIDE WALK ELEVATIONS		EAST MEDIAN GUTTER
	GAS		(33.000)		
EXISTING	LEGEND-PLAN	PROPOSED	EXISTING	LEGEND-PLAN	PROPOSED

LOCATION APPROVED UNDERGROUND STRUCTURES

[Signature]

DATE

NOTE:
LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION

B.M. ELEV. 53-037	232.792
NO. REVISIONS	DATE BY
1	AS-CONSTRUCTED NOV. 86 P.A.A.P.

Reid Crowther

Reid Crowther & Partners Ltd.
Engineers-Planners-Scientists

DESIGNED BY G.A.C. CHECKED BY D.R.K.

DRAWN BY P.A.A.P. APPROVED BY *[Signature]*

HOR. SCALE 1:250 VERTICAL 1:10

DATE DEC. 87

ENGINEER'S SEAL

PROVINCE OF MANITOBA

[Signature]

CUTHBERTSON

197-12-16

REGISTERED PROFESSIONAL ENGINEER

CONSULTANT DRAWING NO. 60814-37

THE CITY OF WINNIPEG

WORKS AND OPERATIONS DIVISION

STREETS AND TRANSPORTATION DEPARTMENT

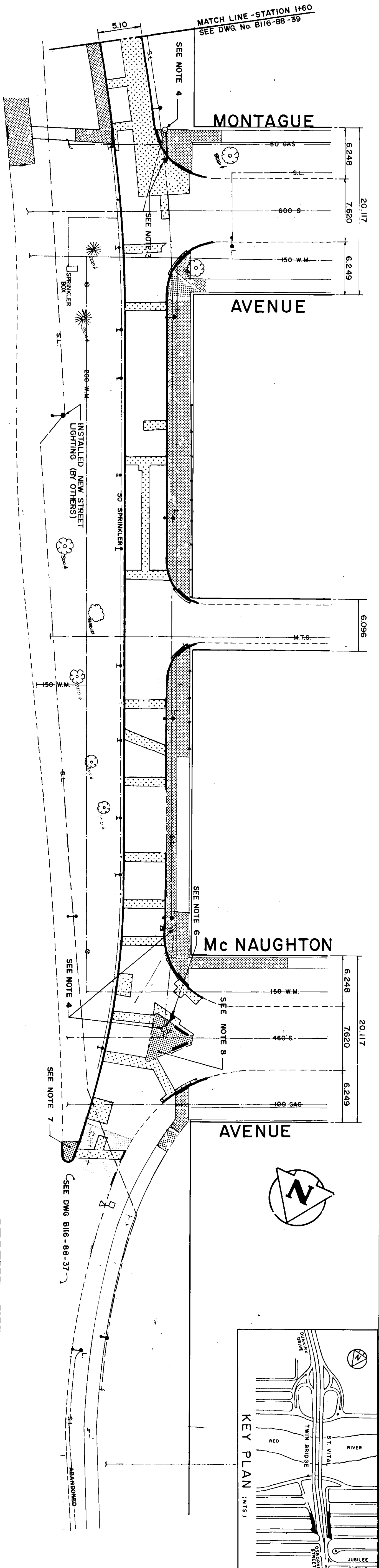
ST. VITAL TWIN BRIDGE OVER RED RIVER

STRUCTURE REHABILITATION AND RELATED WORKS

OSBORNE STREET (NORTH OF BRIDGE) STATION 12+40 TO JUBILEE AVE.

CITY DRAWING NUMBER B116-88-37 SHEET 37 OF 48

B-5826-37



AS CONSTRUCTED
 REID, CROWTHER & PARTNERS LIMITED
 WINNIPEG
 DATE: May 9/85

THE CITY OF WINNIPEG
 WORKS AND OPERATIONS DIVISION
 STREETS AND TRANSPORTATION DEPARTMENT
 ST. VITAL TWIN BRIDGE OVER RED RIVER
 RELATED WORKS

METRIC

WHOLE NUMBERS INDICATE MILLIMETRES
 DECIMALIZED NUMBERS INDICATE METRES

- CONSTRUCTION NOTES:**
1. REMOVED EXISTING ASPHALTIC CONCRETE OVERLAY AND RESURFACE WITH NEW ASPHALTIC CONCRETE OVERLAY.
 2. CONSTRUCTED NEW CONCRETE SIDEWALK.
 3. RELOCATED EXISTING CURB INLET WITH NEW INLET BOX C/W NEW 250 LEAD TO EXISTING CATCHBASIN
 4. ADJUSTED EXISTING CATCHBASIN/MAHOLE TO GRADE
 5. ADJUSTED EXISTING CURB INLET TO GRADE AND INSTALL NEW INLET BOX
 6. INSTALLED NEW CURB INLET WITH NEW INLET BOX C/W NEW 250 LEAD TO EXISTING MAHOLE
 7. CONSTRUCTED NEW MONOLITHIC CONCRETE BULLNOSE
 8. CONSTRUCTED NEW MONOLITHIC CONCRETE MEDIAN
- REFERENCE NOTES:**
1. BASELINE - EAST BACK OF CURB ON "OFF" RAMP & WEST BACK OF CURB ON "ON" RAMP.
 2. LEGAL PLANS 8990, 879, 18016, ATLAS SHEET A226.
 3. ADD 200.000 TO OBTAIN GEODETIC DATUM.
 4. R.C.P.L. FIELD BOOK NO.'S 3256, 3265, 3397, 3427, 3429, 3511, 3514, 3525, 3530, 3531, 3554.
 5. PAVEMENT DIMENSIONS ARE TO BACK OF CURB

EXISTING	PROPOSED	EXISTING	PROPOSED
WATERMAIN	150 mm W.M.	HYDRO	M.T.S.
VALVE	300 mm W.M.	CONCRETE	CONCRETE
LAND DRAINAGE SEWER	300 mm W.M.	ASPHALT	ASPHALT
WASTE WATER SEWER	250 mm W.M.	CONC. TRAFFIC BARRIER	CONC. TRAFFIC BARRIER
MANHOLE	250 mm W.M.	STRUCTURAL SIDEWALK	STRUCTURAL SIDEWALK
CATCH BASIN	250 mm W.M.	SPRINKLER HEAD	SPRINKLER HEAD
CURB INLET	250 mm W.M.	SPRINKLER	SPRINKLER
JUNCTIONS	250 mm W.M.	SIDEWALK	SIDEWALK
CULVERT	250 mm W.M.	ELEVATIONS	ELEVATIONS
GAS	300 mm W.M.	LEGEND-PLAN	LEGEND-PLAN

EXISTING	PROPOSED	EXISTING	PROPOSED
WATERMAIN	150 mm W.M.	HYDRO	M.T.S.
VALVE	300 mm W.M.	CONCRETE	CONCRETE
LAND DRAINAGE SEWER	300 mm W.M.	ASPHALT	ASPHALT
WASTE WATER SEWER	250 mm W.M.	CONC. TRAFFIC BARRIER	CONC. TRAFFIC BARRIER
MANHOLE	250 mm W.M.	STRUCTURAL SIDEWALK	STRUCTURAL SIDEWALK
CATCH BASIN	250 mm W.M.	SPRINKLER HEAD	SPRINKLER HEAD
CURB INLET	250 mm W.M.	SPRINKLER	SPRINKLER
JUNCTIONS	250 mm W.M.	SIDEWALK	SIDEWALK
CULVERT	250 mm W.M.	ELEVATIONS	ELEVATIONS
GAS	300 mm W.M.	LEGEND-PLAN	LEGEND-PLAN

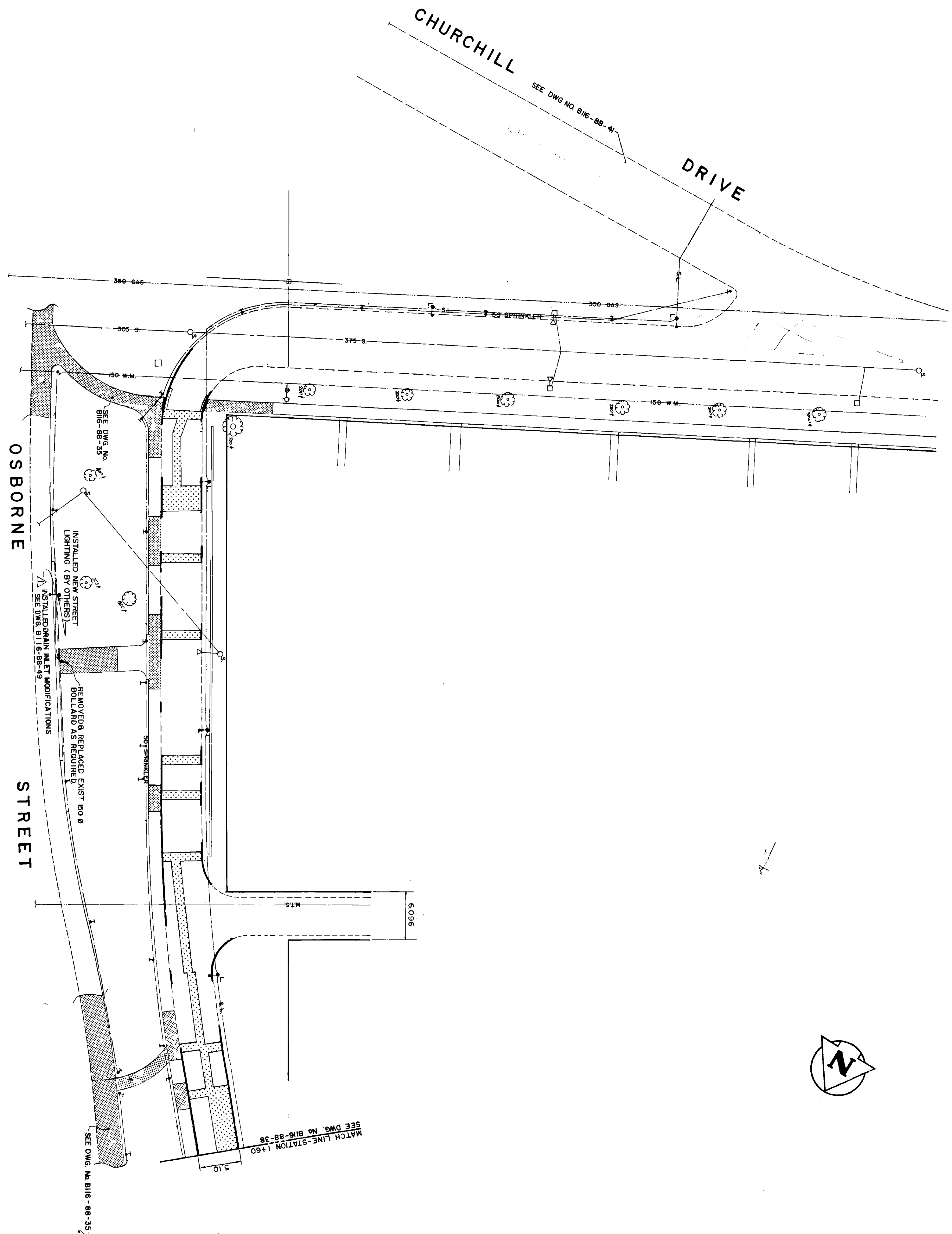
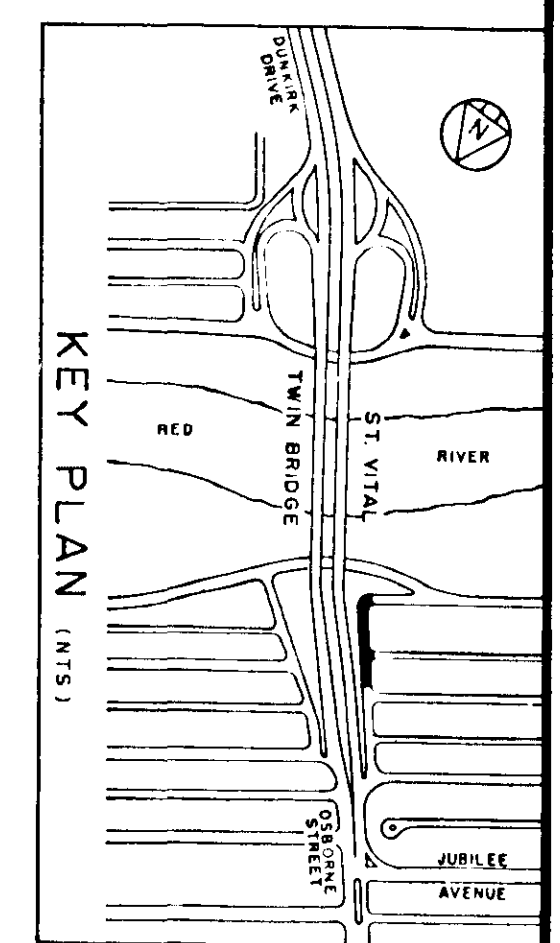
LOCATION APPROVED
 UNDERGROUND STRUCTURES
 DATE: May 9/85

NO.	REVISIONS	DATE	BY
1	AS-CONSTRUCTED	06/89	KB

Reid Crowther
 DESIGNED: G.A.C.
 DRAWN: P.A.A.P.
 HOR. SCALE: 1:250
 VERT. SCALE: 1:250
 DATE: DEC. 87

ENGINEER
 CONSULTANT DRAWING NO. 60814-38

OFF RAMP FROM OSBORNE ST. TO STATION 1460 AND ON RAMP FROM STATION 1460 TO OSBORNE ST.
 B-5826-38



EXISTING		PROPOSED	
150mm W.M.	WATERMAIN	150mm W.M.	HYDRO
300mm L.S.	HYDRANT	CONCRETE	M.T.S.
250mm W.M.S.	LAND DRAINAGE SEWER	ASPHALT	CONCRETE
	WASTE WATER SEWER	SIDEWALK RAMP	ASPHALT
	MANHOLE	STRUCTURAL SIDEWALK	STRUCTURAL SIDEWALK
	CATCH BASIN	SPRINKLER HEAD	SPRINKLER HEAD
	JUNCTIONS	SPRINKLER	SPRINKLER
	CULVERT	CURB	CURB
	GAS	SIDEWALK	SIDEWALK
		ELEVATIONS	ELEVATIONS
		LEGEND-PLAN	LEGEND-PLAN
		EXISTING	PROPOSED

EXISTING		PROPOSED	
150mm W.M.	WATERMAIN	150mm W.M.	HYDRO
300mm L.S.	HYDRANT	CONCRETE	M.T.S.
250mm W.M.S.	LAND DRAINAGE SEWER	ASPHALT	CONCRETE
	WASTE WATER SEWER	SIDEWALK RAMP	ASPHALT
	MANHOLE	STRUCTURAL SIDEWALK	STRUCTURAL SIDEWALK
	CATCH BASIN	SPRINKLER HEAD	SPRINKLER HEAD
	JUNCTIONS	SPRINKLER	SPRINKLER
	CULVERT	CURB	CURB
	GAS	SIDEWALK	SIDEWALK
		ELEVATIONS	ELEVATIONS
		LEGEND-PLAN	LEGEND-PLAN
		EXISTING	PROPOSED

LOCATION APPROVED
 UNDERGROUND STRUCTURES
 SUDY USE STRUCTURES
 COMMITTEE

NOTE:
 LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ON THIS PLAN IS APPROXIMATE. THE LOCATION OF ALL UTILITIES AND EXISTING STRUCTURES MUST BE VERIFIED BY FIELD SURVEYING WITH CONSTRUCTION.

NO REVISIONS

Reid Crowther
 ENGINEER'S SEAL
 DESIGNED BY G.A.C.
 DRAWN BY P.A.P.
 HOR SCALE 1:250
 VERTICAL DATE DEC 87

60814 - 39
 CONSULTANT DRAWING NO.

THE CITY OF WINNIPEG
 WORKS AND OPERATIONS DIVISION
 STREETS AND TRANSPORTATION DEPARTMENT
 ST. VITAL TWIN BRIDGE OVER RED RIVER
 ST. VITAL STRUCTURE REHABILITATION AND RELATED WORKS

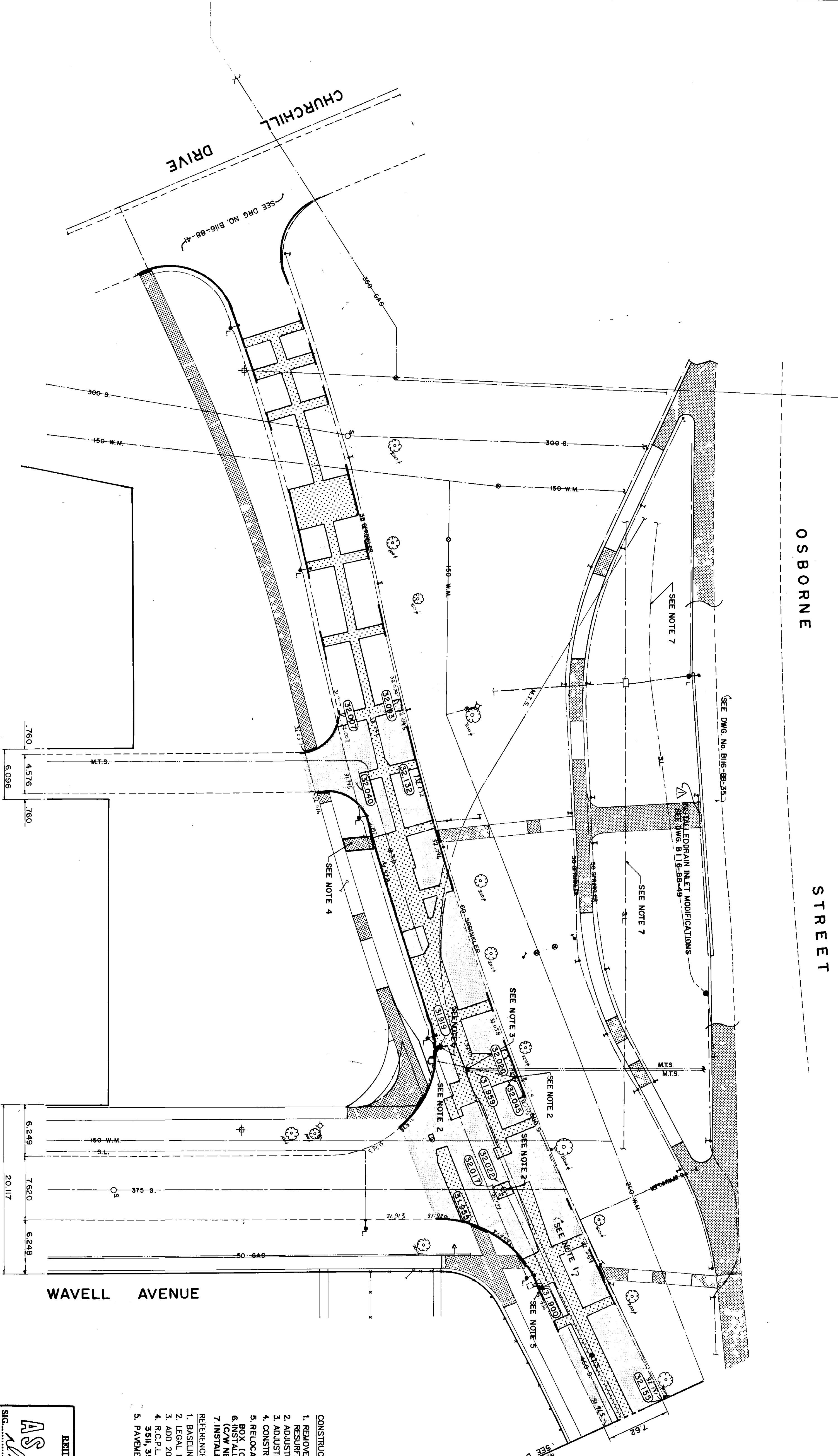
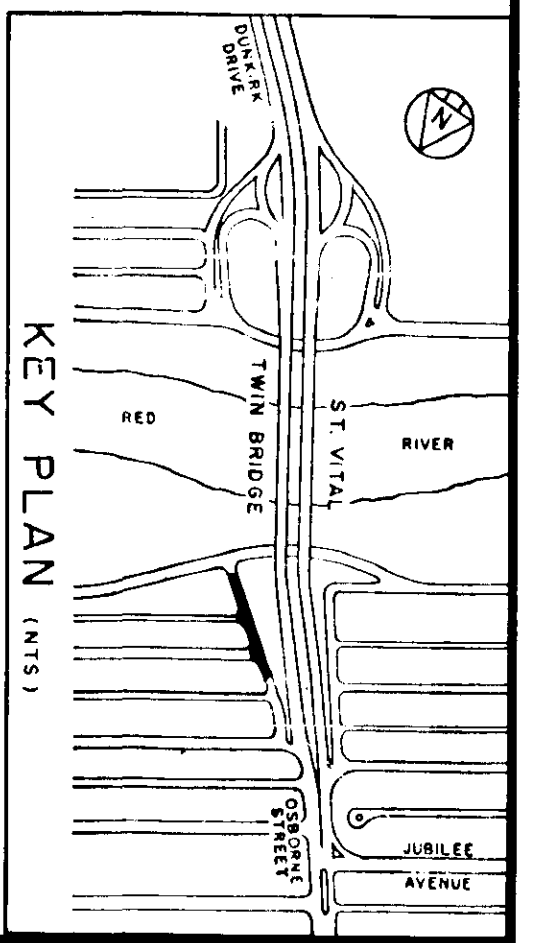
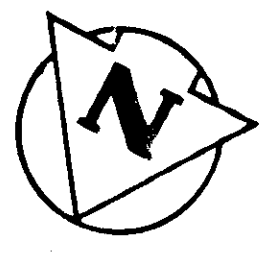
OFF RAMP FROM OSBORNE ST. SOUTHBOUND TO CHURCHILL DR. STATION 1+60 TO CHURCHILL L. DR.

REFERENCE STRUCTURE DRAWING NUMBER U216-88-C9

AS CONSTRUCTED
 REID, CROWTHER & PARTNERS LIMITED
 WINNIPEG
 SIGNED: *W. Wells* DATE: *Nov. 3/89*

- REFERENCE NOTES:
1. BASELINE - WEST BACK OF CURB ON RAMP.
 2. LEGAL PLAN - ATLAS SHEET No. S 66.67.
 3. ADD 200,000 TO OBTAIN GEODETIC DATUM.
 4. R.C.P.L. FIELD BOOK NO. S. 3256, 3265, 3397, 3427, 3429, 3511, 3514, 3523, 3530, 3531, 3554.
 5. PAVEMENT DIMENSIONS ARE TO BACK OF CURB.

METRIC
 WHOLE NUMBERS INDICATE MILLIMETRES
 DECIMALIZED NUMBERS INDICATE METRES



- CONSTRUCTION NOTES:**
1. REMOVE EXISTING ASPHALTIC CONCRETE OVERLAY AND RESURFACED WITH NEW ASPHALTIC CONCRETE OVERLAY.
 2. ADJUSTED EXISTING CATCHBASIN/MANHOLE TO GRADE.
 3. ADJUSTED EXISTING M/S MANHOLE TO GRADE (BY OTHERS).
 4. CONSTRUCTED NEW CONCRETE SIDEWALK.
 5. RELOCATED EXISTING CURB INLET WITH NEW INLET BOX (C/W NEW 250mm LEAD TO EXISTING CATCHBASIN.)
 6. INSTALLED NEW CURB INLET WITH NEW INLET BOX (C/W NEW 250mm LEAD TO EXISTING CATCHBASIN.)
 7. INSTALLED NEW TRAFFIC SIGNALS (BY OTHERS)
- REFERENCE NOTES:**
1. BASELINE - WEST BACK OF CURB ON RAMP.
 2. LEGAL PLAN - ATLAS SHEET No. S. 66.67.
 3. ADD 200.000 TO OBTAIN GEODETIC DATUM.
 4. R.C.P.L. FIELD BOOK NO. S. 3256, 3265, 3397, 3427, 3429, 3511, 3514, 3525, 3530, 3531, 3534
 5. PAYMENT DIMENSIONS ARE TO BACK OF CURB.

REID, CROWTHER & PARTNERS LIMITED
WINNIPEG

AS CONSTRUCTED

SIG. *McLennan* DATE *May 8/88*

B-5826-40

METRIC

WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

WATERMAIN		HYDRO	
150 mm W.M.	HYDRANT	150 mm W.M.	CONCRETE
300 mm W.M.	VALVE	300 mm W.M.	ASPHALT
300 mm W.M.S.	WASTE WATER SEWER	300 mm W.M.S.	SIDEWALK RAMP
300 mm W.M.S.	MANHOLE	300 mm W.M.S.	STRUCTURAL SIDEWALK
300 mm W.M.S.	CATCH BASIN	300 mm W.M.S.	SPRINKLER HEAD
300 mm W.M.S.	CURB INLET	300 mm W.M.S.	SPRINKLER
300 mm W.M.S.	JUNCTIONS	300 mm W.M.S.	CURB
300 mm W.M.S.	CULVERT	300 mm W.M.S.	SIDEWALK
300 mm W.M.S.	GAS	300 mm W.M.S.	ELEVATIONS
EXISTING	LEGEND-PLAN	PROPOSED	LEGEND-PLAN
		5% SLOPE	PROPOSED

LOCATION APPROVAL
UNDERGROUND STRUCTURES
City of Winnipeg
Committee

McLennan
May 8/88

NOTE:
LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE. THE CITY ENGINEERS ARE NOT RESPONSIBLE FOR THE LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES ORIGINATING THE SERVICES.

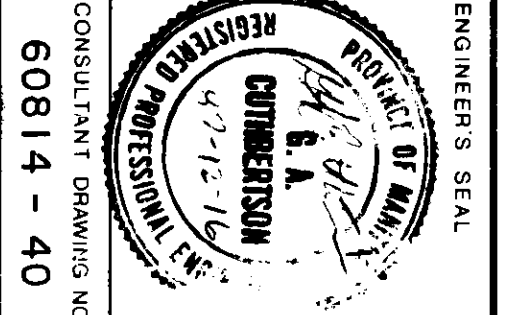
B.M.	53-037
ELEV.	232.792
NO.	2
AS-CONSTRUCTED	OCT/88 RAM
REVISIONS	DATE BY

Reid Crowther

DESIGNED BY G.A.C.
DRAWN BY P.A.A.P.
HON. SCALE: 1:250
VERTICAL

DATE DEC 87

REGISTERED PROFESSIONAL ENGINEER
CONSULTANT DRAWING NO. 60814-40

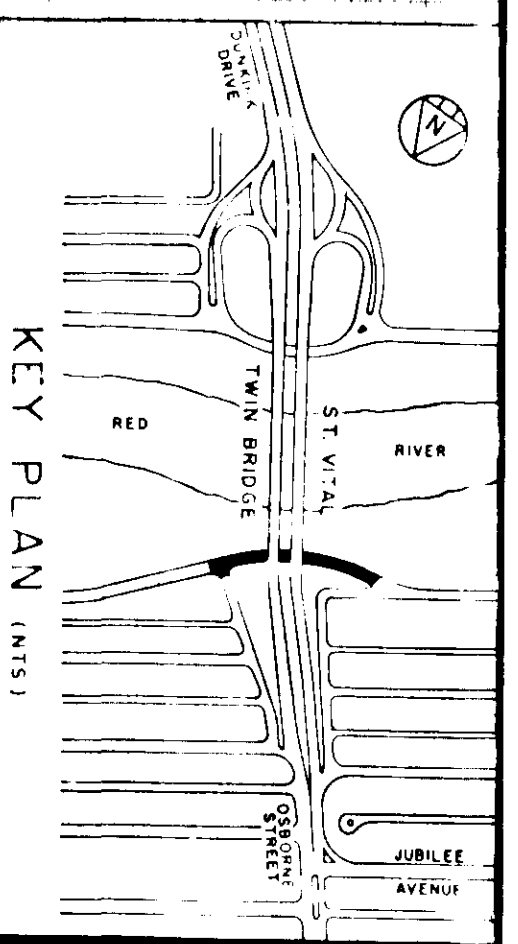


THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
STREETS AND TRANSPORTATION DEPARTMENT

ST. VITAL TWIN BRIDGE OVER RED RIVER
STRUCTURE REHABILITATION AND RELATED WORKS

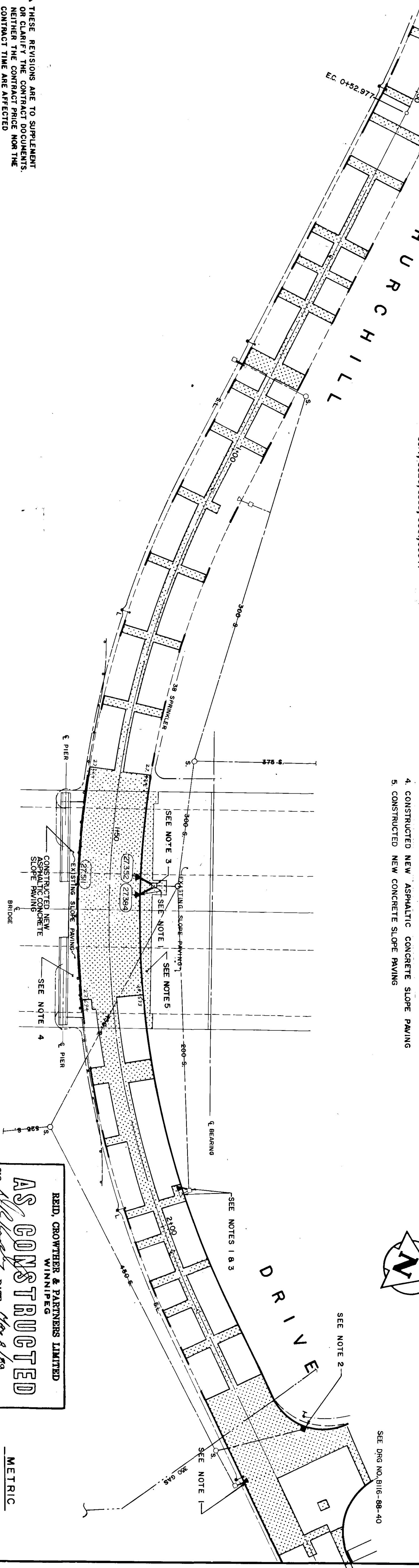
ON RAMP FROM CHURCHILL DR. TO OSBORNE ST NORTHBOUND
CHURCHILL DRIVE TO STATION 0+70

REFERENCE STRUCTURE DRAWING NUMBER
U216-88-10



- REFERENCE NOTES:
1. BASELINE - CENTERLINE OF CHURCH HILL DRIVE.
 2. LEGAL PLAN - ATLAS SHEET NO. S 98.67.
 3. ADD 200,000 TO OBTAIN GEODETIC DATUM.
 4. R.C.P.L. FIELD BOOK NO. S 3256, 3265, 3397, 3427, 3429, 3511, 3514, 3525, 3530, 3531, 3554.

- CONSTRUCTION NOTES:
1. ABANDONED EXISTING DRAINAGE INLET AND INSTALLED NEW CURB AND GUTTER INLET. (C/W NEW 250MM LEAD TO EXISTING CATCHBASIN)
 2. INSTALLED NEW CURB AND GUTTER INLET TO GRADE ON EXISTING CATCHBASIN
 3. ADJUSTED EXISTING CATCHBASIN TO GRADE
 4. CONSTRUCTED NEW ASPHALTIC CONCRETE SLOPE PAVING
 5. CONSTRUCTED NEW CONCRETE SLOPE PAVING



△ THESE REVISIONS ARE TO SUPPLEMENT OR CLARIFY THE CONTRACT DOCUMENTS. NEITHER THE CONTRACT PRICE NOR THE CONTRACT TIME ARE AFFECTED

LEGEND-PLAN	PROPOSED	EXISTING	LEGEND-PLAN	PROPOSED	EXISTING	LEGEND-PROFILE	PROPOSED	EXISTING
WATERMAIN	150mm W.M.	150mm W.M.	HYDRO	CONCRETE	CONCRETE	WATERMAIN	150mm W.M.	150mm W.M.
HYDRANT	150mm W.M.	150mm W.M.	M.T.S.	ASPHALT	ASPHALT	HYDRANT	150mm W.M.	150mm W.M.
VALVE	300mm L.D.S.	300mm L.D.S.	PROPERTY LINE	SURVEY BAR	SURVEY BAR	VALVE	300mm L.D.S.	300mm L.D.S.
LAND DRAINAGE SEWER	250mm W.S.	250mm W.S.	CURB	RAMPS	RAMPS	LAND DRAINAGE SEWER	250mm W.S.	250mm W.S.
WASTE WATER SEWER	250mm W.S.	250mm W.S.	MANHOLE			WASTE WATER SEWER	250mm W.S.	250mm W.S.
CATCH BASIN			CURB INLET			PROFILE		
JUNCTIONS			CULVERT					
GAS								

LOCATION APPROVED
UNDERPINNING STRUCTURES
BY
Michael & Partners Ltd.
DATE
10/15/88

NO.	REVISIONS	DATE	BY
AS-CONSTRUCTED		OCT/88	RAM
GENERAL REVISIONS		02/22/89	BC

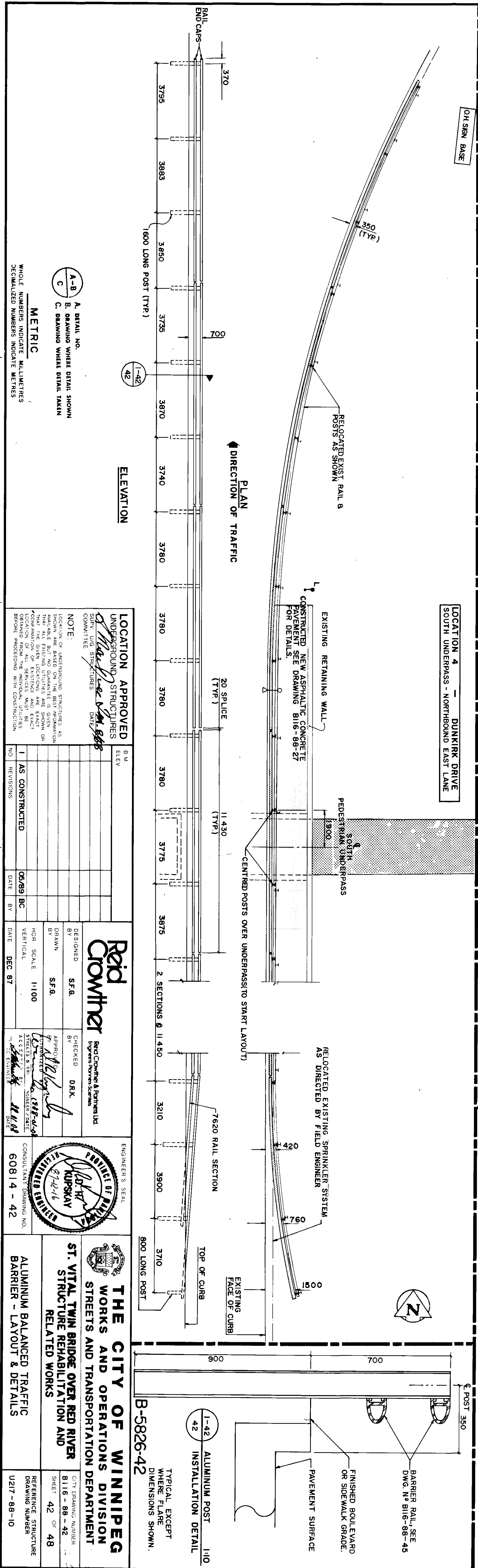
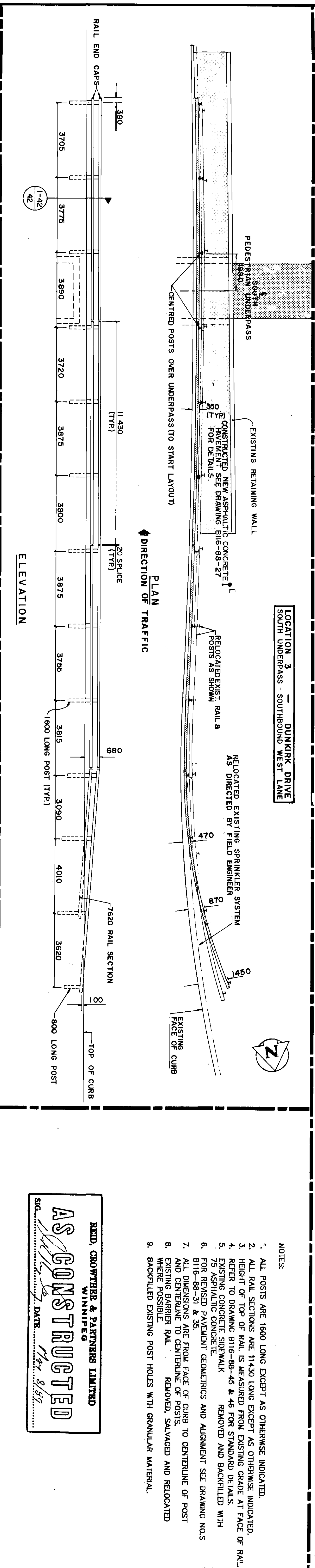
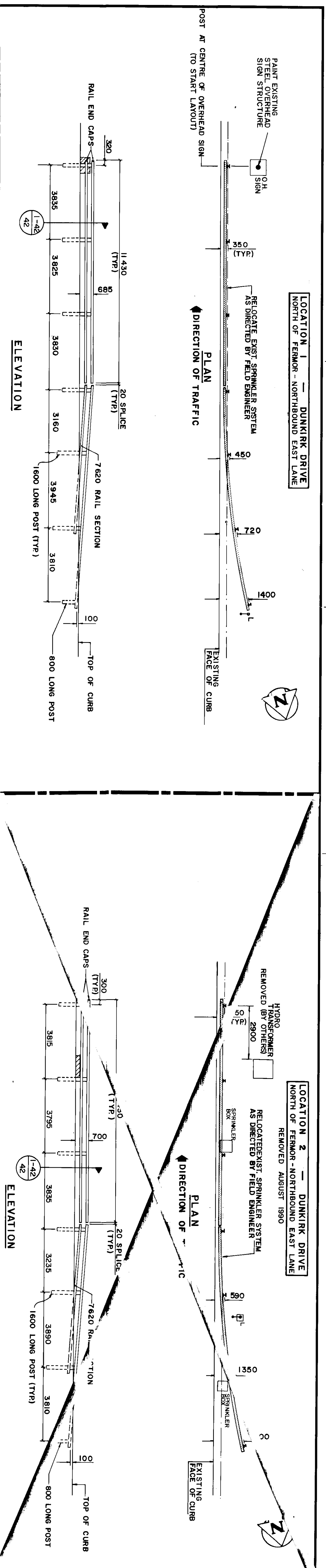
Reid Crowther
DESIGNED G.A.C.
DRAWN S.F.G.
CHECKED D.R.K.
APPROVED BY *[Signature]*
PROJECT NO. 1386-41-01
DATE 11/10/88

ENGINEER'S SEAL
REID, CROWTHER & PARTNERS LTD.
WINNIPEG
REGISTERED PROFESSIONAL ENGINEER
7-12-16
CONSULTANT DRAWING NO. 60814-41

AS CONSTRUCTED
REID, CROWTHER & PARTNERS LIMITED
WINNIPEG
DATE *Nov. 8, 89*

THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
STREETS AND TRANSPORTATION DEPARTMENT
ST. VITAL TWIN BRIDGE OVER RED RIVER
STRUCTURE REHABILITATION AND RELATED WORKS
CHURCH HILL DRIVE
WEST & EAST OF ST. VITAL BRIDGE
CITY DRAWING NUMBER B116-88-41
SHEET 41 OF 48
METRIC
SCALE NUMBERS INDICATE MILLIMETRES
DIMENSIONAL NUMBERS INDICATE METRES

B-5826-41



LOCATION 3 - DUNKIRK DRIVE
SOUTH UNDERPASS - SOUTHBOUND WEST LANE

LOCATION 4 - DUNKIRK DRIVE
SOUTH UNDERPASS - NORTHBOUND EAST LANE

LOCATION 5 - DUNKIRK DRIVE
SOUTH UNDERPASS - NORTHBOUND EAST LANE

NOTES:
1. ALL POSTS ARE 1600 LONG EXCEPT AS OTHERWISE INDICATED.
2. ALL RAIL SECTIONS ARE 11430 LONG EXCEPT AS OTHERWISE INDICATED.
3. HEIGHT OF TOP OF RAIL IS MEASURED FROM EXISTING GRADE AT FACE OF RAIL.
4. REFER TO DRAWING B116-88-45 & 46 FOR STANDARD DETAILS.
5. EXISTING CONCRETE SIDEWALK REMOVED AND BACKFILLED WITH 75 ASPHALTIC CONCRETE.
6. FOR REVISED PAVEMENT GEOMETRICS AND ALIGNMENT SEE DRAWING NO. S B116-88-51 & 53.
7. ALL DIMENSIONS ARE FROM FACE OF CURB TO CENTERLINE OF POST AND CENTERLINE TO CENTERLINE OF POSTS.
8. EXISTING BARRIER RAIL REMOVED, SALVAGED AND RELOCATED WHERE POSSIBLE.
9. BACKFILLED EXISTING POST HOLES WITH GRANULAR MATERIAL.

REID, CROWTHER & PARTNERS LIMITED
WINNIPEG
AS CONSTRUCTED
DATE: *May 8, 87*

LOCATION APPROVED
UNDERGROUND STRUCTURES
City of Winnipeg
Committee

NO.	REVISIONS	DATE	BY
1	AS CONSTRUCTED	05/89 BC	

Reid Crowther
DESIGNED BY: S.F.G.
DRAWN BY: S.F.G.
CHECKED BY: D.R.K.
DATE: DEC 87

ENGINEER'S SEAL
KUPSKAV
60814-42

THE CITY OF WINNIPEG
WORKS AND OPERATIONS DIVISION
STREETS AND TRANSPORTATION DEPARTMENT
ST. VITAL TWIN BRIDGE OVER RED RIVER
STRUCTURE REHABILITATION AND
RELATED WORKS
ALUMINUM BALANCED TRAFFIC
BARRIER - LAYOUT & DETAILS

CITY DRAWING NUMBER
B116-88-42
SHEET 42 OF 48
REFERENCE STRUCTURE
DRAWING NUMBER
U217-88-10

METRIC
A. DETAIL NO.
B. DRAWING WHERE DETAIL SHOWN
C. DRAWING WHERE DETAIL TAKEN
WHOLE NUMBERS INDICATE MILLIMETERS
DECIMALIZED NUMBERS INDICATE METERS

NOTE:
LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE. ALL EXISTING UTILITIES ARE SHOWN ON RECORD DRAWINGS AND EXISTING UTILITIES ARE TO BE DELETED AND RELOCATED PRIOR TO CONSTRUCTION.

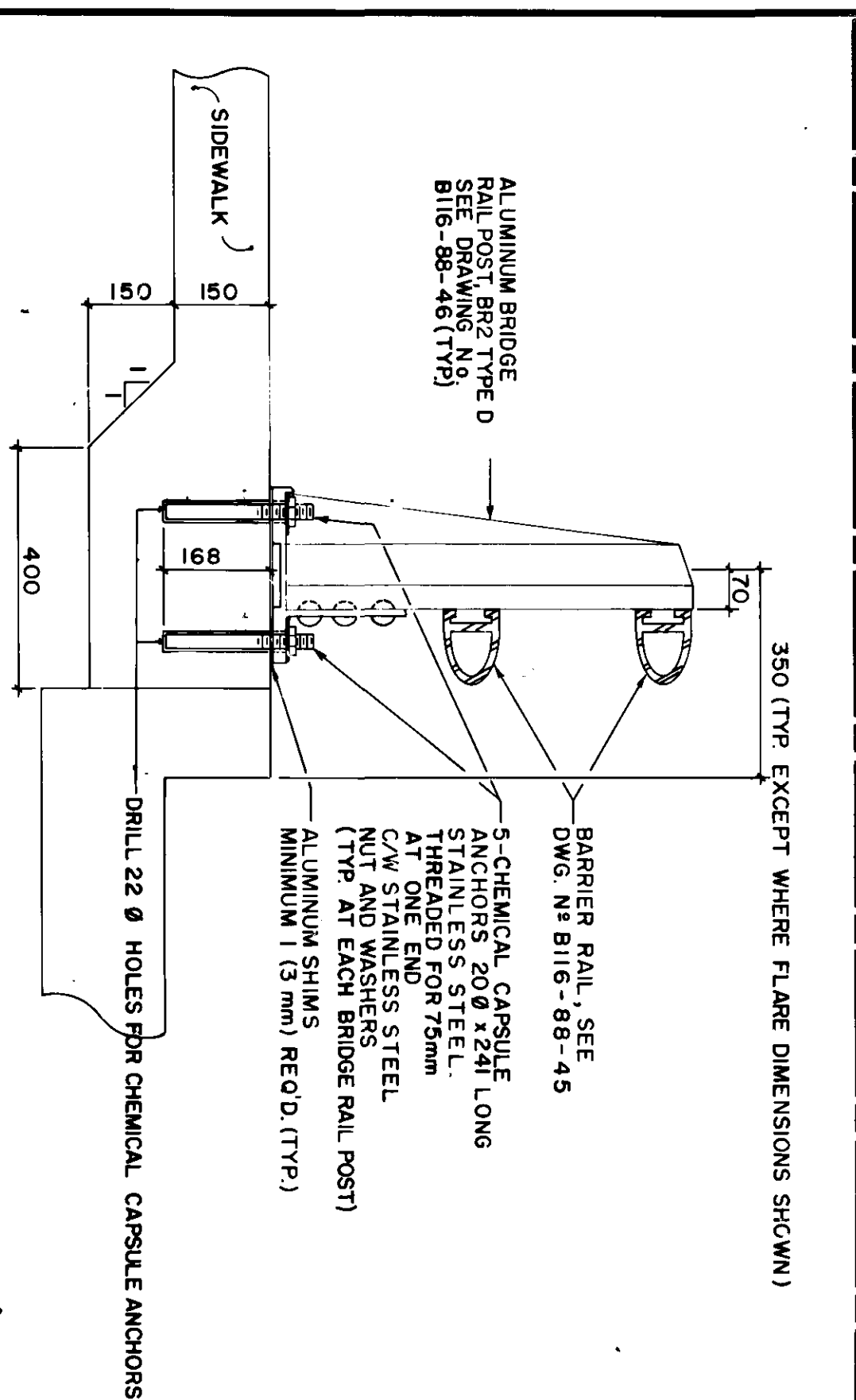
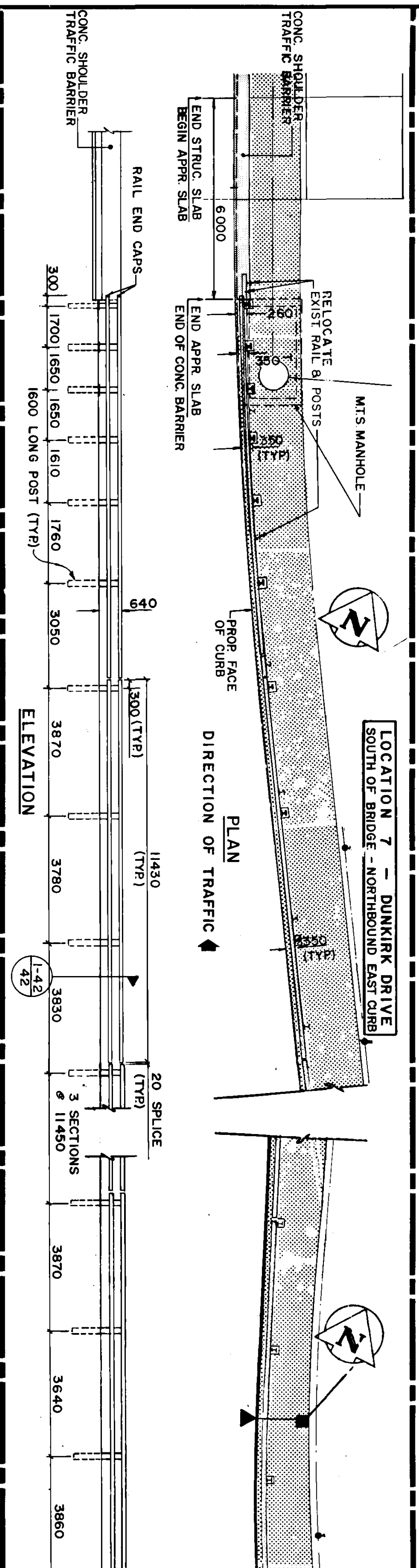
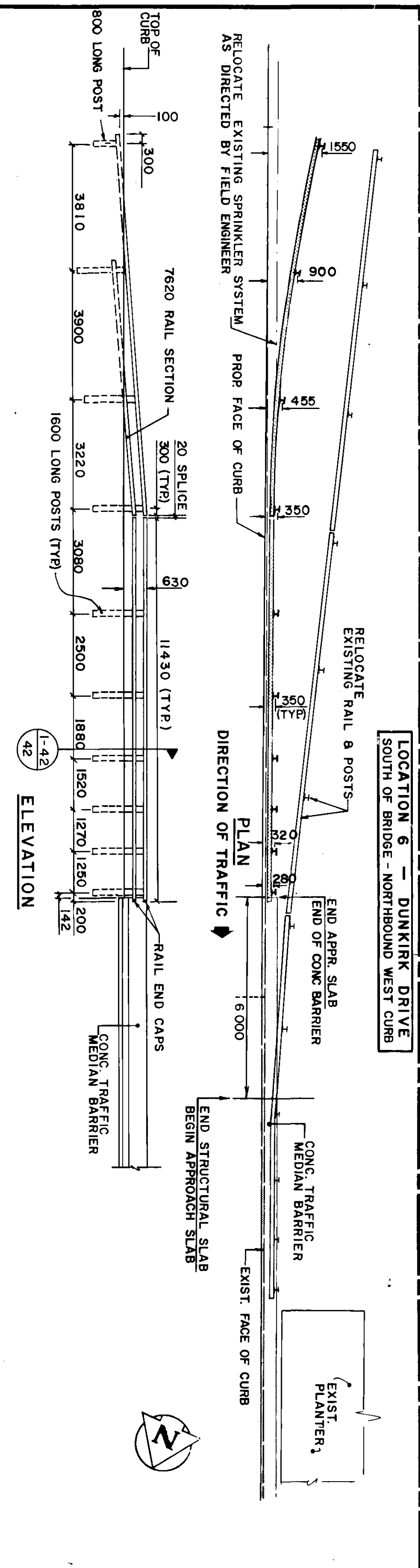
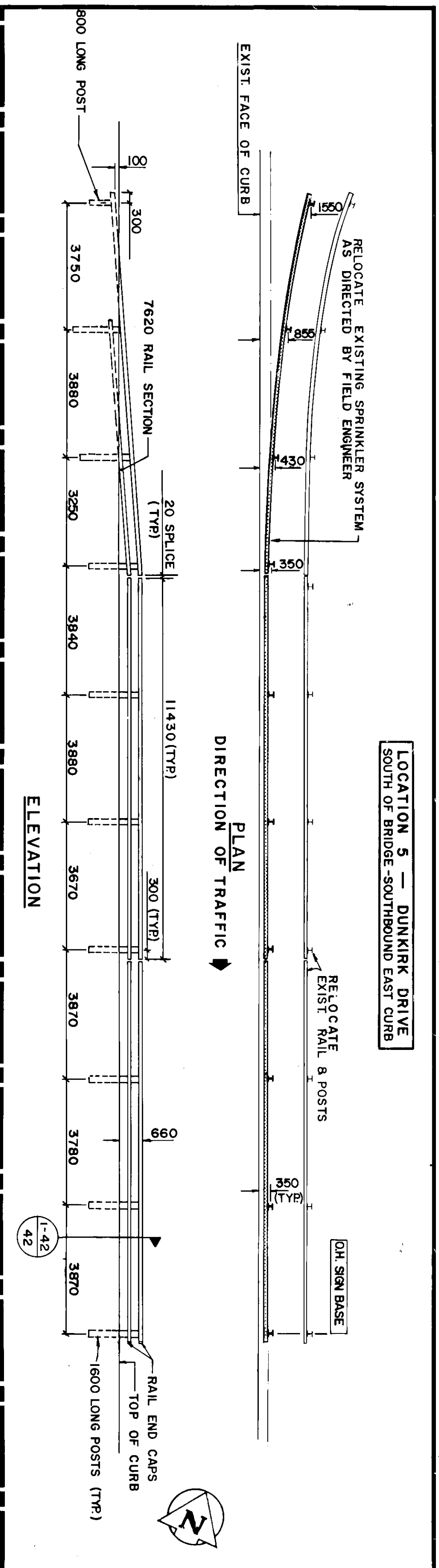
RELOCATED EXISTING SPRINKLER SYSTEM AS DIRECTED BY FIELD ENGINEER

EXISTING RETAINING WALL

RELOCATED EXISTING SPRINKLER SYSTEM AS DIRECTED BY FIELD ENGINEER

FINISHED BOULEVARD OR SIDEWALK GRADE.
BARRIER RAIL, SEE DWG. N° B116-88-45
PAVEMENT SURFACE

ALUMINUM POST 110
INSTALLATION DETAIL
TYPICAL EXCEPT WHERE FLARE DIMENSIONS SHOWN.



- NOTES:
1. ALL POSTS ARE 1600 LONG EXCEPT AS OTHERWISE INDICATED.
 2. ALL RAIL SECTIONS ARE 11430 LONG EXCEPT AS OTHERWISE INDICATED.
 3. HEIGHT OF TOP OF RAIL IS MEASURED FROM EXISTING GRADE AT FACE OF RAIL.
 4. REFER TO DRAWING B16-88-45 & 46 FOR STANDARD DETAILS.
 5. EXISTING CONCRETE SIDEWALK TO BE REMOVED AND BACKFILLED WITH 75 ASPHALTIC CONCRETE.
 6. FOR REVISED PAVEMENT GEOMETRICS AND ALIGNMENT SEE DRAWING NO.5 B16-88-51 & 52.
 7. ALL DIMENSIONS ARE FROM FACE OF CURB TO CENTERLINE OF POST AND CENTERLINE TO CENTERLINE OF POSTS.
 8. EXISTING BARRIER RAIL TO BE REMOVED, SALVAGED AND RELOCATED WHERE POSSIBLE.
 9. BACKFILL EXISTING POST HOLES WITH GRANULAR MATERIAL.
 10. RELOCATE EXISTING SPRINKLER SYSTEM AS DIRECTED BY FIELD ENGINEER.

BILL OF NEW MATERIALS TO BE ORDERED BY CONTRACTOR

ITEM	QUANTITY	TOTAL
BARRIER RAIL 11430	18	
BARRIER RAIL 7620	12	
BARRIER POST 1600	41	
BARRIER POST 800	4	
RAIL END CAP	13	
SPLICE BAR	14	
RAIL CLAMP BAR	164	
HEX HEAD CAP SCREW	364	
27 O.D. x 14 I.D. x 2 THICK STAINLESS STEEL WASHER	364	

BILL OF SURPLUS MATERIALS TO BE RETURNED TO CITY OF WINNIPEG

ITEM	QUANTITY	TOTAL
BR2 BRIDGE RAIL POST 700	2	
BARRIER RAIL 214	2	
BARRIER RAIL 245	2	
BARRIER RAIL 381	9	
BARRIER RAIL 383	1	
BARRIER RAIL 441	1	
BARRIER RAIL 572	3	

BILL OF MATERIALS

ITEM	SOUTH OF BRIDGE					NORTH OF BRIDGE					TOTAL
	LOCATION	LOCATION	LOCATION	LOCATION	LOCATION	LOCATION	LOCATION	LOCATION	LOCATION	LOCATION	
BARRIER RAIL 11430	3	3	7	4	3	7	10	15	3	13	90
BARRIER RAIL 7620	1	1	1	1	1	1	2	1	1	1	12
BARRIER POST 1600	6	6	12	21	9	9	27	17	26	19	161
BARRIER POST 800	1	1	1	1	1	1	2	1	1	1	12
BR2 BRIDGE RAIL POST 700	-	-	-	-	-	-	-	-	-	-	6
RAIL END CAP	2	2	2	2	2	2	2	2	2	2	20
SPLICE BAR	2	2	6	12	4	4	10	14	2	2	60
RAIL CLAMP BAR	26	26	50	86	38	38	110	72	110	38	680
HEX HEAD CAP SCREW	60	60	124	220	92	92	276	184	276	84	680
27 O.D. x 14 I.D. x 2 THICK STAINLESS STEEL WASHER	60	60	124	220	92	92	276	184	276	84	680
TOTAL	114	114	220	420	184	184	544	368	544	220	1660

BILL OF SALVAGE MATERIALS

ITEM	SOUTH OF BRIDGE					NORTH OF BRIDGE					TOTAL
	LOCATION	LOCATION	LOCATION	LOCATION	LOCATION	LOCATION	LOCATION	LOCATION	LOCATION	LOCATION	
BARRIER RAIL 11430	7	13	5	5	5	15	5	7			62
BARRIER RAIL 3810	-	-	-	-	-	-	2	2	3		9
BARRIER POST 1600	12	21	9	7	7	24	7	13			102
BARRIER POST 800	1	1	1	1	1	1	1	1			8
BR2 BRIDGE RAIL POST 700	-	-	-	-	-	-	-	-			8
RAIL END CAP	1	1	1	2	2	4	2	2			7
SPLICE BAR	6	12	4	4	4	14	4	8			56
RAIL CLAMP BAR	50	86	38	46	46	98	38	46			456
HEX HEAD CAP SCREW	124	220	92	108	108	292	108	140			1136
27 O.D. x 14 I.D. x 2 THICK STAINLESS STEEL WASHER	124	220	92	108	108	292	108	140			1136
BARRIER RAIL 572	-	-	-	-	-	-	-	-			3
BARRIER RAIL 441	-	-	-	-	-	-	-	-			3
BARRIER RAIL 383	-	-	-	-	-	-	-	-			1
BARRIER RAIL 245	-	-	-	-	-	-	-	-			1
BARRIER RAIL 214	-	-	-	-	-	-	-	-			2

REID, CROWTHER & PARTNERS LIMITED
WINNIPEG

AS CONSTRUCTED

DATE: May 8/85

ST. VITAL TWIN BRIDGE OVER RED RIVER
STREETS AND TRANSPORTATION DEPARTMENT

ALUMINUM BALANCED TRAFFIC BARRIER - LAYOUT & DETAILS

ENGINEERS SEAL

DESIGNED BY S.F.G.
DRAWN BY S.F.G.
CHECKED BY DRK.
APPROVED BY S.F.G.

DATE: DEC 97

SCALE: 1:100

PROJECT NO: 60814-43

CONTRACT NO: U216-88-11

REFERENCE NUMBER: U217-88-11

LOCATION APPROVED UNDER THE MUNICIPAL STRUCTURES ACT

REID, CROWTHER & PARTNERS LIMITED

ENGINEERS SEAL

DESIGNED BY S.F.G.
DRAWN BY S.F.G.
CHECKED BY DRK.
APPROVED BY S.F.G.

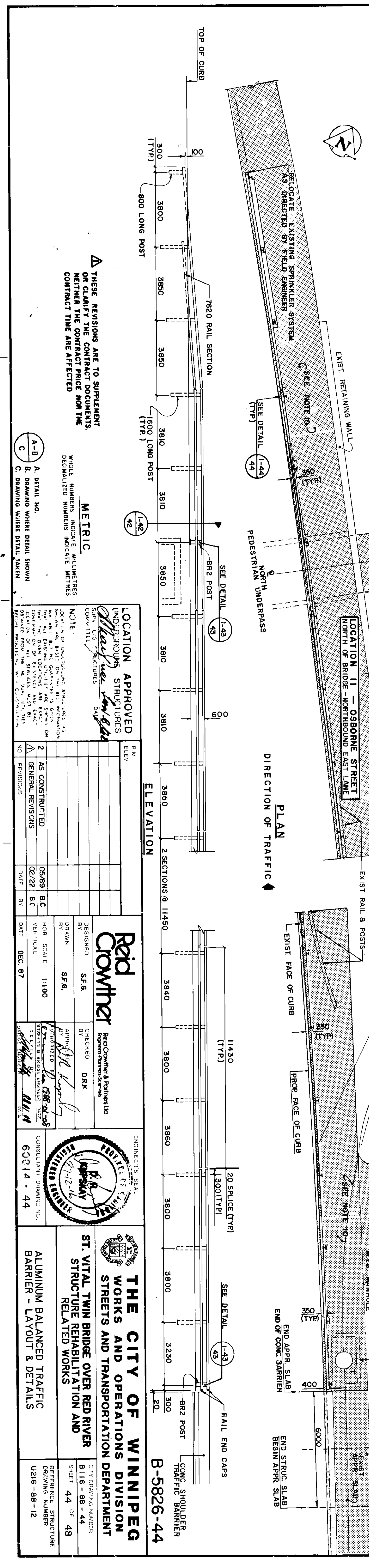
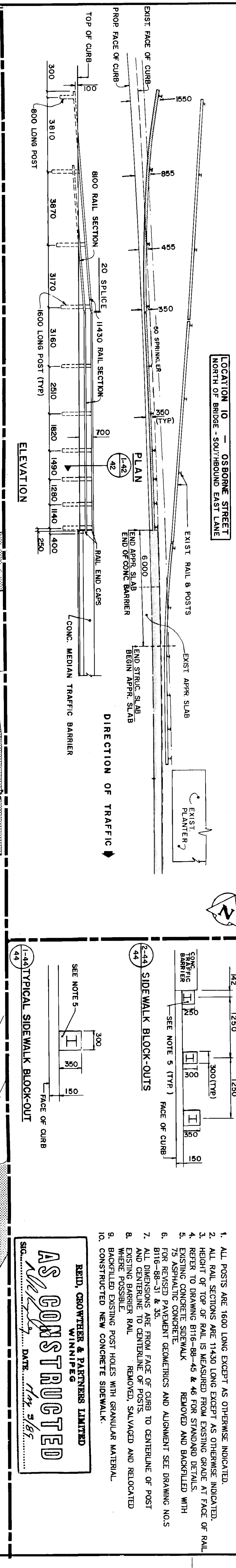
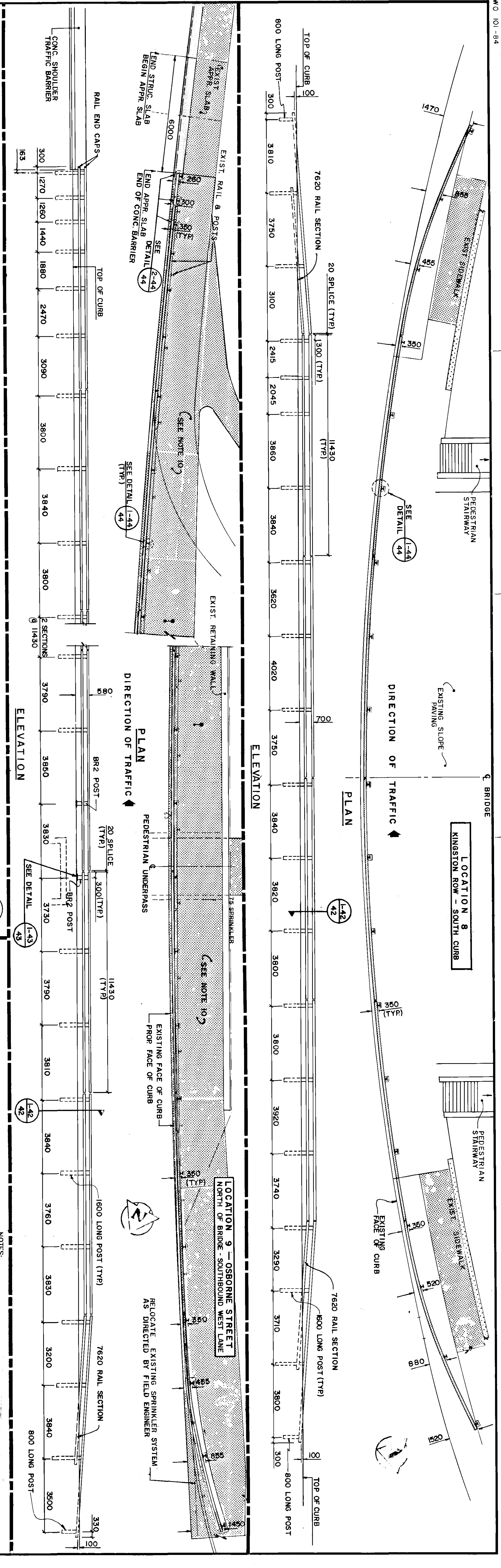
DATE: DEC 97

SCALE: 1:100

PROJECT NO: 60814-43

CONTRACT NO: U216-88-11

REFERENCE NUMBER: U217-88-11



▲ THESE REVISIONS ARE TO SUPPLEMENT OR CLARIFY THE CONTRACT DOCUMENTS. NEITHER THE CONTRACT PRICE NOR THE CONTRACT TIME ARE AFFECTED.

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

A-B A DETAIL NO.
B DRAWING WHERE DETAIL SHOWN
C DRAWING WHERE DETAIL TAKEN

LOCATION APPROVED UNDERPASS STRUCTURES
Markus Ingvalds
Markus Ingvalds

NO.	REVISIONS	DATE	BY
2	AS CONSTRUCTED	06/89	BC
1	GENERAL REVISIONS	02/22	BC

DESIGNED BY: *Raid Crowther*
 DRAWN BY: *S.F.G.*
 CHECKED BY: *DRK*
 APPROVED BY: *Markus Ingvalds*

SCALE: 1:100
 DATE: DEC. 87

63014-44

THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION ST. VITAL TWIN BRIDGE OVER RED RIVER STRUCTURE REHABILITATION AND RELATED WORKS

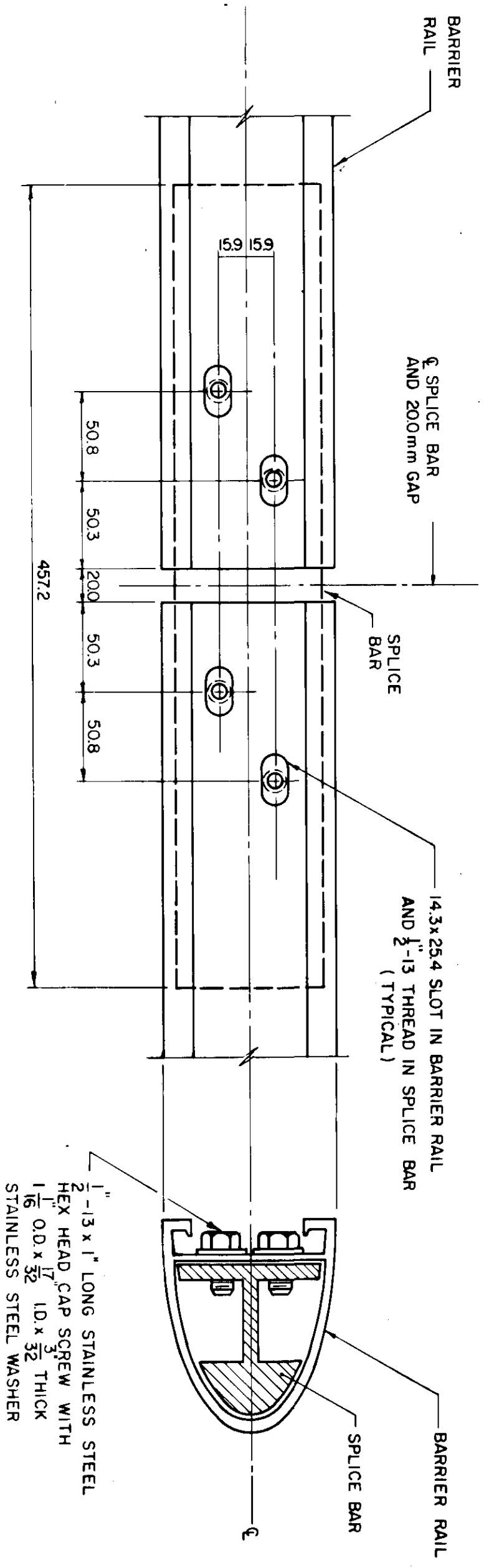
ALUMINUM BALANCED TRAFFIC BARRIER - LAYOUT & DETAILS

AS CONSTRUCTED
Markus Ingvalds
 DATE: 11/8/87

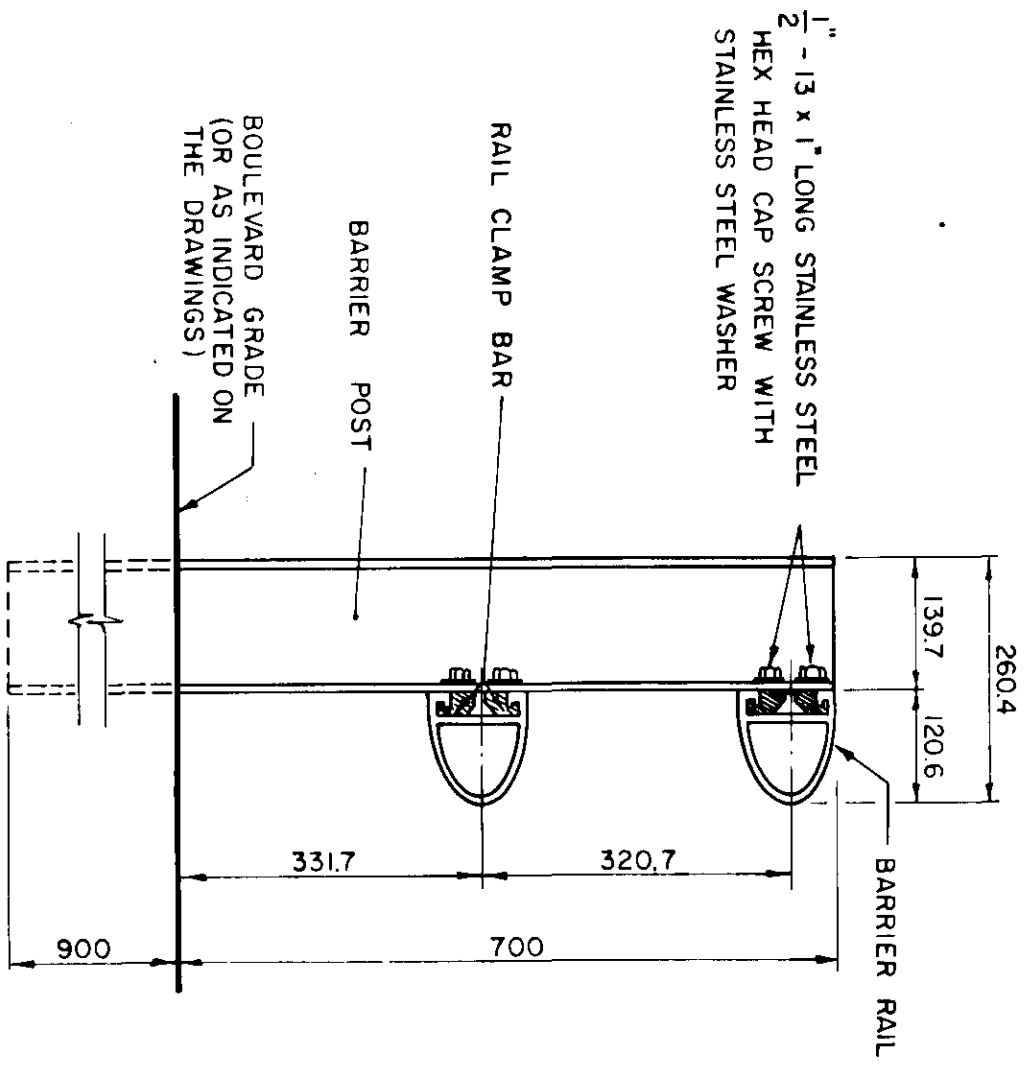
REID, CROWTHER & PARTNERS LIMITED
 WINNIPEG

CITY DRAWING NUMBER: B116-88-44
 SHEET: 44 OF 48
 REFERENCE STRUCTURE DRAWING NUMBER: U216-88-12

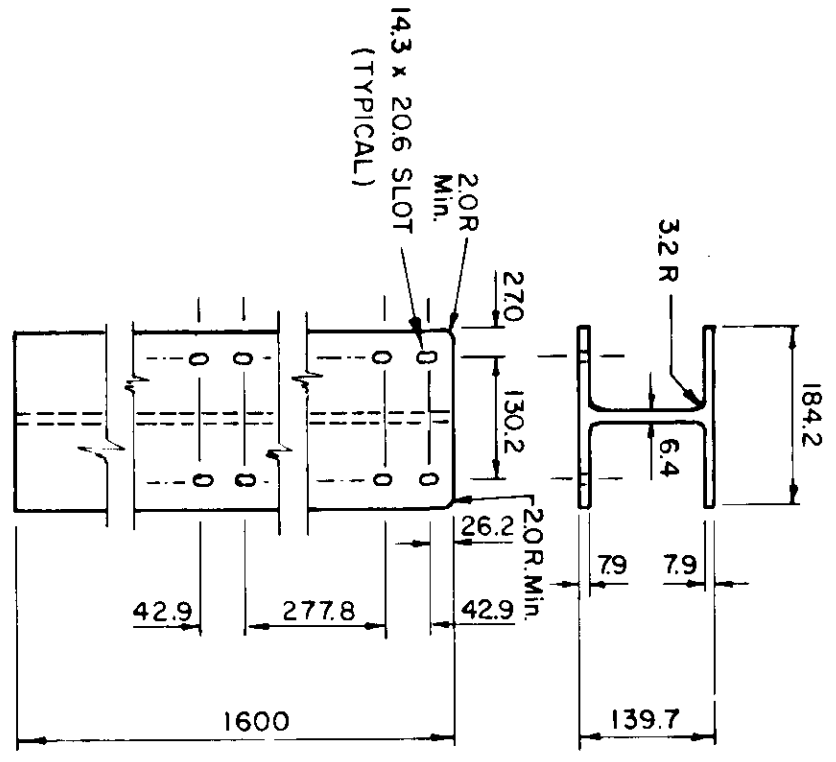
NOTES:
 1. ALL POSTS ARE 1600 LONG EXCEPT AS OTHERWISE INDICATED.
 2. ALL RAIL SECTIONS ARE 11430 LONG EXCEPT AS OTHERWISE INDICATED.
 3. HEIGHT OF TOP OF RAIL IS MEASURED FROM EXISTING GRADE AT FACE OF RAIL.
 4. REFER TO DRAWING BR16-88-45 & 46 FOR STANDARD DETAILS.
 5. 75 ASPHALTIC CONCRETE SIDEWALK REMOVED AND BACKFILLED WITH FOR RE-USE Pavement GEOMETRICS AND ALIGNMENT SEE DRAWING NOS. BR16-88-31 & 33.
 6. ALL DIMENSIONS ARE FROM FACE OF CURB TO CENTRELINE OF POST AND CENTRELINE TO CENTRELINE OF POSTS.
 7. EXISTING BARRIER RAIL REMOVED, SALVAGED AND RELOCATED WHERE POSSIBLE.
 8. BACKFILLED EXISTING POST HOLES WITH GRANULAR MATERIAL.
 9. CONSTRUCTED NEW CONCRETE SIDEWALK.
 10. RELOCATE EXISTING SPRINKLER SYSTEM AS DIRECTED BY FIELD ENGINEER



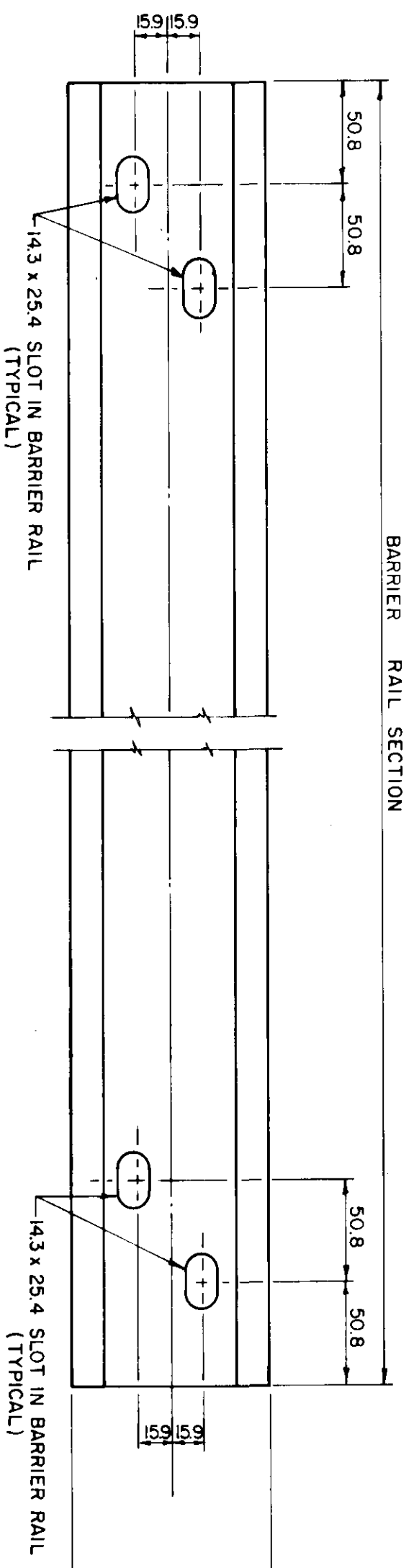
SPlice BAR TO RAIL ASSEMBLY DETAIL



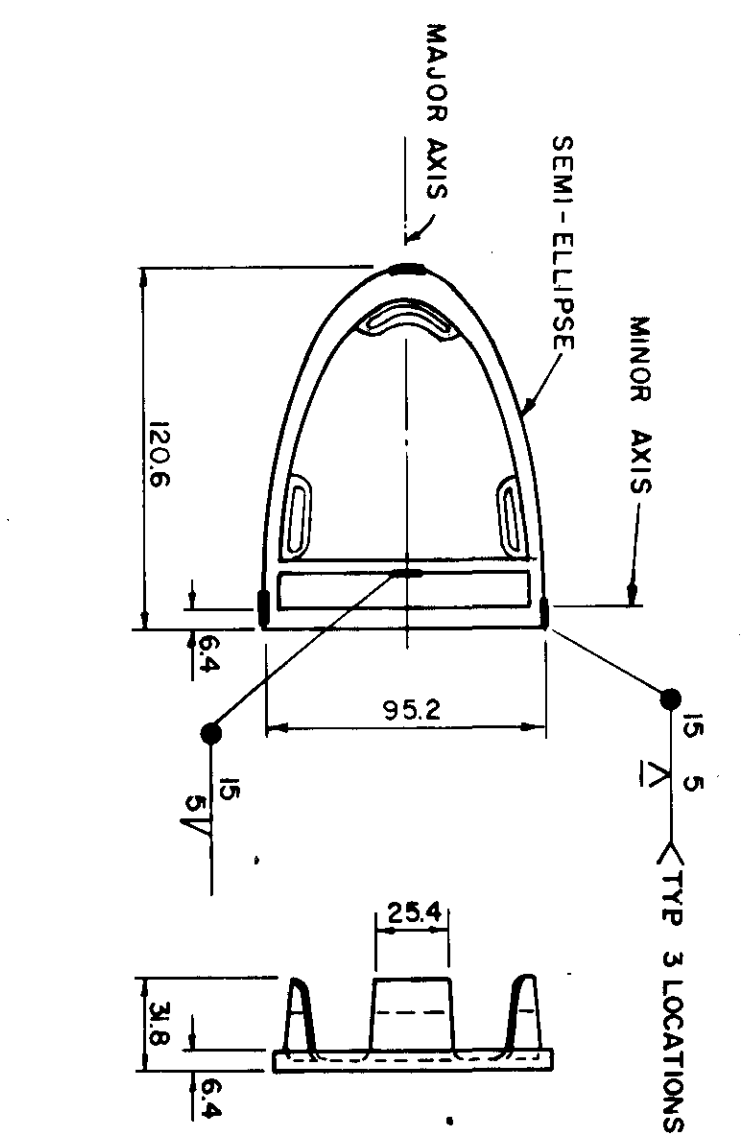
RAIL TO POST ASSEMBLY DETAIL



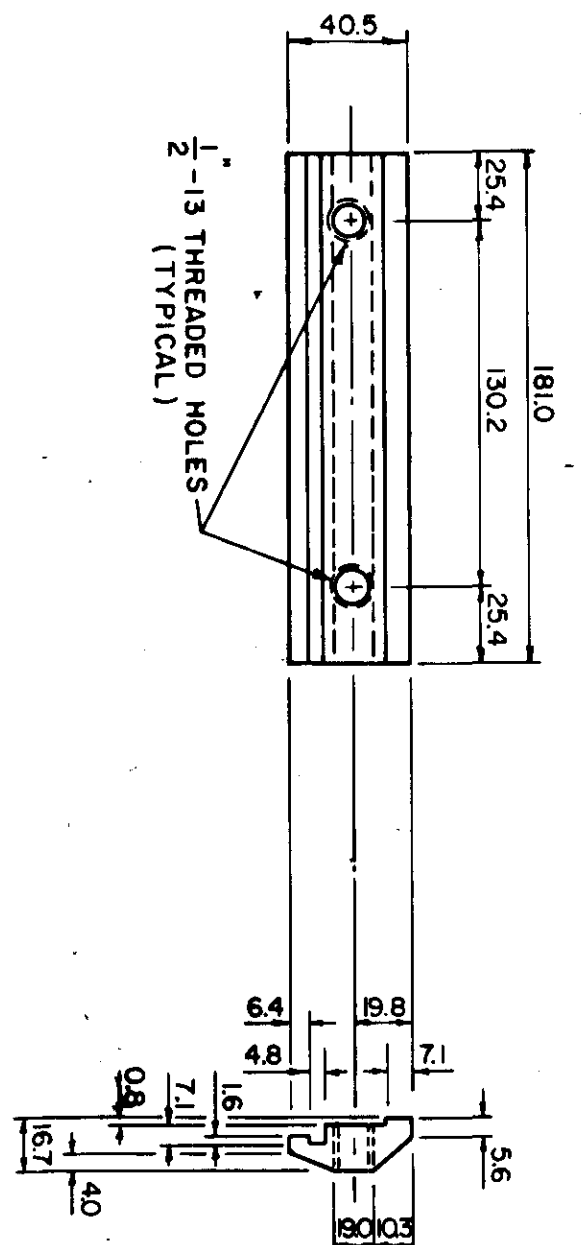
1600 m POST
(0800 m POST SIMILAR EXCEPT WITH ONLY FOUR SLOTS AT TOP OF POST)



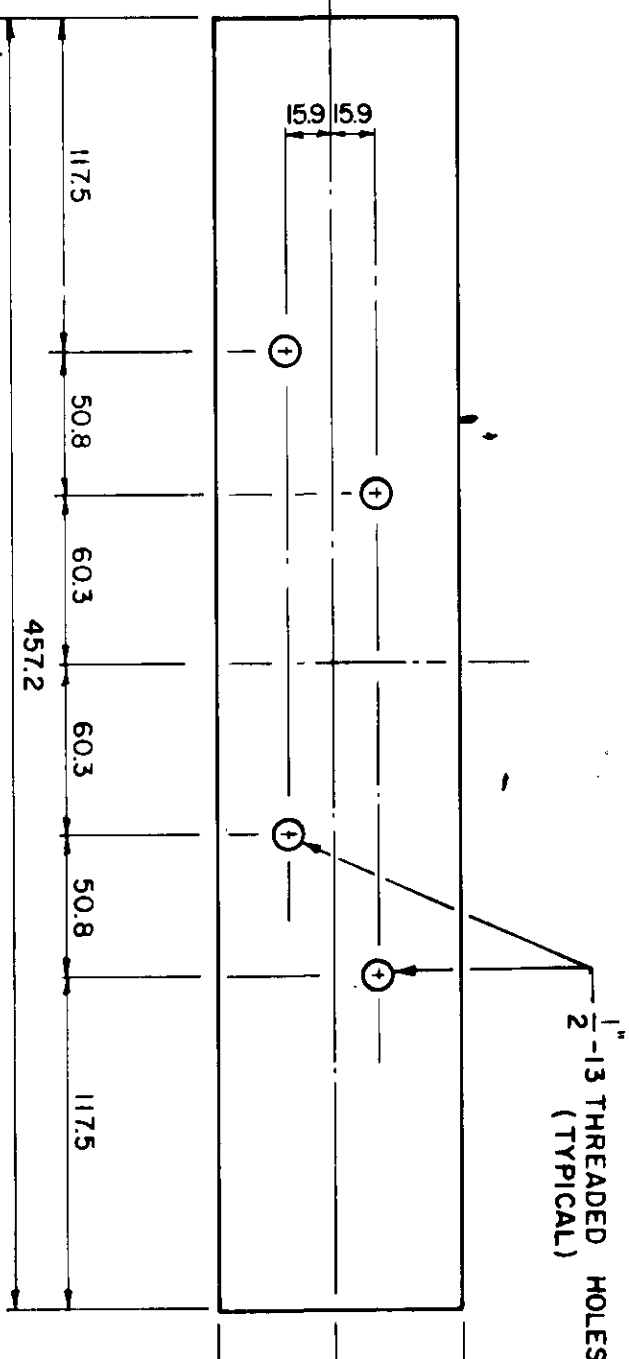
BARRIER RAIL



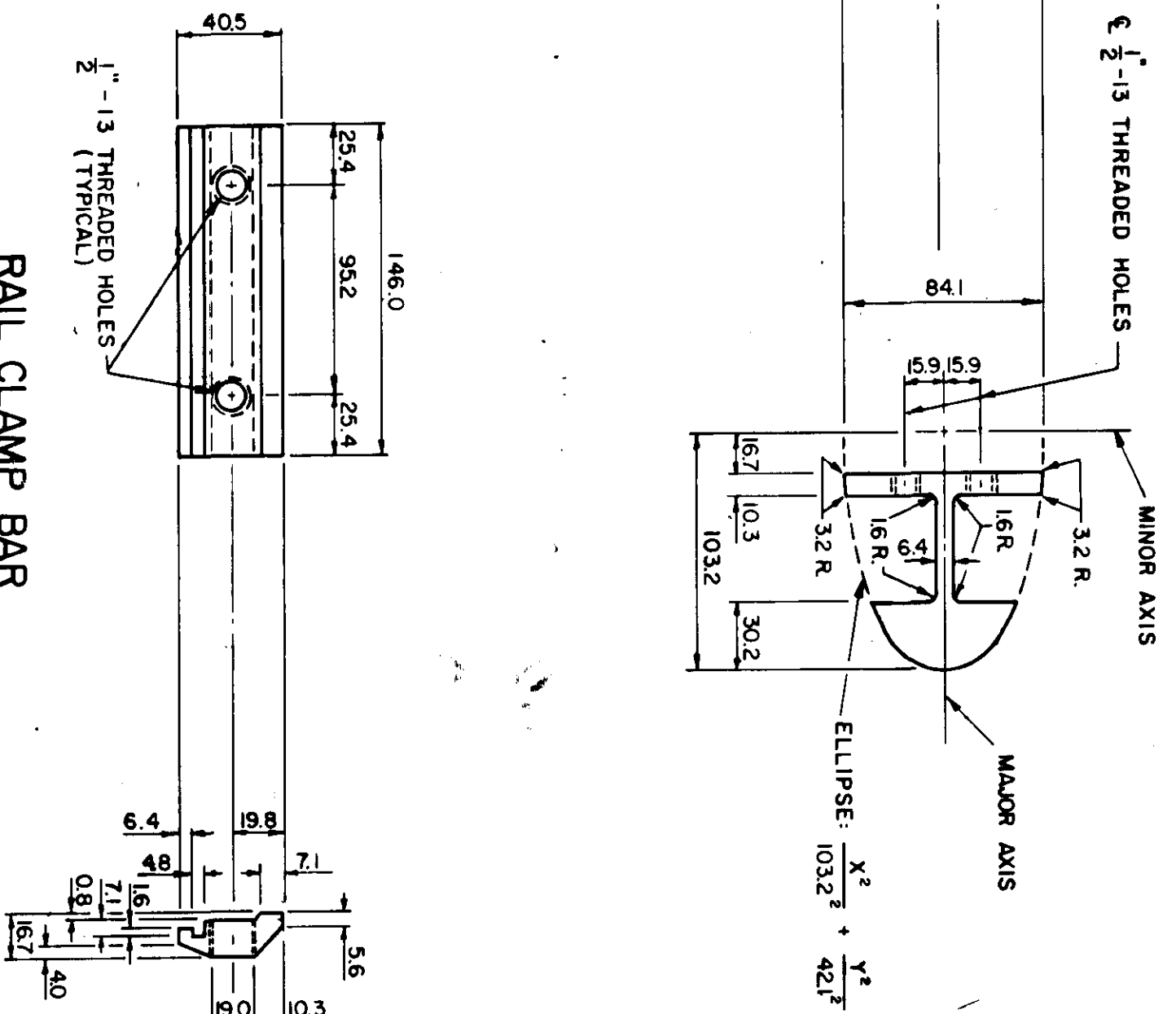
RAIL END CAP



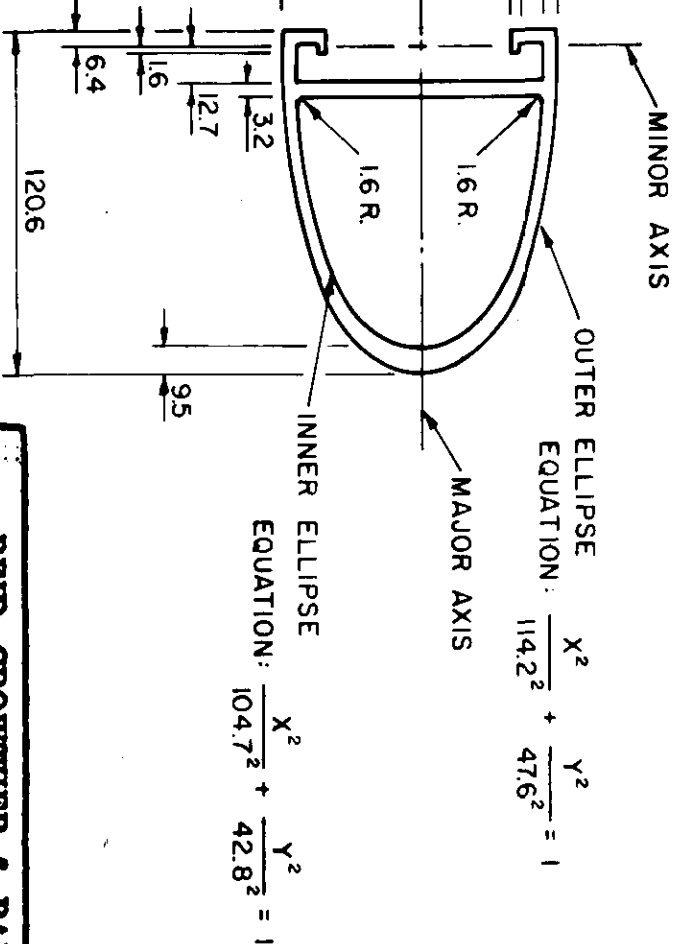
RAIL CLAMP BAR



SPlice BAR



RAIL CLAMP BAR
(FOR BRT C BRIDGE RAIL POST)



PLAN

FRONT ELEVATION
(FABRICATED FROM BARRIER RAIL)

MATERIAL SPECIFICATIONS

1. ALUMINUM RAILS, POSTS, SPLICE BARS, CLAMP BARS, AND END CAPS SHALL CONFORM TO ASTM B221, ALLOY 6061-T6, OR ALLOY 6351-T6.
2. STAINLESS STEEL WASHERS SHALL CONFORM TO ASTM A296.
3. CAP SCREWS SHALL CONFORM TO ASTM A276, TYPE 316 STAINLESS STEEL.
4. NOTE THAT ALL FASTENERS ARE SPECIFIED IN IMPERIAL UNITS.

METRIC

ALL DIMENSIONS SHOWN ON THIS PLAN ARE IN MILLIMETRES EXCEPT AS OTHERWISE INDICATED

NO	REVISIONS	DATE	APP	ENGINEER'S SEAL
R1	BRIDGE RAIL CLAMP BAR ADDED	93.6.16		
R2	RE-DRAWN	93.12.21		
R3	RADIUS ADDED TO POST	96.04.16 HN		
R4	END CAP ATTACHMENT CHANGED	97.11.13 HN		

REID, GROVIER & PARTNERS LIMITED
WINNIPEG
AS CONSTRUCTED
SIGNED: N/A DATE: N/A

STREETS & TRAFFIC BRANCH
DESIGNED BY: N.A.
CHECKED BY: ZVK
DRAWN BY: GFN
DATE: 90-03-18

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

ST. VITAL TWIN BRIDGE OVER RED RIVER
STRUCTURE REHABILITATION AND RELATED WORKS
BALANCED SHOULDER BARRIER
STANDARD DETAIL

REFERENCE STRUCTURE
DRAWING NUMBER: U216-88-13
U217-88-12
B-5826-45

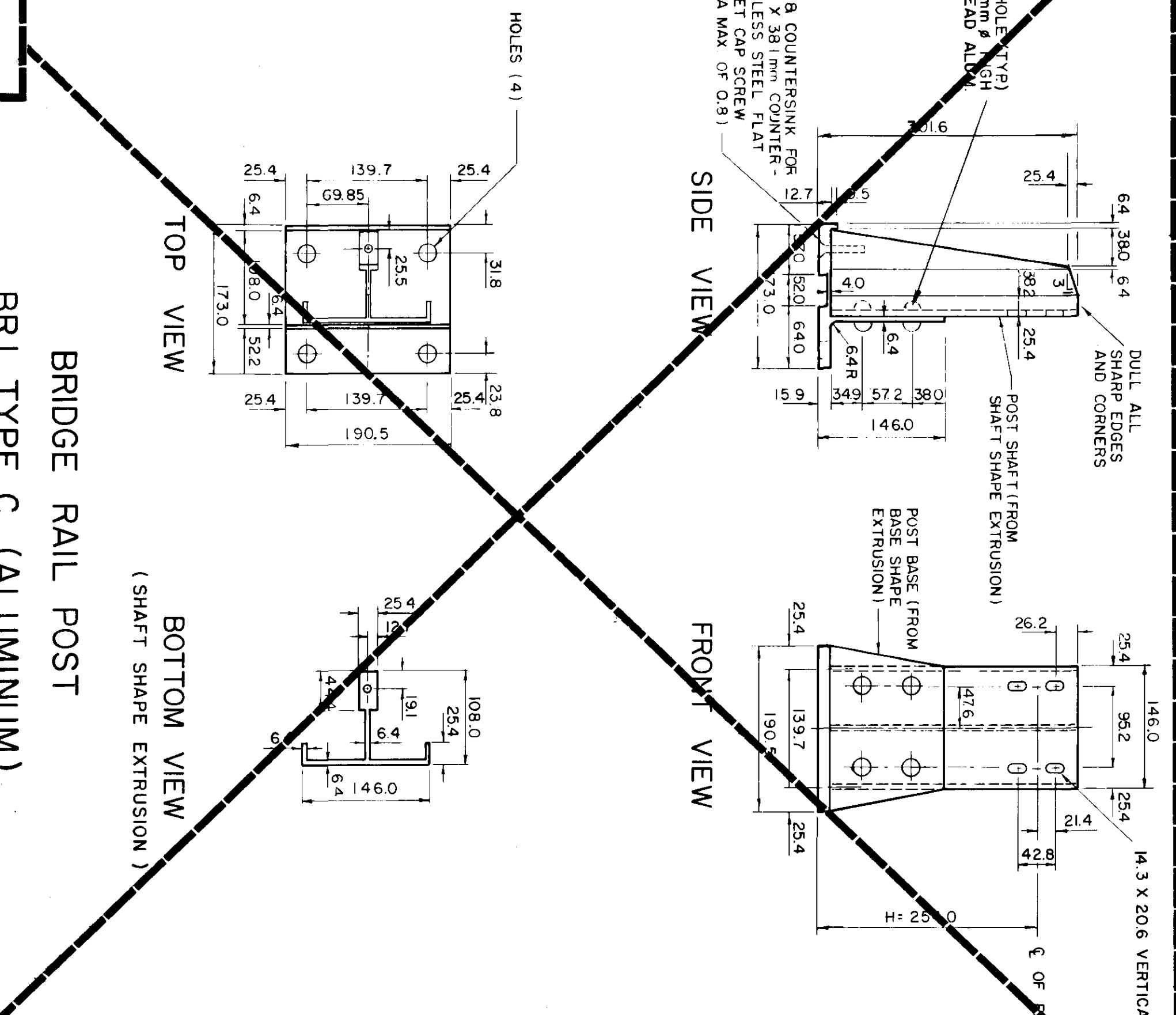
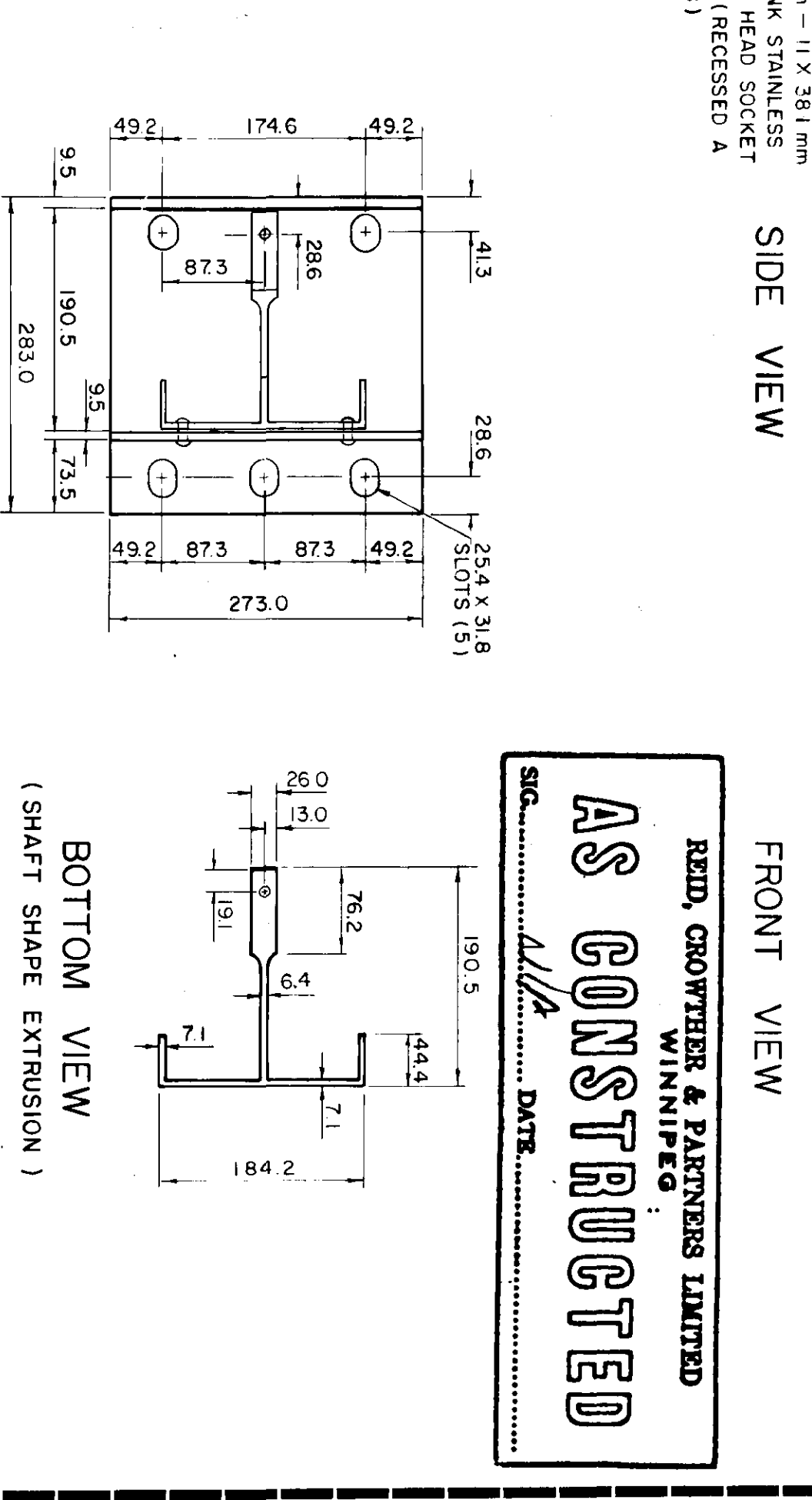
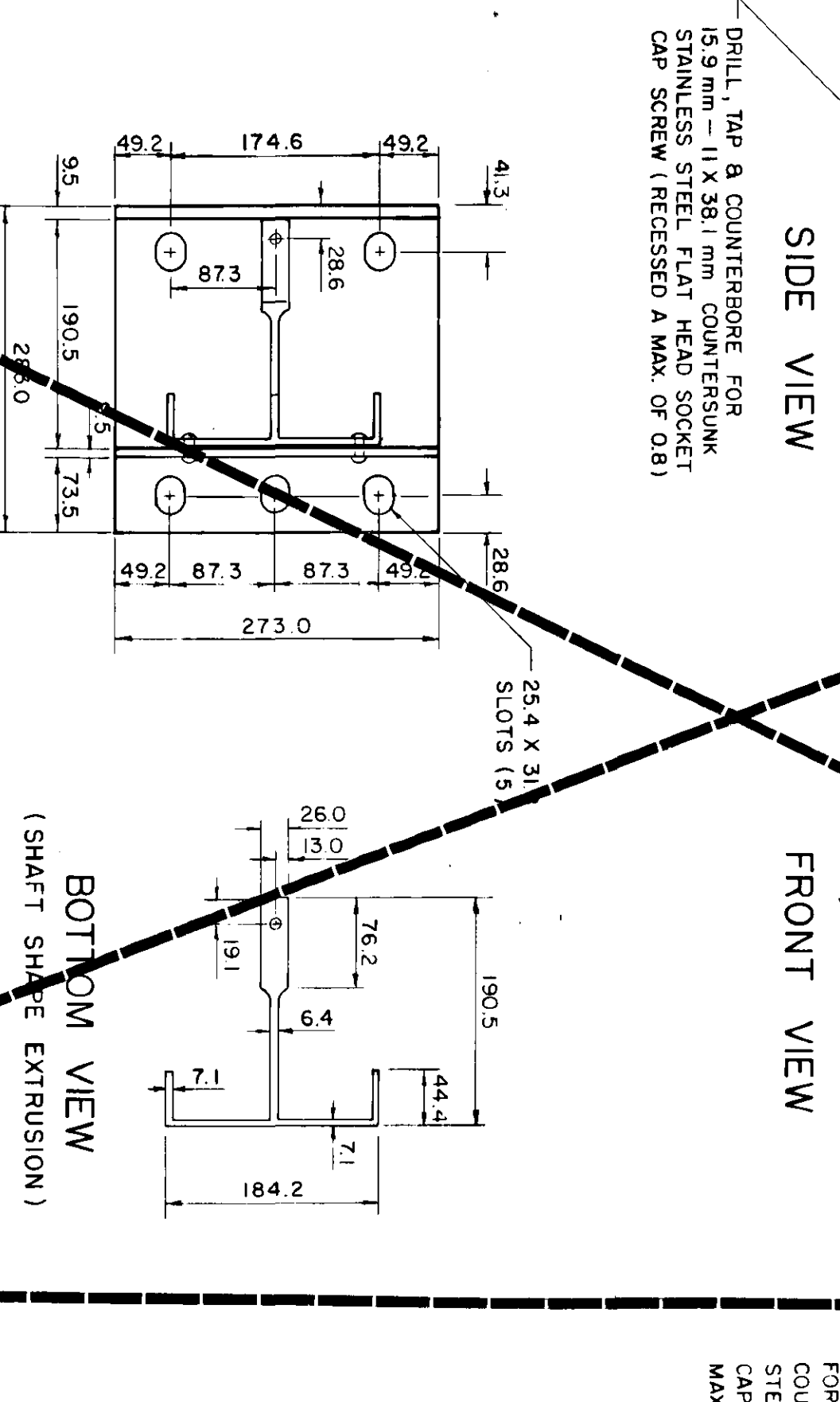
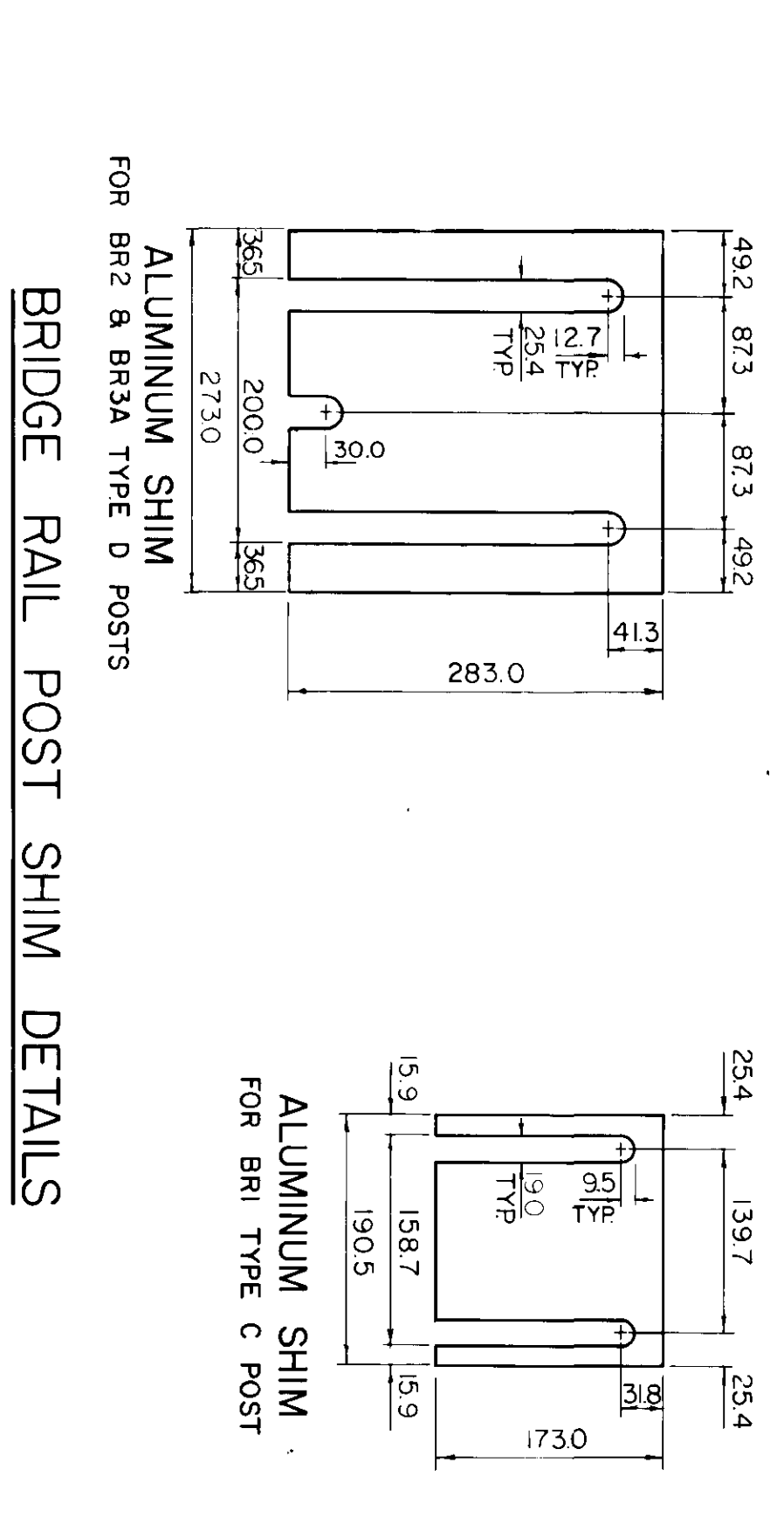
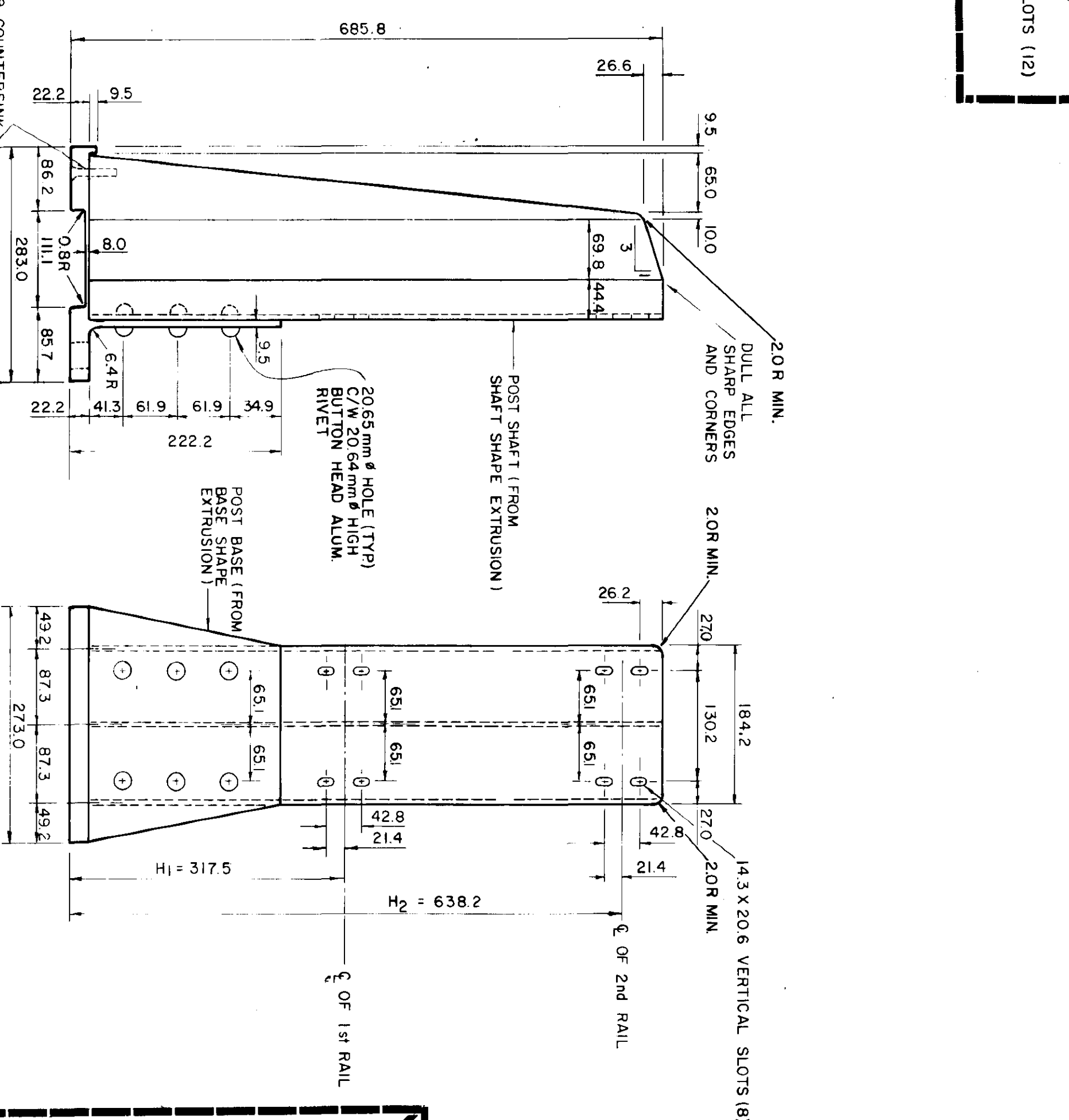
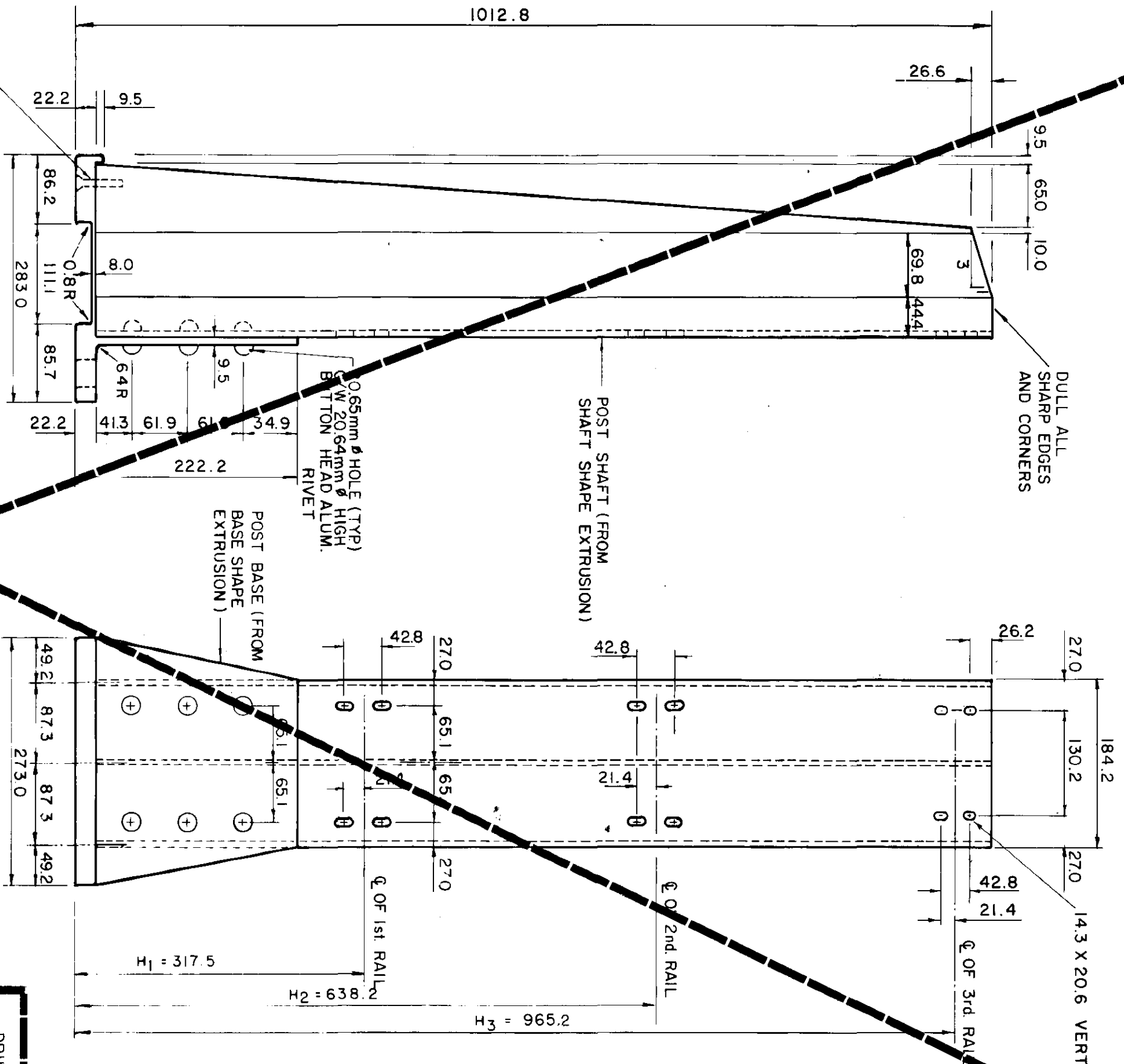
NOTES

THE 25.4 x 318 SLOTS (5) IN THE BASE OF BRIDGE RAIL POSTS TYPE D, BR2 AND BR3A, ARE DESIGNED TO ACCOMMODATE 20mm Ø ANCHOR BOLTS. THE 19mm Ø HOLES (4) IN THE BASE OF BRIDGE RAIL POST BR1 TYPE C ARE DESIGNED TO ACCOMMODATE 16mm Ø RAIL POST ANCHOR BOLTS. COMBINATION OF 15mm, 30mm OR 60mm ALUMINUM SHIMS TO BE USED AS REQUIRED TO SET BRIDGE RAIL POSTS TO THE SPECIFIED HEIGHT. A MINIMUM 3.0mm SHIM IS REQUIRED AT EACH POST. FOR ANCHOR BOLTS AND POST INSTALLATION DETAIL SEE DRAWING B116-88-43

SPECIFICATIONS

EXTRUDED ALUM. SHIMS SHALL CONFORM TO THE REQUIREMENTS OF A.S.T.M. B221, ALLOY 6061-T6 OR ALLOY 6351-T5 (MINIMUM ELONGATION 10%). CAP SCREW SHALL MEET THE REQUIREMENTS OF A.S.T.M. A276, TYPE 430 AND THE DIMENSIONAL REQUIREMENTS OF A.N.S.I. B18.3. RIVET MATERIAL SHALL MEET THE REQUIREMENTS OF A.S.T.M. B316 OR B221, ALLOY 6061-T6. RIVETS SHALL HAVE CONE POINT HEADS, AND SHALL MEET THE DIMENSIONAL REQUIREMENTS OF SECTION 6.5 OF THE ALUMINUM ASSOCIATION'S SPECIFICATIONS FOR ALUMINUM BRIDGE AND OTHER HIGHWAY STRUCTURES. THE POST BASE SHALL BE MADE FROM A SINGLE BASE SHAPE EXTRUSION SIMILARLY. THE POST SHAFT SHALL BE MADE FROM A SINGLE SHAPE EXTRUSION. THE POST BASE AND POST SHAFT SHALL BE CONNECTED USING THE HIGH BUTTON HEAD ALUMINUM RIVETS AND THE STAINLESS STEEL CAP SCREW TO FORM A BRIDGE RAIL POST.

DIMENSIONAL TOLERANCES NOT SHOWN OR IMPLIED ARE INTENDED TO BE THOSE CONSISTENT WITH THE PROPER FUNCTIONING OF THE PART, INCLUDING ITS APPEARANCE AND ACCEPTED MANUFACTURING PRACTICES.



RED, GROWER & PARTNERS LIMITED
WINNIPEG
AS CONSTRUCTED
DATE: 12/05/13

BRIDGE RAIL POST
BR3A TYPE D (ALUMINUM)

BRIDGE RAIL POST
BR2 TYPE D (ALUMINUM)
(TO BE SALVAGED AND REUSED)

BRIDGE RAIL POST
BR1 TYPE C (ALUMINUM)
(FOR USE ON CONCRETE TRAFFIC BARRIER)

△ THESE REVISIONS ARE TO SUPPLEMENT OR CLARIFY THE CONTRACT DOCUMENTS. NEITHER THE CONTRACT PRICE NOR THE CONTRACT TIME ARE AFFECTED.

REFERENCE STRUCTURE DRAWING NUMBER: U216-88-14

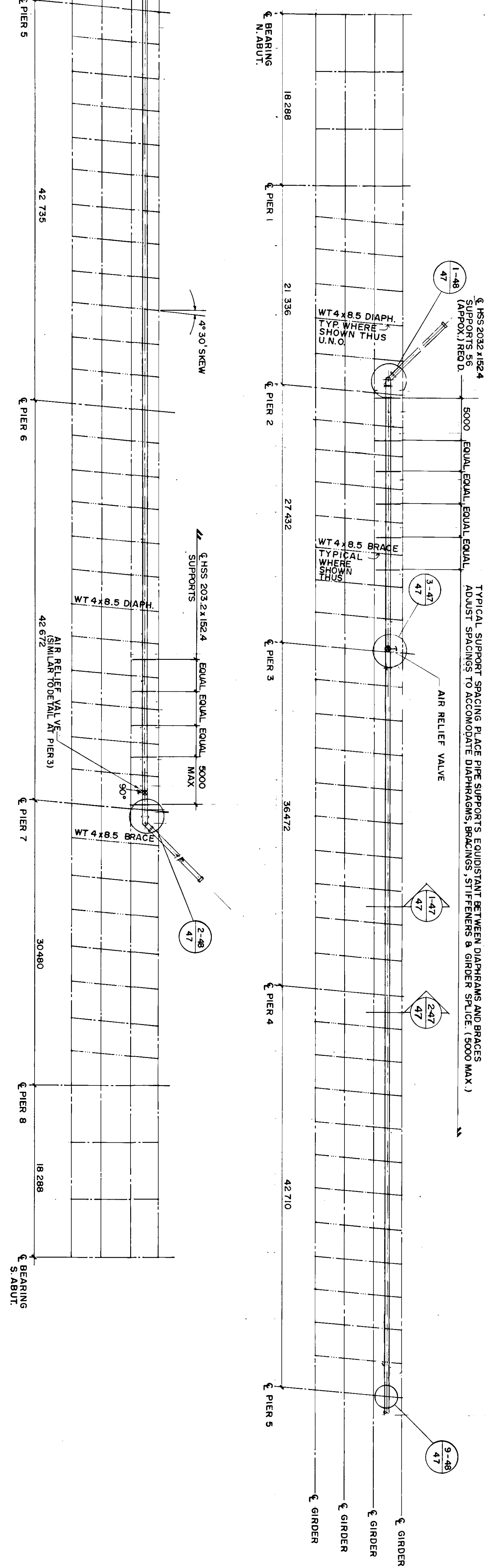
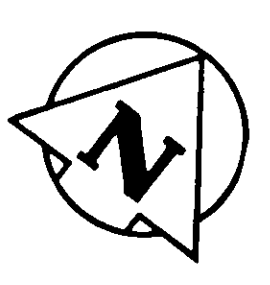
THE CITY OF WINNIPEG
STREETS AND TRANSPORTATION DEPARTMENT
60814-46

ST. VITAL TWIN BRIDGE OVER RED RIVER STRUCTURE REHABILITATION AND RELATED WORKS
DETAILS OF ALUMINUM BRIDGE RAIL POSTS

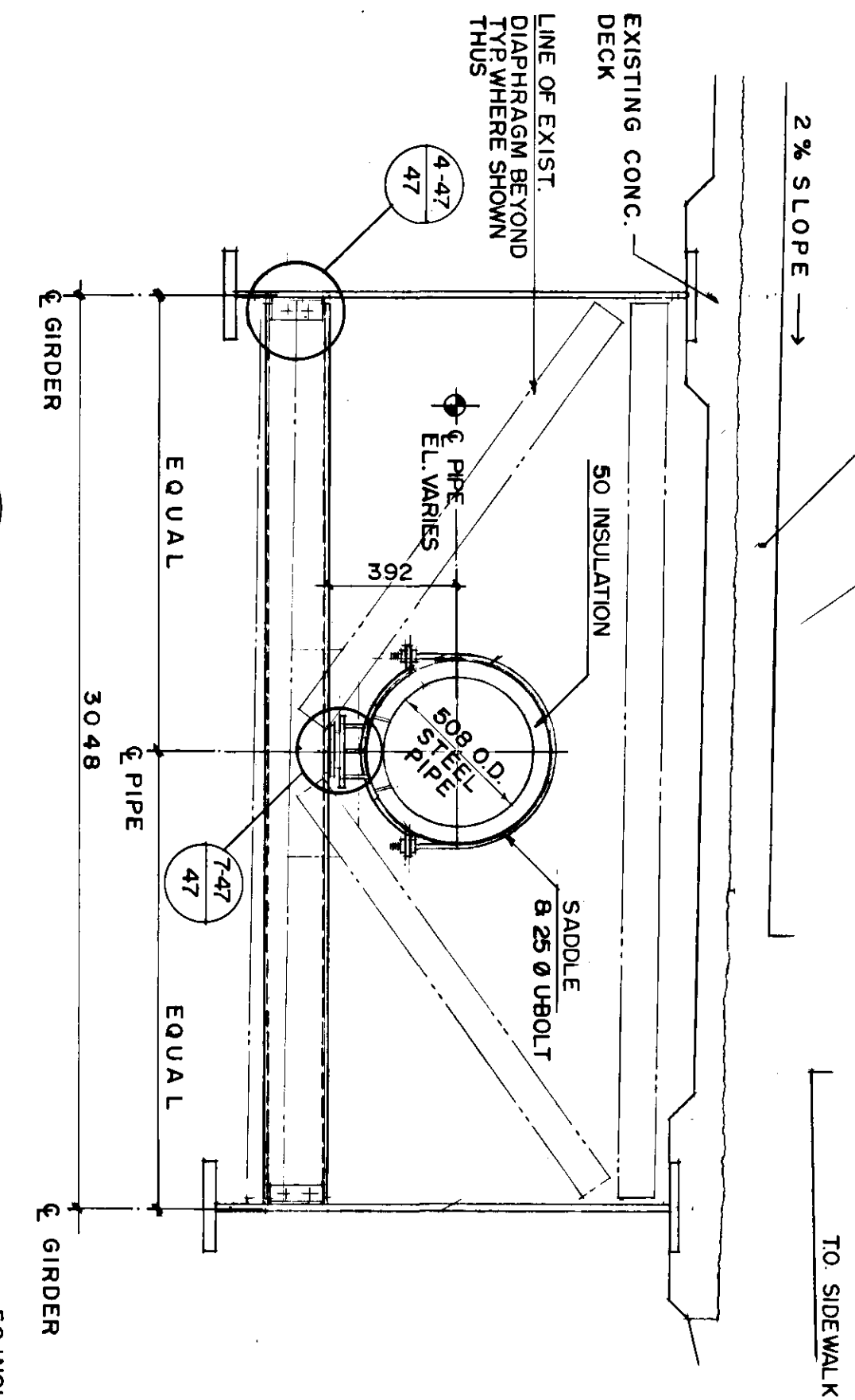
NO.	REVISIONS	DATE	APP.	ENGINEER'S SEAL
1	GENERAL REVISIONS	02/22	BC	
2	NOTES ON SHIMS	03-04	AD	
DESIGNED BY: N/A				
CHECKED BY: GRS 82-03-19				
DATE: 80-11-28				
APPROVED BY: [Signature]				
DATE: 12-05-13				
RELEASED FOR CONSTRUCTION: [Signature]				
DRAWING NO. B116-88-46				
SCALE: N.T.S.				
STD. DETAIL: CW-305 R1				

ALL DIMENSIONS ARE IN MILLIMETRES

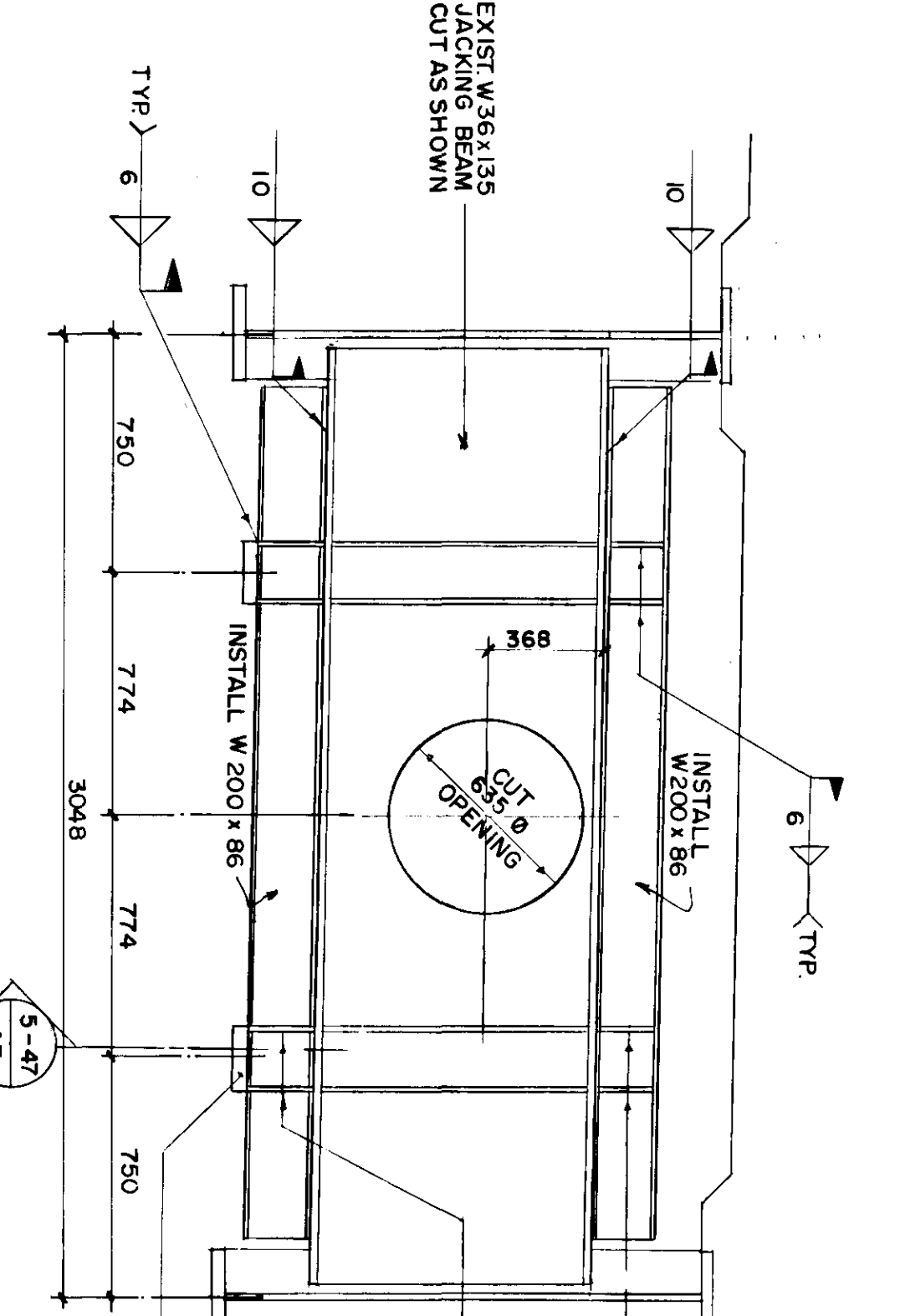
METRIC



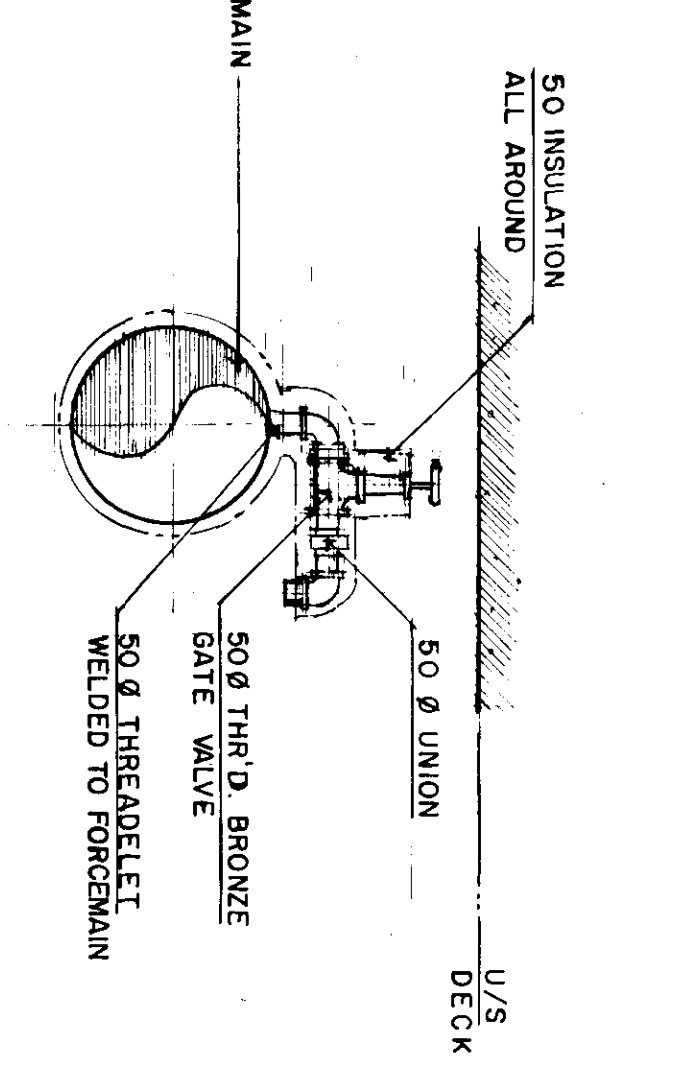
SEWAGE FORCEMAIN LAYOUT NORTHBOUND STRUCTURE
SCALE 1:250



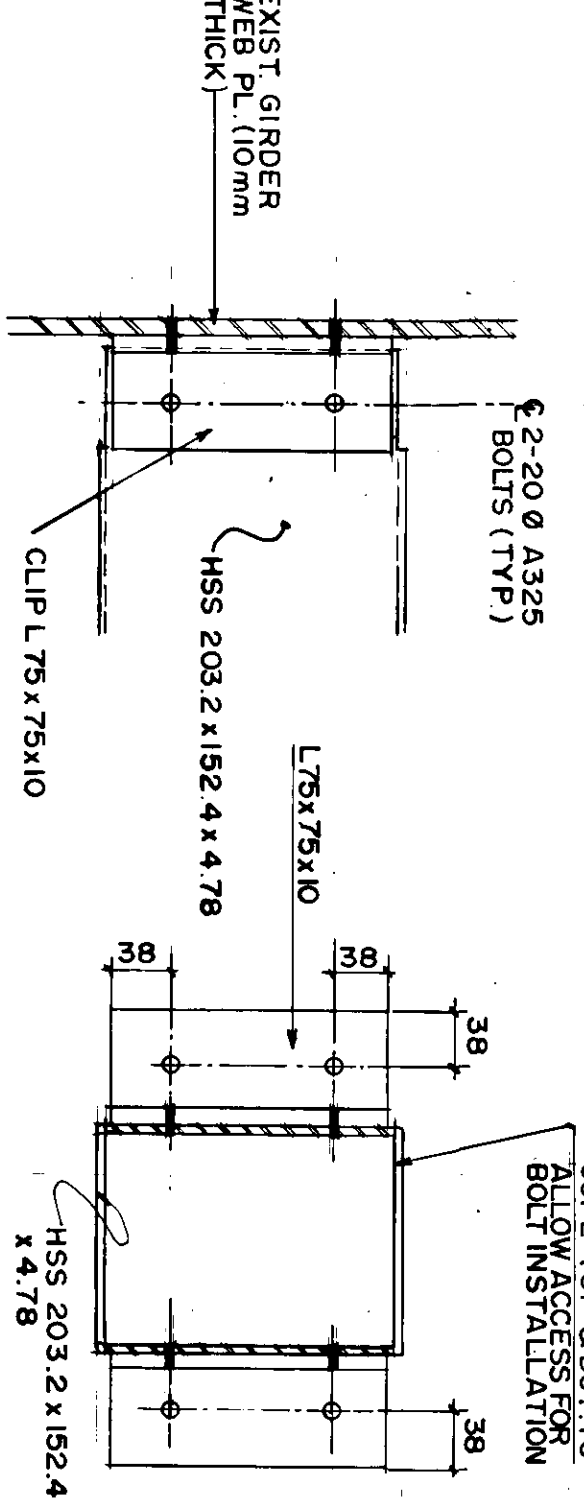
1-47 SECTION
SCALE 1:20



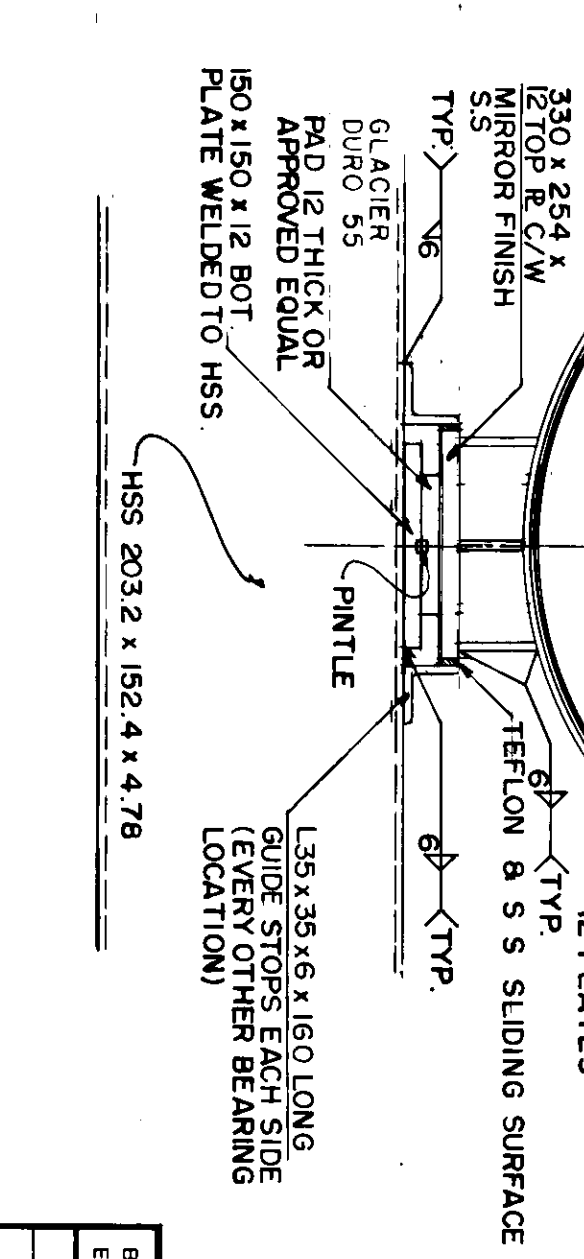
2-47 SECTION
SCALE 1:20



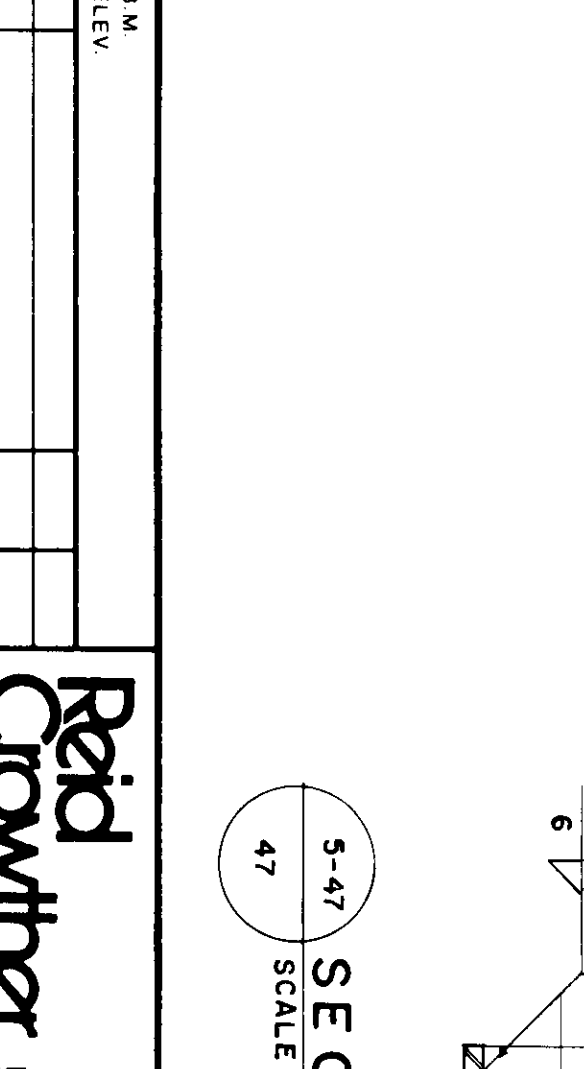
3-47 DETAIL
SCALE 1:20



ELEVATION SECTION



7-47 BEARING DETAIL
SCALE 1:5

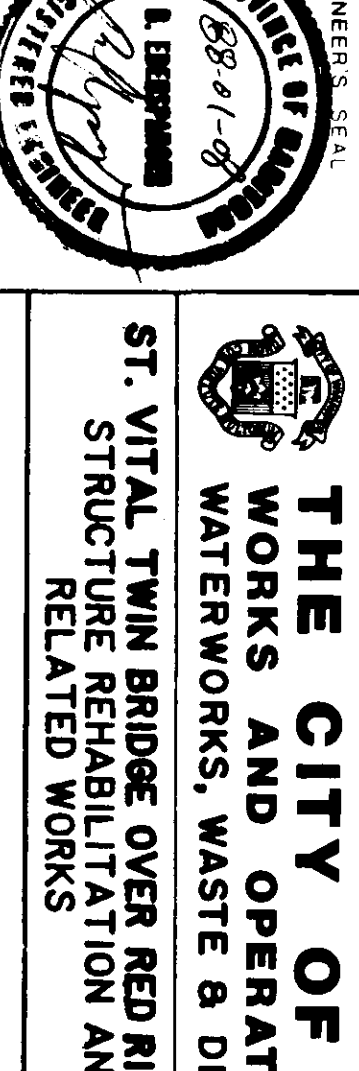
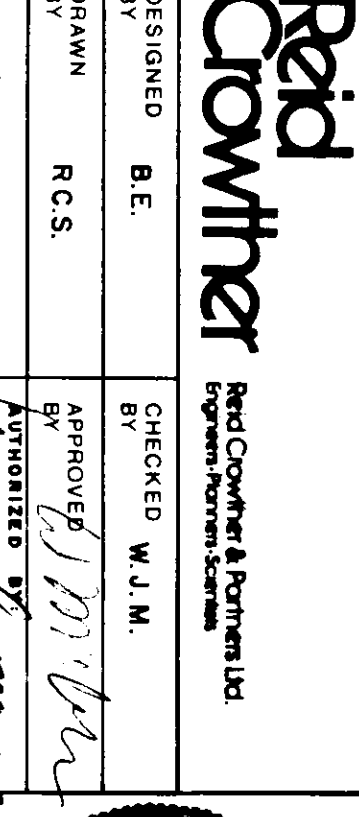
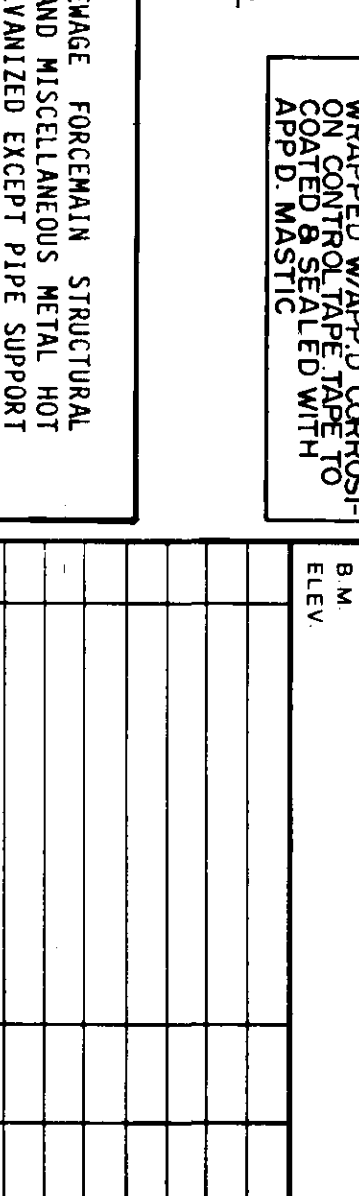
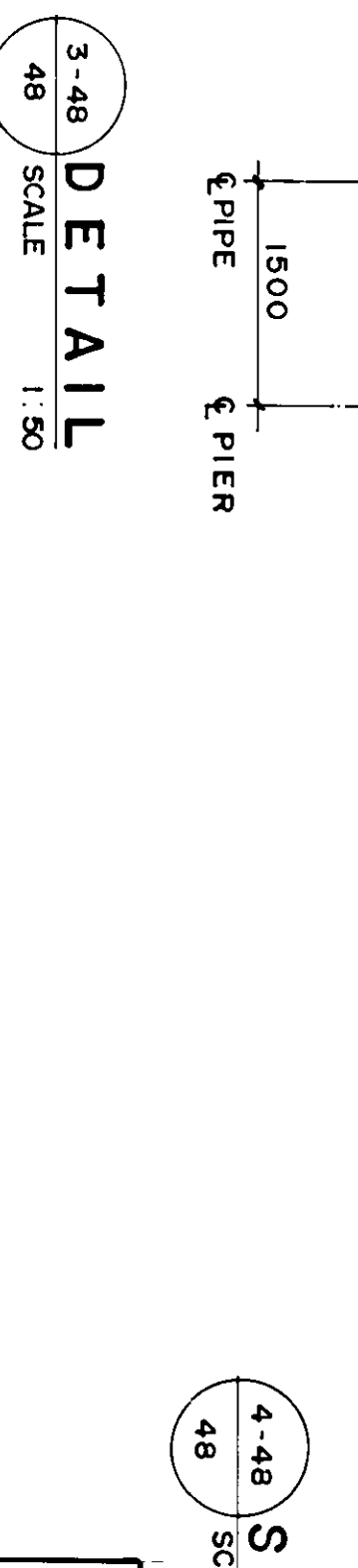
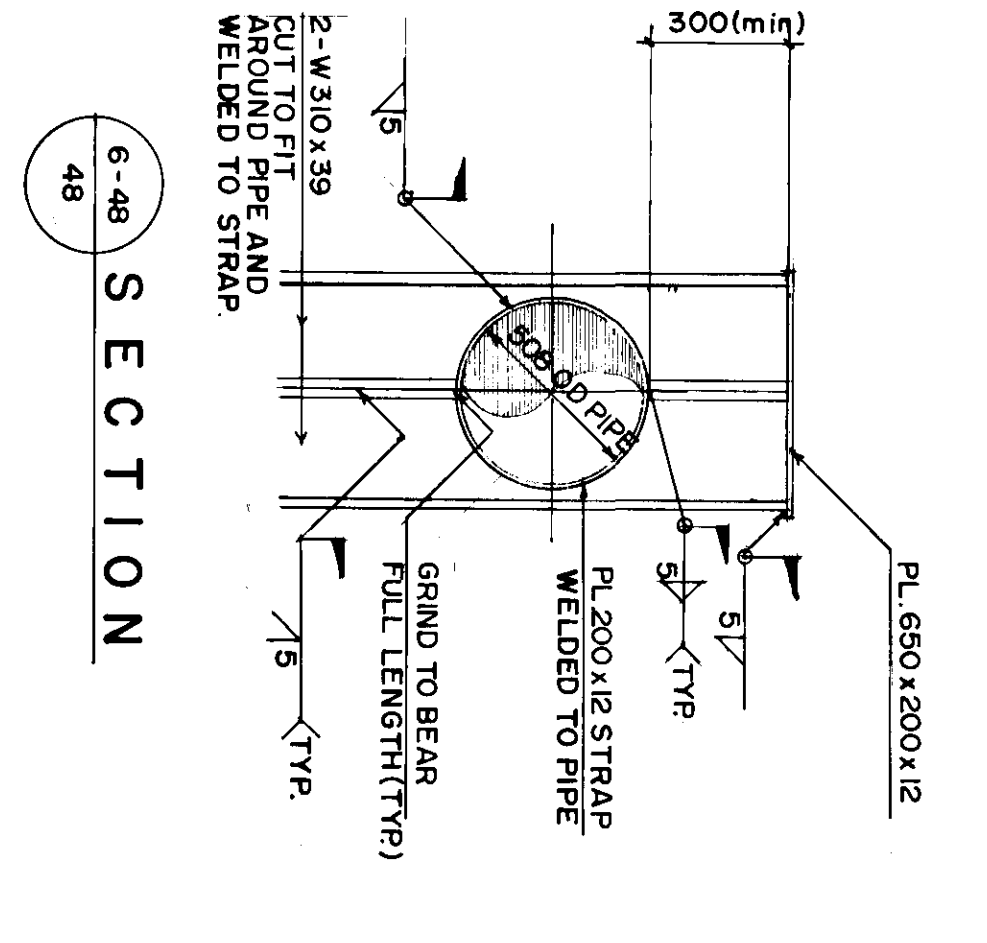
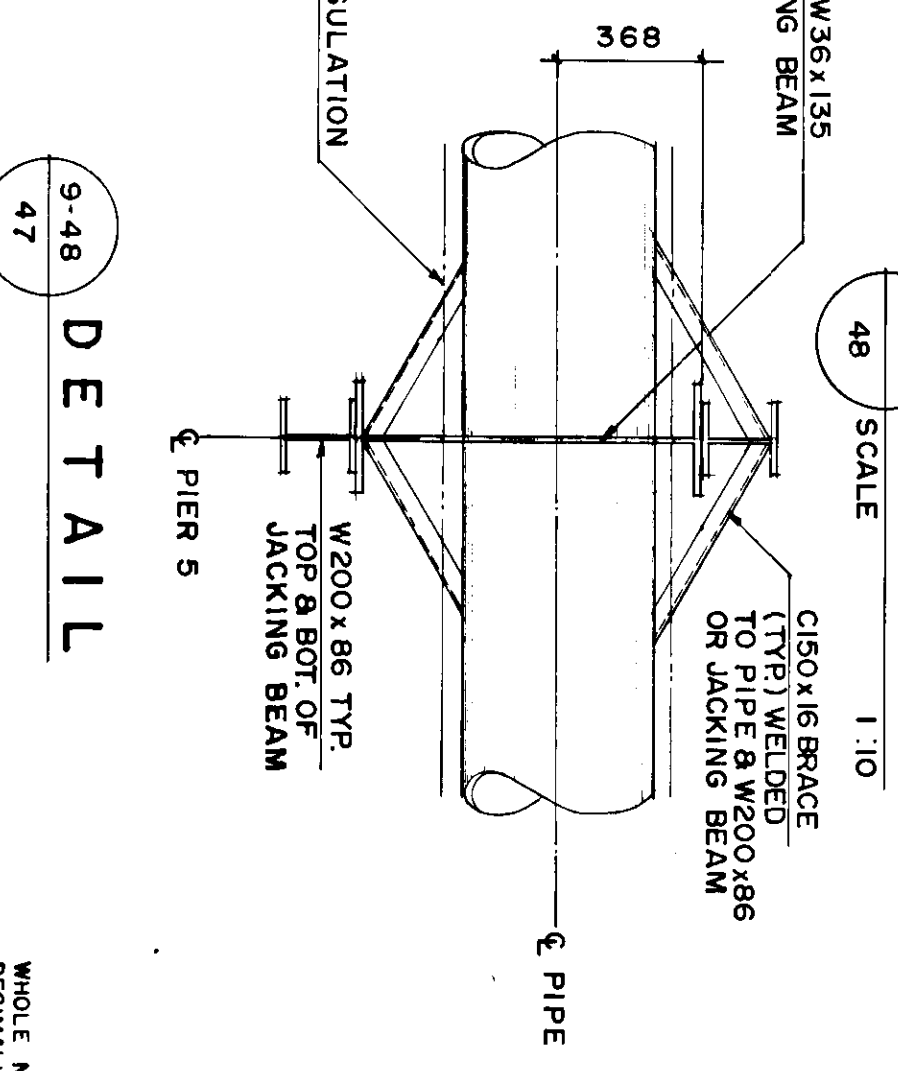
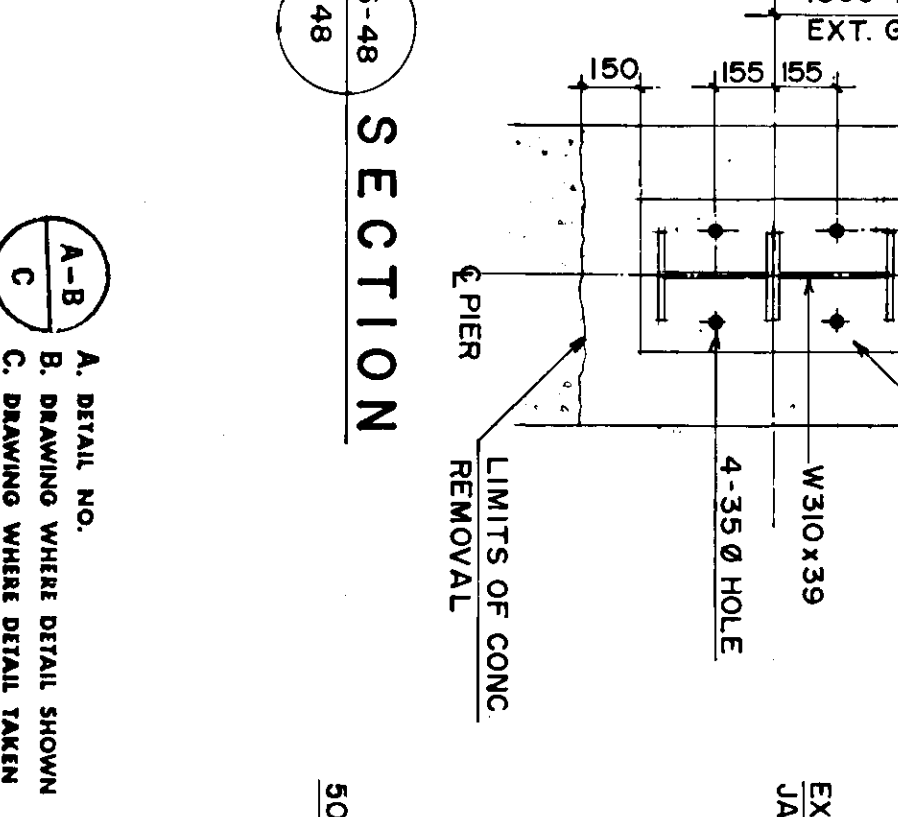
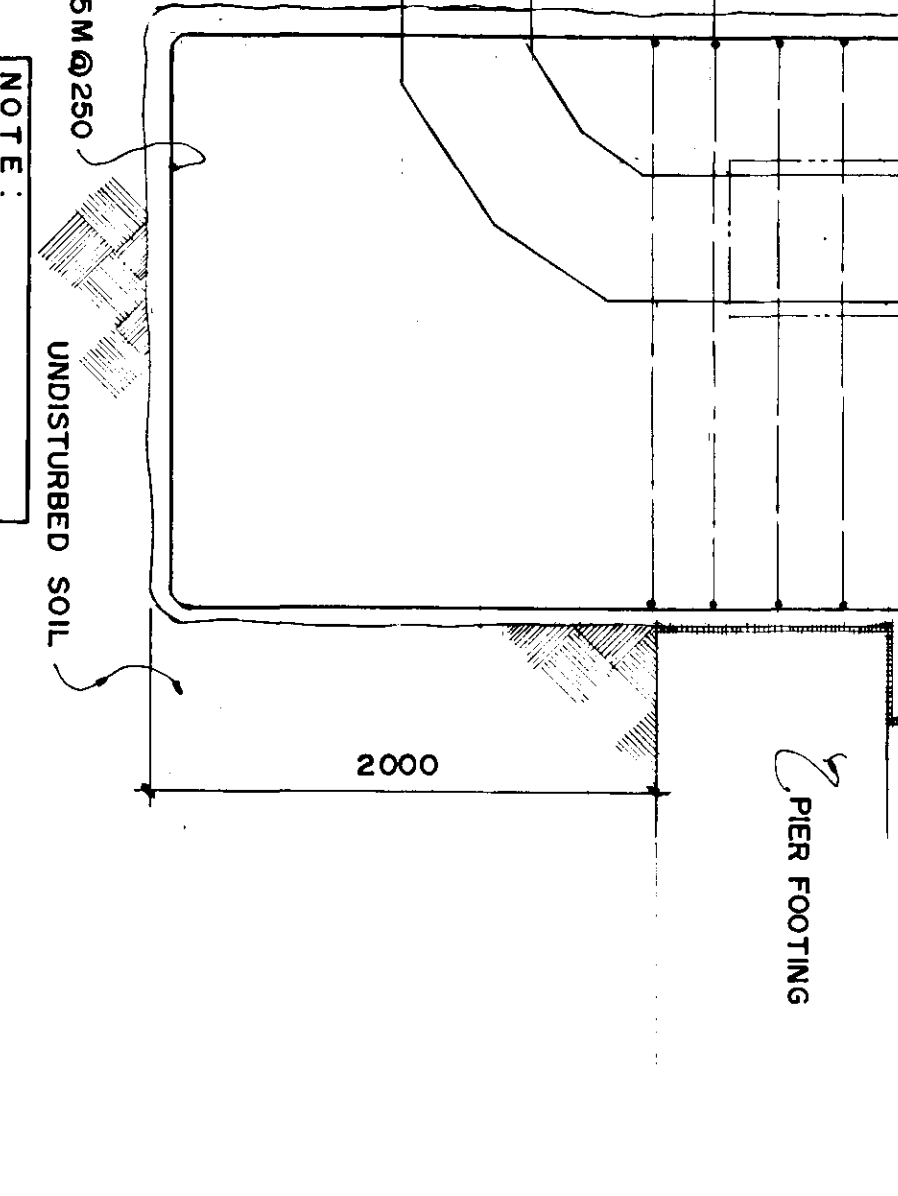
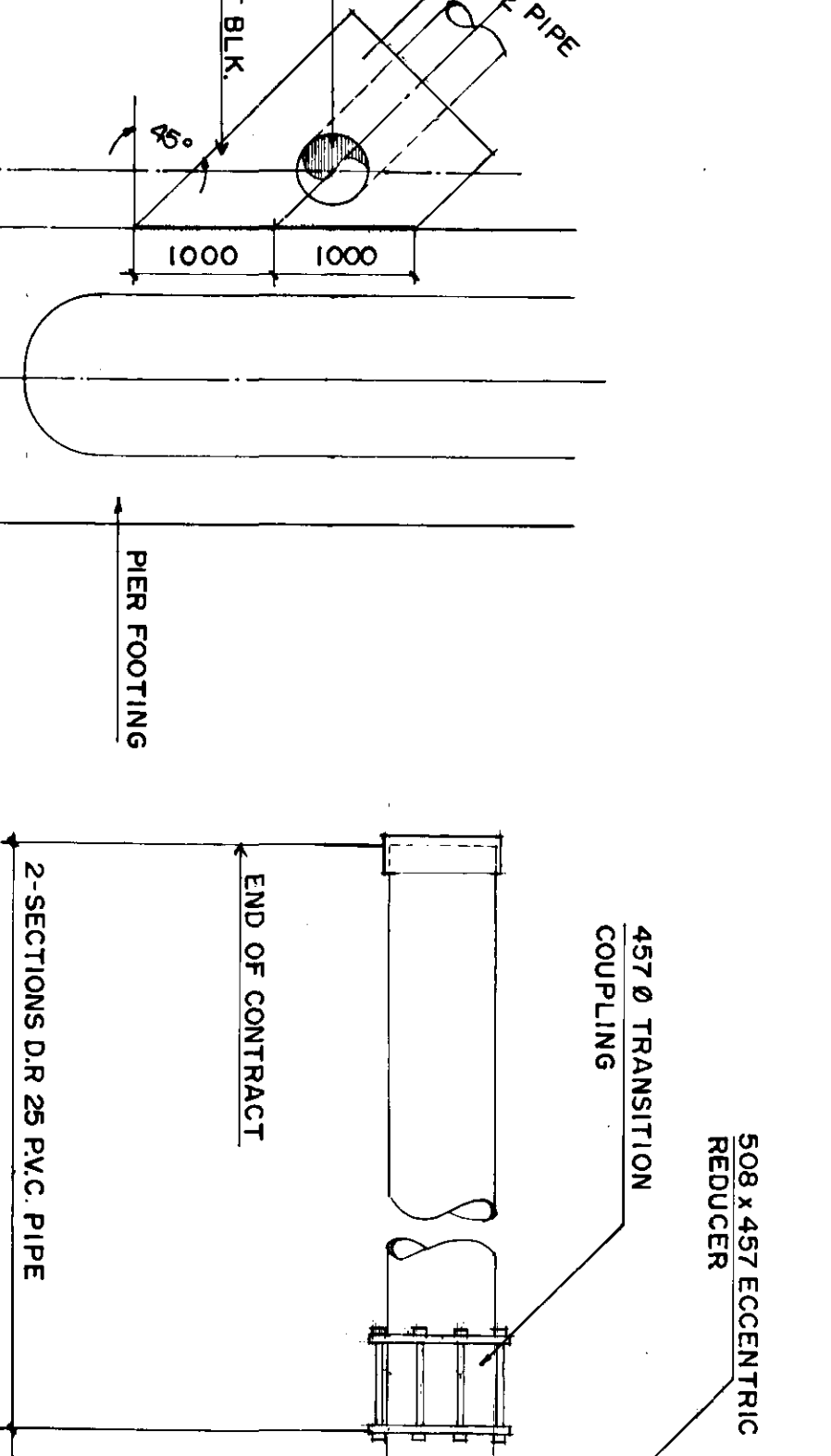
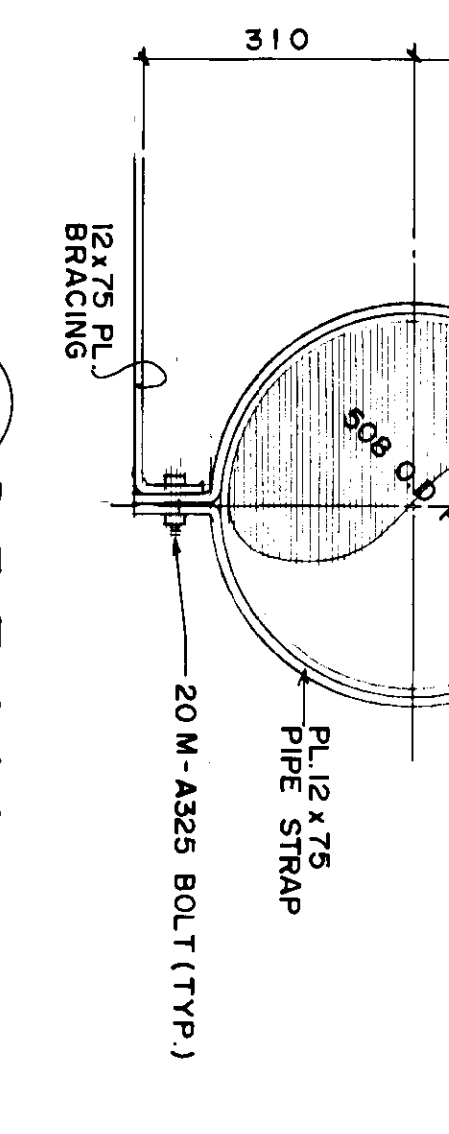
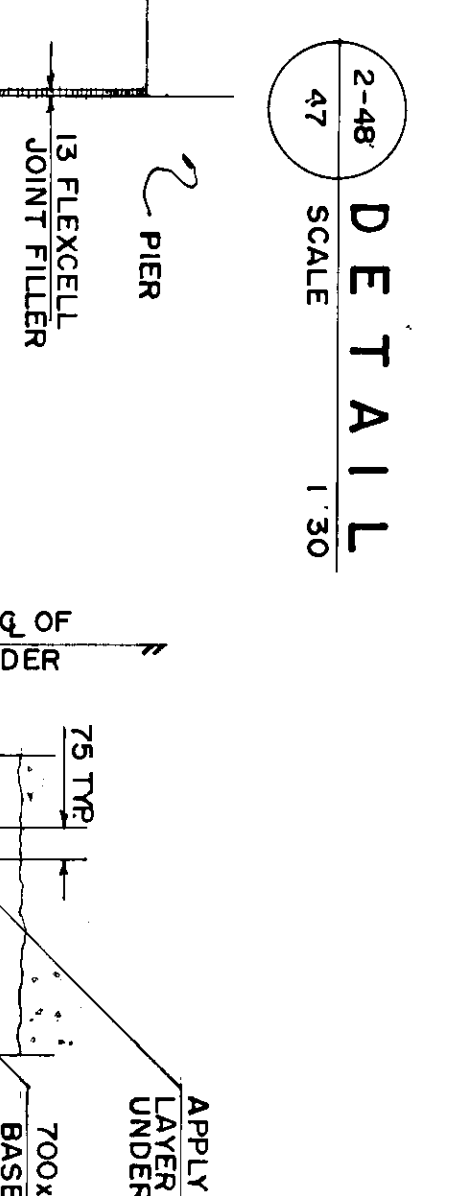
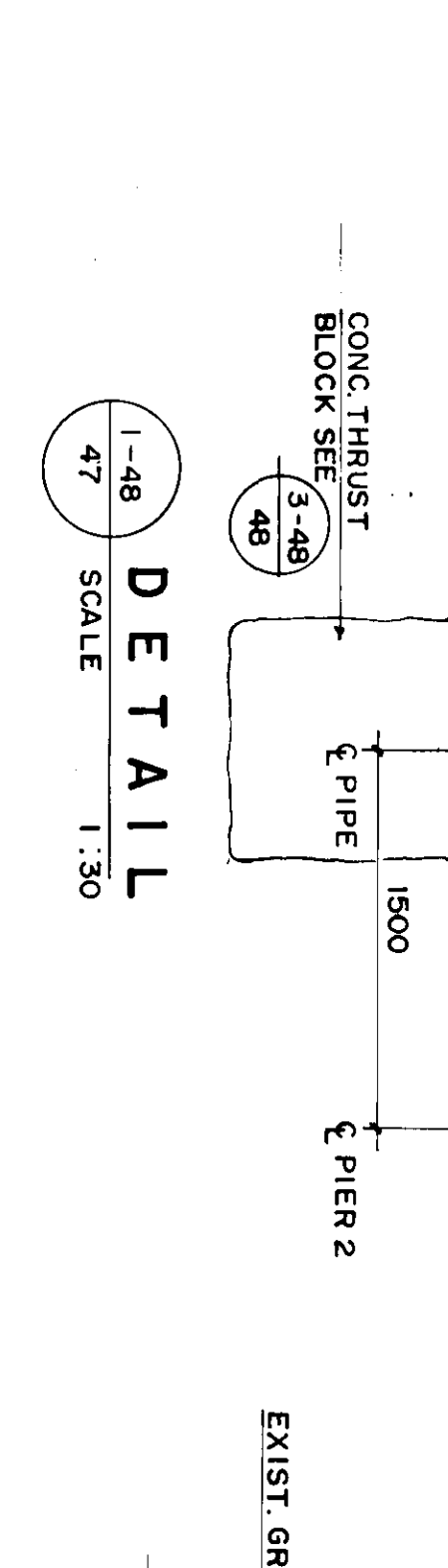
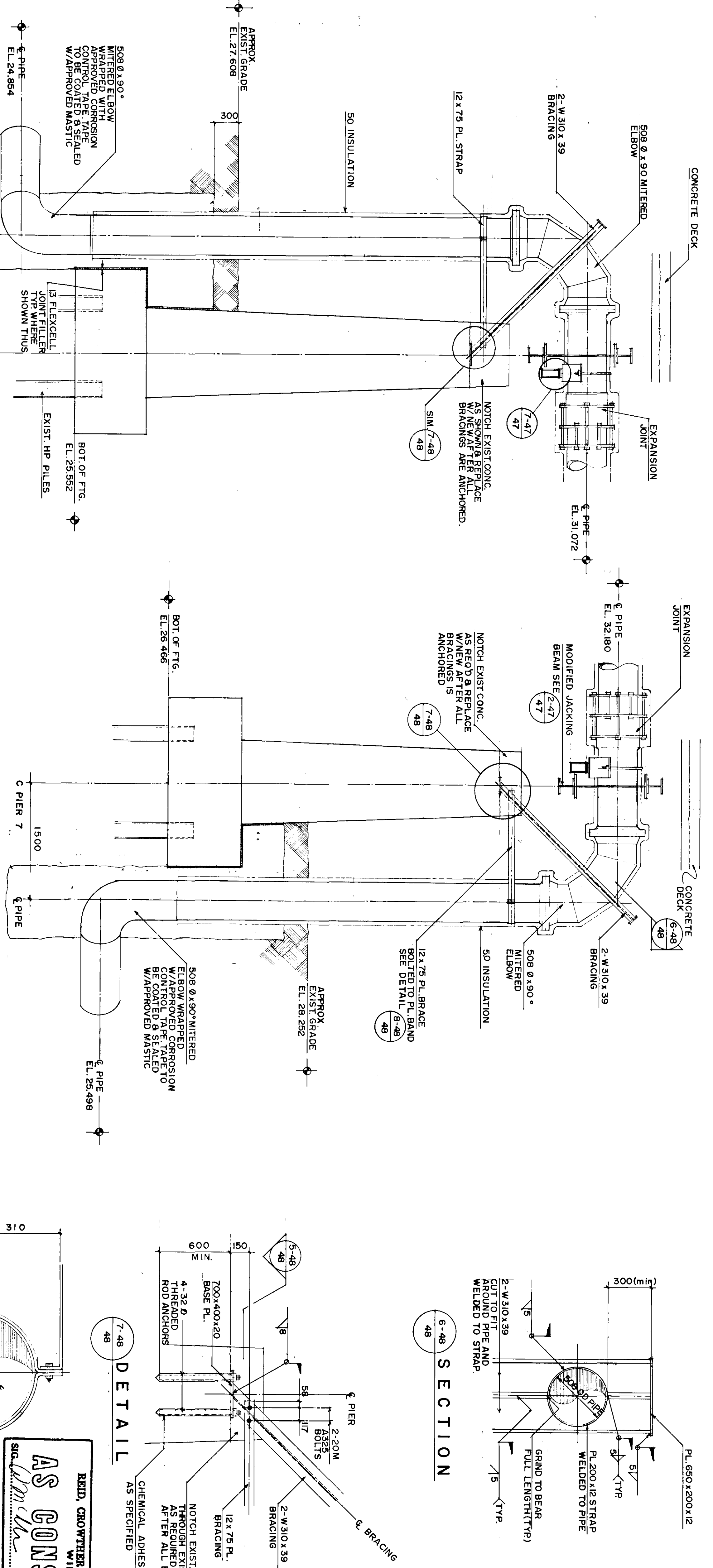


5-47 SECTION
SCALE 1:10

AS CONSTRUCTED
REID, CROWTHER & PARTNERS LIMITED
WINNIPEG
DATE: 89-06-14

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

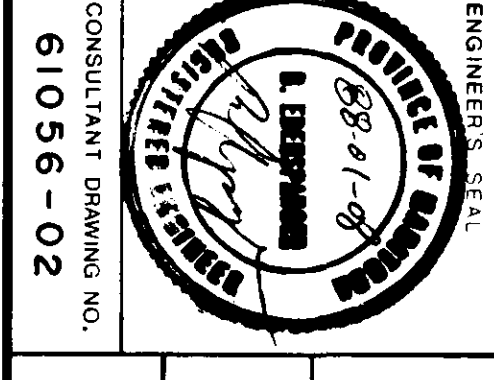
DESIGNED BY	B.E.	CHECKED BY	W.J.M.	APPROVED BY	L.B.
DRAWN BY	R.C.S.	DATE	JAN. 89	DATE	JAN. 89
THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION WATERWORKS, WASTE & DISPOSAL DEPT.		ST. VITAL TWIN BRIDGE OVER RED RIVER STRUCTURE REHABILITATION AND RELATED WORKS		SEWAGE FORCEMAIN LAYOUT & DETAILS	
CITY DRAWING NUMBER	B116-88-47	SHEET	47	OF	48
B-5826-47					



NOTE: ALL SEWAGE FORCEMAIN STRUCTURAL STEEL AND MISCELLANEOUS METAL AND COMPONENTS AND JACKING BEAM MODIFICATIONS TO BE PAINTED.

NO	REVISIONS	DATE	BY
1	AS CONSTRUCTED	89-6-14	KJK

Reid Crowther
 DESIGNER: B.E.
 DRAWN: R.C.S.
 CHECKED: W.J.M.
 APPROVED: [Signature]
 DATE: JAN. 88

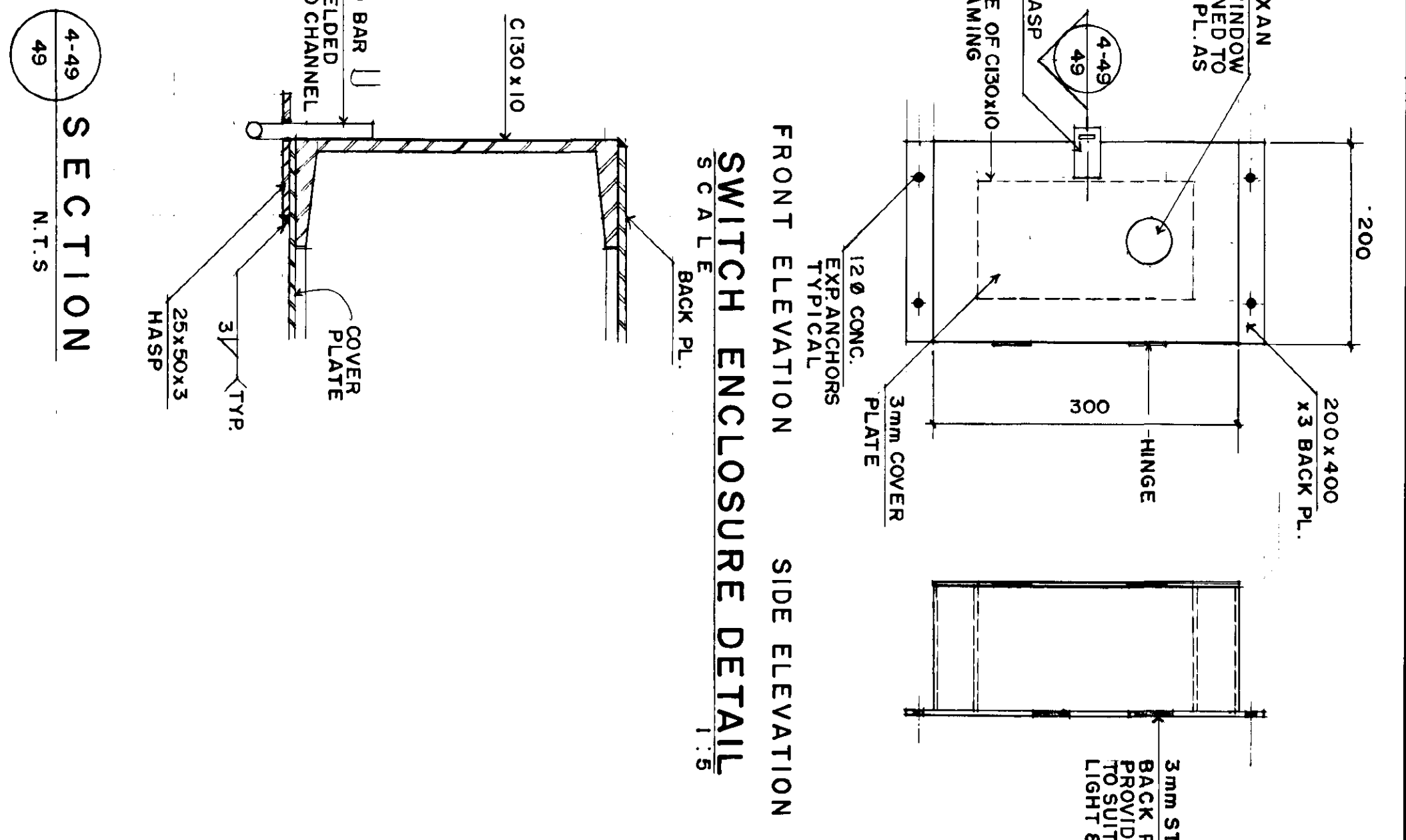
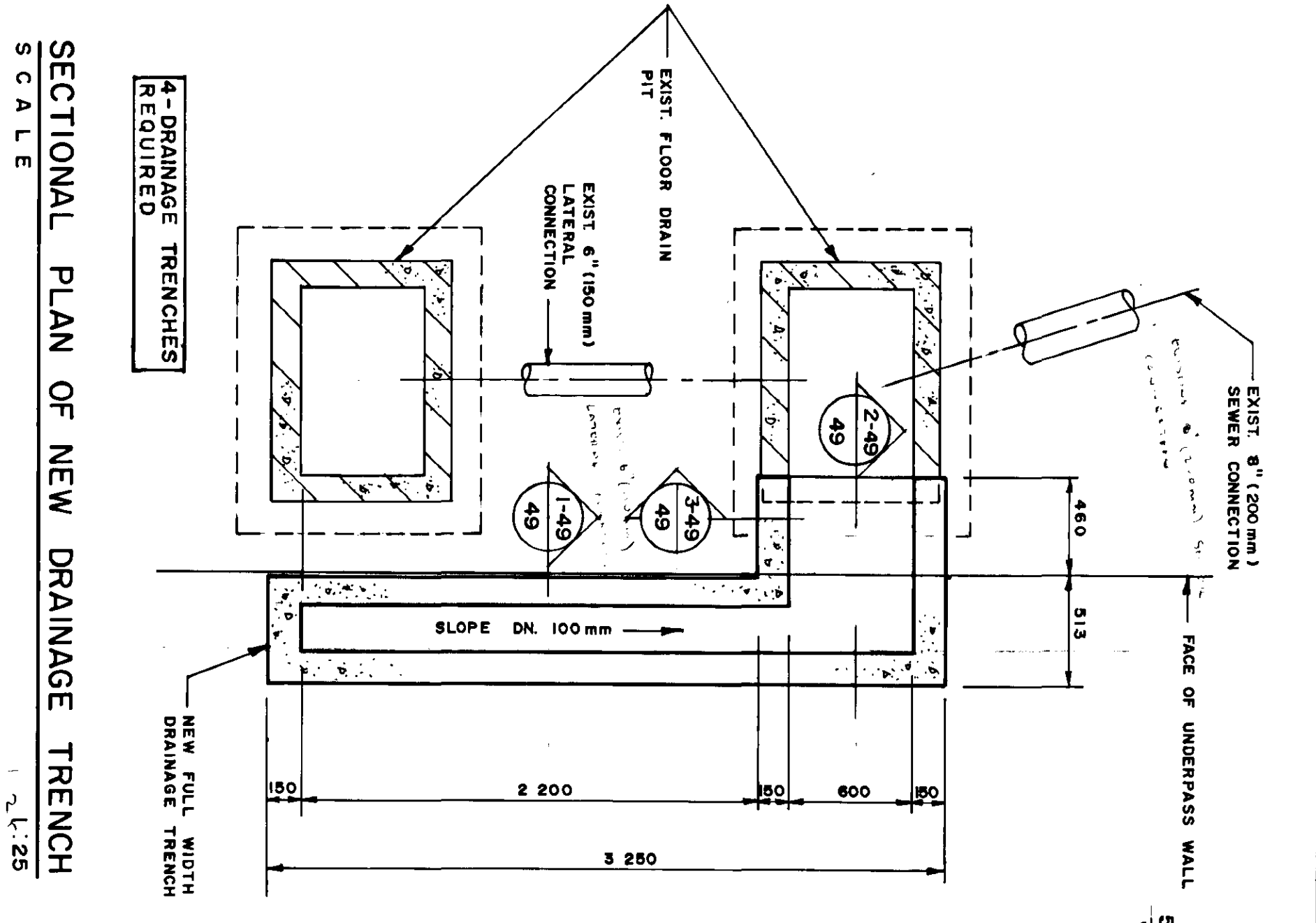
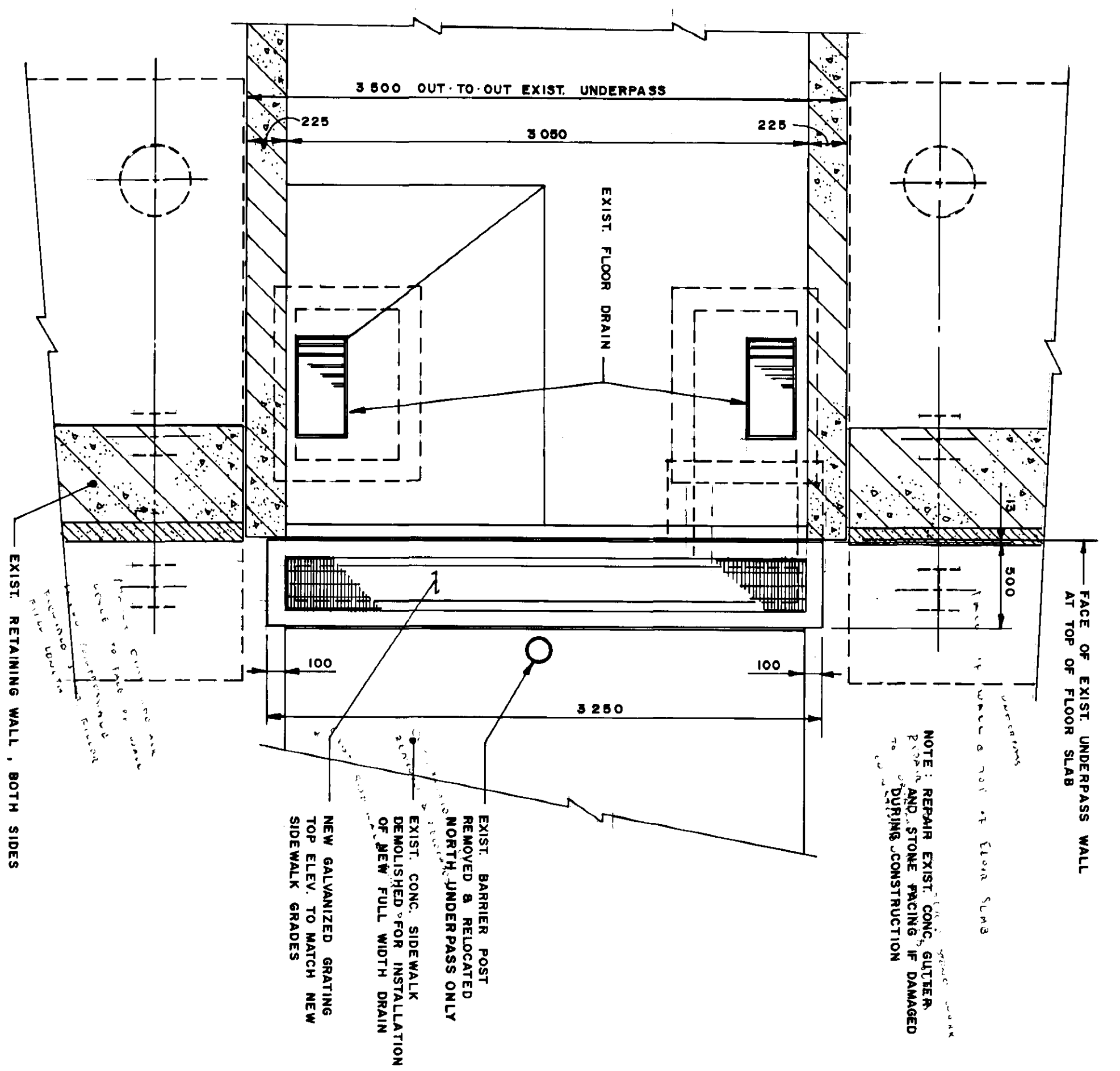


THE CITY OF WINNIPEG
 WORKS AND OPERATIONS DIVISION
 WATERWORKS, WASTE & DISPOSAL DEPT.
 ST. VITAL TWIN BRIDGE OVER RED RIVER
 STRUCTURE REHABILITATION AND RELATED WORKS
 SEWAGE FORCEMAIN SECTIONS & DETAILS

AS CONSTRUCTED
 REID, CROWTHER & PARTNERS LIMITED
 WINNIPEG
 DATE: 89-06-13

METRIC
 WHOLE NUMBERS INDICATE MILLIMETRES
 DECIMALIZED NUMBERS INDICATE METRES

CITY DRAWING NUMBER: B116-88-48
 SHEET: 48 OF 48
 B-5826-48



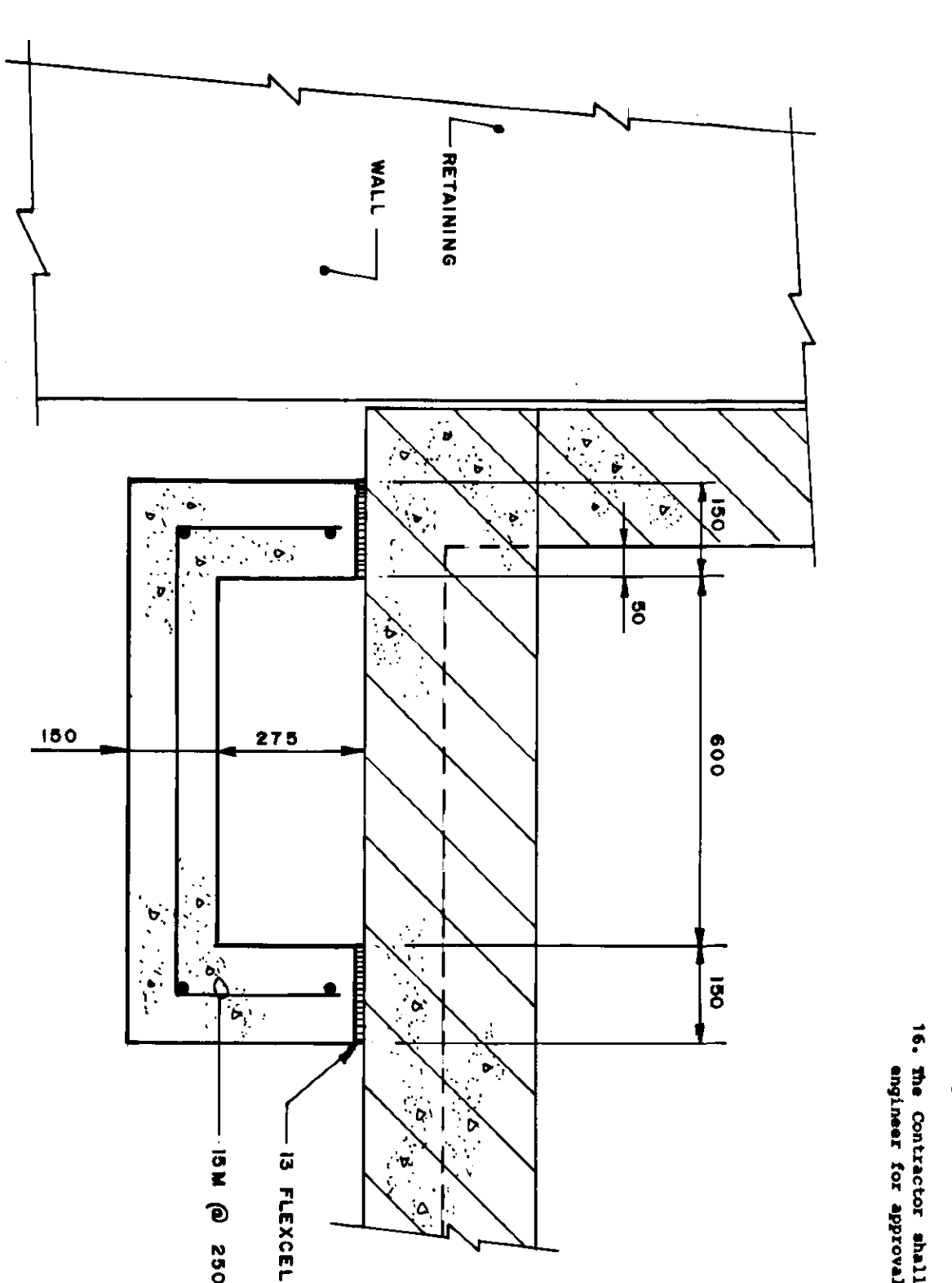
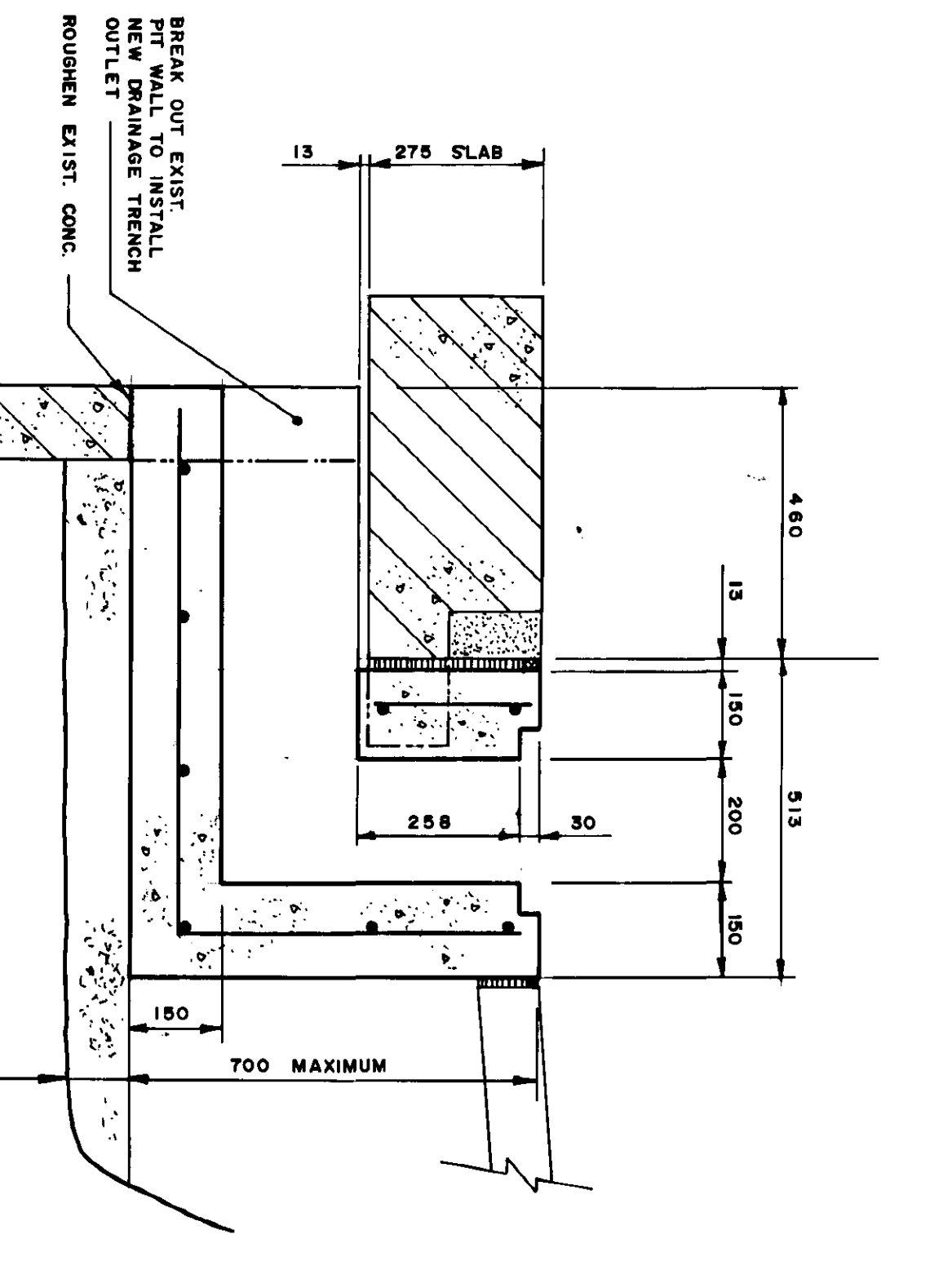
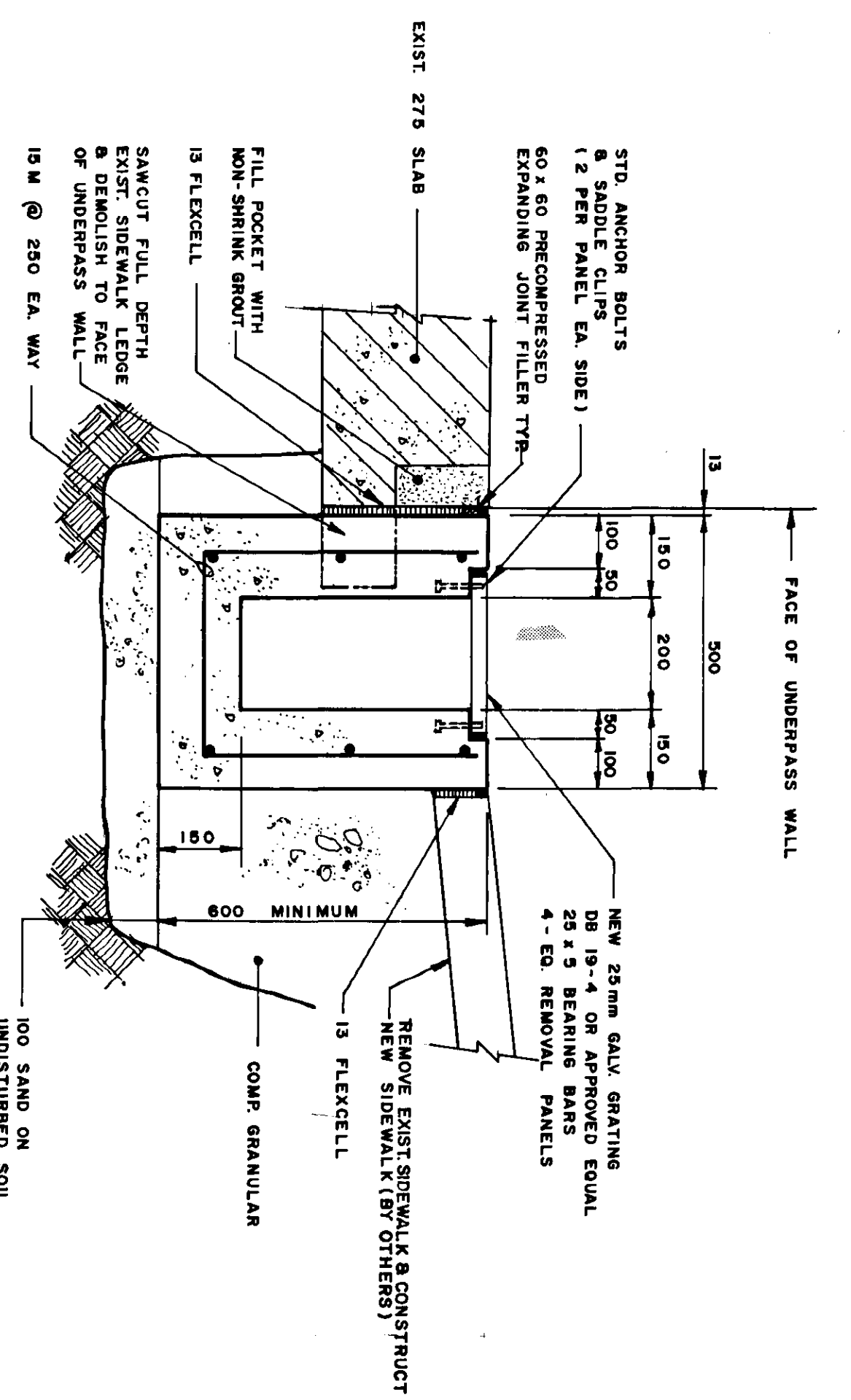
PLAN ABOVE UNDERPASS FLOOR SLAB
SCALE 1:25

SECTIONAL PLAN OF NEW DRAINAGE TRENCH
SCALE 1:25

4-49 SECTION
N.T.S.

FRONT ELEVATION
SIDE ELEVATION
SWITCH ENCLOSURE DETAIL
SCALE 1:5

1. Perform all work and supply all material as specified in tender No. P.D.-88-1 unless noted otherwise.
 2. Wiring cable shall be Raychem Electric Mtg Wiring cable or an approved equal installed in accordance to the manufacturer's instructions and subject to the approval of the Engineer. (operating at 50 Watts/ft.² of 29' spacing). The heating cable shall be installed in the new drainage trench, through the existing floor drain system, following the existing floor drain, and in the existing floor drain system.
 3. Grating shall be galvanized standard diamond bridge grating or an approved equal with a 25 mm x 5 mm bearing area.
 4. Obtain and pay for all permits and inspection fees.
 5. Examine the site and verify all existing conditions that might affect the work.
 6. Confirm all mounting heights prior to installation.
 7. The locations of the drain inlet modifications are shown as revision 2 on Drawings 8116-88-30, 8116-88-31, 8116-88-35, 8116-88-39 and 8116-88-40.
- Electrical**
8. Comply with the latest edition of the Canadian Electrical Code and all provincial and local codes.
 9. Wire all systems in conduit, use rigid steel 1/2" Thomas & Betts connectors (w/size 300-370 Series).
 10. Do not use wire smaller than No. 12 AWG for circuits. No. 14 AWG to be used for control. All wire to be copper w-LINK insulation unless otherwise noted.
 11. Size all circuits for continuity and insulation resistance and correct if necessary.
 12. Ground systems in accordance with the applicable codes.
 13. Connect new duplex receptacle to disconnect power source provided by others. Include all wire, conduit, back boxes and connections.
 14. The power source to the switch box is a 15 Amp circuit breaker to be supplied and installed by others.
 15. The two switch enclosures (one required per underpass) shall be secure and installed complete with locks, switch, operating light and duplex plug as shown. The locations for mounting the two switch enclosures on the inside under-pass walls shall be given by the Engineer.
 16. The Contractor shall submit switch enclosure shop drawings to the Engineer for approval prior to fabrication.



1-49 SECTION
1:10

2-49 SECTION
1:25

3-49 SECTION
1:10

DESIGNED BY	J. L.	CHECKED BY	B. E.
DRAWN BY	G. M.	APPROVED BY	<i>[Signature]</i>
HOR. SCALE 1:10 UNO VERT. SCALE 1:10 UNO		AUTHORIZED BY STREET & BRIDGE ENGINEER / S.W.E. ACCEPTED BY DATE	
THE CITY OF WINNIPEG WORKS AND OPERATIONS DIVISION STREETS AND TRANSPORTATION DEPARTMENT		CONSULTANT DRAWING NO. 60814-49	
ST. VITAL TWIN BRIDGE OVER RED RIVER STRUCTURE REHABILITATION AND RELATED WORKS		DRAIN INLET MODIFICATIONS	
REID, CROWTHER & PARTNERS LIMITED WINNIPEG AS CONSTRUCTED DATE: 20/02/2010		CITY DRAWING NUMBER 8116-88-49 SHEET 49 OF 49	
B-5826-49			