

**SPECIAL PROVISIONS APPENDIX
FOR AMENDMENTS TO THE 2009 STANDARD SPECIFICATIONS
FOR HIGHWAY CONSTRUCTION**

The Amendments to the 2009 Standard Specifications for Highway Construction are as follows:

SECTION 125 - ENGINEER OF RECORD AND RECORD DRAWINGS

Issued Date: June 4, 2010

125.05.01 The Contractor will, for all engineering works required for each implemented VEP:

- a)** comply with the requirements of Ministry Technical Circular T-06/09 “Engineer of Record and Field Review Guidelines” (http://www.th.gov.bc.ca/publications/Circulars/Current/T_Circ/2009/t06-09%20.pdf), or any update or replacement thereof, including, without limitation, identifying Engineers of Record, Field Reviewers, and, if appropriate, a Coordinating Professional Engineer, and submitting all related letters of assurance to the Ministry Representative;
- b)** coordinate with the Coordinating Professional Engineer responsible for the original design as tendered by the Ministry to ensure that all aspects of engineering between the original design and the VEP are covered by the Contractor’s engineers; and
- c)** provide to the Ministry Representative complete signed and sealed record drawings, electronically and in original hard copy, prepared in accordance with Ministry Technical Circular T-07/09 “Record Drawings Amended April 2010” (http://www.th.gov.bc.ca/publications/Circulars/Current/T_Circ/2009/t07-09b.pdf), or any update or replacement thereof.

SECTION 145 – GENERAL REQUIREMENTS FOR HIGHWAY, BRIDGE AND MARINE CONSTRUCTION

Issued Date: February 12, 2009

SS 145.33.03 a) and b) – Traffic Control Signs are amended in their entirety and are replaced with the following:

SS 145.33.03 - Traffic Control Signs:

The Contractor is required to use:

- a)** Prismatic lens sheeting (identified by the diamond shaped pattern) on:
 - C-27 – Stop/Slow Paddle; and
- b)** ASTM D 4956-04 Type 9 sheeting on all other traffic control signs in the Work zone, including:
 - Crew Working;
 - Single Lane Traffic;
 - Traffic Control Person Ahead; and
 - Prepare to Stop Ahead.

Signs should meet the specifications outlined in the Traffic Control Manual for Work on Roadways under:

http://www.th.gov.bc.ca/publications/eng_publications/TCM/Traffic_Control_Manual.htm

and, the Sign Pattern Manual under:

http://www.th.gov.bc.ca/publications/eng_publications/geomet/geometsigns.htm

All costs to provide, replace and use the required traffic control signs in the Work zone shall be included in the price bid for Traffic Management/Control and no additional compensation will be made.

SECTION 207: SLOPE MESH FOR ROCK CUTS

Issued Date: April 29, 2009

SS 207.32 - Soil Anchors, last paragraph is amended in its entirety to read as: The Contractor shall load test 10% of the overburden soil anchors or as specified by the Ministry Representative. Soil anchors shall be tested by applying a lateral load of 10 kN or as specified by the Ministry Representative.

SECTION 211: PORTLAND CEMENT CONCRETE

Issued Date: March 05, 2009

The following Sub-section was inadvertently omitted and is added after SS 211.05.04 – Other Materials:

SS 211.05.05 – Aggregates: Each nominal size of aggregate, including coarse and fine shall be separately stockpiled, stored and handled in a manner that will prevent contamination, intermixing and segregation. A minimum of 10 m³ of each aggregate size, in excess of the requirements of the daily concrete operations, shall be maintained in identifiable stockpiles at the batch site in order to ensure proper continuity of the work with approved aggregates.

SECTION 213: TIMBER BRIDGES - CONSTRUCTION

Issued Date: August 18, 2010

213.03 Work Practice – The Standard of work shall be first-class throughout and in accordance with AASHTO LRFD Bridge Construction Specifications, **3rd Edition 2010** including any subsequent interim revisions and updates.

SECTION 232: METAL BIN WALL

Issued Date: November 26, 2008

The following have been omitted and are attached to these Special Provisions:

[1-SP 232](#) (Nov. 26, 2008) – Type 2 Metal Bin Wall Designs A, B, & C

[2-SP 232](#) (Nov. 26, 2008) – Type 2 Metal Bin Wall Designs D, E & F

[3-SP 232](#) (Nov. 26, 2008) – Metal Bin Wall Type 1

SECTION 303: CULVERTS

Issued Date: February 12, 2009

[Section 303](#) – Culverts is amended in its entirety to include the Standard Specifications drawings which were inadvertently omitted and is attached to these Special Provisions.

SECTION 316: STEEL AND WIRE FENCE MATERIALS

Issued Date: April 29, 2009

SS 316.06, f), iii) - Coating Mass, last line, the reference to “SS 16.06 (c)” should read as “SS 316.06 (c)”.

SECTION 320: CORRUGATED STEEL PIPE

Issued Date: July 17, 2009

SS 320, Table 320-A: Quality Assurance Tasting, the word “Tasting” should be “Testing”.

SECTION 415: MANUFACTURE AND ERECTION OF PRECAST AND PRESTRESSED CONCRETE MEMBERS

Issued Date: October 30, 2009

SS 415.02.02, the first sentence is amended to read as: Precast concrete elements shall be manufactured in plants certified to the current CSA A23.4 requirements in the appropriate category by CSA or by a certification organization accredited by the Canadian Precast Prestressed Concrete Institute (CPCI), in the subject area of building products and structures.

SECTION 421 – STRUCTURAL STEELWORK

Issued Date: August 18, 2010

SS 421.01 Scope – This section covers the supply, fabrication, erection and quality management program of all major structural steel elements.

In general, all shop connections shall be welded, and all field connections high-strength bolted.

Except as otherwise specified herein, steelwork shall be fabricated and erected in accordance with the **AASHTO LRFD Bridge Construction Specifications, 3rd Edition 2010**. Welding and associated work shall be in accordance with the current edition of CAN/CSA W59 – Welded Steel Construction. Fracture control requirements, welding requirements for fracture critical members and welding requirements for primary tension members shall be in accordance with CAN/CSA-S6-06.

421.06 Quality Assurance, and 421.39 Shop Assembly of Bolted Connections

The same for other subsections including 421.06 Quality Assurance, and 421.39 Shop Assembly of Bolted Connections. The **AASHTO LRFD Bridge Construction Specifications, 3rd Edition 2010** including any subsequent interim revisions and updates shall be replacing the AASHTO Standard Specifications for Highway Bridges (17th Edition -2002)

SECTION 508: GRADED AGGREGATE SEAL COAT (EPS)

Issued Date: November 26, 2008

The [Pot Hole and Streaking](#) [pages 18 of 20 to 20 of 20] photographs have been omitted and are attached to these Special Provisions.

With the addition of the Pot Hole photograph as page 18 of 20, the Raveling or Stripping photographs is now numbered as page 19 of 20.

SECTION 582: CONCRETE CURB AND GUTTER AND STORM DRAINAGE

Issued Date: May 7, 2010

The following Standard Specifications drawing has been updated and is now included in this package:

SP 582-07.03 (May 7)

SECTION 635 – ELECTRICAL AND SIGNING

Issued Date: February 12, 2009

The following Subsections are amended to read as:

SS 635.26 – Breakaway Sign Structures, paragraph eight, the word “and” before the words “pressure treated” is deleted and replaced with the word “or”.

SS 635.27 – Wood Post Sign Structures, paragraphs four and twelve, the word “and” before the words “pressure treated” is deleted and replaced with the word “or”.

SECTION 741 – FENCE CONSTRUCTION

Issue Date: August 18, 2010

SS 741.12.01 Gates – Gates shown on the Drawings shall be of the prefabricated type indicated on Drawings SP741-04.04, SP741-04.05 and as specified in SS 316.11 and/or as specified in the Special Provisions

Issued Date: February 12, 2009

SS 741.38 – Steel Sidewalk Fencing, the “Note: These are guide fences only, not intended for use adjacent to drop-offs or high slopes.” is deleted.

SP741-07.01: Sidewalk Fence – Welded for Slip-on is outdated and is replaced with [SP741-07-01](#): Pedestrian Sidewalk Fence – Welded or Slip-on and is attached to these Special Provisions.

[SP741-07.02](#): Bicyclist Sidewalk Fence – Welded or Slip-on is revised to remove the wording “Suitable for locations where gathering of many people improbable” and is attached to these Special Provisions.

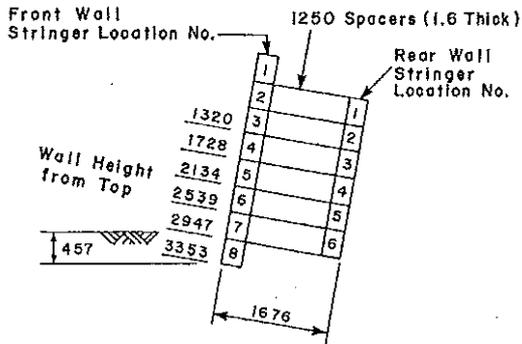
SECTION 941 – PRECAST REINFORCED CONCRETE BARRIERS

Issued Date: February 12, 2009

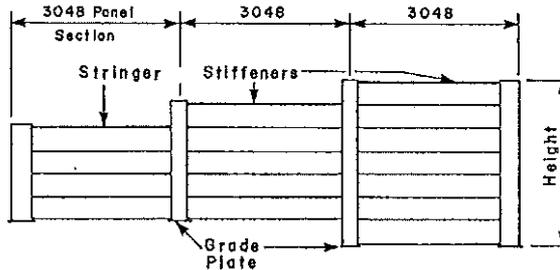
Precast Concrete Median Barrier 810 mm – CMB-E Details, SP941-02.01.04 [941 (8 of 28)] is deleted as it is duplicated [see 941 (13 of 28)].

Precast Concrete Roadside Barrier 690 mm – CRB-E Details, [SP941-01.02.04](#) [941 (8 of 28)] (Nov. 26, 2008) has been omitted and is attached to these Special Provisions.

DESIGN A

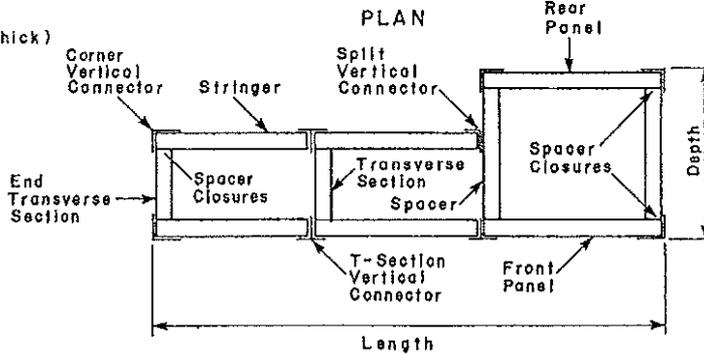
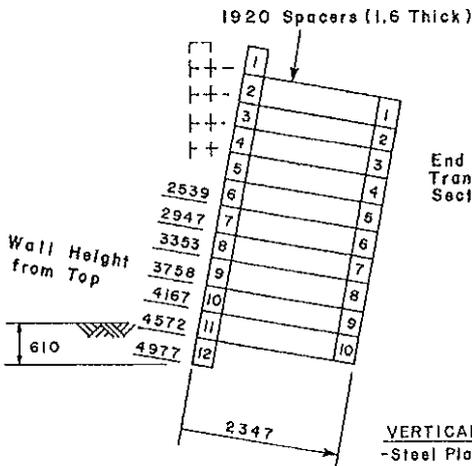


ELEVATION



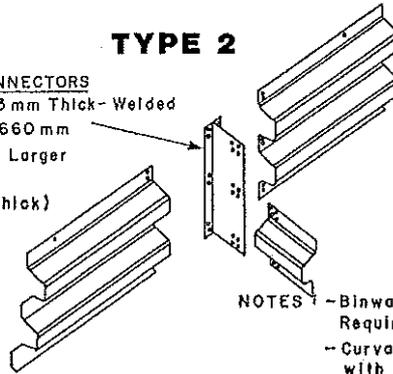
Front Wall Stringer Location No.	Rear Wall Stringer Location No.	Thickness
1 through 8	1 through 6	1.6
9 through 12	7 through 10	2.0
13 through 16	11 through 14	2.8

DESIGN B



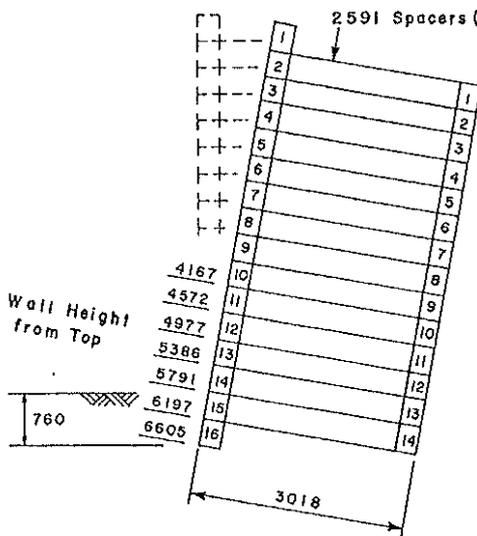
TYPE 2

- VERTICAL CONNECTORS**
 - Steel Plate 6.3 mm Thick - Welded
 - Max. Length 3660 mm
 - Splice Plate if Larger



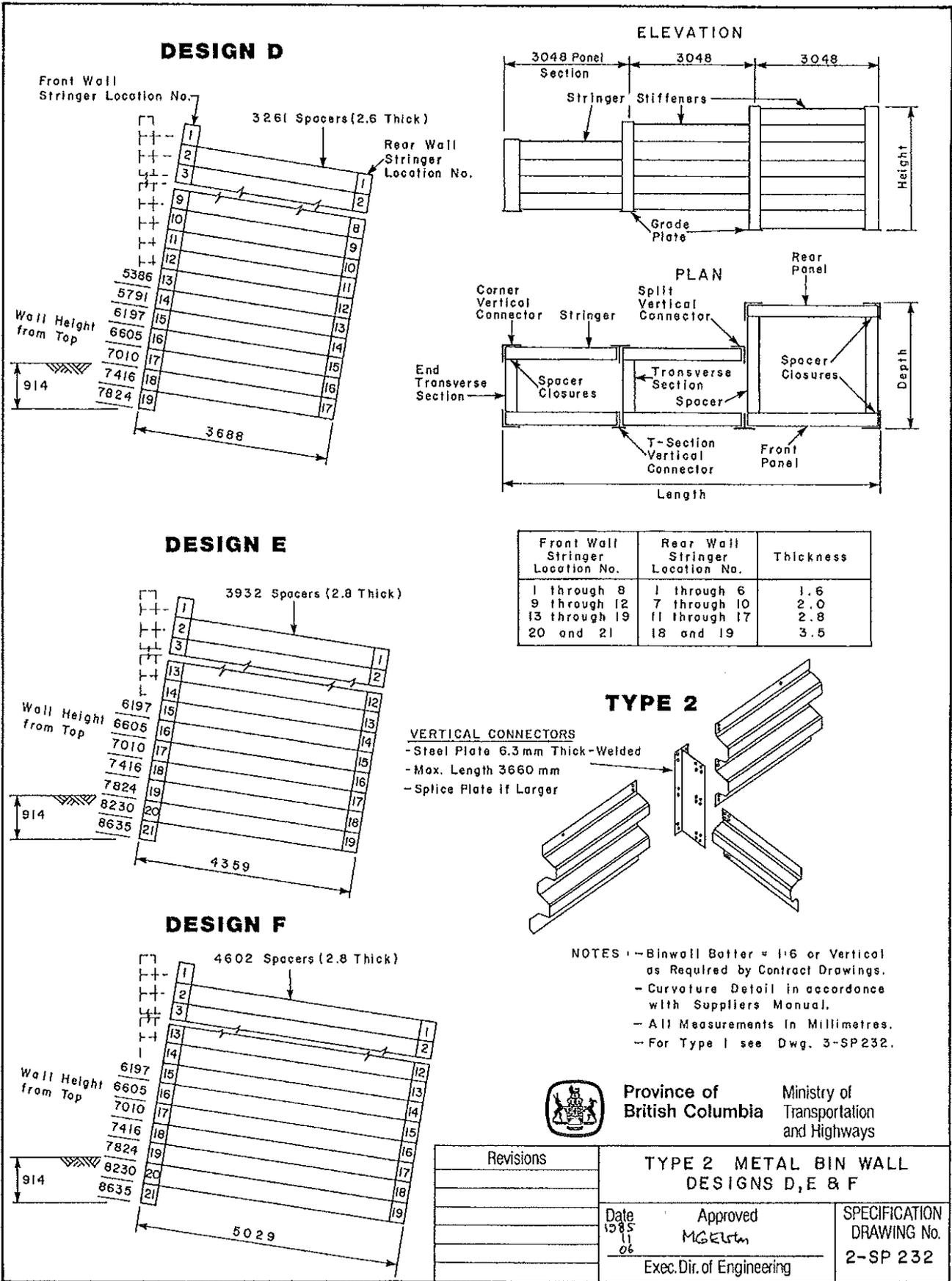
- NOTES**
 - Binwall Batter = 1:6 or Vertical as Required by Contract Drawings.
 - Curvature Detail in accordance with Suppliers Manual.
 - All measurements in millimetres.
 - For Type 1 see Dwg. 3-SP 232.

DESIGN C

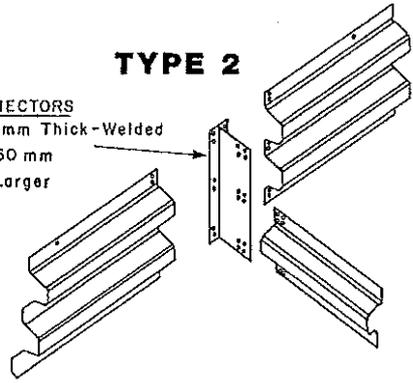


Province of British Columbia Ministry of Transportation and Highways

Revisions	TYPE 2 METAL BIN WALL DESIGNS A, B & C		SPECIFICATION DRAWING No. 1-SP 232
	Date 1985 11 06	Approved MGE/str Exec. Dir. of Engineering	



Front Wall Stringer Location No.	Rear Wall Stringer Location No.	Thickness
1 through 8	1 through 6	1.6
9 through 12	7 through 10	2.0
13 through 19	11 through 17	2.8
20 and 21	18 and 19	3.5

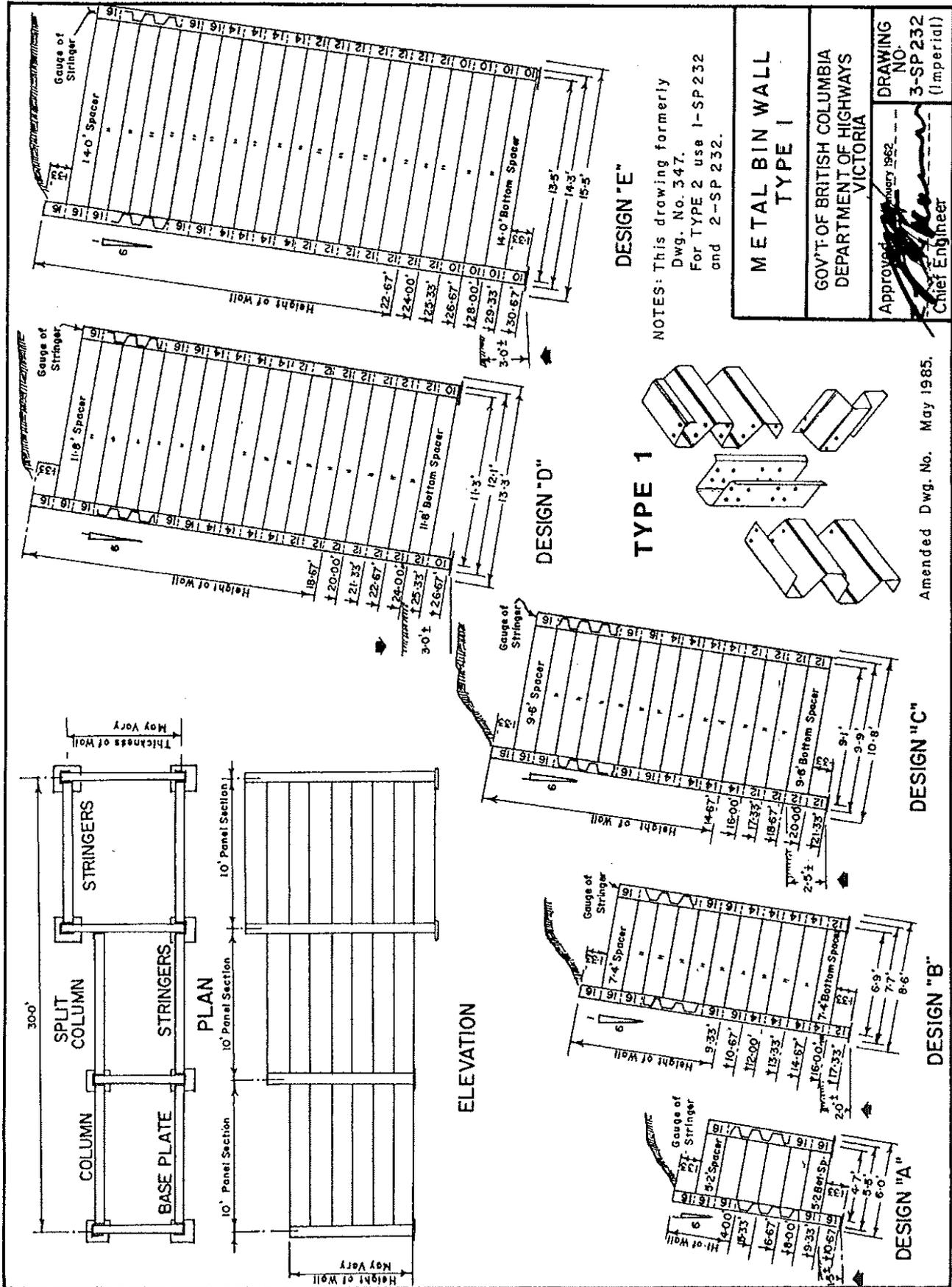


- NOTES :- Binwall Batter = 1:6 or Vertical as Required by Contract Drawings.
 - Curvature Detail in accordance with Suppliers Manual.
 - All Measurements in Millimetres.
 - For Type 1 see Dwg. 3-SP232.



Province of British Columbia Ministry of Transportation and Highways

Revisions	TYPE 2 METAL BIN WALL DESIGNS D, E & F		SPECIFICATION DRAWING No. 2-SP 232
	Date 1985 11 06	Approved MGE/eth Exec. Dir. of Engineering	



SECTION 303 CULVERTS

303.01 Scope - This section covers the construction of pipe culverts.

303.01.01 Definitions – for the purposes of this section, the following general terms are defined as follows:

- a) Backfilling means the operation of filling the embedment and backfill material.
- b) Backfill Material means fill material used above the embedment material and below the lower of the subgrade or finished grade or the original ground.
- c) Bedding Material means the material used to support the pipe culvert.
- d) Embedment Material means material from the bottom of the bedding to the bottom of the backfill.
- e) Subgrade means the grade upon which the first layer of select granular sub-base or base material is laid.

303.02 Materials The Contractor shall supply all material in accordance with SS 145.15 and the following:

- a) Concrete Pipe (CP) - supplied in accordance with CSA A257.
- b) Corrugated Steel Pipe (CSP) - supplied in accordance with SS 320.
- c) Structural Plate Corrugated Steel Pipe (SPCSP) - supplied in accordance with SS 320.
- d) Polyethylene Pipe (PP) – supplied in accordance with SS 317.
- e) PVC Pipe – supplied in accordance with SS 318.03.

303.03 Construction

303.03.01 Backfill Material – construction shall conform to SS 201 Roadway and Drainage Excavation.

303.03.02 Freezing Temperatures - When the air temperature is below 0°C, no backfilling is allowed unless otherwise accepted by the Ministry Representative. When acceptance is granted, all backfill materials shall be in a thawed state when placed and compacted. Frozen granular backfill materials will not be permitted. No backfill material will be permitted to be placed directly on frozen substrate.

303.04 Concrete, Corrugated Steel, Polyethylene and PVC Pipes (this subsection does not cover SPCSP).

303.04.01 Layout – All culverts shall be laid out and constructed in general accordance with the lines, grades, and locations specified in the Drawings, or as directed by the Ministry Representative. Culverts are to be field fit by the Contractor, to reflect actual conditions encountered on-

Site, and approved by the Ministry Representative prior to installation.

Such field fits will normally involve minor changes in location, elevation, grade, skew, depth and/or length resulting from actual local drainage course locations, post-stripping surface elevations, final ditch depths, and other factors.

Some culverts may be designed to control drainage, and are not to be field fit without the approval of the designer and Ministry Representative. Any such culverts will be identified in advance for the Contractor, through a note on the Drawings, in the Special Provisions, or by the Ministry Representative.

303.04.02 Flow Obstructions – Any obstacles to flow, such as filter cloth used for siltation control, shall not be placed directly on the end of any culvert. Where practicable, there shall be a minimum spacing of 1 m between the end of the culvert and any obstacles to flow.

Any obstructed culvert shall be cleaned out in accordance with SS 165.10.07.

303.04.03 Inlet and Outlet Ditches - Inlet and outlet ditches to culverts shall be constructed to the lines and grades as shown in the design.

303.04.04 Trenching - The trench and other preparatory work shall be approved by the Ministry Representative before actual placing starts.

A full trench condition shall be provided wherever possible; a minimum trench depth shall be 50% of the pipe culvert diameter. If, in the opinion of the Ministry Representative, the material in the bottom of the excavation is of such a character as to cause unequal settlement along the length of the culvert, the trench shall be dug below the grade to such depth as ordered, backfilled with gravel or other suitable material, and compacted to ensure a firm and uniform foundation.

303.04.05 Placing - Concrete pipe culvert shall be laid beginning at the downstream end with the bell end pointing upstream. Pipe culvert with elliptical reinforcement shall be laid with the minor axis of the reinforcement as marked by the manufacturer in a vertical position.

When jointing concrete pipe culverts the trench shall be in a dry condition and the joints shall be cleaned and wetted before sealing with mortar. The mortar shall consist of one part Portland Cement to two parts fine sand, mixed to the proper consistency. Sealing shall be neatly and thoroughly done, and the interior of the pipe culvert cleaned of all surplus mortar. Joints shall be kept damp

with burlap or earth for at least three days after sealing.

CSP shall be laid beginning at the downstream end. With riveted CSP, the outside laps shall point upstream and the longitudinal joint shall be on the side. There is no directional restriction with helical CSP.

303.04.06 Backfilling - Embedment Material shall consist of mineral aggregate and shall meet the gradation specified in Table 303-A.

Bedding material shall extend a minimum of 150 mm below the culvert invert. The top of the bedding, upon which the pipe culvert is to be laid, shall be shaped so that at least 25% of the circumference of the pipe culvert is in contact with the prepared bedding for the whole of its length.

Embedment material for embankment installation shall extend a minimum of two-thirds of the span or 0.9 m beyond the culvert span on each side, whichever is greater. Embedment material for trench installation shall extend a minimum of 0.3 m on either side.

Embedment material shall be placed in layers not exceeding 150 mm in depth when compacted. Embedment material shall be compacted to a minimum 95% (100% within 300 mm of subgrade elevation) of the laboratory density as determined in accordance with ASTM D 698. Backfilling shall be done symmetrically. The differential height of backfilling material on either side of the culvert shall not exceed 300 mm.

The material within 450 mm directly above the crown of the pipe culvert shall be laid and compacted as one lift. For a culvert with crown within 300 mm of subgrade, installation methods shall be approved by the Ministry Representative.

TABLE 303-A: EMBEDMENT MATERIAL GRADATION REQUIREMENTS FOR CONCRETE, CORRUGATED STEEL, POLYETHYLENE AND PVC PIPE CULVERTS

SIEVE SIZE (mm)	PERCENTAGE PASSING
31.5	100
25	60-100
19	15-100
2.36	10-100
0.075	0-5

303.05 Structural Plate Corrugated Steel Pipe/Pipe-Arch Culverts (SPCSP)

303.05.01 Excavation – shall conform to SS 407 Foundation Excavation. If a coarse boulder material or solid rock is encountered when preparing the bed of the SPCSP, the material shall be excavated to a minimum depth of 300 mm below the SPCSP invert and backfilled with granular material having a maximum size of 75 mm.

303.05.02 Assembling - All bolted plates shall be in contact for the full width and length of the seam lap. The bolts in the valley of each longitudinal seam shall be nearer to the visible edge of the plate than the bolts in the crest. The torque on the bolts prior to backfilling shall be between 200 and 340 Nm, or as directed by Ministry Representative. A minimum of 5% randomly selected bolts shall be tested in each longitudinal and circumferential connection. The installation shall not be accepted if 10% or more of tested bolts do not meet the specified torque requirements.

Rotation of the pipe culvert and/or spiralling of the longitudinal seams shall not be permitted. The upward or downward crown deflection shall not exceed 2% of the rise.

303.05.03 Backfilling –Backfilling shall extend to the limits as noted on the drawings. For multiple SPCSP structures, structural backfill shall be provided between adjacent SPCSP structures.

The diameter or the span and rise of SPCSP shall not vary from the manufactured dimensions by more than 5% during backfilling operations.

The embedment material shall be free draining, well graded, granular material approved by the Ministry Representative.

The top surface of the bedding upon which the pipe culvert is to be laid shall be constructed to the true grade and alignment as shown in the Drawings.

The embedment material shall be placed and compacted in lifts not exceeding 200 mm compacted thickness, with each lift to a minimum of 95% of Standard Proctor Density prior to addition of the next lift. The bedding layer of a 200 mm thickness in direct contact with the invert shall be shaped to the pipe culvert curved invert and shall be left uncompacted.

Backfilling shall be done symmetrically. The differential height of backfilling material on either side of the SPCSP at any transverse section shall not exceed 400 mm.

The embedment material within 300 mm of the pipe culvert walls shall be free of stones exceeding 75 mm size. Heavy equipment shall not be allowed within 1 m of the pipe culvert walls.

End dumped or loose pushed material shall not be piled closer than 3 m from the pipe culvert. Hauling equipment shall not be operated over the pipe culvert until backfilling

SECTION 303

CULVERTS

operations have completed a suitable cover approved by the Ministry Representative.

303.06 Culvert Endwalls – shall be constructed in accordance with the details shown on the Drawings. For concrete end walls, construction and materials for concrete and reinforcement shall conform to SS 211 and SS 412 and excavation shall conform to the requirements of SS 407.

If specified on the Drawings, the Contractor may provide an alternative endwall product from the Ministry's Recognized Products List.

303.07 MEASUREMENT

303.07.01 Pipe Culverts - Pipe culverts will be measured by the METRE along its invert length as installed.

303.07.02 Concrete Endwalls - Concrete end walls will be measured by the CUBIC METRE.

303.08 PAYMENT

303.08.01 Pipe Culverts - Payment for excavation, pipe culvert assembling, placing, and backfilling shall be at the

Contract Unit or Lump Sum Price bid for each of these items of work, or at the Contract Unit Price bid per metre of pipe culvert.

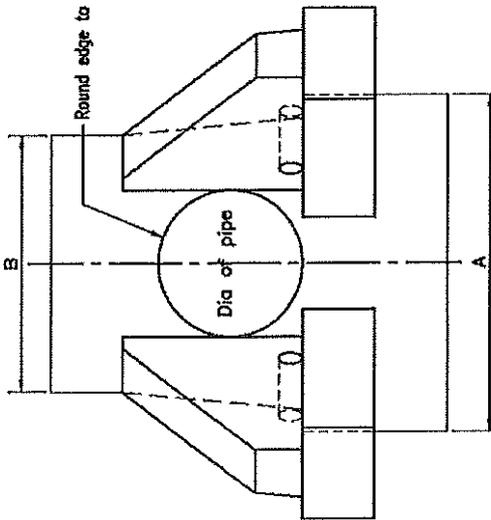
303.08.02 Concrete Endwalls - Payment for CONCRETE END WALLS will be at the Contract Unit or Lump Sum Price bid per size of endwall required. The Contract Unit Price shall include provision of everything necessary; precast or cast-in-place endwall, formwork, reinforcement, air entrained concrete, placing and tamping, stripping and cleaning, curing and any other work necessary in connection therewith, including excavation and backfilling, but excluding riprap.

303.08.03 Full Compensation - The price(s) bid shall be full compensation for the cost of furnishing all labour, materials, equipment, tools and incidentals necessary to complete the work as specified in the Contract.

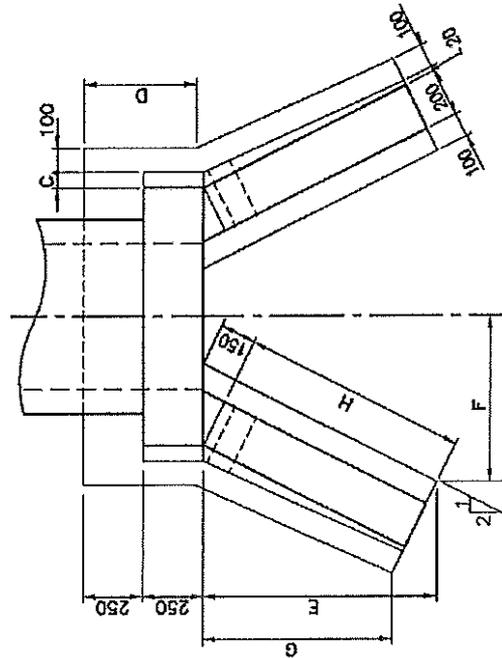
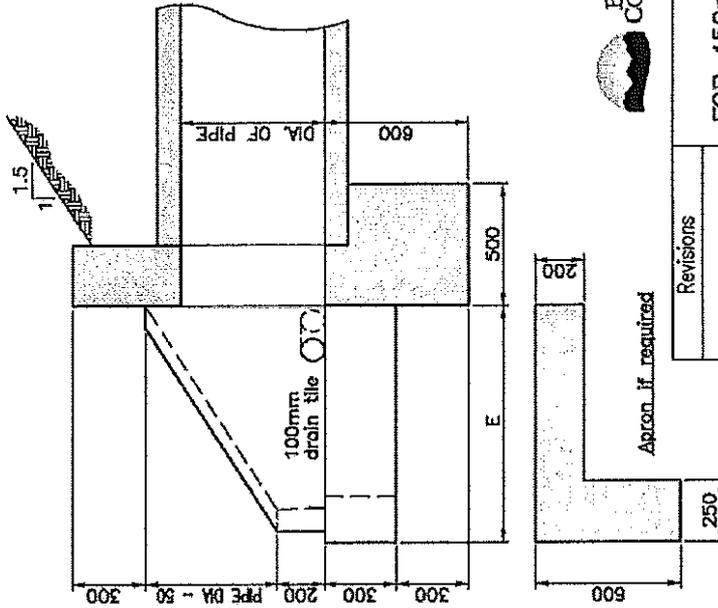
303.08.04 Type A Excavation - Excavation of Type A material encountered in the trench or endwall excavation will be paid at the Contract Unit Price for Type A, or where such an Item is not included in the Contract, at a negotiated price or on a Force Account Basis.

PIPE DIA.	A	B	C	D	E	F	G	H	m ³ of concrete without apron	m ³ of concrete with apron
450	1205	905	50	470	745	480	565	690	0.89	1.07
600	1385	1055	65	470	970	680	785	935	1.14	1.43
750	1565	1210	75	480	1200	870	1010	1150	1.43	1.87
900	1740	1360	90	480	1430	1060	1240	1445	1.78	2.38
1050	1915	1515	100	480	1655	1250	1470	1705	2.13	2.92

Round edge to 25mm rad.

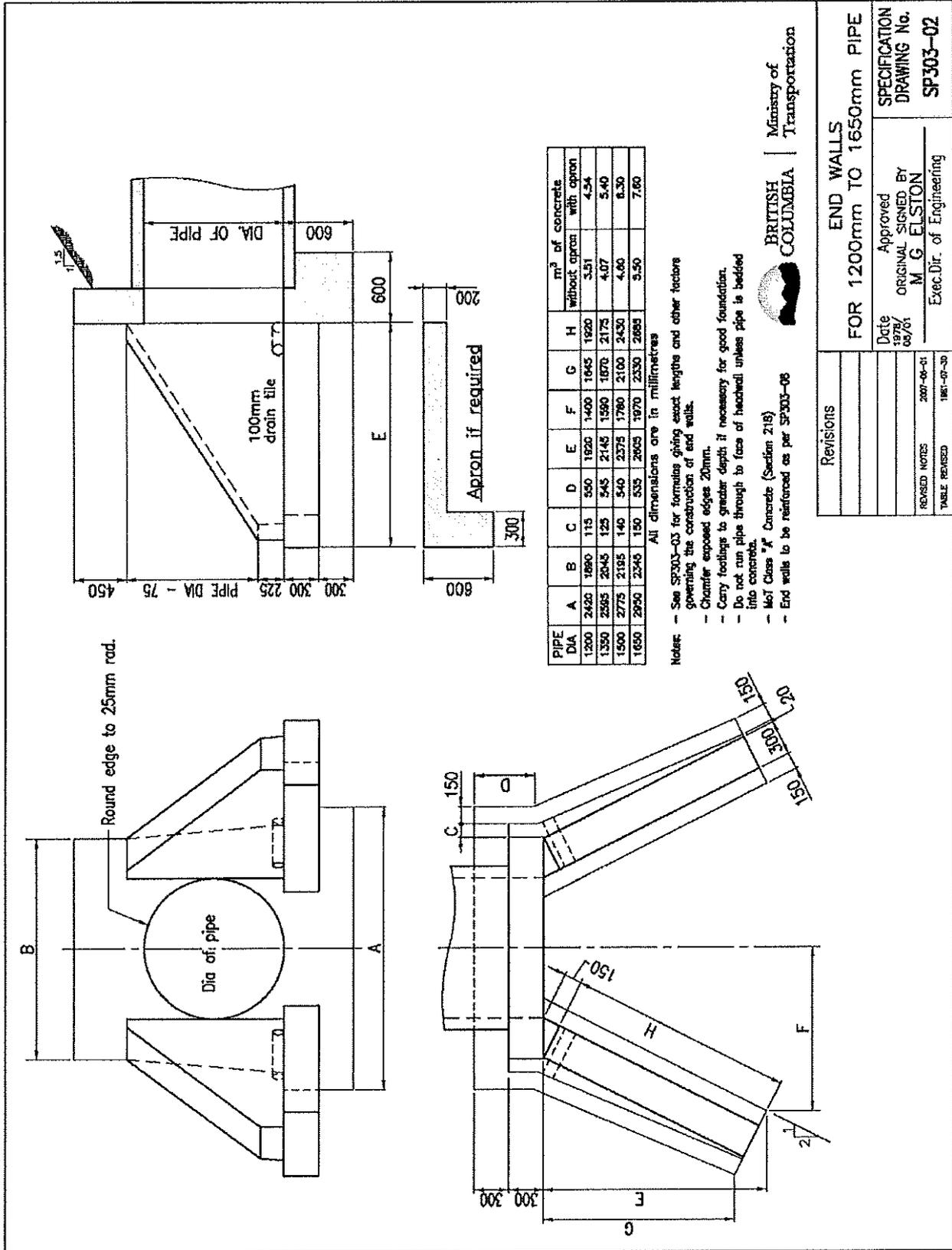


- Notes: - See SP303-03 for formulas giving exact lengths and other factors governing the construction of end walls.
 - Chamfer exposed edges 20mm.
 - Carry footings to greater depth if necessary for good foundation.
 - Do not run pipe through to face of headwall unless pipe is bedded into concrete.
 - Use Class "A" Concrete (Section 218)
 - End walls to be reinforced as per SP303-08

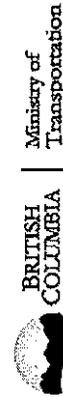
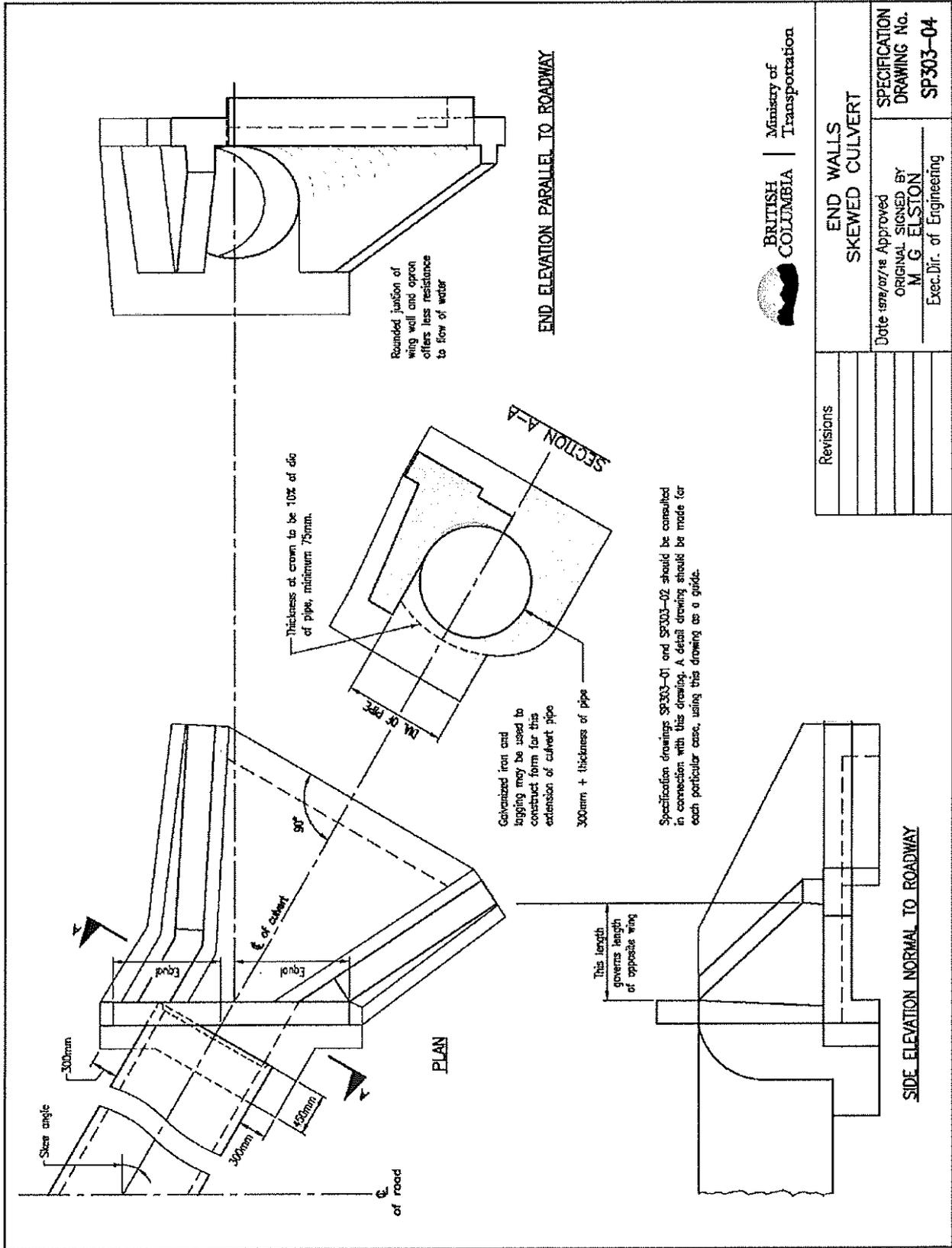


BRITISH COLUMBIA | Ministry of Transportation

Revisions	END WALLS FOR 450mm TO 1050mm PIPE
Approved	Specification Drawing No. SP303-01
ORIGINAL SIGNED BY	M. G. ELSTON
Date	12/7/01
Exec. Dir. of Engineering	
REVISED NOTES	2007-06-01
TABLE REVISED	1987-07-20



Revisions		FOR 1200mm TO 1650mm PIPE	
Date	Approved	SPECIFICATION	
1978	08/01	DRAWING No.	
	M. G. ELSTON	SP303-02	
REVISED NOTES	2007-06-01	Exec. Dir. of Engineering	
TABLE REVISED	1981-09-30		



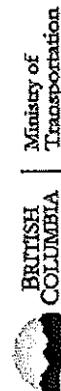
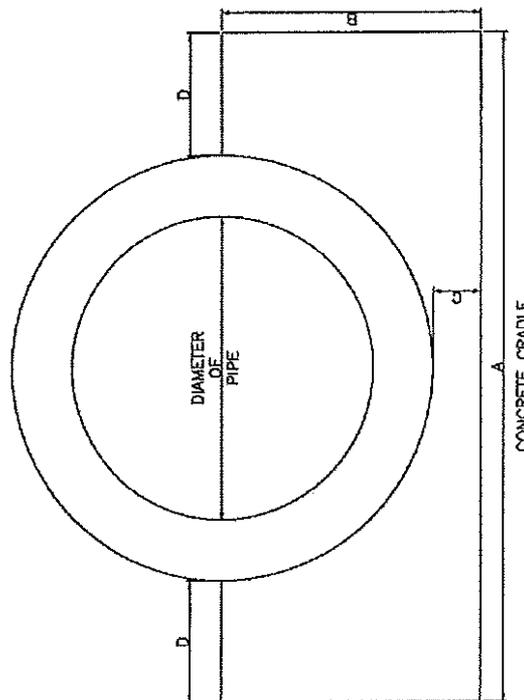
Revisions	END WALLS SKEWED CULVERT	Date: 02/07/18 Approved ORIGINAL SIGNED BY M. G. ELSTON Exec. Dir. of Engineering	SPECIFICATION DRAWING No. SP303-04

Notes:
 Lower part of cradles to be a stiff mix of concrete, for pipe to established line and grade.
 Follow immediately with concrete of a workable consistency to the required height.
 Cradles of these dimensions are for concrete pipes only.

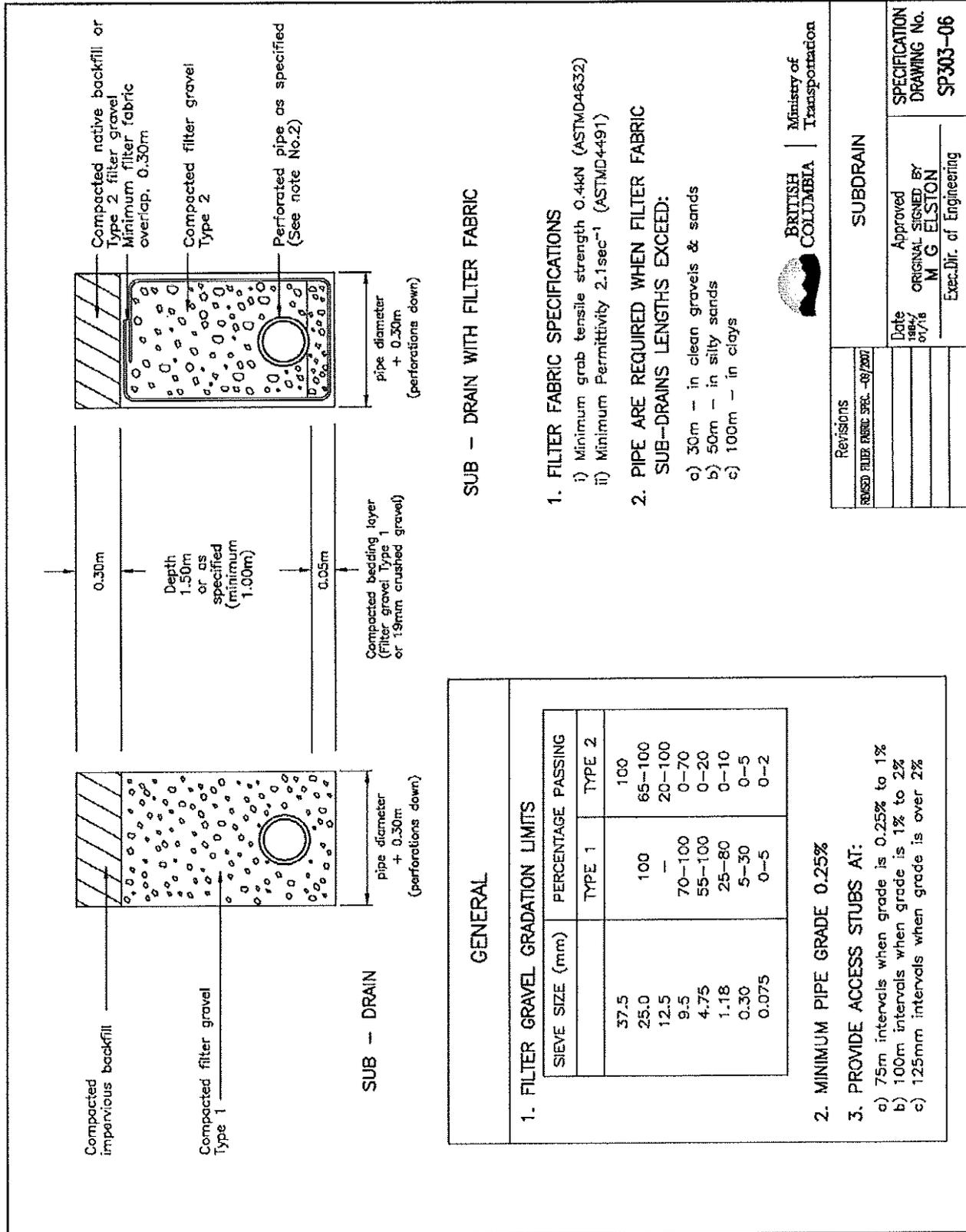
Use concrete cradles under the following conditions:
 High fill.
 Sharp culvert grade.
 Rock formations.

M.O.H. Class "A" Concrete (Section 218)

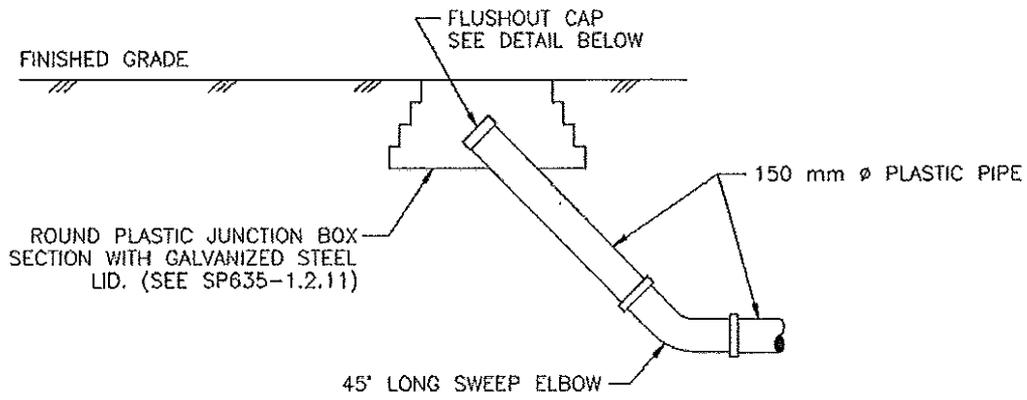
PIPE DIMENSIONS		CONCRETE CRADLES					m ³ per m
Inside Diameter mm	Wall Thickness mm	A mm	B mm	C mm	D mm		
600	95	1400	500	100	300	0.45	
750	108	1580	605	115	300	0.58	
900	121	1755	695	115	300	0.69	
1050	133	1935	795	130	300	0.84	
1200	146	2110	895	140	300	0.99	
1350	159	2290	995	150	300	1.16	
1500	172	2470	1100	165	300	1.35	
1650	184	2645	1200	180	300	1.53	
1800	197	2825	1300	190	300	1.73	



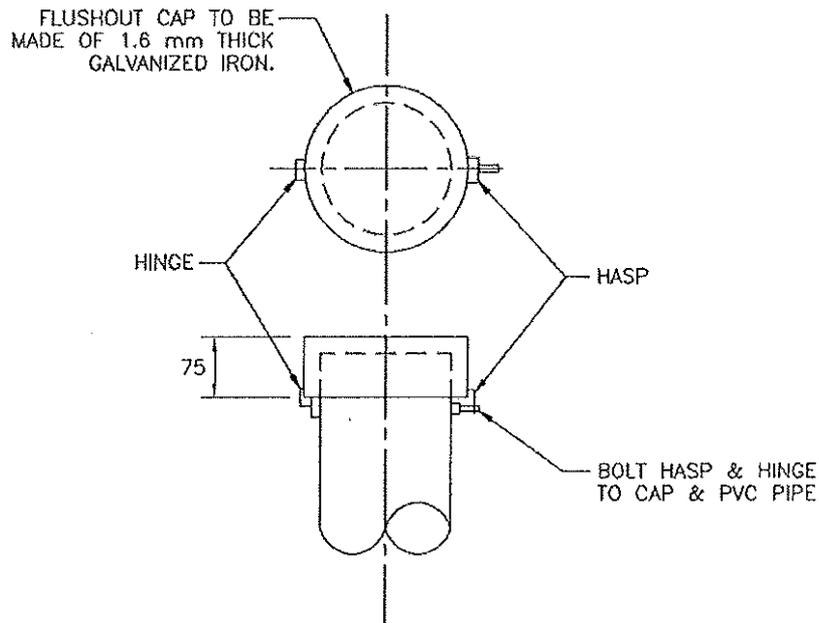
Revisions		CONCRETE CRADLE FOR CULVERT PIPE	
Date	1978/07/16	Approved	ORIGINAL SIGNED BY
			M. G. ELSTON
			Exec. Dir. of Engineering
TABLE REVISED	1981-07-30		SPECIFICATION DRAWING No. SP303-05



SUBDRAIN FLUSHOUT	SP303-07
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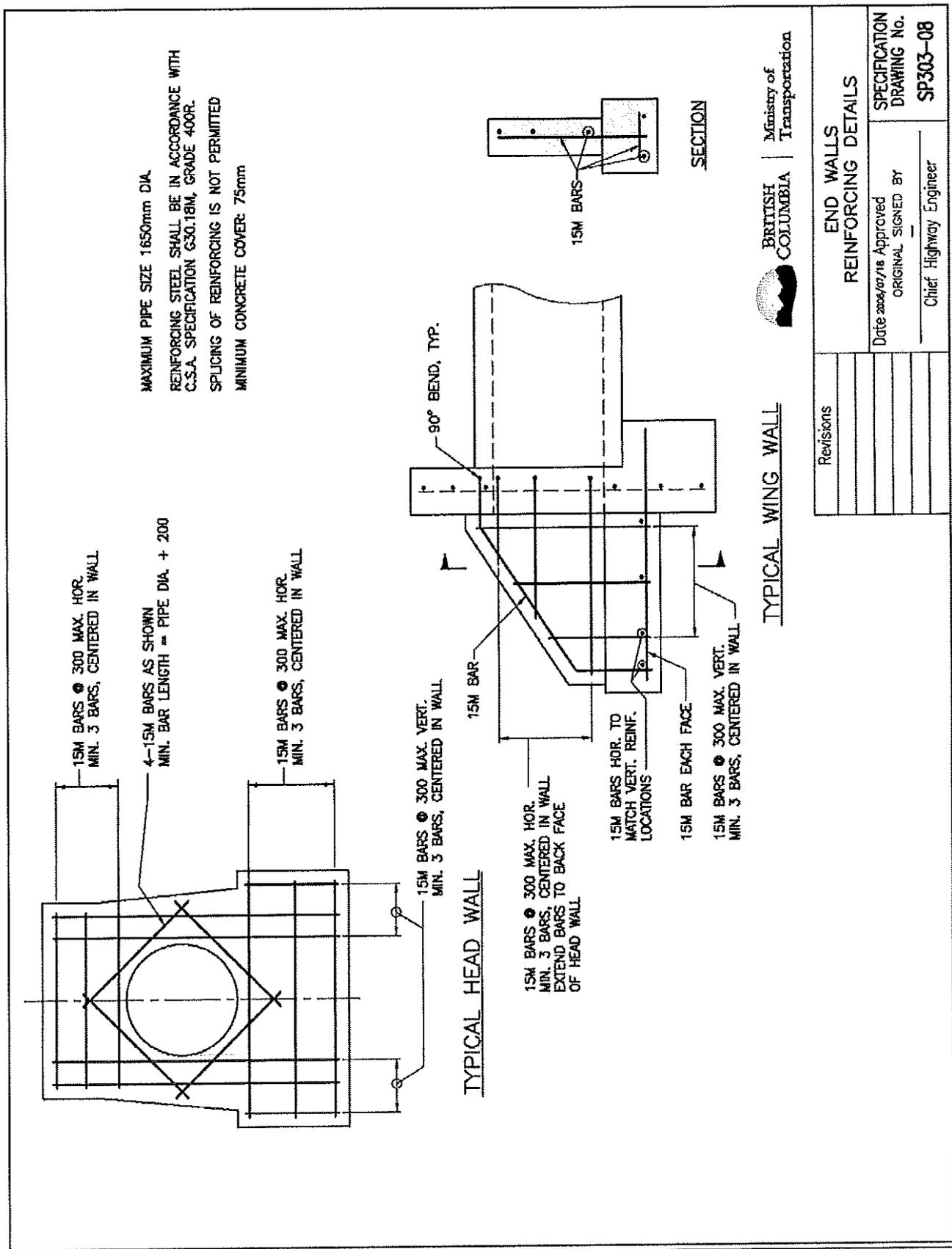
FLUSHOUT AND COVER DETAIL



FLUSHOUT CAP DETAIL

NOT TO SCALE

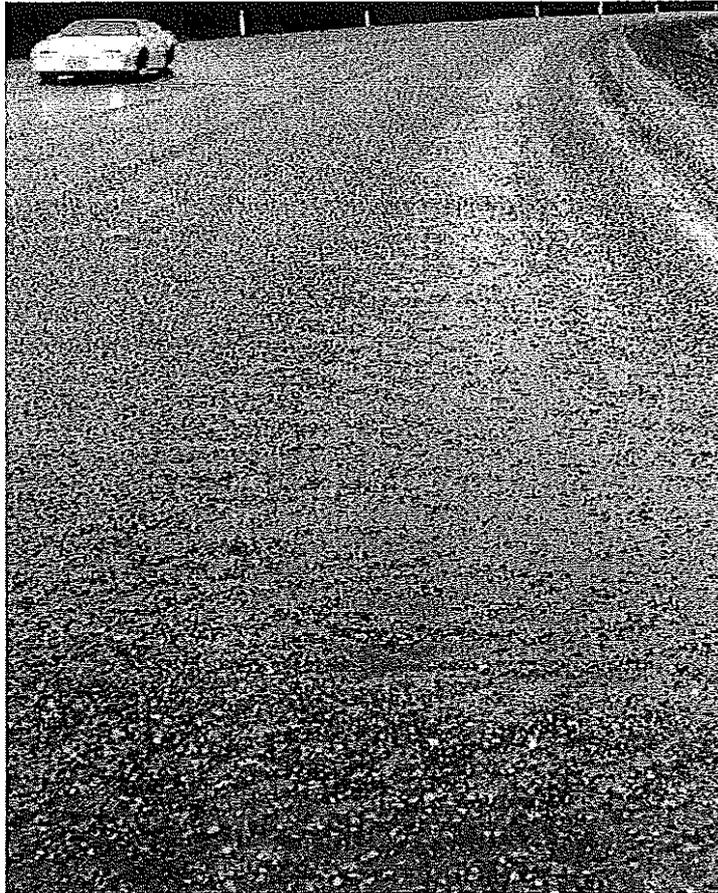
ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED



END WALLS REINFORCING DETAILS	
Date 2008/02/18 Approved	SPECIFICATION DRAWING No.
ORIGINAL SIGNED BY	SP303-08
Chief Highway Engineer	
Revisions	



Pot Hole



Raveling or Stripping

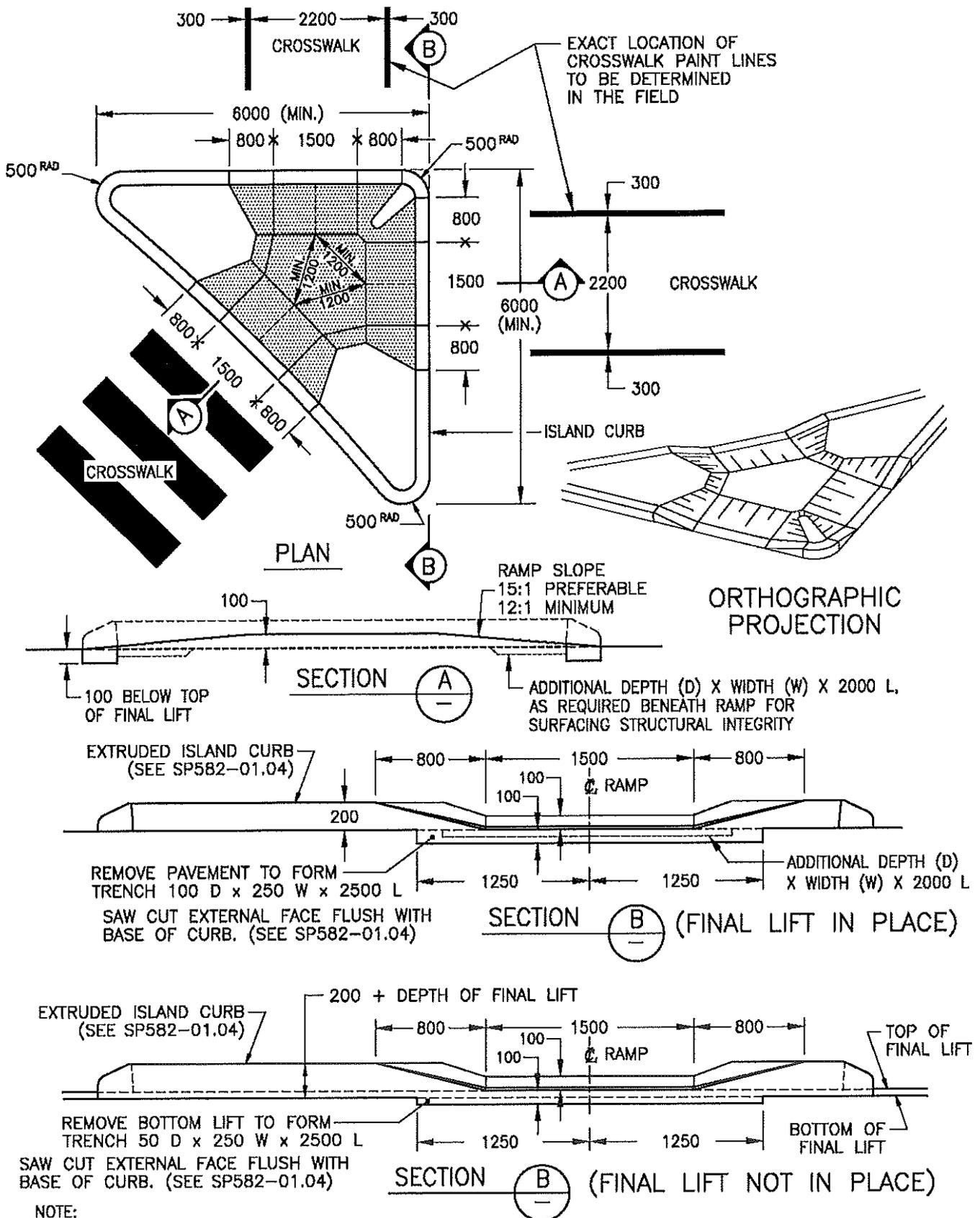




Streaking

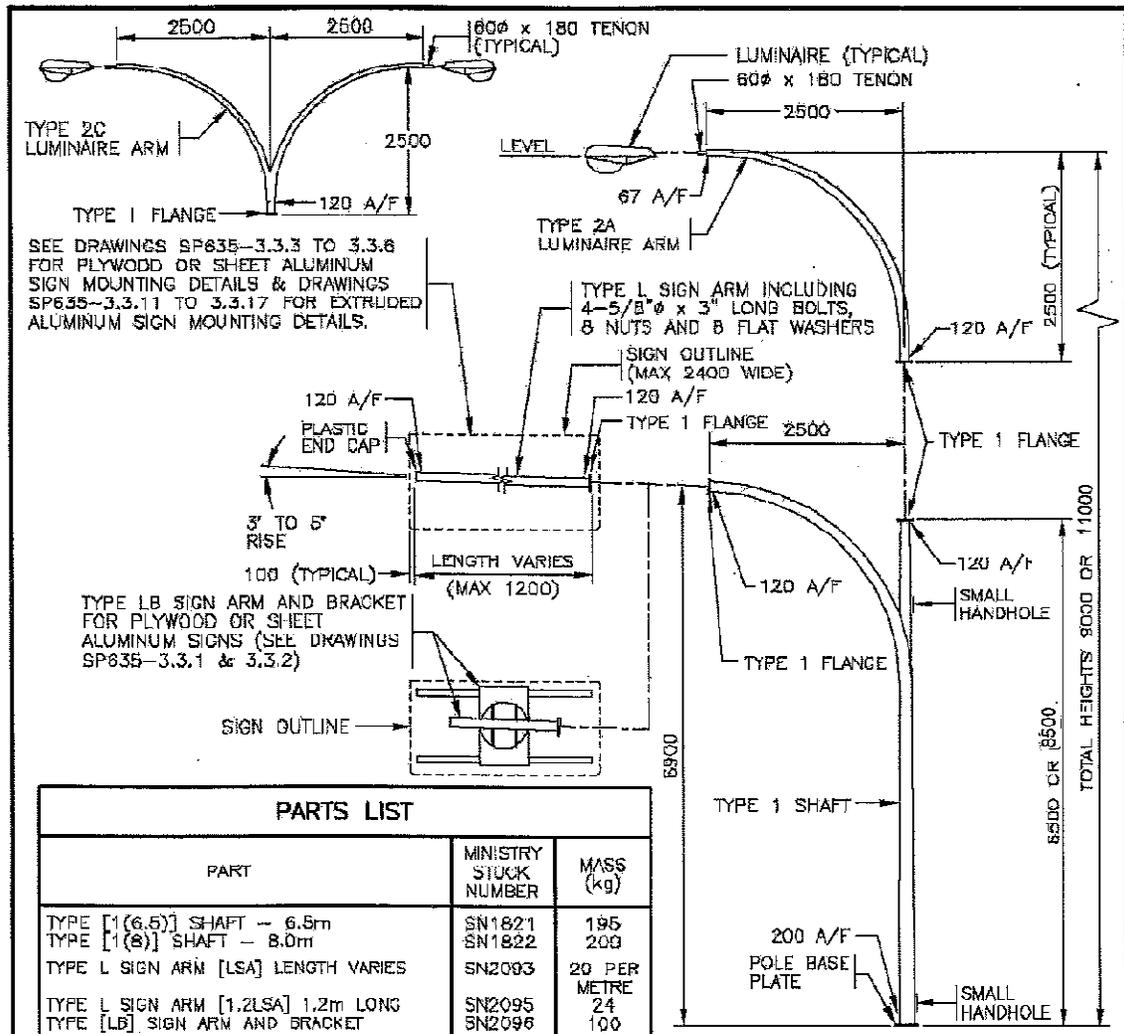
ISLAND RAMP

SP582-07.03



NOT TO SCALE

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED



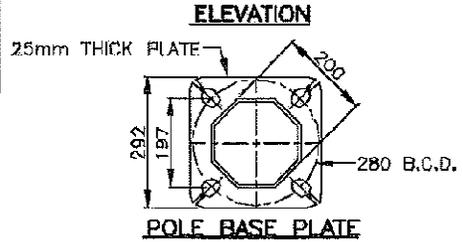
PARTS LIST		
PART	MINISTRY STOCK NUMBER	MASS (kg)
TYPE [1(6.5)] SHAFT - 6.5m	SN1821	195
TYPE [1(8)] SHAFT - 8.0m	SN1822	200
TYPE L SIGN ARM [LSA] LENGTH VARIES	SN2093	20 PER METRE
TYPE L SIGN ARM [1.2LSA] 1.2m LONG	SN2095	24
TYPE [LB] SIGN ARM AND BRACKET	SN2096	100
TYPE [2A] LUMINAIRE ARM	SN1832	35
TYPE [2C] LUMINAIRE ARM	SN1833	65
POST TOP TENON [PTT]	SN1831	5
TYPE 1 FLANGE COVER PLATE [1FCP]	SN1367	1.5

* [] I.D. LABEL ON POLE

NOTES

- FOR ADDITIONAL INFORMATION.
- SEE DRAWING SP635-3.1.2 FOR TYPE 1 SHAFT, BOLT KITS AND POLE ASSEMBLY DETAILS.
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED.

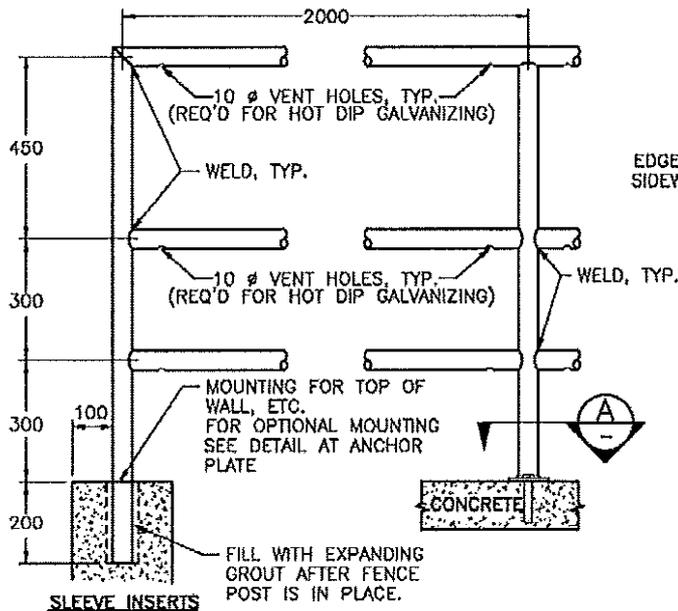
NOT TO SCALE



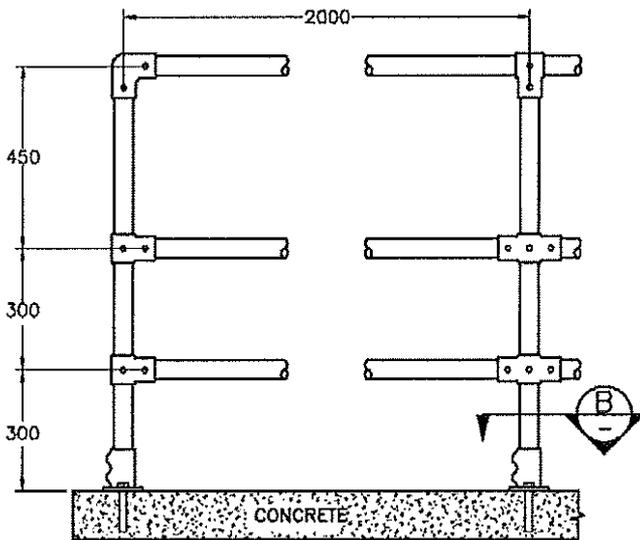
No.	Revision	Date	TYPE 1 SHAFT INSTALLATION DETAILS (SIGN POLE)		SPECIFICATION DRAWING No.
F			Date	Approved	SP635-3.1.1
E			24/02/97	M.C. (Signature on File)	
D			Chief Highway Engineer		
C					
B	SHEET ALUMINUM SIGN ADDED	APR 05			
A	COUPLING DELETED ON SIGN ARM	NOV 01			

PEDESTRIAN SIDEWALK FENCE – WELDED OR SLIP-ON

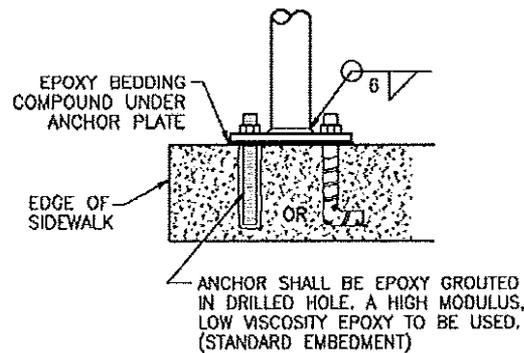
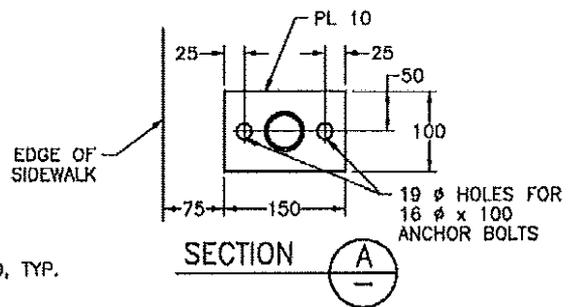
SP741-07.01



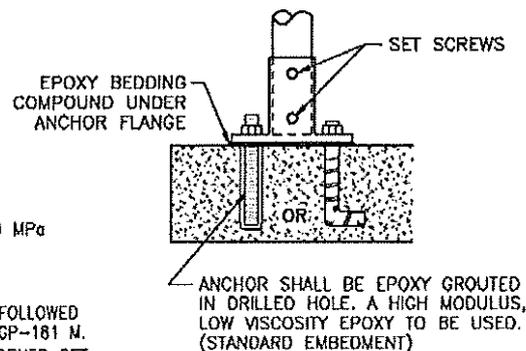
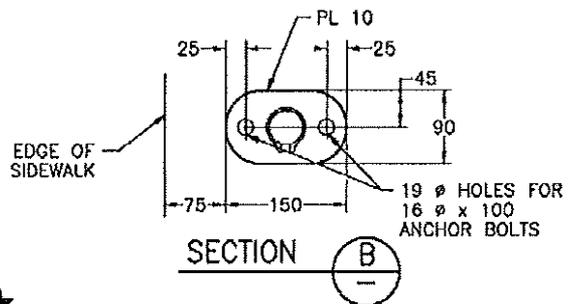
WELDED FENCE



SLIP-ON FENCE



DETAIL AT ANCHOR PLATE



DETAIL AT ANCHOR FLANGE

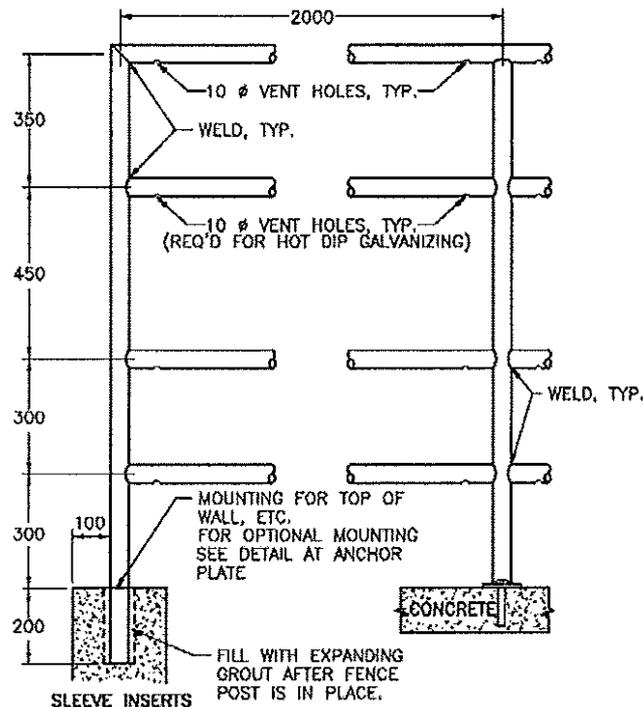
NOTES:

1. ALL RAILS AND POSTS TO BE 48 mm O.D. TO ASTM A 53 GRADE 240 MPa GALVANIZED PIPE, RAILS TO BE STANDARD WEIGHT (SCHEDULE 40), POSTS TO BE 'XS' (SCHEDULE 80).
2. WELDS SHALL BE FULL BEAD.
3. FIELD WELDS SHALL HAVE ROUGH EDGES GROUND SMOOTH IMMEDIATELY FOLLOWED BY TWO APPLICATIONS OF A ZINC RICH COATING CONFORMING TO CGSB 1-GP-181 M.
4. PIPE FITTINGS SHALL BE GALVANIZED MALLEABLE IRON WITH CASE HARDENED SET SCREWS CONFORMING TO ASTM A 47 GRADE 32510 AND ASTM A 153.
5. WELDED FENCE TO BE GALVANIZED AFTER FABRICATION.
6. GALVANIZING SHALL BE IN ACCORDANCE WITH CSA SPECIFICATION G184, TABLE 1.
7. FENCE DESIGNED FOR 1 kN SINGLE POINT LOAD APPLIED ANYWHERE.

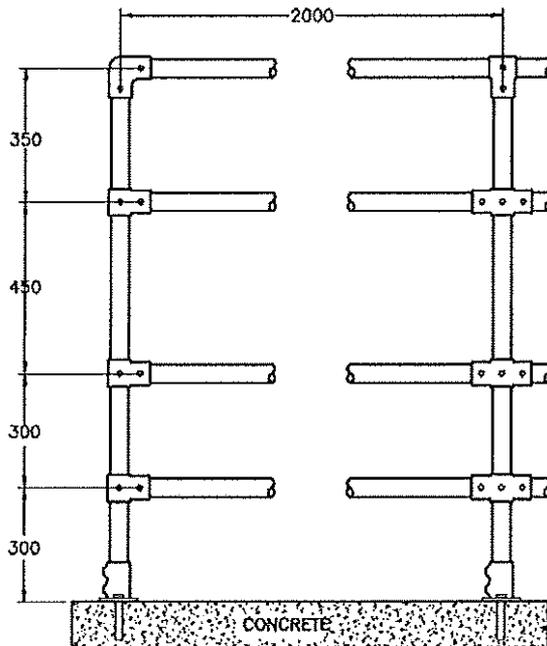
NOT TO SCALE

ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED

BICYCLIST SIDEWALK FENCE – WELDED OR SLIP-ON	SP741-07.02
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WELDED FENCE



SLIP-ON FENCE

NOTES:

1. ALL DETAILS NOT SHOWN SIMILAR TO SP741-07.01.
2. BASE PLATES TO BE 12.7 mm THICK.
3. ALL POSTS TO BE 48 mm O.D. TO ASTM A53 GRADE 240 MPa 'XXS' (SCHEDULE 160).

NOT TO SCALE

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