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CITY OF ENDERBY

SUBDIVISION SERVICING AND DEVELOPMENT BYLAW NO. 1278, 2000

Prepared for:
City of Enderby

Prepared by:
Stantec Consulting Ltd.

September 2000

1-22-62100

CITY OF ENDERBY

SUBDIVISION REGULATION BYLAW NO. 1278, 2000

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CITY OF ENDERBY
SUBDIVISION SERVICING AND DEVELOPMENT BYLAW NO. 1278, 2000

WHEREAS the Council of the City of Enderby wishes to adopt a Bylaw to regulate and require the provision of services in respect to subdivision of land pursuant to Section 533, 932, 933, 934, 935, 931, 938, 939 and 945 of the Local Government Act;

AND WHEREAS the Council of the City of Enderby wishes to consider requiring the provision of works and services under Section 938 of the Local Government Act as a condition of the issue of a Building Permit;

NOW THEREFORE, the Council of the City of Enderby, in open meeting duly assembled, **ENACTS AS FOLLOWS:**

1.0 TITLE

This Bylaw may be cited as "The City of Enderby Subdivision Servicing and Development Bylaw No. 1278, 2000". Text and figures enclosed by brackets (---) are included for information only and do not form part of this Bylaw.

2.0 APPLICABILITY

The provisions of this Bylaw apply to any application for subdivision approval or any application for building permit within the incorporated area of the City of Enderby.

3.0 REPEAL

The "Subdivision Bylaw No. 828" of the City of Enderby, and all amendments thereto, is hereby repealed.

4.0 DEFINITIONS

In this Bylaw, unless the context otherwise requires:

"APPROVAL FINAL" means the Approving Officers affixation of his signature to the subdivision plan pursuant to Section 88 of the Land Title Act or issuance of building permit by the Building Inspector.

"APPROVING OFFICER" means a person appointed under Section 77 of the Land Title Act as an Approving Officer for the City of Enderby.

"BUILDING INSPECTOR" means a person appointed as a Building Inspector for the City of Enderby.

"COMMUNITY DRAINAGE SYSTEM" means a system of works owned, operated and maintained by the Municipality, designed and constructed to control the collection, conveyance and disposal of surface and other water.

"COMMUNITY SANITARY SEWAGE SYSTEM" means a system owned, operated and maintained by the Municipality for the collection and disposal of sanitary sewage.

"COMMUNITY WATER SYSTEM" means a system of waterworks, serving 2 or more parcels and which is owned, operated and maintained by an Improvement District under the Water Act or the Local Government Act or a Regional District or a utility which is regulated under the Water Utility Act.

"HIGHWAY" means and includes any street, road, lane, walkway, bridge, viaduct and any other way open to the use of the public, but does not include a private right-of-way on private property.

"LANE" means a narrow highway which provides vehicular access to any abutting parcel, so that the parcel may be serviced or accessed by vehicles using that highway.

"MEDICAL HEALTH OFFICER" or "PUBLIC HEALTH INSPECTOR" means the official appointed under the Health Act who has jurisdiction over the area in which the subdivision is located.

"MUNICIPALITY" means the City of Enderby.

"OWNER" means a person, registered in the Land Titles Office as owner of land or a charge on land whether entitled to it in his own right or in a representative capacity or otherwise, and includes "registered owner".

"PARCEL" means any lot, block or other area in which land is held or into which land is subdivided, but does not include a highway or portion thereof.

"POTABLE WATER" means water which is accepted for drinking purposes by the Medical Health Officer.

"PROFESSIONAL ENGINEER" means a person who is registered or duly licensed as such, under the provisions of the "Engineers and Geoscientists Profession Act" of the Province of British Columbia.

"REVIEW, PRELIMINARY LAYOUT" means written notification of a review of information presented to the Approving Officer previous to submission of a subdivision plan for final approval.

"SUBDIVISION" means the division of land into two or more parcels, whether by plan, appropriate descriptive words, or otherwise.

"WALKWAY" means a narrow highway for the predominant use of pedestrian traffic.

"WORKS AND SERVICES" means any public service, facility or utility which is required or regulated by this Bylaw and without restricting the generality of the foregoing includes: the supply and distribution of water; collection and disposal of sanitary sewage and drainage water; street lighting; access roadways, curbs, gutters, and sidewalks; and natural gas, power, telephone and cablevision services.

"ZONE" means a zone as provided for in the Zoning Bylaw No. 966, 1987 of the City of Enderby, and amendments thereto.

All words or expressions used in the Bylaw shall have the same meaning assigned to them as like words or expressions contained in the "Land Title Act" and the "Local Government Act".

5.0 GENERAL PROVISIONS

5.1 Severability

The provisions of this Bylaw are severable. If any provision is for any reason held to be invalid by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining provisions of this Bylaw.

5.2 Administration

This Bylaw shall be administered by:

a) The Approving Officer of the City of Enderby where works and services are to be provided because of subdivision of land; or

b) The Building Inspector of the City of Enderby where works and services are to be provided pursuant to Section 938(6), (7), or (8) because of an application for a building permit who shall forward the proposed requirements for works and services to the Approving Officer for approval; or

c) Some other officer appointed by Council.

5.3 Record Kept

1. The Approving Officer shall maintain a record of all applications submitted under this Bylaw with respect to subdivisions, which record shall indicate the final disposition of all such applications thereon.

2. The Building Inspector shall maintain a record of all occasions when the provisions of this Bylaw are used under Section 938(6), (7), or (8) of the Local Government Act to require the provision of works and services in accordance with the standards of this Bylaw and this record will show what works and services were provided and where.

5.4 Authorization for Entry

Employees of the Municipality are hereby authorized to enter at all reasonable times upon such any property or premises to inspect the same in connection with their duties under this Bylaw and to ascertain whether the provisions of this Bylaw are being complied with.

5.5 Measurements

All measurements in this Bylaw are expressed in the Metric System.

5.6 Compliance with Other Regulations

.1 (Applications for subdivision will be reviewed for compliance with the requirements of this Bylaw and other Municipal and Provincial legislation. Nothing contained in this Bylaw shall relieve the owner of a subdivision from the responsibility to seek out and comply with legislation applicable to his undertaking.)

6.0 REQUIRED WORKS AND SERVICES

6.1 Works and Services

Schedules "B" and "C" reflect levels of works and services required.

6.2 Highway Width

Throughout the Municipality and in accordance with the following uses of highways, the subdivider or developer shall provide land for highways without compensation:

a) for motor vehicle use, land not exceeding 20.0 metres in width; or

b) to widen an existing local highway that borders on or is within the subdivision or development no more than the lesser of:-

i) 10.0 metres in width; or

ii) the difference between the current width of a local highway and 20.0 metres; but

c) notwithstanding subsection (a) of this section additional width may be required pursuant to Section 945(2) of the Local Government Act; and

d) for motor vehicle use, lanes where deemed necessary pursuant to Section 75(1)(d) of the Land Title Act which shall have a minimum width of six (6) metres; and

e) for pedestrian use only, walkways shall have a minimum width of three (3) metres.

6.3 Roads

Highways, sidewalks and boulevards shall be provided in all subdivisions and developments in accordance with Schedules "B" and "C" which are attached to and form part of this bylaw; and all highways, sidewalks and boulevards shall be located, constructed and otherwise meet the standards found in Schedule "A" which is attached and forms part of this bylaw.

6.4 Water

In all subdivisions and developments where a water distribution system and fire hydrant system is required or, where no community water system is required and each newly created parcel is to be provided with a source of potable water, each shall be located, constructed and otherwise meet the standards found in Schedules "A" and "B" which are attached to and form part of this Bylaw.

6.5 Effluent Disposal

In all subdivisions and developments where a sewage collection system is required or where no community sewage collection system is required and each newly created parcel is to be provided with an area of soil capable of disposing of a specified amount of effluent, each shall be located, constructed and otherwise meet the standards found in Schedules "A" and "B" which are attached to and form part of this Bylaw.

6.6 Drainage

In all subdivisions and developments where a drainage collection system or a drainage disposal system is required, each shall be located, constructed and otherwise meet the standards found in Schedules "A" and "B" which are attached to and form part of this Bylaw.

6.7 Streetlighting

In all subdivisions and developments where a streetlighting system is required, each shall be located, constructed and otherwise meet the standards found in Schedules "A" and "B" which are attached to and form part of this Bylaw.

6.8 Underground Wiring

In all subdivisions and developments where underground wiring is required, each shall be located, constructed and otherwise meet the standards found in Schedules "A" and "B" which are attached to and form part of this Bylaw.

6.9 Overhead Wiring and Natural Gas

1. Overhead wiring may be considered at the discretion of the Approving Officer for some subdivisions; and, where such overhead wiring is to be provided, it shall be located, constructed and otherwise meet the standards found in Schedule "A" which is attached to and form part of this Bylaw.

2. Natural gas services may, at the owner's option, be provided for some subdivisions; and, where such natural gas services are to be provided, they shall be located, constructed and otherwise meet the standards found in Schedule "A" which is attached to and forms part of this Bylaw.

7.0 SECURITY

Where:

a) all works and services required to be constructed or installed at the expense of the subdivider are not constructed or installed, before the Approving Officer approves the subdivision, security in the form of a cash deposit, or an irrevocable letter of credit from a financial institution acceptable to the Municipality, in the amount of 120% of the estimated construction cost as estimated by the Approving Officer and satisfactory to the Approving Officer, shall be deposited with the Municipality; and

b) where all works and services required to be constructed and installed at the expense of the developer pursuant to Section 938(6), (7), or (8) of the Local Government Act are not constructed or installed, before the Building Inspector issues the building permit, security in the form of a cash deposit, or an irrevocable letter of credit from a financial institution acceptable to the Municipality, in the amount of 120% of the estimated construction cost as estimated by the Building Inspector and satisfactory to the Building Inspector, shall be deposited with the Municipality.

8.0 FEES

8.1 Preliminary Layout Review

Pursuant to Section 931 of the Local Government Act a fee of Two Hundred ($200.00) Dollars for preliminary layout review is payable to the Municipality upon application.

8.2 Application Fees

Pursuant to Section 931 of the Local Government Act a fee of Three Hundred and Eighty ($380.00) Dollars for the first parcel created by subdivision and One Hundred and Fifty-five ($155.00) Dollars for each additional parcel is payable to the Municipality.

8.3 Examination Fee

An examination fee as required under Section 83(2)(a) of the Land Title Act and set out in regulations thereto is payable to the Municipality.

8.4 Inspection Fee

Pursuant to Section 931 of the Local Government Act, an inspection fee of 2% (two percent) of the construction cost of works and services required by this Bylaw as estimated by the Municipality with a minimum of $500.00 (five hundred dollars) is payable to the Municipality. This inspection fee relates only to the periodic inspection of the works under the jurisdiction of the Municipality.

9.0 OVERSIZING OF WORKS

9.1 Where an owner in accordance with this Bylaw provides a highway or water, sewage or drainage facilities that serve land other than the land being subdivided or developed, and

a) The Municipality has required that the owner provide excess or extended highway, water, sewage or drainage facilities; and

b) The Municipality has considered the cost of the Municipality providing such facilities in whole or in part would be excessive; and

c) The Municipality has

i) determined the portion of the cost of providing excess or extended services,

ii) determined which part of excess or extended services will benefit each parcel served; and

iii) imposed, as a condition of an owner connecting to or using the excess or extended service, a charge related to the benefit under (ii)

all in accordance with Section 939 of the Local Government Act; the interest rate on the charge payable under c(iii) shall be at prime plus 2 percent at the time of execution of the Latecomer Agreement, calculated annually.

10.0 SUBDIVISIONS WHERE SERVICING REQUIREMENTS MAY BE WAIVED

Notwithstanding the above, the servicing requirements prescribed in Schedule "B" of this Bylaw may be waived where the parcel created is to be used solely for the unattended equipment necessary for the operation of:

a) a community water system;
b) a community sewer system;
c) a community gas distribution system;
d) a community radio or television receiving antenna;
e) a radio or television receiving antenna;
f) a telecommunication relay station;

g) an automatic telephone exchange;
h) an air or marine navigational aid;
i) electrical substations or generating stations; or
j) any other similar public service or quasi-public service facility or utility.

11.0 BYLAW SCHEDULES

11.1 The following is a list of schedules attached hereto and **which form a part of this Bylaw:**

Schedule "A" - Design Criteria, Specifications, and Standard Drawings

Schedule "B" - Level of Works and Services

Schedule "C" - Level of Highway Works and Services

11.2 The following is a list of appendices attached hereto for the purpose of providing information only and **which do not form a part of this Bylaw.**

Appendix "A" - Drawing Submissions - Acceptable Standards

Appendix "B" - Typical Forms and Agreements

Appendix "C" - Administrative Provisions

11.3 ADOPTION

READ A FIRST TIME this _____ day of _____, 2000.

READ A SECOND TIME this _____ day of _____, 2000.

READ A THIRD TIME this _____ day of _____, 2000.

Reconsidered, Finally Passed and Adopted by

Council this _____ day of _____, 2000.

_____

Mayor Clerk

CITY OF ENDERBY

SUBDIVISION SERVICING AND DEVELOPMENT BYLAW NO. 1278, 2000

SCHEDULE "A"

Design Criteria, Specifications and Standard Drawings

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CITY OF ENDERBY

SUBDIVISION SERVICING AND DEVELOPMENT BYLAW NO. 1278, 2000

SCHEDULE "A"

1.0 GENERAL INFORMATION

1.1 INTRODUCTION

Schedule "A" to the Subdivision Servicing and Development Bylaw identifies the Design Criteria, Specifications, and Standard Drawings acceptable to the Municipality.

This Schedule is to be referred to in the design, construction and acceptance of Engineering Works within the Municipality. Additional information, clarification and suggestions for changes and amendments should be directed to:

City of Enderby
P.O. Box 400
619 Cliff Avenue
Enderby, B.C.
V0E 1V0

1.2 DEFINITIONS

In this Schedule, unless the context otherwise specifies:

"**"ACCEPTED"** means as accepted by the Approving Officer.

"CONSIDERED" means considered for acceptance by the Approving Officer or authorized representative of the Municipality.

"CONTRACTOR" means the person or persons or the company undertaking the construction of works in a subdivision development, and/or on municipal property, or their employees, subcontractors or other duly authorized representative.

"DEVELOPER" means the owner of land or the holder of a bona-fide interim agreement or option to purchase land, who has made application to the Municipality for or is engaged in undertaking the development or subdivision of such land and shall include his duly authorized representative.

"DEVELOPER'S ENGINEER" means the Professional Engineer engaged by the Developer to design and/or prepare drawings for the construction of works in a subdivision, development, and/or on municipal property, or his duly authorized representative.

"ENGINEER" "MUNICIPAL ENGINEER" means the Approving Officer or an authorized representative of the Municipality.

"MUNICIPALITY" means the City of Enderby.

"PROFESSIONAL ENGINEER" means a person who is registered or duly licensed as such in British Columbia under the provision of the Engineers and Geoscientists Professional Act.

"THIS SCHEDULE" means the "Design Criteria, Specifications and Standard Drawings" prepared by the City of Enderby.

"THE WORK" means and includes anything and everything to be done for the setting out, the execution and fulfillment of the requirements in this Schedule.

1.3 SCOPE AND USE

This schedule shall be taken to mean the Design Criteria, Specifications and Standard Drawings to be referred to, and incorporated in, subdivisions, developments, and on municipal properties or rights-of-way, in the City of Enderby.

1.4 NON-MUNICIPAL CODES AND STANDARDS

Where non-Municipal codes and standards, such as A.S.T.M., C.S.A., A.W.W.A., etc., are referred to in this Schedule, the latest adopted revision, including amendments, of these codes and standards at the date of commencement of construction shall apply, except that the Approving Officer may vary requirements under certain circumstances in the interest of public health or safety.

When references to the following capitalized abbreviations are made, they refer to Specifications, Standards, or Methods of the respective Association.

AASHTO	American Association of State Highway and Transportation Officials
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
AWWA	American Water Works Association
AWS	American Welding Society
BCBC	British Columbia Building Code
CEC	Canadian Electrical Code
CEMA	Canadian Electrical Manufacturers Association
CGSB	Canadian General Standards Board
CSA	Canadian Standards Association
CSPI	Corrugated Steel Pipe Institute
IES	Illumination Engineering Society
LEMA	Lighting Equipment Manufacturers Association
NBC	National Building Code of Canada
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NESC	National Electric Safety Code
NFPA	National Fire Protection Association
TAC	Transportation Association of Canada
WCB	Workers' Compensation Board

1.5 SAFETY

All contractors working directly or indirectly for the City of Enderby shall fully comply with the Occupational Health and Safety Regulations.

2.0 ROAD AND WALKWAYS

2.1 INTRODUCTION

All roads in the Municipality shall be designed in accordance with the recommended practice as outlined in "Geometric Design Guide for Canadian Roads", latest edition, as published by the Transportation Association of Canada (T.A.C.) or as stated elsewhere in this Schedule or as accepted.

2.2 ROAD AND WALKWAYS CLASSIFICATIONS

Roadway classification throughout the Municipality shall be as indicated in this Bylaw.

Arterial Street – Controlled by the Ministry of Transportation and Highways

Arterial Streets fall under the jurisdiction of the Ministry of Transportation and Highways and are shown in Schedule "C". All works and services affecting arterials are subject to Ministry of Transportation and Highways Standards and requirements including utility services and access.

Where a subdivision borders or contains a controlled access highway, as defined in the Highway Act, the Approving Officer shall withhold approval until it has first been approved by the Ministry of Transportation and Highways.

Collector Street

Collector streets provide both traffic service and land service functions. The traffic service function of this type of street is to carry traffic between local and arterial streets. Controlled access to adjacent properties will be allowed on collectors. Trip lengths are commonly in the range of 0.75 - 1.5 km. Average daily traffic (ADT) volumes generally range from 1,000 - 12,000 vehicles.

Local Streets, Cul-de-Sacs

The main function of a local street is to provide land access. Direct access is allowed to all abutting properties. Local streets are not intended to move large volumes of traffic. Trip lengths are short, generally under 0.75 km in length. Cul-de-sacs shall not exceed 150 m unless accepted.

Commercial Streets

Commercial and Industrial streets provide vehicle and pedestrian access to and through commercial and industrial shopping areas. Pedestrian volume and vehicle parking volume are greater than on residential streets.

Lanes

Lanes provide a secondary service access to parcels. Lanes shall not exceed a length of 150 m unless accepted. Dead-end lanes shall not be encouraged, but, when accepted, shall include a turn-around area. Due consideration shall be given to the continuation of lanes from block to block in order to facilitate pole lines and other utility construction.

Walkways

Functional walkways provide pedestrian access to transit, shopping and school sites. Leisure walkways provide pedestrian access to parks and open public areas.

2.3 DESIGN PARAMETERS

2.3.1 Design Speed

Unless otherwise accepted, roadways shall be designed to the following minimum standards as specified in the Transportation Association of Canada, Geometric Design Guide for Canadian Roads Manual:

Arterials	Ministry of Transportation and Highways Standards
Collectors	60 km/hr.
Locals	40 km/hr.

2.3.2 Cross Section Elements

All right-of-way and roadway widths shall be as outlined in Table 2.3.2, Right-of-way and Roadway Widths.

Table 2.3.2 - Right-of-Way and Roadway Widths

Road Classification	Minimum Right-of-Way Width	Minimum Roadway
Arterial:		
Controlled by the BC Ministry of Transportation and Highways	As per BC M.O.T.H. Requirements	As per BC MOTH Requirements
Collector:	25.0 m	10.8 m paved
Local Street:	18.0 m	9.2 m paved
Cul-de-Sac	18.0 m	9.2 m paved
Lane	6.0 m	5.5 m paved
Walkways	3.0 m	2.5 m paved

The developer shall either dedicate sufficient right-of-way to cover all road embankments or complete all road construction and site grading prior to registration of the subdivision plan. Where a cut or fill slope exceeds 1.5m in vertical height, additional right-of-way may be required at the discretion of the Approving Officer.

For details of cross-sectional elements refer to the standard drawings.

2.3.3 Horizontal Alignment

Curvature

Table 2.3.3.1 illustrates the minimum required centreline radius for various superelevation rates for each classification of roadway. All designs to be in accordance with RTAC Standards.

Table 2.3.3.1 - Minimum Horizontal curve Radii (Metres)

Roadway Classification		Superelevation (m/m)		
	No Superelevation	0.02	0.04	0.06
Arterial - MOTH	MOTH Standards	MOTH Standards		
Collector	120	110	100	-
Local	65	-	-	-

The maximum superelevation rate for collectors shall be 0.04 m/m. No superelevation will be permitted on local streets.

Table 2.3.3.2 illustrates the minimum curb or pavement return radius for various roadway classifications.

Table 2.3.3.2 - Curb Return Radii

Road Classification	Return Radii (metres)
Collector	8
Local	8
Cul-de Sac	6

Cul-de-sac bulb radius for paved or graveled surface shall be a minimum of 13.0 m.

All roadways shall be constructed using a 2% centreline crown. Under adverse topographic conditions, offset crowns may be permitted for local or collector streets at the discretion of the Approving Officer, in which case the location of the crown shall be approximately 2.5 metres from high side curb with a minimum cross slope of 2% and a maximum of 4%.

2.3.4 Vertical Alignment

Roadway Grades

Minimum grades for roadways shall be 0.5 % with 2% crossfall.

Curb or pavement return grades shall be minimum 1.0%

Maximum grades shall be as shown in Table 2.3.4.1.

Table 2.3.4.1 - Maximum Roadway Grades

Roadway Classification	Maximum Grade
Collector	8%
Local	10%
Cul-de-sac (uphill)	10%
Cul-de-sac (downhill)	8%
Cul-de-sac (through bulb)	7%
Lanes	10%

Consideration may be given to allowing increased grades where short sections of steeper grades can be utilized to improve the geometric design of intersections for increased safety, or where alternate access at grades less than 8% is available.

Vertical Curvature

Vertical curves shall be designed to provide safe stopping sight distances and shall be provided where centreline grades change is in excess of 1%. Stopping sight distance is the distance separating a vehicle from an object, measured the instant that an object (for which the driver decides to stop) comes into view. Minimum stopping sight distance is the least distance required to bring the vehicle to a stop, under prevailing vehicle and climatic conditions. Vertical curve length is calculated by the equation L = KA:

Where: L = length of the vertical curve
K = a constant related to lines and geometry of a parabolic curve
A = algebraic difference in grades in percent

Table 2.3.4.2. shows the minimum K values to be used for vertical curve design.

All vertical curves are to be symmetrical.

Table 2.3.4.2. - Minimum K Values (metres) for Vertical Curve Design

Roadway Classification	Crest Curve		Sag Curve	
	Minimum	Desirable	With Street Lighting	Without Street Lighting
Arterial - RTAC - M.O.T.H. Requirements				
Collector	10	15	9	20
Local	7	10	6	9

Vertical Alignment

The vertical alignment of roads shall be such that an access driveway having a maximum 15% grade can be achieved from the property line to the proposed building area.

2.3.5 Intersections

Unless indicated elsewhere herein, all intersection design standards shall conform to those outlined in the "Geometric Design Standards for Canadian Roads and Streets" as published by Roads and Transportation Association of Canada.

Intersection Grades

Approach grades of minor roads at intersections to major streets shall not exceed 75% of the maximum allowable road grade for that street classification.

Consideration may be given to increased approach grades where topographic or other conditions dictate the use of maximum or near maximum grades.

Intersection Vertical Curves

The minimum K values for vertical curves on minor roads at intersection shall be as shown in Table 2.3.5.

Table 2.3.5 - Minimum Intersection K Values

Minor	Minimum K Value, Metres	
Intersecting Street	Crest Curb	Sag Curve
Collector	7	6
Local	4	4

Grades of major roads through intersecting minor approaches shall be constant and shall not exceed 75% of the maximum allowable grade for that street classification. Consideration may be given to allowing increased grades where topographic or other conditions dictate the use of maximum or near maximum grades.

2.3.6 Road Base

Minimum road base requirements shall be as outlined in Table 2.3.6.1.

Table 2.3.6.1 - Pavement Structure Requirements

Road Classification	Compacted Sub-base Thickness	Compacted Base Thickness	Compacted Asphalt Thickness
Arterial	MOTH STANDARDS		
Collector	300 mm	150 mm	75 mm
Local	300 mm	150 mm	50 mm
Cul-de-sac	300 mm	150 mm	50 mm
Lane	200 mm	150 mm	50 mm

Increases in sub-base thickness where poor soil conditions exist shall be at the discretion of the Municipality. Pavement structure requirements shall be confirmed by the Developer's Engineer following completion of a geotechnical investigation.

Where a "half-road" is to be installed, the asphalt thickness for all road classifications shall be a minimum of 75 mm with 45 mm to be installed during initial construction and the 30 mm remaining thickness to be installed when the roadway is completed by the subsequent developer.

2.3.7 Sidewalks and Walkways

Sidewalks where required by the Approving Officer, shall be installed in accordance with the minimum requirements outlined in Table 2.3.7.

Table 2.3.7 - Minimum Sidewalk Requirements and Widths

Road Classification	Requirement	Width
Arterial	MoTH	
Collector	One Side	1.52 m
Local	One Side	1.52 m
Cul-de-sac	One Side	1.52 m
Commercial	Both Sides	1.5 2m

Where a walkway exists on a cul-de-sac, a sidewalk, 1.52 m wide, shall be extended to the walkway entrance.

Sidewalks shall at all times drain towards the gutter with a cross slope of 2%.

Wheelchair ramps shall be installed at all intersections and at crosswalks.

Where non-mountable curbing is used, access to properties and to lanes shall be in the form of sidewalk crossings and shall conform to municipal standards. Widths for crossings may vary depending on the development's requirements. Minimum crossing width for residential driveways shall be 3.5 m. Maximum crossing width for industrial and commercial driveways shall be 9.2 m.

Where mountable curbing is used, sidewalk crossings will not be required and access shall be directly over the sidewalk. Transition from mountable to non-mountable curbing shall in all cases be made at the nearest wheelchair ramp.

Sidewalk crossings for private residential driveways shall be 150 mm thick. Sidewalk crossings for industrial or commercial developments shall be 180 mm thick and must contain rebars as per specification. Curing compound and sealing compound shall be applied according to the manufacturer's recommendations.

Sidewalks and walkways shall be designed to provide an overall pedestrian traffic system throughout the area and locations shall be subject to the acceptance of the Approving Officer.

Walkways in excess of 12% are not to be encouraged. Where walkway grades exceed 12% but are less than 15%, an accepted stepped walkway shall be constructed, complete with a handrail. Where walkway grades exceed 15%, accepted stairs with handrail shall be constructed.

Walkways shall be graded to the full width between property lines to provide proper access and drainage.

2.3.8 Boulevards and Restoration

Unless otherwise accepted, all boulevards shall be graded to drain to the curb or ditch, as applicable, at a minimum slope of 2% and a maximum slope of 10%.

The top 100 mm of soil shall be good quality topsoil raked free of any debris which is not conducive to the growing of grass and shall be seeded. Hydroseeding may be required.

Quantities and combinations of landscaping materials shall be submitted to and accepted by the Approving Officer prior to installing such materials.

Driveway gradients shall have a maximum slope of 15%.

2.3.9 Geotechnical Requirements

The Developer's Engineer shall in all cases ensure that the structural integrity of the on-site soils are adequate to accommodate the expected loading. The Approving Officer may require a qualified Geotechnical Engineer's report.

2.3.10 Street Names

Street names for new streets must be accepted by the Municipality and the Regional District of North Okanagan 911 Emergency Services Mapping Department who shall have absolute discretion in this regard.

2.3.11 Traffic Signs and Road Markings

Traffic signs and road markings shall be installed and shall conform to the Pavement Marking Manual (latest edition) of the Ministry of Transportation and Highways.

2.3.12 List of Standard Drawings

The following drawings form part of Section 2:

Title	No.	Title	No.
Local Roads w/Curb & Gutter	R1	Typical Crossover	R6
Collector Roads w/ Curb & Gutter	R2	Standard Curb and Gutter	R7
Typical Walkway and Lane Cross Section	R3	Typical Cul-de-Sac	R8
Typical Wheelchair Ramp	R4		
Standard Separate Sidewalk	R5		

2.4 MATERIALS

2.4.1. Roadway Embankment Materials

Earthfill for roadway embankment shall be native material with the exception of overburden, topsoil and rockfill. Earthfill shall be capable of being compacted to form a stable embankment, and shall be free of organic or deleterious material.

2.4.2. Select Granular Sub-Base Material

Select granular sub-base material shall be a pit-run gravel, or crushed gravel, screened if necessary, composed of inert, durable aggregate, uniform in quality and free from soft or disintegrating particles, clay or silt balls, organic material or other deleterious material, and shall be well graded from coarse to fine particles within the following gradation limits:

Sieve Size	Percent Passing
75 mm	100
25 mm	50 - 85
0.150 mm	0 - 15
0.075 mm	0 - 8

2.4.3. Crushed Granular Base Material

Crushed granular base material shall consist of inert, durable crushed aggregate, screened if necessary, uniform in quality and free from soft or disintegrating particles, clay or silt balls, organic material or other deleterious materials, and shall be well graded from coarse to fine particles within the following gradation limits:

Sieve Size	**Percent Passing**
19 mm	100
12.5 mm	75 - 100
9.5 mm	60 - 90
4.75 mm	40 - 70
2.36 mm	27 - 55
1.18 mm	16 - 42
0.600 mm	8 - 30
0.300 mm	5 - 20
0.075 mm	2 - 8

2.4.4. Hot Mix Asphaltic Concrete

Hot mix asphaltic concrete mix design shall be prepared by a Professional Engineer and satisfy the following criteria, in accordance with ASTM D-1559, Marshall Test Procedure:

- Blows per face	75
- Marshall Stability, at 60°C, N min.	6400 lower course
	5500 upper course
- Flow value, mm	2 - 4
- Voids in mixture, %	3 - 6 lower course
	3 - 5 upper course
- Voids in mineral aggregate, % min.	13 lower course
	14 upper course
- Index of Retained Stability, % min.	75

Gradation of mineral aggregate, graded in accordance with ASTM C136 shall conform to the following, and shall form a smooth concave shaped curve when plotted on a semi-log chart:

Sieve Designation		**Percent Passing**	
		Lower Course	**Upper Course**
25.0	mm	-	-
19.0	mm	100	-
12.5	mm	84 - 99	100
9.5	mm	73 - 88	-
4.75	mm	50 - 68	55 - 75
2.36	mm	35 - 55	38 - 58
1.18	mm	27 - 46	28 - 47
0.600	mm	18 - 36	20 - 36
0.300	mm	10 - 26	10 - 26
0.150	mm	4 - 17	4 - 17
0.075	mm	3 - 8	3 - 8

2.4.5 Concrete

The design of concrete mixes shall be prepared by a Professional Engineer and shall suit the local site conditions.

Cement shall be normal Portland Cement conforming to CSA A.5.

Water and aggregates shall conform to CSA A.23.1. Air entraining admixtures shall conform to CSA A.266.1. Chemical admixtures shall conform to CSA A.266.2 and shall be used only if accepted.

Concrete for curb and gutter and sidewalks shall be ready mix concrete designed to achieve a 28 day compressive strength of 25 MPa, with a maximum aggregate size of 25 mm, air entrainment 5 - 7%, water-cement ratio 0.50 maximum and slump of 25 - 75 mm. Premoulded expansion joint filler material shall be minimum 13 mm thick, cut to suit.

2.4.6 Grass Seed Mixture

Grass seed shall be premium quality with a purity of 97% or better and a germination rate of 75% or better and meet the requirements of the Canada Seed Act for Canada No. 1 seed. Seed mixtures to be approved by the Approving Officer or authorized representative and be suited to climate, terrain, establishment and maintenance conditions.

2.5 INSTALLATION

2.5.1 General

Copies of compaction test results, granular materials sieve analyses, asphaltic concrete and concrete design mixes, asphaltic concrete and concrete test results shall be submitted to the Municipality.
The working area and haul roads shall be maintained in an orderly fashion and shall not be encumbered with equipment, materials or debris.

Dust control shall be maintained at all times by watering or other approved means.

The work shall be scheduled such that disruption of normal traffic and inconvenience to residents shall be kept to a minimum.

Proof rolling of the subgrade, subbase or base course may be required by the Municipality.

2.5.2. Clearing and Grubbing

The roadway right-of-way shall be cleared and grubbed of all standing or fallen trees, brush, timber, stumps or other debris and organic materials and these materials shall be disposed of by burning or other approved means. Burning shall be done in accordance with B.C. Forest Act, Municipal By-laws and Waste Management Act

2.5.3. Grading

The entire roadway right-of-way width shall be graded to the approved profile and cross-section, and uniformly compacted to a minimum 95% Standard Proctor. The completed profile and cross-section shall be accurate to a tolerance of 30 mm, with no soft, spongy or unstable areas, and free from ruts, waves and undulations.

2.5.4 Select Granular Sub-Base

Select granular sub-base material shall be placed on dry, firm sub-grade, and compacted in uniform layers not exceeding 150 mm in uncompacted thickness, to a minimum 100% Standard Proctor Density. The completed profile and cross-section shall be accurate to a tolerance of 15 mm, free from ruts, waves and undulations.

2.5.5 Crushed Granular Base

Crushed granular base course material shall be placed on dry, firm sub-base, and compacted in uniform layers to a minimum 100% Standard Proctor Density. The completed profile and cross-section shall be accurate to a tolerance of plus or minus 10 mm, free from ruts, waves and undulations.

2.5.6 Culverts

Culverts shall be high-density polyethylene pipe to ASTM F405, F667, designed for H20 loading for local roads and HS25 loading for arterial and collector roads in accordance with A.A.S.H.O.

Culvert sizes shall be designed for the anticipated run-off, 25 year return period, and shall be minimum 300 mm diameter. Driveway culverts shall be a minimum 7.0 m long.

In areas where culverts cross under major roadways or are located in critical or sensitive areas, culverts shall be sized for a 100 year return period.

Culverts shall be installed to true line and grade, with a minimum 300 mm bury. End walls shall be concrete-sandbagged or other approved headwall system.

2.5.7 Boulevards

Boulevard areas lying between the curb and property line of the road right-of-way shall be graded to drain to the curb and fill sections shall be compacted. The topsoil shall be raked free of roots and other debris and the boulevard shall be seeded or turf installed.

2.5.8 Curb and Gutter, Sidewalk

All concrete work shall conform to the applicable CSA Standards. All curb and gutter and sidewalk shall be plant mixed Portland Cement concrete installed to true line and grade, placed on dry, firm granular base course. Alternative materials and methods of construction such as extruded curb and gutter may be considered and in some instances will be requested by the Approving Authority.

Concrete placed in forms shall be consolidated using mechanical vibration to achieve the required strength.
Expansion joint material shall be placed at each expansion joint, construction joint, beginning and end of curb with radius less than 15 m, around all structures such as poles, valve boxes, and hydrants and adjacent to any building or structure. Construction joints shall be provided at intervals of 3 m in curb and gutter and 1.5 m in sidewalks. Finish shall be dimple finish with tooled, rounded edges.

Cold weather installation of concrete shall conform to CSA A23.1.19. Hot weather installation of concrete shall conform to CSA A23.1.20.

2.5.9 Hot-Mix Asphaltic Concrete

Priming and paving shall be carried out only on dry, smooth, compacted base course. Granular base courses and asphaltic concrete base courses shall be kept clean and uncontaminated until covered. Priming shall include granular and asphaltic base courses, edges of buildings, structures, gutters and pavement and shall not be carried out when the ambient temperature is less than 8 degrees Celsius.

Hot-mix asphaltic concrete shall be produced in a batch plant capable of drying and heating the mineral aggregate, heating the asphalt cement and accurately proportioning all materials to produce an asphaltic concrete possessing the required characteristics and within designated tolerances in accordance with ASTM D-995.

Hauling of asphaltic concrete shall be done in a manner such that the hot-mix is delivered to the site at the specified temperature and that no damage to surfaces of roadway occurs.

Hot-mix asphaltic concrete shall be placed, spread and compacted to produce a true profile and cross-section, of the specified thickness and density and with a uniform textured surface, free from roller marks. Minimum final densities shall be:

Prior to October 1	- 97% of laboratory design density
After October 1	- 98% of laboratory design density

Test results indicating conformance with the approved detailed design drawings and specifications shall be submitted.

3.0 WATER SUPPLY

3.1 INTRODUCTION

Water distribution design and construction shall conform to the requirements of the B.C. Ministry of Health and this schedule.

The system shall be designed to provide day-to-day requirements and also shall provide adequate flows for fire protection. The required flow shall be the sum of the maximum daily flow plus the required fire flow.

3.2 DESIGN PARAMETERS

3.2.1 Per Capita Flows, Fire Flow Demands

Minimum design flows for domestic demand shall be:

Maximum daily domestic flow	5,540 L/single family unit/day
Peak hour domestic flow	9,400 L/single family unit/day

Additional design flows may be required for industrial, institutional or commercial developments.

Fire flow shall be in accordance with the criteria outlined in "Water Supply for Public Fire Protection - A Guide to Recommended Practice", published by Public Fire Protection Survey Services.

The following minimum fire flows shall be met for the noted zones:

Type	Required Fire Flow
Single Family Residential	60 litres/sec
Apartments, Townhouses	90 litres/sec

Design Population Density:

Single Family	3.0 people/dwelling
Multi-Family	2.0 people/dwelling

3.2.2 Pressure and Hydraulic Network Considerations

The water system must be designed to provide domestic water at the probable building main floor elevation on each Parcel as follows:

Maximum Static Pressure	800 kPa (116 psi)
Minimum Static Pressure	275 kPa (40 psi)
Minimum residual pressure at peak hour	250 kPa (36 psi)
Minimum residual pressure at fire flow conditions	140 kPa (20 psi)

As a basic guideline, the following criteria may be used:

a) Design for maximum of (a) fire flows, plus maximum day demand or (b) peak hour demand, whichever is greater.

b) Hazen Williams formula to be used, with the following 'C' factors:

PVC pipe	—	140
Ductile Iron	—	140

c) Demand requirements shall be based on the Municipality's present water consumption records and the projected trends. Demand may vary for different locations within the Municipality.

d) Where there is an existing hydraulic network in place, the Municipality may provide information for design calculations.

e) Depending on the complexity and extent of the proposed distribution system, the Approving Officer may require a hydraulic analysis design showing minimum flows and pressures.

f) The maximum desirable length of any permanent non-interconnected watermain shall be 150 m. All mains exceeding 150 m, unless it is a temporary situation, shall be looped unless otherwise accepted. Dead-end mains shall not be promoted.

g) In residential areas, watermains servicing fire hydrants shall be 150 mm diameter or larger. Watermains 100 mm in diameter may be permitted for domestic service on dead end roads where no further extension is planned, no fire hydrant is required and the dead end main is less than 75 m long. Where a dead-end main is longer than 200 m or services more than one hydrant, watermain shall be 200 mm diameter or larger. In commercial/industrial/ institutional areas, the minimum watermain size shall be 200 mm diameter. However, should the hydraulic analysis indicate a smaller or larger size watermains is required, that size watermain shall be used.

h) Watermains shall generally be located in the road right of way as shown on the Standard Drawings. When watermains must cross private property, a registered utility right-of-way, minimum 3.0 m wide, shall be provided.

i) Design of pumping stations and control valving such as pressure-reducing valves require the acceptance of the Approving Officer. Where storage is on line, pumps shall be sized to handle the Maximum Day Demand with the largest pump out of service.

Where no storage is available, pumps must be sized to handle the Peak Hour Flow with the largest pump out of service. Good engineering practice and consideration of operation and maintenance issues must be considered in the design.

j) Reservoirs, where required, shall be designed to suit the particular circumstances. In general, reservoir capacity shall be not less than:

Total Storage Requirement = A + B

Where A = Fire Storage
B = 25% of Maximum Day Demand

3.2.3 Cover, Grades, Clearance

The minimum cover over any watermain shall be 1.5 metres.

The minimum grade for a main shall be 0.1%. The maximum grade shall be 30% unless provision is made to anchor the pipe to the bottom of the trench with concrete poured in place. Watermain grades shall generally be consistent with the roadway grade.

The minimum vertical clearance between a watermain and other underground services be in accordance with Ministry of Health requirements. The drawings must indicate whether the watermain passes over or under other underground services it is crossing.

The minimum horizontal clearance between a watermain and any sanitary sewer shall be 3.0 m, or where this is not possible, in accordance with Ministry of Health regulations.

3.2.4 Valving

In general, valves shall be located as follows:

a) In intersections, in a cluster at the pipe intersection or at the projection of property lines, to avoid conflicts with curbs and sidewalks:

i) 3 valves at "X" intersection
ii) 2 valves at "T" intersection

so that specific sections of mains may be isolated.

b) Not more than 200 m apart for single family residential. All other zones shall require special designs.

c) Not more than 1 hydrant isolated.

Valves shall be the same diameter as the main up to 300 mm diameter. Gate valves may be used up to and including 300 mm diameter. Butterfly valves will be allowed in mains larger than 300 mm.

3.2.5 Hydrants

Fire hydrants shall generally be located at street intersections. Where hydrants are required at mid-block locations, they shall be installed opposite property lines. Maximum fire hydrant spacing is to be 150 m in single family residential areas. No residence should be more than 90 m from a hydrant. Additional hydrants may be required in high-risk areas.

It shall be the Developer's responsibility to ensure the design and proposed locations of the fire hydrants will not conflict with existing or proposed street lights, power poles, etc.

Gate valves shall be installed with a flanged connection at the main to isolate all hydrants.

3.2.6 Air Valves, Blow-Offs, Chamber Drainage

Air release valves are not required on watermains 200 mm diameter and smaller, except under special needs determined by the Approving Officer.

Combination air valves must be installed on the summit of all mains 250 mm diameter and larger, except where the difference in grade between the summit and valley is less than 600 mm.

A 50 mm diameter standpipe shall be installed on all dead-end mains. Standpipes shall be installed in a box below grade and shall not be located in the traveled portion of the roadway.

Chambers or manholes containing valves, blow-offs, meters or other appurtenances are to allow adequate room for maintenance. The access opening must be suitable for removing valves and equipment. The chamber is to be provided with a drain to prevent flooding. Adequate venting is to be provided.

Cross connections or drainage to sanitary sewers will not be permitted.

3.2.7 Thrust Blocking

Concrete thrust blocking shall be provided at bends, tees, wyes, reducers, plugs, caps, and blow-offs. The area of thrust block bearing on pipe and ground shall be as shown on the standard drawings or as accepted. Where thrust blocks are impractical they may be replaced by adequate restraining devices.

3.2.8 Service Connections

The minimum size water service connection shall be as follows:

Residence	19 mm diameter
Other	25 mm diameter

The curb stop at the end of each service pipe must be located 500 mm from the property line, on the road right-of-way, and within 1 metre of the corner of the lot. Where such location will conflict with other services, the location may be revised with the approval of the Approving Officer.

Services and curb stops must have a minimum cover of 1.5 m and curb stops must be no deeper than 2.0 m.

3.2.9 List of Standard Drawings

The following drawings form part of Section 3:

Title	No.	Title	No.
Typical Watermain Thrust Blocks	W1	Fire Hydrant	W4
19 mm to 25 mm Water Service	W2	Air Release Assembly 25 mm to 50 mm Valves	W5
Standard Valve Box	W3	Watermain Blow-off	W6

3.3. MATERIALS

The materials outlined in Tables 3.3.1 to 3.3.5 on the following pages shall be considered acceptable for installation throughout the Municipality. Alternative equal products may be accepted on approval by the Municipality.

TABLE 3.3.1

APPROVED MATERIALS LIST

DIVISION: Waterworks **PRODUCT:** Pipe

Manufacturer	Make / Model	Size Range	Comments / Conditions:
WATERMAIN			
IPEX, REHAU, FLEX-LOC	PVC to C900	100mm-300mm	Only SDR 18, Class 150 or better as required
-	PVC to C905	350mm-900mm	Joints to Manufacturers Specifications. Pressure Class to Engineer's design.
CANADA PIPE	Ductile	100mm-900mm	Corrosion protection to be considered. Cement mortar lining to AWWA C-104
SERVICE PIPE			
NORANDA, WOLVERINE	Type K Copper	min. 20 mm(3/4") max. 50mm (2")	Must conform to CSA HC.7.6 and ASTM B88
ALL SUPPLIERS	Polyethylene	min. 25mm (1") max. 50mm (2")	Only Series 160 conforming to CAN/CSA-B137.1-M, Compression Fittings Only
ALL SUPPLIERS	PEX	min. 25mm (1") max. 50mm (2")	Must conform to CAN3-B137.8-M Stainless steel inserts required.

TABLE 3.3.2

APPROVED MATERIALS LIST

DIVISION: Waterworks **PRODUCT:** Fittings and Appurtenances

Manufacturer	Make / Model	Size Range	Comments / Conditions:
GATE VALVES			
TERMINAL CITY	TC/CLOW resilient	50-300 mm	Resilient seat gate valve to C-509.
CLOW	CLOW resilient	"	"
MUELLER	Super-Seal	"	"
			All valves to open counterclockwise.
BUTTERFLY VALVES			
			All to AWWA C-504
CENTERLINE	Series 200	350 mm +	For installation in chamber only
PRATT	Groundhog	350 mm +	For buried service
MUELLER	Lineseal III	"	"
KEYSTONE	Type 504	"	"
AIR VALVES			
			All to AWWA C-512
APCO	143C, 145C, 147C	25-150 mm	
	149C, 150C	"	
VALMATIC	201C, 202C, 203C	"	
	204C	"	
SERVICE BOXES			
			All to AWWA C-512
MUELLER	A-726	25-150 mm	Stainless Rods, Brass Cotter Pins
	A-728	"	
MAIN VALVE BOXES			
ROBAR			Nelson Type

*PREFERRED

TABLE 3.3.3

APPROVED MATERIALS LIST

DIVISION: Waterworks **PRODUCT:** Fittings and Appurtenances

Manufacturer	Make / Model	Size Range	Comments / Conditions:
HYDRANTS			
CANADA VALVE			All to AWWA C-502

* PREFERRED

TABLE 3.3.4

APPROVED MATERIALS LIST

DIVISION: Waterworks **PRODUCT:** Fittings and Appurtenances

Manufacturer	Make / Model	Size Range	Comments / Conditions:
FITTINGS			
			All fittings must be properly thrust blocked
*TERMINAL CITY	Ductile Iron Fittings	100-600 mm	AWWA C110, ANSI B16.1
McAVITY	Ductile Iron Fittings	"	AWWA C110, ANSI B16.1
NORWOOD FOUNDRY	Ductile Iron Fittings	"	AWWA C110, ANSI B16.1
BIBBY STE. CROIX	Ductile Iron Fittings	"	AWWA C153, compact fittings
IPEX	PVC Fittings	150-200 mm	Shall be AWWA C-907 approved, 5° Bends Only
RESTRAINING JOINTS			
CLOW	Series 1200 & 1350	100-600 mm	Subject to Engineer's design and approval.
UNIFLANGE	Series 1200 & 1350	"	"
SMITH BLAIR	Model 982	"	"
MEGALUG	Series 1100	100-600 mm	"
SERVICE/TAPPING SADDLES			
			All to AWWA C-800
ROBAR	2616 DB	100-600 mm	
	2506 DS	"	
SMITH-BLAIR	Type 357	"	
CANADA PIPELINE	SC-2 & CD-2	"	
CLAMPS & COUPLERS			
			To AWWA C-800
ROBAR	1406 & 1406R	100-600 mm	Complete with stainless steel bolts
ROCKWELL	411, 413, 415, 611,	"	"
	913 & 914	"	"
DRESSER	Style 62	"	"
SMITH-BLAIR	411, 413, 415 & 611	"	"
CANADA PIPELINE	Style CDB	"	"

*PREFERRED

TABLE 3.3.5

APPROVED MATERIALS LIST

DIVISION: Waterworks **PRODUCT:** Fittings and Appurtenances

Manufacturer	Make / Model	Size Range	Comments / Conditions:
CORPORATION STOPS			
			All to AWWA C-800
MUELLER	B-25008	20 mm-50 mm	Full port only
MUELLER	H 15008		
CURB STOPS			
			All to AWWA C-800
MUELLER	B-25209	20mm - 50mm	Full port only
MUELLER	H 15209		
SERVICE LINE COUPLERS			
MUELLER	H - 15403	20mm - 50mm	H15403 , H15404 & H12940

3.4 INSTALLATION

3.4.1 Excavation, Bedding, Backfill, Restoration

The trench shall be excavated so that pipe can be laid to the specified alignment and depth with allowance for the specified trench wall clearances and bedding.

Bracing, sheeting and trench side slopes shall be in accordance with Worker's Compensation Board safety requirements. Dewatering may be required to control trench water.

Bedding material shall be sand, crushed gravel or concrete. Bedding shall be compacted to 95% Standard Proctor Density.

Backfill material shall be approved select native material or pitrun gravel and shall be placed in such a manner to prevent damage to the pipe.

Backfill materials in traveled surfaces shall be compacted to 95% Standard Proctor Density, except for the upper 750 mm which shall be compacted in accordance with the adjacent traveled surface design requirements.

Surface restoration shall conform to the original condition or as accepted.

3.4.2 Pipe Laying

Pipe shall be installed in accordance with the applicable AWWA specifications, the manufacturer's recommendations and requirements of this Schedule.

Pipes shall be handled with the greatest care and with equipment designed so that no damage occurs to pipe or fittings.

All pipes shall be laid with a horizontal tolerance of plus or minus 50 mm from specified alignment and with a vertical tolerance of plus or minus 25 mm from specified grade. The pipes shall be jointed in accordance with the manufacturer's recommendations except that joint deflections shall be allowed only up to one-half of the manufacturer's recommended tolerances. Particular care must be taken to see that the ends of the pipes are kept clean. Care shall be taken to properly align the pipe once the joints are forced home. Movement of the pipe once the joints are made shall be kept to an absolute minimum. Socket ends of pipe to face direction of laying, for mains on a grade of 2% or greater, face socket ends upgrade.

Care shall be taken to prevent the entrance of trench water or other material into the pipe during installation.

3.4.3 Valves, Hydrants and Appurtenances

Valves shall be installed at the specified locations, in the vertical position. Valve boxes shall be installed plumb, centered over the valve, and such that traffic loads are not transmitted to the valve.

Hydrants shall be installed at the specified locations, set plumb and such that the pumper port faces, and is at right angles to, the road centreline, unless otherwise accepted. Drain outlets with drain rock shall be provided and kept free of obstructions. The break away type ground flange shall be 100 mm above finished ground or sidewalk grade unless otherwise accepted.

Fittings shall be installed at the specified locations in accordance with the manufacturer's recommendations.

3.4.4 Thrust Blocking

Thrust block bearing areas shall be to Municipal standards. Concrete shall be 20 MPa minimum at 28 days.

Care shall be taken to ensure that concrete does not interfere with the operation of flange bolts and nuts or prevent proper operation of hydrant drains.

3.4.5 Service Connections

Service connections shall be installed at the specified locations and depths with the same tolerances as specified for pipe laying.

Curb stop boxes shall be set plumb and adjusted to finish grade.

3.4.6 Testing

Prior to testing, all new water mains are to be cleaned of debris by flushing and immediately afterwards the pipe ends shall be capped in preparation for testing and disinfection.

Before pipe is filled with water, pipe bedding, concreting of all valves and fittings and backfilling to be compacted as required in this specification. Fill each section of pipe and allow to remain full of water for a period of at least 24 hours prior to commencement of any pressure tests. Submit pipeline to a test of 1.5 x working pressure applied at highest elevation in each section, with a minimum of 1380 kPa applied at lowest point of test section. Ensure that test pressure does not exceed pipe or thrust restraint design pressures. Maximum allowable leakage rate at test pressure to not exceed 1.25 litres per millimetre diameter of pipe per kilometre per 24 hour period. Minimum duration of test period to be 2 hours.

Perform pressure and leakage testing of ductile iron piping to AWWA C600.

Perform pressure and leakage testing of polyvinyl chloride (PVC) piping to AWWA M23.

Perform testing of welded steel piping to AWWA C206; no leakage allowed.

Should any test disclose excessive leakage, repair or replace defect and retest section until specified testing requirement is achieved.

Service connections shall be tested with the watermain.

Leakage testing shall be witnessed by the Approving Officer or Authorized Representative who shall be notified 24 hours in advance of the leakage testing. All test data and leakage calculations are to be submitted to the Approving Officer.

3.4.7 Flushing and Disinfection

All water mains shall be flushed and disinfected by chlorination after testing. Chlorination methods shall conform A.W.W.A. C651 and all disinfection shall be acceptable to the Approving Officer and Public Health Inspector.

Upon completion of disinfection, the entire piping system shall be thoroughly flushed, filled with water and left in a condition ready for use.

Care shall be taken to ensure chlorinated water from the testing procedure is not discharged into fish bearing streams. Dechlorination may be required prior to discharge.

4.0 SANITARY SEWERS

4.1 INTRODUCTION

Sanitary sewer systems shall be designed and installed in accordance with the requirements of the B.C. Ministry of Environment, Waste Management Branch, "Guidelines for Assessing Sewage Collection Facilities", and the requirements noted in this Schedule.

4.2 DESIGN PARAMETERS

4.2.1 Design Flows

The sanitary sewer system shall be designed using the following minimum average daily flows for the zone noted:

Residential	=	400 litres/capita/day
Industrial/commercial/institutional	=	17,500 litres/day/hectare

An infiltration rate of 30,000 litres/day/km of sewer main shall be added to the above flows.

Peak flows shall be 4 times the average daily flow for contributing areas with populations less than 1,000; and 3.5 times the average daily flow for contributing areas with populations between 1,000 and 3,000. For populations of more than 3,000 persons, following the formula

$$M = 1 + \frac{14}{4 + P^{0.5}}$$ shall be used.

Where: M = ratio of peak to average flow
P = population in thousands

Design populations used in calculating average daily flows shall be computed in accordance with the Municipality's population predictions or with the planned development in the area to be served, whichever is larger.

Peak design flows must be determined by applying the peak factor to the average daily flow plus infiltration. Pipes shall be designed so that sewers flow 2/3 full for pipes 250 mm diameter and less, and 3/4 full for pipes greater than 250 mm diameter, unless otherwise accepted.

4.2.2 Pipe Flow Formulas

Capacities of gravity sanitary sewer mains shall be determined using Mannings' Formula:

$$Q = \frac{A \times R^{0.667} \times S^{0.5}}{N}$$

Where:
Q = Design Flow in m^3/sec
A = Cross Sectional Area in m^2
R = Hydraulic Radius in m
S = Slope of hydraulic grade line in m/m
N = Roughness coefficient
= 0.013 for Conc. Pipe
= 0.011 for P.V.C. Pipe

Calculations for capacities of sanitary sewer forcemains shall use the Hazen - Williams Formula:

$$Q = 0.278\ C D^{2.63} S^{0.54}$$

Where: Q = Rate of flow in m^3/sec
D = Internal pipe diameter in mm
S = Slope of hydraulic grade line in m/m
C = Friction coefficient
= 140 for all PVC pipe
= 120 all other pipe

4.2.3 Manholes and Hydraulic Losses

Manholes shall be required at:

. all changes in grade
. all changes in direction
. all changes in pipe sizes
. all intersecting sewers
. all terminal sections
. downstream end of curvilinear sewers

Manholes shall be placed where future extensions are anticipated and shall be spaced no greater than 100 m apart. Where grades of sewer mains are sufficient to provide proper self-cleaning, the Approving Officer may accept 120 m spacing.

Pipe intersections in manholes shall utilize smooth hand formed concrete channels to maintain uniform flows.

The invert of the downstream pipe shall not be higher than that of the upstream pipe. However, both pipes may be placed at the same elevation.

The springline of the downstream pipe shall not be higher than that of the upstream pipe.

Minimum drop in invert levels across manholes:

i) Straight run - no drop required
ii) Deflections up to 45° - 25 mm drop
iii) Deflections 45° to 90° - 30 mm drop

Drop manholes and outside ramps must be installed in accordance with standard drawings.

Inside ramps will be permitted up to 450 mm from invert to channel bed.

4.2.4 Temporary Cleanouts

Temporary clean-outs may be provided at terminal sections of a main provided that:

a) Future extension of the main is proposed or anticipated.

b) The length of sewer to the downstream manhole does not exceed 45.0 m.

c) The depth of the pipe does not exceed 2.0 m at the terminal point, and

d) Clean-outs shall not be considered a permanent structure.

4.2.5 Minimum Pipe Diameter, Velocity, Grades and Cover

The minimum diameter for sanitary sewer installations, unless otherwise accepted, shall be as follows:

a) Sanitary Sewer Mains = 200 mm
(except terminal pipe section which cannot be extended in the future, may be 150 mm diameter with minimum 1% grade.)

b) Sanitary Sewer Connections = 100 mm
(a minimum 150 mm diameter service shall be used for all commercial and industrial services)

c) Sanitary Sewer Forcemains = 75 mm

The minimum velocity shall be 0.6 m/sec. There is no maximum velocity, however, consideration must be given to scour problems where flow exceeds 3.0 m/sec., and anchoring must be incorporated where the grades of the sewer are 30% or greater.

The minimum velocity for forcemains shall be 0.9 m/sec.

The grade of any sewer shall be governed by the minimum velocity required. However, the last section of a main that will not be extended in the future, shall have a minimum grade of 1.0% where 150 mm diameter pipe is proposed.

The minimum cover over any main shall be 1.0 m. The desired cover over any sewer forcemain is 1.5 m. Consideration must be given to both dead and live loads for pipe material being utilized.

The depth of the sewer must be sufficient to provide 'gravity flow' service connections to both sides of the roadway and must allow for future extension(s) to properly service all of the upstream tributary lands for ultimate development.

Where it is not feasible to service by gravity connection to a sewer in the frontage street, a sewer in a rear yard or lane may be required.

Where permitted, horizontal and vertical curves will require a constant offset and/or shall be uniform throughout the curve. The radius of the curve shall not be less than 1.5 times the manufacturer's recommended minimum. The design velocity must exceed 0.91 m/sec., the minimum grade shall be 1.0% and the curve midpoint and two quarter points are to be located by survey.

Sanitary sewers shall generally be located in the road right-of-way, with offsets from property line as shown on the standard drawings. When sanitary sewers must cross private property, a registered utility right-of-way, minimum 4.0 m wide, shall be provided. The width must, however, be suitable to accommodate excavations based on WCB regulations.

4.2.6 Service Connections

Service connections shall be provided to each lot fronting the main. All services shall enter the main at a point just above the springline. Each service connection shall have an inspection chamber installed at the property line as shown on the standard drawings.

Separate service connections shall be installed for each dwelling unit of a duplex, townhouse or row housing development for individual ownership.

Connections to new mains shall be made using wye fittings; connections to existing mains shall be made using saddles.

The minimum size for sanitary sewer service connections shall be 100 mm.

The minimum grade of 100 mm diameter service connection from the main to the property line shall be 2.0%. Where this grade cannot be met, a 150 mm diameter service connection at a minimum grade of 1.0% may be installed.

Desirable depth shall be 1.5 m at the property line or as accepted.

Single family and duplex residential service connections may be permitted into manholes provided that:

i) The connection is not in an adverse direction to the flow in the sewermain.

ii) The provisions noted in 4.2.3 are met.

Service connections, 150 mm and larger, except single family or duplex, shall be connected to manholes and; shall comply with the provisions of Section 4.2.3.

4.2.7 Pumping Stations and Force Mains

If at all possible, the use of sanitary pump stations is to be discouraged. Any proposed use of pump stations must receive prior approval from the Approving Officer on submission of preliminary design drawings. Any sanitary pump station must be located within a right-of-way outside of the road dedication.

The size, capacity and type of these stations will be dependent upon the development and catchment area involved. The location and layout of a lift station must include an assessment of the following basic design considerations:

- The lift station must be designed to handle the ultimate flows of the designated catchment.
- Type of station and impact on neighbours.
- Construction dewatering requirements.
- Access for construction.
- Access for maintenance.
- Aesthetics, noise, odour control and landscaping requirements.
- Security against vandalism and theft.
- Flood elevations. Station uplift design must be based on maximum flood level.
- Proximity of receiving sewers, watermains, and adequate power supply.
- Minimizing energy requirements.
- Standby power and its compatibility.
- Soils. Sub-surface investigations must be undertaken prior to site approval.
- Convenience of operation and maintenance.
- Safety for operators and public.
- Capital costs and operation and maintenance costs.

All pumping stations shall be as accepted for the specific installation, but shall include as a minimum:

- Duplex Flygt pump system. Capable of passing 75 mm solids.
- Standby power or provision for connection to portable standby power.
- Emergency pump out pipework and fittings from external source.
- Provision for future connection to SCADA system.
- Electrical kiosk for all auxiliary equipment:
    - Hour meters
    - Ampmeters
- Levels controlled by ultrasonic level transmitter with emergency high and low level balls.
- Ball lift check valves.
- Minimum storage between high level alarm and start of overflow under the more critical of:
    - Minimum 1 hour in wet well at average wet weather flow
    - Minimum 1 hour in wet well and influent pipes at peak wet weather flow
- Minimum barrel size to be 2440 mm in diameter.

In conjunction with sanitary pumping facilities, the following criteria shall be noted in the design of force main systems.

a) Velocity

At the lowest pump delivery rate anticipated to occur at least once per day, a cleansing velocity of at least 0.9 m/sec should be maintained. Maximum velocity should not exceed 3.5 m/s.

b) Air Relief Valve

An automatic air relief valve suitable for sewage applications, installed in an insulated manhole, shall be placed at high points in the force main to prevent air locking. If requested by the Approving Officer and within reasonable depths, the sewer shall be graded to eliminate air relief valves. Vacuum breakers to be installed as required.

c) Termination

Force mains should enter the gravity sewer system at a point not more than 600 mm above the flow line of the receiving manhole. An inside drop pipe shall be incorporated on all forcemains entering manholes.

d) Size

The minimum size for force mains shall be 100 mm diameter unless otherwise accepted. All force mains shall be designed to prevent damage from superimposed loads, or from water hammer or column separation phenomena.

Consideration must be given to maintenance requirements in the design of all sewage pumping stations. Pump selection, wetwell volumes, control system, etc., shall be reviewed with the Approving Officer on a project by project basis.

4.2.8 List of Standard Drawings

The following drawings form part of Section 4:

Title	No.	Title	No.
Sanitary & Storm Sewer Manhole Requirements	S2	Sanitary Sewer Service Connection	
Typical Manhole & Base for Sewers up to 400 mm Dia.	S4	and Inspection Chamber	S9
Drop and Ramp Type Manholes	S5	Standard Manhole Cover & Frame	S10
Inside Drop Manhole	S6	Pipe Anchoring	G2
Invert Channeling in Manhole	S7	Typical Pipe Trench	G3
Standard Manhole Line Clean-out	S8	Standard Pipe Bedding Classification	G4

4.2.9 On Site Sewage Disposal

Where a parcel is not required to be served by a community sewer system, such parcel shall be served by individual on-site sewage disposal. Installations involving flows less than 22.7 m^3/day (5000 Igpd) are subject to permits issued by the British Columbia Ministry of Health and flows greater than or equal to 22.7 m^3/day by the British Columbia Ministry of Environment.

Onsite sewage disposal will only be permitted on lots with a minimum size of 2 Ha.

4.2.9(a) Flows less than 22.7 m^3/day

An area, suitable for construction of on-site sewage disposal facilities and certified by the Medical Health Officer, shall be located on each parcel, and not smaller than the following as determined by the percolation rate, slopes, soil profiles and source of water supply:

Percolation Rate (min./in.)	**Area Required (m^2)**
5	390
10	483
15	539
20	585
25	632
30	669

Maximum slope of disposal area is 30%.

Percolation tests less than 5 min./inch will not be acceptable unless a hydrogeological assessment by a professional geologist indicates that:

a) there is no risk of contamination to a community water system source or any ground water aquifer; and/or

b) there is not any likelihood of breakout points.

All requirements of the Sewage Disposal Regulations are to be complied with.

There shall be a minimum of 120 cm of natural porous topsoil above the ground water table or any impervious layer in such area of soil and a representative number of test holes shall be dug in that area to a minimum depth of 120 cm to demonstrate this.

The area of soil required for sewage disposal shall be capable of meeting the siting and setback requirements for absorption fields in the Municipal Sewage Regulations, B.C. Reg. 129/99.

Percolation tests are subject to the certification of the Medical Health Officer, B.C. Ministry of Health, who will make a recommendation to the Approving Officer.

Percolation tests to test the area of soil are to be undertaken as follows:

a) Percolation testholes shall be dug at points and elevations selected as typical in the area of proposed disposal field;

b) One of these testholes shall be dug at each end of the area of the disposal field. Further holes may be required depending on the nature of the ground and the result of the first test and the size of the proposed field;

c) Testholes shall be 300 mm square and excavated to the depth of the proposed absorption trench;

d) To make the percolation test more accurate, any smeared solid should be removed from the walls of the testhole;

e) If the soil contains considerable amounts of silt and/or clay, the testhole shall be pre-soaked before proceeding with the test. To do this, keep the hole as fully filled with water as possible for four (4) hours. Proceed with the test immediately after pre-soaking.

f) To undertake the test, fill the testhole with water. When the water level is thirteen (13) centimetres or less from the bottom of the hole, refill the hole to the top. No recording of time need be done for these two fillings.

g) When the water level after the second filling (step (f)) is thirteen (13) centimetres or less from the bottom of the hole, add enough water to bring the depth of water to fifteen (15) centimetres or more;

h) Observe the water level until it drops to the fifteen (15) centimetre depth. At precisely fifteen (15) centimetres commence timing. When the water level reaches precisely twelve and one-half (12.5) centimetres depth, stop timing;

i) repeat procedures (g) and (h) until the last 2 rates of fall do not vary more than 2 minutes per 2.5 cm;

j) The time in minutes for the water level to drop 2.5 centimetres is the percolation rate for that hole and is recorded in minutes per 2.5 centimetres. The percolation rate of the absorption field is the average of the slowest rates of the percolation tests made for that field;

k) Cover the holes, flag their location and repeat the test in other locations. Record the results and submit to the local authorities.

4.2.9(b) Flows greater or equal to 22.7 m^3/day

On site sewage installations involving flows greater than or equal to 22.7 m^3/day are subject to permits issued by the British Columbia Ministry of Environment under Waste Management Act prior to approval by the Local Authority.

4.3 MATERIALS

The materials outlined in Table 4.3.1 on the following pages and on standard drawings shall be considered acceptable to the Municipality. Alternative equal products may be accepted on approval.

TABLE 4.3.1

APPROVED MATERIALS LIST

DIVISION: Sanitary Sewer **PRODUCT:** Pipe/Appurtenances

Manufacturer	Make / Model	Size Range	Comments / Conditions:
GRAVITY MAIN SEWER			
IPEX/ROYAL FLEX LOX	PVC SDR 35	150-675 mm	Collection Mains, ASTM D3034, F679 CSA B182.2
REHAU	PVC SDR 28	100-150 mm	Services, CSA B182.2, D3034
			All joints to Manufacturer's Specs.
FORCEMAINS			
IPEX	PVC	100-300 mm	AWWA C-900
DRISCOPIPE	Polyethylene	100mm & larger	Series 160, CSA 137-1
SCLAIRPIPE			ASTM PE 2036. AWWA C-906
IPEX	PVC Series Pipe	100mm & larger	Series 160, CSA 137-3
			Subject to Engineer's design and approval
			Joints to Manufacturer's Specs
			Fittings refer waterwork specs.
MANHOLES			
ALL SUPPLIERS	-	1050 mm min.	ASTM C478, 20 MPa min. concrete.
			To Comply with Std. drawings.

4.4 INSTALLATION

4.4.1 Excavation, Bedding, Backfill, Restoration

Excavation, bedding, backfill and restoration shall conform to the requirements of Section 3.4.1 of this Schedule.

4.4.2 Pipe Laying

Handle, lay and join pipe in accordance with Manufacturer's recommendations and specifications.

Pipe jointing and force main piping installation shall conform to the requirements of Section 3.4.2 of this Schedule except vertical tolerance shall be 10 mm, plus or minus, for sanitary sewer gravity mains and 25 mm, plus or minus for sewer force mains.

4.4.3 Manholes, Cleanouts, and Appurtenances

Manholes, cleanouts and appurtenances shall be installed at the locations shown on the approved design drawings and in accordance with the Standard Drawings.

Manholes shall be set plumb and shall be constructed concurrently with the laying of the pipe. Manholes shall be constructed so as to be free from both ground water infiltration and exfiltration of sewage. All joints shall be butter mortared, including base, barrel, cover, bricking and frame.

Inlet and outlet elevations shall be as shown on the approved design drawings with tolerances as specified for pipe laying.

4.4.4 Service Connections

Service connections shall be installed at the locations and depths shown on the approved drawings with the same tolerances as specified for pipelaying. Inspection chambers shall be installed on all service connections as shown on the standard drawings.

4.4.5 Flushing and Testing

Prior to testing, all new mains are to be cleaned of debris by flushing, T.V. inspected and immediately afterwards capped in preparation for testing. This procedure will help to identify any misalignments on curved mains. All sanitary sewers shall be visually inspected to determine that they are straight.

Exfiltration tests shall be carried out on gravity sewers with either air or water as outlined below.

Testing for sanitary sewer forcemains shall conform to the testing criteria for watermains, but need not include disinfection.

Exfiltration Test for Gravity Sewers:

The allowable exfiltration (air method) shall be determined by filling the test section with air to a constant pressure of 25 kPa and maintaining a pressure above 20 kPa for a minimum of 5 minutes. After the stabilization period, the air supply shall be cut off and the pressure allowed to drop to 20 kPa. Timing shall commence at 20 kPa and shall continue until the pressure reaches 15 kPa. The minimum acceptable time period shall be determined by the formula:

Minimum Time in min. = 0.040 x pipe dia. in millimetres

Where prevailing groundwater is above the sewer line being tested, the test pressure shall be increased 10 kPa for each metre of groundwater above the pipe.

An infiltration test may be required in areas of high groundwater, at the discretion of the Approving Officer.

The Approving Officer shall be notified 24 hours in advance of the leakage testing and may elect to witness the test. All test data and leakage calculations are to be submitted to the Approving Officer.

5.0 STORM DRAINAGE

5.1 INTRODUCTION

All storm drainage facilities shall be designed and installed as stated in this Schedule or as accepted, and shall be in conformance with the latest edition of the Municipality's Master Drainage Plan. The Approving Officer may require a Storm Water Management Plan, including flow modeling, at his sole discretion. Rainfall intensity shall be as shown on standard drawings.

5.2 DESIGN PARAMETERS

5.2.1 Design Methods and Flows

Design flows shall be based on the concept of the major and minor drainage systems and must attempt to maintain zero increase in peak flows over the pre-development flows.

a) Minor System

The minor system consists of localized areas of development serviced by a localized piping or ditching system which discharges to the major component.

This system shall be designed to accommodate a ten-year storm event. However, in doing so, it is mandatory that a comprehensive flood routing plan be developed which analyses the impact of surcharging flows on adjacent services and property.

b) Major System

The major component of the system consists of trunk mains which intercept flows from the minor system, natural drainage channels, overland flood routes and retention or detention facilities designed to reduce peaks. Overland flow through easements on private property is to be discouraged.

This system shall be designed for a 100 year storm based on a recognized calculation method. It shall further conform to any stormwater management plan which may have been established by the Municipality for each particular basin. Amendments to this program may only be permitted upon consultation with a detailed analysis by the Municipality.

In areas of potential flood plain, the major system hydraulic grade line shall be identified and, to prevent flooding, minimum basement elevations shall be identified and established by covenant.

The Ministry of Environment has established 1:200 yr. Flood plain elevations for the Shuswap River that must be considered in design.

5.2.2 Flow Capacities for Storm Sewers and Open Channels:

Capacities for storm sewer mains and open channels shall be determined using Mannings' Formula:

$$Q = \frac{A \times R^{0.667} \times S^{0.5}}{N}$$

Q = Design Flow in m^3/sec
A = Cross Sectional Area in m^2
R = Hydraulic Radius in m
S = Slope of hydraulic garden line in m/m
N = Roughness coefficient
= 0.01 for P.V.C. pipe
= 0.013 for Conc. pipe
= 0.024 for unpaved corrugated steel pipe
= 0.013 for concrete and asphalt line channels
= 0.02 for gravel lined channels
= 0.04 for natural and grassed channels

5.2.3 Minimum Pipe Diameters, Velocities and Cover

The minimum diameter for storm sewer installations shall be as follows:

a)	Storm Sewer Mains	=	250 mm
b)	Catch Basin Leads	=	200 mm
c)	Storm Sewer Service Connections (where required)	=	100 mm for residential and 150 mm for commercial, industrial and multi-family.
d)	Driveway Culverts	=	300 mm

Storm sewer mains shall be installed with a minimum clear cover above the pipe crown of 1.2 m.

Unless otherwise accepted, the minimum velocity for pipes flowing full or half full shall be 0.60 m/s.

Where grades for storm sewers exceed 30%, pipe anchors shall be installed.

Offsets for storm sewer mains shall be as shown on the standard drawings. Offsets may be changed where existing services require otherwise.

5.2.4. Manholes and Catch Basins

Manholes shall be installed at a maximum spacing of 120 m and also at:

- all changes in grade greater than 1.0%
- all intersecting storm drains
- all changes in pipe size
- all changes in direction

Minimum invert drops in manholes shall be:

- Straight Run — no drop required
- deflections up to 45^{o} — 15 mm drop
- deflections 45^{o} to 90^{o} — 30 mm deep

Drop manholes or outside ramps must be installed when drop between inverts exceeds 450 mm. The crown of the downstream pipe must not be higher than the crown of the upstream pipe.

Where required, catch basins shall be placed at regular intervals, at intersections and at low points. The Developer's Engineer shall locate catch basins based on 95% run-off capture rate based on certified computations acceptable to the Municipality. Wherever possible, catch basin leads should be connected directly to a storm manhole. Saddle or wye connections shall be used where leads tie directly to the main.

5.2.5 Inlet and Outlet Structures

Inlet and outlet structures shall be designed to meet the requirements of each particular installation, however, the following guidelines shall be used as a basis for the minimum design requirements:

a) Endwall

Used to retain embankment fill over pipe. End walls shall be designed with a minimum height of 300 mm above the pipe crown and a minimum width of 300 mm on either side of the pipe.

b) Wingwalls

Used to transition outlet and inlet to existing channel shape. Wingwall heights shall match the endwall height, however, sloping may be used depending on the installation requirements. Wingwall lengths shall be a minimum of 1.5 times the endwall width. Wingwalls shall be installed on a 30° or 45° angle from a perpendicular to the endwall.

c) Aprons or Spillways

Used to prevent erosion of channel bottoms at inlet and outlet structures and shall be located to meet the requirements of each particular installation.

d) Energy Dissipaters

Used to reduce intake or discharge velocities. Energy dissipaters shall be installed as required.

e) Trash Grate

To be bolted and removable with a normal maximum 150 mm spacing of vertical bars.

f) Sedimentation devices shall be installed on all outlets to a creek.

All designs for inlet and outlet structures shall be subject to acceptance by the Municipality.

5.2.6 Ditches and Swales

Where ditching has been approved either alone or in conjunction with an underground system, all ditching shall be constructed to Municipal Standards for each particular road classification and shall be hydro-seeded in accordance with Section 2.4.7.

Energy dissipaters may be required if deemed necessary to prevent erosion. Sediment control devices may be required.

Ditches adjacent to Roadways must conform to the following criteria:

maximum depth	=	1.0 m
minimum grade	=	0.5%

The minimum right-of-way width for a ditch must be 5.0 m where it crosses private property. The ditch must be offset in the right-of-way to permit a 3.0 m wide access for maintenance vehicles. The top of a ditch adjacent to a property line must be a minimum 1.0 m away from that property line.

Swales must be a maximum 150 mm deep and have minimum 1% grade. All swales to be lined with turf on minimum 100 mm topsoil. Where an impervious swale is required by the Approving Officer, swales to be constructed with 50 mm compacted asphalt on 65 mm thick compacted 20 mm crush gravel base.

5.2.7 Service Connection

Storm sewer connections are required unless indicated otherwise by the Approving Officer. The Approving Officer may require a hydrogeolical study be done in determining need for service connections. Where required, they shall be installed to the property line at a minimum depth of 1.2 m.

5.2.8 French Drains and Rock Pits

French drains and rock pits may be permitted where topography and soil conditions are proven adequate. A soils report may be required in the Municipality. To promote interception of pollutants and reduction in storm flows, groundwater recharge systems are to be used where appropriate. The use of groundwater recharge systems will be based on geotechnical evaluation of native soils ability to absorb storm runoff.

5.2.9 Natural Watercourses

Natural watercourses shall be protected as directed by the Approving Officer. All Provincial and Federal regulations and permits to be complied with.

5.2.10 List of Standard Drawings

The following drawings form part of Section 5:

Title	No.	Title	No.
Typical Concrete Catch Basin & Trapping Hood Detail	S1	Invert Channeling in Manhole	S7
Sanitary & Storm Sewer Manhole Requirements	S2	Standard Manhole Cover & Frame	S10
Storm Drainage Drywell	S3	Standard Concrete Box Catch Basin Inlet	S11
Typical Manhole and Base for Sewers up to 400 mm Dia.	S4	Rainfall Intensity/Duration/Frequency Curves	S12
Drop and Ramp Type Manholes	S5	Pipe Anchoring	G2
Inside Drop Manhole	S6	Typical Pipe Trench	G3
		Standard Pipe Bedding Classification	G4

5.3 MATERIALS

The materials detailed in Table 5.3.1 and on standard drawings shall be considered acceptable to the Municipality. Alternative equal products may be accepted on approval.

TABLE 5.3.1

APPROVED MATERIALS LIST

DIVISION: Storm Sewer **PRODUCT:** Pipe/Appurtenances

Manufacturer	Make / Model	Size Range	Comments / Conditions:
PIPE			
ALL SUPPLIERS	Reinforced Concrete	250 mm & larger	ASTM C76M. Major Trunks
IPEX	PVC DR 28*	100, 150 mm	Service Connections only to CSA B182.2,
ROYAL FLEX LOX			ASTM D3034
REHAU			
	PVC DR 35*	200 to 375 mm	Mains, ASTM D3034, CSA B182.2
		450 to 675 mm	Mains, ASTM F679, CSA B182.2
	PVC, Ultra Rib	200 - 600 mm	Mains, ASTM F794, CSA B182.4
	PVC, Permalok	450 – 900 mm	Mains, ASTM F794, CSA B182.4
BIG 'O'	Boss N12	100 - 900 mm	Mains, ASTM F405, F667, Smooth Wall
ALL SUPPLIERS	Reinforced Concrete	675 mm & larger	Culverts, ASTM C76M, ASTM C443M
ALL SUPPLIERS	PVC DR28*	100 - 200 mm	Drain Tile
BIG 'O'	Boss N12	100 – 200 mm	Drain Tile
			Note: 1) All joint and fittings to Manufacturer's Specs
			2)* Subject to Engineer's Design and Approval.
MANHOLES - AS PER	**SANITARY**	**SEWER**	**TABLE 4.3.1**
CATCHBASINS - AS	**SHOWN ON**	**STANDARD**	**DRAWINGS**
ALL SUPPLIERS	Precast concrete Barrells	-	To ASTM C478

5.3.4 Catch Basins

All catch basins shall be precast concrete 750 mm inside diameter. Precast barrels shall conform to ASTM C478.

Catch basin slabs shall be precast or cast in place on compacted material to Municipal Standards.

Catch basin leads shall be 200 mm diameter and shall be installed a minimum of 460 mm from the upper side of the precast slab to allow for sediment collection. Catch basins leads shall be installed at a minimum 2% slope from the catch basin to the main.

Catch basins to be fitted with surtraps as shown on detailed drawings

5.3.5 Inlet and Outlet Structures

Endwalls and wingwalls shall be constructed using concrete filled sandbags, reinforced concrete or prefabricated sections. Aprons and spillways shall be constructed of reinforced concrete or riprap.

5.4 INSTALLATION

5.4.1 Excavation, Bedding, Backfill, Restoration

Excavation, bedding, backfill and restoration shall conform to the requirements of Section 3.4.1 of this Schedule.

5.4.2 Pipe Laying

Storm sewer piping installation shall conform to the requirements of Section 3.4.2 of this Schedule.

5.4.3 Manholes, Catch Basin and Appurtenances

Manholes, catch basins and appurtenances shall be installed at the locations shown on the approved design drawings and in accordance with the Standard Drawings and Section 4.4.3 of this Schedule.

6.0 STREET LIGHTING

6.1 INTRODUCTION

All street lighting systems shall be designed by a Professional Engineer competent in lighting design, and in accordance with the International Illuminating Engineering Society and Municipal standards.
All materials, equipment and specifications shall be subject to approval of the Provincial Electrical Inspector prior to submission to the Approving Officer for consideration.

The developer shall be responsible for obtaining all permits and payment of any fees required by the Provincial Electrical Inspector or the power utility company prior to start of construction.

Upon completion, the consulting engineer or contractor shall make provision to energize the system for inspection purposes and notify the Approving Officer the system is ready to inspect. After completion of such inspection by the Approving Officer and correction of remaining deficiencies, the Approving Officer will then make application to energize the system when service is required.

Street lighting voltages shall be compatible with Power Authority service voltages.

Provision for future lighting of parks shall be made by installing ducts from the nearest streetlight or junction to the park property line.

6.2 DESIGN PARAMETERS

6.2.1 Minimum Levels of Illumination

The levels of average horizontal illumination, in lux, for roadways and pedestrian walkways shall not be less than those outlined in Table 6.2.1.1.

Table 6.2.1.1 - Average Horizontal Illumination (LUX)

Road Classification	Industrial & Intermediate Commercial Areas	Residential Areas
Arterial	MoTH	
Collector	12	* 6
Local	9	4
Walkways	5	5

Differentiation between areas shall be at the discretion of the Municipality.

The maximum uniformity ratio of horizontal illumination for roadways and pedestrian walkways using a maintenance factor of 0.90 shall be as outlined in Table 6.2.1.2.

Table 6.2.1.2 - Uniformity Ratios

Road Classification	Uniformity Average: Minimum
Collector	4:1
Local	5:1
Pedestrian Walkways	5:1

6.2.2 Pole Locations

For collector roadways, pole installations shall utilize a staggered arrangement on both sides of the roadways and where possible be located on lot lines, away from driveways and underground services. On local roadways, pole installations shall utilize a one-side arrangement along the sidewalk side, however a staggered arrangement may be considered provided private utility companies are satisfied that no conflicts exist.

Illumination levels differ for different classifications of roadways and where these roads meet, a transition area shall be incorporated. These shall have a gradual increase in illumination level until the higher level is reached.

On curves the luminaire spacing shall be reduced to ensure uniformity of illumination. Where poles are situated on the inside of bends the spacing must be reduced to $\pm$55% of the spacing on straight sections. On the outside of bends the spacing must be reduced to $\pm$70% of the normal spacing. Reduction figures are general guidelines and uniformity levels should dictate the required spacing.

Consideration shall be given to the relative positions of luminaires and trees to ensure that a uniform light distribution is maintained.

6.2.3 Underground Ducting Locations

In general, conduit shall be placed on the light side of the roadway. However, where a staggered type lighting pattern is utilized, conduit shall be placed on both sides of the roadway.

6.2.4 List of Standard Drawings

The following drawings form part of Section 6:

Title	No.
Power Base	E1
Typical Street Light Pole	E2
Standard Light Pole Base	E3
Street Light Electrical Connection	E4
Wiring Schematic for Streetlight Power Supply	E5
Typical Electrical Utility Trench	E6

6.3 MATERIALS

Electrical materials used in the street lighting system shall be new and shall be approved by and bear the label of the Canadian Standards Association.

6.3.1 Street Light Poles

Poles shall be as shown on Standard Drawings No. E2 and shall be a minimum 11 gauge octagonal steel anchor base type with 1.8 m davit and a height of 7.9 m for local highways or as otherwise approved by the Municipality and 8.5 m for collector highways. Poles shall be complete with anchor bolts, nuts and nut covers, handhole and watertight cover assembly, grounding stud and fuse assembly as shown on Standard Drawings. Poles shall be finished by being hot dipped galvanized. Each pole shall be provided with a junction box.

6.3.2 Conductors

All conductors shall be RW90 copper.

All insulated conductors shall be colour coded. White shall be used for the neutral conductor. Provide a #8 ground wire c/w green insulation, between poles.

Conductors run in rigid PVC conduit or in the interior of street light poles shall be wire type as listed in Table 19 of the Canadian Electrical Code for use in raceways (wet location). Adequate slack shall be provided in the pole to permit removal of connected wires and fusing through the handhole for maintenance.

In no case shall the distribution conductors be less than #8 AWG. Minimum conductor size from junction box to luminaire #12 RW90.

6.3.3 Conduit

Conduit size shall be minimum 50 mm diameter. Rigid PVC conduit and fittings shall bear a CSA Certification label or other proof of CSA certification. PVC conduit shall be installed in strict accordance with the manufacturer's recommendations, using CSA certified cement. The conduit shall not be bent in the field. Only factory bends shall be acceptable.

6.3.4 Luminaries and Lamps

Luminaires shall be High Pressure Sodium Cobra Head Fixtures, 100 watt Landmark 100 - L2HS100P2V, 120 volt for local roads and 150 watt Landmark 150 - L2HS150P2Y, 120 volt on collector roads, or as otherwise approved. Photocells shall be Fisher Pierce 6660 or 6690 or equivalent. One photocell will be required for 10 luminaries.

6.3.5 Junction Boxes

Junction boxes shall be PVC or concrete as shown on Standard Drawing. PVC boxes with steel lids shall be used in sidewalk and boulevard areas only. Concrete boxes with bolted steel lids shall be used in all areas subject to vehicle traffic. There shall be one junction box per streetlight.

6.3.6 Ground Rods

Ground rods shall be 19 mm diameter steel with hot forged point, full length galvanized or copperweld. Provide ground rods at power base to code requirements.

6.3.7 Connectors

Insulated connectors shall be Scotchlok as manufactured by Minnesota Mining and Manufacturing Co. Ltd., or as approved. For conductor combinations too large to use Scotchlok connectors, a solderless line connection shall be used, such as connector CL_2 manufactured by Thomas & Betts Ltd., or as approved. Bare copper lug used for connecting ground conductor to ground stud in lighting pole handhole shall be Thomas & Betts 54106 full compression lug, or as approved. The connector serving a ground rod shall be Burndy type GAR, or as approved.

6.3.8 Fusing

There shall be one in-line (cartridge type) fuse per streetlight, located within the pole and accessible through the handhole.

Fuse holder to be elastimold 65 series.

6.3.9 Pole Bases

Concrete bases for poles shall be as shown on Standard Drawings No. E3. Pole bases shall be situated so that the base top is 100 - 150 mm above the adjacent sidewalk or curb, or higher if required to suit steep boulevard grades.

6.4 INSTALLATION

6.4.1 Layout and Positioning

Poles, pole bases, conduit and appurtenances shall be accurately located in accordance with the accepted drawings. Conduit shall be installed parallel or perpendicular to the road centreline and routed so as to run in a direct line between adjacent poles or junction boxes.

6.4.2 Conduit Installation

Conduit shall be installed in accordance with the manufacturer's recommendations.

Empty conduits shall be provided with an insulated #12 AWG copper wire and capped immediately after installation of the pull wire.

6.4.3 Poles, Bases and Luminaires

Bases shall be set plumb and oriented such that one side of the bolt-square layout is parallel to the road centreline.

Poles shall be set plumb with no more than 6 shims per pole.

Luminaires shall be securely fastened to the poles, leveled and cleaned after pole erection.

6.4.4 Wiring and Equipment

Wiring and equipment installation shall conform to the B.C. Electrical Code and manufacturer's recommendations.

6.4.5 Inspection and Testing

Inspection and testing shall conform to the provisions of the B.C. Electrical Code and the provisions of Section 6.1 hereof.

6.4.6 Installation on Power Utility Poles

Where street lighting is to be installed on power utility poles, the installations shall conform to the lighting level requirements of this Schedule and to the materials and installation requirements of the utility owner.

7.0 NON-MUNICIPAL UTILITIES

7.1 INTRODUCTION

Non-municipal utilities include natural gas, power, telephone and cablevision services.

7.2 NATURAL GAS

Natural gas services are not required as a condition of subdivision, however, where natural gas services are to be installed, natural gas main and service installations shall conform to the requirements of the utility owner and natural gas mains shall be installed on both sides of new or upgraded roadways and located in accordance with the standard drawings herein. Installation of natural gas services, where available, is to be encouraged.

7.3 POWER

Electrical power services are required in accordance with Section 6 of this Bylaw. Where underground or overhead power services are to be installed, the installations shall conform to the requirements of the utility owner. Underground and overhead installations shall be located in accordance with the standard drawings herein. All new wiring shall be required to be placed underground.

7.4 TELEPHONE AND CABLEVISION

Telephone services are required in accordance with Section 6 of this Bylaw. Cablevision services are not required as a condition of subdivision, however, where cablevision service is available, installation of cablevision services is to be encouraged.

All new services shall be installed underground.

8.0 STANDARD DRAWINGS

8.1 GENERAL NOTES

1. Where ASTM, AWWA or other non-Municipal Standard Specifications are referred to, the most recent edition at the date of commencement of construction will apply.

2. "as approved" means as accepted for the specific application by the Municipality.

3. All valve boxes, manholes and catch basin covers or grates to be set 5 - 10 mm below finished paved asphalt road grade, and 20-25 mm below finished gravel surface grade.

4. Standard drawings are to represent the preferred methodology under standard conditions and are to be used wherever practical. This does not rule out the development or use of other methods after appropriate approvals have been obtained from the Municipality. Any special conditions or deviations from standard drawings must be submitted as design details and will, after approval, take precedence over the standard drawing. Therefore, any standard drawing developed for non-standard situation must specify on the drawing the specific use intended.

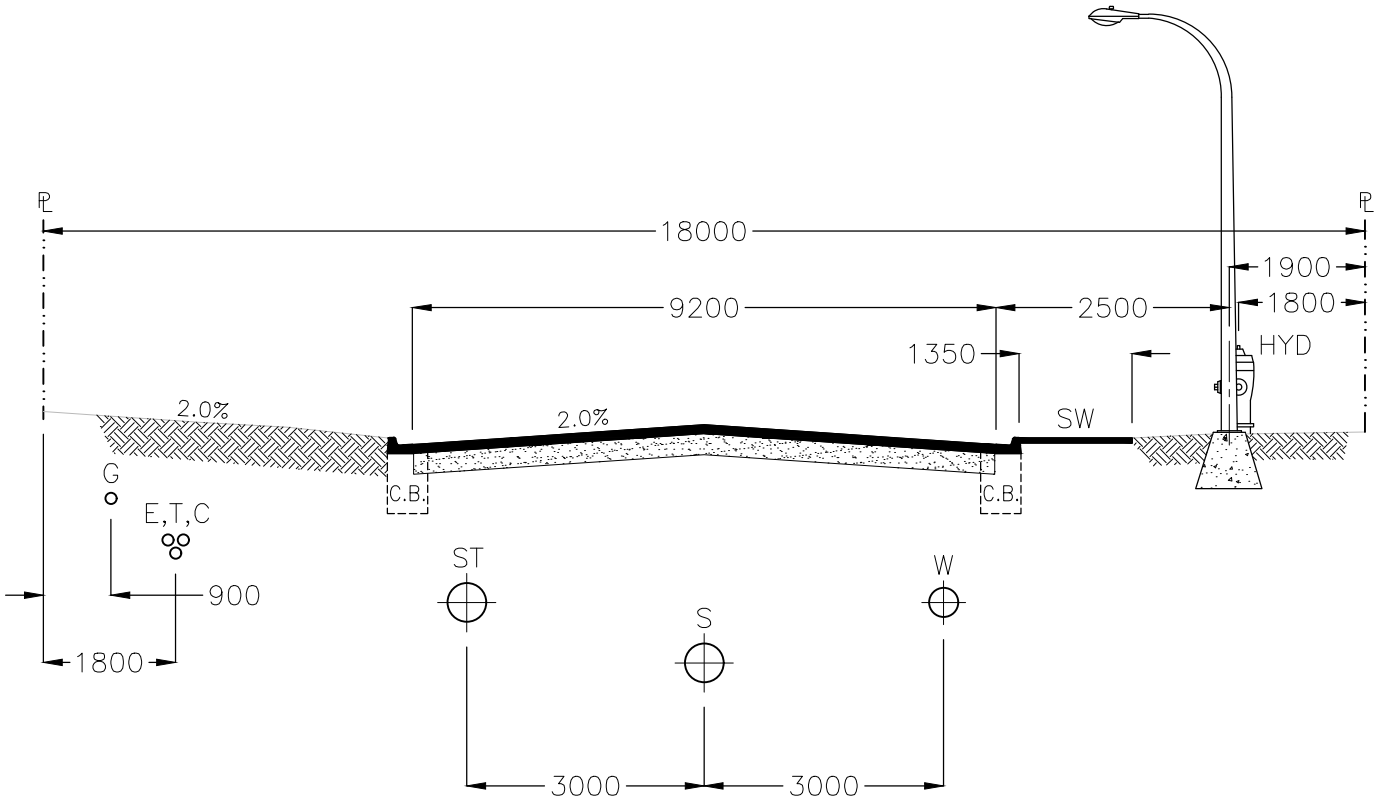
5. It is not the purpose of the standard drawings to detail a manufacturer's product but only the conditions of the Municipality's use of such product.

8.2 LIST OF STANDARD DRAWINGS

Title	No.
Roads:	
Local Roads with Curb and Gutter	R1
Collector Roads with Curb and Gutter	R2
Typical Walkway and Lane Cross Section	R3
Typical Wheelchair Ramp	R4
Standard Separate Sidewalk	R5
Typical Crossover	R6
Standard Curb and Gutter	R7
Typical Cul-de-Sac	R8
Water Works:	
Typical Watermain Thrust Blocks	W1
19 mm to 25 mm Water Service	W2
Standard Valve Box	W3
Fire Hydrant	W4
Air Release Assembly 25 mm to 50 mm Valves	W5
Watermain Blow-off	W6
Storm and Sanitary Sewers:	
Typical Concrete Catch Basin	S1
Sanitary & Storm Sewer Manhole Requirements	S2
Storm Drainage Drywell	S3
Typical Manhole and Base for Sewers up to 400 mm Dia.	S4
Drop and Ramp Type Manholes	S5
Inside Drop Manhole	S6
Invert Channeling in Manhole	S7
Standard Main Line Clean-out	S8
Sanitary Sewer Service Connection and Inspection Chamber	S9
Standard Manhole Cover & Frame	S10
Standard Concrete Box Catch Basin Inlet	S11
Rainfall Intensity/Duration/Frequency Curves	S12
Miscellaneous:	
Chain Link Fence for Walkway	G1
Pipe Anchoring	G2
Typical Pipe Trench	G3
Standard Pipe Bedding Classification	G4
Electrical	
Power Base	E1
Typical Street Light Pole	E2
Standard Light Pole Base	E3
Street Light Electrical Connection	E4
Wiring Schematic for Streetlight Power Supply	E5
Typical Electrical Utility Trench	E6

Note: All drawings have metric dimensions

SCHEDULE A



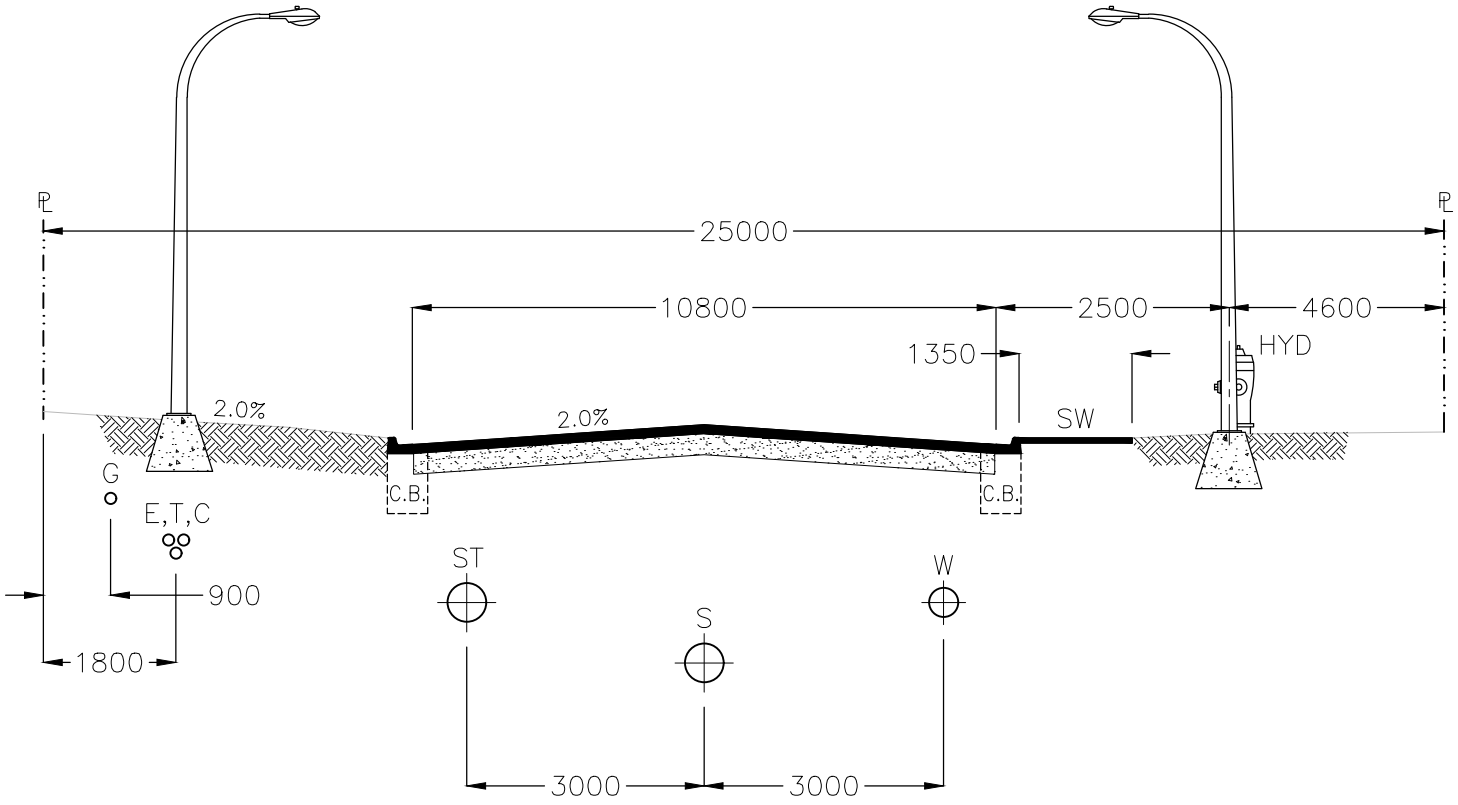
NOTES:

1. ROLLED TYPE CURB TO BE USED WHERE SINGLE FAMILY OR DUPLEX RESIDENTIAL PROPERTIES FRONT ON STREET.
2. UNDERGROUND WIRING REQUIRED AS DIRECTED BY THE APPROVING OFFICER.
3. AT THE DISCRETION OF THE APPROVING OFFICER, THE LOCATION OF WORKS AND SERVICES MAY BE VARIED WHERE WARRANTED BY TOPOGRAPHY, GEOLOGY OR PREVIOUS INSTALLATION OF OTHER WORKS.

LEGEND

G – GAS (MIN. DEPTH 600mm)
T – TELEPHONE
E – ELECTRICAL
C – CABLE T.V.
} MIN. DEPTH 900mm
W – WATER
S – SANITARY
ST – STORM
HYD – HYDRANT
SW – SIDEWALK
CB – CATCH BASIN

CITY OF ENDERBY	TITLE: LOCAL ROADS WITH CURB & GUTTER			
	FILE No. ROAD–CNG	SCALE N.T.S	DATE FEB. 2000	DWG No. R1



LEGEND

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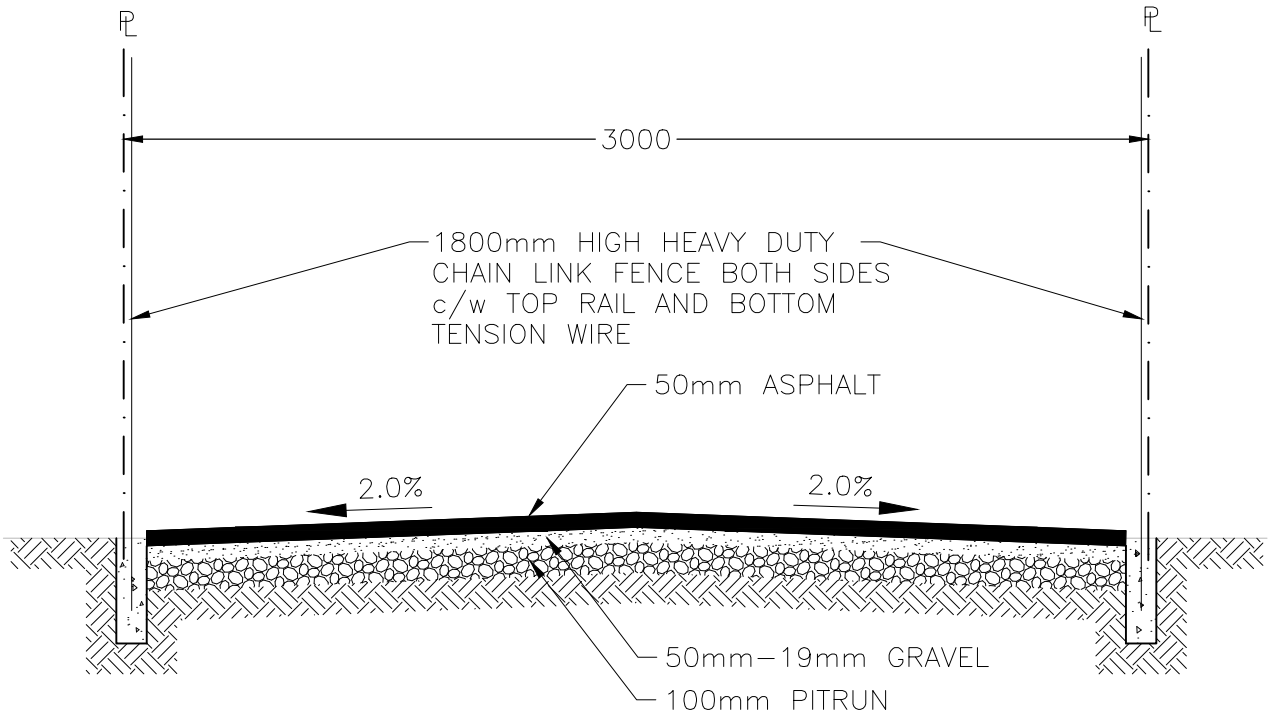
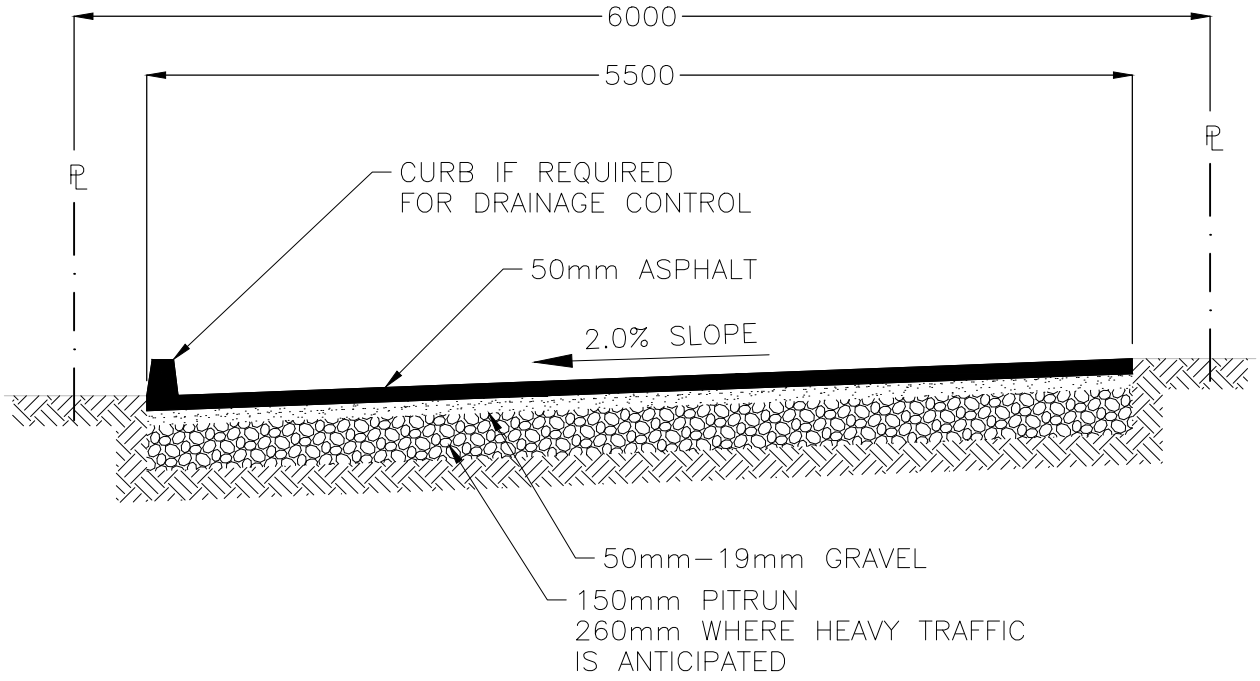
SW – SIDEWALK
CB – CATCH BASIN

NOTES:
1. UNDERGROUND WIRING REQUIRED AS DIRECTED BY THE APPROVING OFFICER.
2. AT THE DISCRETION OF THE APPROVING OFFICER, THE LOCATION OF WORKS AND SERVICES MAY BE VARIED WHERE WARRANTED BY TOPOGRAPHY, GEOLOGY OR PREVIOUS INSTALLATION OF OTHER WORKS.

CITY OF ENDERBY	TITLE: COLLECTOR ROADS WITH CURB & GUTTER			
	FILE No. ROAD	SCALE N.T.S	DATE FEB. 2000	DWG No. R2



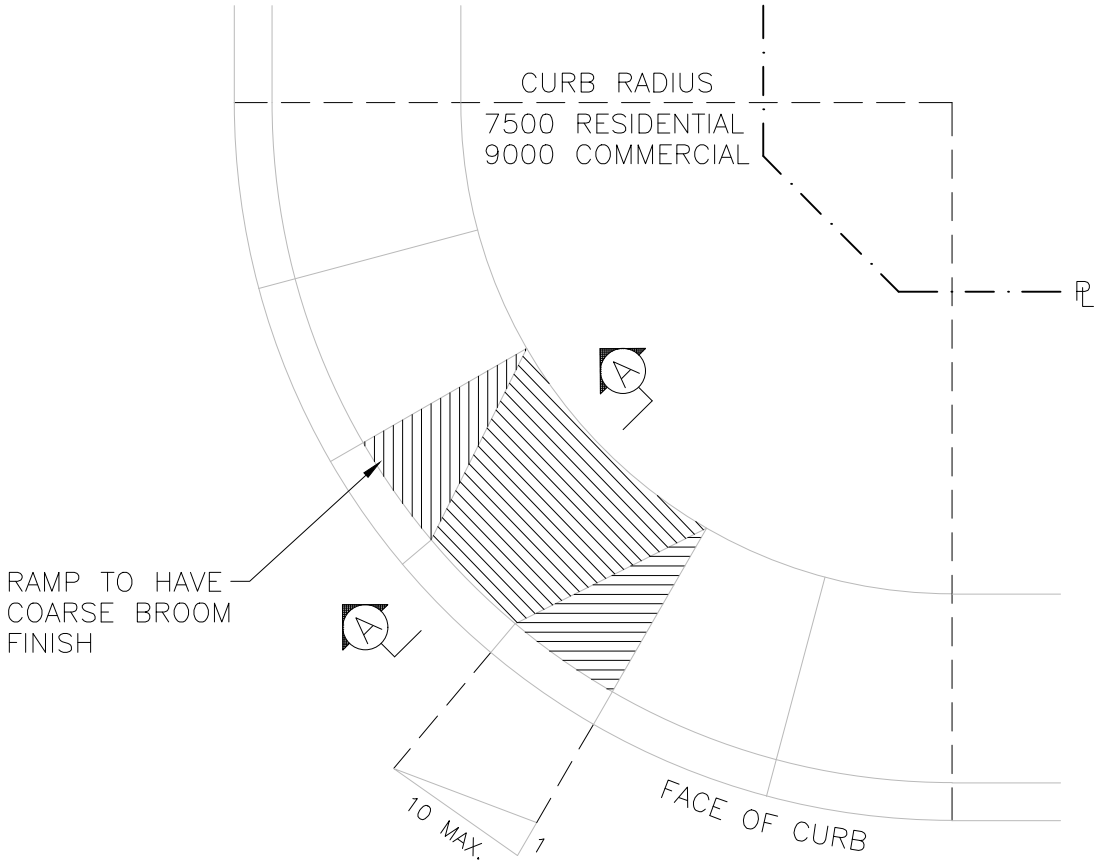
WALKWAY



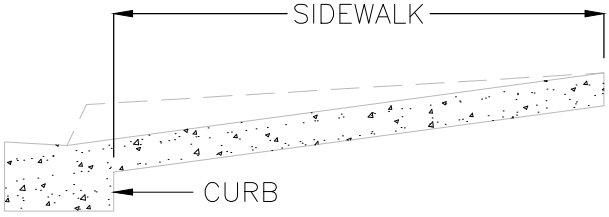
LANE

NOTES:
1. ALL DIMENSIONS IN MILLIMETRES.

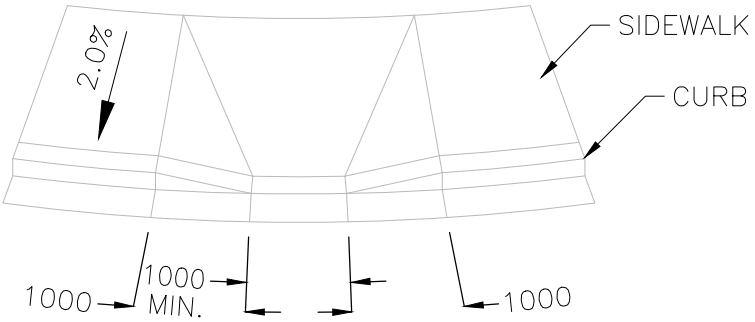
CITY OF ENDERBY	TITLE: TYPICAL WALKWAY AND LANE CROSS SECTION			
	FILE No. LANEXSEC	SCALE N.T.S	DATE FEB. 2000	DWG No. R3



PLAN VIEW



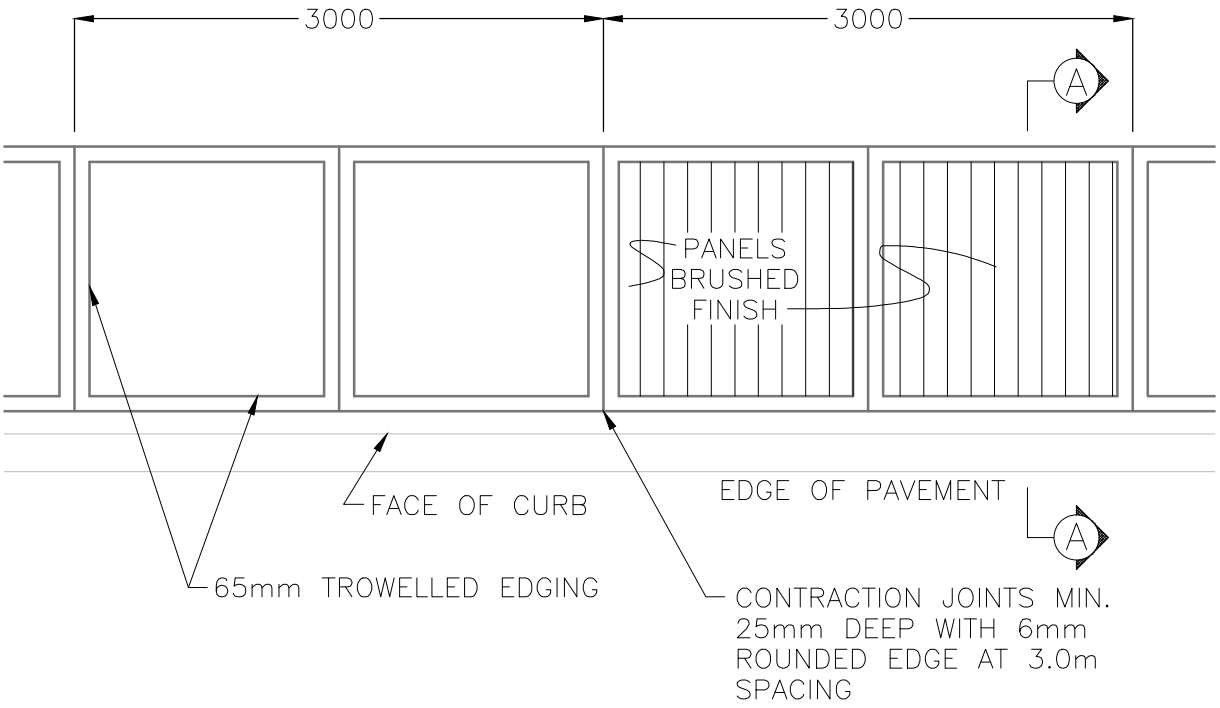
SECTION A–A



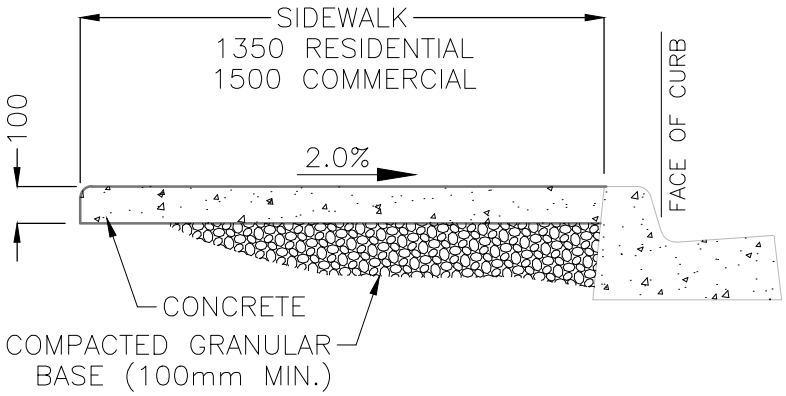
ISOMETRIC VIEW

NOTES:
1. FLARED SIDES TO HAVE MAX. 10.0% GRADE.
2. ALL DIMENSIONS IN MILLIMETRES.

CITY OF ENDERBY	TITLE: TYPICAL WHEELCHAIR RAMP			
	FILE No. CHAIRAMP	SCALE N.T.S	DATE FEB. 2000	DWG No. R4



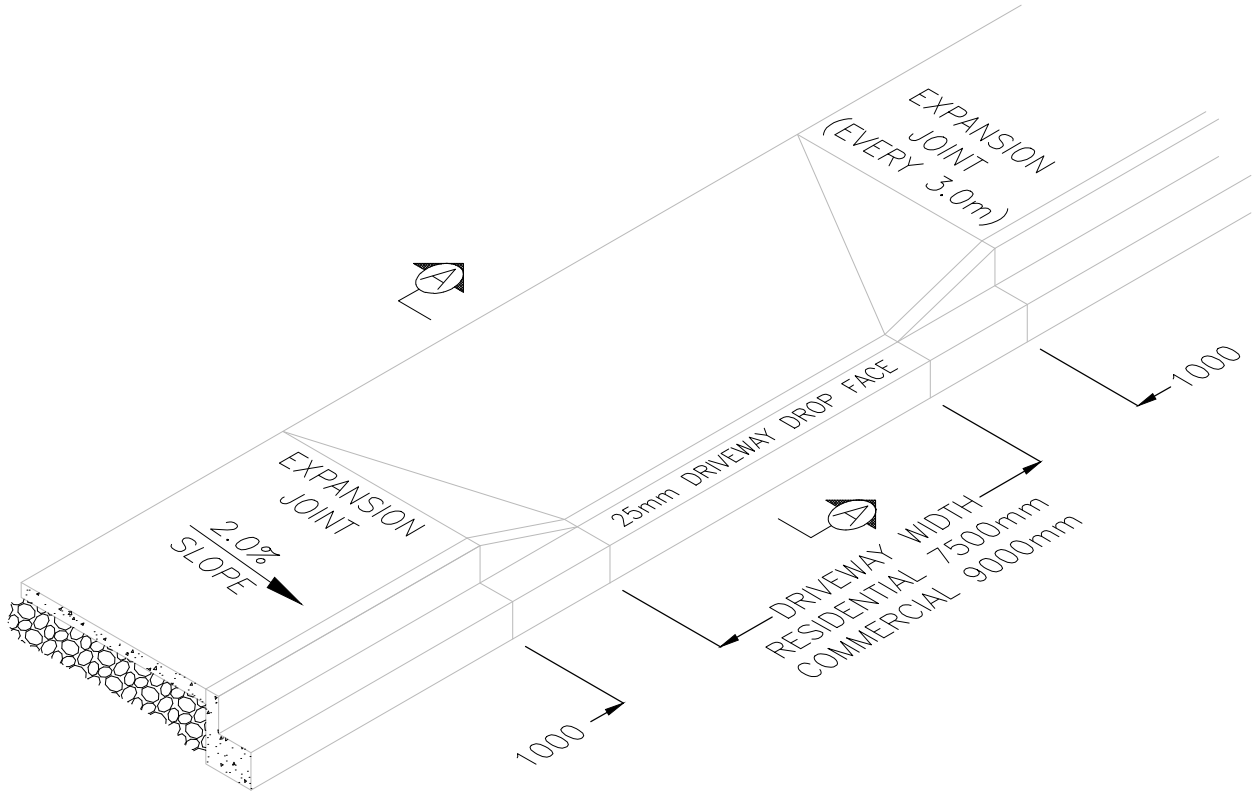
PLAN

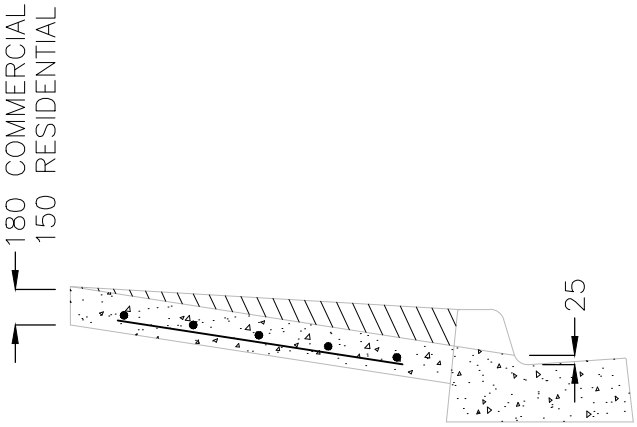


SECTION A–A

NOTES:
1. CONCRETE TO HAVE A 28 DAY COMPRESSIVE STRENGTH OF 30MPa.
2. 13mm MASTIC EXPANSION JOINTS AT 6.0m SECTIONS, AND AT THE END OF EACH DAYS POUR.
3. MINOR VARIATIONS IN CROSS SECTION WILL BE CONSIDERED TO ACCOMMODATE EXTRUDING OR SLIPFORM MACHINES.

CITY OF ENDERBY	TITLE: STANDARD SIDEWALK			
	FILE No. SIDEWALK	SCALE N.T.S	DATE FEB. 2000	DWG No. R5

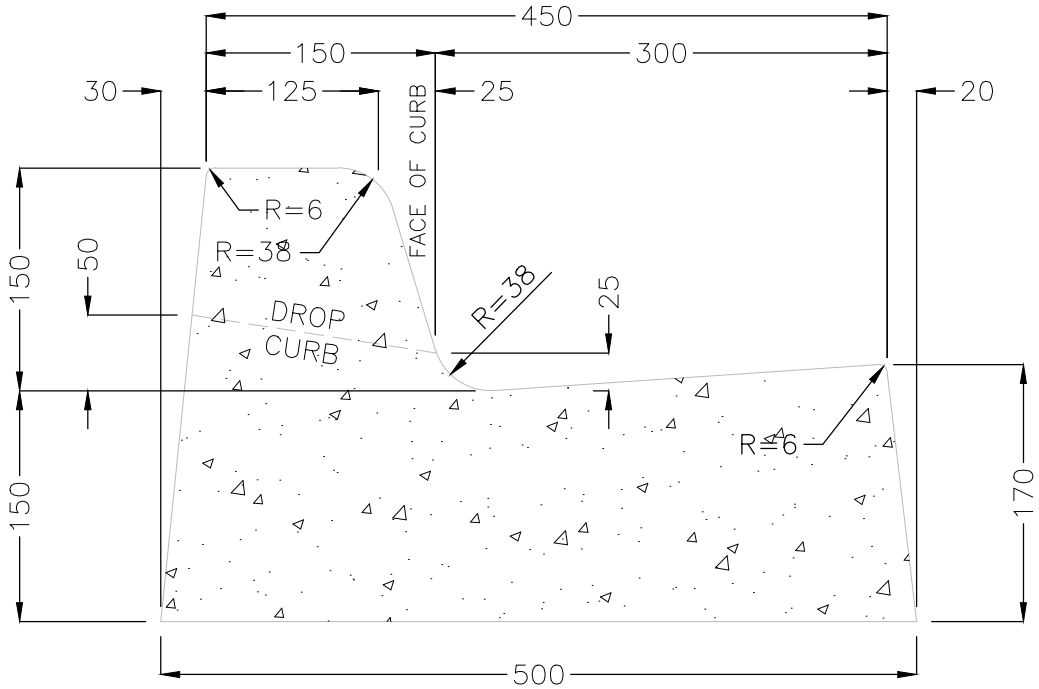




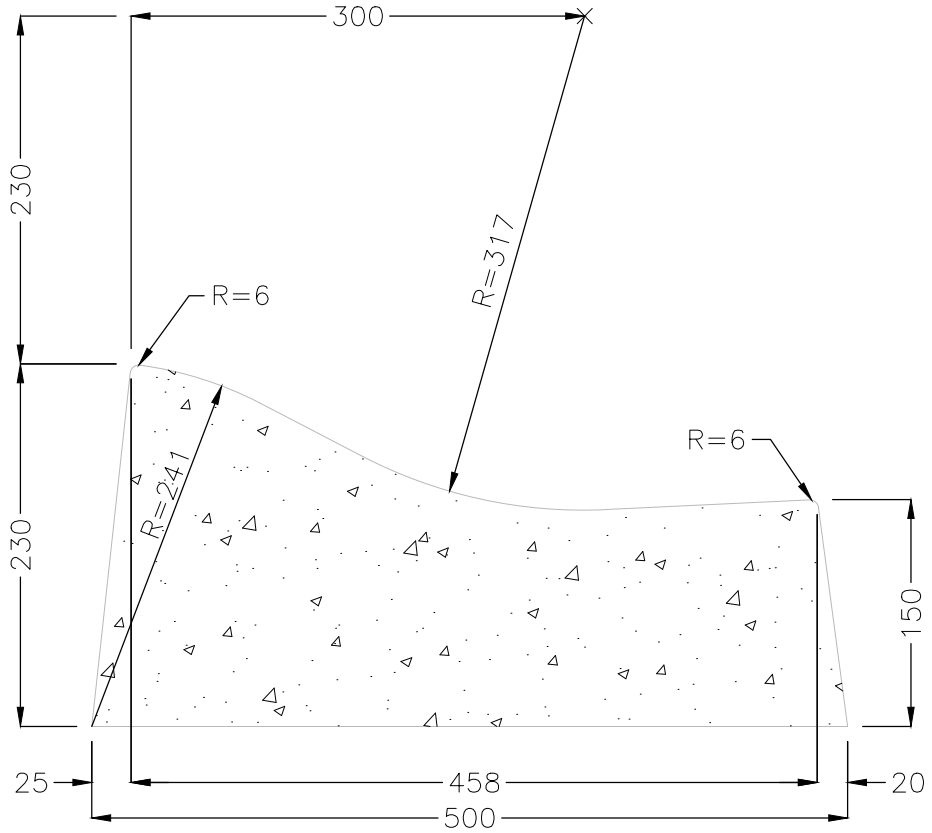
SECTION A–A

NOTES:
1. COMMERCIAL CROSSINGS REQUIRE 15mm BARS 300mm o/c EACH WAY.
2. WHEN INSTALLING CROSSOVER ON EXISTING CURB, GUTTER AND SIDEWALK, 15mm BARS TO BE DRILLED INTO EXISTING CONCRETE 300mm o/c.
3. CONCRETE TO HAVE 28 DAY COMPRESSIVE STRENGTH OF 30MPa.
4. DRIVEWAY LOCATION WILL DEPEND ON USAGE AND LOCATION. MIN. 10.0m FROM CORNER OF PROPERTY LINE.

CITY OF ENDERBY	TITLE: TYPICAL CROSSOVER			
	FILE No.: X–OVER	SCALE: N.T.S	DATE: FEB. 2000	DWG No.: R6

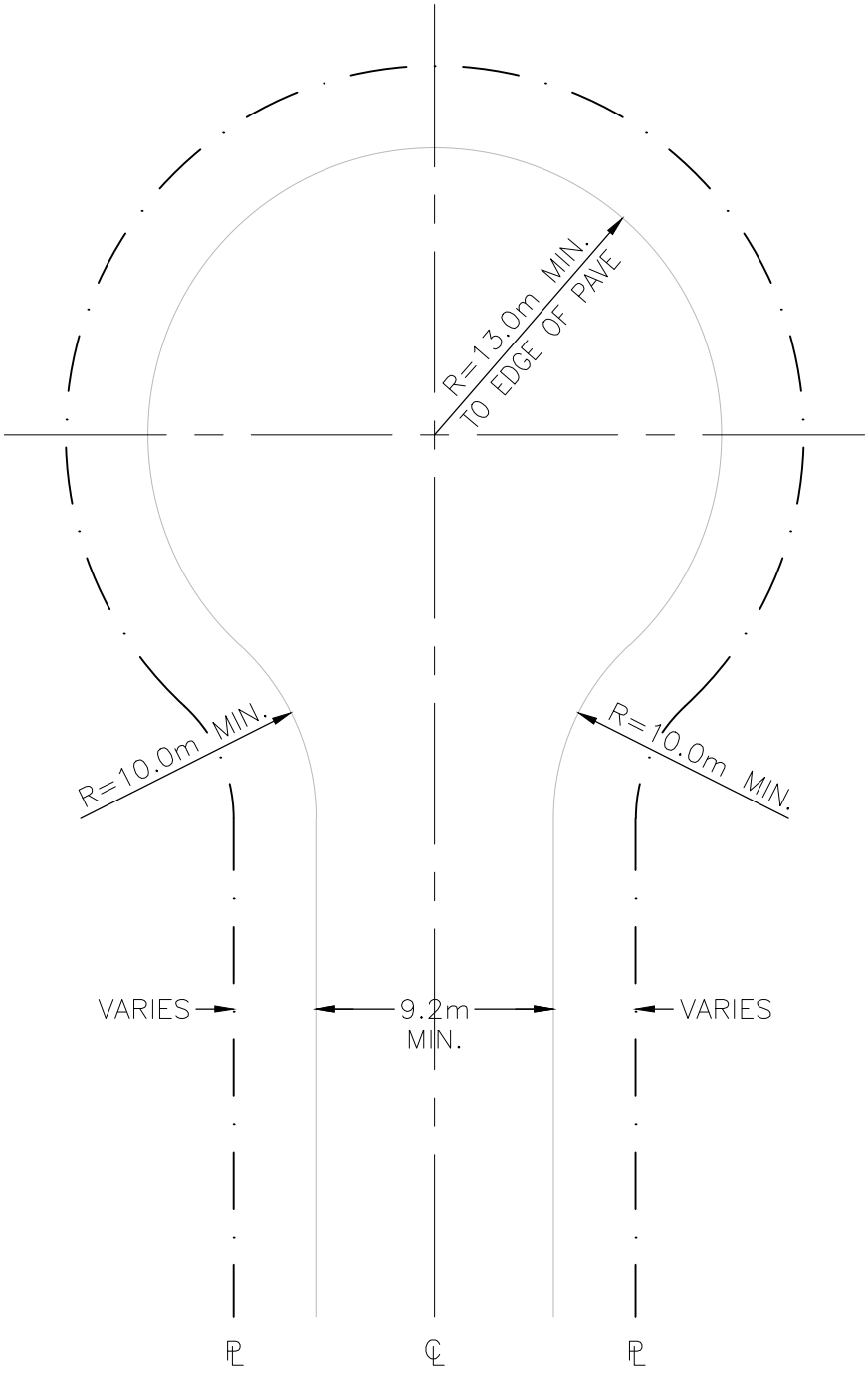


TYPE 1 STANDARD CURB

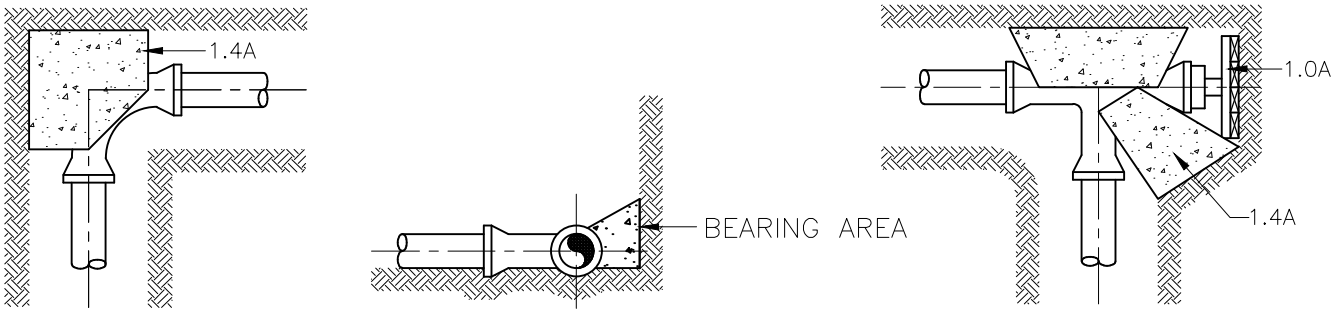


TYPE 2 ROLLED CURB

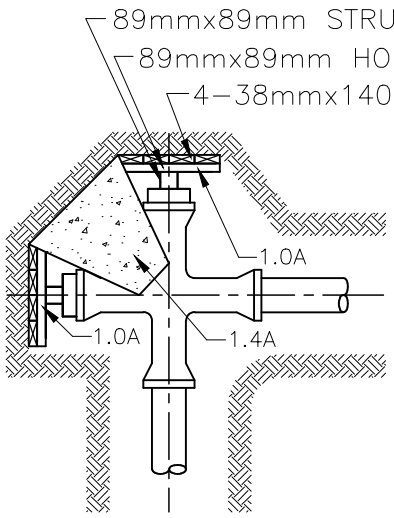
CITY OF ENDERBY	TITLE: STANDARD CURB AND GUTTER			
	FILE No. CURBGUTR	SCALE 1 : 5	DATE FEB. 2000	DWG No. R7

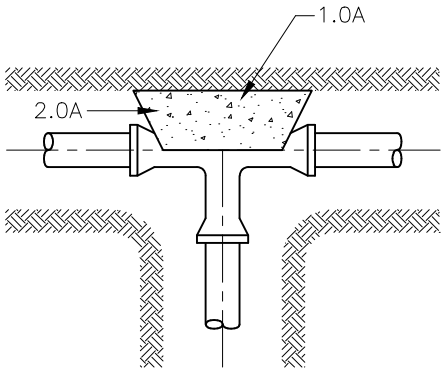


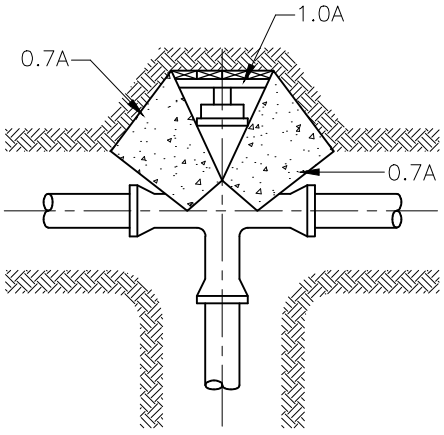
CITY OF ENDERBY	TITLE: TYPICAL CUL–DE–SAC			
	FILE No. CULDESAC	SCALE N.T.S	DATE FEB. 2000	DWG No. R8



SIDE VIEW
(TYPICAL SCHEMATIC)







NOTES:
1. THRUST BLOCK BEARING AREAS FOR:
   –WATER PRESSURE 103.2kPa (150 psi)
   –MIN. COVER OVER WATERMAINS 1.5m (5'–0")
2. BASIC THRUST BLOCK BEARING AREA
   (SOIL CONSIDERED TO BE SAND – 4800 Kg/m²)
3. USE 15MPa CONCRETE, KEEP CONCRETE CLEAR OF FITTINGS, JOINTS

PIPE SIZE (mm)	100	150	200	250	300
AREA A (m²)	0.20	0.45	0.75	1.20	1.70

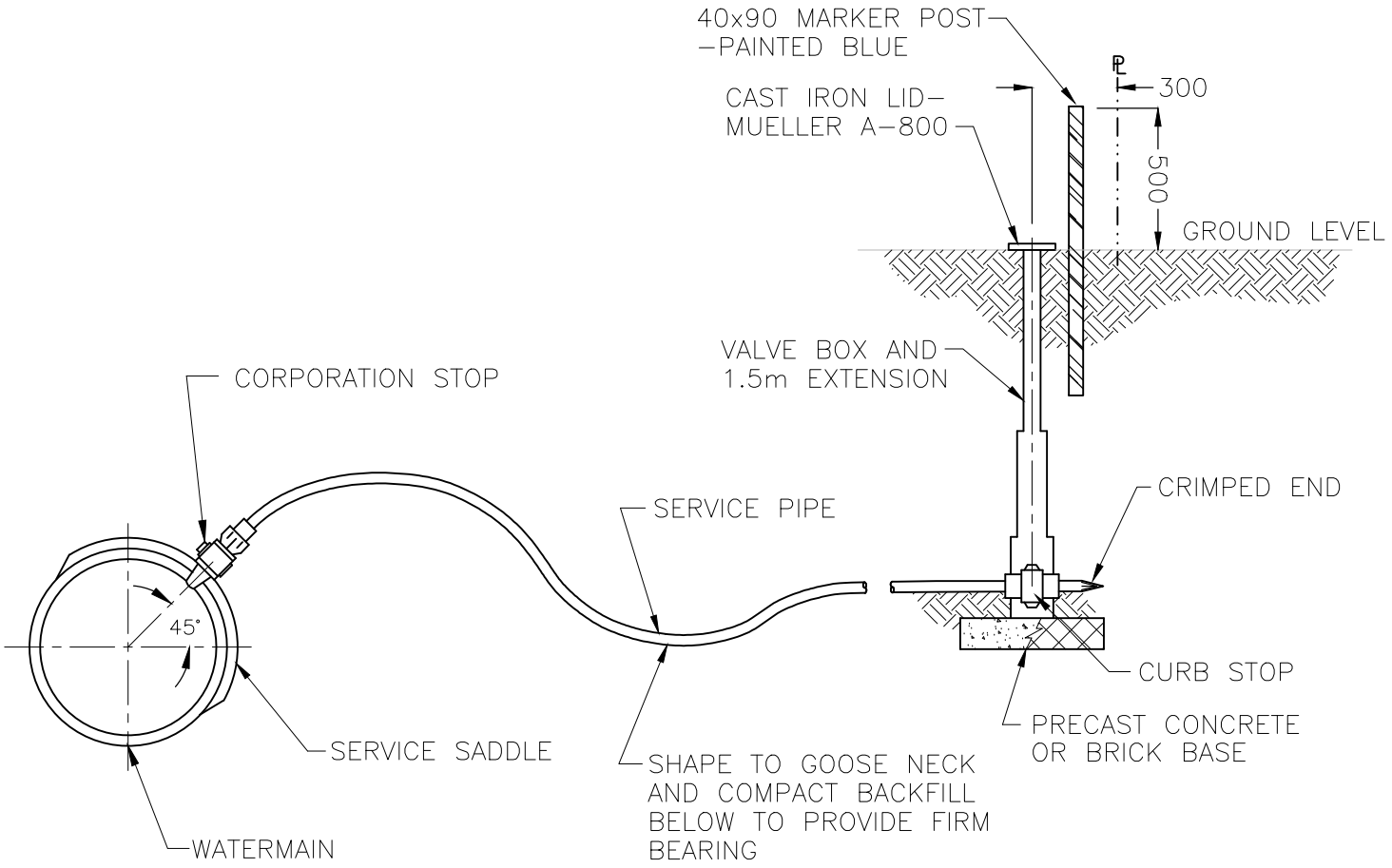
CITY OF ENDERBY

TITLE: TYPICAL WATERMAIN THRUST BLOCKS

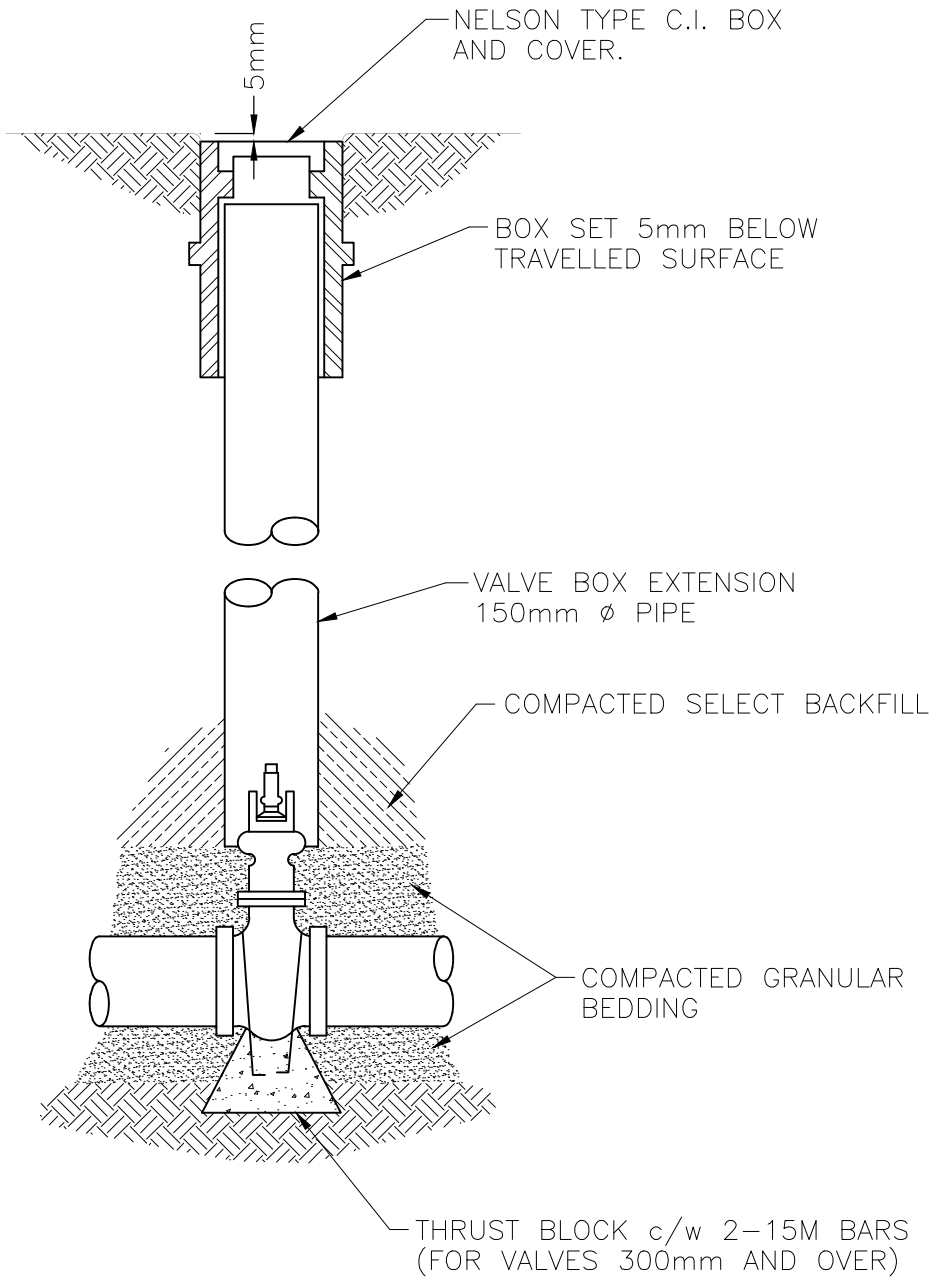
FILE No.	SCALE	DATE	DWG No.
THRBLK	N.T.S	FEB. 2000	W1

CITY OF ENDERBY

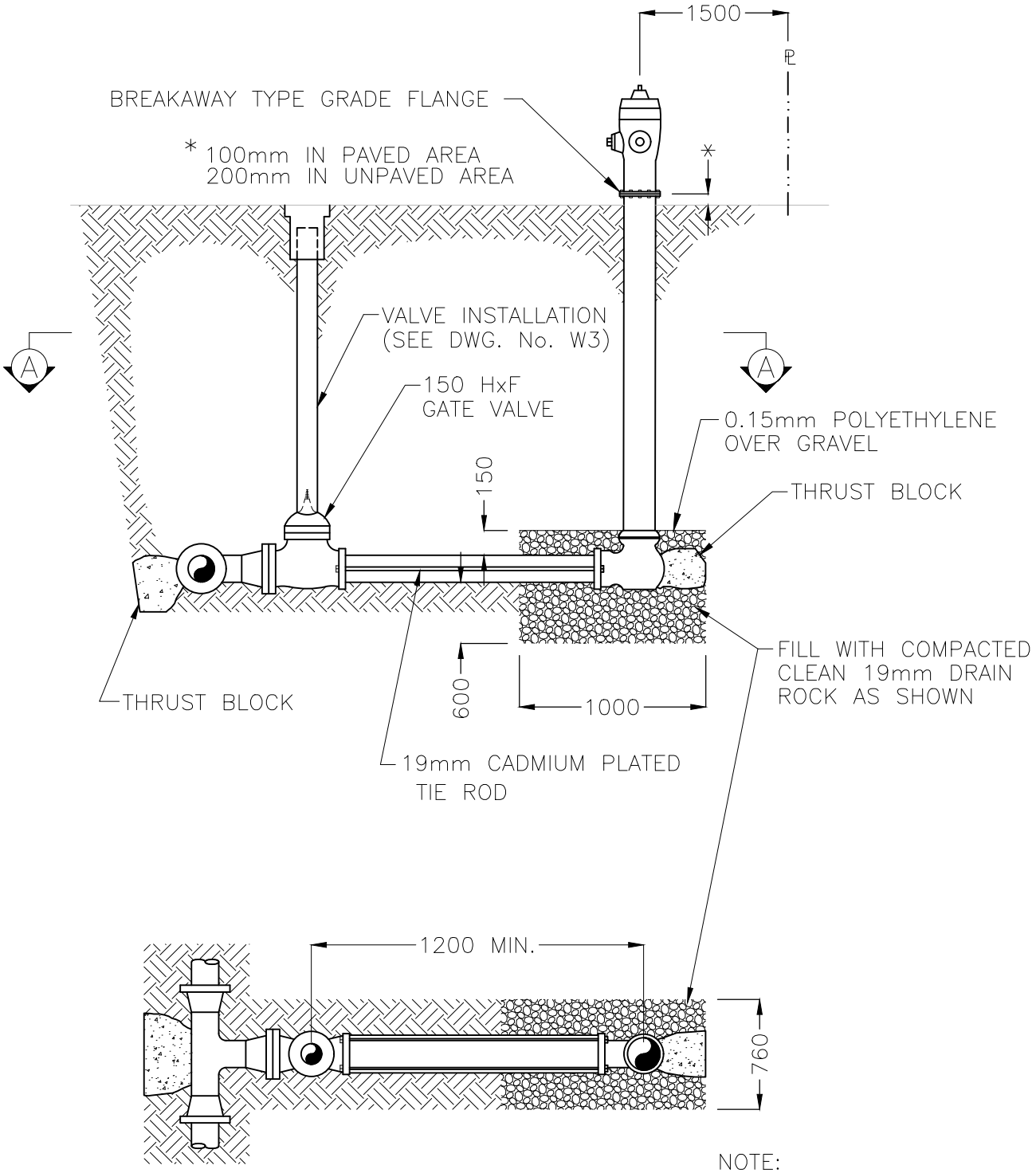
TITLE	FILE No.	SCALE	DATE	DWG No.
19mm TO 25mm WATER SERVICE	WATSERVS	N.T.S	FEB. 2000	W2



NOTES:
1. SERVICE SADDLES REQUIRED ON ALL PVC PIPE.
2. SERVICES SHOULD RUN PERPENDICULAR FROM MAIN AND BE 1.0m OFF CORNER OF PROPERTY (MIN.).



CITY OF ENDERBY	TITLE: STANDARD VALVE BOX			
	FILE No. VALVEBOX	SCALE N.T.S	DATE FEB. 2000	DWG No. W3

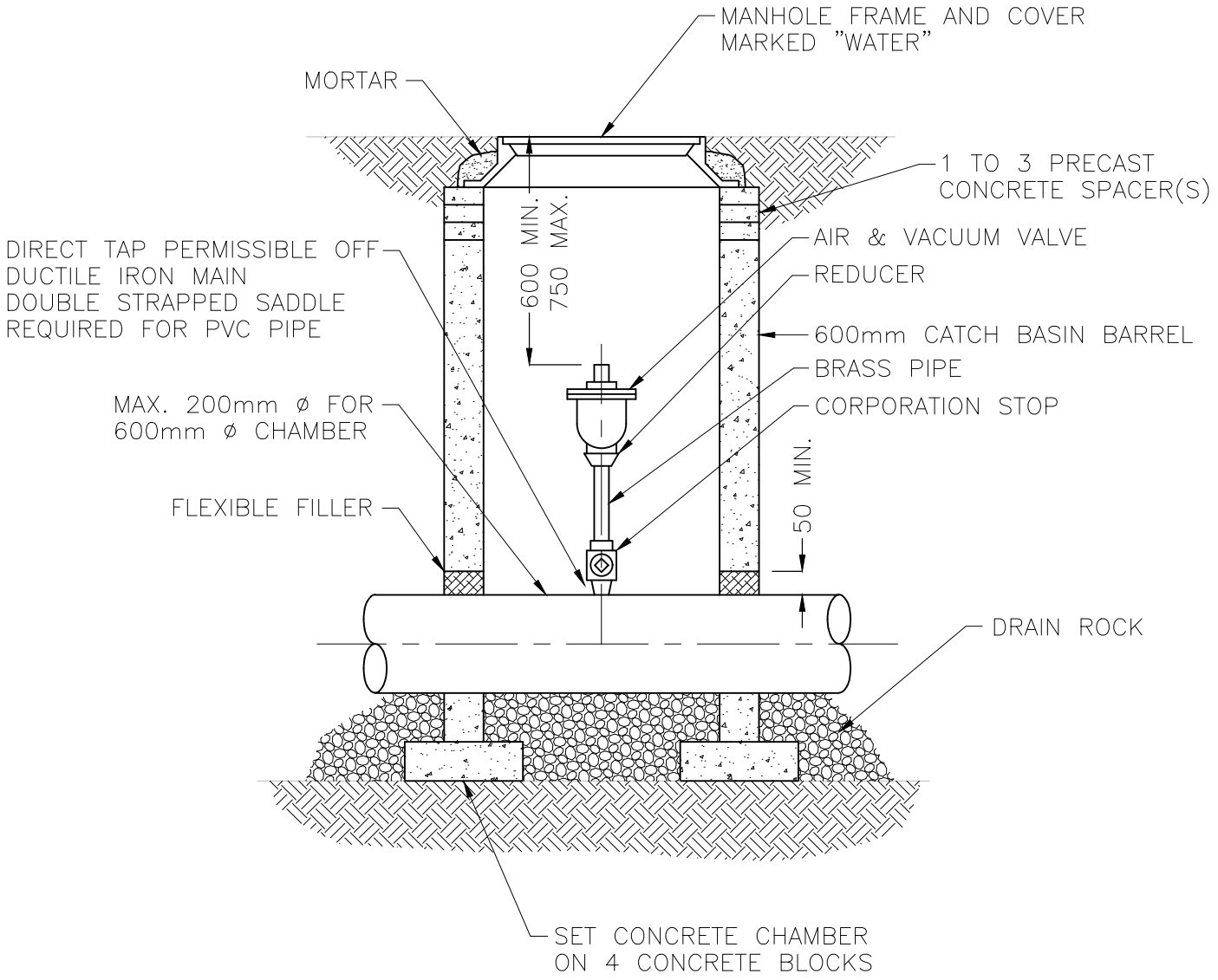


SECTION A–A

NOTE:

HYDRANTS TO BE CANADA VALVE CENTURY c/w STORZ PUMPER

CITY OF ENDERBY	TITLE: STANDARD FIRE HYDRANT			
	FILE No. HYDRANT	SCALE N.T.S	DATE FEB. 2000	DWG No. W4

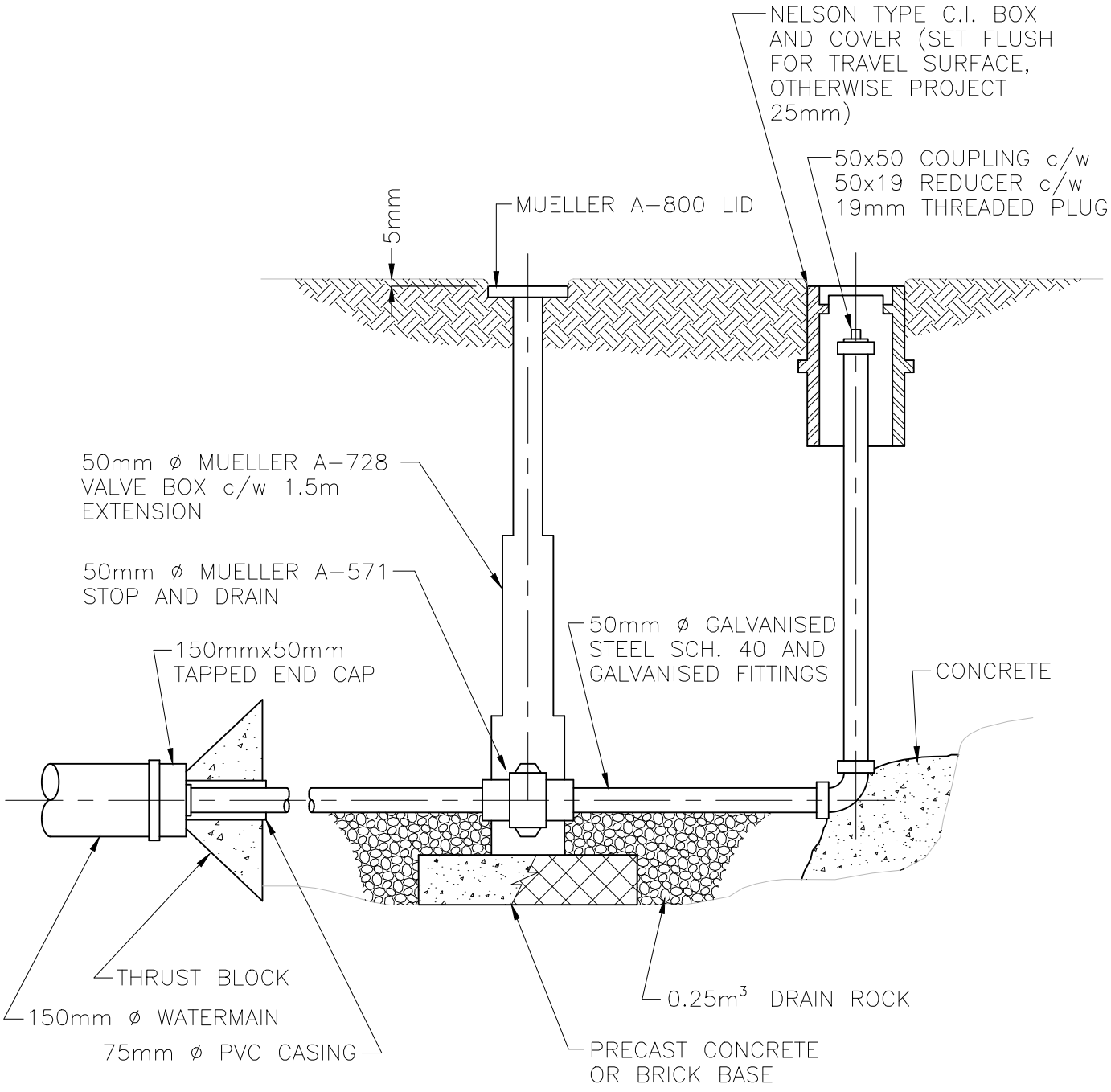


AIR VALVE SIZE (mm)	CORP. STOP SIZE (mm)
25	25
50	40

CITY OF ENDERBY

TITLE: AIR RELEASE ASSEMBLY 25mm TO 50mm VALVES

FILE No.	SCALE	DATE	DWG No.
AIRVALVE	N.T.S	FEB. 2000	W5

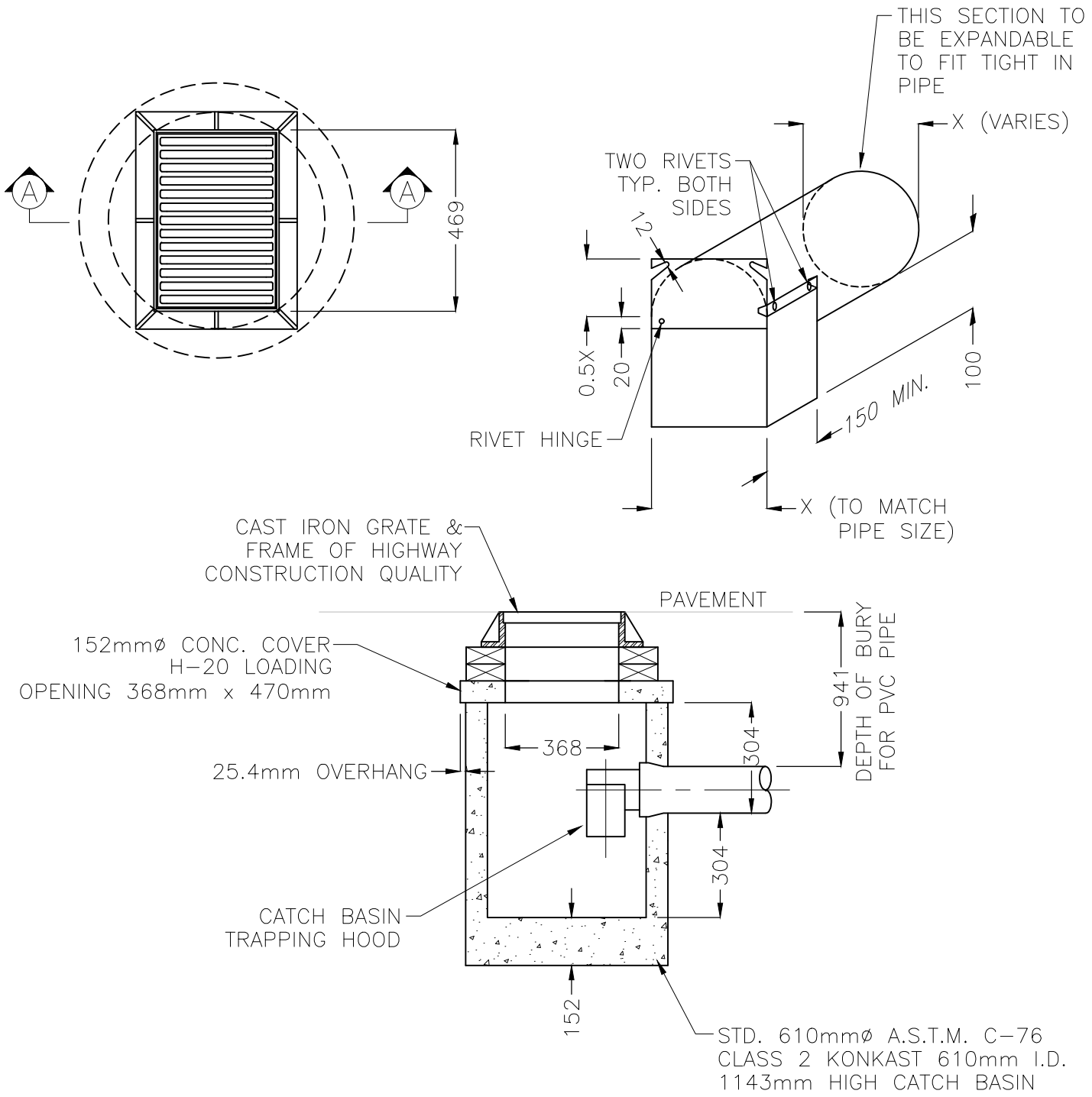


CITY OF ENDERBY	TITLE: TYPICAL WATERMAIN BLOW-OFF			
	FILE No. BLOWOFF	SCALE N.T.S	DATE FEB. 2000	DWG No. W6

NOTES:

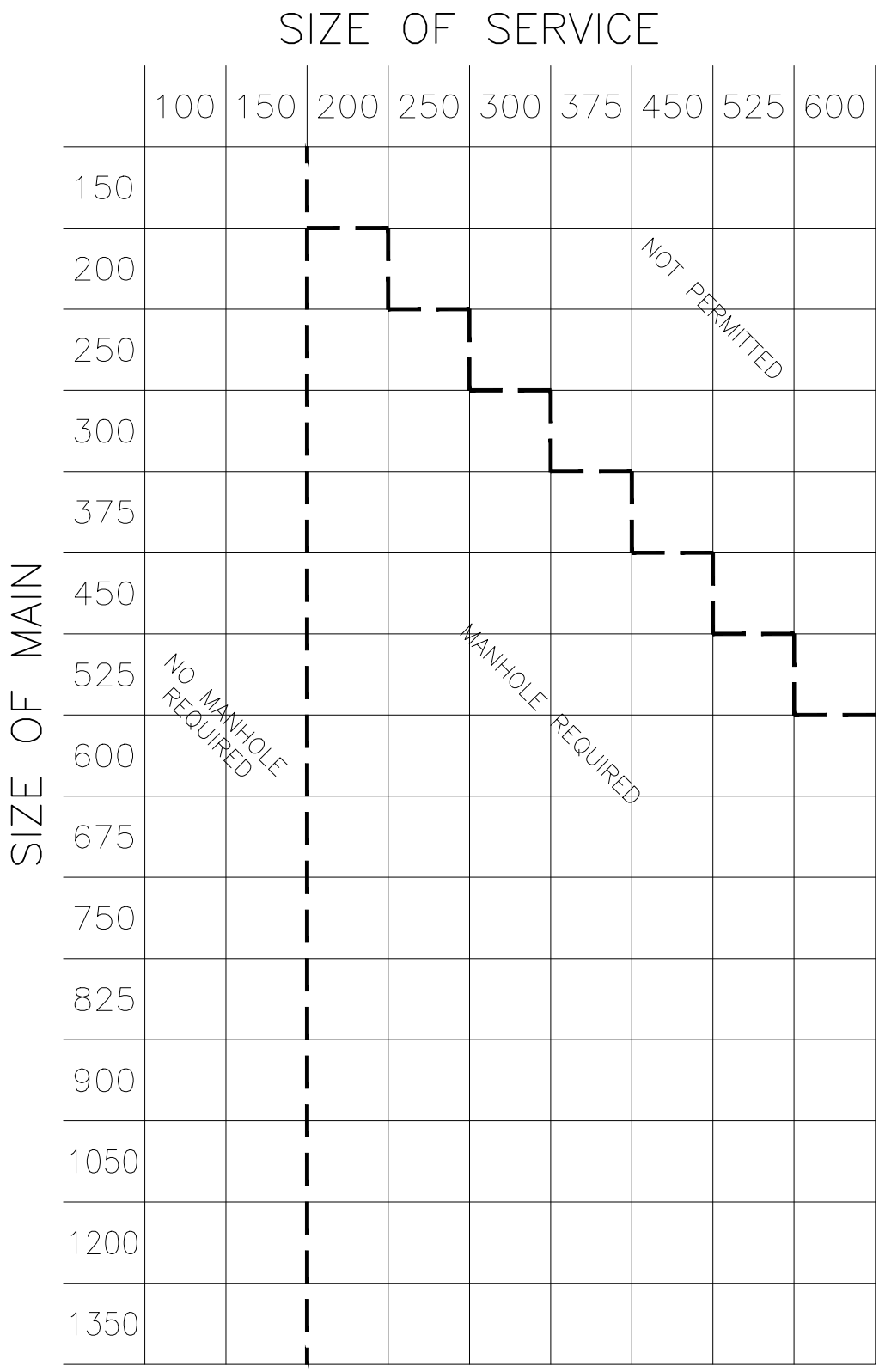
1.) SEWER TRAPS SHALL BE MANUFACTURED FROM 15 GAUGE ALUMINUM.

2.) BLIND RIVETS ONLY SHALL BE USED.
RIVETS SHALL BE ALUMINUM EQUAL TO POP #AD64ABS

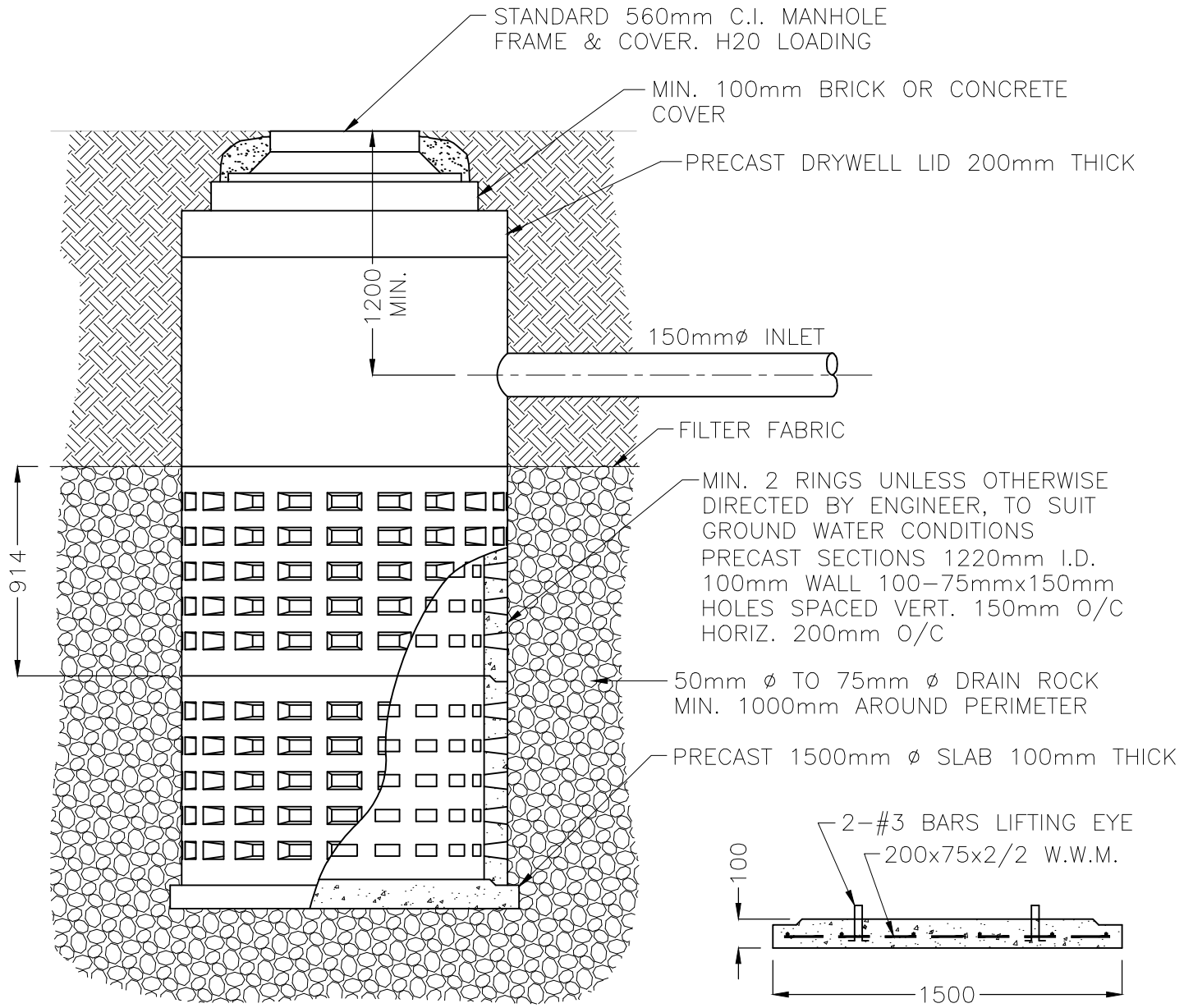


SECTION A–A

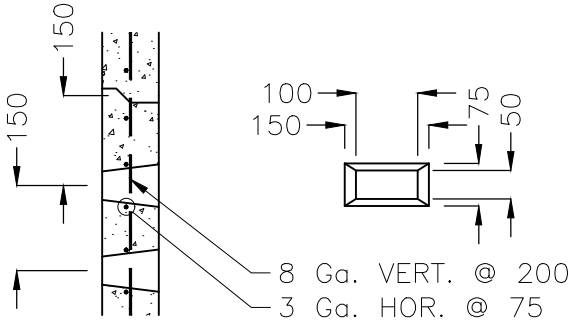
CITY OF ENDERBY	TITLE: CONCRETE CATCH BASIN & TRAPPING HOOD DETAIL			
	FILE No. STAND–CB	SCALE N.T.S	DATE FEB. 2000	DWG No. S1



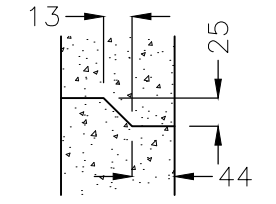
CITY OF ENDERBY	TITLE: SANITARY & STORM SEWER MANHOLE REQUIREMENTS			
	FILE No. MHREQMNT	SCALE N.T.S	DATE FEB. 2000	DWG No. S2



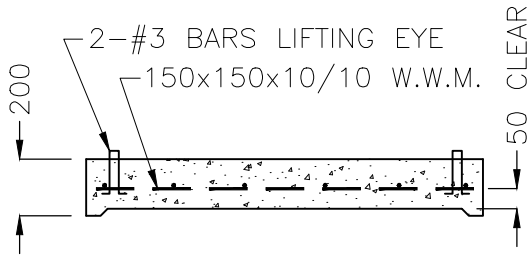
BOTTOM SLAB SECTION



BARREL SECTION



JOINT DETAIL



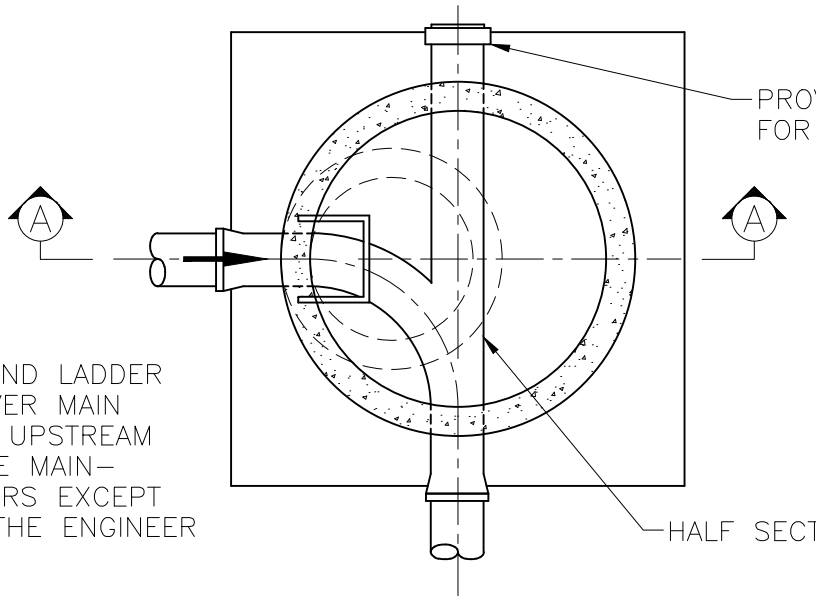
TOP SLAB SECTION

NOTES:
1. ALL DIMENSIONS IN MILLIMETERS.
2. LADDER RUNGS ARE REQUIRED.
3. SEE MANHOLE DWG. No.S4 FOR DETAILS.
4. FILTER FABRIC TO BE PLACED OVER TOP BARREL PRIOR TO PLACING LID. ACCESS TO DRYWELL NOT TO BE CUT THROUGH FABRIC UNTIL FINAL INSPECTION.
5. DRYWELL RINGS TO KON KAST ITEM 625 OR APPROVED EQUAL.

CITY OF ENDERBY

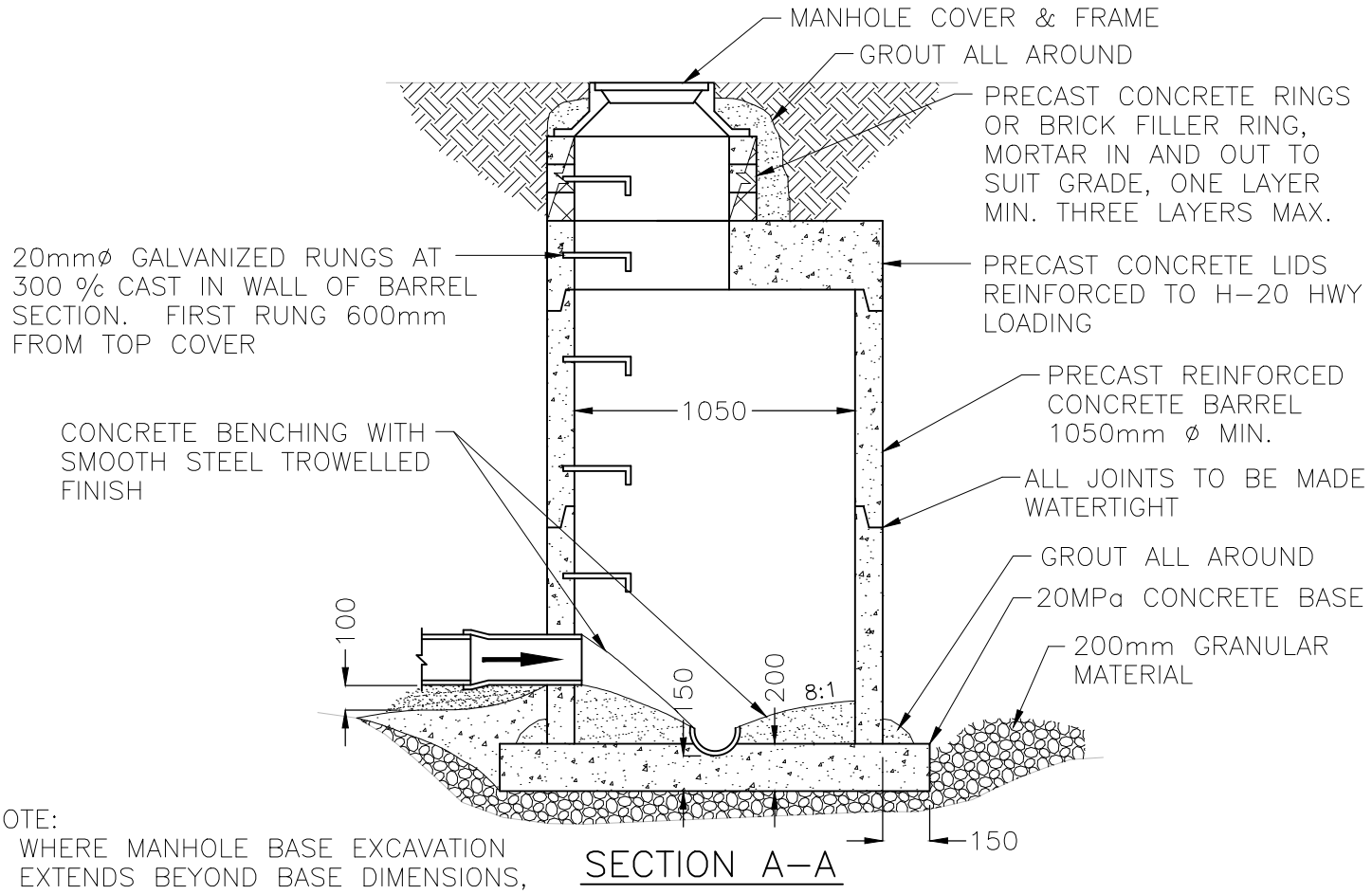
TITLE: STORM DRAINAGE DRYWELL

FILE No.	SCALE	DATE	DWG No.
DRYWELL	N.T.S	FEB. 2000	S3



ENTRANCE TUBE AND LADDER TO BE PLACED OVER MAIN CHANNEL ON THE UPSTREAM SIDE TO FACILITATE MAINTENANCE OPERATORS EXCEPT AS DIRECTED BY THE ENGINEER

PLAN VIEW



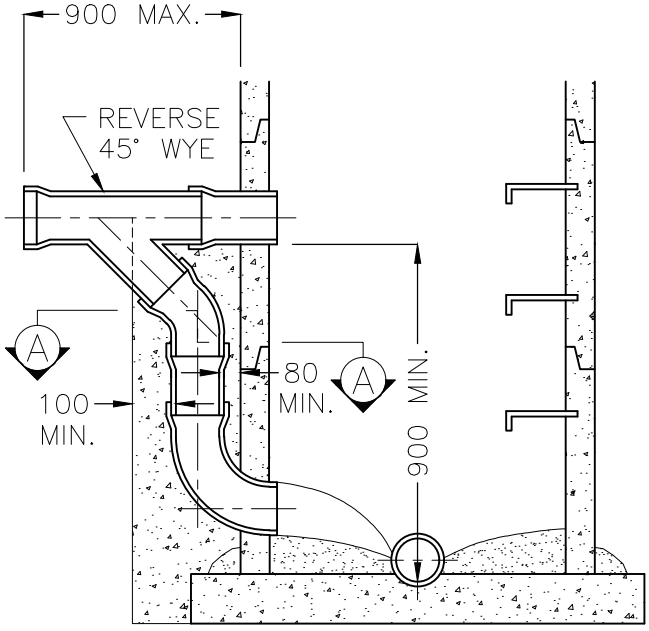
SECTION A–A

NOTE:
WHERE MANHOLE BASE EXCAVATION EXTENDS BEYOND BASE DIMENSIONS, THE EXCAVATION SHALL BE FILLED WITH CONCRETE 100mm BELOW THE BOTTOM OF THE PIPE AND THE WIDTH OF THE TRENCH.
ALL POURED IN PLACE CONCRETE TO BE 20 MPa.

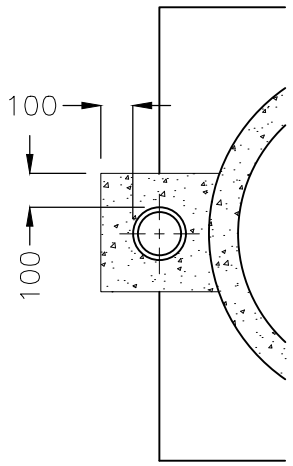
CITY OF ENDERBY

TITLE: TYPICAL MANHOLE & BASE FOR SEWERS UP TO 400mm DIA.

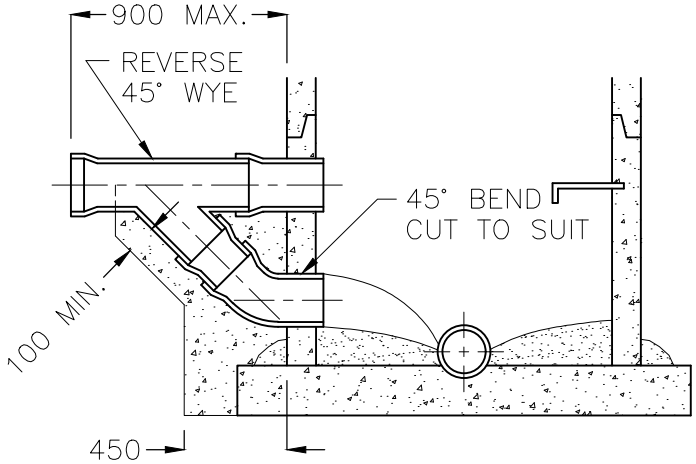
FILE No.	SCALE	DATE	DWG No.
MANHOLE	N.T.S	FEB. 2000	S4



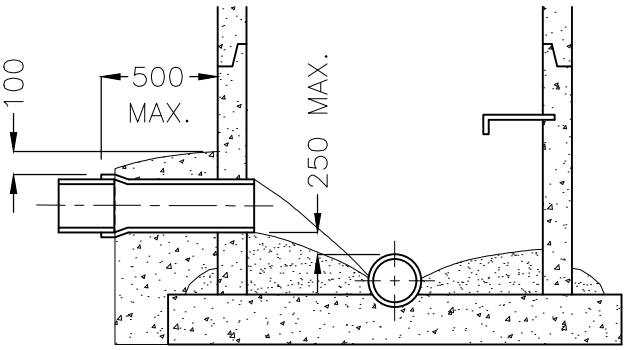
OUTSIDE DROP TYPE



SECTION A–A



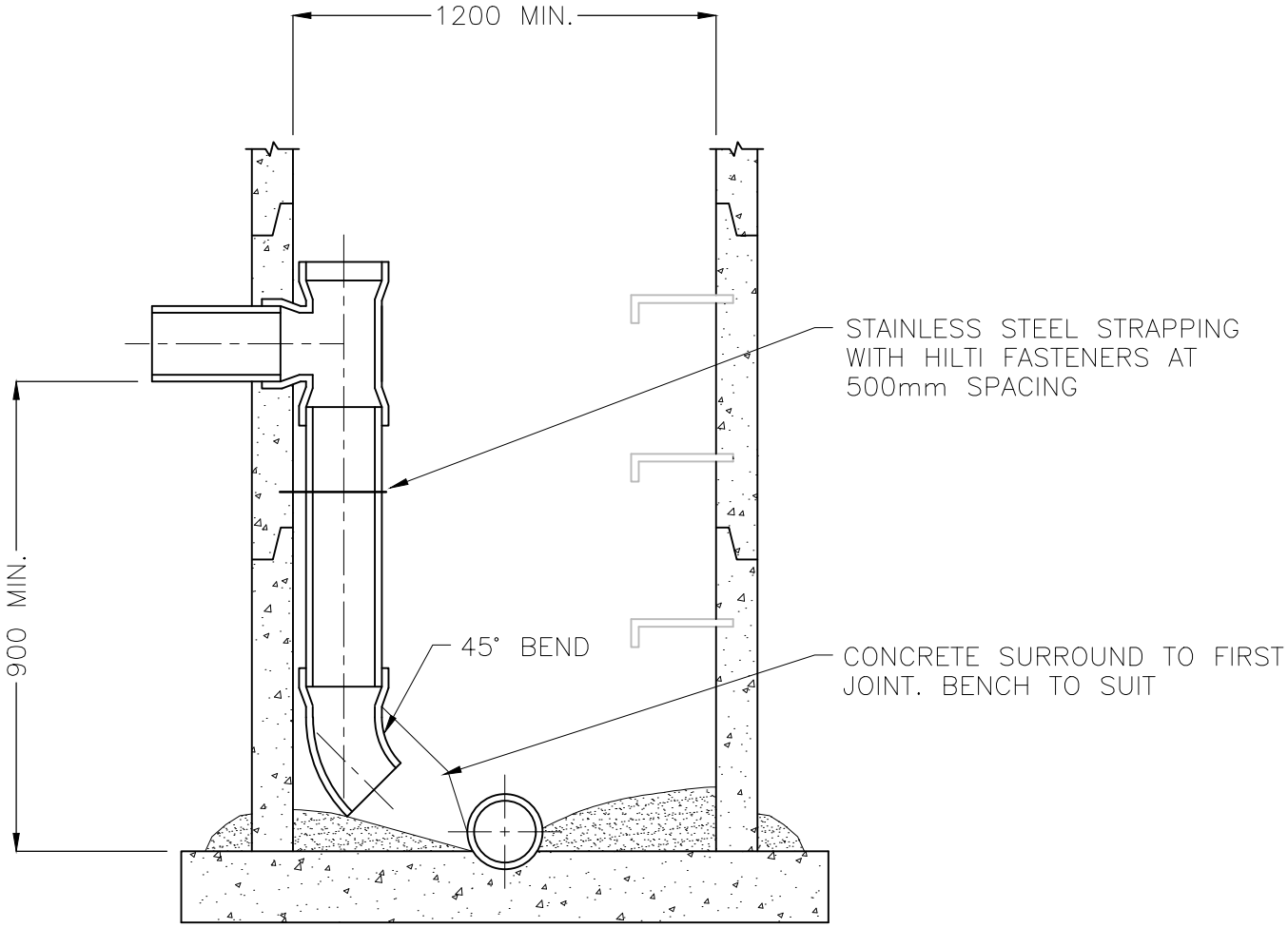
OUTSIDE RAMP TYPE



INSIDE RAMP TYPE

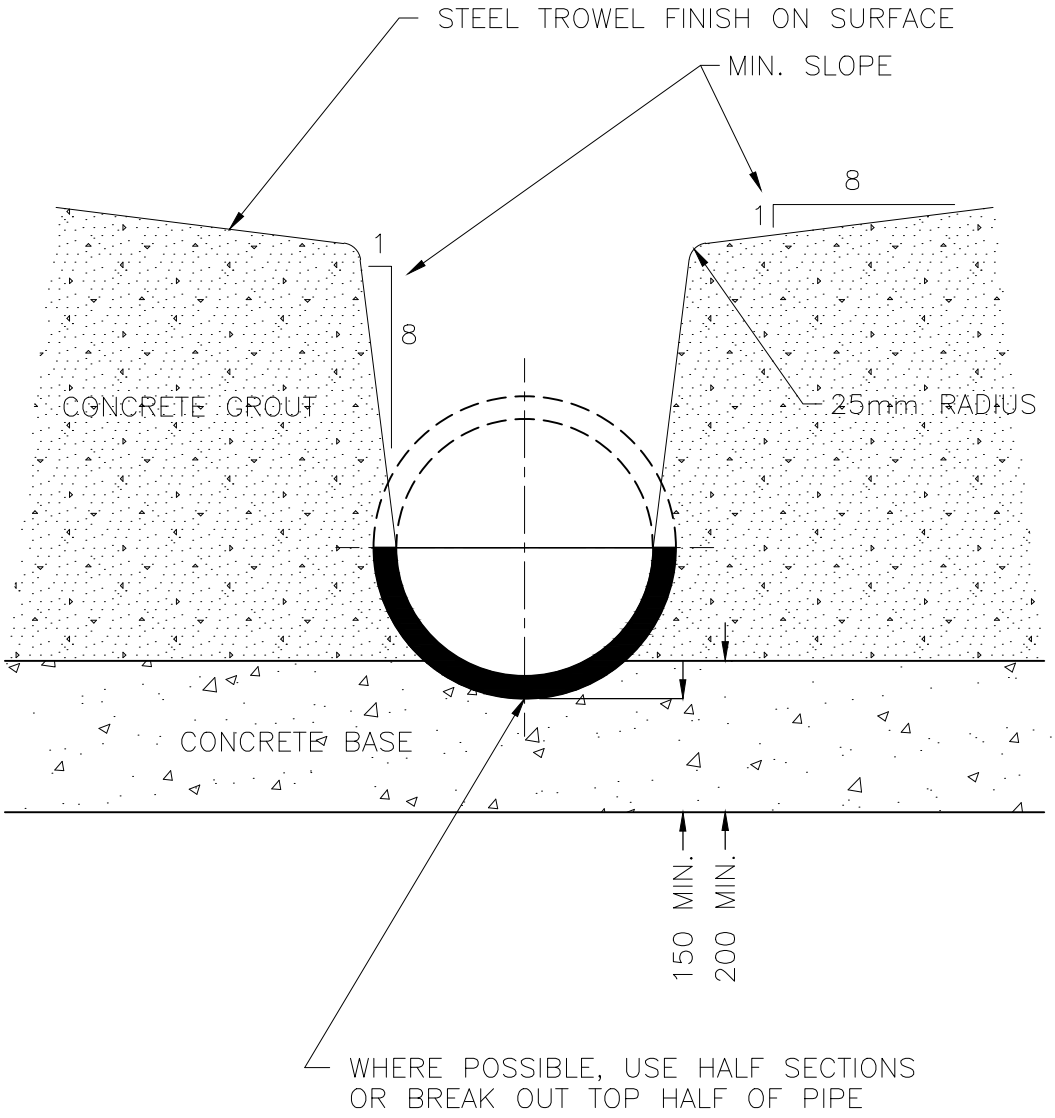
NOTE:
THIS DRAWING SHOWS CONNECTION DETAILS ONLY. REFER TO DRAWING S4 FOR ALL OTHER DETAILS PERTAINING TO MANHOLE REQUIREMENTS AND INSTALLATION.

CITY OF ENDERBY	TITLE: DROP AND RAMP TYPE MANHOLES			
	FILE No. DROPMH	SCALE N.T.S	DATE FEB. 2000	DWG No. S5

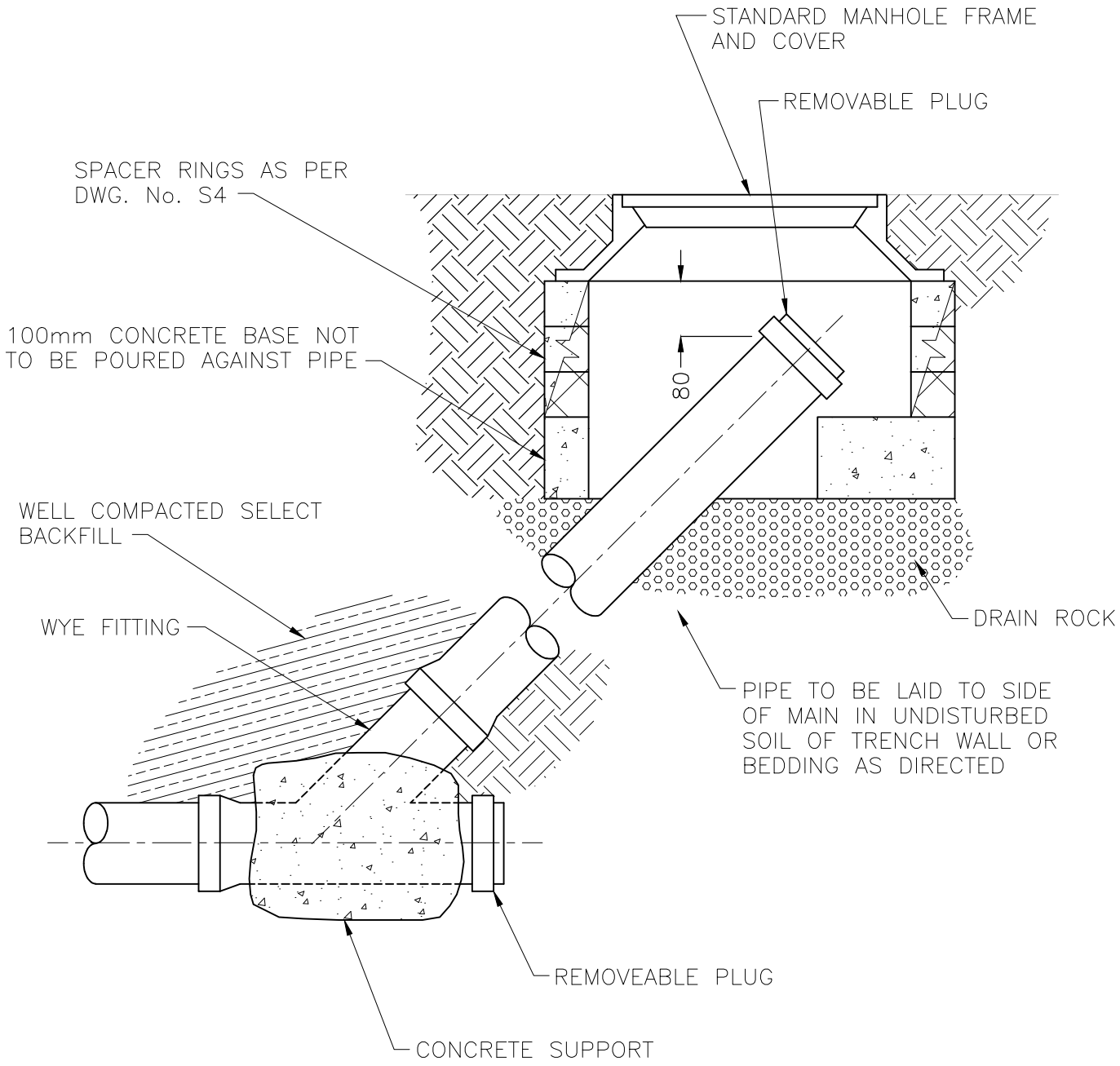


NOTES:
1. INSIDE DROP TO BE USED ONLY WHERE SPECIFIED BY THE CITY.
2. ALL INSIDE PIPE AND FITTINGS TO BE PVC DR 28/35.
3. THIS DRAWING SHOWS INSIDE DROP ONLY. SEE DRAWING S4 FOR ALL OTHER DETAILS PERTAINING TO MANHOLE REQUIREMENTS.

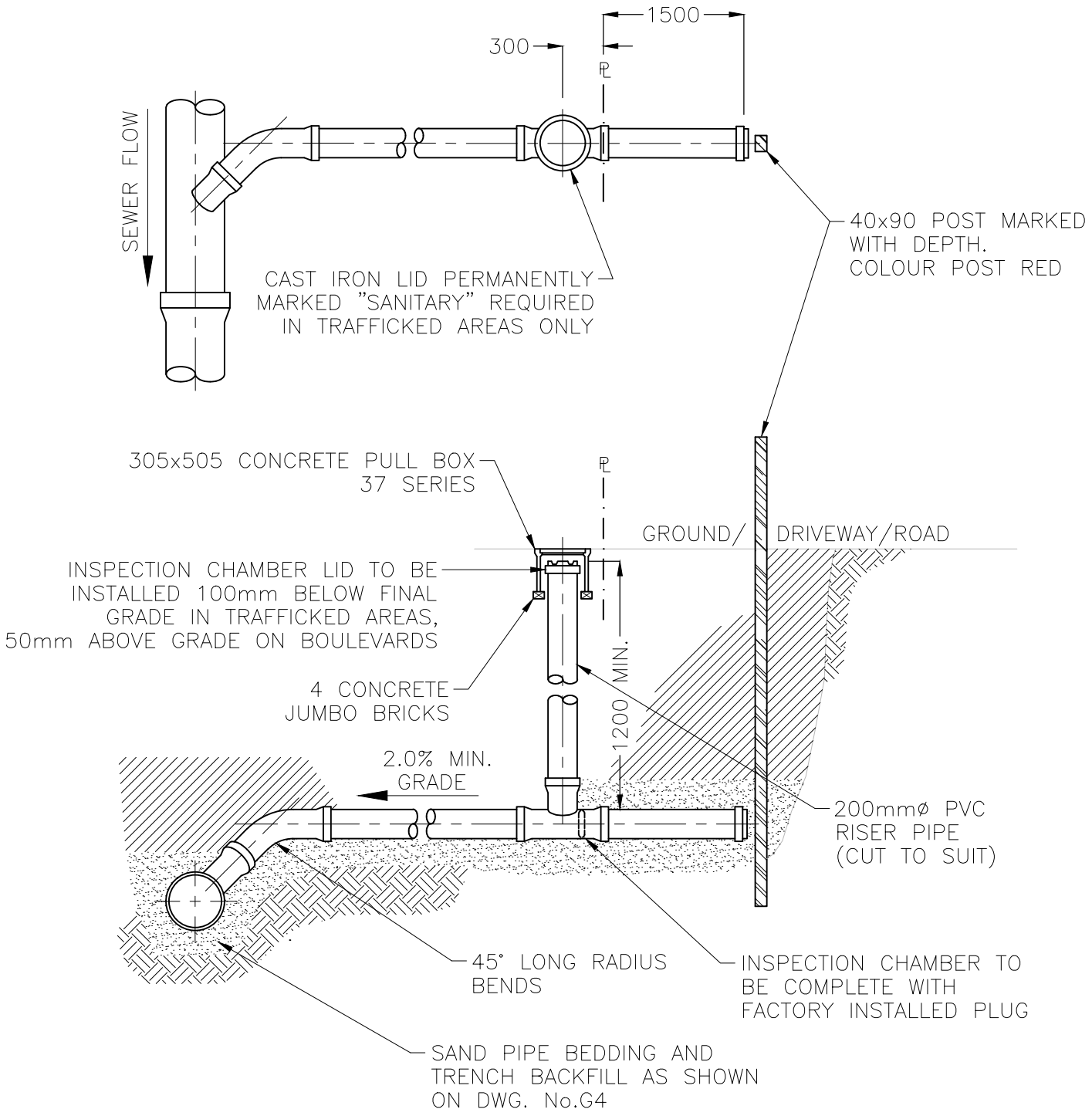
CITY OF ENDERBY	TITLE: INSIDE DROP MANHOLE			
	FILE No. INDROPMH	SCALE N.T.S	DATE FEB. 2000	DWG No. S6



CITY OF ENDERBY	TITLE: INVERT CHANNELLING IN MANHOLE			
	FILE No. MHCHANEL	SCALE 1:10	DATE FEB. 2000	DWG No. S7

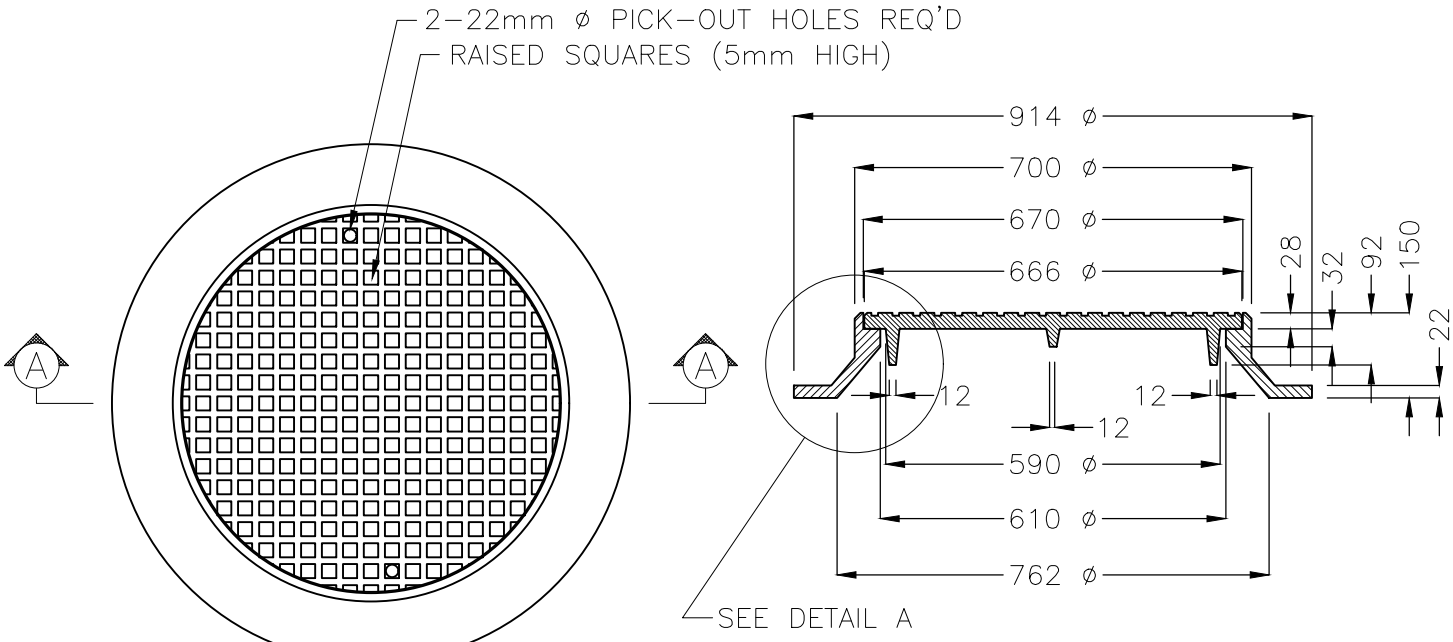


CITY OF ENDERBY	TITLE: STANDARD MAIN LINE CLEAN–OUT			
	FILE No. CLEANOUT	SCALE N.T.S	DATE FEB. 2000	DWG No. S8



NOTES:
1. CONNECTIONS TO BE 100mm OR AS SPECIFIED ON CONTRACT DRAWINGS.

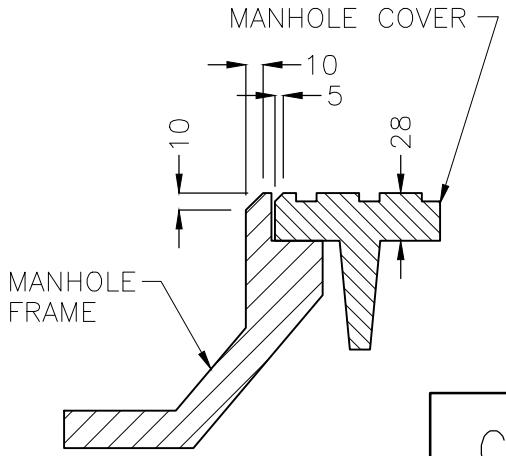
CITY OF ENDERBY	TITLE: SANITARY SEWER SERVICE & INSPECTION CHAMBER			
	FILE No. SANSERV	SCALE N.T.S	DATE FEB. 2000	DWG No. S9



PLAN VIEW

SECTION A–A

STANDARD LETTERING ON COVER



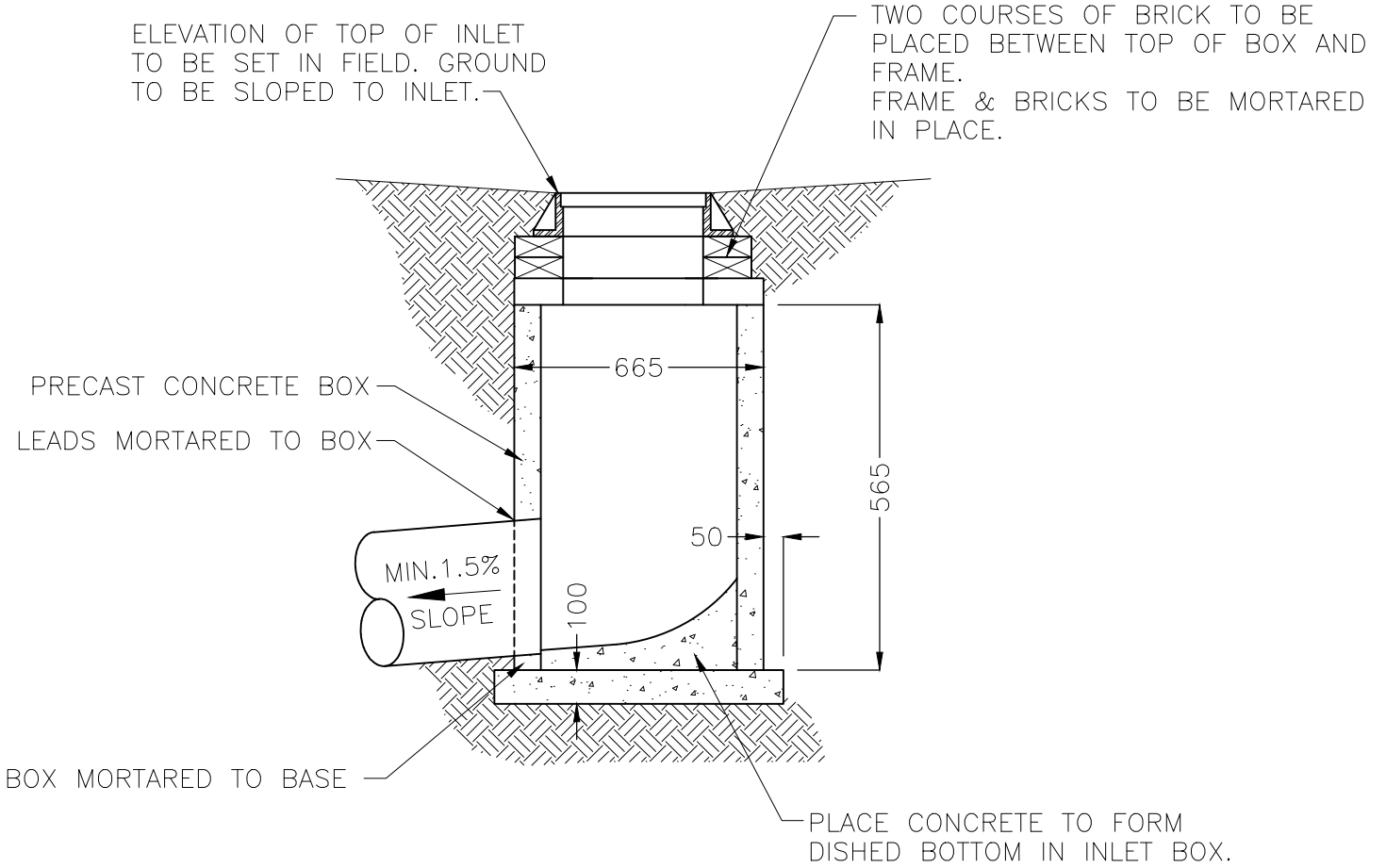
DETAIL A

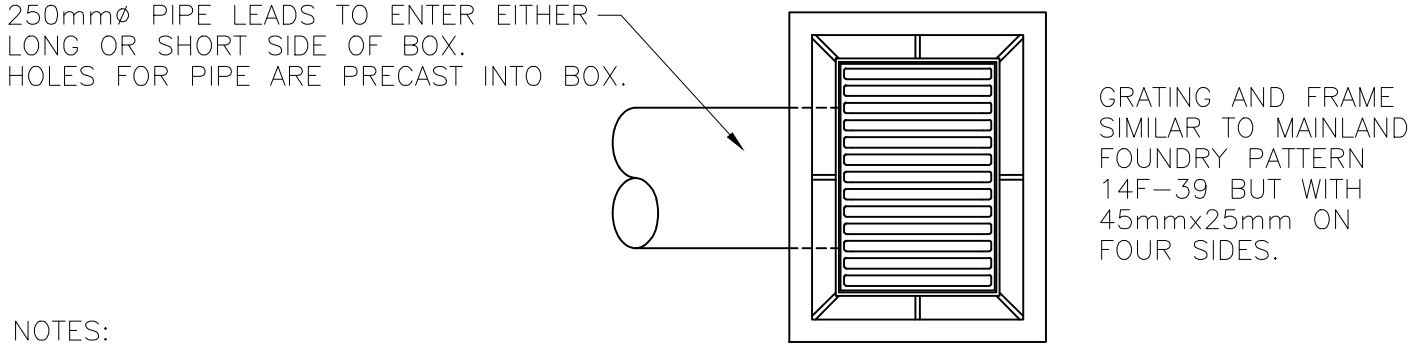
NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. LETTERING TO BE THE SAME HEIGHT AS THE RAISED SQUARES.
3. THE FRAME AND COVER SHALL BE CAST IRON AND MUST BE DESIGNED FOR H–20 LOADING.

CITY OF ENDERBY

TITLE: STANDARD MANHOLE COVER AND FRAME

FILE No.	SCALE	DATE	DWG No.
MH–FRAME	N.T.S	FEB. 2000	S10





NOTES:

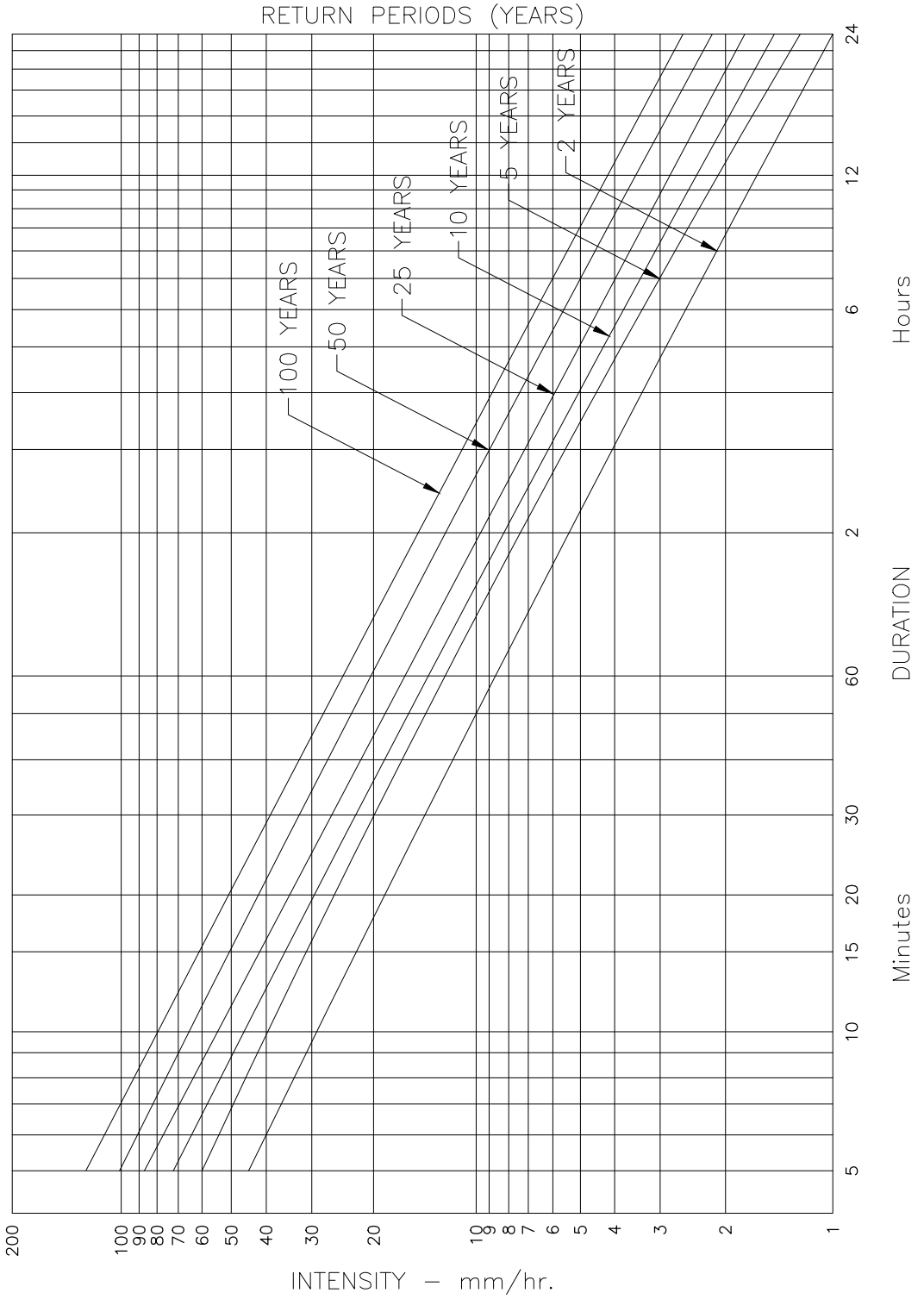
1. CATCH BASIN GRATE – CAST IRON 70mm x 495mm LONG x 405mm WIDE (25mm SPACE ON 22mm GRILL).
2. CATCH BASIN FRAME – PRECAST CONCRETE OUTSIDE MEASUREMENTS 735mm HIGH 665mm LONG 565mm WIDE. WALL 80mm
3. ALL CONCRETE TO HAVE A STRENGTH OF 25 MPa AT 28 DAYS.
4. ONLY TO BE INSTALLED IF APPROVED.

CITY OF ENDERBY	TITLE: STANDARD CONCRETE BOX CATCH BASIN INLET			
	FILE No. STD–CB	SCALE N.T.S	DATE FEB. 2000	DWG No. S11

NOTE:

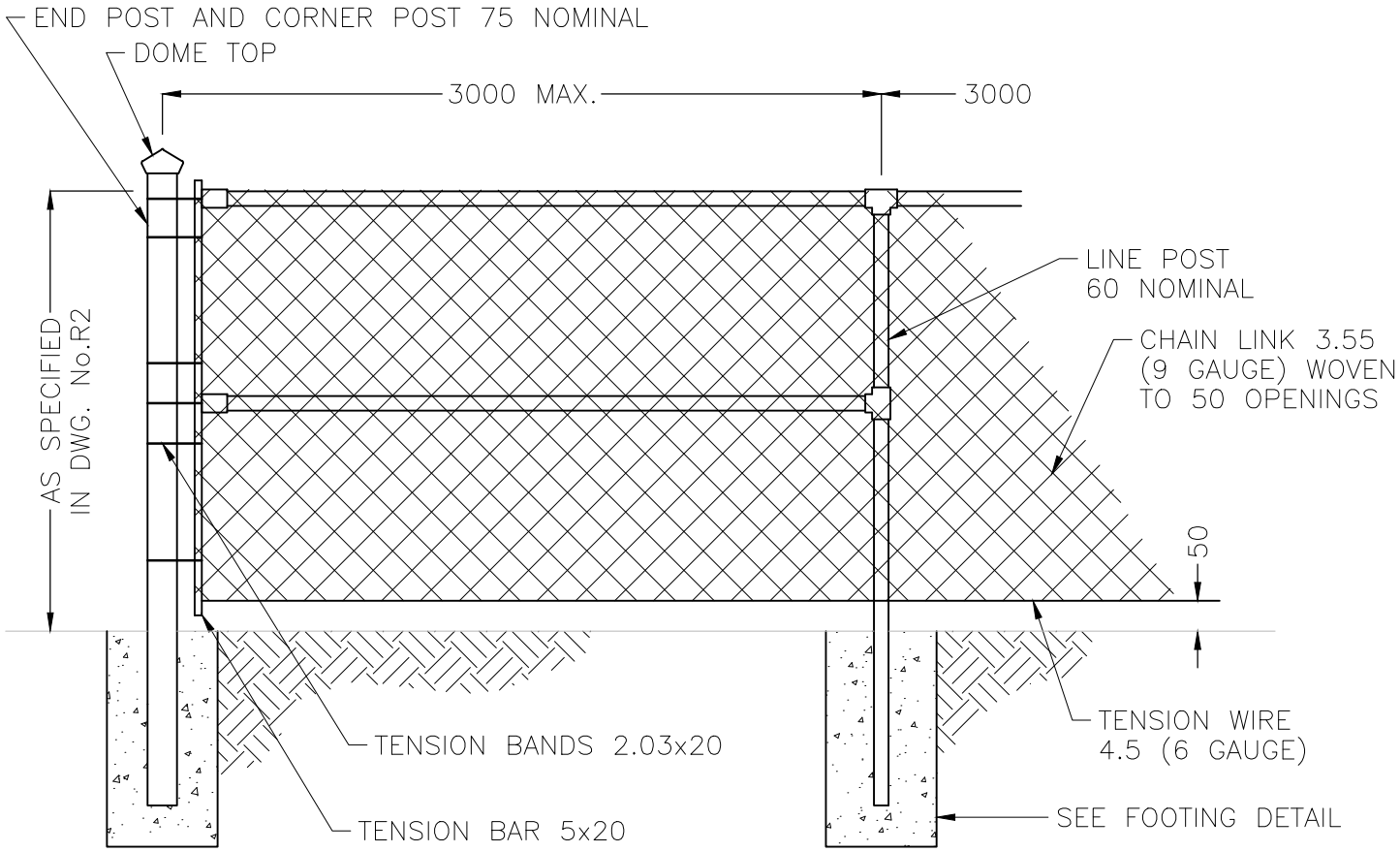
1.) RETURN PERIODS 2, 5, 10, & 25 YEARS–PREPARED BY ATMOSPHERIC ENVIRONMENT SERVICE.

2.) RETURN PERIODS 50 & 100 YEARS–CALCULATED CURVES BASED ON RETURN PERIODS FOR 2, 5, 10, & 25 YEARS.

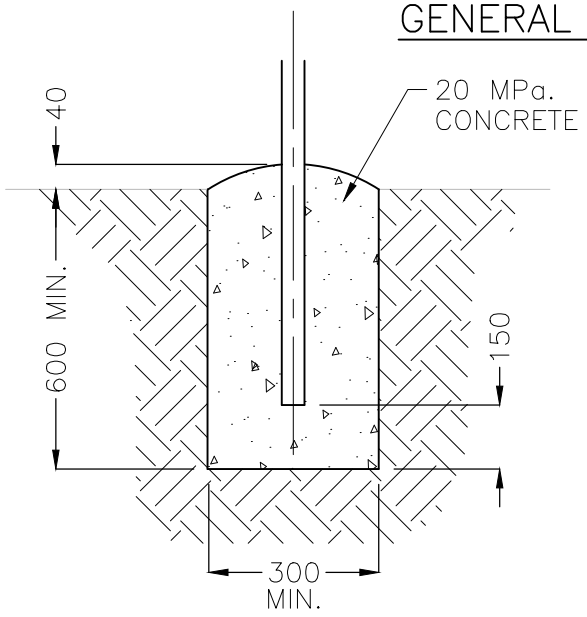


BASED ON DATA INTERPOLATION FOR VERNON (9 YRS.) & SALMON ARM (16 YRS.) RAIN GAUGES

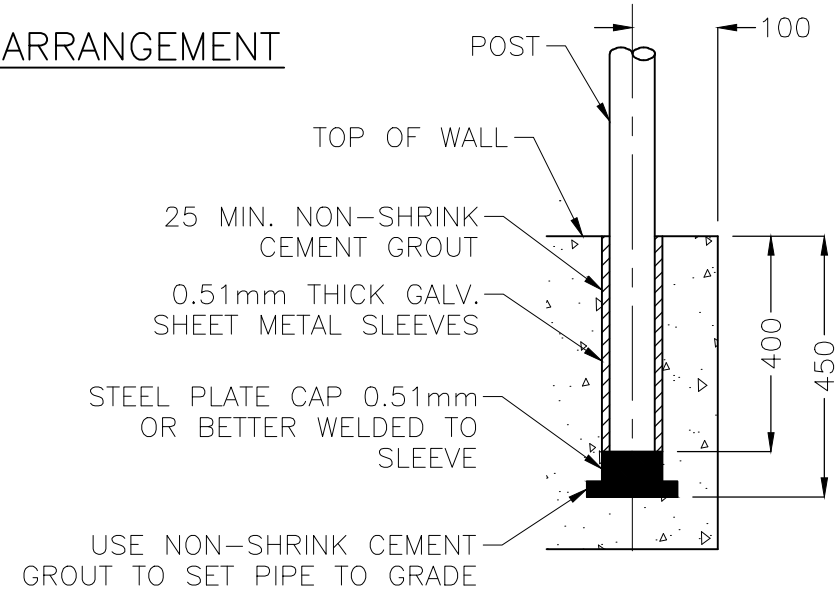
CITY OF ENDERBY	TITLE: RAINFALL INTENSITY DURATION/FREQUENCY DATA			
	FILE No.: RAINFALL	SCALE: N/A	DATE: FEB. 2000	DWG No.: S12



GENERAL ARRANGEMENT



IN EARTH

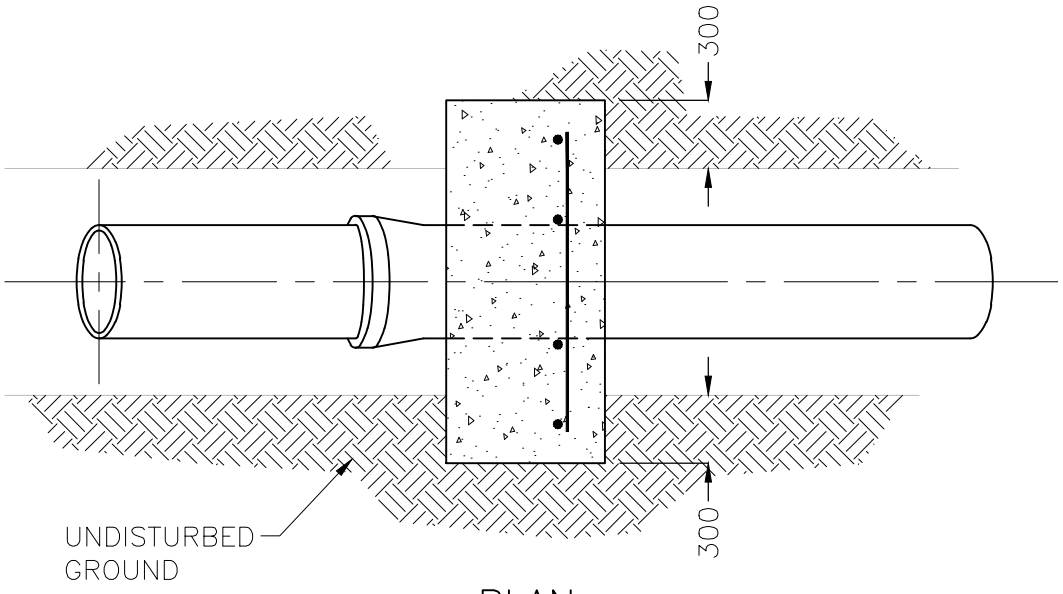


ON RETAINING WALL

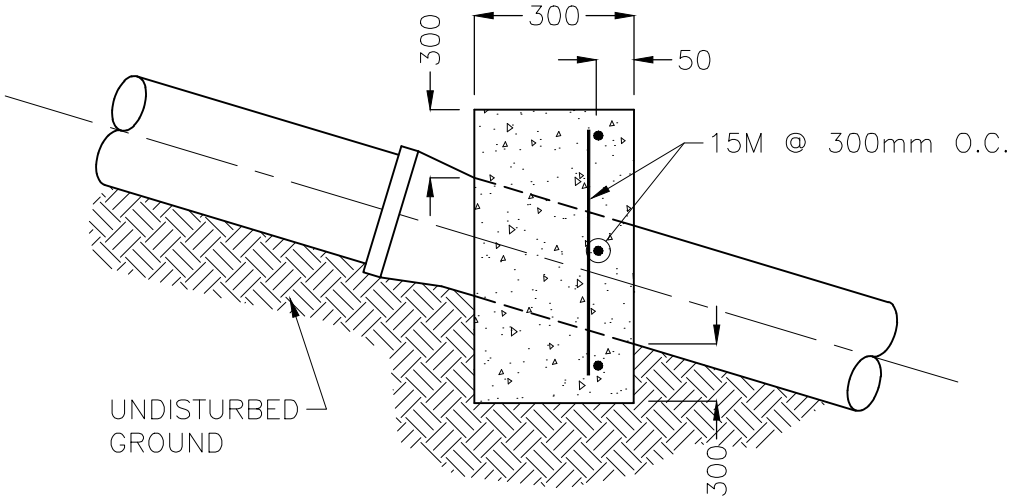
FOOTING DETAILS

NOTES:
1. FOR PURPOSE OF CLARITY, DETAILS OF TENSION BARS, TENSION BANDS AND MISCELLANEOUS FITTINGS NOT SHOWN ON DRAWING.
2. ALL RAILS AND POSTS SCHEDULE 40 PIPE.
3. GATE POSTS AS SPECIFIED (89 NOMINAL MINIMUM).

CITY OF ENDERBY	TITLE: CHAIN LINK FENCE FOR WALKWAY			
	FILE No. FENCE	SCALE N.T.S	DATE FEB. 2000	DWG No. G1



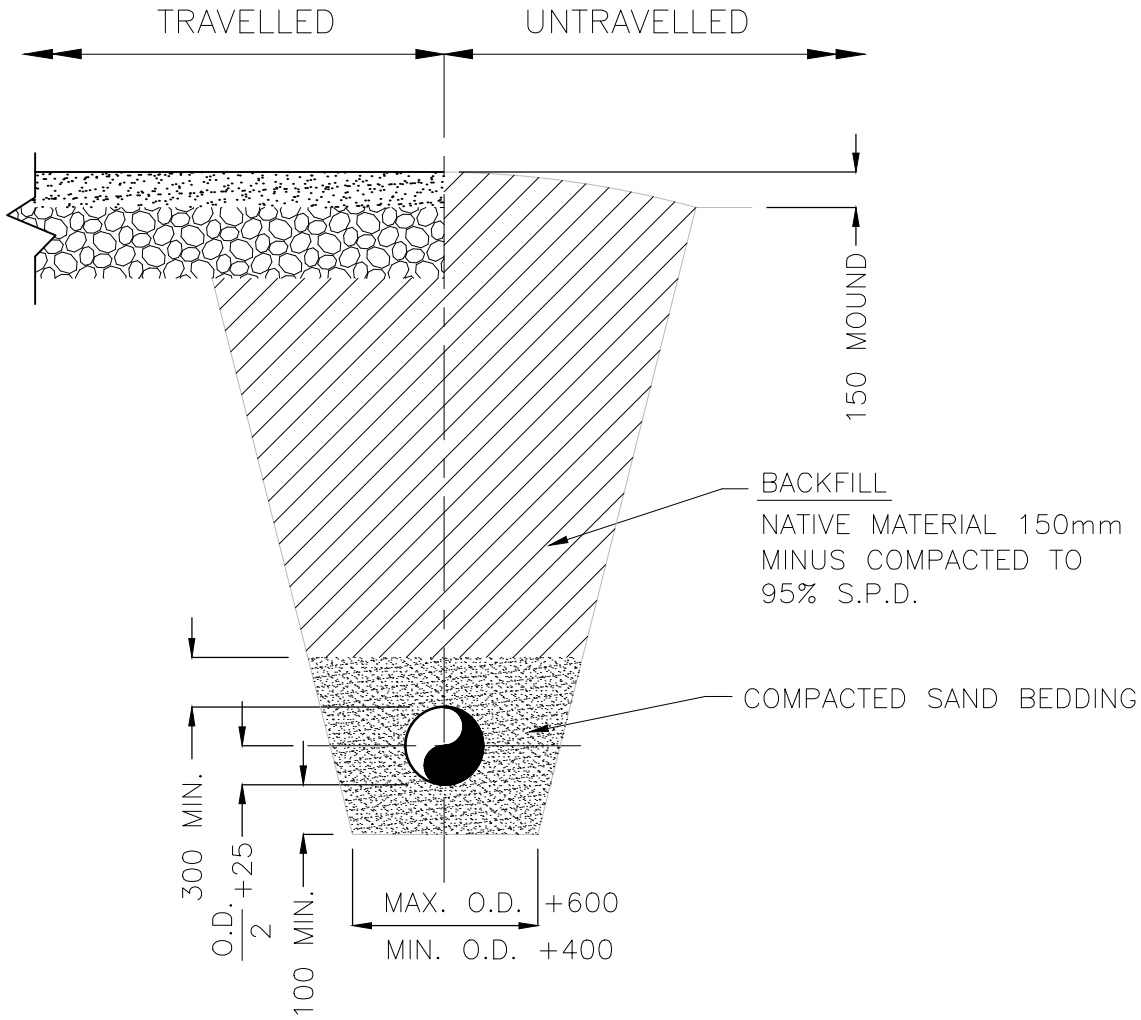
PLAN



PROFILE

NOTES:
1. ANCHORAGE REQUIRED AS PER PROFILE.
2. ANCHOR PIPE EVERY SECOND JOINT.
3. CONCRETE SHALL BE 20 MPa. AT 28 DAY STRENGTH.
4. CONCRETE SHALL BE TYPE 10 NORMAL
5. PLACE 2 PLY OF 0.015mm POLYETHLENE BETWEEN PIPE AND CONCRETE.

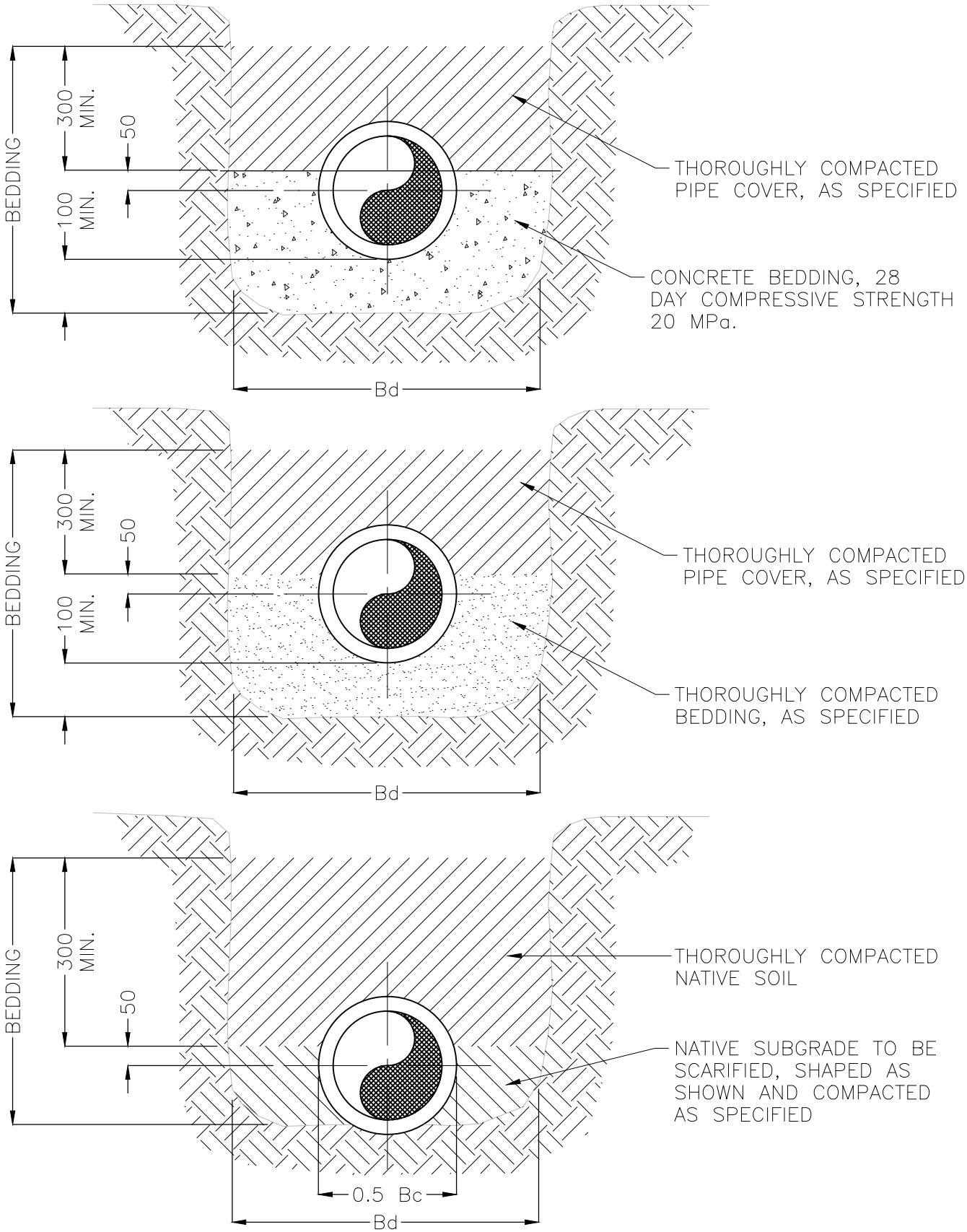
CITY OF ENDERBY	TITLE: PIPE ANCHORING			
	FILE No. PIPEANCR	SCALE N.T.S	DATE FEB. 2000	DWG No. G2



NOTES:

1. ALL TRENCHING MUST COMPLY WITH W.C.B. REQUIREMENTS.

CITY OF ENDERBY	TITLE: TYPICAL PIPE TRENCH			
	FILE No.: TRENCH	SCALE: N.T.S	DATE: FEB. 2000	DWG No.: G3

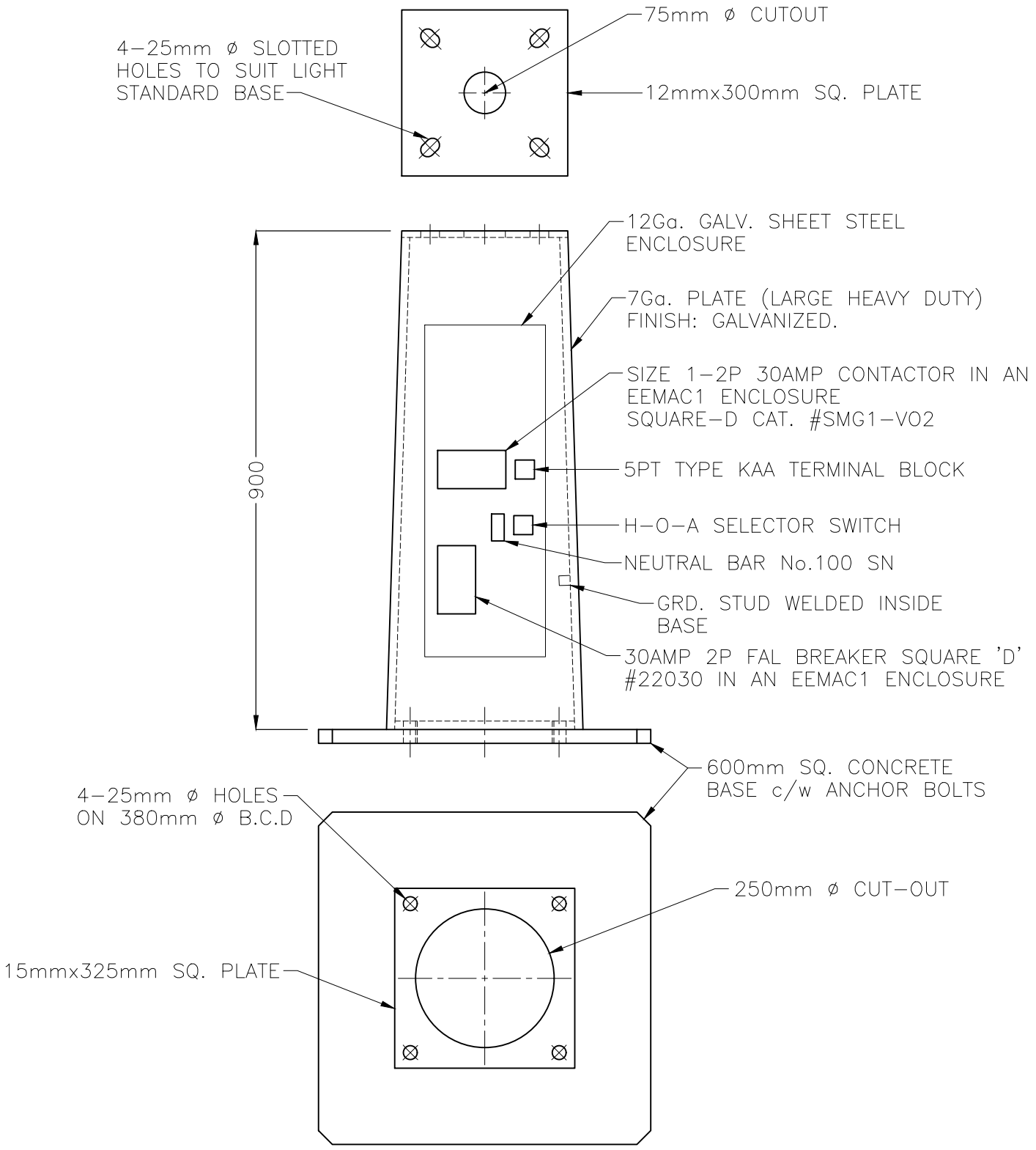


NOTES:
1. Bc = PIPE O.D.
2. Bd = MIN. Bc + 400
   Bd = MAX. Bc + 600

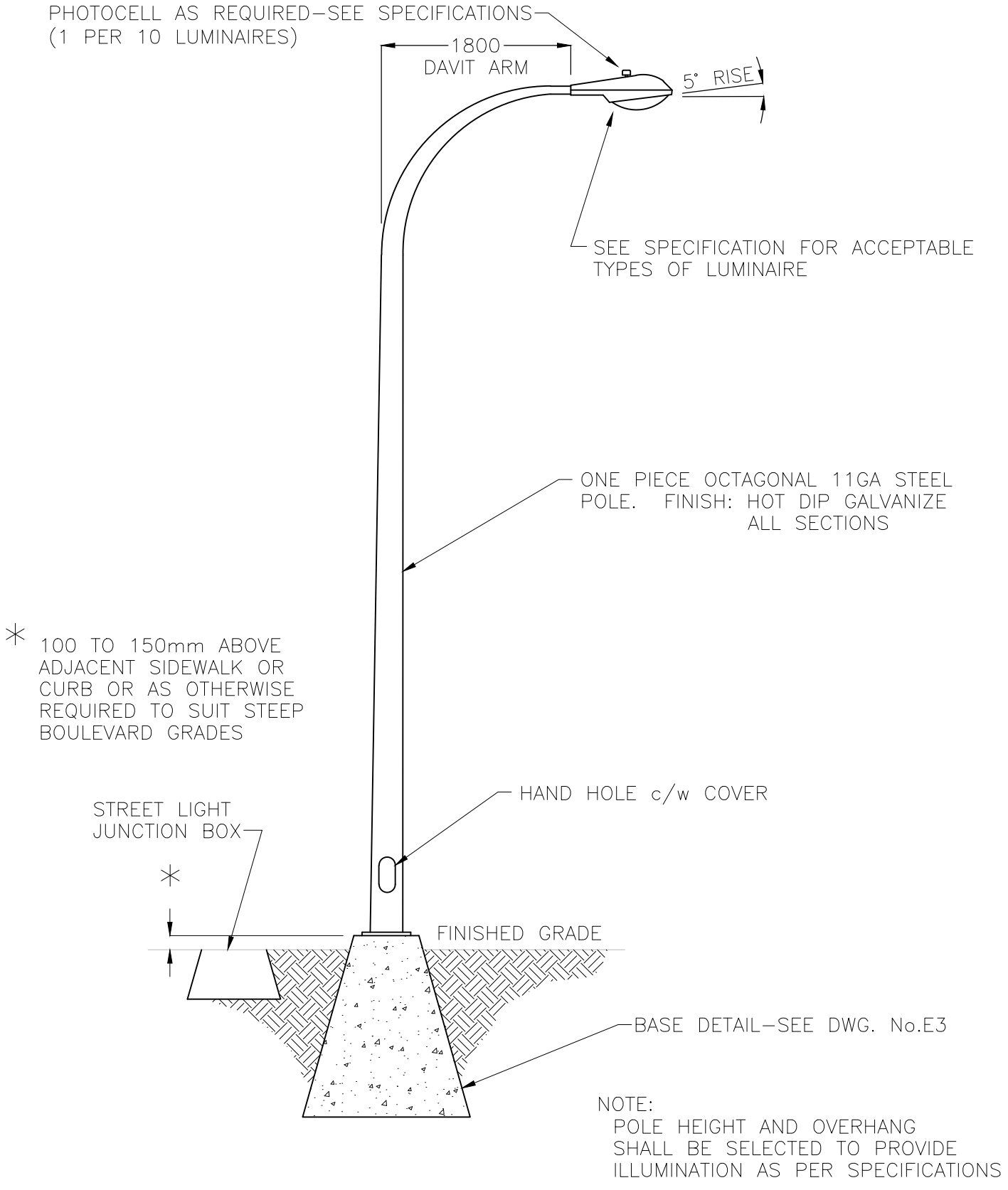
CITY OF ENDERBY

TITLE: STANDARD PIPE BEDDING CLASSIFICATION

FILE No.	SCALE	DATE	DWG No.
PIPEBED	N.T.S	FEB. 2000	G4

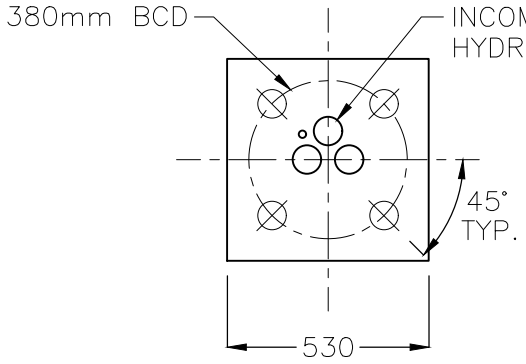


CITY OF ENDERBY	TITLE: POWER BASE			
	FILE No. TRANBASE	SCALE 1:10	DATE FEB. 2000	DWG No. E1



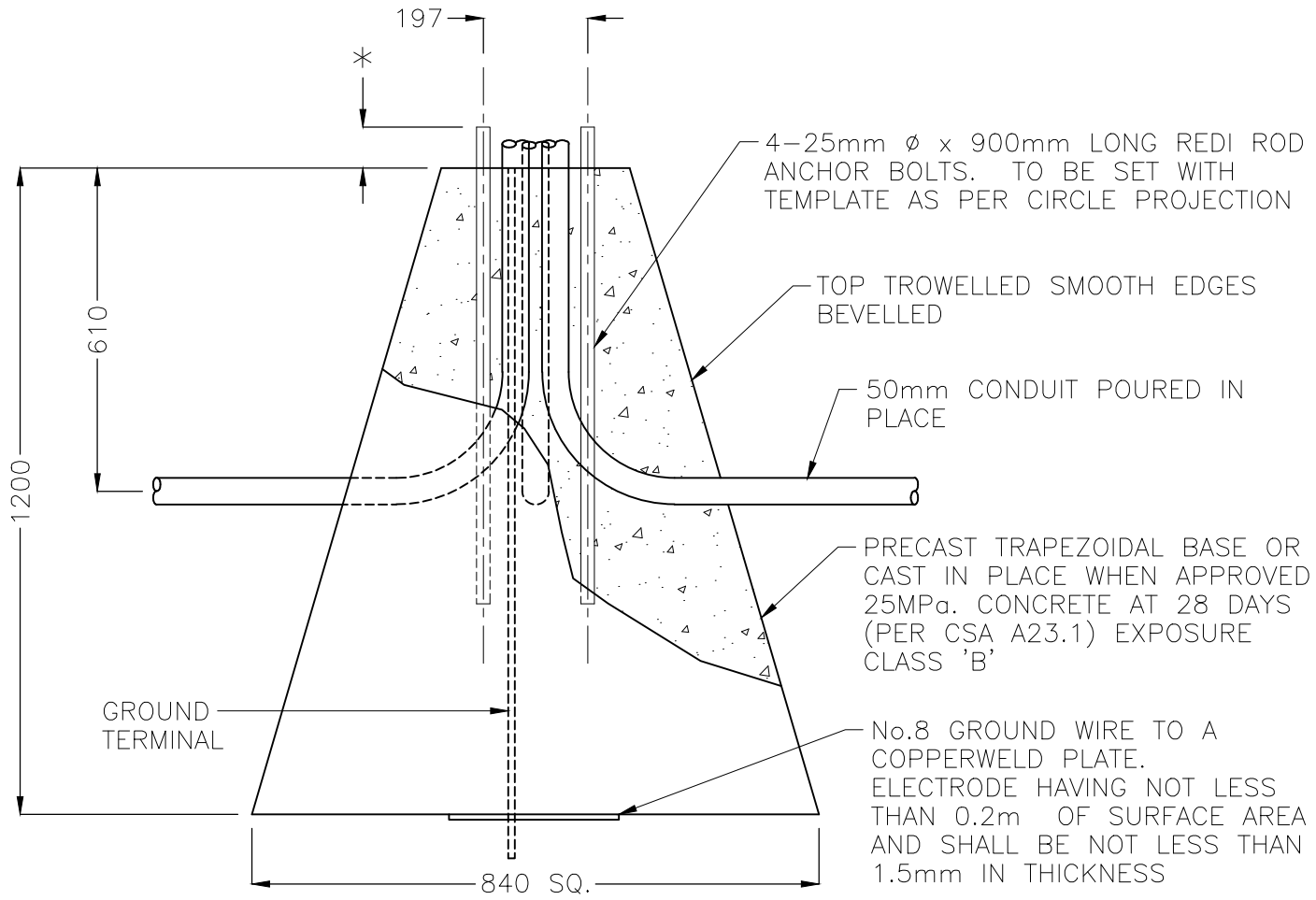
NOTE:
POLE HEIGHT AND OVERHANG
SHALL BE SELECTED TO PROVIDE
ILLUMINATION AS PER SPECIFICATIONS

CITY OF ENDERBY	TITLE: TYPICAL STREET LIGHT POLE			
	FILE No. LITEPOLE	SCALE N.T.S	DATE FEB. 2000	DWG No. E2



* EXTEND ANCHOR BOLTS 100 TO 125mm ABOVE BASE

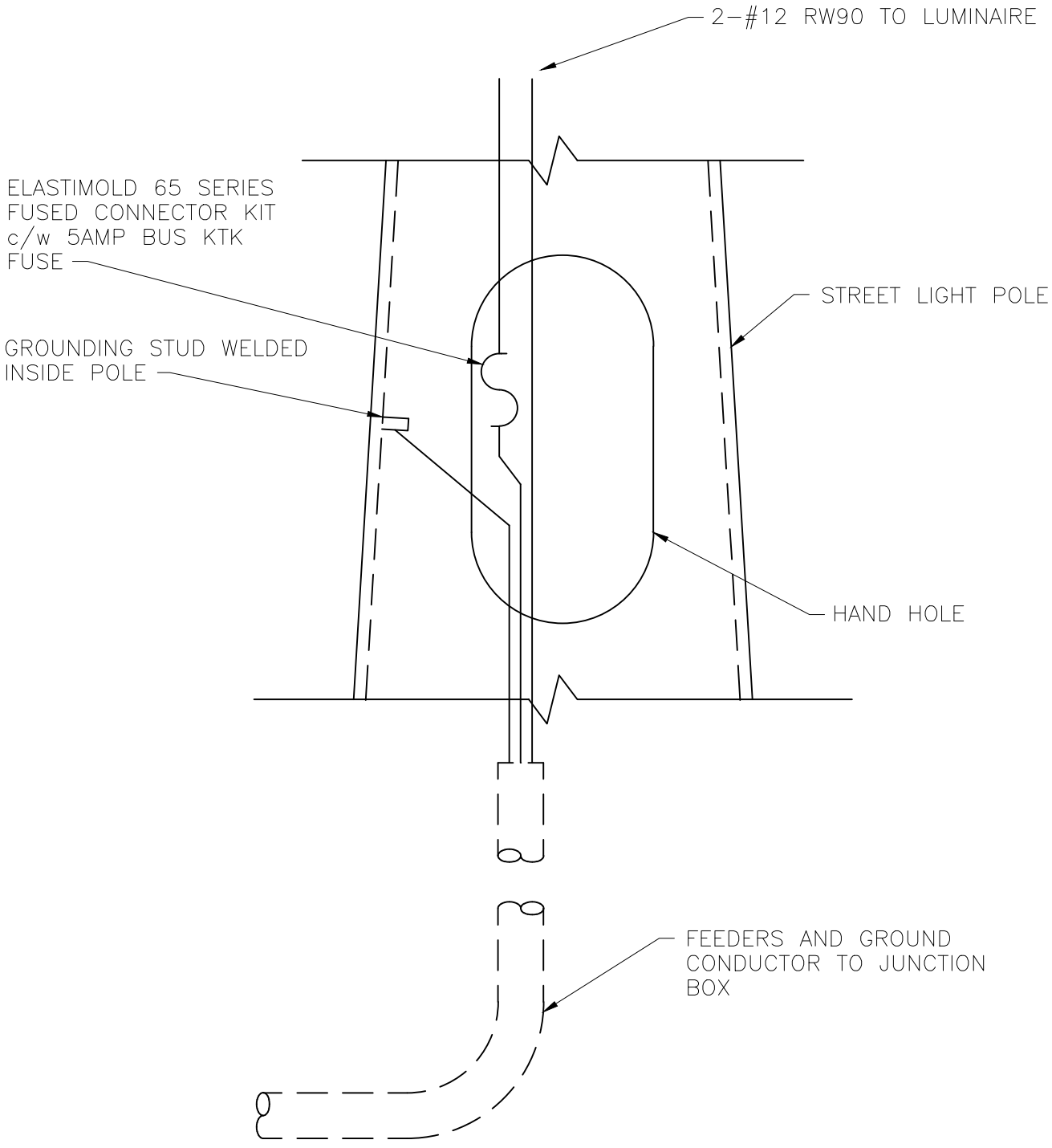
BOLT PATTERN



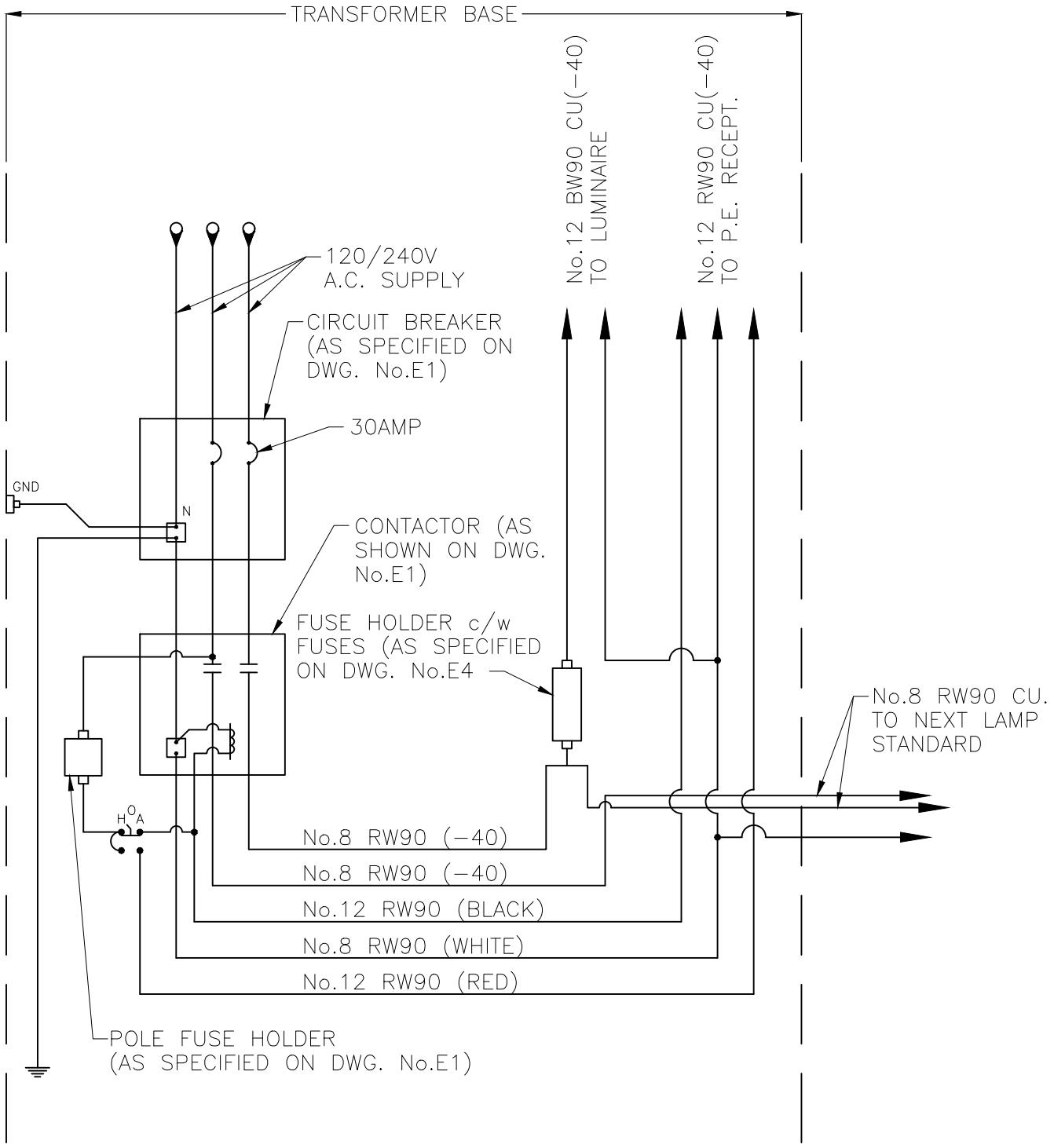
ELEVATION

NOTES:
1. DIFFERENT LIGHT STANDARDS HAVE DIFFERENT BOLT PATTERNS CHECK BEFORE POURING.
2. 150mm COMPACTED TO 100% STANDARD PROCTOR DENSITY, GRANULAR BASE, SELECT BACKFILL MACHINE TAMPED.
3. ANCHOR BOLTS TO BE HOT DIP GALVANIZED.

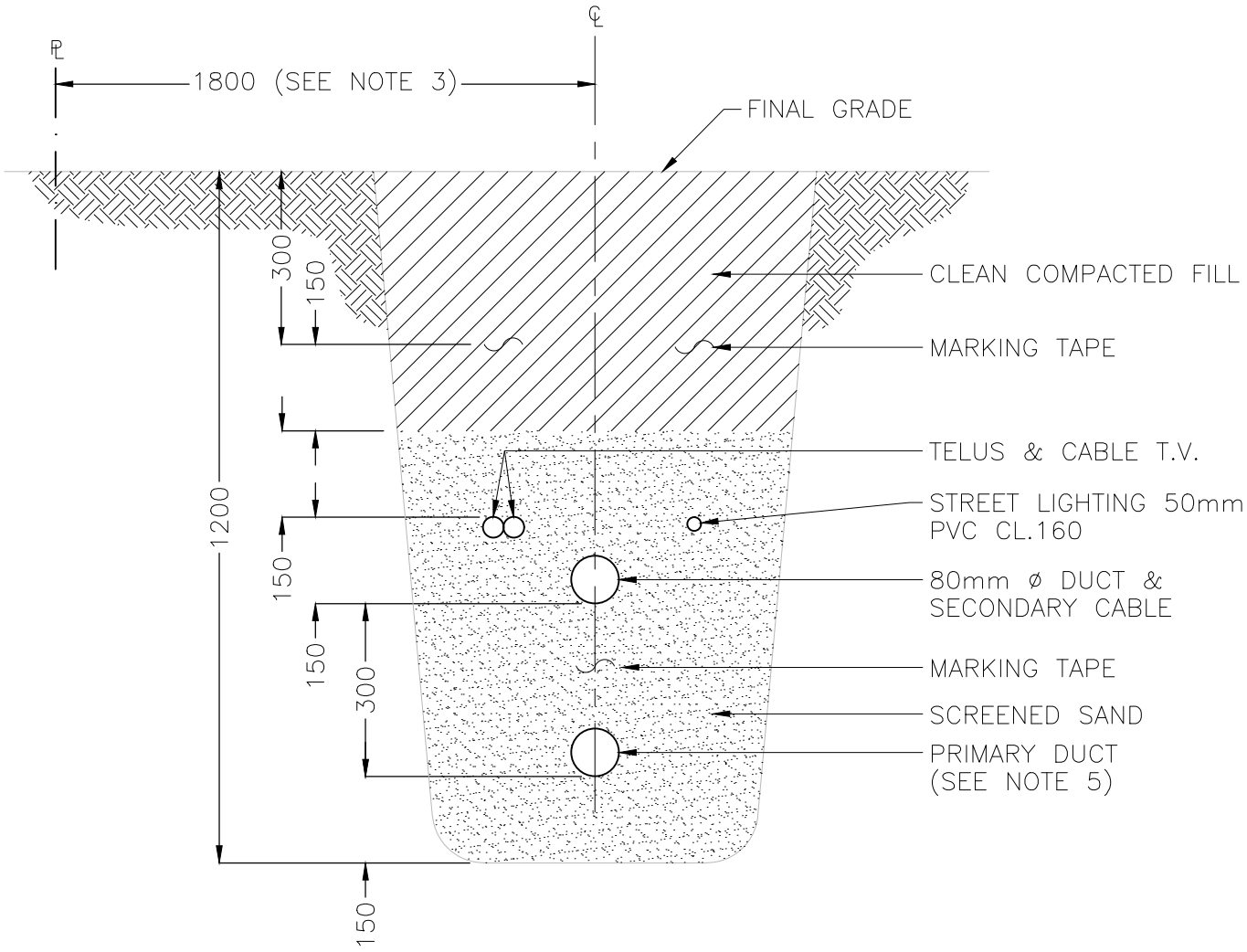
CITY OF ENDERBY	TITLE: STANDARD LIGHT POLE BASE			
	FILE No. LITEBASE	SCALE N.T.S	DATE FEB. 2000	DWG No. E3



CITY OF ENDERBY	TITLE: STREET LIGHT ELECTICAL CONNECTION			
	FILE No. LITECONN	SCALE N.T.S	DATE FEB. 2000	DWG No. E4



CITY OF ENDERBY	TITLE: WIRING SCHEMATIC FOR STREETLIGHT POWER SUPPLY			
	FILE No. SL-SCHEM	SCALE N.T.S	DATE FEB. 2000	DWG No. E5



NOTES:

1. ALL DIMENSIONS IN MILLIMETERS.
2. MINIMUM HORIZONTAL SEPARATION WITH OTHER UTILITIES TO BE ONE (1) METER.
3. OFFSET DISTANCE MAY VARY TO CONFORM TO LOCAL REGULATIONS.
4. WHERE MORE THAN ONE PRIMARY DUCT IS REQUIRED, A SEPARATION OF 80mm IS REQUIRED.
5. SINGLE PHASE USE 80mm F.R.E. DUCT.
   THREE PHASE USE 100mm F.R.E. DUCT.

CITY OF ENDERBY	TITLE: TYPICAL ELECTRICAL UTILITY TRENCH			
	FILE No. UTILTRCH	SCALE N.T.S	DATE FEB. 2000	DWG No. E6

CITY OF ENDERBY

SUBDIVISION SERVICING AND DEVELOPMENT BYLAW NO. 1278, 2000

SCHEDULE "B"

LEVELS OF WORKS AND SERVICES

The levels of works and services to be provided in subdivisions and developments shall conform to the following table for the various zones as set out in the City of Enderby Zoning Bylaw No. 966,1987 and amendments thereto.

DESCRIPTION	R.1	R1-A	R.2	R.3	R.5	C.1	C.2	C.4	I.1	I.2	I.3	S.1	C.R.
1. Water Service													
- Community System	R	R	R	R	R	R	R	R	R	R	R	R	R
2. Sanitary Sewer													
- Community System	R	R	R	R	R	R	R	R	R	R	R	R	R[1]
- Private Individual	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	A
3. Drainage													
- Enclosed Channel	R[2]	R[2]	R[2]	R[2]	R[2]	R[2]	R[2]	R[2]	R[2]	R[2]	R[2]	R[2]	N/A
- Open Channel	A	A	A	A	A	A	A	A	A	A	A	A	A
4. Highways													
- Collector/Local	R	R	R	R	R	R	R	R	R	R	R	R	R[2]
- Walkways	R[3]	R[3]	R[3]	R[3]	R[3]	R[3]	R[3]	R[3]	R[3]	R[3]	R[3]	R[3]	R[3]
5. Sidewalks													
- Both Sides	N/A	N/A	N/A	N/A	N/A	R	R	R	N/A	N/A	N/A	N/A	N/A
- One Side	R	R	R	R	R	N/A	N/A	N/A	R	R	R	R	N/A
6. Street – Lighting													
- Ornamental	R	R	R	R	R	R	R	R	R	R	R	R	N/A
- Hydro Pole Mounted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	B
7. Non-Municipal Services													
- Power, underground	R	R	R	R	R	R	R	R	R	R	R	R	R[2]
- Power, overhead	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	B
- Telephone, underground	R	R	R	R	R	R	R	R	R	R	R	R	R[2]
- Telephone, overhead	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	B
- Cablevision, underground	R	R	R	R	R	R	R	R	R	R	R	R	R[2]
- Cablevision, overhead	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	B

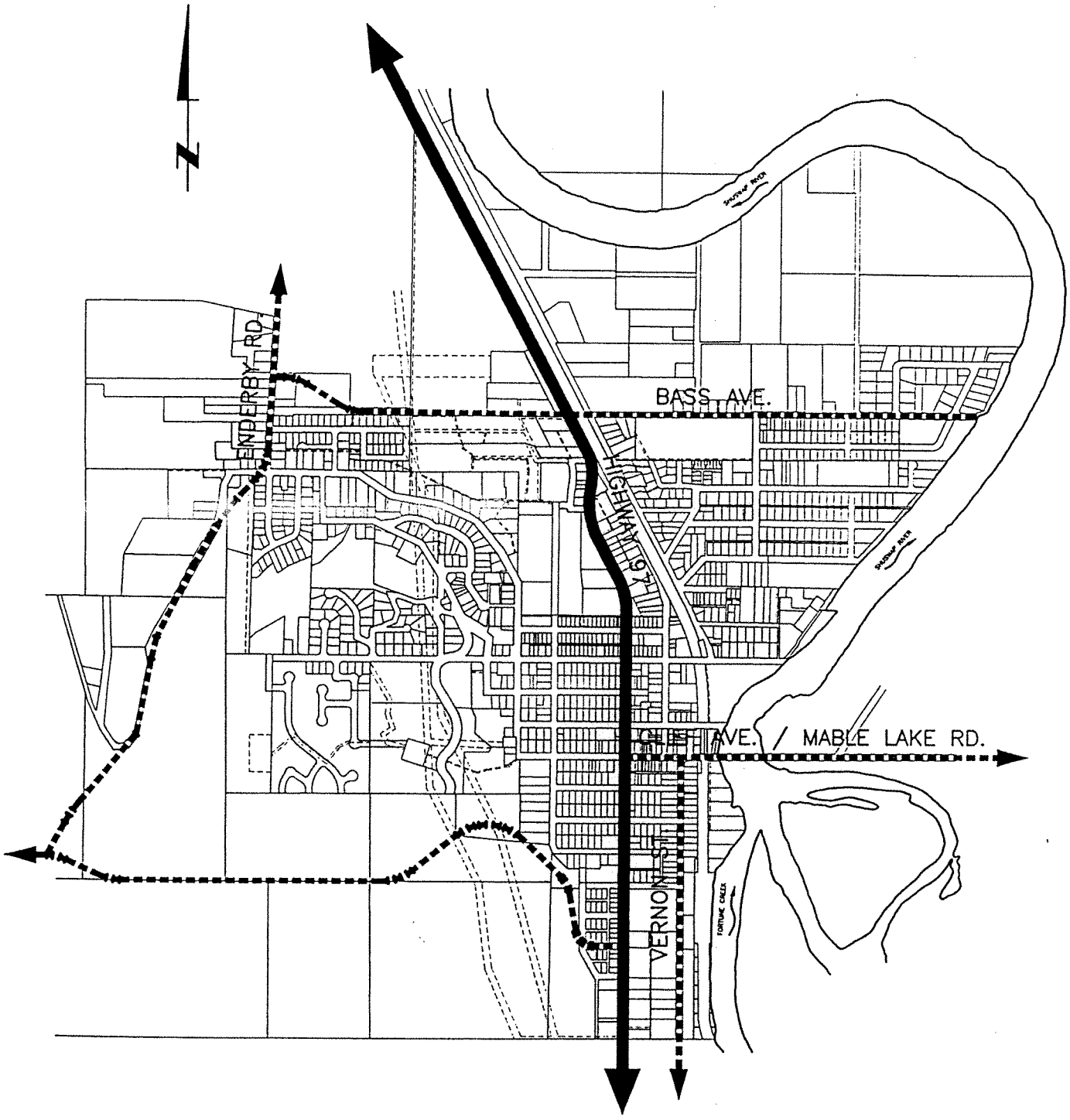
DEFINITIONS

R means required
R[1] means required if municipal services are available adjacent or near to the property to be subdivided or developed, at the discretion of the Approving Officer.
R[2] means required if applicable to the development, at the discretion of the Approving Officer.
R[3] means required as an extension of existing walkway system or as needed for pedestrian traffic movement at the discretion of the Approving Officer
A means required where a higher level of service is not required
B allowed where an underground service is not required
N/A means not applicable

ZONINGS:

R.1	**-**	**Residential Single Family**
R.1-A	**-**	**Residential Single Family**
R.2	**-**	**Residential Two Family**
R.3		**Residential Apartment and Multi-Family**
R.5	**-**	**Residential Mobile Home Park**
C.1	**-**	**General Commercial**
C.2	**-**	**Highway and Tourist Commercial**
C.4		**Service Commercial**
I.1	**-**	**Light Industrial**
I.2	**-**	**General Industrial**
I.3		**Industrial Park**
S.1		**Assembly, Civic and Public Service**
C.R.		**Country Residential**

SCHEDULE C



M.O.T.H. ARTERIAL
COLLECTOR ROADS
ALL OTHER ROADS ARE LOCAL ROADS

CITY OF ENDERBY

CITY of ENDERBY

SCHEDULE "C"

CITY OF ENDERBY

SUBDIVISION SERVICING AND DEVELOPMENT BYLAW

APPENDIX A

ACCEPTABLE STANDARDS FOR DRAWING SUBMISSIONS

This Appendix outlines the minimum standards for design and record drawings which will be acceptable to the Municipality. This Appendix is included for information only and **does not form part of the City of Enderby Subdivision Servicing and Development Bylaw.**

A.1 INTRODUCTION

All design drawings and record drawings, except record drawing transparencies, shall be signed and sealed by a Professional Engineer registered in British Columbia.

All drawings shall be sized A-1 (594 mm x 841 mm). Record drawing transparencies shall be 3 mil double matte mylar. Plan-profile drawings shall be 2 mm x 20 mm grid with the top half profile and the bottom half plan. The title block shall be located in the lower right hand corner of the sheet, with the consultant's name shown only in a 200 mm x 50 mm space beside the title block.

A.2 SYMBOLS AND LETTERING

Standard symbols for the various facilities shall be used on all drawings. Standard details for items such as manholes, catchbasins, hydrant assemblies, etc. need not be shown in detail, unless deviation from details shown on the applicable Standard Drawings is proposed or has occurred.

Lettering shall be an open style vertical gothic style applied using a mechanical template, computer graphics system or equivalent, using generally upper case lettering and black india ink. Lettering shall be minimum of 2.0 mm high and shall be fully legible.

North arrows shall point either toward the top of the sheet or toward the left-hand edge of the sheet and shall be placed on the right hand side near the top of the sheet.

A.3 SCALES AND DIMENSIONING

All scales shall be standard metrics scales and shall conform to the following.

General Plan:	not less than 1:1000
Key Plan:	not less than 1:5000

Plan-Profile Drawings

Plan:	1:500
Profile:	Horizontal 1:500
	Vertical 1:50

Plan-Profile Drawings

Plan:	1:1000
Profile:	Horizontal 1:1000
	Vertical 1:100

Intersection/Corner Details

Plan:	1:200
Profile:	Horizontal 1:200
	Vertical 1:20

Miscellaneous Details: Appropriate metric scale

Pipe sizes shall be shown in millimeters using 1" – 25 mm (ASTM designation). Distance and location dimensions shall be shown in metres and, where existing dimensions are in imperial scale, shall be soft converted using the factor one foot = 0.3048 m.

All elevations shown on drawings shall be based on Integrated Survey (Geodetic) datum.

A.4 INFORMATION TO BE INCLUDED ON DRAWINGS\

A complete set of drawings shall consist of a general plan, key plan, plan and profile of roads and services and additional plans showing special details. Three separate sets of plan-profile drawings are required to show:

- Roads, streets, lanes, walkways and related facilities
- Storm and sanitary sewers, watermains and related facilities
- Underground wiring and ornamental street lighting

All known existing underground services, watercourses and structures on or adjacent to the site shall be shown, along with a notation as to whether they are to be retained, removed, relocated or redirected.

The following information shall be included with design drawings submitted for approval, with design information and notes added so as to be easily removable at the record drawing stage.

A.4.1. General Plan

- All mains, including gas mains
- All existing and proposed property lines for subdivision
- All existing and proposed buildings for development
- Location and monument number of integrated survey monuments and any other monuments and/or bench marks used in preparing the design drawings

A.4.2 Key Plan

- The key plan may be drawn on one corner of the General Plan
- Location of subdivision or development with respect to major roadways and trunk water and sewer lines
- Drainage pattern and tributary drainage area

A.4.3 Roads

Plan/Profile

Plan	:	Property lines
	:	Offsets to ditch lines, edge of pavement curbface
	:	Grading limits, appropriate horizontal curve information
	:	B.C. and EC for all horizontal curves
	:	Centerline of road
	:	Road and right of way widths
	:	Sidewalk and walkway locations and widths
	:	Culvert locations, sizes and invert elevations
	:	Catchbasin locations and rim elevations
	:	Curb return radii
	:	Driveways
	:	Manhole cover elevations
	:	Street name
	:	Poles, fences and other surface features
Profile	:	centerline and/or gutter profiles
	:	Vertical curve information
	:	B.C. and EC for all vertical curves
	:	Vertical points of intersection and grades between points
	:	Centerlines of intersecting roads
	:	Original ground profile at centerline (and on both sides of right-of-way as applicable)
	:	Ditch invert profiles as applicable
	:	Culvert inverts
	:	Walkway profiles

Intersection
Plan/Profile

Plan	:	gutter elevations at maximum 7.5 m intervals
	:	Curb returns data
	:	Finished road elevations at maximum 7.5 m grid
Profile	:	profile of gutter along curb returns showing minimum of five (5) elevations along the curb return and extending 7.5 m in each direction from the ends of the curb return.

Details	:	typical road construction details
	:	Typical pavement structure(s)
	:	Curb, gutter, sidewalk details
	:	Walkway details
	:	Sidewalk crossing details
	:	Other details as required

A.4.4 Storm and Sanitary Sewers, Watermains

Plan	:	centerline of sewers and watermains
	:	Centerline of ditches
	:	Property lines
	:	Pipe size and material, including pressure class
	:	Locations of manholes, catchbasins, cleanouts, culverts, service connections, valves, fittings, hydrants and related appurtenances in relation to roadway, easement and/or lot property lines.
	:	Invert elevations of all storm and sanitary service connections at the property line
	:	Minimum basement elevations where applicable
	:	Varying backfill or surface restoration requirements
Profile	:	existing and finished ground elevation on pipe centerline
	:	Invert of water and sewer pipe(s) profile
	:	Ditch profile
	:	Invert elevation of each pipe entering or leaving manholes and cleanouts and at all changes in gradient
	:	Slope (in percent) of the pipe(s)
	:	Location and elevation of all other services, including service connections, which cross the pipe(s)
Details	:	manholes, catchbasins and cleanouts, cover and frame and intersection details
	:	Typical service connections
	:	Pipe bedding, trench and anchor block details
	:	Storm inlet/outlet details
	:	Valves thrust blocks, hydrants, standpipe, and air-release valve details
	:	Other details as required

A.4.5 Underground Wiring and Street Lighting

Plan	:	roadway, easement and lot property lines
	:	location of underground ducting, overhead wiring, street light poles, power poles, telephone poles, kiosks, service and control equipment and all related appurtenances
	:	all other existing and proposed underground and overhead utilities, including gas mains
	:	wiring diagrams for street lighting

A.4.6 On-Site Servicing Drawings

Off-site services in municipal utility rights-of-way shall be included in the set of drawings for off-site services. A separate and distinct set of plans shall be submitted for on-site services on private property and these services shall not be included on the same plans as off-site services located in municipal utility rights-of-way.

On-site services may be shown on a plan drawing which includes the following minimum information:

- Size and location of all water mains, valves, fittings, hydrants and appurtenances
- Size, slope, location and design capacity of all sewerlines
- Invert elevations of manholes, sumps and major pipe intersection
- Basement and/or floor slab elevations for all buildings
- Clearance where pipes cross
- Existing and proposed elevations around the site perimeter, at key points at pavement and building edges, catchbasin rims, etc.
- If warranted by site topography, existing and proposed contours

A.4.7 As-built Drawings

As-built drawings shall clearly illustrate the work as it has been constructed, shall accurately locate all services and service connections and shall include all changes from the drawings as originally approved for construction. Road cross-section sheets, standard detail sheets, general plan, key plan, intersection detail plan-profiles, etc. need not be submitted as as-built drawings.

A.5 DRAWING SUBMISSIONS

Drawing submissions are required as follows:

a) Preliminary layout plan (2 paper prints).

b) Upon acceptance in principle of a), preliminary servicing plan (2 paper prints).

c) Upon acceptance in principle of b), detailed design drawings for review (2 sets, paper prints) one set may be returned for revisions, if necessary.

d) Revised detailed design drawings for review (2 sets paper prints), repeated as necessary.

e) Upon acceptance of c) or d), one additional complete set of paper prints.

f) Upon receipt of any required Provincial Government approvals, and upon notification by the Municipality's Approving Officer, sufficient additional paper prints to allow five complete sets of the latest accepted drawings to be assembled. (Two sets, stamped and signed "Approved for Construction" will be returned to the Developer's Engineer when

all applicable agreements have been signed and all required security deposits, cash deposits and documentation has been received by the Municipality).

g) After detail design drawings are accepted, the Owner shall engage a registered B.C. Land Surveyor to perform all legal surveys and prepare the subdivision plan and all utility easement plans for registration.

h) Upon completion of the work, as-built drawings consisting of 2 sets of paper prints of drawings which are signed and sealed, one set of full sized positive transparencies of drawings which are not signed or sealed and the "original" and one set of copies of service record sheets in a form acceptable to the Municipality. In addition, one set of digital drawings, compatible with Autocad version used by City.

CITY OF ENDERBY

SUBDIVISION SERVICING AND DEVELOPMENT BYLAW

APPENDIX B

TYPICAL FORMS AND AGREEMENTS

The forms contained herein will be acceptable to the Municipality. These forms are included for information only and **do not form part of the City of Enderby's Subdivision Servicing and Development Bylaw.**

Servicing Agreement ..... B-2 – B-13

Permission to Construct B-14

Certificate of Inspection B-15

Certificate of Completion B-16

Certificate of Acceptance B-17

Irrevocable Letter of Credit B-18

Right-of-Way Agreement ..... B-19 – B-24

Consent to Grant of Right-of-Way B25

Application for Preliminary Layout Review ..... B-26 – B-29

Application for Final Subdivision Approval B-30

Latecomer Agreement ..... B-31 – B-39

SERVICING AGREEMENT

No. _____

Between

CITY OF ENDERBY

And

_____

Developer

SERVICING AGREEMENT

THIS AGREEMENT made this _____ day of _____, _____.

BETWEEN:

The City of Enderby incorporated under the "Local Government Act" of the Province of British Columbia, and having its Municipal Office at

_____

_____

(Hereinafter called the "Municipality")

OF THE FIRST PART

AND:

_____

_____

_____

(Hereinafter called the "Owner")

OF THE SECOND PART

WHEREAS:

A. The Owner is the registered owner in fee simple of lands and premises within the City of Enderby, in the Province of British Columbia, more particularly known and described as follows:

_____

_____

_____

_____

(Hereinafter called the "Lands")

SERVICING AGREEMENT *(continued)*

B. The Owner desires to subdivide the Land or Develop on the Lands.

C. The Approving Officer or the Municipality has agreed to approve the subdivision of the Lands or the Development respectively subject to the terms and conditions contained in this Contract, and the posting with the Municipality of the security deposit described herein.

NOW THEREFORE THIS AGREEMENT WITNESSETH that in consideration of the promised covenants and agreement hereinafter set forth, the parties hereto covenant, agree, represent and promise as follows:

APPENDICES

1. The following Appendices will be read with and form part of this Agreement:

Appendix "A" - A copy of the subdivision plan of the Lands;

Appendix "B" - A list of the "Works" and an estimate of their respective construction costs;

Appendix "C" - Construction drawings to be used for the construction of the "Works".

OWNER TO DO WORK

2. The Owner covenants and agrees to construct and provide all the works and services listed and shown on Appendices "B" and "C" hereto, as approved by the Municipality, in accordance with the standards contained in Schedule "A" of the Municipality's Subdivision Servicing Bylaw.

TRANSFER OF INTEREST IN WORKS

3. The Owner convents and agrees with the Municipality to assign, transfer and convey to the Municipality all of its right, title and interest in the works on any and all of the lands, upon the completion of the works, (as witnessed by the issuance of a certificate of substantial completion). The Owner will from time to time and at all times so long as it exercises any rights of ownership in the "said lands" upon the request of the Municipality, make do and execute or cause or procure to be made, done and executed, as such further acts, deeds, rights-of-way, easements and assurances for the more effectual carrying out of this Agreement.

SERVICING AGREEMENT *(continued)*

PERMISSION TO DO WORK

4. The Municipality covenants and agrees to permit the Owner to construct the "Works", including that portion of the "Works" to be constructed on dedicated highways controlled by the Municipality; on the terms and conditions herein, and in the manner required by and at the places specified in the Plans and Specifications; provided that nothing in this Agreement shall be construed as an undertaking, promise or covenant on the part of the Municipality to make available the use of or access to the "Works" for any purpose, and without limiting the foregoing, for the purpose of serving the Lands or any other real property whatsoever either owned or controlled by the Owner or its associates or otherwise, but rather the Municipality reserves the right in its sole and absolute discretion to make available, operate, alter, use, extend, diminish discontinue, tear up, sell, rent or otherwise dispose of the "Works" as its Council from time to time deems fit.

CHANGE TO BYLAWS

5. The Owner covenants and agrees to comply with any changes in subdivision requirements or standards enacted by Bylaw prior to the actual commencement upon the lands of the works contemplated by this Agreement.

LOT GRADING

6. The Owner covenants and agrees to adhere in all respects to the contours, elevations and drainage patterns indicated on the lot grading plan or storm water management plans prepared by the Engineer and/or Engineering Company indicated in Clause 11 hereof, and which are attached as part of Appendix "C" to this Agreement.

START OF WORK

7. The Owner covenants and agrees not to commence work until the Municipality provides the Owner with written permission to proceed with construction in the form provided in Appendix "B" to the Municipality's Subdivision Servicing Bylaw.

COMPLETION OF WORK

8. The Owner shall complete the construction of the works, specified in Appendix "B" and "C" as Project No. _____ of the Municipality, to the satisfaction of the Municipality by the _____ day of _____, AD _____.

SERVICING AGREEMENT ***(continued)***

OWNER TO GRANT RIGHTS OF WAY

9. The Owner covenants and agrees to grant to the Municipality all necessary road dedications, statutory rights-of-way and easements over the said lands to accommodate the said works and, where the said works are located upon or under privately owned lands other than the said lands, to obtain at the Owner's expense, all necessary road dedications, statutory rights-of-way and easements over such lands, in favour of the Municipality where applicable, to accommodate the said works.

DESIGN BY PROFESSIONAL ENGINEER

10. The Owner covenants and agrees that all works required herein, should be designed by a Professional Engineer, who shall be registered with the Association of Professional Engineers of British Columbia and retained by the Owner. Plans and specifications for the said works shall be prepared by or under the direct supervision of the said Professional Engineer and all plans shall bear his professional seal and signature.

The Owner covenants and agrees to ensure that his Design Engineer (as specified in Clause 11) maintains professional liability and errors and omissions insurance to a value of $250,000 per occurrence during the term of his engagement.

The Owner covenants and agrees to retain the Design Engineer during the construction period for the purposes of inspection to ensure compliance with the approved design and to provide certification of the as-built records.

ENGINEERING DRAWINGS

11. The Owner covenants and agrees that the intent of this Agreement is that the Owner shall construct fully completed works, and grant necessary easements as shown in the plans and specifications prepared by:

_____

_____

_____

under Drawing Nos:

_____ _____

_____ _____

_____ _____

SERVICING AGREEMENT ***(continued)***

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

and as received for the purposes of this Agreement by the Municipality on the _____ day of _____, AD _____.

CHANGES TO DESIGN BY MUNICIPALITY

12. The Municipality's Engineer may require that the Plans be altered because of conditions at the site, so that the works function and operate in a manner satisfactory to the Municipality's Engineer. Should the works, as provided herein, prove to be in anyway defective or should they no operate to the satisfaction of the Municipality's Engineer, then the Owner shall, at his own expense, modify and reconstruct the works so that the works shall be fully operative and function to the satisfaction of the Municipality's Engineer.

CERTIFICATION OF COMPLETION

13. A Certificate of Substantial Completion shall be provided by the Municipality on the completion of the construction listing all the deficiencies. This letter of Substantial Completion shall not be construed as acceptance of the works.

"AS-BUILT" SUBMISSION

14. The Owner covenants and agrees to submit to the Municipality the final "as-built" drawings and records of construction, and test results, as accepted by the Municipality's Engineer, pursuant to Schedule "A" of the Municipality's Subdivision Servicing Bylaw, within 60 days of the date of the Letter of Substantial Completion.

MAINTENANCE PERIOD AND RESPONSIBILITY

15. The Owner covenants and agrees to maintain every part of the "Works" in perfect order and in complete repair for a period of one year from the date shown on the certificate of Substantial Completion in accordance with the requirements of the Municipality's Subdivision Servicing Bylaw.

SERVICING AGREEMENT *(continued)*

Should the Owner, for any reason, fail to maintain when ordered, then the Municipality, at it's option, after giving the Owner seven days (7) written notice (emergencies excepted), may do so, and the whole costs, charges and expenses so incurred by the Municipality will be payable by the Owner, as provided herein. The decision of the Municipality's Engineer will be final with respect to the necessity for repairs, or the adequacy of any work done.

CERTIFICATE OF ACCEPTANCE

16. The Municipality covenants and agrees that upon satisfactory completion by the Owner of all of the covenant and conditions in this Agreement, including the maintenance of the works in complete repair for a period of one (1) year, to provide the Owner with a Certificate of Acceptance of the works, signed by the Municipality's Engineer. Notice of acceptance of the work will be issued by the Municipality's Engineer when all deficiencies have been corrected, "As-Built" drawings and service location cards received, and the maintenance period outlined herein has expired. The Certificate of Acceptance will be in the form outlined in Appendix B to the Municipality's Subdivision Servicing Bylaw. All such works and services remain at the risk of the Owner until the "Certificate of Acceptance" for the work has been issued.

FINAL BUILDING INSPECTION

17. The Owner covenants and agrees that the Municipality will withhold the granting of a Final Inspection for the use of any building or part thereof, constructed upon the land until all the essential services herein have been completed to the satisfaction of the Municipality's Engineer.

OWNER INDEMNIFIES

18. The Owner covenants and agrees to save harmless and effectually indemnify the Municipality against:

(a) All actions and proceedings, costs, damages, expenses, claims, and demands whatsoever and whomsoever brought by reason of the execution of the works required by this Agreement. All such claims recoverable from the Municipality or any property which the Municipality by duty or custom is obliged, directly or indirectly, in any way or to any degree, to construct, repair or maintain, during the term of the Owner's work, shall be paid by the Owner, and if recoverable from the Municipality shall, together with any costs and expenses incurred in connection therewith, be charged to and paid forthwith by the Owner.

SERVICING AGREEMENT *(continued)*

(b) All expenses and costs which may be incurred by reason of the execution of the required works by this Bylaw, resulting in damage to any property owned in whole or in part by the Municipality by custom or duty is obliged, directly or indirectly, in any way or to any degree, to construct, repair or maintain, shall be paid by the Owner, and if paid by the Municipality shall, together with any costs and expenses incurred in connection herewith, be charged to and paid forthwith by the Owner.

(c) All expenses and costs which may be incurred by reason of liens for non-payment of labour or materials, Worker's Compensation Board assessments, unemployment insurance, federal or provincial tax, and of encroachments due to mistakes in survey, and all such claims recoverable from the Municipality, or the property of the Municipality, or any property of the Municipality, or any property which the Municipality by duty or custom is duly obliged, directly or indirectly, in any way or to any degree, to construct, repair or maintain, shall be paid by the Owner, and if recovered from the Municipality shall, together with any costs and expenses incurred in connection therewith be charged to and paid forthwith by the Owner.

(d) All expenses and costs which may be incurred by the Municipality as a result of faulty workmanship and defective material in any of the works installed by the Owner.

The above clauses shall not be constructed as to extinguish any rights which the Municipality would have were it not for the inclusion of Clause 17 in this Agreement.

INSURANCE BY OWNER

19. The Owner will at his sole expense throughout the currency of the work carry Comprehensive Liability Insurance acceptable to the Municipality in the amount of at least Five Million Dollars ($5,000,000.00) with insurance companies licensed to carry on business in the Province of British Columbia in partial discharge of its obligation under Clauses 18(a), (b), (c) and (d).

INSURANCE COVERAGE

20. The Owner covenants and agrees to provide the following insurance coverage, and to provide the Municipality with a copy of the insurance policy prior to the commencement of any construction of the works:

(a) To protect the Owner and the Municipality against all claims arising out of:

SERVICING AGREEMENT *(continued)*

i) Death or injury to persons; and

ii) Damage to, or loss of use of, any property of third persons, including without limiting the foregoing; the following classes of property: Real property, chattels, land, works, buildings, structures, wires, conduits, pipes, mains, shafts, sewers, tunnels, and apparatus in connection therewith, even when the damage or loss of use is caused by vibration, moving, shoring, underpinning, raising, rebuilding or demolition of any building, structure or support, or by excavation, tunneling or other work below the surface of the ground or water; and

iii) Damage to or loss of all building, structures, stores, equipment and materials included in or required for the carrying out of the "Works".

(b) Every policy of insurance required will:

i) Name the "City of Enderby" as an additional insured; and

ii) State that policy applies to each insured in the same manner and to the same extent as if a separate policy had been issued to each insured; and

iii) State that the policy cannot be cancelled, lapsed or materially changed without at least thirty (30) days written notice to the Municipality, delivered to the Corporate Administrator.

SECURITY DEPOSIT 21. As security for the due performance of all the covenants and promises contained in this Agreement the Owner has deposited with the Municipality a security deposit in the amount of $_____, in the form of cash or an Irrevocable Letter of Credit acceptable to the Municipality (herein called the "Security Deposit).

FORFEIT OF SECURITY DEPOSIT 22. In the event that the Owner fails to construct and install the Works and Services prescribed herein within the time specified in Clause 8, the said Security Deposit of $_____ will be forfeited to the Municipality.

SERVICING AGREEMENT *(continued)*

DESIGN BOND

23. Where security is provided in lieu of approved working drawings, (hereinafter called a "Design Bond") the Owner agrees to have the working drawings completed to the satisfaction of the Municipality's Engineer within 90 days of the date of this Agreement. Failure to do so will result in forfeiture of the Design Bond in the amount of $ _____ which shall be used by the Municipality to complete the design. Once forfeited, the Design Bond becomes non-refundable in whole or in part.

USE OF SECURITY

24. The Owner agrees that if all works or obligations are not completed, installed or performed pursuant to this Agreement, the Municipality may complete or fulfil the works or obligations at the cost of the Owner and deduct from the security deposit held by the Municipality the cost of such completion, and the balance of the deposit shall be returned to the Owner, less any additional administration fees or costs incurred. If there is insufficient money on deposit with the Municipality then the Owner will pay such deficiency to the Municipality immediately upon receipt of the Municipality's bill for completion. It is understood that the Municipality may do such work either by itself or by Contractors employed by the Municipality. If the works are completed as herein provided, then the deposit shall be returned to the Depositor.

RELEASE OF SECURITY DEPOSIT

25. If the Municipality's Engineer is satisfied that the Owner has complied with the covenants contained in this Agreement and if there is no litigation pending or threatened by any third party against the Municipality as a result of, or arising from the construction of the "Works", the Municipality's Engineer may recommend to the Municipality the return of all, or any portion of the Security Deposit to the Owner at such times and in such amounts as he may deem proper, provided only that it will retain an amount equal to 15% of the Security Deposit, with a minimum of one thousand dollars ($1,000.00) to secure the performance of the maintenance required of the Owner (hereinafter called the "Maintenance Deposit").

RETURN OF MAINTENANCE DEPOSIT

26. If the Municipality's Engineer is satisfied that the Owner has complied with covenants contained in this Agreement and if there is no litigation pending or threatened by any third party against the Municipality as a result of, or arising from the construction of the "Works", the Municipality's Engineer may recommend that the Maintenance Deposit be returned to the Owner and thereinafter the Owner's responsibility for the "Works" shall cease.

SERVICING AGREEMENT ***(continued)***

ADMINISTRATION FEE

27. The Owner covenants and agrees to pay to the Municipality a non-refundable fee in the amount of $_____ to cover administration and processing costs. These fees are payable prior to the signing of this Agreement or the commencement of construction of the works.

INSPECTION FEE

28. The Owner covenants and agrees to pay to the Municipality a non-refundable fee in the amount of $_____ to cover inspection on a periodic basis. These fees are payable prior to the signing of this Agreement or the commencement of construction of the works.

NO OTHER REPRESENTATIONS

29. It is understood and agreed that the Municipality has made no representations, covenants, warranties, guarantees, promises or agreements (verbal or otherwise) with the developer other than those in this Agreement.

COMPLIANCE WITH BYLAWS

30. Subject to this Agreement, the works and the development herein shall comply with all of the Bylaws of the Municipality.

NO WAIVER

31. The Owner covenants and agrees that nothing contained or implied herein shall prejudice or affect the rights and powers of the Municipality in the exercise of its functions under any public and private statues, bylaws, orders and regulations, all of which may be fully and effectively exercised in relation to the said lands as if the Agreement has not been executed and delivered by the Owner.

SERVICING AGREEMENT ***(continued)***

WHENEVER the word "will" is used in this Agreement it will be construed as imperative (mandatory).

WHENEVER the singular or the masculine is used in the Agreement it will be construed as meaning the plural of the feminine or body corporate or politic where the context or the parties hereto so require.

THIS CONTRACT SHALL ENURE TO THE benefit of and be binding upon the parties hereto, their respective successors and assigns.

IN WITNESS WHEREOF the parties hereto have executed this Contract the day and year first above written.

	THE CORPORATE SEAL OF	
FOR CORPORATE BODY	was hereunto affixed in the presence of:	SEAL
	_____	
	Authorized Signatory	
	_____	
	SIGNED, SEALED AND DELIVERED	
FOR PRIVATE INDIVIDUAL	by the above named in the presence of:	
	Name:_____	_____
	Address:_____	Owner's Signature
	_____	
	Occupation:_____	
	SIGNED, SEALED AND DELIVERED	
	THE CORPORATION SEAL OF The City of Enderby	SEAL
	was hereto affixed in the presence of:	
	_____	
	MAYOR	
	_____	
	CLERK	

PERMISSION TO CONSTRUCT

Authorization to proceed with Construction is hereby granted to:

NAME OF DEVELOPER _____

ADDRESS _____

_____

For the Works described generally as:

_____

_____

Authorized Start Date _____ Completion Date _____

Authorized Hours of Work: From _____hrs. to _____ hrs.
Monday to Saturday Inclusive.

Check the following: (All must be completed)

_____ Approved plans covering the works are attached.
_____ Certificates of Insurance are attached.
_____ Administration fee has been paid.
_____ Inspection Fee has been paid.
_____ Security deposit has been paid.
_____ A Servicing Agreement has been completed – No. _____

Design Engineer: _____

Contact: _____

Phone No.: _____ (Bus.) _____ (Res.)

Special Conditions:

_____

_____

_____
FOR MUNICIPALITY

File No. _____

Cc: Contractor

CERTIFICATE OF INSPECTION

I HEREBY certify that all engineering and construction services, required under the Subdivision Servicing Bylaw of the City of Enderby for the subdivision of:

LEGAL DESCRIPTION: _____

PROJECT NO.: _____

Which services were designed by:

NAME OF FIRM: _____

ADDRESS: _____

And approved for construction on drawing numbers:

Drawing Number	Date	Drawing Number	Date
_____		_____	
_____		_____	
_____		_____	

have been installed and inspected by or under the direction of:

_____

_____

I FURTHER CERTIFY that the "Plan of Record" drawings hereby submitted represent the works and services as installed for the aforementioned subdivision.

_____

_____

(Signature and Name of the Professional
Engineer Responsible for design)

ENGINEER'S
SEAL

CERTIFICATE OF COMPLETION

DEVELOPER: _____

CONTRACTOR: _____

_____

_____

PROJECT NO.: _____

SERVICING
AGREEMENT NO.: _____

DATE: _____

This Certificate is issued pursuant to the Subdivision Servicing Bylaw.

The **MAINTENANCE PERIOD** for the Works will begin on _____

The **MAINTENANCE PERIOD** for the Works will end on _____

The attached is a **LIST OF DEFICIENCIES** related to the Works:

The Certificate of Acceptance will be issued when all deficiencies have been cleared, the maintenance period expired, and the Municipal Clerk has been satisfied all conditions of the Servicing Agreement have been fulfilled.

This Certificate has been made to the best of the Engineer's knowledge, information and belief. It does not constitute acceptance of any Work not in accordance with the requirements of the Subdivision Servicing Bylaw, and not listed as a deficiency herein, whether or not such defect(s) could have been observed or discovered during construction.

_____
MUNICIPALITY ENGINEER

Cc: Contractor

CERTIFICATE OF ACCEPTANCE

DEVELOPER: _____

CONTRACTOR: _____

_____

_____

PROJECT NO.: _____

SERVICING
AGREEMENT NO.: _____

DATE: _____

All deficiencies, defects or faults in the Work observed or discovered within the period preceding the date of this Certificate having been rectified, this Certificate is issued pursuant to the Referenced Servicing Agreement.

This Certificate has been made to the best of the Municipal Engineer's knowledge, information and belief. It does not constitute acceptance of any work not in accordance with the requirements of the Servicing Agreement whether or not such defect(s) could have been observed or discovered during construction.

_____
MUNICIPALITY

Cc: Contractor

IRREVOCABLE LETTER OF CREDIT

Date: _____

Bank:_____
BRITISH COLUMBIA

, 2000

City of Enderby
P.O. Box 400
Enderby, B.C.
V0E 1V0

Dear Sirs:

At the request of (Developer), we hereby establish in your favour our irrevocable credit for a sum not exceeding Dollars ($).

This credit shall be available to you by sight drafts on the Bank of (Name/Address) , B.C. when supported by your written demand for payment made upon us.

This Letter of Credit is required in connection with an undertaking by the Developer to perform certain works and services required by you.

We specifically undertake not to recognize any notice of dishonour of any sight draft that you shall present to us for payment under this Letter of Credit. You may make partial drawings or full drawings at any time. We shall honour your demand without inquiring whether you have a right as between yourself and our Customer.

If you have not demanded on this Letter of Credit in full by (expiry date), it will be considered cancelled unless other arrangements or a renewal have been made with the Bank prior to the aforementioned date.

Our references for this Letter of Credit is Bank of (address) , B.C.

LETTER OF CREDIT NO, _____
BANK OF _____

The Developer hereby specifically agrees that it shall not take any action to dispute the validity of this Letter of Credit unless it shall have expired prior to demand.

We hereby agree to indemnify the Bank of against any costs of actions relative to the above. We also authorize the Bank of to make such payments as may be necessary and debit our account.

_____

_____
Developer

RIGHT-OF-WAY AGREEMENT

THIS INDENTURE made the day of , AD, 2000.

BETWEEN:

(Hereinafter called the "Grantor")

OF THE FIRST PART

AND:

City of Enderby
P.O. Box 400
Enderby, B.C.
V0E 1V0

(Hereinafter called the "Grantee")

OF THE SECOND PART

WHEREAS, The Grantor is the registered owner or is entitled to become the registered owner of an estate in fee simple of **ALL AND SINGULAR** those certain parcels or tracts of land and premises situate, lying and being in the City of Enderby, in the Province of British Columbia, and being more particularly known and described as:

(Hereinafter called the "Lands of the Grantor")

AND WHEREAS to facilitate the installation of a system of sewerage Works, and/or waterworks, and/or drainage works, and/or gas works including all pipes, valves, fittings and facilities in connection therewith and/or hydro electric, telephone and/or cablevision, works including all wires, poles, conduits and other facilities in connection therewith:

(Hereinafter called the "Works")

The Grantor has agreed to permit the construction by the Grantee of the aforementioned Works on a portion of the said Land and to grant for that purpose the right-of-way hereinafter described;

RIGHT-OF-WAY AGREEMENT *(continued)*

NOW THEREFORE THIS INDENTURE WITNESSETH that in consideration of the sum of

One ($1.00) Dollar of lawful money of Canada, now paid by the Grantee to the Grantor (the receipt and sufficiency of which is hereby acknowledged by the Grantor) and in consideration of the covenants and conditions hereinafter contained to be observed and performed by the Grantee and for other valuable consideration:

1.0 THE GRANTOR DOTH HEREBY:

1.1 Grant, convey, confirm and transfer, in perpetuity, unto the grantee the full, free and uninterrupted right, license, liberty, privilege, permission and right-of-way to lay down, install, construct, entrench, operate, maintain, inspect alter, remove, replace, bury, cleanse, string, and otherwise establish one or more systems of Works upon, over, under and across that part of the Land of the Grantor as shown outlined in red on Right-of-Way Plan No.

(Hereinafter called the "Perpetual Right-of-Way")

1.2 Covenant and agree to an with the Grantee that for the purposes aforesaid and upon, over , under and across the Perpetual Right-of-Way the Grantee shall for itself and its servants, agents, workmen, contractors and all other licensees of the Grantee together with machinery, vehicles, equipment, and materials be entitled at all times to enter, use, pass and repass, labour, construct, erect, install, dig, carry away soil or other surface or subsurface materials, clear trees, growth, buildings or obstruction now or hereafter in existence, as may be necessary, useful, or convenient in connection with the operations of the Grantee in relation to the Works;

1.3 Grant, convey, confirm and transfer unto the Grantee for itself, and its servants, agents, workmen, contractors and all other licensees of the Grantee together with machinery, vehicles, equipment and materials the right at all reasonable times to enter upon and to pass and repass over such of the Lands of the Grantor as may reasonably be required for the purpose of the ingress to and egress from the Perpetual Right-of-Way;

1.4 Grant, convey, confirm and transfer unto the Grantee for itself, and its servants, agents, workmen, contractors and all other licensees of the Grantee together with machinery, vehicles, equipment and materials for a period of days only from the date of the Agreement, the full free and uninterrupted right, license, liberty, privilege, permission and Right-of-Way to enter upon, pass and repass, clear, labour, and use for the purpose of ingress and egress to and from the Perpetual Right-of-Way and for the purpose of storing machinery, vehicles, equipment, material or supplies used or to be used in connection with the construction of the Works herein described, and for the purpose of placing or storing the surface or sub-surfaced material to be excavated from the Perpetual Right-of-Way upon and over, but not under that part or parts of the Lands of the Grantor, shown outlined in green on Right-of-Way Plan No.

(Hereinafter called the "Working Right-of-Way")

RIGHT-OF-WAY AGREEMENT *(continued)*

Provided always, and it is hereby agreed that nothing herein contained shall permit the Grantee to dig, trench or otherwise disturb the sub-surfaced of the Working Right-of-Way and the Grantee shall only clear such trees and growth and interfere and disturb the surface of the Working Right-of-Way in a manner that is reasonably necessary in the conduct of its operations thereon;

2.0 THE GRANTOR HEREBY COVENANTS TO AND AGREES WITH THE GRANTEE, as follows:

2.1 That the Grantor will not, nor permit any other person to erect, place, install or maintain any building, structure, mobile home, concrete driveway or patio, pipe, wire, or other conduit on, over or under any portion of the Perpetual Right-of-Way so that it in any way interferes with or damages or prevents access to, or is likely to cause harm to Works authorized hereby to be installed in or upon the Perpetual Right-of-Way;

2.2 That the Grantor will not do nor knowingly permit to be done any act or thing which might interfere with or injure the said Works and in particular will not carry out any blasting on or adjacent to the Perpetual Right-of-Way without the consent in writing of the Grantee; provided that such consent shall not be unreasonably withheld;

2.3 That the Grantor will not substantially diminish the soil cover over any of the Works installed in the Perpetual Right-of-Way and in particular, without in anyway limiting the generality of the foregoing, will not construct open drains or ditches along or across any of the Works installed in the Perpetual Right-of-Way;

2.4 That the Grantor will, from time to time and at all times upon every reasonable request and at the cost of the Grantee, do and execute or cause to be made, done or executed all such further and other lawful acts, deeds, things, devices, conveyances and assurances in law whatsoever for the better assuring unto the Grantee of the rights hereby granted.

3.0 THE GRANTEE HEREBY COVENANTS TO AND AGREES WITH THE GRANTOR as follows:

3.1 That the Grantee will not bury any debris or rubbish of any kind in excavations or backfill, and will remove shoring and like temporary structures as backfilling proceeds;

3.2 That the Grantee will thoroughly clean all lands to which it has had access hereunder of all rubbish and construction debris created or placed thereon by the Grantee and will leave such lands in a neat and clean condition;

RIGHT-OF-WAY AGREEMENT *(continued)*

3.3 That the Grantee will, as soon as weather and soil conditions permit, and so often as it may exercise its right of entry hereunder to any of the Lands of the Grantor, replace the surface soil as nearly as may be reasonably possible to the same condition as it was prior to such entry, in order to restore the natural drainage to such lands. **PROVIDED HOWEVER** that nothing herein contained shall require the Grantee to restore any trees or other surface growth but the Grantee shall leave such lands in a condition which will not inhibit natural regeneration of such growth;

3.4 That the Grantee will, as far as reasonably possible, carry out all work in a proper and workmanlike manner so as to do as little injury to the Lands of the Grantor as possible;

3.5 That the Grantee will make good at its own expense all damage or disturbance which may be caused to the surface soil of the Lands of the Grantor in the exercise of its rights hereunder;

3.6 The Grantee will, as far as reasonably possible, restore any fences, lawns, flower beds, at its cost as nearly as may be reasonably possible to the same conditions that they were in prior to any entry by the Grantee upon the Lands;

4.0 THE PARTIES HERETO EACH HEREBY COVENANT TO AND AGREE WITH THE OTHER, as follows:

4.1 The said Works referred to above, together with all pipes, valves, conduits, wires, casings, fittings, lines, meters, appliances, facilities, attachments or devices used in connection therewith shall constitute the Works;

4.2 Notwithstanding any rule of law or equity to the contrary, the Works brought on to, set, constructed, laid, erected in, upon or under the Perpetual Right-of-Way by the Grantee shall, at all times, remain the property of the Grantee notwithstanding that the same may be annexed or affixed to the freehold and shall at any time and from time to time be removable in whole or in part by the Grantee;

4.3 In the event that the Grantee abandons the Works or any part thereof the Grantees may, if it so elects, leave the whole or any part thereof in place;

4.4 That no part of the Title in Fee Simple to the soil shall pass to or be vested in the Grantee under or by virtue of these presents and the Grantee may fully use and enjoy all of the Lands of the Grantor subject only to the rights and restrictions herein contained;

4.5 That the covenants herein contained shall be covenants running with the land and that none of the covenants herein contained shall be personal or binding upon the parties hereto, save and except during the Grantor's seisin or ownership of any interest in the Lands of the Grantor, and with respect only to that portion of the Lands of the Grantor of which the Grantor shall be seized or in which he shall have an interest, but that the Lands of the Grantor, nevertheless, be and remain at all times charged therewith;

RIGHT-OF-WAY AGREEMENT *(continued)*

4.6 If, at the date hereof, the Grantor is not the sole registered owner of the Lands of the Grantor, this Agreement shall nevertheless bind the Grantor to the full extent of his interest in fee simple, this Agreement shall likewise extend to such after-acquired interests;

4.7 Where the expression "Grantor" includes more than one person, all covenants herein on the part of the Grantor shall be construed as being several as well as joint;

4.8 This Agreement shall ensure to the benefit of and be binding upon the parties hereto and their respective heirs, administrators, executors, successors and assigns as the case may be and wherever the singular or masculine is used, it shall be construed as if the plural or the feminine or neuter, as the case may be, had been used, where the parties or the context hereto so require and the rest of the sentence shall be construed as if the grammatical and terminological changes thereby rendered necessary had been made.

IN WITNESS WHEREOF the parties hereto have executed these presents in the manner and on the date hereinafter appearing.

SIGNED, SEALED AND DELIVERED)
by the Grantor this day of)
,2000.)
)
)
_____)
Name)
)
)
_____)
Address)
)
_____)
)
)
_____)
Occupation)
(as to all signatures of Grantor))

RIGHT-OF-WAY AGREEMENT ***(continued)***

THE CORPORATE SEAL OF THE GRANTOR)
was hereunto affixed this day of)
, 2000)
in the presence of:)
)
)
_____)
)
)
_____)

THE CORPORATE SEAL OF THE)
City of Enderby was hereunto)
affixed this day of)
, 2000)
in the presence of:)
)
)
_____)
Mayor)
)
)
_____)
Clerk)

CONSENT TO GRANT OF RIGHT-OF-WAY

KNOW ALL MEN BY THESE PRESENTS that

Is the registered holder of a charge by way of against the within described property which said charge is registered in the Land Title Office,

Under Number(s) . For and in consideration the sum of **One ($1.00) Dollar** paid by the Grantor to the said Chargeholder (the receipt whereof is hereby acknowledged), the said Chargeholder agrees with the Grantor, its successors and assigns, that the within Right-of-Way shall be an encumbrance upon the within described property in priority to the said charge in the same manner and to the same effect as if it had been dated and registered prior to the said charge.

IN WITNESS WHEREOF the parties hereto have caused these present to be signed, sealed and delivered in the presence of its duly authorized officer this day of , 2000.

THE CORPORATE SEAL OF THE GRANTOR was hereunto affixed this day of , 2000, in the presence of:	)	**THE CORPORATE SEAL OF THE CHARGEHOLDER** was hereunto affixed this day of , 2000 in the presence of:
_____	)	_____
_____	)	_____

APPLICATION FOR PRELIMINARY LAYOUT REVIEW

CITY OF ENDERBY

Street Address: 619 Cliff Avenue
Telephone: 250-838-7230
Fax: 250-838-6007

Mailing Address:P.O. Box 400
Enderby, BC
VOE 1VO

File No. _____

Information To Be Supplied by Applicant

DATE OF APPLICATION: _____

OWNERS: Name: _____ Signature: _____

Address: _____

Phone No. _____

APPLICANTS: Name: _____ Signature: _____

Address: _____

Phone No. _____

LEGAL DESCRIPTION OF PROPERTY(S): _____

& CIVIC ADDRESS: _____

NO. OF LOTS PROPOSED: _____ PRESENT LOT SIZE: _____

FEE ENCLOSED: $_____

PROPOSED WATER SUPPLY: _____

PROPOSED SEWAGE DISPOSAL METHOD: _____

PROPOSED STORM DRAINAGE METHOD: _____

PRESENT ZONING: _____

PROPOSED USE: _____

APPLICATION FOR PRELIMINARY LAYOUT REVIEW *(continued)*

IS THE SUBJECT PROPERTY:	YES	NO
– Located in the Agricultural Land Reserve?		
– Adjacent to a controlled access highway (Highway 97A)?		
– Adjacent to a major road designated on the City of Enderby O.C.P.?		
– In a flood plain area or area subject to flood?		
– In a development permit area designated on the City of Enderby O.C.P.?		
IS A WAIVER OF THE MINIMUM LOT FRONTAGE REQUIREMENT OF THE CITY OF ENDERBY ZONING BY-LAW REQUIRED?		
IS A DEVELOPMENT COST CHARGE PAYABLE FOR THIS PROPOSED SUBDIVISION?		
DOES THE DEVELOPER HAVE A COPY OF THE LATEST EDITION OF THE SUBDIVISION SERVICING BYLAW?		

THE APPLICANT SHOULD BE FAMILIAR WITH THE EFFECT THAT ANY OF THE ABOVE MATTERS MAY HAVE ON HIS PROPOSED SUBDIVISION PRIOR TO SUBMISSION OF THIS APPLICATION TO THE APPROVING OFFICER. APPLICANTS ARE URGED TO CONTACT A BRITISH COLUMBIA LAND SURVEYOR OR THE CITY'S PLANNER FOR ASSISTANCE IN THIS REGARD.

IN SUPPORT OF THIS APPLICATION I/WE SUBMIT HEREWITH 10 PRINTS OF A SKETCH PLAN OF SUBDIVISION, DRAWING TO SCALE, SHOWING THE EXISTING AND PROPOSED ROADS AND/OR LOTS TOGETHER WITH A CURRENT STATE OF TITLE CERTIFICATE.

FOR THE INFORMATION OF THE APPLICANT THE PLAN MUST SHOW:

- Dimensions and areas of each proposed lot
- Existing buildings accurately identified and located
- The nature, location and dimensions of any existing or proposed restrictive covenants, easements or right-of-way affecting the proposed subdivision
- Existing and proposed wells and sewage disposal area including soil inspection holes and percolation test holes
- 1 m contour intervals for lands exceeding fifteen percent slope
- An accurate illustration of all lakes, rivers and drainage courses including high water marks

APPLICATION FOR PRELIMINARY LAYOUT REVIEW *(continued)*

THIS SUBDIVISION APPLICATION MAY BE CIRCULATED TO THE FOLLOWING AGENCIES FOR THEIR COMMENTS:

Public Works Superintendent		N.O.H.U.	
B.C. Hydro		Ministry of Environment	
B.C. Tel		A.P.C.	
B.C. Gas		N.O.R.D. Dev. Services Dept.	
Cable Television Company		Regional Fire Inspector	
Improvement District		Canada Post	
M.O.T.H.		B.C.A.A.	
Ministry of Forests			

AGENCIES RECEIVING A COPY OF THIS PROPOSED SUBDIVISION ARE HEREBY REQUESTED TO PROVIDE COMMENTS TO_____ APPROVING OFFICER, CITY OF ENDERBY, BOX 400, ENDERBY, B.C. V0E 1V0. IF WE DO NOT RECEIVE A REPLY FROM YOUR OFFICE BY _____, WE WILL ASSUME THAT YOU AGREE WITH THE PROPOSED SUBDIVISION.

COMMENTS: _____

_____

_____

_____

_____ _____ _____

Signature Position Phone Number

FOR OFFICE USE ONLY **FILE NO. _____**

DATE APPLICATION RECEIVED: _____ N.O.R.D. FILE NO. _____

APPLICATION FEE OF $ _____RECEIVED BY: _____

ASSESSMENT ROLL NO. _____ AIR PHOTO NO. _____ MAP NO. _____

APPLICATION FOR PRELIMINARY LAYOUT REVIEW *(continued)*

CONDITIONS PRECEDENT TO SUBDIVISION APPROVAL:

	YES	NO	N/A
Conform with zoning by-law requirement (lot area/frontage, setbacks)			
Approved by Public Works Superintendent?			
Approved by S.C.A.L.C.?			
Approved by M.O.T.H.? (Re: C.A.H.)			
Approved by N.O.H.U.? (Re: sewage disposal)			
Approved by Ministry of Environment? (Re: flood plain)			
Approved by Trustees of any Improvement District?			
Approved by Council? (Re: waiver of lot frontage requirement)			
Road dedication (widening) including major roads 12.5 m from centre line?			
Development Cost Charges paid?			
Development Permit issued by Council?			
Covenant _____ Easement _____ Right-of-way _____ required?			
Dedication of Access to Lands Beyond required? (Section 75(1) (a) LTA)			
Dedication of Access to Navigable Water required? (Section 75 (1) (b) & (c) LTA)			
Final Subdivision Approval Fee paid?			

APPLICATION FOR FINAL SUBDIVISION APPROVAL

I/We hereby apply for Final Subdivision Approval for a subdivision property described as

(insert legal description) _____

and located at (street address or general location)

_____

into (insert number of parcels) _____

Required application fees of $ _____ required under Section 8.0 is attached.

_____ _____
(Date) (Applicant's Signature)

THIS APPLICATION IS MADE WITH MY FULL KNOWLEDGE AND CONSENT

_____ _____
(Date) (Registered Owner's / Authorized Signatory's Signature)

Where the Applicant is **NOT** the REGISTERED OWNER the Application must be signed

- In the case of an individual person or persons, by every REGISTERED OWNER or the Registered Owner'' SOLICITOR
- in the case of a Corporation, by the Corporation's AUTHORIZED SIGNATORY or SIGNATORIES.

FOR OFFICE USE ONLY

APPLICATION FEE $_____ RECEIVED

RECEIPT NO. _____ FOLIO NUMBER _____

_____ _____
(DATE) (SIGNATURE OF OFFICIAL)

LATECOMER AGREEMENT

THIS AGREEMENT dated for reference the day of , 2000.

BETWEEN:

City of Enderby
P.O. Box 400
Enderby, B.C.
V0E 1V0

(the "Municipality)

OF THE FIRST PART

AND:

(Insert name and address of Developer)

(the "Developer)

OF THE SECOND PART

GIVEN THAT:

A. The Developer has applied to the Municipality to develop the lands herein defined and is in accordance with the Municipality's subdivision bylaw providing water, sewage, drainage, or highway facilities, or a combination of such facilities, that will serve the lands;

B. A portion of the water, sewage, drainage, or highway facilities (herein defined as "**excess or extended services**") will serve the **benefiting lands** herein defined, which **benefiting lands** do not include the **lands**;

C. The Municipality considers that its costs to provide the **excess or extended services** in whole or in part are excessive, and requires the Developer, as owner of the **lands**, and the owners of any other land that, in the opinion of the Municipality, will benefit from the **excess or extended services,** to pay the cost of the **excess or extended services**;

D. The Municipality is authorized to enter into this Agreement under Section 939 of the *Local Government Act;*

LATECOMER AGREEMENT *(continued)*

E. The Council of the Municipality has by way of Bylaw No. , as amended or replaced from time to time, set the rate of interest referred to under Section 939(8) of the *Local Government Act* and in paragraph 3 of this Agreement;

NOW THEREFORE THIS AGREEMENT WITNESSES THAT in consideration of the mutual covenants and agreements made by each of the parties to the other as set out in this Agreement, and for other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Municipality and the Developer covenant and agree as follows:

Interpretation

1. In this Agreement

(a) **"benefiting lands"** means the lands other than the lands that:

(i) in the opinion of the Municipality, will be served by the **excess or extended services,** which **benefiting lands** are, subject to paragraph 1(a)(ii), legally described on Appendix A, and

(ii) are connected to the **excess or extended services** after **completion** of those **excess or extended services;**

(b) **"completion"** means the date that is the later of

(i) 21 days after written acceptance by the Municipality of a written statement from the Developer's professional engineer certifying the final costs of the **excess or extended services;** and

(ii) the issuance of a Certificate of **Completion** signed by the Municipality's Representative certifying that the **excess or extended services** have been completed to the standards and specifications set out in the bylaws of the Municipality such that the **excess or extended services** have been fully tested, are functional, and can be used for their intended purpose, all to the satisfaction of the Municipality;

(c) **"excess or extended services"** means any combination, described in Appendix B, of a portion of a:

(i) highway system constructed by the Developer that will in the opinion of the Municipality provide access to the **benefiting lands,** or

(ii) water, sewage, or drainage system constructed by the Developer that will serve the **benefiting lands;**

LATECOMER AGREEMENT *(continued)*

(d) **"lands"** means those certain lands legally described on Appendix C and owned by the Developer in respect of which the Developer is constructing highway, water, sewage, or drainage systems, a portion of which systems constitutes the **excess or extended services** that will serve the **benefiting lands.**

Charges for Latecomer Connections or Use

2. The Municipality must pay to the Developer charges imposed by the Municipality under Section 939(5)(c) of the *Local Government Act* and described on Appendix D, only if and to the extent the charges are paid by the owners of **benefiting lands** and collected by the Municipality during the period commencing on **completion,** up to the date that the connection is made or the use commences, and if paid by the owners of **benefiting lands** and collected by the Municipality during the period referred to in paragraph 2, the interest shall be paid to the Developer.

Interest

3. There shall be included in the charge payable by the owner of **benefiting lands** under Section 939(5)(c) interest calculated annually at a rate prescribed by a **bylaw** of the Municipality, payable for the period commencing on **completion**, up to the date the connection is made or the use commences, and if paid by the owners of benefiting lands and collected by the Municipality during the period referred to in paragraph 2, the interest shall be paid to the Developer.

Assignment or Transfer of Developer's Rights

4. In the event of the assignment or transfer of the rights of the Developer voluntarily, or by operation of law, the Municipality may pay any benefits accruing under this Agreement, after notice, to such successor of the Developer as the Municipality, in its judgement, deems entitled to such benefits. In the event of conflicting demands being made on the Municipality for benefits accruing under this Agreement, then the Municipality may at its option commence an action in interpleader joining any party claiming rights under this Agreement, or other parties which the Municipality believes to be necessary or proper, and the Municipality shall be discharged from further liability on paying the person or persons whom the court having jurisdiction over such interpleader action shall determine, and in such action the Municipality shall be entitled to recover it's reasonable legal fees and costs, which fees and costs shall constitute a lien upon all funds accrued or accruing pursuant to this Agreement.

Indemnity

5. The Developer covenants not to sue the Municipality, its Administrators, successors, assigns, officers, agents, employees, servants, tenants, solicitors, consultants, and anyone else for whom the Municipality is in law liable, by reason of or arising out of or in any way connected with any error, omission, or conduct of the Municipality in relation to the **excess or extended services,** including, without the generality of the foregoing, a failure of the Municipality to pass a resolution, enact a bylaw, enter into an Agreement, impose a charge, calculate a charge correctly, or collect a charge under Section 939 of the *Local Government Act.*

LATECOMER AGREEMENT *(continued)*

Termination

6. This Agreement shall expire and shall be of no further force and effect for any purpose on the earlier of:

   (a) the payment of the **latecomer charge** or charges by the Municipality to the Developer for all the **benefiting lands** under paragraph 2 and 3 of this Agreement; or

   (b) (insert the date set out in Paragraph 2).

   and thereafter the Municipality shall be forever fully released and wholly discharged from any and all liability and obligations hereunder this Agreement, or howsoever arising pertaining to the **latecomer charges,** and whether arising before or after the expiry of this Agreement.

7. Paragraph 5 to 16 shall survive the termination of this Agreement.

Developer Representation and Warranty

8. The Developer represents and warrants to the Municipality that the Developer has not received, claimed, demanded, or collected money or any other consideration from the owners of the **benefiting lands** for the provision, or expectation of the provision of the **excess or extended services,** other than as contemplated and as provided for under this Agreement; and further represents and warrants that the Developer has not entered into any Agreement with the owners of the **benefiting lands** for consideration in any way related to or connected directly or indirectly with the provision of the **excess or extended services.**

Miscellaneous

9. Time is of the essence.

10. Any notice required by this Agreement will be sufficiently given if delivered by courier or registered mail to the parties at the addresses first above written.

11. This Agreement will enure to the benefit of and be binding on the parties hereto and their respective successors and assigns.

12. This Agreement shall be governed by the laws of the Province of British Columbia.

13. This Agreement constitutes the entire Agreement between the Municipality and Developer with regard to the subject matter hereof and supersedes all prior agreements, understandings, negotiations, and discussions, whether oral or written of the Municipality with the Developer.

14. No amendment or waiver of any portion of this Agreement shall be valid unless in writing and executed by the parties to this Agreement. Waiver of any default by a party shall not be deemed to be a waiver of any subsequent default by that party.

LATECOMER AGREEMENT ***(continued)***

15. A reference in this Agreement to the Municipality or the Developer included or permitted assigns, heirs, successors, officers, employees, and agents.

16. The Developer represents and warrants to the Municipality that:

    (a) all necessary corporate actions and proceedings have been taken by the Developer to authorize its entry into performance of the Agreement;

    (b) upon execution and delivery on behalf of the Developer, this Agreement constitutes a valid and binding contractual obligation of the Developer;

    (c) neither the execution and delivery, nor the performance, of this Agreement shall breach any other Agreement or obligation, or cause the Developer to be in default of any other Agreement or obligation, respecting the Lands; and

    (d) the Developer has the corporate capacity and authority to enter into and perform this Agreement.

IN WITNESS WHEREOF the parties hereto have executed this Agreement as of the year and date first above written.

SIGNED, SEALED AND DELIVERED by the)
(DEVELOPER) in the presence of)
) c/s
)
_____)
Name (Authorized Signatory))
)
)
_____)
Name (Authorized Signatory))

SIGNED, SEALED AND DELIVERED by the)
City of Enderby in the presence of)
) c/s
)
_____)
Name)
)
)
_____)
Name)

APPENDIX A to LATECOMER AGREEMENT

[insert legal descriptions of lands (other than the lands)
considered by the Municipality to benefit
from the **excess or extended services,**
subject to paragraph 1(a)(ii)]

APPENDIX B to LATECOMER AGREEMENT

[insert description, including standards, specifications,
and location, of **excess or extended services]**

APPENDIX C to LATECOMER AGREEMENT

[insert legal description of **lands**]

APPENDIX D to LATECOMER AGREEMENT

The charges imposed by the Municipality for the purposes of paragraph 2 will, in respect of a particular parcel of the **benefiting lands,** be based on the following formula:

$$\frac{\text{[Parcel NDA]}}{\text{[}\textbf{benefiting lands}\text{ NDA]} + \text{[}\textbf{lands}\text{ NDA]}} = \text{[}\textbf{excess or extended services}\text{ cost]}$$

where

"excess or extended services cost**"** means the cost accepted under paragraph 1(b);

"NDA" means Net Developable Area, being the gross area of the parcel less areas to be dedicated for highway or park purposes and areas in respect of which statutory rights of way, easements, or fee simple will be granted to a government or crown corporation for utility purposes;

provided that the Municipality will not charge the owner of a parcel of the **benefiting lands** in respect of the connection to water or sewer **excess or extended services** of the first single family residential dwelling on that parcel to be so connected.

CITY OF ENDERBY

SUBDIVISION SERVICING AND DEVELOPMENT BYLAW

APPENDIX "C"

ADMINISTRATIVE PROVISIONS

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1. APPLICATION OF SUBDIVISION - PROCESS

1.1 Preliminary Discussions and Bylaw Review

The applicant should hold preliminary discussions with the Approving Officer. The Approving Officer uses this opportunity to assess the feasibility of the proposal in terms of the requirements of the City Zoning, Official Community Plan and Subdivision and Development Bylaw. The Approving Officer should confirm that the applicant has a copy of the latest edition of the Subdivision Servicing Bylaw in his/her possession.

1.2 Preliminary Layout Review (PLR)

The applicant makes application for Preliminary Layout Review on the prescribed forms together with the application fee and a minimum of 10 copies of the proposed subdivision plans required for the referral process.

1.3 Technical Review

The Approving Officer proceeds with the review if all the necessary information has been submitted. To facilitate the Approving Officers review, the applicant should provide information regarding servicing and utility requirements including roads, water, sanitary sewer, storm sewer, electrical / street lighting, telephone / cablevision and natural gas.

1.4 Referrals

The Approving Officer refers the application and results of his/her review to the relevant agencies detailed in the Preliminary Layout Review Application form.

1.5 Conditional Approval or Refusal

The Approving Officer advises the applicant if the application has been either denied or granted conditional approval. If granted, conditional approval is valid for a period of 180 days with the possibility of extension for an additional 180 days.

In the event that works and services are required, 2 sets of detailed engineering drawings for review by the City's Public Works Superintendent who may choose to consult with the City's consulting engineering firm.

1.5.1 If Construction is to Proceed Immediately

a) Once the detailed design drawings have been approved, the Approving Officer issues "Permission to Construct" on the prescribed form and ensures receipt of:

- Certificate of Insurance detailing level of insurance, names insured, coverage as outlined in Sections 19 and 20 of the Standard Servicing Agreement form;

- Payment of Administration and Inspection Fees. Note that Subdivision application fees are not refundable;

- Security deposit if subdivision approval required prior to completion of works.

At this stage the applicant shall engage a registered BC Land Surveyor to perform all legal surveys and prepare the subdivision plan and all utility easement plans for registration.

b) Construction/Inspection of Works

The applicant proceeds with the construction of works.

c) Certificate of Completion

Once construction of the works is complete, the applicant must provide the following:

- Evidence of substantial completion;
- As-built drawings;
- Service utility cards;
- Certificate of Inspection by the applicant's engineer on the prescribed form;
- Conveyance to the Municipality all right, title and interest of the applicant in the works;
- Executed right-of-way agreements as required.

On review of the above, the City will issue the Certificate of Completion on the prescribed form defining the Maintenance Period for the works and a list of deficiencies as applicable. The Approving Officer may require the applicant to provide a Maintenance Bond valued at ten percent (10%) of the total construction cost and valid for a period of one (1) year from the date of construction completion.

d) Final Subdivision Approval

The Approving Officer either grants Final Approval or notifies the applicant in writing that Final Approval is being withheld and the reasons. Final Approval may be withheld at this stage for the following reasons only:

- The completed works are not constructed as per the plans submitted to the City;
- Taxes and charges have not been paid.

e) Registration of Subdivision

Once plans have been signed by the Approving Officer they are returned to the applicant who makes submission to the Land Title Office for registration.

1.5.2 If Construction is not to Proceed Immediately

a) In the event the applicant does not plan to proceed with the work immediately but requires Final Subdivision Approval, the process is the same as above with the applicant entering into a Servicing Agreement on the prescribed forms.

2. CONSTRUCTION OF HIGHWAYS

The Municipality shall permit the Developer to layout, construct and erect works and coordinate the installation of the private utility works in the highways to be dedicated by the subdivision plan, subject to the terms and conditions hereinafter provided in General Provisions and subject to all Provincial statutes and regulations governing construction and the use of highways.

3. SUBDIVISION PLAN

The Developer shall be solely responsible for the preparation of subdivision plans and for the registration of the approved subdivision plans in the Land Title Office at Kamloops, B.C. In no case shall a single phase of development be approved unless the tentative subdivision plan for the entire development has been submitted to and approved by the Approving Officer.

The Developer shall forward to the Municipality a copy of the approved and registered subdivision plan once it has been registered at the Land Title Office in Kamloops, B.C.

The Developer shall forward to the Municipality a copy of the approved prospectus once it has been registered with the Superintendent of Brokers, Insurance and Real Estate.

4. INSPECTION

The Developer's consulting engineer, at the Developer's expense, shall provide full inspection services for all works installed by the Developer or his contractors and shall ensure that all works are constructed and installed in accordance with the standards and specifications contained in this Bylaw. The consulting engineer shall file all his inspection reports with the Approving Officer, who may refuse to accept such report if there is reason to doubt the adequacy of such inspection. Should such report in the opinion of the Approving Officer be unsatisfactory, the Municipality may carry out full inspections at the cost of the Developer.

The Municipality shall appoint its own inspectors to inspect the Developer's works from time to time, the cost of which is covered by inspection fee charge to the Developer. Any inspection carried out by the Municipality shall, in no way, relieve the Developer of any obligations or responsibility whatsoever in connection with the installation of the works of the subdivision. If the Municipality discovers any defect or requires any correction, the matter shall be reported to the Developer's inspector for appropriate action. The Municipality shall not issue any direct order to the Developer's contractor except in the case of emergency. Request from the Municipality to the Developer's inspector shall be acted on immediately.

5. FINAL INSPECTION

Within 12 months of the issuance of the Certificate of Completion, the Approving Officer will reinspect the works accepted and shall give notice to the Developer of any deficiencies and damage, not resulting from normal wear and tear of operation, the Developer shall forthwith correct the deficiencies and repair the damage. If the damage or deficiencies are not repaired or corrected forthwith upon written notice of the same, then the necessary repair and corrections may be done by the Municipality at the expense of the Developer.

6. WAIVER

Where, because of the size, location or service requirements of any subdivision, the services of a professional engineer is not required, in the opinion of the Approving Officer, the provisions set out above dealing with the engineering drawings, construction and inspection of works are not applicable and may be waived by the Approving Officer.

7. INDEMNITY AND INSURANCE

The Developer shall save harmless and effectually indemnify the Municipality against:

(a) All actions and proceedings, costs, damages, expenses, claims, and demands whatsoever and whomsoever brought by reason of the execution of the said works and all such claims recoverable from the Municipality or the property of the Municipality, or any property which the Municipality by duty or custom is obliged, directly or indirectly, in any way or to any degree, to construct, repair or maintain, shall be paid by the Developer, and if paid by the Municipality shall, together with any costs and expense incurred in connection therewith, be charged to the Developer.

(b) All expenses and costs which may be incurred by reason of the execution of the said works resulting in damage to any property owned in whole or in part by the Municipality for which the Municipality by custom or duty is obliged, directly or indirectly, in any way or to any degree, to construct, repair or maintain, shall be paid by the Developer, and if paid by the Municipality shall, together with any costs and expense incurred in connection therewith, be charged to the Developer.

(c) All expenses and costs which may be incurred by reason of liens for non-payment of labour or materials, Workers' Compensation assessments, unemployment insurance, federal or provincial tax, check-off and for encroachments owing to mistakes in survey, and all such claims recoverable from the Municipality or the property of the Municipality, or any property which the Municipality by duty of custom is obliged, directly or indirectly, in any way or to any degree, to construct, repair or maintain, shall be paid by the Developer, and if recovered from the Municipality shall, together with all costs and expenses incurred in connection therewith, be charged to the Developer. Provided this paragraph shall not be construed as to extinguish any rights which the Municipality would have were it not for the inclusion of this paragraph.

(d) The Developer shall, at his sole expense throughout the currency of the work, carry comprehensive liability insurance in the amount of at least Five Million ($5,000,000.00) Dollars with insurance companies licensed to carry on business in the Province of British Columbia and in every such policy of insurance the Municipality shall be named as an additional insured with proceeds payable as the interest of the Municipality and Developer may appear. The Developer shall forthwith, and prior to commencement of the work, furnish the Municipality with a certified copy of every policy of insurance herein required.

8. OVERSIZE WORKS

It is recognized that large diameter trunk service mains may be required to pass through a subdivision in order to service properties beyond the subdivision boundaries. In addition, extra street widths may be required to accommodate future anticipated traffic flow thorough the subdivision or around the perimeter roads. The following are therefore set as standard sizes and depths for service mains and road widths, the cost of which are to be the responsibility of the Developer and the difference in cost between actual sizes, depths or widths required may be paid by the Municipality in compliance with the Municipal Act to the Developer or by the Developer to the Municipality depending upon the installing agency at the current rates determined on the basis of such costs to the Municipality in the year of installation.

(a) Sanitary Sewer

The standard size shall be up to and including 250 mm diameter. Standard depth shall be up to and including 4.5 metres from centreline of the finished road surface to pipe invert. No compensation shall be paid to the Developer if the depth of a sanitary sewer required to service his own subdivision exceeds 3.5 metres or exceeds 250 mm diameter.

(b) Water Mains

The standard size shall be up to and including 200 mm diameter, standard depth shall be up to 3.5 metres of cover. Waterworks fittings and valves shall be standard up to and including 200 mm diameter. All fire hydrants, valves and leads are to be supplied at the sole cost of the Developer. No compensation shall be paid to the Developer if the size of the water main required to service his own subdivision exceeds 200 mm diameter or the depth of cover exceeds 3.5 metres.

(c) Storm Sewers

The standard main size shall be up to and including 600 mm diameter. Standard depth shall be up to and including 4.5 metres from centreline of the finished road to pipe invert. No compensation shall be paid to the Developer if the storm sewer exceeds 4.5 metres in depth or 600 mm in diameter in order to service his own subdivision.

(d) Road Allowance

The standard width shall be 20 metres. Additional right-of-way required over and above the 20 metre width to accommodate the arterial or collector streets within the subdivision may be paid by the Municipality at the unit price per hectare as agreed upon or upon failure to agree, as set by arbitration pursuant to the Arbitration Act.

Where a cut of fill slope exceeds 1.5 m in vertical freight, the Approving Officer may require additional road widths to be provided at no cost to the Municipality.

(e) Street Width

The standard width from curb face to curb face shall be up to and including 13.5 metres. Additional road widths required by the Municipality for additional traffic lanes shall be paid for by the Municipality at the unit price paid by the Municipality for such work in that construction season.

(f) Special Structures

Special structures or works such as pumping stations or outfalls may be submitted for consideration for cost sharing if the said structures or works are to be used to service lands outside the subdivision. The cost sharing formulae shall be negotiated and agreed between the Developer and the Municipality prior to any works in the subdivision being commenced.