SCHEDULE H

REGULATIONS, STANDARDS AND SPECIFICATIONS FOR THE INSTALLATION OF STREET LIGHTING

This is Schedule H of the Corporation of the Village of Lytton Subdivision and Development Servicing Bylaw No. 483, 1998.

Clerk

SCHEDULE H

REGULATIONS, STANDARDS AND SPECIFICATIONS FOR THE INSTALLATION OF STREET LIGHTING

H - 1.0 GENERAL

H - 1.01 Street Lighting To Be Provided By Owner

Where the provisions of Schedule A require the provision of street lighting, the Owner shall provide street lighting including all service wiring, bases, poles, luminaires, lamps, photo cells, control equipment and all related appurtenances consistent with the regulations, standards and specifications set out in this Schedule and the requirements of the Provincial Inspector of Electrical Energy.

H - 1.02 Approval of Engineering Drawings Required Prior To Construction

Engineering drawings showing detailed design of the necessary works, together with technical specifications shall be approved in writing by the Approving Officer before commencement of construction.

The street lighting system shall be designed in accordance with the Canadian Standard Practice For Street and Highway Lighting.

H - 1.03 Permit Fees To Be Paid By Owner

The Owner shall be responsible for obtaining all required electrical permits, arranging for all electrical inspections covering his work and paying all fees for such permits. A copy of the permits are to be submitted to the Village at the time of application for final approval.

H - 2.0 DESIGN CRITERIA

H - 2.01 Levels of Illumination

The average levels of illumination in lux shall be as described in Table H.1:

TABLE H.1

ILLUMINATION FOR VARIOUS HIGHWAY CLASSIFICATIONS

	Residential Areas	Commercial and Industrial Areas
.1 Arterial	10.0	21.5
.2 Collector	6.5	11.0
.3 Local & Cul-de-Sac	4.5	10.0

The maximum uniformity ratio for local residential highways shall be 6:1; all other highways shall be 3:1.

H - 2.02 Pole Locations

In general, poles shall be installed as follows:

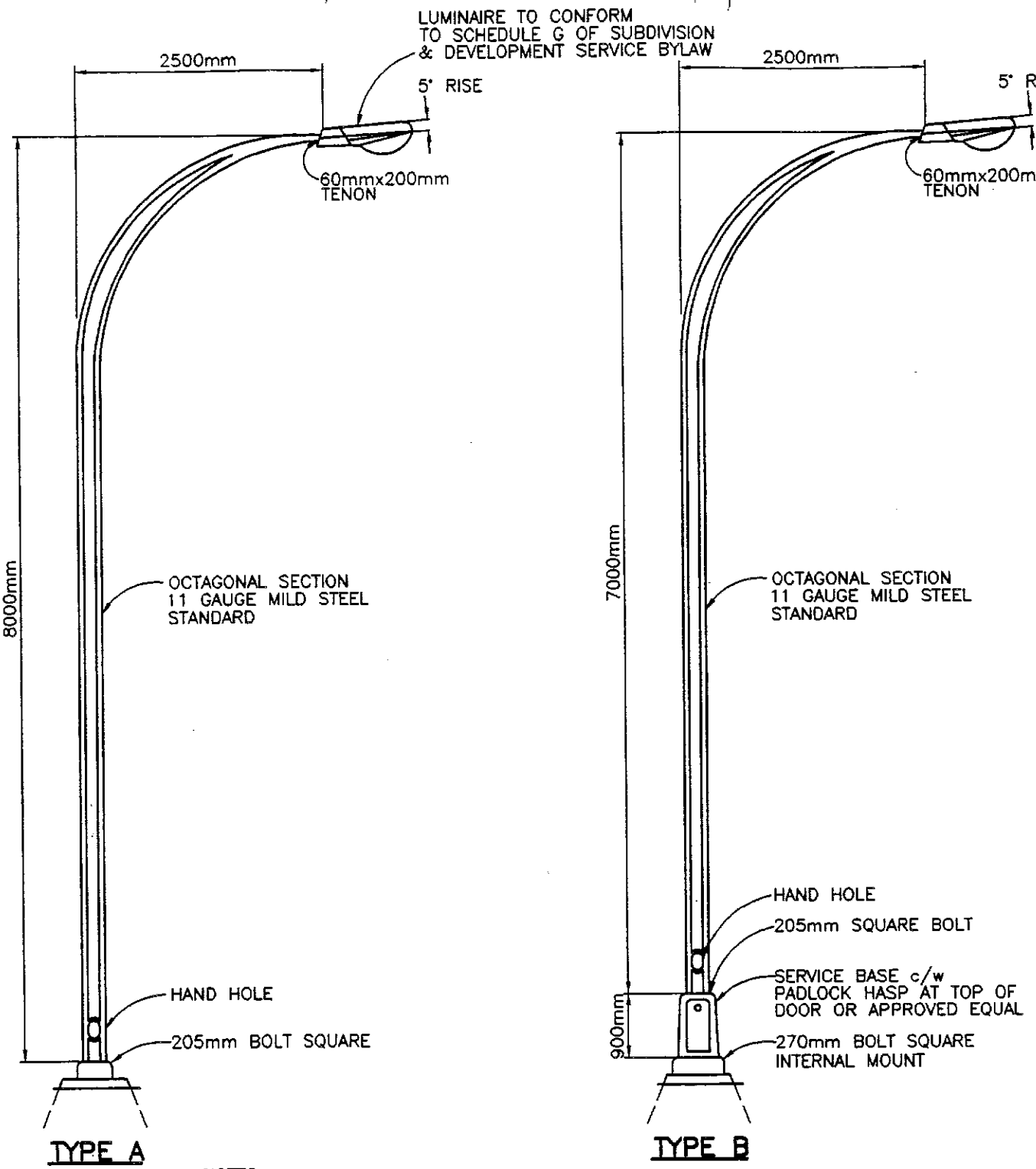
.1 Downtown Commercial - opposite or staggered spacing;
.2 Industrial - spaced one side; and
.3 Local & Cul-de-Sac - spaced one side of streets behind the sidewalk.

Poles shall be located within 0.6 metres of the property corners and shall be checked for conflict with driveways, underground services and fire hydrants.

H - 2.03 Rules and Regulations

Equipment, installation, wiring methods, and materials used shall be in accordance with the latest edition, including amendments, of the Rules and Regulations for the installation and maintenance of electrical equipment as issued by the Province of British Columbia and all bulletins issued thereto. Work shall also be in accordance with all applicable Municipal codes and regulations, Provincial Statutes in effect at the site, and the Fire Marshall and Workmen's Compensation Acts, hereinafter called the Rules and Regulations.

Wherever the drawings or specifications call for material, workmanship, arrangement or construction of a superior quality than is required by the rules and regulations, the drawings and specifications shall prevail. Otherwise, should there be a conflict between the rules and regulations and the drawings and specifications, the rules and regulations shall prevail. The Owner shall obtain, and pay for all permits, and arrange for all electrical inspections covering his work, and pay all other fees and charges, and make



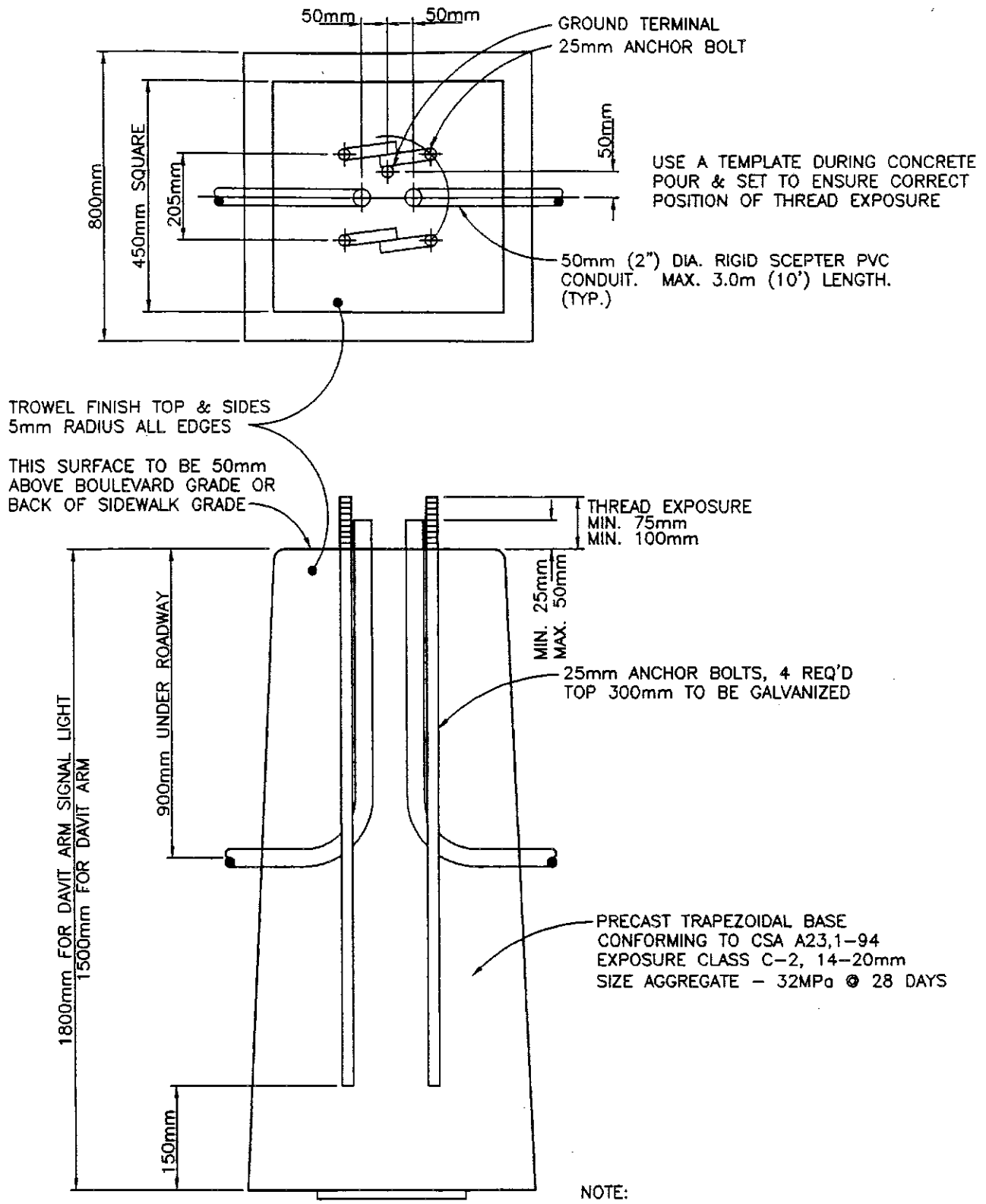
NOTES:

1. POLES AND SERVICE BASES TO BE HOT DIPPED GALVANIZED AT FACTORY NO PAINTING IS PERMITTED.
2. BASE BOLT COVERS TO BE USED ON TYPE 'B' POLES ONLY.

PLOT DATE: 98/04/30 10:55am RH

PROJ. CAD FILE No.: J:\STDDET\LYTSTD\H-1.DWG

VILLAGE OF LYTTON	SCALE: NOT TO SCALE	TITLE: DAVIT STREET LIGHTS	
	DATE DRAWN: MAR. 1998 / LATEST REVISION DATE: MAR. 1998		
	APPROVED BY: Madiq	SECTION: SCHEDULE H STREET LIGHTING	REVISION No. 0 / DWG.No. H-1



NOTE:
STRUCTURAL (CIVIL) ENGINEER SHALL MODIFY BASE REQUIREMENTS TO COMPENSATE FOR SITE SOIL CONDITIONS.

PLOT DATE: 98/04/30 11:00am RH

PROJ. CAD FILE No.: J:\STDDET\LYTSTD\H-2.DWG

VILLAGE OF LYTTON	SCALE: NOT TO SCALE	TITLE: STREET LIGHT ANCHOR BASE FOR TYPE 'A' POLES	
	DATE DRAWN: MAR. 1998 / LATEST REVISION DATE: MAR. 1998		
	APPROVED BY:	SECTION: SCHEDULE H STREET LIGHTING	REVISION No. 0 / DWG No. H-2

all deposits that are in any way connected with the installation of the systems specified as shown on the Drawings. He shall give all necessary notices to authorities having jurisdiction, and shall be responsible for keeping all applicable public ordinances.

Scheduling B.C. Hydro and Power Authority shall be the Owner's responsibility. Systems shall be compatible with power services available. Where costs are incurred with B.C. Hydro and Power Authority in installing the light system, these shall be considered as part of the cost of the system.

Before acceptance of any part or all of the system, it shall meet the requirements of Schedule J. As-built drawings of the street lighting system shall be furnished to the Approving Officer prior to acceptance. The information shown shall be pole locations and locations of all conduits, together with any other pertinent information.

Before acceptance of any work by the Approving Officer, he shall have received a Certificate of Inspection by the governing electrical authorities showing that the installation is unconditionally approved.

H - 2.04 Connection to Utility

An allowance for a minimum of 8 street lights per electrical connections shall be made and future extension of the street lighting system should accommodate this requirement.

Each connection to B.C. Hydro will be made to a service box located at a lamp standard as shown on the applicable Standard Drawings.

H - 3.0 MATERIALS

H - 3.01 General

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.

H - 3.02 Street Light Poles

Poles shall be as shown on the Standard Drawing and shall be a minimum 11 gauge octagonal steel anchor base type with a 2.5 m davit and a minimum height of 8 m for local highways as shown on the applicable Standard Drawings. Poles shall be complete with anchor bolts, nuts and nut covers, handhole and water tight cover assembly, grounding stud and fuse and terminal block assembly as shown on the Standard Drawing. Poles shall be factory hot dipped galvanized coat in accordance with CAN/CSA-S16.1 and CAN/CSA-G164.

H - 3.03 Conductors

All conductors shall be copper and if larger than 10 AWG shall be stranded.

All insulated conductors shall be colour coded . White shall be used for the mutual conductor.

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 conductor be less than 10 AWG.

H - 3.04 Conduit

Rigid PVC conduit shall be acceptable provided that it bears a CSA Certification label and all fittings shall be CSA Certified. PVC conduit shall be installed in strict accordance with the Manufacturer's recommendation, using CSA certified cement. The conduit shall not be bent in the field. Only factory bends shall be acceptable. The minimum conduit size shall be 32 mm diameter.

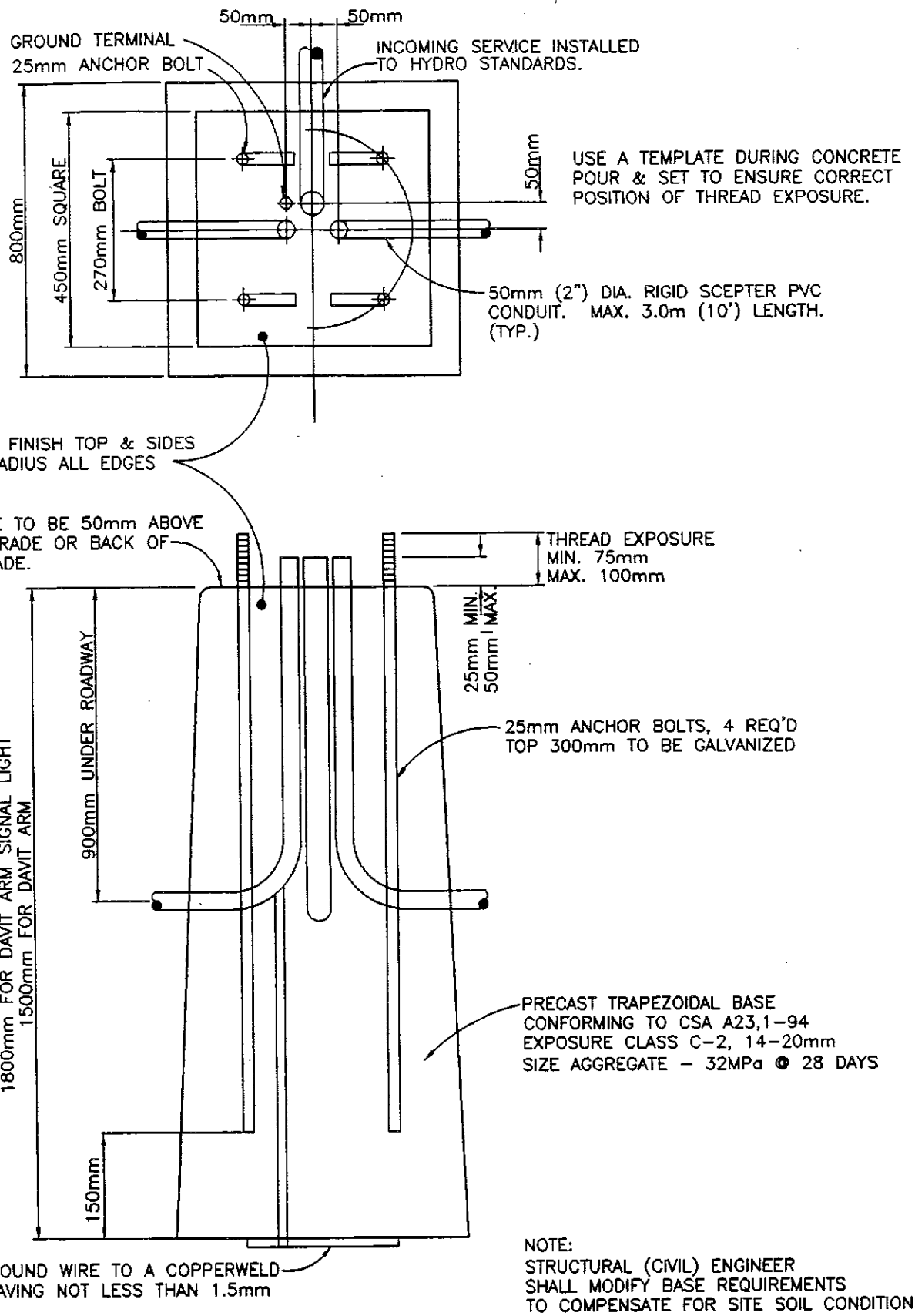
H - 3.05 Luminaries and Lamps

Luminaries shall be High Pressure Sodium Cobra Head Fixtures, 100 watt Landmark 100 – L2HS100P2V, 120/240 volt for local roads and 150 watt Landmark 150-L2HS150P2Y, 120/240 volt on collector and arterial roads, or as otherwise approved by the Approving Officer. Photocells shall be Fisher Pierce 6660 or 6690 or equivalent. There shall be one photocell per luminaire.

On local and cul-de-sac highways, a Cooper Industries Crouse-Hinds Lighting Promenade Type PR, 100 watt, HPS Post Top, poly carbonate, type 3 distribution luminaire may be used. Photocells shall be Fisher Pierce 6660 or 6690 or equivalent. There shall be one photocell per luminaire.

H - 3.06 Junction Boxes

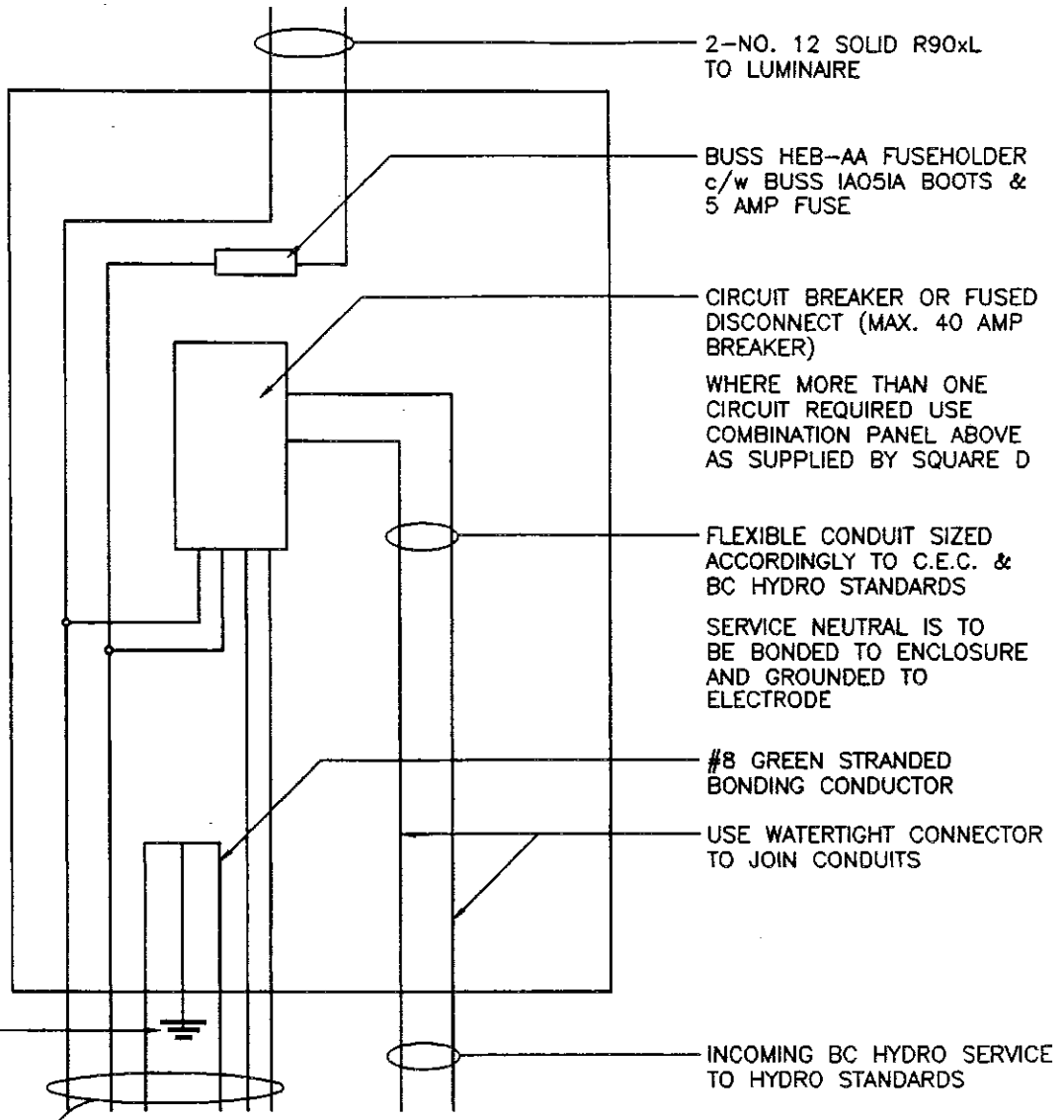
Junction boxes shall be PVC or concrete as shown on the Standard Drawing. PVC boxes with street lids shall be used in sidewalk areas only. Concrete boxes with street lids shall be used in all areas subject to vehicle traffic. Concrete lids may be used in areas not subject to vehicle traffic. There will be one junction box per street light.



PLOT DATE: 98/04/30 11:00am RH

PROJ. CAD FILE No.: J:\STDDET\LYTSTD\H-3.DWG

VILLAGE OF LYTTON	SCALE: NOT TO SCALE	TITLE: STREET LIGHT ANCHOR BASE FOR TYPE 'B' POLES	
	DATE DRAWN: MAR. 1998 / LATEST REVISION DATE: MAR. 1998		
	APPROVED BY:	SECTION: SCHEDULE H STREET LIGHTING	REVISION No. 0 / DWG.No. H-3



NOTES:

INGROUND JUNCTION BOXES WILL NOT BE ALLOWED. SEE POLE & BASE DWG'S B,D &F FOR SERVICE BASE SPECS. THIS WILL BE NECESSARY WHEN MORE THEN 2 CONDUITS ENTER A POLE.

CONDUCTORS BETWEEN POLES TO BE RW90

CONDUCTORS TO BE COPPER AND SIXED ACCORDING TO CANADIAN ELECTRICAL CODE. (MINIMUN #8)

PLOT DATE: 98/04/30 11:00am RH

PROJ. CAD FILE No.: J:\STDDET\LYTSTD\H-4.DWG

VILLAGE OF LYTTON

SCALE: NOT TO SCALE

DATE DRAWN: MAR. 1998

LATEST REVISION DATE: MAR. 1998

APPROVED BY:

TITLE: SERVICE BASE SCHEMATIC FOR 120V STREET LIGHT

SECTION: SCHEDULE H STREET LIGHTING

REVISION No. 0

DWG No. H-4

H - 3.07 Ground Rods

Ground rods shall be 19 mm diameter steel with hot forged point, full length galvanized or copperweld and located in the junction box adjacent to each pole.

H - 3.08 Connectors

Insulated connectors shall be Scotchlok as manufactured by Minnesota Mining and Manufacturing Co. Ltd., or as otherwise approved by the Approving Officer. For conductor combinations too large to use Scotchlok connectors, a solderless line connection shall be used, such as connector CL2 manufactured by Thomas & Betts Ltd., or approved equal. Bare copper lug used for connecting ground conductor to ground stud in lighting pole handhole shall be Thomas & Betts 54106 full compression lug, or approved equal. The connector serving a ground rod shall be Burndy type GAR, or approved equal.

H - 3.09 Pole Bases

Concrete bases for poles shall be as shown on the applicable Standard Drawing.

H - 3.10 Fusing

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

H - 4.0 WORKMANSHIP

H - 4.01 Installation

Conduits shall be installed as nearly as possible at a constant depth and on the alignment shown on the approved construction drawings. Conduits under existing paved roads, driveways or sidewalks shall be installed by tunnelling, unless the Approving Officer gives his express written consent for open trench construction. Service line conductors and all other electrical components shall be installed in conformance with the standard drawings in the B.C. Electrical Code. A conduit under curb or sidewalk shall be buried in a trench with the centre line not less than 750 mm below top of curb or sidewalk.

If no curb or sidewalk is installed, the conduit shall be buried 900 mm below finished grade of centreline of road; and all road, lane and industrial and commercial driveway crossings, the conduit shall be buried not less than 900 mm below top of crossing. If the top of crossing is covered by concrete slab, the depth of trench may not be less than 750 mm below the top of crossing.

In all trenches, the conduit shall be snaked slightly to permit expansion and contraction.

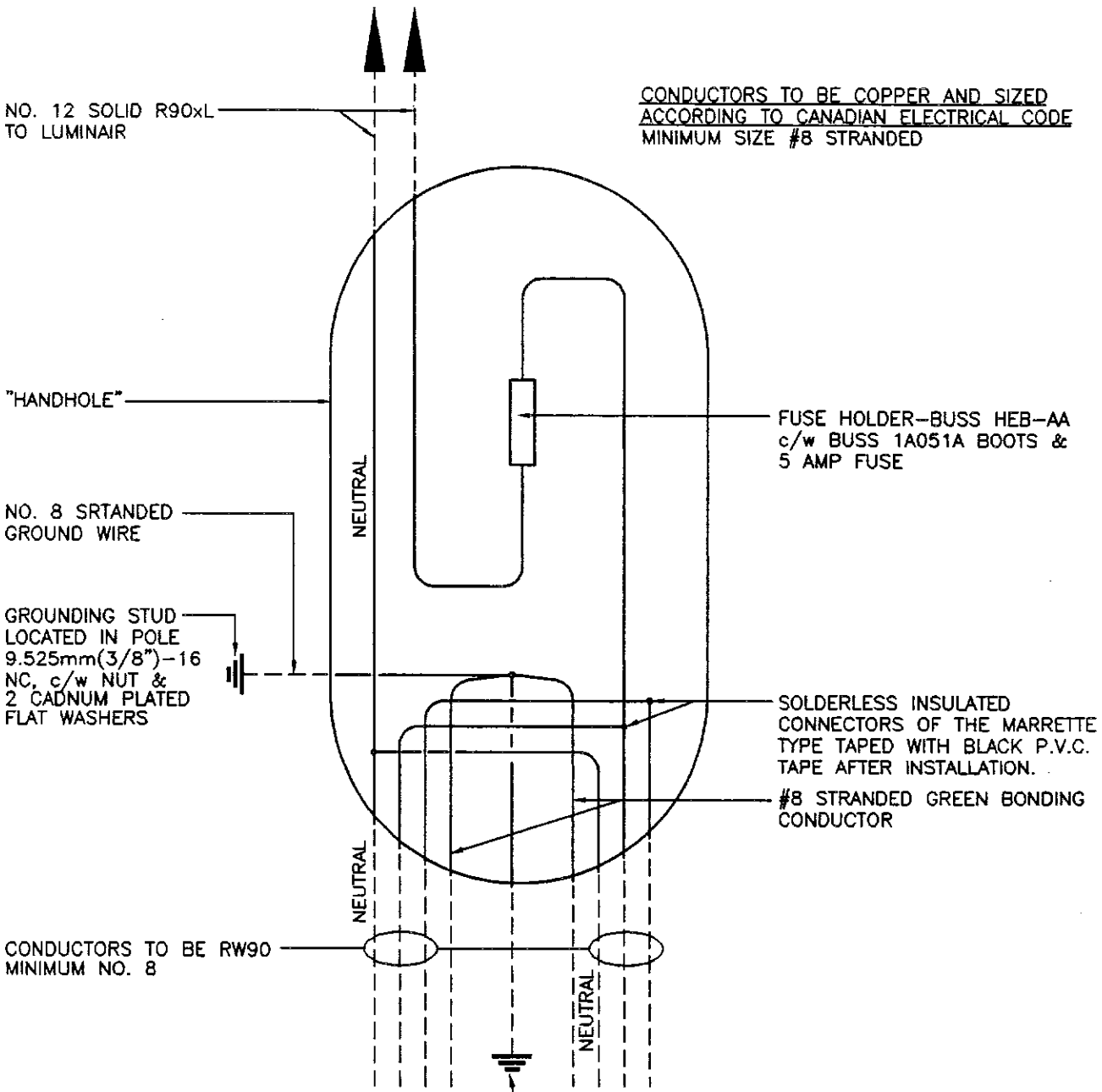
All ducts shall be sand bedded.

Bases shall be constructed and installed as shown on the standard drawings. The standards shall be erected plumb, using shims if required.

Luminaries shall be securely fastened to the lighting poles and oriented to produce the required light distribution.

H - 4.02 Restoration

All roadways, lanes, driveways, boulevards, and other areas traversed by trenches shall be returned to their original conditions or better by the Owner.



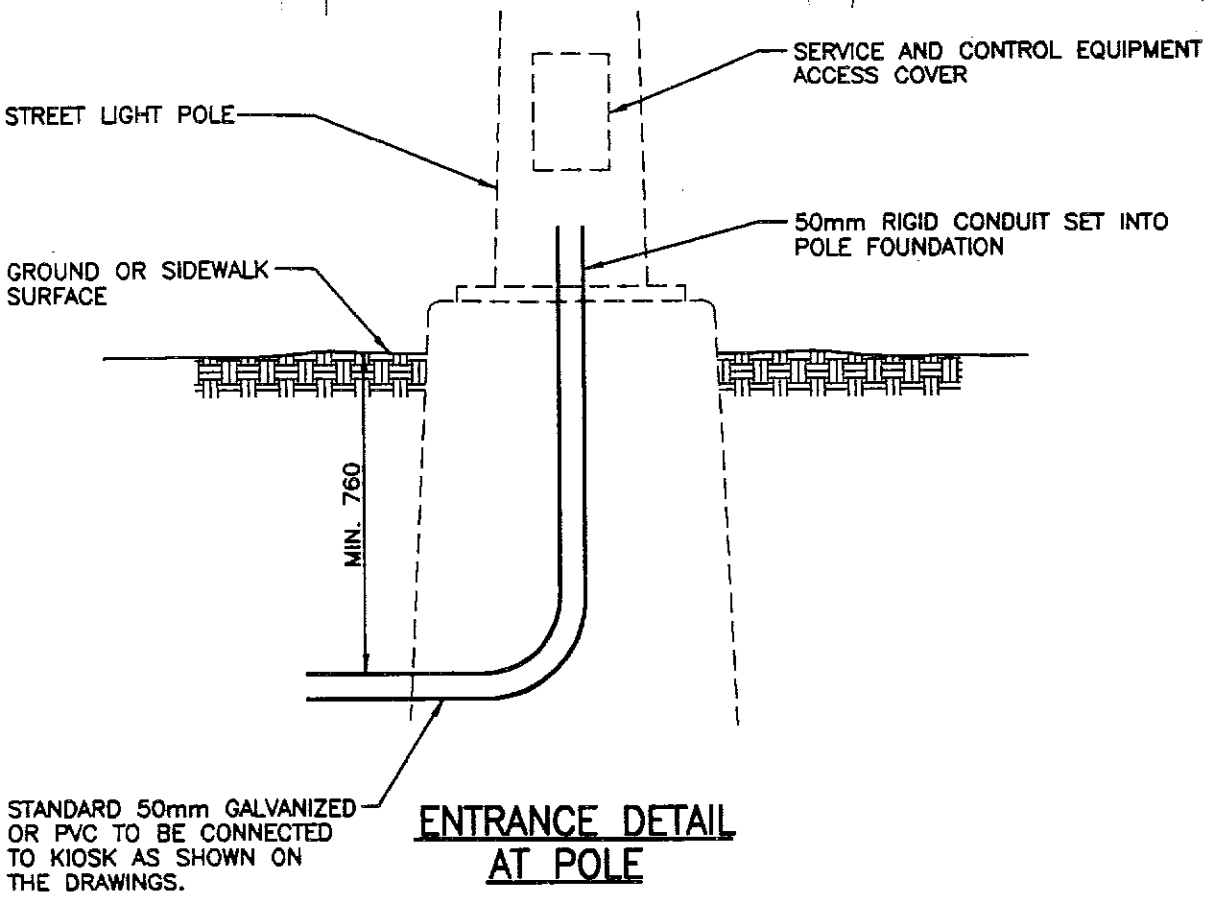
MAXIMUM 2 CURRENT CARRYING CONDUCTORS ON CONDUIT. INGROUND JUNCTION BOXES WILL NOT BE ALLOWED. SEE POLE & BASE DWGS. TYPE 'B' & 'F' FOR SERVICE BASE SPECS. THIS WILL BE NECESSARY WHEN MORE THAN 2 CONDUITS ENTER A POLE

NO.6 SOLID GROUND WIRE TO A COPPERWELD PLATE ELECTRODE HAVING NOT LESS THAN 0.2m² OF SURFACE AREA AND SHALL BE NOT LESS THAN 15mm IN THICKNESS. TYPE B,D & F

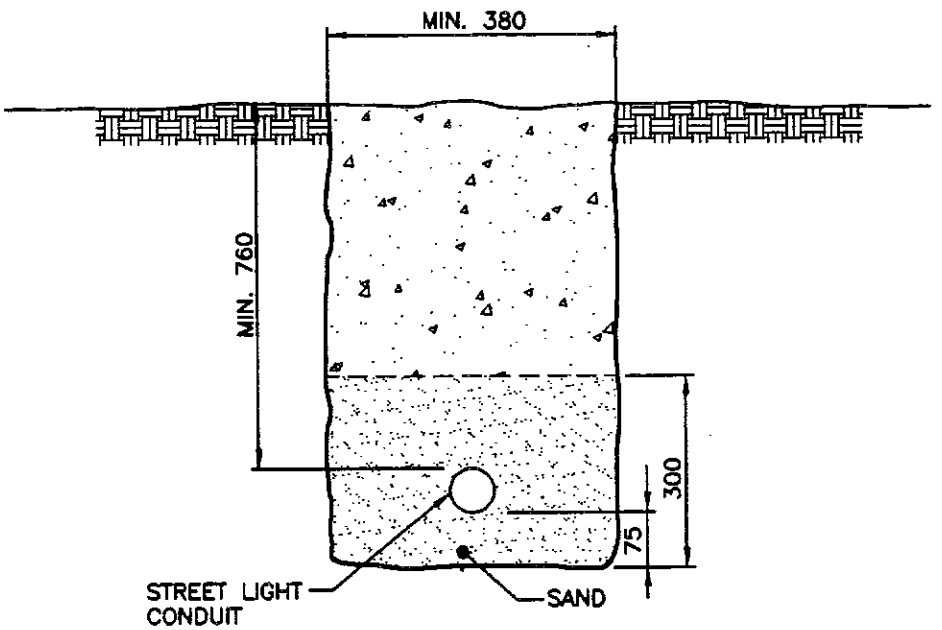
PLOT DATE: 98/04/30 11:05am RH

PROJ. CAD FILE No.: J:\STDDET\LYTDET\H-5.DWG

VILLAGE OF LYTTON	SCALE: NOT TO SCALE	TITLE: HANDHOLE WIRING SCHEMATIC FOR 120V STREET LIGHT	
	DATE DRAWN: MAR. 1998 / LATEST REVISION DATE: MAR. 1998		
	APPROVED BY:	SECTION: SCHEDULE H STREET LIGHTING	REVISION No. 0 / DWG No. H-5



ENTRANCE DETAIL AT POLE



TRENCH DETAIL

PLOT DATE: 98/04/30 11:05am RH

PROJ. CAD FILE No.: J:\STDDET\LYTSTD\H-6.DWG

VILLAGE OF LYTTON	SCALE: NOT TO SCALE	TITLE: STREET LIGHT UNDERGROUND CONDUIT INSTALLATION	
	DATE DRAWN: MAR. 1998 / LATEST REVISION DATE: MAR. 1998		
	APPROVED BY:	SECTION: SCHEDULE H STREET LIGHTING	REVISION No. 0 / DWG.No. H-6

SCHEDULE I

REGULATIONS, STANDARDS AND SPECIFICATIONS FOR THE INSTALLATION OF ELECTRICAL, COMMUNICATIONS WIRING, CABLEVISION AND GAS DISTRIBUTION SYSTEM

This is Schedule I of the Corporation of the Village of Lytton Subdivision and Development Servicing Bylaw No. 483, 1998.

Clerk

SCHEDULE I

REGULATION, STANDARDS AND SPECIFICATIONS FOR THE INSTALLATION OF ELECTRICAL, COMMUNICATIONS WIRING, CABLEVISION AND GAS DISTRIBUTION SYSTEM

I - 1.0 GENERAL

I - 1.01 Standards and Specifications to Apply to All Electrical, Communications Wiring and Cablevision

Electrical and telephone systems shall be provided to serve each parcel within the subdivision consistent with the standards and specifications set out in this Schedule and Schedule A. Where it is proposed to develop a natural gas distribution system, the system shall be designed and constructed consistent with the provisions of this Schedule. Where it is proposed to develop a cablevision system, the system shall be designed and constructed consistent with the provisions of this schedule.

I - 1.02 Approval of Engineering Drawings Required Prior to Construction

Prior to construction engineering drawings for each respective utility showing detailed design of the necessary works shall be submitted to the Approving Officer for approval who will advise to Owner accordingly in writing. The engineering drawings shall clearly indicate the locations of poles, structures, conduits, pipes and any other facilities required.

I - 1.03 Construction In Compliance With Engineering Drawings

All poles, structures and facilities shall be constructed or installed in compliance with the engineering drawings approved by the Approving Officer.

I - 1.04 Construction In Accordance With B.C. Hydro, B.C. Telephone, Cablevision Company, and BC Gas Requirements

Electrical, Telephone and Cablevision services shall be installed in accordance with the requirements of the B.C. Hydro and Power Authority, the B.C. Telephone Company, the Cablevision Company and the Inspector of Electrical Energy of the Province of B.C.

I - 1.05 Underground Electrical Systems

Underground systems shall include the supply and installation of all necessary conduits, wiring, transformers, service runs and connections for a complete and fully operative underground electrical system as laid out by the B.C. Hydro and Power Authority and approved by the Approving Officer and the Inspector of Electrical Energy of the Province of B.C.

I - 1.06 Underground Cablevision

Underground cablevision ducting and appurtenances shall be installed throughout the Village. The Owner shall obtain and pay for a cablevision distribution system from a bonafide designer, and shall install underground cablevision works in accordance with the design in a common trench (where possible) with B.C. Telephone and B.C. Hydro infrastructure.

I - 2.0 DESIGN CRITERIA

I - 2.01 Horizontal Location

Horizontal location of underground ducting and gas main piping shall be as shown on the applicable Standard Drawings. Systems shall be laid out with due regard for other utilities, and shall have the approval of the Approving Officer as well as the utility company involved. Where overhead distribution is specified, pole locations and any anchor easements shall be approved by both the Approving Officer and the appropriate utility company. Care shall be taken to eliminate aerial trespasses.

I - 2.02 Vertical Location

All conduit and gas main piping to have a minimum of 750 mm cover or to the depths specified by the local authority, whichever is greater.

I - 2.03 Detailed Design

Details of design such as vertical and horizontal location of service boxes, size and type of conduits and gas mains, kiosk dimensions and ducting and all wiring details shall be as per specifications and drawings provided by B.C. Hydro and Power Authority and B.C. Telephone Company.

I - 3.0 MATERIALS

I - 3.01 B.C. Hydro

All materials used in the underground or overhead electrical distribution system shall be as specified by B.C. Hydro and Power Authority.

I - 3.02 B.C. Telephone Company

All materials used shall be as specified by the B.C. Telephone Company.

I - 4.0 WORKMANSHIP

I - 4.01 Underground Installation

Installation requirements such as trenching, installation of ducting and backfilling shall be according to specifications supplied by the appropriate utility company.

I - 4.02 Clean-up

After installation of all underground ducting service boxes, kiosks, etc. the boulevard area shall be shaped to grade and all debris shall be removed.

SCHEDULE J

STANDARDS FOR THE PREPARATION OF DESIGN AND CONSTRUCTION RECORD DRAWINGS

This is Schedule J of the Corporation of the Village of Lytton Subdivision and Development Servicing Bylaw No.483, 1998.

Clerk

SCHEDULE J

STANDARDS FOR THE PREPARATION OF ENGINEERING DESIGN AND CONSTRUCTION RECORD DRAWINGS

J - 1.0 GENERAL REQUIREMENTS

These requirements pertain to the preparation of drawings for: sanitary sewers, storm sewers, water, gas, underground power, telephone, cablevision, street lighting, roads, curbs and gutters, sidewalks, culverts, bridges, and other permanent structures.

Where no standard is defined in this schedule for the preparation of a drawing to portray a particular service, structure, or other items, instructions and requirements may be obtained by discussion with the Corporation of the Village of Lytton, or its appointed representative.

Construction record drawings are to be completed and approved before securities are released.

Construction record drawings are to be submitted within four (4) week of the completion of all services to be installed by the Owner. The Design Engineer shall deliver construction record drawings as specified in this schedule to the Approving Officer. These drawings shall be signed and sealed by the Design Engineer.

A plan profile is a detailed engineering drawing record containing the permanent and temporary features within a public right-of-way. The plan profile is divided into two parts:

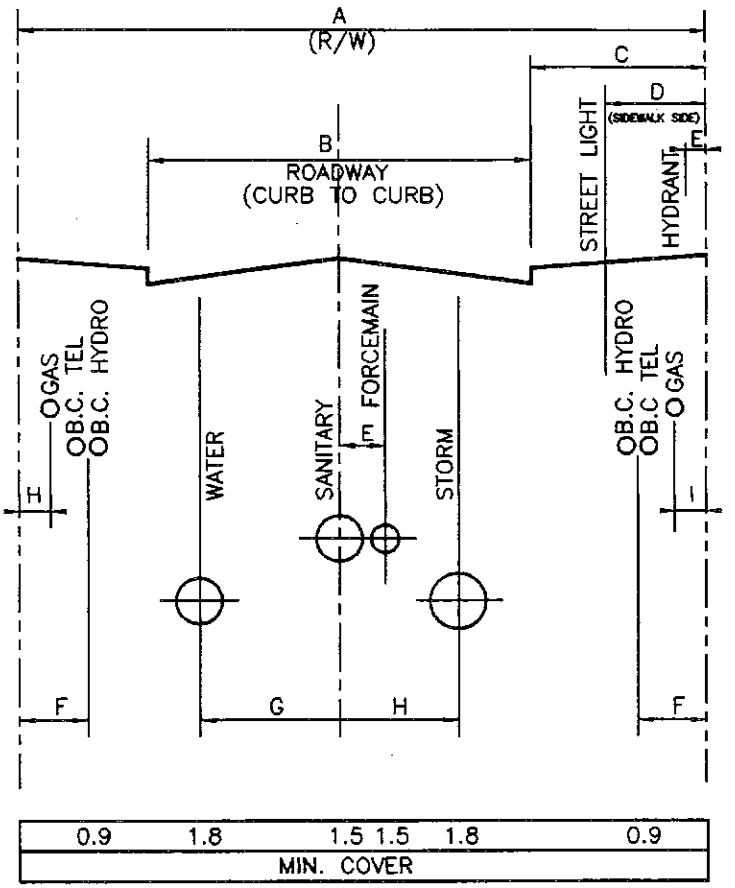
Part One: The top profile shows, elevations, chainages, surface and utility grades with related data.

Part Two: The bottom plan view shows all surface features, legal descriptions and bordering property data, all underground utilities and their locations within the public right-of-way and related data.

J - 2.0 DRAWING STANDARDS

J - 2.01 Sheet Size

Pre-cut sheets to be 841 mm x 594 mm (A-1 sheet size).



OFFSETS IN METRES									
ROAD CLASSIFICATION	A	B	C	D	E	F	G	H	I
DOWNTOWN/COMMERCIAL	20	15.5	2.25	1.75	0.6	1.8	3.5	3.0	0.9
INDUSTRIAL	20	11	4.5	3.7	0.6	1.8	3.5	3.0	0.9
CUL-DE-SAC									
ENTRANCE	18	8.5	4.75	2.5	0.6	1.8	3.5	3.0	0.9
TERMINUS	15m RAD.	12m RAD.							
LOCAL – MAJOR	20	11	4.5	2.25	0.6	1.8	3.5	3.0	0.9
– MINOR	18	8.5	4.75	2.5	0.6	1.8	3.5	3.0	0.9

NOTE:
-MEASUREMENTS B & C ARE TO THE GUTTERLINE ON EACH SIDE OF THE ROAD

PLOT DATE: 98/04/30 11:05am RH

PROJ. CAD FILE No.: J:\STDDET\LYTTSTD\J-1.DWG

VILLAGE OF LYTTON

SCALE: NOT TO SCALE

DATE DRAWN: MAR. 1998

LATEST REVISION DATE: MAR. 1998

APPROVED BY:

TITLE: UNDERGROUND UTILITY LOCATIONS

SECTION: SCHEDULE J STANDARDS

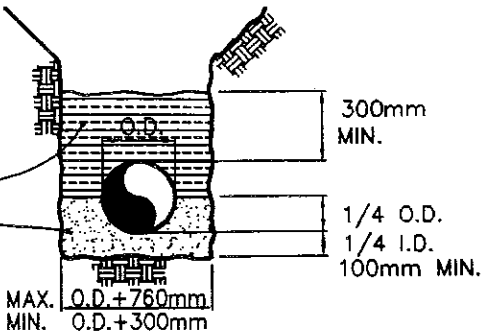
REVISION No. 0

DWG.No. J-1

CLASS "A" BEDDING

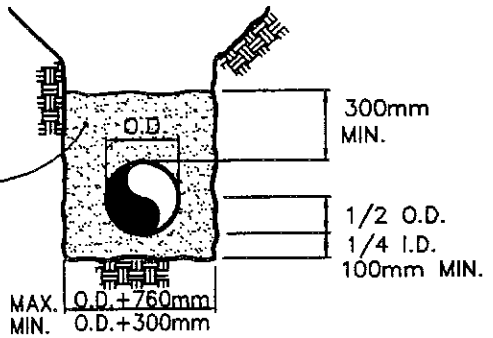
SELECT EXCAVATED OR IMPORTED GRANULAR MATERIAL PLACE IN MAXIMUM 100mm LIFTS. COMPACT TO 95% S.P.D.

CONCRETE – 20MPa. IN ALKALI SOILS, SULFATE RESISTANT CEMENT SHALL BE USED.



CLASS "B" BEDDING

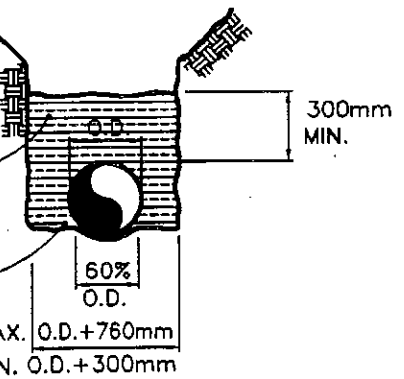
FINE GRANULAR MATERIAL PLACE IN MAXIMUM 100mm LIFT. COMPACT TO 95% S.P.D.



CLASS "C" BEDDING

SELECT EXCAVATED OR IMPORTED GRANULAR MATERIAL PLACE IN MAXIMUM 150mm LIFT. COMPACT TO 95% S.P.D.

BOTTOM OF TRENCH SHAPED TO ACCEPT LOWER EXTERIOR OF PIPE



PLOT DATE: 98/04/30 11:10am RH

PROJ. CAD FILE No.: J:\STDDET\LYTSTD\J-2.DWG

VILLAGE OF LYTTON	SCALE: NOT TO SCALE	TITLE: STANDARD CLASSES OF PIPE BEDDING & BACKFILL WITHIN THE PIPE ZONE	
	DATE DRAWN: MAR. 1998 / LATEST REVISION DATE: MAR. 1998		
	APPROVED BY:	SECTION: SCHEDULE J STANDARDS	REVISION No. 0 / DWG.No. J-2

J - 2.02 Sheet Material

3 mil mylar matte both sides with half plan and half profile.

J - 2.03 Grid Standards

2 mm x 10 mm as shown on sample sheet.

J - 2.04 Sheet Border

Border line width to be 1.0 mm. Top, bottom and right border to be 15 mm respectively from edge of sheet. Left border to be 42 mm from edge of sheet.

J - 2.05 Title Block

.1 Located along the bottom of the sheet.

.2 Size of the title block is 46 mm wide.

.3 Title block to be pre-printed. Stick-on type is not acceptable.

.4 Title block shall describe the contents of the drawing (eg. key plan, roadworks, etc.) and shall clearly indicate the location of the works by road name(s) and/or legal description. See sample sheet.

.5 Lettering to be an open style of Vertical Gothic - Leroy or Autocad. If using Autocad, use text font Roman If using some other computer graphic system, it should be compatible with Autocad. See sample sheet for lettering height and pen size.

.6 Design Engineers must use the Corporation of the Village of Lytton A-1 standard sheets. Design Engineers identifications are to be placed on each drawing.

.7 A sample of a prepared plan/profile sheet, and an Autocad disk of the Standard Drawing block shell may be obtained by contacting the Corporation of the Village of Lytton.

J - 3.0 PREPARATION OF DRAWING

Drawings are to be prepared in a manner as illustrated on the attached standard plan/profile sample sheet.

J - 3.01 Sheet Layout

.1 Maintain a minimum clearance of 40 mm from all borders.

.2 The profile SHALL NOT be drawn over the title block.

.3 Place north arrow close to the top right hand side of the sheet whenever possible.

.4 North arrow shall point either towards the top of the page or towards the left hand edge of the page. The north arrow may point not more than 60° to the right hand side of the page.

.5 Show distances and location dimensions in metres and to 3 decimal places.

.6 Show pipe sizes in mm as per A.S.T.M. specifications using 1" = 25 mm.

.7 Existing imperial dimensions except for pipe sizes are to be soft converted using the factor:
1 inch (1") = 25.4 cm
1 foot (1') = 0.3048 m

J - 3.02 Lettering

.1 Lettering is to be an open style of Vertical Gothic (eg. Leroy or Autocad - Romans) minimum height being 1.8 mm. The standard lettering height is 2.5 mm.

.2 Lettering to be applied by using a Leroy, a computer graphics system compatible to Autocad, or equivalent.

.3 Use BLACK INDIA ink on all as-built drawings.

J - 3.03 Scales

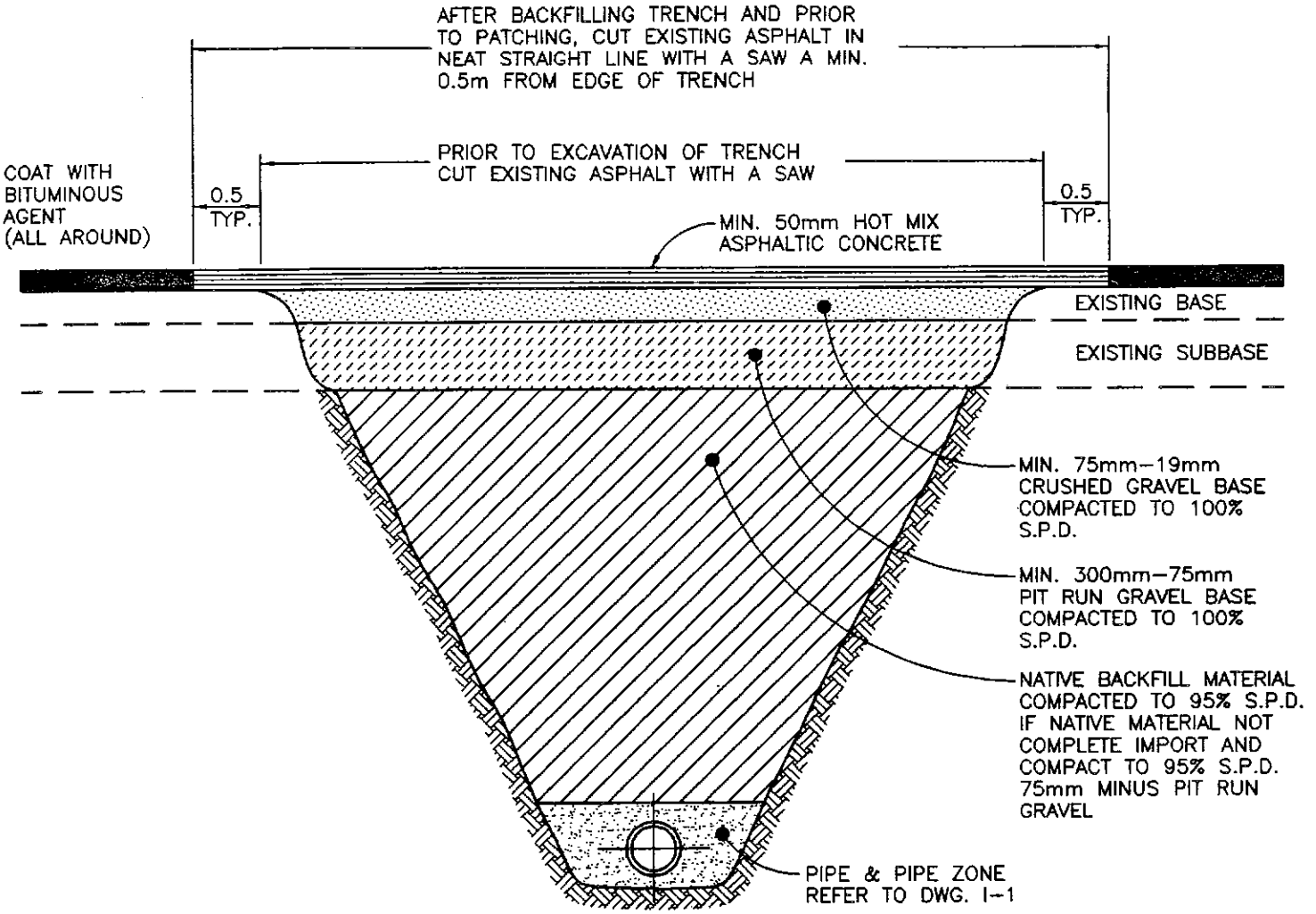
Use metric scales:

PLAN VIEW SCALE		1:500
PROFILE VIEW SCALE	Horizontal	1:500
	Vertical	1:50

J - 3.04 Plan View

.1 Show utility and utility access R.O.W.'s.

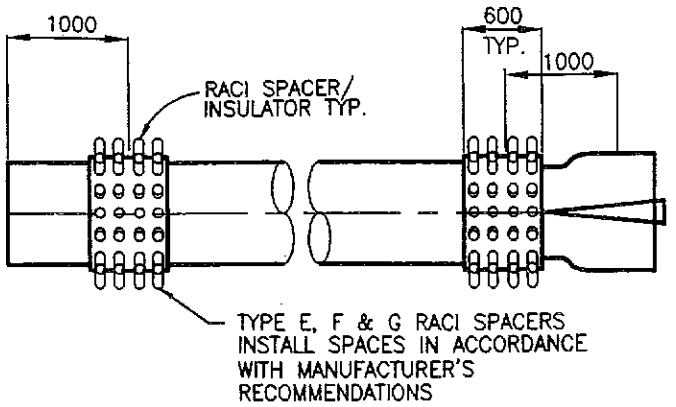
.2 In case of R.O.W.'s less than 6.0 m larger scales may be permitted.

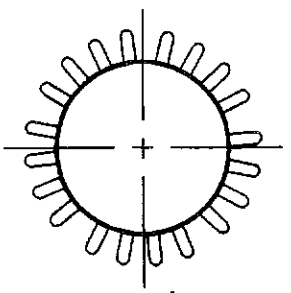


PLOT DATE: 98/04/30 11:10am RH

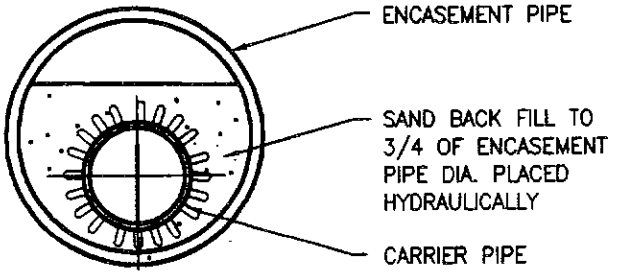
PROJ. CAD FILE No.: J:\STDDET\LYTSTD\J-3.DWG

VILLAGE OF LYTTON	SCALE: NOT TO SCALE	TITLE: TYPICAL ROAD REPAIR FOR UTILITY TRENCH CROSSING	
	DATE DRAWN: MAR. 1998 / LATEST REVISION DATE: MAR. 1998		
	APPROVED BY:	SECTION: SCHEDULE J STANDARDS	REVISION No. 0 / DWG.No. J-3





RACI SPACER/INSULATOR



SECTION

NOTES

1. CARRIER PIPE JOINTS SHALL BE SET 1000mm BEYOUND THE ENDS OF THE ENCASEMENT PIPE.
2. 200mm P.V.C. PIPE ILLUSTRATED
3. TYPE E, F & G RACI SPACERS INSTALL SPACES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS

PLOT DATE: 98/04/30 11:10am RH

PROJ. CAD FILE No.: J:\STDDET\LYTSTD\J-4.DWG

VILLAGE OF LYTTON	SCALE: NOT TO SCALE	TITLE: CARRIER PIPE AND ENCASEMENT PIPE INSTALLATION DETAIL	
	DATE DRAWN: MAR. 1998 / LATEST REVISION DATE: MAR. 1998		
	APPROVED BY:	SECTION: SCHEDULE J STANDARDS	REVISION No. 0 / DWG No. J-4

.3 Show control station monuments with identification number.

.4 The PLAN VIEWS should not be fragmented or broken due to slight curves in the road right-of-way.

.5 The PLAN VIEWS shall be fragmented or broken if the vertical alignment of the utilities in the PROFILE SECTION when shown at true length and when projected above to the utilities in the PLAN VIEW cannot be maintained in as close a relationship as possible without too much discrepancy.

.6 If using co-ordinates for layouts, calculate and plot distances at SEA LEVEL, but show ground level distances on the plan.

.7 Show the legal layout, dimensions, bearings, lot numbers, block numbers, legal plan numbers, street names, sidewalks with related data and catch basin installations with elevations.

.8 All lots need not be numbered providing they are in sequence. Show first and second and next to last and last lots. If not in sequence, all lots shall be numbered.

.9 All lot dimensions shall be given in metres and to three (3) decimal places. If the lots are of same dimensions and side by side, only the two outside lots need have the dimensions shown, the remainder with ditto marks.

.10 Curb information should be shown and should include radius, delta angle, tangent length, and arc length

.11 Face of curb information must be complete.
ie. Rollover Face of Curb - Roll F.C.

If other than concrete face of curb specify material used.
ie. Rollover Asphalt Face of Curb - Roll Asph F.C.

.12 Show Right of Way road widths and the actual roadway widths between curbs or between curbs and edge of pavement.

.13 Show all utilities such as sanitary and storm sewers, water, hydro, telephone, gas, cable TV, manholes, valves, cleanouts, hydrants, service boxes, etc.

.14 Reference each utility to the nearest property line or boundaries of right-of-ways.

.15 Show flow directions of sewers.

.16 Manholes in midblock shall be referenced to the nearest lot line (I.P).

.17 Lot services (sanitary, storm, water) shall be shown and referenced to the nearest or convenient lot line of said lot.

J - 3.05 Profile

.1 The profile and related data are shown on the bottom half of the sheet. Establish 0+00 station on accented vertical grid line.

.2 The original groundline (centreline) and related data prior to construction should be shown, along with date surveyed.

.3 The profile shall be shown at true centreline length and projected above to the PLAN VIEW in as close a relationship as possible.

.4 Show as constructed centreline for streets and lanes and date constructed.

.5 Show centreline percent grade to two (2) decimal places, together with the following information on vertical curves:

- the chainage and elevations of B.C., E.C., and V.P.I.
- the external value, "e"
- the length of vertical curve
- the chainage and elevation of the low spot of sag curves or high point of crest curves
- on super elevated curves and crossfall sections, percent crossfall, transition length and crown should be noted.

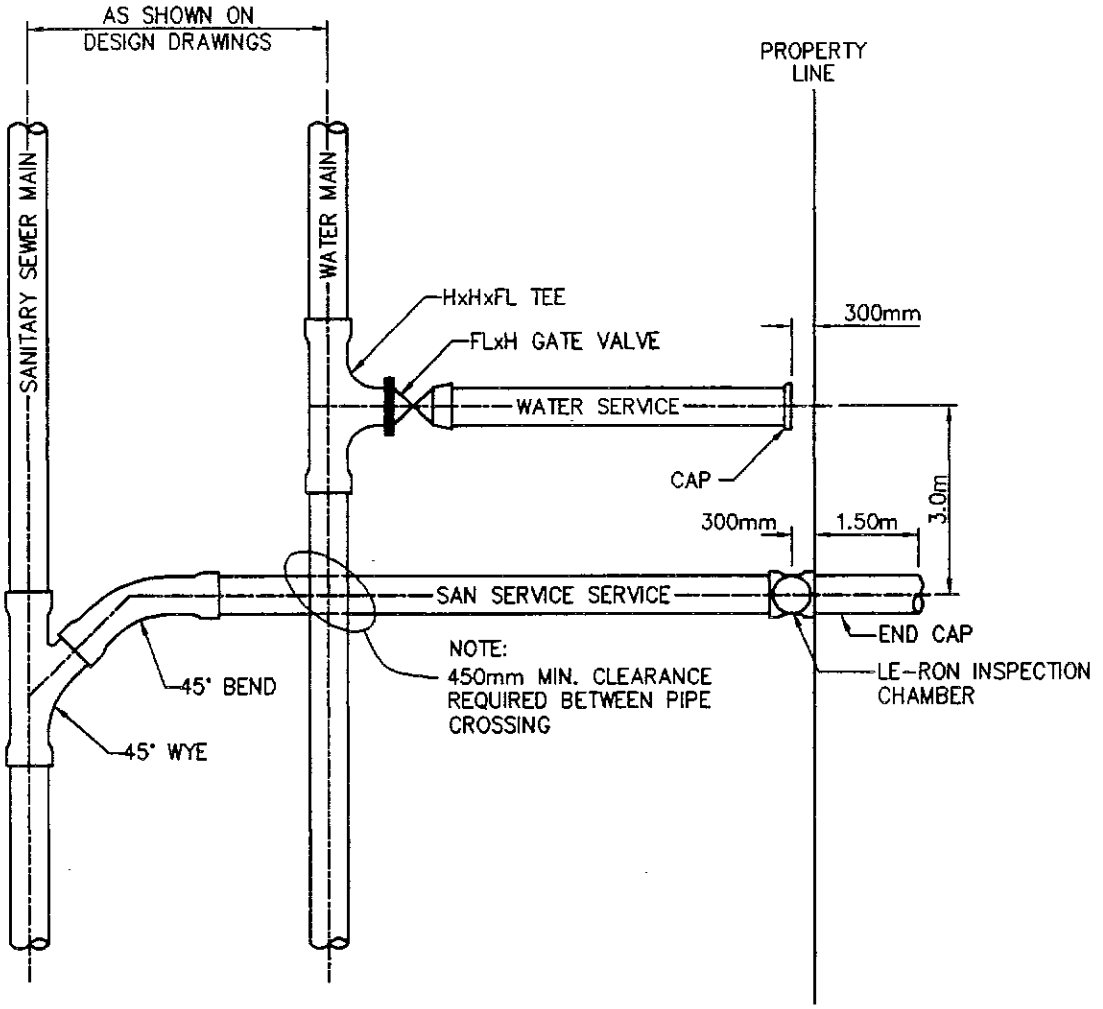
.6 Show profiles of invert and crown of pipes for sanitary, storm, and water mains as well as length, size, type, grade, and class of pipe (eg. 75 m - 200 mm SAN SDR 35 PVC).

.7 Show manholes with rim elevations, and invert elevations at both inlet and outlet.

.8 Crown of pipes shall be shown at all locations where there is the possibility of conflicts with other utilities.

.9 Show location type and elevation of all crossing utilities.

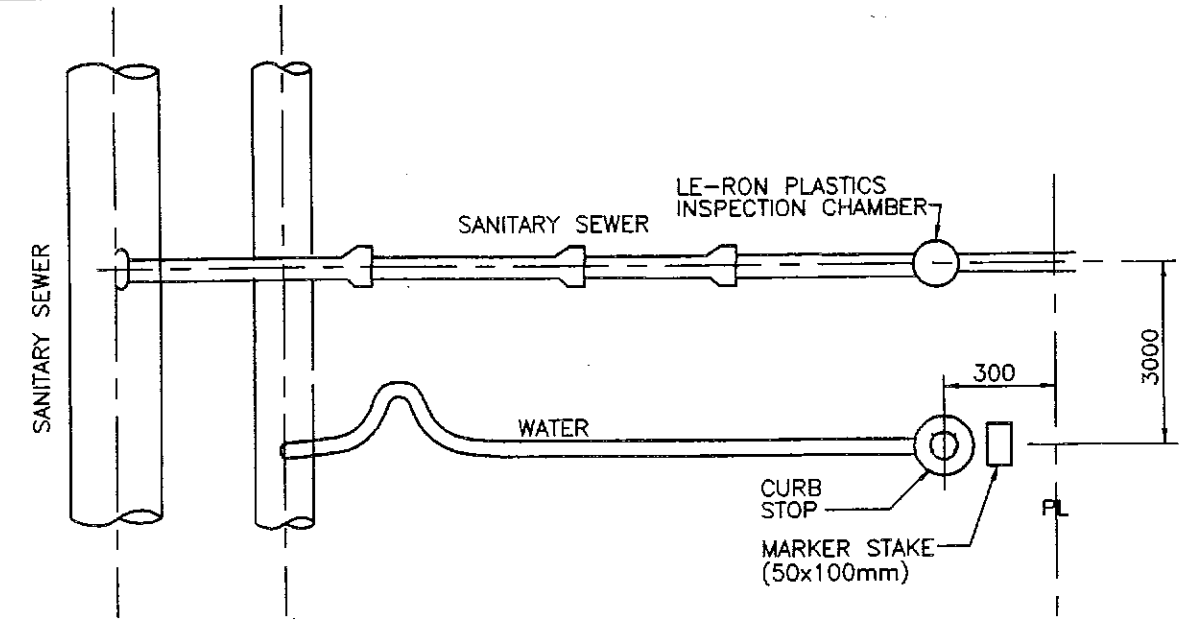
.10 Elevations are placed at the right and left hand side of the profile and repeated when there is a break in the profile.



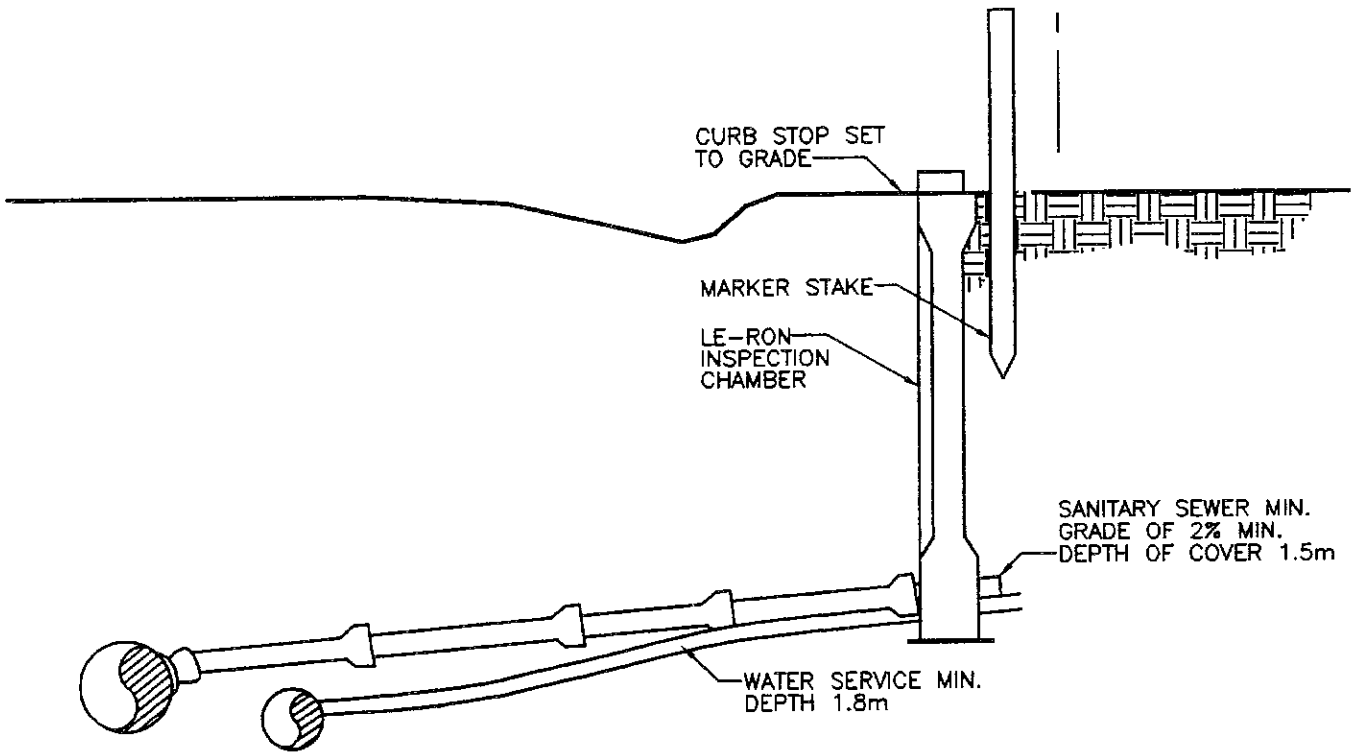
PLOT DATE: 98/04/30 11:15am RH

PROJ. CAD FILE No.: J:\STDDET\LYTSTD\J-5.DWG

VILLAGE OF LYTTON	SCALE: NOT TO SCALE	TITLE: LARGE DIAMETER SEWER & WATER SERVICES	
	DATE DRAWN: MAR. 1998 / LATEST REVISION DATE: MAR. 1998		
	APPROVED BY:	SECTION: SCHEDULE J STANDARDS	REVISION No. 0 / DWG No. J-5



PLAN



ELEVATION

NOTES:
WHEN VIEWING THE LOT FROM THE ROAD, THE SANITARY SEWER SERVICE IS LOCATED TO THE LEFT OF THE CURB BOX.
THROUGH AREAS OF STEEP TOPOGRAPHY THE SANITARY SEWER SERVICES MAY BE INSTALLED 3.0m FROM THE LOWEST ELEVATION ON THE PROPERTY BOUNDARY.

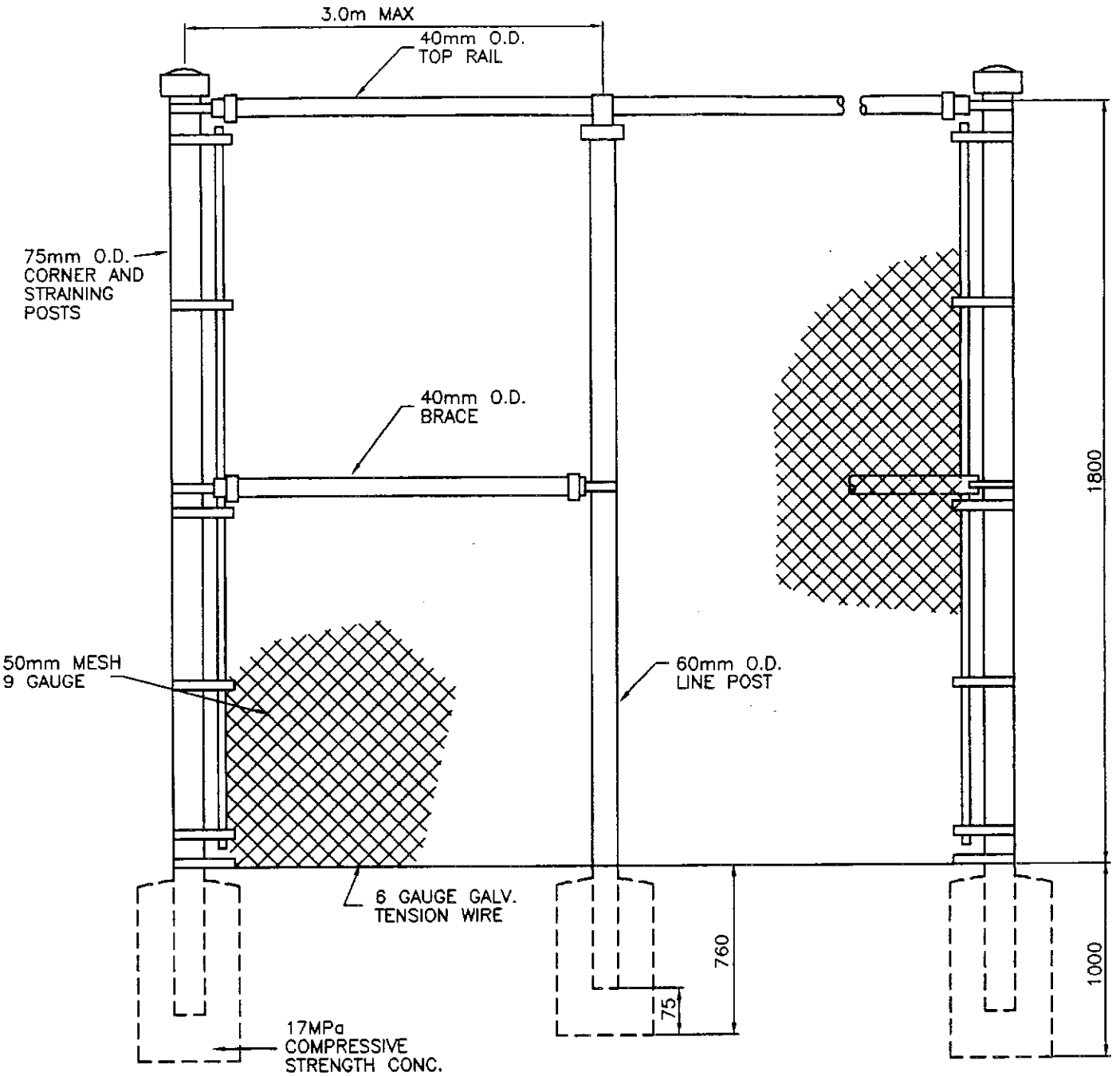
PLOT DATE: 98/04/30 11:20am RH

PROJ. CAD FILE No.: J:\STDDET\LYTTSTD\J-6.DWG

VILLAGE OF LYTTON	SCALE: NOT TO SCALE	TITLE: SEWER AND WATER SERVICE INSTALLATION	
	DATE DRAWN: MAR. 1998 / LATEST REVISION DATE: MAR. 1998		
	APPROVED BY:	SECTION: SCHEDULE J STANDARDS	REVISION No. 0 / DWG.No. J-6

NOTE:

1. ALL POSTS AND PIPE SHOULD BE SCHEDULE 40 WITH GALVANIZED ZINC COATING AT 550 g/m^2 SURFACE AREA
2. FOOTINGS MIN 200mm GREATER DIAMETER THAN POSTS.
3. STRAINING POSTS AT EQUAL SPACING TO 150m MAXIMUM



PLOT DATE: 98/04/30 11:20am RH

PROJ. CAD FILE No.: J:\STDDET\LYTSTD\J-7.DWG

VILLAGE OF LYTTON	SCALE: NOT TO SCALE	TITLE: CHAIN LINK FENCE DETAIL	
	DATE DRAWN: MAR. 1998 / LATEST REVISION DATE: MAR. 1998		
	APPROVED BY:	SECTION: SCHEDULE J STANDARDS	REVISION No. 0 / DWG No. J-7

.11 Elevations are to be shown at every even metre graduation and placed on the heavy accented line.

.12 All elevations shall be relative to GEODETIC DATUM and in metric.

J - 4.0 DRAFTING GUIDELINES

The format of the Technical Legend places the symbol as it appears on the drawing on the left hand page with drafting guidelines on the right hand page.

The symbols presented in the Legend are sized for use on Plan Profile drawings. Dimensions used are given in millimetres. Pen and template sizes refer to the widely used Leroy equipment. Metric pen and template sizes are given in millimetres along with their imperial equivalent.

J - 5.0 CERTIFICATION REPORTS

Prior to acceptance of the Works, the Design Engineer shall submit 3 bound copies of System Certification Reports to the Approval Authority. Certification reports shall fully describe the works comprising all aspects of each system as well as all required operation and maintenance information. As a minimum, reports shall include the following:

- Complete set of construction record drawings at the same scale and in the same format as the construction drawings.
- Construction Record AutoCAD files saved in the format as requested by the Approving Officer.
- Copies of all test reports and results.
- All shop drawings.
- A list of contractors and major subcontractors by work item.
- Operating and Maintenance Manuals.

J - 6.0 ABBREVIATIONS

Technical Legend	Plan Profile Abbreviations
ABANDONED	ABAND.
ABBREVIATION	ABBREV.
ACRE	AC.
ASBESTOS CONCRETE	A.C.
ASPHALT	ASPH.
ASPHALT WALK	ASPH.W.
AIR VALVE	A.V.
AVENUE	AVE.
AVERAGE	AVG.
BACK OF CURB	B.O.C.
BACK OF WALK	B.O.W. or B.W.
BASEMENT	BSMT
BEARING	BRG.
BEDDING	BED.
BEGINNING OF CURVE	B.C.
BENCH MARK	B.M.
BETWEEN	BTWN
BLOCK	BLK
BOTTOM	BTM
BOTTOM OF PIPE	B.O.P.
BOULEVARD	BLVD.
BOUNDARY	BDY
BUILDING	BLDG
BEGINNING OF VERTICAL CURVE	B.V.C.
CABLE TELEVISION	T.V.
CALCULATED	CALC
CANADIAN NATIONAL RAILWAY	C.N.R.
CANADIAN PACIFIC RAILWAY	C.P.R.
CANADIAN STANDARDS ASSOCIATION	C.S.A.
CAPACITY	CAP
CAST IRON	C.I.
CATCH BASIN	C.B.
CATHODIC PROTECTION	C.P.
CENTIMETER	CM
CENTRE LINE	
CHECKED	CHKD
CHECK VALVE	C.V.
CHORD	CH
CIRCLE	CIR
CLASS	CL

Technical Legend	Plan Profile Abbreviations
CLEAN OUT	C.O.
CONCRETE	CONC
CONCRETE WALK	C.W.
CONDUIT	COND
CONSTRUCTION/CONSTRUCT	CONSTR or CONST
CONTOUR	CONT
CONTRACTOR	CONTR
COPPER	CU
CORNER	COR.
CORRUGATED METAL PIPE	C.M.P.
COUPLING	CPLG
COURT	CT
CREEK	CR
CRESCENT	CRES
CROSSFALL	X-FALL
CROSS SECTION	X-SECTION
CULVERT	CULV
CURB AND GUTTER	C & G
DEGREE	DEG or °
DELTA	
DEPARTMENT	DEPT
DIAMETER	DIA. or
DIMENSION	DIM
DISTANCE	DIST
DITCH	D
DOUBLE	DBL
DRAWING	DWG
DRIVEWAY	DWY
DRY WELL	D.W.
DRIVE	DR
DUCTILE IRON	DI
DWELLING	DWLG
EASEMENT	ESMT
EAST	E
EDGE OF MEDIAN	E.M.
EDGE OF PAVEMENT	E.P.
EDGE OF SHOULDER	E.S.
ELECTRIC	ELEC
ELECTRIC LIGHT	E.L.
ELEVATION	ELEV
END OF CURVE	E.C.
END OF VERTICAL CURVE	E.V.C.

Technical Legend	Plan Profile Abbreviations
ESTIMATE	EST.
EXISTING	EXIST
FACE OF CURB	F.C. (Roll F.C., Std. F.C., Asph.
(Rolled, Standard, Asphalt)	F.C.)
FACE OF WALK	F.W.
FEET OR FOOT	FT
FLANGE	FLG
FLANGED OUTLET	F/O
FLOOR	FLR
FOOTING	FTG
FORCE MAIN	F.M.
FOUND	FD
GALVANIZED	GALV
GARAGE	GAR
GARDEN	GDN
GRAVEL	GRAV
GRADE	GR
GUARD RAIL	GDR
HECTARE	HA
HECTOMETRE	HM
HEIGHT	HT
HIGHWAY	HWY
HORIZONTAL	HOR
HORIZONTAL CURVE	HOR
HOSPITAL	HOSP
HYDRANT	HYD
INCH	IN or "
INLET CHAMBER	I.C.
INSIDE DIAMETER	I.D.
INTERSECTION	INT
INVERT	INV
IRON PIN, FOUND IRON PIN	I.P., F.I.P.
INSULATE	INS
INTAKE STRUCTURE	I.S.
JOINT	JT
KILOGRAM	KG
KILOMETRES	KM

Technical Legend	Plan Profile Abbreviations
KILOMETRES PER HOUR	KM/H
LATERAL	LAT
LEAD	L
LENGTH	LGTH
LENGTH OF CURVE	L.C.
LIFT STATION	L.STA
LIGHT STANDARD	L.S.
LIP OF GUTTER	L.G.
MAIN VALVE	M.V.
MANHOLE	M.H.
MANHOLE RIM	M.H.R.
MAXIMUM	MAX
MECHANICAL JOINT	M.J.
METRE	m
METRE CHAMBER	M.C.
MEDIAN	M. or MED
MILES PER HOUR	M.P.H.
MILLIMETRE	mm
MINIMUM	min
MINISTRY OF TRANSPORT	M.O.T.
MONOLITHIC SIDEWALK	MONO
MONUMENT	MON
MORTAR JOINT	M.J.
MINUTES	MIN or '
NORTH	N
NORTH SIDE	N/S
NOT TO SCALE	N.T.S.
NUMBER	NO. or #
OBLITERATED	OBL
ON CENTRE	O.C. or O/C
ORIGINAL GROUND	O.G.
OPPOSITE FACE	O.F.
OUTLET CHAMBER	O.C.
OUTSIDE DIAMETER	O.D.
PARALLEL	PAR
PARKWAY	PKWY
PAVEMENT	PVMT
PER	/
PERCENT	%

Technical Legend	Plan Profile Abbreviations
PHASE	PH
PIPE	P
PLACE	PL
PLAN PROFILE	P.P.
PLUG	PLUG
POINT	PT
POINT ON CURVE	P.C.
POINT ON COMPOUND CURVE	P.C.C.
POINT ON TANGENT	P.T.
POINT ON INTERSECTION	P.I.
POUNDS	lbs
POUNDS PER SQUARE INCH	P.S.I.
POWER POLES	P-P
PRESSURE REDUCING VALVE	P.R.V.
PROPERTY LINE	P.L.
PROPOSED	PROP
PUMP STATION	P.S.
QUANTITY	QTY
RADIUS	RAD OR R
RAILWAY	RWY
RAISED FACE	R.F.
RECTIFIER	RECT
REDUCER	RED
REFERENCE	REF
REGISTERED PLAN	R.P.
REINFORCED	REIN
RESTORED	RSTD
REPLACEMENT	REPL
RESERVOIR	RES
REVISION	REV
RIGHT	RT
ROAD	RD
ROUND	
RIGHT OF WAY	R/W or R.O.W.
SANITARY	SAN
SECOND	SEC
SECTION	SECT
SERVICE	SERV
SERVICE ROAD	SERV.RD.
SET IN FIELD	S.I.F.

Technical Legend	Plan Profile Abbreviations
SIDEWALK PROFILE	S.W.P.
SLOPE	SLP
SOUTH	S
SOUTH SIDE	S/S
SPECIFICATION	SPEC
SPIRAL TO CURVE	S.C.
SQUARE	SQ OR
STANDARD	STD
STATION	STA
STEEL	STL
STORM	STM
STREET	ST
STRUCTURE	STR
SUPPLY	SUP
SWALE	SWL
SYMBOL	SYM
TANGENT	TAN
TANGENT TO SPIRAL	T.S.
TECHNICAL	TECH
TEMPERATURE	TEMP
TEMPORARY	TEMPO
TEST HOLE	T.H.
TONGUE AND GROOVE	T.G.
TOWNSHIP	T.W.P.
TOP OF CURVE	T.O.C.
TOP OF PIPE	T.O.P.
TRAFFIC CONTROL	T.C.
TRAIL	TR.
TRANSFORMER	TRANSF
TRANSITE	TRANS
TYPICAL	TYP
UNDERGROUND	U.G. or U/G/
UNDER CONSTRUCTION	U/C
VELOCITY	VEL
VERTICAL	VERT
VERTICAL CURVE	V.C.
VOLUME	VOL
WALL THICKNESS	W.T.
WASH OUT	W/O

Technical Legend	Plan Profile Abbreviations
WATER	W
WEST	West
WEST SIDE	W/S
WEEPING TILE	W.TILE
WEIGHT	Wt
WIDTH	WDTH
WITNESS PIN	W.PIN
WOODEN POST	W.P.
YARD	YD2