



**Engineering Department**

**DRAWING STANDARD  
SPECIFICATIONS**

**June 2017  
(Updated November 3, 2020)**

	<b>Page</b>
<b>1 INTRODUCTION.....</b>	<b>1</b>
1.1 Overview .....	1
1.2 Measurements / Units.....	1
1.3 Hardcopy and Digital Template .....	1
<b>2 DRAWING STANDARDS.....</b>	<b>2</b>
2.1 General Hard Copy Drawing Standards.....	2
2.2 Survey and Drawing Reference (Horizontal and Vertical Datums).....	4
2.3 Chainage and Baselines.....	5
2.3.1 Chainage.....	5
2.3.2 Baselines .....	5
2.4 Plan and Profile Drawings .....	6
2.4.1 Plan View .....	6
2.4.2 Profile View .....	8
2.5 Additional Standards for Specific Service Drawings.....	9
2.5.1 Storm and Sanitary Sewers .....	9
2.5.2 Roads.....	10
2.5.3 Water.....	10
2.5.4 Street Light Works .....	11
2.5.5 Sidewalks .....	11
2.5.6 Cross-Sections.....	11
2.5.7 Intersections .....	12
<b>3 DRAWING SUBMISSION PROCESS.....</b>	<b>13</b>
3.1 Submission Process.....	13
3.2 Sign and Seal.....	14
<b>4 DIGITAL FILE SUBMISSION.....</b>	<b>16</b>
4.1 Spatial Coordinate System .....	16
4.2 Naming Convention for Digital File .....	16
4.3 Submission of Digital File .....	17

**List of Tables**

- Table 2.1.1: Asset / Service Feature Types
- Table 2.2.1: Survey Control Monument Reference Data
- Table 2.5.1: Geometric Curve and Curb Return Data
- Table 4.2.1: File Name Abbreviation per Drawing Phase

**List of Appendices**

Appendix I: Road Templates

- i. 27B Avenue Road – Design Template
- ii. 27B Avenue Road – As-Constructed Template

Appendix 2: Utility Templates

- i. 27B Avenue Storm Sewer – Design Template
- ii. 27B Avenue Storm Sewer – As-Constructed Template

Appendix 3: Legend & Linetypes

## 1 INTRODUCTION

### 1.1 Overview

The City of Surrey's Engineering Department receives over 2,000 design drawings per year from a range of consultants and developers as part of our Capital Construction Program and Land Development projects. Drawings are recorded, scanned, organized and stored within the City's GIS system. To maximize efficiencies and resources, the City has developed Drawing Standard Specifications for consultants and developers to adhere to.

This document specifies those Standard Specifications to which each engineering infrastructure drawing must adhere to. Adherence to these standards will help to ensure consistency across the City, a higher degree of accuracy of as-built submittals and will assist in projects being accepted and signed off as soon as possible.

### 1.2 Measurements / Units

SI units (International System of Units), conforming to the Canadian Metric Practice Guide, CSA CAN3-Z234.1., are used in this Standard Specifications and shall be used in all drawings.

All references to pipe diameter are to be interpreted as the minimum inside pipe diameter.

### 1.3 Hardcopy and Digital Template

Each drawing must adhere to the general page layout, standards, legend and line types defined in this document. In an attempt to align the City's Drawings Standards with the common industry based standards, the City has generally adopted the MMCD Municipal CAD Standards and made supplementary modifications to suit the City. At this time, the City still relies on hardcopy check prints, instead of solely on digital CAD submittals, and as such the City does not require developers and consultants to use Civil3D nor a consistent digital layer name convention as set out in the MMCD; however the City requests that these industry based digital layer names be utilized as much as possible. For reference purposes, hardcopy examples are provided in **Appendices 1 to 3**, for which digital templates can be obtained from the City's GIS Section ([GIS@surrey.ca](mailto:GIS@surrey.ca)).

Road designs (Local/Collector/Arterial) should follow the example provided in **Appendix 1**. Utility designs (water, sanitary, drainage, district energy) should follow the Plan – Profile example provided in **Appendix 2**. For all drawings, with the "Drawing Type" attribute within the title block shall be changed to reflect the annotation as noted in **Table 2.1.1** (i.e. Road works, signals, water).

## 2 DRAWING STANDARDS

### 2.1 General

The following shall apply to all drawings:

- a. Each project should contain a Key Plan that illustrates the overall layout, location of the project works, and connections made to existing mains. Notes pertaining to the construction of a particular service type are to be shown on the applicable service drawings, not on the Key Plan.
- b. Each project shall have separate drawings for each asset type (i.e., district energy, drainage / storm sewer, sanitary sewer, water, roads, street lighting). Refer to **Table 2.1.1** for the various asset types.
- c. All drawings must identify existing infrastructure within the project area. Each of the following, if applicable, must be illustrated:
  - Water Infrastructure
  - Sanitary Infrastructure
  - Drainage Infrastructure
  - Catch Basins
  - Lawn Basins
  - Ditches
  - Driveway Culverts and Sizes
  - Utility Poles
  - Gas Lines
  - Underground electrical / CATV
  - Edge of Pavement
  - Curbs and Sidewalks
  - Boulevard Trees
  - Survey Monuments
- d. All dimensions and elevations are to be in metres.
- e. All hardcopy drawings submitted must be original prints, with black ink and white background.
- f. Drawings shall be orientated with the north arrow pointing to the top or to the right hand side of the drawing.
- g. Drawings must use the City's Engineering Standard Title Block (shown in **Appendix I and 2**), and adhere to the City's Standard Drawing Legend and Linetypes (Refer to **Appendix 3**). Note, in the title block the "Title" should follow the template examples in **Appendix I** (i.e. 27B Avenue Roadworks or 27B Ave Storm) and the "Drawing Type" shall match the "service type" provided in **Table 2.1.1**.

**Table 2.1.1: Asset / Service Feature Types**

<b>Asset</b>	<b>Service Type</b>	<b>Information to be Included on Drawing</b>	<b>Annotation to be used for "Drawing Type" in Title Block</b>
Roads / Transportation	Roads	Longitudinal profiles, cross-fall percentage, elevations (centreline, median, curb/gutter pan, etc.) and cross-sections at maximum 20m intervals	Roadworks
	Sidewalks	Existing and proposed sidewalks, driveway crossings, letdowns, elevations, cross-sections with thickness and granular base detail	Roadworks
	Pavement Markings	Proposed pavement markings and signage	Marking/Signage
	Traffic Signals	Signal head type, controllers, sign details, junction boxes, conduits, power source, etc.	Signals
	Street Lighting	Pole locations / spacing, pole type, lamp type, illuminance, boxes, conduits, power source, etc.	Lighting
Water	Water	Water mains, fittings, connections, manholes, etc.	Water
	Pump Station, PRV	Varies by Discipline	Discipline (Civil, Mech, Struc, Elec)
Sanitary	Sanitary Sewer	Sanitary mains, connections, manholes, etc.	Sanitary
	Sanitary Catchment Plan	Refer to Design Criteria Manual	Sanitary
	Pump Station	Varies by Discipline	Discipline (Civil, Mech, Struc, Elec)
Drainage / Stormwater	Storm Sewer	Drainage mains, connections, manholes, etc.	Drainage
	Stormwater Control Plan	Refer to Design Criteria Manual	Drainage
	Pump Station	Varies by Discipline	Discipline (Civil, Mech, Struc, Elec)
	Detention Pond	Refer to Design Criteria Manual	Drainage

## 2.2 Survey and Drawing Reference (Horizontal and Vertical Datums)

The City of Surrey lies within Integrated Survey Area No.1, Surrey (ISA No.1) and is also covered by the Metro Vancouver Active Control System (MV-ACS). All drawings submitted to the City must reference coordinates (eastings, northings, and elevations) derived from either:

1. Ties made to at least two existing and validated ISA No.1 integrated survey monuments shown in the Integrated Survey Area Listing issued December 5, 2019. Validation observations must be recorded and displayed on the Key Plan; or
2. Ties made to an active control base station within the MV-ACS or any other Class A GNSS base stations validated and categorized by the Province. Observations to known ISA No.1 ground control monuments will be required to ensure adequate redundancy. These observations must be recorded and displayed on the Key Plan.

Nov. 2020

Coordinates derived from either of these methods will reflect the latest coordinate refresh published by the Province of BC using the Nad83 (CSRS) 4.0.0.BC.1.MVRD horizontal datum and CVD28GVRD2018 vertical datum.

Nov. 2020

Each drawing must include a reference to the survey control used and must include:

- ISA No.1 Monument number or name of the MV-ACS or Class A Base Stations;
- Coordinates (eastings, northings, and elevations); and
- Location (address/cross streets).

Validation observations between existing ISA No.1 control monuments or from MV-ACS or any other Class A GNSS base stations to known ISA No.1 ground control monuments are required to ensure adequate redundancy. These observations must be recorded and displayed on the Key Plan, in a format similar to **Table 2.2.1** below

**Table 2.2.1: Survey Control Monument Reference Data**

Monument No.	Published			Observed			
	Elevation	Easting	Northing	Elevation	Easting	Northing	Date

## **2.3 Chainage and Baselines**

### **2.3.1 Chainage**

Drawings shall include chainage along the centreline of the road or directly in-line with the asset / utility. The chainage shall start in-line with a related lot corner, and not at an arbitrary location, nor the centre of an intersection, nor from an infrastructure asset (i.e., watermain tie-in or sewer manhole). All chainage shall:

- a. Start at 1+000 and be in 20 metre intervals, rounded off to the nearest 0.1m (i.e., 1+020, 1+040, 1+060);
- b. Have continuation breaks, where applicable, at a 20-meter interval (i.e., 1+280 or 1+300 or 1+320); and
- c. Not overlap the same chainage numbering when beginning work on another Street or Avenue. For example, if work on 152 Street begins at 1+000 then work on 64 Avenue shall start a new chainage numbering (i.e., 2+000 or 3+000).

### **2.3.2 Baselines**

For projects that have multiple assets being designed on the same road, baseline chainage along road centreline may be permitted. The chainage shall follow the requirements identified in Section 2.3.1 and:

- a. All baselines shall be referenced spatially, including annotated offsets from property lines, ties to monuments, or identification of easting and northing coordinates of start and end points;
- b. Offsets are to be shown to both sides of the road allowance or to one side with the road allowance width annotated;
- c. Baseline change of direction (bend, curve, deflection, BC, EC, etc.) must be noted; and
- d. Each drawing must have sufficient baseline information to stand on its own.



## 2.4 Plan and Profile Drawings

### 2.4.1 Plan View

All plan views are to meet the following requirements:

1. The plan shall be situated on top of the page and chainage in plan shall align directly with the chainage in profile, unless there are curvatures in the alignment.
2. The plan view shall show the legal cadastral with all legal descriptions (lots and plan numbers) and dimensions (to the nearest 0.01m). Existing house numbers and all registered statutory rights-of-way and easements.
3. The names of streets are to be indicated outside of the road boundaries. Road widths are to be annotated. No temporary (e.g., A, B or C) names will be accepted.
4. All work done must be shown (e.g., removal of a clean out or replacement of a clean out by a manhole, removal or existing blowdowns, lines abandoned, etc.) and clearly noted on the appropriate drawing.
5. Existing infrastructure is to be shown in thin/light black lines and new works are to be drafted in bold lines. Refer to templates provided in **Appendices I to 3**.
6. Drawn at a horizontal scale of 1:500 (plan and profile) with the profile having a vertical scale of 1:50. A horizontal scale of 1:250 should only be used where the project is small enough to fit on a single drawing, and the vertical scale should remain 1:50. In rare cases, the City may accept a 1:100 vertical scale.
7. All offsets of proposed and existing assets (mains, manholes, services, etc.) will be indicated to the nearest 0.01m and dimension referenced to and along property lines. Offsets for new mains are to be circled. **All offsets dimensions shall be digitally / automatically generated in CAD as it is not acceptable to simply change the associated CAD dimension string to a text based numerical value.**
8. All proposed and existing assets (mains, manholes, services, streetlights, etc.) must be placed at their correct spatial location, as confirmed by completing a topographic survey. **It is not acceptable to simply rely on as-built drawing offsets and inverts.**
9. An offset from lot corners must be shown for all service connections. A note indicating typical is not acceptable. If the connection is not perpendicular to the main, the location of each bend is to be shown.
10. The rim, invert and depth (where applicable) are to be shown for all service connections, with a text box outlining the information.
11. Where there are existing connections, the field-measured inverts are to be shown. Where information has been obtained from an As-Constructed drawing, this must be clearly noted.
12. Two dimensions from lot corners are required to show the location for all manholes, valves, tees, hydrants, stubs, catchbasins, lawnbasins, bends in water lines, etc.  
(Note: The "Location" of manholes as shown on the drawings are to be the location of

the intersection of the pipes within the manhole, not the center of the lid. When there is a major difference, such as large concrete chambers, a note stating the offset of the manhole lid shall be added to the drawing.)

13. Where chainage is used to locate services, bends, etc., the baseline must be shown and dimensioned to the legal along with all curve data. Each change of direction (pipe deflections) must be noted and tied with dimensions to lot corners, or noted as follows:

- pipe pulled from sta. \_\_\_\_ to sta. \_\_\_\_
- BC at sta. \_\_\_\_
- EC at sta. \_\_\_\_
- bend at sta. \_\_\_\_

14. On curved alignments clearly reference/dimension all fittings to the baseline and/or lot corners.

15. All notes and dimensions are to be placed outside of the road allowance.

## 2.4.2 Profile View

Profile views on drawings are to meet the following requirements:

1. The profile view must show:
  - Chainages and profile along the baseline;
  - Elevations of new and existing works;
  - New and existing service connections (all asset types);
  - Mains and services being crossed by the new works (and their elevations);
  - All data pertaining to the design of the works; and
  - Major and minor grid, as per the Drawing Templates provided in **Appendix I and 2.**
2. Elevations at all grade changes are to be shown with a chainage or ties to lot corners.
3. All elevations are to be geodetic. Existing elevations are to be rounded to the nearest 0.01m whereas proposed elevations are to be rounded to nearest 0.001m.
4. Start chainage on the profile view, should line up vertically with the station on the plan view.
5. The material type (PVC, concrete, etc.) and DR (or pressure rating) must be shown on the profile for all mains.
6. Rim and invert elevations are required for all manholes and clean outs.
7. All manhole and clean-out diameter are to be noted. If a standard 1,050 mm diameter manhole is used, a general note is acceptable with any non-standard diameters clearly noted on the profile.
8. Profiles must be shown for all utility/asset designs (including road crossings) except where the installation of connections from an existing main is the only work performed.
9. Pipe measurements should be from the center of each associated manhole. Chainage distances are not acceptable.
10. For drop manholes, the type of drop ('inside', 'outside' or 'ramp' manhole) must be noted, along with the associated inverts of each manhole penetration.
11. Where a new main connects to an existing main, show the location and inverts of both existing upstream and downstream manholes.

## 2.5 Additional Standards for Specific Service Drawings

This section details standards specific to individual service drawings (as previously identified in **Table 2.1.1**). All Specific Service Drawings shall conform to the City of Surrey Standard Drawing Templates.

### 2.5.1 Storm and Sanitary Sewers

Additional information required on storm and sanitary sewer drawings includes:

1. Sewer diameter and material and manhole diameter and material are to be shown, as well as all invert and service elevations.
2. Where a new sewer ties to an existing stub, the balance of the distance to the existing manhole (from the new sewer) is to be shown.
3. Show location, invert and offset all new sewers installed, regardless of length.
4. All lawn basins (both private and Municipal) are to be referenced to lot corners and the size, material and rim elevation shown with the size and material of the lead.
5. 5 and 100-year HGL (storm) is to be shown. For each proposed storm sewer pipe, the  $Q_5$ ,  $Q_{100}$  and  $Q_c$  will be noted in the profile.
6. All sanitary sewer flows and capacity to be shown in profile for each section of pipe.
7. The type of backfill material is to be shown on each drawing. If sections of the sewers require non-standard backfill (i.e., lightweight fill), the extent of that backfill must be shown both vertically and horizontally in the plan-profile.
8. Storm sewer catch basin locations and rim elevations are to be shown, with the offset from property line to the back of catch basin and the chainage.
9. Detention pond information required:
  - Stage-storage curve, with elevations;
  - All pipes with diameters, inverts and location;
  - Design water levels, high water elevation, and orifice/weir elevations;
  - Control device(s) and maintenance details; and
  - Location, size and elevation of all manholes, catchbasins, etc.
10. Service connections to be dimensioned with references to property line.
11. All non-standard service connections are to be noted on the drawing.

## 2.5.2 Roads

Additional information required on road drawings includes:

1. A typical cross-section of the designed roads is to be shown on each drawing.
2. Pavement tapers are to be dimensioned to property lines with length of taper dimensioned and offset to existing pavement.
3. A table, similar to **Table 2.5.1** as follows, showing curve and curb return data:

**Table 2.5.1: Geometric Curve and Curb Return Data**

CURVE NO. 1		2	3	4
R	7.000	7.000	7.000	7.000
Δ	84° 10' 42"	95° 49' 18"	90° 00' 00"	90° 00' 00"
T	6.322	7.750	7.000	7.000
Arc	10.284	11.707	10.996	10.996
B.C. Sta.	1 + 40.71	1 + 38.73	—	—
E.C. Sta.	1 + 72.60	1 + 52.60	1 + 11.20	1 + 11.20

## 2.5.3 Water

1. All fittings are to be shown in plan view, with “box outline”, for each location and referenced to chainages and lot corners. Show on the ‘plan’ portion of the drawing. Fittings to have the description of hub, flange, etc.: e.g., 150H x 150H x 150 FL Tee.
2. All fittings are to be shown in the profile with the elevations and chainages indicated.
3. Water connections larger than 20 mm diameter are to show diameter. Water connections 100 mm diameter and larger shall show diameter and elevation at the property line.
4. Water service connections to be dimensioned to property line.
5. The location of all pipe deflections, whether horizontal or vertical, must be shown and dimensioned to legal.
6. Between each grade change, show the length and grade of that segment of main.
7. Details, including section view, are required for all tie-ins.

#### **2.5.4 Street Light Works**

1. The drawings will only include plan views. Profile not required. All improvements (service boxes, poles, etc.) are to be tied to property lines.
2. Streetlights are to be numbered in accordance with the City's procedures.

#### **2.5.5 Sidewalks**

The drawings must show the width of the sidewalk and the type of materials used. The offset to back of the sidewalk are to be dimensioned to the property line must be circled. A typical cross-section shall also be shown on each drawing; see next section.

1. When sidewalks are part of road works, they will be shown on road drawings.
2. When sidewalks are shown separately, the drawings will include plan view and profile.
3. The drawings will require the same information as for streetlight works. The new sidewalk will be drafted in bold lines and hatched (refer to line types in **Appendix 3**).

#### **2.5.6 Cross-Sections**

Cross-sections are required for drawings depicting new road, sidewalk, drainage channels and/or dykes, and at least every 20m intervals.

For road works, cross-sections must span the full width of the road allowance and any tapers into private property. The cross-section must include property lines, ditches, and edges of existing road and centreline of road. It must also illustrate chainages and elevations of each break in the cross-section.

The new road works must be shown with bold lines that emphasize the finished surface. Elevations of the new road must be shown. Road measurements from centreline of the road allowance must also be illustrated.

Cross-sections will be drafted using a 1:100 Horizontal Scale and a 1:20 Vertical Scale.

Existing elevations in cross-section should be rounded off to the nearest 0.01m, whereas proposed elevations in cross-section should be bold text and rounded to the nearest 0.001m.

### 2.5.7 Intersections

1. For road intersections with traffic signals or traffic channelization, the drawings will only include plan views. No profile is required. The scale of drawings must be 1:200.
2. The drawings will show the following existing services:
  - Curbs
  - Sidewalks
  - Utility Poles
  - Islands
  - Valves
  - Inspection Chambers
  - Hydrants
  - Edges of Pavement
  - Catch Basins
  - Electrical Conduits and Junction Boxes
  - Traffic Signals
3. Conduits to be sized in millimetres.
4. The location of new lights, junction boxes, and conduits will be referenced to property lines and circled.
5. Where traffic channelization is shown, widths of traffic lanes are to be shown, length of road tapering and stop bars are to be shown.
6. Where raised islands are used, curb return details and a cross-section of the intersection is to be shown on the drawing, to scale.

### 3 DRAWING SUBMISSION PROCESS

#### 3.1 Submission Process

Drawings must be submitted to the City's GIS Section three times over the course of a typical project: (1) at the Final Design (Early Copy) stage, (2) the Initial As-Constructed Submission stage, and (3) at the Final As-Constructed submission stage. Only after the GIS Section processes and signs off on all drawings will the project obtain a letter of acceptance.

##### **Final Design / Issued for Construction Submission:**

The first time drawings are submitted to the City' GIS Section is at the Final Design / Issued for Construction Stage, referred to by City as the Early Copy stage. One set of hard copy drawings and one set of digital AutoCAD files are required. For City Capital Projects, along with this submission, the consultant shall submit a compiled PDF of all drawings as well as the digital Survey file.

##### **Initial As-Constructed Submission (Check Prints):**

Once construction is complete, one set of hardcopy drawings and the associated digital files must be sent to the City. Upon receipt, the City forwards the drawings to the GIS Section for input into the GIS database. The GIS Section records the receipt of the drawings, assigns Surrey Drawing Numbers, reviews the drawings for completeness and adherence to standards, and inputs all new services into the City's GIS.

Any deviation from standards, omissions, or any other deficiencies to the drawings will be noted and drawings will be returned to the consultant for final review and updates. The City expects all deficiencies to be corrected, and the Surrey Drawing Numbers entered on each drawing. Once complete, the drawings must be sent back to the City for final acceptance.

Please note that the most frequent deficiency encountered involves the placement of features and the dimensions and offset distances associated with those features. Placement of features must be geographically correct. Any dimensions or offset distances displayed must be to scale (e.g., if the offset distance of a manhole from a lot corner is listed as 2.1m, the placement of the manhole symbol in CAD must be 2.1m from the lot corner). **Simply changing the offset dimension text / label without moving the service feature accordingly is NOT acceptable.**

An initial set of As-Constructed drawings must be submitted to the City Project Supervisor or Inspector within sixty (60) days of Substantial Completion or the issued date on the Letter of Completion.



### **Final As-Constructed Submission:**

The Final Submission is reviewed to ensure all corrections have been made appropriately. If so, the drawings are scanned and stored on the City's network. A final acceptance letter is produced and sent to the consultant along with the release of any remaining security funds held back pending final acceptance. If drawings still have deficiencies, they are again returned to the consultant for corrections.

Each submission package must contain one set of signed and sealed hard copy drawings and one digital file (AutoCAD-Etransmit), which must include all files pertaining to the project. Final As-Constructed submissions shall include the original marked-up set of paper prints. Each set of hard copy drawings must include a Key Plan drawing and a separate drawing for each applicable service type (see **Table 2.1.1**).

For City Capital Projects, the consultant shall submit a compiled PDF of all drawings.

Please see Section 2 for a detailed description of all drawing standards. While the City recognizes the use of Civil3D, currently the digital file must either be in standard AutoCAD format, version 2010 or later. Please see Section 4 for additional information related to the digital submission.

#### Notes:

1. Drawings with incomplete, non-standard or confusing information will be returned for correction and/or clarification.
2. All drawings submitted remain the property of the City.
3. Final As-Constructed drawings are to be returned to the City within 30 days after receipt of the City's Comments on the initial As-Constructed Drawings/Check-Prints.

### **3.2 Sign and Seal**

For all City Capital Projects, all drawings must be signed and sealed at specific milestones of a project: Final Design, Issued for Construction, and As-Constructed.

For Land Development Projects, all drawing submittals must be signed and sealed.

The City requires As-Constructed drawings be sign and sealed by a Professional Engineer registered, and in good standing, with the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC).

The City will not accept drawings titled Record Drawings, nor will the City will accept As-Constructed drawings with disclaimers, with exception to the following disclaimer which the City has vetted through APEGBC and Legal Counsel:

*“By sealing and signing this drawing, I certify that the information contained in these drawings accurately reflects the original design, addenda, change orders and material design changes made during construction and field reviewed by me, or my representative, and that the as-constructed works substantially comply with the original design intent, however, I do not accept responsibility for the accuracy or completeness of the as-constructed information supplied by others contained in these drawings.”*

The above certification is based on the construction contractor providing As-Constructed information to the Professional Engineer, and is not intended to restrict the Engineer from carrying out their professional requirements, due diligence and a proper standard of care, nor does it release the professional, or their representative, from not recording As-Constructed information directly and in an accurate manner.

Any, and all, quality assurance surveys completed by the developer, consultant or the contractor are to be conducted under the Professional Engineer’s supervision and the named firm may either be a sub-consultant to the Professional Engineer or the firm the Professional Engineer is employed by, where qualified survey staff are available.

The Professional Engineer must sign and seal the Final As-Constructed drawings submitted to the City.

## 4 DIGITAL FILE SUBMISSION

A digital file must be included with the submission of the hard copy drawing set at each stage as noted above in Section 3.1. The digital file submitted must adhere to the following general requirements:

- Must conform to the City of Surrey Standard Drawing Templates;
- Must be AutoCAD (version 2010 or later);
- Must conform to the City's GIS spatial coordinate system (UTM Zone 10, NAD83 (CSRS) 4.0.0.BC.1.GVRD\_2005-04-05). Ground measurements must be properly scaled to grid measurements. (Section 4.1);
- Must be one comprehensive file, included with each submission. File name must adhere to file naming conventions (Section 4.2); and
- Can be emailed or copied to a CD/USB drive and attached with the hard copy submissions (Section 4.3).

### 4.1 Spatial Coordinate System

Note that the City's GIS system stores all existing legal and utility data in UTM, Zone 10, NAD83 (CSRS) 4.0.0.BC.1.GVRD\_2005-04-05 coordinate system. The City requires submitted digital files be in this coordinate system as well. This coordinate (or reference) system is a GRID based system. If your file is in a local, ground based coordinate system (i.e., ground measurements) then you must convert it to our grid based coordinate system prior to submission. You must use a mean combined scale factor for the project area when converting from GROUND to GRID. Scale factor computation software and scale factor gradient (contour) maps will be provided to consultants upon request.

### 4.2 Naming Convention for Digital File

Digital files submitted to the City will be copied to a common network directory for processing. File naming conventions must be followed to ensure proper organization. The naming conventions for these files include the Surrey project number and the submission phase (EC, Initial As-Constructed, and Final As-Constructed). That is, the file name should follow this convention:

City-Project-Number\_Phase.dwg

For example:

4806-7100-00\_EC.dwg  
1706-4000-00\_Initial.dwg  
3806-5500-00\_Final.dwg

Please use dashes ( - ) as the separators within the project number and an underscore ( \_ ) between the project number and the phase. The phase can be abbreviated as annotated above and noted in **Table 4.2.1** below.

**Table 4.2.1: File Name Abbreviation per Drawing Phase**

Phase	Abbreviation
Final Design / Issued For Construction ("Early Copy")	EC
Initial As-Constructed / Check Print	Initial
Final As-Constructed	Final

### 4.3 Submission of Digital File

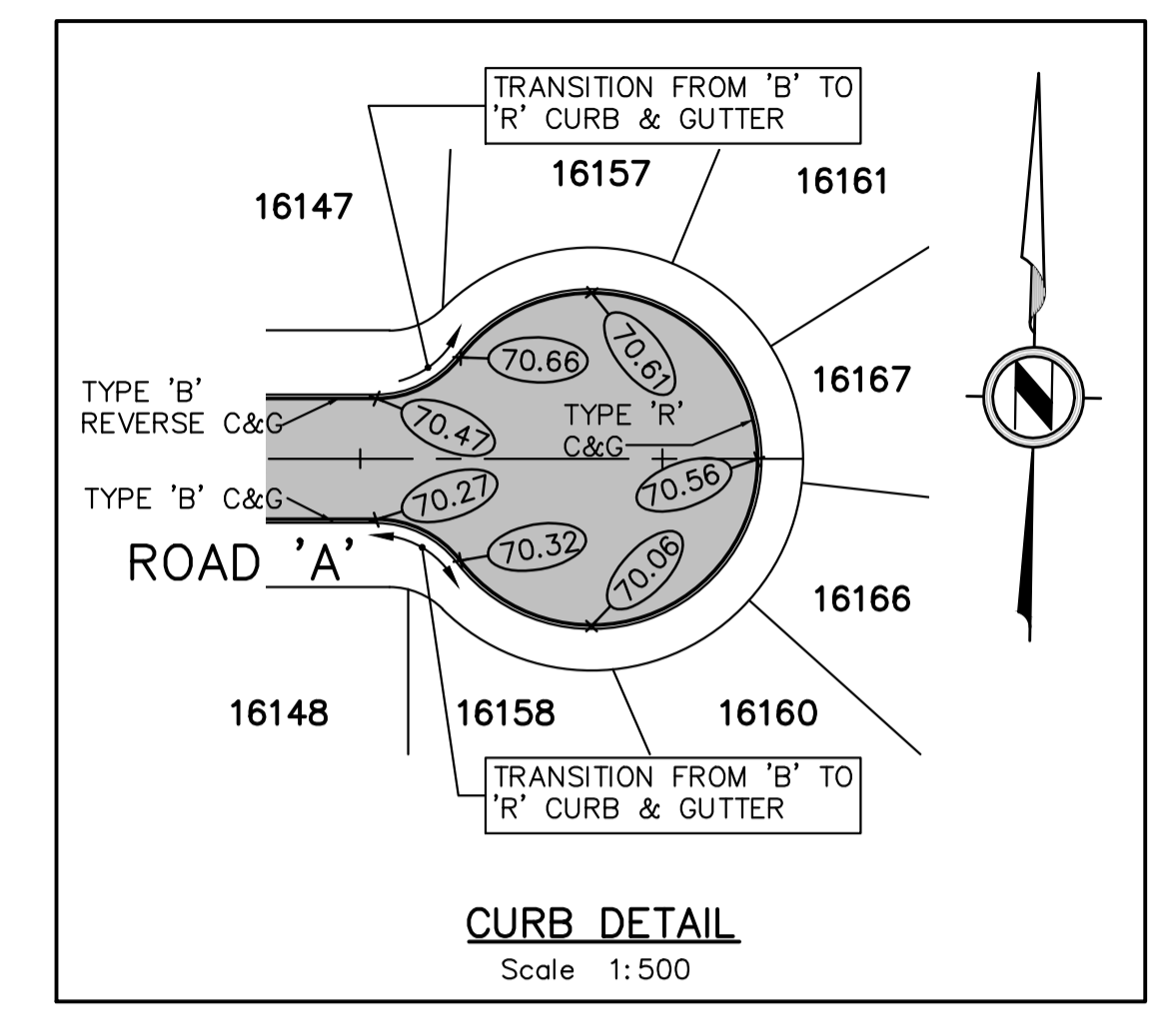
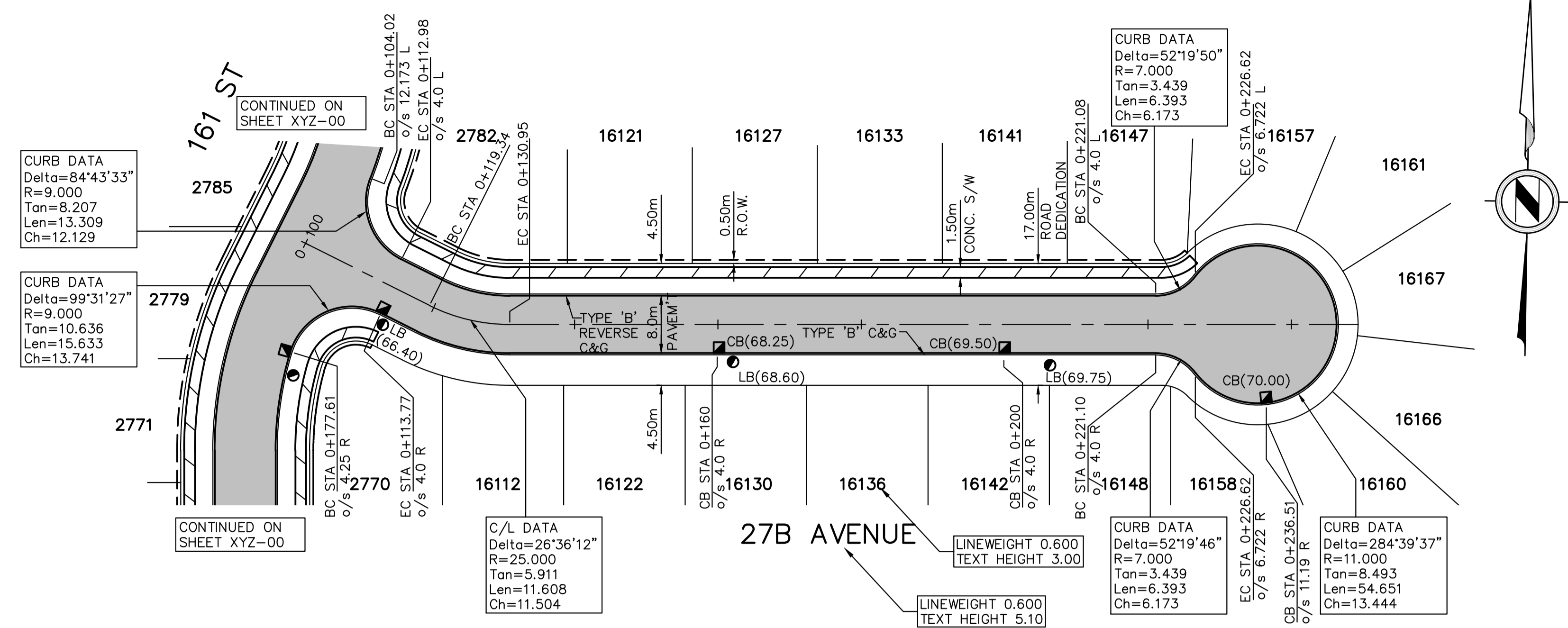
The digital file can be submitted via email to: [GIS@surrey.ca](mailto:GIS@surrey.ca)

Please include the text pertaining to each submission such as, '**Digital EC Drawing Submission**' in the subject line. Note, that projects will not be processed until the digital file is received, regardless if the hard copies have been submitted.

# **APPENDIX I - ROAD TEMPLATES**

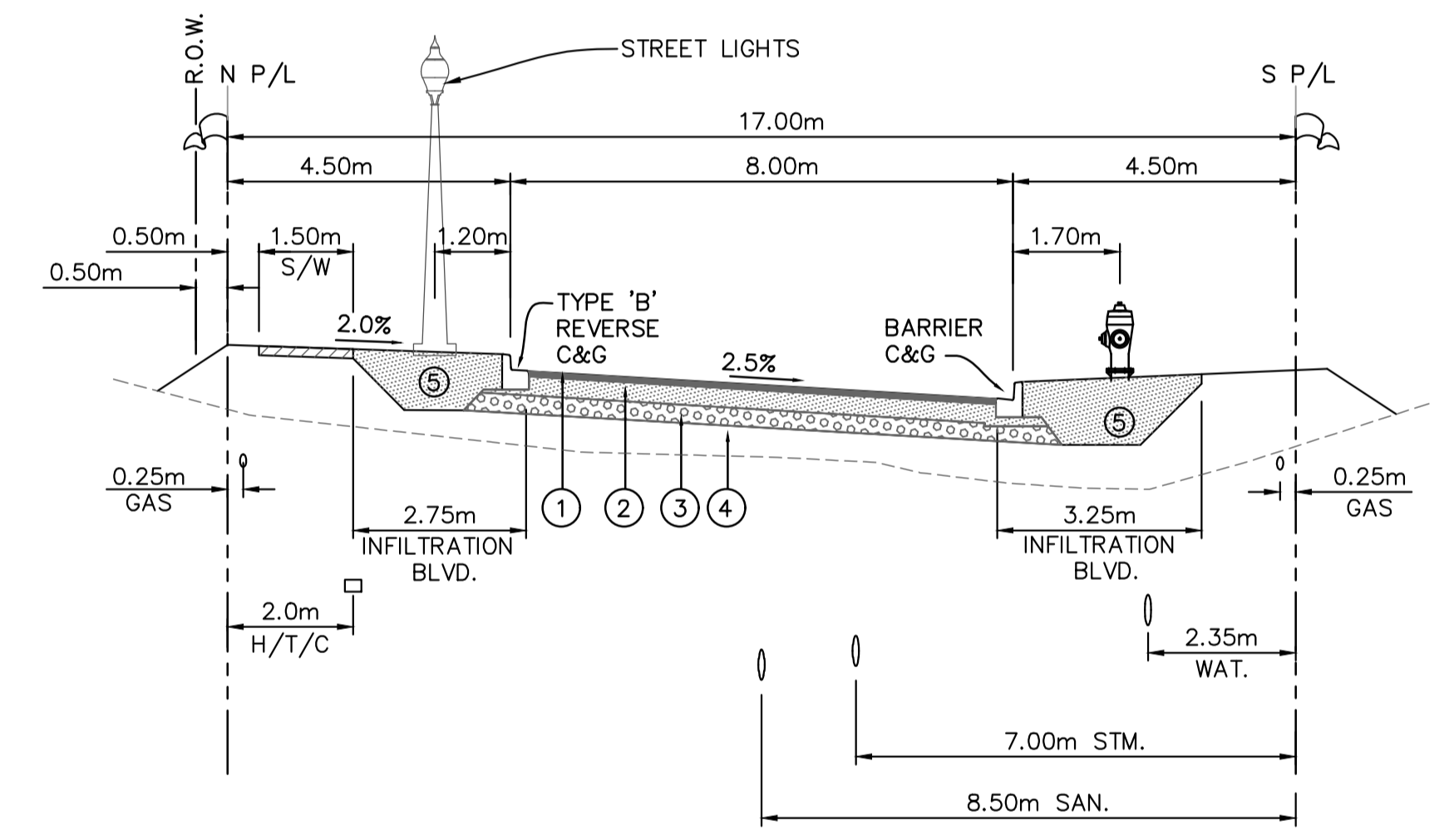
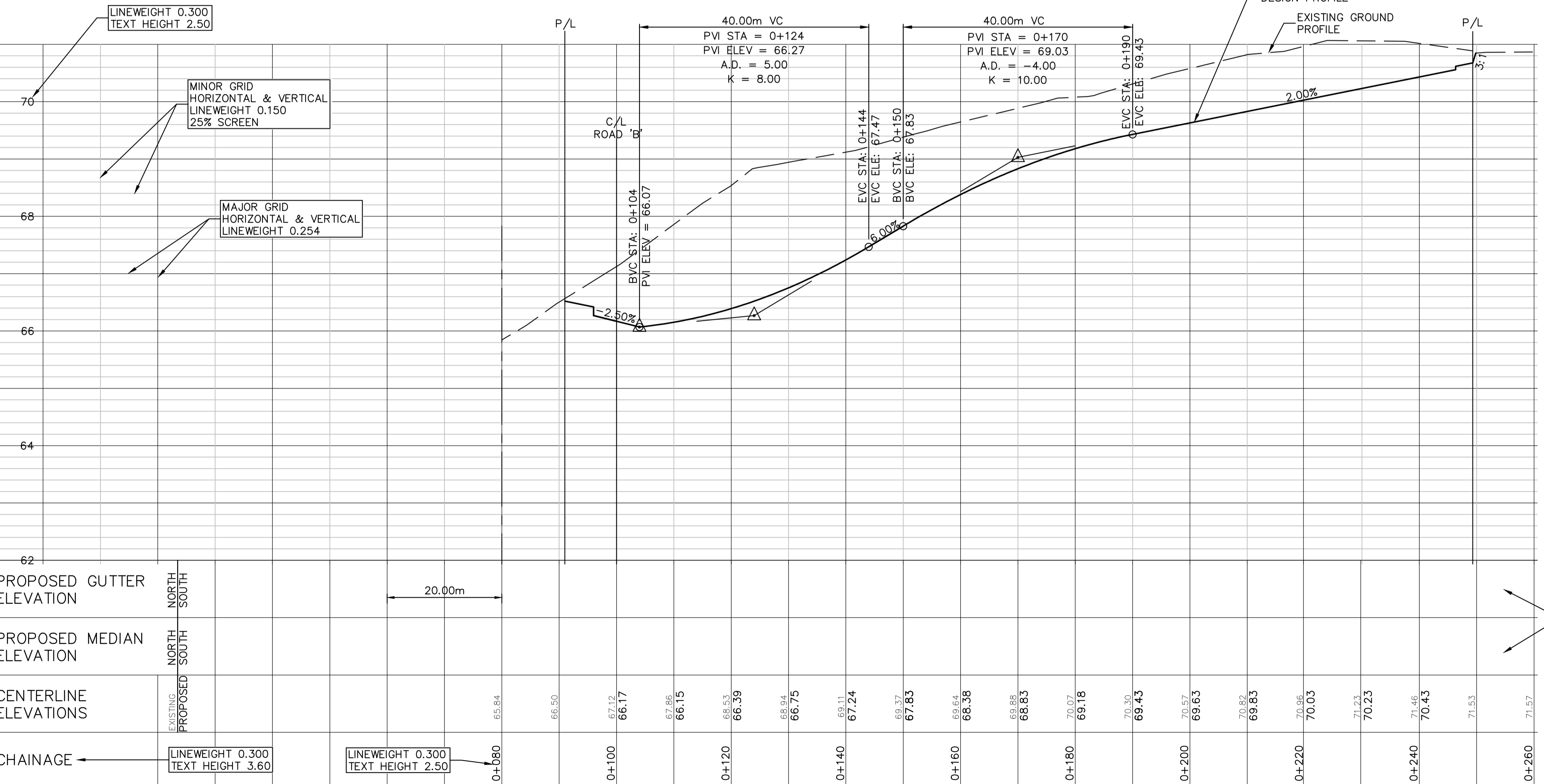
- i. 27B Avenue Road - Design Template
- ii. 27B Avenue Road – As-Constructed Template

# APPENDIX 1 (i)



**NOTICE TO CONTRACTOR**

IT IS THE RESPONSIBILITY OF THE CONTRACTOR'S SURVEYOR TO VERIFY THAT ALL LEGAL SURVEY DIMENSIONS SHOWN ON THE ENGINEERS DRAWINGS AGREE WITH THOSE ON THE REGISTERED LEGAL SURVEY PLAN. SHOULD THERE BE ANY DISCREPANCIES, THEN IMMEDIATELY NOTIFY THE ENGINEER OF RECORD



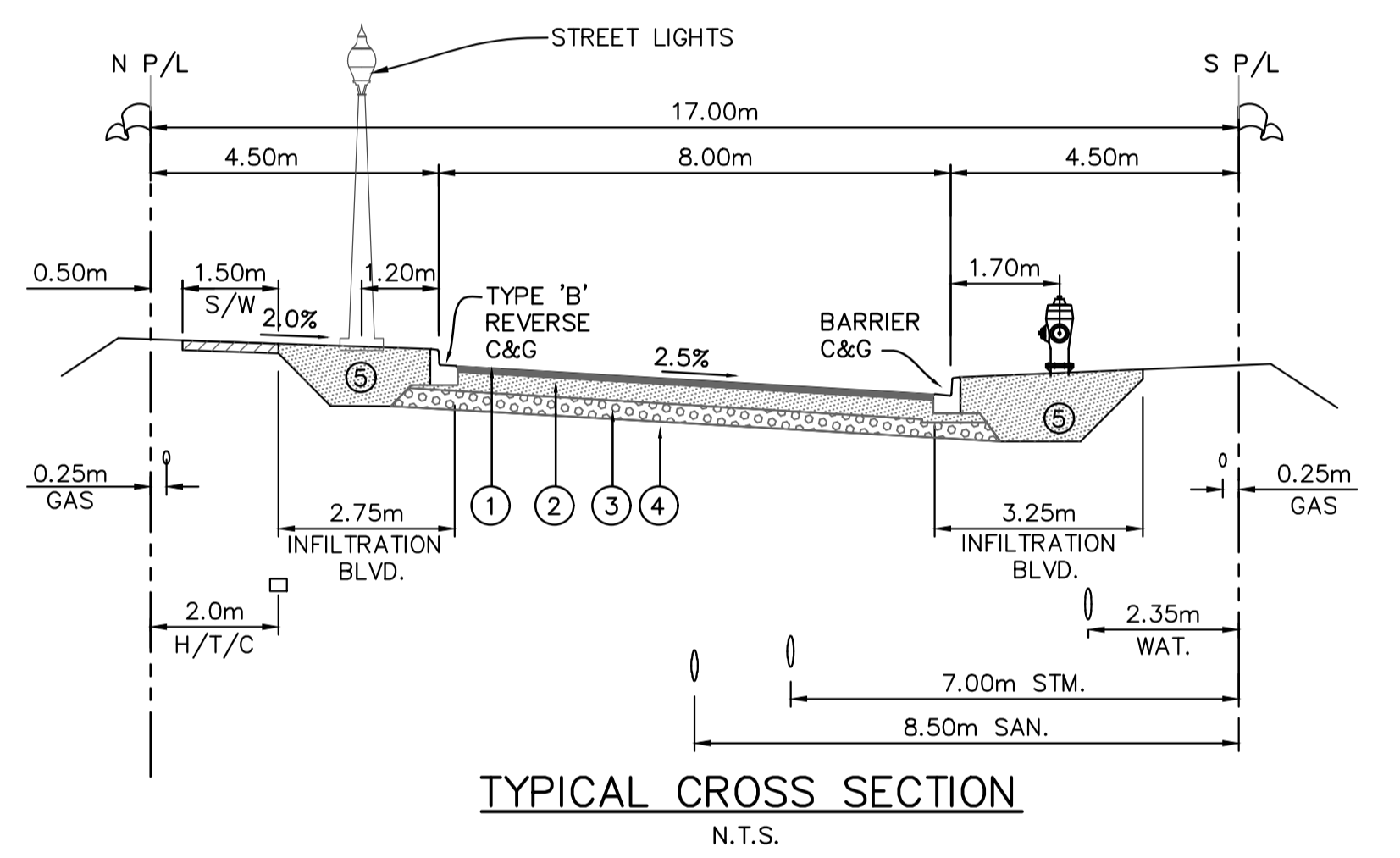
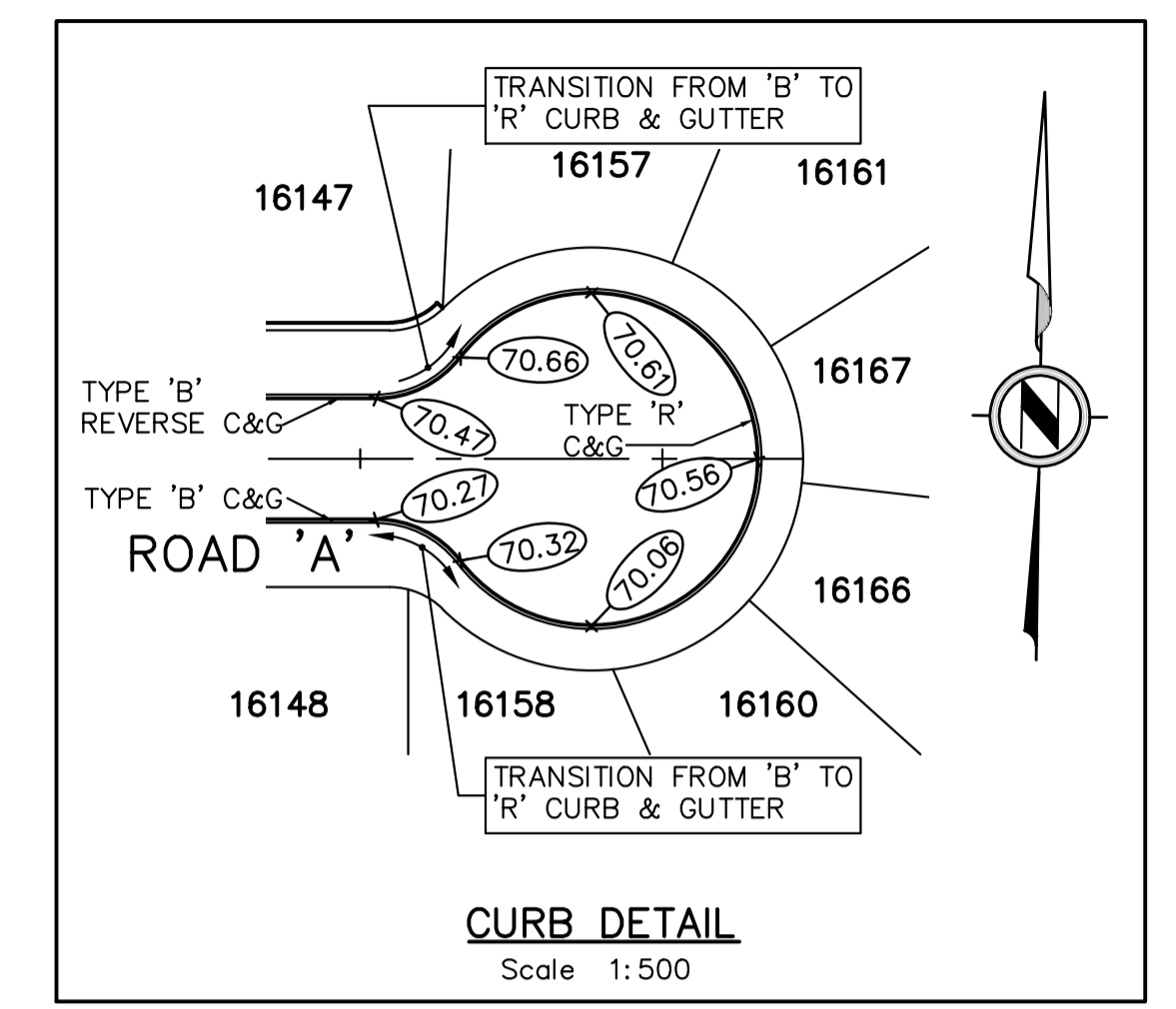
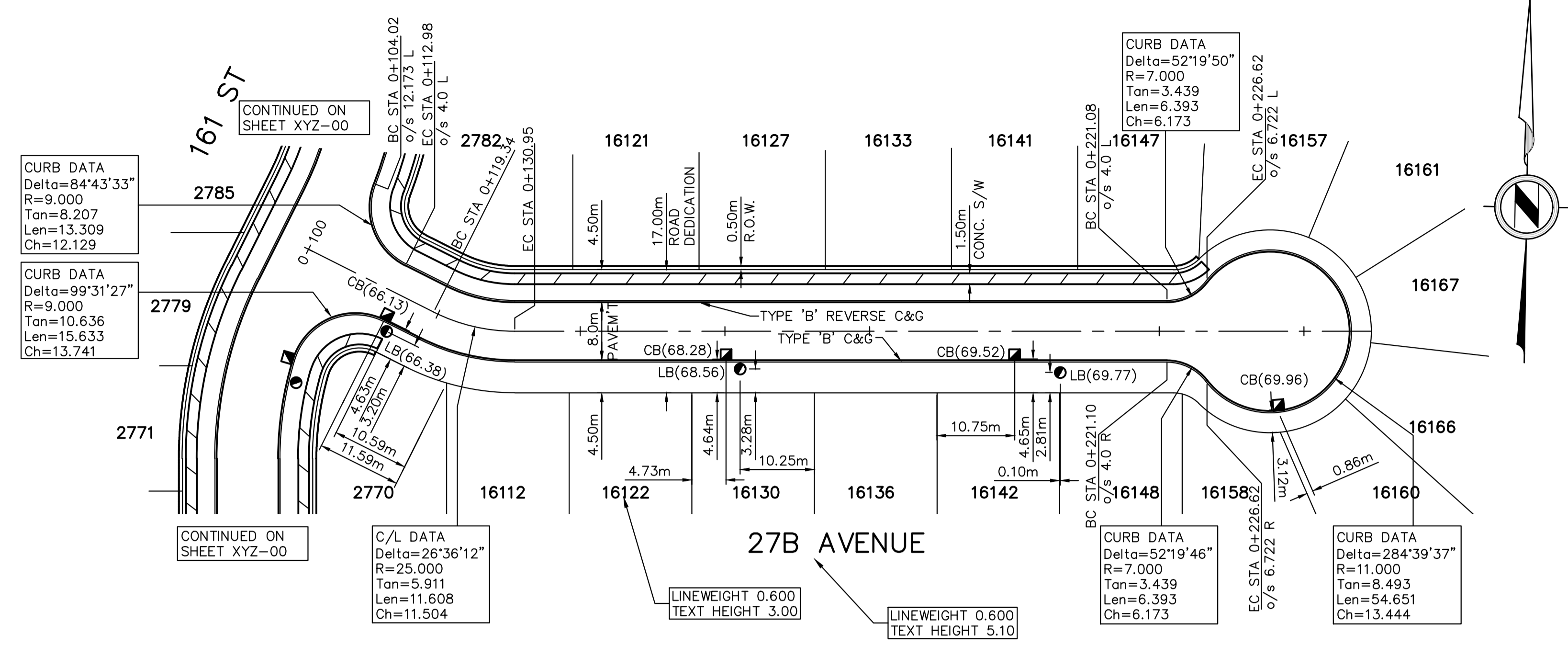
- TYPICAL CROSS SECTION ROAD 'A'**
- 85mm ASPHALT  
-40mm ASPHALT UPPER COURSE  
-45mm ASPHALT LOWER COURSE
  - 100mm-19mm MINUS CRUSHED GRANULAR BASE COMPACTED TO 95% M.P.D.
  - MIN. 200mm-75mm MINUS CRUSHED GRANULAR SUB-BASE COMPACTED TO 95% M.P.D.
  - SUBGRADE COMPACTED TO 95% M.P.D.
  - MINIMUM 450mm OF GROWING MEDIUM/TOPSOIL

FOR DRAWING TYPE NAMING CONVENTION, PLEASE REFER TO DRAWING STANDARD SPECIFICATIONS TABLE 2.1.1.

LEGAL DESCRIPTION		CONSULTANT		CLIENT		SEAL		DATE (YYYY.MM.DD)		SURREY PROJECT NUMBER	
SURVEY BENCHMARK MON: XXXXXXXX N XXXXXXXX.XXX E XXXXXXXX.XXX		CITY OF SURREY		CITY/DEVELOPER NAME				2016.11.03		Project No.	
SCALE FACTOR: ELEV. XX.XXXm		LINEWEIGHT 0.300 TEXT HEIGHT 2.00		ADDRESS 1 ADDRESS 2				CONSULTANT PROJ. NO.		DRAWING TYPE	
				TITLE				123		ROADWORKS	
				27B AVE ROAD STA. 0+00 TO 3+60 PLAN & PROFILE				DWG. NO.		REV.	
								01		1	

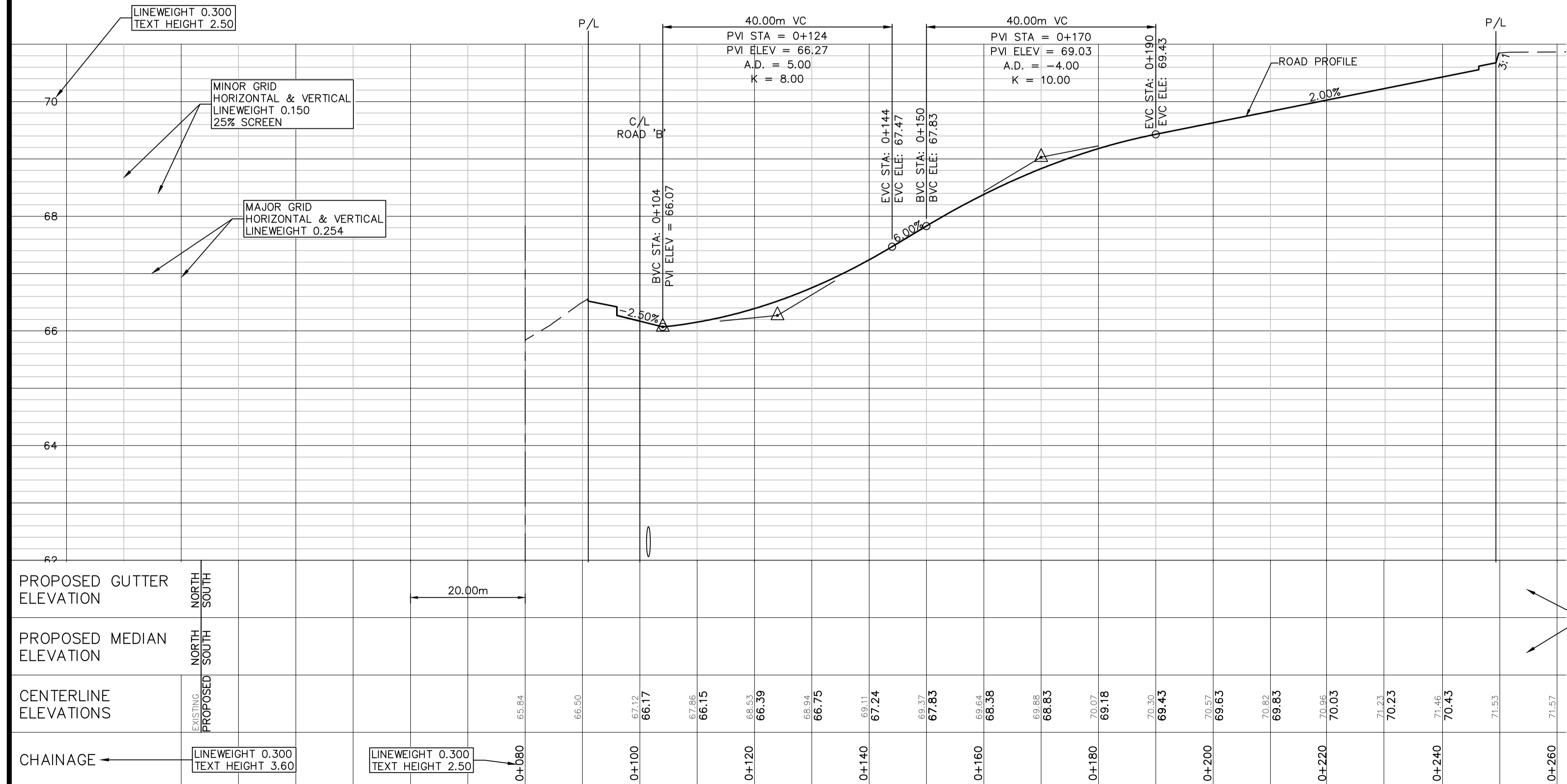


# APPENDIX 1 (ii)



- TYPICAL CROSS SECTION ROAD 'A'**
- ① 85mm ASPHALT  
-40mm ASPHALT UPPER COURSE  
-45mm ASPHALT LOWER COURSE
  - ② 100mm-19mm MINUS CRUSHED GRANULAR BASE COMPACTED TO 95% M.P.D.
  - ③ MIN. 200mm-75mm MINUS CRUSHED GRANULAR SUB-BASE COMPACTED TO 95% M.P.D.
  - ④ SUBGRADE COMPACTED TO 95% M.P.D.
  - ⑤ MINIMUM 450mm OF GROWING MEDIUM/TOPSOIL

**CERTIFIED AS-CONSTRUCTED DRAWING**



PROPOSED GUTTER ELEVATION	NORTH SOUTH
PROPOSED MEDIAN ELEVATION	NORTH SOUTH
CENTERLINE ELEVATIONS	EXISTING PROPOSED
CHAINAGE	LINEWEIGHT 0.300 TEXT HEIGHT 3.60

LEGAL DESCRIPTION

SURVEY BENCHMARK  
MON: XXXXXXXX N XXXXXXXX.XXX E XXXXXXXX.XXX SCALE FACTOR:  
ELEV. XX.XXXm

REV.	DATE	DESCRIPTION	BY
5			
4			
3			
2			
1		AS CONSTRUCTED	

CONSULTANT

BY SEALING AND SIGNING THIS DRAWING, I CERTIFY THAT THE INFORMATION CONTAINED IN THESE DRAWINGS ACCURATELY REFLECTS THE ORIGINAL DESIGN, ADDENDA, CHANGE ORDERS AND MATERIAL DESIGN CHANGES MADE DURING CONSTRUCTION AND FIELD REVIEWED BY ME, OR MY REPRESENTATIVE, AND THAT THE AS-CONSTRUCTED WORKS SUBSTANTIALLY COMPLY WITH THE ORIGINAL DESIGN INTENT, HOWEVER, I DO NOT ACCEPT RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE AS-CONSTRUCTED INFORMATION SUPPLIED BY OTHERS CONTAINED IN THESE DRAWINGS.



CLIENT

**CITY/DEVELOPER NAME**  
ADDRESS 1  
ADDRESS 2

TITLE  
**27B AVE ROAD**  
STA. 0+00 TO 3+60  
PLAN & PROFILE

SCALE: HOR. 1:500  
VERT. 1:50

DESIGNED XX  
DRAWN XX  
REVIEWED XX

DATE (YYYY.MM.DD)  
2016.11.03

CONSULTANT PROJ. NO.  
123

DWG. NO.  
01

REV. 1

SURREY PROJECT NUMBER  
**Project No.**

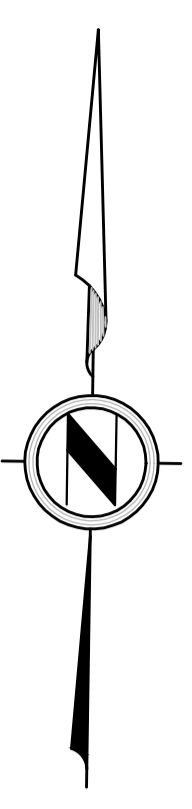
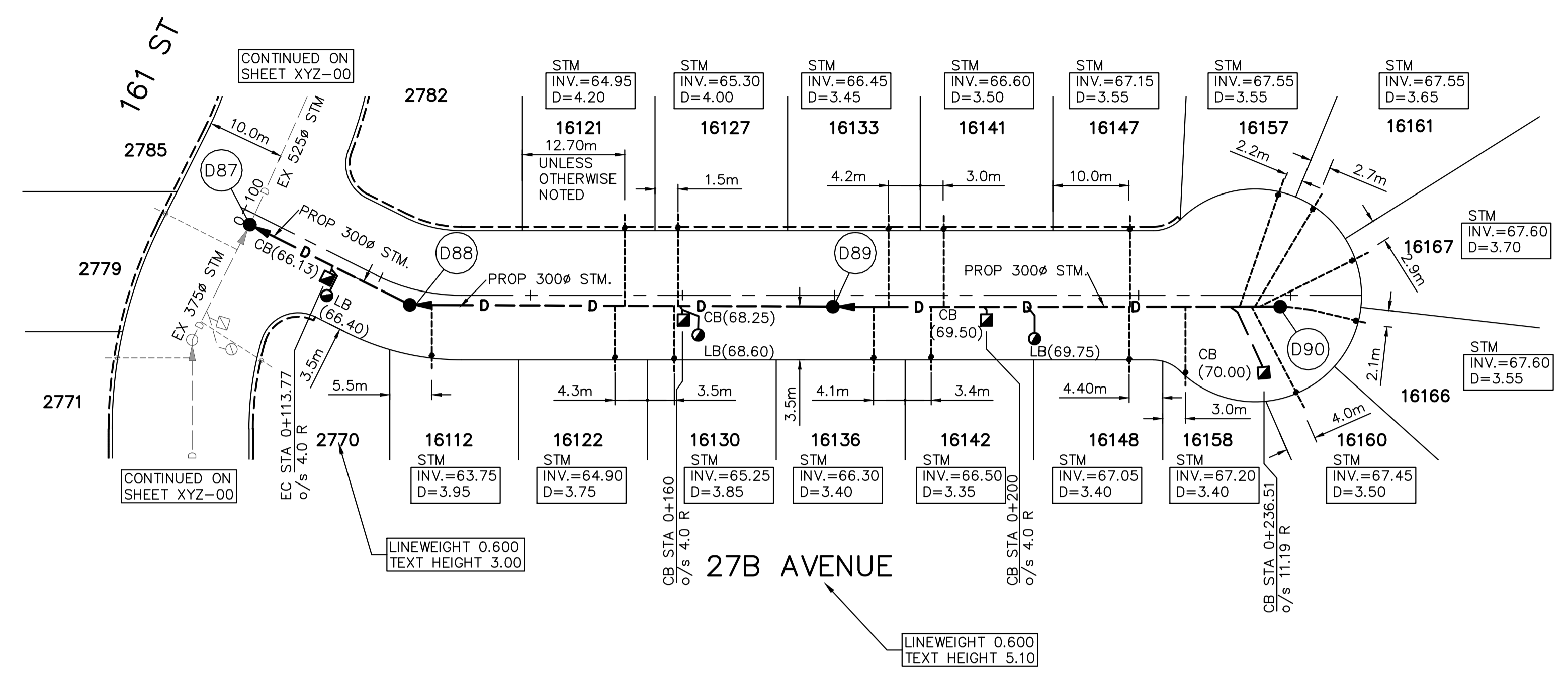
DRAWING TYPE  
**ROADWORKS**

## **APPENDIX 2 - UTILITY TEMPLATES**

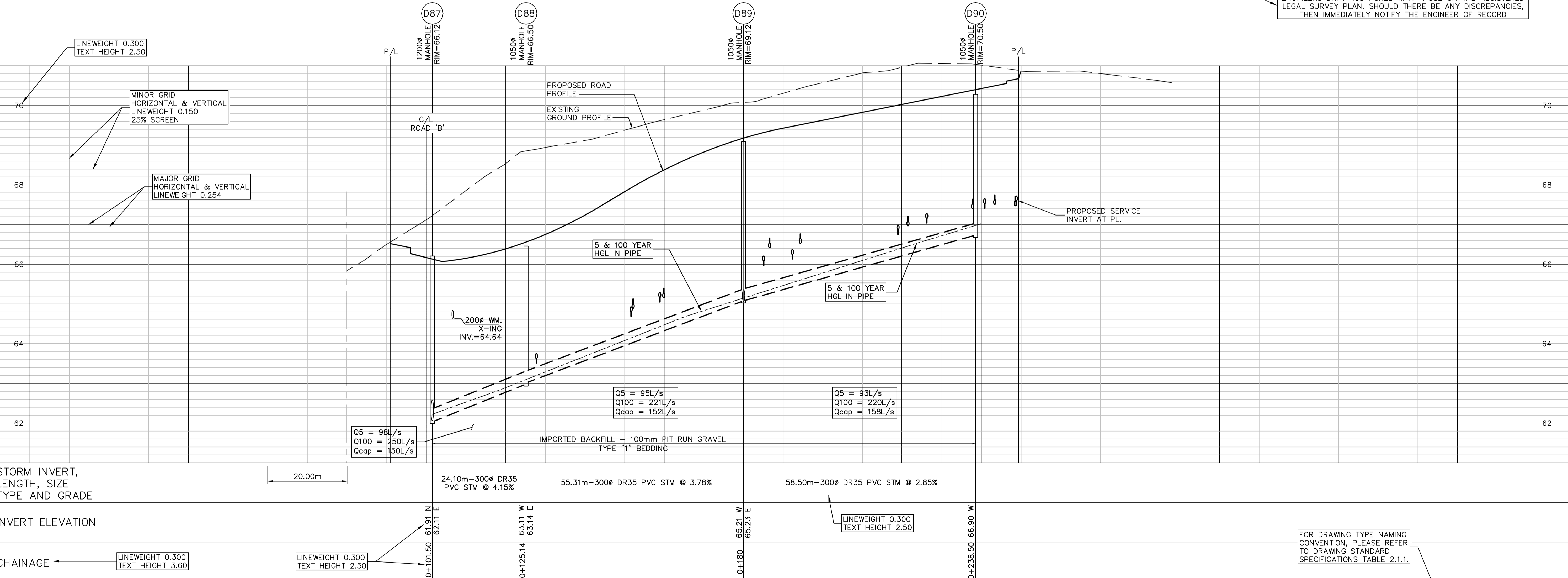
- i. 27B Avenue Storm Sewer - Design Template
- ii. 27B Avenue Storm Sewer – As-Constructed Template



# APPENDIX 2 (i)



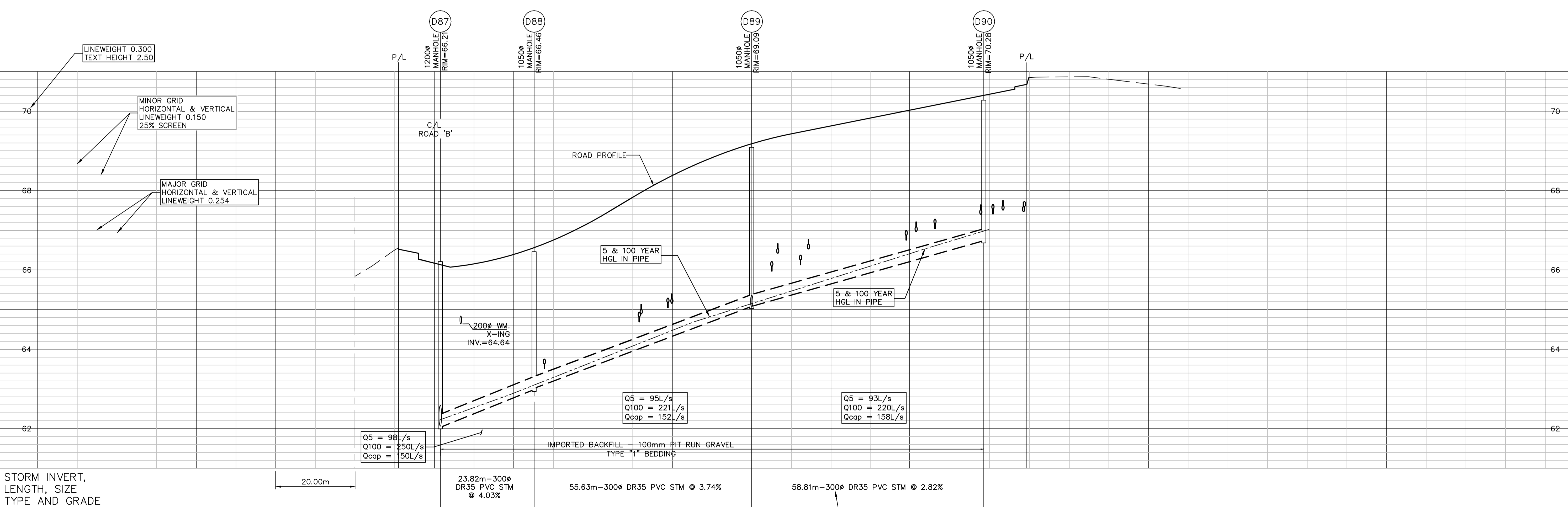
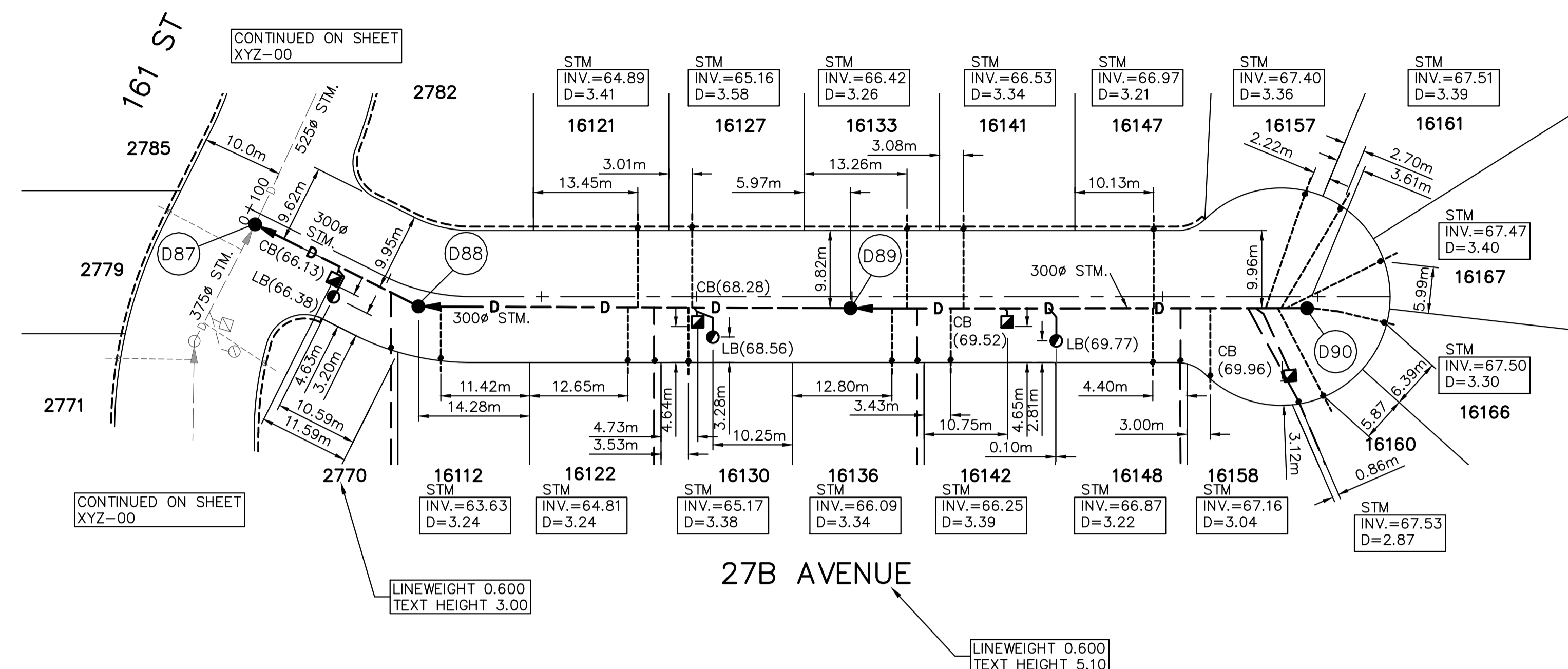
**NOTICE TO CONTRACTOR**  
 IT IS THE RESPONSIBILITY OF THE CONTRACTOR'S SURVEYOR TO VERIFY THAT ALL LEGAL SURVEY DIMENSIONS SHOWN ON THE ENGINEERS DRAWINGS AGREE WITH THOSE ON THE REGISTERED LEGAL SURVEY PLAN. SHOULD THERE BE ANY DISCREPANCIES, THEN IMMEDIATELY NOTIFY THE ENGINEER OF RECORD



STORM INVERT, LENGTH, SIZE TYPE AND GRADE	INVERT ELEVATION	CHAINAGE
20.00m	61.91 N 62.11 E	0+101.50
24.10m-300ø DR35 PVC STM @ 4.15%	63.11 W 63.14 E	0+125.14
55.31m-300ø DR35 PVC STM @ 3.78%	65.21 W 65.23 E	0+180
58.50m-300ø DR35 PVC STM @ 2.85%	66.90 W	0+238.50

<p>LEGAL DESCRIPTION</p> <p>SURVEY BENCHMARK                  MON: XXXXXXXX N XXXXXXXX.XXX E XXXXXXXX.XXX                  SCALE FACTOR:                  ELEV. XX.XXXm</p>	<p>CONSULTANT</p> <p>CITY OF SURREY</p>	<p>CLIENT</p> <p><b>CITY/DEVELOPER NAME</b>                  ADDRESS 1                  ADDRESS 2</p> <p>TITLE <b>27B AVE STORM SEWER</b>                  STA. 0+00 TO 3+60                  PLAN &amp; PROFILE</p>	<p>SCALE: HOR. 1:500                  VERT. 1:50</p> <p>DATE (YYYY.MM.DD)                  2016.11.03</p> <p>CONSULTANT PROJ. NO.                  123</p> <p>DWG. NO.                  01</p> <p>REV. 1</p>	<p>SURVEY PROJECT NUMBER  <b>Project No.</b></p> <p>DRAWING TYPE  <b>DRAINAGE</b></p>
---	---	--	--	---

# APPENDIX 2 (ii)



STORM INVERT, LENGTH, SIZE TYPE AND GRADE	20.00m	23.82m-300 $\phi$ DR35 PVC STM @ 4.03%	55.63m-300 $\phi$ DR35 PVC STM @ 3.74%	58.81m-300 $\phi$ DR35 PVC STM @ 2.82%
INVERT ELEVATION	62.06 SW 62.01 NE 62.03 SE	62.99 W 63.00 E	65.08 W 65.06 N 65.08 E	66.74 W 66.93 SE
CHAINAGE	0+101.50	0+125.14	0+180	0+238.50

**CERTIFIED AS-CONSTRUCTED DRAWING**

REV.	DATE	DESCRIPTION	BY
5			
4			
3			
2			
1		AS CONSTRUCTED	

"BY SEALING AND SIGNING THIS DRAWING, I CERTIFY THAT THE INFORMATION CONTAINED IN THESE DRAWINGS ACCURATELY REFLECTS THE ORIGINAL DESIGN, ADDENDA, CHANGE ORDERS AND MATERIAL DESIGN CHANGES MADE DURING CONSTRUCTION AND FIELD REVIEWED BY ME, OR MY REPRESENTATIVE, AND THAT THE AS-CONSTRUCTED WORKS SUBSTANTIALLY COMPLY WITH THE ORIGINAL DESIGN INTENT. HOWEVER, I DO NOT ACCEPT RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE AS-CONSTRUCTED INFORMATION SUPPLIED BY OTHERS CONTAINED IN THESE DRAWINGS."

CONSULTANT



CLIENT  
**CITY/DEVELOPER NAME**  
 ADDRESS 1  
 ADDRESS 2  
 TITLE **27B AVE STORM SEWER**  
 STA. 0+00 TO 3+60  
**PLAN & PROFILE**

SCALE: HOR. 1:500 VERT. 1:50	DATE (YYYY.MM.DD) 2016.11.03	SURREY PROJECT NUMBER <b>Project No.</b>
DESIGNED XX	CONSULTANT PROJ. NO. 123	DRAWING TYPE <b>DRAINAGE</b>
DRAWN XX	DWG. NO. 01	REV. 1
REVIEWED XX		

## **APPENDIX 3 – LEGEND & LINETYPES**



# APPENDIX 3

## ROADWORKS

SYMBOL	DESCRIPTION	LINE THICKNESS
	EX ASPHALT CURB	0.150
	EX CONCRETE CURB	0.150
	EX DRIVEWAY	0.150
	EX EDGE OF PAVEMENT	0.150
	EX EDGE OF GRAVEL	0.150
	EX ASPHALT SIDEWALK	0.150
	EX CONCRETE SIDEWALK	0.150
	EX PAVER STONE SIDEWALK	0.150

SYMBOL	DESCRIPTION	LINE THICKNESS
	PR ASPHALT CURB	0.400
	PR CONCRETE CURB	0.400
	PR DRIVEWAY	0.350
	PR EDGE OF PAVEMENT	0.400
	PR EDGE OF GRAVEL	0.400
	PR ASPHALT SIDEWALK	0.600
	PR CONCRETE SIDEWALK	0.600
	PR PAVER STONE SIDEWALK	0.400

## STORM AND DRAINAGE

SYMBOL	DESCRIPTION	LINE THICKNESS
	EX CATCH BASIN LEAD	0.150
	EX CUVERT	0.150
	EX DITCH CENTERLINE	0.150
	EX DITCH BOTTOM OF BANK	0.150
	EX DITCH TOP OF BANK	0.150
	EX LAWN BASIN LEAD	0.150
	EX STORM MAIN	0.150
	EX STORM SERVICE	0.150
	EX SWALE	0.150
	EX TOP INLET CATCH BASIN	0.150
	EX DOUBLE CATCH BASIN	0.150
	EX SIDE INLET CATCH BASIN	0.150
	EX HEADWALL	0.150
	EX LAWN BASIN	0.150
	EX STORM MANHOLE	0.150
	EX STORM INSPECTION CHAMBER	0.150
	EX STORM CLEAN-OUT	0.150
	EX STORM TEXT ( L80 )	0.150
	EX SLOTTED LID MH	0.150
	EX FLAP GATE	0.150

SYMBOL	DESCRIPTION	LINE THICKNESS
	PR CATCH BASIN LEAD	0.600
	PR CUVERT	0.600
	PR DITCH CENTERLINE	0.600
	PR DITCH BOTTOM OF BANK	0.600
	PR DITCH TOP OF BANK	0.600
	PR LAWN BASIN LEAD	0.600
	PR STORM MAIN	0.600
	PR STORM SERVICE	0.600
	PR SWALE	0.600
	PR TOP INLET CATCH BASIN	0.400
	PR DOUBLE CATCH BASIN	0.400
	PR SIDE INLET CATCH BASIN	0.400
	PR HEADWALL	0.400
	PR LAWN BASIN	0.400
	PR STORM MANHOLE	0.600
	PR STORM INSPECTION CHAMBER	0.600
	PR STORM CLEAN-OUT	0.600
	PR STORM TEXT ( L100 )	0.300
	PR CB/MH (SLOTTED LID)	0.300
	PR FLAP GATE	0.400

## SANITARY

SYMBOL	DESCRIPTION	LINE THICKNESS
	EX SANITARY MAIN	0.150
	EX SANITARY SERVICE	0.150
	EX SANITARY FORCEMAIN OR LPS	0.150
	EX SANITARY MANHOLE	0.150
	EX SANITARY INSPECTION CHAMBER	0.150
	EX SANITARY TEXT ( L80 )	0.150

SYMBOL	DESCRIPTION	LINE THICKNESS
	PR SANITARY MAIN	0.600
	PR SANITARY SERVICE	0.500
	PR SANITARY FORCEMAIN OR LPS	0.500
	PR SANITARY MANHOLE	0.600
	PR SANITARY INSPECTION CHAMBER	0.600
	PR SANITARY TEXT ( L100 )	0.300

## WATER

SYMBOL	DESCRIPTION	LINE THICKNESS
	EX WATER MAIN	0.150
	EX WATER SERVICE	0.150
	EX WATER HYDRANT	0.150
	EX VALVE	0.150
	EX CHECK VALVE	0.150
	EX CAP	0.150
	EX BLOWOFF	0.150
	EX REDUCER	0.150
	EX AIR VALVE	0.150
	EX WATER METER	0.150
	EX 11.25° BEND	0.150
	EX 22.5° BEND	0.150
	EX 45° BEND	0.150
	EX 90° BEND	0.150
	EX TEE	0.150
	EX BLOW DOWN	0.150
	EX WATER TEXT ( L80 )	0.150

SYMBOL	DESCRIPTION	LINE THICKNESS
	PR WATER MAIN	0.600
	PR WATER SERVICE	0.500
	PR WATER HYDRANT	0.400
	PR VALVE	0.400
	PR CHECK VALVE	0.400
	PR CAP	0.400
	PR BLOWOFF	0.400
	PR REDUCER	0.400
	PR AIR VALVE	0.400
	PR WATER METER	0.400
	PR 11.25° BEND	0.400
	PR 22.5° BEND	0.400
	PR 45° BEND	0.400
	PR 90° BEND	0.400
	PR TEE	0.400
	PR BLOW DOWN	0.400
	PR WATER TEXT ( L100 )	0.300

## MATERIALS

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	PROPOSED A.C. PAVEMENT (HATCH STYLE SOLID; SCALE 10%)		UNDISTURBED EXISTING GROUND (HATCH STYLE EARTH; SCALE 0.300)		PIT RUN SAND (HATCH STYLE BOX; SCALE 0.080)
	EXISTING A.C. PAVEMENT		GRANULAR PIPE BEDDING (HATCH STYLE DOTS; SCALE 0.500)		DRAIN ROCK (HATCH STYLE HONEY; SCALE 0.250)
	GRANULAR BASE (HATCH STYLE AR-SAND; SCALE 0.025)		IMPORTED GRANULAR BACKFILL (HATCH STYLE HEX; SCALE 0.150)		IMPORTED TOP SOIL (HATCH STYLE CROSS; SCALE 0.150)
	GRANULAR SUB-BASE (HATCH STYLE TRIANG; SCALE 0.100)		APPROVED NATIVE BACKFILL (HATCH STYLE HOUND; SCALE 0.300)		CONCRETE (HATCH STYLE AR-CONC; SCALE 0.020)

## MISCELLANEOUS

SYMBOL	DESCRIPTION	LINE THICKNESS
	EX PROPERTY LINE	0.150
	EX WIRE FENCE	0.150
	EX CHAIN LINK FENCE	0.150
	EX BUILDING	0.150
	EX GAS	0.150
	EX HYDRO DUCT	0.150
	EX OVERHEAD HYDRO	0.150
	EX FIBRE OPTICS	0.150
	EX TELEPHONE	0.150
	EX UNDERGROUND TELEPHONE DUCT	0.150
	EX DISTRICT ENERGY	0.150
	EX RETAINING WALL	0.150
	EX BARRIER (NO POST CONC.)	0.150

SYMBOL	DESCRIPTION	LINE THICKNESS
	PR BUILDING	0.300
	PR GAS	0.600
	PR HYDRO DUCT	0.600
	PR OVERHEAD HYDRO	0.600
	PR FIBRE OPTICS	0.600
	PR TELEPHONE	0.600
	PR UNDERGROUND TELEPHONE DUCT	0.600
	PR DISTRICT ENERGY	0.600
	PR RETAINING WALL	0.500
	PR BARRIER (NO POST CONC.)	0.500

	EX CONIFEROUS TREE	0.150
	EX DECIDUOUS TREE	0.150
	EX VEGETATION	0.150
	EX R/W	0.150

	PR CONIFEROUS TREE	0.400
	PR DECIDUOUS TREE	0.400
	PR VEGETATION	0.400
	PR R/W	0.400

## PAVEMENT MARKING

SYMBOL	DESCRIPTION	LINE THICKNESS
	EX THROUGH AND TURNING ARROW	0.150
	EX THROUGH ARROW	0.150
	EX TURNING ARROW	0.150
	EX MERGE ARROW	0.150
	EX SIGN	0.150
	EX LANING LINE WHITE DASHED	0.150
	EX LANING LINE WHITE SOLID	0.150
	EX LANING LINE YELLOW DASHED	0.150
	EX LANING LINE YELLOW SOLID	0.150

SYMBOL	DESCRIPTION	LINE THICKNESS
	PR THROUGH AND TURNING ARROW	0.600
	PR THROUGH ARROW	0.600
	PR TURNING ARROW	0.600
	PR MERGE ARROW	0.600
	PR SIGN	0.600
	PR LANING LINE WHITE DASHED	0.600
	PR LANING LINE WHITE SOLID	0.600
	PR LANING LINE YELLOW DASHED	0.600
	PR LANING LINE YELLOW SOLID	0.600

	EX RAISED CONCRETE MEDIAN	0.150
	EX PAINTED MEDIAN	0.150
	EX BIKE LANE	0.150

	PR RAISED CONCRETE MEDIAN	0.600
	PR PAINTED MEDIAN	0.600
	PR BIKE LANE	0.600

## SURVEY

SYMBOL	DESCRIPTION	LINE THICKNESS
	EX IRON PROPERTY PIN	0.150
	EX TEMPORARY BENCH MARK (GEODETIC DATUM)	0.150
	EX BENCH MARK (GEODETIC DATUM)	0.150

SYMBOL	DESCRIPTION	LINE THICKNESS
	PR IRON PROPERTY PIN	0.500
	PR TEMPORARY BENCH MARK (GEODETIC DATUM)	0.500
	PR BENCH MARK (GEODETIC DATUM)	0.500

## STREET LIGHTS

SYMBOL	DESCRIPTION	LINE THICKNESS
	PR LIGHT W/ PED LIGHT	0.150
	PR DOUBLE LIGHT	0.150
	EX DAVIT LUMINAIRE POLE	0.150
	EX ORNAMENTAL STREET POST-TOP	0.150
	EX UTILITY POLE	0.150
	EX COMBINATION LUMINAIRE TRAFFIC SIGNAL POLE	0.150
	EX TRAFFIC SIGNAL POLE	0.150
	EX UTILITY POLE WITH LIGHT	0.150
	EX JUNCTION BOX	0.150
	EX NEMA TYPE TRAFFIC SIGNAL CONTROLLER	0.150
	EX MODEL 170 TYPE TRAFFIC SIGNAL CONTROLLER	0.150
	EX ST. LIGHT DUCT	0.150
	EX ROUND VEHICLE DETECTOR LOOP	0.150
	EX DIAMOND VEHICLE DETECTOR LOOP	0.150
	EX DIAPOLE VEHICLE DETECTOR LOOP	0.150
	EX QUADRUPOLE VEHICLE DETECTOR LOOP	0.150
	EX ST. LIGHT TEXT ( L80 )	0.150

SYMBOL	DESCRIPTION	LINE THICKNESS
	PR LIGHT W/ PED LIGHT	0.500
	PR DOUBLE LIGHT	0.500
	PR DAVIT LUMINAIRE POLE	0.500
	PR ORNAMENTAL STREET POST-TOP	0.500
	PR UTILITY POLE	0.500
	PR COMBINATION LUMINAIRE TRAFFIC SIGNAL POLE	0.500
	PR TRAFFIC SIGNAL POLE	0.500
	PR UTILITY POLE WITH LIGHT	0.500
	PR JUNCTION BOX	0.500
	PR NEMA TYPE TRAFFIC SIGNAL CONTROLLER	0.500
	PR MODEL 170 TYPE TRAFFIC SIGNAL CONTROLLER	0.500
	PR ST. LIGHT DUCT	0.500
	PR ROUND VEHICLE DETECTOR LOOP	0.500
	PR DIAMOND VEHICLE DETECTOR LOOP	0.500
	PR DIAPOLE VEHICLE DETECTOR LOOP	0.500
	PR QUADRUPOLE VEHICLE DETECTOR LOOP	0.500
	PR ST. LIGHT TEXT ( L100 )	0.300

LEGAL DESCRIPTION		*BY SEALING AND SIGNING THIS DRAWING, I CERTIFY THAT THE INFORMATION CONTAINED IN THESE DRAWINGS ACCURATELY REFLECTS THE ORIGINAL DESIGN, ADDENDA, CHANGE ORDERS AND MATERIAL DESIGN CHANGES MADE DURING CONSTRUCTION AND FIELD REVIEWED BY ME, OR MY REPRESENTATIVE, AND THAT THE AS-CONSTRUCTED WORKS SUBSTANTIALLY COMPLY WITH THE ORIGINAL DESIGN INTENT. HOWEVER, I DO NOT ACCEPT RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE AS-CONSTRUCTED INFORMATION SUPPLIED BY OTHERS CONTAINED IN THESE DRAWINGS.*		CONSULTANT		CLIENT <b>CITY/DEVELOPER NAME</b> ADDRESS 1 ADDRESS 2		SEAL		SCALE: HOR. 1:500 VERT. 1:50		DATE (YYYY.MM.DD) 2016.01.01		SURREY PROJECT NUMBER	
SURVEY BENCHMARK MON:XXXXXXX N XXXXXXXX.XXX E XXXXXXXX.XXX		SCALE FACTOR: ELEV													