

ANNEXURE B

SERVICES REPORT

Prepared by
SPARKS AND PARTNERS



PART B

DEVELOPMENT SITE 13

HYDRAULIC & FIRE SERVICES

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PART B

DEVELOPMENT SITE 13

HYDRAULIC & FIRE SERVICES

B1. EXISTING HYDRAULIC & FIRE SERVICES

The existing Hydraulic and Fire services are:

Development Site 13

- i) Potable Water Service Reticulation.
- ii) Recycled Water Service Reticulation.
- iii) Irrigation Water Service Reticulation.
- iv) Fire Service Reticulation.
- v) Gas Service Reticulation.
- vi) Stormwater Drainage.
- vii) Sewer Drainage.

The existing services have been isolated on individual drawings lifted from SOPA's drawings which are included in Appendix B of this report.

B2. EXISTING SERVICES – CONSIDERATION RELATIVE TO POSSIBLE RELOCATION

Should the existing services be required to be relocated the following concepts should be the basis for design of the future and relocated existing services:

- i) Approval of the utility owner to relocate service shall be given in writing prior to commencement of relocation.
- ii) Each service should be located in its own zone or easement and the existing and new services grouped together.
- iii) The arrangement of each service should be arranged so that access to each service can be achieved without undue disturbance to any other service.
- iv) Each service must be clearly identified.
- v) Provision should be made for flexibility to allow future alterations and additions to take place eg via appropriately located additional pits.
- vi) For any new work the latest state of the art technology should be incorporated into the services installation eg a solar hot water, heat recovery units etc.
- vii) If new services routes are adopted where they are already other existing services, then the new works should fit into the existing services reticulation arrangement and easements (unless this is not possible).

There appears to be 5 services affecting the proposed site. They are as follows:

1. Stormwater drainage within the site boundary.
2. Fire hydrant service within the site boundary.
3. Irrigation within the site boundary.
4. The proximity of 550 Dia "Primary" gas main.
5. The proximity of 100 Dia NAPTHA main.

We have listed them in descending priority order.

B3. NEW SERVICES PHILOSOPHY

1. Locate new services infrastructure generally along public corridors footpaths or streets close to where the services are required. Water services should where possible be connected in a grid pattern, this assists with efficiency and provides greater reliability during maintenance and flexibility to service the development.
2. Services should be oversized by 10 – 20% to provide for future expansion.
3. New services should be installed in locations that would provide cost effective connections to the end user.

B4. AVAILABILITY OF POTABLE WATER

An existing 150mm DICL main extends along Olympic Boulevard.

A new 100 dia main should be extended across Olympic Boulevard to tee off and service Building "B" before Building "A". The main should then continue to service Buildings "C" and "D".

B5. AVAILABILITY OF RECYCLED WATER

In both Sarah Durack Avenue and Olympic Boulevard recycled water mains are available to the proposed development area with 300mm DICL mains located in Sarah Durack Avenue and 250mm mains in Olympic Boulevard.

It is recommended that recycled water be extended from the main in Olympic Boulevard to the new buildings. This connection will avoid crossing the primary gas main.

There is adequate supply for this proposed development.

B6. AVAILABILITY OF GAS

Currently there is no gas available for connection at this site. Gas will need to be extended from the secondary regulator adjacent to Herb Elliott Avenue and Olympic Boulevard.

There are 2 gas mains running in the road and footpath west of the development site at an approximate depth of 1 metre.

- | | | |
|---|---|--|
| 1 | = | 550 dia – (primary carrier main) 3500 kPa. |
| 2 | = | 100 dia - NAPTHA (1000 kPa) |

The 550 dia primary main (3500 kPa) running along Sarah Durack Avenue cannot be built over or adjacent to without a full risk study being completed by AGL.

B7. AVAILABILITY OF IRRIGATION WATER

Irrigation water is fed from recycled water mains throughout the site.

During the proposed construction work these will need to be adjusted or deleted.

The future demand on this service will diminish as land is covered by buildings.

B8. AVAILABILITY OF STORMWATER DRAINAGE

Stormwater drainage for street drainage is designed to cater for 1:20 ARI flows in excess of this run as overland flow.

Existing drainage exists within this development site, this drainage can be removed up to the site boundary at Olympic Boulevard.

It is not clear from available "As Built" drawings if the 375mm diameter main is connected to kerb inlet Pit No 11 on Line 11 which is shown on Drawing No HSR3-335. This pit is the third pit west from Olympic Boulevard. From visual inspection of this pit it appears that the line running through this site has been blocked off at the KIP and therefore the existing sw drainage can be removed from site.

B9. AVAILABILITY OF SEWER DRAINAGE

The only sewer main connection available is an existing 150 sewer main located across Olympic Boulevard at the entry to the carpark directly opposite to this site. Sewer will need to be extended to site across Olympic Boulevard as shown on Drawing H-06.

The starting and invert level at this pit is 28.85 with surface RL 31.37. Refer Drawing H-06

B10. EXCLUSIONS

We have not included for the following:

- Section 73 certificate
- Any Sydney Water contributions
- Design fees
- Amplification fees
- Cost to shut down existing businesses to facilitate connections to existing services eg gas.
- Cost to divert existing gas mains if required by Agility:
 - (a) 550 dia gas trunk main
 - (b) 100 dia NAPTHA main

B11. RECOMMENDATIONS

We would recommend that discussions with Agility be commenced early in design phase to establish Agility's requirements and they may need to conduct a full study prior to their approval being given.

A Sydney Water design will be required for sewer and water main extension by an approved Project Manager.

B12. CONCLUSION

This site has minor restrictive components as follows:

- (a) Sewer will need to be extended to site from existing sewer in Olympic Boulevard.
- (b) Gas will need to be extended to site from the secondary regulator adjacent to Herb Elliot Avenue and Olympic Boulevard.
- (c) The existing stormwater drainage crossing the site will need to be removed.
- (d) Recycled and potable water will need to be extended to site.
- (e) 550mm primary gas main location needs to be considered during design phase.

All the other services would be adequate for the proposed development.

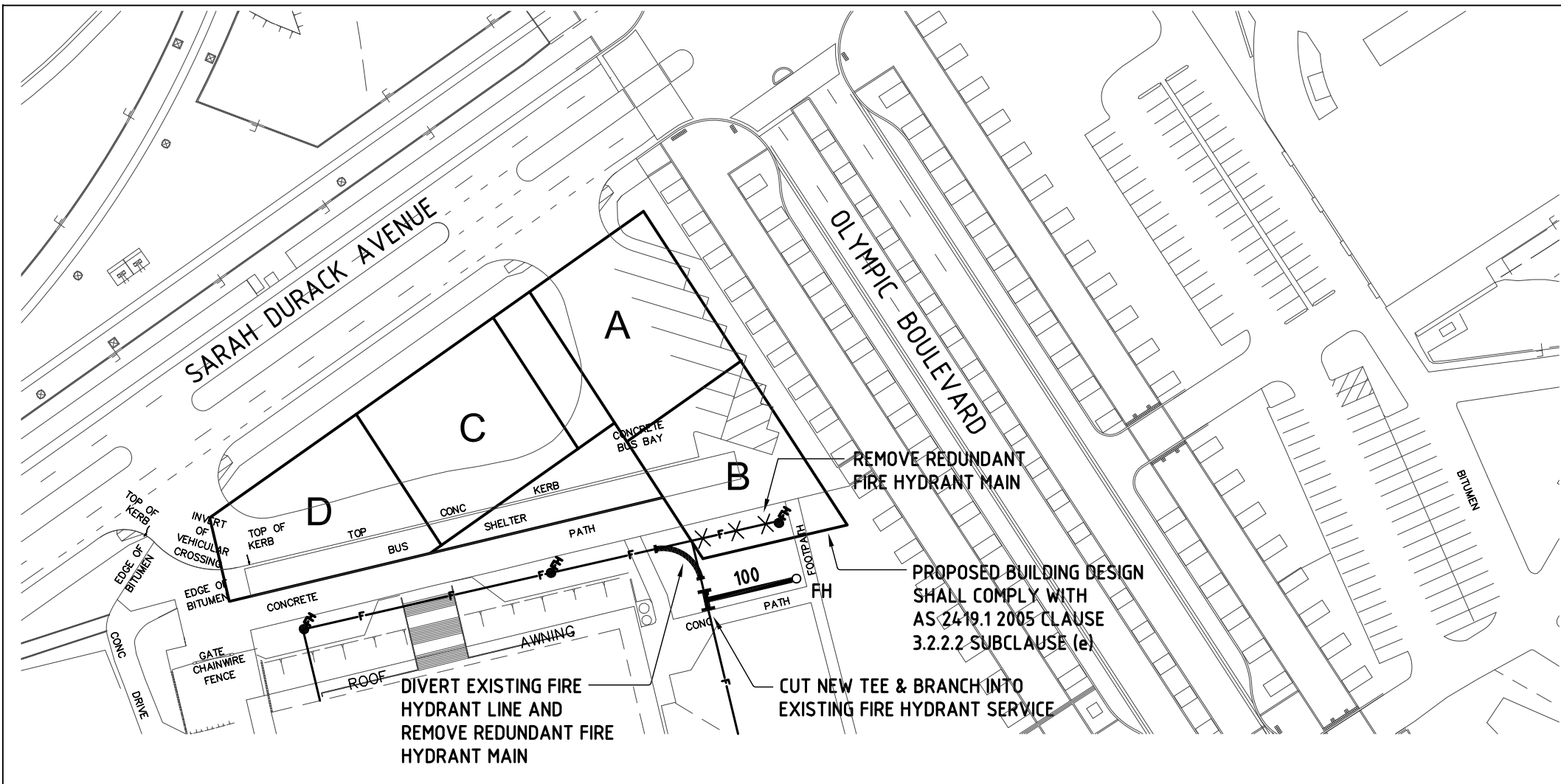
Technical drawing of a bus stop layout on a street corner. The drawing shows Sarah Durack Avenue and Olympic Boulevard. A bus stop shelter is located on the corner, with a concrete bus bay and a concrete path leading to it. The bus stop is labeled with letters A, B, C, and D. Dimensions are given for various areas: 100 W, 150 W, and 150 W. The drawing also shows the edge of bitumen, the top of the kerb, and the invert of the vehicular crossing. A carpark is shown to the right of the bus stop.

- VERIFICATION**
Completion of the Drawing Status is evidence that the design has been verified as conforming to the requirements of the Project Quality Plan.

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No. IN SET	ISSI
1 of 7	



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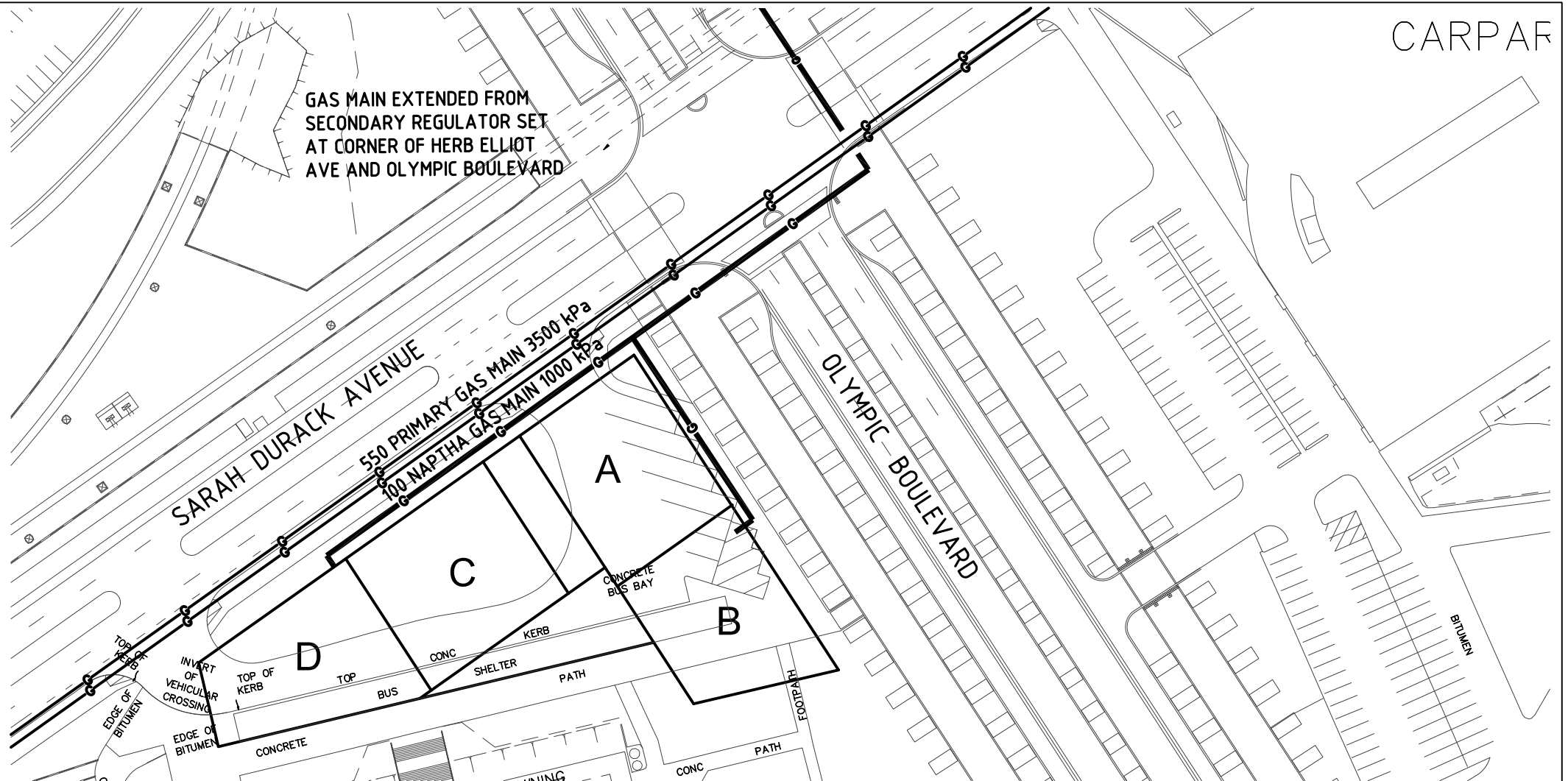
PROJECT
EXISTING UTILITIES
STUDY FOR :
DEVELOPMENT SITE 13

TITLE
HYDRAULIC SERVICES
WATER-FIRE WATER LAYOUT

CLIENT
SYDNEY OLYMPIC PARK AUTHORITY
SOPA

DESIGNED BY CMcV		CHECKED BY	
DATE 15.02.05		DATE	
SCALE 1:1000	DRAWN BY HZ	DATE FEB 2006	
JOB NO 06318	DRAWING No. H-03	No. IN SET 3 of 7	ISSUE

GAS MAIN EXTENDED FROM
SECONDARY REGULATOR SET
AT CORNER OF HERB ELLIOT
AVE AND OLYMPIC BOULEVARD



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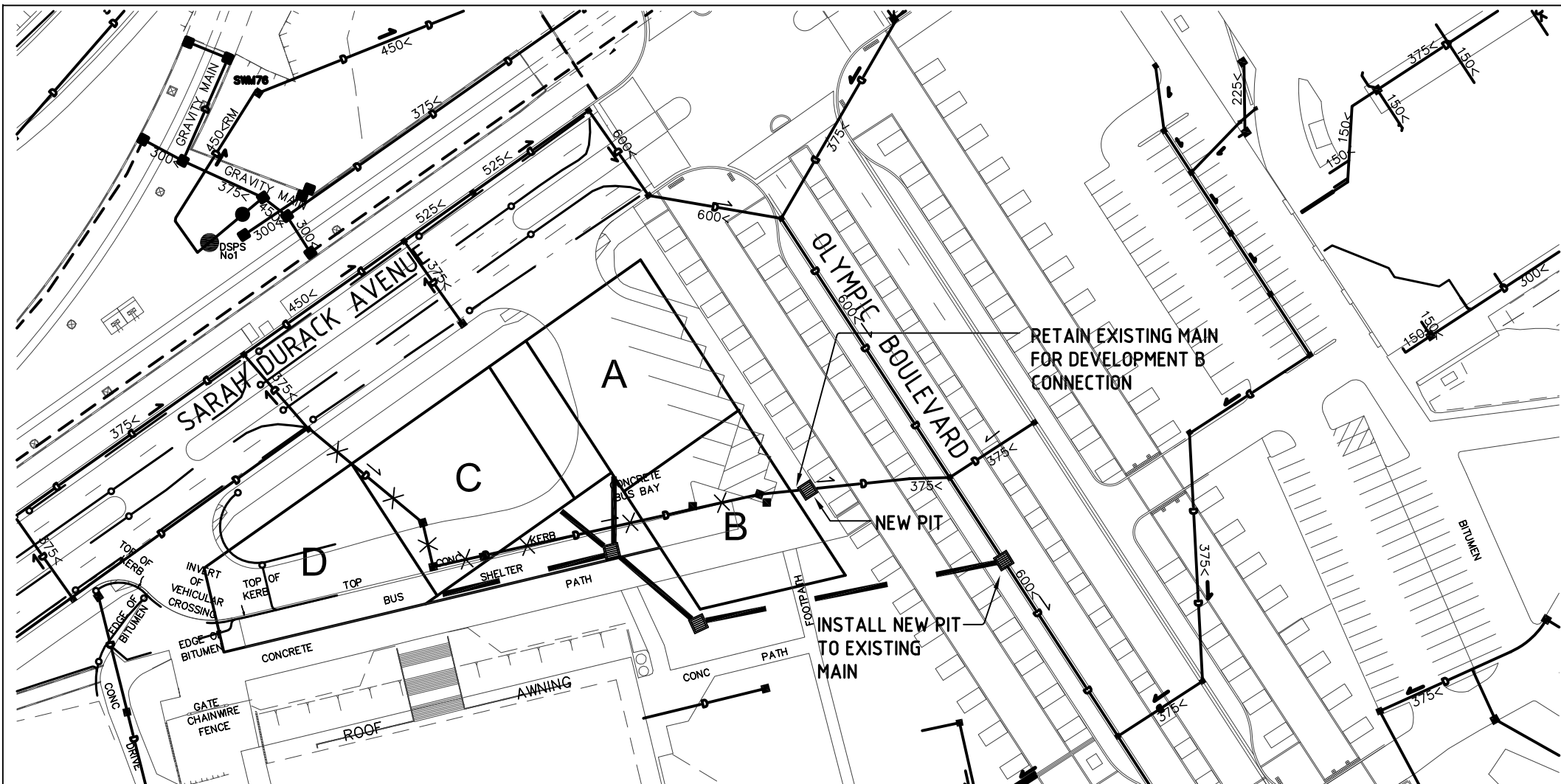
QUALITY
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COMPANY
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PROJECT
EXISTING UTILITIES
STUDY FOR :
DEVELOPMENT SITE 13

TITLE
HYDRAULIC SERVICES
GAS SERVICE LAYOUT

CLIENT
SYDNEY OLYMPIC PARK AUTHORITY
SOPA

DESIGNED BY CMcV		CHECKED BY	
DATE 22.02.06		DATE	
SCALE 1:1000	DRAWN BY HZ	DATE FEB 2006	
JOB NO 06318	DRAWING No. H-04	No. IN SET 4 of 7	ISSUE



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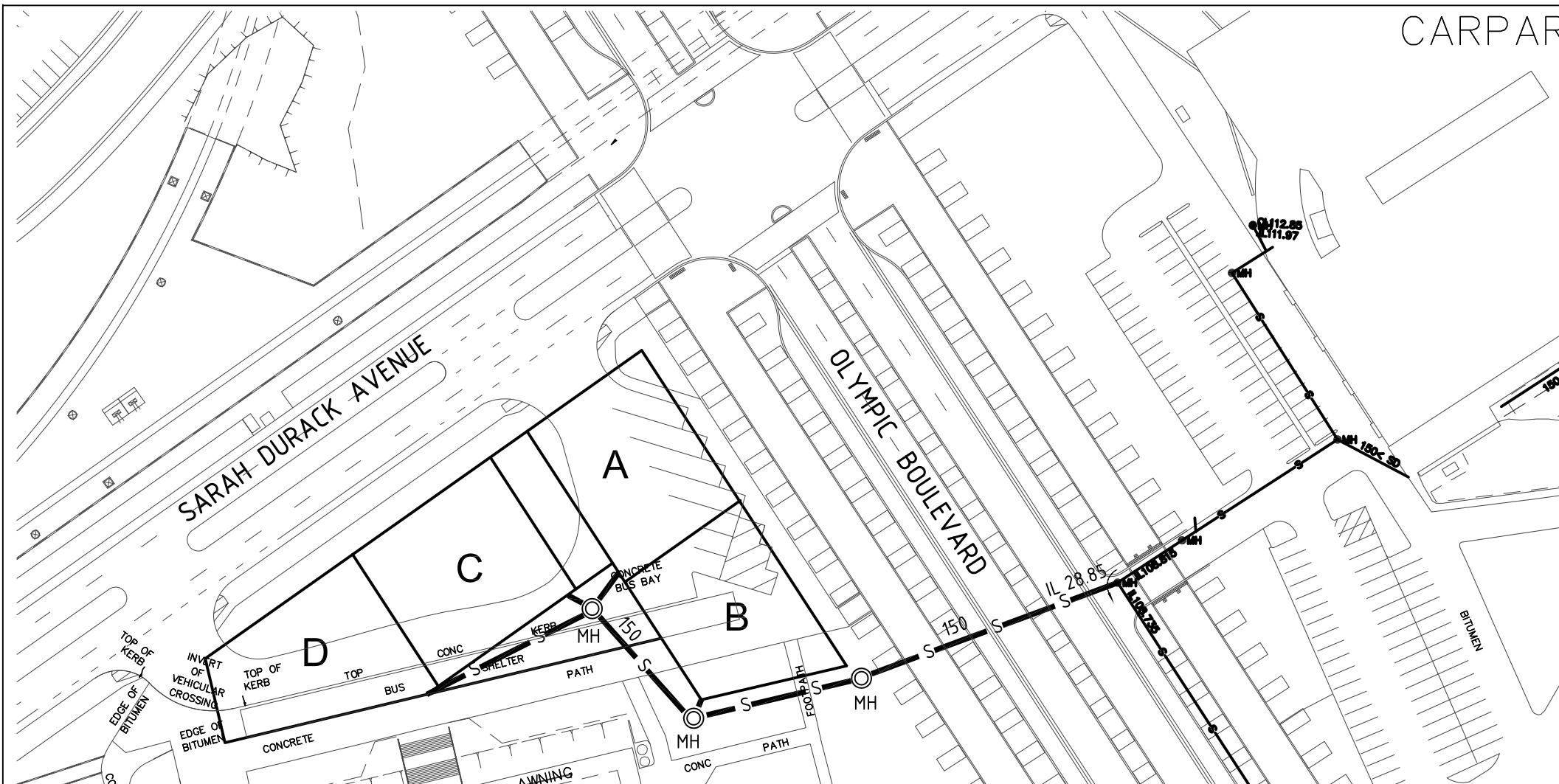
PROJECT
EXISTING UTILITIES
STUDY FOR:
DEVELOPMENT SITE 13

TITLE
HYDRAULIC SERVICES
STORMWATER &
SUB-SOIL LAYOUT

CLIENT
SYDNEY OLYMPIC PARK AUTHORITY
SOPA

DESIGNED BY CMcV	CHECKED BY		
DATE 15.02.05	DATE		
SCALE 1:1000	DRAWN BY HZ	DATE FEB 2006	
JOB NO 06318	DRAWING No. H-05	No. IN SET 5 OF 7	ISSUE

CARPAF



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FOR CONSTRUCTION		

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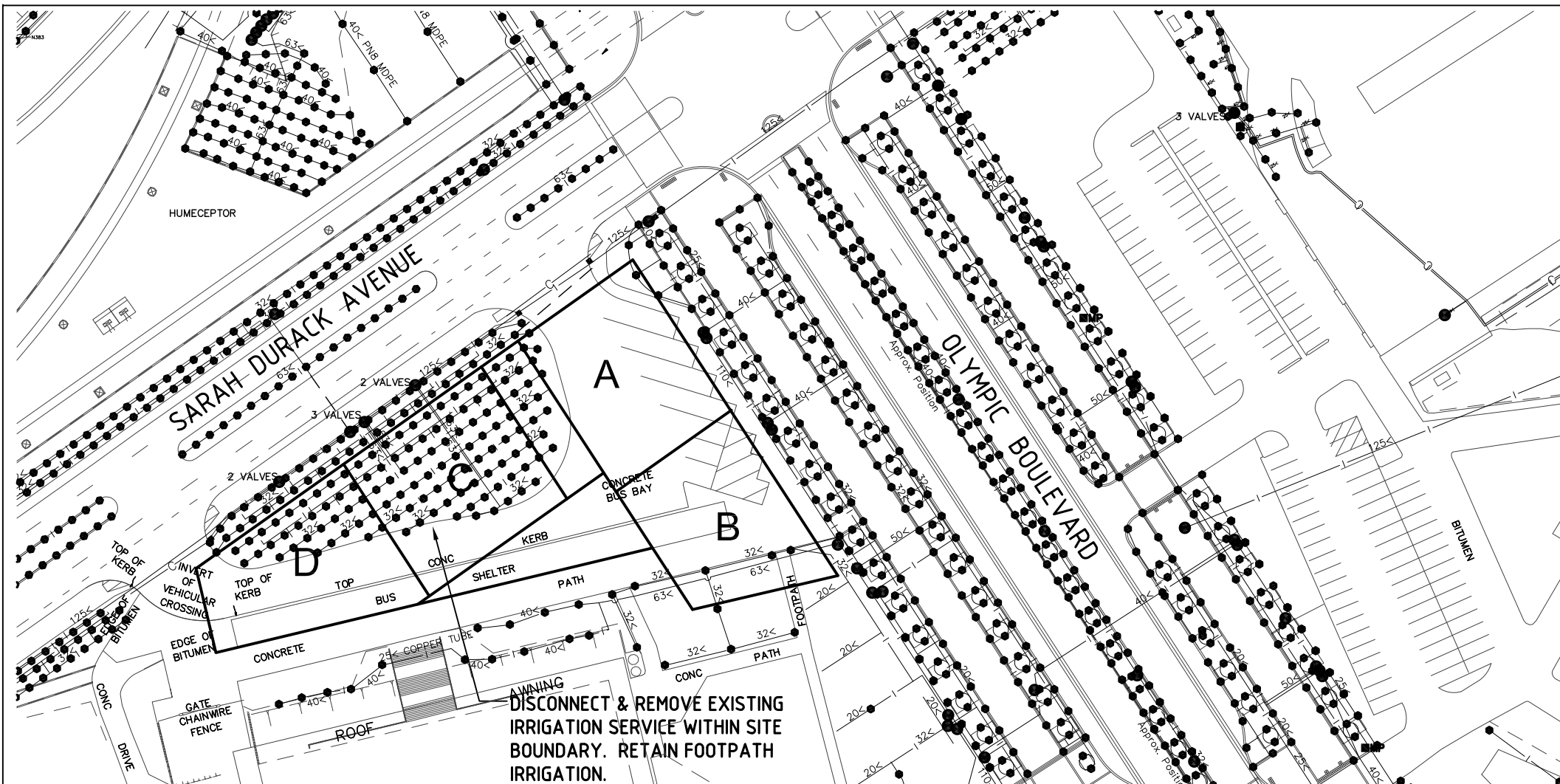
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PROJECT
EXISTING UTILITIES
STUDY FOR:
DEVELOPMENT SITE 13

TITLE HYDRAULIC SERVICES SEWER DRAINAGE LAYOUT

CLIENT
SYDNEY OLYMPIC PARK AUTHORITY
SOPA

DESIGNED BY CMcV		CHECKED BY	
DATE 15.02.05		DATE	
SCALE 1:1000	DRAWN BY HZ	DATE FEB 2006	
JOB NO 06318	DRAWING No. H-06	No. IN SET 6 of 7	ISSUE



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PROJECT
EXISTING UTILITIES
STUDY FOR :
DEVELOPMENT SITE 13

TITLE
HYDRAULIC SERVICES
IRRIGATION LAYOUT

CLIENT
SYDNEY OLYMPIC PARK AUTHORITY
SOPA

DESIGNED BY CMcV		CHECKED BY	
DATE 15.02.05		DATE	
SCALE 1:1000	DRAWN BY HZ	DATE FEB 2006	
JOB NO 06318	DRAWING No. H-07	No. IN SET 7 of 7	ISSUE