

SUPPLY OF "AS CONSTRUCTED" DELIVERABLES

Introduction

Port of Brisbane Pty Ltd (PBPL) has a responsibility to maintain reliable records for their plan register and Geographical Information System (GIS). This document is an outline of the acceptable standards and formats of the "As Constructed" deliverables. It is to be used as supplementary advice where not already stipulated, in conjunction with any other agreed Contract or Development Application.

For information regarding the supply of "As Constructed" **data** deliverables, please refer to the PBPL ADAC standards document "Guidelines for creation and Submission of ADAC XML files" (Appendix C of the Technical Guidelines)

Content of "As Constructed" Information

The documents included, but not limited to, as "As Constructed" information are:

- Works Drawings / Construction Sets;
- 2. Services Coordination drawings;
- 3. Demolition and alterations drawings

The final "As Constructed" versions of these drawings will adhere to these guideline:

- "As Constructed" changes clearly marked in red and 'clouded' often referred to as "red line mark ups", with revision letter adjacent;
- Changes to design or construction as a result of an RFI or discussion to be clearly shown on the face of the plan. RFI numbers or AsCon number to be displayed next to all changes;
- Details to be shown at a larger scale on plan where necessary. If there is insufficient room
 on the plan, provide additional plans clearly labelled "Detail A", with the same plan number
 (see Plan Numbering section);
- Revision status in the title bar shall indicate "As Constructed" issue, and contain the Certification of the Provider. All other references to plan status to be removed;
- All "red line mark ups" are to be executed in the native CAD file, where possible, and not as comments or edits in the PDF.

If not already defined, details and/or supporting documentation relating to RFIs and AsCon numbers can be via an "As Constructed Register". A sample of an "As Constructed Register" is shown in "Example A'. A sample of an anticipated final mark up Construction plan is shown in "Example B".

On projects where existing infrastructure and/or utilities are demolished, services realigned, upgraded, changed or abandoned, a detailed drawing (or series of drawings) should be produced to reflect these changes. These drawings will display enough information to identify their location on the Works site, and their relative position to existing services.

A plan showing "As Constructed" survey pickups shall also be provided, including horizontal coordinate and vertical datum used, date of survey and company/surveyor details. This is in addition to information covered by other plans. All information contained in the survey pickup needs to be detailed on one or more of the other "As Constructed" documents. Where ADAC information has been supplied, this plan(s) will be a representation of the extent of ADAC pickup. In this instance, labelling of content will not be required as it will already be provided as database attributes in the ADAC XML submission.

Drafting

CAD Application

All drawings are to be provided to PBPL in CAD format. These plans, where applicable, shall be on our standard drawing template (see Plan Template). Note: if the sample legend is not utilised, please remove and replace with suppliers' own legend. Our in-house CAD package is Bentley Microstation Connect edition(.dgn). Files are to be provided in this format, or any other suitable CAD format, such as AutoCad (.dwg).

Please ensure that all external reference files or images attached to the parent file are also provided. Any resource files such as custom line styles, font libraries, colour tables, ctb, cells, etc, will also need to be provided to ensure there is no loss of data in translation.

Seed files containing PBPL standards can be provided on request in Microstation DGN format.

GIS Application

The GIS package we use is Bentley OpenCities. It is compatible with other GIS packages in that it can import shapefiles (.shp) and retain associated databases. Supplied Extensible Markup Language (XML) files are utilised in the Bentley OpenCities application. We can supply an extract from our current GIS content as a KML or KMZ file to be used within Google Earth applications, on request.

Survey Control and Datum

From January 1st, 2017, PBPL used two grid systems – on Fisherman Islands and off Fisherman Islands, denoted by the boat passage's "Captain Bishop Bridge".

If reference is made to Fisherman Island Grid (FIG), this is a plane rectangular grid on a rotated alignment (57°58′34″), running parallel to the wharves, on X and Y coordinates. This is for information only, and not to be used as the control for the digital data.

Unless specifically requested to use FIG, all port work sites are to use the coordinate system Map Grid of Australia (MGA) Zone 56, GDA94. Refer to Appendix A of the Technical Guidelines. Please note that when using MGA, all survey work should be scaled around the PSM used to agree with MGA positioning (approx. 0.9996), and not planar distances.

Plans should specify details of the set-out control points / Permanent Survey Marks (PSMs) used for horizontal positioning relative to the site.

A detailed description of the FIG translation, and previously used local grids prior to 2017, can be provided on request.

All heights are to have a vertical datum based on AHD. If reference to vertical datum is "PORT", which is only used on Port of Brisbane (Fisherman Islands) sites by request, this was based on Lowest Astronomical Tide (LAT). This datum is 1.243m higher than Australian Height Datum (AHD). Please convert all digital data to AHD height. Please refer to MSQ Tide tables for ongoing updated AHD-LAT differences.

Plan Numbering

A PBPL sequential 6-digit number is assigned to all plans, and you will be supplied a number allocation when you are able to define the extent of your drawing list. Please supply a spreadsheet (.xls) of the complete drawing list which we can append the number to. A sample of the format of this spreadsheet is provided in Example C.

This number will reside in the CAD file, in the designated area of the drawing template title block "PBPL Plan Ref:" prior to PDF creation. When the PBPL plan number has been provided, the subsequent CAD file name will change accordingly. For example, if a CAD file contains 1 plan, it will

have a file name of "123456.dgn". If there are 3 sheets in the CAD file, it can be named "123456-123458.dgn"

PBPL plan numbers need to be incorporated on all plans supplied to the port, even if the contractor or sub-contractor title sheets have been used. This can be placed near the title block or our logo, in red, at a legible scale, as "PBPL Ref:<number>".

Submission of Drawings

All drawings will be provided to PBPL in the following formats:

- 1. Native CAD file (.dgn, .dwg, .dxf); and
- 2. PDF format (.pdf). This file generated at the same page size as the intended printed output. Please ensure the scale of the PDF is retained, particularly if you are scanning or copying a hardcopy, or if you choose a "Fit to Page" option for print preferences. Please also ensure that you provide 1 x PDF per plan, numbered with only the 6 digits no revision, names, etc, ie. "123456.pdf"

Additionally, upon request from PBPL, a hardcopy of the plans may be required. This may be, but is not limited for, records requiring original signatures.

All drawings shall be accompanied by a drawing transmittal notice, including the following details:

- 1. Drawing Number (PBPL number or otherwise)
- 2. Drawing Title
- 3. Revision
- 4. Release Date
- 5. Status (ie. Construction Issue, As Built)

Electronic files must only contain relative information and be compressed to reduce file size wherever possible. Any additional files required for reproducing the information should also be provided.

Electronic files can be provided via:

- 1. Email attachments;
- 2. Client Dropbox site;
- 3. USB, CD or DVD

Options may be limited depending on number and size of files being provided. A Maximum of 10Mb is allowable through our Mail Server.

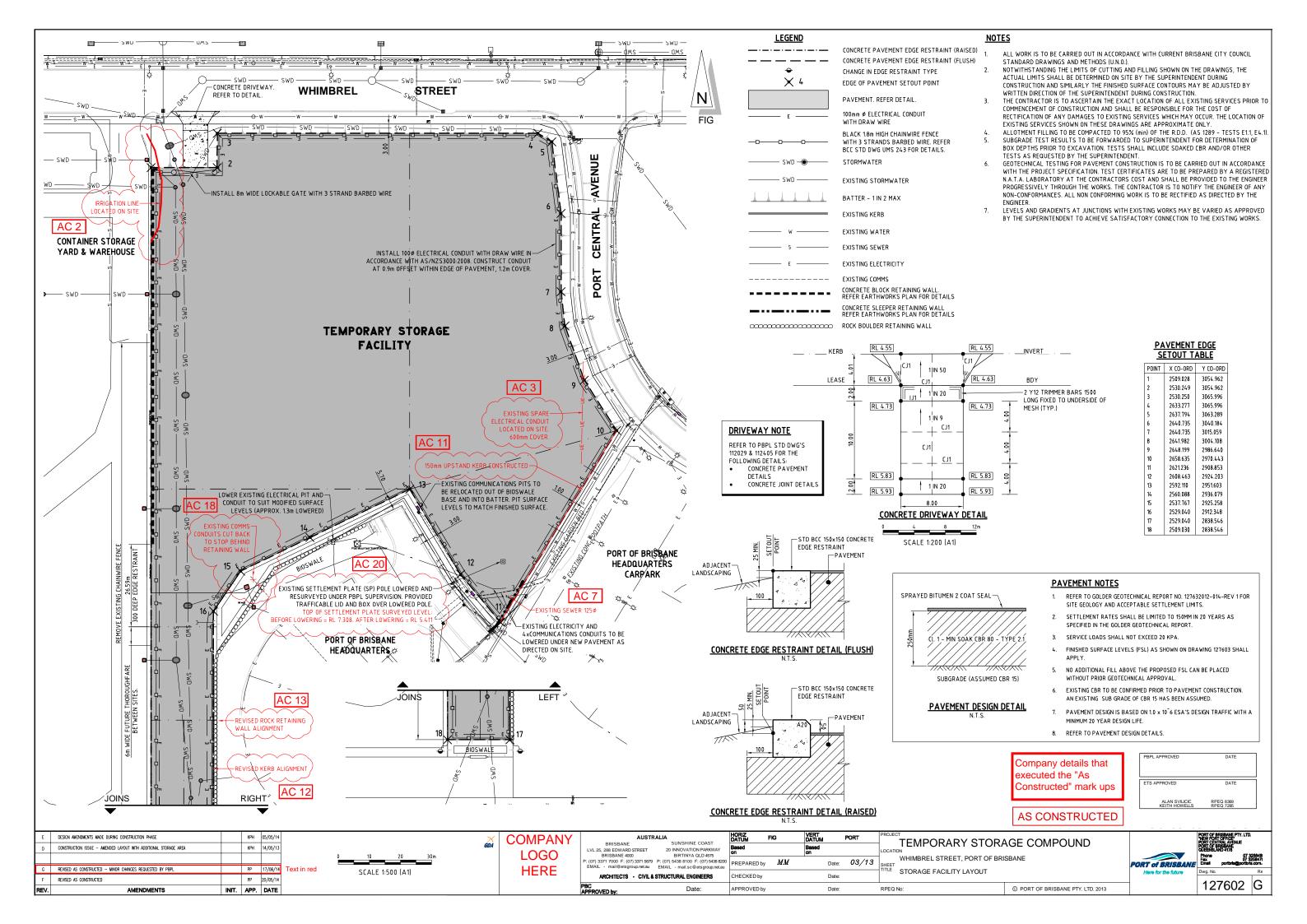
As Constructed Checklist

A Microsoft Excel spreadsheet has been provided as an easy reference for supply of information. (See AsCon Checklist). This outlines the range of services and details that a new site will encapsulate, but will not always be applicable in its entirety. It is a guide to what plan sets may be required from contractors and subcontractors.

Example A

WHIMBREL ST - 'AS CONSTRUCTED' DRAWING REGISTER ENGINEER TO UPDATE SURVEYOR TO AS CON NO. DRAWNG NO. REVISION UPDATE COMMENTS 127603 For the Retaining wall along the Southern side of the Property, the Lease boundary has now been shifted to the centre of the wall. Amendment to set out advised by Angel on 15/5/13, at site meeting (Angel, Pete Mason, Clint 0 Mason, Clint, Dave, Michael) Refer to attached drawing. (See attached Sketch) 127603 Irrigation Line along Southern boundary. Surveyor to pick up location of line 2 and add to As Constructed Drawings. 0 3 127603 С Communication conduits that Brimar Electrical have placed in the ground beside the POB car park (in our site). The conduit is 600mm below the 0 existing surface. Surveyors to pick up exact location of conduit and add to As Constructed Drawings 127605 & 500mm Subgrade Replacement beneath SW Pipes. Replacement with 20mm 4 127606 Aggregate along twin 1500 line with geo fabric. HP580 Woven Fabric from PM SKETCH CHO -28 then A44 non woven fabric onwards. 5 127603 lc Reinforcing steel in top course of retaining wall southern boundary changed from single N16 bar to twin N12 bars running horizontal through top of wall. Also N16 'Dropper bars' placed next to every starter bar (200 centres) PM SKETCH to allow for higher block wall. (See attached Sketch) 127606 Stormwater Road Crossing pavement Reinstatement. Please see attached 6 sketch Plan PM SKETCH 127605 D Refer surveyor plan for existing services (sewer / comms) in southern corner near POB Car park. 0 8 127605 Pit Lids (MH2.1, 2A, 2B, 3A, 3B, 4A) have additional Reinforcing placed in them. (See attached Sketch / Form 15) ENGINEER SKETCH PLAN Installation of 100mm socked agg drain connected to Manhole 1A and 3A 127602 as per the drawing + backfill up the wall with 20mm drainage gravel (in lieu PM SKETCH of 10mm noted on drawings) to the western boundary block retaining wall on Whimbrel Street 10 Removal of Electrical Services on the creek side of Lucinda Drive. Please see 127606 attached sketch of the extent of removal. PM SKETCH 11 127605 ח 150mm upstand kerb installed along SE South East Boundary. Surveyor to show on As Cons. 0 12 127619 ln Car park kerb alignment pulled in 1m from that shown of plans - as requested 0 13 127619 lъ Retaining Rock Wall around the Bio-retention Pond and continuation towards Lucinda Dr. 0

Example B



Example C

A-08-11	6	132144	DOOR SCHEDULE	ARCHITECTURAL
A-08-15	6	132145	GLAZING SCHEDULE - SHEET 01	ARCHITECTURAL
A-10-01	6	132146	PERSPECTIVES	ARCHITECTURAL
S-00-01	2	132147	STRUCTURAL NOTES - SHEET 1	STRUCTURAL
S-00-02	2	132148	STRUCTURAL NOTES - SHEET 2	STRUCTURAL
S-01-01	2	132149	EXTERNAL PT SLAB ON GROUND PLAN - SHEET 1.	STRUCTURAL
S-01-03	1	132151	EXTERNAL PT SLAB ON GROUND PLAN - SHEET 3	STRUCTURAL
S-01-11	1	132153	FOOTING AND SLAB ON GROUND PLAN - WAREHOUSE AND OFFICE - SHEET 2	STRUCTURAL
S-03-01	1	132156	ROOF FRAMING PLAN - WAREHOUSE AND OFFICE - SHEET 1	STRUCTURAL
S-03-0A	1	132158	OVERALL STEELWORK SCHEDULES	STRUCTURAL
S-03-0B	1	132159	DETAILED STEELWORK SCHEDULES	STRUCTURAL
S-04-01	1	132160	OVERALL TILT PANEL PLAN AND SCHEDULES	STRUCTURAL
S-05-02	1	132162	ELEVATIONS AND SECTIONS - WAREHOUSE AND OFFICE - SHEET 2	STRUCTURAL
S-05-03	1	132163	ELEVATIONS AND SECTIONS - WAREHOUSE AND OFFICE - SHEET 3	STRUCTURAL
S-08-01	1	132171	FRAMING PLANS AND ELEVATIONS - TRUCK WASH	STRUCTURAL
S-08-02	С	132172	FRAMING PLANS AND ELEVATIONS - PUMP ROOM	STRUCTURAL
S-08-03	1	132173	FRAMING PLANS AND ELEVATIONS - INTERNAL WEARHOUSE OFFICE	STRUCTURAL
C-00-01	2	132174	LOCALITY PLAN DRAWINGS INDEX AND GENERAL NOTES	CIVIL
C-01-01	2	132175	EROSION AND SEDIMENT CONTROL LAYOUT PLAN	CIVIL
C-01-02	2	132176	EROSION AND SEDIMENT CONTROL NOTES	CIVIL
C-02-01	2	132177	BULK EARTHWORKS LAYOUT PLAN - SHEET 1 OF 3	CIVIL
C-02-02	2	132178	BULK EARTHWORKS LAYOUT PLAN - SHEET 2 OF 3	CIVIL
C-02-03	2	132179	BULK EARTHWORKS LAYOUT PLAN - SHEET 3 OF 3	CIVIL
C-04-01	2	132180	PAVEMENT LAYOUT AND LEVELS PLAN - SHEET 1 OF 3	CIVIL
C-04-02	2	132181	PAVEMENT LAYOUT AND LEVELS PLAN - SHEET 2 OF 3	CIVIL
C-04-03	2	132182	PAVEMENT LAYOUT AND LEVELS PLAN - SHEET 3 OF 3	CIVIL
C-04-04	2	132183	PAVEMENT JOINTING LAYOUT PLAN	CIVIL
C-04-05	2	132184	PAVEMENT AND JOINT DETAILS	CIVIL
C-06-01	2	132185	STORMWATER LAYOUT PLAN - SHEET 1 OF 3	CIVIL
C-06-02	2	132186	STORMWATER LAYOUT PLAN - SHEET 2 OF 3	CIVIL
C-06-03	2	132187	STORMWATER LAYOUT PLAN - SHEET 3 OF 3	CIVIL
C-06-04	2	132188	STORMWATER DETAILS - SHEET 1 OF 3	CIVIL
C-06-05	2	132189	STORMWATER DETAILS - SHEET 2 OF 3	CIVIL
C-06-06	2	132190	STORMWATER DETAILS - SHEET 3 OF 3	CIVIL
15137-C001	В	132191	SEWER RETICULATION LAYOUT PLANS AND DETAILS	CIVIL
15137-C010	В	132192	WATER RETICULATION LOCALITY PLAN AND NOTES	CIVIL

AsCon Checklist

AS CONSTRUCTED INFORMATION CHECKLIST - Items listed in order of importance

NO CONSTRUCTED IN CHICKETS	items isted in order or importance		To be completed by Project Manager by				by PBPL	
IN GROUND SERVICES - connecting to existing	Contractor (Company) Name / Drawn by	Surveyed	3D	DWG	/G PDF		Plan Reference / Number	Satisfied
Water								
Electrical								
Communications								
Stormwater Drainage								
Sewerage								
Irrigation								
CIVIL WORKS - site services and layout								
Site layout and Pavement details (kerbs, fences, linemarking, signs)								
Electricals (pits, transformers, lighting)								
Stormwater Drainage (including open drainage)								
Fire services								
Hydraulics (domestic water, sewer)								
Communications / Data cables								
Building extents and offsets								
Terrain (Levels, Spot heights, embankments)								
ARCHITECTURAL WORKS - per Building or improvement								
Location on site, Floor Plans								
Electricals (including distribution boards, etc)								
Drainage (roofwater, tanks, etc)								
Fire Protection / Sprinklers								
Air Conditioning								
Irrigation								
Landscaping								
STRUCTURAL WORKS - per Building or improvement								
Footings / slab details								
Framing Plans and Elevations								
Roof Framing								
Fabricated Items								<u> </u>

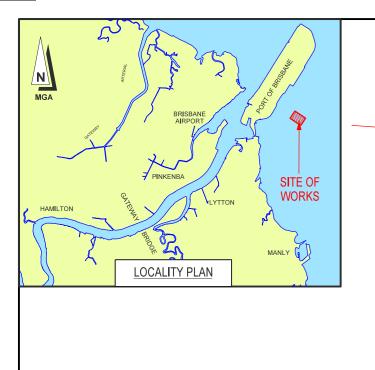
Please Note: Surveyed information on site does not replace the "As Constructed" release of any other set of plans. All plans that form part of the works on site need to be final "As Constructed/ As Built" versions, marked up accordingly to show any changes, additions or deletions during the construction phase.

Denotes minimim requirement

If you require any more information regarding acceptable formats for documentation, please do not hesitate to contact our Spatial Data Section

As Constructed Checklist_Rev B.xls

Plan Template



IF A LOCALITY ISN'T AVAILABLE, THIS ONE CAN BE USED.

MOVE THE SITE AREA BOX TO WORKING LOCATION

THIS WILL BE PROVIDED FROM THE PLAN NUMBERING SPREADSHEET.

PLEASE ENSURE THIS IS COMPLETED PRIOR TO "AS CONSTRUCTED" SUBMISSION OR APPROVED FINAL RELEASE.

MAKE SURE SCALE IS CORRECT AND RELEVANT.

INCLUDE SITE OR LOCAL NORTH POINT HERE, IF NEEDED AS WELL

ONLY INCLUDE FIG NORTH IF PLAN IS REQUIRED TO BE ON FIG ORIENTATION

TAKEN FROM INITIAL SITE SURVEY (RPS)

PLEASE CHECK THIS PSM WAS USED BY CONTRACTORS ALSO.

REVISION NUMBER TO MATCH AMENDMENT LIST. IF ONLY FINAL RELEASE, THIS SHOULD BE "0'

PLEASE ENSURE THESE ARE NOT BLANK

STATUS

Metres 200 400 600 800 1000 SCALE 1:1000 (A1) - 1:2000 (A3) AMENDMENTS INIT. APP. DATE



N∖ MGA

PLACE **COMPANY CONTACT DETAILS HERE**

	/	
HORIZ DATUM -	VERT -	
Based on	Based on	
PREPARED by -	Date: -	
CHECKED by	Date:	
APPROVED by	Date:	RPEQ No: (If Required)

PROJECT DETAILS CONTRACT No. (If Required)

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