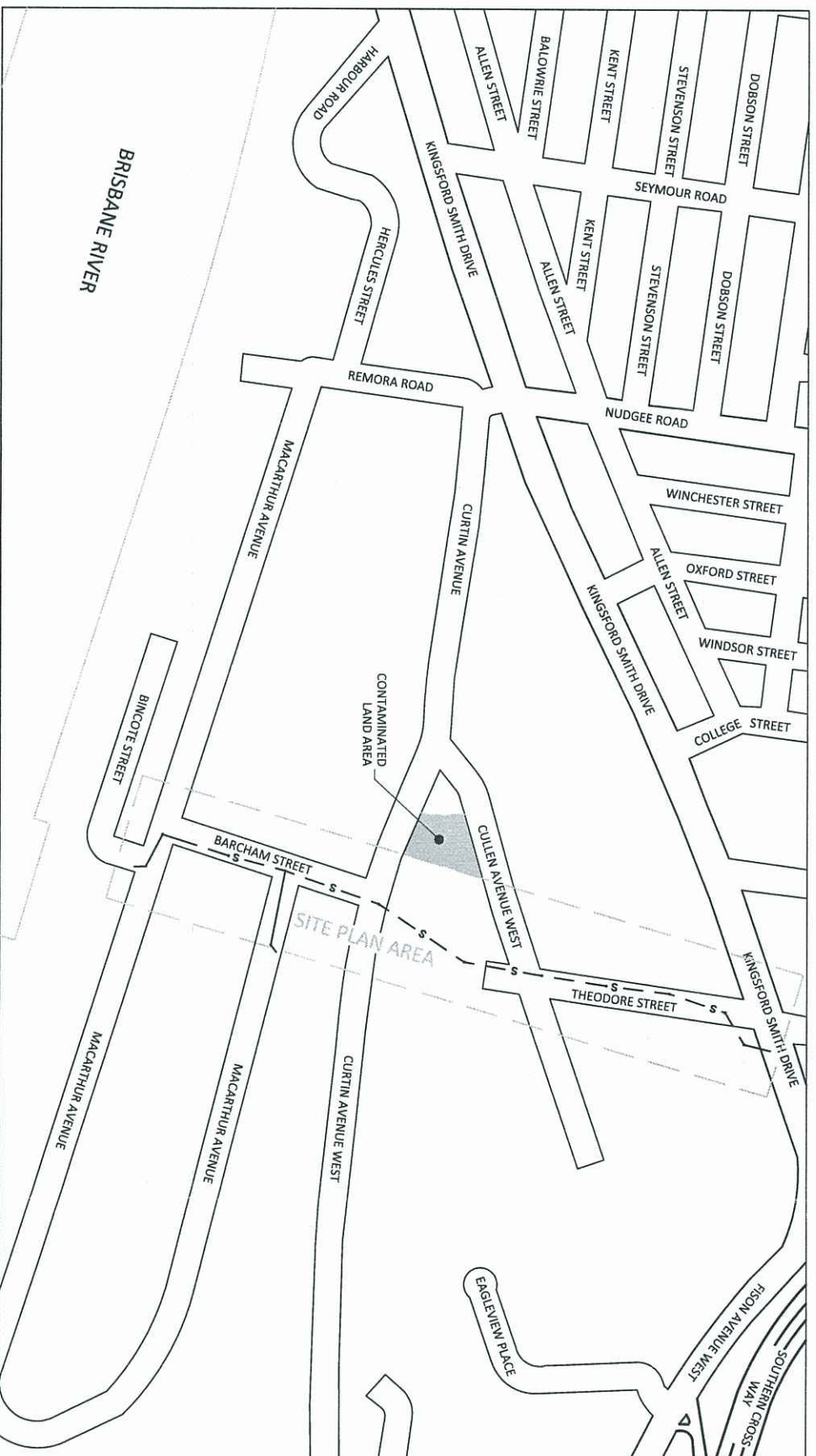


MACARTHUR AVENUE TO KINGSFORD SMITH DRIVE

referred to in the ULDA
APPROVAL dated 25 / 5 / 2012



LOCALITY PLAN

UBD REFERENCE : BRISBANE MAP 141 C17
SITE ADDRESS : NORTHSHORE, HAMILTON, QLD, 4007

CONSTRUCTION INSPECTION:
NOTIFICATION OF INSPECTIONS MUST BE RECEIVED BY
QUEENSLAND URBAN UTILITIES SERVICE DELIVERY
EAST - PROJECT WIS AT LEAST TWO (2) WEEKS PRIOR
TO COMMENCEMENT OF CONSTRUCTION
PLEASE CONTACT QAU PH: (07) 3407 8494

A "PERMIT TO WORK" MUST BE OBTAINED FROM THE RELEVANT QUU CONTROL ROOM PRIOR TO COMMENCEMENT OF WORK ON SITE. A MINIMUM PERIOD OF TEN WORKING DAYS IS REQUIRED FOR THE ISSUING OF A PERMIT. CONTROL ROOM EAST (BRISBANE LG AREA)
PH: 3407 8391 EMAIL: PTW@E@URBANUTILITIES.COM.AU



urban
land
development
authority

COMPONENT D - This document is a draft and remains the property of Bormhorst & Ward Pty Ltd. It is not to be distributed or used for the purposes for which it was commissioned and in no event shall it be used as evidence. It is to be returned to the originator immediately upon request. Any use of this document in any form whatsoever is prohibited.											
REV	DATE	AMENDMENT / ISSUE									
F	13.05.12	RE-ISSUE TO QOU FOLLOWING COMMENTS									
E	02.03.12	ISSUE TO QOU FOR SCRUTINY									
D	15.1.11	RE-ISSUE TO QOU FOR APPROVAL									
C	07.10.11	ISSUE TO QOU FOR TENDER									
B	29.09.11	ISSUE TO QOU FOR SCRUTINY									
			<table border="1"> <tr> <td>TW</td> <td>DS</td> <td>CK</td> <td>AP</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>	TW	DS	CK	AP				
TW	DS	CK	AP								
ASSOCIATED CONSULTANTS SURVEYOR: LANDPARTNERS LIMITED. GEOTECH: SOIL SURVERS PTY LTD.											
APPROVED NICK ROZIS 7729 BREC		CHECKED N. ROZIS DATE 29/09/2011									
BORNHORST + WARD CONSULTING ENGINEERS CIVIL AND STRUCTURAL Level 4, 67 Asot Terrace, Spring Hill, QLD 4000 A.M. 0800 333 334 Bormhorst & Ward Pty Ltd Brisbane Australia Phone (07) 3013 4699 Facsimile (07) 3013 4611 mail@bormhorstward.com.au www.bormhorstward.com.au											
CLIENT URBAN LAND DEVELOPMENT AUTHORITY		PROJECT NORTHSHORE HAMILTON TRUNK SEWER, MACARTHUR AVE TO KINGSFORD SMITH DRIVE									
SUBJECT TRUNK SEWER LOCALITY PLAN		PROJECT No. 10470 DRAWING No. C000 REVISION F									

ROADWORKS DRAWING INDEX

C000	TRUNK SEWER LOCALITY PLAN
C060	TRUNK SEWER NOTES AND DETAILS
C061	TRUNK SEWER TYPICAL DETAILS AND SECTIONS
C062	TRUNK SEWER LAYOUT PLAN SHEET 1
C063	TRUNK SEWER LAYOUT PLAN SHEET 2
C064	TRUNK SEWER LAYOUT PLAN SHEET 3
C065	TRUNK SEWER LAYOUT PLAN SHEET 4
C067	TRUNK SEWER LONGITUDINAL SECTIONS SHEET 1
C068	TRUNK SEWER LONGITUDINAL SECTIONS SHEET 2
C069	TRUNK SEWER LONGITUDINAL SECTIONS SHEET 3
C070	KINGSFORD SMITH DRIVE CONNECTION DETAIL OPTION A
C071	KINGSFORD SMITH DRIVE CONNECTION DETAIL OPTION B
C072	MACARTHUR AV AND BANCHAM ST INTERSECTION MAINTENANCE HOLE DETAIL
C073	GIRT COLLECTOR MAINTENANCE HOLE DETAIL
C074	GIRT COLLECTOR MAINTENANCE HOLE ACCESS ROAD PLAN SHEET 1
C075	GIRT COLLECTOR MAINTENANCE HOLE ACCESS ROAD PLAN SHEET 2
C080	TYPE 2 (SPECIAL) MAINTENANCE HOLE NOTES AND DETAILS
C081	TYPE 2 1500 (SPECIAL) MAINTENANCE HOLE DETAILS
C082	TYPE 2 1800 (SPECIAL) MAINTENANCE HOLE DETAILS
C090	SEWER CATCHMENT PLAN

QUU STANDARD DRAWINGS - SEWERAGE (486/5/25)

98001	STRIPPED CLAY SEWERAGE PRELINE DETAILS
5C001	SEWER MAINTENANCE HOLE COPING AND HOLE - GENERAL BRACKET DETAILS
5C004/1	X- TYPE STANDARD DEEP MAINTENANCE HOLE - GENERAL ARRANGEMENT
5C004/3	X- TYPE STANDARD DEEP MAINTENANCE HOLE - GENERAL ARRANGEMENT
5C004/5	X- TYPE STANDARD DEEP MAINTENANCE HOLE - JUNCTION DETAILS
5C004/6	X- TYPE STANDARD DEEP MAINTENANCE HOLE - TOP SLAB DETAILS
5C005/1	POLYETHYLENE LINED SEWER MAINTENANCE HOLE TRAFFICABLE LOCATIONS
5C005/2	POLYETHYLENE LINED SEWER MAINTENANCE HOLE TRAFFICABLE LOCATIONS
5C005/3	POLYETHYLENE LINED SEWER MAINTENANCE HOLE TRAFFICABLE LOCATIONS
5C005/4	POLYETHYLENE LINED SEWER MAINTENANCE HOLE TRAFFICABLE LOCATIONS
5F004/1	MAINTENANCE HOLE COVER - SEWER CLASS D - FRAME DETAILS
5F004/2	MAINTENANCE HOLE COVER - SEWER CLASS D - RISING RING DETAILS
5F004/3	MAINTENANCE HOLE COVER - SEWER CLASS D - COVER DETAILS
5F004/4	MAINTENANCE HOLE COVER - SEWER CLASS D - COVER DETAILS
5P001/3	PE NUSEWERS MAINTENANCE HOLE CONNECTION DETAILS
0003-501	POLYETHYLENE LINING WALL AND WALL TYPICAL DETAILS
0003-502	POLYETHYLENE LINING WALL PIPE PENETRATION TYPICAL DETAILS
0003-241	GIT COLLECTOR MAINTENANCE HOLE - WEDGE GATE PENSTOCK INSTALLATION
0003-231	GENERAL ARRANGEMENT
0003-601	GIT COLLECTOR MAINTENANCE HOLE VALVE BOX INSTALLATION IN TOP SLAB
0003-601	VACTOR PIPE INSTALLATION AND DETAILS
0003-621	VENT POLE DETAILS
0003-631	LADDERS FOR GIT COLLECTOR MAINTENANCE HOLE AND PUMP WELL INSTALLATION AND DETAILS

QUEENSLAND URBAN UTILITIES DELEGATE
(APPROVAL VALID FOR 12 MONTHS FROM DATE SHOWN)

<u>CLIENT:</u>	ULDA
<u>CONTACT:</u>	BORNHORST & WARD
<u>QUU AUDITOR:</u>	AUDIT AND COMPLIANCE OFFICER QUEENSLAND URBAN UTILITIES
<u>CONTACT:</u>	(07) 3407 8494

AS CONSTRUCTED DETAILS FOR AMEND.

I CERTIFY THAT THE "AS CONSTRUCTED" DETAILS SHOWN ON THIS PLAN ARE TRUE AND ACCURATE RECORD OF THE WORKS
 SIGNED: DATE:

[illegible]

SHEET NO.	OF	AMEND.
QUEENSLAND URBAN UTILITIES DRAWING No.		
486/5/6-0087-001		A



QUEENSLAND
Urban Utilities

FOR APPROVAL

STATUS

PRELIMINARY QUU AND CONTRACTOR LIVE SEWER WORK

CONTRACTOR TO CONFIRM LIVE SEWER WORKS THROUGH CONSULTATION WITH QUU AND COMPLETION OF WORK METHOD STATEMENT. CONSULTING ENGINEERS ARE TO CONTACT QUEENSLAND URBAN UTILITIES 24 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION TO ARRANGE FOR THIS WORK TO BE CARRIED OUT. (EXCAVATION, SAFE-SHORING AND ASSOCIATED WORK BY CONTRACTOR) EXCAVATION WORKS CARRIED OUT BY CONTRACTOR PRIOR TO DEPTH OF 1.5m OR GREATER MUST PROVIDE A SAFE WORK PLAN AS PER WORKPLACE HEALTH AND SAFETY LEGISLATION TO COUNCIL PRIOR TO COMMENCING ANY WORKS. IT IS THE DEVELOPER'S RESPONSIBILITY TO ENSURE ALL LIVE SEWER WORKS ARE COMPLETE BEFORE ALLOWING PRIVATE DRAINAGE TO BE CONNECTED.



ID	DESCRIPTION	DIA. SEWER	TYPE	M.H. NO.	M.H. TYPE	COVER TYPE	LOT NO	F.S.L.	E.S.L.	I.L.	Depth
KINGSFORD SMITH DRIVE LIVE WORKS											
1(A)	CONTRACTOR TO TUNNEL BORE NEW SEWER LINE FROM STRUCTURE 1/1 TO MH150190 AND TERMINATE AT EXISTING SEWER MANHOLE 1/1.	630	PE	1/1	2	1500	-	-	-	-	-
2(A)	AT LOW FLOW TIME, QUU TO CONTROL FLOW AT VIOLET STREET PUMP STATION, TO REDUCE WATER LEVEL IN MANHOLE.	1500	CR	150190	-	-	-	4.310	-14.030	18.340	-
3(A)	USING SAFE WORK PRACTICES, CONTRACTOR TO BREAK THROUGH THE INSIDE OF THE MANHOLE WALL TO THE NEW SEWER LINE.	630	PE	150190	-	-	-	4.310	-12.030	16.340	-
4(A)	CONTRACTOR TO INSTALL NEW PIPELINE AND PROVIDE CONNECTION AS PER DETAIL ON DRAWINGS. PROVIDE TEMPORARY PLUG ON UPSTREAM END AND TEST.	630	PE	150190	-	-	-	4.310	-12.030	16.340	-
5(A)	FOLLOWING ACCEPTANCE FROM QUU, QUU TO REMOVE TEMPORARY SEALS WITHIN EXISTING SEWER LINE	-	-	150190	-	-	-	-	-	-	-
NORTHSHORE SEWER LIVE WORKS											
1(B)	CONTRACTOR TO CONSTRUCT NEW SEWER LINE FROM STRUCTURE 1/2 AND STOP SHORT OF EXISTING MANHOLE EX17/1	500	VC	1/2	X	-	-	3.077	3.077	-2.969	6.046
2(B)	QUU TO TEMPORARILY SEAL OFF UPSTREAM END OF EXISTING SEWER	450	PE	EX17/1	-	-	-	3.689	-2.811	6.500	-
3(B)	CONTRACTOR TO BREAK THROUGH WALL OF EXISTING SEWER MANHOLE, AND CONNECT NEW SEWER. PROVIDE TEMPORARY PLUG.	500	VC	EX17/1	-	-	-	3.689	-2.861	6.550	-
4(B)	QUU TO REMOVE TEMPORARY SEALS	450	PE	EX17/1	-	-	-	3.689	-2.811	6.500	-
MACARTHUR AVENUE LIVE WORKS											
1(C)	CONTRACTOR TO CONSTRUCT MANHOLE 12/1 OVER EXISTING SEWER LINE.	500	PE	12/1	X	-	-	2.396	2.396	-3.000	5.396
1(E)	QUU TO BREAK INTO EXISTING SEWER MANHOLE TO PROVIDE 315 PE STUB WITH TEMPORARY PLUG AND END CAP	315	PE	150541	-	-	-	2.507	-	-1.700	4.207
2(E)	CONTRACTOR TO REMOVE END CAP AND LAY 1 SHORT PIPE (MHT AND L.O.) AND THEN LAY SEWER LINES. AFTER CLEANING AND TESTING L.O. PIPE TO BE SURROUNDED WITH 150mm CONCRETE.	315	PE	150541	-	-	-	-	-	-	-
FOLLOWING SUCCESSFUL ON MAINTENANCE INSPECTION OF ALL SEWER MANHOLES AND LINES											
8(A)	QUU TO REMOVE TEMPORARY PLUG	-	-	150190	-	-	-	-	-	-	-
5(B)	QUU TO REMOVE TEMPORARY PLUG AND RE-BENCH MANHOLE	-	-	EX17/1	-	-	-	-	-	-	-
2(C)	QUU TO REMOVE GROWN OF EXISTING PIPE, SEAL DOWNSTREAM END OF MANHOLE AND RE-BENCH.	-	-	12/1	-	-	-	-	-	-	-
3(E)	QUU TO REMOVE TEMPORARY PLUG	-	-	150541	-	-	-	-	-	-	-
DECOMMISSIONING WORKS											
1(E)	CONTRACTOR TO DECOMMISSION NORTHSHORE LIFT STATION	-	-	-	-	-	-	-	-	-	-
2(E)	CONTRACTOR TO DECOMMISSION MACARTHUR AVENUE PUMP STATION NO 1 AND RISING MAIN. REMOVE PUMPS AND FILL WELL WITH GRAVEL. FILL RISING MAIN WITH FLOWABLE GROUT.	-	-	-	-	-	-	-	-	-	-
3(F)	CONTRACTOR TO DECOMMISSION EXISTING SEWERS AS MARKED BY FILLING WITH FLOWABLE GROUT, IN ACCORDANCE WITH QUU SEWERAGE STANDARDS.	-	-	-	-	-	-	-	-	-	-

VITRIFIED CLAY PIPES (VC)

VC1 VC JACKING PIPES TO BE SELECTED BASED ON JACKING LOADS.
VC2 VC PIPES FITTINGS AND JOINING ASSEMBLIES SHALL COMPLY WITH EN295-1.
VC3 MINIMUM PIPE CLASS TO BE CLASS 4 TO A.S. 1741 OR CONFORM TO EN295-1.

MAINTENANCE HOLES

MH1 ALL MAINTENANCE HOLES TO BE CAST IN-SITU USING SPECIAL CLASS CONCRETE (WSA PS-358) UNLESS OTHERWISE STATED.
MH2 SPECIAL CLASS CONCRETE (WSA PS-358) TO BE: STRENGTH CLASS 40MPa
AGGREGATE SIZE 20mm
SLUMP 75mm
ONLY CALCAREOUS AGGREGATES TO BE USED. CALCAREOUS AGGREGATES ARE AGGREGATES DEFINED AS HAVING AN ACID SOLUBILITY GREATER THAN 98% WHEN TESTED IN ACCORDANCE WITH AWMA 8.100.
MH3 INTERNAL FORMWORK TO BE STRIPPED BEFORE EXTERNAL FORMWORK.
MH4 CONCRETE TO CURE FOR TIME SPECIFIED BY DESIGN CONSULTANT PRIOR TO LOADING OF MAINTENANCE HOLE.
MH5 MAINTENANCE HOLE STEP IRONS & FIXING METHOD TO AS 1607 FOR MH'S 522 300^{mm} DEPTH. INSTALL ACCESS LADDERS TO MH'S DEEPER THAN 3000mm IN ACCORDANCE WITH AS 1657. REFER TO QUU STANDARD DRG 486/5/25-0003-631. PR. VIDE 12 THICK SPOUGE. NEOPRENE GASKET BETWEEN LADDER BACKLET AND P.E. LINING AND COMPRESSED 3 THICK AS PER QUU STD DRG 486/5/25-003-501.
MH6 ALL MANHOLES TO BE POLYETHYLENE LINED. REFER QUU STD DWG 486/5/25-003-501.
MH7 SACRIFICIAL CANNONS REMAINING IN GROUND POST CONSTRUCTION TO BE CUT OFF MIN 2m BELOW FINISHED SURFACE LEVEL.



CONTRACTOR TO UNDERTAKE THEIR OWN SERVICES INVESTIGATIONS AS NECESSARY.

ALL SEWER CONSTRUCTION WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE QUEENSLAND WORKPLACE HEALTH AND SAFETY ACT 1995. CONTACT THE DIVISION OF WORKPLACE HEALTH AND SAFETY FOR INFORMATION. PHONE 1300 369 915

CONTRACTOR TO UNDERTAKE THEIR OWN SERVICES INVESTIGATIONS AS NECESSARY.

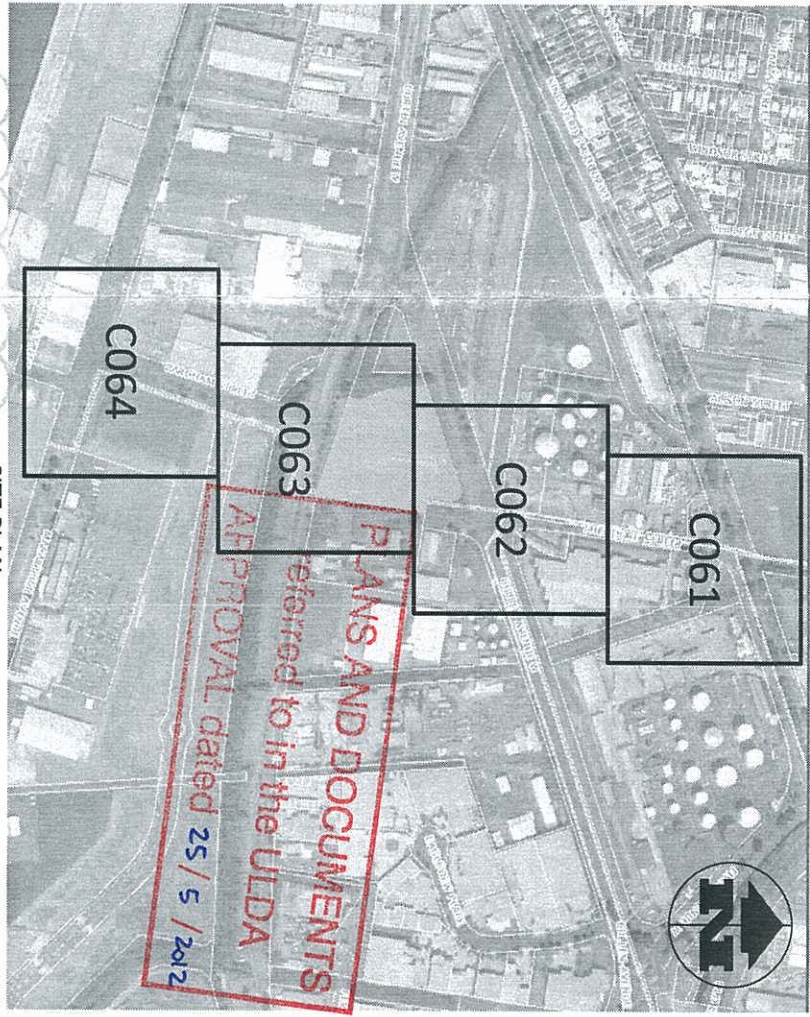
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SITE PLAN



CONSTRUCTION INSPECTION: NOTIFICATION OF INSPECTIONS MUST BE RECEIVED BY QUEENSLAND URBAN UTILITIES SERVICE DELIVERY EAST - PROJECT WAS AT LEAST TWO (2) WEEKS PRIOR TO COMMENCEMENT OF CONSTRUCTION PLEASE CONTACT QUU PH: (07) 3407 8494

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PIPE TYPE DETAILS
TYPE A DN600 VC JACKING PIPE
TYPE B DN630 PE (PE100 - PN12.5) SDR 13.6 MILD STEEL ENVELOPER
TYPE C DN630 VC JACKING PIPE
TYPE D DN 315 PE (PE100 - PN10) SDR17

LEVEL DATUM
DATUM - A.H.D - P.M 77618 - R.I 4.114
SURVEYOR - LANDPARTNERS

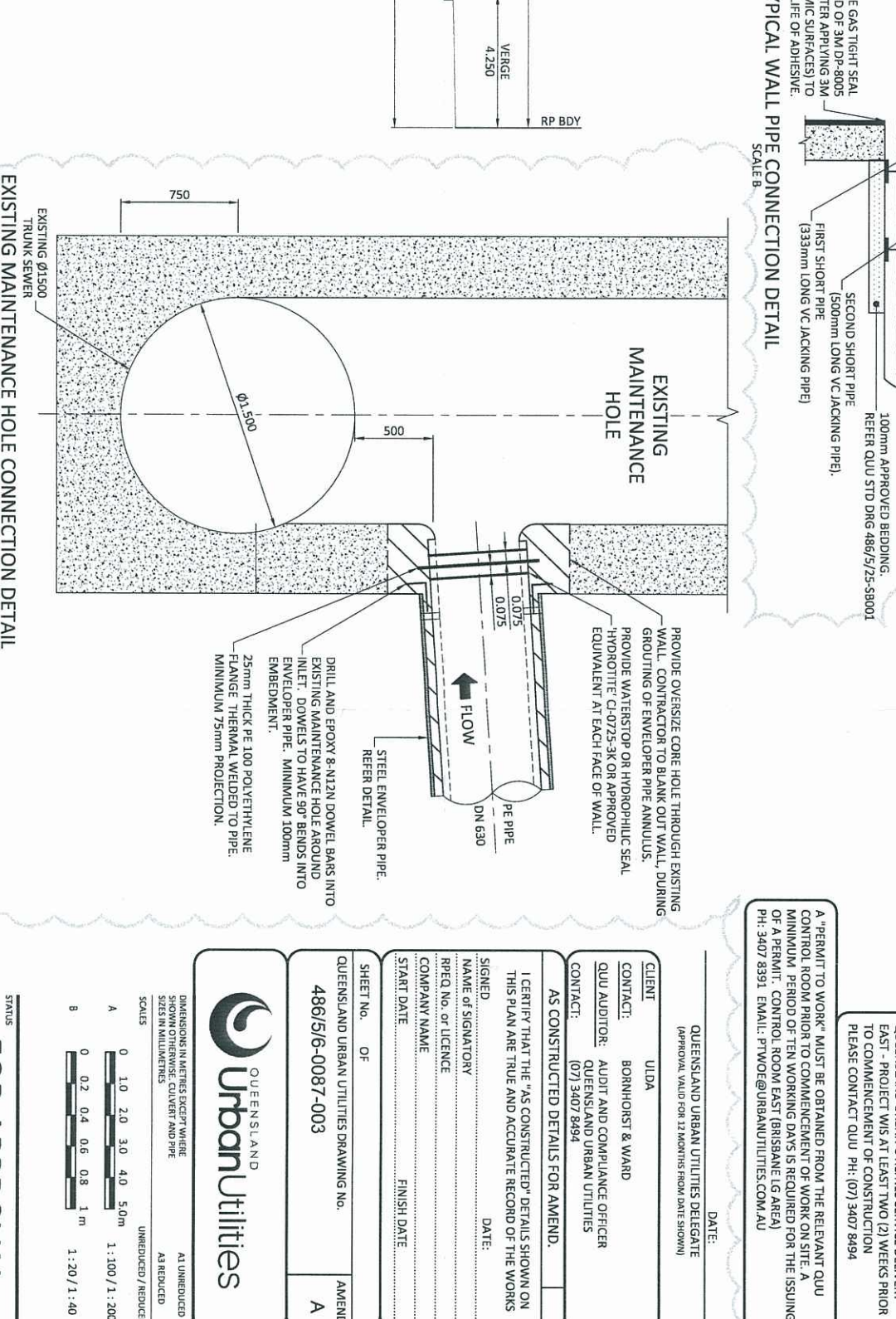
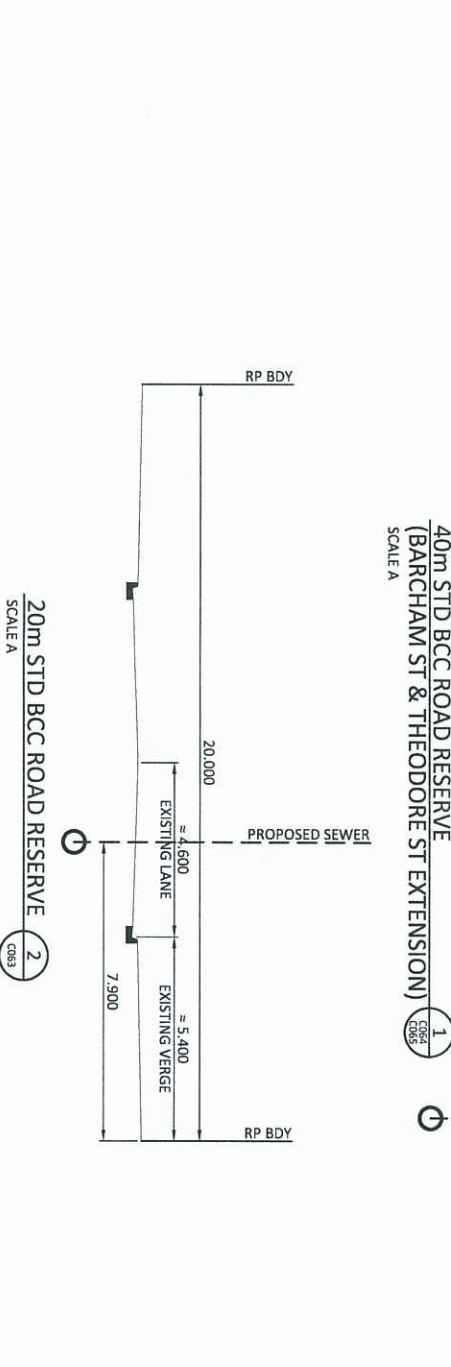
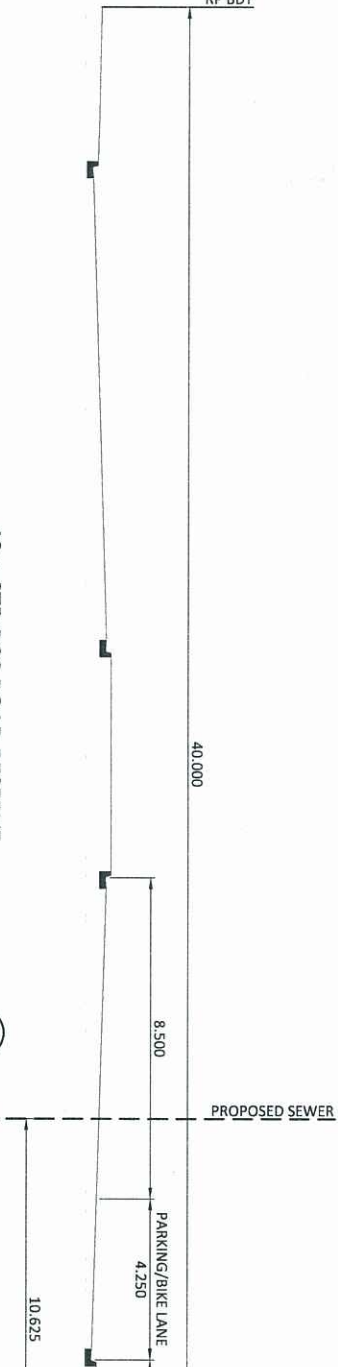
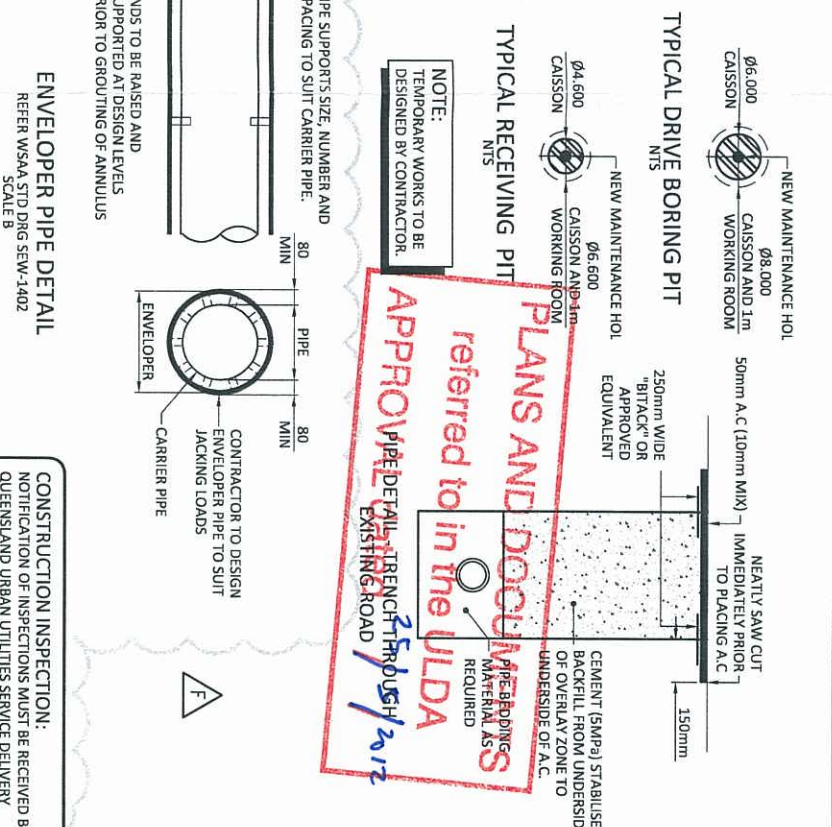
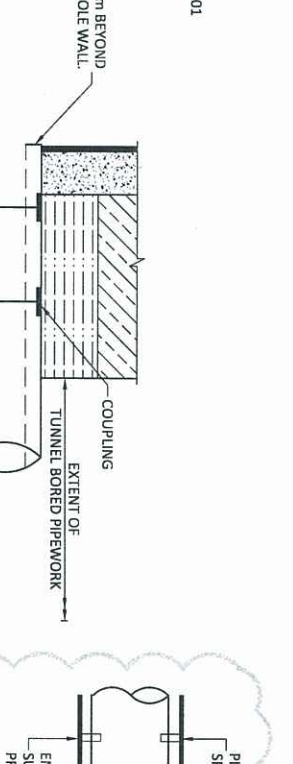
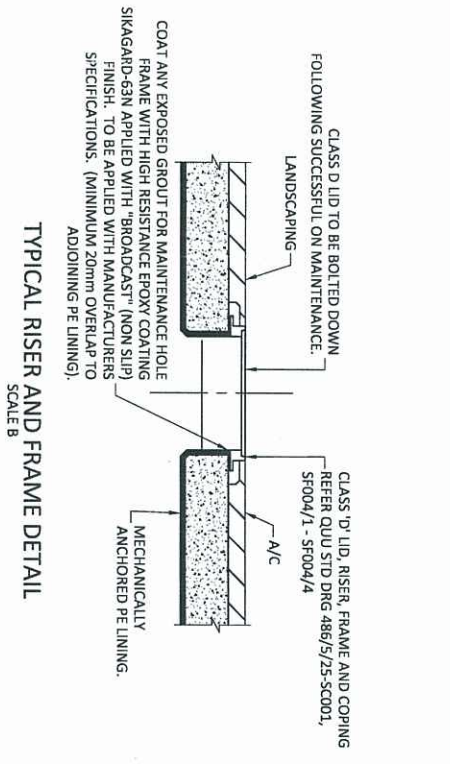
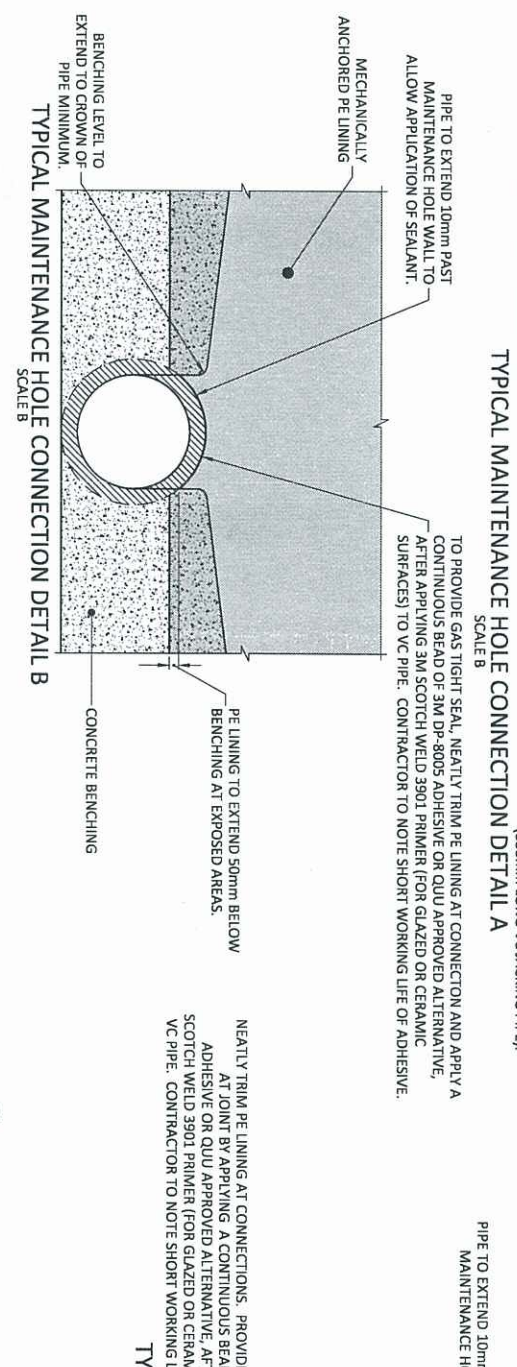
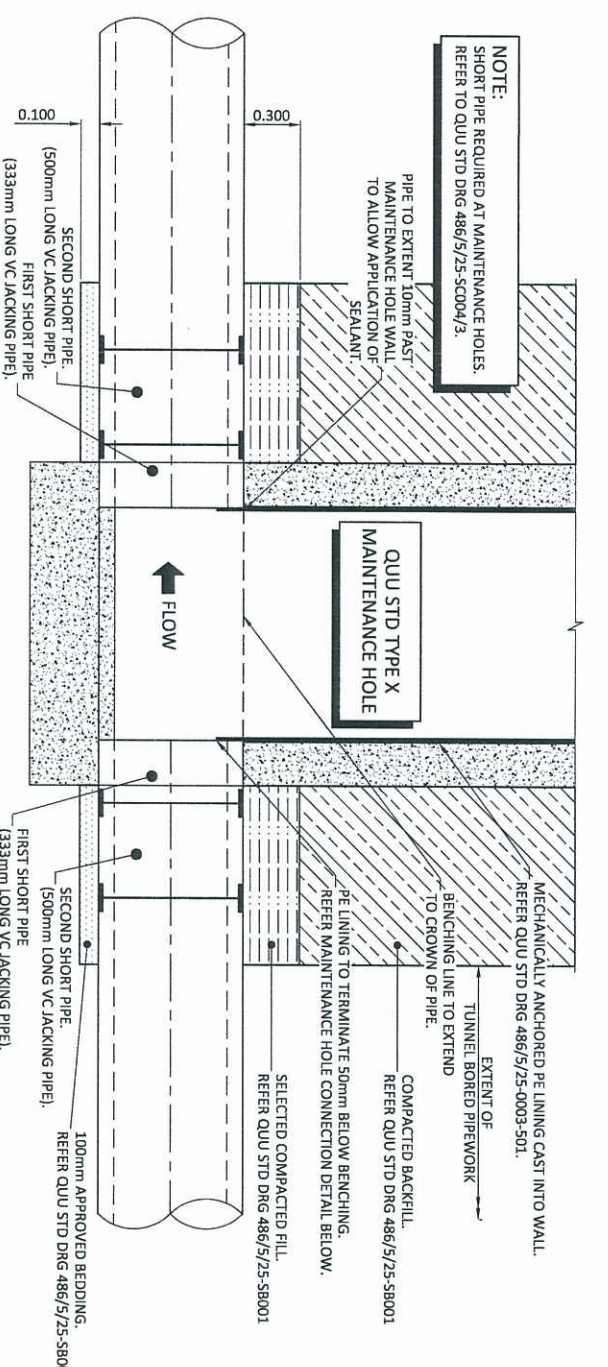
NAME OF ESTATE	NORTHSHORE HAMILTON
SUBDIVIDER	ULDA
BCC REFERENCE NO.	
D.A. NO.	
B.C.C. DELEGATES	
APPROVAL DATE	
NUMBER OF LOTS	
AREA OF ESTATE (ha)	
LENGTH OF SEWERS	250 PE 74m 500 VC 306m 600 VC 733m 630 PE 39m
NO. PRIVATE PROPERTIES EXT. TO DEVELOPMENT TRAVERSED BY SEWER	

CLIENT	ULDA
CONTACT:	BORNHORST & WARD
QUU AUDITOR:	AUDIT AND COMPLIANCE OFFICER QUEENSLAND URBAN UTILITIES (07) 3407 8494
AS CONSTRUCTED DETAILS FOR AMEND.	
SIGNED	
NAME OF SIGNATORY	
RPEQ No. or LICENCE	
COMPANY NAME	
START DATE	
FINISH DATE	
SHEET No. OF	
QUEENSLAND URBAN UTILITIES DRAWING NO.	486/5/6-0087-002
AMEND.	A



FOR APPROVAL

PROJECT No.	10470
DRAWING No.	C060
REVISION	F



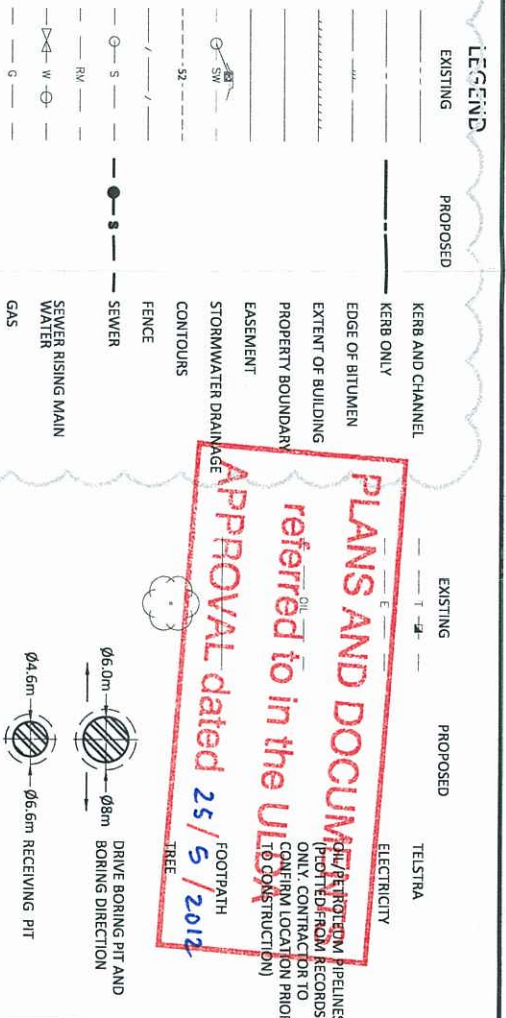
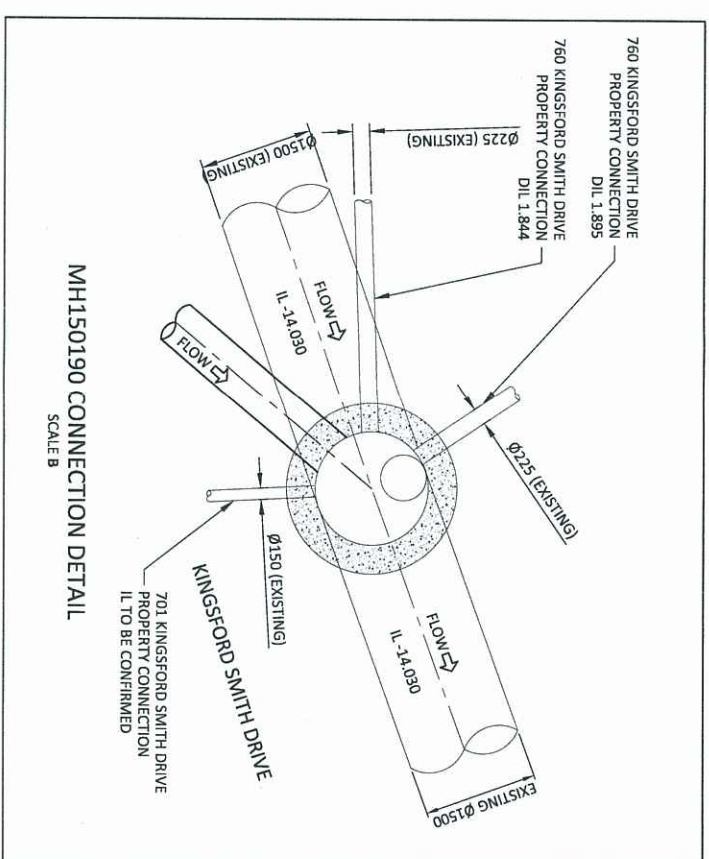
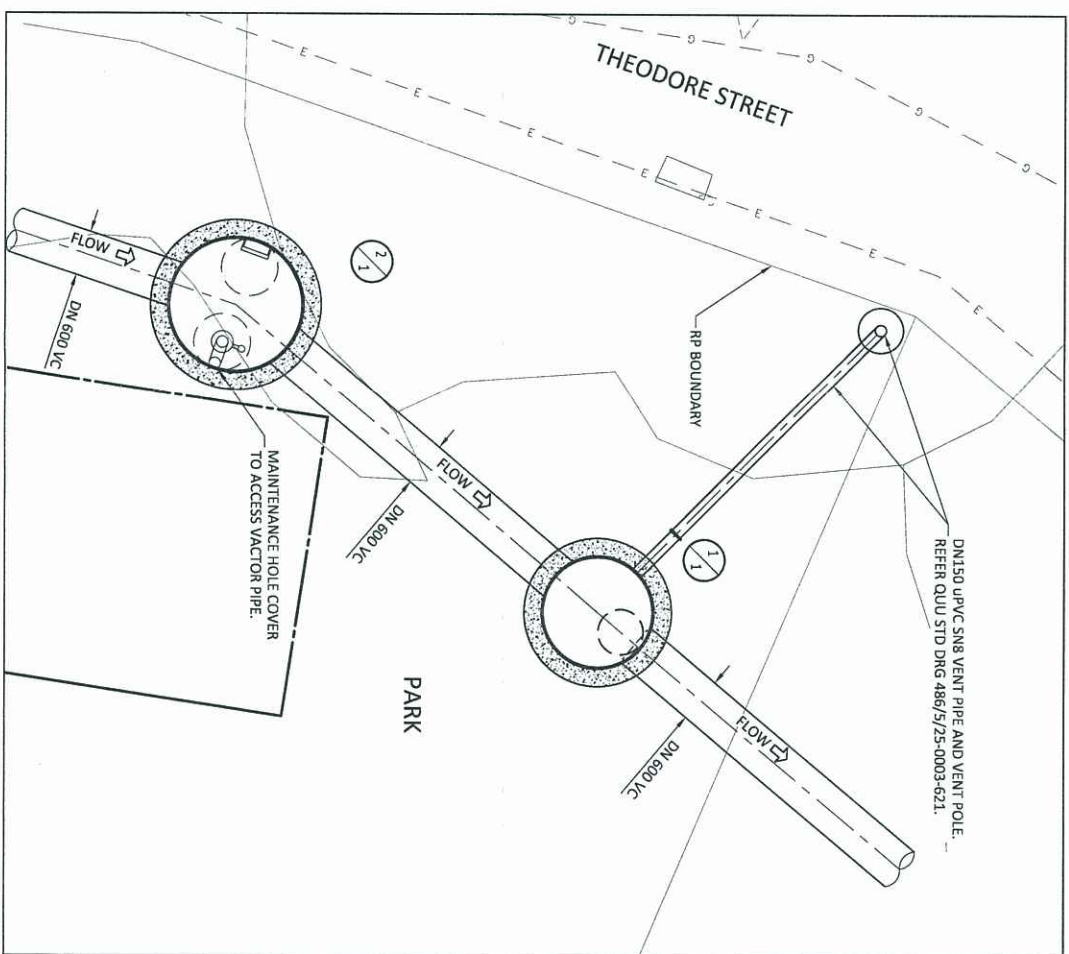
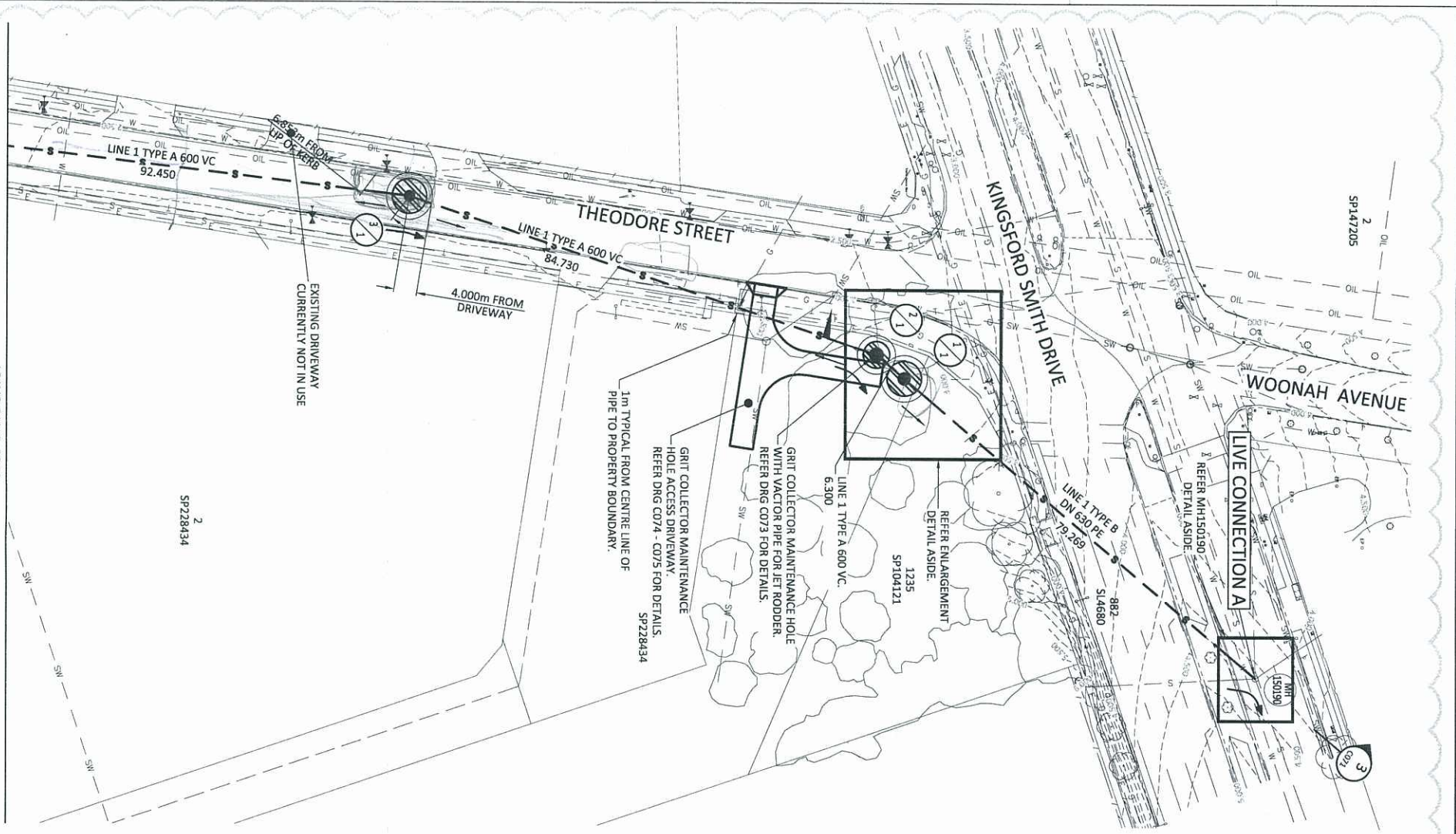
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F	13.03.12	RE-ISSUE TO QUU FOLLOWING COMMENTS	AY	KR	13.03.12	AY	KR	13.03.12	AY
E	02.03.12	ISSUE TO QUU FOR SCRUTINY	AY	KR	02.03.12	AY	KR	02.03.12	AY
D	15.12.11	RE-ISSUE TO QUU FOR APPROVAL	AY	KR	15.12.11	AY	KR	15.12.11	AY
C	07.10.11	ISSUE FOR TENDER	AY	KR	07.10.11	AY	KR	07.10.11	AY
B	29.09.11	ISSUE TO QUU FOR SCRUTINY	AY	KR	29.09.11	AY	KR	29.09.11	AY

ASSOCIATED CONSULTANTS									
SURVEYOR: LANDPARTNERS LIMITED, GEOTECH: SOIL SURVEYS PTY LTD.					APPROVED NICK ROZIS 7729 N. ROZIS				
DATE 29/09/2011					DATE 29/09/2011				

BORNHORST + WARD CONSULTING ENGINEERS CIVIL AND STRUCTURAL									
Brisbane Australia Phone (07) 3013 6699 Fax (07) 3013 6611 Email: bornhorst@bw.com.au					CLIENT: NORTHSHORE HAMILTON TRUNK SEWER, MACARTHUR AVE TO KINGSFORD SMITH DRIVE				
Level 4, 67 Asot Terrace, Spring Hill, QLD 4000					SUBJECT: TRUNK SEWER TYPICAL DETAILS AND SECTIONS				

PROJECT No. 10470									
DRAWING No. C061					REVISION F				

FOR APPROVAL



PLANS AND DOCUMENTS
referred to in the ULS
APPROVAL dated 25/5/2012

NOTE:
THE LOCATION OF EXISTING SERVICES SHOWN ON THE DRAWINGS IS PRELIMINARY ONLY. THE CONTRACTOR IS TO CONFIRM THE LOCATION OF EXISTING SERVICES PRIOR TO COMMENCEMENT OF WORKS.

NOTE:
CONTRACTOR TO NOTIFY ALL ADJACENT PROPERTIES PRIOR TO COMMENCEMENT OF WORK, WITH PROPERTY ACCESS BEING MAINTAINED AT ALL TIMES.

NOTE:
CONTRACTOR TO RE-INSTATE ALL EXISTING ASPHALT/KERBS/FOOTPATHS DAMAGED OR REMOVED DURING CONSTRUCTION

A "PERMIT TO WORK" MUST BE OBTAINED FROM THE RELEVANT QUT CONTROL ROOM PRIOR TO COMMENCEMENT OF WORK ON SITE. A MINIMUM PERIOD OF TEN WORKING DAYS IS REQUIRED FOR THE ISSUING OF A PERMIT. CONTROL ROOM EAST (BRISBANE LG AREA) PH: 3407 8391. EMAIL: PTW@QUTURBANUTILITIES.COM.AU

CONSTRUCTION INSPECTION:
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PLEASE CONTACT QUT PH: (07) 3407 8494

DATE: _____
QUEENSLAND URBAN UTILITIES DELEGATE
(APPROVAL VALID FOR 12 MONTHS FROM DATE SHOWN)

CLIENT: ULDA
CONTACT: BORNHORST & WARD
QUT AUDITOR: AUDIT AND COMPLIANCE OFFICER
CONTACT: (07) 3407 8494

AS CONSTRUCTED DETAILS FOR AMEND.
I CERTIFY THAT THE "AS CONSTRUCTED" DETAILS SHOWN ON THIS PLAN ARE TRUE AND ACCURATE RECORD OF THE WORKS
SIGNED: _____ DATE: _____
NAME OF SIGNATORY: _____
RPEC No. or LICENCE: _____
COMPANY NAME: _____
START DATE: _____ FINISH DATE: _____

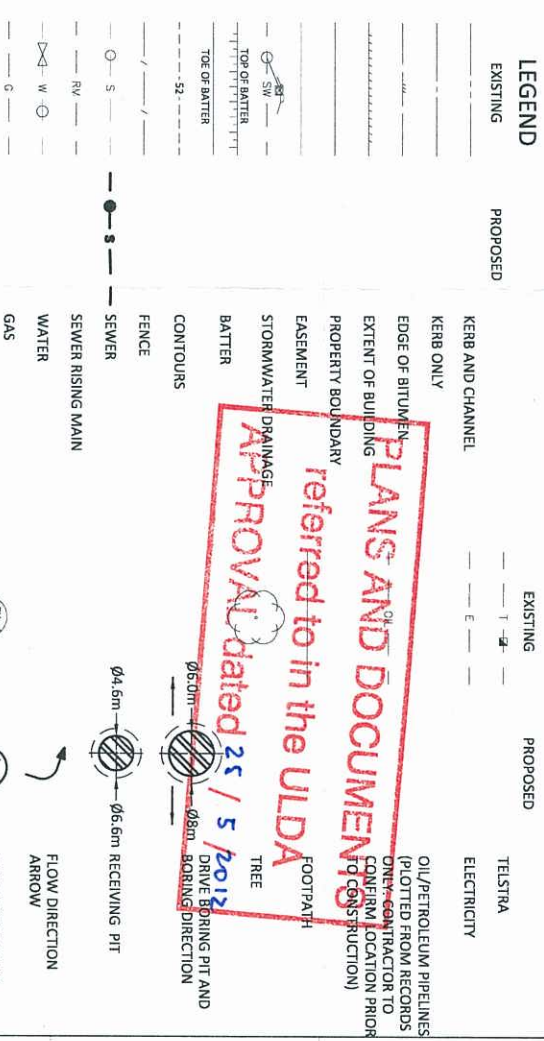
SHEET No. OF _____
QUEENSLAND URBAN UTILITIES DRAWING No. 486/5/6-0087-004
AMEND. A

PROJECT NORTH
Urban Utilities

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES
UNREDUCED / REDUCED
A 0 5 10 15 20 25m 1:500 / 1:1000
B 0 0.5 1.0 1.5 2.0 2.5m 1:50 / 1:100

FOR APPROVAL

REV.	DATE	AMENDMENT / ISSUE	DES.	CHECK.	APP.	ASSOCIATED CONSULTANTS	APPROVED	CHECKED	BORNHORST + WARD CONSULTING ENGINEERS	CLIENT	PROJECT	SUBJECT
F	13/03/12	RE-ISSUE TO QUT FOLLOWING COMMENTS	AV	KR	NR	SURVEYOR: LANDPARTNERS LIMITED.	NICK ROZIS	7729	CIVIL AND STRUCTURAL	URBAN LAND DEVELOPMENT AUTHORITY	NORTHSHORE HAMILTON TRUNK SEWER, MACARTHUR AVE TO KINGSFORD SMITH DRIVE	TRUNK SEWER LAYOUT PLAN SHEET 1
E	02/03/12	ISSUE TO QUT FOR SCRUTINY	AV	KR	NR	GEOTECH: SOIL SURVEYS PTY LTD.	N. ROZIS		Level 4, 67 Asot Terrace, Spring Hill, QLD 4000			10470
D	15/12/11	RE-ISSUE TO QUT FOR APPROVAL	AV	KR	NR							REVISION
C	07/10/11	ISSUE FOR TENDER	AV	KR	NR							CG62
B	29/09/11	ISSUE TO QUT FOR SCRUTINY	AV	KR	NR							F



NOTE:
CONTRACTOR TO NOTIFY ALL ADJACENT PROPERTIES
PRIOR TO COMMENCEMENT OF WORK, WITH
PROPERTY ACCESS BEING MAINTAINED AT ALL TIMES.

A "PERMIT TO WORK" MUST BE OBTAINED FROM THE RELEVANT QLU CONTROL ROOM PRIOR TO COMMENCEMENT OF WORK ON SITE. A MINIMUM PERIOD OF TEN WORKING DAYS IS REQUIRED FOR THE ISSUING OF A PERMIT. CONTROL ROOM EAST (BRISBANE LG AREA)
PH: 3407 8391 EMAIL: PTMWOE@QLUBAINTILITIES.COM.AU

DATE _____

AS CONSTRUCTED DETAILS FOR AMEND.

DATE: _____ NED _____

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PROJECT NORTH

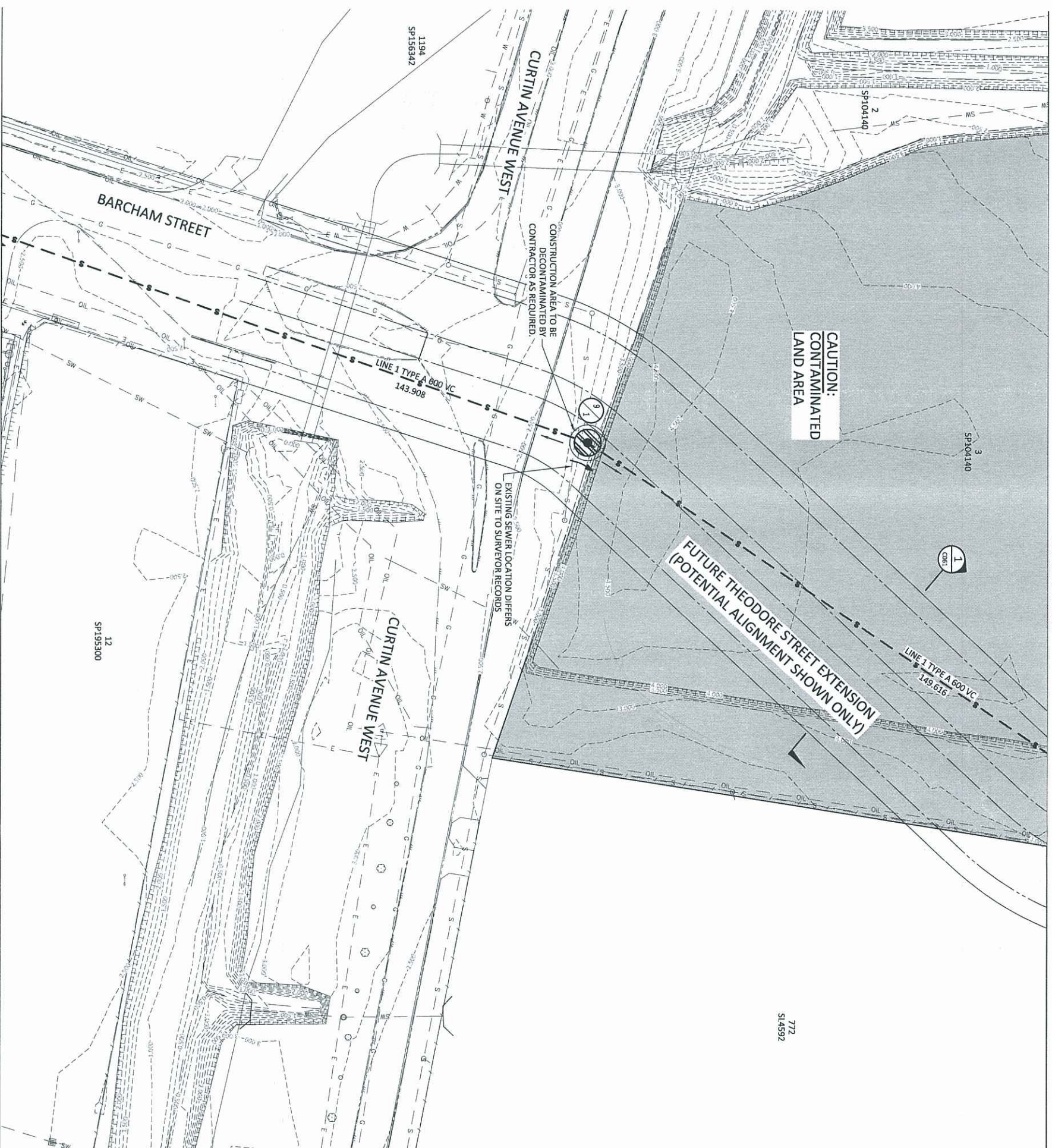
STATUS

DRAWING NO. _____ REVISION _____

0
n
0

;

JOINS DWG C063



LEGEND



PLANS AND DOCUMENTS
referred to in the ULDA
APPROVAL dated 25/5/2016

NOTE:
CONTRACTOR TO RE-INSTATE ALL EXISTING ASPHALT/KERBS/FOOTPATHS DAMAGED/REMOVED DURING CONSTRUCTION

NOTE:
THE LOCATION OF EXISTING SERVICES SHOWN ON THE DRAWINGS IS PRELIMINARY ONLY. THE CONTRACTOR IS TO CONFIRM THE LOCATION OF EXISTING SERVICES PRIOR TO COMMENCEMENT OF WORKS.

NOTE:
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CONSTRUCTION INSPECTION:
NOTIFICATION OF INSPECTIONS MUST BE RECEIVED BY QUEENSLAND URBAN UTILITIES SERVICE DELIVERY EAST - PROJECT WAS AT LEAST TWO (2) WEEKS PRIOR TO COMMENCEMENT OF CONSTRUCTION
PLEASE CONTACT QUL PH: (07) 3407 8494

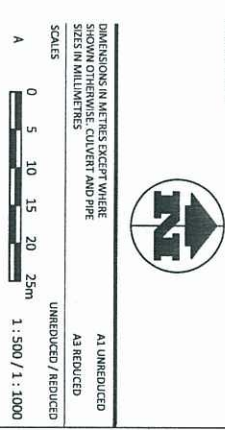
DATE: _____
QUEENSLAND URBAN UTILITIES DELEGATE
(APPROVAL VALID FOR 12 MONTHS FROM DATE SHOWN)

CLIENT: ULDA
CONTACT: BORNHORST & WARD
QUL AUDITOR: AUDIT AND COMPLIANCE OFFICER
CONTACT: (07) 3407 8494

SIGNED: _____
NAME OF SIGNATORY: _____
DATE: _____
APPROVED: _____
COMPANY NAME: _____
START DATE: _____
FINISH DATE: _____

SHEET No. OF _____
QUEENSLAND URBAN UTILITIES DRAWING No. 48615/6-0087-006
AMEND. A

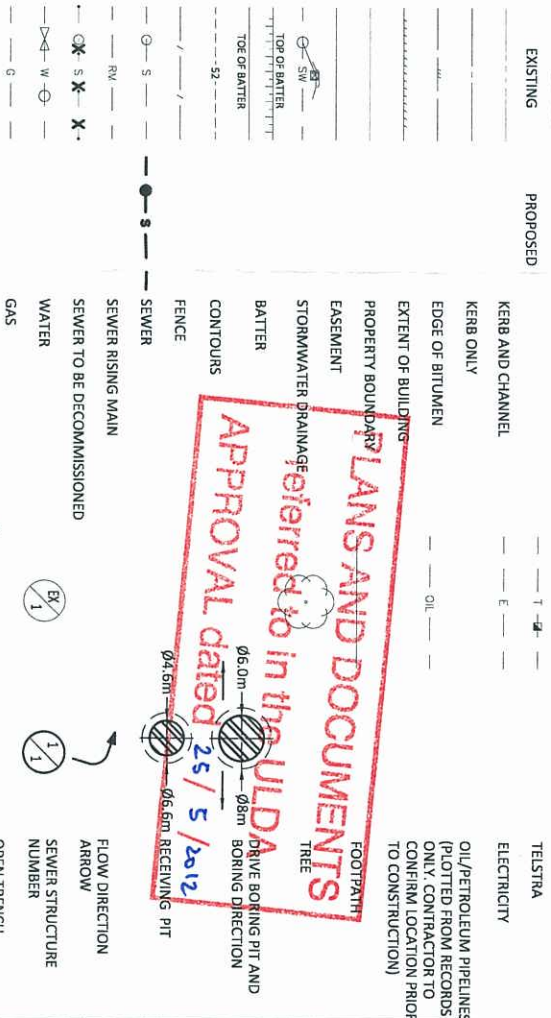
PROJECT NORTH



FOR APPROVAL

REV	DATE	AMENDMENT / ISSUE	OWN	DWG	CHK	APP	ASSOCIATED CONSULTANTS	APPROVED	CHECKED	BORNHORST + WARD CONSULTING ENGINEERS CIVIL AND STRUCTURAL	CLIENT	PROJECT	SUBJECT	STATUS
F	13.03.12	RE-ISSUE TO QUL FOLLOWING COMMENTS	AY	KR	NN	NN	SURVEYOR: LANDPARTNERS LIMITED.	NICK ROZIS	N. ROZIS	CONSULTING ENGINEERS CIVIL AND STRUCTURAL	URBAN LAND DEVELOPMENT AUTHORITY	NORTHSHORE HAMILTON TRUNK SEWER, MACARTHUR AVE TO KINGSFORD SMITH DRIVE	TRUNK SEWER LAYOUT PLAN SHEET 3	10470
E	02.03.12	ISSUE TO QUL FOR SCRUTINY	AY	KR	NN	NN								REVISION
D	15.12.11	RE-ISSUE TO QUL FOR APPROVAL	AY	KR	NN	NN	GEOTECH: SOIL SURVEYS PTY LTD.							
C	07.10.11	ISSUE FOR TENDER	AY	KR	NN	NN								
B	29.09.11	ISSUE TO QUL FOR SCRUTINY	AY	KR	NN	NN								

LEGEND



PLANS AND DOCUMENTS
referred to in the ULDA
Approval dated 25/5/2012

NOTE:
CONTRACTOR TO RE-INSTALL ALL EXISTING ASPHALT/KERBS/FOOTPATHS DAMAGED/REMOVED DURING CONSTRUCTION

NOTE:
THE LOCATION OF EXISTING SERVICES SHOWN ON THE DRAWINGS IS PRELIMINARY ONLY. THE CONTRACTOR IS TO CONFIRM THE LOCATION OF EXISTING SERVICES PRIOR TO COMMENCEMENT OF WORKS.

NOTE:
CONTRACTOR TO NOTIFY ALL ADJACENT PROPERTIES PRIOR TO COMMENCEMENT OF WORK. WITH PROPERTY ACCESS BEING MAINTAINED AT ALL TIMES.

CONSTRUCTION INSPECTION:
NOTIFICATION OF INSPECTIONS MUST BE RECEIVED BY QUEENSLAND URBAN UTILITIES SERVICE DELIVERY EAST - PROJECT WAS AT LEAST TWO (2) WEEKS PRIOR TO COMMENCEMENT OF CONSTRUCTION
PLEASE CONTACT QUU PH: (07) 3407 8694

A "PERMIT TO WORK" MUST BE OBTAINED FROM THE RELEVANT QUU CONTROL ROOM PRIOR TO COMMENCEMENT OF WORK ON SITE. A MINIMUM PERIOD OF TEN WORKING DAYS IS REQUIRED FOR THE ISSUING OF A PERMIT. CONTROL ROOM EAST (BRISBANE LG AREA)
PH: 3407 8391 EMAIL: PTW@E@URBANUTILITIES.COM.AU

DATE: _____
QUEENSLAND URBAN UTILITIES DELEGATE
(APPROVAL VALID FOR 12 MONTHS FROM DATE SHOWN)

CLIENT: ULDA
CONTACT: BORNHORST & WARD
QUU ADDRES: AUDIT AND COMPLIANCE OFFICER
CONTACT: QUEENSLAND URBAN UTILITIES
(07) 3407 8494

SIGNED: _____
NAME OF SIGNATORY: _____
DATE: _____
APPROVED BY: _____
COMPANY NAME: _____
START DATE: _____
FINISH DATE: _____

SHEET No. OF _____
QUEENSLAND URBAN UTILITIES DRAWING No. _____
48615/6-0087-007
AMEND: _____
A



PROJECT NORTH



UNRENDERED IN METRES EXCEPT WHERE SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES.

SCALE A
0 5 10 15 20 25m
1:500 / 1:1000

SCALE B
0 0.2 0.4 0.6 0.8 1m
1:20 / 1:40

FOR APPROVAL

REV	DATE	AMENDMENT / ISSUE	BY	CHK	APP
1	13.03.12	RE-ISSUE TO QUU FOLLOWING COMMENTS	AV	KR	NR
2	02.03.12	ISSUE TO QUU FOR SCRUTINY	AV	KR	NR
3	15.12.11	RE-ISSUE TO QUU FOR APPROVAL	AV	KR	NR
4	07.10.11	ISSUE FOR TENDER	AV	KR	NR
5	29.09.11	ISSUE TO QUU FOR SCRUTINY	AV	KR	NR

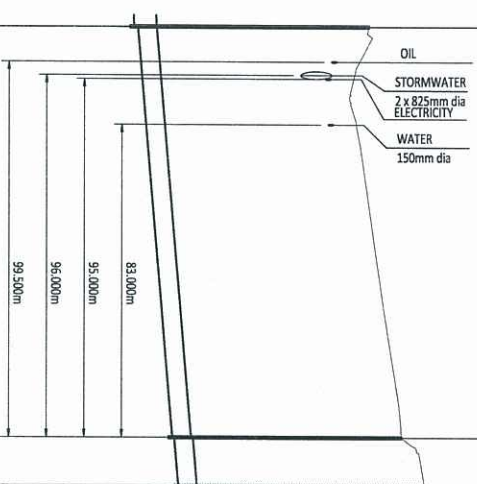
ASSOCIATED CONSULTANTS
APPROVED NICK ROZIS 7729
CHECKED N. ROZIS
DATE 29/09/2011
DATE 29/09/2011

BORNHORST & WARD
CONSULTING ENGINEERS
CIVIL AND STRUCTURAL
Level 4, 67 Astor Terrace, Spring Hill, QLD 4000
Brisbane Australia
Phone (07) 3013 4699
Facsimile (07) 3013 4611
mail@bornhorstward.com.au
ACN 800 313 314

CLIENT URBAN LAND DEVELOPMENT AUTHORITY
PROJECT NORTHSHORE HAMILTON TRUNK SEWER, MACARTHUR AVE TO KINGSFORD SMITH DRIVE
SUBJECT TRUNK SEWER LAYOUT PLAN SHEET 4
PROJECT No. 10470
DRAWING No. C065
REVISION F

MANHOLE/END NAME
MANHOLE TYPE
LID TYPE
JUNCTION LINE
DROP TYPE

A	1	X	10 1
A		X	1 2
CONNECTION TO EXISTING MANHOLE			1 1

[illegible]

EXISTING INVERT LEVEL, TO BE
CONFIRMED BY CONTRACTOR ON SITE.



SEWER LONGITUDINAL SECTIONS

HORIZONTAL SCALE A
VERTICAL SCALE B

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REV.	DATE	AMENDMENT / ISSUE			SWN	DSS	CHK	APP	
F	13.03.12	RE-ISSUE TO QQU FOLLOWING COMMENTS							
E	02.03.12	ISSUE TO QQU FOR SCRUTINY			AY	KR	NN	NN	
D	15.12.11	RE-ISSUE TO QQU FOR APPROVAL			AY	KR	NN	NN	
C	07.10.11	ISSUE FOR TENDER			IRK	KR	NN	NN	
B	29.09.11	ISSUE TO QQU FOR SCRUTINY			IRK	KR	NN	NN	
ASSOCIATED CONSULTANTS									
APPROVED					CHECKED				
NICK ROZIS 7729 RPG					N. ROZIS DATE 29/09/2011				
BORNHORST & WARD CONSULTING ENGINEERS CIVIL AND STRUCTURAL Level 4, 87 Asford Terrace, Spring Hill, QLD 4000 Phone (07) 3013 4699 Brisbane Australia Facsimile (07) 3013 4611 mail@bornhorstward.com.au www.bornhorstward.com.au A.S.N. 16037334									
CLIENT URBAN LAND DEVELOPMENT AUTHORITY									
PROJECT NORTHSHORE HAMILTON TRUNK SEWER, MACARTHUR AVE TO KINGSFORD SMITH DRIVE									
SUBJECT TRUNK SEWER LONGITUDINAL SECTIONS SHEET 3									
PROJECT No. 10470									
DRAWING No. C069									
REVISION F									

PLANS AND DOCUMENTS

NOTE: APPROXIMATE LOCATION OF BORE HOLES PLOTTED ONLY

referred to in

APPROVAL dated 25 / 5 / 2017

NOTE:
ALL MANHOLE LIDS TO BE INSTALLED
WITH BOLTS IN PLACE AFTER
ON-MAINTENANCE INSPECTION.

NOTE:
FOR DETAILED GEOTECHNICAL INFORMATION
REFER SOIL SURVEYS (PROPOSED NORTHSORE
DEVELOPMENT) GEOTECHNICAL REPORT
(106-9336) AND 'GEOTECHNICAL
INVESTIGATION - HAMILTON CATCHMENT
TRUNK SEWER LINE' (111-35316).

CONSTRUCTION INSPECTION:
NOTIFICATION OF INSPECTIONS MUST BE RECEIVED BY
QUEENSLAND URBAN UTILITIES SERVICE DELIVERY
EAST - PROJECT WIS AT LEAST TWO (2) WEEKS PRIOR
TO COMMENCEMENT OF CONSTRUCTION
PLEASE CONTACT QUU PH: (07) 3407 8494

A "PERMIT TO WORK" MUST BE OBTAINED FROM THE RELEVANT QUANTUM ROOM PRIOR TO COMMENCEMENT OF WORK ON SITE. A MINIMUM PERIOD OF TEN WORKING DAYS IS REQUIRED FOR THE ISSUING OF A PERMIT. CONTROL ROOM EAST (BARISANE LG AREA)
PH: 3407 8391 EMAIL: PTWOE@URBANUTILITIES.COM.AU

CLIENT UDA		DATE:	
CONTACT: BORNHORST & WARD		QUEENSLAND URBAN UTILITIES DELEGATE (APPROVAL VALID FOR 12 MONTHS FROM DATE SHOWN)	
QUO AUDITOR: AUDIT AND COMPLIANCE OFFICER QUEENSLAND URBAN UTILITIES			
CONTACT: (07) 3407 8494			
AS CONSTRUCTED DETAILS FOR AMEND.			
I CERTIFY THAT THE "AS CONSTRUCTED" DETAILS SHOWN ON THIS PLAN ARE TRUE AND ACCURATE RECORD OF THE WORKS SIGNED:			
NAME of SIGNATORY:			
REPEQ No. or LICENCE:			
COMPANY NAME:			
START DATE:			
FINISH DATE:			
SHEET No. OF		AMEND	
QUEENSLAND URBAN UTILITIES DRAWING No.		A	
486/5/6-0087-010			

DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. CULVERT AND PIPE SIZES IN MILLIMETRES		AI UNBUNDLED AS REDUCED
SCALES	UNBUNDLED / REDUCED	
A	 0 10 20 30 40 50m	1:1000 / 1:2000
B	 0 1.0 2.0 3.0 4.0 5.0m	1:100 / 1:200

FOR APPROVAL

KINGSFORD SMITH DRIVE

MH
150139

PARK
1
1

PARK
2
1

79.296

6.300

4.650

LID, RISER AND FRAME.
REFER DETAIL ON DRG C061.

TOP SLAB.
REFER STRUCTURAL
DETAILS DRG C081.

UPVC VENT PIPE.
REFER QUL STD DWG
486/5/25-0003-621.

MECHANICALLY ANCHORED PE LINING CAST INTO WALL
WITH 100 HORIZONTAL RETURN AT TOP OF WALL.
REFER QUL STD DWG 486/5/25-0003-501

316 S/S LADDER.
REFER QUL STD DRG
486/5/25-0003-631

FOR DETAILS OF JOINT BETWEEN
WALL AND TOP SLAB, REFER QUL
STD DRG 486/5/25-0003-501

THERMAL WELD
PIPE TO PE LINING.

LOCALLY THICKEN AND REINFORCE WALL
TO PROVIDE A MINIMUM OF 150 COVER.
TO REAR AND FACE OF WEEP FLANGE.
REFER EXISTING MAINTENANCE HOLE
CONNECTION DETAIL ON DWG C061

BENCHING LINE TO EXTEND
TO CROWN OF PIPE.
REFER TO TYPICAL MAINTENANCE HOLE
CONNECTION DETAILS DRG C061

SHORT PIPES 500mm LONG.

SHORT PIPES 500mm LONG.

SHORT PIPES 500mm LONG.

SHORT PIPES 500mm LONG.

INVERT OF BENCHING.

25mm THICK P.E. 100 POLYETHYLENE
FLANGE THERMALLY WELDED TO PIPE.
MINIMUM 75mm PROJECTION.

PROVIDE WATERSTOP OR HYDROPHILIC SEAL
HYDROTITE C-0725-SK ON APPROVED
EQUIVALENT AT EACH FACE OF WALL.

TYPE Z 1500 MAINTENANCE HOLE.
REFER STRUCTURAL DETAILS DRG C080 AND C081

TYPE Z 1800 GRIT COLLECTOR MAINTENANCE HOLE.
REFER DETAILS DRG C073 AND STRUCTURAL DETAILS DRG C080 AND C081.

EXISTING MAINTENANCE HOLE

SECTION
SCALE A 3
C061

750

CONTRACTOR TO CONFIRM
EXISTING LEVEL ON SITE.

EXISTING Ø1500
TRUNK SEWER
(BIMAP
RECORDS)

IL -14.03

REV	DATE	AMENDMENT / ISSUE
E	13.03.12	RE-ISSUE TO QUL FOLLOWING COMMENTS
D	02.03.12	ISSUE TO QUL FOR SCRUTINY
C	15.12.11	RE-ISSUE TO QUL FOR APPROVAL
B	07.10.11	ISSUE FOR TENDER
A	29.09.11	ISSUE TO QUL FOR SCRUTINY

DES	CHK	APP
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AY	KR	NN
LKA	KR	NN
LKA	KR	NN

APPROVED	CHECKED
NICK ROZIS 7729	N. ROZIS
DATE 29/09/2011	DATE 29/09/2011

BORNHORST + WARD
CONSULTING ENGINEERS
CIVIL AND STRUCTURAL
Level 4, 67 Asot Terrace, Spring Hill, QLD 4000

Bornhorst & Ward Pty Ltd
Brisbane Australia
Phone (07) 3013 4699
Facsimile (07) 3013 4611
www.bornhorstward.com.au
mail@bornhorstward.com.au

CLIENT
URBAN LAND
DEVELOPMENT
AUTHORITY

PROJECT
NORTHSHORE HAMILTON
TRUNK SEWER, MACARTHUR
AVE TO KINGSFORD SMITH DRIVE

SUBJECT
KINGSFORD SMITH DRIVE
CONNECTION DETAIL OPTION B

PROJECT No.
10470
DRAWING No.
C071
REVISION
E

FOR APPROVAL

DIMENSIONS IN METRES EXCEPT WHERE
NOTED OTHERWISE
SIZES IN MILLIMETRES
UNREduced / REDUCED
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QUEENSLAND
Urban Utilities

SHEET No. OF
QUEENSLAND URBAN UTILITIES DRAWING No.
486/5/6-0087-012
AMEND.
A

SIGNED
NAME OF SIGNATORY
RPEQ No. or LICENCE
COMPANY NAME
START DATE
FINISH DATE

AS CONSTRUCTED DETAILS FOR AMEND.

CONTACT: 07 3407 8494

CLIENT: ULDA
CONTACT: BORNHORST & WARD
QUU AUDITOR: AUDIT AND COMPLIANCE OFFICER
QUEENSLAND URBAN UTILITIES

DATE:
QUEENSLAND URBAN UTILITIES DELEGATE
(APPROVAL VALID FOR 12 MONTHS FROM DATE SHOWN)

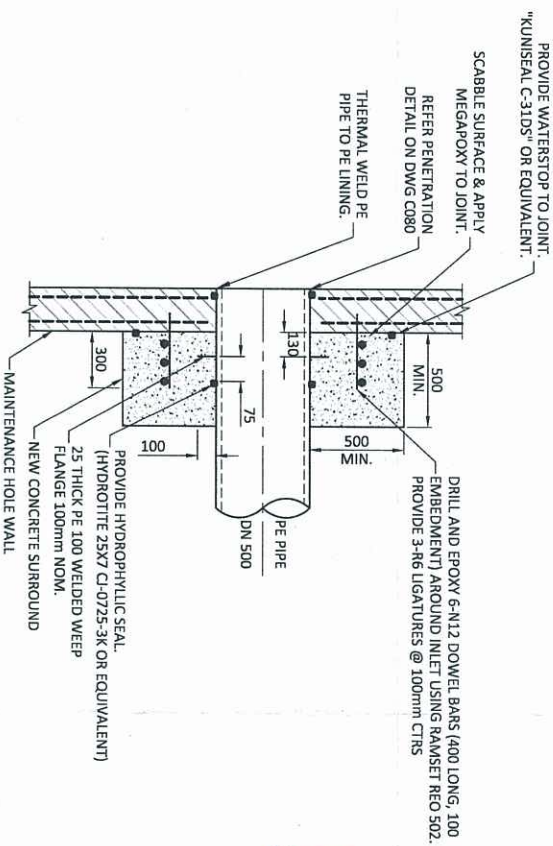
A "PERMIT TO WORK" MUST BE OBTAINED FROM THE RELEVANT QUU
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MINIMUM PERIOD OF TEN WORKING DAYS IS REQUIRED FOR THE ISSUING
OF A PERMIT. CONTROL ROOM EAST (BRISBANE LG AREA)
PH: 3407 8391. EMAIL: PTW@URBANUTILITIES.COM.AU

CONSTRUCTION INSPECTION:
NOTIFICATION OF INSPECTIONS MUST BE RECEIVED BY
QUEENSLAND URBAN UTILITIES SERVICE DELIVERY
EAST - PROJECT WAS AT LEAST TWO (2) WEEKS PRIOR
TO COMMENCEMENT OF CONSTRUCTION
PLEASE CONTACT QUU PH: (07) 3407 8494

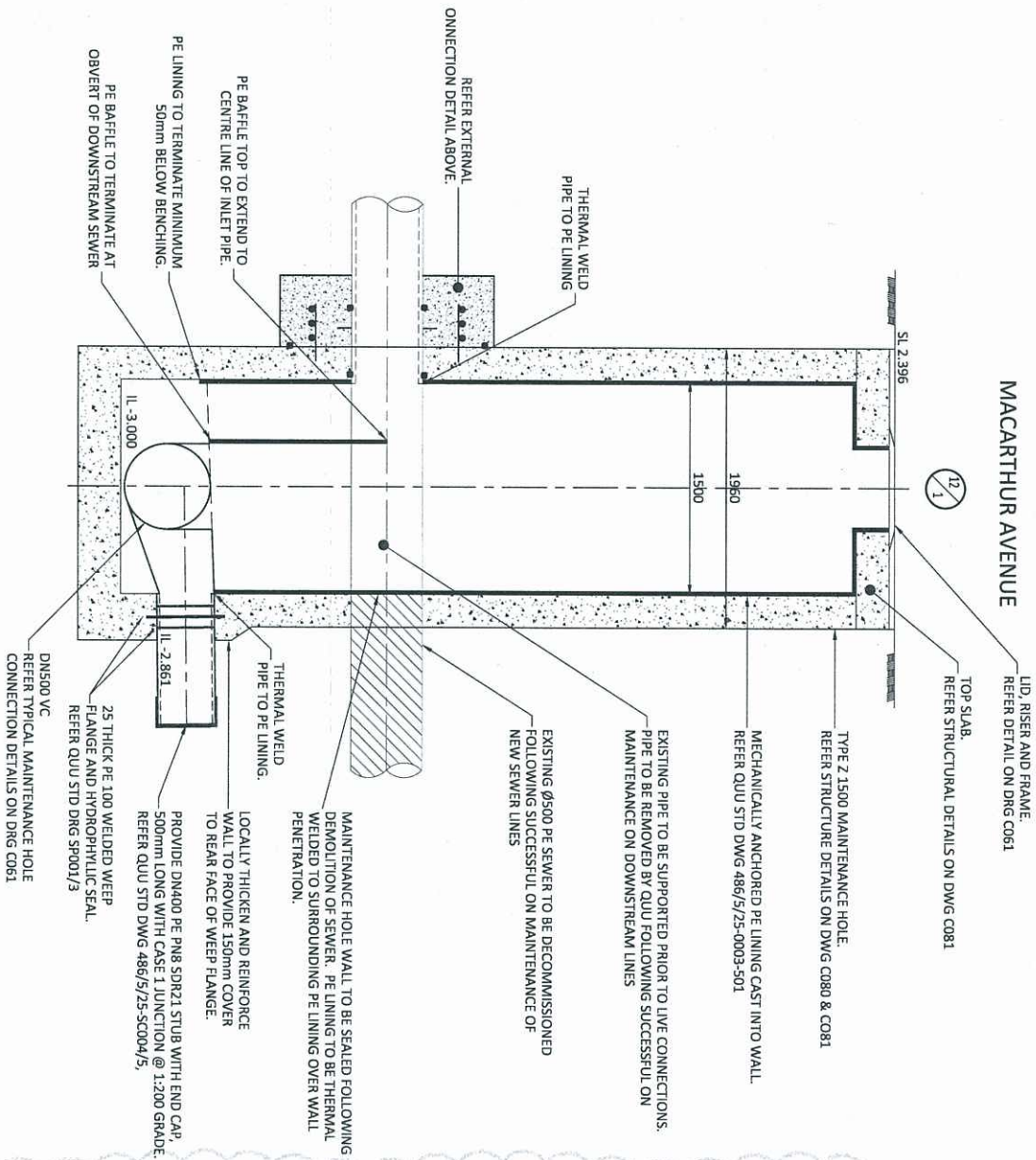
PLANS AND DOCUMENTS
referred to in the ULDA
APPROVAL dated 25 / 5 / 2012

PLANS AND DOCUMENTS
referred to in the ULDA
APPROVAL dated 25 / 5 / 2012

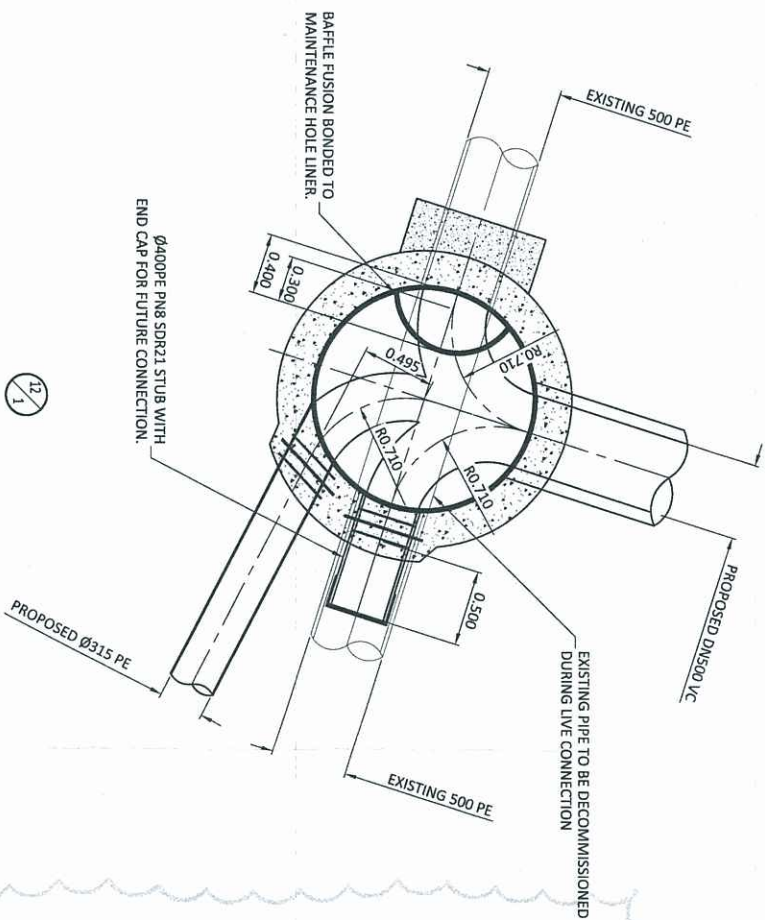
EXTERNAL CONNECTION DETAIL
SCALE B



SECTION - MH12/1 (TYPE Z - 1500)
SCALE A



12/1 MAINTENANCE HOLE CONNECTIONS DETAIL
SCALE A



CONSTRUCTION INSPECTION:
NOTIFICATION OF INSPECTIONS MUST BE RECEIVED BY QUEENSLAND URBAN UTILITIES SERVICE DELIVERY EAST - PROJECT WAS AT LEAST TWO (2) WEEKS PRIOR TO COMMENCEMENT OF CONSTRUCTION
PLEASE CONTACT QQU PH: (07) 3407 8494

A "PERMIT TO WORK" MUST BE OBTAINED FROM THE RELEVANT QQU CONTROL ROOM PRIOR TO COMMENCEMENT OF WORK ON SITE. A MINIMUM PERIOD OF TEN WORKING DAYS IS REQUIRED FOR THE ISSUING OF A PERMIT. CONTROL ROOM EAST (BRISBANE LG AREA)
PH: 3407 8391. EMAIL: PTWO@URBANUTILITIES.COM.AU

DATE:

QUEENSLAND URBAN UTILITIES DELEGATE
(APPROVAL VALID FOR 12 MONTHS FROM DATE SHOWN)

CLIENT: ULDA

CONTACT: BORNHORST & WARD

QUU AUDITOR: AUDIT AND COMPLIANCE OFFICER

CONTACT: (07) 3407 8494

AS CONSTRUCTED DETAILS FOR AMEND.

I CERTIFY THAT THE "AS CONSTRUCTED" DETAILS SHOWN ON THIS PLAN ARE TRUE AND ACCURATE RECORD OF THE WORKS

SIGNED: NAME OF SIGNATORY DATE:

PRQ No. or LICENCE

COMPANY NAME

START DATE FINISH DATE

SHEET No. OF

QUEENSLAND URBAN UTILITIES DRAWING No.

486/5/6-0087-013

AMEND.

A



DIMENSIONS IN METRES EXCEPT WHERE SHOWN OTHERWISE. COVER AND PRE SIZES IN MILLIMETRES

ALL UNREduced AS REDUCED

UNREduced / REDUCED

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FOR APPROVAL

STATUS

PROJECT No. 10470
PROJECT BARCHAM ST INTERSECTION
SUBJECT MAINTENANCE HOLE DETAIL

PROJECT NORTHSHORE HAMILTON
TRUNK SEWER, MACARTHUR
AVE TO KINGSFORD SMITH DRIVE

CLIENT URBAN LAND
DEVELOPMENT
AUTHORITY

BORNHORST + WARD
CONSULTING ENGINEERS
CIVIL AND STRUCTURAL
Level 4, 67 Astor Terrace, Spring Hill, QLD 4000

APPROVED NICK ROZIS 7729
CHECKED N. ROZIS
DATE 29/09/2011 DATE 29/09/2011

ASSOCIATED CONSULTANTS
SURVEYOR: LANDPARTNERS LIMITED.
GEOTECH: SOIL SURVEYS PTY LTD.

OWNER: QQU

REVISIONS
REV DATE AMENDMENT/ISSUE
E 13.03.12 RE-ISSUE TO QQU FOLLOWING COMMENTS
D 02.03.12 ISSUE TO QQU FOR SCRUTINY
C 15.12.11 RE-ISSUE TO QQU FOR APPROVAL
B 07.10.11 ISSUE FOR TENDER
A 29.09.11 ISSUE TO QQU FOR SCRUTINY

COMMENTS
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SURFACE LEVELS TO GRADE AWAY FROM MAINTENANCE HOLE AT MAXIMUM 1:10.

PARK
1/2

TOP SLAB TO BE 150mm PROUD OF SURROUNDING GROUND.

FOR DETAILS OF JOINT BETWEEN WALL AND TOP SLAB REFER TO QUU STD DRG 486/5/25-0003-501

MECHANICALLY ANCHORED POLYETHYLENE LINING IS TO BE CAST INTO UNDERSIDE OF TOP SLAB WITH LINING ON SIDES OF ALL OPENINGS. FOR DETAILS REFER TO QUU STD DRG 486/5/25-0003-501

GEARBOX INSTALLED BENEATH TOP SLAB.

MECHANICALLY ANCHORED PE LINING CAST INTO WALL WITH 100mm HORIZONTAL RETURN AT TOP OF WALL. LINING TO TERMINATE 200mm BELOW BOTTOM WATER LEVEL. REFER QUU STD DRG 486/5/25-003-501

316 STAINLESS STEEL TORQUE TUBE WITH INTERNAL 316 STAINLESS STEEL RISING SPINDLE. REFER TO QUU STD DRG 486/5/25-0003-241 FOR INSTALLATION AND TYPICAL DETAILS.

TYPE Z 1800 MAINTENANCE HOLE. REFER STRUCTURAL DETAILS ON DRG C082

PE VACTOR PIPE AND AIR PIPE. FOR DETAILS AND INSTALLATION REFER TO QUU STD DRG 486/5/25-0003-601

REFER WALL PIPE CONNECTION DETAIL ON DRG C061

SHORT PIPES 500mm LONG

PROVIDE 50mm FALL IN BASE SLAB FLOOR TO INLET OF VACTOR PIPE.

BASE OF VACTOR PIPE TO BE TRIMMED TO ALLOW INVERT OF PIPE TO BE LEVEL WITH INVERT OF FLOOR.

GRIT COLLECTOR MAINTENANCE HOLE DETAIL (TYPE Z 1800)
SCALE A

DN600 CLASS D MAINTENANCE HOLE COVER AND FRAME CAST INTO TOP SLAB TO ACCESS VACTOR PIPE. REFER QUU STD DRG 5/25/0003-501 FOR DETAILS

REFER DRG C082 FOR ROOF SLAB STRUCTURAL DETAILS.

CAST IRON VALVE BOX AND COVER CAST INTO TOP SLAB. REFER QUU STD DRG 486/5/25-0003-231.

4 (EACH) S/S REID SWIFT LIFT LIFTING ANCHORS.

DN600 CLASS D MAINTENANCE HOLE COVER AND FRAME CAST INTO TOP SLAB TO ACCESS LADDER. REFER QUU STD DRG 5/25/0003-501 FOR DETAILS

PLAN OF GRIT COLLECTOR TOP SLAB
SCALE A

NOTE:
EXTREME CARE MUST BE TAKEN WHEN CONSTRUCTING THE FLAT VERTICAL FACE OF THE GRIT COLLECTOR WALL WHERE THE PENSTOCK ATTACHES. THE PLANE OF THE FACE MUST BE VERTICAL TO WITHIN A TOLERANCE OF 0.02°. THE SURFACE MUST ALSO BE FLAT WITH NO DEVIATION GREATER THAN 2mm. TO ACHIEVE THE ABOVE, CARE MUST BE TAKEN DURING THE POURING OF THE CONCRETE TO ENSURE THE PE LINING DOES NOT DISTORT. WHEN INSTALLED, THE TORQUE TUBE CONTAINING THE RISING SPINDLE MUST BE VERTICAL AND MUST ALIGN WITH THE CENTRE OF THE HOLE IN THE TOP SLAB.
REFER QUU STD DRG 486/5/25-0003-201.

NOTE:
• MAINTENANCE HOLE COVERS ARE TO BE PROVIDED WITH A MINIMUM 2m CLEARANCE TO ALL ABOVE GROUND STRUCTURES.
• SURROUNDING SURFACE IS TO GRADE AWAY FROM THE TOP SLAB AT A 1:10 MAXIMUM GRADE. CONTRACTOR TO LOCALLY RE-GRADE AREA AS REQUIRED TO ACHIEVE FALLS. THIS GRADE IS TO BE MAINTAINED FOR A MINIMUM OF 1.5m HORIZONTAL FROM THE EDGE OF THE TOP SLAB.
• MAINTENANCE HOLE COVERS ARE TO BE FLUSH MOUNTED AT THE TOP SLAB.
• THE FRAME AND THE 35mm HIGH RISER RING MAY BE INSTALLED IN RECESS IN TOP SLAB WITH NON-SHRINK EPOXY GROUT OR ALTERNATIVELY CAST IN PLACE.
• THE VENT PIPE IS TO BE INTERCONNECTED WITH THE VENT POLE ADJACENT TO MAINTENANCE HOLE 1/11.
• REFER DRG C080 FOR STRUCTURAL DETAILS.

APPROVAL dated 25/5/2012

CONSTRUCTION INSPECTION:
NOTIFICATION OF INSPECTIONS MUST BE RECEIVED BY QUEENSLAND URBAN UTILITIES SERVICE DELIVERY EAST - PROJECT WIS AT LEAST TWO (2) WEEKS PRIOR TO COMMENCEMENT OF CONSTRUCTION
PLEASE CONTACT QUU PH: (07) 3407 8494

A "PERMIT TO WORK" MUST BE OBTAINED FROM THE RELEVANT QUU CONTROL ROOM PRIOR TO COMMENCEMENT OF WORK ON SITE. A MINIMUM PERIOD OF TEN WORKING DAYS IS REQUIRED FOR THE ISSUING OF A PERMIT. CONTROL ROOM EAST (BRISBANE LG AREA) PH: 3407 8391. EMAIL: PTW@QUEENSLANDUTILITIES.COM.AU

DATE:
QUEENSLAND URBAN UTILITIES DELEGATE
(APPROVAL VALID FOR 12 MONTHS FROM DATE SIGNED)

CLIENT: ULDA
CONTACT: BORNHORST & WARD
QUU AUDITOR: AUDIT AND COMPLIANCE OFFICER
CONTACT: (07) 3407 8494

AS CONSTRUCTED DETAILS FOR AMEND.

I CERTIFY THAT THE "AS CONSTRUCTED" DETAILS SHOWN ON THIS PLAN ARE TRUE AND ACCURATE RECORD OF THE WORKS

SIGNED: DATE:
NAME OF SIGNATORY
RPEC NO. OR LICENCE
COMPANY NAME

START DATE: FINISH DATE:
SHEET No. OF: AMEND. A

QUEENSLAND URBAN UTILITIES DRAWING No. 486/5/6-0087-014

Urban Utilities

UNRENDERED / REDUCED
A 0 25 50 75 100 125m 1:25 / 1:50

FOR APPROVAL

REV.	DATE	AMENDMENT / ISSUE
C	13.03.12	RE-ISSUE TO QUU FOLLOWING COMMENTS
B	02.03.12	ISSUE TO QUU FOR SCRUTINY
A	15.12.11	RE-ISSUE TO QUU FOR APPROVAL

APPROVED	CHECKED
NICK ROZIS	N. ROZIS
7729	RPEO
DATE 29/09/2011	DATE 29/09/2011

BORNHORST + WARD
CONSULTING ENGINEERS
CIVIL AND STRUCTURAL
Level 4, 67 Astor Terrace, Spring Hill, QLD 4000

Bornhorst & Ward Pty Ltd
Preston Australia 3073
Phone: (07) 3013 4690
Facsimile: (07) 3013 4611
mail@bornhorstward.com.au
www.bornhorstward.com.au

CLIENT: URBAN LAND DEVELOPMENT AUTHORITY
PROJECT: NORTHSHORE HAMILTON TRUNK SEWER, MACARTHUR AVE TO KINGSFORD SMITH DRIVE

SUBJECT: GRIT COLLECTOR MAINTENANCE HOLE DETAIL
PROJECT No. 10470
DRAWING No. C073
REVISION C

PLANS AND DOCUMENTS
referred to in the ULDA
APPROVAL dated 25 / 5 / 2012

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CONTROL ROOM PRIOR TO COMMENCEMENT OF WORK ON SITE. A
MINIMUM PERIOD OF TEN WORKING DAYS IS REQUIRED FOR THE ISSUING
OF A PERMIT. CONTROL ROOM EAST (BRISBANE LG AREA)
PH: 3407 8391. EMAIL: PTWOC@URBANUTILITIES.COM.AU

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CONTACT: BORNHORST & WARD
QUU AUDITOR: AUDIT AND COMPLIANCE OFFICER
CONTACT: QUEENSLAND URBAN UTILITIES
(07) 3407 8494

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SIGNED: NAME OF SIGNATORY
DATE:
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COMPANY NAME
START DATE
FINISH DATE

SHEET NO. OF
QUEENSLAND URBAN UTILITIES DRAWING No.
486/5/6-0087-020
AMEND.
O

Urban Utilities
PROJECT NORTH

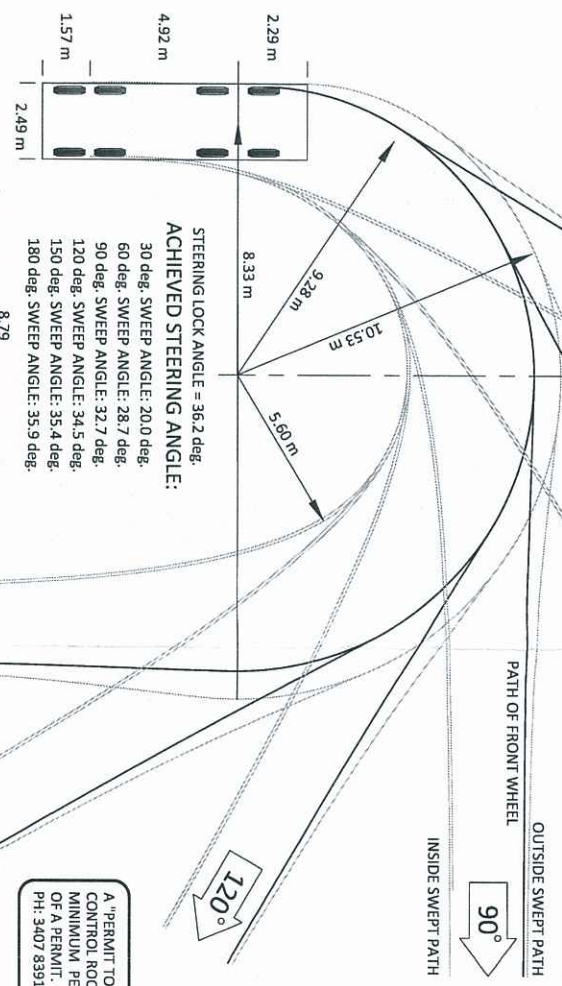
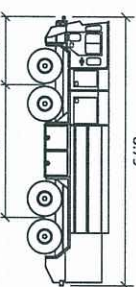
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FOR APPROVAL

STATUS
PROJECT No. 10470
DRAWING No. C075
REVISION A

LEGEND
EXISTING
PROPOSED
CONCRETE ACCESS
KERB AND CHANNEL
KERB ONLY
EDGE OF BITUMEN
EXTENT OF BUILDING
PROPERTY BOUNDARY
EASEMENT
STORMWATER DRAINAGE
BATTER
FENCE
TREE
EXISTING CONTOURS
SEWER
SEWER RISING MAIN
WATER
GAS
TELSTRA
ELECTRICITY
OIL/PETROLEUM PIPELINES
(PLOTTED FROM RECORDS ONLY.
CONTRACTOR TO CONFIRM LOCATION
PRIOR TO CONSTRUCTION)
FOOTPATH

MERCEDES BENZ ACTROS 3241
NTS



PLAN
SCALE A

COMPONENT	REV	DATE	AMENDMENT / ISSUE
1	A	14.03.12	ISSUE TO QUU FOR SCRUTINY
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			

ASSOCIATED CONSULTANTS	APPROVED	CHECKED
SURVEYOR: LANDPARTNERS LIMITED. GEOTECH: SOIL SURVEYS PTY LTD.	DATE	DATE

BORNHORST + WARD CONSULTING ENGINEERS CIVIL AND STRUCTURAL Level 4, 67 Astor Terrace, Spring Hill, QLD 4000	Bornhorst & Ward Pty Ltd Brisbane Australia Phone (07) 3013 4699 Facsimile (07) 3013 4611 Email: info@bornhorstward.com.au ACN 620 951 301 ABN 780013134	CLIENT URBAN LAND DEVELOPMENT AUTHORITY	PROJECT NORTHSHORE HAMILTON TRUNK SEWER, MACARTHUR AVE TO KINGSFORD SMITH DRIVE	SUBJECT GRIT COLLECTOR MAINTENANCE HOLE ACCESS ROAD PLAN SHEET 2	PROJECT No. 10470 DRAWING No. C075 REVISION A
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TOP SLAB NOTES

- ## 1. ROOF DESIGN BASED ON IPWEAQ D-0012

4. REINFORCEMENT :- SL81 FABRIC TO AS 4671 BARS N12 AND N16, GRADE D500 TO AS 4671.

4. WHERE PROPRIETARY ITEMS HAVE BEEN

• CLASSIC

9. SAFE WORKING LOAD OF CRANE OR LIFTING DEVICE TO BE NO LESS THAN 4 TONNES.

5. AS 3735 EXPOSURE CLASSIFICATION B1

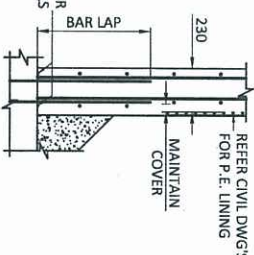
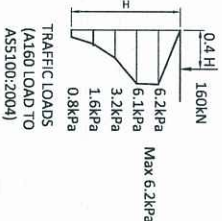
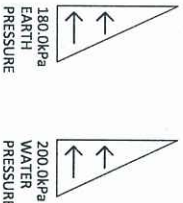
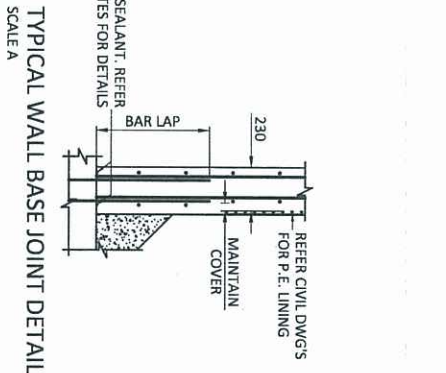
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- | | |
|-------------------------------|-------------------------------|
| 180.0kPa
EARTH
PRESSURE | 200.0kPa
WATER
PRESSURE |
|-------------------------------|-------------------------------|

-

-

- TRAFFIC LOADS
(A160 LOAD TO
A55100:2004)



PLANS AND DOCUMENTS
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DATE: _____

QUEENSLAND URBAN UTILITIES DELEGAT

(APPROVAL VALID FOR 12 MONTHS FROM DATE SHOWN)

<u>CLIENT:</u>	ULDA
<u>CONTACT:</u>	BORNHORST & WARD
<u>QUU AUDITOR:</u>	AUDIT AND COMPLIANCE OFFICE
<u>CONTACT:</u>	QUEENSLAND URBAN UTILITIES (07) 3407 8494

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COMPANY NAME	
START DATE	FINISH DATE

SHEET No.	OF	AMEND.
QUEENSLAND URBAN UTILITIES DRAWING No.		
486/5/6-0087-015		A



OWN OTHERWISE, CULVERT AND PIPE
IS IN MILLIMETRES

0 0.2 0.4 0.6 0.8 1 m

1:20/1:40

UNREDUCED / REDUCED

AS REDUCED

FOR APPROVAL

SUBJECT
TYPE Z (SPECIAL)
MAINTENANCE HOLE NOTES
AND DETAILS

PROJECT No.	10470
DRAWING No.	REVISION