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**NOTES**

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- ALL LEVELS ARE IN METRES ABOVE ORDNANCE SURVEY DATUM.
- DIMENSIONS, AIRFIELD CONTOURS AND LEVELS ARE FOR INFORMATION ONLY AND NOT FOR APPROVAL.

**LEGEND**

- PROPOSED SURFACE WATER MAIN AND MANHOLE
- PROPOSED SURFACE WATER PUMPING MAIN
- PROPOSED SURFACE WATER SLOT DRAIN AND CATCHPIT
- PROPOSED AIRSIDE CATCHMENT AREA BOUNDARY
- EXISTING DRAINAGE PIPE TO BE DECOMMISSIONED

03	J.EAGLING	25.01.2018	B.WYTHIE	25.01.2018
02	A.WILSON	12/12/2017	B.WYTHIE	12/12/2017
01	A.WILSON	01/11/2017	B.WYTHIE	01/11/2017

ISSUED FOR INFORMATION.

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
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**FOR APPROVAL**

**London City Airport**  
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Project  
**CITY AIRPORT DEVELOPMENT PROGRAMME**

Drawing Title  
**AIRFIELD PROPOSED DRAINAGE LAYOUT SHEET 1 OF 4**

Originating Office  
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TPS Job Manager  
R.KNAPTON  
Signature  
Date

QA System - Checks  
A.WILSON  
01/11/2017

Checked: B.WYTHIE  
01/11/2017

Authorised: S.HAWLEY  
01/11/2017

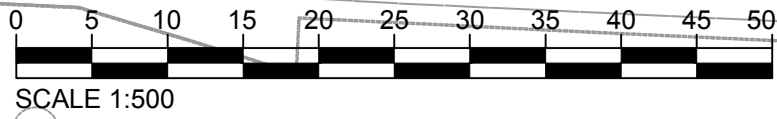
TPS Project No. 112931  
Drawing Status FOR APPROVAL  
Scale (at A1) 1:500 (at A3)

Project No.	Orig	Disc	Zone	Level	Type	Sub Type	Series	Sht. No.	Rev.
A400-TPS-C-00-L00-DR-GA-864-206								03	

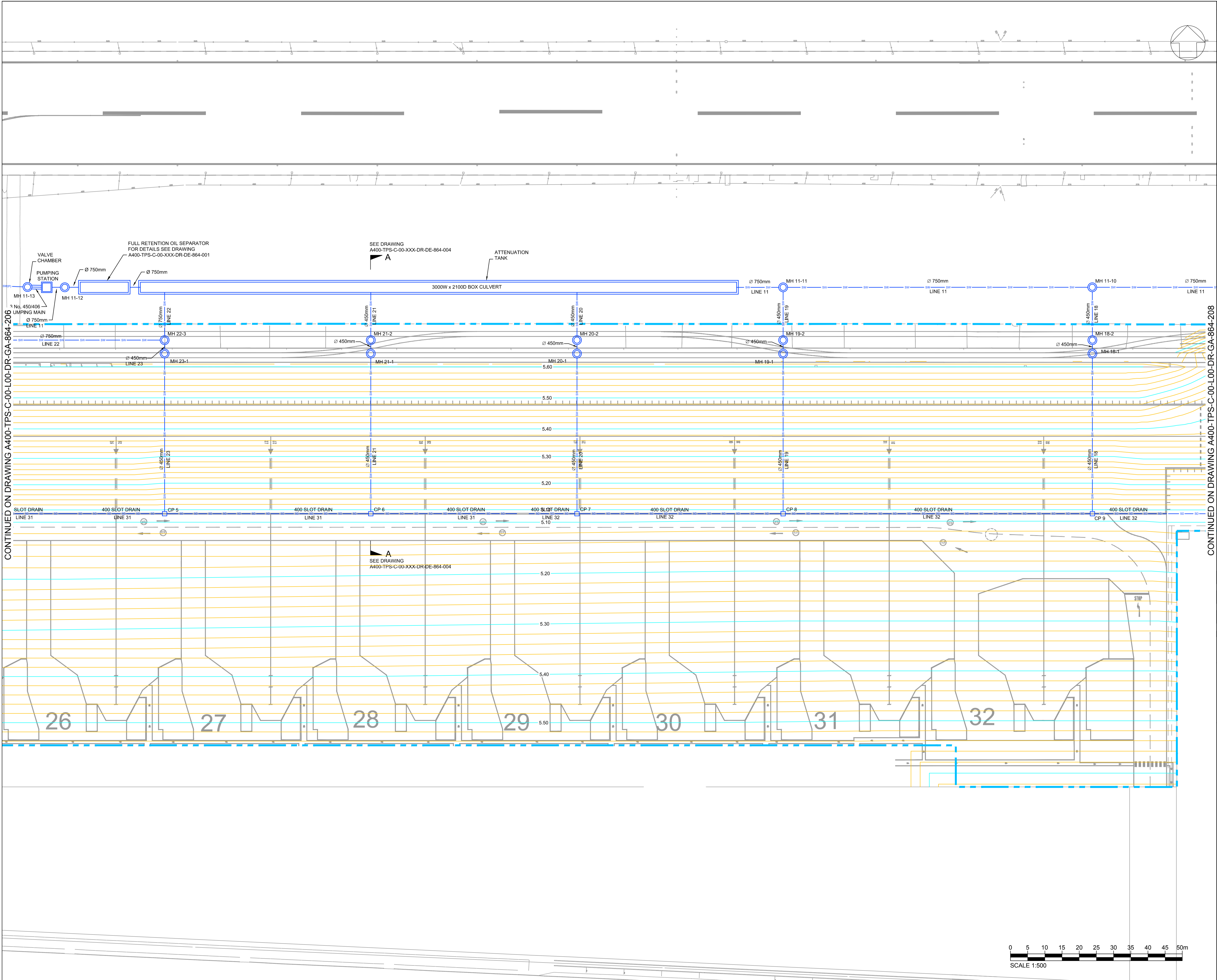
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CONTINUED ABOVE

CONTINUED ON DRAWING A400-TPS-C-00-L00-DR-GA-864-207



ACAD  
PLOT SCALE



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**NOTES**

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**LEGEND**

- PROPOSED SURFACE WATER MAIN AND MANHOLE
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- PROPOSED SURFACE WATER SLOT DRAIN AND CATCHPIT
- PROPOSED AIRSIDE CATCHMENT AREA BOUNDARY
- EXISTING DRAINAGE PIPE TO BE DECOMMISSIONED

03	J.EAGLING	25.01.2018	B.WYTHIE	25.01.2018
NOTES AMENDED				
02	A.WILSON	12/12/2017	B.WYTHIE	12/12/2017
DRAWING TITLES REVISED				
01	A.WILSON	01/11/2017	B.WYTHIE	01/11/2017
ISSUED FOR INFORMATION				
01	A.WILSON	01/11/2017	B.WYTHIE	01/11/2017

**FOR APPROVAL**

**London City Airport**  
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Project  
**CITY AIRPORT DEVELOPMENT PROGRAMME**

Drawing Title  
**AIRFIELD PROPOSED DRAINAGE LAYOUT**  
**SHEET 2 OF 4**

Originating Office  
TPS Croydon - Interchange  
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info: tpsconsult.co.uk

**TPS**  
Birmingham Croydon Edinburgh Sheffield Wolverhampton

TPS Job Manager  
R.KNAPTON

QA System - Checks  
Signature Date

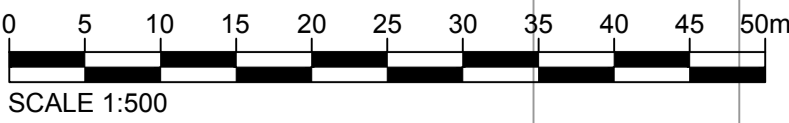
Drawn By: A.WILSON 01/11/2017

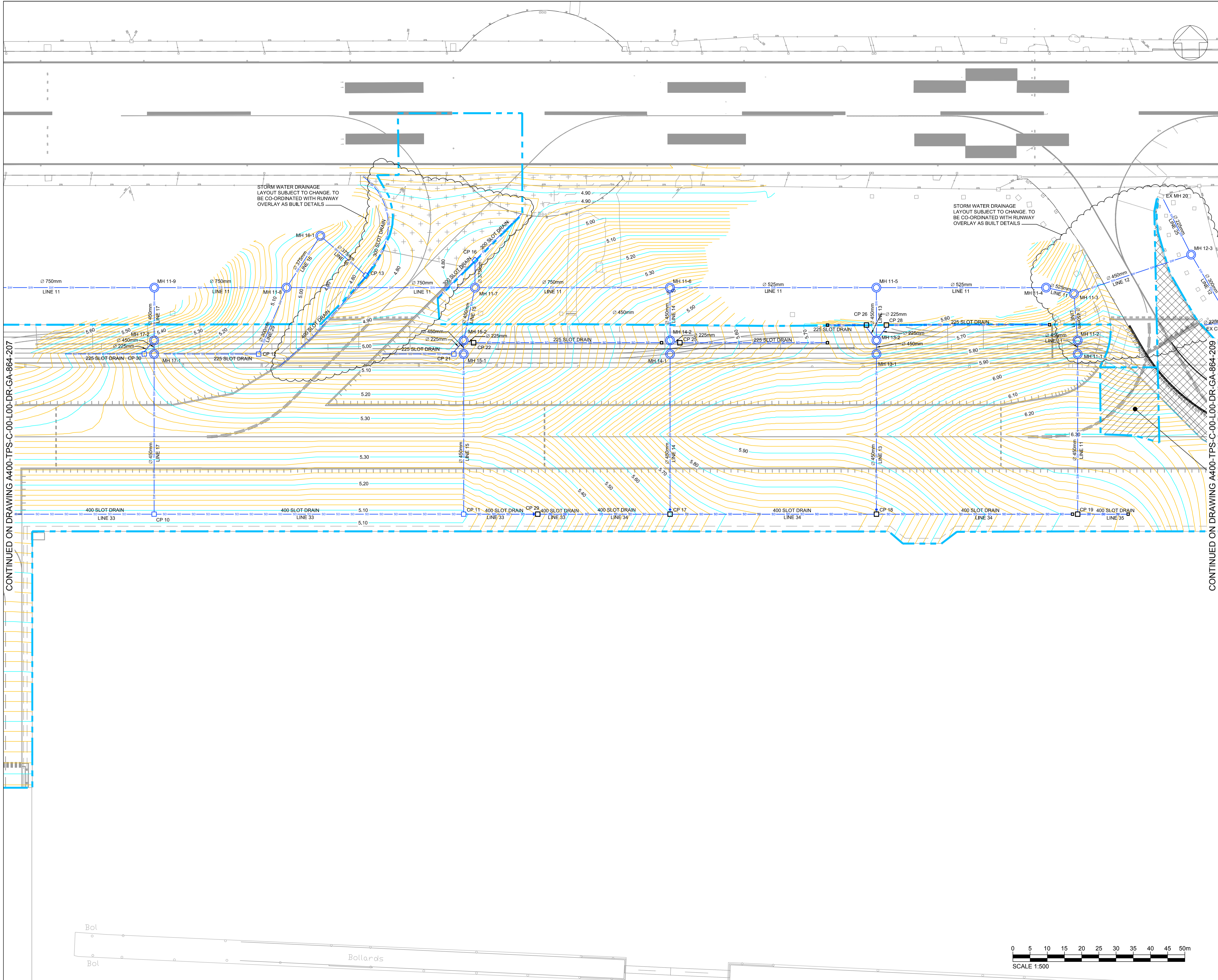
Checked: B.WYTHIE 01/11/2017

Authorised: S.HAWLEY 01/11/2017

TPS Project No. 112931 Drawing Status FOR APPROVAL Scale (at A1) 1:500 (at A3)

Project No.	Org	Disc	Zone	Level	Type	Sub Type	Series	Sht. No.	Rev.
A400-TPS-C-00-L00-DR-GA-864-207								03	





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- PROPOSED AIRSIDE CATCHMENT AREA BOUNDARY
- EXISTING DRAINAGE PIPE TO BE DECOMMISSIONED

AREA 1 = 77024m<sup>2</sup>

AREA A = 2500m<sup>2</sup>  
ADDITIONAL AREA ADDED TO EXISTING CATCHMENT COMPENSATED FOR BY EQUIVALENT AREA OF EXISTING ADDED TO PROPOSED CATCHMENT

AREA B = 3355m<sup>2</sup>  
EXISTING AREA ADDED TO NEW CATCHMENT TO COMPENSATE FOR AREA ADDED TO EXISTING CATCHMENT

03	J.EAGLING	25.01.2018	B.WYTHIE	25.01.2018
NOTES AMENDED				
02	A.WILSON	12/12/2017	B.WYTHIE	12/12/2017
DRAWING TITLES REVISED				
01	A.WILSON	01/11/2017	B.WYTHIE	01/11/2017
ISSUED FOR INFORMATION				
00	REVISED BY	DATE	CHECKED BY	DATE

**FOR APPROVAL**

**London City Airport**  
Get closer.

Project  
**CITY AIRPORT DEVELOPMENT PROGRAMME**

Drawing Title  
**AIRFIELD PROPOSED DRAINAGE LAYOUT**  
**SHEET 3 OF 4**

Originating Office  
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Birmingham Croydon Edinburgh Sheffield Wolverhampton

TPS Job Manager  
R.KNAPTON

QA System - Checks  
Signature Date

Drawn By: A.WILSON 01/11/2017

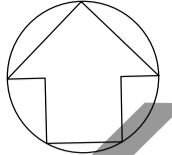
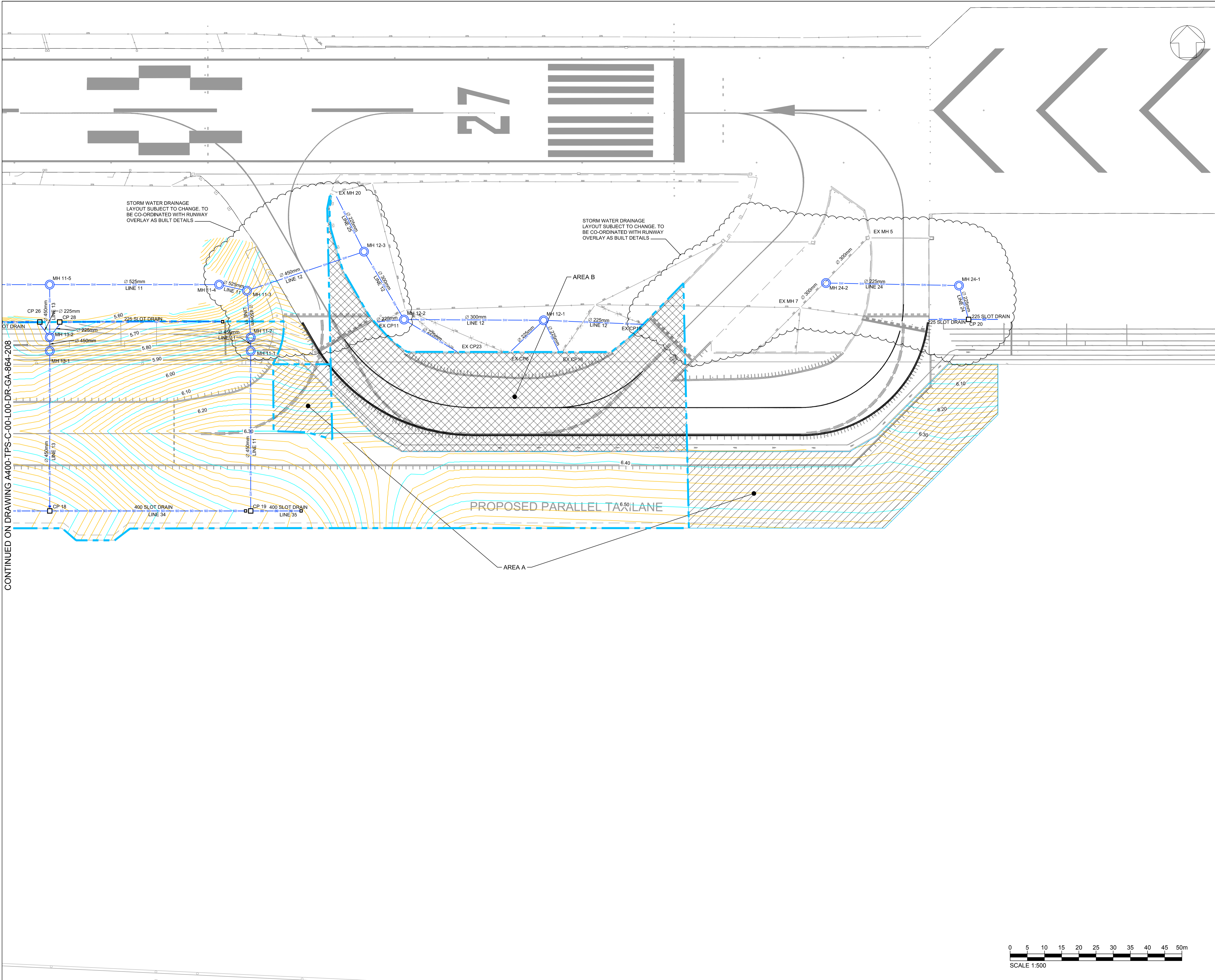
Checked: B.WYTHIE 01/11/2017

Authorised: S.HAWLEY 01/11/2017

TPS Project No. 112931 Drawing Status FOR APPROVAL Scale (at A1) 1:500 (at A3)

Project No.	Orig	Disc	Zone	Level	Type	Sub Type	Series	Sht. No.	Rev.
A400-TPS-C-00-L00-DR-GA-864-208									03

ACAD  
PLOT SCALE



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ADDITIONAL AREA ADDED TO EXISTING CATCHMENT COMPENSATED FOR BY EQUIVALENT AREA OF EXISTING ADDED TO PROPOSED CATCHMENT

AREA B = 3355m<sup>2</sup>  
EXISTING AREA ADDED TO NEW CATCHMENT TO COMPENSATE FOR AREA ADDED TO EXISTING CATCHMENT

03	J.EAGLING	25.01.2018	B.WYTHIE	25.01.2018
02	A.WILSON	12/12/2017	B.WYTHIE	12/12/2017
01	A.WILSON	01/11/2017	B.WYTHIE	01/11/2017

01	A.WILSON	01/11/2017	B.WYTHIE	01/11/2017
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FOR APPROVAL



Project  
CITY AIRPORT  
DEVELOPMENT PROGRAMME

Drawing Title  
AIRFIELD PROPOSED DRAINAGE  
LAYOUT  
SHEET 4 OF 4

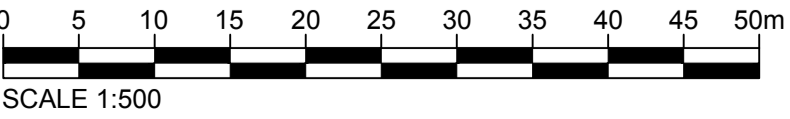
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Tel +44 (0)1902 422431  
www.tpsconsult.co.uk  
info@tpsconsult.co.uk

TPS Job Manager  
R.KNAPTON  
QA System - Checks  
Signature  
Date  
Drawn By: A.WILSON  
01/11/2017  
Checked: B.WYTHIE  
01/11/2017  
Authorised: S.HAWLEY  
01/11/2017

TPS Project No.  
112931  
Drawing Status  
FOR APPROVAL  
Scale (at A1)  
1:500  
Scale (at A3)  
(at A3)

Project No. | Orig | Disc | Zone | Level | Type | Sub Type | Series | Sht. No. | Rev.

A400-TPS-C-00-L00-DR-GA-864-209 03



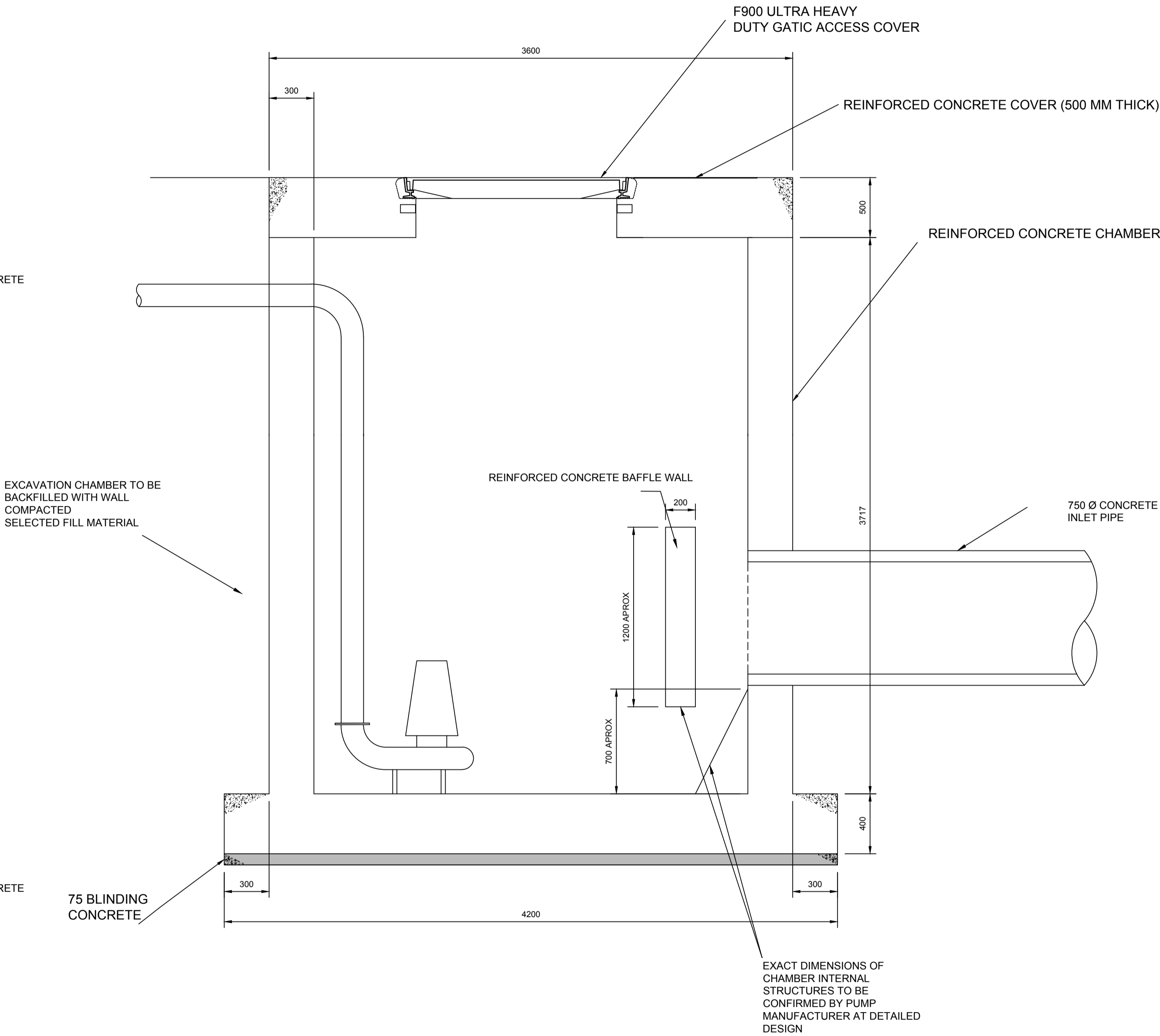
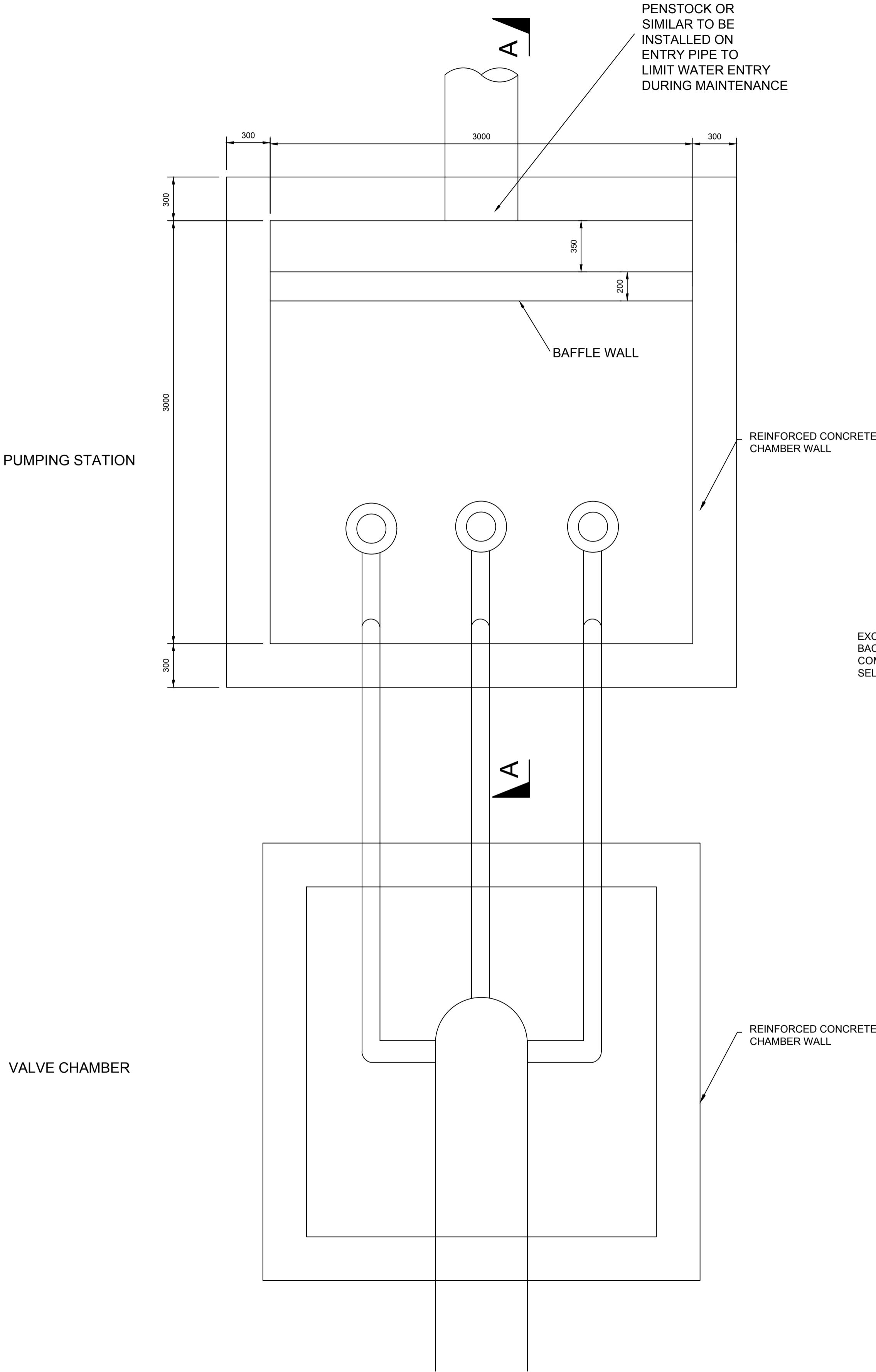
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ACAD  
PLOT SCALE



SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
In addition to the hazards and risks normally associated with the type of work detailed on this drawing, <b>NOTE SIGNIFICANT HAZARDS AS IDENTIFIED</b>
CONSTRUCTION: FOR CONSTRUCTION, OPERATION, MAINTENANCE AND DEMOLITION RISKS REFER TO COMBINED CADP RISK REGISTER: A400-01-U-REG-00001-02
MAINTENANCE: SEE ABOVE
DECOMMISSIONING / DEMOLITION: SEE ABOVE
It is assumed that all works will be undertaken by a competent contractor working where appropriate, to an approved method statement.

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NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. FOR CLARITY REINFORCEMENT DETAILS ARE NOT SHOWN.
3. PUMP TYPE(S) AND ARRANGEMENT INCLUDING OUTLET PIPE CONFIGURATION TO BE CONFIRMED AT DETAILED DESIGN BY PUMP MANUFACTURER.
4. FINAL DIMENSIONS AND INSTALLATION DETAILS MAY VARY SLIGHTLY DEPENDING ON INSTALLATION LOGISTICS AND PRODUCT CHOICES OF A CONTRACTOR.
5. DIMENSIONS ARE FOR INFORMATION ONLY AND NOT FOR APPROVAL.



SECTION A-A


06	J.EAGLING	25.01.2018	B.WYTHIE	25.01.2018
ISSUED FOR APPROVAL				
05	A.WILSON	12/12/2017	B.WYTHIE	12/12/2017
NOTE 4 ADDED.				
04	R. RYAN	25/08/2017	P. MISTRY	25/08/2017
STAGE 3 UPDATE ISSUE				
03	R. RYAN	13/01/2017	P. MISTRY	13/01/2017
TENDER ISSUE				
02	P.OFFER	12/07/16	W.HELLYER	12/07/16
STAGE 3 ISSUE				
P1	L.LOLARIU	06/11/2015	W.HELLYER	06/11/2015
STAGE 3 ISSUE				
Rev	Revised By	Date	Checked By	Date

FOR APPROVAL



Project  
**CITY AIRPORT  
DEVELOPMENT PROGRAMME**

Drawing Title  
**AIRFIELD  
DRAINAGE DETAILS  
SHEET 2**

Originating Office  
**TPS**  
Birmingham : Croydon : Edinburgh : Sheffield : Wolverhampton

TPS Croydon - Interchange  
81-85 Station Road  
Croydon  
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United Kingdom  
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www.tpsconsult.co.uk  
info@tpsconsult.co.uk

TPS Job Manager  
R.KNAPTON  
QA System : Checks  
Signature  
Date

Drawn By: L.LOLARIU  
Checked: W.HELLYER  
Authorised: R.MOORE

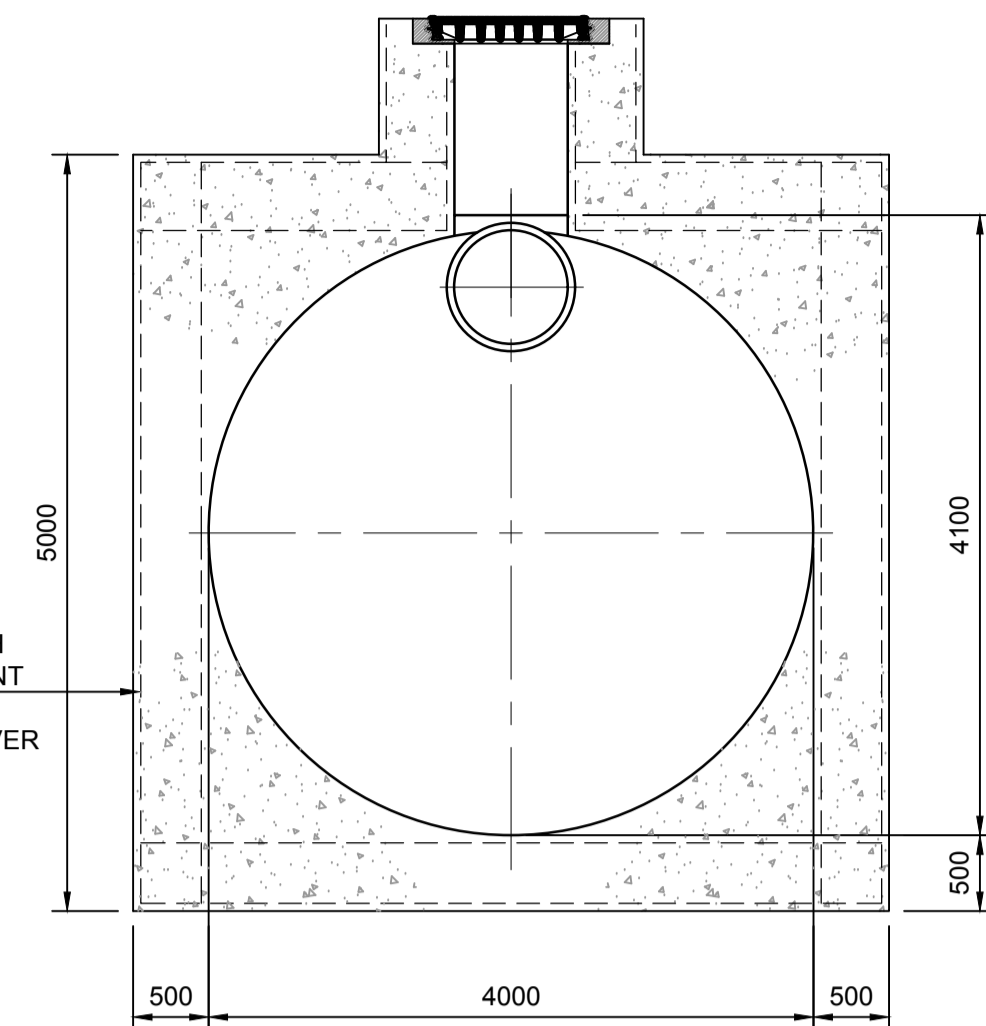
06/11/2015  
06/11/2015  
06/11/2015

TPS Project No.  
112931  
Drawing Status  
FOR APPROVAL  
Scale (at A1)  
AS SHOWN  
(at A3)

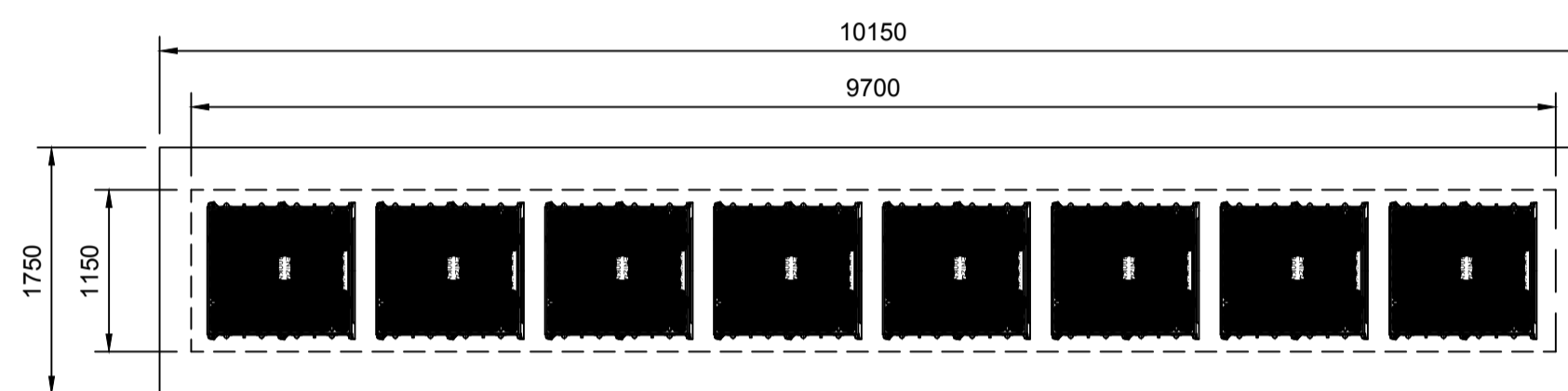
Project No. | Orig | Disc | Zone | Level | Type | Sub Type | Series | Sht. No. | Rev.

**A400-TPS-C-00-XXX-DR-DE-864-002**

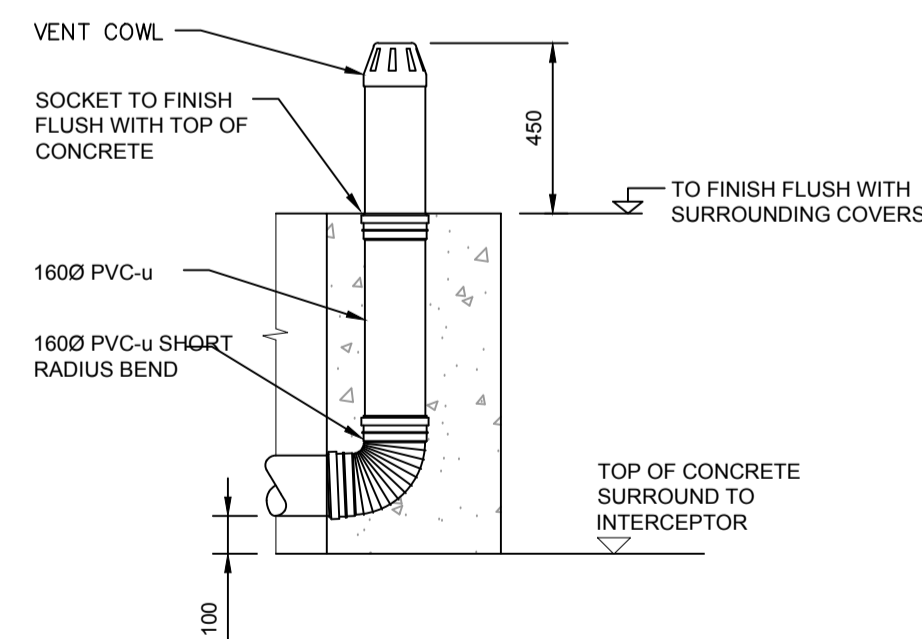
**06**



SECTION A-A  
SCALE 1:50



PLAN  
SCALE 1:50



VENT DUCT DETAIL  
SCALE :20

DO NOT SCALE FROM THIS DRAWING	
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NOTES:	
1.	ALL DIMENSIONS IN MM UNLESS OTHERWISE SHOWN.
2.	THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT DRAINAGE DRAWINGS AND THE SPECIFICATION
3.	RECESSES FOR COVERS BASED ON USING DUCTILE IRON COVERS TO BS EN 124 CLASS F900 900 ~ 750 c/c AS ELKINGTON GATIC
4.	CONCRETE SULPHATE CLASS DC1/0 CONCRETE STRENGTH CLASS C32/40 REINFORCEMENT TO HAVE 50mm COVER.
5.	FINAL DIMENSIONS AND INSTALLATION DETAILS MAY VARY SLIGHTLY DEPENDING ON INSTALLATION LOGISTICS AND PRODUCT CHOICES OF A CONTRACTOR.
6.	DIMENSIONS ARE FOR INFORMATION ONLY AND NOT FOR APPROVAL.


FOR APPROVAL

Project  
CITY AIRPORT  
DEVELOPMENT PROGRAMME

Drawing Title

AIRFIELD  
DRAINAGE DETAILS  
SHEET 3

Originating Office \_\_\_\_\_

 **TPS**

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[info.tpsconsult.co.uk](http://info.tpsconsult.co.uk)

TPS Job Manager	R.KNAPTON	
QA System - Checks	Signature	Date

Drawn By: L.OLARIU 06/11/2015

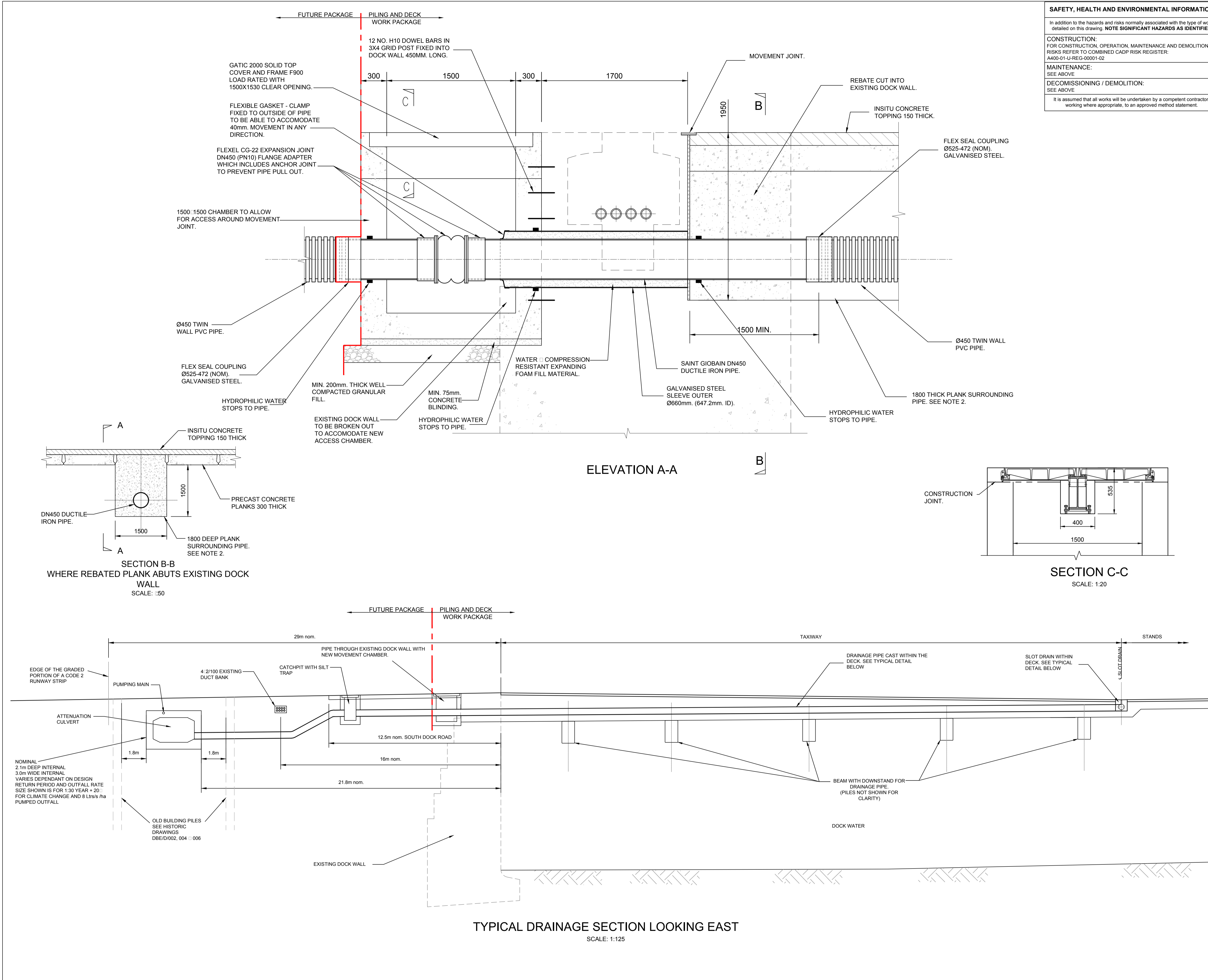
Checked: W.HELLYER 06/11/2015

Authorised: R.MOORE		06/11/2015	
TBS Project No.	Drawing Status	Scale (at A1)	(at A2)

TPS Project No. 112931	Drawing Status FOR APPROVAL	Scale (at A1) (at A3) AS SHOWN
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Project No.	Orig.	Disc.	Zone	Level	Type	Sub Type	Series	Sht. No.	Rev.
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A400-TPS-C-00-XXX-DR-DE-864-003 06



**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**

In addition to the hazards and risks normally associated with the type of work detailed on this drawing, **NOTE SIGNIFICANT HAZARDS AS IDENTIFIED**

**CONSTRUCTION:**  
FOR CONSTRUCTION, OPERATION, MAINTENANCE AND DEMOLITION RISKS REFER TO COMBINED CADP RISK REGISTER: A400-01-U-REG-00001-02

**MAINTENANCE:**  
SEE ABOVE

**DECOMMISSIONING / DEMOLITION:**  
SEE ABOVE

It is assumed that all works will be undertaken by a competent contractor working where appropriate, to an approved method statement.

**DO NOT SCALE FROM THIS DRAWING**

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**NOTES:**

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
- FOR CLARITY REINFORCEMENT DETAILS ARE NOT SHOWN.
- MOVEMENT JOINTS SHALL ACCOMODATE 40mm LATERAL MOVEMENT IN EITHER DIRECTION AND 40mm TELESCOPIC MOVEMENT. DETAILS TO BE AGREED WITH MANUFACTURER.
- FINAL DIMENSIONS AND INSTALLATION DETAILS MAY VARY SLIGHTLY DEPENDING ON INSTALLATION LOGISTICS AND PRODUCT CHOICES OF A CONTRACTOR.
- DIMENSIONS ARE FOR INFORMATION ONLY AND NOT FOR APPROVAL.

**LEGEND:**

--- PACKAGE SCOPE BOUNDARY

07	J.EAGLING	25.01.2018	B.WYITHE	25.01.2018
ISSUED FOR APPROVAL				
06	A.WILSON	12/12/2017	B.WYITHE	12/12/2017
NOTE 4 ADDED.				
05	A.WILSON	02/11/2017	S.HAWLEY	02/11/2017
ATTENUATION CULVERT DESIGN NOTE REVISED.				
04	R. RYAN	25/08/2017	P. MISTRY	25/08/2017
STAGE 3 UPDATE ISSUE				
03	R. RYAN	14/11/2016	W.HELLYER	14/11/2016
TENDER ISSUE				
02	P.OFFER	12/07/16	W.HELLYER	12/07/16
STAGE 3 ISSUE				
P1	L.OLARIU	06/11/2015	W.HELLYER	06/11/2015
STAGE 3 ISSUE				
Rev	Revised By	Date	Checked By	Date

**FOR APPROVAL**

London City Airport  
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Project  
**CITY AIRPORT  
DEVELOPMENT PROGRAMME**

Drawing Title  
**AIRFIELD  
DRAINAGE DETAILS  
SHEET 4**

Originating Office  
TPS Croydon - Interchange  
81-85 Station Road  
Croydon  
CR0 2RD  
United Kingdom  
Tel +44 (0)1902 422431  
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Birmingham Croydon Edinburgh Sheffield Wolverhampton

TPS Job Manager  
R.KNAPTON  
Signature Date

QA System - Checks  
L.OLARIU  
06/11/2015

Checked: W.HELLYER  
06/11/2015

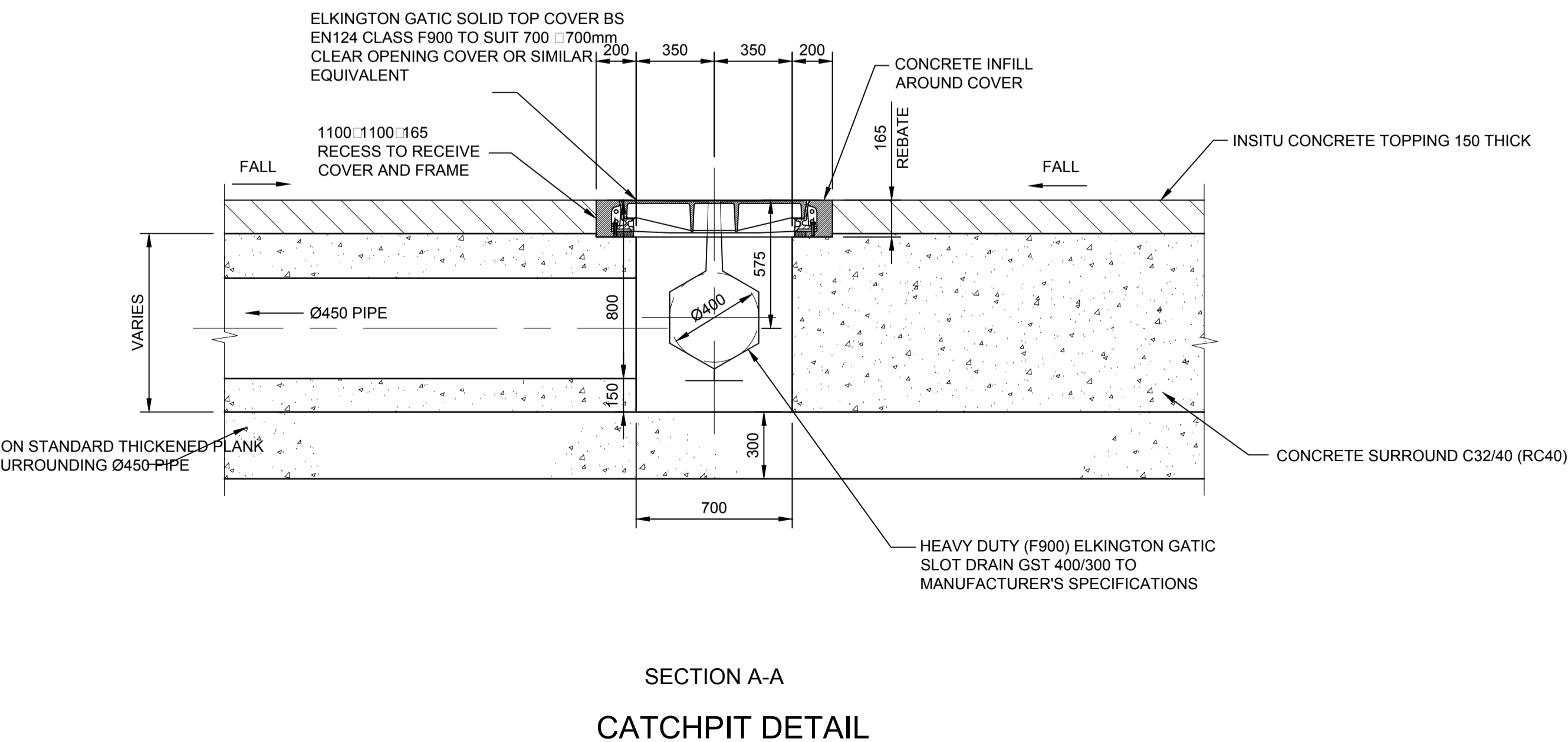
Authorised: R.MOORE  
06/11/2015

TPS Project No. 112931  
Drawing Status FOR APPROVAL  
Scale (at A1) AS SHOWN (at A3)

Project No.	Orig	Disc	Zone	Level	Type	Sub Type	Series	Shr. No.	Rev.
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**A400-TPS-C-00-XXX-DR-DE-864-004 07**

ACAD  
PLOT SCALE



<p><b>CONSTRUCTION:</b>          FOR CONSTRUCTION, OPERATION, MAINTENANCE AND DEMOLITION          RISKS REFER TO COMBINED CADP RISK REGISTER:          A400-01-U-REG-00001-02</p>
<p><b>MAINTENANCE:</b>          SEE ABOVE</p>
<p><b>DECOMMISSIONING / DEMOLITION:</b>          SEE ABOVE</p>

It is assumed that all works will be undertaken by a competent contractor ☐ working where appropriate, to an approved method statement.

- ## NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
  2. FOR CLARITY REINFORCEMENT DETAILS ARE NOT SHOWN.
  3. MOVEMENT JOINTS SHALL ACCOMMODATE 40mm LATERAL MOVEMENT IN EITHER DIRECTION AND 40mm TELESCOPIC MOVEMENT. DETAILS TO BE AGREED WITH MANUFACTURER.
  4. FINAL DIMENSIONS AND INSTALLATION DETAILS MAY VARY SLIGHTLY DEPENDING ON INSTALLATION LOGISTICS AND PRODUCT CHOICES OF A CONTRACTOR.
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07	J.EAGLING	25/01/2018	B.WYTHIE	25/01/2018
ISSUED FOR APPROVAL				
06	A.WILSON	12/12/2017	B.WYTHIE	12/12/2017
NOTE 4 ADDED.				
05	R. RYAN	25/08/2017	P. MISTRY	25/08/2017
STAGE 3 UPDATE ISSUE				
04	R. RYAN	13/01/2017	P. MISTRY	13/01/2017
NOTES 2 AND 3 ADDED.				
03	R. RYAN	14/11/2016	W.HELLYER	14/11/2016
TENDER ISSUE				
02	P.OFFER	12/07/16	W.HELLYER	12/07/16
STAGE 3 ISSUE				
P1	L.OLARIU	06/11/2015	W.HELLYER	06/11/2015
STAGE 3 ISSUE				
Rev	Revised By	Date	Checked By	Date


FOR APPROVAL

London City Airport  
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Project

CITY AIRPORT  
DEVELOPMENT PROGRAMME

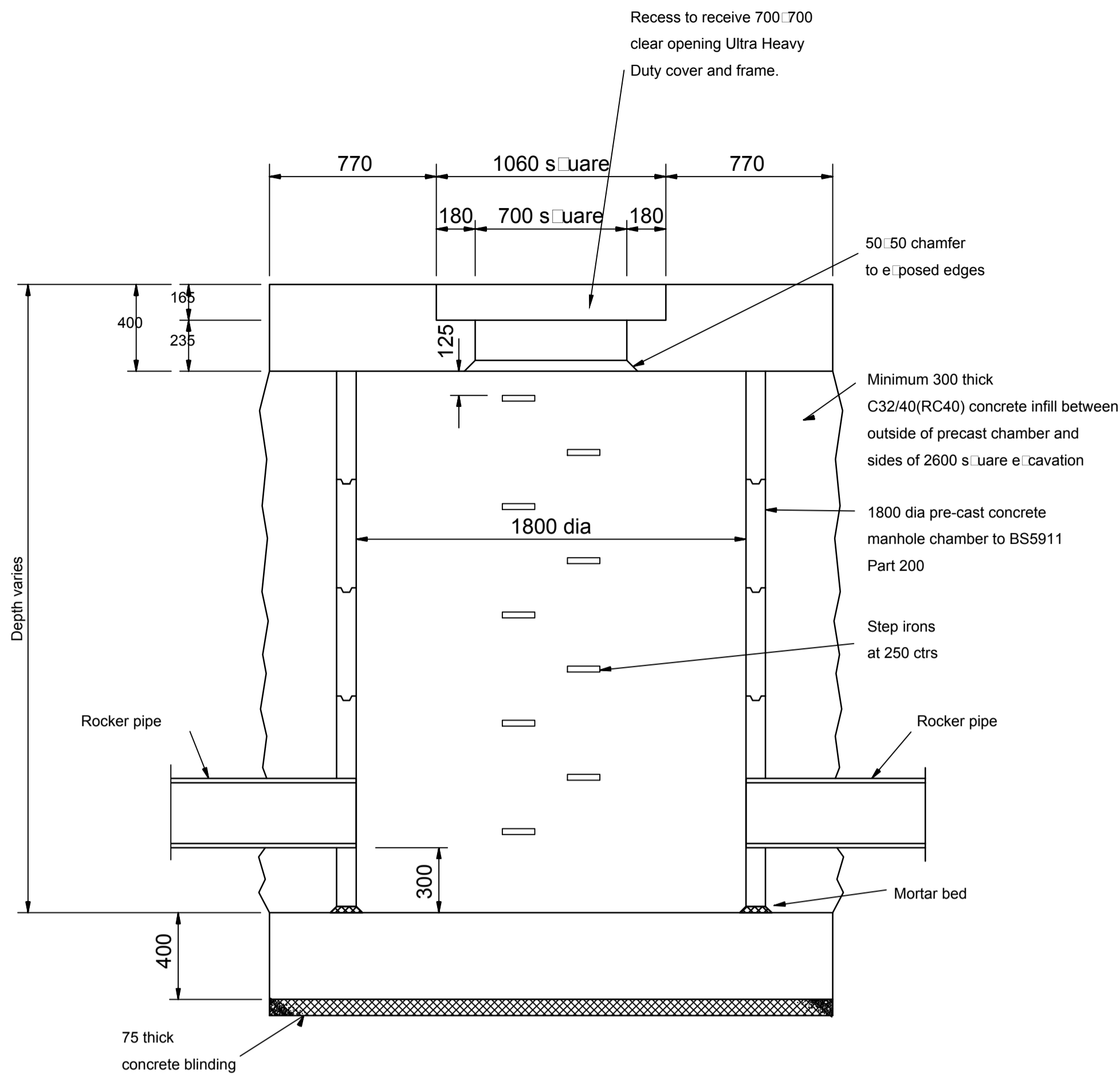
Drawing Title  
AIRFIELD  
DRAINAGE DETAILS  
SHEET 5


**TPS**  
 Originating Office \_\_\_\_\_ **TPS Croydon - Interchange**  
 81-85 Station Road  
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[www.tpsconsult.co.uk](http://www.tpsconsult.co.uk)  
[info@tpsconsult.co.uk](mailto:info@tpsconsult.co.uk)  
 Birmingham • Croydon • Edinburgh • Sheffield • Wolverhampton

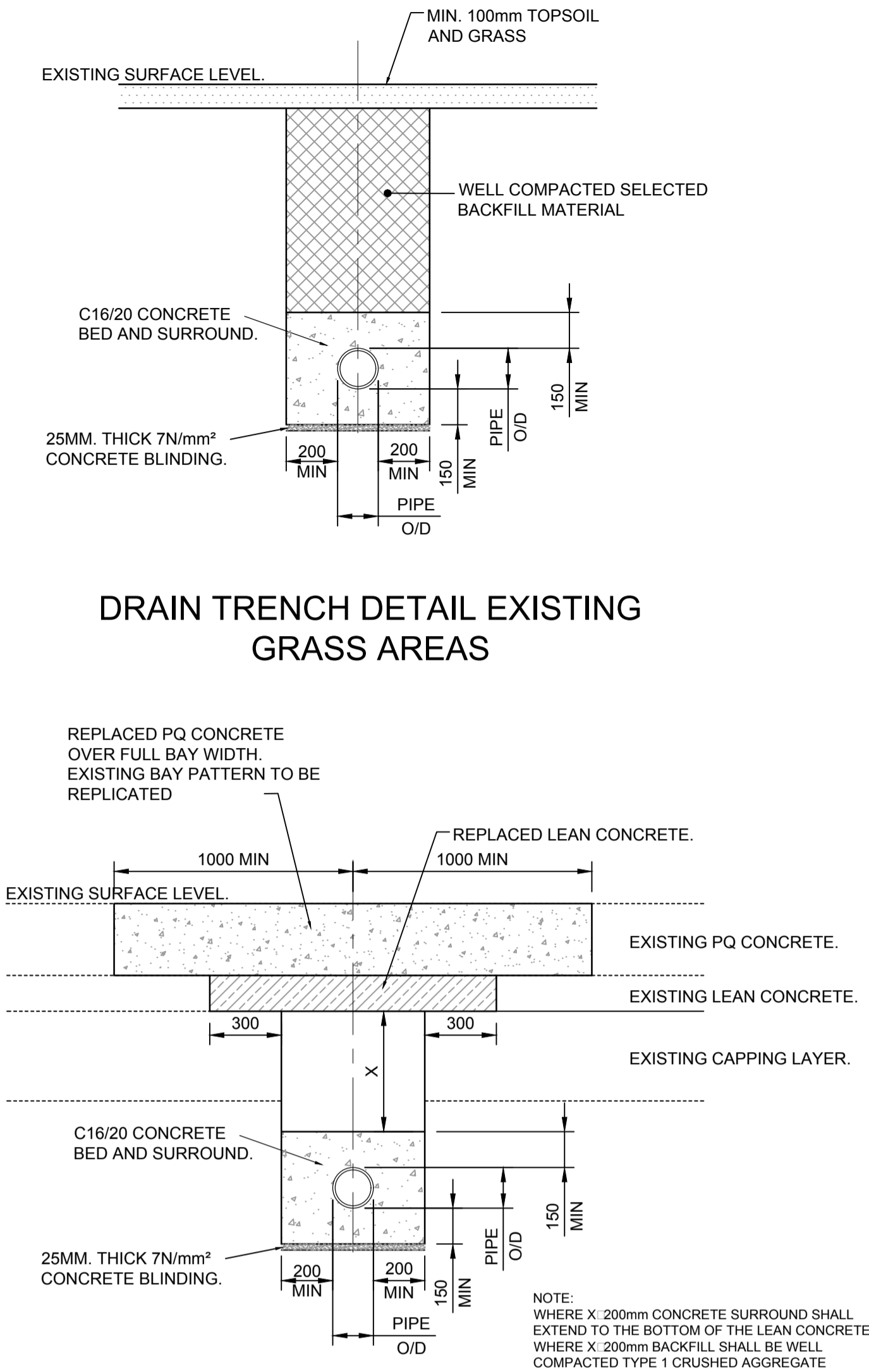
TPS Job Manager	R.KNAPTON	
QA System - Checks	Signature	Date
Drawn By: L.OLARIU		06/11/2015
Checked: W.HELLYER		06/11/2015
Authorised: R.MOORE		06/11/2015

TPS Project No. 112931		Drawing Status FOR APPROVAL				Scale (at A1) (at A3)			
Project No.	Orig.	Disc.	Zone	Level	Type	Sub Type	Series	Sht. No.	Rev.

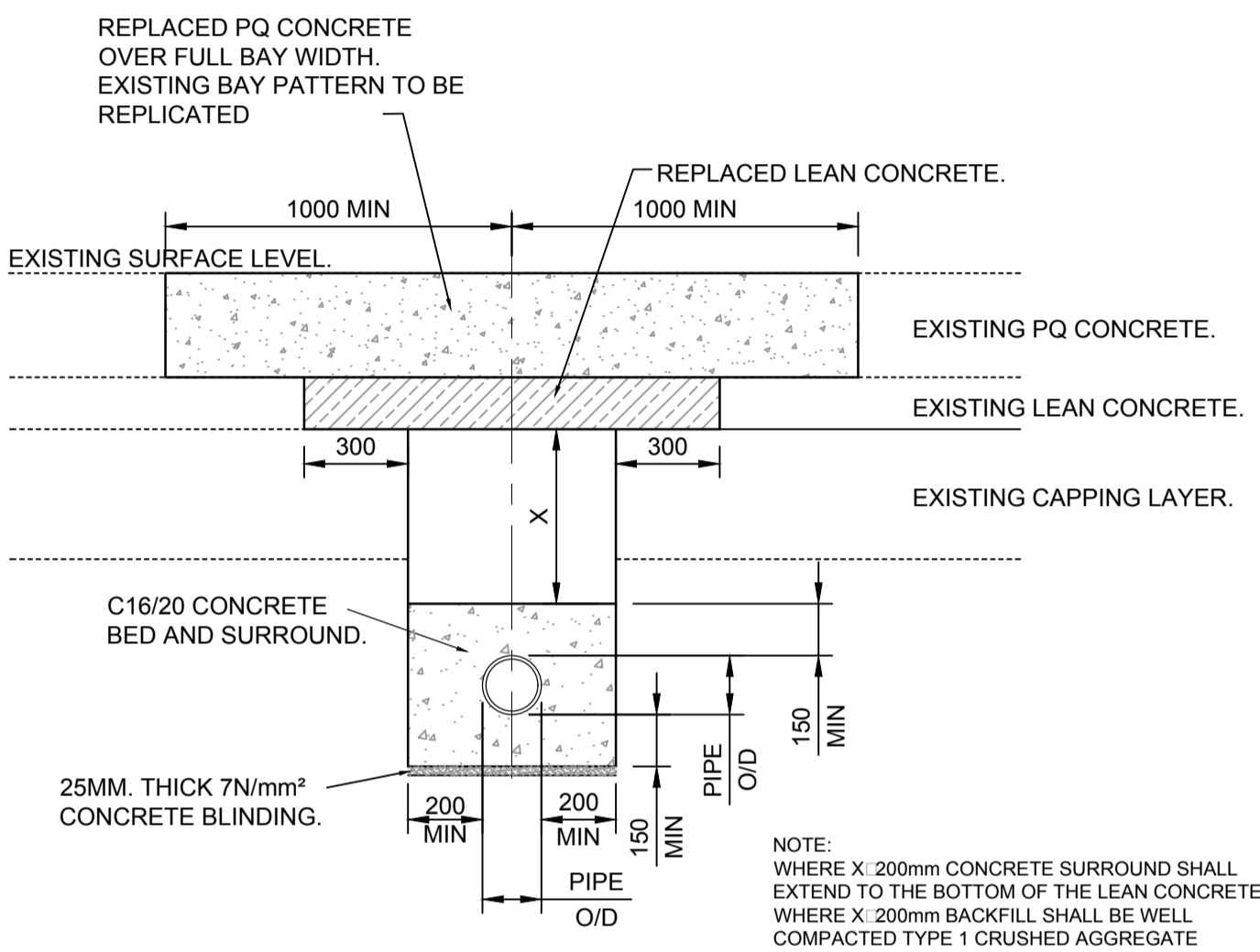
A400-TPS-C-00-XXX-DR-DE-864-005 07



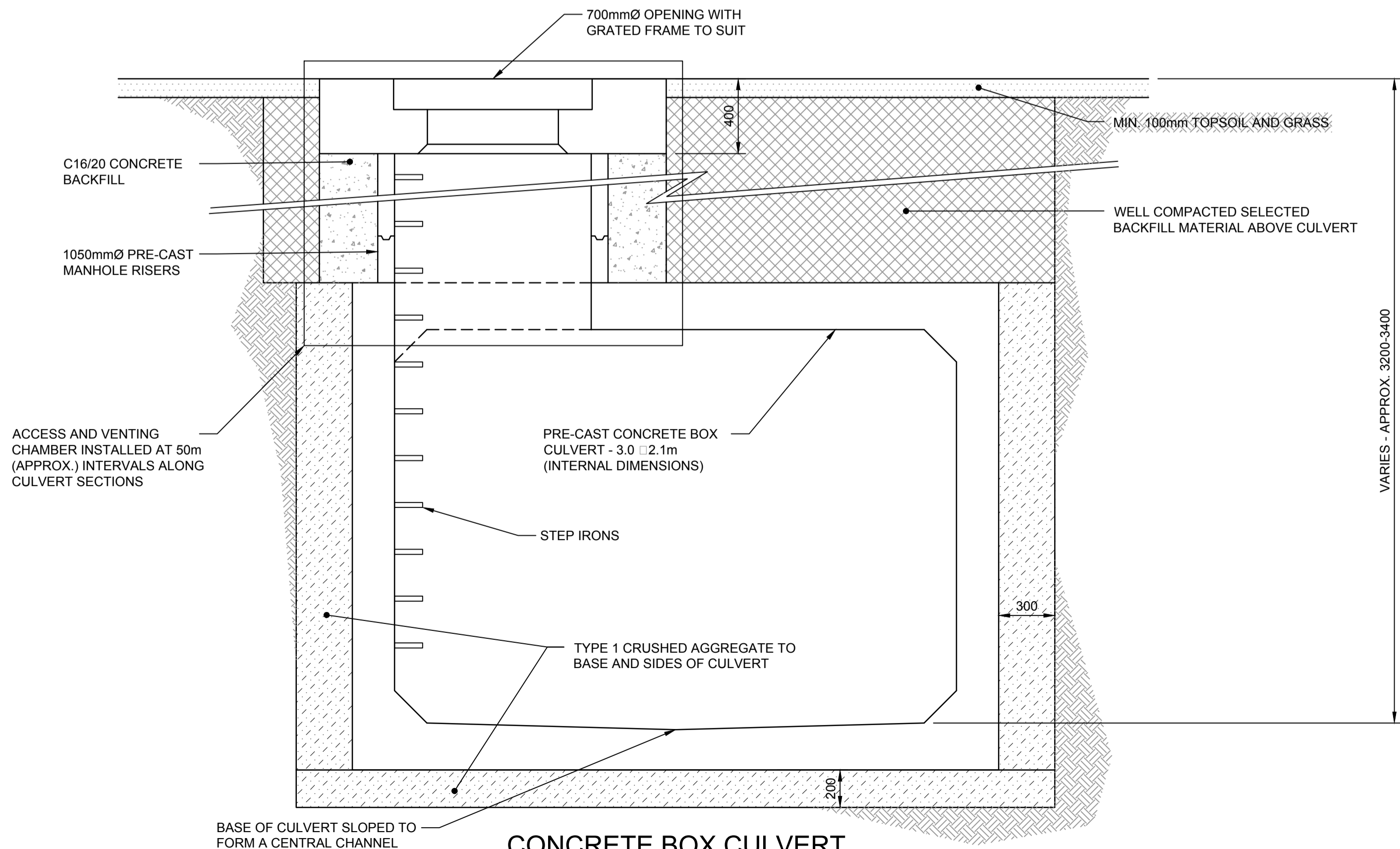
DRAINAGE MANHOLE IN GRASS AREAS



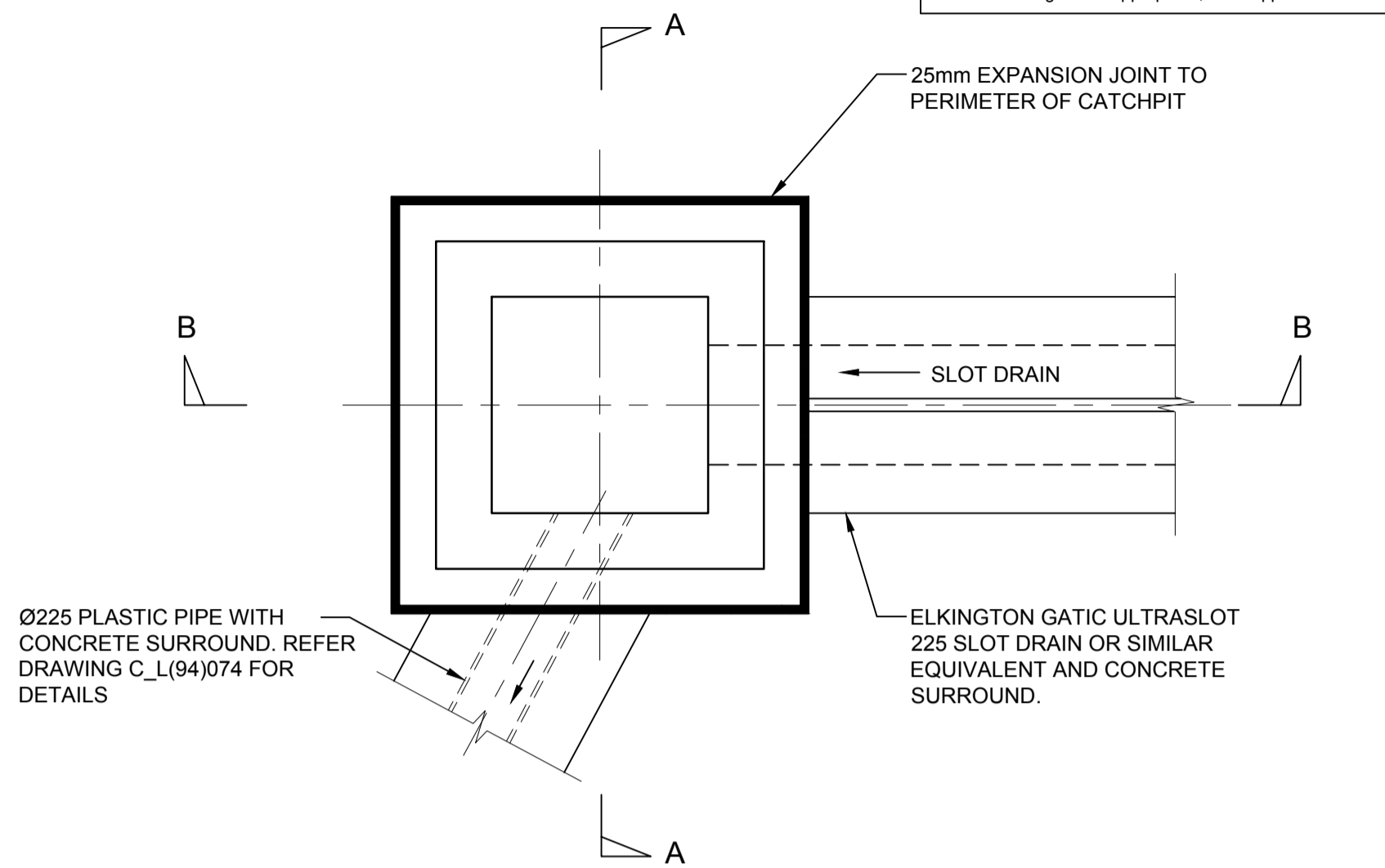
DRAIN TRENCH DETAIL EXISTING GRASS AREAS



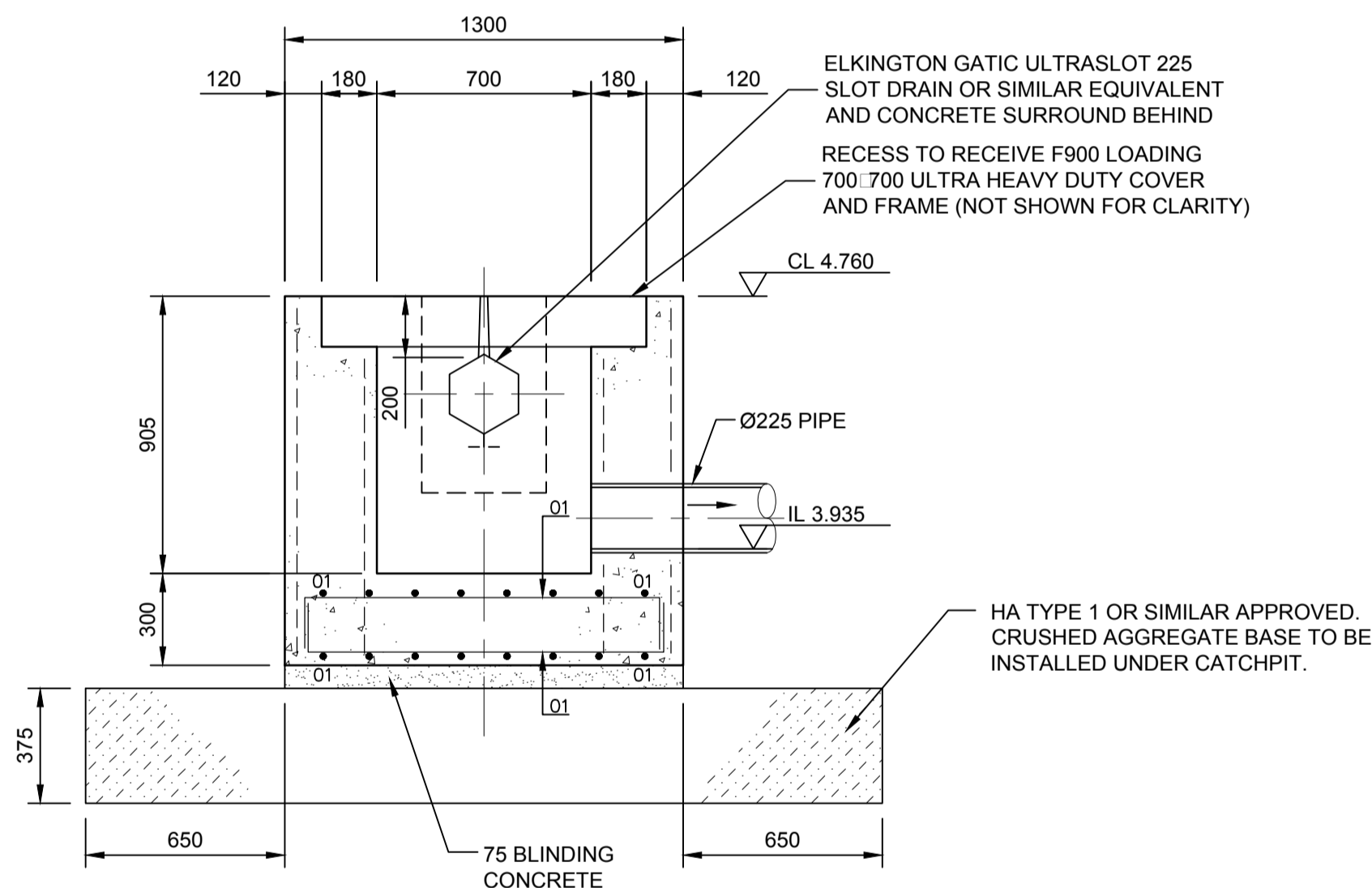
DRAIN TRENCH DETAIL EXISTING PAVEMENT AREAS



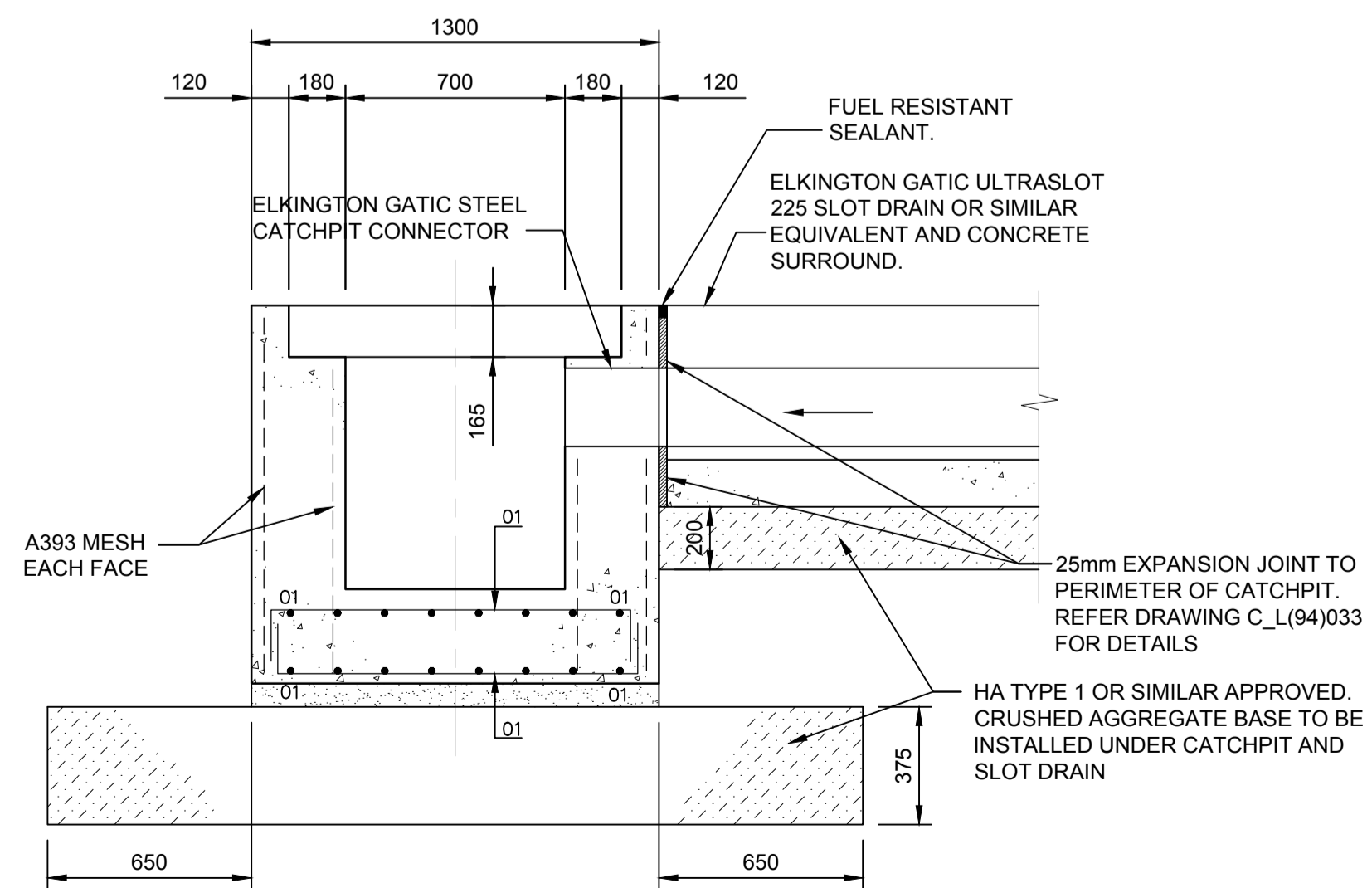
CONCRETE BOX CULVERT INSTALLATION DETAIL



SLOT DRAIN AND CATCH PIT AT TAXIWAY EDGE



SECTION A-A



SECTION B-B

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
In addition to the hazards and risks normally associated with the type of work detailed on this drawing, <b>NOTE SIGNIFICANT HAZARDS AS IDENTIFIED</b>
CONSTRUCTION: FOR CONSTRUCTION, OPERATION, MAINTENANCE AND DEMOLITION RISKS REFER TO COMBINED CADP RISK REGISTER: A400-01-U-REG-00001-02
MAINTENANCE: SEE ABOVE
DECOMMISSIONING / DEMOLITION: SEE ABOVE
It is assumed that all works will be undertaken by a competent contractor working where appropriate, to an approved method statement.

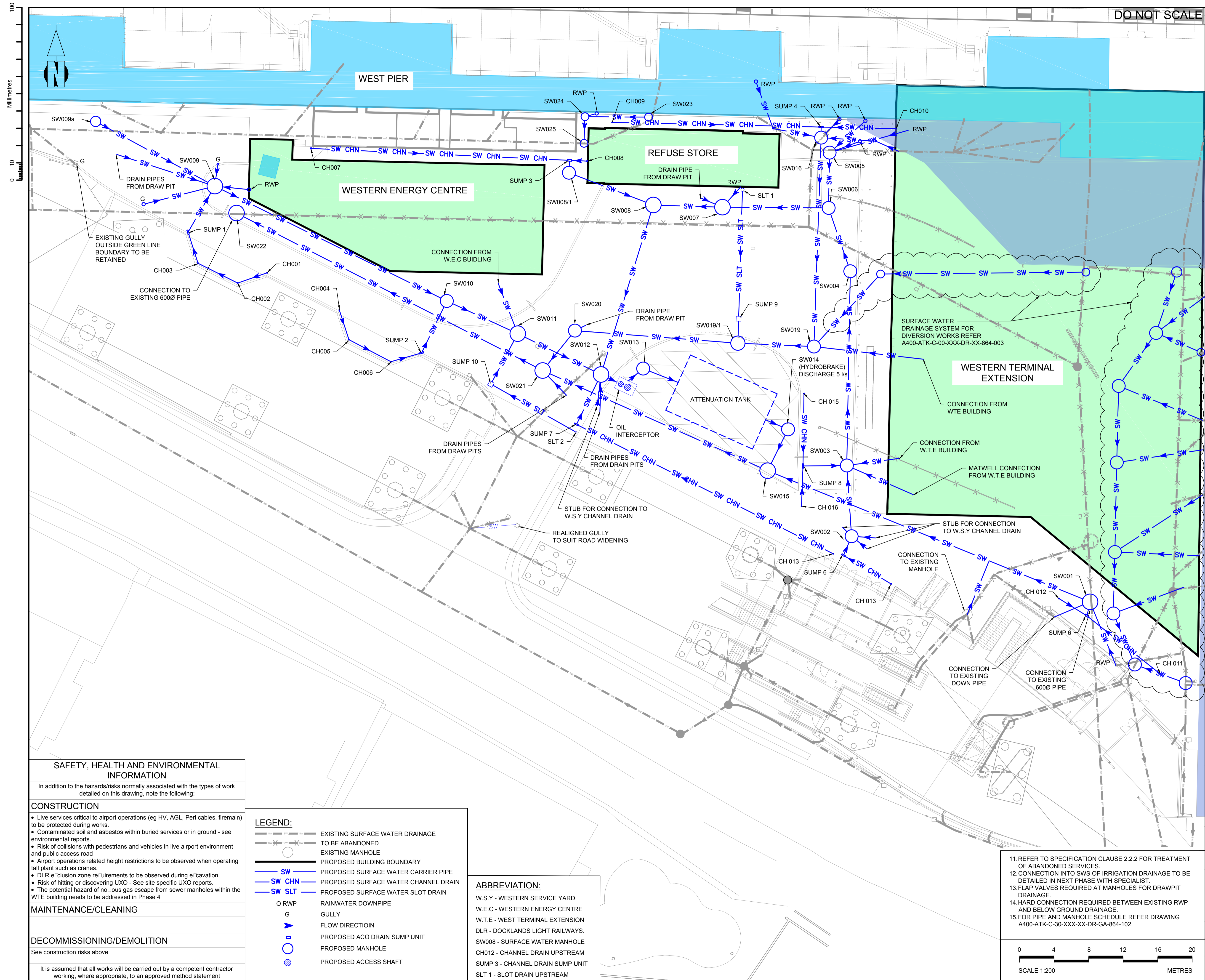
- DO NOT SCALE FROM THIS DRAWING**
- Copyright in all documents and drawings prepared by TPS Consult Ltd. and in any works executed from those documents and drawings shall remain the property of TPS Consult Ltd. unless otherwise agreed at project inception.
- NOTES:-**
- ALL DIMENSIONS IN MILLIMETRES UNLESS OTHERWISE STATED.
  - CONCRETE GRADES TO BE:-  
BLINDING LAYER C15/40  
BASE AND WALLS C40/20
  - REINFORCEMENT TO BE HIGH YIELD ROUND DEFORMED BARS TO BS4449 WITH BAR BENDING TO BS4466.
  - MINIMUM COVER TO REINFORCEMENT TO BE 40mm UNLESS OTHERWISE STATED.
  - A393 REINFORCEMENT MESH TO BS4483 TO BE CUT TO SUIT, 40mm COVER, 500mm LAPS.
  - COVERS AND FRAMES SHALL BE ULTRA HEAVY DUTY.
  - FALL ACROSS COVER SLABS TO SUIT ADJACENT GROUND LEVELS.
  - FINAL DIMENSIONS AND INSTALLATION DETAILS MAY VARY SLIGHTLY DEPENDING ON INSTALLATION LOGISTICS AND PRODUCT CHOICES OF A CONTRACTOR.
  - DIMENSIONS ARE FOR INFORMATION ONLY AND NOT FOR APPROVAL.

06	J.EAGLING	25.01.2018	B.WYTHIE	25.01.2018
06	A.WILSON	12/12/2017	B.WYTHIE	12/12/2017
04	R. RYAN	25/08/2017	P. MISTRY	25/08/2017
03	R. RYAN	13/01/2017	P. MISTRY	13/01/2017
02	P. OFFER	12/07/16	W.HELLYER	12/07/16
01	L.OLARIU	06/11/2015	W.HELLYER	06/11/2015
Rev	Revised By	Date	Checked By	Date

FOR APPROVAL

London City Airport  
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Project	CITY AIRPORT DEVELOPMENT PROGRAMME
Drawing Title	AIRFIELD DRAINAGE DETAILS SHEET 6
Originating Office	TPS Croydon - Interchange 81-85 Station Road Croydon CR0 2RD United Kingdom Tel +44 (0)1902 422431 www.tpsconsult.co.uk info@tpsconsult.co.uk
TPS Job Manager	R.KNAPTON
QA System - Checks	Signature Date
Drawn By	L.OLARIU 06/11/2015
Checked	W.HELLYER 06/11/2015
Authorised	R.MOORE 06/11/2015
TPS Project No.	112931
Drawing Status	FOR APPROVAL
Scale (at A1)	1:20
Scale (at A3)	
Project No.	Orig Disc Zone Level Type Sub Type Series Sht. No. Rev.
A400-TPS-C-00-XXX-DR-DE-864-006	06



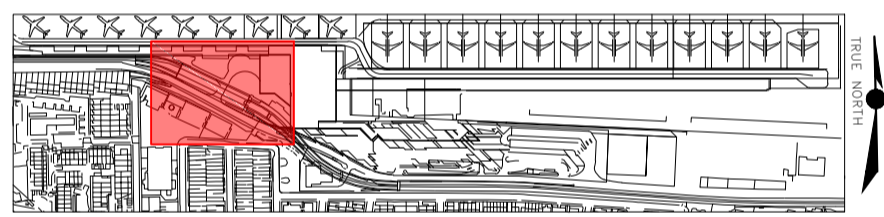
DO NOT SCALE

NOTES:

1. THIS DRAWING IS BASED ON P. W UWSY LAYOUT A400-PAW-A-35-XXX-XX-00-XX-9001
2. EXISTING INFORMATION BASED ON:
  - MSA DRAINAGE SURVEY DRAWING REF 4046-D DATED 05/09/2016
  - GEOTEC SURVEY DRAWING REF 1506S004W LAYOUTS 1 TO 12 AND MANHOLE SCHEDULE LANDSIDE DATED JUNE 2015
  - TECHNICHS CCTV SURVEY SD16823-01 DATED JANUARY 2017
  - STATS SEARCH UTILITIES DATED OCTOBER 2016 □
  - UTILITY OVERVIEW MAP REF 48558 FINAL ISSUE B DATED 08/11/2016
  - TECHNICHS SURVEY DRAWING REF P17189-TEC-SUT-00-DR-AC-15\_15\_06-0001 DATED 10/04/2017
  - 'AS-BUILT' DOCKLANDS LIGHT RAILWAY (DLR) RECORD DRAWINGS DATED 16/06/2016
  - 'AS-BUILT' UCKIN RECORD DRAWINGS
  - WEST PIER WATERMAN CONSTRUCTION DRAWING DRAINAGE LAYOUTS DATED 27/08/2015.
3. THIS DRAWING TO BE READ IN CONJUNCTION WITH STAGE 3 WSY DESIGN REPORT AND PROPOSED WSY DRAWINGS SERIES:
  - A400-ATK-C-30-XXX-XX-DR-GA-500-101- PROPOSED COMMUNICATION SERVICES EXTERNAL PIT AND DUCT LAYOUT
  - A400-ATK-C-30-XXX-XX-DR-GA-823-101- PROPOSED LV LV HV SERVICES PIT AND DUCT LAYOUT
  - A400-ATK-C-30-XXX-XX-DR-GA-852-101- PROPOSED FOUL WATER DRAINAGE SYSTEM LAYOUT
  - A400-ATK-C-30-XXX-XX-DR-GA-863-101- PROPOSED FIRE MAIN AND WATER SERVICES LAYOUT
4. CONSULTATION WITH THAMES WATER REQUIRED TO AGREE DISCHARGE RATES AND CONNECTION INTO THAMES WATER NETWORK.
5. ALL MANHOLE AND COVERS TO BE D400 RATED AND PIPES TO HAVE A 150mm CONCRETE SURROUND FOR HIGHWAYS LOADING, IF LESS THAN 0.9m DEEP.
6. ATTENTION TANK TO BE HEAVY DUTY SDS GEOLIGHT. OVERALL DIMS 7m X 11m X 2m DEEP. TYPICAL COVER FROM PROPOSED HARD LANDSCAPING LEVELS IS 0.9m. ATTENTION TANK'S TOP SURFACE TO BE PROTECTED WITH GEOTEXTILE ROOT BARRIER.
7. ALL RETAINED EXISTING PITS AND MANHOLES TO BE ADJUSTED AND/OR REINFORCED TO SUIT LEVELS AND LOADING WHERE REQUIRED.
8. PRELIMINARY MANHOLE SIZES AND PIPE BEDDING TYPES BASED ON HIGHWAYS STANDARD DETAILS (MCHW). REQUIREMENT TO BE REVIEWED AND DEVELOPED AT NEXT DESIGN STAGE.
9. OIL INTERCEPTOR TO BE 208 C/L/SC BY SPEL WITH CONCRETE SURROUND DESIGN FOR VEHICLE LOADING.
10. LOCATION OF ALL EXISTING UTILITIES TO BE VERIFIED PRIOR TO CONSTRUCTION.

## KEY PLAN

**ZONE:**



PRIVATE

02	16/02/2018	STAGE 3 ISSUE	AM	HR	
01	20/10/2017	FIRST DRAWING ISSUE	RJM	ML	MJH
Rev.	Date	Description	By	Chk'd	App'd

[illegible]

**ATKINS** Euston Tower  
286 Euston Road  
London  
NW1 3AT

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**London City Airport**  
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Project Title

LONDON CITY AIRPORT  
CADP STAGE 3

Drawing Title

STAGE 3 WESTERN SERVICE YARD  
PROPOSED SURFACE WATER DRAINAGE  
LAYOUT SHEET 1 OF 2

Scale 1:200 <input type="checkbox"/> A1	Designed DH	Drawn RJM	Checked AS	Authorised FB
Original Size A1	Date 30/08/2017	Date 30/08/2017	Date 15/09/2017	Date 15/09/2017

Drawing Number					Proj.					Rev		Status	
Proj.Code	Orig	Dis	Zone	Level	Tile	Type	Sub	Series / Num					
A400-ATK-C-30-XXX-XX-DR-GA-864-101 02 S2													

100  
Millimetres

10  
0

DO NOT SCALE

PIPE SCHEDULE											
SETOUT POINTS		Conduit Type	Length (m)	Slope (1:X)	USIL (m)	USCL (m)	DSIL (m)	US DEPTH (m)	PIPE DIAMETER (mm)	BEDDING CLASS	TYPE
FROM	TO										
CH011	Sump 5	Channel	10.61	98	5.312	5.445	5.204	0.023	100X230	Z	ACO MultiDrain M100
CH012	Sump 5	Channel	3.82	200	5.065	5.195	5.046	0.020	100X230	Z	ACO MultiDrain M100
Sump 5	SW001	Carrier	1.66	23	4.531	5.321	4.458	0.640	150	Z	Clay
SW001	SW015	Carrier	40.30	325	1.406	5.430	1.282	3.424	600	B	PCC
CH013	Sump 6	Channel	6.41	200	4.800	5.080	4.768	0.020	100X280	Z	ACO MultiDrain M100
Sump 6	SW002	Carrier	2.40	24	4.550	5.130	4.450	0.430	150	Z	Clay
SW002	SW003	Carrier	8.20	245	3.261	5.276	3.228	1.715	300	F	Clay
CH015	Sump 8	Channel	8.38	184	5.187	5.321	5.142	0.024	100X230	Z	ACO MultiDrain M100
CH016	Sump 8	Channel	4.67	235	5.072	5.203	5.052	0.021	100X230	Z	ACO MultiDrain M100
Sump 8	SW003	Carrier	5.07	56	4.587	5.323	4.497	0.586	150	Z	Clay
SW003	SW004	Carrier	22.48	234	2.280	5.498	2.184	2.918	300	B	Clay
SW004	SW006	Carrier	7.80	195	2.184	5.496	2.144	3.012	300	B	Clay
SW005	SW006	Carrier	6.39	60	2.400	5.441	2.294	2.891	150	B	Clay
SW006	SW007	Carrier	12.17	245	2.144	5.484	2.094	3.040	300	B	Clay
SW007	SW008	Carrier	8.01	211	2.094	5.270	2.056	2.876	300	B	Clay
CH007	Sump 3	Channel	29.95	150	4.817	5.052	4.617	0.020	150X235	Z	ACO MultiDrain M150
CH008	Sump 3	Channel	2.04	204	4.872	5.052	4.862	0.020	100X180	Z	ACO MultiDrain M100
Sump 3	SW008/1	Carrier	1.45	103	4.248	5.038	4.234	0.565	225	Z	Clay
SW008/1	SW008	Carrier	10.46	125	3.493	4.980	3.409	1.262	225	F	Clay
SW008	SW012	Carrier	20.52	151	2.056	5.209	1.920	2.853	300	B	Clay
SW009a	SW009	Carrier	15.69	141	2.365	4.113	2.254	1.448	300	F	Clay
CH001	CH002	Channel	3.60	200	4.170	4.300	4.152	0.020	100X230	Z	ACO MultiDrain M100
CH002	CH003	Channel	5.12	200	4.152	4.360	4.126	0.098	100X230	Z	ACO MultiDrain M100
CH003	Sump 1	Channel	3.79	200	4.126	4.355	4.107	0.119	100X230	Z	ACO MultiDrain M100
Sump 1	SW009	Carrier	6.16	14	3.700	4.293	3.250	0.443	150	Z	Clay
SW009	SW010	Carrier	29.97	245	2.254	4.502	2.132	1.948	300	F	Clay
CH004	CH005	Channel	3.60	200	4.186	4.316	4.168	0.020	100X230	Z	ACO MultiDrain M100
CH005	CH006	Channel	5.49	200	4.168	4.356	4.141	0.078	100X230	Z	ACO MultiDrain M100
CH006	Sump 2	Channel	3.69	200	4.141	4.338	4.122	0.088	100X230	Z	ACO MultiDrain M100
Sump 2	SW010	Carrier	6.68	57	3.521	4.311	3.403	0.640	150	Z	Clay
SW010	SW011	Carrier	9.04	225	2.132	4.487	2.092	2.055	300	F	Clay
SLT 2	Sump 10	Carrier	11.31	954	3.789	4.190	3.777	0.176	225X425	Z	ACO Qmax 225
Sump 10	SW011	Carrier	6.61	54	3.427	4.217	3.304	0.640	150	Z	Clay
SW011	SW012	Carrier	10.73	134	2.092	4.426	2.012	2.034	300	F	Clay
CH014	Sump 7	Channel	33.26	32	4.821	5.101	3.782	0.020	100X280	Z	ACO MultiDrain M100
Sump 7	SW012	Carrier	6.44	6	3.625	4.134	2.496	0.359	150	Z	Clay
SW012	INTERCEPTOR	Carrier	3.59	76	1.910	4.370	1.863	2.010	450	F	PCC
INTERCEPTOR	SW013	Carrier	3.10	100	1.863	4.545	1.832	2.232	450	Z	PCC
SW013	ATT TANK	Carrier	3.85	227	1.832	4.653	1.815	2.371	450	B	PCC
ATT TANK	SW014	Carrier	14.33	94	1.815	5.940	1.662	3.675	450	B	PCC
SW014	SW015	Carrier	5.33	87	1.662	5.524	1.601	3.412	450	B	PCC
SW015	SW021	Carrier	28.48	264	1.282	5.221	1.174	3.339	600	B	PCC
CH009	Sump 4	Channel	24.18	200	4.980	5.180	4.859	0.020	100X180	Z	ACO MultiDrain M100
CH010	Sump 4	Channel	8.64	99	5.372	5.494	5.285	0.012	100X230	Z	ACO MultiDrain M100
Sump 4	SW016	Carrier	1.23	38	4.611	5.401	4.579	0.640	150	Z	Clay
SW016	SW019	Carrier	24.20	101	3.518	5.414	3.279	1.746	150	F	Clay
SW019	SW019/1	Carrier	8.81	143	1.696	5.336	1.635	3.340	300	B	Clay
SLT 1	Sump 9	Carrier	14.92	93	4.828	5.378	4.668	0.200	350X550	Z	ACO Qmax 350
Sump 9	SW019/1	Carrier	2.84	37	4.227	5.017	4.150	0.640	150	Z	Clay
SW019/1	SW020	Carrier	18.92	305	1.560	5.121	1.498	3.186	375	B	PCC
SW020	SW021	Carrier	5.94	60	1.498	4.602	1.399	2.729	375	B	PCC
SW021	SW022	Carrier	39.89	376	1.174	4.400	1.068	2.626	600	B	PCC

MANHOLE SCHEDULE

SETOUT POINTS	COORDINATES		MH Type	MH SIZE (mm)	MH COVER LOAD CLASS	NOTE
	E (m)	N (m)				
SW001	542319.851	180277.695	1	1500	D400	-
SW002	542292.243	180285.285	2	1200	D400	-
SW003	542291.688	180293.470	2	1200	D400	-
SW004	542292.093	180315.949	1	1200	D400	-
SW005	542289.691	180329.682	2	1200	D400	-
SW006	542289.581	180323.289	1	1200	D400	-
SW007	542277.291	180323.366	2	1500	D400	-
SW008	542269.287	180323.621	2	1500	D400	-
SW008/1	542259.521	180327.354	2	1200	D400	-
SW009a	542204.732	180333.295	2	1200	D400	-
SW009	542218.521	180325.811	2	1500	C250	-
SW010	542245.383	180312.515	2	1200	C250	-
SW011	542253.595	180308.729	2	1500	D400	-
SW012	542263.232	180304.010	2	1500	D400	-
OIL INTERCEPTOR	542266.314	180302.165	—	"1225 DIA 2260 LENGTH"	—	-
SW013	542268.113	180304.691	1	1350	C250	-
SW014	542284.881	180297.655	2	1350	C250	HYDROBRAKE DESIGN FLOW: 5lps DESIGN HEAD: 1.5m
SW015	542282.525	180292.875	2	1500	C250	-
SW016	542288.724	180331.420	1	1200	D400	-
SW019	542287.878	180307.239	2	1200	D400	-
SW019/1	542279.076	180307.629	2	1350	C250	-
SW020	542260.211	180309.089	2	1350	D400	-
SW021	542256.481	180304.463	2	1500	D400	-

CHANNEL SCHEDULE

SETOUT POINTS	COORDINATES		MH Type	MH SIZE (mm)	MH COVER LOAD CLASS	NOTE
	E (m)	N (m)				
CH001	542224.579	180315.775	-	100X230	-	-
CH002	542221.175	180314.593	-	100X230	-	-
CH003	542216.588	180316.872	-	100X230	-	-
CH004	542232.945	180311.467	-	100X230	-	-
CH005	542234.054	180308.041	-	100X230	-	-
CH006	542238.921	180305.491	-	100X230	-	-
CH007	542229.667	180330.171	-	150X235	-	-
CH008	542261.620	180328.703	-	100X180	-	-
CH009	542284.533	180333.187	-	100X180	-	-
CH010	542297.341	180332.407	-	100X230	-	-
CH011	542327.772	180269.430	-	100X230	-	-
CH012	542316.250	180278.076	-	100X230	-	-
CH013	542296.810	180279.776	-	100X280	-	-
CH014	542290.106	180283.263	-	100X280	-	-
CH015	542286.735	180301.805	-	100X230	-	-
CH016	542286.452	180288.756	-	100X230	-	-
SLT 1	542279.611	180325.382	-	350X550	-	-
SLT 2	542280.341	180297.345	-	225X425	-	-
Sump 1	542215.434	180320.478	-	500x135x635	-	ACO M100D SUMP UNIT
Sump 2	542242.464	180306.510	-	500x135x635	-	ACO M100D SUMP UNIT
Sump 3	542259.587	180328.798	-	500x185x735	-	ACO M150D SUMP UNIT
Sump 4	542288.708	180332.647	-	500x135x635	-	ACO M100D SUMP UNIT
Sump 5	542319.496	180276.069	-	500x135x635	-	ACO M100D SUMP UNIT
Sump 6	542291.318	180283.074	-	500x135x635	-	ACO M100D SUMP UNIT
Sump 7	542260.400	180298.228	-	500x135x635	-	ACO M100D SUMP UNIT
Sump 8	542286.619	180293.423	-	500x135x635	-	ACO M100D SUMP UNIT
Sump 9	542279.168	180310.468	-	—	-	ACO Qmax 350
Sump 10	542250.484	180302.900	-	—	-	ACO Qmax 225

ATTENUATION TANK SCHEDULE

STRUCTURE TYPE	AREA / Sq.m	DEPTH (m)
CELLULAR STORAGE	77	2.0

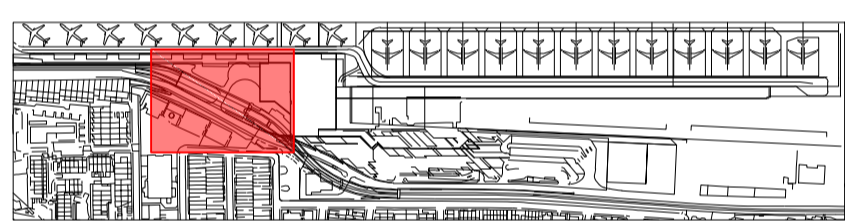
11. REFER TO SPECIFICATION CLAUSE 2.2.2 FOR TREATMENT OF ABANDONED SERVICES.  
11. CONNECTION INTO SWS OF IRRIGATION DRAINAGE TO BE DETAILED IN NEXT PHASE WITH SPECIALIST.  
12. FLAP VALVES REQUIRED AT MANHOLES FOR DRAWPIT DRAINAGE.  
13. HARD CONNECTION REQUIRED BETWEEN EXISTING RWP AND BELOW GROUND DRAINAGE.

ABBREVIATION  
MH - MANHOLE  
US - UPSTREAM  
DS - DOWNSTREAM  
IL - INVERT LEVEL  
CL - COVER LEVEL  
ATT - ATTENUATION TANK  
M100 - ACO MULTIDRAIN M100  
M150 - ACO MULTIDRAIN M150  
Qmax - ACO Qmax - (Q-Slot edge)

- NOTES:
- THIS DRAWING IS BASED ON P.W UWSY LAYOUT A400-PAW-A-35-XXX-XX-M2-XX-900-001
  - EXISTING INFORMATION BASED ON:
    - MSA DRAINAGE SURVEY DRAWING REF 4046-D DATED 05/09/2016
    - GEOTEC SURVEY DRAWING REF 1506S004W LAYOUTS 1 TO 12 AND MANHOLE SCHEDULE LANDSIDE DATED JUNE 2015
    - TECHNICS CCTV SURVEY SD16823-01 DATED JANUARY 2017
    - STATS SEARCH UTILITIES DATED OCTOBER 2016  
UTILITY OVERVIEW MAP REF 48558 FINAL ISSUE B DATED 08/11/2016
    - TECHNICS BURIED SERVICES DRAWING REF P17189-TEC-SUT-00-DR-AC\_15\_15\_06-0001 DATED 10/04/2017
    - 'AS-BUILT' DOCKLANDS LIGHT RAILWAY (DLR) RECORD DRAWINGS DATED 16/06/2016
    - 'AS-BUILT' UKPN RECORD DRAWINGS
    - WEST PIER WATERMAIN CONSTRUCTION DRAWING DRAINAGE LAYOUTS DATED 27/08/2015.
  - THIS DRAWING TO BE READ IN CONJUNCTION WITH STAGE 3 WSY DESIGN REPORT AND PROPOSED WSY DRAWINGS SERIES:
    - A400-ATK-C-30-XXX-XX-DR-GA-500-101- PROPOSED COMMUNICATION SERVICES EXTERNAL PIT AND DUCT LAYOUT
    - A400-ATK-C-30-XXX-XX-DR-GA-823-101- PROPOSED LV / HV SERVICES PIT AND DUCT LAYOUT
    - A400-ATK-C-30-XXX-XX-DR-GA-862-101- PROPOSED FOUL WATER DRAINAGE SYSTEM LAYOUT
    - A400-ATK-C-30-XXX-XX-DR-GA-863-101- PROPOSED FIRE MAIN AND WATER SERVICES LAYOUT
  - CONSULTATION WITH THAMES WATER REQUIRED TO AGREE DISCHARGE RATES AND CONNECTION INTO THAMES WATER NETWORK.
  - ALL MANHOLE AND COVERS TO BE D400 RATED AND PIPES TO HAVE A 150mm CONCRETE SURROUND FOR HIGHWAYS LOADING, IF LESS THAN 0.9m DEEP.
  - ATTENUATION TANK TO BE HEAVY DUTY SDS GEOLIGHT. OVERALL DIMS 7m X 11m X 2m DEEP. TYPICAL COVER FROM PROPOSED HARD LANDSCAPING LEVELS IS 0.9m. ATTENUATION TANK'S TOP SURFACE TO BE PROTECTED WITH GEOTEXTILE ROOT BARRIER.
  - ALL RETAINED EXISTING PITS AND MANHOLES TO BE ADJUSTED AND/OR REINFORCED TO SUIT LEVELS AND LOADING WHERE REQUIRED.
  - PRELIMINARY MANHOLE SIZES AND PIPE BEDDING TYPES BASED ON HIGHWAYS STANDARD DETAILS (MCHW). REQUIREMENT TO BE REVIEWED AND DEVELOPED AT NEXT DESIGN STAGE.
  - OIL INTERCEPTOR TO BE 208 C1/SC BY SPEL WITH CONCRETE SURROUND DESIGN FOR VEHICLE LOADING.
  - LOCATION OF ALL EXISTING UTILITIES TO BE VERIFIED PRIOR TO CONSTRUCTION.

KEY PLAN

ZONE:



PRIVATE


01	16/02/2018	STAGE 3 ISSUE	AM	HR	
Rev.	Date	Description	By	Chk'd	App'd

Drawing Suitability	Status
<b>F</b> <b>0000</b> <b>0000</b> <b>0000</b> <b>0000</b>	<b>S2</b>

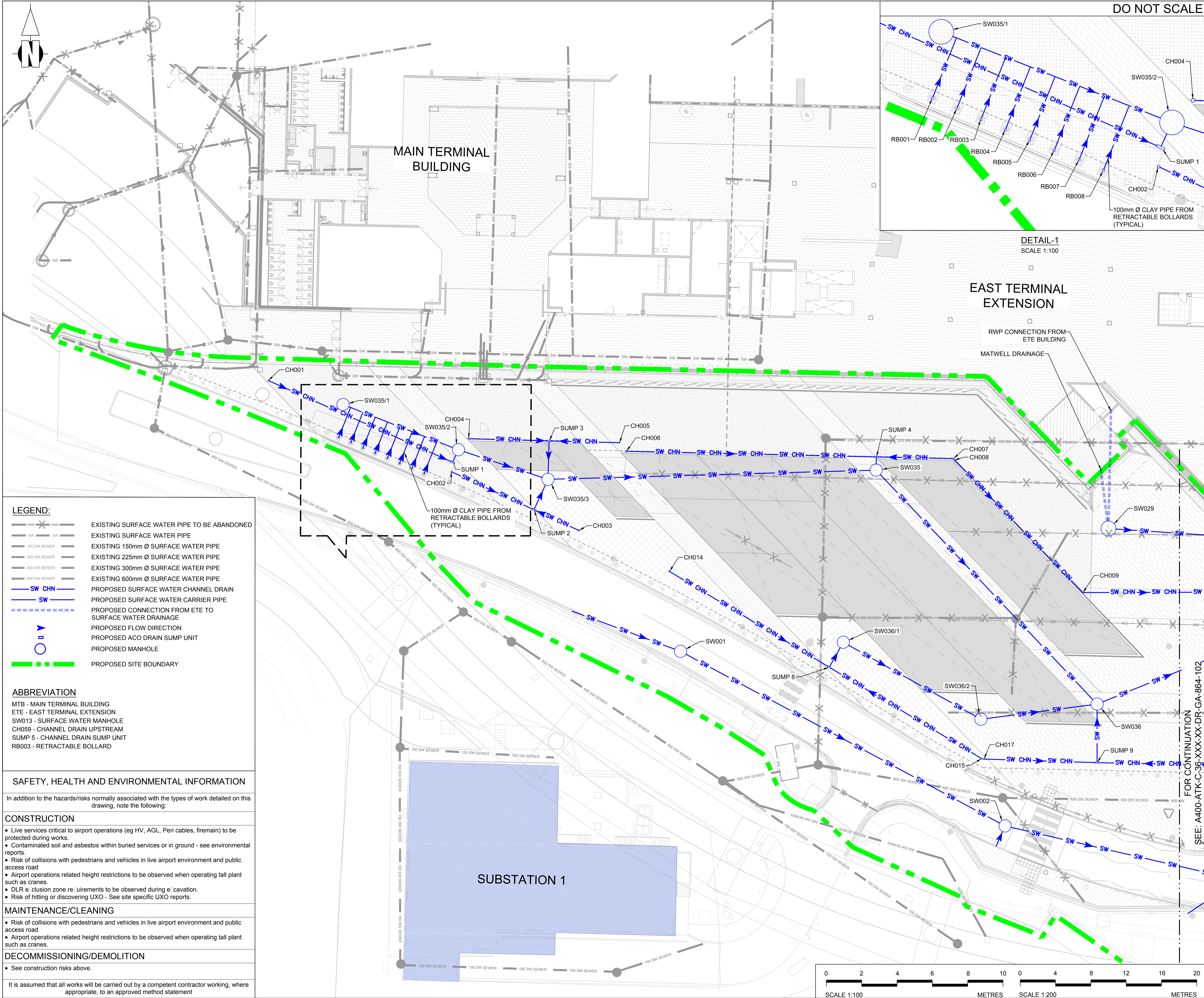
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DO NOT SCALE

DETAIL-1  
SCALE 1:100

EAST TERMINAL  
EXTENSION

MAIN TERMINAL  
BUILDING

SUBSTATION 1

LEGEND:

- EXISTING SURFACE WATER PIPE TO BE ABANDONED
- EXISTING SURFACE WATER PIPE
- EXISTING 150mm Ø SURFACE WATER PIPE
- EXISTING 225mm Ø SURFACE WATER PIPE
- EXISTING 300mm Ø SURFACE WATER PIPE
- EXISTING 600mm Ø SURFACE WATER PIPE
- PROPOSED SURFACE WATER CHANNEL DRAIN
- PROPOSED SURFACE WATER CARRIER PIPE
- PROPOSED CONNECTION FROM ETE TO SURFACE WATER DRAINAGE
- PROPOSED FLOW DIRECTION
- PROPOSED ACO DRAIN SUMP UNIT
- PROPOSED MANHOLE
- PROPOSED SITE BOUNDARY

ABBREVIATION

- MTB - MAIN TERMINAL BUILDING
- ETE - EAST TERMINAL EXTENSION
- SW013 - SURFACE WATER MANHOLE
- CH059 - CHANNEL DRAIN UPSTREAM
- SUMP 5 - CHANNEL DRAIN SUMP UNIT
- RB003 - RETRACTABLE BOLLARD

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

- Live services critical to airport operations (eg HV, AGL, Peri cables, firemain) to be protected during works.
- Contaminated soil and asbestos within buried services or in ground - see environmental reports.
- Risk of collisions with pedestrians and vehicles in live airport environment and public access road
- Airport operations related height restrictions to be observed when operating tall plant such as cranes.
- DLR exclusion zone requirements to be observed during excavation.
- Risk of hitting or discovering UXO - See site specific UXO reports.

MAINTENANCE/CLEANING

- Risk of collisions with pedestrians and vehicles in live airport environment and public access road
- Airport operations related height restrictions to be observed when operating tall plant such as cranes.

DECOMMISSIONING/DEMOLITION

- See construction risks above.

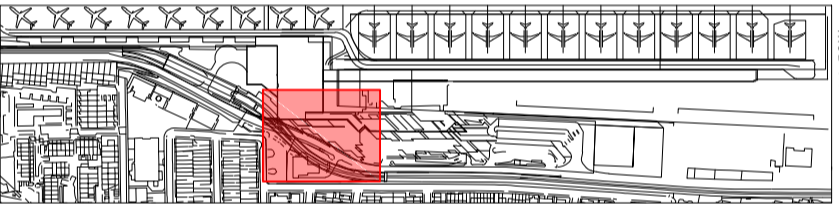
It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

NOTES:

- THIS DRAWING IS BASED ON P: W FORECOURT LAYOUT A400-PAW-A-36-XXX-XX-M3-200-001.
- REFER TO THE FOLLOWING DRAWINGS FOR EXISTING SURVEY INFORMATION:
  - A400-ATK-C-36-XXX-XX-DR-XX-800-321 - EXISTING COMBINED SERVICES LAYOUT - BASED ON MSA RECORDS
  - A400-ATK-C-36-XXX-XX-DR-XX-800-324 - EXISTING COMBINED SERVICES LAYOUT - BASED ON 2015 & 2017 BURIED SERVICES SURVEY.
- THIS DRAWING TO BE READ IN CONJUNCTION WITH STAGE 3 FORECOURT DESIGN REPORT AND PROPOSED FORECOURT DRAWINGS SERIES:
  - A400-ATK-C-36-XXX-XX-DR-GA-500-101 TO 103 - PROPOSED COMMUNICATION SERVICES EXTERNAL PIT AND DUCT LAYOUT
  - A400-ATK-C-36-XXX-XX-DR-GA-823-101 TO 103 - PROPOSED LV HV SERVICES PIT AND DUCT LAYOUT
  - A400-ATK-C-36-XXX-XX-DR-GA-831-101 TO 103 - PROPOSED GAS MAIN LAYOUT
  - A400-ATK-C-36-XXX-XX-DR-GA-842-101 TO 103 - PROPOSED EXTERNAL LOW TEMPERATURE HOT WATER SERVICES LAYOUT
  - A400-ATK-C-36-XXX-XX-DR-GA-862-101 TO 103 - PROPOSED FOUL WATER DRAINAGE SYSTEM LAYOUT
  - A400-ATK-C-36-XXX-XX-DR-GA-863-101 TO 103 - PROPOSED FIRE MAIN AND WATER SERVICES LAYOUT
- CONSULTATION WITH THAMES WATER REQUIRED TO AGREE DISCHARGE RATES AND CONNECTION INTO THAMES WATER NETWORK.
- ALL MANHOLE AND COVERS TO BE D400 RATED AND PIPES TO HAVE A 150mm CONCRETE SURROUND FOR HIGHWAYS LOADING, IF LESS THAN 1.2m DEEP.
- ATTENUATION TANK TO BE HEAVY DUTY SDS GEOLIGHT. OVERALL DIMS 74m X 11m X 1.5m DEEP. TYPICAL COVER FROM PROPOSED HARD LANDSCAPING LEVELS IS 0.9m. ATTENUATION TANK'S TOP SURFACE TO BE PROTECTED WITH GEOTEXTILE ROOT BARRIER.
- ALL RETAINED EXISTING PITS AND MANHOLES TO BE ADJUSTED AND/OR REINFORCED TO SUIT LEVELS AND LOADING WHERE REQUIRED.
- PRELIMINARY MANHOLE SIZES AND PIPE BEDDING TYPES BASED ON HIGHWAYS STANDARD DETAILS (MCHW). REQUIREMENT TO BE REVIEWED AND DEVELOPED AT NEXT DESIGN STAGE.
- OIL INTERCEPTOR TO BE 210 C1/SC AND 330 C1/SC BY SPEL WITH CONCRETE SURROUND DESIGN FOR VEHICLE LOADING.
- LOCATION OF ALL EXISTING UTILITIES TO BE VERIFIED PRIOR TO CONSTRUCTION.
- FOR PIPE AND MANHOLE SCHEDULE REFER DRAWING A400-ATK-C-36-XXX-XX-DR-GA-864-104.
- REFER TO SPECIFICATION CLAUSE 2.2.2 FOR TREATMENT OF ABANDONED SERVICES.
- CONNECTION INTO SWS OF IRRIGATION DRAINAGE TO BE DETAILED IN NEXT PHASE WITH SPECIALIST.

KEY PLAN

ZONE:



PRIVATE

NOT FOR CONSTRUCTION

02	27/02/18	STAGE 3 ISSUE	AM	HR
01	20/10/17	FIRST DRAWING ISSUE	RJM	ML MJH
Rev.	Date	Description	By	Chk'd App'd

Drawing Suitability  
**SUITABLE FOR INFORMATION**  
Status  
**S2**

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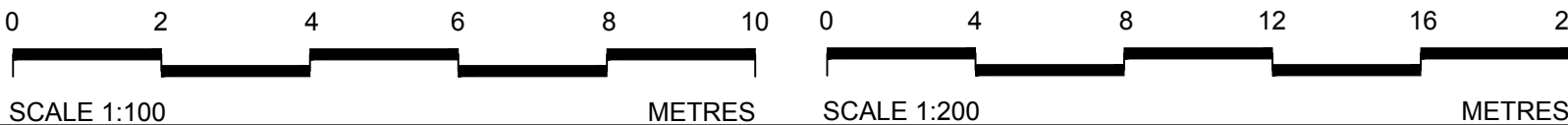
Project Title  
**CITY AIRPORT DEVELOPMENT  
PROGRAMME (CADP)  
ULTIMATE FORECOURT**

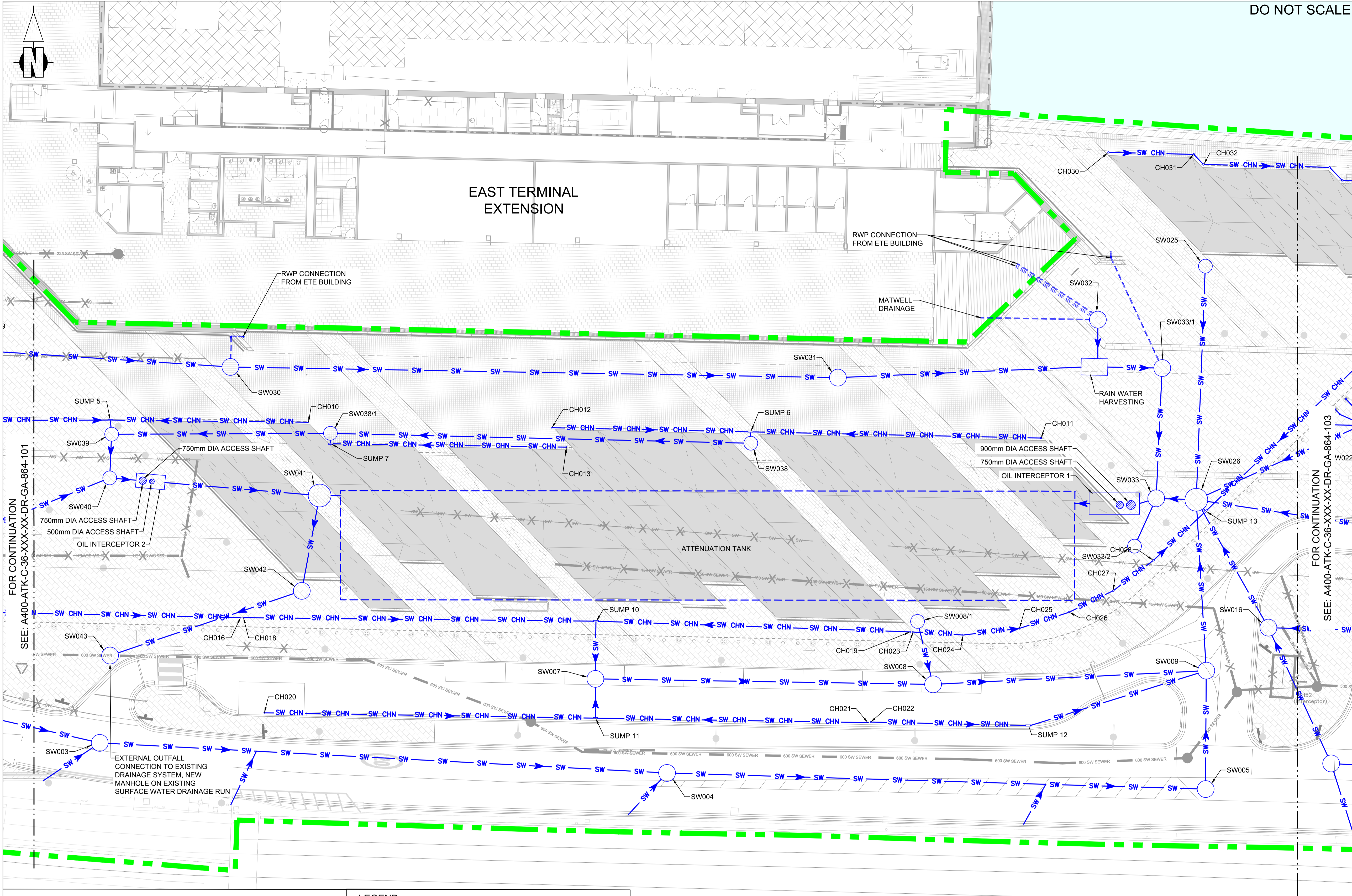
Drawing Title  
**STAGE 3 ULTIMATE FORECOURT  
PROPOSED SURFACE WATER DRAINAGE  
SHEET 1 OF 4**

Scale	Designed	Drawn	Checked	Authorised
AS SHOWN	AIZ	RJM	ML	MJH
Original Size	Date	Date	Date	Date
A1	20/10/2017	20/10/2017	20/10/2017	20/10/2017

Drawing Number	Proj. Code	Orig	Dis	Zone	Level	Title	Type	Sub	Series / Num	Rev	Status
A400-ATK-C-36-XXX-XX-DR-GA-864-101										02	S2

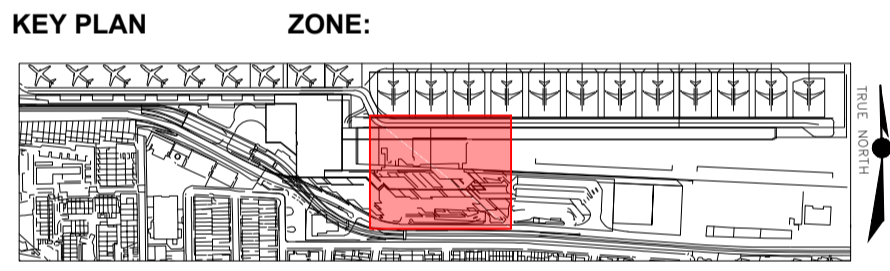
FOR CONTINUATION  
SEE: A400-ATK-C-36-XXX-XX-DR-GA-864-102





DO NOT SCALE

- NOTES:
- THIS DRAWING IS BASED ON P. W FORECOURT LAYOUT A400-PAW-A-36-XXX-XX-M3-200-001.
  - REFER TO THE FOLLOWING DRAWINGS FOR EXISTING SURVEY INFORMATION:
    - A400-ATK-C-36-XXX-XX-DR-XX-800-321 - EXISTING COMBINED SERVICES LAYOUT - BASED ON MSA RECORDS
    - A400-ATK-C-36-XXX-XX-DR-XX-800-324 - EXISTING COMBINED SERVICES LAYOUT - BASED ON 2015 □ 2017 BURIED SERVICES SURVEY.
  - THIS DRAWING TO BE READ IN CONJUNCTION WITH STAGE 3 FORECOURT DESIGN REPORT AND PROPOSED FORECOURT DRAWINGS SERIES:
    - A400-ATK-C-36-XXX-XX-DR-GA-500-101 TO 103 - PROPOSED COMMUNICATION SERVICES EXTERNAL PIT AND DUCT LAYOUT
    - A400-ATK-C-36-XXX-XX-DR-GA-823-101 TO 103 - PROPOSED LV □ HV SERVICES PIT AND DUCT LAYOUT
    - A400-ATK-C-36-XXX-XX-DR-GA-831-101 TO 103 - PROPOSED GAS MAIN LAYOUT
    - A400-ATK-C-36-XXX-XX-DR-GA-842-101 TO 103 - PROPOSED EXTERNAL LOW TEMPERATURE HOT WATER SERVICES LAYOUT
    - A400-ATK-C-36-XXX-XX-DR-GA-862-101 TO 103 - PROPOSED FOUL WATER DRAINAGE SYSTEM LAYOUT
    - A400-ATK-C-36-XXX-XX-DR-GA-863-101 TO 103 - PROPOSED FIRE MAIN AND WATER SERVICES LAYOUT
  - CONSULTATION WITH THAMES WATER REQUIRED TO AGREE DISCHARGE RATES AND CONNECTION INTO THAMES WATER NETWORK.
  - ALL MANHOLE AND COVERS TO BE D400 RATED AND PIPES TO HAVE A 150mm CONCRETE SURROUND FOR HIGHWAYS LOADING, IF LESS THAN 1.2m DEEP.
  - ATTENUATION TANK TO BE HEAVY DUTY SDS GEOLIGHT. OVERALL DIMS 74m X 11m X 1.5m DEEP. TYPICAL COVER FROM PROPOSED HARD LANDSCAPING LEVELS IS 0.9m. ATTENUATION TANK'S TOP SURFACE TO BE PROTECTED WITH GEOTEXTILE ROOT BARRIER.
  - ALL RETAINED EXISTING PITS AND MANHOLES TO BE ADJUSTED AND/OR REINFORCED TO SUIT LEVELS AND LOADING WHERE REQUIRED.
  - PRELIMINARY MANHOLE SIZES AND PIPE BEDDING TYPES BASED ON HIGHWAYS STANDARD DETAILS (MCHW). REQUIREMENT TO BE REVIEWED AND DEVELOPED AT NEXT DESIGN STAGE.
  - OIL INTERCEPTOR TO BE 210 C1/SC AND 330 C1/SC BY SPEL WITH CONCRETE SURROUND DESIGN FOR VEHICLE LOADING.
  - LOCATION OF ALL EXISTING UTILITIES TO BE VERIFIED PRIOR TO CONSTRUCTION.
  - FOR PIPE AND MANHOLE SCHEDULE REFER DRAWING A400-ATK-C-36-XXX-XX-DR-GA-864-104.
  - REFER TO SPECIFICATION CLAUSE 2.2.2 FOR TREATMENT OF ABANDONED SERVICES.
  - CONNECTION INTO SWS OF IRRIGATION DRAINAGE TO BE DETAILED IN NEXT PHASE WITH SPECIALIST .



PRIVATE

NOT FOR CONSTRUCTION

Rev.	Date	Description	By	Chk'd	App'd
02	27/02/18	STAGE 3 ISSUE	AM	HR	
01	20/10/17	FIRST DRAWING ISSUE	RJM	ML	MJH

Drawing Suitability

**SUITABLE FOR INFORMATION**

**S2**

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Client

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Project Title

**CITY AIRPORT DEVELOPMENT  
PROGRAMME (CADP)  
ULTIMATE FORECOURT**

Drawing Title

**STAGE 3 ULTIMATE FORECOURT  
PROPOSED SURFACE WATER DRAINAGE  
SHEET 2 OF 4**

Scale	Designed	Drawn	Checked	Authorised						
1:200	AIZ	RJM	ML	MJH						
Original Size	Date	Date	Date	Date						
A1	20/10/2017	20/10/2017	20/10/2017	20/10/2017						
Drawing Number										
Proj Code	Orig	Dis	Zone	Level	Proj Title	Type	Sub	Series / Num	Rev	Status
A400-ATK-C-36-XXX-XX-DR-GA-864-102									02	S2

**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

**CONSTRUCTION**

- Live services critical to airport operations (eg HV, AGL, Peri cables, firemain) to be protected during works.
- Contaminated soil and asbestos within buried services or in ground - see environmental reports.
- Risk of collisions with pedestrians and vehicles in live airport environment and public access road
- Airport operations related height restrictions to be observed when operating tall plant such as cranes.
- DLR exclusion zone re: urements to be observed during excavation.
- Risk of hitting or discovering UXO - See site specific UXO reports.

**MAINTENANCE/CLEANING**

- Risk of collisions with pedestrians and vehicles in live airport environment and public access road
- Airport operations related height restrictions to be observed when operating tall plant such as cranes.

**DECOMMISSIONING/DEMOLITION**

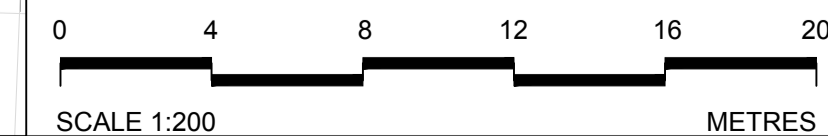
- See construction risks above.

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

- LEGEND:**
- EXISTING SURFACE WATER PIPE TO BE ABANDONED
  - EXISTING SURFACE WATER PIPE
  - EXISTING 150mm Ø SURFACE WATER PIPE
  - EXISTING 225mm Ø SURFACE WATER PIPE
  - EXISTING 300mm Ø SURFACE WATER PIPE
  - EXISTING 600mm Ø SURFACE WATER PIPE
  - PROPOSED SURFACE WATER CHANNEL DRAIN
  - PROPOSED SURFACE WATER CARRIER PIPE
  - PROPOSED CONNECTION FROM ETE TO SURFACE WATER DRAINAGE
  - PROPOSED FLOW DIRECTION
  - PROPOSED ACO DRAIN SUMP UNIT
  - PROPOSED MANHOLE
  - PROPOSED ACCESS SHAFT
  - PROPOSED SITE BOUNDARY

**ABBREVIATION**

MTB - MAIN TERMINAL BUILDING  
ETE - EAST TERMINAL EXTENSION  
SW013 - SURFACE WATER MANHOLE  
CH059 - CHANNEL DRAIN UPSTREAM  
SUMP 5 - CHANNEL DRAIN SUMP UNIT



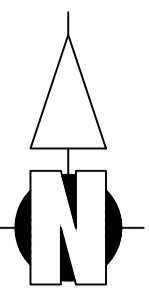


100  
Millimetres  
0 10

PIPE SCHEDULE											
SETOUT POINTS		Conduit Type	Length (m)	Slope (1:X)	USIL (m)	USCL (m)	DSIL (m)	US DEPTH (m)	PIPE DIAMETER (mm)	BEDDING CLASS	TYPE
FROM	TO										
SW001	SW002	Carrier	41.71	158	4.004	4.804	3.740	0.575	225	Z	Clay
SW002	SW003	Carrier	27.07	193	3.040	4.540	2.900	1.200	300	F	Clay
SW003	SW004	Carrier	57.26	245	2.900	4.400	2.666	1.200	300	F	Clay
SW004	SW005	Carrier	54.30	365	2.441	4.360	2.292	1.394	525	F	PCC
SW005	SW009	Carrier	11.94	442	2.292	4.358	2.265	1.541	525	B	PCC
CH019	Sump 10	Channel	31.70	254	4.604	4.840	4.479	0.026	100x230	Z	ACO MultiDrain M100
CH018	Sump 10	Channel	35.55	188	4.656	4.886	4.467	0.020	100x230	Z	ACO MultiDrain M100
Sump 10	SW007	Carrier	5.82	33	4.000	4.831	3.825	0.681	150	Z	Clay
CH020	Sump 11	Channel	33.39	187	4.265	4.495	4.086	0.020	100x230	Z	ACO MultiDrain M100
CH021	Sump 11	Channel	27.48	233	4.270	4.483	4.152	0.003	100x230	Z	ACO MultiDrain M100
Sump 11	SW007	Carrier	3.96	26	3.693	4.483	3.543	0.640	150	Z	Clay
SW007	SW008	Carrier	31.44	103	3.468	4.580	3.162	0.887	225	Z	Clay
SW008/1	SW008	Carrier	6.45	52	3.456	4.863	3.332	1.182	225	F	Clay
SW008	SW009	Carrier	30.17	119	3.162	4.587	2.909	1.200	225	F	Clay
CH022	Sump 12	Channel	16.15	199	4.355	4.485	4.274	0.020	100x130	Z	ACO MultiDrain M100
Sump 12	SW009	Carrier	18.53	59	3.706	4.496	3.389	0.640	150	Z	Clay
SW009	SW026	Carrier	17.26	401	2.265	4.604	2.222	1.814	525	B	PCC
SW025	SW026	Carrier	18.24	150	3.700	5.351	3.578	1.426	225	F	Clay
CH047	Sump 21	Channel	34.45	176	4.443	4.679	4.247	0.026	100x230	Z	ACO MultiDrain M100
Sump 21	SW023	Carrier	2.59	88	3.926	4.725	3.896	0.649	150	Z	Clay
SW023/1	SW023	Carrier	24.00	209	3.200	4.763	3.085	1.338	225	F	Clay
SW023	SW024	Carrier	24.00	160	3.085	4.772	2.935	1.462	225	F	Clay
CH046	Sump 20	Channel	22.76	169	4.494	4.724	4.359	0.020	100x230	Z	ACO MultiDrain M100
CH043	CH044	Channel	6.56	46	4.640	4.770	4.497	0.020	100x130	Z	ACO MultiDrain M100
CH044	CH045	Channel	2.34	98	4.497	4.758	4.373	0.151	100x130	Z	ACO MultiDrain M100
CH045	Sump 20	Channel	10.46	374	4.473	4.775	4.445	0.191	100x130	Z	ACO MultiDrain M100
Sump 20	SW024	Carrier	2.47	44	3.936	4.727	3.880	0.641	150	Z	Clay
SW024	SW024/1	Carrier	25.93	245	2.860	4.778	2.754	1.618	300	F	Clay
CH042	Sump 19	Channel	8.84	200	4.669	4.799	4.625	0.020	100x130	Z	ACO MultiDrain M100
Sump 19	SW024/1	Carrier	1.70	37	3.995	4.785	3.949	0.640	150	Z	Clay
SW024/1	SW026	Carrier	25.64	245	2.754	4.815	2.649	1.761	300	B	Clay
SW010	SW011	Carrier	19.01	200	3.100	4.600	3.005	1.200	300	F	Clay
SW011	SW012	Carrier	65.53	324	2.930	4.330	2.728	1.025	375	F	PCC
SW012	SW013	Carrier	47.39	402	2.653	4.360	2.535	1.257	450	F	PCC
SW013	SW016	Carrier	15.08	397	2.535	4.440	2.497	1.455	450	F	PCC
CH048	Sump 22	Channel	18.40	100	4.279	4.509	4.095	0.020	100x230	Z	ACO MultiDrain M100
CH049	Sump 22	Channel	18.48	201	4.309	4.539	4.217	0.020	100x230	Z	ACO MultiDrain M100
Sump 22	SW014/1	Carrier	3.99	93	3.746	4.536	3.703	0.790	150	Z	Clay
SW014/2	SW014/1	Carrier	17.73	365	2.930	4.580	2.801	1.200	450	F	PCC
SW014/1	SW014	Carrier	37.70	366	2.881	4.609	2.778	1.278	450	F	PCC
CH050	Sump 23	Channel	17.42	98	4.302	4.539	4.124	0.027	100x230	Z	ACO MultiDrain M100
CH051	Sump 23	Channel	21.60	57	4.352	4.582	3.976	0.020	100x230	Z	ACO MultiDrain M100
Sump 23	SW014	Carrier	4.20	91	3.740	4.530	3.694	0.790	225	Z	Clay
SW014	SW016	Carrier	43.40	154	2.778	4.612	2.497	1.384	450	B	PCC
SW016	SW026	Carrier	14.81	449	2.422	4.784	2.389	1.837	525	B	PCC
CH038	Sump 16	Channel	17.27	200	4.881	5.116	4.795	0.020	150x235	Z	ACO MultiDrain M150
CH037	Sump 16	Channel	14.32	199	4.964	5.199	4.892	0.072	150x235	Z	ACO MultiDrain M150
Sump 16	SW017/1	Carrier	2.08	80	4.386	5.176	4.360	0.565	225	Z	Clay
SW017/2	SW017/1	Carrier	24.00	130	3.950	5.159	3.765	0.984	225	F	Clay
SW017/1	SW017	Carrier	24.00	364	3.690	5.218	3.624	1.228	300	F	Clay
SW017	SW018	Carrier	24.00	364	3.624	5.242	3.558	1.138	300	F	Clay
CH035	Sump 15	Channel	12.42	106	4.979	5.209	4.862	0.020	100x230	Z	ACO MultiDrain M100
CH036	Sump 15	Channel	31.35	309	4.971	5.200	4.870	0.019	100x230	Z	ACO MultiDrain M100
Sump 15	SW018	Carrier	1.95	21	4.412	5.203	4.319	0.566	225	Z	Clay
SW018	SW019	Carrier	13.58	65	3.558	5.239	3.348	1.381	300	F	Clay
CH030	CH031	Channel	8.61	200	5.328	5.563	5.285	0.020	150x235	Z	ACO MultiDrain M150
CH031	CH032	Channel	1.42	200	5.285	5.586	5.278	0.086	150x235	Z	ACO MultiDrain M150
CH032	CH033	Channel	12.71	200	5.233	5.566	5.169	0.073	200x290	Z	ACO MultiDrain M200
CH033	CH034	Channel	1.84	200	5.169	5.591	5.160	0.162	200x290	Z	ACO MultiDrain M200
CH034	Sump 14	Channel	7.64	200	5.104	5.559	5.066	0.195	200x290	Z	ACO MultiDrain M200
Sump 14	SW019	Carrier	20.72	505	4.266	5.564	4.225	0.988	300	F	Clay
SW019	SW022	Carrier	25.52	170	3.273	5.244	3.123	1.596	375	F	PCC
CH041	Sump 18	Channel	39.59	200	4.600	4.830	4.402	0.020	100x230	Z	ACO MultiDrain M100
Sump 18	SW020	Carrier	4.38	55	4.125	4.915	4.045	0.640	150	Z	Clay
SW020/2	SW020/1	Carrier	16.89	214	3.410	4.910	3.331	1.200	300	F	Clay
SW020/1	SW020	Carrier	24.00	214	3.331	4.967	3.219	1.336	300	F	Clay
SW020	SW021	Carrier	23.92	154	3.219	4.994	3.064	1.475	300	F	Clay
CH040	Sump 17	Channel	23.08	130	4.612	4.912	4.504	0.020	100x230	Z	ACO MultiDrain M100
CH039	Sump 17	Channel	12.52	42	4.800	4.930	4.504	0.020	100x130	Z	ACO MultiDrain M100
Sump 17	SW021	Carrier	4.19	47	4.504	4.915	4.415	0.261	150	Z	Clay
SW021	SW022	Carrier	34.74	76	3.064	4.992	2.607	1.628	300	F	Clay
SW022	SW026	Carrier	19.00	127	2.457	5.142	2.307	2.235	450	B	PCC
CH029	Sump 13	Channel	40.04	80	5.189	5.474	4.689	0.500	150x285	Z	ACO MultiDrain M150
CH023	CH024	Channel	5.05	1000	4.555	4.840	4.550	0.020	150x285	Z	ACO MultiDrain M150
CH024	CH025	Channel	5.66	1000	4.550	4.845	4.544	0.030	150x285	Z	ACO MultiDrain M150
CH025	CH026	Channel	5.28	1000	4.544	4.863	4.539	0.054	150x285	Z	ACO MultiDrain M150
CH026	CH027	Channel	4.98	1000	4.539	4.893	4.534	0.089	150x285	Z	ACO MultiDrain M150
CH027	CH028	Channel	5.07	1000	4.534	4.927	4.529	0.128	150x285	Z	ACO MultiDrain M150
CH028	Sump 13	Channel	7.22	1000	4.529	4.971	4.522	0.177	150x285	Z	ACO MultiDrain M150
Sump 13	SW026	Carrier	1.50	26	4.205	5.032	4.148	0.602	225	Z	Clay
SW033/2	SW026	Carrier	7.80	177	3.700	5.010	3.656	1.160	150	Z	Clay
SW033/1	SW033	Carrier	4.04	202	2.222	5.059	2.202	2.087	750	B	PCC
SW032	RW Hanesting	Carrier	4.78	37	3.745	5.442	3.616	1.322	375	F	PCC
SW029	SW030	Carrier	27.90	349	3.669	5.471	3.589	1.352	450	F	PCC
SW030	SW031	Carrier	61.25	171	3.589	5.450	3.231	1.411	450	F	PCC
SW031	RW Harvesting	Carrier	25.34	243	3.231	5.347	3.127	1.666	450	B	PCC
RW Harvesting	SW033/1	Carrier	7.36	323	3.127	5.378	3.104	1.801	450	B	PCC
SW033/1	SW033	Carrier	13.15	323	3.104	5.308	3.063	1.754	450	B	PCC
SW033	Petrol Interceptor	Carrier	3.34	167	2.202	5.090	2.182	2.138	750	B	PCC
Petrol Interceptor	Att Tank	Carrier	2.73	273	2.183	5.115	2.173	2.182	750	B	PCC
SW035/1	SW035/2	Carrier	14.04	54	3.060	5.111	2.800	1.901	150	B	Clay
CH001	Sump 1	Channel	22.82	200	4.843	5.023	4.729	0.020	100x180	Z	ACO MultiDrain M100
Sump 1	SW035/2	Carrier	1.55	31	3.979	5.047	3.929	0.918	150	Z	Clay
SW035/2	SW035/3	Carrier	10.68	63	2.800	5.097	2.630	2.147	150	B	Clay
CH002	Sump 2	Channel	10.26	200	4.885	5.015	4.834	0.020	100x130	Z	ACO MultiDrain M100
CH003	Sump 2	Channel	5.59	200	4.977	5.107	4.949	0.020	100x130	Z	ACO MultiDrain M100
Sump 2	SW035/3	Carrier	3.79	84	4.034	5.081	3.989	0.897	150	Z	Clay
CH004	Sump 3	Channel	9.07	201	4.968	5.148	4.923	0.020	100x180	Z	ACO MultiDrain M100
CH005	Sump 3	Channel	7.98	100	5.149	5.279	5.069	0.020	100x130	Z	ACO MultiDrain M100
Sump 3	SW035/3	Carrier	4.35	31	4.123	5.193	3.982	0.920	150	Z	Clay
SW035/3	SW035	Carrier	37.15	206	2.480	5.139	2.300	2.359	300	B	Clay
CH006	Sump 4	Channel	28.33	200	5.041	5.271	4.899	0.020	100x230	Z	ACO MultiDrain M100
CH007	Sump 4	Channel	8.70	200	5.283	5.413	5.239	0.020	100x130	Z	ACO MultiDrain M100
Sump 4	SW035	Carrier	1.50	47	4.099	5.400	4.067	1.151	150	F	Clay

PIPE SCHEDULE											
SETOUT POINTS		Conduit Type	Length (m)	Slope (1:X)	USIL (m)	USCL (m)	DSIL (m)	US DEPTH (m)	PIPE DIAMETER (mm)	BEDDING CLASS	TYPE
FROM	TO										
SW035	SW036	Carrier	36.41	240	2.300	5.459	2.148	2.859	300	B	Clay
CH014	Sump 8	Channel	21.09	200	4.887	5.117	4.782	0.020	100x230	Z	ACO MultiDrain M100
CH015	Sump 8	Channel	20.11	200	4.683	4.813	4.582	0.020	100x130	Z	ACO MultiDrain M100
Sump 8	SW036/1	Carrier	3.24	48	3.982	4.998	3.914	0.866	150	Z	Clay
SW036/1	SW036/2	Carrier	17.85	74	3.634	5.049	3.392	1.190	225	F	Clay
SW036/2	SW036	Carrier	13.26	40	3.392	4.927	3.060	1.310	225	F	Clay
CH016	Sump 9	Channel	26.09	200	4.602	4.887	4.472	0.025	100x280	Z	ACO MultiDrain M100
CH017	Sump 9	Channel	12.83	190	4.417	4.812	4.349	0.285	100x130	Z	ACO MultiDrain M100
Sump 9	SW036	Carrier	6.62	53	4.027	4.848	3.902	0.671	150	Z	Clay
SW036	SW040	Carrier	18.29	398	2.078	4.995	2.032	2.467	450	B	PCC
CH011	Sump 6	Channel	29.29	201	4.990	5.270	4.844	0.065	150x235	Z	ACO MultiDrain M150
CH012	Sump 6	Channel	20.03	200	4.980	5.215	4.880	0.100	150x235	Z	ACO MultiDrain M150
Sump 6	SW038	Carrier	1.15	14	4.436	5.226	4.354	0.565	225	Z	Clay
SW038	SW038/1	Carrier	42.38	245	3.758	5.258	3.585	1.200	300	F	Clay
CH013	Sump 7	Channel	23.75	200	4.967	5.197	4.848	0.020	100x230	Z	ACO MultiDrain M100
Sump 7	SW038/1	Carrier	1.17	39	4.848	5.800	4.818	0.802	150	Z	Clay
SW038/1	SW039	Carrier	22.05	210	3.585	5.245	3.480	1.360	300	F	Clay
CH008	CH009	Channel	20.89	167	5.295	5.414	5.170	0.009	100x130	Z	ACO MultiDrain M100
CH009	Sump 5	Channel	18.64	114	5.170	5.320	5.006	0.040	100x130	Z	ACO MultiDrain M100
CH010	Sump 5	Channel	19.91	152	5.087	5.267	4.956	0.020	100x180	Z	ACO MultiDrain M100
Sump 5	SW039	Carrier	1.51	60	4.534	5.366	4.909	0.567	225	Z	Clay
SW039	SW040	Carrier	4.43	221	3.405	5.299	3.385	1.519	375	F	PCC
SW040	Oil Interceptor	Carrier	3.32	400	2.032	5.215	2.024	2.733	450	B	PCC
Oil Interceptor	SW041	Carrier	17.92	398	2.024	5.211	1.979	2.737	450	B	PCC
SW041	SW042	Carrier	9.96	369	1.979	5.426	1.952	2.997	450	B	PCC
SW042	SW043	Carrier	20.39	400	1.952	4.948	1.901	2.546	450	B	PCC

100  
0 10  
Millimetres



**ABBREVIATION**  
SW023 - SURFACE WATER MANHOLE  
CH034 - SETTING OUT POINT / SUMP UNIT  
EMH-197 - EXISTING MANHOLE  
DATCT - DIGITAL AIR TRAFFIC CONTROL TOWER

**DO NOT SCALE**

**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

**CONSTRUCTION**

- LIVE SERVICES CRITICAL TO AIRPORT OPERATIONS (EG HV, AGL, PERI CABLES, FIREMAIN) TO BE PROTECTED DURING WORKS.
- AIRPORT OPERATIONS RELATED HEIGHT RESTRICTIONS TO BE OBSERVED WHEN OPERATING TALL PLANT SUCH AS CRANES.
- DLR EXCLUSION ZONE REQUIREMENTS TO BE OBSERVED DURING EXCAVATION.
- RISK OF HITTING OR DISCOVERING UXO - SEE SITE SPECIFIC UXO REPORTS
- CONTAMINATED SOIL AND ASBESTOS WITHIN BURIED SERVICES OR IN GROUND - SEE ENVIRONMENTAL REPORTS
- RISK OF COLLISIONS WITH PEDESTRIANS AND VEHICLES IN LIVE AIRPORT ENVIRONMENT AND PUBLIC ACCESS ROAD

**MAINTENANCE/CLEANING**

- AIRPORT OPERATIONS RELATED HEIGHT RESTRICTIONS TO BE OBSERVED WHEN OPERATING TALL PLANT SUCH AS CRANES.
- RISK OF COLLISIONS WITH PEDESTRIANS AND VEHICLES IN A LIVE AIRPORT ENVIRONMENT AND PUBLIC ACCESS ROAD.

**DECOMMISSIONING/DEMOLITION**

- SEE CONSTRUCTION RISKS ABOVE.

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

**NOTES:**

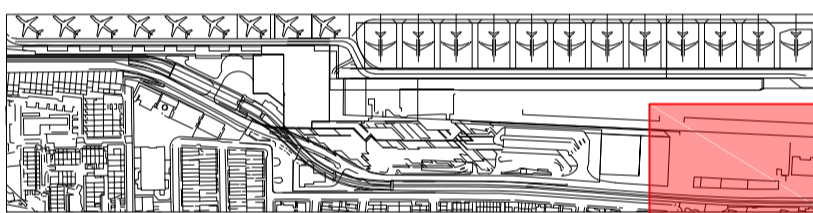
1. EXISTING INFORMATION BASED ON:
  - MSA DRAWING SURVEY DRAWING REF 4563-T DATED 22/04/2016
  - TECHNIC BURIED SERVICES DRAWING REF P17189-TEC-SUT-00-DR-AC\_15\_15\_06-0001 DATED 10/04/2017
2. STATUS AND EXTENT OF ALL SERVICES (RECORDED AND UNRECORDED) TO BE DETERMINED BY FURTHER SURVEY AND CONSULTATION WITH RELEVANT UTILITY OWNER.
3. ALL MANHOLE COVERS AND GRATING TO BE D400 RATED.
4. ALL RETAINED EXISTING PITS AND MANHOLES TO BE ADJUSTED AND/OR REINFORCED TO SUIT LEVELS AND LOADING WHERE REQUIRED.
5. PIPES TO BE ENCLOSED WITH 150 THICK CONCRETE SURROUND AT LOCATIONS WHERE COVER IN HARDSTAND AREAS ARE LESS THAN 900 AND AT LOCATION WHERE COVER IS LESS THAN 1200 ALONG HARTMANN ROAD.
6. CONSULTATION WITH THAMES WATER REQUIRED TO AGREE DISCHARGE RATES AND CONNECTION INTO EXISTING THAMES WATER NETWORK
7. ALL CHANNEL DRAINS TO BE CLASS D400.
8. MODIFICATIONS TO SERVICES SHOWN ARE SUBJECT TO REVIEW AND APPROVAL BY UTILITY OWNERS.
9. WHERE MODIFICATION TO EXISTING SURFACE LEVELS ARE MADE THE CONTRACTOR IS TO PROVIDE ADEQUATE SURFACE WATER DRAINAGE.
10. REFER A429-ATK-C-12-XXX-DR-GA-800-003 FOR DETAILS FROM DATCT-SW001 TO DATCT-SW002
11. PIPE CONNECTING DATCT SW002 AND SW020 TO SUPERSEDE CONNECTION BETWEEN DATCT SW002 TO DSC-SW012 IN DRAWING A429-ATK-C-12-XXX-DR-GA-800-003

**LEGEND:**

- |                  |                                      |
|------------------|--------------------------------------|
| — 300 SW SEWER — | EXISTING 300mm Ø SW SEWER PIPE       |
| — 225 SW SEWER — | EXISTING 225mm Ø SW SEWER PIPE       |
| — SW —           | EXISTING SURFACE WATER PIPE          |
| — SW —           | PROPOSED SURFACE WATER PIPE          |
| — SW CHN —       | PROPOSED SURFACE WATER CHANNEL DRAIN |
| — KD —           | PROPOSED KERB DRAIN                  |
| — —              | PROPOSED SITE BOUNDARY               |
| →                | FLOW DIRECTION                       |
| □                | PROPOSED FUEL INTERCEPTOR            |
| □                | PROPOSED ATTENUATION TANK            |
| ○                | PROPOSED ACO DRAIN SUMP UNIT         |
| ○                | PROPOSED MANHOLE                     |

**KEY PLAN**

**ZONE:**



**PRIVATE**  
**NOT FOR CONSTRUCTION**

Rev.	Date	Description	By	Chk'd	App'd
03	02/03/18	STAGE 3 ISSUE	SK	DK	SJP
02	26/01/18	FOR INFORMATION	SK	DK	PH
01	08/12/17	FOR INFORMATION	SK	DK	PH

Drawing Suitability **SUITABLE FOR INFORMATION** Status **S2**

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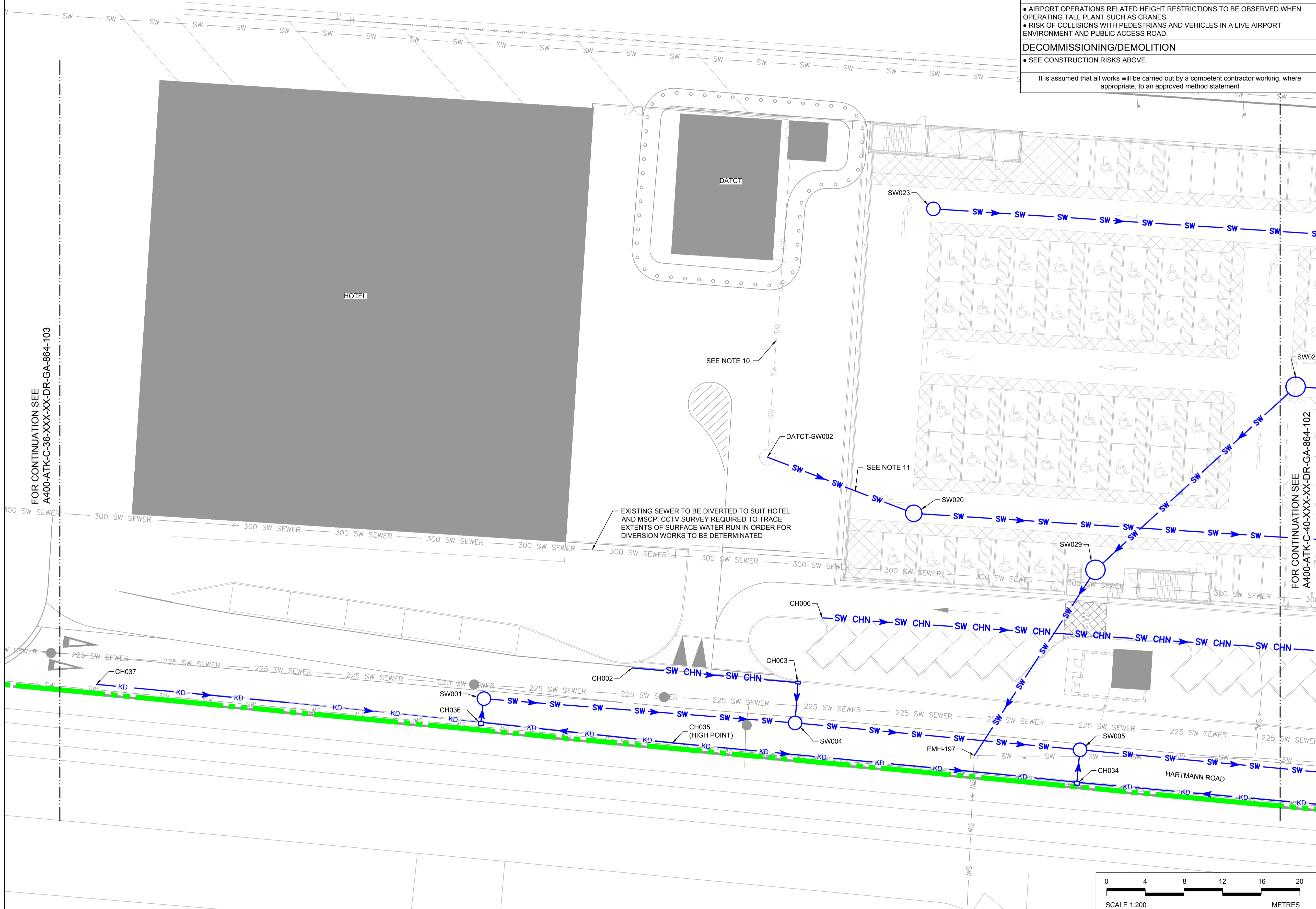
Client **London City Airport**  
Get closer.

Project Title **CITY AIRPORT DEVELOPMENT  
PROGRAMME (CADP) - DOCKSIDE**

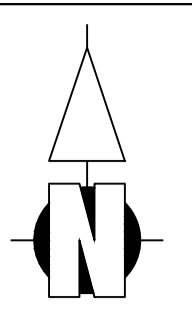
Drawing Title **STAGE 3 DOCKSIDE  
PROPOSED SURFACE WATER DRAINAGE  
LAYOUT (1 OF 12)**

Scale	Designed	Drawn	Checked	Authorised
1:200 A1	SK	AG	DK	SJP
Original Size	Date	Date	Date	Date
A1	08/12/2017	08/12/2017	08/12/2017	08/12/2017

Drawing Number	Proj. Code	Orig	Dis	Zone	Level	Title	Type	Sub	Series / Num	Rev	Status
A400-ATK-C-40-XXX-XX-DR-GA-864-101										03	S2



100  
0  
10  
Millimetres



ATTENUATION TANK SCHEDULE				
TANK NUMBER	STRUCTURE TYPE	AREA in Sq.m	DIMENSION (m)	DEPTH (m)
ATT.01	CELLULAR STORAGE	675	62.5x10.8	1.2

**ABBREVIATION**  
SW024 - PROPOSED SURFACE WATER MANHOLE  
CH038 - PROPOSED SETTING OUT POINT/SUMP UNIT  
ATT - ATTENUATION TANK

**DO NOT SCALE**

**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**  
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

**CONSTRUCTION**

- LIVE SERVICES CRITICAL TO AIRPORT OPERATIONS (EG HV, AGL, PERI CABLES, FIREMAIN) TO BE PROTECTED DURING WORKS.
- AIRPORT OPERATIONS RELATED HEIGHT RESTRICTIONS TO BE OBSERVED WHEN OPERATING TALL PLANT SUCH AS CRANES.
- DLR EXCLUSION ZONE REQUIREMENTS TO BE OBSERVED DURING EXCAVATION.
- RISK OF HITTING OR DISCOVERING UXO - SEE SITE SPECIFIC UXO REPORTS
- CONTAMINATED SOIL AND ASBESTOS WITHIN BURIED SERVICES OR IN GROUND - SEE ENVIRONMENTAL REPORTS
- RISK OF COLLISIONS WITH PEDESTRIANS AND VEHICLES IN LIVE AIRPORT ENVIRONMENT AND PUBLIC ACCESS ROAD

**MAINTENANCE/CLEANING**

- AIRPORT OPERATIONS RELATED HEIGHT RESTRICTIONS TO BE OBSERVED WHEN OPERATING TALL PLANT SUCH AS CRANES.
- RISK OF COLLISIONS WITH PEDESTRIANS AND VEHICLES IN A LIVE AIRPORT ENVIRONMENT AND PUBLIC ACCESS ROAD.

**DECOMMISSIONING/DEMOLITION**

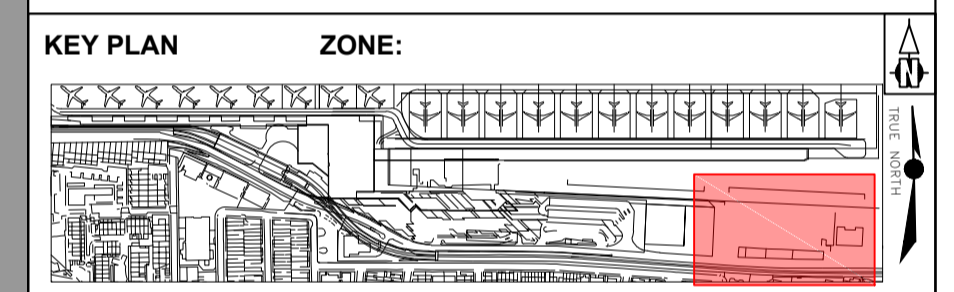
- SEE CONSTRUCTION RISKS ABOVE.

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

- NOTES:**
- EXISTING INFORMATION BASED ON:
    - MSA DRAWING SURVEY DRAWING REF 4563-T DATED 22/04/2016
    - TECHNIC BURIED SERVICES DRAWING REF P17189-TEC-SUT-00-DR-AC\_15\_15\_06-0001 DATED 10/04/2017
  - STATUS AND EXTENT OF ALL SERVICES (RECORDED AND UNRECORDED) TO BE DETERMINED BY FURTHER SURVEY AND CONSULTATION WITH RELEVANT UTILITY OWNER.
  - ALL MANHOLE COVERS AND GRATING TO BE D400 RATED.
  - ALL RETAINED EXISTING PITS AND MANHOLES TO BE ADJUSTED AND/OR REINFORCED TO SUIT LEVELS AND LOADING WHERE REQUIRED.
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  - ALL CHANNEL DRAINS TO BE CLASS D400.
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  - WHERE MODIFICATION TO EXISTING SURFACE LEVELS ARE MADE THE CONTRACTOR IS TO PROVIDE ADEQUATE SURFACE WATER DRAINAGE.

**LEGEND:**

— 300 SW SEWER	EXISTING 300mm Ø SW SEWER PIPE
— 225 SW SEWER	EXISTING 225mm Ø SW SEWER PIPE
— SW	EXISTING SURFACE WATER PIPE
— SW	PROPOSED SURFACE WATER PIPE
— SW CHN	PROPOSED SURFACE WATER CHANNEL DRAIN
— KD	PROPOSED KERB DRAIN
—	PROPOSED SITE BOUNDARY
➔	FLOW DIRECTION
▭	PROPOSED FUEL INTERCEPTOR
▭	PROPOSED ATTENUATION TANK
○	PROPOSED ACO DRAIN SUMP UNIT
○	PROPOSED MANHOLE



**PRIVATE**  
**NOT FOR CONSTRUCTION**

03	02/03/18	STAGE 3 ISSUE	SK	DK	SJP
02	26/01/18	FOR INFORMATION	SK	DK	PH
01	08/12/17	FOR INFORMATION	SK	DK	PH
Rev.	Date	Description	By	Chk'd	App'd

Drawing Suitability      Status  
**SUITABLE FOR INFORMATION**      **S2**

**ATKINS**      Euston Tower  
286 Euston Road  
London  
NW1 3AT

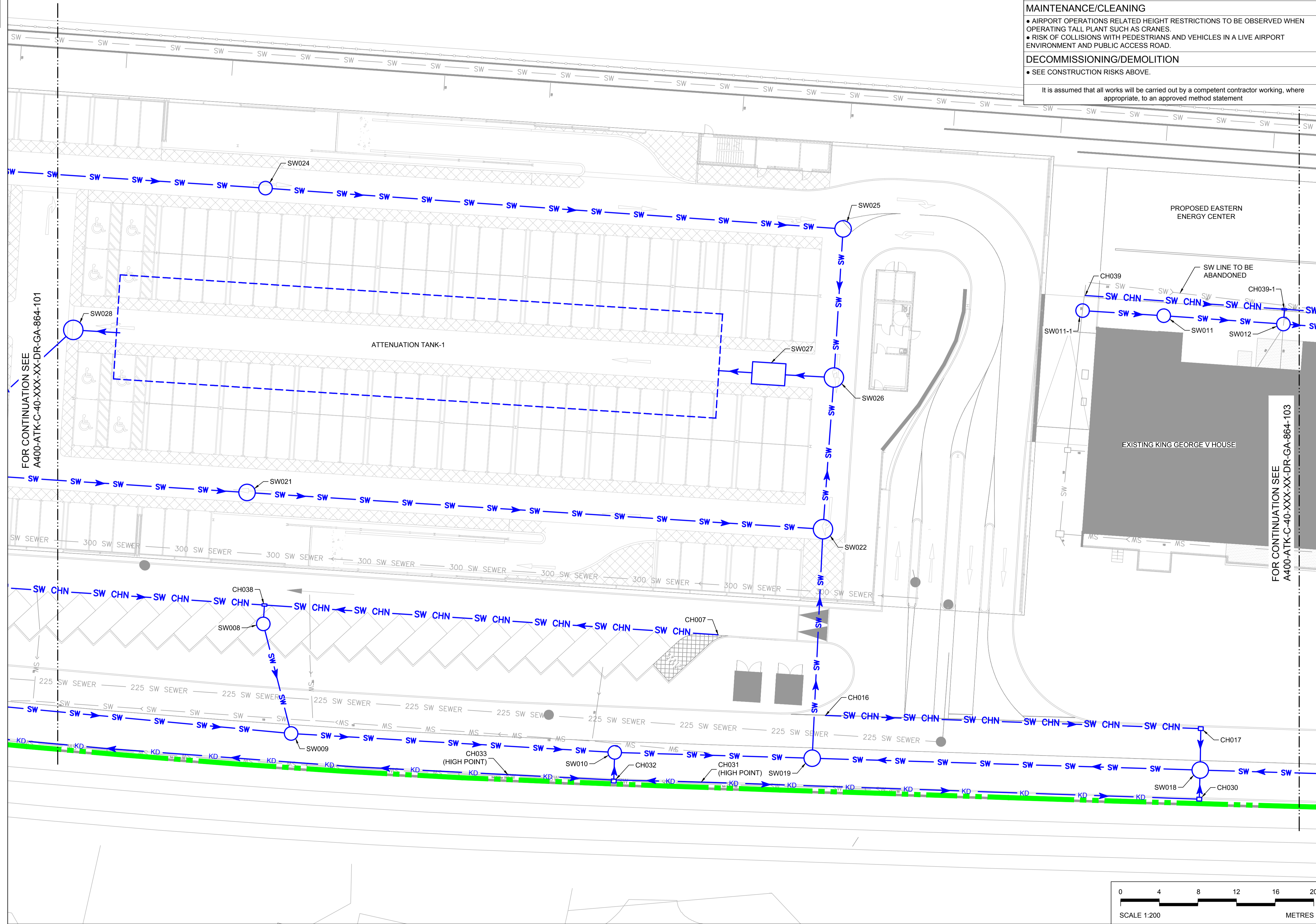
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Project Title  
**CITY AIRPORT DEVELOPMENT  
PROGRAMME (CADP) - DOCKSIDE**

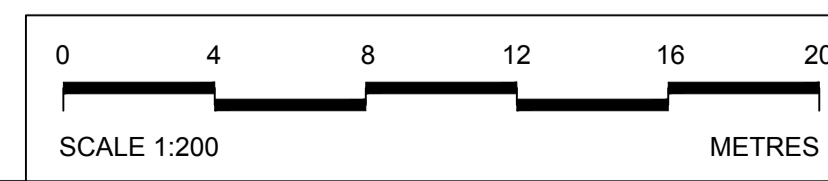
Drawing Title  
**STAGE 3 DOCKSIDE  
PROPOSED SURFACE WATER DRAINAGE  
LAYOUT (2 OF 12)**

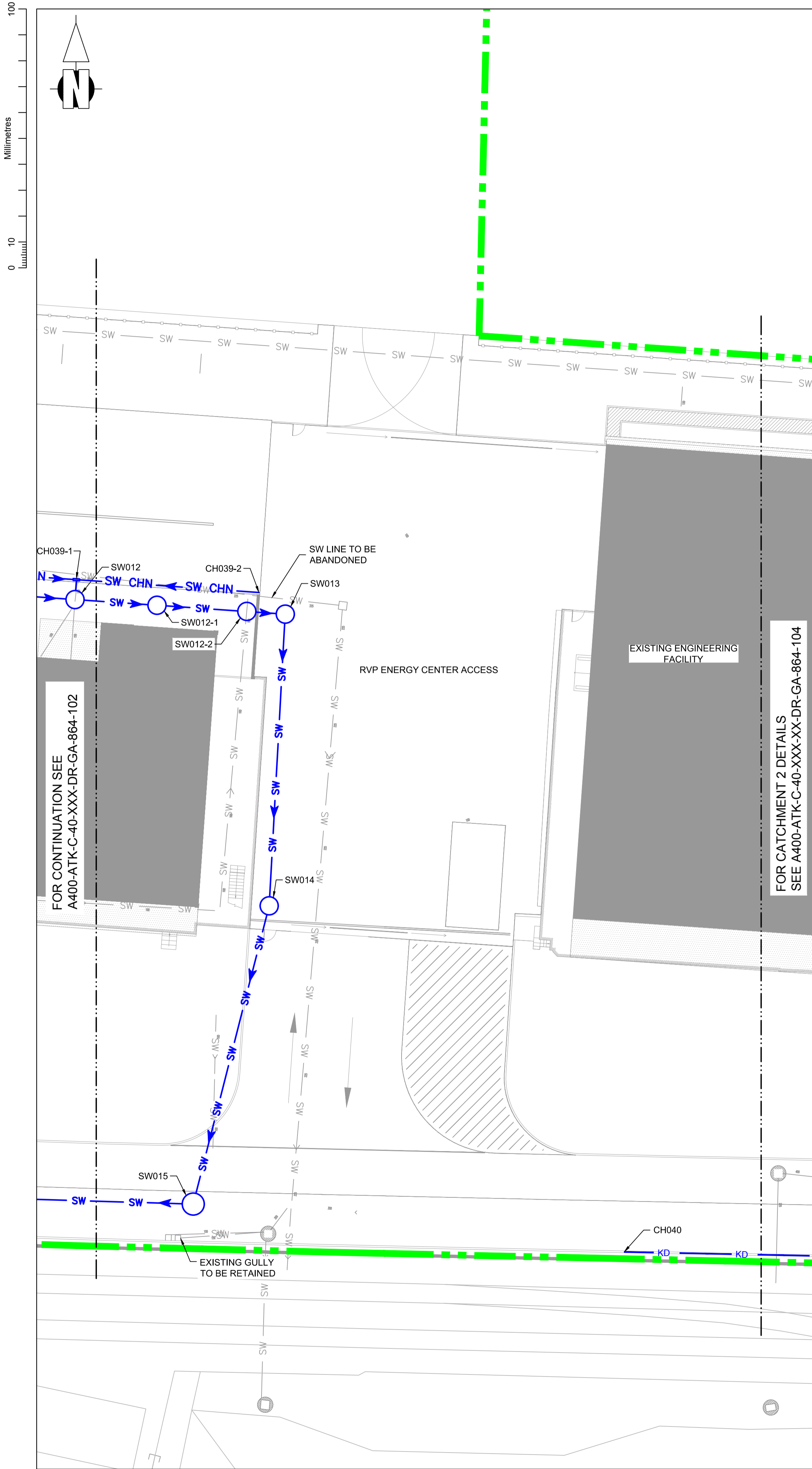
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Drawing Number										
Proj. Code	Orig	Dis	Zone	Level	Title	Type	Sub	Series / Num	Rev	Status
A400-ATK-C-40-XXX-XX-DR-GA-864-102									03	S2



FOR CONTINUATION SEE  
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FOR CONTINUATION SEE  
A400-ATK-C-40-XXX-XX-DR-GA-864-103





PIPE SCHEDULE											
SETOUT POINTS		CONDUIT TYPE	LENGTH (m)	SLOPE (1:X)	USIL (m)	USCL (m)	DSIL (m)	US COVER DEPTH (m)	CONDUIT SIZE(mm)	BEDDING CLASS	TYPE
FROM	TO										
SW001	SW004	CARRIER	32.326	245	2.689	4.175	2.557	1.186	300	A	PCC
CH002	CH003	CHANNEL DRAIN	17.220	1076	4.009	4.319	3.993	-	200x340	-	ACO M200D
CH003	SW004	CARRIER	4.173	100	3.599	4.303	3.557	0.554	150	A	CLAY
SW004	SW005	CARRIER	29.626	245	2.557	4.198	2.436	1.341	300	B	PCC
SW005	SW009	CARRIER	45.086	245	2.436	4.204	2.252	1.468	300	B	PCC
CH006	CH038	CHANNEL DRAIN	68.393	1103	4.214	4.524	4.152	-	200x340	-	ACO M200D
CH007	CH038	CHANNEL DRAIN	47.661	350	4.288	4.598	4.152	-	200x340	-	ACO M200D
CH038	SW008	CARRIER	1.962	166	3.760	3.910	3.748	0.712	225	A	CLAY
SW008	SW009	CARRIER	13.597	60	3.037	4.462	2.811	1.125	300	B	PCC
SW009	SW010	CARRIER	33.566	404	2.102	4.244	2.019	1.692	450	F	PCC
SW010	SW019	CARRIER	20.457	400	2.019	4.244	1.968	1.775	450	F	PCC
CH039	CH039-1	CHANNEL DRAIN	24.189	69	5.474	5.604	5.126	-	100x130	-	ACO M100D
CH039-2	CH039-1	CHANNEL DRAIN	14.139	140	5.225	5.355	5.124	-	100x130	-	ACO M100D
CH039-1	SW012	CARRIER	1.539	225	4.621	5.256	4.609	0.485	150	A	CLAY
SW011-1	SW011	CARRIER	8.423	110	4.029	5.398	3.952	1.144	225	B	CLAY
SW011	SW012	CARRIER	12.421	110	3.952	5.326	3.839	1.149	225	B	CLAY
SW012	SW012-1	CARRIER	6.348	247	3.839	5.296	3.801	1.232	225	F	CLAY
SW012-1	SW012-2	CARRIER	9.931	247	3.813	5.294	3.744	1.258	225	F	CLAY
SW012-2	SW013	CARRIER	2.979	247	3.744	5.304	3.711	1.294	225	F	CLAY
SW013	SW014	CARRIER	23.278	35	3.684	5.130	3.108	1.102	225	B	CLAY
SW014	SW015	CARRIER	23.081	149	2.790	4.290	2.635	1.125	375	B	PCC
SW015	SW018	CARRIER	17.754	169	2.560	4.210	2.455	1.200	450	F	PCC
CH016	CH017	CHANNEL DRAIN	38.896	447	4.045	4.355	3.958	-	200x340	-	ACO M200D
CH017	SW018	CARRIER	4.293	171	3.558	4.268	3.533	0.485	225	A	CLAY
SW018	SW019	CARRIER	40.194	390	2.380	4.190	2.277	1.285	525	F	PCC
SW019	SW022	CARRIER	23.733	126	1.685	4.253	1.496	1.818	750	F	PCC
SW020	SW021	CARRIER	57.649	310	3.800	5.524	3.614	1.425	375	B	PCC
SW021	SW022	CARRIER	59.763	310	3.614	5.552	3.421	1.611	375	B	PCC
SW022	SW026	CARRIER	15.736	550	1.496	5.544	1.467	3.354	750	B	PCC
SW023	SW024	CARRIER	57.538	170	4.105	5.519	3.767	1.270	225	B	CLAY
SW024	SW025	CARRIER	59.961	239	3.692	5.545	3.441	1.608	300	B	PCC
SW025	SW026	CARRIER	15.412	249	3.216	5.451	3.154	2.009	375	B	PCC
SW026	SW027	CARRIER	5.098	464	1.450	5.494	1.439	3.400	750	B	PCC
SW027	ATT U/S	CARRIER	3.517	350	1.439	5.433	1.428	3.159	750	B	PCC
ATT D/S	SW028	CARRIER	4.832	499	1.300	5.524	1.291	3.411	750	B	PCC
SW028	SW029	CARRIER	28.002	491	1.291	5.487	1.234	3.784	525	B	PCC
SW029	EMH-197	CARRIER	22.710	247	1.234	5.560	1.142	4.066	300	A	PCC
DATCT-SW002	SW020	CARRIER	16.231	85	3.990	4.444	3.800	0.721	375	A	PCC
	SW018	CARRIER	3.007	168	3.268	4.261	3.250	0.843	150	A	CLAY
CH031	CH030	KERB DRAIN	52.655	863	3.840	4.344	3.779	-	150x480	-	ACO-HB480
CH031	CH032	KERB DRAIN	9.920	342	3.840	4.344	3.811	-	150x480	-	ACO-HB480
CH032	SW010	CARRIER	2.848	154	3.299	4.292	3.280	0.843	150	A	CLAY
CH033	CH032	KERB DRAIN	10.115	3372	3.814	4.318	3.811	-	150x480	-	ACO-HB480
CH033	CH034	KERB DRAIN	69.610	444	3.814	4.318	3.733	-	150x480	-	ACO-HB480
CH035	CH034	KERB DRAIN	33.479	180	3.923	4.427	3.737	-	150x480	-	ACO-HB480
CH034	SW005	CARRIER	3.383	174	3.226	4.213	3.207	0.837	150	A	CLAY
CH035	CH036	KERB DRAIN	19.971	143	3.923	4.427	3.783	-	150x480	-	ACO-HB480
CH037	CH036	KERB DRAIN	39.768	172	4.014	4.517	3.783	-	150x480	-	ACO-HB480
CH036	SW001	CARRIER	2.384	150	3.247	4.265	2.384	0.868	150	A	CLAY

MANHOLE SCHEDULE						
SETOUT POINTS	COORDINATES		MH TYPE	MH SIZE (mm)	MH COVER LOAD CLASS	NOTE
	E(m)	N(m)				
SW001	542738.567	180166.607	2	1200	D400	-
SW004	542770.795	180164.099	2	1200	D400	-
SW005	542800.290	180161.319	2	1200	D400	-
SW008	542842.296	180168.474	2	1200	D400	-
SW009	542845.181	180157.130	2	1500	D400	-
SW010	542845.181	180157.130	2	1500	D400	-
SW011-1	542927.132	180200.897	2	1200	D400	-
SW011	542935.539	542935.539	2	1200	D400	-
SW012	542948.930	180199.509	2	1200	D400	-
SW012-1	542954.262	180199.069	2	1200	D400	-
SW013	542964.169	180198.381	2	1200	D400	-
SW014	542962.930	180175.851	2	1500	D400	-
SW015	542957.059	180152.815	2	1500	D400	-
SW018	542939.314	180153.343	2	1500	D400	-
SW019	542899.138	180154.570	2	1800	D400	-
SW020	542783.082	180185.795	2	1500	D400	-
SW021	542840.611	180182.074	2	1500	D400	-
SW022	542900.253	180178.277	1	1800	D400	-
SW023	542785.110	180217.325	2	1200	D400	-
SW024	542842.526	180213.580	2	1200	D400	-
SW025	542902.338	180209.355	2	1500	D400	-
SW026	542901.389	180193.972	1	1800	D400	-
SW027	542896.299	180194.261	1	"2700 DIA, 3450 LENGTH"	-	FUEL INTERCEPTOR. MODEL 460C1/SC
SW028	542822.622	180198.905	1	1800	D400	HYDROBRAKE DESIGN FLOW: 10.6lps HEAD: 2.070m
SW029	542801.893	180179.945	1	1500	D400	-
CH002	542753.934	180169.799	-	-	D400	-
CH003	542771.085	180168.262	-	500x235x790	D400	ACO M200D SUMP UNIT
CH006	542773.597	180174.979	-	-	D400	-
CH007	542889.398	180167.347	-	-	D400	-
CH016	542900.504	180158.999	-	-	D400	-
CH017	542939.377	180157.636	-	500x235x790	D400	ACO M200D SUMP UNIT
CH030	542939.217	180150.338	-	500x390x1025	D400	ACO KERB SUMP UNIT
CH031	542887.648	180152.099	-	-	D400	HIGH POINT
CH032	542878.590	180152.324	-	500x390x1025	D400	ACO KERB SUMP UNIT
CH033	542867.628	180152.867	-	-	D400	HIGH POINT
CH034	542799.970	180157.951	-	500x390x1025	D400	ACO KERB SUMP UNIT
CH035	542758.115	180162.034	-	-	D400	HIGH POINT
CH036	542738.262	180164.046	-	500x390x1025	D400	ACO KERB SUMP UNIT
CH037	542698.448	180168.095	-	-	D400	HIGH POINT
CH038	542842.420	180170.431	-	500x235x790	D400	ACO M200D SUMP UNIT
CH039	542923.907	180202.729	-	-	D400	-
CH039-2	542962.141	180200.060	-	-	D400	-
CH039-1	542948.037	180201.045	-	500x135x635	D400	ACO M100D SUMP UNIT

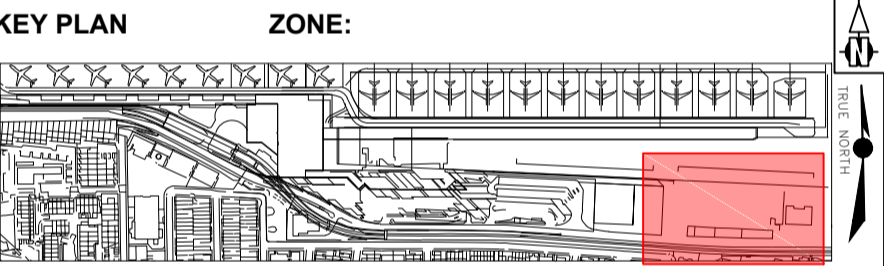
DO NOT SCALE

ABBREVIATION

SW012 - PROPOSED SURFACE WATER MANHOLE  
CH030 - PROPOSED SETTING OUT POINT/SUMP UNIT  
ATT - ATTENUATION TANK  
US - UPSTREAM  
DS - DOWNSTREAM  
IL - INVERT LEVEL  
CL - COVER LEVEL

- NOTES:
- EXISTING INFORMATION BASED ON:
    - MSA DRAWING SURVEY DRAWING REF 4563-T DATED 22/04/2016
    - TECHNIC BURIED SERVICES DRAWING REF P17189-TEC-SUT-00-DR-AC\_15\_15\_06-0001 DATED 10/04/2017
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- LEGEND:
- 300 SW SEWER
  - 225 SW SEWER
  - EXISTING SURFACE WATER PIPE
  - SW
  - SW CHN
  - KD
  - PROPOSED SITE BOUNDARY
  - FLOW DIRECTION
  - PROPOSED FUEL INTERCEPTOR
  - PROPOSED ATTENUATION TANK
  - PROPOSED ACO DRAIN SUMP UNIT
  - PROPOSED MANHOLE



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03	02/03/18	STAGE 3 ISSUE	SK	DK	SJP
02	26/01/18	FOR INFORMATION	SK	DK	PH
01	08/12/17	FOR INFORMATION	SK	DK	PH
Rev.	Date	Description	By	Chk'd	App'd

Drawing Suitability

SUITABLE FOR INFORMATION

Status

S2

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London  
NW1 3AT

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Client

London City Airport  
Get closer.

Project Title

CITY AIRPORT DEVELOPMENT  
PROGRAMME (CADP) - DOCKSIDE

Drawing Title

STAGE 3 DOCKSIDE  
PROPOSED SURFACE WATER DRAINAGE  
LAYOUT (3 OF 12)

Scale	Designed	Drawn	Checked	Authorised
1:200	SK	AG	DK	SJP
Original Size	Date	Date	Date	Date
A1	08/12/2017	08/12/2017	08/12/2017	08/12/2017

Drawing Number

Proj. Code

Orig

Dia

Zone

Level

Title

Type

Sub

Series / Num

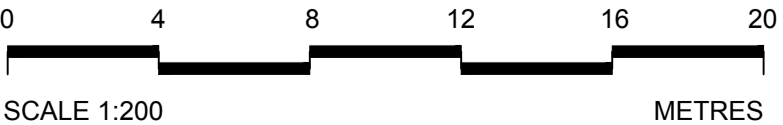
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Status

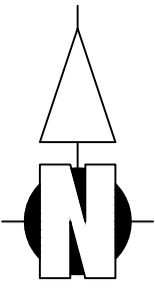
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Millimetres



#### ABBREVIATION

SW055 - SURFACE WATER MANHOLE  
CH072 - SETTING OUT POINT / SUMP UNIT

#### DO NOT SCALE

#### SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

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#### MAINTENANCE/CLEANING

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#### DECOMMISSIONING/DEMOLITION

- SEE CONSTRUCTION RISKS ABOVE.

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

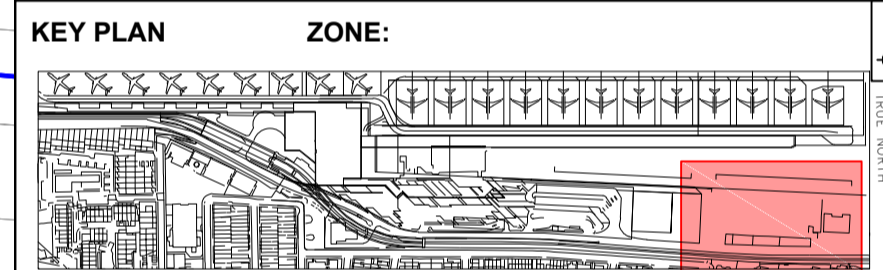
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#### LEGEND:

	EXISTING 300mm Ø SW SEWER PIPE
	EXISTING 225mm Ø SW SEWER PIPE
	EXISTING SURFACE WATER PIPE
	PROPOSED SURFACE WATER PIPE
	PROPOSED SURFACE WATER CHANNEL DRAIN
	PROPOSED KERB DRAIN
	PROPOSED SITE BOUNDARY
	FLOW DIRECTION
	PROPOSED FUEL INTERCEPTOR
	PROPOSED ATTENUATION TANK
	PROPOSED ACO DRAIN SUMP UNIT
	PROPOSED MANHOLE

#### KEY PLAN



**PRIVATE**  
**NOT FOR CONSTRUCTION**

Rev.	Date	Description	By	Chk'd	App'd
02	02/03/18	STAGE 3 ISSUE	SK	DK	SJP
01	08/12/17	FOR INFORMATION	SK	DK	PH

Drawing Suitability: **SUITABLE FOR INFORMATION** Status: **S2**

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Project Title: **CITY AIRPORT DEVELOPMENT PROGRAMME (CADP) - DOCKSIDE**

Drawing Title: **STAGE 3 DOCKSIDE PROPOSED SURFACE WATER DRAINAGE LAYOUT (4 OF 12)**

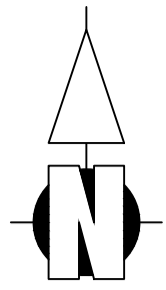
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STAGE 3 DOCKSIDE											
PROPOSED SURFACE WATER DRAINAGE											
LAYOUT (4 OF 12)											
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Drawing Number											
Proj. Code		Orig		Dis		Zone		Level		Title	
A400-ATK-C-40-XXX-XX-DR-GA-864-104										02	
Series / Num		Rev		Status							

0 4 8 12 16 20  
SCALE 1:200 METRES

FOR CATCHMENT 1 DETAILS REFER  
A400-ATK-C-40-XXX-XX-DR-GA-864-103

FOR CONTINUATION SEE  
A400-ATK-C-40-XXX-XX-DR-GA-864-105

100  
0 10  
Millimetres



ABBREVIATION

SW055 - SURFACE WATER MANHOLE  
CH072 - SETTING OUT POINT / SUMP UNIT

DO NOT SCALE

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

- LIVE SERVICES CRITICAL TO AIRPORT OPERATIONS (EG HV, AGL, PERI CABLES, FIREMAIN) TO BE PROTECTED DURING WORKS.
- AIRPORT OPERATIONS RELATED HEIGHT RESTRICTIONS TO BE OBSERVED WHEN OPERATING TALL PLANT SUCH AS CRANES.
- DLR EXCLUSION ZONE REQUIREMENTS TO BE OBSERVED DURING EXCAVATION.
- RISK OF HITTING OR DISCOVERING UXO - SEE SITE SPECIFIC UXO REPORTS
- CONTAMINATED SOIL AND ASBESTOS WITHIN BURIED SERVICES OR IN GROUND - SEE ENVIRONMENTAL REPORTS
- RISK OF COLLISIONS WITH PEDESTRIANS AND VEHICLES IN LIVE AIRPORT ENVIRONMENT AND PUBLIC ACCESS ROAD

MAINTENANCE/CLEANING

- AIRPORT OPERATIONS RELATED HEIGHT RESTRICTIONS TO BE OBSERVED WHEN OPERATING TALL PLANT SUCH AS CRANES.
- RISK OF COLLISIONS WITH PEDESTRIANS AND VEHICLES IN A LIVE AIRPORT ENVIRONMENT AND PUBLIC ACCESS ROAD.

DECOMMISSIONING/DEMOLITION

- SEE CONSTRUCTION RISKS ABOVE.

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

NOTES:

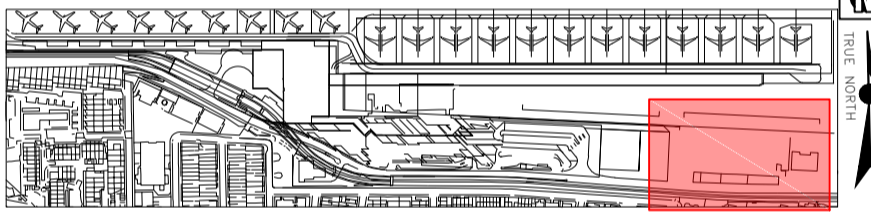
- EXISTING INFORMATION BASED ON:
  - MSA DRAWING SURVEY DRAWING REF 4563-T DATED 22/04/2016
  - TECHNIC BURIED SERVICES DRAWING REF P17189-TEC-SUT-00-DR-AC\_15\_15\_06-0001 DATED 10/04/2017
- STATUS AND EXTENT OF ALL SERVICES (RECORDED AND UNRECORDED) TO BE DETERMINED BY FURTHER SURVEY AND CONSULTATION WITH RELEVANT UTILITY OWNER.
- ALL MANHOLE COVERS AND GRATING TO BE D400 RATED.
- ALL RETAINED EXISTING PITS AND MANHOLES TO BE ADJUSTED AND/OR REINFORCED TO SUIT LEVELS AND LOADING WHERE REQUIRED.
- PIPES TO BE ENCLOSED WITH 150 THICK CONCRETE SURROUND AT LOCATIONS WHERE COVER IN HARDSTAND AREAS ARE LESS THAN 900 AND AT LOCATION WHERE COVER IS LESS THAN 1200 ALONG HARTMANN ROAD.
- CONSULTATION WITH THAMES WATER REQUIRED TO AGREE DISCHARGE RATES AND CONNECTION INTO EXISTING THAMES WATER NETWORK
- ALL CHANNEL DRAINS TO BE CLASS D400.
- MODIFICATIONS TO SERVICES SHOWN ARE SUBJECT TO REVIEW AND APPROVAL BY UTILITY OWNERS.
- WHERE MODIFICATION TO EXISTING SURFACE LEVELS ARE MADE THE CONTRACTOR IS TO PROVIDE ADEQUATE SURFACE WATER DRAINAGE.

LEGEND:

- |                |                                      |
|----------------|--------------------------------------|
| — 300 SW SEWER | EXISTING 300mm Ø SW SEWER PIPE       |
| — 225 SW SEWER | EXISTING 225mm Ø SW SEWER PIPE       |
| — SW           | EXISTING SURFACE WATER PIPE          |
| — SW           | PROPOSED SURFACE WATER PIPE          |
| — SW CHN       | PROPOSED SURFACE WATER CHANNEL DRAIN |
| — KD           | PROPOSED KERB DRAIN                  |
| —              | PROPOSED SITE BOUNDARY               |
| →              | FLOW DIRECTION                       |
| □              | PROPOSED FUEL INTERCEPTOR            |
| □              | PROPOSED ATTENUATION TANK            |
| ○              | PROPOSED ACO DRAIN SUMP UNIT         |
| ○              | PROPOSED MANHOLE                     |

KEY PLAN

ZONE:



**PRIVATE**  
**NOT FOR CONSTRUCTION**

02	02/03/18	STAGE 3 ISSUE	SK	DK	SJP
01	08/12/17	FOR INFORMATION	SK	DK	PH
Rev.	Date	Description	By	Chk'd	App'd

Drawing Suitability **SUITABLE FOR INFORMATION** Status **S2**

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London  
NW1 3AT

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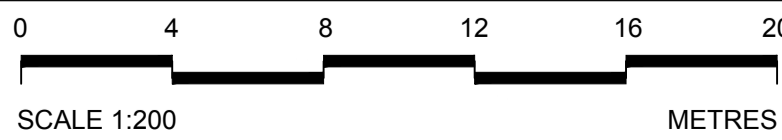
**London City Airport**  
Get closer.

Project Title  
**CITY AIRPORT DEVELOPMENT  
PROGRAMME (CADP) - DOCKSIDE**

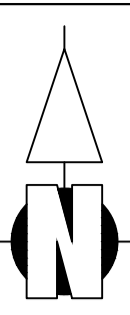
Drawing Title  
**STAGE 3 DOCKSIDE  
PROPOSED SURFACE WATER DRAINAGE  
LAYOUT (5 OF 12)**

Scale 1:200 A1	Designed SK	Drawn AG	Checked DK	Authorised SJP
Original Size A1	Date 08/12/2017	Date 08/12/2017	Date 08/12/2017	Date 08/12/2017

Drawing Number	Proj. Code	Orig	Dis	Zone	Level	Title	Type	Sub	Series / Num	Rev	Status
A400-ATK-C-40-XXX-XX-DR-GA-864-105										02	S2



100  
0  
10  
Millimetres



**ABBREVIATION**

SW055 - SURFACE WATER MANHOLE  
CH072 - SETTING OUT POINT / SUMP UNIT  
ATT - ATTENUATION TANK

**DO NOT SCALE**

**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

**CONSTRUCTION**

- LIVE SERVICES CRITICAL TO AIRPORT OPERATIONS (EG HV, AGL, PERI CABLES, FIREMAIN) TO BE PROTECTED DURING WORKS.
- AIRPORT OPERATIONS RELATED HEIGHT RESTRICTIONS TO BE OBSERVED WHEN OPERATING TALL PLANT SUCH AS CRANES.
- DLR EXCLUSION ZONE REQUIREMENTS TO BE OBSERVED DURING EXCAVATION.
- RISK OF HITTING OR DISCOVERING UXO - SEE SITE SPECIFIC UXO REPORTS
- CONTAMINATED SOIL AND ASBESTOS WITHIN BURIED SERVICES OR IN GROUND - SEE ENVIRONMENTAL REPORTS
- RISK OF COLLISIONS WITH PEDESTRIANS AND VEHICLES IN LIVE AIRPORT ENVIRONMENT AND PUBLIC ACCESS ROAD

**MAINTENANCE/CLEANING**

- AIRPORT OPERATIONS RELATED HEIGHT RESTRICTIONS TO BE OBSERVED WHEN OPERATING TALL PLANT SUCH AS CRANES.
- RISK OF COLLISIONS WITH PEDESTRIANS AND VEHICLES IN A LIVE AIRPORT ENVIRONMENT AND PUBLIC ACCESS ROAD.

**DECOMMISSIONING/DEMOLITION**

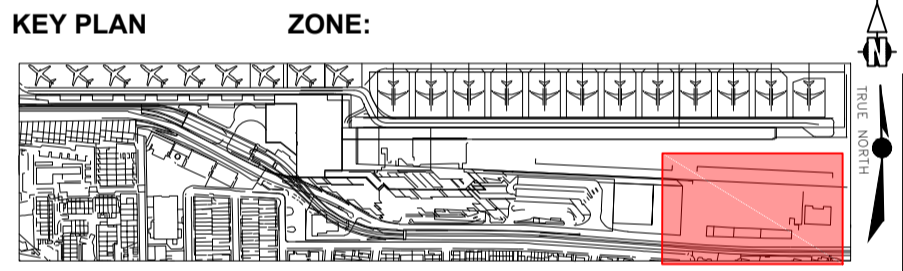
- SEE CONSTRUCTION RISKS ABOVE.

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

- NOTES:**
1. EXISTING INFORMATION BASED ON:
    - MSA DRAWING SURVEY DRAWING REF 4563-T DATED 22/04/2016
    - TECHNIC BURIED SERVICES DRAWING REF P17189-TEC-SUT-00-DR-AC\_15\_15\_06-0001 DATED 10/04/2017
  2. STATUS AND EXTENT OF ALL SERVICES (RECORDED AND UNRECORDED) TO BE DETERMINED BY FURTHER SURVEY AND CONSULTATION WITH RELEVANT UTILITY OWNER.
  3. ALL MANHOLE COVERS AND GRATING TO BE D400 RATED.
  4. ALL RETAINED EXISTING PITS AND MANHOLES TO BE ADJUSTED AND/OR REINFORCED TO SUIT LEVELS AND LOADING WHERE REQUIRED.
  5. PRELIMINARY MANHOLE SIZES AND PIPES BEDDING TYPES BASED ON HIGHWAY STANDARD DETAILS (MCHW), REQUIREMENTS TO BE REVIEWED AND DEVELOPED AT NEXT DESIGN STAGE.
  6. PIPES TO BE ENCLOSED WITH 150 THICK CONCRETE SURROUND AT LOCATIONS WHERE COVER IN HARDSTAND AREAS ARE LESS THAN 900 AND AT LOCATION WHERE COVER IS LESS THAN 1200 ALONG HARTMANN ROAD.
  7. CONSULTATION WITH THAMES WATER REQUIRED TO AGREE DISCHARGE RATES AND CONNECTION INTO EXISTING THAMES WATER NETWORK.
  8. ALL CHANNEL DRAINS TO BE CLASS D400.
  9. MODIFICATIONS TO SERVICES SHOWN ARE SUBJECT TO REVIEW AND APPROVAL BY UTILITY OWNERS.
  10. WHERE MODIFICATION TO EXISTING SURFACE LEVELS ARE MADE THE CONTRACTOR IS TO PROVIDE ADEQUATE SURFACE WATER DRAINAGE.
  11. MODIFICATIONS TO EEC COULD HAVE AN IMPACT ON THE UTILITY SHOWN ON DRAWING.

**LEGEND:**

— 150 SW SEWER —	EXISTING 100mm Ø SW SEWER PIPE
— 300 SW SEWER —	EXISTING 300mm Ø SW SEWER PIPE
— 225 SW SEWER —	EXISTING 225mm Ø SW SEWER PIPE
— SW —	EXISTING SURFACE WATER PIPE
— SW —	PROPOSED SURFACE WATER PIPE
— SW CHN —	PROPOSED SURFACE WATER CHANNEL DRAIN
— KD —	PROPOSED KERB DRAIN
— —	PROPOSED SITE BOUNDARY
▶	FLOW DIRECTION
◻	PROPOSED FUEL INTERCEPTOR
◻	PROPOSED ATTENUATION TANK
○	PROPOSED ACO DRAIN SUMP UNIT
○	PROPOSED MANHOLE



**PRIVATE**  
**NOT FOR CONSTRUCTION**

02	02/03/18	STAGE 3 ISSUE	SK	DK	SJP
01	08/12/17	FOR INFORMATION	SK	DK	PH
Rev.	Date	Description	By	Chk'd	App'd

Drawing Suitability **SUITABLE FOR INFORMATION** Status **S2**

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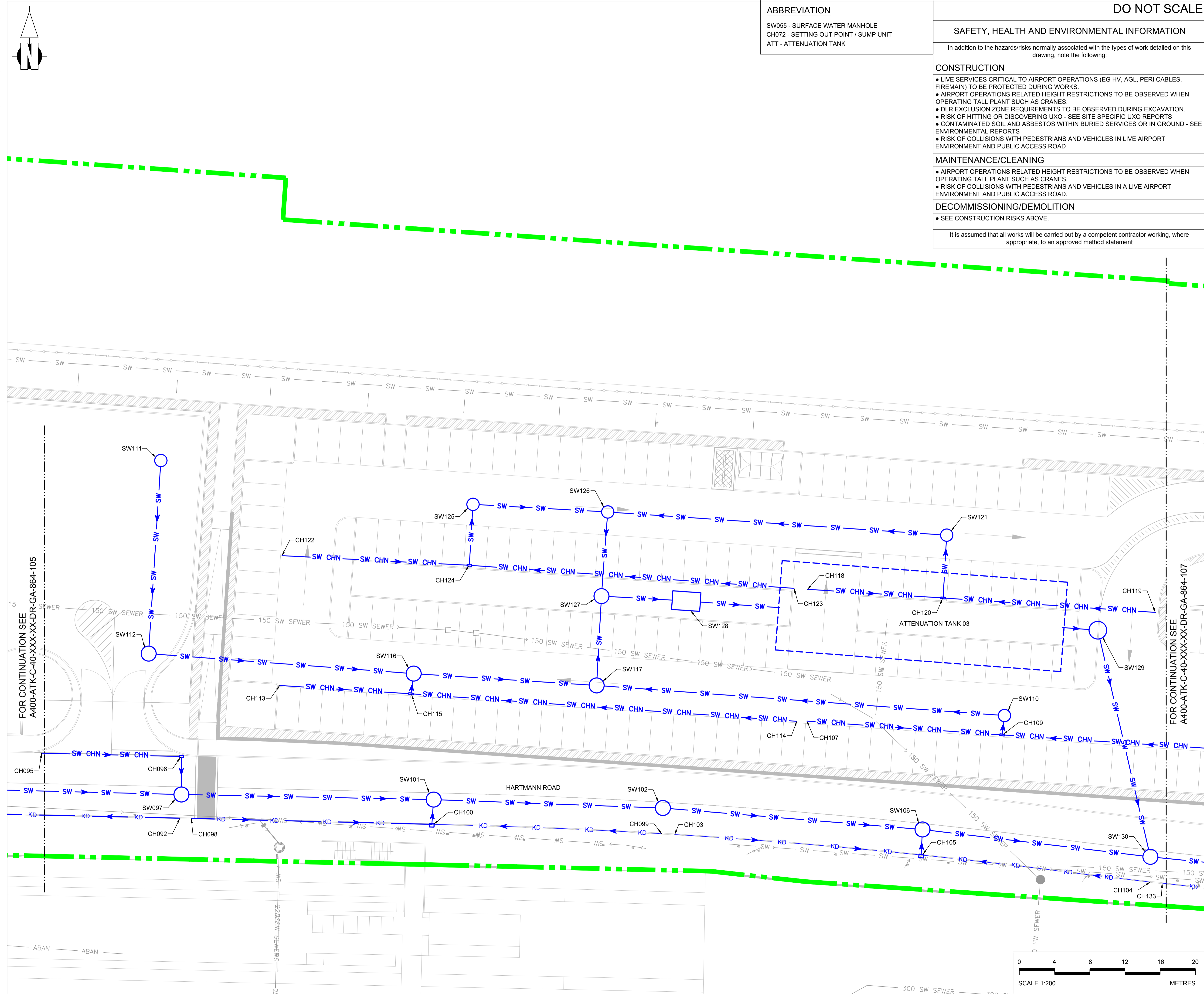
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Client **London City Airport**  
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Project Title **CITY AIRPORT DEVELOPMENT  
PROGRAMME (CADD) - DOCKSIDE**

Drawing Title **STAGE 3 DOCKSIDE  
PROPOSED SURFACE WATER DRAINAGE  
LAYOUT (6 OF 12)**

Scale	Designed	Drawn	Checked	Authorised
1:200 A1	SK	AG	DK	SJP
Original Size	Date	Date	Date	Date
A1	08/12/2017	08/12/2017	08/12/2017	08/12/2017
Drawing Number	Proj.	Title	Sub	Series / Num
Proj.Code	Orig	Dis	Zone	Level
A400-ATK-C-40-XXX-XX-DR-GA-864-106				
Rev	Status			
02	S2			

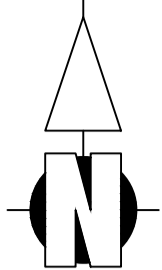


FOR CONTINUATION SEE  
A400-ATK-C-40-XXX-XX-DR-GA-864-105

FOR CONTINUATION SEE  
A400-ATK-C-40-XXX-XX-DR-GA-864-107

SCALE 1:200  
METRES

100  
10  
0  
Millimetres



ABBREVIATION

SW158 - SURFACE WATER MANHOLE  
CH155 - SETTING OUT POINT / SUMP UNIT

DO NOT SCALE

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

- LIVE SERVICES CRITICAL TO AIRPORT OPERATIONS (EG HV, AGL, PERI CABLES, FIREMAIN) TO BE PROTECTED DURING WORKS.
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- RISK OF COLLISIONS WITH PEDESTRIANS AND VEHICLES IN LIVE AIRPORT ENVIRONMENT AND PUBLIC ACCESS ROAD

MAINTENANCE/CLEANING

- AIRPORT OPERATIONS RELATED HEIGHT RESTRICTIONS TO BE OBSERVED WHEN OPERATING TALL PLANT SUCH AS CRANES.
- RISK OF COLLISIONS WITH PEDESTRIANS AND VEHICLES IN A LIVE AIRPORT ENVIRONMENT AND PUBLIC ACCESS ROAD.

DECOMMISSIONING/DEMOLITION

- SEE CONSTRUCTION RISKS ABOVE.

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

NOTES:

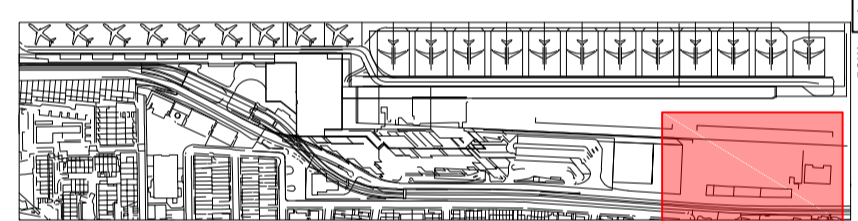
- EXISTING INFORMATION BASED ON:
  - MSA DRAWING SURVEY DRAWING REF 4563-T DATED 22/04/2016
  - TECHNIC BURIED SERVICES DRAWING REF P17189-TEC-SUT-00-DR-AC\_15\_15\_06-0001 DATED 10/04/2017
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- WHERE MODIFICATION TO EXISTING SURFACE LEVELS ARE MADE THE CONTRACTOR IS TO PROVIDE ADEQUATE SURFACE WATER DRAINAGE.

LEGEND:

- |                |  |
|----------------|--|
| — 150 SW SEWER | — EXISTING 150mm Ø SW SEWER PIPE       |
| — 300 SW SEWER | — EXISTING 300mm Ø SW SEWER PIPE       |
| — 225 SW SEWER | — EXISTING 225mm Ø SW SEWER PIPE       |
| — SW           | — EXISTING SURFACE WATER PIPE          |
| — SW           | — PROPOSED SURFACE WATER PIPE          |
| — SW CHN       | — PROPOSED SURFACE WATER CHANNEL DRAIN |
| — KD           | — PROPOSED KERB DRAIN                  |
| —              | — PROPOSED SITE BOUNDARY               |
| ➔              | — FLOW DIRECTION                       |
| □              | — PROPOSED FUEL INTERCEPTOR            |
| □              | — PROPOSED ATTENUATION TANK            |
| ○              | — PROPOSED ACO DRAIN SUMP UNIT         |
| ○              | — PROPOSED MANHOLE                     |

KEY PLAN

ZONE:



**PRIVATE**  
**NOT FOR CONSTRUCTION**

02	02/03/18	STAGE 3 ISSUE	SK	DK	SJP
01	08/12/17	FOR INFORMATION	SK	DK	PH
Rev.	Date	Description	By	Chk'd	App'd

Drawing Suitability Status  
**SUITABLE FOR INFORMATION S2**

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NW1 3AT

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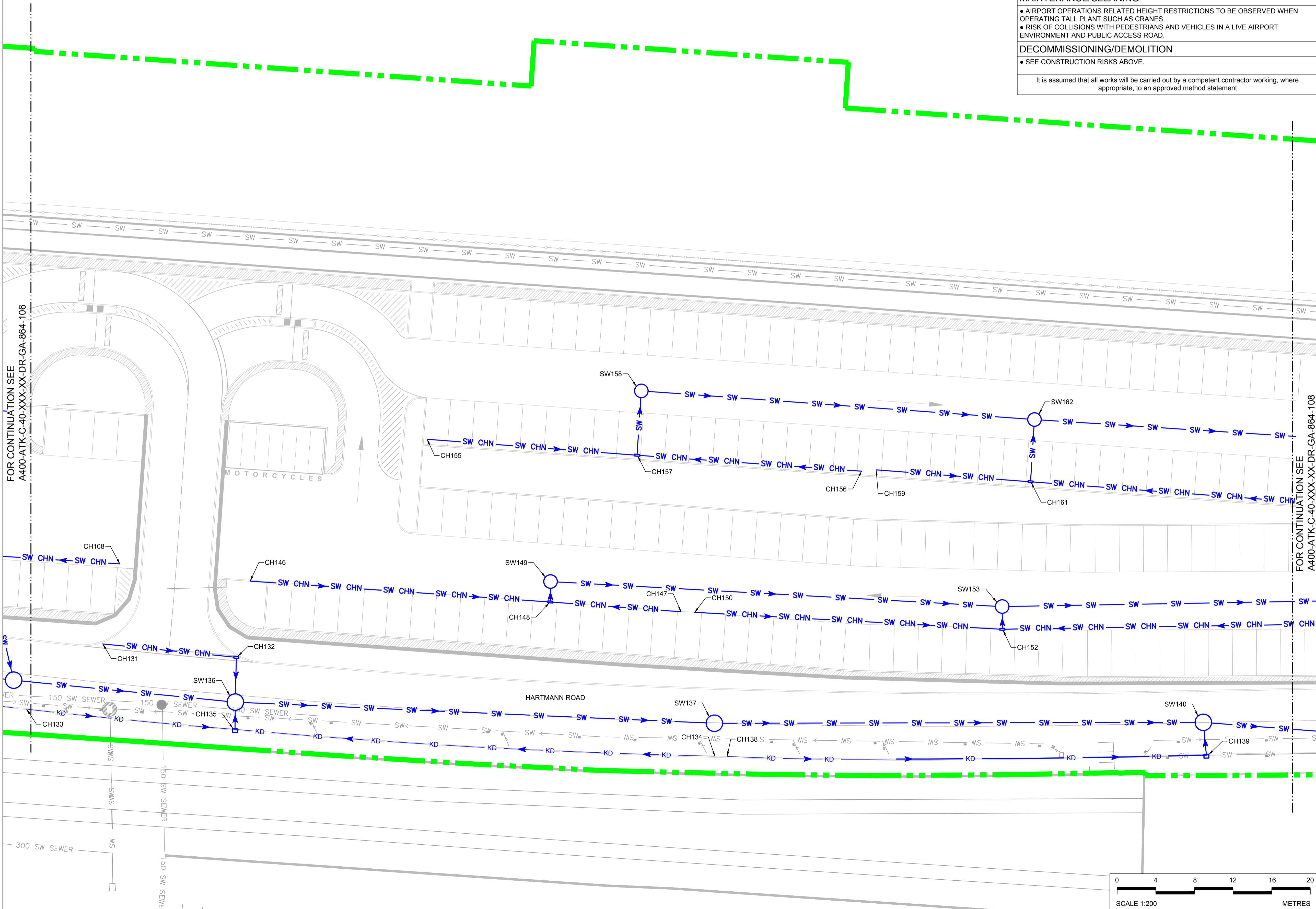
**London City Airport**  
Get closer.

Project Title  
**CITY AIRPORT DEVELOPMENT  
PROGRAMME (CADP) - DOCKSIDE**

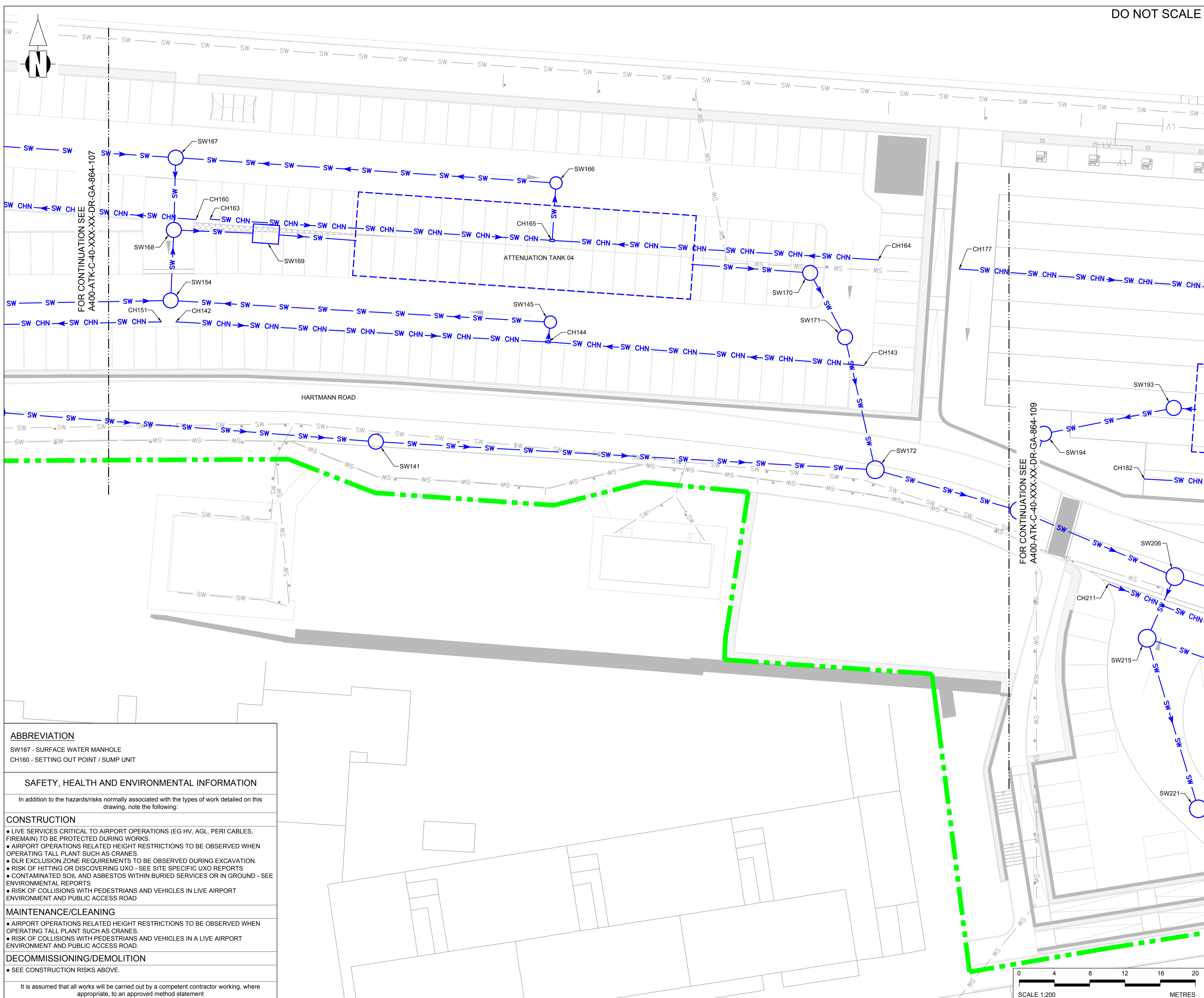
Drawing Title  
**STAGE 3 DOCKSIDE  
PROPOSED SURFACE WATER DRAINAGE  
LAYOUT (7 OF 12)**

Scale 1:200 A1	Designed SK	Drawn AG	Checked DK	Authorised SJP
Original Size A1	Date 08/12/2017	Date 08/12/2017	Date 08/12/2017	Date 08/12/2017

Drawing Number  
Proj.Code Orig Dis Zone Level Title Type Sub Series / Num Rev Status  
**A400-ATK-C-40-XXX-XX-DR-GA-864-107 02 S2**



100  
0 10  
Millimetres



DO NOT SCALE

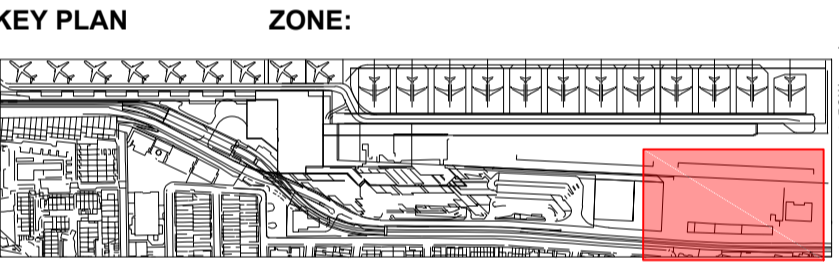
NOTES:

- EXISTING INFORMATION BASED ON:
  - MSA DRAWING SURVEY DRAWING REF 4563-T DATED 22/04/2016
  - TECHNIC BURIED SERVICES DRAWING REF P17189-TEC-SUT-00-DR-AC\_15\_15\_06-0001 DATED 10/04/2017
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- ALL RETAINED EXISTING PITS AND MANHOLES TO BE ADJUSTED AND/OR REINFORCED TO SUIT LEVELS AND LOADING WHERE REQUIRED.
- PIPES TO BE ENCLOSED WITH 150 THICK CONCRETE SURROUND AT LOCATIONS WHERE COVER IN HARDSTAND AREAS ARE LESS THAN 900 AND AT LOCATION WHERE COVER IS LESS THAN 1200 ALONG HARTMANN ROAD.
- CONSULTATION WITH THAMES WATER REQUIRED TO AGREE DISCHARGE RATES AND CONNECTION INTO EXISTING THAMES WATER NETWORK
- ALL CHANNEL DRAINS TO BE CLASS D400.
- MODIFICATIONS TO SERVICES SHOWN ARE SUBJECT TO REVIEW AND APPROVAL BY UTILITY OWNERS.
- WHERE MODIFICATION TO EXISTING SURFACE LEVELS ARE MADE THE CONTRACTOR IS TO PROVIDE ADEQUATE SURFACE WATER DRAINAGE.

LEGEND:

- |  |                                      |
|--|--------------------------------------|
|  | EXISTING 300mm Ø SW SEWER PIPE       |
|  | EXISTING 225mm Ø SW SEWER PIPE       |
|  | EXISTING SURFACE WATER PIPE          |
|  | PROPOSED SURFACE WATER PIPE          |
|  | PROPOSED SURFACE WATER CHANNEL DRAIN |
|  | PROPOSED KERB DRAIN                  |
|  | PROPOSED SITE BOUNDARY               |
|  | FLOW DIRECTION                       |
|  | PROPOSED FUEL INTERCEPTOR            |
|  | PROPOSED ATTENUATION TANK            |
|  | PROPOSED ACO DRAIN SUMP UNIT         |
|  | PROPOSED MANHOLE                     |

KEY PLAN



**PRIVATE**  
**NOT FOR CONSTRUCTION**

02	02/03/18	STAGE 3 ISSUE	SK	DK	SJP
01	08/12/17	FOR INFORMATION	SK	DK	PH
Rev.	Date	Description	By	Chk'd	App'd

Drawing Suitability  
**SUITABLE FOR INFORMATION**  
Status  
**S2**

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Project Title  
**CITY AIRPORT DEVELOPMENT  
PROGRAMME (CADP) - DOCKSIDE**

Drawing Title  
**STAGE 3 DOCKSIDE  
PROPOSED SURFACE WATER DRAINAGE  
LAYOUT (8 OF 12)**

Scale 1:200	Designed SK	Drawn AG	Checked DK	Authorised SJP
Original Size A1	Date 08/12/2017	Date 08/12/2017	Date 08/12/2017	Date 08/12/2017

Drawing Number  
Proj.Code Orig Dis Zone Level Title Type Sub Series / Num  
A400-ATK-C-40-XXX-XX-DR-GA-864-108  
Rev Status  
02 S2

ABBREVIATION

SW167 - SURFACE WATER MANHOLE  
CH160 - SETTING OUT POINT / SUMP UNIT

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

- LIVE SERVICES CRITICAL TO AIRPORT OPERATIONS (EG HV, AGL, PERI CABLES, FIREMAIN) TO BE PROTECTED DURING WORKS.
- AIRPORT OPERATIONS RELATED HEIGHT RESTRICTIONS TO BE OBSERVED WHEN OPERATING TALL PLANT SUCH AS CRANES.
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- RISK OF HITTING OR DISCOVERING UXO - SEE SITE SPECIFIC UXO REPORTS
- CONTAMINATED SOIL AND ASBESTOS WITHIN BURIED SERVICES OR IN GROUND - SEE ENVIRONMENTAL REPORTS
- RISK OF COLLISIONS WITH PEDESTRIANS AND VEHICLES IN LIVE AIRPORT ENVIRONMENT AND PUBLIC ACCESS ROAD

MAINTENANCE/CLEANING

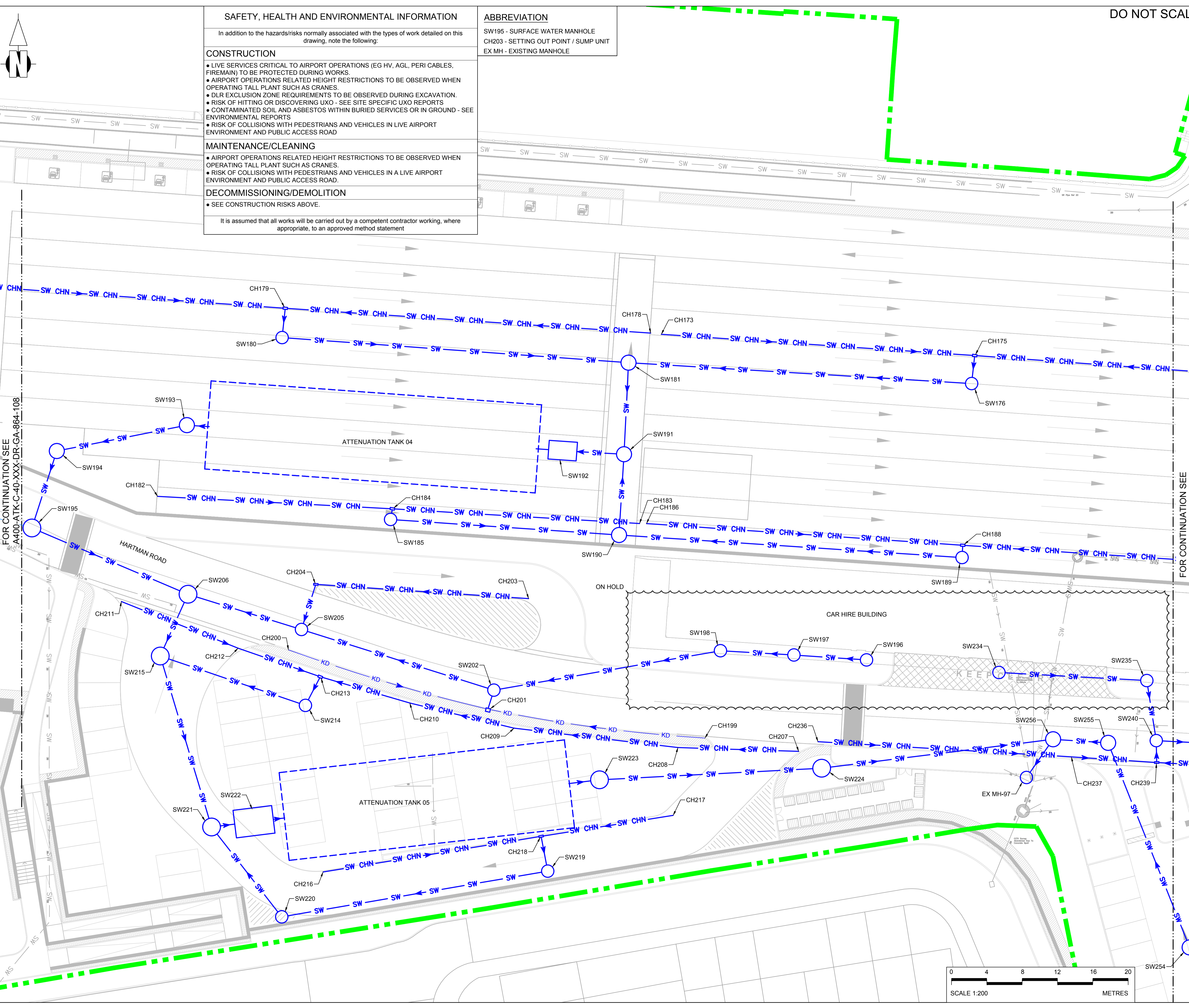
- AIRPORT OPERATIONS RELATED HEIGHT RESTRICTIONS TO BE OBSERVED WHEN OPERATING TALL PLANT SUCH AS CRANES.
- RISK OF COLLISIONS WITH PEDESTRIANS AND VEHICLES IN A LIVE AIRPORT ENVIRONMENT AND PUBLIC ACCESS ROAD.

DECOMMISSIONING/DEMOLITION

- SEE CONSTRUCTION RISKS ABOVE.

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

100  
0  
10  
Millimetres



DO NOT SCALE

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

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- AIRPORT OPERATIONS RELATED HEIGHT RESTRICTIONS TO BE OBSERVED WHEN OPERATING TALL PLANT SUCH AS CRANES.
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- RISK OF HITTING OR DISCOVERING UXO - SEE SITE SPECIFIC UXO REPORTS
- CONTAMINATED SOIL AND ASBESTOS WITHIN BURIED SERVICES OR IN GROUND - SEE ENVIRONMENTAL REPORTS
- RISK OF COLLISIONS WITH PEDESTRIANS AND VEHICLES IN LIVE AIRPORT ENVIRONMENT AND PUBLIC ACCESS ROAD

MAINTENANCE/CLEANING

- AIRPORT OPERATIONS RELATED HEIGHT RESTRICTIONS TO BE OBSERVED WHEN OPERATING TALL PLANT SUCH AS CRANES.
- RISK OF COLLISIONS WITH PEDESTRIANS AND VEHICLES IN A LIVE AIRPORT ENVIRONMENT AND PUBLIC ACCESS ROAD.

DECOMMISSIONING/DEMOLITION

- SEE CONSTRUCTION RISKS ABOVE.

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

ABBREVIATION

SW195 - SURFACE WATER MANHOLE

CH203 - SETTING OUT POINT / SUMP UNIT

EX MH - EXISTING MANHOLE

- NOTES:
1. EXISTING INFORMATION BASED ON:
    - MSA DRAWING SURVEY DRAWING REF 4563-T DATED 22/04/2016
    - TECHNIC BURIED SERVICES DRAWING REF P17189-TEC-SUT-00-DR-AC\_15\_15\_06-0001 DATED 10/04/2017
  2. STATUS AND EXTENT OF ALL SERVICES (RECORDED AND UNRECORDED) TO BE DETERMINED BY FURTHER SURVEY AND CONSULTATION WITH RELEVANT UTILITY OWNER.
  3. ALL MANHOLE COVERS AND GRATING TO BE D400 RATED.
  4. ALL RETAINED EXISTING PITS AND MANHOLES TO BE ADJUSTED AND/OR REINFORCED TO SUIT LEVELS AND LOADING WHERE REQUIRED.
  5. PIPES TO BE ENCLOSED WITH 150 THICK CONCRETE SURROUND AT LOCATIONS WHERE COVER IN HARDSTAND AREAS ARE LESS THAN 900 AND AT LOCATION WHERE COVER IS LESS THAN 1200 ALONG HARTMANN ROAD.
  6. CONSULTATION WITH THAMES WATER REQUIRED TO AGREE DISCHARGE RATES AND CONNECTION INTO EXISTING THAMES WATER NETWORK
  7. ALL CHANNEL DRAINS TO BE CLASS D400.
  8. MODIFICATIONS TO SERVICES SHOWN ARE SUBJECT TO REVIEW AND APPROVAL BY UTILITY OWNERS.
  9. WHERE MODIFICATION TO EXISTING SURFACE LEVELS ARE MADE THE CONTRACTOR IS TO PROVIDE ADEQUATE SURFACE WATER DRAINAGE.

LEGEND:

150 SW SEWER

EXISTING 150mm Ø SW SEWER PIPE

300 SW SEWER

EXISTING 300mm Ø SW SEWER PIPE

225 SW SEWER

EXISTING 225mm Ø SW SEWER PIPE

SW

EXISTING SURFACE WATER PIPE

SW

PROPOSED SURFACE WATER PIPE

SW CHN

PROPOSED SURFACE WATER CHANNEL DRAIN

KD

PROPOSED KERB DRAIN

PROPOSED SITE BOUNDARY

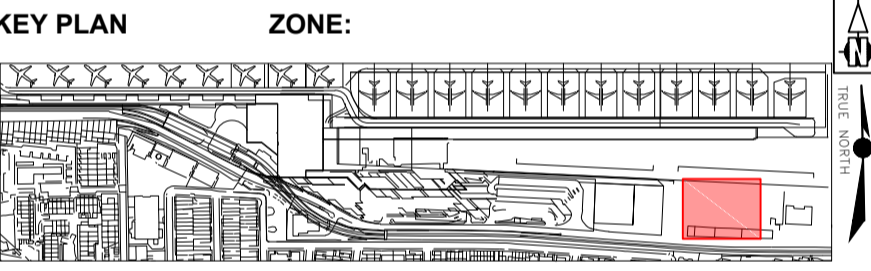
FLOW DIRECTION

PROPOSED FUEL INTERCEPTOR

PROPOSED ATTENUATION TANK

PROPOSED ACO DRAIN SUMP UNIT

PROPOSED MANHOLE



PRIVATE  
NOT FOR CONSTRUCTION

03	02/03/18	STAGE 3 ISSUE	SK	DK	SJP
02	30/01/18	FOR INFORMATION	SK	DK	PH
01	08/12/17	FOR INFORMATION	SK	DK	PH
Rev.	Date	Description	By	Chk'd	App'd

SUITABLE FOR INFORMATION

S2

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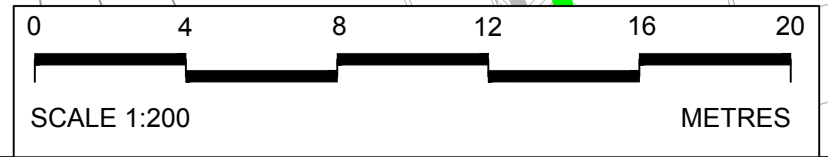
Project Title

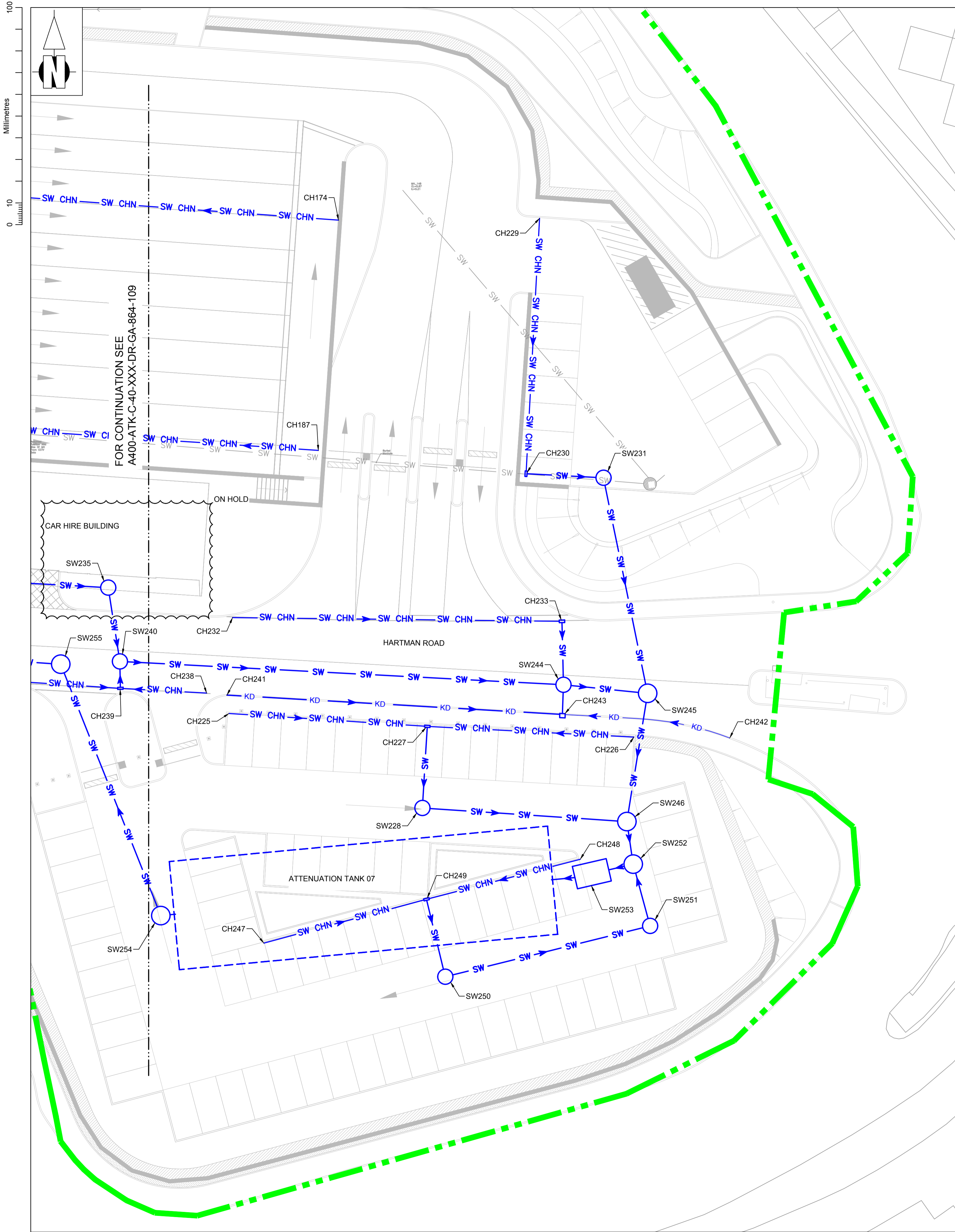
CITY AIRPORT DEVELOPMENT  
PROGRAMME (CADP) - DOCKSIDE

Drawing Title

STAGE 3 DOCKSIDE  
PROPOSED SURFACE WATER DRAINAGE  
LAYOUT (9 OF 12)

Scale	Designed	Drawn	Checked	Authorised					
1:200 A1	SK	AG	DK	SJP					
Original Size	Date	Date	Date	Date					
A1	08/12/2017	08/12/2017	08/12/2017	08/12/2017					
Drawing Number	Proj. Title				Rev	Status			
Proj Code	Orig	Dis	Zone	Level	Type	Sub	Series / Num	Rev	Status
A400-ATK-C-40-XXX-XX-DR-GA-864-109								03	S2





**ABBREVIATION**

SW055 - SURFACE WATER MANHOLE  
CH072 - SETTING OUT POINT / SUMP UNIT

**DO NOT SCALE**

**SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION**

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

**CONSTRUCTION**

- LIVE SERVICES CRITICAL TO AIRPORT OPERATIONS (EG HV, AGL, PERI CABLES, FIREMAIN) TO BE PROTECTED DURING WORKS.
- AIRPORT OPERATIONS RELATED HEIGHT RESTRICTIONS TO BE OBSERVED WHEN OPERATING TALL PLANT SUCH AS CRANES.
- AIRPORT OPERATIONS RELATED HEIGHT RESTRICTIONS TO BE OBSERVED DURING EXCAVATION.
- DLR EXCLUSION ZONE REQUIREMENTS TO BE OBSERVED DURING EXCAVATION.
- RISK OF HITTING OR DISCOVERING UXO - SEE SITE SPECIFIC UXO REPORTS
- CONTAMINATED SOIL AND ASBESTOS WITHIN BURIED SERVICES OR IN GROUND - SEE ENVIRONMENTAL REPORTS
- RISK OF COLLISIONS WITH PEDESTRIANS AND VEHICLES IN LIVE AIRPORT ENVIRONMENT AND PUBLIC ACCESS ROAD

**MAINTENANCE/CLEANING**

- AIRPORT OPERATIONS RELATED HEIGHT RESTRICTIONS TO BE OBSERVED WHEN OPERATING TALL PLANT SUCH AS CRANES.
- RISK OF COLLISIONS WITH PEDESTRIANS AND VEHICLES IN A LIVE AIRPORT ENVIRONMENT AND PUBLIC ACCESS ROAD.

**DECOMMISSIONING/DEMOLITION**

- SEE CONSTRUCTION RISKS ABOVE.

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

**NOTES:**

1. EXISTING INFORMATION BASED ON:
  - MSA DRAWING SURVEY DRAWING REF 4563-T DATED 22/04/2016
  - TECHNIC BURIED SERVICES DRAWING REF P17189-TEC-SUT-00-DR-AC\_15\_15\_06-0001 DATED 10/04/2017
2. STATUS AND EXTENT OF ALL SERVICES (RECORDED AND UNRECORDED) TO BE DETERMINED BY FURTHER SURVEY AND CONSULTATION WITH RELEVANT UTILITY OWNER.
3. ALL MANHOLE COVERS AND GRATING TO BE D400 RATED.
4. ALL RETAINED EXISTING PITS AND MANHOLES TO BE ADJUSTED AND/OR REINFORCED TO SUIT LEVELS AND LOADING WHERE REQUIRED.
5. PIPES TO BE ENCLOSED WITH 150 THICK CONCRETE SURROUND AT LOCATIONS WHERE COVER IN HARDSTAND AREAS ARE LESS THAN 900 AND AT LOCATION WHERE COVER IS LESS THAN 1200 ALONG HARTMANN ROAD.
6. CONSULTATION WITH THAMES WATER REQUIRED TO AGREE DISCHARGE RATES AND CONNECTION TO EXISTING THAMES WATER NETWORK
7. ALL CHANNEL DRAINS TO BE CLASS D400.
8. MODIFICATIONS TO SERVICES SHOWN ARE SUBJECT TO REVIEW AND APPROVAL BY UTILITY OWNERS.
9. WHERE MODIFICATION TO EXISTING SURFACE LEVELS ARE MADE THE CONTRACTOR IS TO PROVIDE ADEQUATE SURFACE WATER DRAINAGE.

**LEGEND:**

— 300 SW SEWER	— EXISTING 300mm Ø SW SEWER PIPE
— 225 SW SEWER	— EXISTING 225mm Ø SW SEWER PIPE
— SW	— EXISTING SURFACE WATER PIPE
— SW	— PROPOSED SURFACE WATER PIPE
— SW CHN	— PROPOSED SURFACE WATER CHANNEL DRAIN
— KD	— PROPOSED KERB DRAIN
—	— PROPOSED SITE BOUNDARY
→	— FLOW DIRECTION
□	— PROPOSED FUEL INTERCEPTOR
□	— PROPOSED ATTENUATION TANK
□	— PROPOSED ACO DRAIN SUMP UNIT
○	— PROPOSED MANHOLE

**KEY PLAN**

**ZONE:**

**PRIVATE**

**NOT FOR CONSTRUCTION**

03	02/03/18	STAGE 3 ISSUE	SK	DK	SJP
02	30/01/18	FOR INFORMATION	SK	DK	PH
01	08/12/17	FOR INFORMATION	SK	DK	PH
Rev.	Date	Description	By	Chk'd	App'd

Drawing Suitability: **SUITABLE FOR INFORMATION** Status: **S2**

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Project Title: **CITY AIRPORT DEVELOPMENT PROGRAMME (CADP) - DOCKSIDE**

Drawing Title: **STAGE 3 DOCKSIDE PROPOSED SURFACE WATER DRAINAGE LAYOUT (10 OF 12)**

Scale: 1:200	Designed: SK	Drawn: AG	Checked: DK	Authorised: SJP
Original Size: A1	Date: 08/12/2017	Date: 08/12/2017	Date: 08/12/2017	Date: 08/12/2017
Drawing Number: A400-ATK-C-40-XXX-XX-DR-GA-864-110	Proj. Code: A400-ATK-C-40-XXX-XX-DR-GA-864-110	Proj. Title: C-40-XXX-XX-DR-GA-864-110	Proj. Sub: C-40-XXX-XX-DR-GA-864-110	Proj. Series / Num: C-40-XXX-XX-DR-GA-864-110
Rev: 03	Status: S2			

0 10 20 30 40 50 60 70 80 90 100  
Millimetres

PIPE SCHEDULE											
SETOUT POINTS		CONDUIT TYPE	LENGTH (mm)	SLOPE (1:X)	USIL (m)	USCL (m)	DSIL (m)	US DEPTH (m)	CONDUIT SIZE(mm)	BEDDING CLASS	TYPE
FROM	TO										
CH040	CH042	KERB DRAIN	20.859	802	3.931	4.186	3.905	-	150X405	-	ACO HB405
CH041	CH042	KERB DRAIN	19.172	383	4.005	4.160	3.955	-	150X305	-	ACO HB305
CH042	SW043	CARRIER	2.724	101	3.603	4.318	3.576	0.49	225	A	CLAY
SW043	SW047	CARRIER	41.205	171	2.814	4.222	2.573	1.183	225	A	CLAY
CH044	CH046	KERB DRAIN	21.048	526	4.002	4.157	3.962	-	150X305	-	ACO HB305
CH045	CH046	KERB DRAIN	19.657	728	3.989	4.144	3.962	-	150X305	-	ACO HB305
CH046	SW047	CARRIER	2.466	103	3.402	4.117	3.378	0.49	225	A	CLAY
SW047	SW054	CARRIER	45.714	171	2.573	4.177	2.306	1.379	225	B	CLAY
CH048	CH049	KERB DRAIN	30.007	250	3.980	4.135	3.860	-	150X305	-	ACO HB305
CH049	SW050	CARRIER	2.41	100	3.353	4.220	3.329	0.717	150	A	CLAY
SW050	SW054	CARRIER	22.232	100	2.895	4.250	2.673	1.205	150	B	CLAY
CH051	CH053	KERB DRAIN	25.386	259	3.990	4.145	3.892	-	150X305	-	ACO HB305
CH052	CH053	KERB DRAIN	21.118	728	4.060	4.215	4.031	-	150X305	-	ACO HB305
CH053	SW054	CARRIER	2.551	102	3.471	4.186	3.446	0.49	225	A	CLAY
SW054	SW071	CARRIER	19.963	219	2.156	4.228	2.065	1.697	375	B	PCC
SW055	SW056	CARRIER	33.534	96	4.120	5.682	3.770	1.412	150	B	CLAY
SW056	SW063	CARRIER	26.42	100	3.770	5.103	3.506	1.183	150	B	CLAY
CH057	CH059	CHANNEL	19.27	201	4.902	5.067	4.806	-	150x185	-	ACO M150D
CH058	CH059	CHANNEL	31.716	200	4.900	5.065	4.741	-	150x185	-	ACO M150D
CH059	SW063	CARRIER	2.78	126	4.364	5.100	4.342	0.511	225	A	CLAY
CH060	CH062	CHANNEL	18.962	107	5.016	5.181	4.839	-	150x185	-	ACO M150D
CH061	CH062	CHANNEL	32.622	115	4.995	5.160	4.712	-	150x185	-	ACO M150D
CH062	SW063	CARRIER	4.516	137	4.461	5.171	4.428	0.485	225	A	CLAY
SW063	SW071	CARRIER	30.458	100	3.356	5.111	3.051	1.455	300	B	PCC
CH064	CH066	CHANNEL	26.275	101	4.900	5.065	4.641	-	150x185	-	ACO M150D
CH065	CH066	CHANNEL	21.198	104	4.995	5.160	4.792	-	150x185	-	ACO M150D
CH066	SW070	CARRIER	2.652	133	4.343	5.084	4.323	0.516	225	A	CLAY
CH067	CH069	CHANNEL	25.239	143	4.997	5.162	4.821	-	150x185	-	ACO M150D
CH068	CH069	CHANNEL	21.276	182	4.964	5.129	4.847	-	150x185	-	ACO M150D
CH069	SW070	CARRIER	4.7	100	4.466	5.156	4.399	0.485	225	A	CLAY
SW070	SW071	CARRIER	28.864	135	3.890	5.090	3.676	0.975	225	S	CLAY
SW071	SW081	CARRIER	13.632	545	1.840	5.100	1.815	2.66	600	F	PCC
CH072	CH074	CHANNEL	15.83	189	5.286	5.451	5.202	-	150x185	-	ACO M150D
CH073	CH074	CHANNEL	29.495	201	5.271	5.436	5.124	-	150x185	-	ACO M150D
CH074	SW075	CARRIER	2.177	128	4.737	5.450	4.720	0.488	225	A	CLAY
SW075	SW080	CARRIER	27.643	107	4.200	5.475	3.942	1.05	225	B	CLAY
CH076	CH078	CHANNEL	14.448	201	5.261	5.426	5.189	-	150x185	-	ACO M150D
CH077	CH078	CHANNEL	26.359	183	5.275	5.440	5.131	-	150x185	-	ACO M150D
CH078	SW079	CARRIER	2.088	131	4.718	5.499	4.702	0.556	225	A	CLAY
SW079	SW080	CARRIER	29.791	100	4.200	5.456	3.901	1.031	225	B	CLAY
SW080	SW081	CARRIER	13.722	80	3.872	5.464	3.701	1.292	300	B	PCC
SW081	SW082	CARRIER	5.869	534	1.815	5.284	1.804	2.869	600	F	PCC
SW082	ATT U/S 02	CARRIER	4.250	552	1.804	5.276	1.796	2.872	600	F	PCC
ATT D/S 02	SW083	CARRIER	4.914	552	1.741	5.279	1.733	2.929	600	F	PCC
SW083	SW084	CARRIER	17.671	570	1.733	5.272	1.702	2.939	600	F	PCC
SW084	SW085	CARRIER	13.124	571	1.702	5.189	1.679	2.887	600	F	PCC
SW085	SW090	CARRIER	30.235	571	1.679	4.328	1.626	2.049	600	F	PCC
CH086	CH087	CHANNEL	29.763	198	4.179	4.344	4.029	-	150x185	-	ACO M150D
CH087	SW090	CARRIER	4.574	153	3.616	4.421	3.586	0.58	225	A	CLAY
CH088	CH089	KERB DRAIN	29.639	302	4.009	4.264	3.911	-	150X405	-	ACO HB405
CH089	SW090	CARRIER	2.083	99	3.278	4.273	3.257	0.845	150	A	CLAY
SW090	SW094	CARRIER	40.287	567	1.626	4.300	1.555	2.074	600	F	PCC
CH091	CH093	KERB DRAIN	39.004	534	4.012	4.267	3.939	-	150X405	-	ACO HB405
CH092	CH093	KERB DRAIN	47.954	480	4.025	4.280	3.925	-	150X405	-	ACO HB405
CH093	SW094	CARRIER	2.511	100	3.480	4.195	3.455	0.49	225	A	CLAY
SW094	SW097	CARRIER	48.07	572	1.555	4.259	1.471	2.104	600	F	PCC
CH095	CH096	CHANNEL	15.89	201	4.188	4.403	4.109	-	150x235	-	ACO M150D
CH096	SW097	CARRIER	4.315	50	3.949	4.659	3.863	0.485	225	A	CLAY
SW097	SW101	CARRIER	28.654	585	1.471	4.417	1.422	2.346	600	F	PCC
CH098	CH100	KERB DRAIN	27.346	536	4.017	4.272	3.966	-	150X405	-	ACO HB405
CH099	CH100	KERB DRAIN	26.131	533	4.028	4.283	3.979	-	150X405	-	ACO HB405
CH100	SW101	CARRIER	2.483	99	3.524	4.239	3.499	0.49	225	A	CLAY
SW101	SW102	CARRIER	26.06	579	1.422	4.294	1.377	2.272	600	F	PCC
SW102	SW106	CARRIER	29.595	580	1.377	4.336	1.326	2.359	600	F	PCC
CH103	CH105	KERB DRAIN	28.086	380	4.031	4.286	3.957	-	150X405	-	ACO HB405
CH104	CH105	KERB DRAIN	26.214	452	3.951	4.206	3.893	-	150X405	-	ACO HB405
CH105	SW106	CARRIER	2.64	102	3.502	4.217	3.476	0.49	225	A	CLAY
SW106	SW130	CARRIER	26.074	593	1.326	4.291	1.282	2.365	600	F	PCC
CH107	CH109	CHANNEL	22.228	193	4.885	5.050	4.770	-	150x185	-	ACO M150D
CH108	CH109	CHANNEL	27.895	115	4.987	5.152	4.744	-	150x185	-	ACO M150D
CH109	SW110	CARRIER	2.216	139	4.338	5.050	4.322	0.487	225	A	CLAY
SW110	SW117	CARRIER	46.454	110	3.900	5.075	3.478	0.95	225	S	CLAY
SW111	SW112	CARRIER	21.968	65	3.830	5.345	3.492	0.99	525	B	PCC
SW112	SW116	CARRIER	30.194	165	3.492	4.854	3.309	0.837	525	A	PCC
CH113	CH115	CHANNEL	14.955	199	4.885	5.050	4.810	-	150x185	-	ACO M150D
CH114	CH115	CHANNEL	43.934	200	4.883	5.048	4.663	-	150x185	-	ACO M150D
CH115	SW116	CARRIER	2.311	136	4.341	5.051	4.324	0.485	225	A	CLAY
SW116	SW117	CARRIER	20.826	200	3.309	5.088	3.205	1.254	525	F	PCC
SW117	SW127	CARRIER	10.158	199	3.178	5.090	3.127	1.387	525	F	PCC
CH118	CH120	CHANNEL	15.432	200	5.087	5.252	5.010	-	150x185	-	ACO M150D
CH119	CH120	CHANNEL	24.164	200	5.052	5.217	4.931	-	150x185	-	ACO M150D
CH120	SW121	CARRIER	7.141	135	4.592	5.282	4.539	0.465	225	A	CLAY
SW121	SW126	CARRIER	38.598	100	4.155	5.335	3.769	0.955	225	S	CLAY
CH122	CH124	CHANNEL	21.311	143	5.129	5.294	4.980	-	150x185	-	ACO M150D
CH123	CH124	CHANNEL	36.983	200	5.088	5.253	4.903	-	150x185	-	ACO M150D
CH124	SW125	CARRIER	6.932	136	4.623	5.380	4.572	0.532	225	A	CLAY
SW125	SW126	CARRIER	15.329	100	4.100	5.387	3.947	0.987	300	S	PCC
SW126	SW127	CARRIER	9.582	150	3.694	5.372	3.630	1.378	300	B	PCC
SW127	SW128	CARRIER	8.05	196	3.127	5.343	3.086	1.691	525	F	PCC
SW128	ATT U/S 03	CARRIER	9.060	352	3.021	5.347	2.985	1.884	600	F	PCC
ATT D/S 03	SW129	CARRIER	4.052	352	2.884	5.323	2.873	2.07	600	F	PCC
SW129	SW130	CARRIER	26.423	110	2.675	5.221	2.435	1.946	600	F	PCC
SW130	SW136	CARRIER	23.062	577	1.207	4.271	1.167	2.389	675	F	PCC
CH131	CH132	CHANNEL	13.898	201	4.170	4.385	4.101	-	150x235	-	ACO M150D
CH132	SW136	CARRIER	4.64	50	3.676	4.445	3.583	0.544	225	A	CLAY
CH133	CH135	KERB DRAIN	21.656	349	3.951	4.206	3.889	-	150X405	-	ACO HB405
CH134	CH135	KERB DRAIN	49.762	392	3.955	4.210	3.828	-	150X405	-	ACO HB405

PIPE SCHEDULE											
SETOUT POINTS		CONDUIT TYPE	LENGTH (mm)	SLOPE (1:X)	USIL (m)	USCL (m)	DSIL (m)	US DEPTH (m)	CONDUIT SIZE(mm)	BEDDING CLASS	TYPE
FROM	TO										
CH135	SW136	CARRIER	2.498	100	3.495	4.210	3.470	0.49	225	A	CLAY
SW136	SW137	CARRIER	49.658	584	1.167	4.272	1.082	2.43	675	F	PCC
SW137	SW140	CARRIER	50.626	582	1.082	4.288	0.995	2.531	675	F	PCC
CH138	CH139	KERB DRAIN	49.583	365	3.955	4.210	3.819	-	150X405	-	ACO HB405
CH139	SW140	CARRIER	3.081	128	3.493	4.208	3.469	0.49	225	A	CLAY
SW140	SW141	CARRIER	43.071	507	0.995	4.273	0.910	2.603	675	F	PCC
SW141	SW172	CARRIER	56.754	668	0.910	4.165	0.825	2.58	675	F	PCC
CH142	CH144	CHANNEL	42.267	200	4.860	5.025	4.649	-	150x185	-	ACO M150D
CH143	CH144	CHANNEL	35.967	175	5.052	5.217	4.846	-	150x185	-	ACO M150D
CH144	SW145	CARRIER	2.269	134	4.331	5.050	4.314	0.494	225	A	CLAY
SW145	SW154	CARRIER	43.147	160	3.902	5.072	3.632	0.945	225	S	CLAY
CH146	CH148	CHANNEL	31.127	200	5.031	5.196	4.875	-	150x185	-	ACO M150D
CH147	CH148	CHANNEL	13.999	200	4.899	5.064	4.831	-	150x185	-	ACO M150D
CH148	SW149	CARRIER	2.362	103	4.395	5.061	4.372	0.441	225	A	CLAY
SW149	SW153	CARRIER	46.795	130	3.877	5.060	3.517	0.958	225	S	CLAY
CH150	CH152	CHANNEL	31.946	200	4.898	5.063	4.738	-	150x185	-	ACO M150D
CH151	CH152	CHANNEL	39.422	200	4.861	5.026	4.664	-	150x185	-	ACO M150D
CH152	SW153	CARRIER	2.346	138	4.336	5.050	4.319	0.489	225	A	CLAY
SW153	SW154	CARRIER	40.502	117	3.442	5.069	3.097	1.327	300	B	PCC
SW154	SW168	CARRIER	8.009	211	2.947	5.063	2.909	1.666	450	B	PCC
CH155	CH157	CHANNEL	21.802	200	5.074	5.239	4.965	-	150x185	-	ACO M150D
CH156	CH157	CHANNEL	23.311	199	5.086	5.251	4.969	-	150x185	-	ACO M150D
CH157	SW158	CARRIER	6.674	136	4.546	5.289	4.497	0.518	225	A	CLAY
SW158	SW162	CARRIER	40.816	163	4.197	5.337	3.946	0.915	225	S	CLAY
CH159	CH161	CHANNEL	16.035	200	5.088	5.253	5.008	-	150x185	-	ACO M150D
CH160	CH161	CHANNEL	40.537	200	5.038	5.203	4.835	-	150x185	-	ACO M150D
CH161	SW162	CARRIER	6.46	101	4.640	5.312	4.576	0.447	225	A	CLAY
SW162	SW167	CARRIER	37.794	151	3.871	5.343	3.620	1.172	300	B	PCC
CH163	CH165	CHANNEL	38.891	201	4.893	5.203	4.699	-	200x340	-	ACO M200D
CH164	CH165	CHANNEL	37.077	200	5.155	5.369	4.970	-	200x240	-	ACO M200D
CH165	SW166	CARRIER	6.533	50	4.494	5.204	4.363	0.485	225	A	CLAY
SW166	SW167	CARRIER	43.253	170	4.074	5.296	3.820	0.922	300	S	PCC
SW167	SW168	CARRIER	8.212	293	3.470	5.309	3.442	1.389	450	B	PCC
SW168	SW169	CARRIER	8.979	134	2.909	5.187	2.842	1.828	450	B	PCC
SW169	ATT U/S 04	CARRIER	8.781	289	2.842	5.175	2.811	1.87	450	B	PCC
ATT D/S 04	SW170	CARRIER	13.497	290	2.669	5.231	2.623	2.157	450	B	PCC
SW170	SW171	CARRIER	8.313	287	2.623	5.429	2.594	2.356	450	B	PCC
SW171	SW172	CARRIER	15.423	200	2.512	5.258	2.435	2.296	450	B	PCC
SW172	SW195	CARRIER	16.971	771	0.750	4.246	0.728	2.746	750	F	PCC
CH173	CH175	CHANNEL	35.553	200	4.966	5.276	4.788	-	200x340	-	ACO M200D
CH174	CH175	CHANNEL	40.798	123	5.300	5.610	4.967	-	200x340	-	ACO M200D
CH175	SW176	CARRIER	3.191	40	4.586	5.277	4.506	0.391	300	A	PCC
SW176	SW181	CARRIER	38.902	155	4.064	5.242	3.813	0.878	300	A	PCC
CH177	CH179	CHANNEL	35.562	115	5.206	5.516	4.896	-	200x340	-	ACO M200D
CH178	CH179	CHANNEL	41.456	200	4.966	5.276	4.759	-	200x340	-	ACO M200D
CH179	SW180	CARRIER	3.341	28	4.670	5.363	4.550	0.393	300	A	PCC
SW180	SW181	CARRIER	39.309	120	4.137	5.330	3.809	0.893	300	A	PCC
SW181	SW191	CARRIER	10.38	150	3.734	5.246	3.665	1.137	375	B	PCC
CH182	CH184	CHANNEL	26.806	140	4.956	5.166	4.766	-	200x240	-	ACO M200D
CH183	CH184	CHANNEL	28.027	115	4.863	5.073	4.620	-	200x240	-	ACO M200D
CH184	SW185	CARRIER	1.224	102	4.450	5.150	4.438	0.475	225	A	CLAY
SW185	SW190	CARRIER	25.915	145	3.953	5.150	3.774	0.972	225	S	CLAY
CH186	CH188	CHANNEL	35.881	201	4.862	5.072	4.683	-	200x240	-	ACO M200D
CH187	CH188	CHANNEL	40.277	163	5.087	5.297	4.840	-	200x240	-	ACO M200D
CH188	SW189	CARRIER	1.397	100	4.376	5.050	4.362	0.374	300	A	PCC
SW189	SW190	CARRIER	38.906	105	3.875	5.050	3.503	0.875	300	A	PCC
SW190	SW191	CARRIER	9.156	100	3.353	5.100	3.261	1.297	450	B	PCC
SW191	SW192	CARRIER	5.577	136	3.186	5.149	3.145	1.438	525	F	PCC
SW192	ATT U/S 05	CARRIER	1.419	301	3.145	5.159	3.140	1.489	525	F	PCC
ATT D/S 05	SW193	CARRIER	2.543	301	3.007	5.238	2.999	1.527	525	F	PCC
SW193	SW194	CARRIER	15.013	406	2.999	5.243	2.962	1.719	525	F	PCC
SW194	SW195	CARRIER	9.16	92	2.500	5.305	2.400	2.205	600	F	PCC
SW195	SW206	CARRIER	19.191	768	0.678	4.258	0.653	2.83	750	F	PCC
SW196	SW197	CARRIER	8.248	102	3.087	4.411	3.006	1.174	150	B	CLAY
SW197	SW198	CARRIER	8.322	102	3.006	4.399	2.924	1.243	150	B	CLAY
SW198	SW202	CARRIER	26.028	100	2.924	4.414	2.664	1.34	150	B	CLAY
CH199	CH201	CHANNEL	24.821	1773	3.876	4.231	3.862	-	150x480	-	ACO HB480
CH200	CH201	CHANNEL	23.575	445	3.949	4.204	3.896	-	150X405	-	ACO HB405
CH201	SW202	CARRIER	1.977	76	3.377	4.217	3.351	0.615	225	A	CLAY
SW202	SW205	CARRIER	22.839	100	2.589	4.250	2.361	1.436	225	B	CLAY
CH203	CH204	CHANNEL	24.139	575	4.130	4.295	4.088	-	150x185	-	ACO M150D
CH204	SW205	CARRIER	5.366	55	3.546	4.253	3.448	0.557	150	A	CLAY
SW205	SW206	CARRIER	13.449	44	2.641	4.250	2.336	1.459	150	B	CLAY
SW206	SW215	CARRIER	7.663	766	0.653	4.274	0.643	2.871	750	F	PCC
CH207	CH208	CHANNEL	13.676	180	4.034	4.244	3.958	-	200x240	-	ACO M200D
CH208	CH209	CHANNEL	18.677	158	3.958	4.236	3.840	-	200x240	-	ACO M200D
CH209	CH210	CHANNEL	12.131	169	3.740	4.211	3.668	-	200x340	-	ACO M200D
CH210	CH213	CHANNEL	10.565	199	3.668	4.200	3.615	-	200x340	-	ACO M200D
CH211	CH212	CHANNEL	14.227	156	4.090	4.255	3.999	-	150x185	-	ACO M150D
CH212	CH213	CHANNEL	9.847	126	3.854	4.235	3.776	-	200x340	-	ACO M200D
CH213	SW214	CARRIER	3.651	28	3.496	4.206	3.366	0.485	225	A	CLAY
SW214	SW215	CARRIER	17.359	100	2.987	4.250	2.813	0.963	300	S	PCC
SW215	SW221	CARRIER	20.209	777	0.643	4.263	0.617	2.87	750	F	PCC
CH216	CH218	CHANNEL	25.003	147	4.253	4.418	4.083	-	150x185	-	ACO M150D
CH217	CH218	CHANNEL	15.135	199	4.159	4.324	4.083	-	150x185	-	ACO M150D
CH218	SW219	CARRIER	4.022	101	3.663	4.358	3.623	0.545	150	A	CLAY
SW219	SW220	CARRIER	30.546	85	3.623	4.400	3.263	0.627	150	A	CLAY
SW220	SW221	CARRIER	12.905	244	3.113	4.494	3.060	1.081	300	B	PCC
SW221	SW222	CARRIER	5.989	749	0.617	4.390	0.609	3.023	750	B	PCC
SW222	ATT U/S 06	CARRIER	38.239	750	0.607	4.370	0.602	3.013	750	B	PCC
ATT D/S 06	SW223	CARRIER	3.483	750	0.601	4.283	0.556	2.931	750	B	PCC
SW223	SW224	CARRIER	25.184	741	0.556	4.278	0.522	2.972	750	F	PCC
SW224	SW256	CARRIER	24.867	410	0.521	4.385	0.460	3.414	450	S	PCC
CH225	CH227	CHANNEL	18.307	193	4.082	4.247	3.987	-	150x185	-	ACO M150D
CH226	CH227	CHANNEL	19.057	201	4.074	4.239	3.979	-	150x185	-	ACO M150D

100  
Millimetres  
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MANHOLE SCHEDULE						
SETOUT POINTS	COORDINATES		MH TYPE	MH SIZE (mm)	MH COVER LOAD CLASS	NOTE
	E(m)	N(m)				
CH040	542990.365	180149.12	-	-	D400	
CH041	543030.385	180148.23	-	-	D400	
CH042	543011.219	180148.575	-	500x390x1025	D400	ACO KERB SUMP UNIT
SW043	543011.364	180151.746	2	1200	D400	
CH044	543031.375	180148.208	-	-	D400	
CH045	543072.069	180147.296	-	-	D400	
CH046	543052.418	180147.629	-	500x390x1025	D400	ACO KERB SUMP UNIT
SW047	543052.552	180150.565	2	1200	D400	
CH048	543150.589	180147.911	-	-	D400	
CH049	543120.6	180146.776	-	500x390x1025	D400	ACO KERB SUMP UNIT
SW050	543120.486	180149.677	2	1200	D400	
CH051	543072.783	180147.28	-	-	D400	
CH052	543119.302	180146.851	-	-	D400	
CH053	543098.164	180146.605	-	500x390x1025	D400	ACO KERB SUMP UNIT
SW054	543098.255	180149.582	2	1200	D400	
SW055	543045.535	180207.333	2	1200	D400	
SW056	543042.975	180173.897	2	1200	D400	
CH057	543049.848	180170.417	-	-	D400	
CH058	543100.712	180166.895	-	-	D400	
CH059	543069.072	180169.088	-	500x185x735	D400	ACO M150D SUMP UNIT
CH060	543050.664	180177.381	-	-	D400	
CH061	543102.131	180173.95	-	-	D400	
CH062	543069.599	180176.364	-	500x185x735	D400	ACO M150D SUMP UNIT
SW063	543069.316	180171.857	2	1200	D400	
CH064	543102.203	180166.838	-	-	D400	
CH065	543149.548	180163.361	-	-	D400	
CH066	543128.406	180164.895	-	500x185x735	D400	ACO M150D SUMP UNIT
CH067	543103.601	180174.044	-	-	D400	
CH068	543149.974	180170.43	-	-	D400	
CH069	543128.775	180172.237	-	500x185x735	D400	ACO M150D SUMP UNIT
SW070	543128.48	180167.546	2	1200	D400	
SW071	543099.682	180169.495	2	1500	D400	
CH072	543057.735	180198.131	-	-	D400	
CH073	543102.919	180194.55	-	-	D400	
CH074	543073.515	180196.862	-	500x185x735	D400	ACO M150D SUMP UNIT
SW075	543073.749	180199.026	2	1200	D400	
CH076	543145.253	180191.686	-	-	D400	
CH077	543104.555	180194.652	-	-	D400	
CH078	543130.835	180192.607	-	500x185x735	D400	ACO M150D SUMP UNIT
SW079	543131.018	180194.687	2	1200	D400	
SW080	543101.302	180196.8	2	1200	D400	
SW081	543100.588	180183.097	2	1800	D400	
SW082	543108.043	180182.674	2	"1875 DIA, 3200 LENGTH"	-	FUEL INTERCEPTOR MODEL 318C1/SC BY SPEL
SW083	543145.536	180180.283	2	1800	D400	
SW084	543151.384	180163.607	2	1500	D400	
SW085	543151.355	180150.484	2	1500	D400	
CH086	543151.647	180155.101	-	-	D400	
CH087	543181.403	180155.743	-	500x185x735	D400	ACO M150D SUMP UNIT
CH088	543151.888	180147.889	-	-	D400	
CH089	543181.503	180148.69	-	500x390x1025	D400	ACO KERB SUMP UNIT
SW090	543181.583	180151.172	2	1500	D400	
CH091	543182.827	180148.83	-	-	D400	
CH092	543269.756	180146.991	-	-	D400	
CH093	543221.816	180147.961	-	500x390x1025	D400	ACO KERB SUMP UNIT
SW094	543221.868	180150.89	2	1500	D400	
CH095	543254.039	180154.368	-	-	D400	
CH096	543269.925	180153.993	-	500x185x735	D400	ACO M150D SUMP UNIT
SW097	543269.923	180149.677	2	1500	D400	
CH098	543271.052	180146.962	-	-	D400	
CH099	543324.484	180145.226	-	-	D400	
CH100	543298.374	180146.176	-	500x390x1025	D400	ACO KERB SUMP UNIT
SW101	543298.572	180149.097	2	1500	D400	
SW102	543324.614	180148.143	2	1500	D400	
CH103	543325.967	180145.136	-	-	D400	
CH104	543379.971	180139.743	-	-	D400	
CH105	543353.954	180142.69	-	500x390x1025	D400	ACO KERB SUMP UNIT
SW106	543354.108	180145.703	2	1500	D400	
CH107	543340.98	180158.01	-	-	D400	
CH108	543390.99	180154.636	-	-	D400	
CH109	543363.153	180156.444	-	500x185x735	D400	ACO M150D SUMP UNIT
SW110	543363.418	180158.644	2	1200	D400	
SW111	543267.585	180187.604	2	1200	D400	
SW112	543266.199	180165.68	2	1500	D400	
CH113	543281.087	180162.062	-	-	D400	
CH114	543339.835	180157.992	-	-	D400	
CH115	543296.011	180161.113	-	500x185x735	D400	ACO M150D SUMP UNIT
SW116	543296.307	180163.405	2	1500	D400	
SW117	543317.09	180162.065	2	1500	D400	
CH118	543341.049	180172.981	-	-	D400	
CH119	543380.558	180170.362	-	-	D400	
CH120	543356.45	180171.999	-	500x185x735	D400	ACO M150D SUMP UNIT
SW121	543356.856	180179.128	2	1200	D400	
CH122	543281.349	180176.801	-	-	D400	
CH123	543339.521	180173.091	-	-	D400	
CH124	543302.632	180175.71	-	500x185x735	D400	ACO M150D SUMP UNIT
SW125	543303.044	180182.63	2	-	D400	
SW126	543318.349	180181.764	2	1200	D400	
SW127	543317.64	180172.208	2	1500	D400	
SW128	543327.273	180171.644	2	"1875 DIA, 3200 LENGTH"	-	FUEL INTERCEPTOR MODEL 318C1/SC BY SPEL
SW129	543374.03	180168.336	2	1800	D400	
SW130	543379.996	180142.595	2	1500	D400	
CH131	543389.233	180146.352	-	-	D400	
CH132	543403.061	180144.966	-	500x185x735	D400	ACO M150D SUMP UNIT
CH133	543381.334	180139.606	-	-	D400	
CH134	543452.605	180134.736	-	-	D400	
CH135	543402.926	180137.387	-	500x390x1025	D400	ACO KERB SUMP UNIT
SW136	543402.946	180140.327	2	1500	D400	

MANHOLE SCHEDULE						
SETOUT POINTS	COORDINATES		MH TYPE	MH SIZE (mm)	MH COVER LOAD CLASS	NOTE
	E(m)	N(m)				
SW137	543452.556	180138.139	2	1500	D400	
CH138	543453.882	180134.709	-	-	D400	
CH139	543503.504	180134.729	-	500x390x1025	D400	ACO KERB SUMP UNIT
SW140	543503.183	180138.232	2	1500	D400	
SW141	543546.125	180134.905	2	1500	D400	
CH142	543523.443	180148.505	-	-	D400	
CH143	543601.517	180143.562	-	-	D400	
CH144	543565.649	180146.224	-	500x185x735	D400	ACO M150D SUMP UNIT
SW145	543565.928	180148.475	2	1200	D400	
CH146	543404.432	180151.674	-	-	D400	
CH147	543449.045	180148.505	-	-	D400	
CH148	543435.484	180149.519	-	500x185x735	D400	ACO M150D SUMP UNIT
SW149	543435.589	180151.879	2	1200	D400	
CH150	543450.439	180148.505	-	-	D400	
CH151	543521.796	180148.505	-	-	D400	
CH152	543482.379	180147.872	-	500x185x735	D400	ACO M150D SUMP UNIT
SW153	543482.355	180150.218	2	1200	D400	
SW154	543522.851	180150.93	2	1500	D400	
CH155	543422.806	180167.541	-	-	D400	
CH156	543467.798	180164.238	-	-	D400	
CH157	543444.545	180165.889	-	500x185x735	D400	ACO M150D SUMP UNIT
SW158	543444.99	180172.549	2	1200	D400	
CH159	543469.311	180164.376	-	-	D400	
CH160	543525.723	180160.111	-	-	D400	
CH161	543485.299	180163.138	-	500x185x735	D400	ACO M150D SUMP UNIT
SW162	543485.698	180169.585	2	1200	D400	
CH163	543527.317	180160.156	2	-	D400	
CH164	543603.145	180155.542	-	-	D400	
CH165	543566.134	180157.749	-	500x235x790	D400	ACO M200D SUMP UNIT
SW166	543566.571	180164.267	2	1200	D400	
SW167	543523.413	180167.141	2	1500	D400	
SW168	543523.207	180158.932	2	1500	D400	
SW169	543533.659	543533.659	2	"1875 DIA, 3200 LENGTH"	-	FUEL INTERCEPTOR MODEL 318C1/SC BY SPEL
SW170	543595.406	180154.068	2	1500	D400	
SW171	543599.369	180146.76	2	1500	D400	
SW172	543602.789	180131.72	2	1800	D400	
CH173	543690.362	180149.02	2	-	D400	
CH174	543766.524	180143.666	2	-	D400	
CH175	543725.833	180146.611	-	500x235x790	D400	ACO M200D SUMP UNIT
SW176	543725.477	180143.44	2	1200	D400	
CH177	543612.326	180154.508	2	-	D400	
CH178	543689.157	180149.154	2	-	D400	
CH179	543647.797	180151.965	-	500x235x790	D400	ACO M200D SUMP UNIT
SW180	543647.441	180148.643	2	1200	D400	
SW181	543686.647	180145.803	2	1500	D400	
CH182	543633.349	180130.668	-	-	D400	
CH183	543687.895	180127.595	-	-	D400	
CH184	543659.918	180129.26	-	500x235x790	D400	ACO M200D SUMP UNIT
SW185	543659.716	180128.052	2	1200	D400	
CH186	543688.682	180127.591	-	-	D400	
CH187	543764.666	180122.456	-	-	D400	
CH188	543724.479	180125.135	-	500x235x790	D400	ACO M200D SUMP UNIT
SW189	543724.393	180123.741	2	1200	D400	
SW190	543685.572	180126.298	2	1500	D400	
SW191	543686.138	180135.436	2	1500	D400	
SW192	543679.199	180135.85	2	"1875 DIA, 3200 LENGTH"	-	FUEL INTERCEPTOR MODEL 318C1/SC BY SPEL
SW193	543636.662	180138.73	2	1500	D400	
SW194	543621.937	180135.801	2	1500	D400	
SW195	543619.116	180127.086	2	1800	D400	
SW196	543713.589	180112.154	2	1200	D400	
SW197	543705.36	180112.713	2	1200	D400	
SW198	543697.052	180113.192	2	1200	D400	
CH199	543695.297	180103.306	-	-	D400	
CH200	543648.155	180113.296	-	-	D400	
CH201	543670.736	180106.48	-	500x390x1025	D400	ACO KERB SUMP UNIT
SW202	543671.408	180108.736	2	1200	D400	
CH203	543675.343	180119.094	-	-	D400	
CH204	543651.258	180120.711	-	500x185x735	D400	ACO M150D SUMP UNIT
SW205	543649.626	180115.599	2	1200	D400	
SW206	543636.782	180119.589	2	1800	D400	
CH207	543705.909	180101.807	-	-	D400	
CH208	543692.24	180102.236	-	-	D400	
CH209	543673.692	180104.434	2	-	D400	
CH210	543661.899	180107.275	2	-	D400	
CH211	543629.252	180118.768	-	-	D400	
CH212	543642.461	180113.484	2	-	D400	
CH213	543651.761	180110.248	-	500x235x790	D400	ACO M200D SUMP UNIT
SW214	543650.076	180107.009	2	1200	D400	
SW215	543633.642	180112.598	2	1800	D400	
CH216	543652.076	180088.151	-	-	D400	
CH217	543691.699	180094.557	-	-	D400	
CH218	543676.751	180092.185	-	500x185x735	D400	ACO M150D SUMP UNIT
SW219	543677.505	180088.247	2	1200	D400	
SW220	543647.397	180083.074	2	1200	D400	
SW221	543639.453	180093.243	1	1800	D400	
SW222	543644.261	180093.841	1	"2700 DIA, 4400 LENGTH"	-	FUEL INTERCEPTOR MODEL 460C1/SC BY SPEL
SW223	543683.357	180098.58	2	1800	D400	
SW224	543708.506	180099.897	1	1800	D400	
CH225	543756.437	180098.231	-	-	D400	
CH226	543793.736	180096.05	-	-	D400	
CH227	543774.705	180097.041	-	500x185x735	D400	ACO M150D SUMP UNIT
SW228	543774.251	180089.523	2	1200	D400	
CH229	543785.043	180143.826	-	-	D400	-
CH230	543783.803	180120.31	-	500x185x735	D400	ACO M150D SUMP UNIT
SW231	543790.935	180119.934	2	1200	D400	
CH232	543756.759	180107.063	-	-	D400	
CH233	543787.113	180106.717	-	500x235x790	D400	ACO M200D SUMP UNIT
SW234	543728.568	180110.735	2	1200	D400	