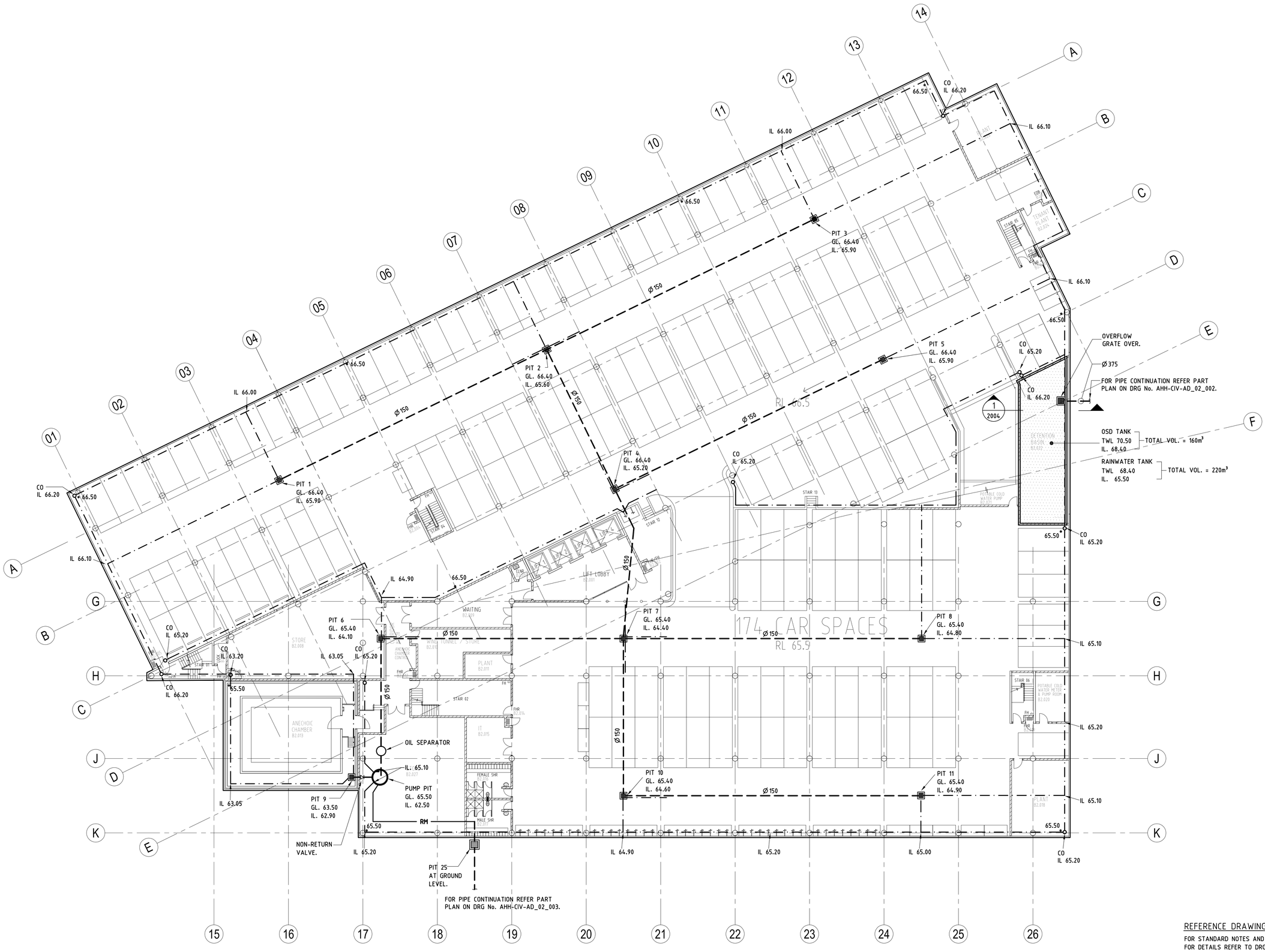
PRELIMINARY

AUSTRALIAN HEARING HUB MACQUARIE UNIVERSITY



REFERENCE DRAWINGS:

FOR STANDARD NOTES AND LEGEND REFER TO DRG. No. AHH-CIV-AD_00_001
FOR DETAILS REFER TO DRG. No. AHH-CIV-AD_02_004

AMENDMENTS		
REVDATE	AMENDMENT	BY
A 14.05.10	ISSUED FOR PROJECT APPLICATION.	SETO

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AUSTRALIAN HEARING HUB
AT MACQUARIE UNIVERSITY

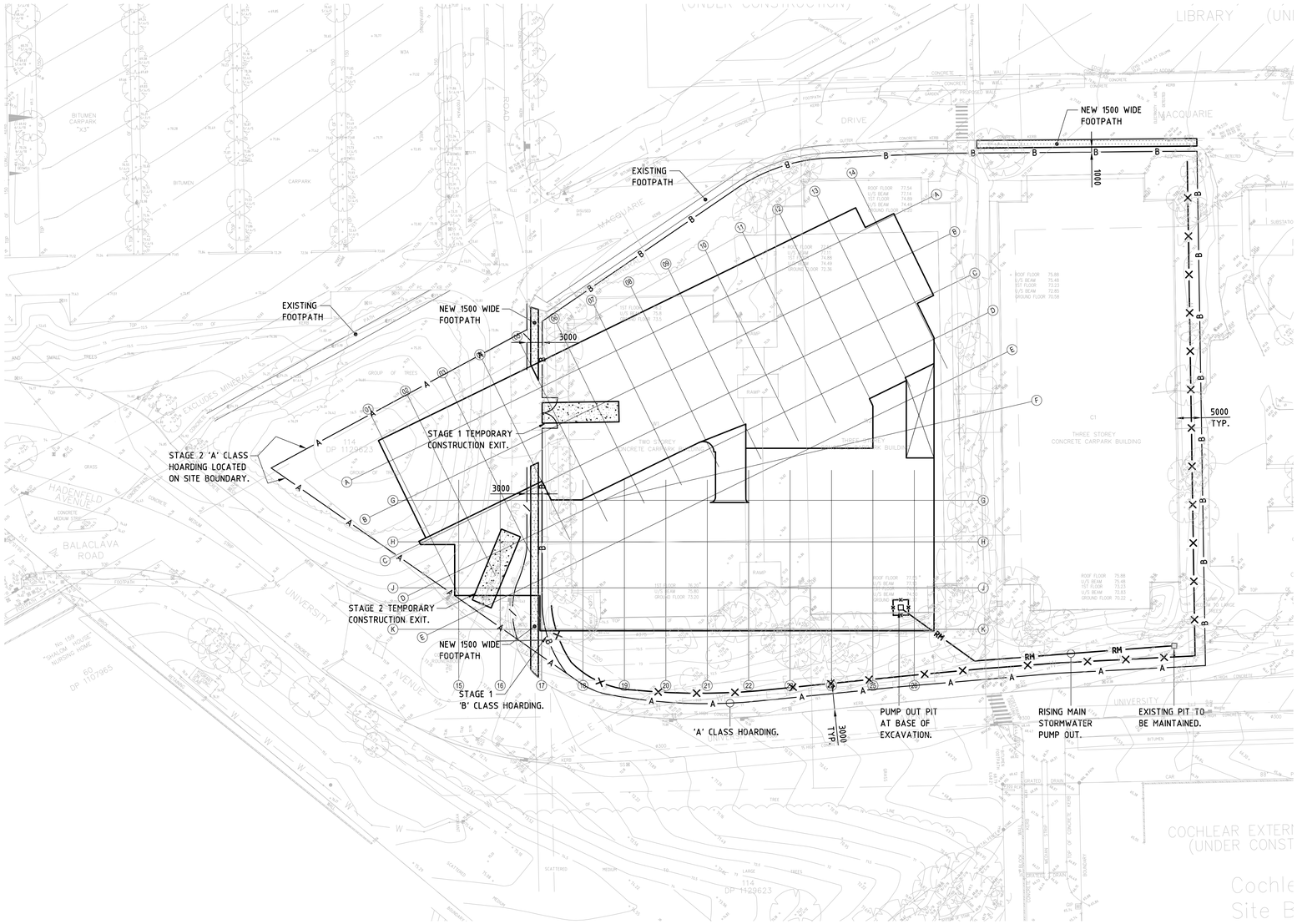
CIVIL WORKS PLAN - BASEMENT 2

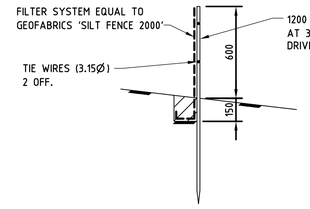
SCALES (A1 original)	CONSULTANTS DRAWING REFERENCE NUMBER
1:200	

DESIGNED	DRAFTED	VERIFIED	TRUE NORTH	DATE
				MAR 2010

DRAWING NUMBER

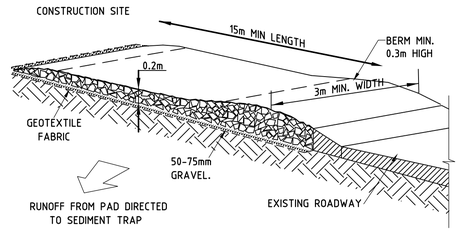
PROJECT CODE	DISCIPLINE CODE	PHASE CODE	DRAWING TYPE	SERIES NUMBER	REVISION
AHH	- CIV	-AD	_02_001		A



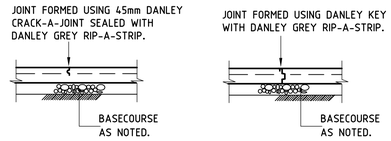


SILT FENCE DETAIL.

TO BE PLACED AROUND LOW SIDE OF PROPERTY BOUNDARY AND AROUND STORMWATER INLET STRUCTURES TO PREVENT SOIL WASHING OFF SITE.



TEMPORARY CONSTRUCTION EXIT



DUMMY JOINT
SHOWN 'd' ON PLAN

KEY JOINT
SHOWN 'k' ON PLAN

CONCRETE PEDESTRIAN PAVEMENT DETAILS

LEGEND

- NEW SILT FENCE
- NEW 1800 HIGH CHAIN WIRE FENCE.
- A — NEW 'A' CLASS HOARDING
- B — NEW 'B' CLASS HOARDING
  (PLYWOOD FINISH FOR FUTURE GRAPHICS.)
- RM — RISING MAIN.
- k — DENOTES KEYED JOINT
- d — DENOTES DUMMY JOINT
- DENOTES 100mm THICK CONCRETE PAVEMENT SLAB ON A 75mm THICK DGB20 BASECOURSE REINFORCED WITH SL72 FABRIC TOP (40 COVER)
- DENOTES TEMPORARY CONSTRUCTION EXIT

STAGING

STAGE 1 - 1. DEMOLITION DOWN TO EXISTING BITUMEN ONLY
2. PROTECT ALL TREES
3. MAINTAIN EXISTING STORMWATER DRAINAGE
4. PROVIDE GEOFABRIC PROTECTION TO EXISTING GRATES.

STAGE 2 - 1. DEMOLITION OF EXISTING BITUMEN/FOOTINGS/TREES/SERVICES ETC. ONLY OVER AREA OF BULK EXCAVATION.
2. BULK EXCAVATION OF SITE INCLUDING THE REMOVAL OF TREES
3. DETAIL EXCAVATION FOR FOOTINGS
4. FORM, REINFORCE AND POUR FOOTINGS

REFERENCE DRAWINGS:
FOR STANDARD NOTES AND LEGEND REFER TO DRG. No. AHH-CIV-AD_00_001

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AUSTRALIAN HEARING HUB MACQUARIE UNIVERSITY

AMENDMENTS

REV	DATE	AMENDMENT	BY
A	01.04.10	EARLY WORKS TENDER ISSUE	SETB
B	16.04.10	EARLY WORKS TENDER ADDENDUM ISSUE	SETB

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AUSTRALIAN HEARING HUB
AT MACQUARIE UNIVERSITY

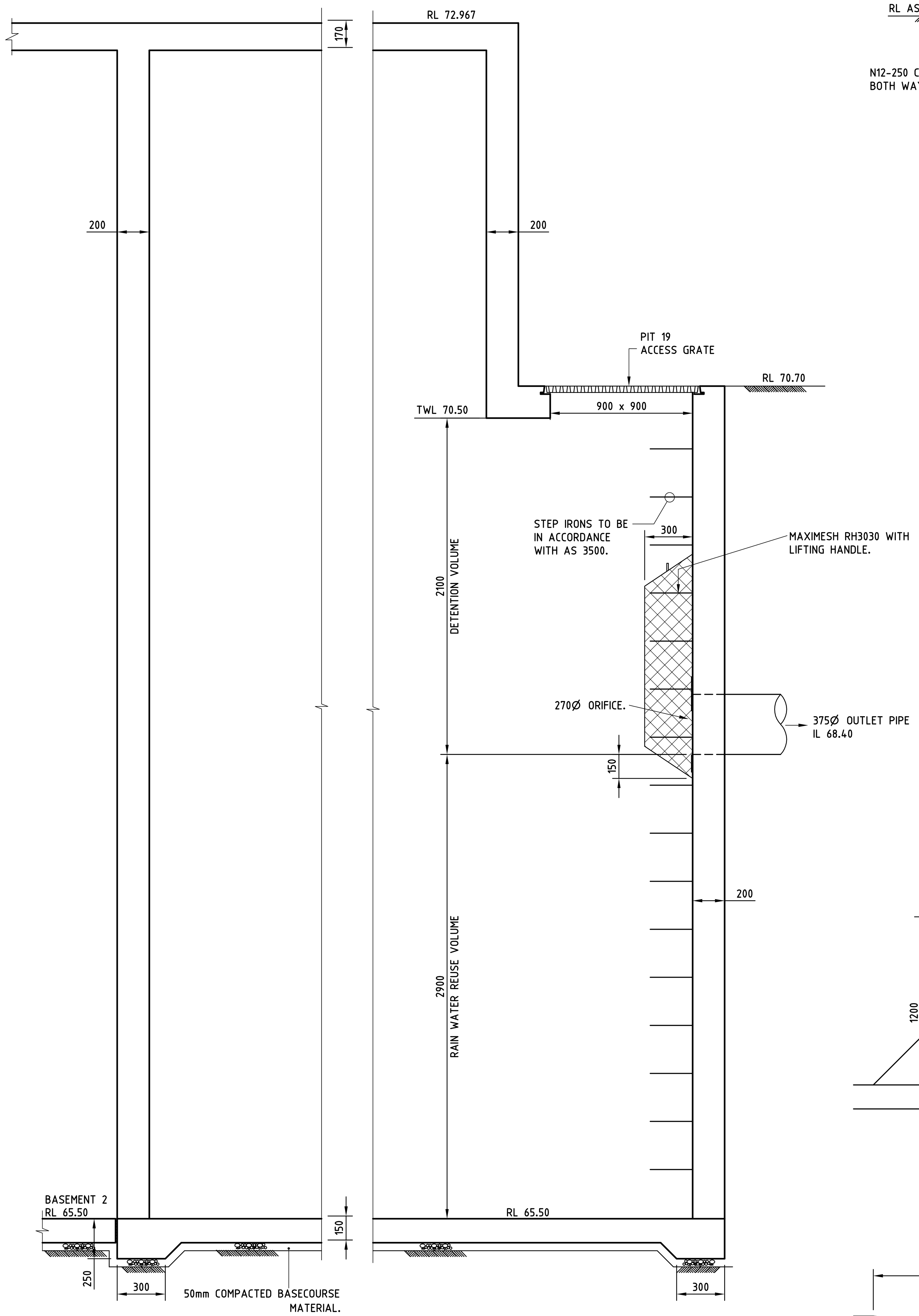
EROSION AND SEDIMENT CONTROL PLAN

SCALES (A1 original)	CONSULTANTS DRAWING REFERENCE NUMBER
1:500, 1:20	

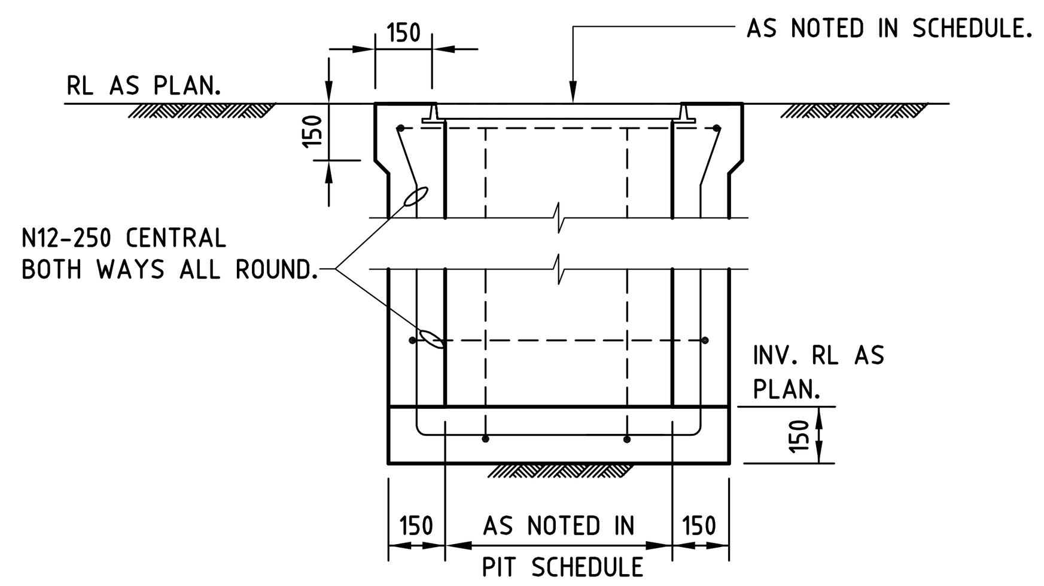
DESIGNED	DRAFTED	VERIFIED	TRUE NORTH	DATE
				MAR 2010

DRAWING NUMBER

PROJECT CODE	DISCIPLINE CODE	PHASE CODE	DRAWING TYPE	SERIES NUMBER	REVISION
AHH	- CIV	-AD	_00_002		B



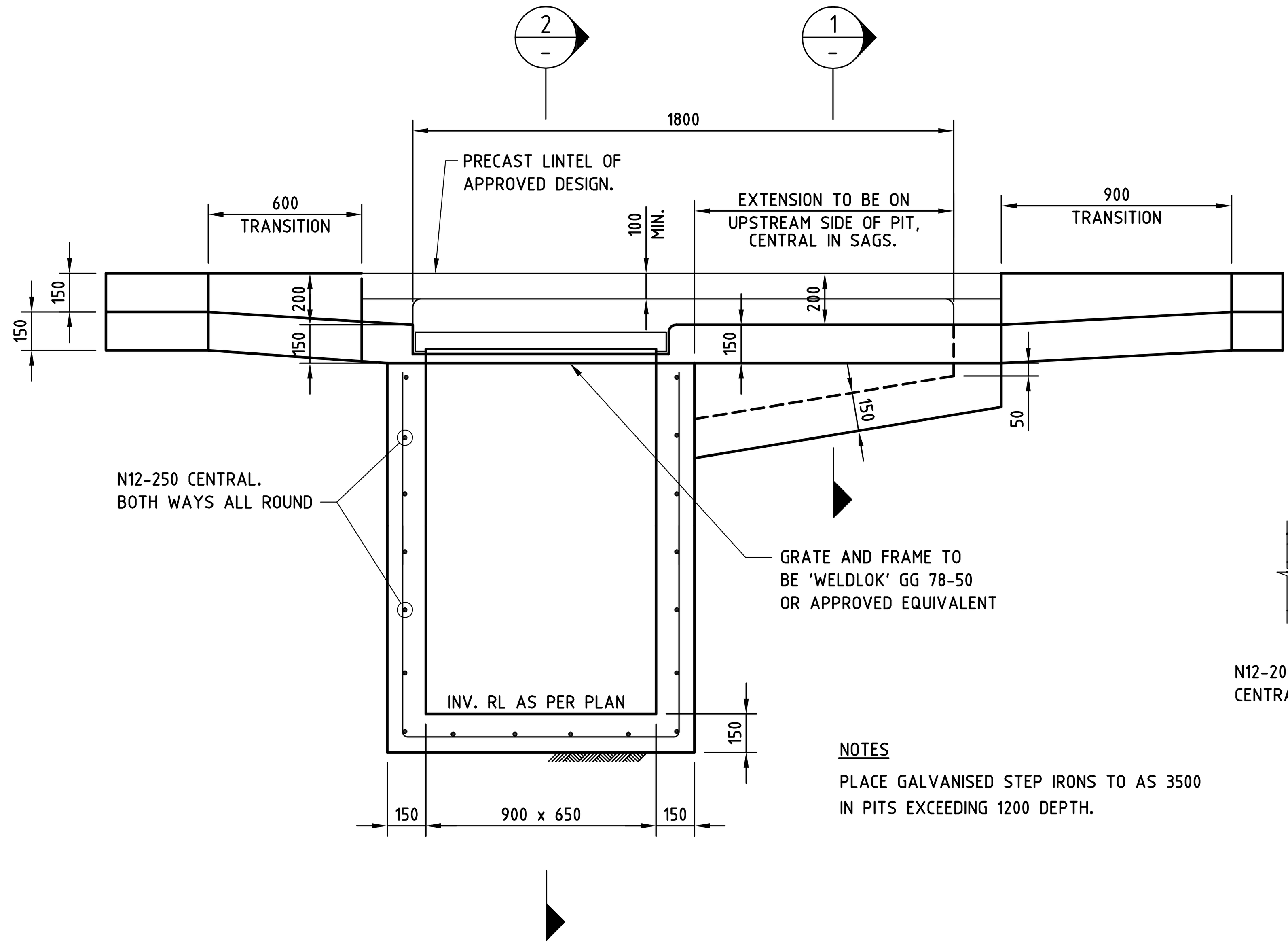
SECTION 1/2001



TYPICAL PIT DETAIL

PIT SCHEDULE

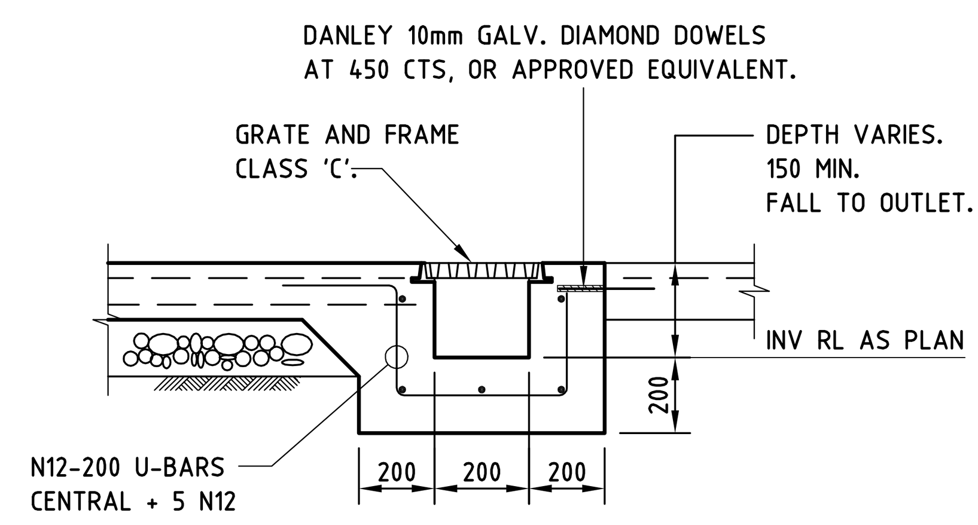
PIT No.	PIT SIZE	
1	450 x 450	CLASS 'C' GRATE
2	600 x 600	CLASS 'C' GRATE
3	450 x 450	CLASS 'C' GRATE
4	900 x 900	CLASS 'C' GRATE
5	450 x 450	CLASS 'C' GRATE
6	900 x 900	CLASS 'C' GRATE
7	900 x 900	CLASS 'C' GRATE
8	450 x 450	CLASS 'C' GRATE
9	450 x 450	CLASS 'C' GRATE
10	600 x 600	CLASS 'C' GRATE
11	450 x 450	CLASS 'C' GRATE
12	KIP	CLASS 'C' GRATE
13	600 x 600	CLASS 'B' GRATE
14	600 x 600	CLASS 'B' GRATE
15	600 x 600	CLASS 'B' GRATE
16	600 x 600	CLASS 'B' GRATE
17	600 x 600	CLASS 'B' GRATE
18	600 x 600	CLASS 'C' GRATE
19	900 x 900	CLASS 'B' GRATE
20	Ø1000	CLASS 'C' COVER
21	450 x 450	CLASS 'B' GRATE
22	450 x 450	CLASS 'B' GRATE
23	600 x 600	CLASS 'B' GRATE
24	600 x 600	CLASS 'B' GRATE
25	600 x 600	CLASS 'B' GRATE
26	Ø1000	CLASS 'C' COVER
27	KIP	CLASS 'C' GRATE
28	KIP	CLASS 'C' GRATE
29	900 x 900	CLASS 'B' GRATE



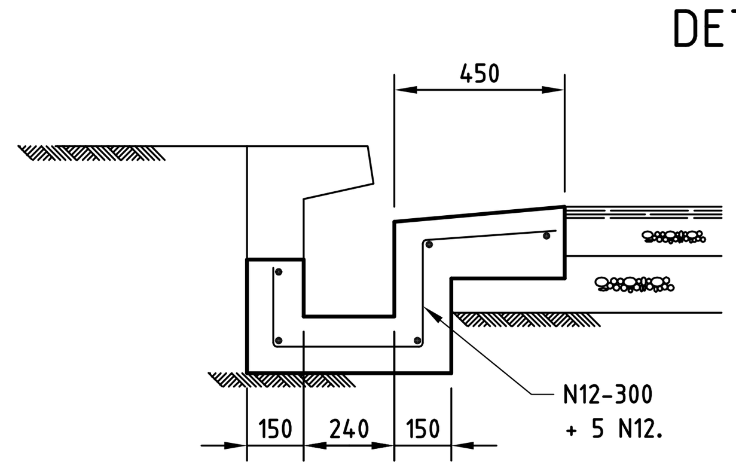
NOTES

PLACE GALVANISED STEP IRONS TO AS 3500 IN PITS EXCEEDING 1200 DEPTH.

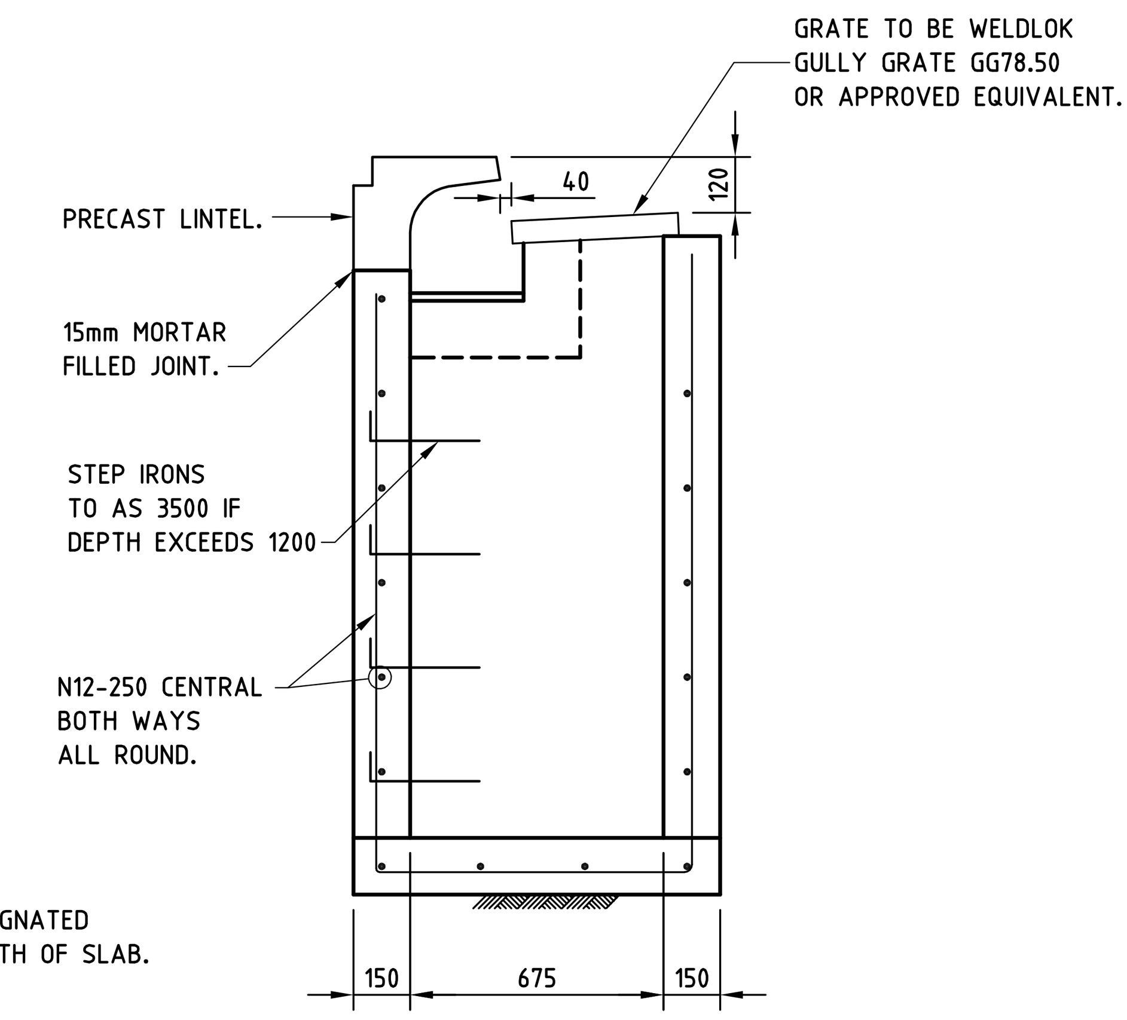
KERB INLET PIT (KIP) DETAIL



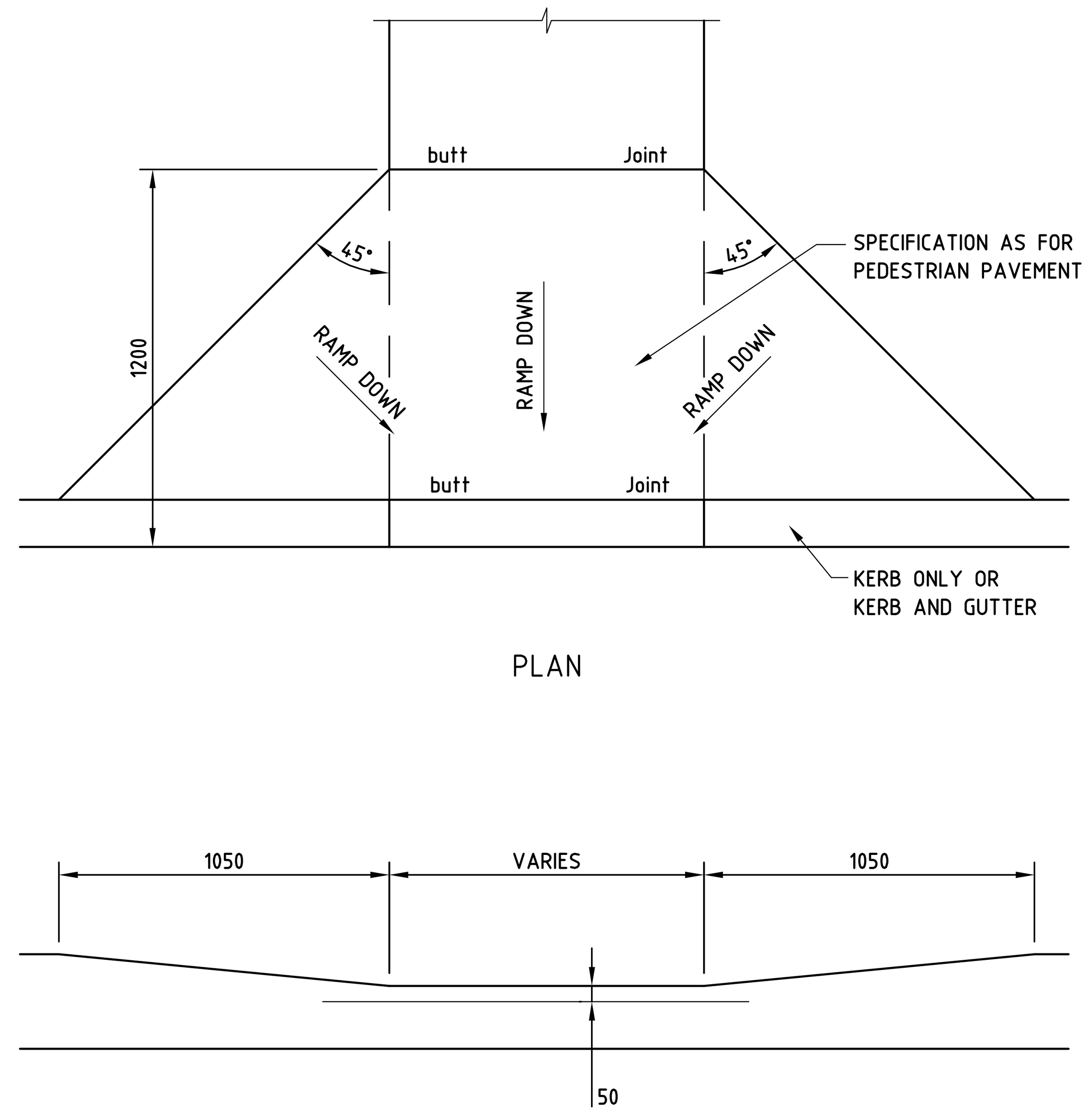
GRATED DRAIN DETAIL



SECTION 1/-

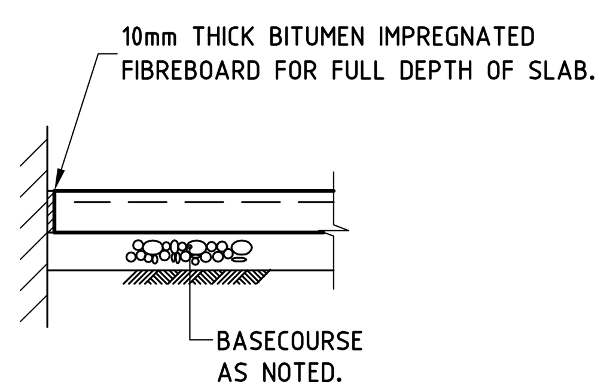


SECTION 2/-

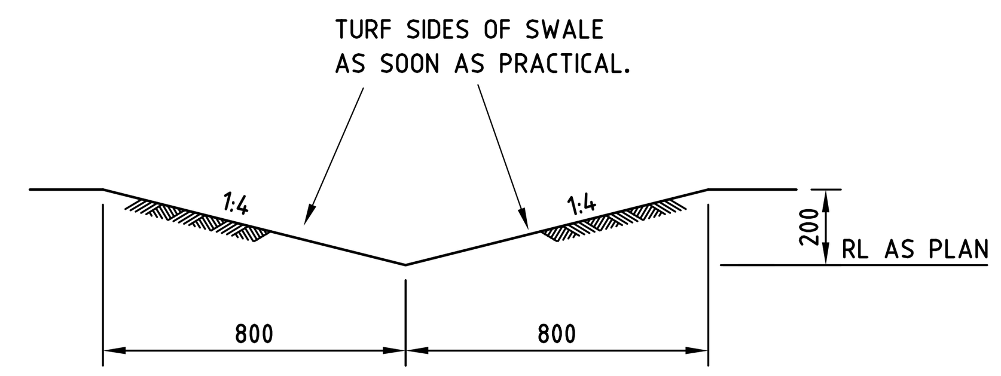


ELEVATION.

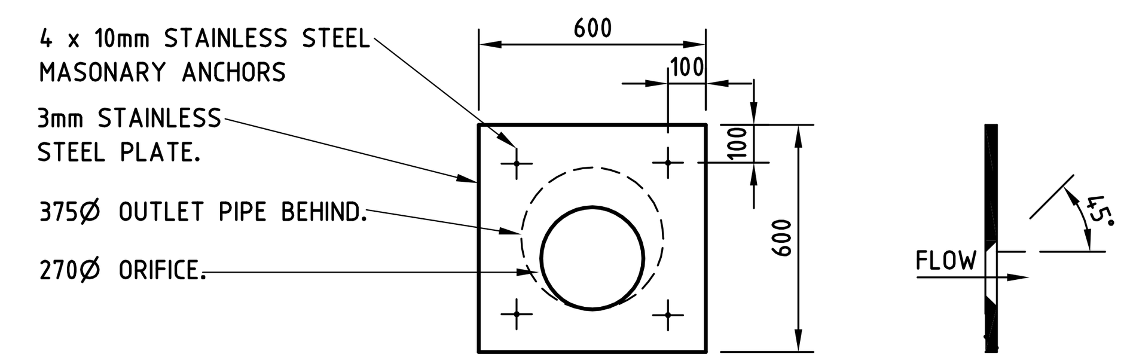
DETAIL - PEDESTRIAN LAYBACK. (PRAM RAMP)



BUTT JOINT
NOTE: TO BE PROVIDED WHEN PAVEMENT ABUTS ALL WALLS AND BUILDINGS.



SWALE DETAIL



DETAIL - ORIFICE PLATE
SCALE 1:20

REFERENCE DRAWINGS:

FOR STANDARD NOTES AND LEGEND REFER TO DRG. No. AHH-CIV-AD_00_001

PRELIMINARY

AUSTRALIAN HEARING HUB MACQUARIE UNIVERSITY

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AUSTRALIAN HEARING HUB
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CIVIL WORKS DETAILS

SCALES (A1 original)	CONSULTANTS DRAWING REFERENCE NUMBER			
1:20				
DESIGNED	DRAFTED	VERIFIED	TRUE NORTH	DATE MAR 2010

DRAWING NUMBER

PROJECT CODE	DISCIPLINE CODE	PHASE CODE	DRAWING TYPE / SERIES NUMBER	REVISION
AHH	- CIV	-AD	_02_004	A

APPENDIX B

CALCULATIONS

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CONSULTING ENGINEERS

Job Macquarie Uni Date 28 Apr 10

Detention System

References: Ryde City Council DCP 2006
Section 8.2
AS/NZS 3500.3
Australian Rainfall & Runoff

Detention Required for commercial

Post Devel Flow ≤ Pre Devel Flow
for a range of ARI - 3 → 100
If existing buildings to be removed,
site is to be considered vacant
→ Pre devel imp. area = 0m²

Total Site Area = 11 350m²

Existing hard paved area = 0m²
(as per requirement above)

Developed site
Total hard paved area = 5890m²
- Draining to OSD = 4410m²
- Bypassing OSD = 1480m²

Pervious area = 5460m²
- Draining to OSD = 0m²
- Bypassing OSD = 5460m²

RAFTS-XP used to model site

	Pervious	Impervious
Initial loss =	15mm	2.0
Continuing loss =	2.5	0
Manning 'n' =	0.025	0.015

Designed CMW | Job No. 09-181 | Sheet No. 1

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Job Macquarie Uni Date 28 Apr 10

Existing Site

Site Area = 11 350 m²

Existing hard paved area = 0 m²
(Site contains hard paving which is being removed, therefore, in accordance with Council Policy, take hard paving as 0 m²)

Site slope = 4 %

Peak Flow (L/s)

DUR	5y	20y	100y
10m	34	118	233
15m	115	213	356
20m	155	268	444
25m	184	305	467
30m	181	291	435
45m	188	286	433
1h	249	371	521
1.5h	292	430	557
2h	302	429	540
3h	223	309	385
Peak = PSD	302	430	557

Designed CMW | Job No. 09-R81 | Sheet No. 2

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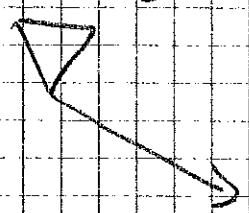
Job Macquarie Uni Date 28 Apr 10

Developed Site



A = 4410 m²
100% Hard Paved
S = 3%

Outlet

A = 6940m²
A imp = 1480m²
A per = 5460m²
S = 4%

Detention Tank

Level (m)	Volume (m³)
0	0
1	75
2	150
3	225

Outlet = Orifice
270 Ø

$Q = 0.6 \frac{\pi d^2}{4} \sqrt{2gh}$

Designed OMM | Job No. 09-181 | Sheet No. 3

Woolacott Hale Corlett & Jumikis
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CONSULTING ENGINEERS

Job Macquarie Uni Date 28 APR 10

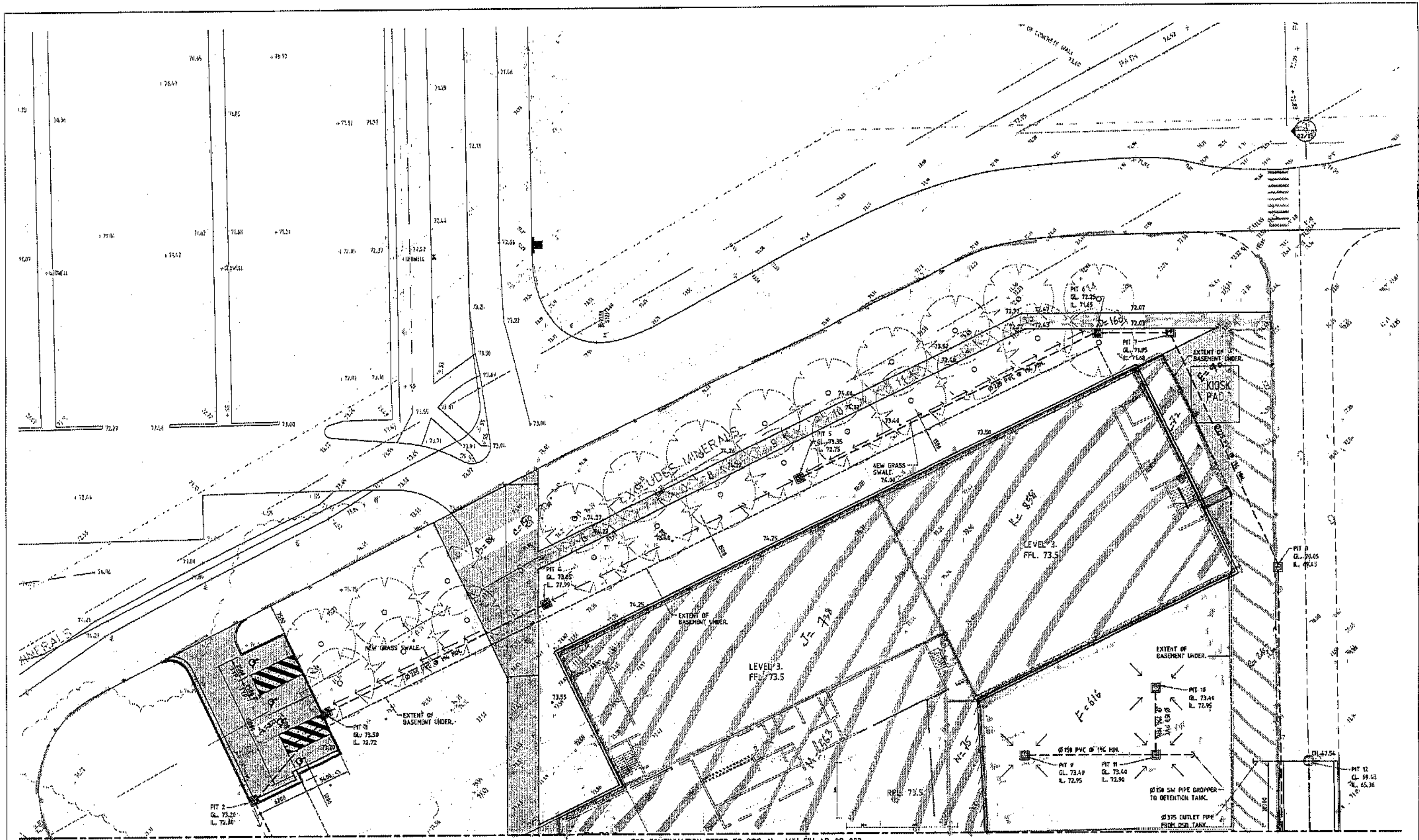
Outflow - with detention (l/s)

	5yr		20 Yr		100 Yr	
Dur	Tank	Site	Tank	Site	Tank	Site
10m	56	119	71	171	83	282
15m	61	143	76	224	89	324
20m	67	184	83	294	96	400
25m	69	213	86	327	96	426
30m	67	193	84	311	95	406
45m	66	185	83	284	98	381
1h	69	249	88	354	102	440
1.5h	78	297	92	389	106	472
2h	72	274	91	358	105	442
3h	64	213	83	275	96	334
Max		297		389		472
PSD		302		430		557

Max Vol. = 157.43 m³ @ 2.10 m

ORIFICE = 270 mm

Designed ..... Job No. ..... Sheet No. 4



FOR CONTINUATION REFER TO DRG. No. AHH-CIV-AD_02_002

SITE AREA = 11 352 m²
TOTAL HARD AREA = 5886
HARD AREA DRAINING TO OSD = 4410 (J+K+M+N+F + G+H+Q)
HARD AREA BYPASSING OSD = 1476 (A+B+C+D+E+L+R+I+H+O)
SOFT AREA BYPASSING OSD = 5466
OSD VOLUME FOR 100 YR/ARI = 195 m³
ORIFICE DIA = 300 mm

A = 200
B = 88
C = 150
D = 160
E = 90
F = 616

G
H
I
J = 738
K = 858
L = 72
M = 563
N = 75
SUB TOTAL = 3595

PROGRESS PRINT

REFERENCE DRAWINGS:
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FOR DETAILS REFER TO DRG. No. AHH-CIV-AD_02_004

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Structural and Civil Engineers
Woolacotts. Consulting Engineers

JOB No.	Approved	Verified	Prepared
09-181			

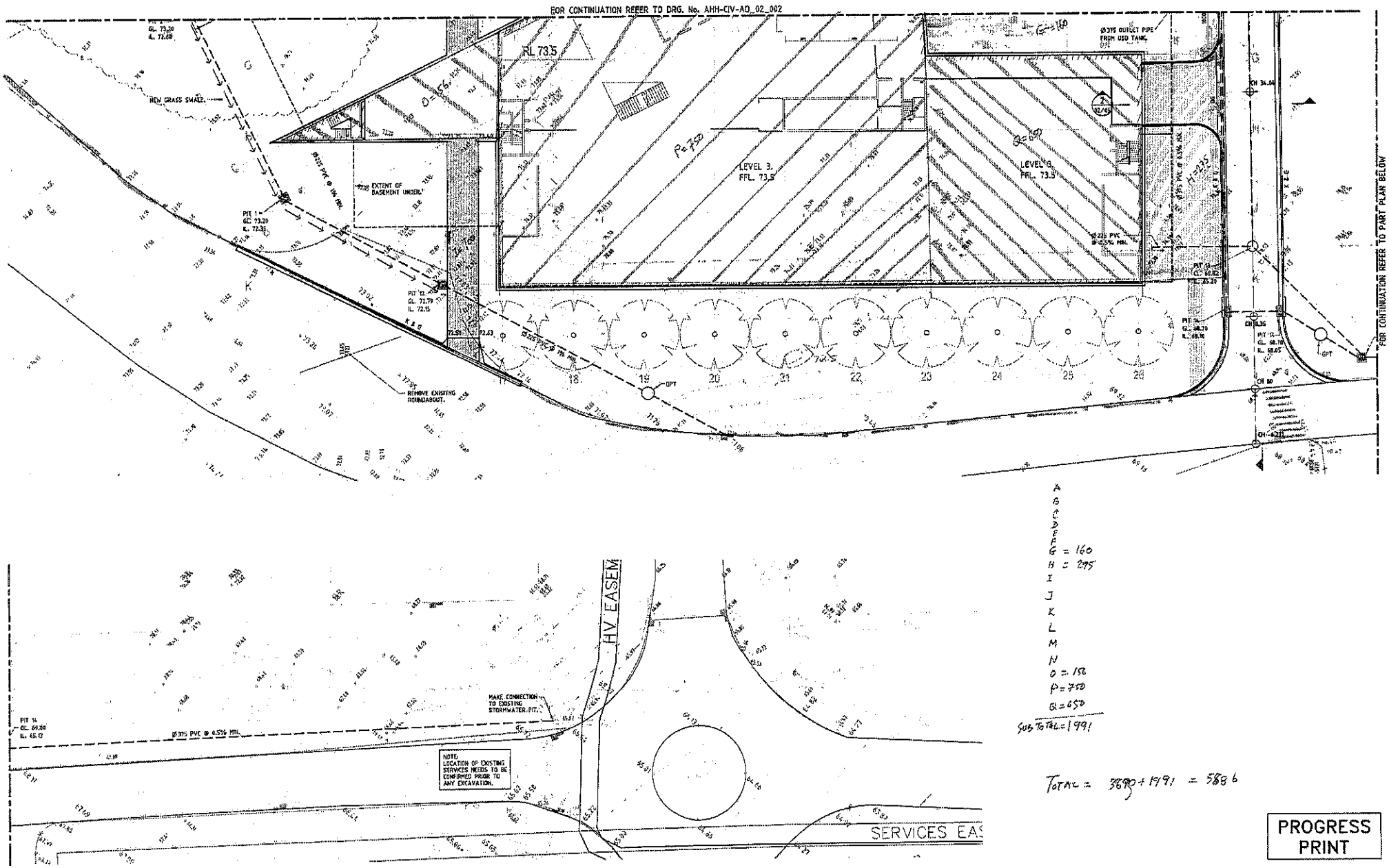
PERUMAL PEDAVOLI ARCHITECTS
MACQUARIE UNIVERSITY

AUSTRALIAN HEARING HUB
AT MACQUARIE UNIVERSITY

CIVIL WORKS PLAN - GROUND FLOOR_NORTH

SCALE 1:200
DATE MAR 2010

PROJECT CODE	DISCIPLINE CODE	PHASE CODE	DRAWING TYPE	SERIES NUMBER	REVISION
AHH	-CIV	-AD	_02	_002	P2



A
B
C
D
E
G = 160
H = 295
I
J
K
L
M
N
O = 150
P = 750
Q = 650
SUB TOTAL = 1991

TOTAL = 3890 + 1991 = 5886

PROGRESS PRINT

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PRELIMINARY

AUSTRALIAN HEARING HUB MACQUARIE UNIVERSITY

AUTHORITY'S ACCEPTANCE	AMENDMENT	DATE

Structural And Civil Engineer
Woolacotts. Consulting Engineers
JOB No. 09-181 | Approved | Verified | Prepared

ARCHITECTURAL PERUMAL PEDAVOLI ARCHITECTS
MACQUARIE UNIVERSITY

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ELECTRICAL & COMMUNICATIONS
HYDRAULIC
INTERIOR DESIGNER

AUSTRALIAN HEARING HUB
AT MACQUARIE UNIVERSITY

CIVIL WORKS PLAN - GROUND FLOOR_SOUTH

SCALE (A1 original) 1:200
DESIGNED | DRAFTED | APPROVED | TRUE NORTH
DATE MAR 2010

PROJECT CODE	LOCATION CODE	TRADE CODE	DRAWING TYPE	DRAWING NUMBER	REVISION
AHH	- CIV	-AD	_02_003	P3	