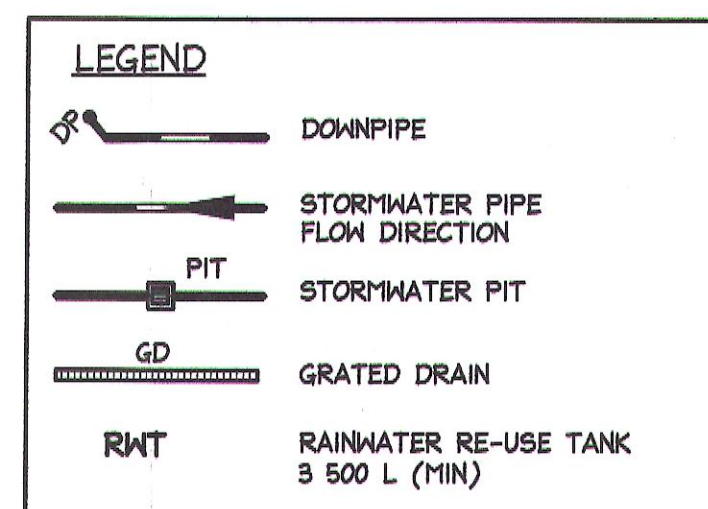
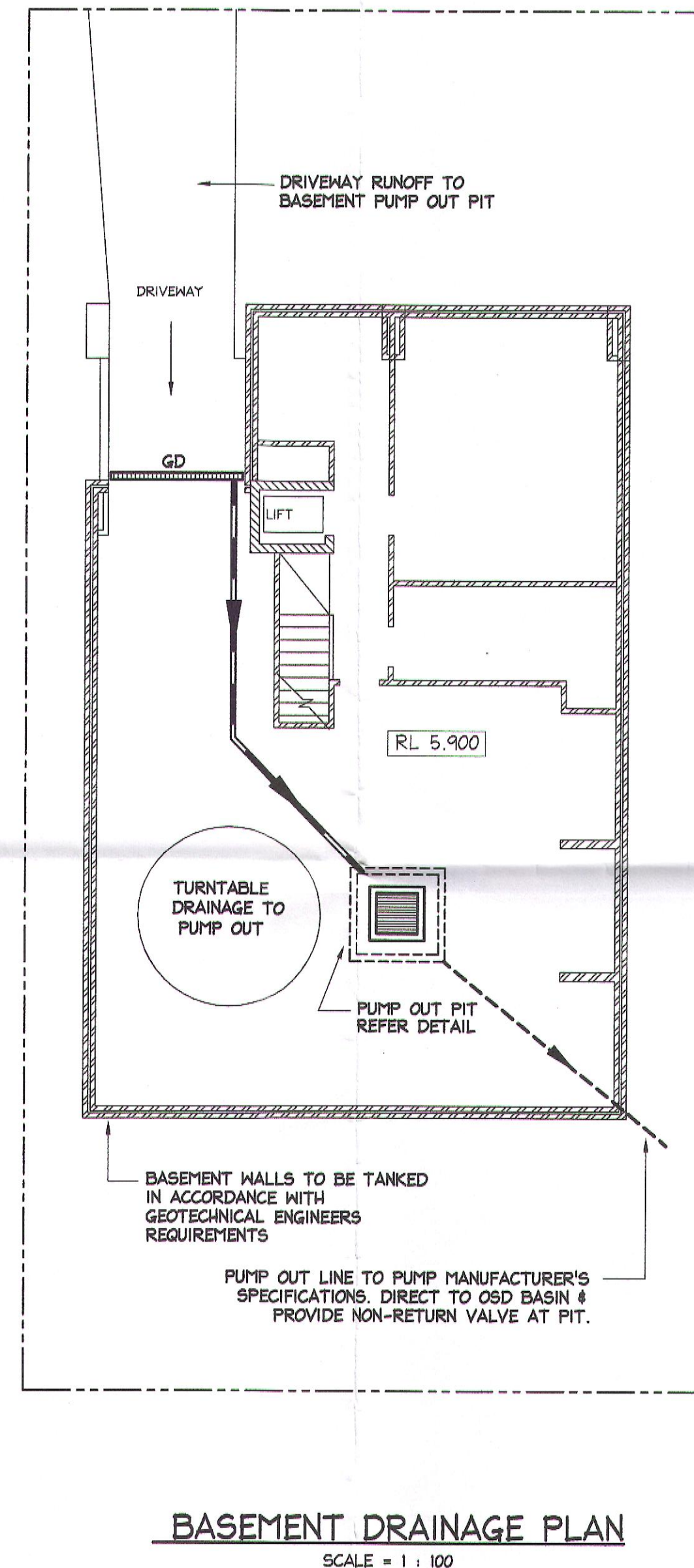
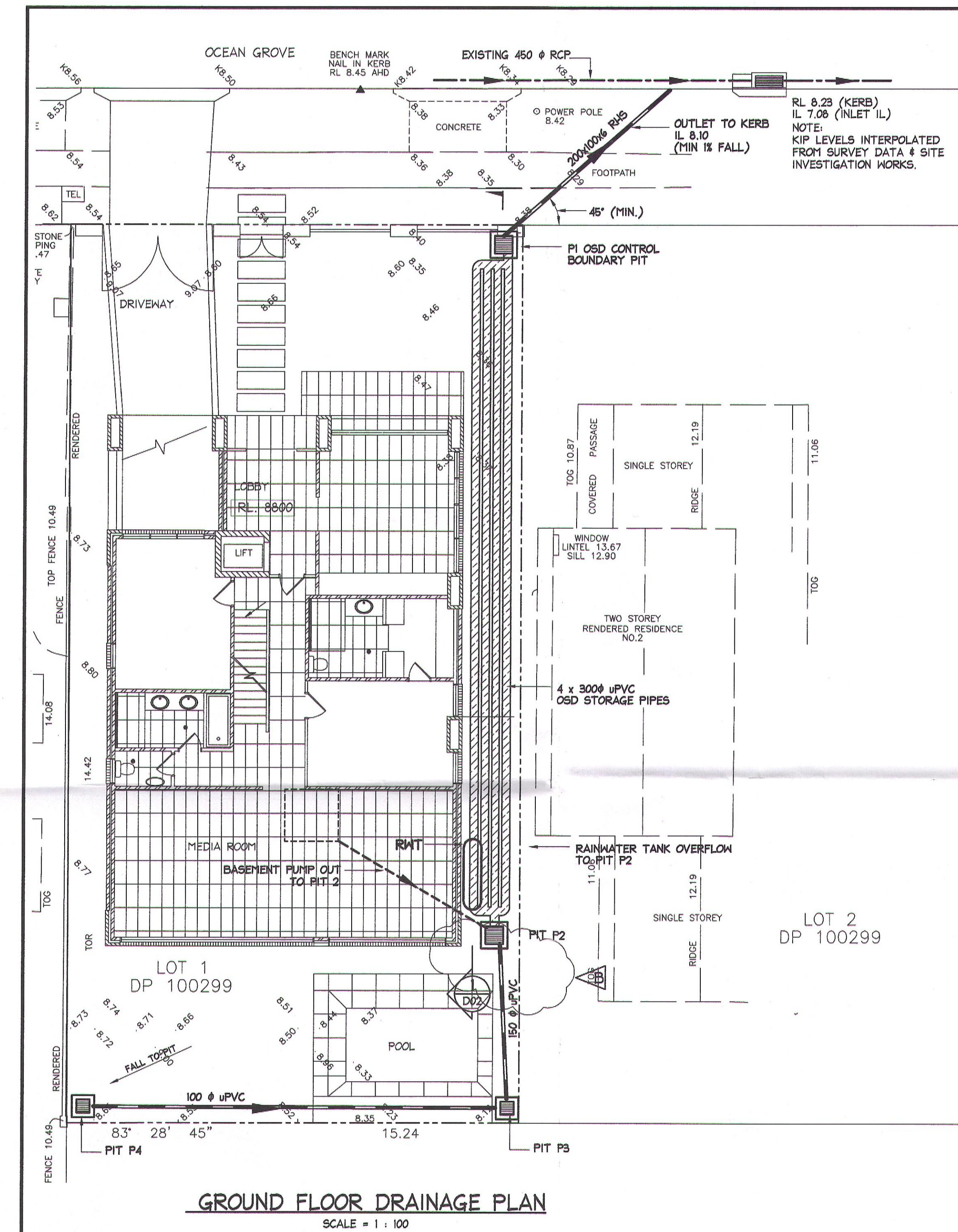




NOTE:
DRAINAGE LINES ARE INDICATIVE ONLY AND
MAY VARY DUE TO CONSTRAINTS.
IF IN DOUBT CONTACT THE ENGINEER.
ALL ROOF WATER TO BE DIRECTED TO RAIN
WATER TANK.

PIT SCHEDULE				
PIT No	RL	IL	SIZE	COMMENTS
P1	8.75	8.20	600x600	OSD CONTROL PIT
P2	8.80	8.32	600x600	GRATED PIT
P3	8.50	8.35	450x450	GRATED PIT
P4	8.50	8.36	450x450	GRATED PIT

STORMWATER NOTES

- ALL PIPES TO BE 100mm ϕ UNLESS NOTED OTHERWISE.
- ALL PIPES TO BE uPVC TO AS 1254-2002 UNLESS NOTED OTHERWISE.
- ALL PIPES TO BE LAYED AT 1% MINIMUM GRADE UNLESS NOTED OTHERWISE.
- ALL PIPES SHALL BE LAID ON A 75mm SAND BED, COMPACTED TO 100% S.M.D.D. BELOW PAVEMENTS.
(NO COMPACTION REQUIRED BELOW LANDSCAPING)
COVER TO SURFACE FROM TOP OF PIPE TO BE 300mm MINIMUM.
BACKFILL TO BE ADEQUATELY CONSOLIDATED AROUND PIPES BY METHOD OF RAMMING AND WATERING IN. TRENCHES TO BE FILLED WITH GRANULAR MATERIAL AS SPECIFIED.
- ALL DOWN PIPES TO BE 100mm ϕ UNLESS NOTED OTHERWISE.
- DOWN PIPE LOCATIONS ARE INDICATIVE ONLY. LOCATIONS TO BE CONFIRMED WITH ARCHITECT PRIOR TO COMMENCEMENT WITH WORK.
- PROVIDE CLEANING EYES AT ALL DOWNPIPES.
- ALL PITS TO BE CAST INSITU OR, IF PRECAST, APPROVED BY ENGINEER. CAST INSITU PITS TO HAVE 150mm THICK CONCRETE WALLS AND BASE. WALLS TO BE REINFORCED WITH 1 N12 TOP TIE UNLESS NOTED OTHERWISE. CAST INSITU PITS GREATER THAN 1000 DEEP TO BE MINIMUM 900x600 AND TO HAVE 150mm THICK CONCRETE WALLS AND BASE. WALLS TO BE REINFORCED WITH N12 AT 300 EACH WAY UNLESS NOTED OTHERWISE.
- ALL PITS GREATER THAN 1000mm DEEP SHALL HAVE STEP IRONS AS PER COUNCIL STANDARDS.
- ALL WORK TO BE IN ACCORDANCE WITH LOCAL COUNCIL STANDARDS AND SPECIFICATIONS.
- PRIOR TO COMMENCING ANY SITE WORKS THE CONTRACTOR SHALL IMPLEMENT EROSION CONTROL MEASURES TO APPROVED SEDIMENT AND EROSION CONTROL PLAN, EPA GUIDELINES AND COUNCIL SPECIFICATIONS. ALL MEASURES TO REMAIN IN PLACE UNTIL COMPLETION AND STABILIZATION OF THE SITE TO COUNCIL SATISFACTION.
- ALL LEVELS SHOWN ARE TO AHD
- ENSURE THAT ALL PITS AND STORMWATER PIPES ARE LOCATED CLEAR FROM TREE ROOT SYSTEMS.
- ALL EXISTING EARTHENWARE PIPES TO BE UPGRADED TO uPVC.
- ALL WORKS TO BE IN ACCORDANCE WITH AS 3500-2003 NATIONAL PLUMBING DRAINAGE CODE PART 3 - STORMWATER DRAINAGE.
- 90mm ϕ x 3000 LONG TAIL OUT SUBSOIL LINE TO BE PROVIDED ON THE UPSTREAM SIDE OF ALL PITS. SUBSOIL LINE TO BE COVERED WITH GEOTEXTILE FILTER SOCK FOR THE FULL LENGTH AND END COVERED.

RAINWATER RE-USE TANKS

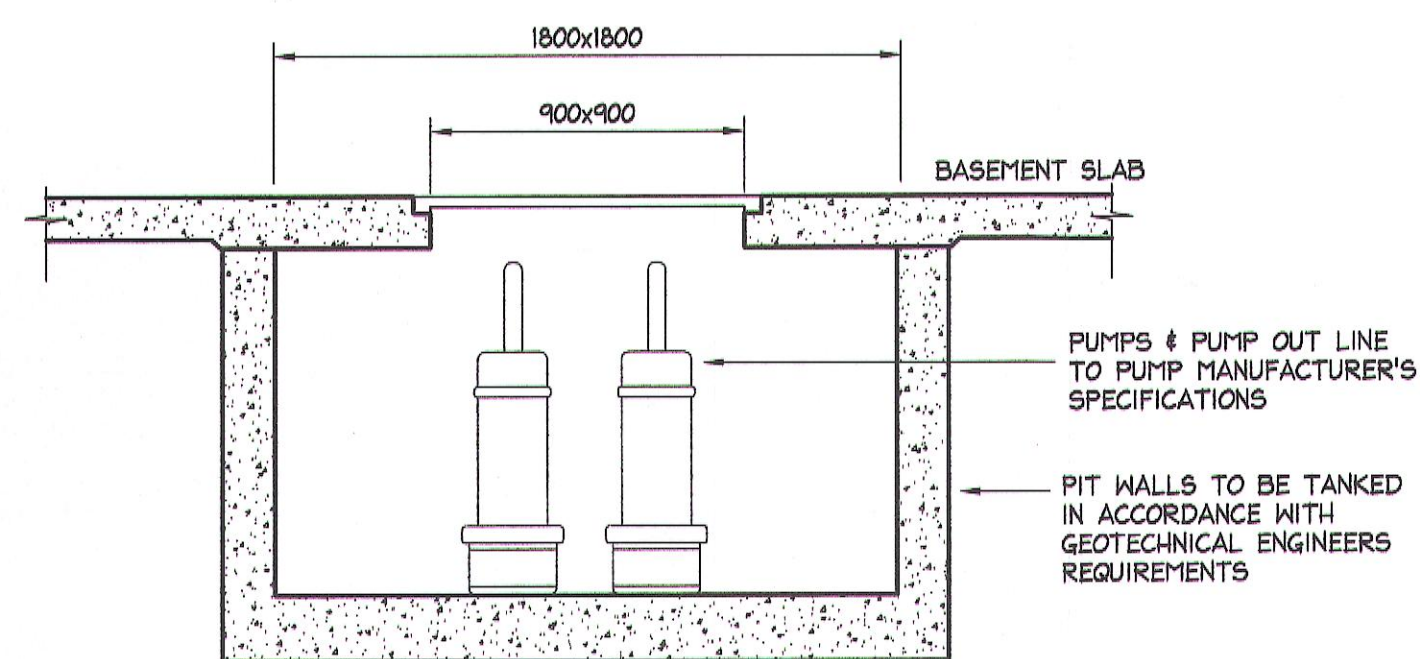
- CONSIDERING THE ROOF CATCHMENT AREA, LOCATION OF PROPERTY, INTENDED USE OF RAINWATER AND GARDEN SIZE WE RECOMMEND PROVIDING A 3500 L CAPACITY RAINWATER TANK FOR THE FOLLOWING USES:
a) TO WATER GARDEN AREAS b) CONNECT TO W.C. c) CONNECT TO WASHING MACHINE.
- THE TANKS PROVIDED WILL REDUCE PRESSURE ON COUNCIL'S STORMWATER INFRASTRUCTURE.
- REFERENCES:
COOMBS P.J. & KUCZERA G. (2001), 'RAINWATER TANK DESIGN FOR WATER SUPPLY & STORMWATER MANAGEMENT.' STORMWATER INDUSTRY ASSOCIATION REGIONAL CONFERENCE.
PATRICK DUPONT & STEVE SHACKEL, 'RAINWATER' AUSTRALIAN GOVERNMENT (2004), 'GUIDANCE ON USE OF RAINWATER TANKS'
- ALL CONNECTIONS TO PLUMBING AND RAINWATER TANKS TO BE IN ACCORDANCE WITH SYDNEY WATERS' GUIDE 'INSTALLING A RAINWATER TANK' AVAILABLE AT www.sydneywater.com.au
- PROVIDE A DUAL SUPPLY SYSTEM AND BACKFLOW PREVENTION SYSTEM IN ACCORDANCE WITH 'BASIX-DESIGN GUIDE FOR SINGLE DWELLINGS' BY NSW DEPARTMENT OF INFRASTRUCTURE, PLANNING AND NATURAL RESOURCES.

ONSITE DETENTION SYSTEM SUMMARY NOTES

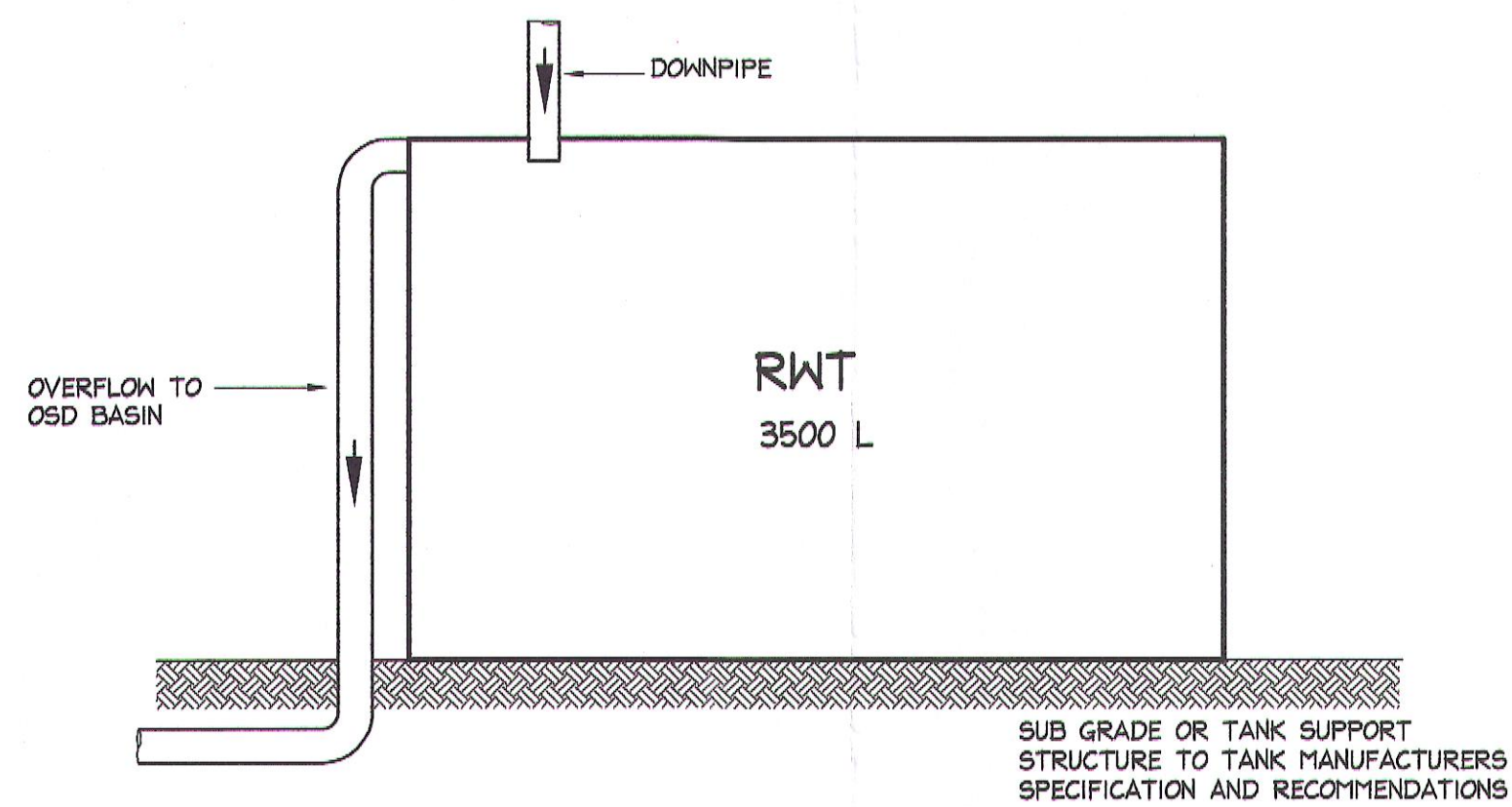
TOTAL SITE AREA	464.5 m ²
DESIGN METHOD USED	DRAINS (REFER TO DISK)
PRE DEVELOPMENT IMPERVIOUS AREA	353.1 m ² (35% MODELLED FOR CALC'S)
POST DEVELOPMENT IMPERVIOUS AREA	283.5 m ²
PRE DEVELOPMENT SITE DISCHARGE	
5 YR	12 l/s
20 YR	17 l/s
100 YR	23 l/s
POST DEVELOPMENT SITE DISCHARGE	
5 YR	12 l/s
20 YR	14 l/s
100 YR	17 l/s (12 l/s FROM OSD)
PORTION OF SITE THROUGH OSD	83%
ORIFICE SIZE	90 mm ϕ
TYPE OF CONTROL	BELOW GROUND STORAGE
MAXIMUM CONCENTRATED DISCHARGE TO KERB	12 l/s
RAINWATER PROPOSED (BASIX)	3 500 L
OSD VOLUME CALCULATED	9 400 L
OSD OFFSET REDUCED VOLUME	6 400 L
DIMENSION OF OSD	22.5 m ² x 4, 300 ϕ STORAGE PIPES
VOLUME OF OSD (INCLUDING PITS)	6.5 m ³ (NOTE: 6.4 m ³ REQUIRED)

THIS PLAN IS TO BE READ
IN CONJUNCTION WITH
MO: 2012 / 0248

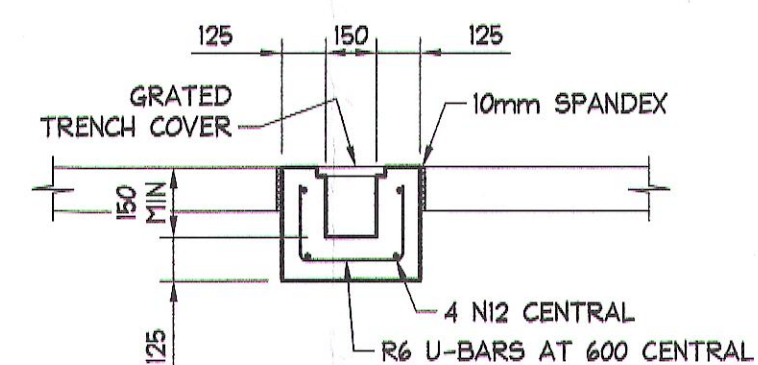
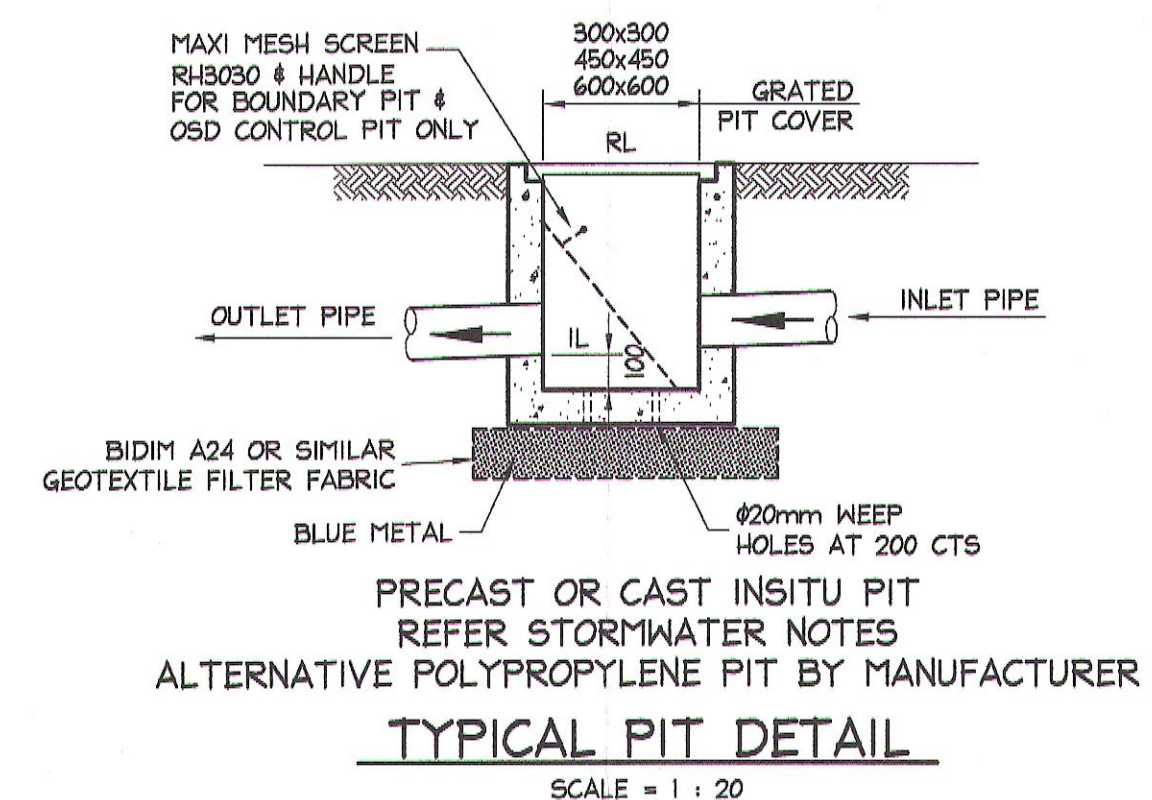
RE-ISSUED FOR COUNCIL APPROVAL			DOCUMENT CERTIFICATION		NORTHERN BEACHES Consulting Engineers P/L A.C.N. 078 121 616 A.B.N. 24 078 121 616 Suite 207, 30 FISHER ROAD DEE WHY N.S.W. 2099 Ph: (02) 9884 7000 Fax: (02) 9884 7444 e-mail: nb@nbconsulting.com.au web page: www.nbconsulting.com.au		Architect: The Design Section	Project: PROPOSED NEW HOUSE 4 OCEAN GROVE COLLAROTY NSW	Date: Nov 2009	Design: RM	Drawn: MC	Checked:
11/09/2012 03/06/2010	C B A	REVISED TO SUIT NEW ARCH. PLAN PIT SCHEDULE/LEVELS REVISED, NOTES ADDED AT COUNCIL REQUEST RE-ISSUED FOR COUNCIL APPROVAL, OSD BASIN DELETED, STORAGE PIPES ADDED	MC RYAN RM	By:	Date: Stewart McGeady B.E.(Civil), MIEAust, P.Eng (Director Northern Beaches Consulting Engineers)	Client: Paul Fudge & Ann Christiansen	Drawing Title: STORMWATER MANAGEMENT PLANS	Job No: 091123	Drawing No: D01	Rev: C	WAIRAHAPAH COUNCIL	



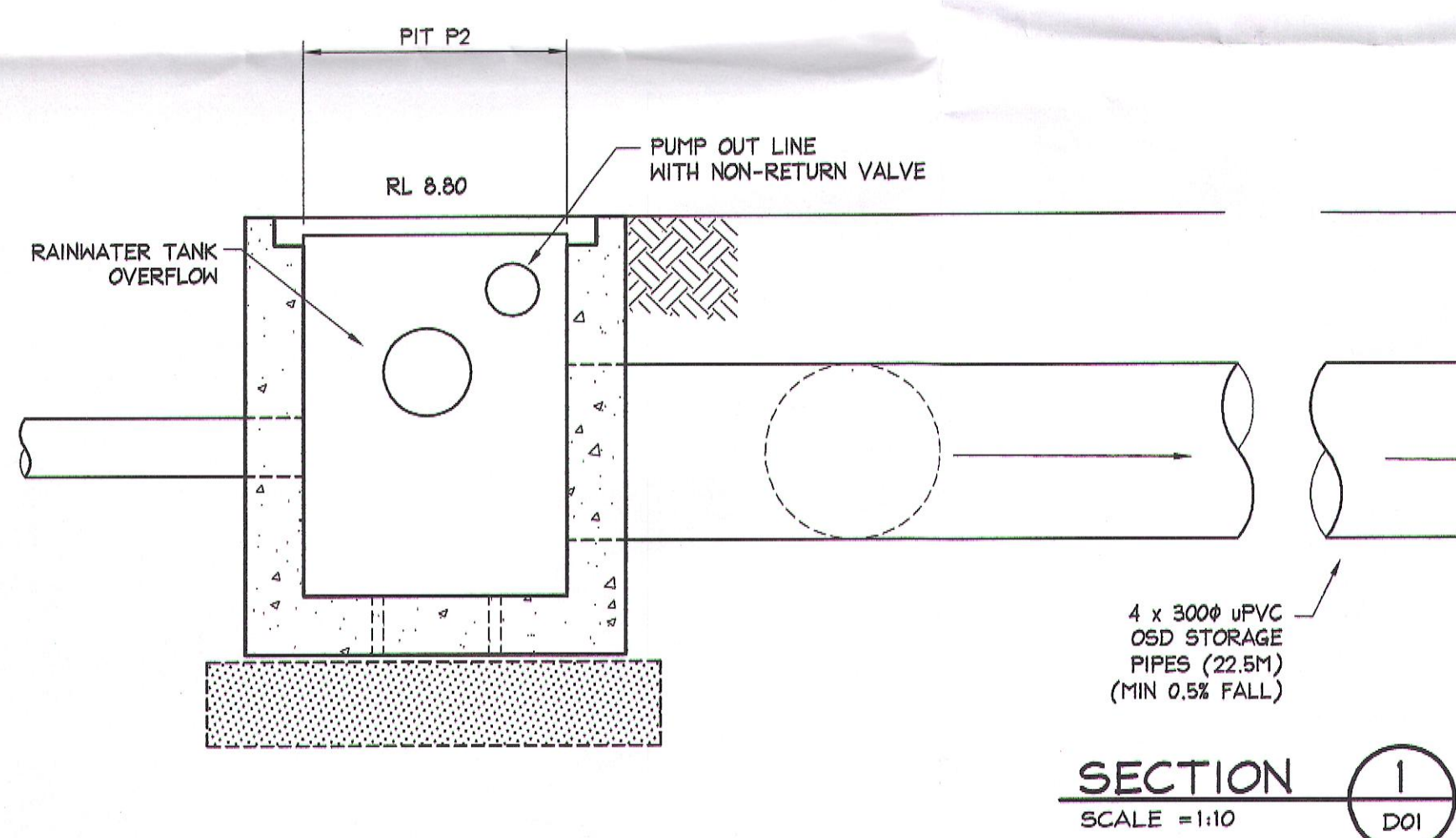
PUMP OUT PIT DETAIL
SCALE = 1 : 20



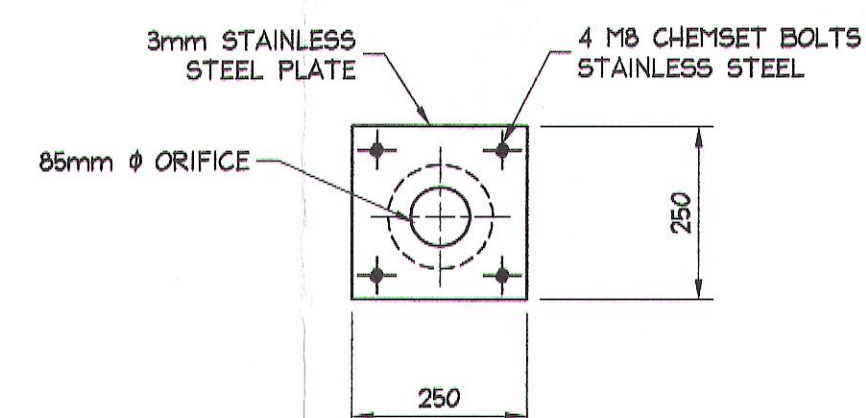
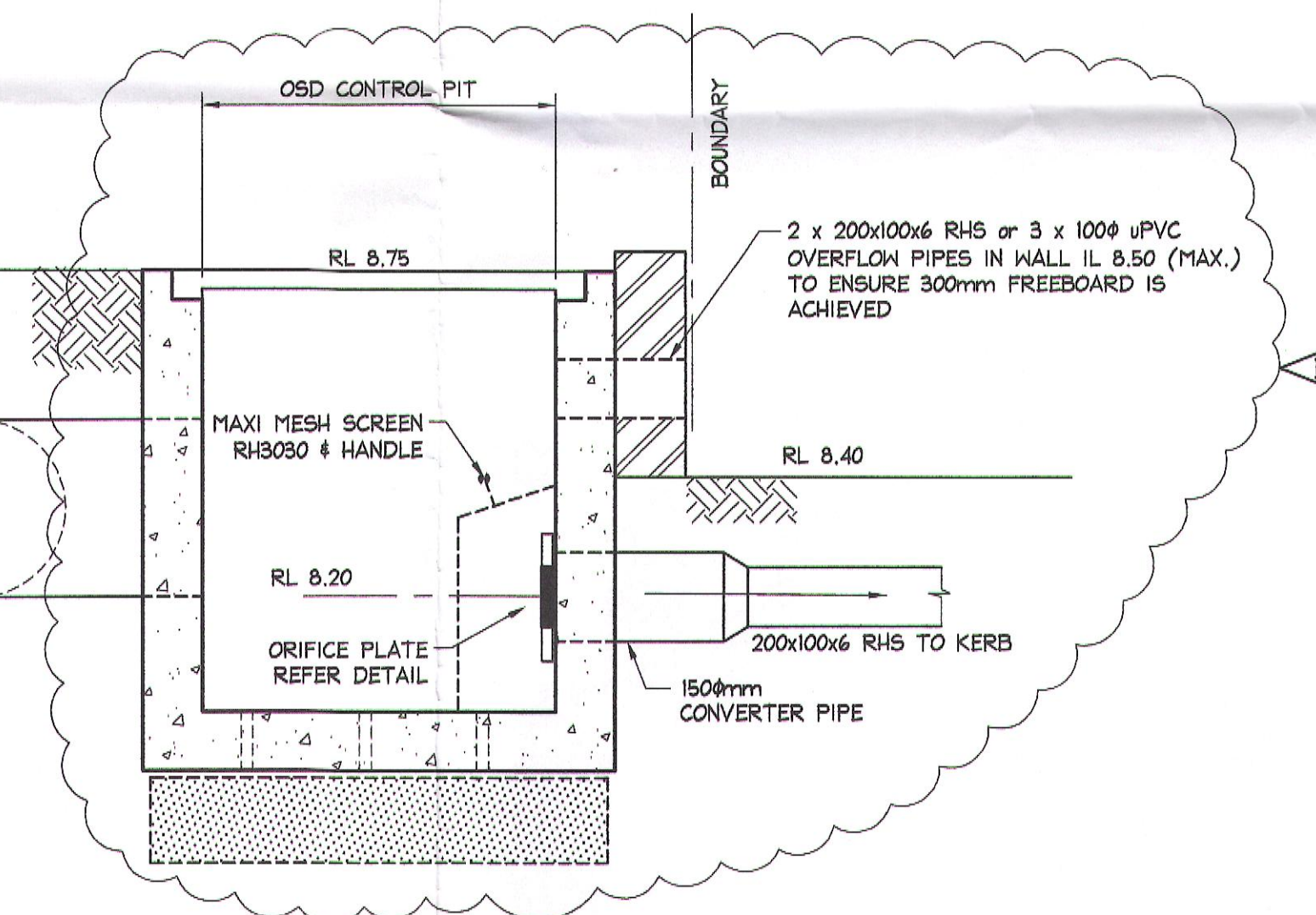
'RWT' - RAIN WATER TANK DETAIL
SCALE = 1 : 20



OR PRECAST GRATED DRAIN
ALTERNATIVE POLYPROPYLENE DRAIN BY MANUFACTURER
TYPICAL GRATED DRAIN
SCALE = 1 : 20



SECTION 1
SCALE = 1:10



ORIFICE PLATE DETAIL

THIS PLAN IS TO BE READ
IN CONJUNCTION WITH
MC: 2012 / 0248
WARRINGAH COUNCIL

RE-ISSUED
FOR
COUNCIL
APPROVAL

DOCUMENT CERTIFICATION				NORTHERN BEACHES Consulting Engineers P/L		Architect:	The Design Section		Project:	PROPOSED NEW HOUSE 4 OCEAN GROVE COLLAROY NSW		Date:	Nov 2009	Design:	RM	Drawn:	MC	Checked:	
Date: 11/09/2012				By: RYAN		Client:		Paul Fudge & Ann Christiansen		Drawing Title:		Job No:		Drawing No:		Rev:			
03/06/2010				A						STORMWATER MANAGEMENT SECTIONS & DETAILS		091123		D02		B			
Rev:				Amendment:															

