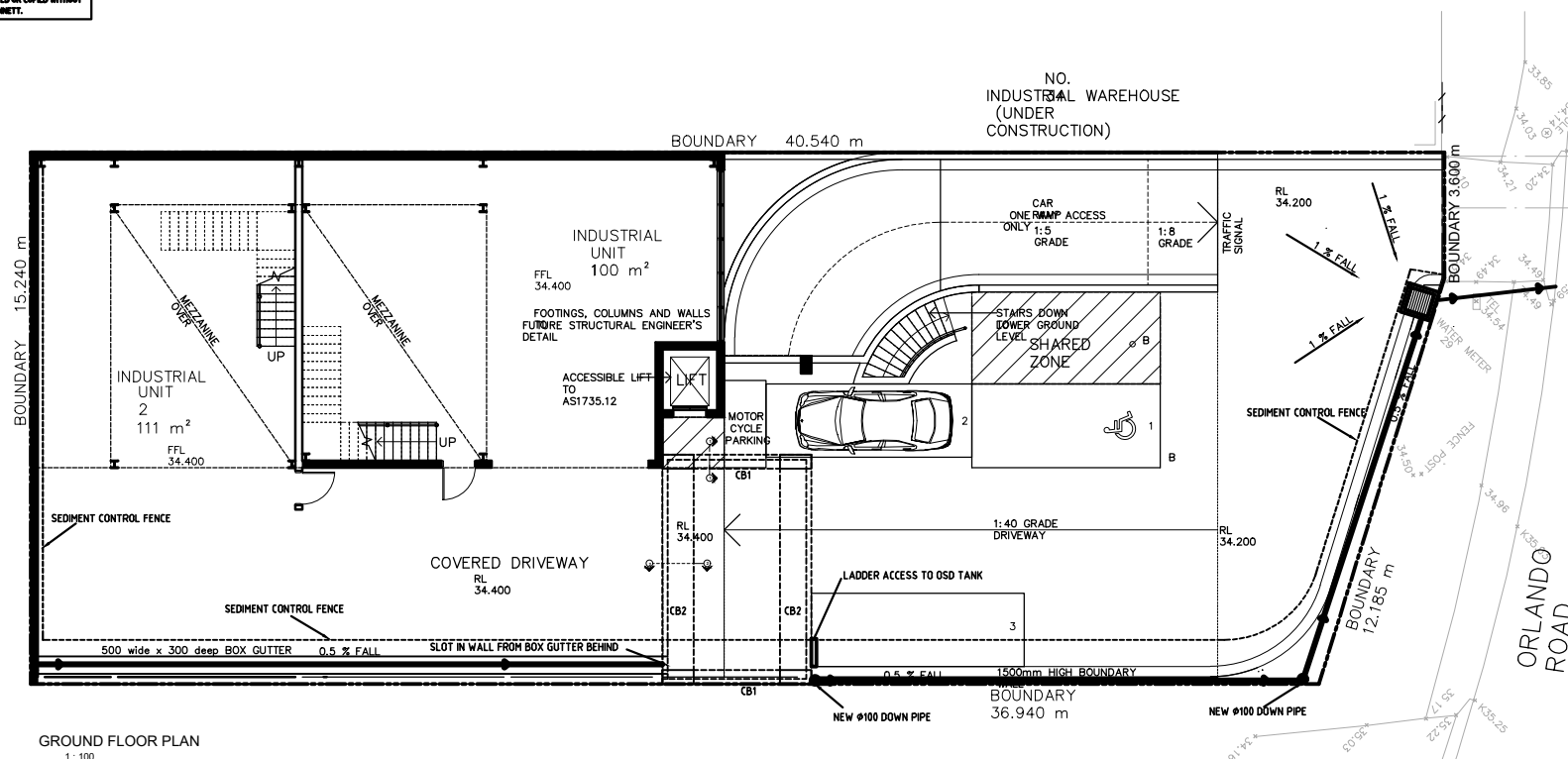
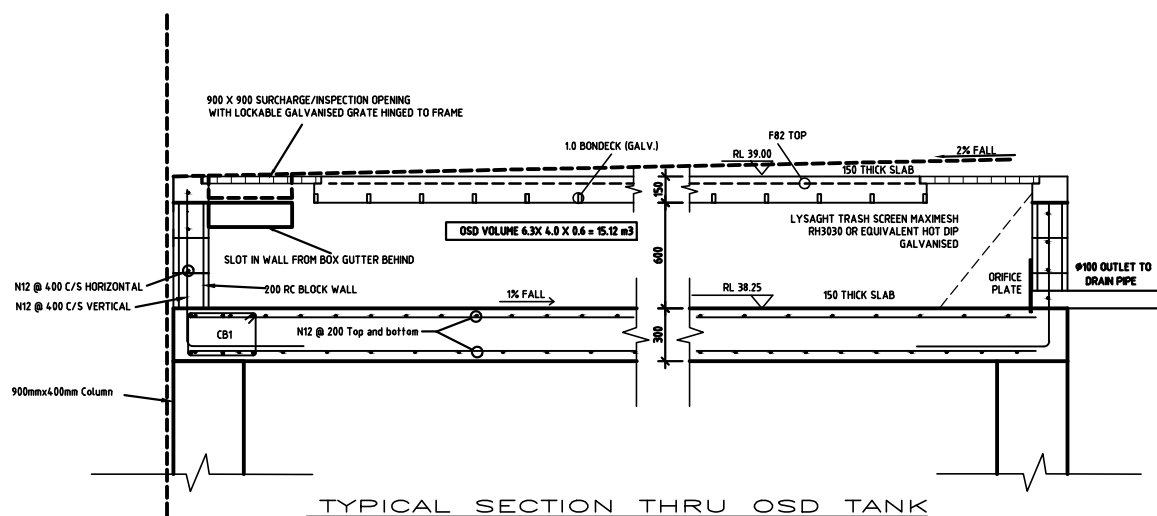
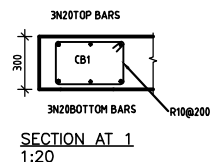




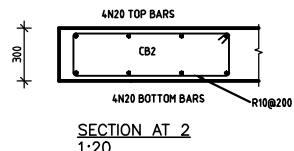
GROUND FLOOR PLAN
1:100



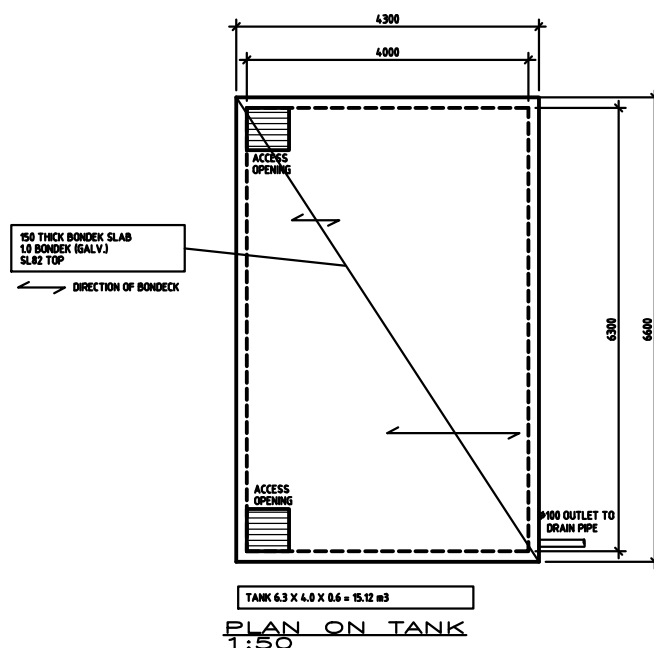
TYPICAL SECTION THRU OSD TANK
1:20



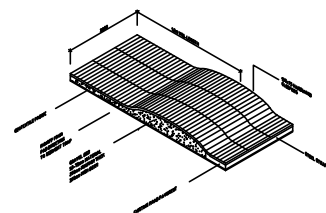
SECTION AT 1
1:20



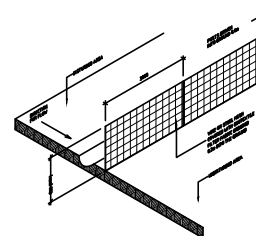
SECTION AT 2
1+20



PLAN ON TANK
1:50



TEMPORARY CONSTRUCTION EXIT
NTS



SEDIMENT FENCE DETAIL
NTS

HYDRAULIC NOTES

- N.1 ALL SERVICES ARE TO BE LOCATED IN THE FIELD IN CONNECTION WITH A RESPONSIBLE OFFICER OF EACH RELEVANT AUTHORITY PRIOR TO COMPLETION OF CONSTRUCTION.
- N.2 DRAINAGE PITS ARE TO BE 150 mm SQUARE OR LARGER AND FITTED WITH A GALVANIZED GRATE.
- N.3 DRAINAGE PIPE SIZES ARE 400 mm UNLESS NOTED.
- N.4 DRAINAGE PIPES SHALL BE SEVERAL GRADE PVC UNLESS NOTED.
- N.5 ALL BASE SOIL AREAS ARE TO BE PROTECTED FROM EROSION BY TEMPORARY MEASURES AND RE-VEGETATED AT CESSION OF CONSTRUCTION.
- N.6 A SEDIMENT CATCHMENT POND IS TO BE PROVIDED AT THE RATE OF 100 m³ CAPACITY PER HECTARE DRAINING THE EXISTING FARMHOLD. IN CASE OF THIS POND, EXCESS FLOWED SURFACED WATER IS RETAINED AS A POOL DURING CONSTRUCTION. A ADEQUATE SAFETY FENCING IS PROVIDED.
- N.7 THE DRAINAGE DRAINAGE OF THE SITE IS TO BE PROTECTED BY HAY BALE OR PLASTIC FABRIC FENCE DURING CONSTRUCTION AS SHOWN IN ATTACHED DETAIL.
- N.8 THE STREET DRAINAGE PIT LOCATED DOWNHILL OF THE SITE SHALL BE PROTECTED FROM SEDIMENT WITH HAY BALES.
- N.9 A SINGLE CONSTRUCTION ENTRANCE SHALL BE ESTABLISHED IN THE MANNER SHOWN IN ATTACHED DETAIL.
- N.10 ALL EROSION PROTECTION MEASURES TO MEET THE REQUIREMENTS OF THE DEP'S CONSERVATION AND LAND MANAGEMENT ACT ARE SPECIFIED BY THE DRAINAGE AND SEDIMENT CONTROL, CS-320X, HANDBOOK IN 3.999 UNLESS OFFICED BY COUNCIL.

FRICTION SLOPE (%)	100 mm PVC		150 mm PVC		225 mm PVC	
	Q (l/s)	SA (m/s)	Q (l/s)	SA (m/s)	Q (l/s)	SA (m/s)
1	5.6	46	16.5	260	48.6	750
2	7.9	120	23.3	360	68.1	1040
3	9.7	190	28.6	440	85.2	1280
4	11.3	250	33.0	510	97.2	1460
5	12.5	300	36.9	570	109	1600
6	13.7	340	40.2	610	119	1720

EIA = EQUIVALENT IMPERVIOUS AREA

SPECIAL NOTES

1. ALL PILES TO BE LAID ON A 60 MM SAND BED WITH THE BARRELS FULLY SUPPORTED BY "P" CLASS RIGIDITY. PROVIDE "CLEARANCE EYES" TO ALLOW PILES TO BE DIRECTED TO ANY CORRECTION TO PITS.
2. "HEAVY DUTY" GRATES AND CURBS ARE TO BE PROVIDED IN TRAFFICABLE AREAS.
3. THE SLOPE OF THE DETENTION BASIN SHALL BE 1:1.
4. GROUND WATER MONITORING SHALL BE PROVIDED AT THE DETENTION BASIN.
5. GROUND PILES USED TO RESTRICT THE OUTFLOW MUST BE MATCHED TO THE EXACT DIVISION AS CALCULATED, FROM MINIMUM 3 IN THICK STAINLESS STEEL, OR 3 IN THICK GALVANIZED STEEL.
6. THE PILES SHALL BE HARDENED TO WITHSTAND THE PRESSURE OF THE PERMANENTLY FLOATED PILE BY THE APPROVED METHOD(S) THEY CANNOT BE EASILY REMOVED.
7. A PILE HAVING HOLE OR LESS THAN 4.8 IN X 2.94 IN SHALL BE, OR MAY BE PERMANENTLY REMOVED AND REPLACED WITH A PILE OF THE SAME SIZE AND TYPE.
8. THE PILES SHALL BE INSTALLED TO THE FULL DEPTH OF THE EXISTENCE OF THE OGD DRYDIE AND ALSO THAT THE DETENTION IS NOT IN ANY WAY TO BE TAPERED WITH OR CHANGED WITHOUT PRIOR WRITTEN APPROVAL OF CHAIRMAN.
9. THE CONSTRICTED OGD INSTALLATION MUST BE APPROPRIATELY CERTIFIED BY A SUITABLY QUALIFIED AND EXPERIENCED CONSULTING ENGINEER REGARDLESS OF THE GROUND INSTALLATION WHO MUST STATE THAT THE OGD IS SUITABLE FOR THE CONSTRUCTION OF THE OGD CODES AND STANDARDS AND ALSO THAT IT IS GENERALLY IN ACCORDANCE WITH APPROVED PLANS.
10. UPON COMPLETION OF THE OGD WORKING, WHOLE-AS-EXCERPTED DRAIN PILES SHALL BE SUBMITTED TO THE CHAIRMAN OF THE OGD CODES AND STANDARDS FOR REVIEW AND APPROVAL.
11. THE OGD SHALL BE INSTALLED TO THE FULL DEPTH OF THE EXISTENCE OF THE OGD DRYDIE OF STORAGE HAS BEEN ATTENDED AND THAT CRITICAL WATER AND FLOOR LEVELS ARE IN ACCORDANCE WITH DESIGN REQUIREMENTS, ANY CHANGES OR VARIATIONS TO THE APPROVED PLANS SHALL BE INSTALLED.
12. CERTIFICATION ON THE STANDARD FORM FOR ON-SITE DETENTION REGION OF INSTALLATION IS REQUIRED.

GENERAL NOTES

- 6.1 THESE NOTES SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS ISSUED DURING THE COURSE OF THE CONTRACT. ALL DISCREPANCIES SHALL BE REFERRED TO THE ARCHITECT OR ENGINEER BEFORE PROCEEDING WITH THE WORK.
 - 6.2 DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THE STRUCTURAL DRAWINGS.
 - 6.3 SETTING OUT DIMENSIONS SHOWN ON THE DRAWINGS SHALL BE VERIFIED BY ON-SITE MEASUREMENT.
 - 6.4 DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVERSTRESSED.
 - 6.5 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT EDITIONS OF THE SAA CODE AND THE BY-LAWS AND ORDINANCES OF THE RELATIVE LOCALITY AUTHORITY.
 - 6.6 EXCAVATIONS SHALL NOT BE PERMITTED WITHIN 2 METRES OF AN EXISTING STRUCTURE WITHOUT PRIOR APPROVAL OR RECOMMENDATIONS FOR SHORING OR UNDERPINNING PROVIDED BY ENGINEER.
- FOUNDATIONS AND FOOTINGS**
- F.1 FOOTINGS HAVE BEEN DESIGNED FOR AN ALLOWABLE INTENSITY OF BEARING PRESSURE OF 100 KPA. THE BUILDER SHALL OBTAIN APPROVAL OF THE FOUNDATION FRACTION BEFORE PLACING CONCRETE.
 - F.2 FOOTINGS SHALL BE PLACED UNDER WALLS AND COLUMNS UNDER OTHERS NOTED.
- SUB-GRADE**
- S6.1 UNDER ALL SLABS ON GRADE, WHETHER ON CUT OR FILL, RECEIVE SOFT SPOTS AND REPEL BY EXCAVATING OUT SLURRIES OR FILL MATERIALS IN LAYERS NOT EXCEEDING 200 mm TO 90% DRY DENSITY, EXCEPT FOR REPAIRS SET BACK TO 150 mm.

CONCRETE WORK
C.1 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600

- C.2 CONCRETE QUALITY SHALL BE AS TABULATED AND SHALL BE VERIFIED BY TESTS.

ELEMENT	SUMP	MAX. SIZE AGG.	CEMENT TYPE	AD MIXTURE	NO. CONCRETE GRADE
ALL	60	20	A	NL	32

- C.3 CLEAR CONCRETE COVERS TO REINFORCEMENT SHALL BE AS FOLLOWS UNLESS OTHERWISE SHOWN.**

CAST IN FORMS COMPLYING WITH AS 5109			
ELEMENT	CONCRETE 1 NOT TO BE EXPOSED TO SHALLOW WATER OR FRESH WATER	CONCRETE 2 TO BE EXPOSED TO SHALLOW WATER OR FRESH WATER	CONCRETE 3 CAST AGAINST STEELWORK OR ON THE GROUND
PAV FOOTINGS & PILE CAPS	-	45	75
STRIP FOOTINGS	-	45	75
SLAB OR CAST PILES	-	50	75
COLUMNS	40	50	75
WALLS, INCLUDING RETAINING WALLS	25	30	65
BEAMS	20	40	65
SLABS, INCLUDING ROOF & WALL BLOCK CONSTRUCTION	20	30	65
NON-REINFORCED ADJACENT TO WELDED BLOCKS INTERNAL WELDED BLOCKS	5	-	-

NOTE:

1. SLABS POURED OVER A MEMBRANE ON THE GROUND ARE INCLUDED AS CONDITION 2.
2. SLABS EXPOSED TO CORROSIVE VAPOURS, CORROSIVE GROUND WATER, SEA WATER OR SPRAY ARE TO HAVE REINFORCEMENT COVER AS NOTED OR NOT LESS THAN AS REQUIRED FOR CONDITION 3.

4. SIZES OF ELEMENTS DO NOT INCLUDE THICKNESS OF APPLIED FINISHES.
5. CONSTRUCTION JOINTS WHERE NOT SHOWN SHALL BE TO THE APPROVAL OF THE ENGINEER.
6. BEAR DEPTHS ARE WRITTEN FIRST AND INCLUDE SLAB THICKNESS, IF ANY, UNA.
7. NO HOLES OR CHARGES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE. MADE IN CONCRETE ELEMENTS WITHOUT PRIOR APPROVAL OF THE ENGINEER.
8. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY. IT IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.
9. SPACES IN REINFORCEMENT MADE BY POSITIONING OTHER THAN SHOWN, SHALL BE, TO THE APPROVAL OF THE ENGINEER, WHERE THE LAP LENGTH IS SMALLER THAN IS SUFFICIENT TO DEVELOP THE FULL STRENGTH OF THE REINFORCEMENT.
10. WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS.
11. PIPES OR CONDUITS SHALL NOT BE PLACED WITHIN THE CONCRETE COVER TO REINFORCEMENT WITHOUT THE APPROVAL OF THE ENGINEER.
12. ALL REINFORCEMENT BARS SHALL COMPLY WITH AS 902. ALL FABRIC SHALL COMPLY WITH AS 500 AND AS 506 AND SHALL BE SUPPLIED IN FLAT SHEETS.
13. REINFORCING SYMBOLS
 - a. GRADE 230C DEFORMED BAR
 - b. GRADE 430C COLD WARMED DEFORMED BAR
 - c. GRADE 430B DEFORMED BAR
 - d. GRADE 230B PLAIN BAR
 - e. GRADE 430B WELDED WIRE FABRIC
 - f. GRADE 500 DEFORMED BAR
14. THE NUMBER IMMEDIATELY FOLLOWING THESE SYMBOLS IS THE BAR DIAMETER IN MILLIMETRES
15. FABRIC REINFORCEMENT TO BE LAPPED 500 MM OR AT 60S AND REELS UNA, LAPS IN POSITION OF MAXIMUM MOMENT ARE NOT PERMITTED.
16. ALL REINFORCEMENT SHALL BE FULLY SUPPORTED ON UNGRADED SLEED, PLASTIC OR CONCRETE CHAIRS SPACED AT 100 AND 300 CENTRES WITH WAYS UNDER REEL AND FABRIC REINFORCEMENT RESPECTIVELY. JOBS SHALL BE TIED AT ALTERNATE INTERSECTIONS.
17. DOWNWARD STIFFNESS TIPS FOR ROOFWORK SHALL BE AS RECOMMENDED IN AS 1089 OR AS PER THE DESIGNER'S REQUIREMENTS.

CIVIL & STRUCTURAL ENGINEERING
DESIGN SERVICES PTY. LTD. ACN 051 387 852

CONSULTING STRUCTURAL, CIVIL, GEOTECHNICAL & ENVIRONMENTAL ENGINEERS
3 Warrville Road BELROSE 2005
PHONE 61-02 9975 3899
FAX 61-02 9975 1943
MOBILE 0407 753 899
EMAIL hited@bigpond.net.au

CLIENT: MARK BENNETT
PROJECT: 32 ORLANDO RD
CROMER
NSW 2099

Drawn By: KS	Scale: AS MENTIONED
Checked By: E. A. BENNETT M.I.E. Aust.	Drawing No: B-21-0624
Date: 28/11/2022	Amendment: A

Registered Professional Engineer 19823-
Mr Edward A. Bennett
NIEAust CPEng

Signature E. J. Smith Date 03 / 11 / 22

Register on the NPER in the Category of
Civil/Environmental/Structural/Geotechnical
National Professional Engineers Register



DIAL1100

BEFORE YOU DIG