

SHEET LIST	
DRG No.	NAME
ST-000-01	GENERAL NOTES SHEET
ST-001-00	RING BEAM SUPPORTING 72kL EFFECTIVE CAPACITY FIRE WATER TANK AND PUMP PLINTH REINFORCEMENT DETAILS

DENMARK LIGHT INDUSTRIAL AREA FIRE PROTECTION SYSTEM

CLIENT

PROJECT



301250343 ST-000-00

PROJECT No

DRAWING No

REV



C SECTION
SCALE - 1 : 25

PLAN - RING BEAM 2No.

A SECTION
SCALE - 1 : 25

B SECTION
SCALE - 1 : 10

RING BEAM SCHEDULE			
SIZE	REINFORCEMENT		
	TOP	BOTTOM	LIGS
750x700	8-N12	8-N12	N12-300 (SET OF 2)

FIRE SERVICES



SHIRE OF DENMARK

CLIENT

DENMARK LIGHT INDUSTRIAL AREA - PRECINCT FIRE SYSTEM

PROJECT



301250343

PROJECT No

FP-000-00

DRAWING No

B

REV

FIRE SERVICES NOTES

GENERAL NOTES

- REFER TO THE HEAD CONTRACT FOR ALL PRELIMINARY CONDITIONS & REQUIREMENTS.
- THE PROGRAMME OF THE WORKS SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION PROGRAMME. THE CONTRACTOR IS TO FAMILIARISE THEMSELF WITH THE CONSTRUCTION PROGRAMME & MAKE THE NECESSARY ALLOWANCES TO SUIT.
- DRAWINGS TO BE READ IN CONJUNCTION WITH EXISTING FIRE SERVICE OPERATING & MAINTENANCE MANUAL & ASSOCIATED AS CONSTRUCTED DRAWINGS.
- THE FIRE SERVICES DRAWINGS ARE TO BE READ IN CONJUNCTION WITH:
 - CIVIL DRAWINGS
 - STRUCTURAL DRAWINGS
 - ELECTRICAL SERVICES DRAWINGS
 - FIRE SERVICES SPECIFICATION
- FIRE CONTRACTOR SHALL LIAISE WITH OTHER ENGINEERING SERVICES FOR FINAL INTEGRATION OF SERVICES
- FIRE CONTRACTOR TO ALLOW FOR COORDINATION WITH OTHER TRADES AND SERVICES TO COMPLETE THE INSTALLATION.

SCOPE OF WORK

- THE SCOPE OF WORKS COMPRISES THE SUPPLY, INSTALLATION, TESTING, COMMISSIONING, MAINTENANCE AND DEFECTS LIABILITY, MATERIALS LABOUR AND EQUIPMENT FOR THE COMPLETE FIRE PROTECTION SERVICES INSTALLATION.
- THE WORK SHALL INCLUDE ALL NECESSARY MINOR AND INCIDENTAL WORK REQUIRED TO IMPLEMENT THE INTENT AND MEANING OF THIS SPECIFICATION AND ASSOCIATED DRAWINGS.
- UNLESS EXPRESSLY EXCLUDED, ALL ITEMS OF EQUIPMENT FOR THE COMPLETE INSTALLATION ARE REQUIRED AND SHALL BE SUPPLIED AND INSTALLED.
- THE SCOPE OF WORKS IS SUMMARISED BELOW
 - PROVISION OF FIRE HYDRANT SYSTEMS, INCLUDING FIRE PUMPSET WITHIN AN ENCLOSURE, FIRE STORAGE WATER TANKSM, FIRE BOOSTER CABINETS AND RING MAIN
 - INTERFACES AND COORDINATION WITH OTHER SERVICES
 - ATTENDANCE AT SITE AND COORDINATION WITH THE PROGRAM.
 - PSIGNS REQUIRED BY DFES GUIDELINE GL-03 AND THE RELEVANT AUSTRALIAN STANDARDS.
 - DETAILED ("SHOP") DRAWINGS AND SCHEDULES OF EQUIPMENT, FULLY DEPICTING THE ENTIRE INSTALLATION, FOR APPROVAL PRIOR TO PURCHASE OR MANUFACTURE.
 - SCHEDULE OF FIRE SERVICES SEPARATED FROM BUT COORDINATED WITH TOTAL PROJECT SCHEDULE. SUBMITTED FOR APPROVAL PRIOR TO PREPARATION OF SHOP DRAWINGS.
 - TESTING AND COMMISSIONING PLAN AND ALL NECESSARY COMMISSIONING AND TESTING AT PRACTICAL COMPLETION.
 - MANUFACTURERS CERTIFIED DRAWINGS, UPON REQUEST.
 - SAMPLES, WHERE SPECIFIED, PRIOR TO PLACING ORDERS.
 - OPERATIONS AND MAINTENANCE MANUALS, INCLUDING AS-CONSTRUCTED DOCUMENTATION.
 - SUBMISSION OF ALL NECESSARY DETAILS TO AUTHORITIES BEFORE, DURING AND AFTER CONSTRUCTION, TO ENSURE THAT THE SYSTEM COMPLIES WITH THEIR REQUIREMENTS. OBTAIN ALL NECESSARY CERTIFICATES AND PAYMENT OF ALL FEES.
 - ARRANGE INSPECTIONS BY THE FIRE BRIGADE AND OBTAIN THEIR APPROVAL OF THE INSTALLATION.
 - TESTING AND COMMISSIONING INCLUDING PAYMENT OF FEES TO WITNESSING AUTHORITIES, THE CONSULTING ENGINEER, THE SUPERINTENDENT AND THIRD PARTY CERTIFIER.
 - PREVENTATIVE TESTING AND MAINTENANCE DURING THE TWELVE (12) MONTHS PERIOD FOLLOWING PRACTICAL COMPLETION.
 - COMPREHENSIVE MAINTENANCE AND WARRANTY OF ALL NEW AND UPGRADE PLANT DURING THE CONSTRUCTION PERIOD AND FOR THE DEFECTS LIABILITY PERIOD IN ACCORDANCE WITH AS 1851.
- THE FIRE CONTRACTOR SHALL ALLOW TO CO-ORDINATE THE FIRE SERVICES INSTALLATION WITH THE FOLLOWING:
 - STRUCTURAL ELEMENTS, CONCRETE PLINTH ETC
 - ELECTRICAL SERVICES
 - HYDRAULIC SERVICES
 - CIVIL SERVICES EXISTING INGROUND SERVICES
- INSTALLATION, FOR APPROVAL PRIOR TO PURCHASE OR MANUFACTURE.
- USE EQUIPMENT LISTED IN THE ACTIVE FIRE REGISTER AS ACCREDITED PRODUCTS "FIRE PROTECTION EQUIPMENT".

APPLICABLE STANDARDS

- FIRE SERVICES INSTALLATION TO COMPLY WITH THE CURRENT EDITION OF BUILDING CODE OF AUSTRALIA (BCA).
- THE ENTIRE FIRE SERVICES INSTALLATION SHALL COMPLY WITH CURRENT AUSTRALIAN STANDARDS WHERE APPLICABLE AND PARTICULARLY THE FOLLOWING:
 - AS 2419.1 - 2005 FIRE HYDRANT SYSTEM
 - AS 2304 - 2011 FIRE WATER STORAGE FOR FIRE PROTECTION SYSTEMS
 - AS 3500.1 - 2003 PLUMBING AND DRAINAGE PART 1: WATER SERVICES

MATERIALS AND WORKMANSHIP

- ALL MATERIALS, LABOUR AND PLANT SHALL BE PROVIDED BY THE FIRE CONTRACTOR UNLESS OTHERWISE SPECIFIED. ALL MATERIALS SHALL BE THE BEST OF THEIR RESPECTIVE KINDS AND FREE FROM ALL DEFECTS.
- WORKMANSHIP SHALL BE CARRIED OUT IN A FIRST CLASS MANNER AND IN ACCORDANCE WITH THE TRUE INTENT AND MEANING OF THIS SPECIFICATION AND ACCOMPANYING DRAWINGS, GENERAL CONDITIONS OF CONTRACT AND TO THE SATISFACTION OF THE CLIENTS REPRESENTATIVE.
- SO FAR AS IT IS REASONABLY AND ECONOMICALLY PRACTICABLE AND WHERE IT IS NOT PREJUDICIAL TO THE PROPRIETOR TO DO SO, THE FIRE CONTRACTOR SHALL IN THE PERFORMANCE OF THE CONTRACT USE LABOUR, MATERIALS, PLANT, EQUIPMENT, SUPPLIES AND SERVICES AVAILABLE WITHIN THE STATE OF WESTERN AUSTRALIA.
- ALL MATERIALS EQUIPMENT AND WORK SHALL COMPLY WITH THE APPROPRIATE AUSTRALIAN STANDARD SPECIFICATION OR CODE.
- ALL MATERIALS EQUIPMENT AND WORK SHALL ALSO COMPLY WITH THE RELEVANT RULES AND REGULATIONS LAID DOWN BY ANY STATUTORY AUTHORITY HAVING JURISDICTION OVER SUCH WORK AND SHALL CONFORM WITH THE REQUIREMENTS OF INSURANCE UNDERWRITER'S

- CODES.
- ANY WORKMANSHIP, MATERIALS OR INSTALLATION, WHICH ON INSPECTION, IS FOUND TO REQUIRE MODIFICATION TO BE ACCEPTABLE TO THE AUTHORITY CONCERNED SHALL BE REPLACED, CHANGED, MODIFIED, OR OTHERWISE PUT IN A FORM TO PASS THE RELEVANT REGULATIONS. SUCH MODIFICATIONS SHALL BE AT THE EXPENSE OF THE FIRE CONTRACTOR AT NO COST TO THE PROPRIETOR.
- THE FIRE SERVICE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS WITH THE SUPPLY AND INSTALLATION OF EQUIPMENT AND COMPONENTS TO PREVENT CORROSION. ANY COMPONENT OR ACCESSORY SHOWING SIGNS OF RUST OR CORROSION DURING THE MAINTENANCE PERIOD SHALL BE RENEWED OR OTHERWISE MADE GOOD IN AN APPROVED MANNER.
- THE FIRE CONTRACTOR SHALL PAINT & LABEL ALL FIRE SERVICES COMPONENTS IN ACCORDANCE WITH THE SPECIFICATION AND THE RELEVANT RESPECTIVE AUSTRALIAN STANDARD.

TESTING COMMISSIONING AND MAINTENANCE

- TESTING, COMMISSIONING AND MAINTENANCE SHALL BE INCLUSIVE OF ALL SYSTEMS AND INSTALLATIONS AND INCLUDE ALL SPECIFIED AND REQUIRED PROCEDURES DURING THE CONSTRUCTION PERIOD AND FOR THE DURATION OF THE MAINTENANCE PERIOD.

TESTING

- MAKE ALL NECESSARY ADJUSTMENTS SUCH THAT THE COMPLETE INSTALLATION IS LEFT IN A SATISFACTORY AND RELIABLE OPERATING CONDITION.
- RECORD ADJUSTMENT PARTICULARS IN THE LOGBOOK.
- SERVICE THE WHOLE OF THE SYSTEM AT THE CONTRACTOR'S OWN EXPENSE DURING THE DEFECTS LIABILITY PERIOD AND CONSTRUCTION PERIOD.
- PERFORM ALL TESTS AS REQUIRED BY THE RELEVANT RESPECTIVE INSTALLATION STANDARD AND AS 1851.

COMMISSIONING

- UPON COMPLETION OF THE INSTALLATION, THE ENTIRE SYSTEM SPECIFIED HEREIN SHALL BE FULLY TESTED AND COMMISSIONED TO THE SATISFACTION OF THE SUPERINTENDENT REPRESENTATIVE AND THE RELEVANT AUTHORITIES.
- THE COMMISSIONING AND TESTING PROCEDURES SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING.
 - HYDROSTATIC TESTING OF ALL PIPEWORK SYSTEMS SPECIFIED IN THE RELEVANT AUSTRALIAN STANDARDS.
 - FLOW AND PRESSURE TESTING ASSOCIATED WITH NEW FIRE PUMPS AND BOOSTER TESTING.

LEGEND - VALVES

- ISOLATION VALVE (NORMALLY OPEN)
- ISOLATION VALVE (NORMALLY CLOSE)
- ISOLATION VALVE IN VALVE BOX (NORMALLY OPEN)
- ISOLATION VALVE IN VALVE BOX (NORMALLY CLOSED)
- MONITOR ISOLATION VALVE (NORMALLY OPEN)
- MONITOR ISOLATION VALVE (NORMALLY CLOSE)
- SOLENOID TEST VALVE
- TEST/ DRAIN VALVE (NORMALLY CLOSE)
- BALL FOAT VALVE
- NON RETURN VALVE
- DOUBLE CHECK VALVE
- BACKFLOW PREVENTION DEVICE
- FIRE HYDRANT (DUAL)

LINE TYPES

- FIRE HYDRANT SYSTEM PIPING
- ABOVE GROUND PIPEWORK
- UNDERGROUND PIPEWORK



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Revision	Rev	By	Appd	YYYY.MM.DD

	LUL	FW	TJD	-
	Drawn	Dsgn.	Chkd.	YYYY.MM.DD

Issue Status

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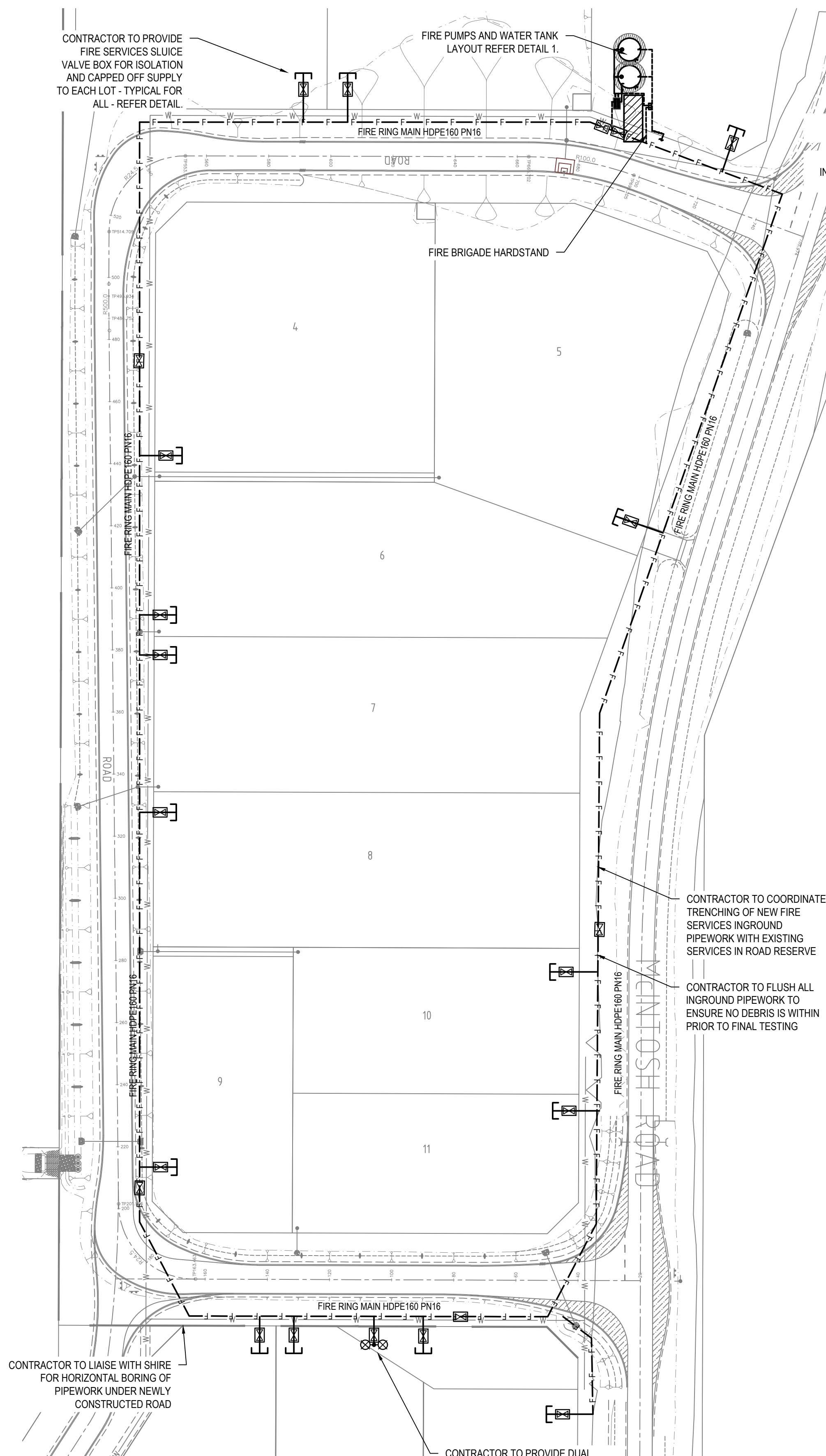
Project
DENMARK LIGHT INDUSTRIAL AREA -
FIRE PROTECTION SYSTEM

Title
NOTES AND LEGEND

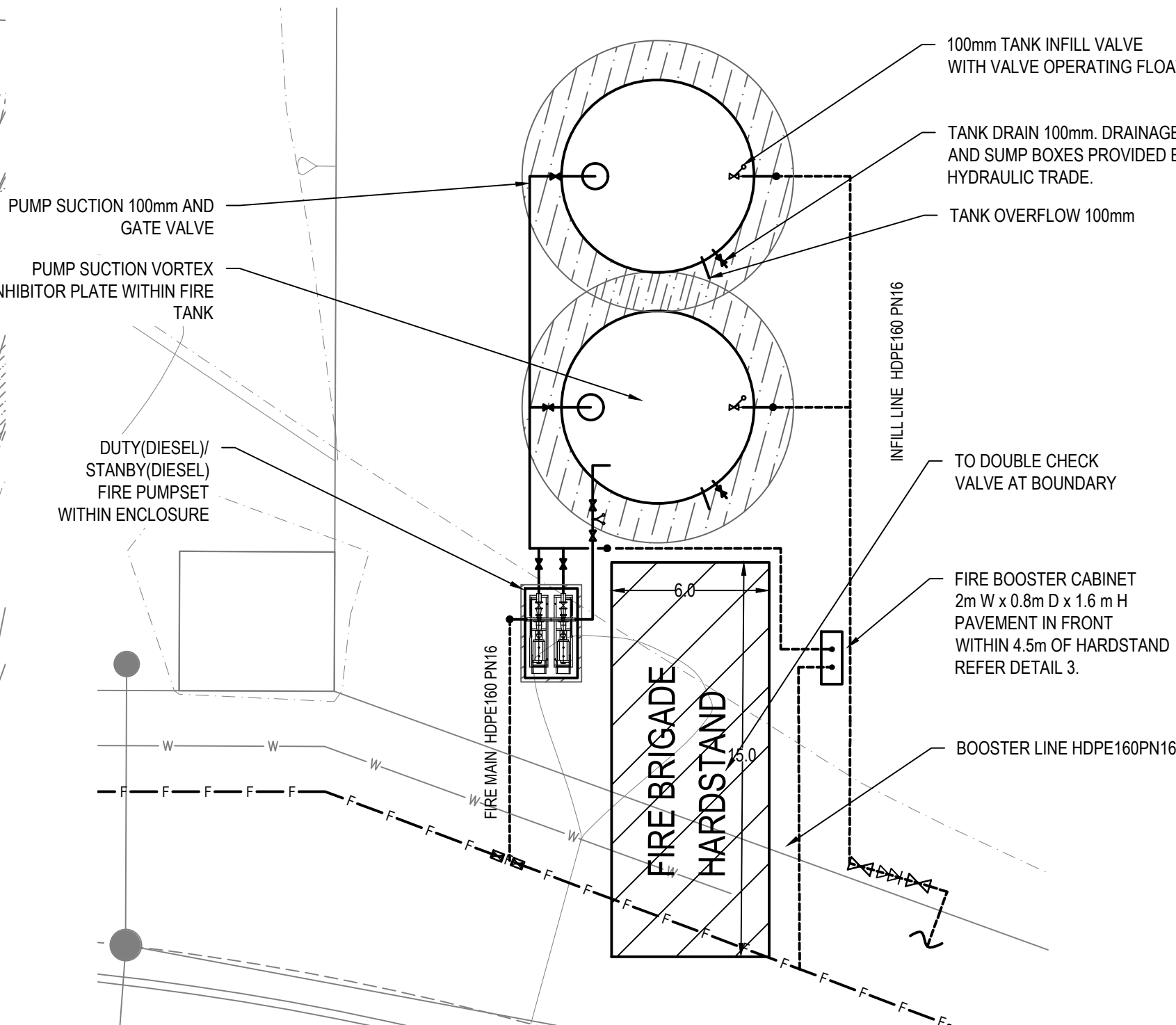
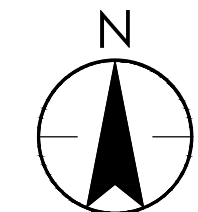
Project No. 301250343	WAPC No -	Scale NTS
Revision B	Drawing No.	FP-000-01

Datum: mAHD

Coord:



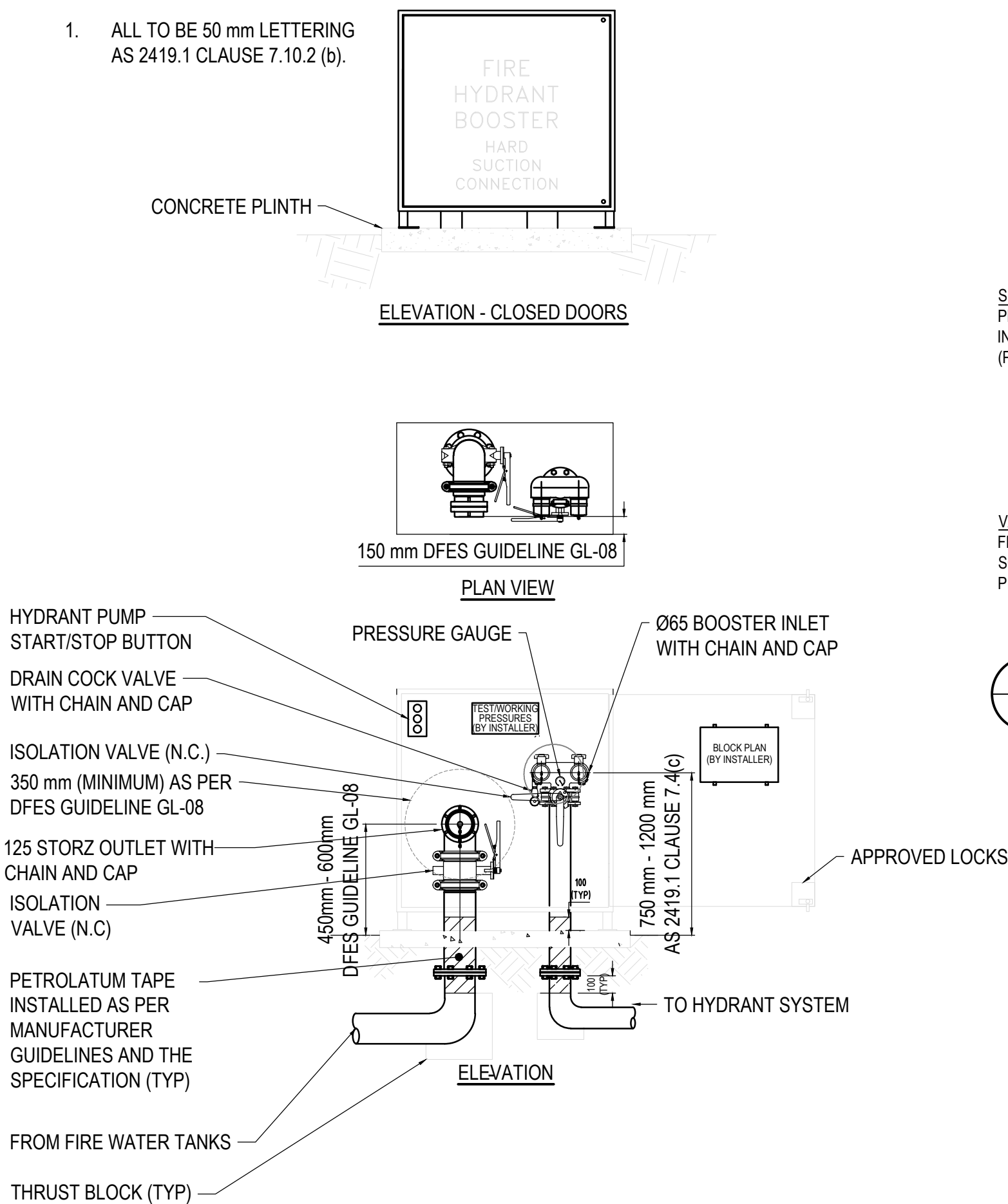
1 SITE PLAN
1:1000



2 FIRE PUMP ROOM AND WATER STORAGE TANKS
1:100

NOTES:

1. ALL TO BE 50 mm LETTERING AS 2419.1 CLAUSE 7.10.2 (b).

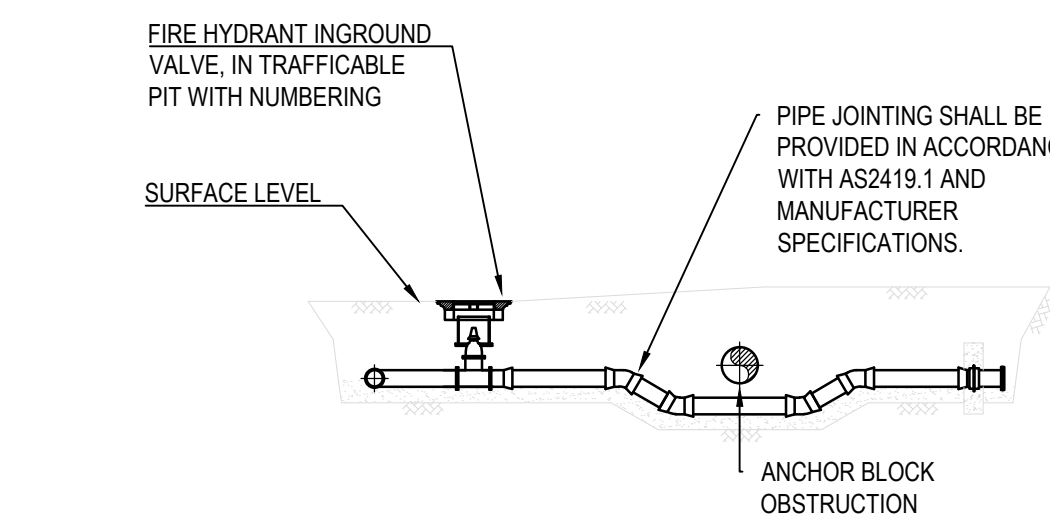
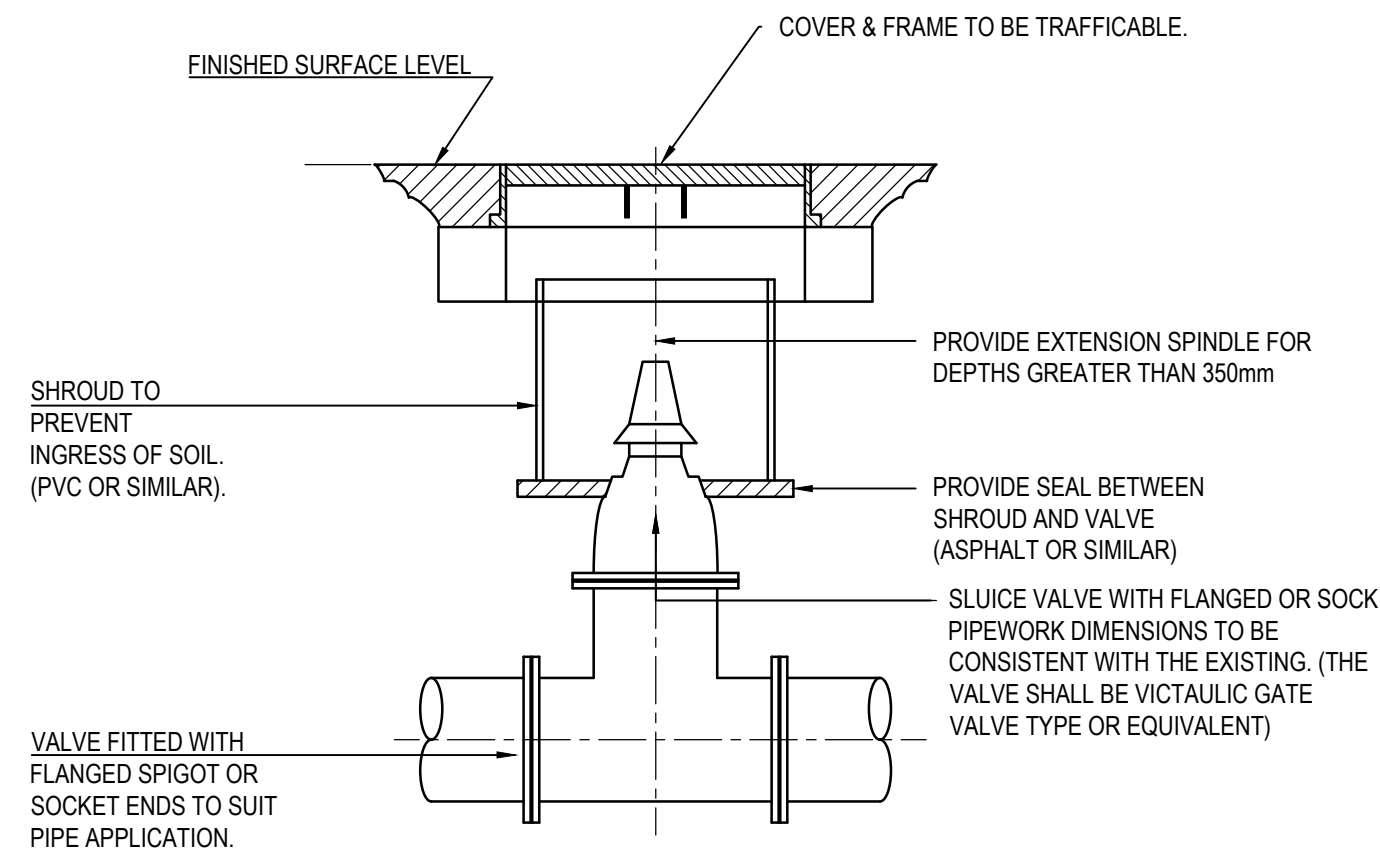


3 FIRE BOOSTER ASSEMBLY DETAIL
NTS

4 TYPICALLY FIRE SERVICES PIPEWORK TRENCH DETAIL
NTS

MINIMUM COVER IN PUBLIC AND PRIVATE AREAS FOR BURIED PIPE AS PER AS3500.1 AND AS2033	
LOADING CONDITIONS	MINIMUM COVER, mm
FIRE SERVICES NOT SUBJECT TO VEHICULAR LOADING	600
VEHICULAR LOADING (SCALED CARRIAGEWAY)	600
VEHICULAR LOADING (UNSEALED CARRIAGEWAY)	750
EMBANKMENTS OR SUBJECT TO CONSTRUCTION EQUIPMENT LOADS	750

5 TYPICALLY KEY-OPERATED SLUICE VALVE
NTS



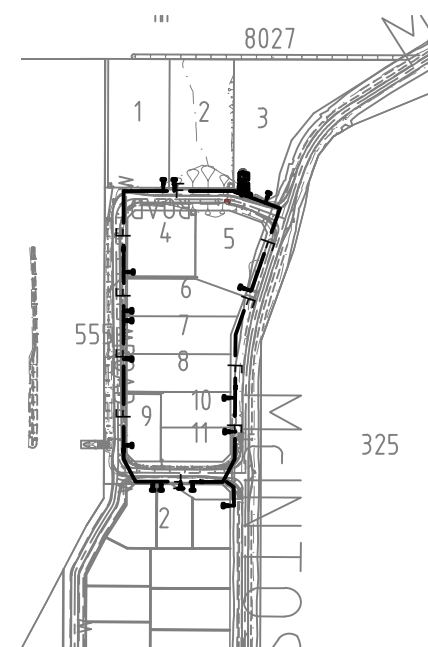
6 FIRE SERVICE PIPEWORK OBSTRUCTION DETAIL
NTS



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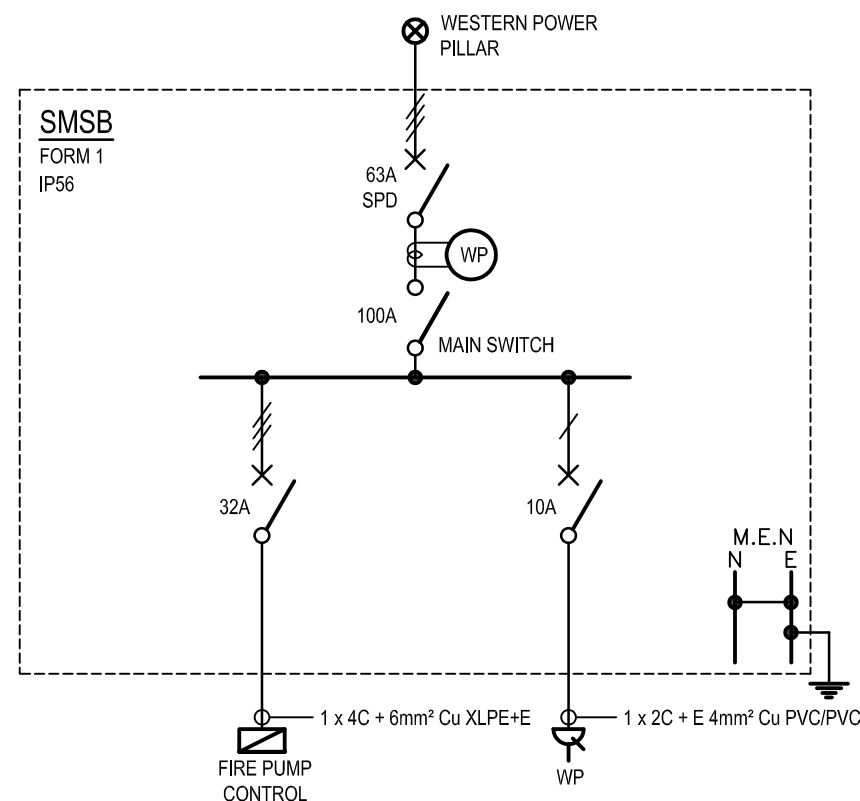
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Project
DENMARK LIGHT INDUSTRIAL AREA -
FIRE PROTECTION SYSTEM

Title
FIRE PROTECTION LAYOUT

Project No. 301250343	WAPC No -	Scale AS NOTED
Revision B	Drawing No.	FP-100-00



ABBREVIATIONS

SMSB - DENOTES SITE MAIN SWITCHBOARD
1P100 ——— DENOTES 32mm UNDERGROUND CONDUIT
P DENOTES HD PVC POWER CONDUIT
C DENOTES WHITE CLASS 12 COMMUNICATIONS PIPE
1 DENOTES NUMBER OF CONDUITS

LEGEND

- WEATHERPROOF DOUBLE GPO
RCD CIRCUIT BREAKER
CIRCUIT BREAKER
SINGLE PHASE
THREE PHASE
POWER PIT
DISTRIBUTION BOARD
DISTRIBUTION BOARD/CONTROL PANEL (BY OTHERS)
POWER AND COMMUNICATIONS CONDUIT
WESTERN POWER DIRECT CONNECT METER

SPECIFICATION NOTES

- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE ELECTRICAL SERVICES SECTION OF THE SPECIFICATION, THE ARCHITECTURAL DRAWINGS AND ALL OTHER RELEVANT SERVICES DRAWINGS.
- ALL EQUIPMENT AND ACCESSORIES SHALL BE NEW UNLESS NOTED OTHERWISE.
- FINAL POSITION OF ALL EQUIPMENT TO BE DETERMINED ON SITE PRIOR TO INSTALLATION. REFER TO ARCHITECTURAL FITOUT DRAWINGS.
- RATINGS AND TERMINATIONS OF ALL EQUIPMENT TO BE CONFIRMED WITH SUPPLIER/MANUFACTURER'S RECOMMENDATIONS PRIOR TO INSTALLATION.
- THE BUILDER SHALL ENGAGE THE SERVICES OF A LICENSED ELECTRICAL CONTRACTOR TO UNDERTAKE THE ELECTRICAL SERVICES AND ASSOCIATED WORKS.
- ALL WORKS ARE TO BE INSTALLED IN ACCORDANCE WITH THE AUSTRALIAN STANDARDS IN PARTICULAR AS/NZS 3000 "THE WIRING RULES." ALL ASSOCIATED MANDATORY STANDARDS, THE BUILDING CODE OF AUSTRALIA AND ALL REGULATORY AUTHORITIES REQUIREMENTS.
- THE EXTENT OF WORKS INDICATED ON THE DRAWINGS CALL FOR THE PROVISION OF SYSTEMS COMPLETE IN EVERY RESPECT, FIT AND READY FOR CONTINUOUS SAFE EFFICIENT OPERATION, THE ELECTRICAL CONTRACTOR SHALL THEREFORE SUPPLY, DELIVER, INSTALL, TEST, COMMISSION AND SET TO WORK THE SYSTEMS INDICATED ON THE DRAWINGS. THE FINISHED INSTALLATION SHALL BE COMPLETED WITH ALL NECESSARY ANGLERY AND MINOR ITEMS, WHETHER EXPRESSLY INDICATED ON THE DRAWINGS OR NOT.
- ALL EQUIPMENT TO BE SUPPLIED AS PART OF THESE WORKS SHALL BE NEW UNLESS INDICATED OTHERWISE. ALTERNATIVE EQUIPMENT SHALL NOT BE INSTALLED UNLESS PRIOR WRITTEN APPROVAL HAS BEEN GRANTED BY THE CLIENT OR PROJECT MANAGER, SUCH APPROVAL SHALL BE TO THE DISCRETION OF THE CONSULTING ENGINEER, CLIENT OR PROJECT MANAGER.
- THE ELECTRICAL CONTRACTOR SHALL FULLY CO-ORDINATE ALL WORKS WITH THE OTHER TRADES PRIOR TO INSTALLATION. NO EXTRA COSTS WILL BE PAID FOR VARIATIONS IF CO-ORDINATION WAS NOT CARRIED OUT PRIOR TO THE INSTALLATIONS OF THE POWER SUPPLIES.
- THE ELECTRICAL CONTRACTOR SHALL INSPECT THE SITE PRIOR TO SUBMITTING A PRICE AND ENSURE THAT ALL SUNDRY ASSOCIATED WORKS ARE INCLUDED, WHETHER INDICATED ON THE DRAWINGS OR NOT.
- LOCATIONS OF EXISTING SERVICES SHOWN ON THE DRAWINGS ARE APPROXIMATE, THE EXACT LOCATIONS AND EXTENT OF EXISTING EQUIPMENT SHALL BE VERIFIED ON SITE BY THE ELECTRICAL CONTRACTOR PRIOR TO WORK COMMENCING.
- LOCATIONS OF ALL NEW OUTLETS ETC SHOWN ON ELECTRICAL DRAWINGS ARE INDICATIVE, THE EXACT LOCATIONS, MOUNTING HEIGHTS ETC SHALL BE DETERMINED FROM THE ARCHITECT'S DIMENSIONED PLANS, SECTIONS, ELEVATIONS AND DETAILS.
- WHERE EXISTING EQUIPMENT IS INDICATED TO BE REMOVED, REMOVAL SHALL INCLUDE MAKING SAFE, DISCONNECTION OF SUBCIRCUIT WIRING, REMOVAL OF CABLING, CABLE SUPPORTS AND EQUIPMENT AND MAKING GOOD.
- ALL NEW LIGHT SWITCHES, OUTLETS AND CONNECTIONS SHALL BE LABELLED WITH THEIR RESPECTIVE CIRCUIT AND DISTRIBUTION BOARD NUMBERS WITH COLOURED IPA MARKERS. CIRCUIT SCHEDULES AT DISTRIBUTION BOARDS AFFECTED BY THESE WORKS SHALL BE UPDATED WITH NEW TYPED CIRCUIT SCHEDULES.
- PROVIDE POWER SUB CIRCUIT FROM DISTRIBUTION BOARDS TO ALL OUTLETS, FITTINGS AND APPLIANCES. POWER SUB CIRCUITS TO BE SIZED AS PER DRAWING LAYOUT. GENERAL POWER SUB CIRCUITS TO BE 20A MCB PROTECTED AND WIRED WITH 1 X 2C+E 4mm² Cu PVC/PVC CABLE, UNLESS OTHERWISE NOTED.
- IRRESPECTIVE OF THE CIRCUIT PROTECTION RATING AND CABLE SITES DETAILED IN THESE NOTES, THE COMPLETE ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH AS3000. ALL SUBMAIN AND SUB-CIRCUIT CABLES SHALL BE INSTALLED ACCORDANCE WITH AS3008 TO SUIT THE FOLLOWING:
 - CIRCUIT PROTECTION RATING
 - CONDITIONS WHERE THE CABLES ARE INSTALLED
 - DERATING
 - VOLT DROP NO GREATER THAN 5% AT THE FINAL POINT OF CONNECTION
- ALL LUMINAIRES SHALL BE CLEANED PRIOR TO PRACTICAL COMPLETION.
- SUBMIT FOR APPROVAL COMPLETE WORKING DRAWINGS WITH PANEL LAYOUTS OF EACH SWITCHBOARD BEFORE MANUFACTURE.
- ALLOW TO CARRY OUT PHASE LOAD TESTING AFTER CLIENT OCCUPATION, AND LIAISE WITH CLIENT TO TEST AND RE-BALANCE LOAD DISTRIBUTION ACROSS PHASES. THE MAXIMUM OUT OF BALANCE BETWEEN ANY PHASE SHALL BE 10%.
- PROVIDE 12 MONTHS DEFECTS LIABILITY FOR THE WORKS FROM THE DATE OF PRACTICAL COMPLETION.
- PROVIDE THREE OFF HARD COPIES OF "AS-BUILT" DRAWINGS, OPERATION AND MANUFACTURER'S INFORMATION MANUAL, INCLUDING DATA SHEETS OF ALL LUMINAIRES, LAMP REPLACEMENT ORDERING DETAILS AND EMERGENCY LIGHTING SYSTEM LOG BOOK. MAINTENANCE/OPERATION MANUALS SHALL BE IN BOUND HARD COPY FORMAT. SUBMIT 1 COPY FOR APPROVAL PRIOR TO CONTRACT COMPLETION.
- ELECTRONIC FILES OF THE LATEST ARCHITECTURAL DRAWINGS WILL BE PROVIDED UPON REQUEST. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ACCURATE "AS CONSTRUCTED" DRAWINGS IN ELECTRONIC AUTOCAD AND HARD COPY FORMATS.
- PROVIDE PERMANENT LABEL AT THE SITE MAIN SWITCHBOARD TO SAY "IN THE EVENT OF FIRE, DO NOT SWITCH OFF" IN ACCORDANCE WITH AS3000.
- EXACT CONDUIT RUNS TO BE DETERMINED ON SITE.
- AVOID LOCATING PITS ALONG FOOT PATH, WHERE CABLE PITS ARE REQUIRED ALONG THE PATH WALLS, PITS SHALL BE FINISHED PLUSH WITH THE FINISH LEVEL OF THE IN SITU CONCRETE.
- ALL CONDUITS SHALL BE SEALED TO PREVENT INGRESS OF WATER AFTER INSTALLATION OF CABLING.
- WHERE POSSIBLE, POWER AND COMMUNICATION CONDUITS SHALL BE INSTALLED IN COMMON TRENCHES WITH OTHER SERVICES TRADE. ENSURE THAT THE MINIMUM REQUIRED SEPARATION IS MAINTAINED BETWEEN SERVICES THAT RUN IN COMMON TRENCH IN ACCORDANCE WITH AS3000.
- LIAISE WITH WESTERN POWER FOR THE WORKS REQUIRED.
- ALLOW TO UNDERTAKE ALL "CUSTOMER SCOPE OF WORKS" AS PER WESTERN POWER REQUIREMENTS.



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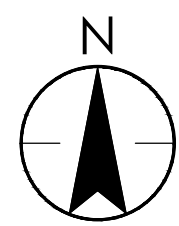
Project

DENMARK LIGHT INDUSTRIAL AREA -
FIRE PROTECTION SYSTEM

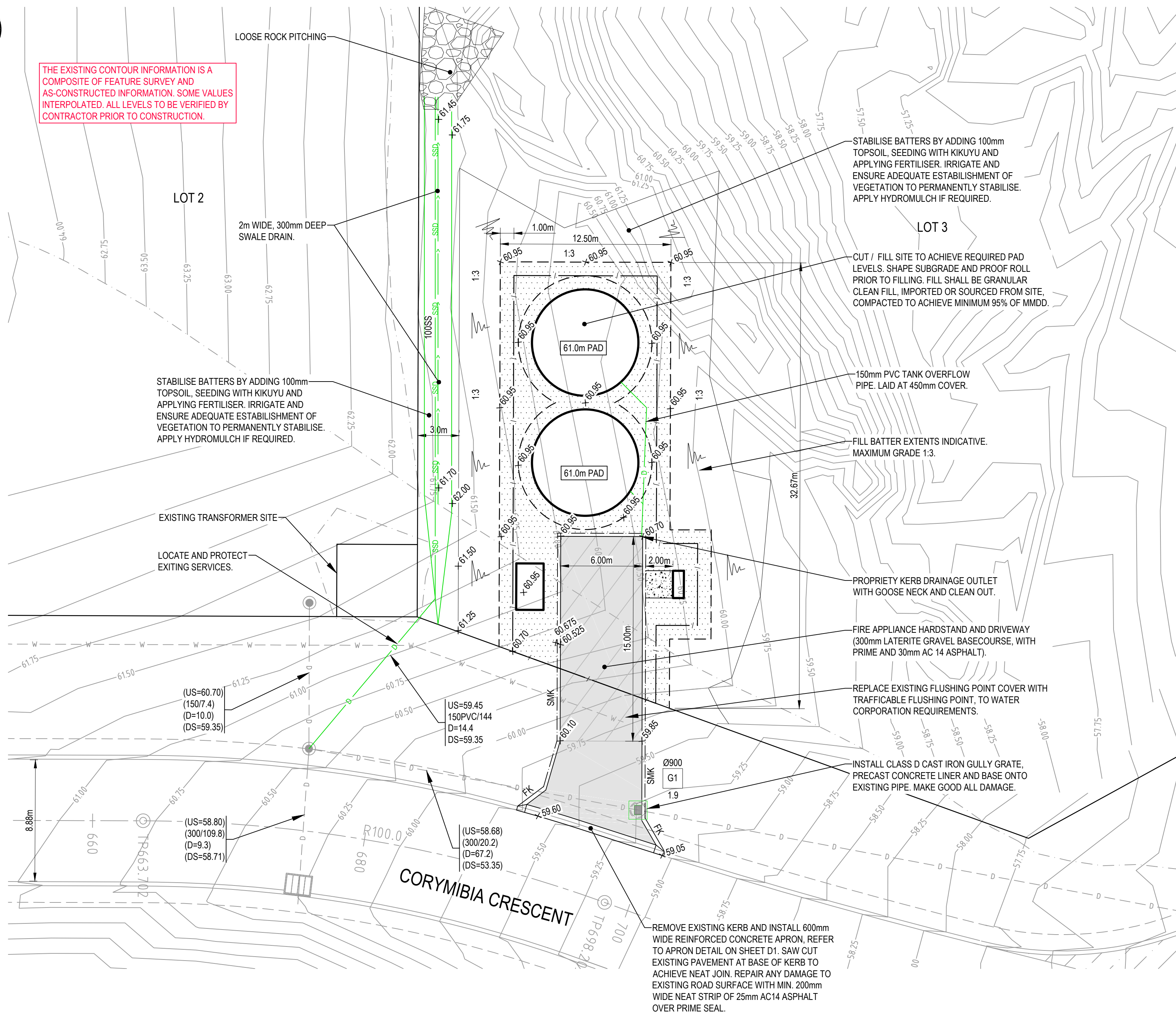
Title

LEGEND, SPECIFICATION NOTES, FIRE
PUMP ROOM LAYOUT AND SINGLE LINE
DIAGRAM

Project No.	WAPC No	Scale
301250343	-	1:5
Revision	Drawing No.	
B		



THE EXISTING CONTOUR INFORMATION IS A COMPOSITE OF FEATURE SURVEY AND AS-CONSTRUCTED INFORMATION. SOME VALUES INTERPOLATED. ALL LEVELS TO BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION.



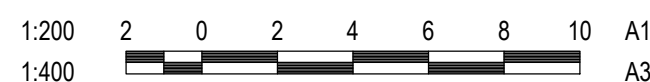
PLAN
SCALE 1:200

CAUTION: EXISTING UNDERGROUND, OVERHEAD AND PRESSURISED SERVICES (INCLUDING PRIVATE SERVICES) EXIST WITHIN THE SITE AND HAVE NOT BEEN LOCATED. THE CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO LOCATE, ISOLATE, PROTECT AND REINSTATE EXISTING SERVICES AS APPROPRIATE

CAUTION: NO INVESTIGATION OR TESTING HAS BEEN UNDERTAKEN TO DETERMINE THE PRESENCE OF HAZARDOUS MATERIALS ON THE SITE. THE CONTRACTOR SHALL EXERCISE DUE CAUTION REGARDING POTENTIAL CONTAMINATION.

CONTRACTOR TO BE AWARE OF EXISTING OVERHEAD POWER LINES IN THE WORKS AREA AND TAKE ALL DUE PRECAUTIONS FOR WORKS IN THE VICINITY OF OVERHEAD POWER LINES. CONTRACTOR TO REFER TO THE LEAFLET: 'GUIDELINES FOR WORK IN THE VICINITY OF OVERHEAD POWER LINES' AND THE WESTERN POWER WEBSITE: <https://www.westernpower.com.au/safety/360-aware/industry-safety/?tab=excavation>

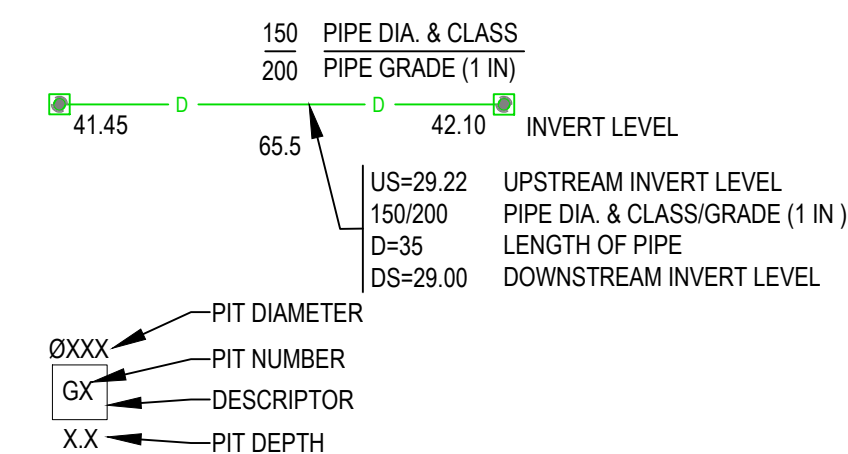
NO INVESTIGATIONS INTO EXISTING STRUCTURES ADJACENT TO THE PROPOSED WORKS HAVE BEEN UNDERTAKEN. THE CONTRACTOR SHALL TAKE ALL DUE PRECAUTIONS DURING THE WORKS TO PROTECT EXISTING STRUCTURES AND ENSURE SAFE WORK PRACTICES.



NOTES

- LEVELS
- 1.1. PROPOSED LEVELS SHOWN SHALL BE ON THE FINISHED SURFACE, INCLUDING TOPSOIL, AGGREGATE AND/OR ROAD PAVEMENT MATERIALS. THE CONTRACTOR SHALL REFER TO THE SPECIFICATION AND DETAILS FOR THICKNESSES TO DETERMINE SAND FILL LEVELS.
- CLEARING/TOPSOIL
- 2.1. THE CONTRACTOR SHALL CLEAR VEGETATION AND DEBRIS FROM WITHIN THE SITE BOUNDARY IN ACCORDANCE WITH THE SPECIFICATION, EXCEPT FOR VEGETATION SHOWN AS RETAINED.
- 2.2. TOPSOIL SHALL BE STRIPPED FROM THE SITE AS SPECIFIED.
- 2.3. VEGETATION TO BE RETAINED SHALL BE PROTECTED IN ACCORDANCE WITH THE SPECIFICATION.
- 2.4. ALL EXCESS MATERIAL SHALL BE DISPOSED OF ONSITE AS DIRECTED BY THE SHIRE OF DENMARK.
- GENERAL EARTHWORKS
- 3.1. THE CONTRACTOR SHALL CUT, PROOF ROLL, AND FILL THE SITE IN ACCORDANCE WITH THE SPECIFICATION.
- 3.2. ALL BATTERS SHALL BE AT 1 IN 6 UNLESS NOTED OTHERWISE.
- MODIFIED WORK PRACTICES
- 4.1. THE CONTRACTOR SHALL UTILISE MODIFIED WORK PRACTICES WHERE NECESSARY:
- 4.2. IN THE VICINITY OF LIVE UNDERGROUND SERVICES IN ACCORDANCE WITH AUTHORITY STANDARDS.
- 4.3. IN THE VICINITY OF OVERHEAD POWER LINES IN ACCORDANCE WITH AUTHORITY STANDARDS.
- GEOTECHNICAL VERIFICATION
- 5.1. THE CONTRACTOR SHALL ENGAGE A GEOTECHNICAL ENGINEER TO PERFORM THE FOLLOWING TASKS:
- 5.1.1. INSPECT AND PROVIDE VERIFICATION OF ADEQUATE TOPSOIL STRIPPING.
- 5.1.2. INSPECT AND PROVIDE VERIFICATION OF ADEQUATE PROOF ROLLING.
- 5.1.3. INSPECT AND PROVIDE VERIFICATION THAT EARTHWORKS HAVE BEEN PERFORMED IN ACCORDANCE WITH THE WORD AND INTENT OF THE CONTRACT DOCUMENTS UPON COMPLETION OF EARTHWORKS.
- 5.1.4. DEVELOP A METHOD SPECIFICATION FOR TREATMENT OF ANY LIMESTONE / ROCK INTENDED FOR RE-USE ON SITE, AND INSPECT AND PROVIDE VERIFICATION OF IMPLEMENTATION OF THE METHOD. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE SUPERINTENDENT FOR THE PROPOSED METHOD SPECIFICATION PRIOR TO COMMENCING THE RELEVANT WORKS ON SITE.
- 5.2. ALL GEOTECHNICAL VERIFICATION SHALL BE SUBMITTED TO AND APPROVED BY THE SUPERINTENDENT PRIOR TO COMMENCEMENT OF ANY SUBSEQUENT WORKS UNLESS INSTRUCTED OTHERWISE BY THE SUPERINTENDENT IN WRITING.
- 5.3. ALL GEOTECHNICAL VERIFICATION SHALL BE SUBMITTED TO AND APPROVED BY THE SUPERINTENDENT PRIOR TO PRACTICAL COMPLETION.
- DUST CONTROL AND STABILISATION DURING THE CONTRACT PERIOD
- 6.1. THE CONTRACTOR SHALL ALLOW FOR DUST CONTROL MEASURES IN ACCORDANCE WITH THE SPECIFICATION, AND TO ENSURE A PERMANENTLY STABLE OR OTHERWISE TEMPORARILY PROTECTED SITE AT THE COMPLETION OF WORKS. THE CONTRACTOR SHALL ENSURE THAT VERGES/DRAINS AND OTHER GRASSED AREAS IS FULLY ESTABLISHED BY THE END OF THE 12 MONTH DEFECT PERIOD. THE CONTRACTOR SHALL ALLOW FOR WATERING/MAINTENANCE AS REQUIRED TO ACHIEVE THIS OUTCOME.
- EXISTING SERVICES
- 7.1. THE CONTRACTOR SHALL OBTAIN DIAL BEFORE YOU DIG INFORMATION PRIOR TO COMMENCEMENT OF ANY WORKS ON SITE.
- 7.2. THE CONTRACTOR SHALL ACCURATELY LOCATE ANY EXISTING SERVICE THAT MAY POTENTIALLY INHIBIT THE PROPOSED WORKS, WITHIN A MAXIMUM OF TWO WEEKS AFTER THE DATE OF POSSESSION OF SITE TO AVOID IMPACTING THE PROGRAM.
- 7.3. THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT IMMEDIATELY SHOULD ANY EXISTING SERVICE PREVENT OR INHIBIT THE PROPOSED WORKS AND AWAIT FURTHER INSTRUCTION PRIOR TO PROCEEDING, UNLESS NOTED OTHERWISE.
- 7.4. THE RELEVANT AUTHORITY STANDARDS SHALL BE ADHERED TO AND CAUTION SHALL BE EXERCISED DURING WORKS IN THE VICINITY OF LIVE AUTHORITY SERVICES.
- REINSTATEMENTS
- 8.1. THE CONTRACTOR SHALL REINSTATE ANY DAMAGE CAUSED TO EXISTING AREAS TO EXISTING STANDARD PRIOR TO PRACTICAL COMPLETION, WITH THE EXCEPTION OF AREAS TO BE REINSTATED AFTER PIECE UPS BY THE RELEVANT AUTHORITIES. IF REQUIRED, THE CONTRACTOR SHALL REMOBLISE TO PERFORM REINSTATEMENTS AFTER AUTHORITY PIECE UPS.
- TRAFFIC MANAGEMENT
- 9.1. THE CONTRACTOR SHALL SUBMIT A TRAFFIC MANAGEMENT PLAN TO THE LOCAL AUTHORITY AND GAIN APPROVAL PRIOR TO COMMENCEMENT OF WORKS WITHIN THE ROAD RESERVE.
- EXISTING DRAINAGE INFRASTRUCTURE
- 10.1. THE LEVEL, ALIGNMENT, AND DIAMETER OF EXISTING DRAINAGE INFRASTRUCTURE AT PROPOSED POINTS OF CONNECTION SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION, OR EARLIER IF REQUIRED BY THE PROGRAM. THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT IMMEDIATELY SHOULD EXISTING DETAILS NOT MATCH THOSE SHOWN ON THE DRAWINGS.
- ACCESS CHAMBERS
- 11.1. ACCESS CHAMBERS COVERS SHALL BE CLASS D HEAVY DUTY TRAFFICABLE COVERS.
- SUBSOIL DRAINAGE
- 12.1. SUBSOIL DRAINAGE PIPE ON STRAIGHTS SHALL BE DRAINCOIL DN160 CLASS SN8 FLEXIBLE SLOTTED PIPE (OR SIMILAR APPROVED).
- 12.2. CAPS SHALL BE LOCATED AT THE UPSTREAM END OF ALL SUBSOIL PIPES. CAPS ARE NOT REQUIRED WHERE THE SUBSOIL INVERT LEVEL IS ABOVE ALL CONCRETE PIPE OBVERT LEVELS WITHIN AN ACCESS CHAMBER.
- 12.3. SUBSOIL DRAINAGE ALIGNMENTS SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
- 12.4. CLEAN OUT POINTS TO BE DN100 RISER BROUGHT TO SURFACE, WITH PVC SCREW CAP, UNDER HINGED CAST IRON LID SET LEVEL TO PAVING AND SET ON CONCRETE FOOTING PVC SCREW CAP TO BE LABELLED 'SUBSOIL CLEANOUT POINT'. LABEL TO BE BLACK PLASTIC LABEL WITH WHITE ENGRAVED SCRIPT AFFIXED TO CAP WITH ALUMINIUM RIVETS AND SUITABLE ADHESIVE.
- 12.5. SUBSOIL DRAINAGE PIPE TO BE SURROUNDED BY MIN OF 100mm OF 14mm AGGREGATE TO ALL SIDES, ALL SURROUNDED BY A14 BIDIM.
- CLASHES WITH OTHER SERVICES
- 13.1. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF PROPOSED DRAINAGE WITH ALL OTHER SERVICES AND ROADWORKS. IN THE EVENT OF ANY CLASH THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE SUPERINTENDENT AND SEEK FURTHER DIRECTION PRIOR TO PROCEEDING.
- FENCE
- 14.1. THE PROPOSED FENCE SHALL BE A MIN 2.1m HIGH 'CYCLONE' SECURITY FENCE WITH 3 STRANDS OF BARBED WIRE TO THE TOP. POSTS SHALL BE GALVANISED STEEL WITH APPROPRIATE CONCRETE FOOTINGS. ALL DETAILS OF PROPOSED FENCING TO BE SUBMITTED WITH TENDER PROPOSAL.

NOTATION



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LEGEND

— 58.75 —	EXISTING CONTOURS - 0.25m INTERVAL
=====	EXISTING ROAD KERB
== == ==	EXISTING ROAD KERB TO BE REMOVED
== SMK ==	PROPOSED SEMI-MOUNTABLE KERB
== FK ==	PROPOSED FLUSH KERB
=====	PROPOSED 20mm AGGREGATE
=====	PROPOSED HARDSTAND
— D —	PROPOSED DRAINAGE PIPE AND INFRASTRUCTURE
— SSD —	PROPOSED SUBSOIL DRAINAGE PIPE (100mm DIA)
— > —	PROPOSED SWALE
— / —	PROPOSED FENCE
— x 59.25m —	PROPOSED FINISHED SURFACE SPOT LEVEL
— D —	EXISTING DRAINAGE PIPE AND INFRASTRUCTURE
— W —	EXISTING WATER PIPE AND INFRASTRUCTURE
=====	PROPOSED ROCK PITCHING (Nom. 200mm)
=====	PROPOSED CONCRETE PAVEMENT

REVISED TENDER ISSUE	D	LUL	FW	2021.11.11
BUILDING PERMIT ISSUE	C	LUL	FW	2021.08.23
ISSUED FOR TENDER	B	LUL	FW	2021.07.23
PRELIMINARY ISSUE	A	LUL	FW	2021.07.02
Revision	Rev	By	Appd	YYYY.MM.DD
	LUL	FW	TJD	2021.07.23
	Drawn	Dsgn	Chkd.	YYYY.MM.DD

Issue Status

TENDER ISSUE

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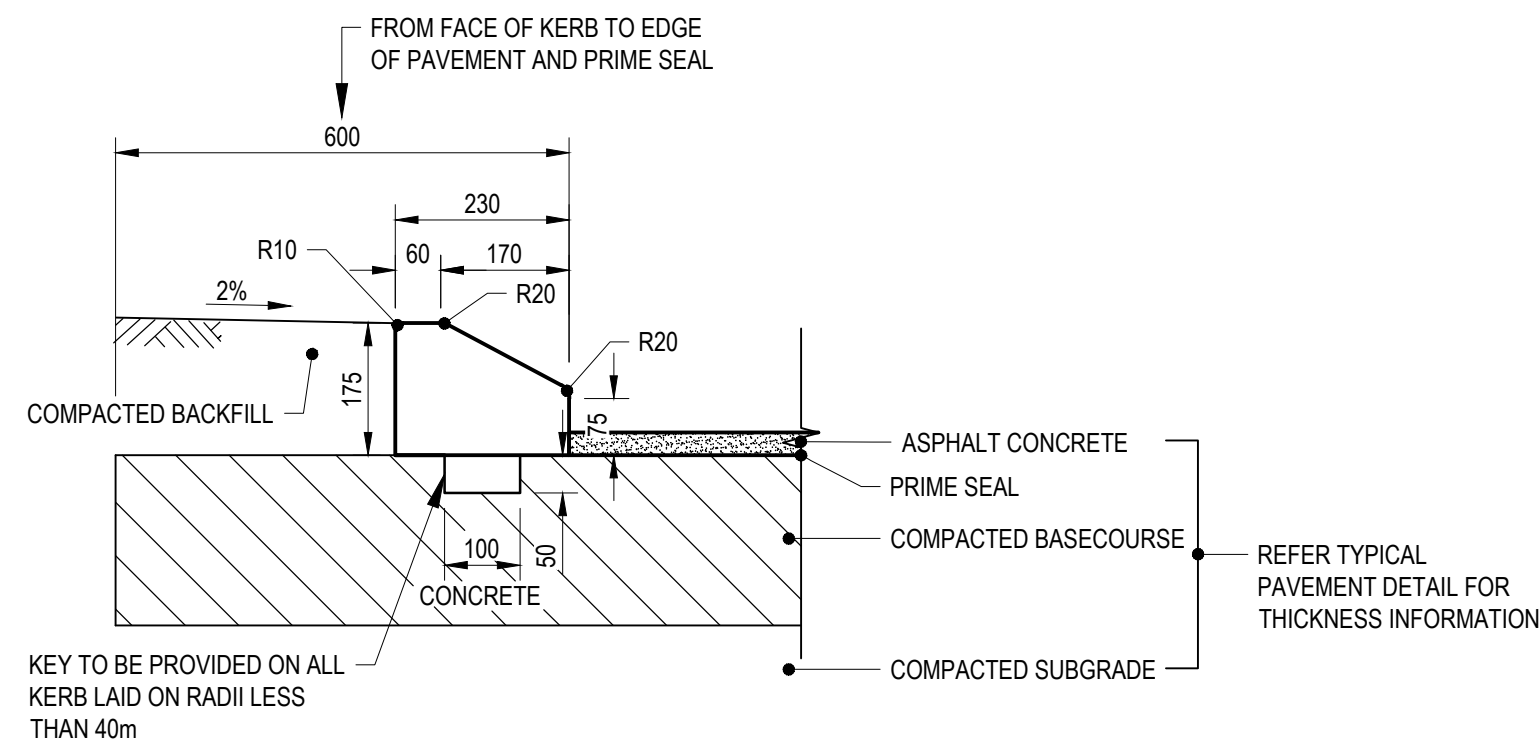
Project

DENMARK LIGHT INDUSTRIAL AREA -
FIRE PROTECTION SYSTEM

Title

CIVIL / SITEWORKS PLAN

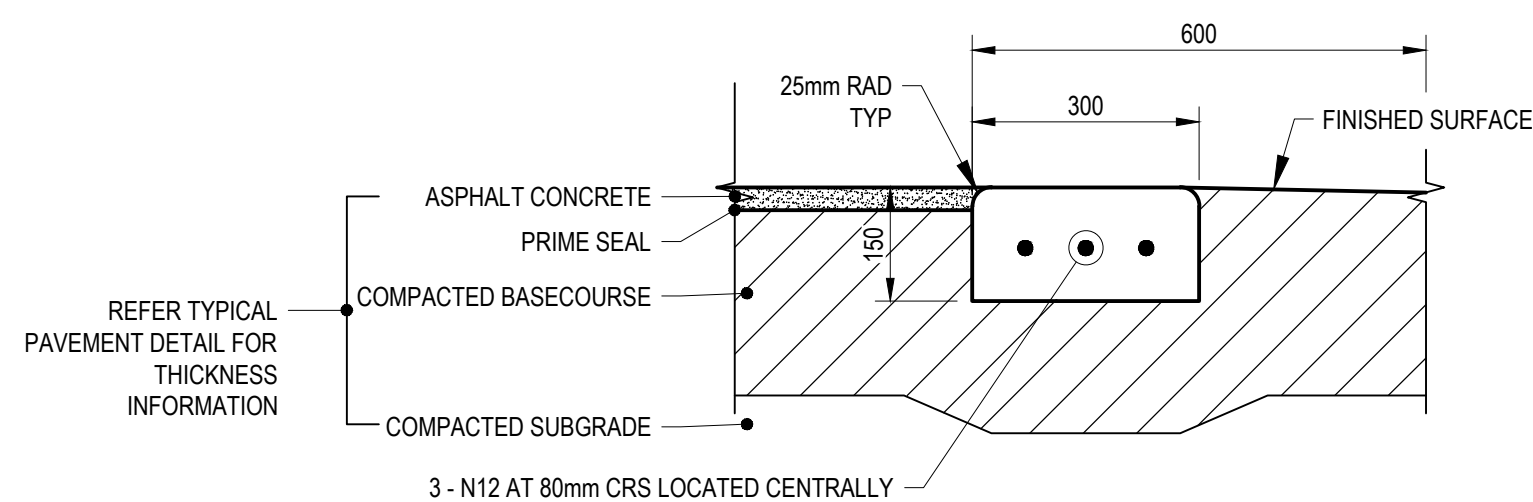
Project No. 301250343	WAPC No -	Scale 1:200
Revision D	Drawing No.	



SEMI MOUNTABLE KERB DETAIL - AC TO VERGE
SCALE 1:10

NOTE:

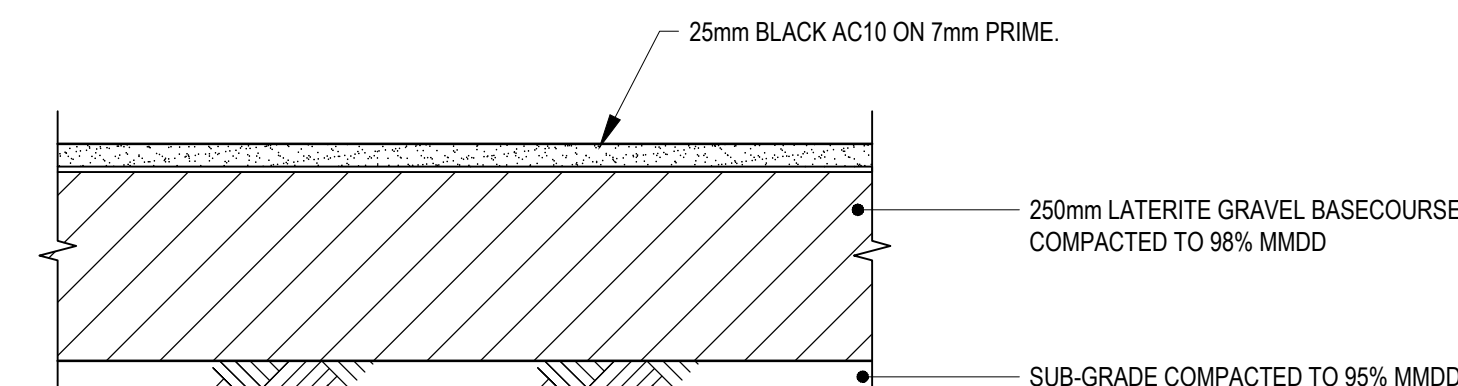
1. ALL KERBS TO BE INSITU N32 CONCRETE.
2. CONTRACTION JOINTS AT 2.0m CENTRES; EXPANSION JOINTS AT EVERY SECOND JOINT (4.0m CENTRES)
REFER EXPANSION JOINT DETAIL.



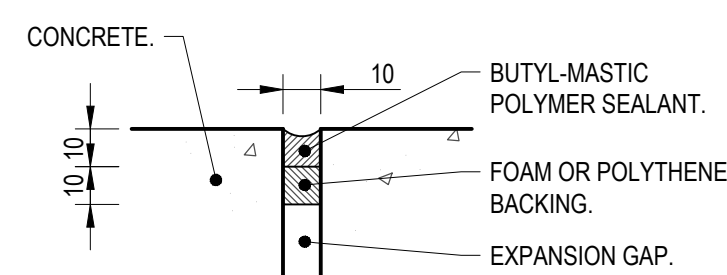
FLUSH KERB AC TO VERGE DETAIL
SCALE 1:10

NOTE:

1. ALL KERBS TO BE INSITU N32 CONCRETE.
2. CONTRACTION JOINTS AT 2.0m CENTRES; EXPANSION JOINTS AT EVERY SECOND JOINT (4.0m CENTRES). REFER EXPANSION JOINT DETAIL.



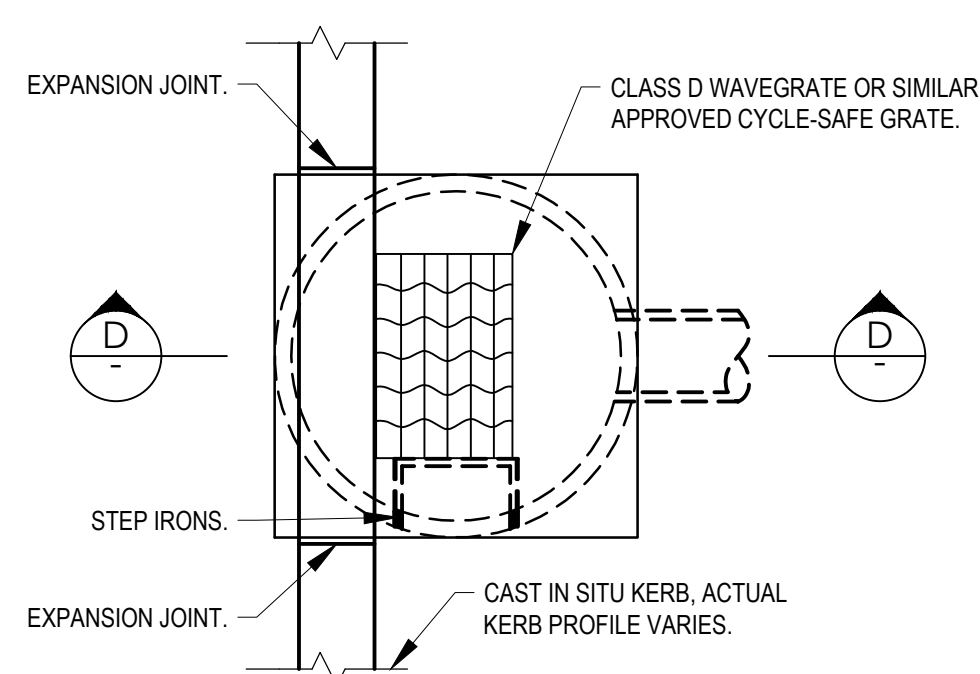
TYPICAL PAVEMENT DETAIL - TRAFFICABLE AREAS
SCALE 1:10



EXPANSION JOINT DETAIL
SCALE 1:2

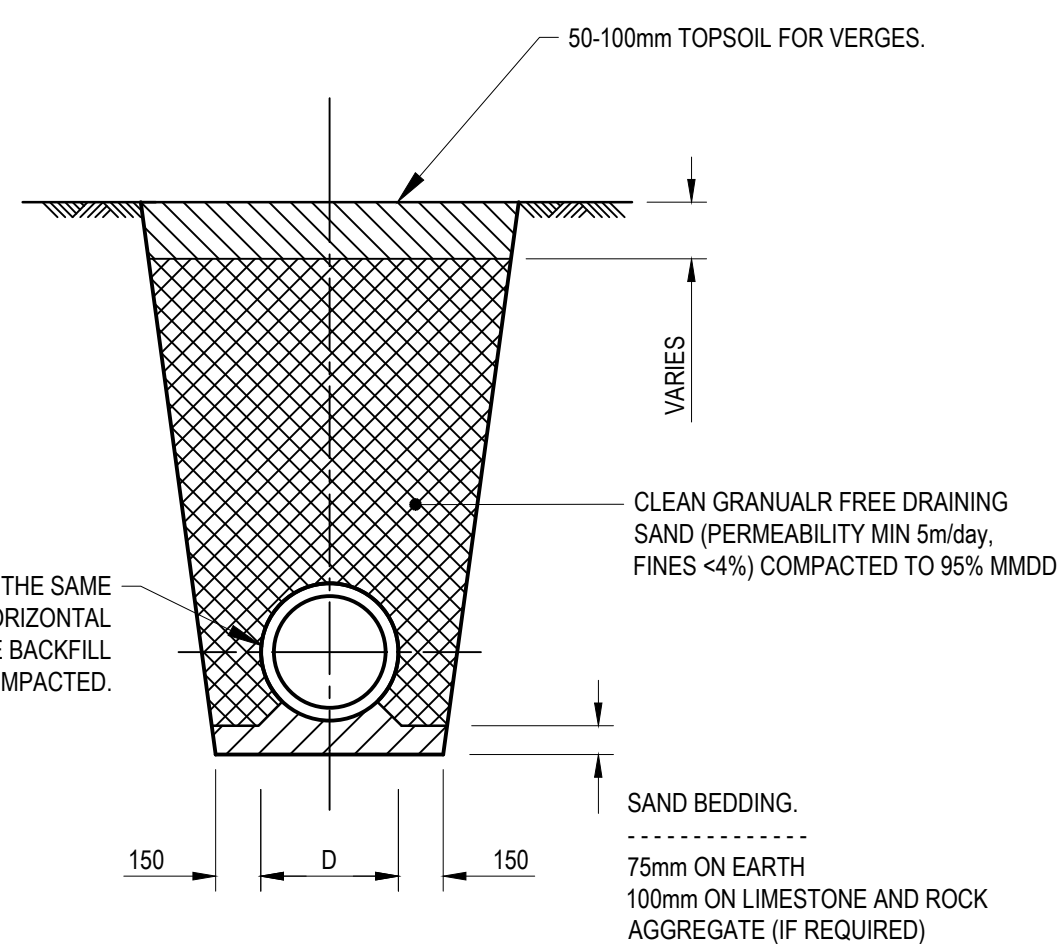


ELEVATION

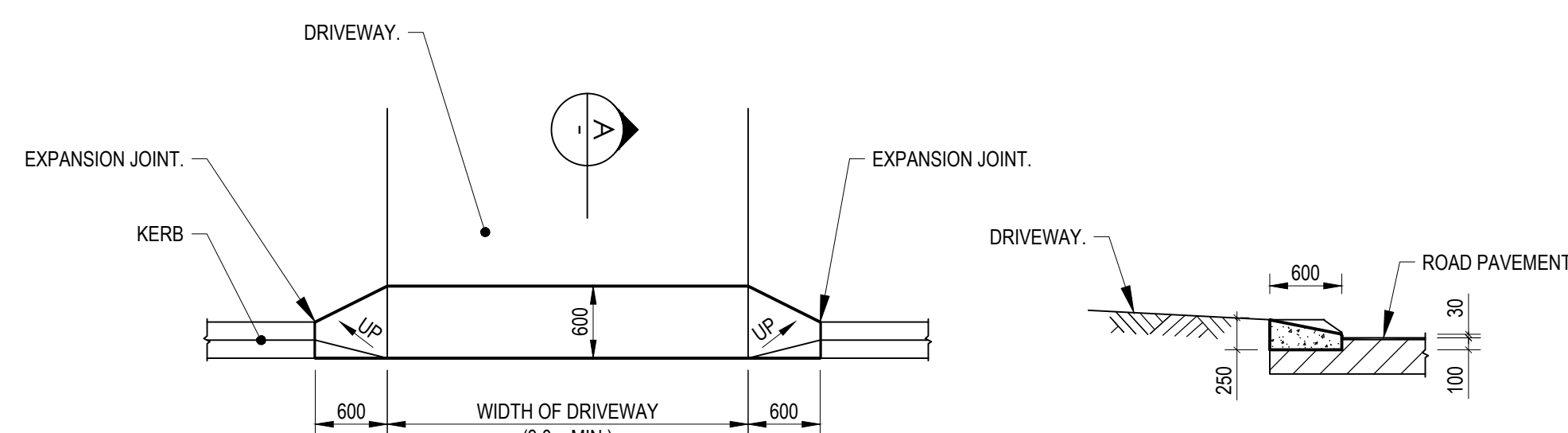


GULLY GRATE DETAIL

SCALE 1:25



TYPICAL TRENCH DETAIL
SCALE 1:25



PLAN

SECTION A

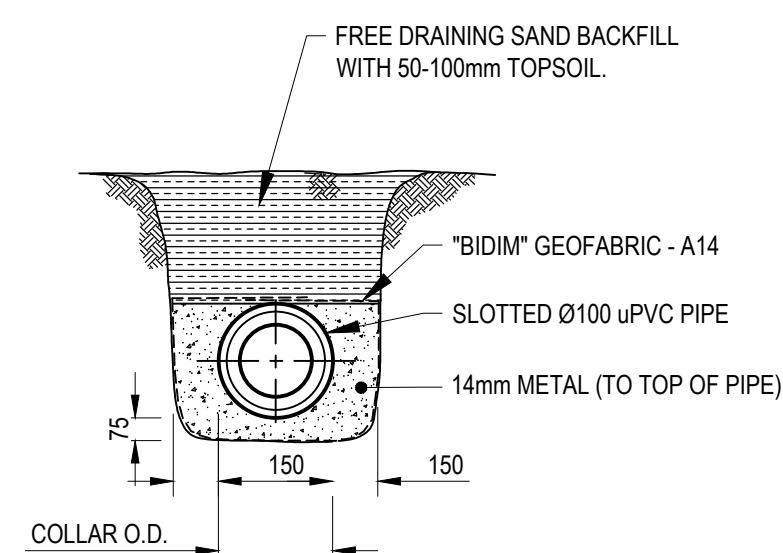
CONCRETE APRON
SCALE 1:50

NOTE

1. CONCRETE APRONS ARE NOT REQUIRED IN AREAS WHERE MOUNTABLE KERBING HAS BEEN USED.

PIPE SIZE Ø	LINER TO BE CLASS 2 WITH INTERLOCKING JOINTS
225 - 300	DN900
375 - 450	DN1050
525 - 600	DN1200

NOTE: STEP IRONS TO BE INSTALLED WHERE DEPTH IS GREATER THAN 1000mm FROM COVER TO BASE AT 300 CENTRES. BOTTOM STEP 300mm ABOVE BASE. STEP IRONS ARE TO BE INSTALLED ON THE WALL FACING ONCOMING TRAFFIC. CONTRACTOR SHALL ENSURE COMPACTION OF BASE AND BACKFILL MATERIAL TO LINER IS IN ACCORDANCE WITH THE SPECIFICATION AND UNIFORM.



SUBSOIL DRAINAGE DETAIL
SCALE 1:25

REVISED TENDER ISSUE	C	LUL	FW	2021.11.11
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	LUL	FW	TJD	2021.07.23
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Project
DENMARK LIGHT INDUSTRIAL AREA -
FIRE PROTECTION SYSTEM

Title
CIVIL DETAILS

Project No. 301250343	WAPC No -	Scale -
Revision C	Drawing No.	CI-006-GE-D1