CUT AND FILL LEVELS FROM ROAD LEVEL TO PLATFORM SURFACE:

LANSCAPE AREA 4,800m²
TOTAL CUT (RED): 600m³
FILL (BLUE) : 50m³

MAXIMUM DEPTHS
CUT: 0.6m
FILL: 0.3m

VOLUMES ARE SOLID - NO BULKING OR SHRINKING FACTOR APPLIED.

0.30 (m)
0.00 (m)
-0.60 (m)

PART LOT 2
DP 5786

BENMORE CRESCENT

PART LOT 8
DP 5786

SILT FENCE

EXISTING STREAM

AREA 2

AREA 3

AREA 1

WAIRARAPA
RAILWAY LINE

0 10 20 30 40 50

NO	REVISION	BY	DATE
A	FIRST ISSUE		

RESOURCE CONSENT
GRANTED
27/01/2025
HUTT CITY COUNCIL

SpencerHolmes
engineers - surveyors - planners
Level 10 - 57 Willis Street
PO Box 588 Wellington New Zealand
(04) 472-2261 www.spencerholmes.co.nz

CLIENT
ROSCO INDUSTRIAL

PROJECT
BENMORE CRESCENT,
MANOR PARK

DRAWING TITLE
CUT AND FILL PLAN
1 OF 2

DESIGN CONSULTANT

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S20-0380-Ewks Subdivision - AP30
DRAWN JDS
CHECKED MWC DATE 16/11/2022

SCALE 1 : 500
AT A1
DRAWING NUMBER S20-0380-AP30
REV A

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

CUT AND FILL LEVELS ARE TO SUBGRADE LEVELS

EARTHWORKS AREA 3,410m²
TOTAL CUT (RED): 520m³
FILL (BLUE) : 480m³

MAXIMUM DEPTHS
CUT: 1.7m
FILL: 1.3m

VOLUMES ARE SOLID - NO BULKING OR SHRINKING FACTOR APPLIED.

SILT FENCE
SILT FENCE
SILT FENCE
SILT FENCE

WAIRARAPA RAILWAY LINE
WAIRARAPA RAILWAY LINE

PART LOT 2 DP 5786

PART LOT 8 DP 5786

BENMORE CRESCENT

MANOR PARK ROAD

PART LOT DP 578

LOT 1 DP 82784

LOT 2 DP 82784

LOT 3 DP 82784

MARY HUSE GROVE

LOT 1 DP 87540

LOT 2 DP 87540

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	SUBGRADE AMENDED	ADG	6/11/2023
C	INTERSECTION WIDENING	ADG	26/02/2024
D	INTERSECTION WIDENING ADJUST	ADG	11/06/2024

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DRAWING TITLE
CUT AND FILL PLAN
2 OF 2

DESIGN CONSULTANT
STANTEC

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S20-0380-Ewks Subdivision D - AP31C
DRAWN JDS FB
CHECKED MWC DATE 16/11/2022

SCALE 1 : 300
AT A1
DRAWING NUMBER S22-0380-EW31
REV D

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

CIVIL ENGINEERING DESIGN
BENMORE CRESCENT SUBDIVISION

TE KAREAREA, BENMORE CRESCENT, MANOR PARK

DWG No.	REV	DRAWING TITLE
S20-0380-D0	D	DRAWING REGISTER
S20-0380-D1	B	OVERALL LAYOUT
S20-0380-D2	D	ROAD LAYOUT 1/12
S20-0380-D3	D	ROAD LAYOUT 2/12
S20-0380-D4	D	ROAD LAYOUT 3/12
S20-0380-D5	D	ROAD LAYOUT 4/12
S20-0380-D6	D	ROAD LAYOUT 5/12
S20-0380-D7	D	ROAD LAYOUT 6/12
S20-0380-D8	D	ROAD LAYOUT 7/12
S20-0380-D9	D	ROAD LAYOUT 8/12
S20-0380-D10	D	ROAD LAYOUT 9/12
S20-0380-D11	D	ROAD LAYOUT 10/12
S20-0380-D12	D	ROAD LAYOUT 11/12
S20-0380-D13	D	ROAD LAYOUT 12/12
S20-0380-D15	D	ROAD DETAILS 1 OF 2
S20-0380-D16	A	ROAD DETAILS 2 OF 2
S20-0380-D20	C	SERVICES LAYOUT 1/14
S20-0380-D21	C	SERVICES LAYOUT 2/14
S20-0380-D22	C	SERVICES LAYOUT 3/14
S20-0380-D23	C	SERVICES LAYOUT 4/14
S20-0380-D24	C	SERVICES LAYOUT 5/14
S20-0380-D25	A	SERVICES LAYOUT 6/14
S20-0380-D26	C	SERVICES LAYOUT 7/14
S20-0380-D27	C	SERVICES LAYOUT 8/14
S20-0380-D28	C	SERVICES LAYOUT 9/14
S20-0380-D29	C	SERVICES LAYOUT 10/14
S20-0380-D30	C	SERVICES LAYOUT 11/14
S20-0380-D31	C	SERVICES LAYOUT 12/14
S20-0380-D32	C	SERVICES LAYOUT 13/14
S20-0380-D33	C	SERVICES LAYOUT 14/14
S20-0380-D35	B	SEWER LONGSECTIONS 1/2
S20-0380-D36	B	SEWER LONGSECTIONS 2/2
S20-0380-D37	B	STORMWATER LONGSECTIONS 1/3
S20-0380-D38	B	STORMWATER LONGSECTIONS 2/3
S20-0380-D39	B	STORMWATER LONGSECTIONS 3/3
S20-0380-D40	B	SERVICES DETAILS 1/16
S20-0380-D41	B	SERVICES DETAILS 2/16
S20-0380-D42	B	SERVICES DETAILS 3/16
S20-0380-D43	B	SERVICES DETAILS 4/16
S20-0380-D44	B	SERVICES DETAILS 5/16
S20-0380-D45	B	SERVICES DETAILS 6/16
S20-0380-D46	B	SERVICES DETAILS 7/16
S20-0380-D48	B	SERVICES DETAILS 9/16
S20-0380-D49	B	SERVICES DETAILS 10/16
S20-0380-D50	B	SERVICES DETAILS 11/16
S20-0380-D51	B	SERVICES DETAILS 12/16
S20-0380-D52	B	SERVICES DETAILS 13/16
S20-0380-D53	B	SERVICES DETAILS 14/16
S20-0380-D54	B	SERVICES DETAILS 15/16
S20-0380-D55	B	SERVICES DETAILS 16/16
S20-0380-EW1	C	EARTHWORKS CUT AND FILL

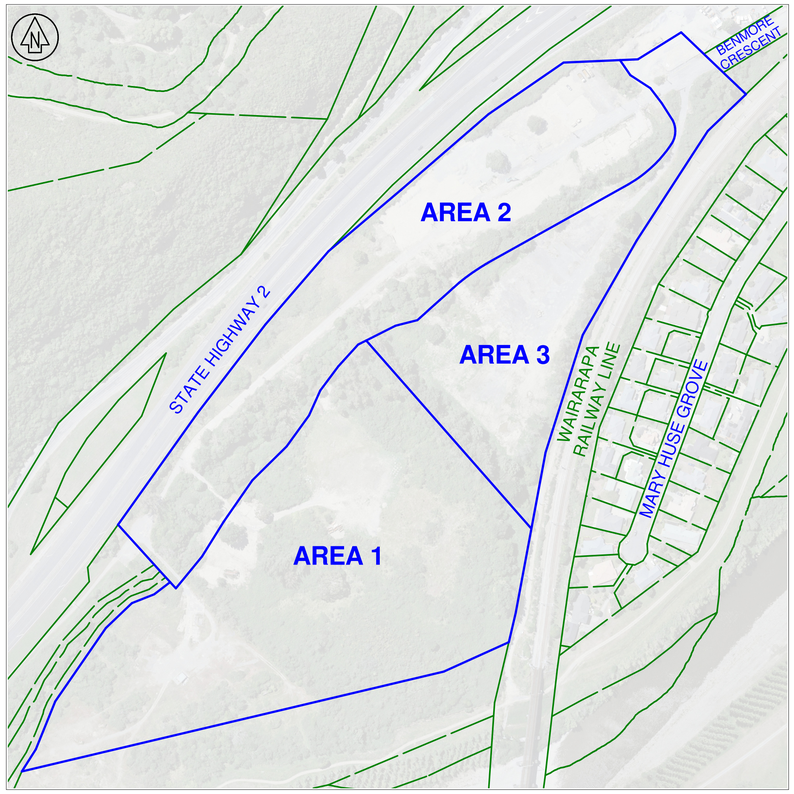

DIAGRAM N.T.S

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	08/12/2022
C	UPDATED DESIGN	JDS	04/07/2023
D	UPDATED DESIGN	JDS	26/07/2023

RESOURCE CONSENT
GRANTED
27/01/2025
HUTT CITY COUNCIL

SAFETY IN DESIGN

THE SERVICES DESIGN AS SHOWN IN THE SUBMITTED DESIGN PLANS HAVE BEEN PREPARED WITH REFERENCE TO THE COUNCIL STANDARDS, THE REGIONAL STANDARD FOR WATER SERVICES (2021), THE REGIONAL SPCIFICATION FOR WATER SERVICES (2021) AND NZS 4404:2010 LAND DEVELOPMENT AND SUBDIVISION INFRASTRUCTURE. IT IS OUR BELIEF THAT NO ASPECT OF THE SERVICES DESIGN INCLUDED HEREWITH HAS INTRODUCED ANY HEIGHTED RISK TO PERSONS EITHER LIVING AROUND OR WORKING WITH THE SERVICES INFRASTRUCTURE BEYOND A LEVEL WHICH IS CURRENTLY ACCEPTED BY SOCIETY TODAY. PERTAINING TO CONSTRUCTION, OPERATION, MAINTENANCE AND DEMOLITION PHASES OF THE ASSET THE RELEVANT CONTRACTOR SHALL:

1. SUPPLY AND OPERATE UNDER A SITE SPECIFIC HEALTH AND SAFETY PLAN.
2. CONSTRUCT SAFETY BARRIERS AND FALL PROTECTION PRIOR TO EXCAVATION AT EDGES OF OPENINGS AND ELEVATED AREAS.
3. REVIEW ADEQUACY OF WORKING AND MOVEMENT SPACE AVAILABLE FOR CONSTRUCTION ACTIVITIES AND ENSURE SEPARATION OF PLANT AND PERSONNEL ON SITE.
4. LOCATE LIFTING SLEW AND LAY DOWN AREAS AWAY FROM REGULAR CONSTRUCTION TRAFFIC.
5. BE ADVISED THAT WRITTEN RISK ASSESSMENTS FOR ACCESS TO OPEN EXCAVATIONS ARE RECOMMENDED.
6. PROVIDE ACCESS AND EGRESS TO EXCAVATIONS APPROPRIATE IN CASE OF INUNDATION, COLLAPSE OR ENGULFMENT.
7. SEEK ADVICE FROM SUITABLY QUALIFIED GEOTECHNICAL OR STRUCTURAL ENGINEER PRIOR TO OPERATION OF HEAVY SURFACE PLANT AND EQUIPMENT OR STOCKPILING MATERIAL NEAR OPEN EXCAVATIONS OR EXISTING RETAINING STRUCTURES.
8. DO NOT STOCKPILE MATERIALS BEHIND OR EXCAVATE IN FRONT OF EXISTING RETAINING WALLS UNTIL WALL STABILITY HAS BEEN REVIEWED BY SUITABLY QUALIFIED STRUCTURAL ENGINEER.
9. SEEK ADVICE FROM SUITABLY QUALIFIED STRUCTURAL ENGINEER BEFORE CORING, CHASING, CUTTING OR REMOVAL OF EXISTING CONCRETE AND REINFORCEMENT.
10. SEEK ADVICE FROM SUITABLY QUALIFIED STRUCTURAL ENGINEER IF PLANNING CRANE LIFTS OR HOIST INSTALLATION ON PARTIALLY ERECTED OR SUSPENDED STRUCTURES.
11. INSTRUCT SERVICES CONTRACTORS UNDER NO CIRCUMSTANCES CAN STRUCTURAL MEMBERS BE CUT, NOTCHED OR DRILLED TO ACCOMMODATE NEW SERVICES.
12. MINIMISE SITE BASED TREATMENTS (eg WELDING, CUTTING, SPRAY PAINTING, GRIT BLASTING, etc). PROVIDE ADEQUATE PROTECTION, SCREENING AND VENTILATION TO MINIMISE HAZARDS TO PERSONNEL IF SITE BASED TREATMENT IS UNAVOIDABLE.
13. TRY TO AVOID WORKING IN CONFINED SPACES. IF CONFINED SPACES WORK CAN'T BE AVOIDED, PROVIDE SAFE WORK METHOD STATEMENT ADDRESSING MITIGATION OF RISKS. PROVIDE ADEQUATE SIGNAGE TO TEMPORARY AND PERMANENT CONFINED SPACES TO AS2865.
14. AN ASSESSMENT PROTOCOL TO CEASE WORK IN BAD WEATHER CONDITIONS.

GENERAL NOTES

1. PIPES, CABLES AND OTHER UTILITES, FOUNDATIONS, LEVELS, REFERENCE MARKS AND OTHER OBSTRUCTIONS INDICATED ON THIS DRAWING ARE BASED ONLY ON READILY AVAILABLE RECORD PLANS AND OTHER INFORMATION. THIS INFORMATION MAY NOT BE COMPLETE, ACCURATE OR UP TO DATE PRIOR TO CARRYING OUT ANY EXCAVATION OR OTHER PHYSICAL WORK, CONTRACTORS SHALL OBTAIN THE LATEST INFORMATION FROM UTILITY PROVIDERS AND CARRY OUT DETAILED EXPLORATORY WORK, TRACING, LOCATING, PROTECTION, ISOLATION AND ALTERATIONS AS REQUIRED UNDER NZS 3910 CLAUSE 5.13 CONTRACTOR MUST FOLLOW OSH GUIDELINES FOR SAFE LOCATION OF UNDERGROUND SERVICES.
2. RESIDENTS SHALL BE ADEQUATELY NOTIFIED PRIOR TO WORKS COMMENCING, AND 24 HOURS PRIOR TO DISRUPTION OF SERVICE.
3. ALL CARE MUST BE TAKEN BY THE CONTRACTOR NOT TO DAMAGE PRIVATE PROPERTY, OR ANY GARDENED AREA OTHER THAN THOSE NECESSARY AS PART OF THE WORKS.
4. ALL WORKS ARE TO BE CONSTRUCTED USING BEST TRADE PRACTICES.
5. APPROVAL MUST BE SOUGHT FROM THE ENGINEER PRIOR TO THE REMOVAL OF ANY FIXTURE (IE FENCE, TREE) IN PRIVATE PROPERTY.
6. ALL WORKS TO BE CONSTRUCTED IN ACCORDANCE WITH NATIONAL CODE OF PRACTICE FOR UTILITES ACCESS TO TRANSPORT CORRIDORS HUTT VALLEY LOCAL CONDITIONS. APRIL 2011, NATIONAL CODE OF PRACTICE FOR UTILITES ACCESS TO THE TRANSPORT CORRIDOR NOVEMBER 2011, REGIONAL STANDARD FOR WATER SERVICES 2021, REGIONAL SPECIFICATION FOR WATER SERVICES 2021, WELLINGTON WATER APPROVED MATERIALS REGISTER 2021 AND MANUFACTURER'S SPECIFICATIONS.
7. THE EXISTING SERVICES SHOWN SHOULD BE CONSIDERED INDICATIVE ONLY AND ARE BASED ON RECORDS SUPPIED BY THE UTILITY COMPANIES OR WELLINGTON CITY COUNCIL FROM THEIR GIS DATABASE. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SERVICES ARE LOCATED/MARKED BY THE APPROPRIATE SERVICE AUTHORITY, OR THEIR OWN STAFF, PRIOR TO ANY SITE WORKS, AND FOR PROTECTING THESE SERVICES FOR THE DURATION OF THE SITE CONTRACT.
8. THE CONTACTOR SHALL GIVE A MINIMUM OF 48 HOURS NOTICE TO WELLINGTON WATER SITE INSPECTOR PRIOR TO THE COMMENCEMENT OF WORK.
9. THE CONTRACTOR SHALL PROVIDE WELLINGTON WATER SITE INSPECTOR WITH A LIST OF SITE HAZARDS AND A SITE SAFETY INDUCTION A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF WORK.
10. REFER TO THE ENGINEER'S SPECIFICIATION FOR FURTHER TERMS.
11. SERVICES DESIGN SHOWN IS TO UNITS ONLY, SEE ARCHITECTURAL DRAWINGS FOR DRAINAGE IN AND AROUND UNITS

WATER

1. THE CONTRACTOR IS TO CHECK INVERT LEVELS OF EXISTING AND PROPOSED SYSTEM AND ADVISE ENGINEER OF ANY ANOMALIES PRIOR TO COMMENCING PIPE LAYING.
2. WATER MAIN IS TO BE SOURCED TO REMOVE ALL DEBRIS BEFORE COMMISSIONING TESTING AND SERVICES ARE CONNECTED TO HOUSES.
3. MINIMUM COVER OF 750mm AT ALL PLACES MEASURED FROM THE GROUND SURFACE MAXIMUM COVER TO BE 1350mm.
4. CONCRETE THRUST BLOCKS TO BE CONSTRUCTED ON ALL BENDS, TAPERS, TEES AND DEAD ENDS, CONCRETE TO BE 20 MPA, THRUST BLOCKS TO BE CONSTRUCTED TO MAINTAIN ACCESS TO THE BOLTS ADJACENT JOINTS/FLANGES AND FITTINGS CONCRETE THRUST BLOCKS TO BE SIZED AS PER REGIONAL STANDARD (2019).
5. ALL BACKFILL MATERIAL SHOULD BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 200mm IN LOOSE DEPTH.
6. THE CONTRACTOR SHALL CARRY OUT SCALA PENETROMETER TESTING AND NOT MORE THAN 5m DISTANCES ALONG TRENCH, THE RESULTS MUST BE RECORDED AND MADE AVAILABLE TO THE ENGINEER A COMPACTION OF NOT LESS THAN 7 BLOWS / 50mm, 4 BLOWS / 50mm AND 2 BLOWS / 50mm IN CARRIAGEWAYS, FOOTPATHS AND BERMS RESPECTIVELY MUST BE ACHIEVED.
7. DETECTOR TAPE MUST BE LAID ABOVE ALL WATER PIPES IN ACCORDANCE WITH REGIONAL STANDARDS FOR WATER SERVICES.
8. CONTRACTOR TO REMOVE ABANDONED VALVES AND HYDRANTS. NOTE ALL REINSTATEMENT IS TO COMPLY WITH NATIONAL CODE OF PRACTICE FOR UTILITY OPERATORS ACCESS TO TRANSPORT CORRIDORS.
9. LOCATION AND REQUIREMENTS FOR BENDS SHOWN ARE INDICATIVE, CONTACTOR TO CONFIRM SPECIFIC LOCATIONS AND REQUIREMENTS WITH ENGINEER ON SITE.
10. SERVICE CONNECTION LOCATIONS ARE INDICATIVE ONLY; SERVICE PIPES SHALL BE LAID PERPENDICULAR TO THE MAIN. ALL SERVICE PIPES SHALL BE EXTENDED TO THE NEW MAIN.
11. AN ENGRAVED PLASTIC TAG READING "WATER SUPPLY MANIFOLD FOR (STREET NUMBER)" IS TO BE SECURED TO THE MANIFOLD CLEARLY SHOWING WHICH PROPERTY IS SERVED BY THE MANIFOLD.

SEWER / STORMWATER

1. ALL PIPE SIZES SHOWN ARE NOMINAL DIAMETER UNLESS OTHERWISE STATED.
2. THE CONTRACTOR IS TO ENSURE ALL WASTEWATER IS CONTAINED WITHIN THE SEWER SYSTEM. ANY OVERPUMPING IS TO BE ALLOWED FOR IN THE CONTRACT RATES. THERE ARE TO BE NO SEWAGE SPILLS IN PRIVATE PROPERTY.
3. THE CONTRACTOR IS TO ALLOW FOR ALL SHORING REQUIRED FOR TRENCHING IN ANY UNSTABLE GROUND WHICH MAY BE ENCOUNTED.
4. THE LATERAL STUB POSITIONS TO BE CONFIRMED FROM CCTV BY THE CONTRACTOR. PRIOR TO RECONNECTION TO THE NEW PIPELINE, TESTS SHALL BE CARRIED OUT TO DETERMINE LIVE LATERALS SHALL BE CONNECTED.
5. ALL GRAVITY MAINS AND LATERALS TO BE CCTV INSPECTED WITH THE RESULTS PROVIDED TO THE ENGINEER UPON COMPLETION.
6. EXISTING LAWN SHALL BE REMOVED AS TURF SLABS AND REINSTATED ON COMPLETION.
7. CONTRACTOR TO DEWATER AS NECESSARY TO COMPLETE THE WORKS.
8. CONTRACTOR TO REINSTATE ALL ROAD SURFACE MARKINGS AND RRPMs.
9. PROVIDE WATER STOPS ON STEEP SECTIONS IN ACCORDANCE TO WITH REGIONAL WATER SPECIFICATIONS.
10. EXISTING SEWER PIPES TO BE ABANDONED SHALL BE CAPPED OFF AT BOTH ENDS WITH A CONCRETE PLUG.
11. WHERE EXISTING MANHOLES ARE BEING REPLACED WITH NEW, THE CONTRACTOR SHALL RECONNECT ALL EXISTING PIPELINES TO THE NEW MANHOLE.
12. THE CONTRACTOR IS TO NOTIFY THE ENGINEER WHERE INVERT LEVELS FOR NEW MANHOLES DONT WORK WITH THE DESIGN GRADES OR WITH THE TOPOGRAPHY ONSITE.
13. THE CONTRACTOR SHALL CHECK AND CONFIRM ALL EXISTING SEWER LOCATIONS AND LEVELS ON SITE AS AN INITAL ACTIVITY. ADVISE THE ENGINEER FOR FURTHER INSTRUCTION SHOULD THESE DIFFER FROM THE INFORMATION SHOWN ON THE DRAWINGS.
14. ALL MANHOLES AFFECTED BY THE WORK SHALL HAVE THEIR CONDITION REVIEWED BY THE CONTRACTOR AS AN INITIAL ACTIVITY INCLUDING A RECOMMENDATION AS TO WHETHER UPGRADE OR REPLACEMENT IS REQUIRED. THE ENGINEER SHALL INSTRUCT ON THE REQUIRED APPROACH THEN.

UNDERGROUND POWER

AT LEAST 2 WORKING DAYS' NOTICE REQUIRED PRIOR TO EXCAVATION, HAND DIGGING IS REQUIRED WHEN EXCAVATING WITHIN 1m OF CABLE. REPLACEMENT TRENCH BACKFILL MATERIAL MUST BE THE SAME AS THE REMOVED AND MUST BE REPLACED TO THE SAME LEVEL OF COMPACTION.

UNDERGROUND TELECOM

ONSITE CABLE LOCATE OR STANDOVER IS REQUIRED IF WORKING WITHIN 1m OF THESE CABLES. AT LEAST 2 WORKING DAYS' NOTICE REQUIRED TO EXCAVATION. FOR LOCATE AND STANDOVER CONTACT 0800 248 344.

UNDERGROUND GAS

EXCAVATION AROUND STRATEGIC INTERMEDIATE PRESSURE (FEEDER MAIN OPERATING AT PRESSURES GREATER THAN 700 KPa (100 PSI) AND MEDIUM GAS PIPES:
1. MACHINE DIGGING IS NOT PERMITTED CLOSER THAN 1.0m FROM ANY STRATEGIC INTERMEDIATE PRESSURE AND MEDIUM PRESSURE GAS MAINS OR SERVICES ANT EXCAVATION WORK WITHIN THE DISTANCE MUST BE PERFORMED BY HAND DIGGING AND UNDER THE OBSERVATION OF A POWERCO APPROVED WORKS PROTECTION OBSERVER INCLUDING THE BACKFILLING OPERATION.
2. PLEASE REFER TO THE POWERCO STANDARD "EXCAVATION WORKS IN THE VICINITY OF STRATEGIC CABLES AND PIPES" BEFORE COMMENCING EXCAVATION WORK IN THE VICINITY OF STRATEGIC GAS PIPES.

EXCAVATION AROUND MEDIUM AND LOW PRESSURE GAS PIPES:
3. MACHINE DIGGING IS NOT PERMITTED CLOSER THAN 500mm FROM ANY MEDIUM OR LOW PRESSURE GAS MAIN OR SERVICE UNLESS THE POSITION OF THE PIPES HAS BEEN VERIFIED BY HAND DIGGING AND EXPOSING THEM FIRST.

NOTIFICATION OF WORK NEAR STRATEGIC INTERMEDIATE PRESSURE AND MEDIUM PRESSURE GAS PIPES:
1. AT LEAST 2 WORKING DAYS NOTICE MUST BE GIVEN TO POWERCO PRIOR TO ANY EXCAVATION WORK TAKING PLACE.
2. IT IS THE EXCAVATION CONTRACTORS RESPONSIBILITY TO CONTACT THE POWERCO HELP DESK ON 0800769372 FOR THE ABOVE INFORMATION.
3. THE EXCAVATION CONTACTOR WILL BE ISSUED WITH A WORKS AGREEMENT WHICH MUST BE COMPLETED AND SIGNED PRIOR TO ANY EXCAVATION WORK TAKING PLACE ANY STRATEGIC PRESSURE OR MEDIUM PRESSURE GAS PIPES.

LOCATION OF OTHERS SERVICES:
1. NO SERVICES SHALL BE LAID CLOSER THAN 300mm FROM ANY INTERMEDIATE PRESSURE GAS PIPE FOR INTERMEDIATE PRESSURE GAS PIPES.
2. NO SERVICES SHALL BE LAID CLOSER THAN 150mm FROM ANY LOW OR MEDIUM PRESSURE GAS PIPE FOR LOW OR MEDIUM PRESSURE GAS PIPES.

HEIGHT DATUM

ALL HEIGHTS REFERENCED HEREIN ARE IN TERMS OF MEAN SEA LEVEL, WELLINGTON 1953.

ORIGIN OF LEVELS: OPIN I SO 497033
HEIGHT: 31.522m
SOURCED: LINZ GEODETIC DATABASE

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CLIENT
ROSCO INDUSTRIAL

PROJECT
TE KAREAREA
BENMORE CRESCENT,
MANOR PARK

DRAWING TITLE
DRAWING REGISTER

DESIGN CONSULTANT

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□ S20-0380-WM-DR - DR
□ DRAWN SJC
□ CHECKED MWC □ DATE 17/11/2022

SCALE	AT
NOT TO SCALE	A1
DRAWING NUMBER	REV
S20-0380-D0	D

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FIRST ISSUE		
A	FIRST ISSUE	JDS	31/05/2023

S20-0380-D2/S20-0380-D21

S20-0380-D20

BENMORE CRESCENT

S20-0380-D3/S20-0380-D22

S20-0380-D4/S20-0380-D23

AREA 2

WAIRARAPA RAILWAY LINE

S20-0380-D5/S20-0380-D24

S20-0380-D25

STATE HIGHWAY 2

AREA 3

S20-0380-D6/S20-0380-D26

S20-0380-D7/S20-0380-D27

MARY HUSE GROVE

AREA 1

S20-0380-D8/S20-0380-D28

S20-0380-D9/S20-0380-D29

S20-0380-D10/S20-0380-D30

S20-0380-D11/S20-0380-D31

S20-0380-D12/S20-0380-D32

S20-0380-D13/S20-0380-D33

WAIRARAPA RAILWAY LINE

0 50 100 150 200 250

RESOURCE CONSENT

GRANTED
27/01/2025

HUTT CITY COUNCIL

HUTT CITY

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engineers - surveyors - planners

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CLIENT
ROSCO INDUSTRIAL

PROJECT
TE KAREAREA
BENMORE CRESCENT,
MANOR PARK

DRAWING TITLE
OVERALL LAYOUT

DESIGN CONSULTANT

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- S20-0380-WM_EWA - D1
- DRAWN JDS
- CHECKED MWC
- DATE 16/11/2022

SCALE	AT
1 : 1200	A1
DRAWING NUMBER	REV
S20-0380-D1	B

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	18/05/2023
C	UPDATED DESIGN	JDS	19/06/2023

RESOURCE CONSENT

GRANTED
27/01/2025

HUTT CITY COUNCIL

HUTT CITY

PART LOT 2
DP 5786

BENMORE CRESCENT

PART LOT 8
DP 5786

WAIRARAPA
RAILWAY LINE

LOT 4
DP 82784

AREA 3

AREA 3

TOP OF FILL BATTER

BASE OF FILL BATTER

ROAD DESIGN TO MARRY INTO PUBLIC ROAD DESIGN BY OTHERS

KERB AND CHANNEL

KERB AND CHANNEL

KERB AND CHANNEL

BRUSHED CONCRETE

BLACK OXIDE CONCRETE

NIB

33.23
33.25
33.27
33.32
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33.39
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33.36
33.42
33.32
33.39
33.44
33.47
33.37
33.50
33.43
33.49
33.0
32.0
31.0

0 10 20

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CLIENT
ROSCO INDUSTRIAL

PROJECT
TE KARAERAE
BENMORE CRESCENT,
MANOR PARK

DRAWING TITLE
ROAD LAYOUT
SHEET 1 OF 12

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□ S20-0380-D1A BM 2023.06.16 - D2
□ DRAWN SJC
□ CHECKED MWC □ DATE 16/11/2022

SCALE 1 : 200
AT A1

DRAWING NUMBER S20-0380-D2
REV C

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	18/05/2023
C	UPDATED DESIGN	JDS	19/06/2023

RESOURCE CONSENT

GRANTED
27/01/2025

HUTT CITY COUNCIL

HUTT CITY

AREA 2

AREA 3

CULVERT WINGWALL & HEADWALL DESIGN REFER TO STRUCTURAL DATASET FOR DETAILS

CULVERT

KERB AND CHANNEL

BLACK OXIDE CONCRETE

MODIFIED KERB AND CHANNEL

NIB

BRUSHED CONCRETE

EXISTING STREAM

STORMWATER MANAGEMENT DEVICE SWALE TO COLLECT AND TREAT STORMWATER RUNOFF DESIGNED TO TREAT A 1 IN 10 YEAR EVENT

TOP OF FILL BATTER

BASE OF FILL BATTER

TOP OF CUT BATTER

BASE OF CUT BATTER

WAIRARAPA RAILWAY LINE

0 10 20

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

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CLIENT
ROSCO INDUSTRIAL

PROJECT
TE KARAERAE
BENMORE CRESCENT,
MANOR PARK

DRAWING TITLE
ROAD LAYOUT
SHEET 2 OF 12

DESIGN CONSULTANT

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- S20-0380-D1A BM 2023.06.16 - D3
- DRAWN SJC
- CHECKED MWC DATE 16/11/2022

SCALE	AT
1 : 200	A1
DRAWING NUMBER	REV
S20-0380-D3	C

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	18/05/2023
C	UPDATED DESIGN	JDS	19/06/2023

AREA 2

AREA 3

EXISTING STREAM

STORMWATER MANAGEMENT DEVICE SWALE TO COLLECT AND TREAT STORMWATER RUNOFF DESIGNED TO TREAT A 1 IN 10 YEAR EVENT

TOP OF FILL BATTER

BASE OF FILL BATTER

TOP OF CUT BATTER

BASE OF CUT BATTER

BLACK OXIDE CONCRETE

MODIFIED KERB AND CHANNEL

BRUSHED CONCRETE

NIB

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ROAD LAYOUT
SHEET 3 OF 12

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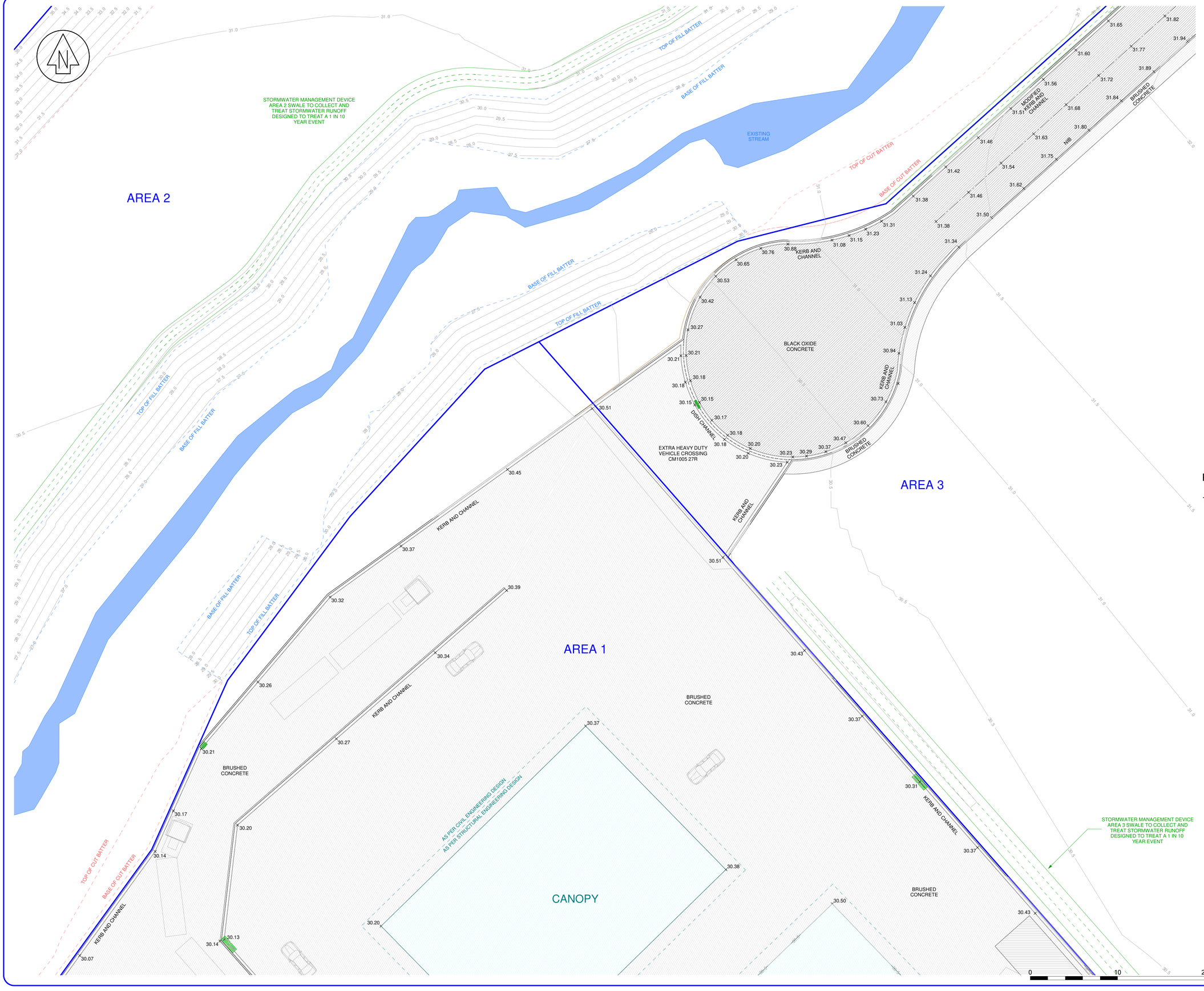
DRAWN SJC
CHECKED MWC DATE 16/11/2022

SCALE	AT
1 : 200	A1
DRAWING NUMBER	REV
S20-0380-D4	C

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE



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A	FIRST ISSUE		
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C	UPDATED DESIGN	JDS	19/06/2023
D	UPDATED DESIGN	JDS	26/07/2023

RESOURCE CONSENT

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27/01/2025

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ROAD LAYOUT
SHEET 4 OF 12

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DRAWN SJC
CHECKED MWC DATE 16/11/2022

SCALE	AT
1 : 200	A1

DRAWING NUMBER	REV
S20-0380-D5	D

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

AREA 2

AREA 1

STORMWATER MANAGEMENT DEVICE
AREA 2 SWALE TO COLLECT AND
TREAT STORMWATER RUNOFF
DESIGNED TO TREAT A 1 IN 10
YEAR EVENT

TOP OF FILL BATTER

BASE OF FILL BATTER

EXISTING
STREAM

TOP OF CUT BATTER

BASE OF CUT BATTER

KERB AND CHANNEL

BRUSHED
CONCRETE

ASPHALT

CANOPY

AS PER CIVIL ENGINEERING DESIGN
AS PER STRUCTURAL ENGINEERING DESIGN

WEIGH BRIDGE

OFFICE
FFL: 30.13

AS PER STRUCTURAL ENGINEERING DESIGN
AS PER CIVIL ENGINEERING DESIGN

DISH CHANNEL

30.17 30.20 30.14 30.13 30.07 30.08 30.00 30.02 29.94 29.95 29.88 29.81 29.62 29.74 29.66 29.61 29.53 30.21 30.22 30.28 30.35 30.36 30.50 30.39 30.25 30.52 30.11 30.03 30.90 29.89 29.86 29.92 29.83

0 10 20

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	18/05/2023
C	UPDATED DESIGN	JDS	19/06/2023
D	UPDATED DESIGN	JDS	26/07/2023

RESOURCE CONSENT

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SHEET 5 OF 12

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DRAWN SJC
CHECKED MWC DATE 16/11/2022

SCALE	AT
1 : 200	A1
DRAWING NUMBER	REV
S20-0380-D6	D

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	18/05/2023
C	UPDATED DESIGN	JDS	19/06/2023
D	UPDATED DESIGN	JDS	26/07/2023

CANOPY

RETAIL
FFL: 30.60

AREA 1

RTS
FFL: 31.00

AREA 3

STORMWATER MANAGEMENT DEVICE AREA 3 SWALE TO COLLECT AND TREAT STORMWATER RUNOFF DESIGNED TO TREAT A 1 IN 10 YEAR EVENT

KERB AND CHANNEL

BRUSHED CONCRETE

WEIGH BRIDGE

ASPHALT

AS PER STRUCTURAL ENGINEERING DESIGN
AS PER CIVIL ENGINEERING DESIGN

HIGH LINE

TOP OF FILL BATTER

BASE OF FILL BATTER

TIMBER BATTER BOARD

RESOURCE CONSENT

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0 10 20

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MANOR PARK

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ROAD LAYOUT
SHEET 6 OF 12

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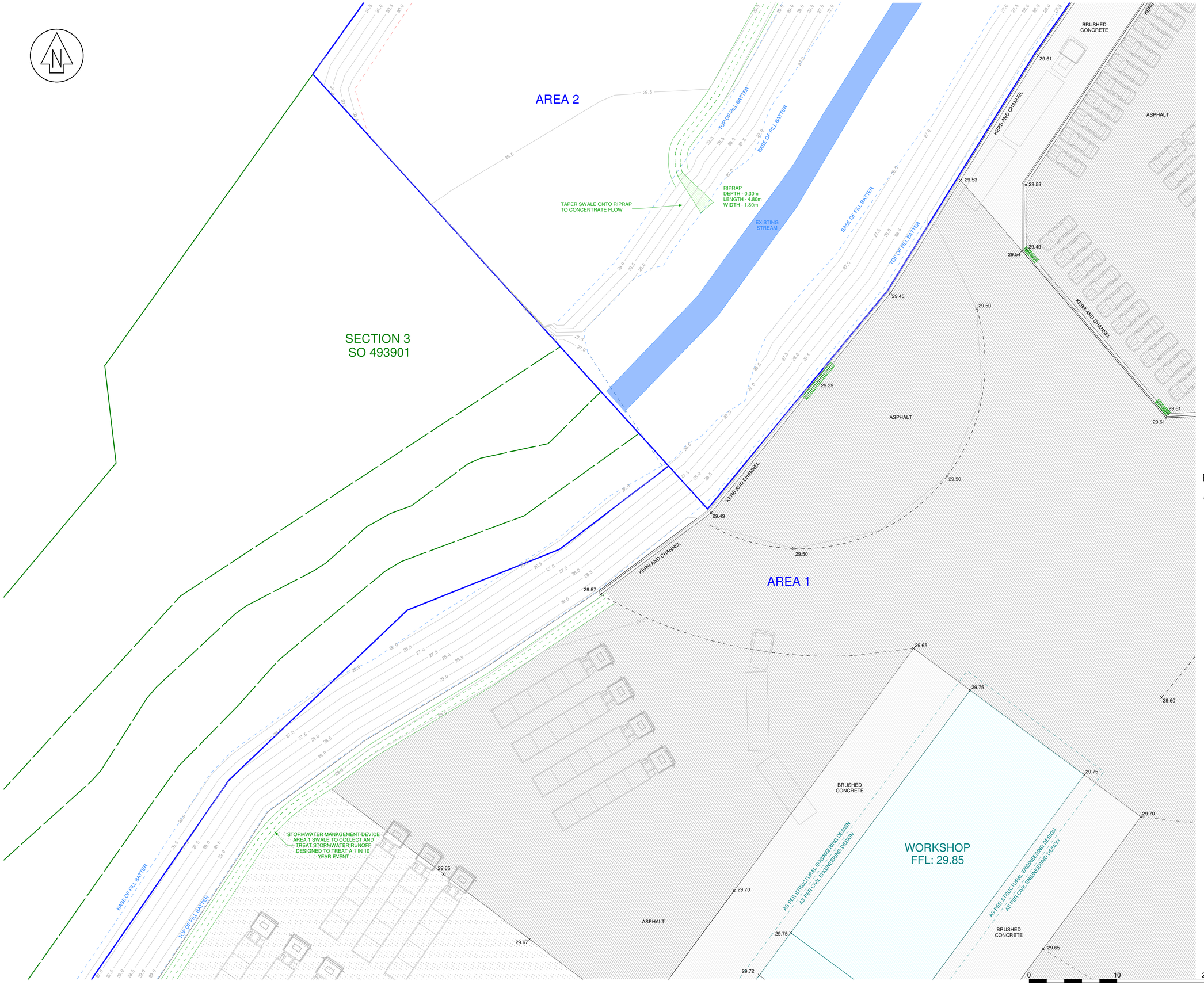
S20-0380-D1A BM 2023.06.16 - D7
DRAWN SJC
CHECKED MWC DATE 16/11/2022

SCALE	AT
1 : 200	A1
DRAWING NUMBER	REV
S20-0380-D7	D

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE



NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	18/05/2023
C	UPDATED DESIGN	JDS	05/07/2023
D	UPDATED DESIGN	JDS	26/07/2023

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DRAWING TITLE
ROAD LAYOUT
SHEET 7 OF 12

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DRAWN SJC
CHECKED MWC DATE 16/11/2022

SCALE	AT
1 : 200	A1
DRAWING NUMBER	REV
S20-0380-D8	D

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
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B	UPDATED DESIGN	JDS	18/05/2023
C	UPDATED DESIGN	JDS	19/06/2023
D	UPDATED DESIGN	JDS	26/07/2023

RESOURCE CONSENT

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ROAD LAYOUT
SHEET 8 OF 12

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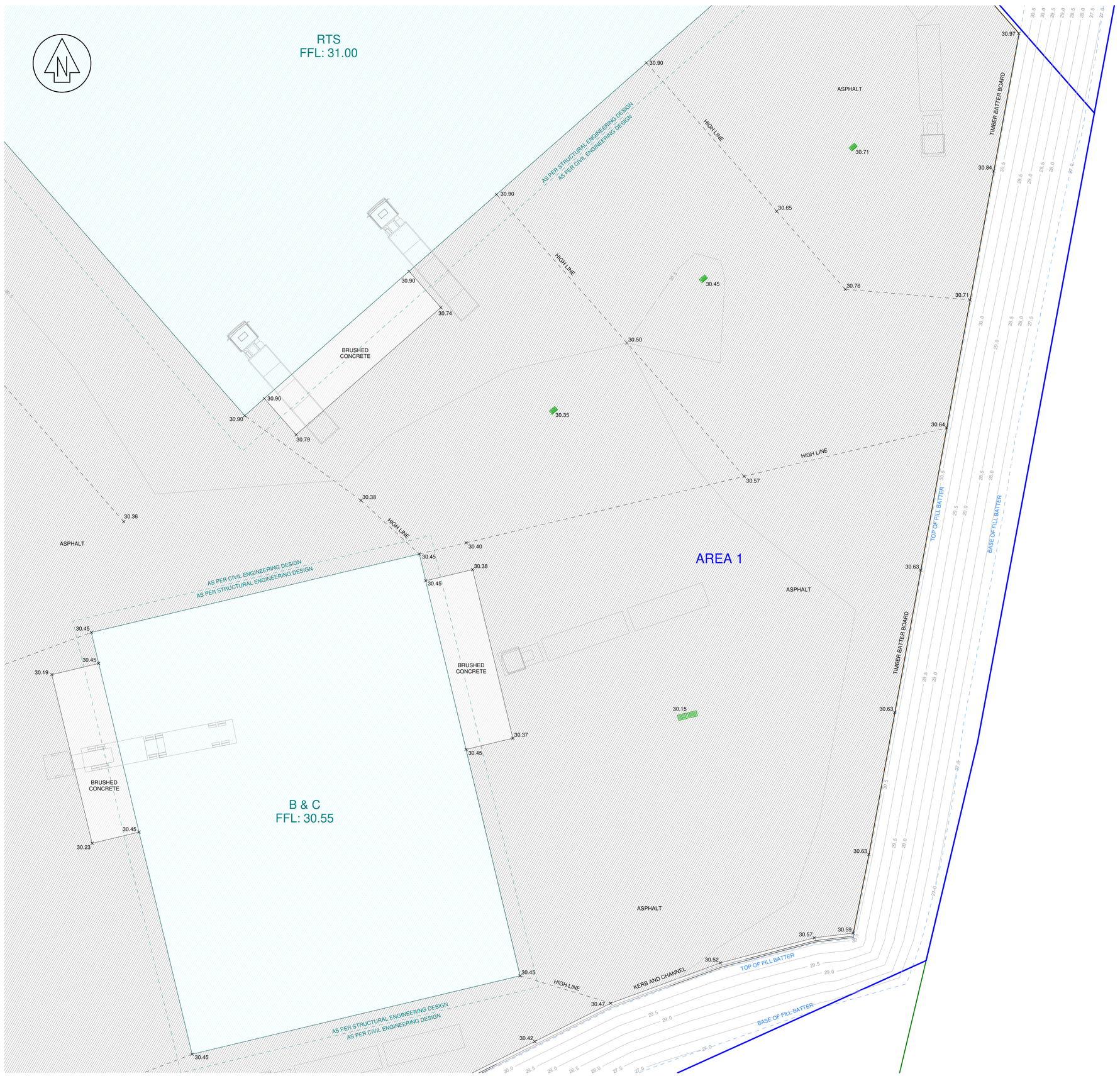
- DRAWN SJC
- CHECKED MWC DATE 16/11/2022

SCALE	AT
1 : 200	A1
DRAWING NUMBER	REV
S20-0380-D9	D

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE



NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	18/05/2023
C	UPDATED DESIGN	JDS	19/06/2023
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DRAWING TITLE
ROAD LAYOUT
SHEET 9 OF 12

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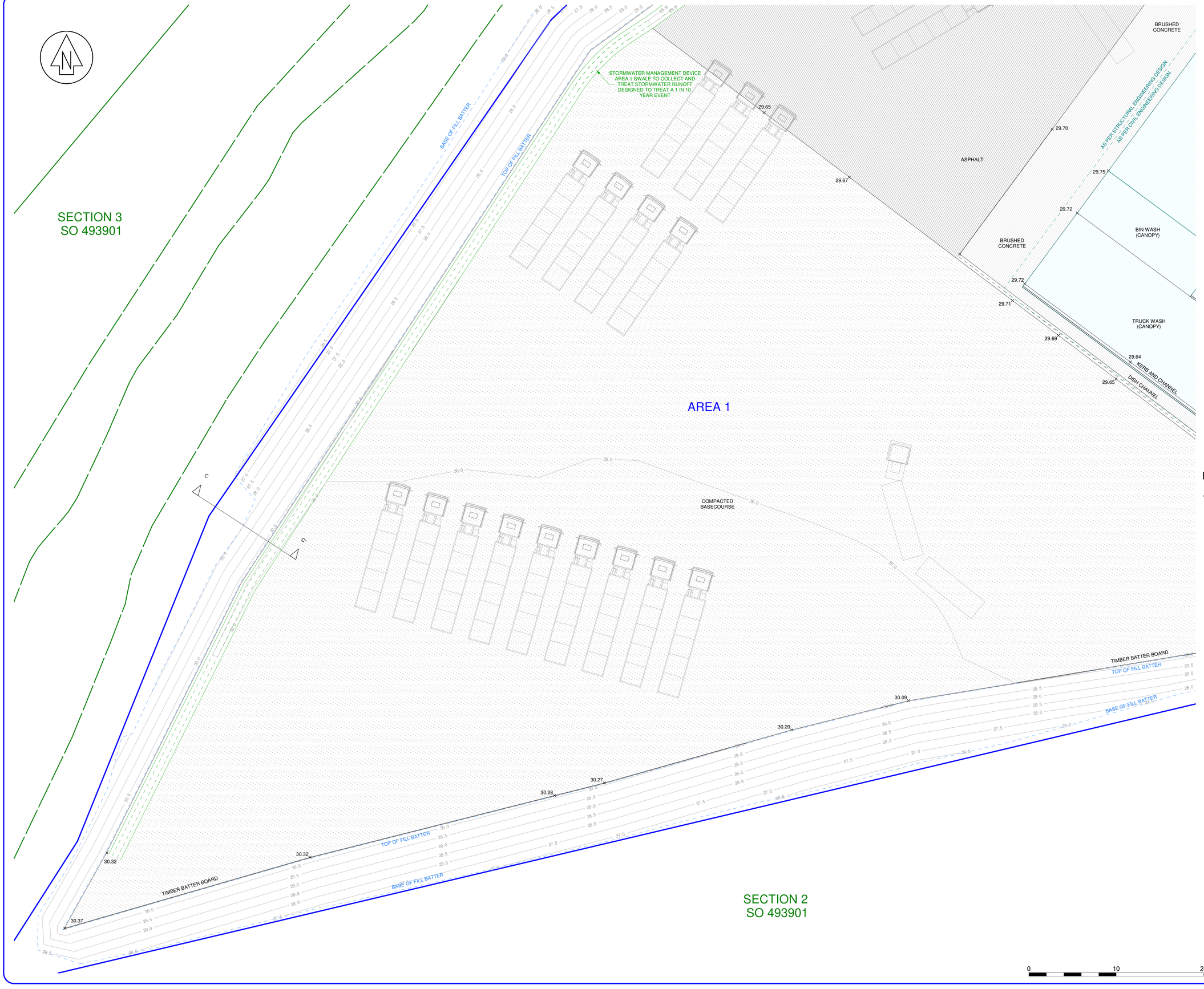
DRAWN SJC
CHECKED MWC DATE 16/11/2022

SCALE	AT
1 : 200	A1
DRAWING NUMBER	REV
S20-0380-D10	D

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE



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A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	18/05/2023
C	UPDATED DESIGN	JDS	19/06/2023
D	UPDATED DESIGN	JDS	26/07/2023

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SHEET 10 OF 12

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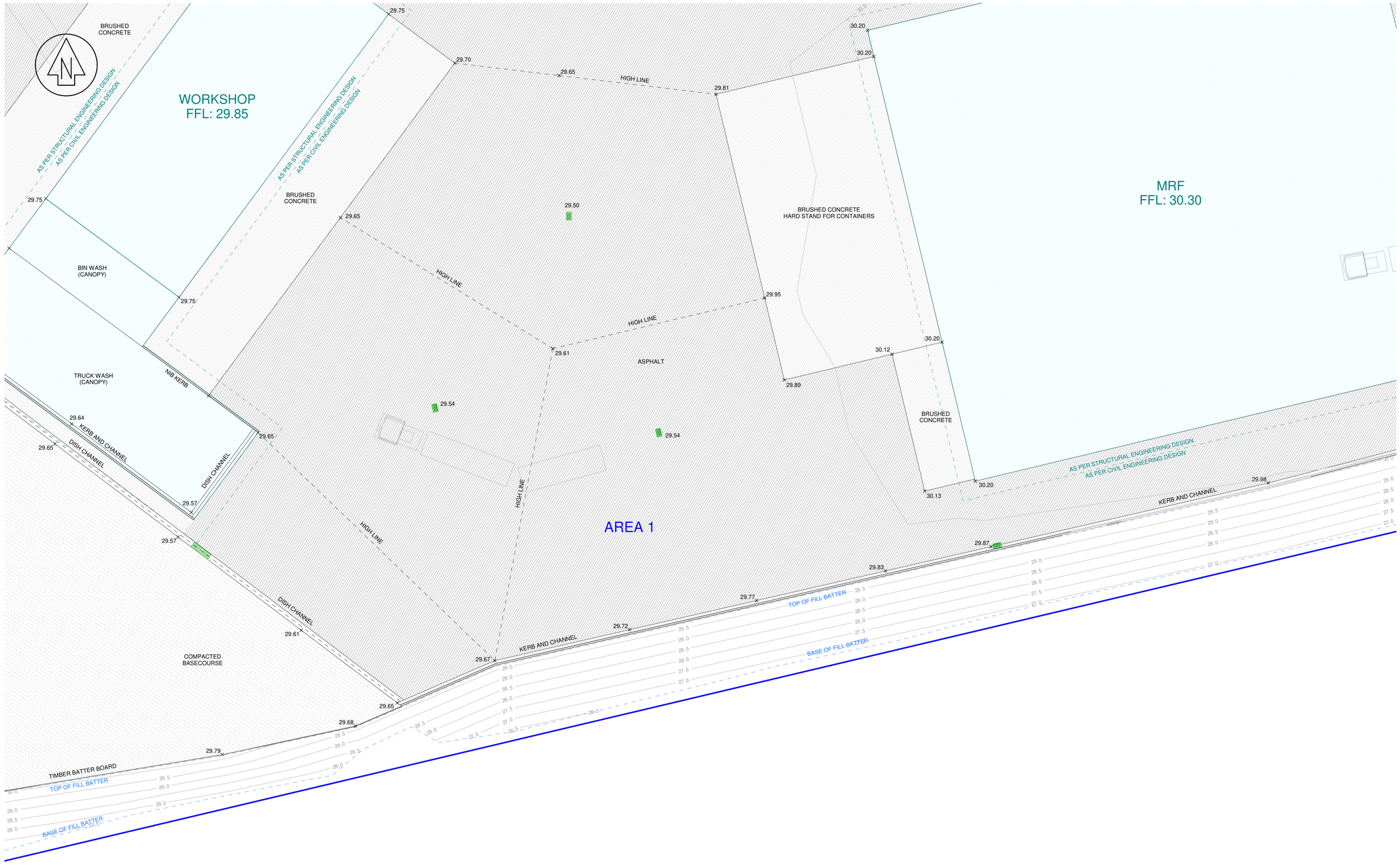
- S20-0380-D1A BM 2023.06.16 - D11
- DRAWN SJC
- CHECKED MWC
- DATE 16/11/2022

SCALE	AT
1 : 200	A1
DRAWING NUMBER	REV
S20-0380-D11	D

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE



SECTION 2
SO 493901

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	18/05/2023
C	UPDATED DESIGN	JDS	19/06/2023
D	UPDATED DESIGN	JDS	26/07/2023

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DRAWING TITLE
ROAD LAYOUT
SHEET 11 OF 12

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- S20-0380-D1A BM 2023.06.16 - D12
- DRAWN SJC
- CHECKED MWC DATE 16/11/2022

SCALE	AT
1 : 200	A1
DRAWING NUMBER	REV
S20-0380-D12	D

0 10 20

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	18/05/2023
C	UPDATED DESIGN	JDS	19/06/2023
D	UPDATED DESIGN	JDS	26/07/2023

RESOURCE CONSENT

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DRAWING TITLE
ROAD LAYOUT
SHEET 12 OF 12

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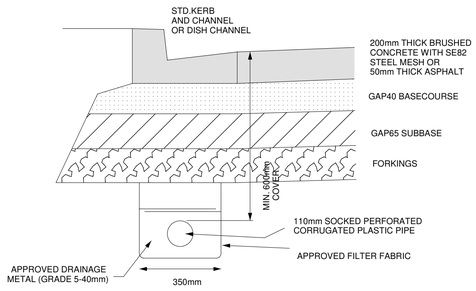
- S20-0380-D1A BM 2023.06.16 - D13
- DRAWN SJC
- CHECKED MWC
- DATE 16/11/2022

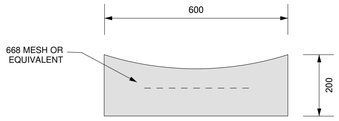
SCALE	AT
1 : 200	A1
DRAWING NUMBER	REV
S20-0380-D13	D

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE



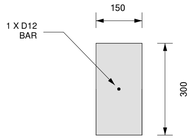
SUB SOIL DRAINAGE DETAIL

N.T.S



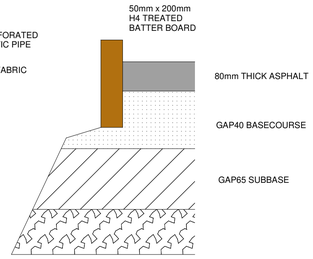
STANDARD DISH CHANNEL

N.T.S



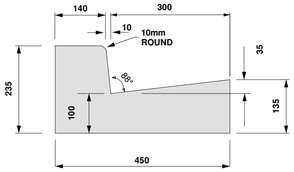
NIB KERB

N.T.S



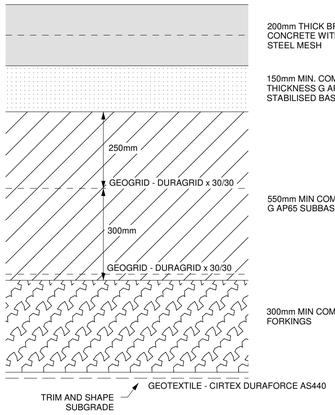
BATTER BOARD

N.T.S



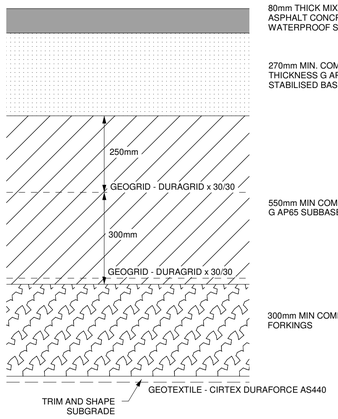
STANDARD KERB AND CHANNEL

N.T.S



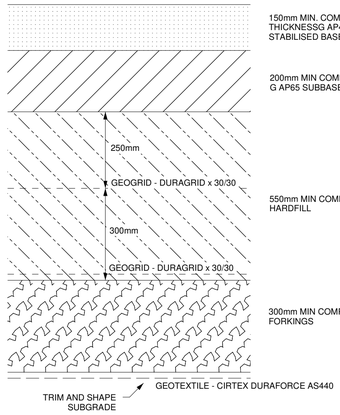
TYPICAL CONCRETE PAVEMENT DESIGN WITHIN RAFT

N.T.S



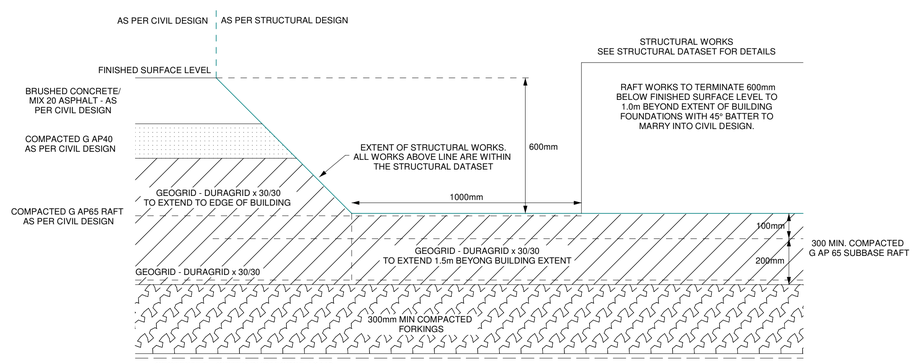
TYPICAL ASPHALT PAVEMENT DESIGN WITHIN RAFT

N.T.S



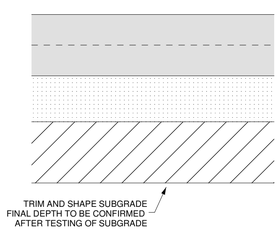
TYPICAL COMPACTED BASECOURSE PAVEMENT DESIGN WITHIN RAFT

N.T.S



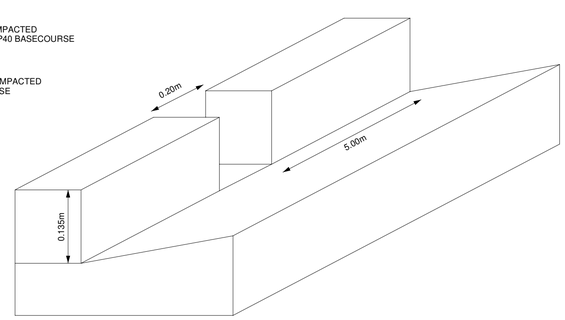
TYPICAL STRUCTURAL INTERACTION WITH CIVIL DESIGN

N.T.S



TYPICAL CONCRETE PAVEMENT DESIGN NOT WITHIN RAFT

N.T.S



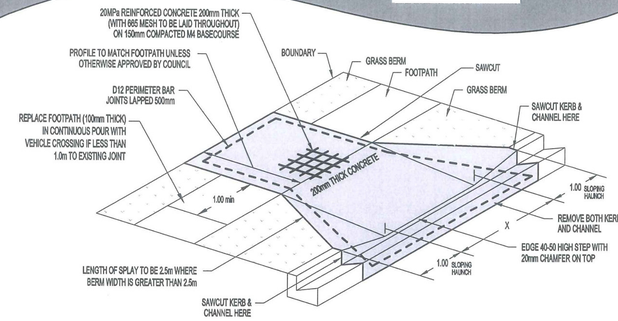
MODIFIED KERB AND CHANNEL

N.T.S

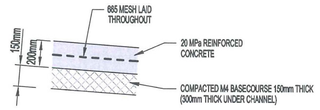
Standard Plan

UPPER HUTT CITY — A SMART PLACE TO LIVE — UPPER HUTT CITY COUNCIL

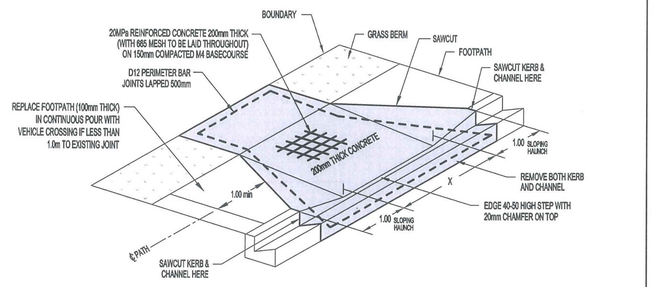
HUTT CITY — TE AWA KAIRANGI



BERM ADJACENT TO KERB



TYPICAL SLAB CROSS SECTION



FOOTPATH ADJACENT TO KERB

Extra Heavy Duty Vehicle Crossing — This type of crossing required if regularly used by very heavy trade vehicles — NOT TO SCALE

Approved: Road and Traffic Divisional Manager, Hutt City Council

Approved: Director, Infrastructure Services, Upper Hutt City Council

Standard Plan No: CM1005 27R

Date: 29 / 10 / 12

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	10/05//2023
C	UPDATED DESIGN	JDS	03/07/2023
D	UPDATED DESIGN	JDS	26/07/2023

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BENMORE CRESCENT,
MANOR PARK

DRAWING TITLE
ROAD DETAILS
1 OF 2

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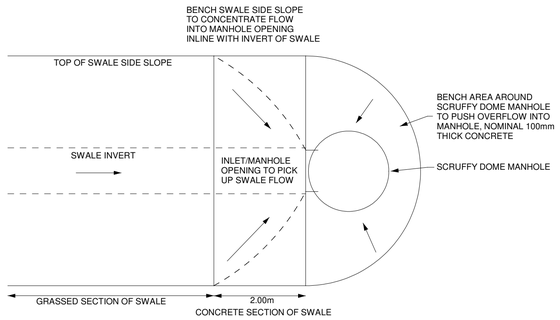
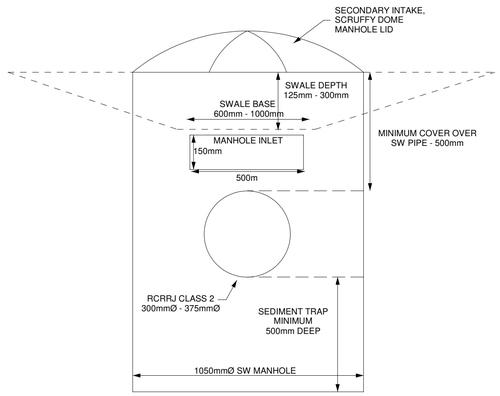
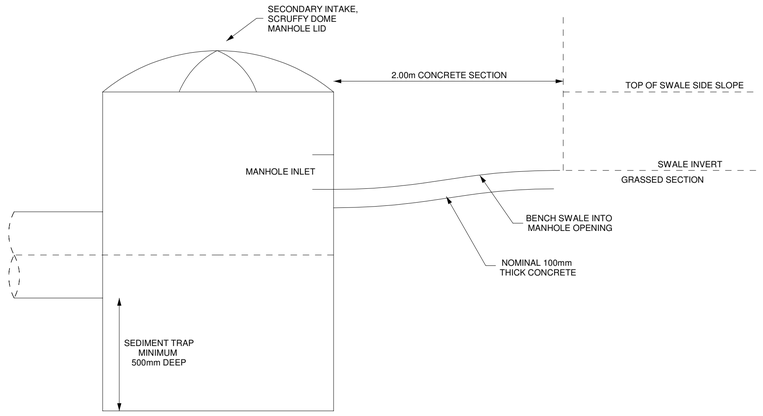
- S20-0380-WM-Road Sections and Details 2023.07.04 - D15
- DRAWN SJC
- CHECKED MWC DATE 16/11/2022

SCALE	AT
SCALE AS SHOWN	A1
DRAWING NUMBER	REV
S20-0380-D15	D

NO	REVISION	BY	DATE
A	FIRST ISSUE		







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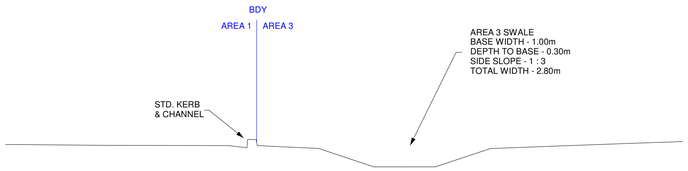
TYPICAL SWALE INTAKE DETAIL

N.T.S



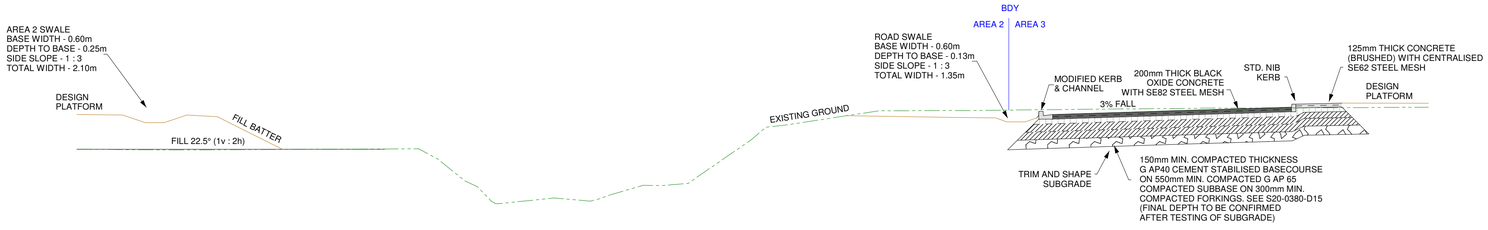
SECTION B - B'

SCALE 1 : 200

SECTION C - C'

SCALE 1 : 200

0 10 20



SECTION A - A'

SCALE 1 : 100

0 5 10

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2 OF 2

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- S20-0380-WM-Road Sections and Details 2023.07.04 - D16
- DRAWN JDS
- CHECKED MWC DATE 04/07/2023

SCALE	AT
SCALE AS SHOWN	A1
DRAWING NUMBER	REV
S20-0380-D16	A

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	08/05/2023
C	UPDATED DESIGN	JDS	31/05/2023

WAIRARAPA
RAILWAY LINE

HYDRANT

WAIRARAPA
RAILWAY LINE

MANOR PARK ROAD

PART LOT 8
DP 5786

HCC_WWP009637

EXISTING 850Ø CONC SS MAIN

76.5m 200Ø PE100 SDR11 WATER MAIN

HCC_WWP001592

LOT 1
DP 82784

LOT 2
DP 82784

LOT 3
DP 82784

ACCORDING TO GIS
150Ø WATER LINE.
UNKNOWN MATERIAL
1996.

GATE VALVE

200mm ON 150mm
UNEQUAL TEE

EXISTING 150Ø WATER MAIN

EXISTING 150Ø WATER MAIN

HYDRANT

EXISTING 600 WATER MAIN

MARY HUSE GROVE

EXISTING 525Ø RCON SS MAIN

EXISTING 150Ø WATER MAIN

MANOR PARK ROAD

LOT 1
DP 87540

LOT 2
DP 87540

0 10 20

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SERVICES LAYOUT
SHEET 1 OF 14

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- S20-0380-D1A BM 2023.06.16 - D20
- DRAWN JDS
- CHECKED MWC DATE 16/11/2022

SCALE	AT
1 : 200	A1
DRAWING NUMBER	REV
S20-0380-D20	C

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	08/05/2023
C	UPDATED DESIGN	JDS	31/05/2023

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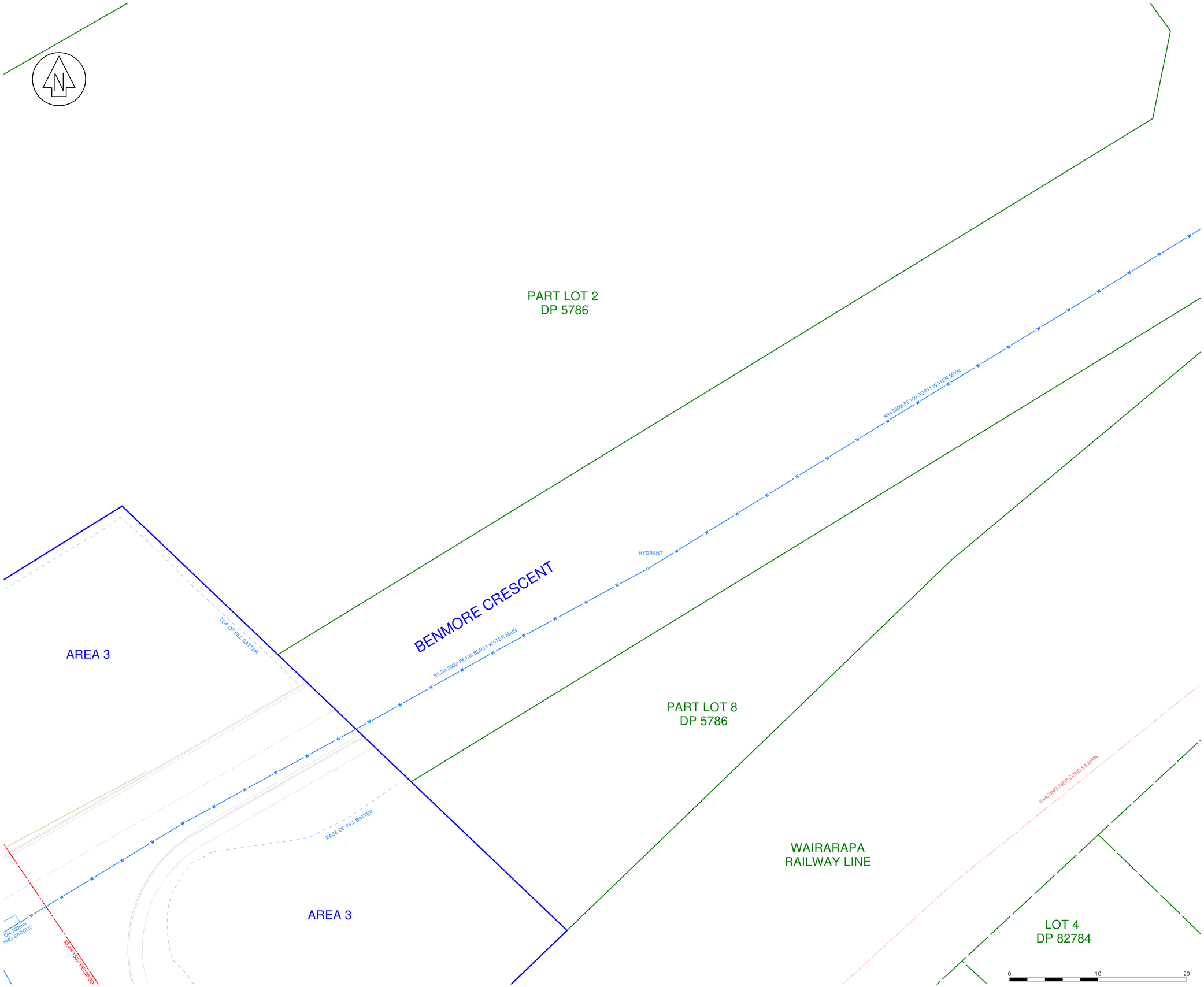

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□ S20-0380-D1A BM 2023.06.16 - D21
□ DRAWN JDS
□ CHECKED MWC □ DATE 16/11/2022

SCALE	AT
1 : 200	A1
DRAWING NUMBER	REV
S20-0380-D21	C

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

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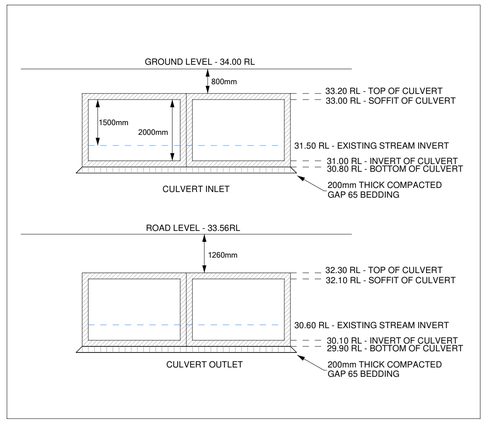
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	08/05/2023
C	UPDATED DESIGN	JDS	30/05/2023



AREA 2

AREA 3

UPSTREAM WINGWALL
WEST WALL ~ 9.0m LONG
EASTWALL ~ 7.1m LONG
2.5m HIGH FROM EXISTING STREAM INVERT

DUAL 3.0m x 2.0m CULVERTS, 35m LONG. UPSTREAM IL - 31.0RL DOWNSTREAM IL - 30.1RL ALLOW FOR 500mm BURY TO INVERT LEVEL. LAY ON 200mm THICK COMPACTED GAP 65 BEDDING ON EXISTING STREAM GRADIENT SEE STUCTURAL DESIGN PACKAGE FOR DETAILS

CULVERT WINGWALL & HEADWALL DESIGN REFER TO STRUCTURAL DATASET FOR DETAILS

CULVERT

DOWNSTREAM WINGWALL
WEST WALL ~ 8.3m LONG
EAST WALL ~ 7.8m LONG
3.0m HIGH FROM EXISTING STREAM INVERT

43.8m 25Ø PE100 SDR11 SERVICE POINT FOR LOT 2

NEW 20.0m 150Ø uPVC SN16 LATERAL CONNECTED TO EXISTING SS MAIN SERVICE POINT FOR LOT 2

EXISTING 300Ø CONC SS MAIN

HCC_WW001595

EXISTING 300Ø CONC SS MAIN

SSMH B
1050Ø

LOCATE AND ABANDON

HCC_WW015125

ABANDON & GROUT FILL EXISTING SS

HYDRANT

25mm ON 200mm TAPPING SADDLE

NEW METERED 63

LOCATE AND ABANDON

HCC_WWP008241

NEW MANIFOLD

90m 200Ø PE100 SDR11 WATER MAIN

324m 160mm OD PE100 SDR17 FSS MAIN

BASE OF FILL BATTER

SSMH A
1050Ø

TEST EXCAVATION TO CONFRIRM INVERT LEVEL OF SSMH A & GRADIENT TO SSMH B

ABANDON & GROUT FILL EXISTING SS OR REMOVE IF EXPOSED DURING WORKS

EXISTING 150Ø AC SS MAIN

EXISTING STREAM

STORMWATER MANAGEMENT DEVICE AREA 2 SWALE TO COLLECT AND TREAT STORMWATER RUNOFF DESIGNED TO TREAT A 1 IN 10 YEAR EVENT

TOP OF FILL BATTER

BASE OF FILL BATTER

STORMWATER MANAGEMENT DEVICE ROAD SWALE TO COLLECT AND TREAT STORMWATER RUNOFF DESIGNED TO TREAT A 1 IN 10 YEAR EVENT

EXISTING STREAM

EXISTING 850Ø CONC SS MAIN

HCC_WW001597

HYDRANT

90m 200Ø PE100 SDR11 WATER MAIN

TOP OF CUT BATTER

BASE OF CUT BATTER

EXISTING STREAM

WAIRARAPA RAILWAY LINE

0 10 20

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SERVICES LAYOUT
SHEET 3 OF 14

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- DRAWN JDS
- CHECKED MWC DATE 16/11/2022

SCALE	AT
1 : 200	A1
DRAWING NUMBER	REV
S20-0380-D22	C

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	08/05/2023
C	UPDATED DESIGN	JDS	30/05/2023

AREA 2

AREA 3

EXISTING STREAM

EXISTING 850Ø CONC SS MAIN

RAISE SS MANHOLE LID C.O.S

HCC_WW001599

STORMWATER MANAGEMENT DEVICE AREA 2 SWALE TO COLLECT AND TREAT STORMWATER RUNOFF DESIGNED TO TREAT A 1 IN 10 YEAR EVENT

TOP OF FILL BATTER

BASE OF FILL BATTER

TOP OF CUT BATTER

BASE OF CUT BATTER

HYDRANT

90m 200Ø PE100 SDR11 WATER MAIN

STORMWATER MANAGEMENT DEVICE ROAD SWALE TO COLLECT AND TREAT STORMWATER RUNOFF DESIGNED TO TREAT A 1 IN 10 YEAR EVENT

SWMH A
1050Ø

SSMH 1
1050Ø

0 10 20

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S20-0380-D1A BM 2023.06.16 - D23
DRAWN JDS
CHECKED MWC DATE 16/11/2022

SCALE 1 : 200

AT A1

DRAWING NUMBER S20-0380-D23

REV C

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	08/05/2023
C	UPDATED DESIGN	JDS	30/05/2023

AREA 2

AREA 3

AREA 1

CANOPY

STORMWATER MANAGEMENT DEVICE AREA 2 SWALE TO COLLECT AND TREAT STORMWATER RUNOFF DESIGNED TO TREAT A 1 IN 10 YEAR EVENT

EXISTING 850Ø CONC SS MAIN

TOP OF FILL BATTER

BASE OF FILL BATTER

EXISTING STREAM

TOP OF CUT BATTER

BASE OF CUT BATTER

SWALE TO FLOW INTO MANHOLE VIA CONCRETE CHANNEL. SCRUFFY DOME IN CASE OF OVERFLOW SEE DETAILS

SWMH C1 1050Ø

25mm ON 200mm TAPPING SADDLE

HYDRANT

7.8m 25Ø PE100 SDR11 AND NEW METERED MANIFOLD SERVICE POINT FOR LOT 3

37.5m 110mmOD PUNCHED AND SOCKED SUBSOIL DRAIN

15.6m 300mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

OVERLAND FLOW PATH STORMWATER 360 VORTECHS VX4000 OR SIMILAR

9.2m 225Ø uPVC SN16 TREATMENT FLOW

9.0m 225Ø uPVC SN16 TREATED FLOW

6.5m 525mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

54.2m 200Ø PE100 SDR11 WATER MAIN

525 WINGWALL

14.7m 525mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

SWMH E 1500Ø

17.2m 525mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

SWMH D 1500Ø

21.4m 525mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

SWMH C 1200Ø

30.8m 450mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

4.4m 150Ø uPVC SN16

RIPRAP DEPTH - 0.32m LENGTH - 5.03m WIDTH - 1.58m

AREA 3 OVERFLOW WEIR 1200Ø

DOUBLE SUMP

7.0m 300Ø uPVC SN16 SUMP LEAD

45.0m 110mmOD PUNCHED AND SOCKED SUBSOIL DRAIN

17.0m 525Ø RCRRJ @ 1:75 CLASS 2 SUMP LEAD

4 x 30,000L PROMAX XPRESS TANKS OR SIMILAR. CONNECTED VIA UNISEALS OR WALLACE SEALS WITH TRICKLE FEED OVERFLFLOW TO BOX SUMP SEE S20-0380-WM42 FOR DETAILS

PUMP TO POTABLE DEMAND, FIRE REQUIREMENT & RAINWATER RECYCLE SEE S20-0380-D45

24.4m 25Ø PE100 SDR11 & METERED MANIFOLD

HYDRANT

25mm ON 200mm TAPPING SADDLE

18.0m 280mmOD PE100 SDR 17 PUBLIC SS MAIN

SSMH 3 1050Ø

23.4m 375mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

SWALE TO FLOW INTO MANHOLE VIA CONCRETE CHANNEL. SCRUFFY DOME IN CASE OF OVERFLOW SEE DETAILS

SWMH D1 1050Ø

81.8m 250mmOD PE100 SDR17 PUBLIC SS MAIN

SS MAIN TO BE ENCASED IN CONCRETE TO AVOID SCOURING. 'DOUBLE WRAP' PIPE IN DENSOTAPE. SURROUND WITH 100mm THICK CONCRETE, EXTEND 1.0m PAST EDGE OF SWALE

SSMH 4 1050Ø

88.7m 200Ø PE100 SDR11 WATER MAIN

SUMP

21.0m 225Ø uPVC SN16 SUMP LEAD

90.0m 250mmOD PE100 SDR17 PUBLIC SS MAIN

SWMH 7 1050Ø

6.7m 300Ø uPVC SN16 SUMP LEAD

DOUBLE SUMP

DOUBLE SUMP

SADDLE 150Ø uPVC INTO 300Ø SUMP LEAD

62.6m 300Ø uPVC SN16 SUMP LEAD

42.7m 150Ø uPVC SN16 NOMINAL 1:100 C.O.S

STORMWATER MANAGEMENT DEVICE AREA 3 SWALE TO COLLECT AND TREAT STORMWATER RUNOFF DESIGNED TO TREAT A 1 IN 10 YEAR EVENT

25mm ON 200mm TAPPING SADDLE

7.2m 25Ø PE100 SDR11 AND MANIFOLD

150mm ON 200mm UNEQUAL TEE

100mm GATE VALVE

7.2m 100Ø PE100 SDR11 FIRE FEED

0 10 20

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SHEET 5 OF 14

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- S20-0380-D1A BM 2023.06.16 - D24
- DRAWN JDS
- CHECKED MWC DATE 16/11/2022

SCALE 1 : 200

AT A1

DRAWING NUMBER S20-0380-D24

REV C

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

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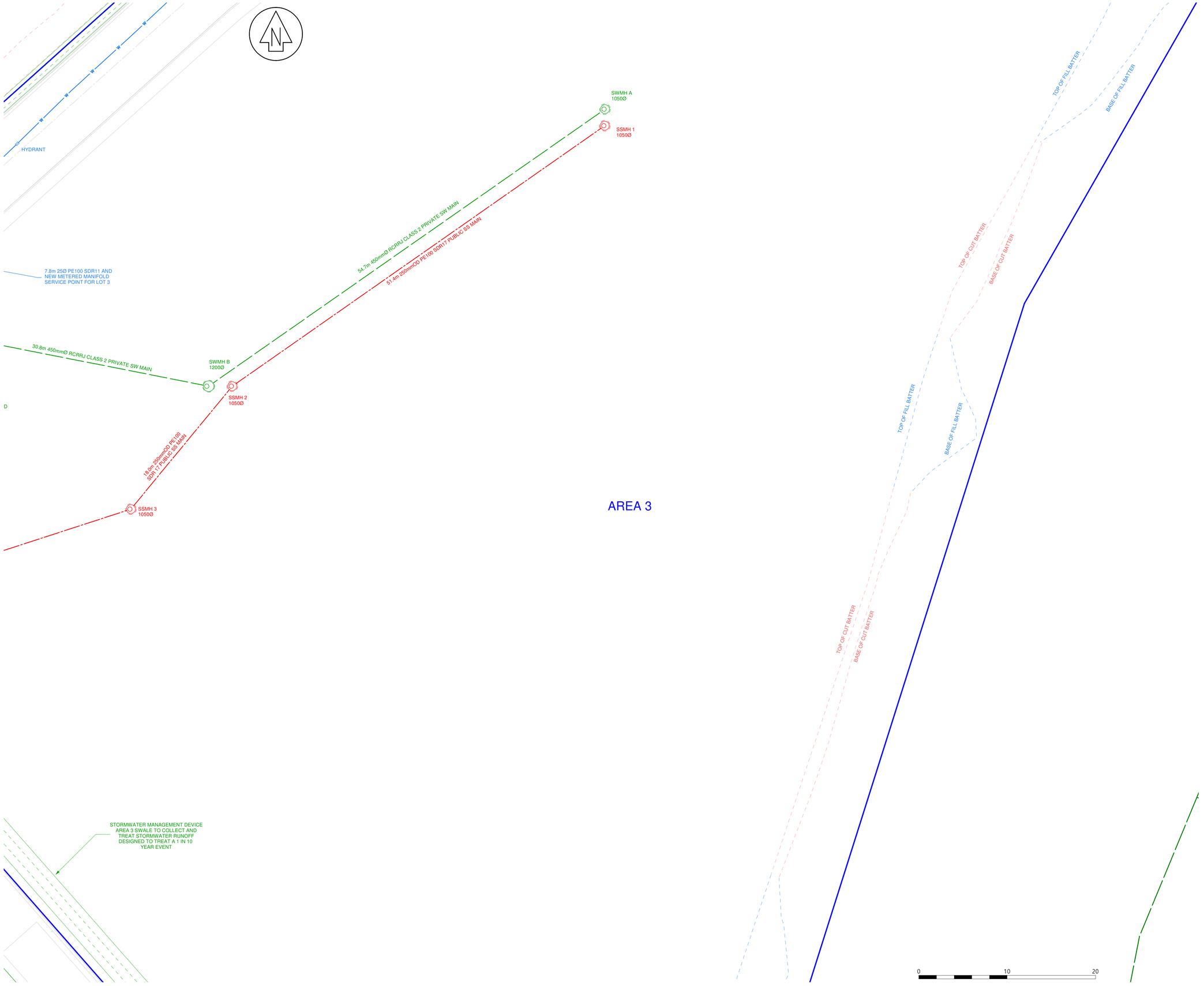

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□ S20-0380-D1A BM 2023.06.16 - D25
□ DRAWN JDS
□ CHECKED MWC □ DATE 30/05/2023

SCALE	AT
1 : 200	A1
DRAWING NUMBER	REV
S20-0380-D25	A

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A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	30/05/2023
C	UPDATED DESIGN	JDS	04/07/2023

AREA 2

AREA 1

CANOPY

EXISTING 850Ø CONC SS MAIN

STORMWATER MANAGEMENT DEVICE AREA 2 SWALE TO COLLECT AND TREAT STORMWATER RUNOFF DESIGNED TO TREAT A 1 IN 10 YEAR EVENT

TOP OF FILL BATTER

BASE OF FILL BATTER

EXISTING STREAM

TOP OF CUT BATTER

BASE OF CUT BATTER

90.0m 250mmOD PE100 SDR17 PUBLIC SS MAIN

21.0m 225Ø uPVC SN16 SUMP LEAD

SWMH 7 1050Ø

6.7m 300Ø uPVC SN16 SUMP LEAD

DOUBLE SUMP

37.5m 450mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

32.1m 150Ø uPVC SN16

RODDING POINT

WEIGHBRIDGE 4 x 100Ø uPVC

32.1m 150Ø uPVC SN16

SWMH 6 1200Ø

14.7m 150Ø uPVC SN16

21.4m 150Ø uPVC SN16 CHARGED DOWNPIPES TO 31,000L AQUA TANK (OR SIMILAR) RAINWATER TANK WITH ROJO PART FILL VALVE. OVERFLOW TO BOX SUMP. DOWNPIPES TO HAVE LEAF EATERS AND FIRST FLUSH DIVERTERS SEE S22-0380-D42 FOR DETAILS

28.6m 450mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

SADDLE 150Ø uPVC INTO 4500 MAIN

SSMH 5 1050Ø

SUMP

9.0m 225Ø uPVC SN16 SUMP LEAD

SUMP

3.5m 225Ø uPVC SN16 SUMP LEAD

SWMH 4A

53.7m 250mmOD PE100 SDR17 PUBLIC SS MAIN

SWMH 5 1200Ø

SSMH 5A 1050Ø

41.6m 250mmOD PE100 SDR17 PUBLIC SS MAIN

SSMH 5B 1050Ø

5.9m 150Ø uPVC SN16

29.9m 300mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

51.2m 750mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

37.4m 450mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

9.7m 150Ø uPVC SN16

150mm ON 200mm UNEQUAL TEE & 100mm GATE VALVE

25mm ON TAPPING

18.4m 150Ø uPVC SN16 CHARGED DOWNPIPES TO 31,000L AQUA TANK (OR SIMILAR) RAINWATER TANK WITH ROJO PART FILL VALVE. OVERFLOW TO BOX SUMP. DOWNPIPES TO HAVE LEAF EATERS AND FIRST FLUSH DIVERTERS SEE S22-0380-D42 FOR DETAILS

OFFICE FFL: 30.13

SWMH 4 1500Ø

SWMH 5A 1050Ø

HYDRANT

20.8m 300mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

53.7m 750mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

SUMP

SWMH 4B

1.3m 225Ø uPVC SN16 SUMP LEAD

90.0m 250mmOD PE100 SDR17 PUBLIC SS MAIN

9.2m 250Ø PE100 SDR11 ANVIL MANIFOLD

3.5m 100Ø PE100 SDR11 PRE-FEED

2 x 100mm ON 200mm UNEQUAL TEE & 100mm GATE VALVE

2 x 25mm ON 200mm TAPPING SADDLE

8.5m 300Ø uPVC SN16

0 10 20

RESOURCE CONSENT

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CLIENT
ROSCO INDUSTRIAL

PROJECT
TE KAREAREA
BENMORE CRESCENT,
MANOR PARK

DRAWING TITLE
SERVICES LAYOUT
SHEET 7 OF 14

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- S20-0380-D1A BM 2023.06.16 - D26
- DRAWN JDS
- CHECKED MWC DATE 16/11/2022

SCALE 1 : 200

AT A1

DRAWING NUMBER S20-0380-D26

REV C

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	30/05/2023
C	UPDATED DESIGN	JDS	04/07/2023

CANOPY

RETAIL
FFL: 30.60

DOUBLE SUMP

62.6m 300Ø uPVC SN16 SUMP LEAD

SADDLE 150Ø uPVC
INTO 300Ø SUMP LEAD

STORMWATER MANAGEMENT DEVICE
SWALE TO COLLECT AND
TREAT STORMWATER RUNOFF
DESIGNED TO TREAT A 1 IN 10
YEAR EVENT

42.7m 150Ø uPVC SN16 NOMINAL 1:100 C.O.S

25mm ON 200mm
TAPPING SADDLE

7.2m 25Ø PE100 SDR11
AND MANIFOLD

100mm ON 200mm
UNEQUAL TEE &
100mm GATE VALVE

7.2m 100Ø PE100 SDR11
FIRE FEED

WEIGHBRIDGE
4 x 100Ø uPVC

HYDRANT

RODDING POINT

21.4m 150Ø uPVC SN16 CHARGED
DOWNPIPES TO 15,000L XPRESS
RAINWATER TANK WITH ROJO
PART FILL VALVE. OVERFLOW
TO BOX SUMP. DOWNPIPES TO
HAVE LEAF EATERS AND FIRST
FLUSH DIVERTERS
SEE S22-0380-D42 FOR DETAILS

SUMP

10.7m 150Ø uPVC SN16

90.0m 200Ø PE100 SDR11 WATER MAIN

10,000L PROMAX TANK
FOR LIQUID WASTE

50.3m 225Ø uPVC
SN16 SUMP LEAD

SSMH 5B
1050Ø

25mm ON 200mm
TAPPING SADDLE

100mm ON 200mm
UNEQUAL TEE &
100mm GATE VALVE

10.1m 150Ø
uPVC SN16

8.8m 25Ø PE100 SDR11
AND MANIFOLD

8.8m 100Ø PE100 SDR11
FIRE FEED

29.4m 225Ø uPVC SN16 @ NOMINAL GRADIENT

SUMP

AREA 1

RTS
FFL: 31.00

SWMH 5A
1050Ø

51.5m 150Ø uPVC SN16 CHARGED
DOWNPIPES TO TWIN 15,000L XPRESS
RAINWATER TANKS WITH UNISEAL
CONNECTIONS AND ROJO PART
FILL VALVE. OVERFLOW TO BOX SUMP.
DOWNPIPES TO HAVE LEAF EATERS
AND FIRST FLUSH DIVERTERS
SEE S22-0380-D42 FOR DETAILS

8.5m 300Ø
uPVC SN16

AREA 3

BASE OF FILL BATTER

TOP OF FILL BATTER

TOP OF FILL BATTER

BASE OF FILL BATTER

SUMP

21.0m 225Ø uPVC SN16 SUMP LEAD

0 10 20

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SHEET 8 OF 14

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- S20-0380-D1A BM 2023.06.16 - D27
- DRAWN JDS
- CHECKED MWC DATE 16/11/2022

SCALE	AT
1 : 200	A1
DRAWING NUMBER	REV
S20-0380-D27	C

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	30/05/2023
C	UPDATED DESIGN	JDS	04/07/2023

AREA 2

SECTION 3
SO 493901

AREA 1

EXISTING 600Ø CONC SS MAIN

EXISTING 850Ø CONC SS MAIN

HCC_WW001616

LOCATE & OPEN MANHOLE CHECK DEPTH TO INVERT ON SITE

32.2m 250mmOD PE100 SDR17 PUBLIC SS MAIN

SSMH 7
1050Ø

TAPER SWALE ONTO RIPRAP TO CONCENTRATE FLOW

RIPRAP
DEPTH - 0.30m
LENGTH - 4.80m
WIDTH - 1.80m

TOP OF FILL BATTER

BASE OF FILL BATTER

EXISTING STREAM

SUSPENDED GRAVITY PIPE CROSSING REFER TO STRUCTURAL DATASET FOR DETAILS

30.0m 250mmOD PE100 SDR17 PUBLIC SS MAIN

90.0m 250mmOD PE100 SDR17 PUBLIC SS MAIN

SSMH 6
1050Ø

DOUBLE SUMP

6.3m 300Ø uPVC SN16 SUMP LEAD

SWMH 3
1500Ø

17.4m 300Ø uPVC SN16 SUMP LEAD

DOUBLE SUMP

25.7m 750mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

HYNDS MEGAPIT

750 WINGWALL

WINGWALL

7.4m 450Ø RCRRJ @ 1:15 CLASS 2 SUMP LEAD

RIPRAP
DEPTH - 0.45m
LENGTH - 7.06m
WIDTH - 2.25m

7.5m 750mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

5.1m 750mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

SWMH 2
1500Ø

3.7m 750mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

SWMH 0
1500Ø

3.9m 300Ø uPVC SN16 TREATED FLOW

SWMH 1
1800Ø

25.8m 250mmOD PE100 SDR17 PUBLIC SS MAIN

SSMH 6A
1050Ø

2.1m 750mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

15.3m 600mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

STORMWATER 360 VORTECHS VX9000 OR SIMILAR

AREA 1 OVERFLOW WEIR 1500Ø

5.0m 300Ø uPVC SN16 TREATMENT FLOW

SWMH 8
1200Ø

10.1m 375mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

SWALE TO FLOW INTO MANHOLE VIA CONCRETE CHANNEL. SCRUFFY DOME IN CASE OF OVERFLOW SEE DETAILS

SWMH 8B
1050Ø

34.9m 300mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

SWMH 8A
1050Ø

49.3m 600mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

11.1m 150Ø uPVC SN16

28.0m 150Ø uPVC SN16

17.4m 150Ø uPVC SN16 CHARGED DOWNPIPES TO 4 x 31,000L AQUATANK RAINWATER TANKS WITH UNISEAL CONNECTIONS AND ROJO PART FILL VALVE. OVERFLOW TO BOX SUMP. DOWNPIPES TO HAVE LEAF EATERS AND FIRST FLUSH DIVERTERS SEE S22-0380-D42 FOR DETAILS

WORKSHOP
FFL: 29.85

STORMWATER MANAGEMENT DEVICE AREA 1 SWALE TO COLLECT AND TREAT STORMWATER RUNOFF DESIGNED TO TREAT A 1 IN 10 YEAR EVENT

BASE OF FILL BATTER

TOP OF FILL BATTER

20,000L PROMAX TANK FOR LIQUID WASTE

42.7m 225Ø uPVC SN16 @ NOMINAL GRADIENT

0 10 20

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SERVICES LAYOUT
SHEET 9 OF 14

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□ S20-0380-D1A BM 2023.06.16 - D28
□ DRAWN JDS
□ CHECKED MWC □ DATE 16/11/2022

SCALE	AT
1 : 200	A1
DRAWING NUMBER	REV
S20-0380-D28	C

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	30/05/2023
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SWMH 4
1500Ø

20.9m 300mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

53.7m 750mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

SWMH 4B

SUMP

1.3m 225Ø uPVC
SN16 SUMP LEAD

18.4m 150Ø uPVC SN16 CHARGED
DOWNPIPES TO 31,000L AQUA
TANK (OR SIMILAR) RAINWATER
TANK WITH ROJO PART FILL
VALVE. OVERFLOW TO BOX
SUMP. DOWNPIPES TO HAVE
LEAF EATERS AND FIRST
FLUSH DIVERTERS
SEE S22-0380-D42 FOR DETAILS

OFFICE
FFL: 30.13

HYDRANT

SWMH 5A
1050Ø

8.5m 300Ø
uPVC SN16

51.5m 150Ø uPVC SN16 CHARGED
DOWNPIPES TO 31,000L AQUA
TANK (OR SIMILAR) RAINWATER
TANK WITH ROJO PART FILL
VALVE. OVERFLOW TO BOX
SUMP. DOWNPIPES TO HAVE
LEAF EATERS AND FIRST
FLUSH DIVERTERS
SEE S22-0380-D42 FOR DETAILS

9.2m 25Ø PE100 SDR11
AND MANIFOLD

9.2m 100Ø PE100 SDR11
FIRE FEED

2 x 100mm ON 200mm
UNEQUAL TEE &
100mm GATE VALVE

2 x 25mm ON 200mm
TAPPING SADDLE

64.7m 25Ø PE100 SDR11 & WATER MANIFOLD

64.2m 100Ø PE100 SDR11 FIRE FEED

35.1m 225Ø uPVC SN16 SUMP LEAD

SUMP

17.4m 300Ø uPVC
SN16 SUMP LEAD

DOUBLE SUMP

90.0m 25Ø PE100 SDR11 WATER MAIN

AREA 1

2 x 25mm ON 200mm
TAPPING SADDLE

2 x 100mm ON 200mm
UNEQUAL TEE &
100mm GATE VALVE

HYDRANT

90.1m 25Ø PE100 SDR11 & WATER MANIFOLD

29.6m 100Ø PE100 SDR11 FIRE FEED

55.4m 250mmOD PE100 SDR17 PUBLIC SS MAIN

49.3m 600mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

45.0m 100Ø PE100 SDR11 FIRE FEED

48.6m 25Ø PE100 SDR11 & WATER MANIFOLD

SSMH 6B
1050Ø

85.4m 250mmOD PE100 SDR17 PUBLIC SS MAIN

83.7m 600mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

SSMH 6C
1050Ø

6.8m 150Ø uPVC SN16

SWMH 10
1200Ø

25.1m 450Ø RCRRJ CLASS 2 PRIVATE SW MAIN

SWMH 9
1200Ø

12.2m 150Ø uPVC SN16

46.3m 150Ø uPVC SN16 CHARGED
DOWNPIPES TO 31,000L AQUA
TANK (OR SIMILAR) RAINWATER
TANK WITH ROJO PART FILL
VALVE. OVERFLOW TO BOX
SUMP. DOWNPIPES TO HAVE
LEAF EATERS AND FIRST
FLUSH DIVERTERS
SEE S22-0380-D42 FOR DETAILS

13.3m 300Ø uPVC SN16

SWMH 10A
1050Ø

15.2m 300Ø uPVC SN16

4.2m 300Ø uPVC
SN16 SUMP LEAD

DOUBLE SUMP

22.0m 450mmØ RCRRJ CLASS 2 PRIVATE SW MAIN

5.8m 225Ø uPVC
SN16 SUMP LEAD

SWMH 9A
1200Ø

SUMP

18.0m 300

MRF
FFL: 30.30

0 10 20

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BENMORE CRESCENT,
MANOR PARK

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SERVICES LAYOUT
SHEET 10 OF 14

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SCALE	AT
1 : 200	A1
DRAWING NUMBER	REV
S20-0380-D29	C

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FIRST ISSUE		
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RESOURCE CONSENT

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RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

51.5m 150Ø uPVC SN16 CHARGED DOWNPIPES TO 31,000L AQUA TANK (OR SIMILAR) RAINWATER TANK WITH ROJO PART FILL VALVE. OVERFLOW TO BOX SUMP. DOWNPIPES TO HAVE LEAF EATERS AND FIRST FLUSH DIVERTERS SEE S22-0380-D42 FOR DETAILS

RTS
FFL: 31.00

SUMP

21.0m 225Ø uPVC SN16 SUMP LEAD

SWMH 12
1050Ø

1.3m 225Ø uPVC SN16 SUMP LEAD

SUMP

36.9m 300Ø RCRRJ CLASS 2 PRIVATE SW MAIN

SUMP

16.4m 225Ø uPVC SN16 SUMP LEAD

SWMH 11
1200Ø

AREA 1

SSMH 6C
1050Ø

54.9m 450Ø RCRRJ CLASS 2 PRIVATE SW MAIN

6.8m 150Ø uPVC SN16

34.5m 300Ø uPVC SN16 SUMP LEAD

DOUBLE SUMP

B & C
FFL: 30.55

46.3m 150Ø uPVC SN16 CHARGED DOWNPIPES TO 31,000L AQUA TANK (OR SIMILAR) RAINWATER TANK WITH ROJO PART FILL VALVE. OVERFLOW TO BOX SUMP. DOWNPIPES TO HAVE LEAF EATERS AND FIRST FLUSH DIVERTERS SEE S22-0380-D42 FOR DETAILS

15.2m 300Ø uPVC SN16

TOP OF FILL BATTER

BASE OF FILL BATTER

TOP OF FILL BATTER

BASE OF FILL BATTER

WAIRARAPA
RAILWAY LINE

0 10 20

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DRAWING TITLE
SERVICES LAYOUT
SHEET 11 OF 14

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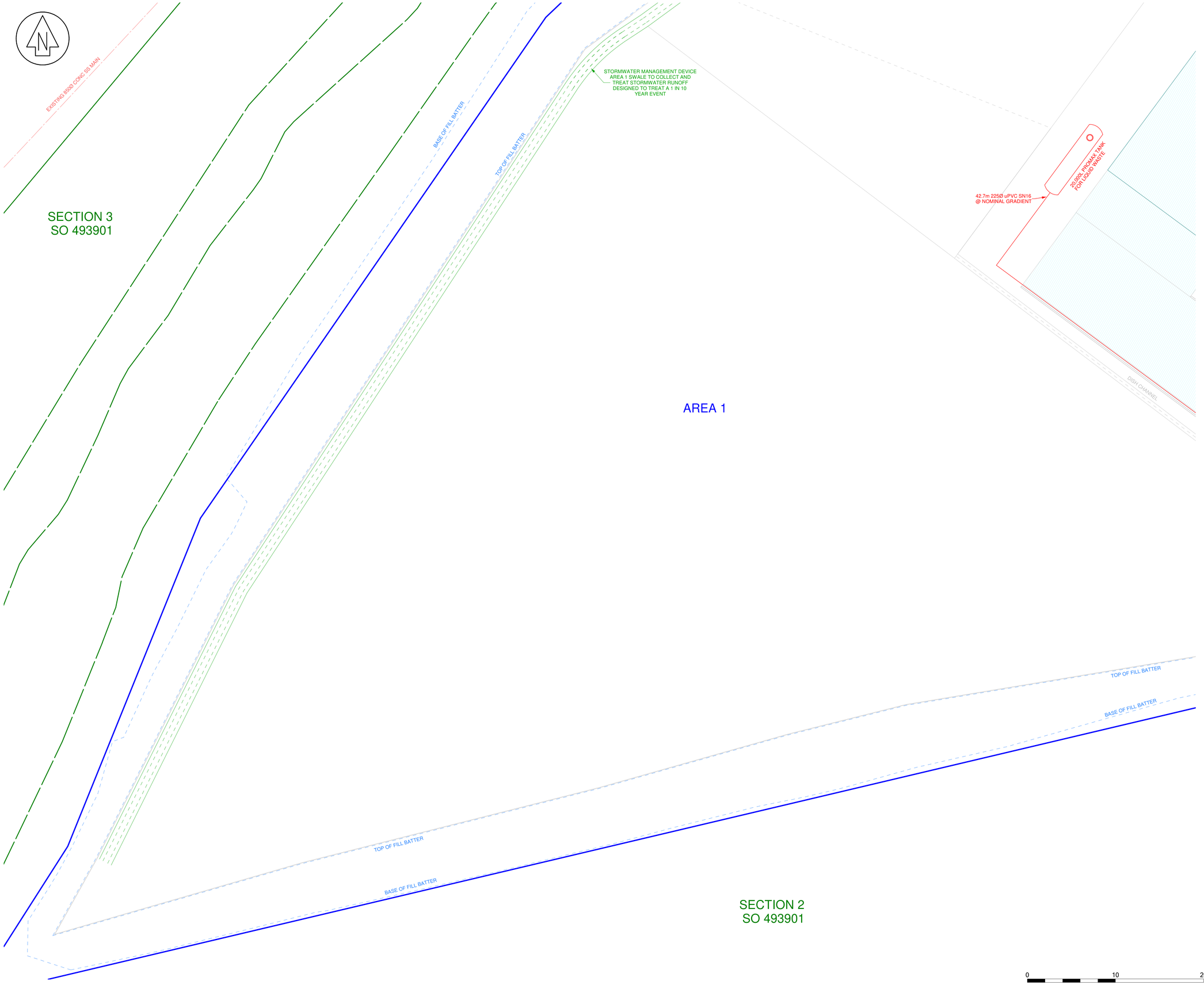
□ S20-0380-D1A BM 2023.06.16 - D30
□ DRAWN JDS
□ CHECKED MWC □ DATE 16/11/2022

SCALE	AT
1 : 200	A1
DRAWING NUMBER	REV
S20-0380-D30	C



NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	30/05/2023
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SERVICES LAYOUT
SHEET 12 OF 14

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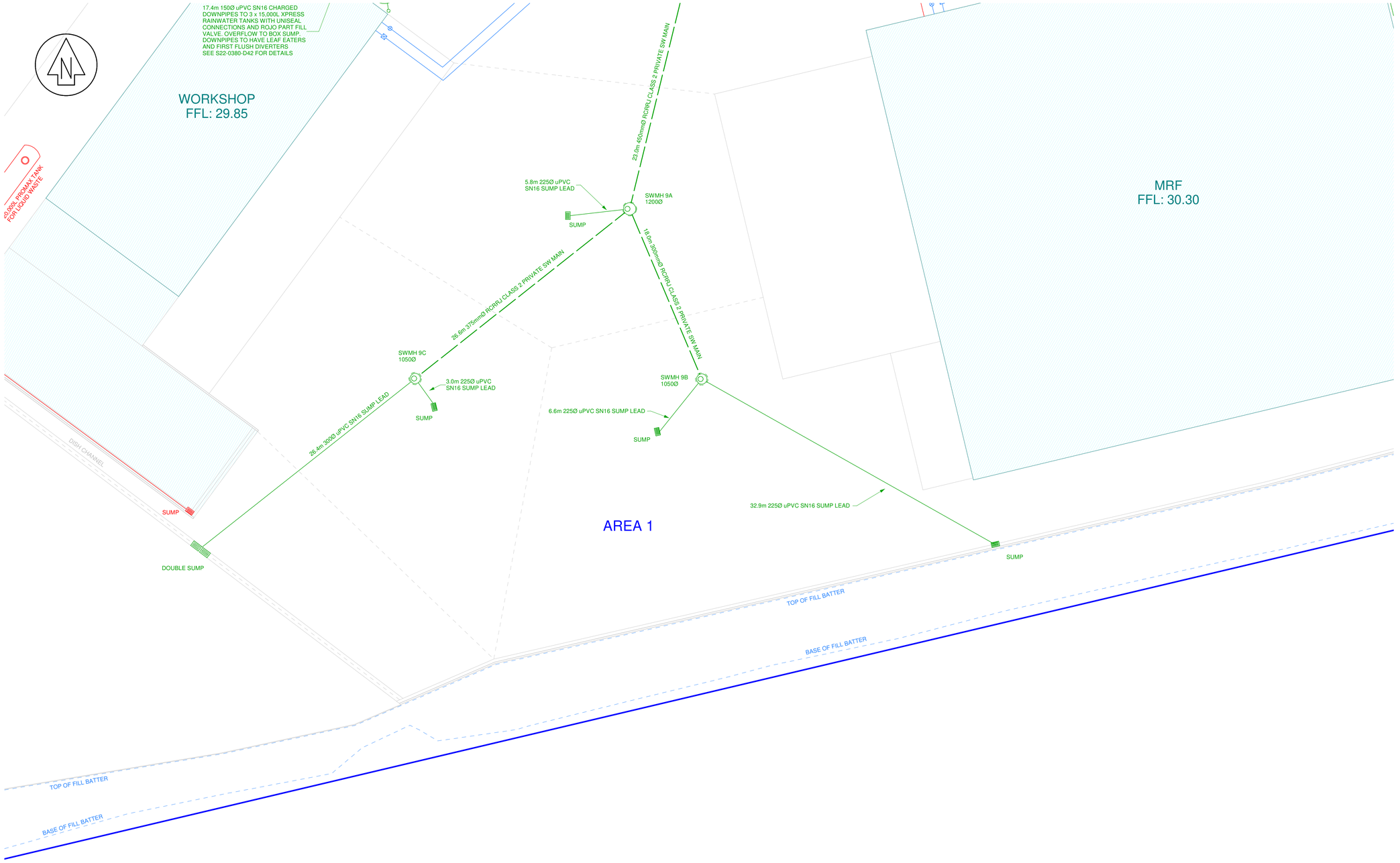
□ S20-0380-D1A BM 2023.06.16 - D31
□ DRAWN JDS
□ CHECKED MWC □ DATE 16/11/2022

SCALE	AT
1 : 200	A1
DRAWING NUMBER	REV
S20-0380-D31	C

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE



SECTION 2
SO 493901

0 10 20

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	30/05/2023
C	UPDATED DESIGN	JDS	04/07/2023

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BENMORE CRESCENT,
MANOR PARK

DRAWING TITLE
SERVICES LAYOUT
SHEET 13 OF 14

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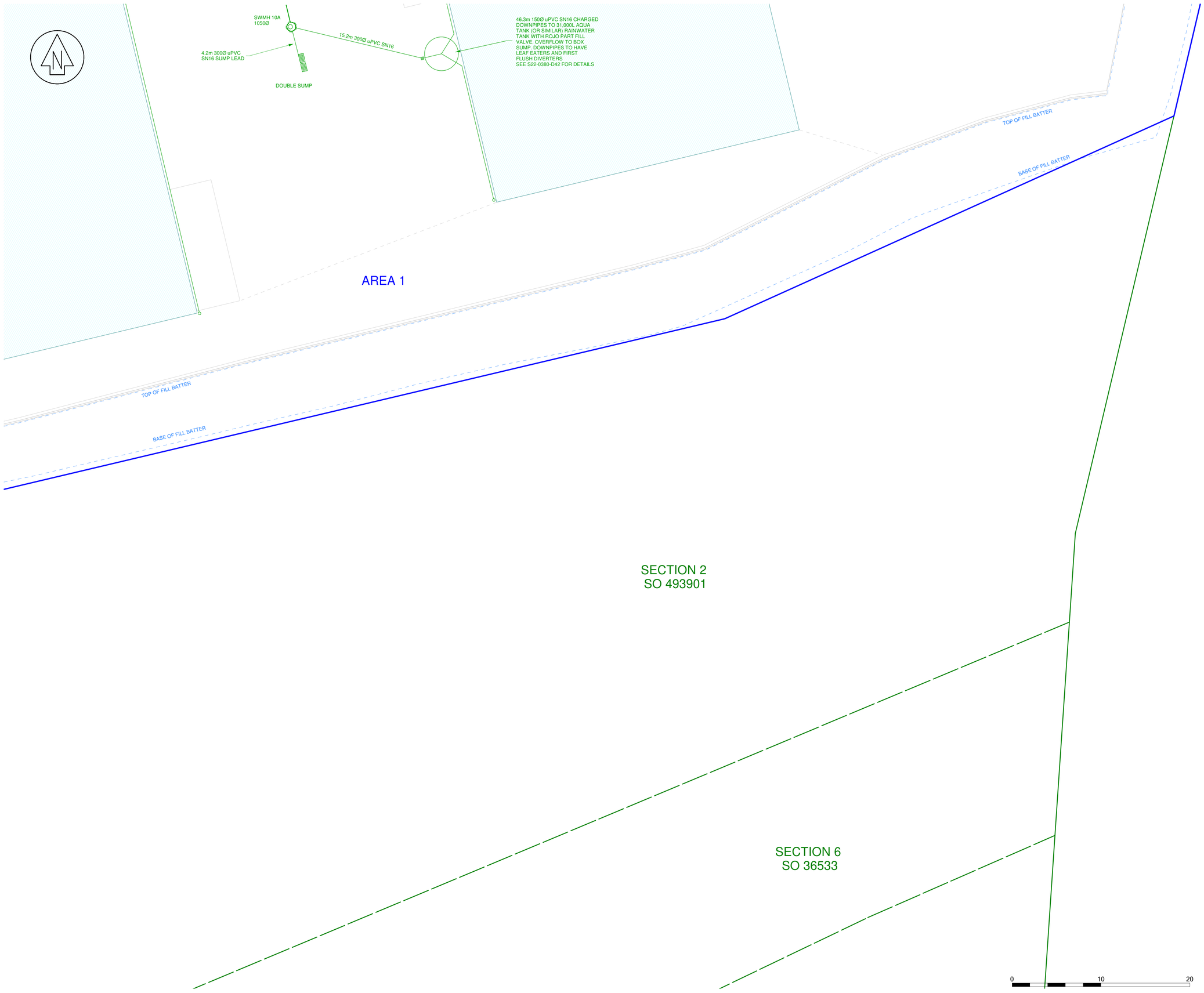
- S20-0380-D1A BM 2023.06.16 - D32
- DRAWN JDS
- CHECKED MWC DATE 16/11/2022

SCALE	AT
1 : 200	A1
DRAWING NUMBER	**REV**
S20-0380-D32	C

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE



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A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	30/05/2023
C	UPDATED DESIGN	JDS	04/07/2023

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SHEET 14 OF 14

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- S20-0380-D1A BM 2023.06.16 - D33
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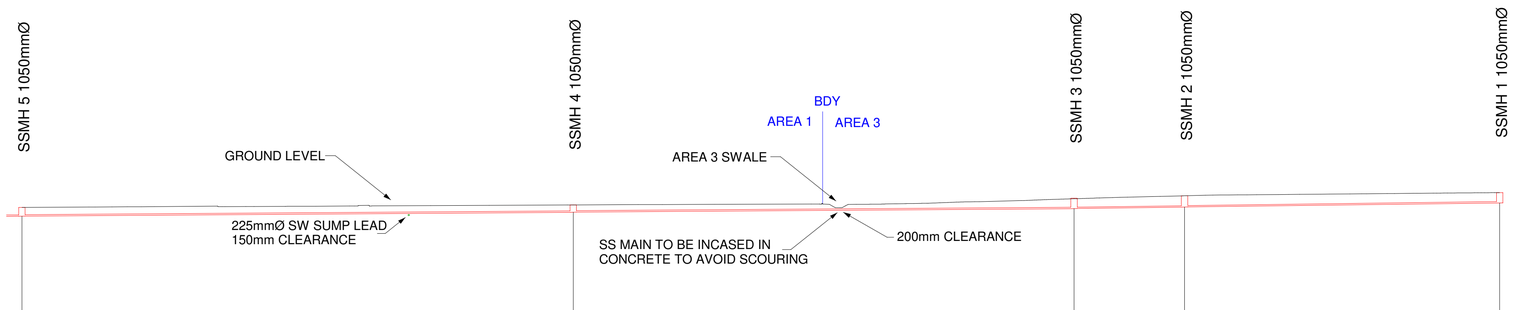
- CHECKED MWC
- DATE 16/11/2022

SCALE	AT
1 : 200	A1
DRAWING NUMBER	REV
S20-0380-D33	C

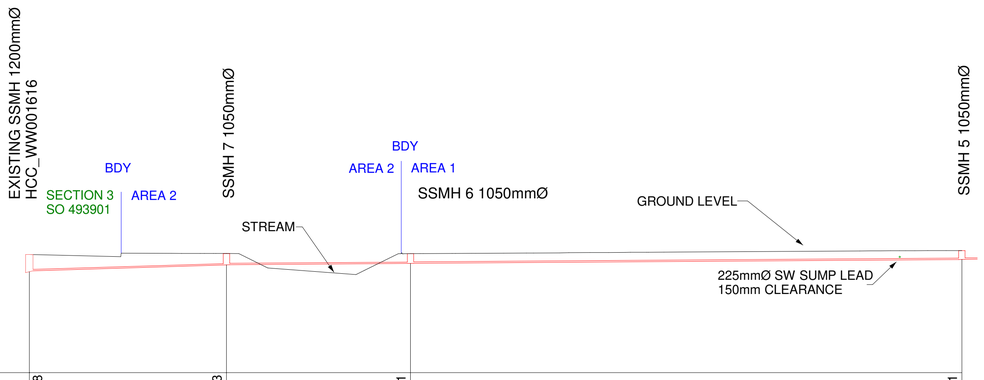
RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	04/07/2023



DATUM 10.00

LID LEVEL	29.91			30.31			31.41		31.80			32.32		
INVERT LEVEL	28.46	28.49		29.11	29.14		29.70	29.73	29.94	29.98		30.62		
DEPTH TO INVERT	1.45	1.42		1.20	1.17		1.71	1.68	1.86	1.82		1.70		
CHAINAGE	152.22	90.00		242.22	81.75		323.97	18.03	342.00	51.44		393.44		
GRADIENT	0.69%			0.69%			1.22%		1.26%					
MATERIALS	250mmOD PE100 SDR17 PUBLIC			250mmOD PE100 SDR17 PUBLIC			250mmOD PE100 SDR17 PUBLIC		250mmOD PE100 SDR17 PUBLIC					



DATUM 10.00

LID LEVEL	29.28			29.43			29.41			29.91				
INVERT LEVEL	25.99			27.55	27.60		27.80	27.84		28.46	28.49			
DEPTH TO INVERT	3.29			1.87	1.83		1.61	1.57		1.45	1.42			
CHAINAGE	0.00	32.18		32.18	30.04		62.22	90.00		152.22				
GRADIENT	2.97%			0.69%			0.69%							
MATERIALS	250mmOD PE100 SDR17 PUBLIC			250mmOD PE100 SDR17 PUBLIC			250mmOD PE100 SDR17 PUBLIC							

0 10 20 30 40 50

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MANOR PARK

DRAWING TITLE
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1 OF 2

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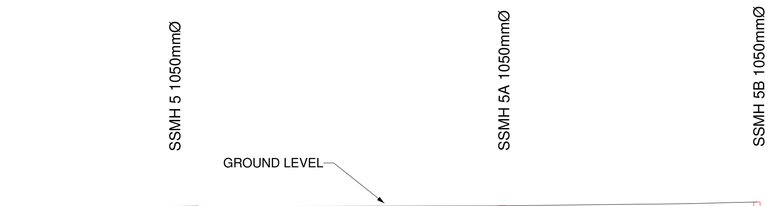
S20-0380-WM-Long Sections 2023.07.03 - D35
DRAWN JDS
CHECKED MWC DATE 01/12/2022

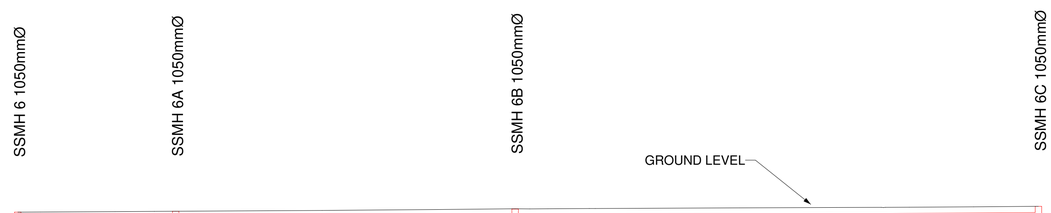
SCALE 1 : 500
AT A1
DRAWING NUMBER S20-0380-D35
REV B

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	04/07/2023



DATUM 10.00

LID LEVEL		29.91			30.02			30.65
INVERT LEVEL	28.46	28.49			28.86	28.89		29.25
DEPTH TO INVERT	1.45	1.42			1.16	1.13		1.40
CHAINAGE		0.00	53.70		53.70		41.61	95.31
GRADIENT		0.69%				0.87%		
MATERIALS		250mmOD PE100 SDR17 PUBLIC				250mmOD PE100 SDR17 PUBLIC		



DATUM 10.00

LID LEVEL		29.41			29.55		29.92		30.37	
INVERT LEVEL	27.80	27.88			28.07	28.10	28.49	28.52	29.12	
DEPTH TO INVERT	1.61	1.53			1.48	1.45	1.43	1.40	1.25	
CHAINAGE		0.00	25.79		25.79	55.41	81.20	85.42	166.62	
GRADIENT		0.70%				0.70%		0.70%		
MATERIALS		250mmOD PE100 SDR17 PUBLIC				250mmOD PE100 SDR17 PUBLIC		250mmOD PE100 SDR17 PUBLIC		

0 25 50

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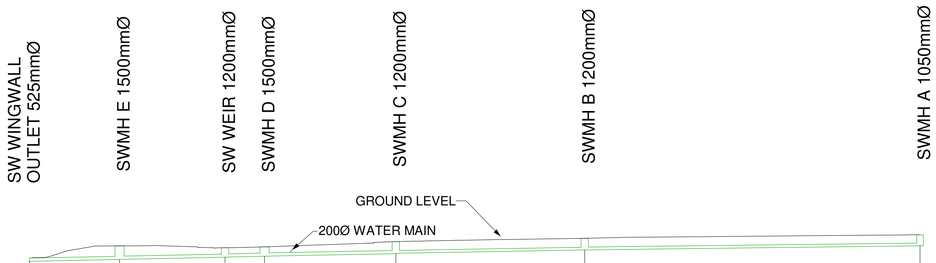
- S20-0380-WM-Long Sections 2023.07.03 - D36
- DRAWN JDS
- CHECKED MWC DATE 01/12/2022

SCALE: SCALE AS SHOWN
AT: A1

DRAWING NUMBER: S20-0380-D36
REV: B

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	04/07/2023



DATUM 10.00

LID LEVEL	28.58		30.52		30.22		30.35	31.21		31.75		32.33		
INVERT LEVEL	28.01		28.29	28.33		28.66	28.70	28.81	28.86	29.24	29.33	29.84	29.88	30.52
DEPTH TO INVERT	0.57		2.23	2.19		1.56	1.52	1.54	1.49	1.97	1.88	1.91	1.87	1.81
CHAINAGE	0.00	14.68	14.68		17.21	31.89	38.34		21.44	59.78	30.83	90.61	54.73	145.34
GRADIENT		1.98%			1.98%		2.02%		1.82%		1.69%		1.19%	
MATERIALS		RCRRJ CLASS 2 525mmØ									RCRRJ CLASS 2 450mmØ			

DATUM 10.00

LID LEVEL		31.21		31.23
INVERT LEVEL	29.24	29.48	29.98	29.73
DEPTH TO INVERT	1.97	1.73	1.25	1.75
CHAINAGE	0.00	15.58	15.58	
GRADIENT		3.21%		
MATERIALS		RCRRJ CLASS 2 300mmØ		

DATUM 10.00

LID LEVEL		30.35		30.41
INVERT LEVEL	28.81	28.98	29.41	28.91
DEPTH TO INVERT	1.54	1.37	1.00	1.50
CHAINAGE	0.00	23.42	23.42	
GRADIENT		1.84%		
MATERIALS		RCRRJ 375mmØ		

0 25 50 75 100

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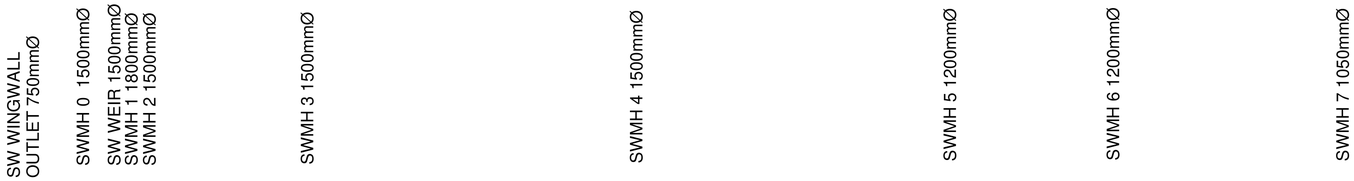
S20-0380-WM-Long Sections 2023.07.03 - D37
DRAWN JDS
CHECKED MWC DATE 16/11/2022

SCALE 1 : 500
AT A1
DRAWING NUMBER S20-0380-WM37
REV B

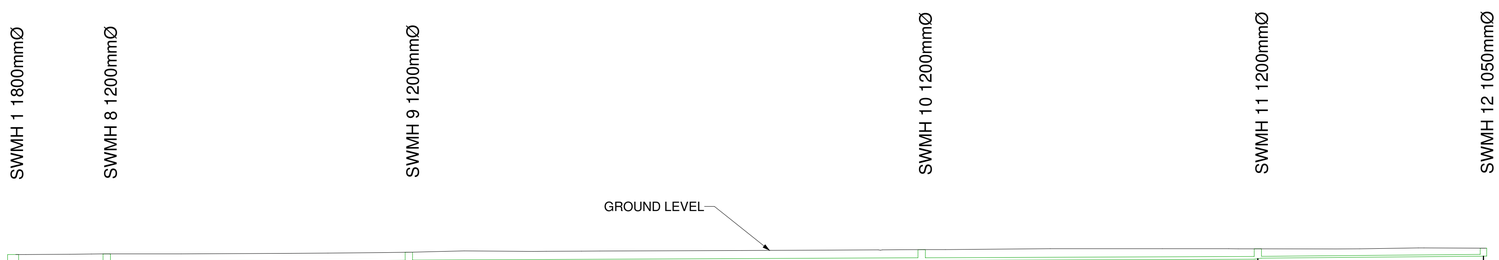
RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	04/07/2023



DATUM 10.00

LID LEVEL		27.41		29.43		29.44		29.44		29.44		29.60		29.82		30.17		30.31		30.17					
INVERT LEVEL		26.66		26.79		26.83		26.90		26.94		26.95		27.00		27.02		27.05		27.16		27.19		27.41	
		27.45		27.65		27.95		28.15		28.18		28.41													
DEPTH TO INVERT		0.75		2.64		2.60		2.51		2.54		2.49		2.44		2.42		2.39		2.44		2.41		2.41	
		2.38		2.52		2.22		2.16		2.13		1.76													
CHAINAGE	0.00		8.20	8.20		5.10	13.30		2.08	15.38		3.68	19.06		25.74	44.80		53.73	98.53		51.19	149.72		26.63	176.35		37.47	213.82
GRADIENT			1.71%		1.67%		1.68%		0.54%		0.43%		0.42%		0.40%		0.75%		0.64%						
MATERIALS			RCRRJ CLASS 2 750mmØ										RCRRJ CLASS 2 750mmØ				RCRRJ CLASS 2 450mmØ								



DATUM 10.00

LID LEVEL		29.44		29.56				29.83				30.24				30.38				30.48					
INVERT LEVEL	26.95		27.12		27.39	27.43				27.89	27.93			28.33	28.48			28.70	28.85			29.18			
DEPTH TO INVERT	2.49		2.32		2.17	2.13				1.94	1.90			1.91	1.76			1.68	1.53			1.30			
CHAINAGE	0.00		15.29		15.29		49.32			64.61		83.71			148.32		54.87		203.19		36.82		240.01		
GRADIENT			1.83%				0.95%					0.48%					0.40%				0.90%				
MATERIALS			RCRRJ CLASS 2 600mmØ									RCRRJ CLASS 2 600mmØ					RCRRJ CLASS 2 450mmØ				RCRRJ CLASS 2 300mmØ				

0 25 50 75 100

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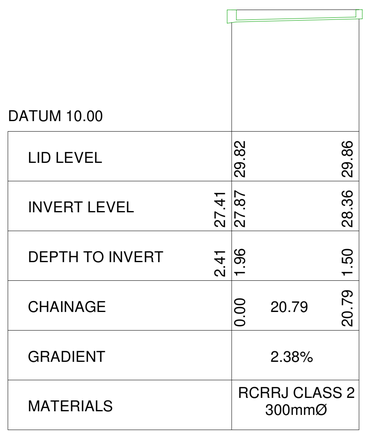
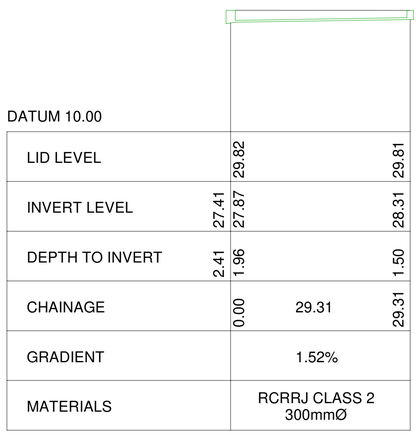
- S20-0380-WM-Long Sections 2023.07.03 - D38
- DRAWN JDS
- CHECKED MWC
- DATE 16/11/2022

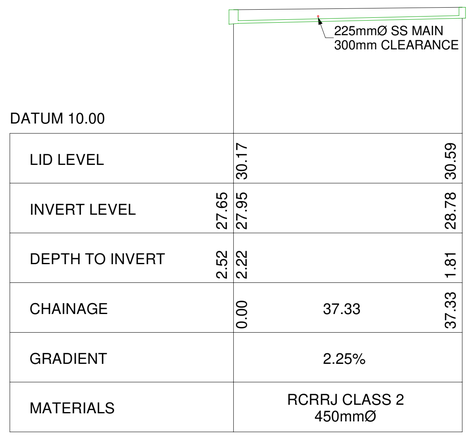
SCALE 1 : 500
AT A1
DRAWING NUMBER S20-0380-WM38
REV B

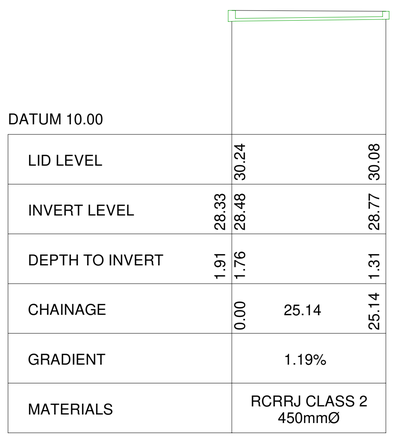
RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	04/07/2023









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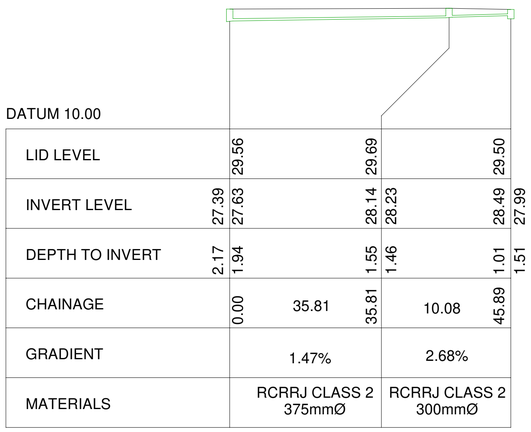

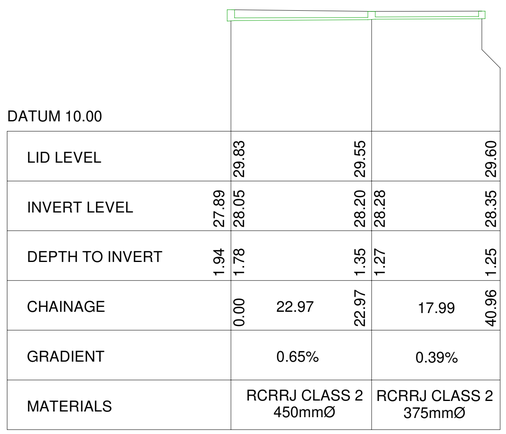

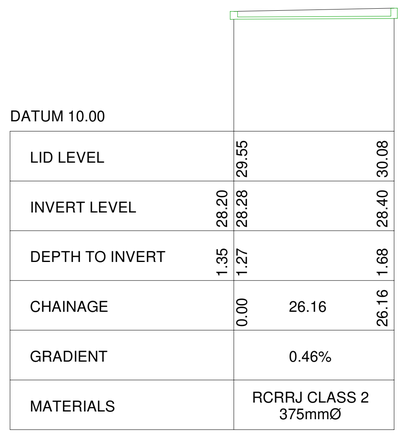

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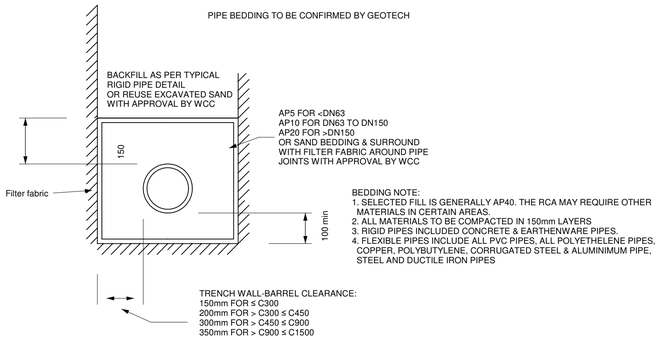
S20-0380-WM-Long Sections 2023.07.03 - D39
DRAWN JDS
CHECKED MWC DATE 16/11/2022

SCALE 1 : 500
AT A1
DRAWING NUMBER S20-0380-WM39
REV B

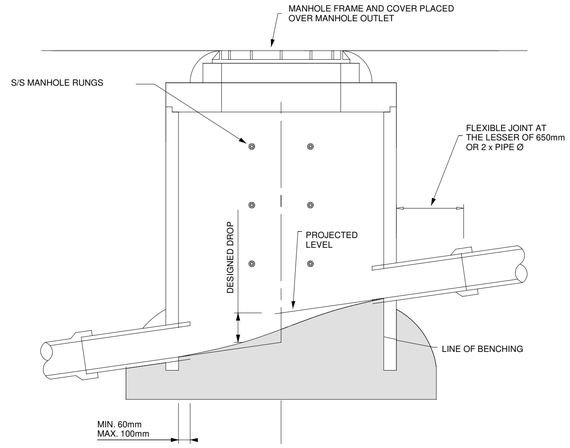
RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	03/07/2023



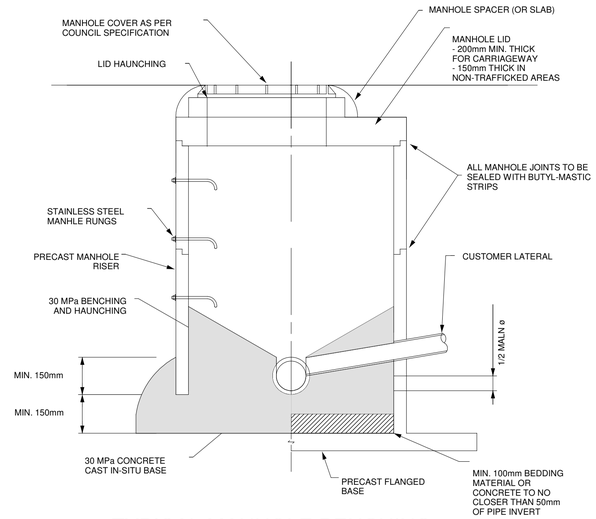
TYPICAL FLEXIBLE PIPE BEDDING AND SURROUNDS DETAIL

NOT TO SCALE



CROSS SECTION THROUGH STANDARD MANHOLE

NOT TO SCALE



TYPICAL MANHOLE BENCHING AND HAUNCHING DETAILS

NOT TO SCALE

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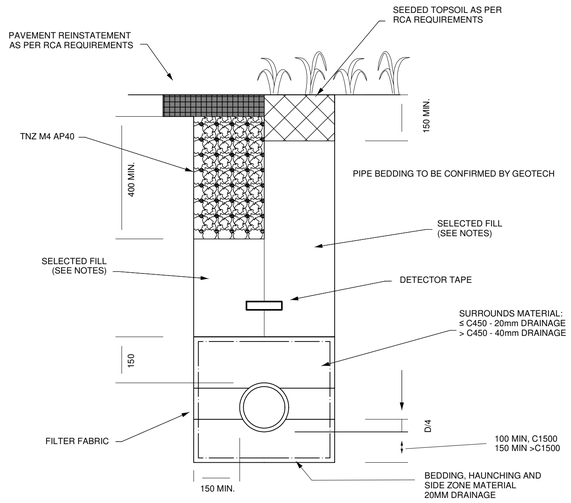
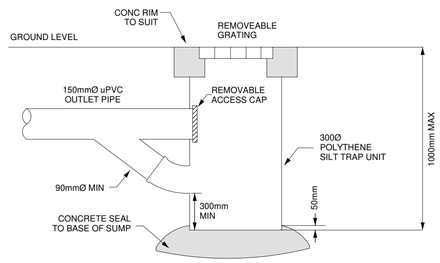


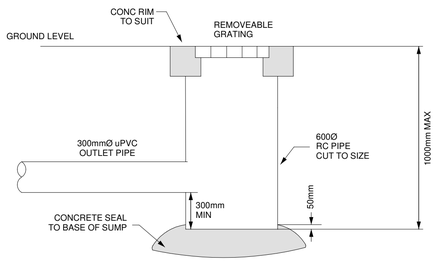
TYPICAL RIGID PIPE TRENCH DETAIL

NOT TO SCALE



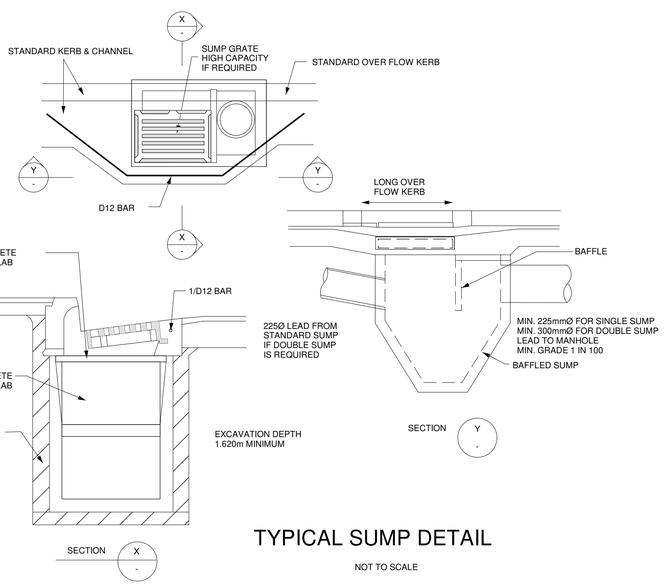
BOX SUMP TYPICAL DETAIL

NOT TO SCALE



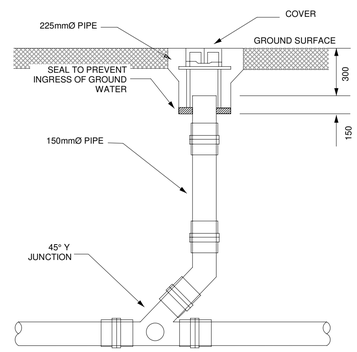
BOX SUMP (LARGE) DETAIL

NOT TO SCALE



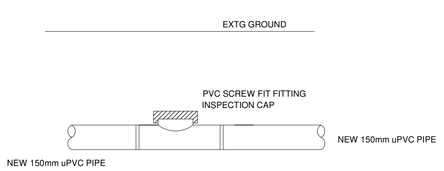
TYPICAL SUMP DETAIL

NOT TO SCALE



RODDING POINT

NOT TO SCALE



INSPECTION POINT DETAIL

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☐ S20-0380-WM-Services Details - D40
☐ DRAWN JDS
☐ CHECKED MWC ☐ DATE 17/11/2022

SCALE	AT
SCALE AS SHOWN	A1
DRAWING NUMBER	REV
S20-0380-D40	B

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

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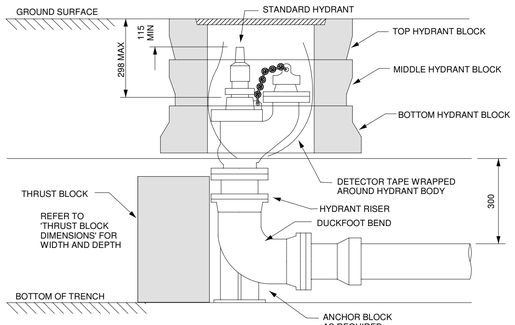
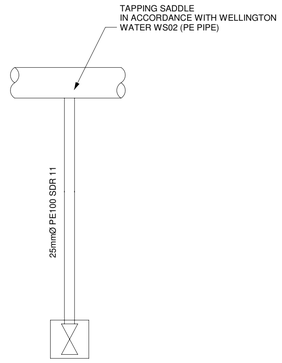
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	03/07/2023



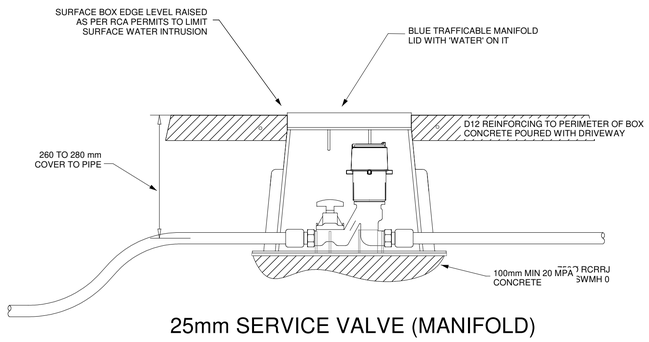
FIRE HYDRANT (DUCKFOOT) DETAIL

NOT TO SCALE



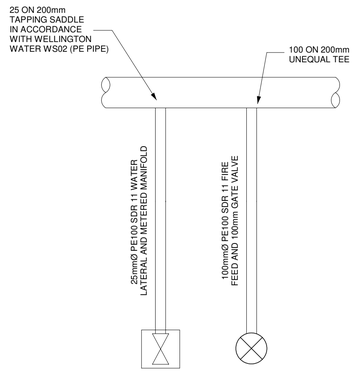
SINGLE WATER LATERAL DETAIL

NOT TO SCALE



25mm SERVICE VALVE (MANIFOLD)

NOT TO SCALE



SINGLE WATER LATERAL DETAIL

NOT TO SCALE

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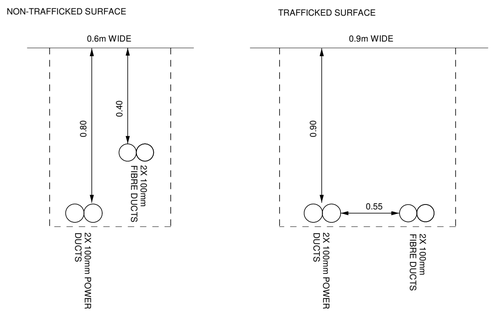
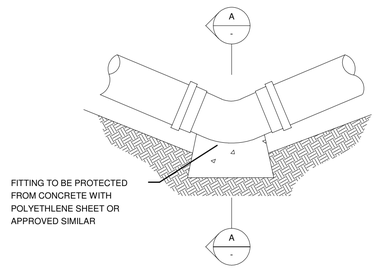
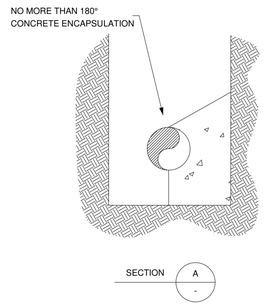
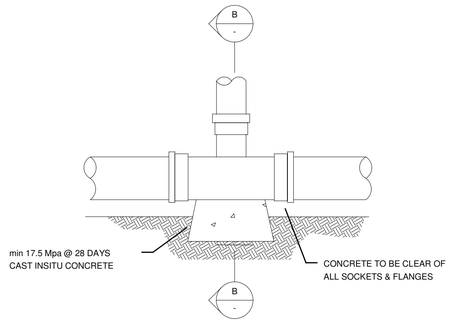


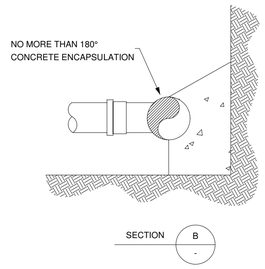
SERVICES TRENCH DETAILS

NOT TO SCALE







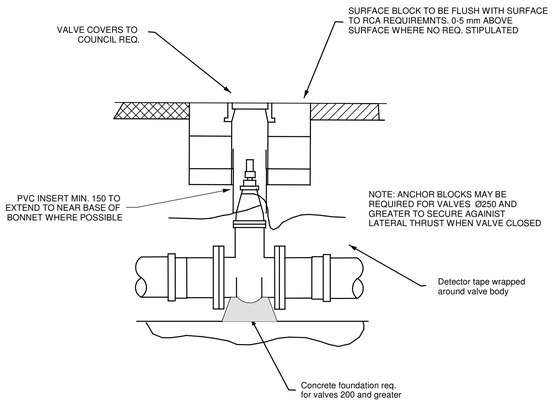


TYPICAL THRUST BLOCK DETAILS

NOT TO SCALE

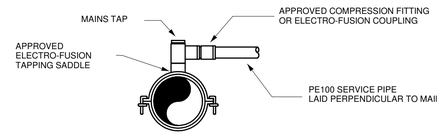
MINIMUM BEARING AREA (m²) FOR PN16 PIPES					
ASSUMED TEST PRESSURE 1600kPa, HORIZONTAL BEARING PRESSURE 75kPa					
PIPE DN	11.25° BEND	22.5° BEND	45.0° BEND	90.0° BEND	END CAP / TEE / INLINE
Ø100	0.10	0.10	0.19	0.36	0.25
Ø150	0.11	0.22	0.43	0.80	0.57
Ø200	0.20	0.39	0.77	1.42	1.00
ASSUMED TEST PRESSURE 1600kPa, HORIZONTAL BEARING PRESSURE 150kPa					
PIPE DN	11.25° BEND	22.5° BEND	45.0° BEND	90.0° BEND	END CAP / TEE / INLINE
Ø100	0.10	0.10	0.10	0.18	0.13
Ø150	0.10	0.11	0.22	0.40	0.28
Ø200	0.10	0.20	0.38	0.71	0.50

AS PER REGIONAL SPECIFICATION FOR WATER SERVICES 2021 - TYPICAL THRUST BLOCK DETAILS WS03



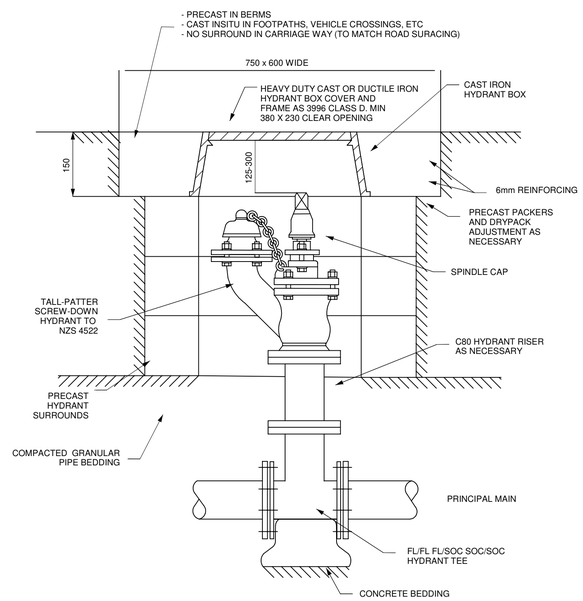
GATE VALVES Ø80 AND ABOVE

NOT TO SCALE



TYPICAL TAPPING TO PE PIPE

NOT TO SCALE



FIRE HYDRANT DETAIL

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- S20-0380-WM-Services Details - D41
- DRAWN JDS
- CHECKED MWC DATE 17/11/2022

SCALE: SCALE AS SHOWN
AT: A1
DRAWING NUMBER: S20-0380-D41
REV: B

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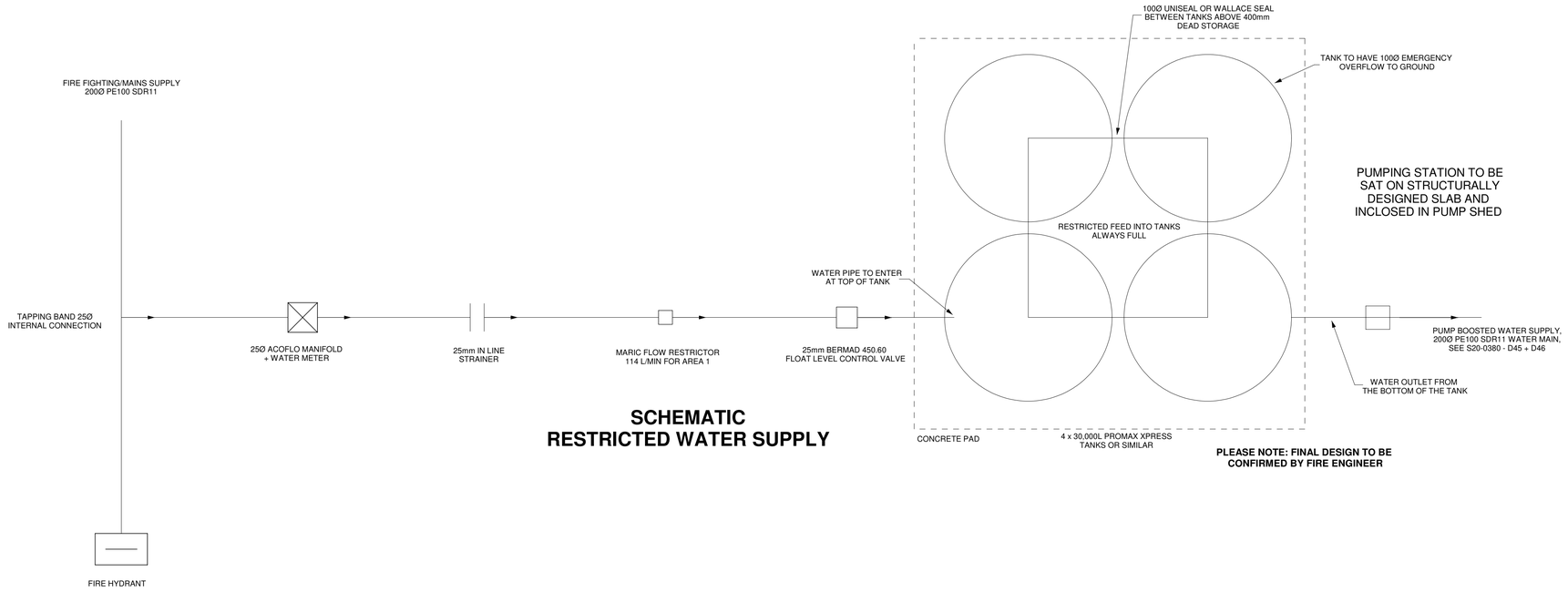
NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	03/07/2023



SCHEMATIC
RESTRICTED WATER SUPPLY

PLEASE NOTE: FINAL DESIGN TO BE CONFIRMED BY FIRE ENGINEER

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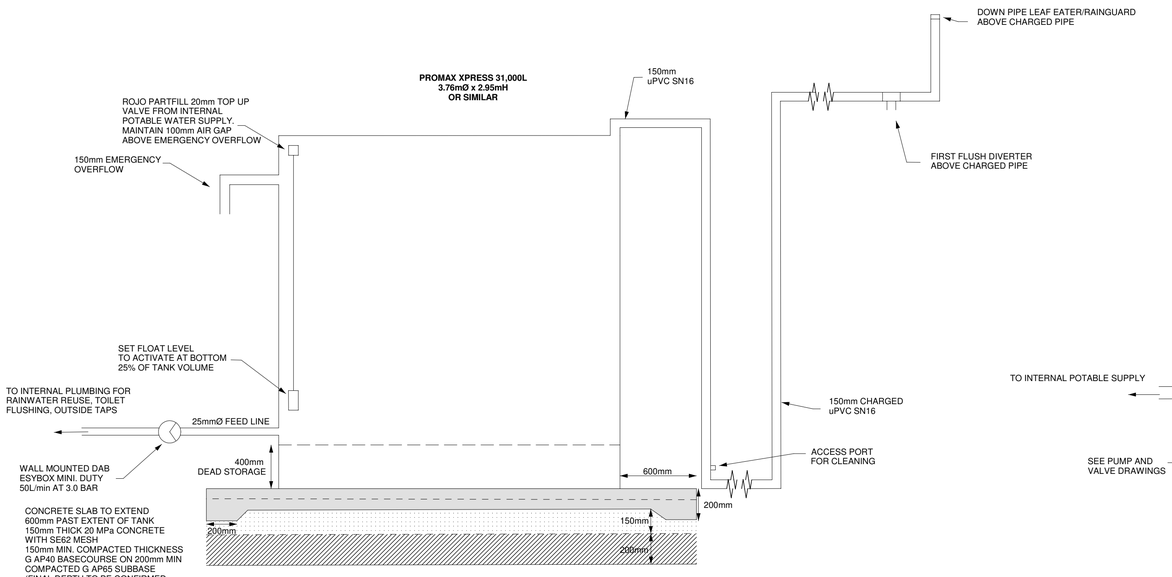
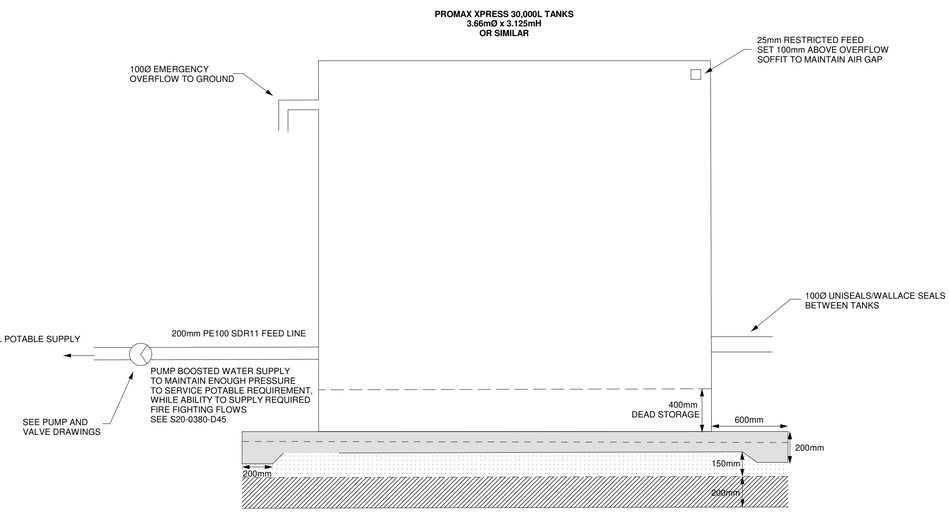


RAINWATER RECYCLE SUPPLY
SCHEMATIC



POTABLE WATER PUMPING STATION
SCHEMATIC

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□ S20-0380-WM-Services Details - D42
□ DRAWN JDS
□ CHECKED MWC □ DATE 17/11/2022

SCALE NOT TO SCALE
AT A1
DRAWING NUMBER S20-0380-D42
REV B

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NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	03/07/2023

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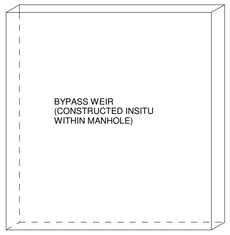
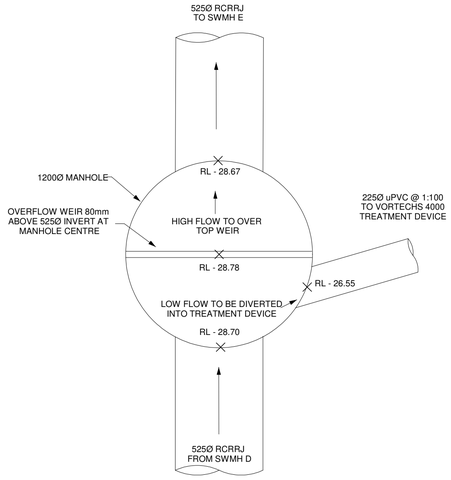
R10 REBAR STARTERS @ 200mm CENTRES
(DRILLED INTO MANHOLE BASE AND SIDES AND EPOXIED)
SE62 MESH CENTRALLY SPACED

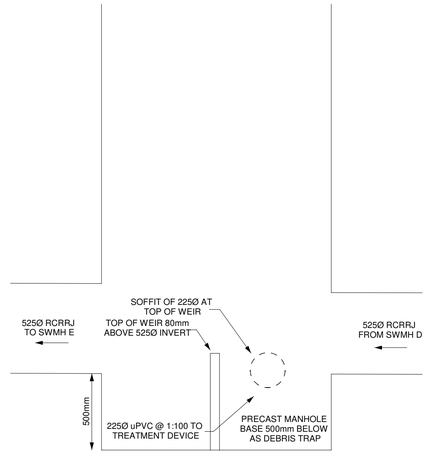
100MM THICK 25mPA CONCRETE



BYPASS WEIR
(INSIDE MANHOLE)

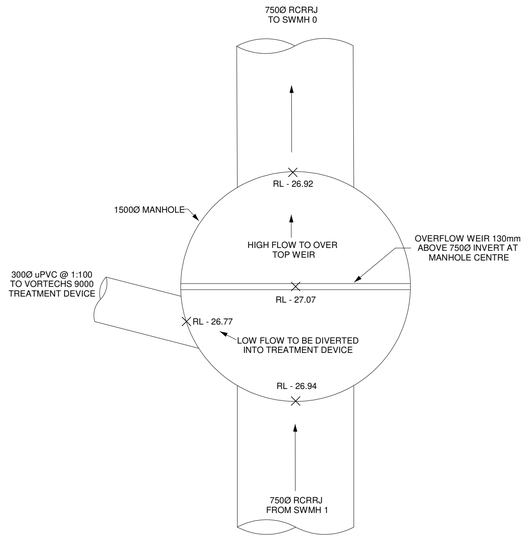
NOT TO SCALE

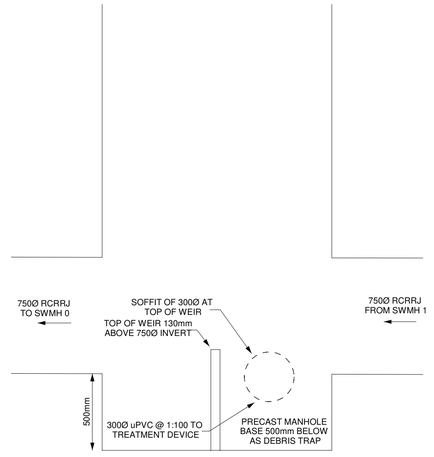




AREA 3 WEIR CHAMBER SCHEMATIC

NOT TO SCALE





AREA 1 WEIR CHAMBER SCHEMATIC

NOT TO SCALE

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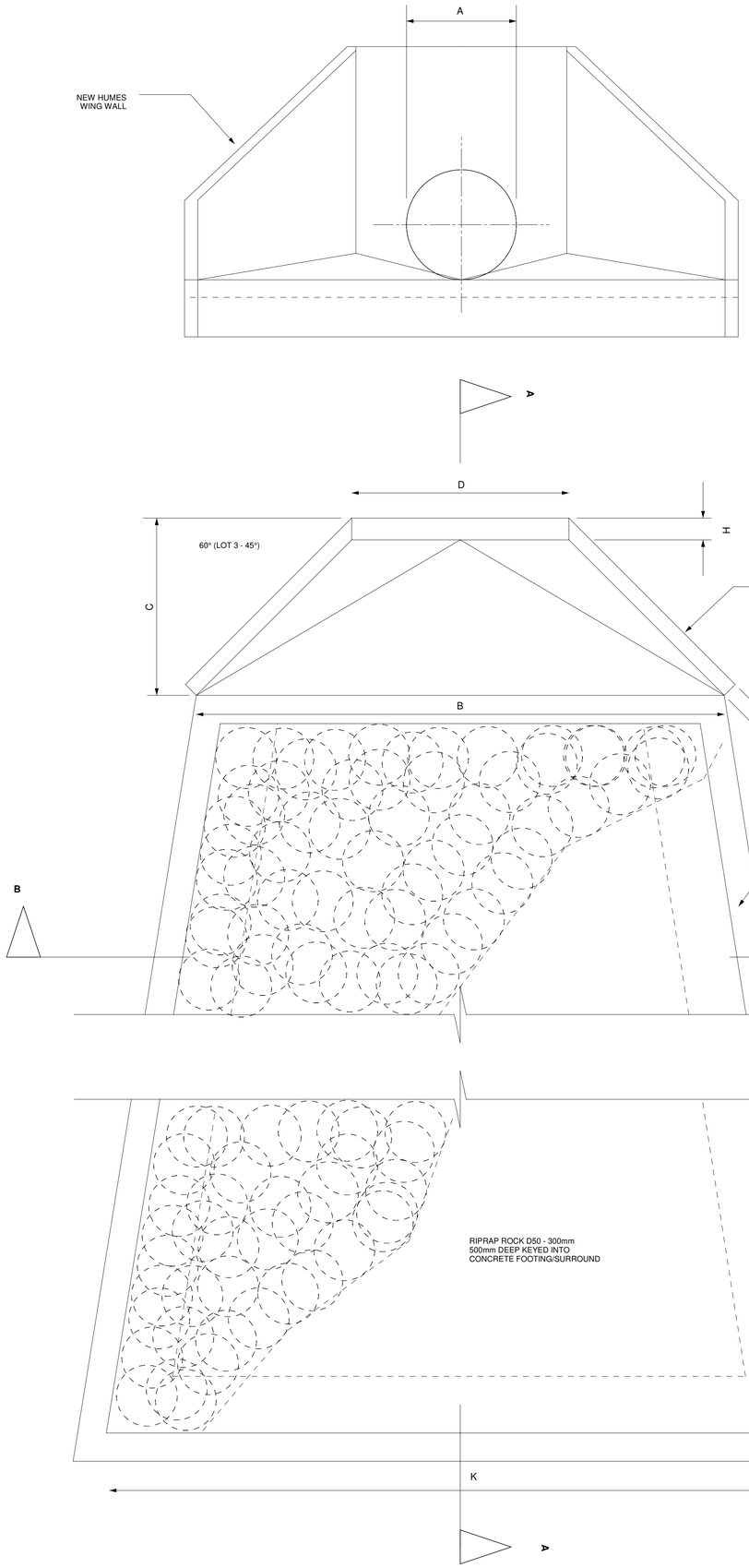
- S20-0380-WM-Services Details - D43
- DRAWN JDS
- CHECKED MWC DATE 17/11/2022

SCALE	AT
SCALE AS SHOWN	A1
DRAWING NUMBER	REV
S20-0380-D43	B

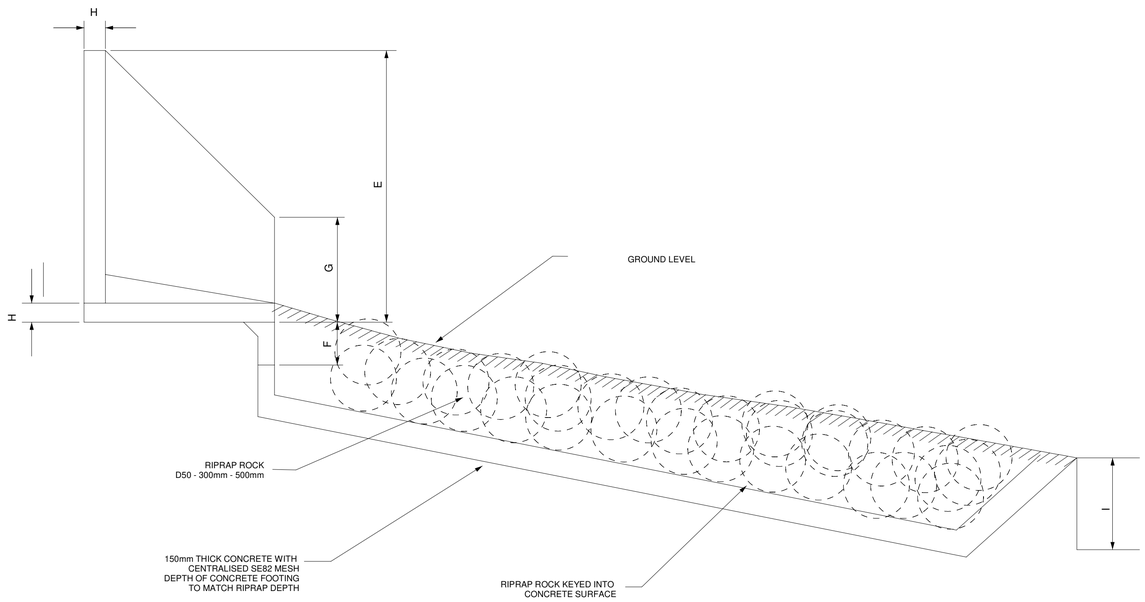
RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	03/07/2023

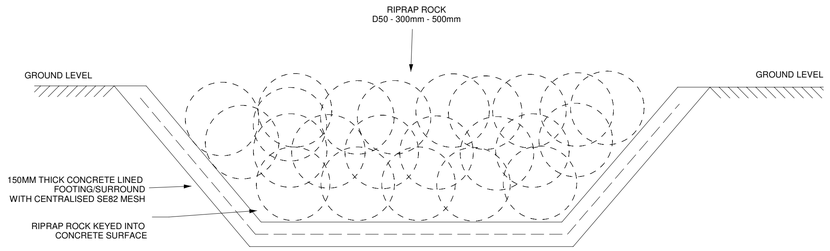


WINGWALL AND RIPRAP DETAIL

NOT TO SCALE



SECTION A - A



SECTION B - B

	RIPRAP AREA 1	RIPRAP AREA 2	RIPRAP AREA 3
A	1300mm		700mm
B	3800mm		2300mm
C	2200mm		825mm
D	1400mm		800mm
E	1550mm		910mm
F	300mm		175mm
G	450mm		395mm
H	125mm		80mm
I	450mm	300mm	320mm
J	7060mm	4800mm	5030mm
K	2250mm	1800mm	1580mm

SIZE TO BE CONFIRMED WITH ENGINEER PRIOR TO BUILDING

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- S20-0380-WM-Services Details - D44
- DRAWN JDS
- CHECKED MWC
- DATE 17/11/2022

SCALE	AT
SCALE AS SHOWN	A1
DRAWING NUMBER	REV
S20-0380-D44	B

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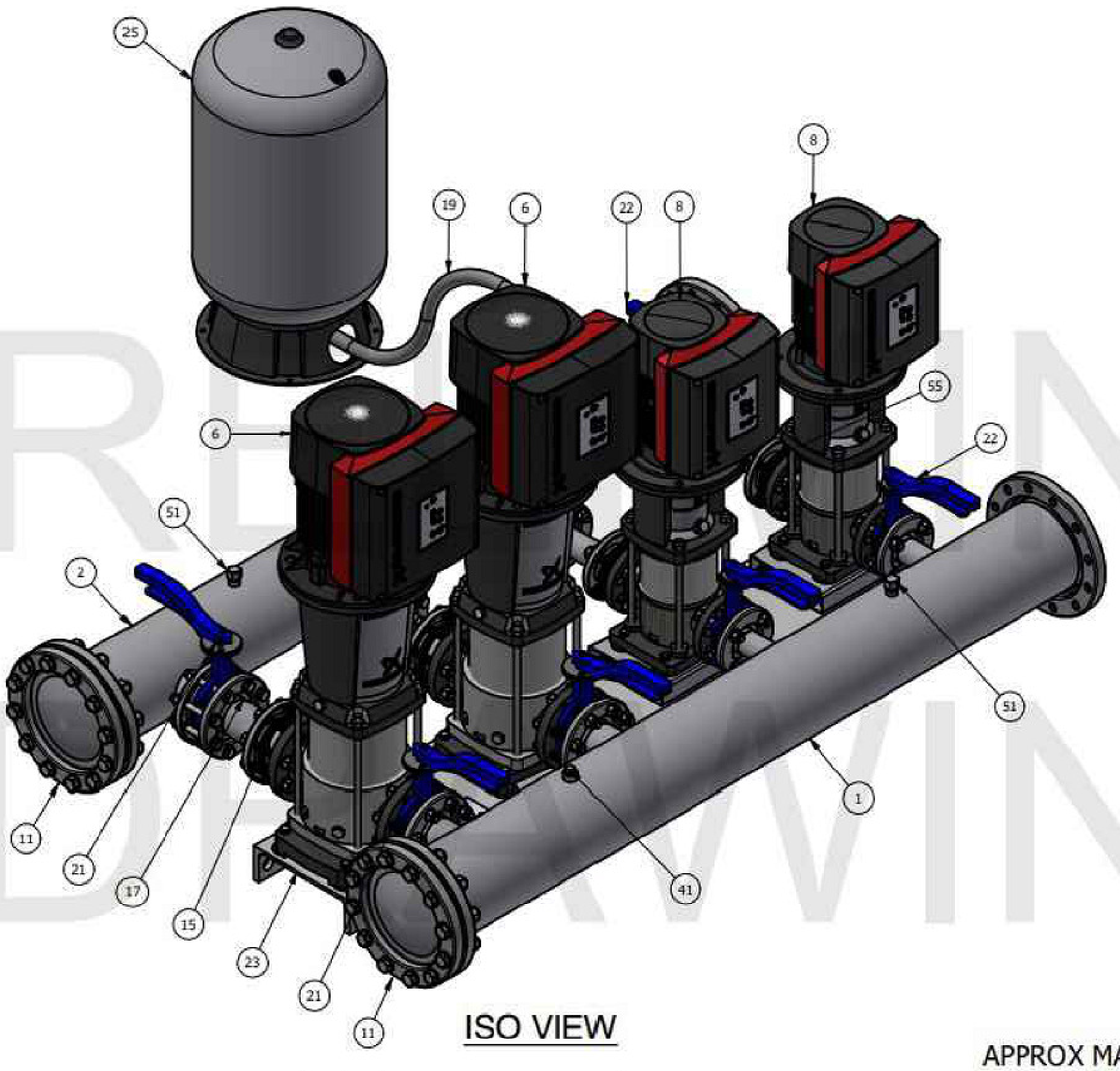
B	UPDATED DESIGN	JDS	03/07/2023



ISO VIEW

APPROX MASS: 775.3 kg

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27/01/2025

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ISSUE	DATE	DATE	BY	APD
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TITLE:
GRUNDFOS BOOSTER PUMPSET
ISOMETRIC VIEW
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CAD FILE:	SCALE:
PV0166	NTS
DRAWN BY:	DESIGNED BY:
RM	RM
DWG NO:	ISSUE:
PV0166.101	.

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- S20-0380-WM-Services Details - D45
- DRAWN JDS
- CHECKED MWC DATE 01/12/2022

SCALE	AT
SCALE AS SHOWN	A1
DRAWING NUMBER	REV
S20-0380-D45	B

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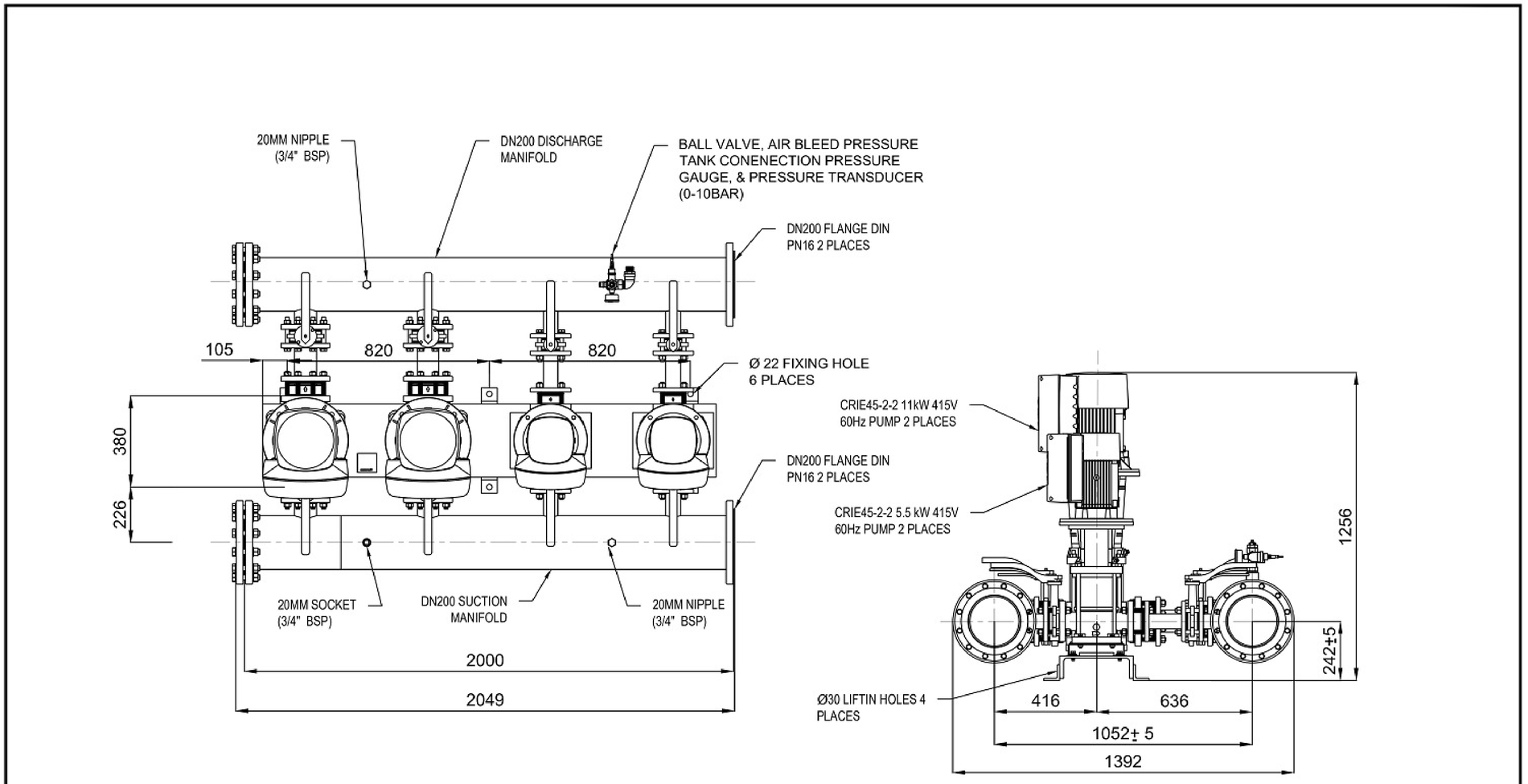
NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	03/07/2023



ISSUE	DATE	DATE	BY	APD
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PLAN, & END VIEW

.

CAD FILE:	SCALE:
PV0166	NTS
DRAWN BY:	DESIGNED BY:
RM	RM
DWG NO:	ISSUE:
PV0166.100	.

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□ S20-0380-WM-Services Details - D46
□ DRAWN JDS
□ CHECKED MWC □ DATE 01/12/2022

SCALE	AT
SCALE AS SHOWN	A1
DRAWING NUMBER	REV
S20-0380-D46	B

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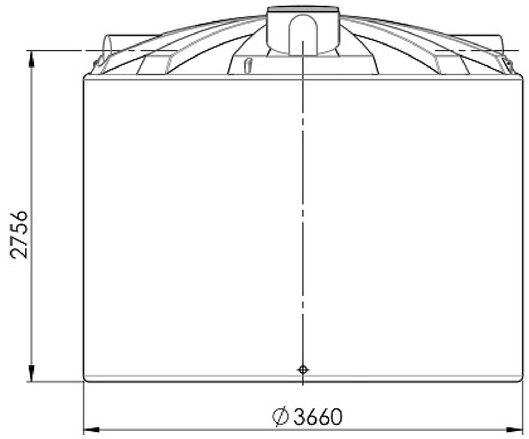
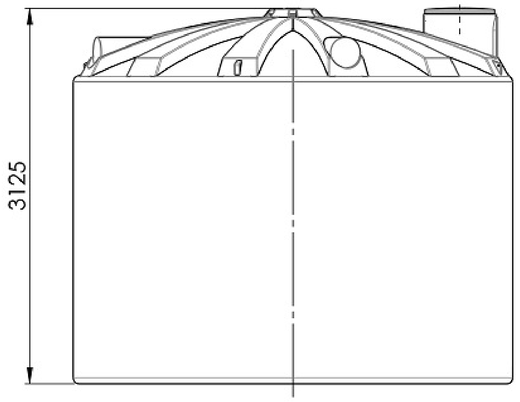
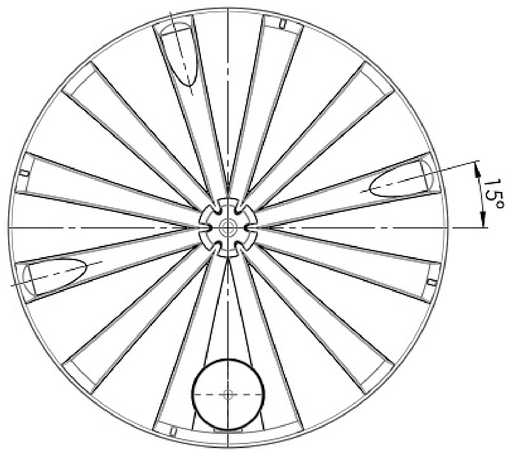
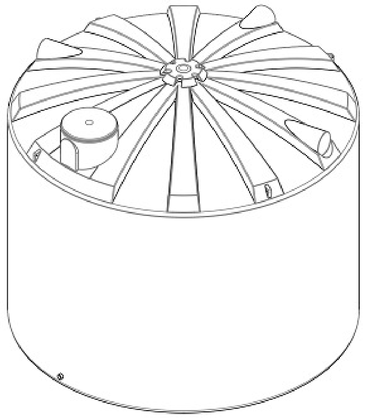
NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	03/07/2023









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			promax ENGINEERED PLASTICS	

	NAME	SIGNATURE	DATE
DRAWN			
CHK'D			
APPV'D			
MFG			
Q.A			

TITLE:	30000 LTR TANK
MATERIAL:	DWG NO. XP1030000 A3
WEIGHT:	SCALE:1:40 SHEET 1 OF 1

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- S20-0380-WM-Services Details - D48
- DRAWN JDS
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B	UPDATED DESIGN	JDS	03/07/2023

ROJO PARTFILL
PRODUCT INFO

Jobe valves

Intertek 5002993 Conforms to NSF/ANSI STD 372

WaterMark AS 1910 Lic 21606 SAI Global

20 L / MIN

20 L / MIN

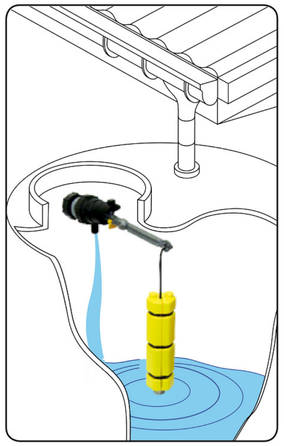
Rojo Partfill

Description

Rojo Partfill is a low flow valve intended for use in rain water harvesting tanks. The purpose of the float valve is to automatically maintain a low level of water in the tank during periods of no or low rainfall. This allows services fed by the tank to continue while leaving capacity in the tank for refilling by the next rain.

Applications

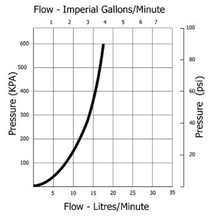
Maintaining water levels in:
- Rain water harvesting tanks
- Water cisterns
- Irrigation and process applications.



Outline of Operation

- The valve is installed through the side wall of a storage tank. It should be mounted above the overflow level of the tank to prevent backflow.
- As the tank empties the weighted float travels down the cord and sits on the bottom stop to activate the valve.
- The valve will run until the weighted float lifts clear of the bottom stop.
- The float will then rise as rainwater fills the tank and falls as the tank water is used.
- The valve will only function at times when rain fall is insufficient to maintain a water level in the tank above the bottom stop.
- The use of a flow restrictor before the valve will not cause the valve to malfunction.

Flow Graph



Features

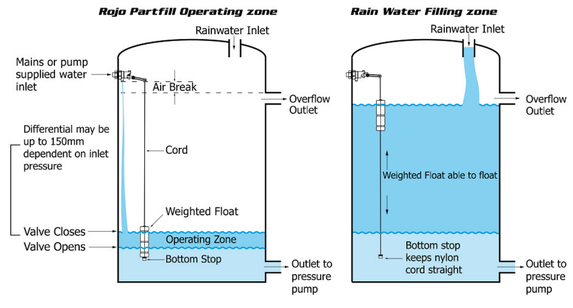
- Ideal for use with all makes and models of rain water harvesting tanks
- Compatible with trickle flow restrictors
- Compact
- Constructed from non corroding materials
- Built in non return valve
- Valve can be locked in off position using the lock off switch

Available Inlet Sizes
15mm (1/2″)
20mm (3/4″)

All supplied with long tail thread with back nut.

Pressure Range
0 – 10 Bar (0 -150 psi)

Typical Installation



Note: Keep overflow, rain water inlet and outlet to pressure pump as far away from the float valve as possible.

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1.13

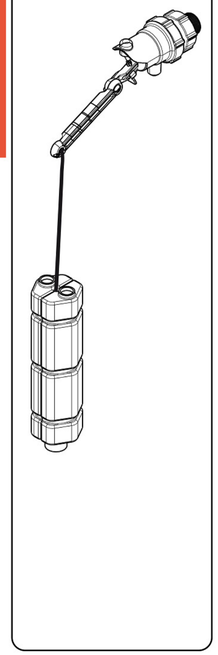
ROJO PARTFILL
DIMENSIONS & MATERIALS

Jobe valves

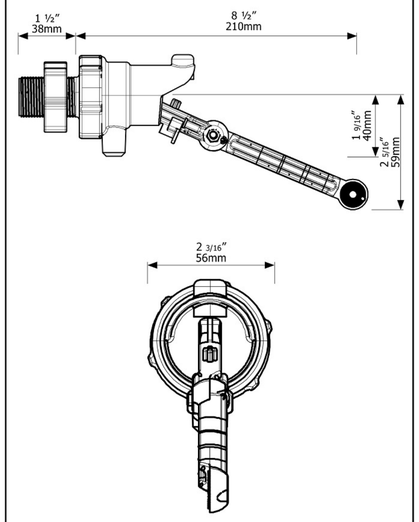
Intertek 5002993 Conforms to NSF/ANSI STD 372

WaterMark AS 1910 Lic 21606 SAI Global

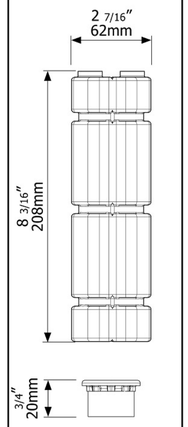
Rojo Partfill



Rojo Dimensions



Float & Weight Dimensions



Part	Material	Part	Material
Valve Body	ABS	**Float**	HDPE
Tail & Nut		**Springs**	
Arm		**Bolts**	304 Stainless Steel
Extension Arms	Glass Filled Nylon	**Nuts**	
Internal Grey Mouldings		**O'Rings**	Nitrile
		Float Cord	Polyester
Yellow Valve Parts	Acetal		
Filter			

Maximum Operating Temperature	60ºC, 140ºF

1.14

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BERMAD Waterworks

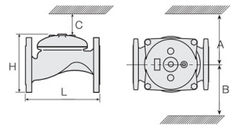
Model: WW-450-60

400 Series

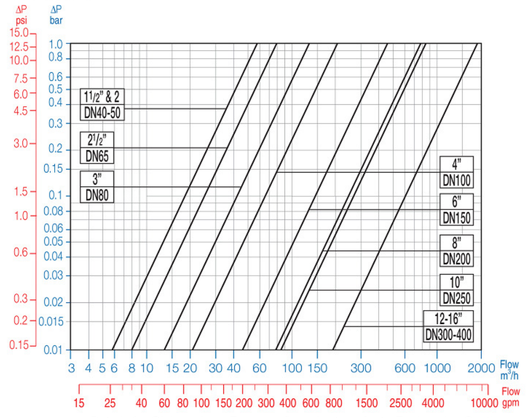
Technical Specifications

Dimensions and Weights

	Size		A, B		C		L		H		Weight	
	DN	inch	DN	inch	DN	inch	DN	inch	DN	inch	kg	lbs
Flange	40	1½	330	13	68	2.7	205	8.1	152	6	8	17.6
	50	2	330	13	68	2.7	205	8.1	155	6.1	9	19.8
	65	2½	340	13	110	4.3	205	8.1	178	7	11	23.1
	80	3	350	14	125	4.9	250	9.8	210	8.3	19	41.9
	100	4	360	14	145	5.7	320	12.6	242	9.5	28	61.7
	150	6	400	16	205	8.1	415	16.3	345	13.6	68	149.9
	200	8	430	17	260	10	500	19.7	430	16.9	125	275.6
	250	10	450	18	275	11	605	23.8	460	18.1	140	308.6
	300	12	515	20	380	15	725	28.5	635	25.0	290	639.3
	350	14	545	22	395	16	742	29.2	655	25.8	358	789.2
	400	16	550	22	580	23	742	29.2	695	27.4	377	831.1
Groove	50	2	310	12	65	2.6	205	8.1	108	4.3	5	11
	80	3	335	13	125	4.9	250	9.8	155	6.1	11	23.4
	100	4	350	14	145	5.7	320	12.6	191	7.5	16	35.7
	150	6	400	16	205	8.1	415	16.3	302	11.9	49	108



Flow Chart



Data is for Globe valves. For more flow charts, refer to Engineering Section

Main valve

Pressure Ratings: 16 bar; 232 psi
Connections Standard:
Flanged: ISO 7005-2 (PN10 & 16);
ANSI B16.42 (#150)
Grooved: ANSI C606
Threaded: Rp ISO 7/1 (BSP.P) or NPT
Others: Available on request
Operating Pressure Range: 0.5-16 bar; 7-232 psi
For lower pressure requirements, consult factory
Working Temperature: Water up to 50°C (122°F)
Standard Materials:
Body and Cover:
Fusion Bonded Epoxy, RAL 5005 (Blue) Coated Ductile Iron
Spring: Stainless Steel 302
Diaphragm: Nylon fabric Reinforced NR with rugged insert
Bolts, Studs and Nuts: Zinc-Cobalt plated Steel

Control System

Float Standard Materials:
Pilot body: Stainless Steel or Brass
Internals: Plastic
Working temperature: Water up to 50ºC (125ºF)
Pressure rating: 16 bar (230 psi)
If inlet pressure is below 0.7 bar (10 psi) orabove 10 bar (150 psi) consult factory

How to Order

Please specify the requested valve in the following sequence: (for more options, refer to Ordering Guide.)

Sector	Size	Primary Feature	Additional Feature		Pattern	Body Materials	End Connections	Coating	Voltage & Position	Tubing & Fittings	Additonal Attributes
WW	6"	450	60	-	G	C	16	EB	-	NN	I
Waterworks	1½ - 16" DN40-400	Level Control									

			Closing Surge Prevention 49 Modulating Horizontal Float 60 Bi-Level Electric Float 65 Bi-Level Vertical Float 66 Modulating Vertical Float 67 Altitude Pilot 80 Modulating Altitude Pilot 82 Sustaining Altitude Pilot 83 Bi-Level Altitude Control 86		Globe G Angle (up to 4") A	Ductile Iron (Standard) C Cast Steel S St. Steel 316 N Nickel Alumin. Bronze U	Epoxy FB Blue EB Polyester Green PG Polyester Blue PB Uncoated UC		St. St. 316 Tubing & Fittings NN Copper Tubing & Brass Fittings CB Plastic Tubing & Brass Fittings PB		
			2-14 Meter Setting Altitude Pilot M6 5-22 Meter Setting Altitude Pilot M5 15-35 Meter Setting Altitude Pilot M4 25-70 Meter Setting Altitude Pilot M8			ISO-16 16 ANSI-150 A5 JIS-10 J1 Grooved (2-6") VI BSP.P (1¼-3") BP NPT (1¼-3") NP Other end connections available on request	24VAC/50Hz - N.C. 4AC 24VAC/50Hz - N.O. 4AO 24VDC - N.C. 4DC 24VDC - N.O. 4DO 24VDC - L.P. 4DP 220VAC/50Hz - N.C. 2AC 220VAC/50Hz - N.O. 2AO Use when additional electric control feature is selected		Valve Position Indicator I Large Control Filter F Orifice Assembly U Electric Limit Switch S St. St. 316 Control Accessories N Multiple choices permitted		

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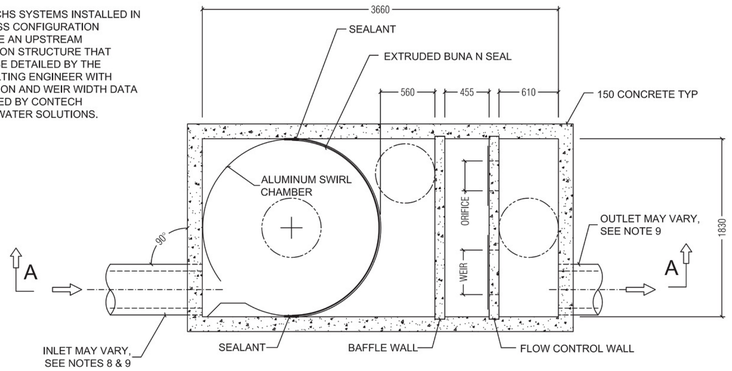
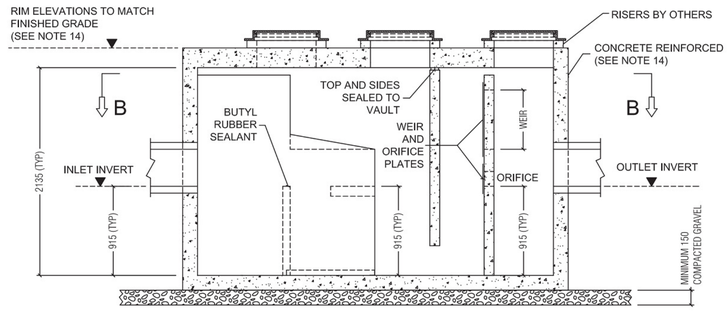
NOTE:
VORTECHS SYSTEMS INSTALLED IN A BYPASS CONFIGURATION REQUIRE AN UPSTREAM DIVERSION STRUCTURE THAT SHALL BE DETAILED BY THE CONSULTING ENGINEER WITH ELEVATION AND WEIR WIDTH DATA PROVIDED BY CONTECH STORMWATER SOLUTIONS.



PLAN VIEW B - B



SECTION A - A

NOTES:
1. STORMWATER TREATMENT SYSTEM (SWTS) SHALL HAVE:
   PEAK TREATMENT CAPACITY: 170L/S
   SEDIMENT STORAGE: 1.84M3
   SEDIMENT CHAMBER DIA: 1829MM
2. SWTS SHALL BE CONTAINED IN ONE RECTANGULAR STRUCTURE
3. SWTS REMOVAL EFFICIENCY SHALL BE DOCUMENTED BASED ON PARTICLE SIZE
4. SWTS SHALL RETAIN FLOATABLES AND TRAPPED SEDIMENT UP TO AND INCLUDING PEAK TREATMENT CAPACITY
5. SWTS INVERTS IN AND OUT ARE TYPICALLY AT THE SAME ELEVATION
6. SWTS SHALL NOT BE COMPROMISED BY EFFECTS OF DOWNSTREAM TAILWATER
7. SWTS SHALL HAVE NO INTERNAL COMPONENTS THAT OBSTRUCT MAINTENANCE ACCESS
8. INLET PIPE MUST BE PERPENDICULAR TO THE STRUCTURE
9. PIPE ORIENTATION MAY VARY; SEE SITE PLAN FOR SIZE AND LOCATION
10. PURCHASER SHALL NOT BE RESPONSIBLE FOR ASSEMBLY OF UNIT
11. MANHOLE FRAMES AND PERFORATED COVERS SUPPLIED WITH SYSTEM, NOT INSTALLED
12. PURCHASER TO PREPARE EXCAVATION AND PROVIDE CRANE FOR OFF-LOADING AND SETTING AT TIME OF DELIVERY
13. VORTECHS SYSTEMS BY STORMWATER360:
    AUCKLAND (09) 476 5586 BRISBANE (07) 3272 1872 SYDNEY (02) 9525 5833
14. VORTECHS SYSTEM HAS BEEN DESIGNED IN ACCORDANCE WITH RELEVANT AUSTRALIAN ANS NEW ZEALAND STANDARDS FOR 0-2m FILL AND T44 (HNHO-72) LIVE LOADINGS ONLY. FOR OTHER LOADING CONDITIONS PLEASE CONTACT STORMWATER360.

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Stormwater360

STORMWATER360
STORMWATER TREATMENT SYSTEM
VORTECHS MODEL 4000 METRIC
STANDARD DETAIL

DRAWING 1 A

DATE: 18.11.07 | SCALE: N.T.S. | FILE NAME: STD4KM | DRN: R.P. | CHK: M.W.

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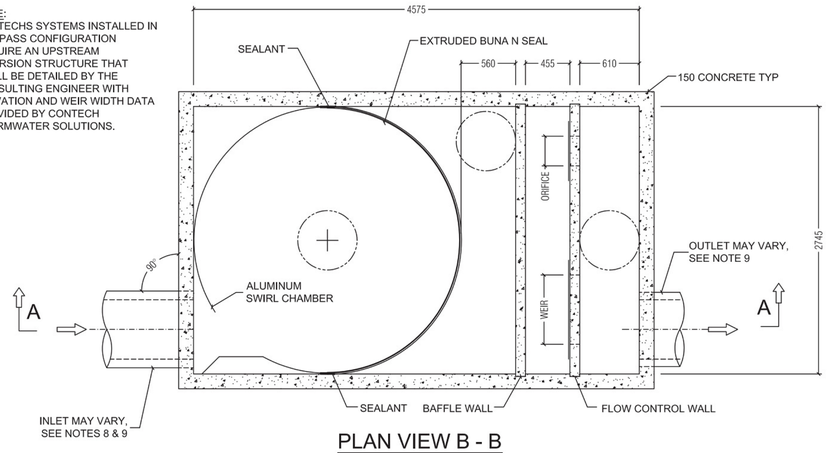
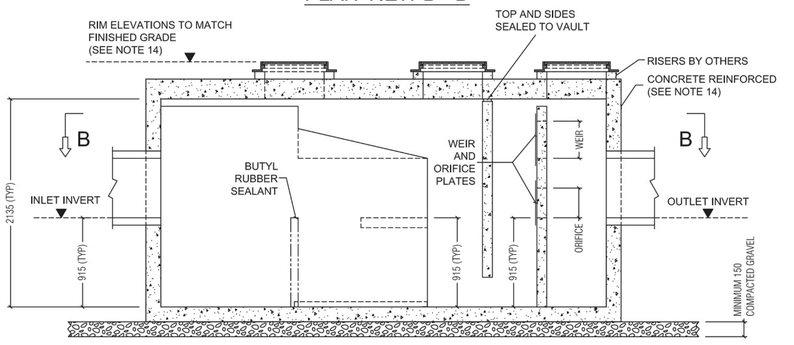


PLAN VIEW B - B



SECTION A - A

NOTES:
1. STORMWATER TREATMENT SYSTEM (SWTS) SHALL HAVE:
   PEAK TREATMENT CAPACITY: 396L/S
   SEDIMENT STORAGE: 3.67M3
   SEDIMENT CHAMBER DIA: 2743MM
2. SWTS SHALL BE CONTAINED IN ONE RECTANGULAR STRUCTURE
3. SWTS REMOVAL EFFICIENCY SHALL BE DOCUMENTED BASED ON PARTICLE SIZE
4. SWTS SHALL RETAIN FLOATABLES AND TRAPPED SEDIMENT UP TO AND INCLUDING PEAK TREATMENT CAPACITY
5. SWTS INVERTS IN AND OUT ARE TYPICALLY AT THE SAME ELEVATION
6. SWTS SHALL NOT BE COMPROMISED BY EFFECTS OF DOWNSTREAM TAILWATER
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STORMWATER TREATMENT SYSTEM
VORTECHS MODEL 9000 METRIC
STANDARD DETAIL

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Hynds Megapit®

Technical Guide D5.10

Hynds Megapit® units are designed for installation in areas where there is a need to intercept very high volumes of stormwater (up to 800 litres/second).

Applications

- Capture of very high flow stormwater
- Provision of extended inlet capacity
- Inner city locations

Product Attributes

- Simple installation (refer to installation guide)
- Two piece unit
- Multiple stormwater capture
- Narrow footprint
- Robust construction
- Low maintenance

Approvals/Standards

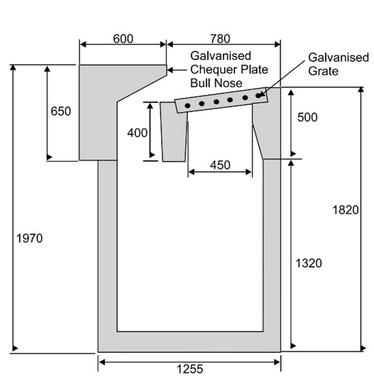
- Designed in accordance with Auckland Transport Code of Practice RD045
- NZS 3109 Concrete Construction

Quality

- ISO 9001:2008 Quality Management Standard

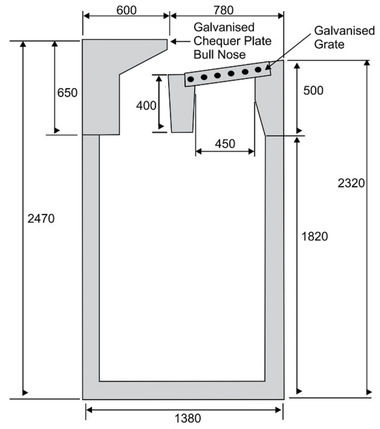
We are the supply partner of choice for New Zealand's civil construction industry, specialising in water and infrastructure based solutions.

HYNDS PIPE SYSTEMS



Scale: NTS

FIG. 1 Figure 1: Standard Megapit®.



Scale: NTS

FIG. 2 Figure 2: Extra deep Megapit®.

TABLE 1 Megapit Flow Capacities

Gutter flow depth (mm)	200	150	100
Average head over grate (mm)	150	100	50
Length of back entry (m)	3.24	3.24	3.24
Length of grate (m)	2.88	2.88	2.88
Theoretical flow (Litres/second)	800	680	500

TABLE 2 Megapit Inlet Dimensions

Unit	Length (mm)	Width (m)	Depth (m)	Weight (kg)
Tank (Standard)	3620	1255	1320	5960
Tank (Extra Deep)	3620	1380	1820	8400
Lid	3620	1380	650 / 500	3760

Lifting and Handling

All Hynds Megapits® incorporate Swiftlift lifting anchors for safe lifting and must be used with the correct lifting clutch.

Hynds Pipe Systems has designed and manufactured Hynds Megapits® with a minimum dynamic factor of 1.2. This dynamic factor requires that all the following conditions are observed when lifting, moving or placing the Megapits:

1. Lifting with mobile plant *(such as an excavator or similar)* where equipment is specifically exempt from the requirements of the PECPR Regulations 1999, subject to the conditions outlined in the New Zealand Gazette, No. 104, September 2015 and
2. Lifting, travelling and placing over rough or uneven ground where anchor failure is not anticipated to cause harm or injury, by adopting procedures such as:
   a. Transporting the element as close as practical to ground level (300mm recommended)
   b. Establishing and maintaining exclusion zones
   c. Transporting only precast concrete elements that are unlikely to topple if they were to hit the ground
   d. Inspecting lifting anchors both after transportation and before final lifting into place

Refer to "Safe work with precast concrete - Handling, transportation and erection of precast concrete elements" published by Worksafe New Zealand (October 2018)

Shock loads resulting from travelling with suspended Megapits over rough terrain and uneven ground may exceed design, dynamic and safety factors of the lifting systems. It is essential that care is taken during lifting and transporting as additional stresses could result in anchor failure.

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- S20-0380-WM-Services Details - D52
- DRAWN JDS
- CHECKED MWC
- DATE 01/12/2022

SCALE: SCALE AS SHOWN
AT: A1
DRAWING NUMBER: S20-0380-D52
REV: B

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	03/07/2023

TECHNICAL INFORMATION

e.sybox

GENERAL DESCRIPTION

DAB Pumps are proud to officially launch a brand new innovative product to the Australian market, leading the way in electronic pump technology. The E.SYBOX is a completely new solution in rainwater harvesting and cold water boosting for residential and light commercial applications. It's an all in one pump and control solution comprising of a single pump, water cooled booster pump with integrated high efficiency variable speed motor

But the E.sybox offers much more....
please see our commercial documentation for further details.

DESIGN FEATURES

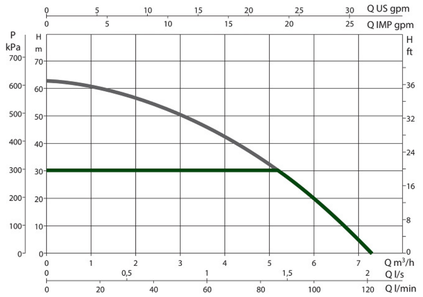
- Water cooled motor and sound dampening casing creating the quietest booster pump available today
- Energy efficient variable speed motor operating from 0.3 KW to 1.5 KW
- Powerful performance Flow up to 2 Litres/second and head up to 6 Bar
- Self priming down to 5 Metres
- Dry running protection
- Frost protection
- Anti-vibration mountings
- Flexible installation with Horizontal or vertical position and wall mounting accessory kit
- Variable positions for in-let and out-let pipework
- Integrated chamber with expansion vessel, tool kit and installer manual
- Wireless connectivity and modular design can expand the pump system up to a 4 pump booster set (available end of 2013)
- Integrated modular water storage tank system with Cat 5 connection (available end of 2013)

Part No: DAB-E.SYBOX
Item Code: 800621

TECHNICAL DATA

MODEL	VOLTAGE	FREQUENCY	CONNECTION SIZE		ELECTRICAL DATA			
			SUCTION	DISCHARGE	MAX A	MAX POWER	PROTECTION CLASS	MOTOR CLASS
e.sybox	220-240 V / 1 ~	50/60 Hz	1" BSP F	1" BSP F	10 AMP	1550 W	IP44	F

PERFORMANCE



OVERALL DIMENSIONS			WEIGHT EMPTY	MAX WORKING PRESSURE	MAX LIQUID TEMPERATURE	MAX WORKING ENVIRONMENT
W	D	H				
263 mm	352 mm	564 mm	27 KG	8 Bar	+ 40 ° C	+ 50 ° C

INTEGRATED SYSTEM PROTECTION INCLUDES:
- Protection agsinst dry running (Auto & manual reset options)
- Antifreeze protection
- Anticyling protection
- Motor overload protection
- Protection against abnormal supply voltages
- Protection against excessive temperatures

* DEFAULT SETTING

Maximum Flow: 120 Litres/Minute
Maximum Head: 65 Metres
Priming: 5 Mins at 8 Metres

See more about e.sybox
www.dabpumps.com/e.sybox

V1. 0713

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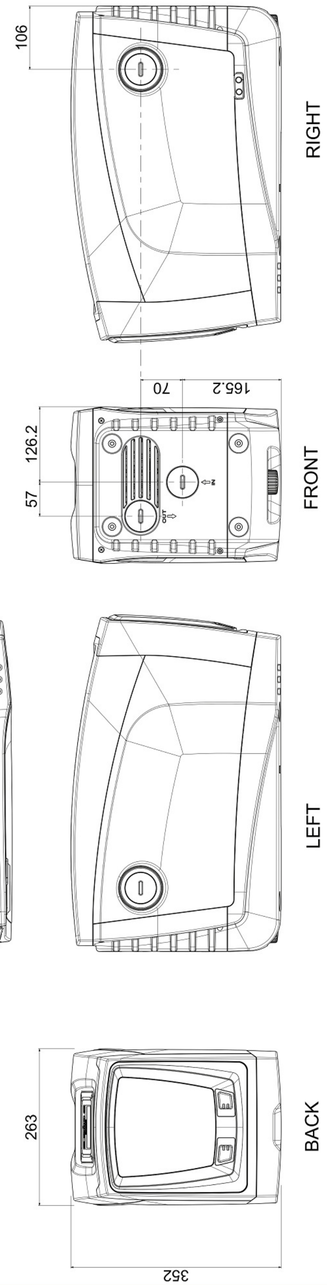
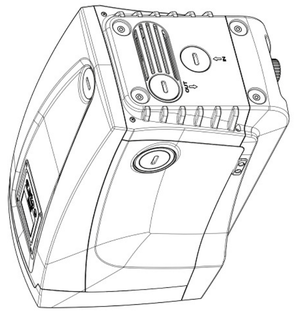
e.sybox





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BENMORE CRESCENT,
MANOR PARK

DRAWING TITLE
SERVICES DETAILS
14 OF 16

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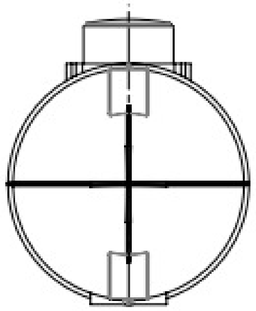
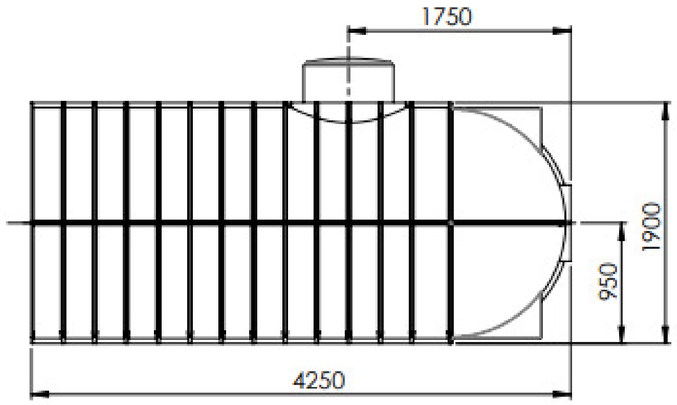
☐ S20-0380-WM-Services Details - D53
☐ DRAWN JDS
☐ CHECKED MWC ☐ DATE 01/12/2022

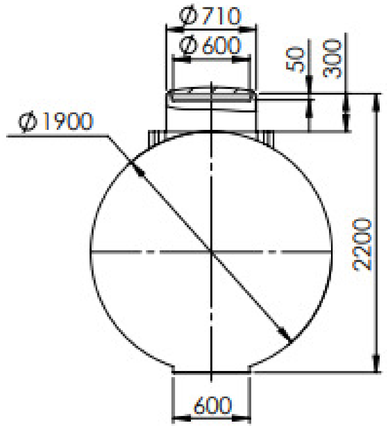
SCALE: SCALE AS SHOWN
AT: A1
DRAWING NUMBER: S20-0380-D53
REV: B

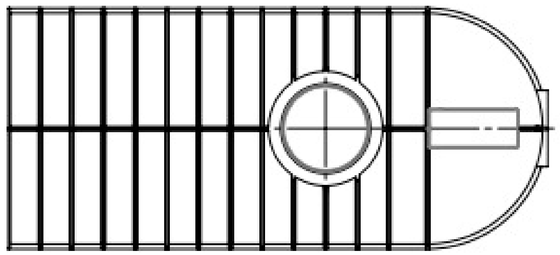
RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

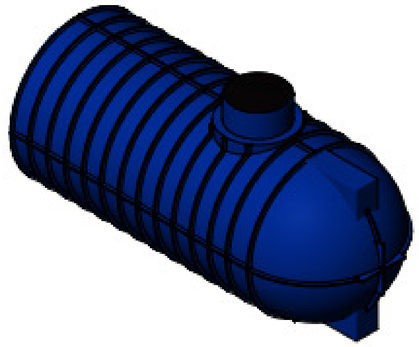
NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	03/07/2023











NOTES:

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			promax ENGINEERED PLASTICS	

	NAME	SIGNATURE	DATE
DRAWN			
CHK'D			
APPV'D			
MFG			
Q.A.			

MATERIAL:

WEIGHT:

TITLE: 10000L UNDERGROUND TANK

DWG NO. UX1910000

A3

SCALE:1:40

SHEET 1 OF 1

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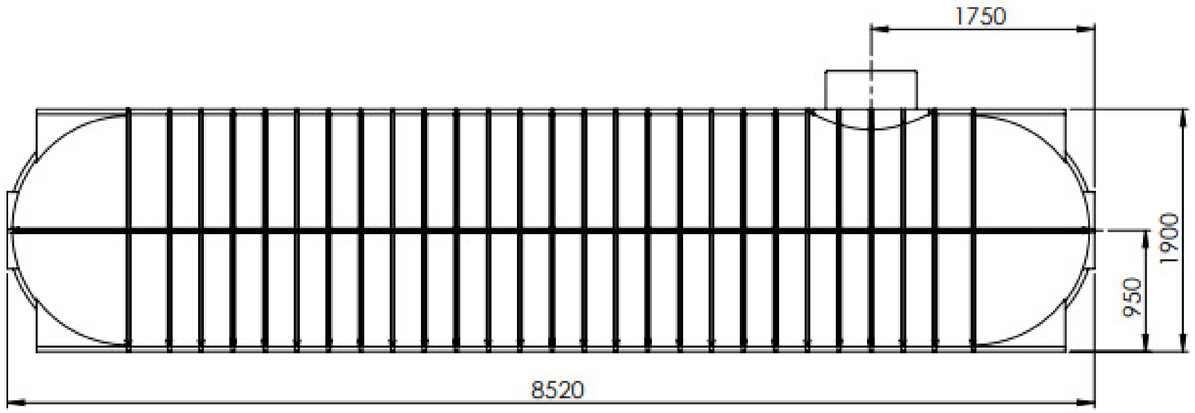
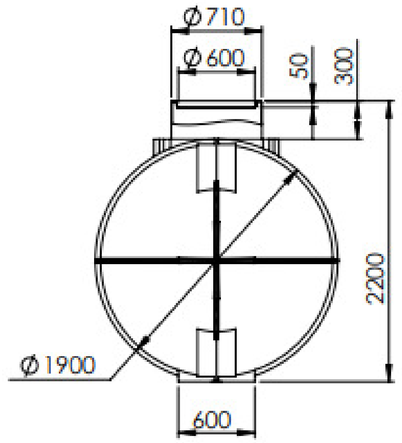
- S20-0380-WM-Services Details - D54
- DRAWN JDS
- CHECKED MWC
- DATE 19/12/2022

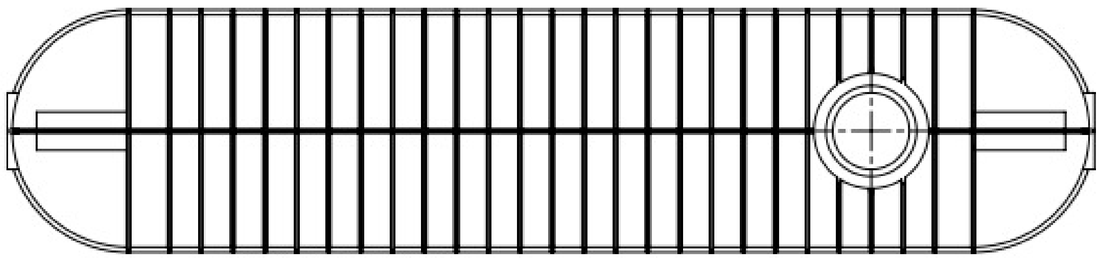
SCALE: SCALE AS SHOWN
AT: A1
DRAWING NUMBER: S20-0380-D54
REV: B

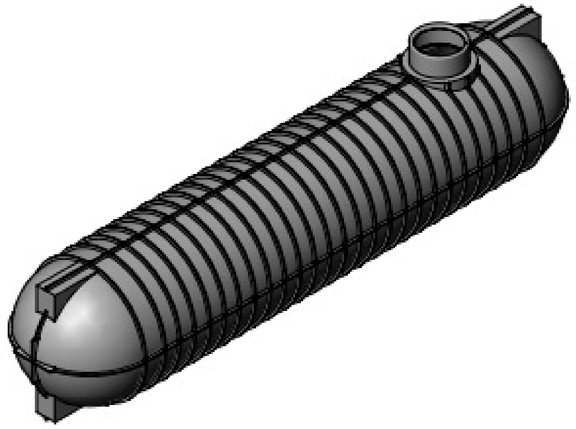
RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FIRST ISSUE		
B	UPDATED DESIGN	JDS	03/07/2023









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	NAME	SIGNATURE	DATE		promax ENGINEERED PLASTICS	
DRAWN					TITLE: 20000 LTR UNDERGROUND TANK	
CHK'D						
APPV'D						
MFG						
Q.A.				MATERIAL:	DWG NO. UX1920000	A3
				WEIGHT:	SCALE:1:40	SHEET 1 OF 1

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- S20-0380-WM-Services Details - D55
- DRAWN JDS
- CHECKED MWC DATE 19/12/2022

SCALE	AT
SCALE AS SHOWN	A1
DRAWING NUMBER	REV
S20-0380-D55	B

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FOR CONSENT	BES	
B	CIVIL CHANGES	BES	14/12/22

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SEWER STREAM CROSSING AND CULVERT HEADER WALL

AT

BENMORE CRESENT
MANOR PARK
UPPER HUTT

FOR

ROSCO INDUSTRIAL

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DRAWING NO.	REV.	TITLE
E21-0101-00	B	DRAWING REGISTER & LOCALITY PLAN
E21-0101-01	A	SITE PLANS
E21-0101-10	B	SERVICES BRIDGE SITE PLAN
E21-0101-11	B	SERVICES BRIDGE SECTION 1
E21-0101-12	B	SERVICES BRIDGE DETAILS
E21-0101-13	A	SERVICES BRIDGE DETAILS
E21-0101-20	A	CULVERT HEAD SITE PLAN
E21-0101-21	B	FOUNDATION PLAN
E21-0101-22	A	ROAD LEVEL PLAN
E21-0101-23	B	SECTION 1 & 2
E21-0101-24	B	DETAILS
E21-0101-25	A	DETAILS

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BENMORE CRESENT
BENMORE CRESENT

DRAWING TITLE
DRAWING REGISTER &
LOCALITY PLAN

DESIGNED	CAD FILE E21-0101+00
DRAWN BES	FIELD BOOK
CHECKED	DATE
SCALE AS SHOWN	SIZE A1
DRAWING NUMBER E21-0101-00	REV B

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
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SITE PLAN
1:1000 AT A1
1:2000 AT A3

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CULVERT HEAD
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DRAWING TITLE
SITE PLAN

DESIGNED	CAD FILE E21-0101+00
DRAWN BES	FIELD BOOK
CHECKED	DATE
SCALE AS SHOWN	SIZE A1
DRAWING NUMBER E21-0101-01	REV A

SURVEYING - STRUCTURAL - CIVIL - FIRE
RESOURCE MANAGEMENT - LAND PLANNING - SU

NO	REVISION	BY	DATE
A	FOR CONSENT	BES	
B	CIVIL CHANGES	BES	14/12/22

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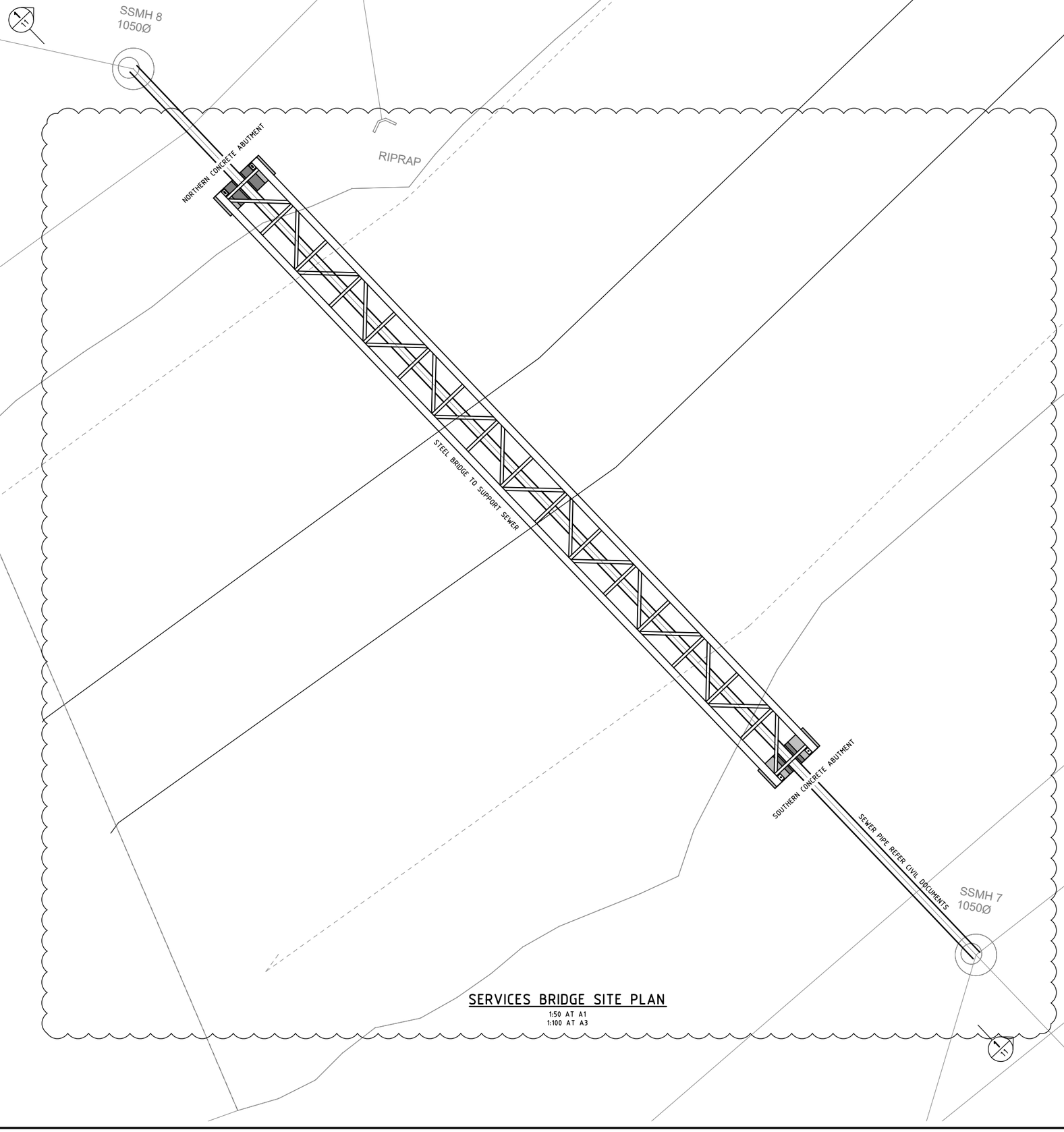

SERVICES BRIDGE SITE PLAN

1:50 AT A1
1:100 AT A3

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DRAWING TITLE
SERVICES BRIDGE
SITE PLAN

DESIGNED	CAD FILE E21-0101+00
DRAWN BES	FIELD BOOK
CHECKED	DATE
SCALE AS SHOWN	SIZE A1
DRAWING NUMBER E21-0101-10	REV B

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FOR CONSENT	BES	
B	CIVIL CHANGES	BES	14/12/22

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NOTE
- CONFIRM LEVELS WITH CIVIL ENGINEERING DRAWINGS.
- GROUND BEARING CAPACITY TO BE CONFIRMED ONSITE BY ENGINEER.

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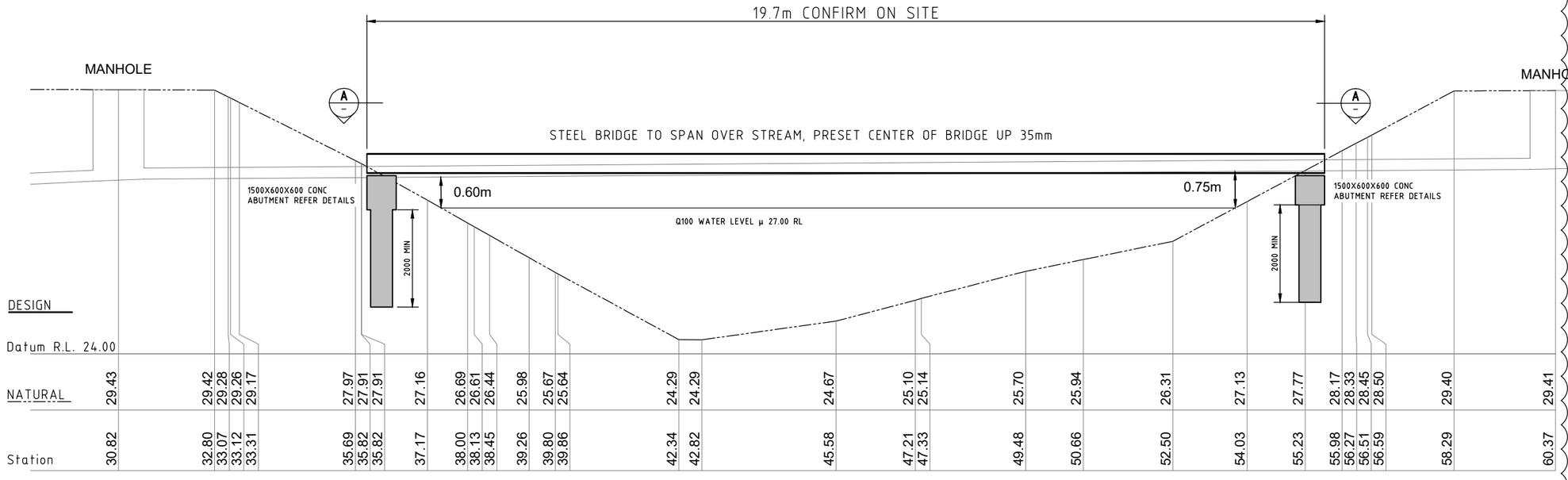
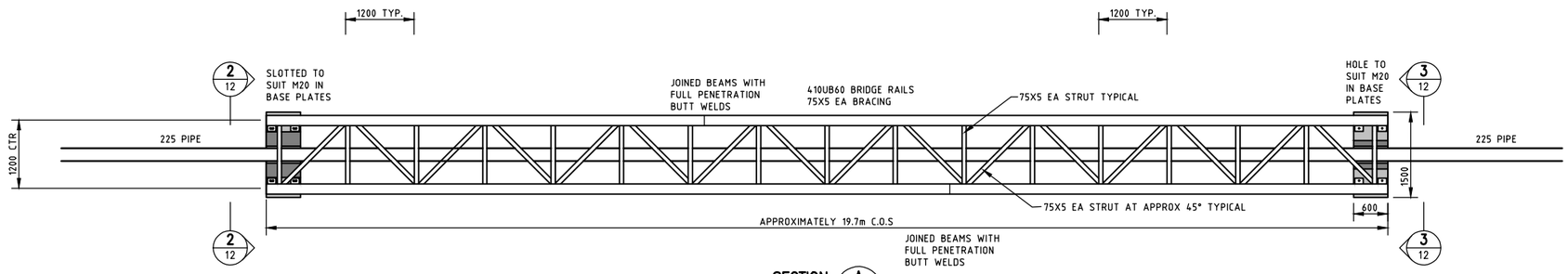


SECTION 1 / 10
1:50 AT A1
1:100 AT A3



SECTION A / –
1:50 AT A1
1:100 AT A3

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BENMORE CRESENT
BENMORE CRESENT

DRAWING TITLE
SECTIONS

DESIGNED		CAD FILE	E21-0101+00
DRAWN	BES	FIELD BOOK	
CHECKED		DATE	
SCALE	AS SHOWN	SIZE	A1
DRAWING NUMBER	E21-0101-11	REV	B

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FOR CONSENT	BES	
B	CIVIL CHANGES	BES	14/12/22

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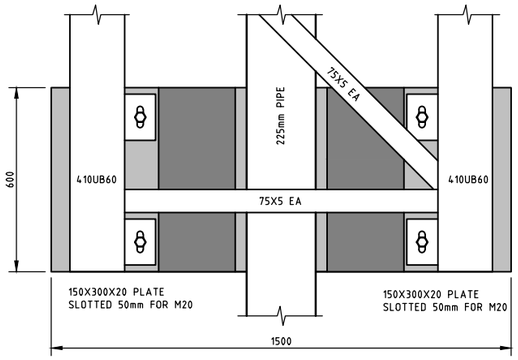
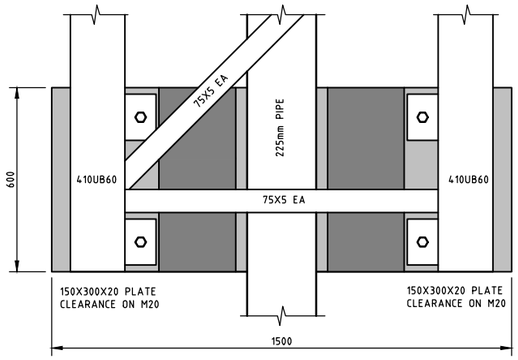
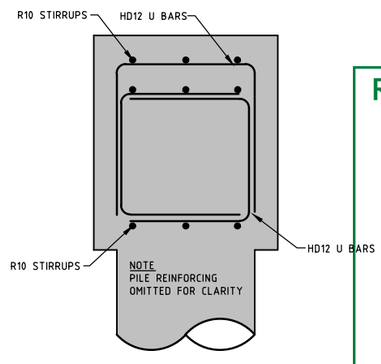


SECTION 2A
1:10 AT A1
1:20 AT A3



SECTION 3A
1:10 AT A1
1:20 AT A3



SECTION X
1:10 AT A1
1:20 AT A3

RESOURCE CONSENT

GRANTED
27/01/2025

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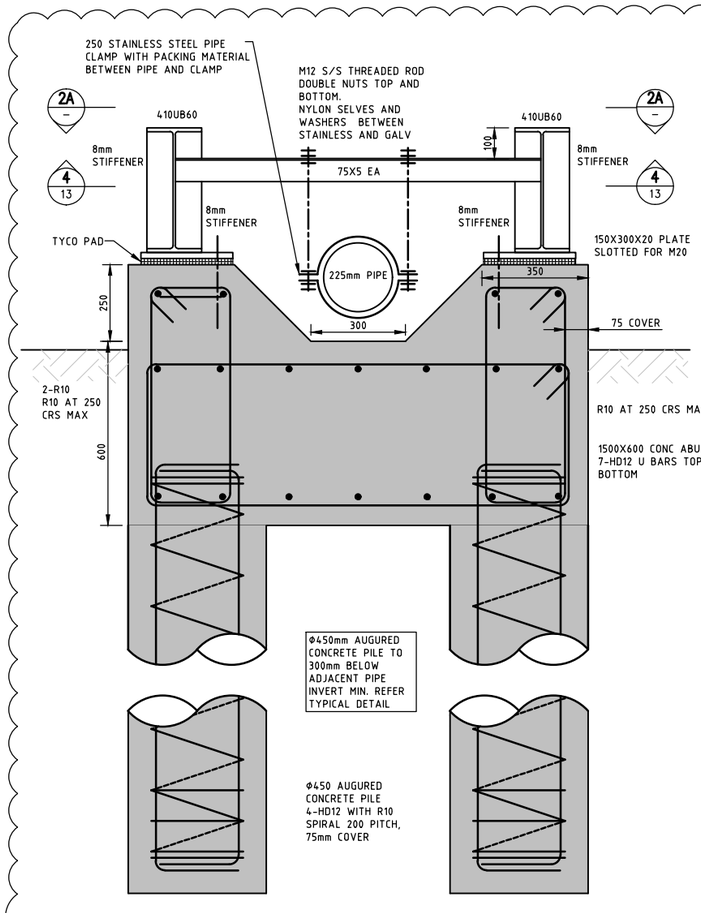
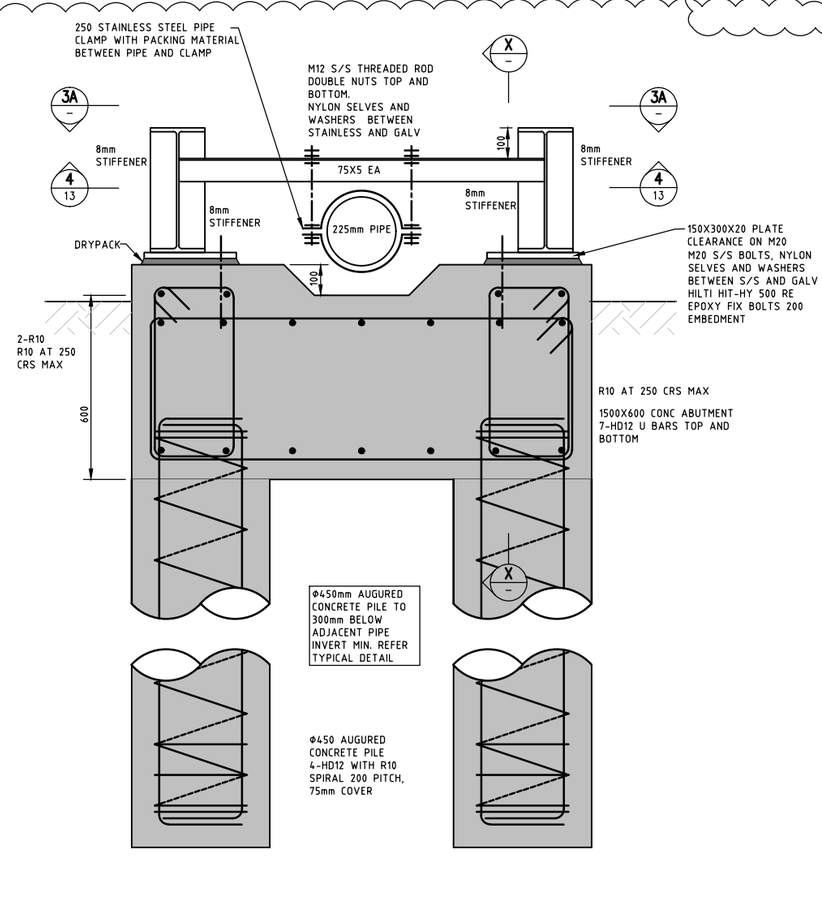


SOUTHERN ABUTMENT
SECTION 2/11
1:10 AT A1
1:20 AT A3



NORTHERN ABUTMENT
SECTION 3/11
1:10 AT A1
1:20 AT A3

NOTE

- ALL STEEL TO BE HDG600 P3I IN ACCORDANCE WITH NZS2312.
- NYLON SELVES AND WASHERS TO BE USED TO SEPARATE STAINLESS STEEL FROM GALVANIZED STEEL
- GROUND BEARING CAPACITY TO BASE OF PILES TO BE 300 KPA ULT MIN, TO BE CONFIRMED ONSITE BY ENGINEER.
- PIPE HANGERS TO AT 1.2m CRS TO EACH EA. MIN CLEARANCE FROM UNDERSIDE OF EA TO BE 30mm & MAXIMUM SUSPENSION HEIGHT FROM UNDERSIDE OF EA TO BE 200mm.
- PIPE PACKING MATERIAL TO BE NON PERISHABLE RUBBER OR DENSO TAPE TO FORM SNUG FIT.

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PROJECT
SERVICES BRIDGE &
CULVERT HEAD
BENMORE CRESENT

DRAWING TITLE
SERVICES BRIDGE DETAILS

DESIGNED		CAD FILE	E21-0101+00
DRAWN	BES	FIELD BOOK	
CHECKED		DATE	

SCALE	SIZE
AS SHOWN	A1
DRAWING NUMBER	REV
E21-0101-12	B

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FOR CONSENT	BES	

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NOTE
- ALL STEEL TO BE HDG600 P3I IN ACCORDANCE WITH NZS2312.
- NYLON SELVES AND WASHERS TO BE USED TO SEPARATE STAINLESS STEEL AND GALVANIZED STEEL.

RESOURCE CONSENT

GRANTED
27/01/2025

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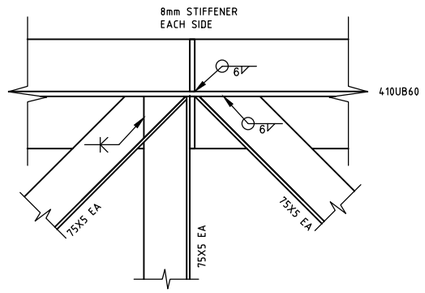
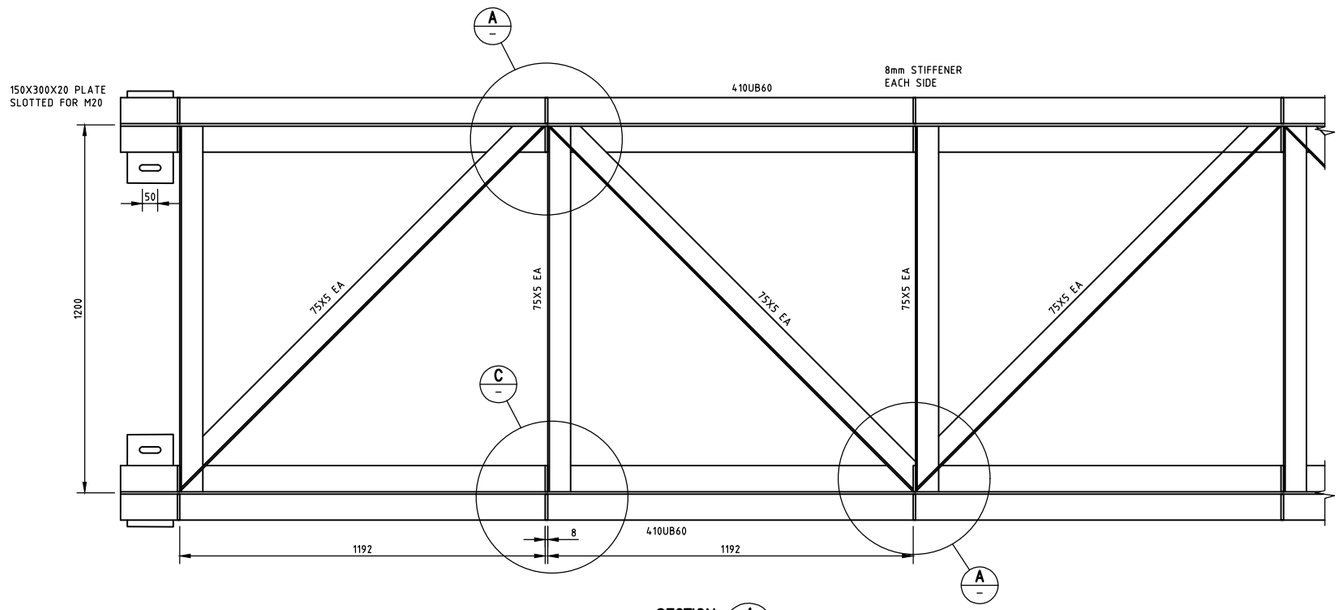


DETAIL A
1:05 AT A1
1:10 AT A3



SECTION 4
1:10 AT A1
1:20 AT A3
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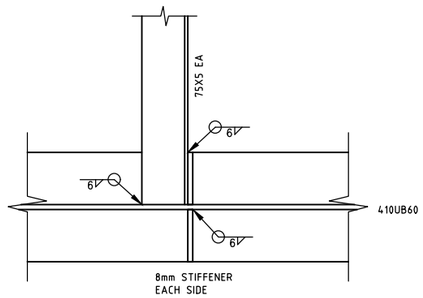
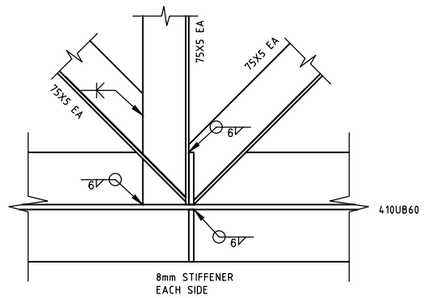


DETAIL C
1:05 AT A1
1:10 AT A3



DETAIL B
1:05 AT A1
1:10 AT A3

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PRINCIPAL CONSULTANT

PROJECT
SERVICES BRIDGE &
CULVERT HEAD
BENMORE CRESENT

DRAWING TITLE
SERVICES BRIDGE DETAILS

DESIGNED		CAD FILE	E21-0101+00
DRAWN	BES	FIELD BOOK	
CHECKED		DATE	

SCALE	SIZE
AS SHOWN	A1
DRAWING NUMBER	REV
E21-0101-13	A

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FOR CONSENT	BES	

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RESOURCE CONSENT

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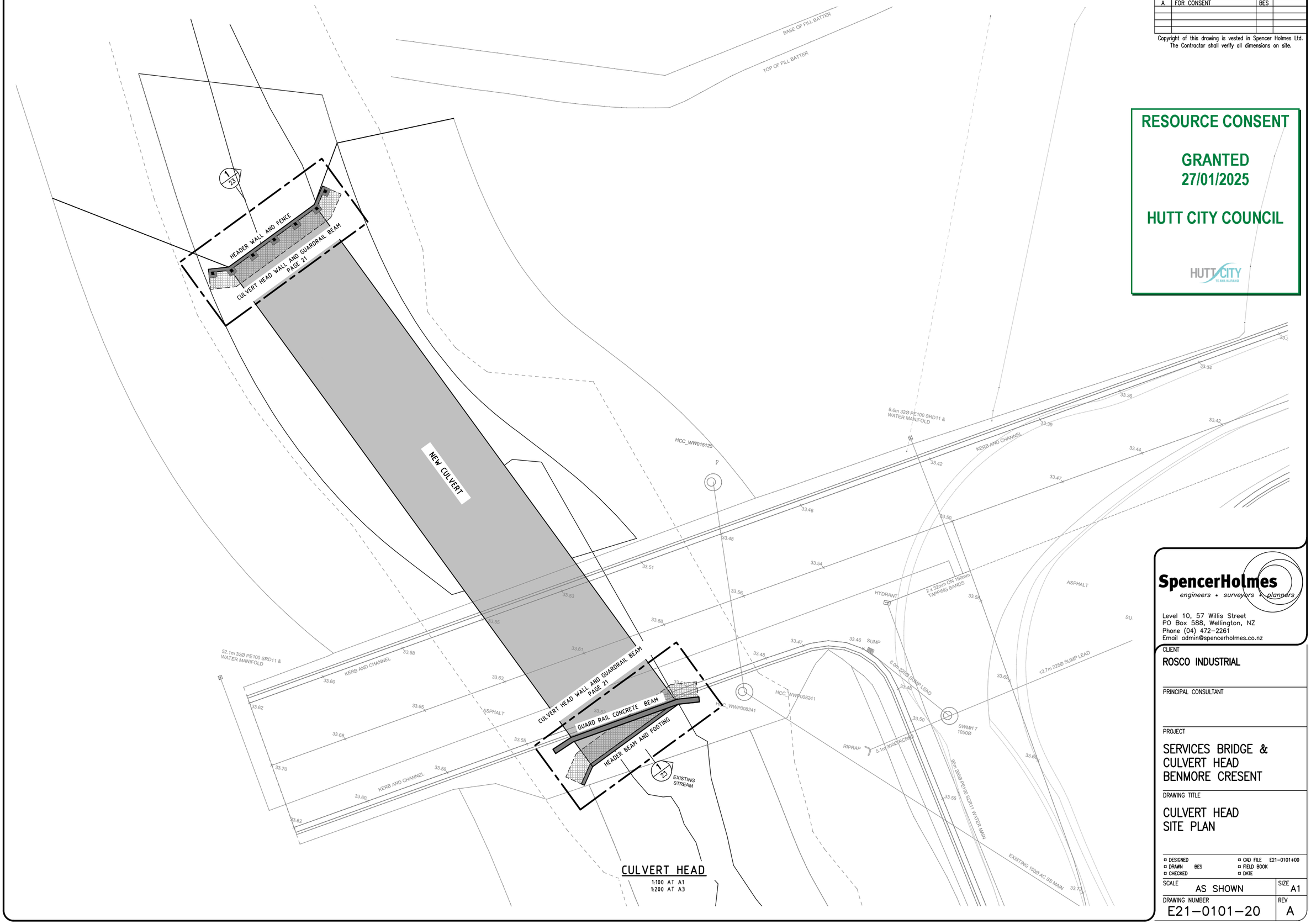
HUTT CITY COUNCIL

HUTT CITY TE AWA KAIRANGI



CULVERT HEAD

1:100 AT A1
1:200 AT A3

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DRAWING TITLE
CULVERT HEAD
SITE PLAN

▫ DESIGNED		▫ CAD FILE	E21-0101+00
▫ DRAWN	BES	▫ FIELD BOOK	
▫ CHECKED		▫ DATE	

SCALE	SIZE
AS SHOWN	A1
DRAWING NUMBER	REV
E21-0101-20	A

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FOR CONSENT	BES	
B	CIVIL CHANGES	BES	14/12/22

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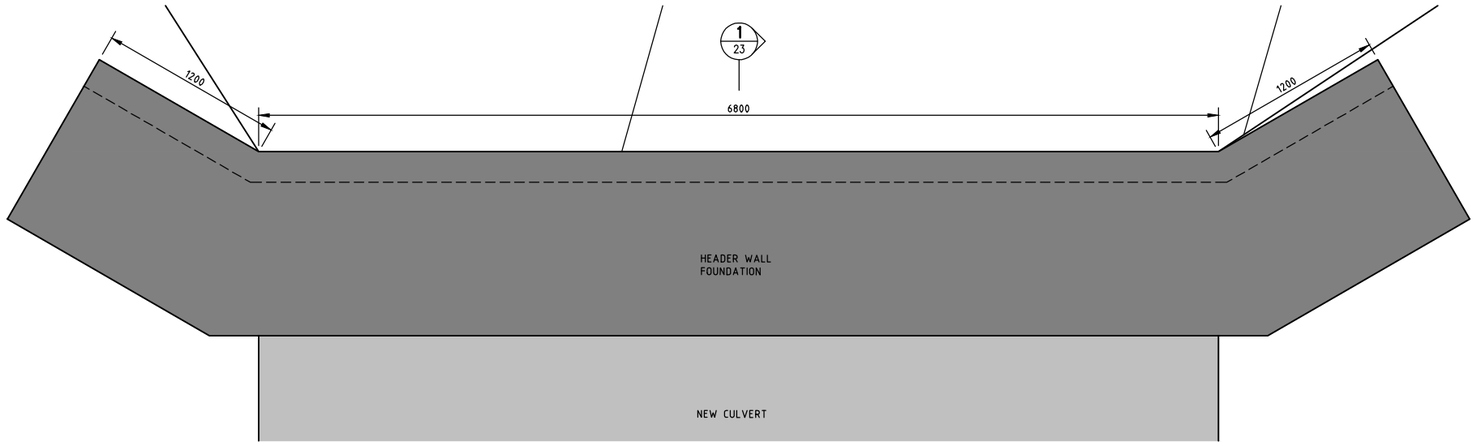
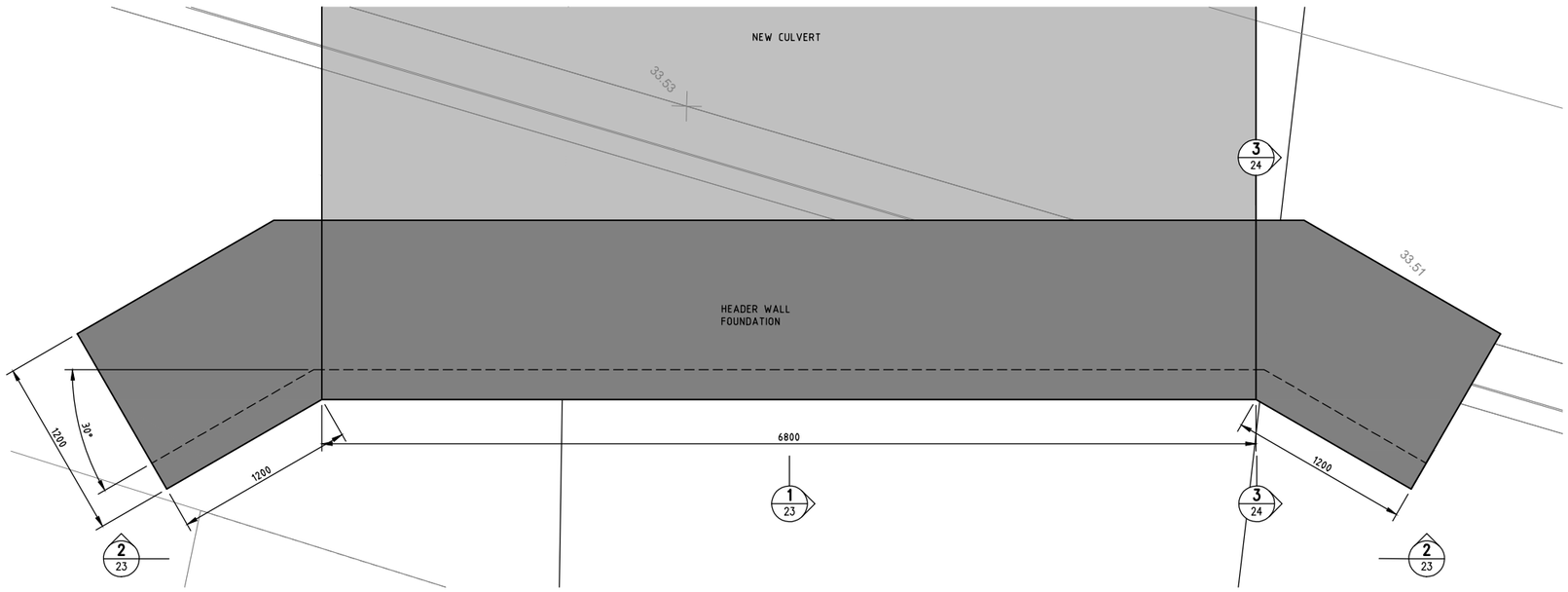


HEADER WALL FOOTING NORTH END

1:20 AT A1
1:40 AT A3



HEADER WALL FOOTING SOUTH END

1:20 AT A1
1:40 AT A3

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DRAWING TITLE
FOUNDATION PLAN

▫ DESIGNED		▫ CAD FILE	E21-0101+00
▫ DRAWN	BES	▫ FIELD BOOK	
▫ CHECKED		▫ DATE	

SCALE	SIZE
AS SHOWN	A1
DRAWING NUMBER	REV
E21-0101-21	B

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FOR CONSENT	BES	

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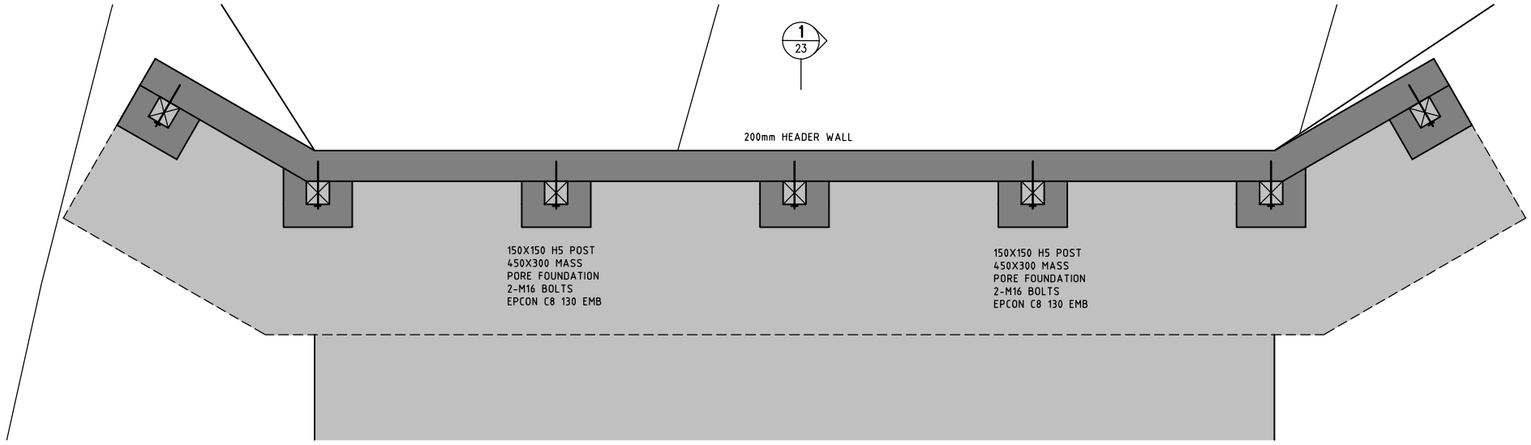
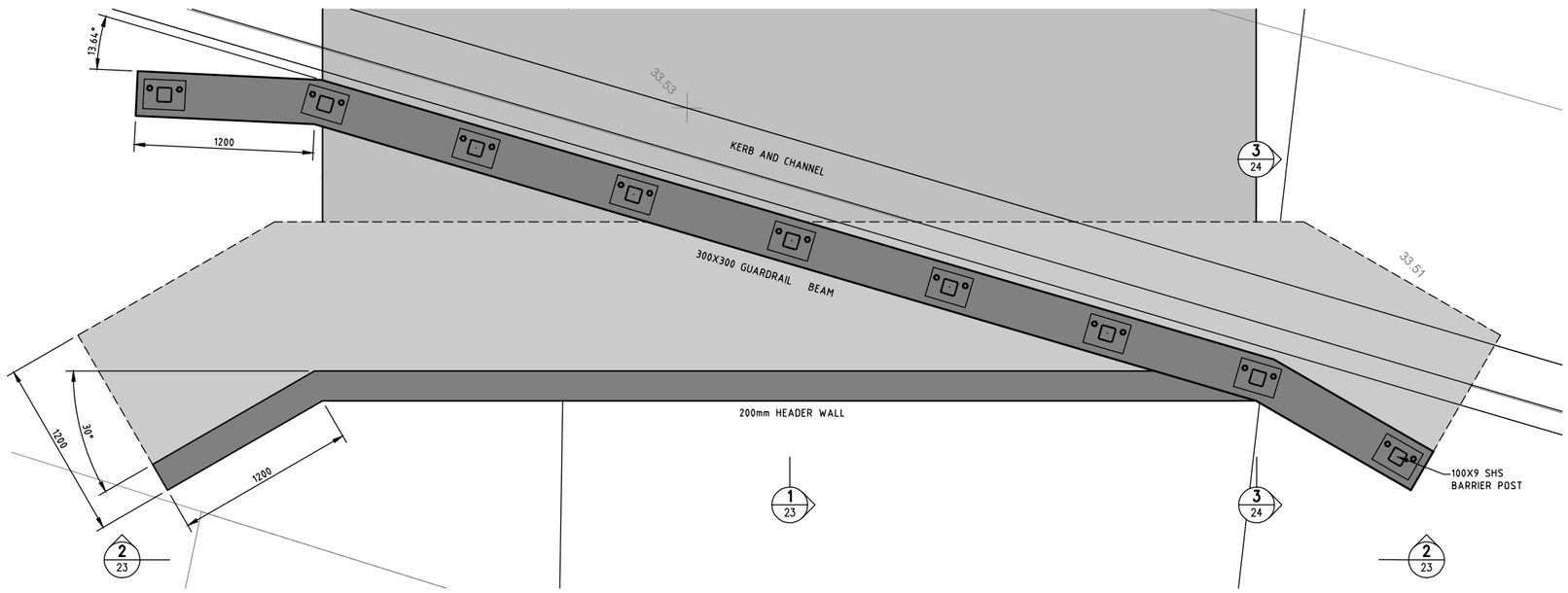


HEADER WALL AND GUARDRAIL BEAM NORTH END

1:20 AT A1
1:40 AT A3



HEADER WALL AND GUARDRAIL BEAM SOUTH END

1:20 AT A1
1:40 AT A3

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DRAWING TITLE
ROAD LEVEL PLAN

DESIGNED	CAD FILE E21-0101+00
DRAWN BES	FIELD BOOK
CHECKED	DATE

SCALE AS SHOWN	SIZE A1
DRAWING NUMBER E21-0101-22	REV A

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FOR CONSENT	BES	
B	CIVIL CHANGES	BES	14/12/22

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SECTION 1
1:50 AT A1
1:100 AT A3
20

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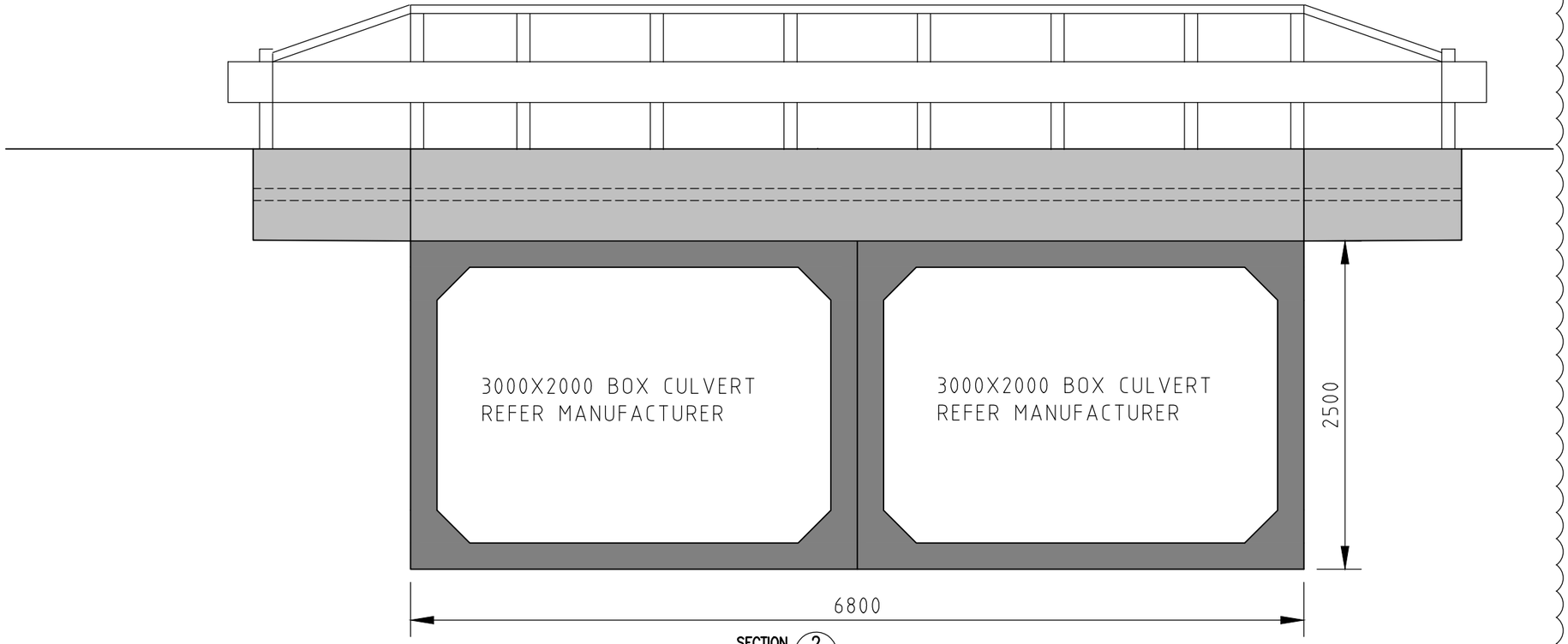

SECTION 2
1:50 AT A1
1:100 AT A3
– 22

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SECTION 1
SECTION 2

DESIGNED	CAD FILE E21-0101+00
DRAWN BES	FIELD BOOK
CHECKED	DATE
SCALE AS SHOWN	SIZE A1
DRAWING NUMBER E21-0101-23	REV B

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

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A	FOR CONSENT	BES	
B	CIVIL CHANGES	BES	14/12/22

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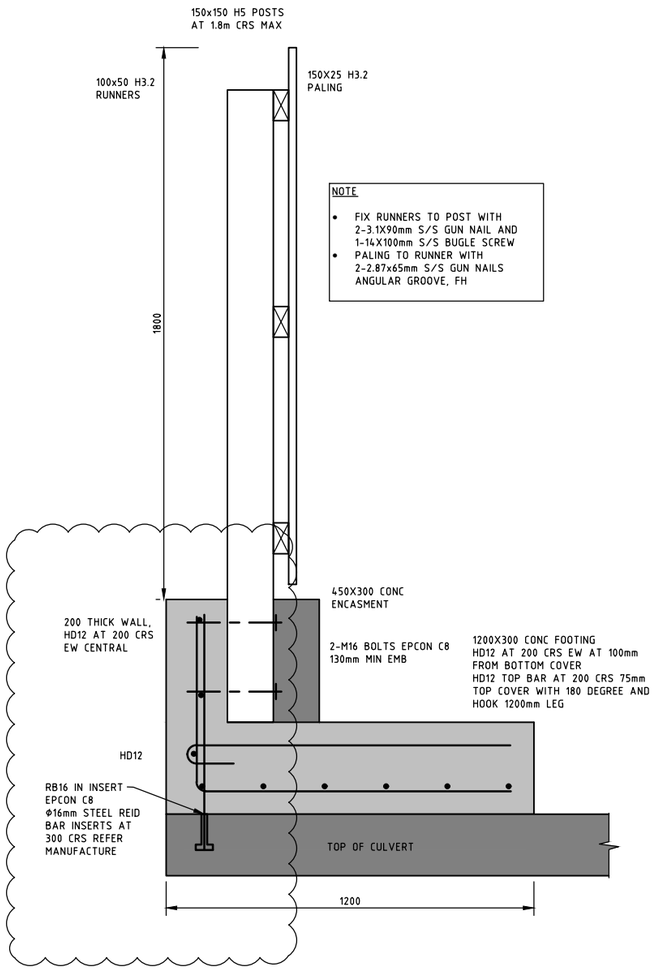
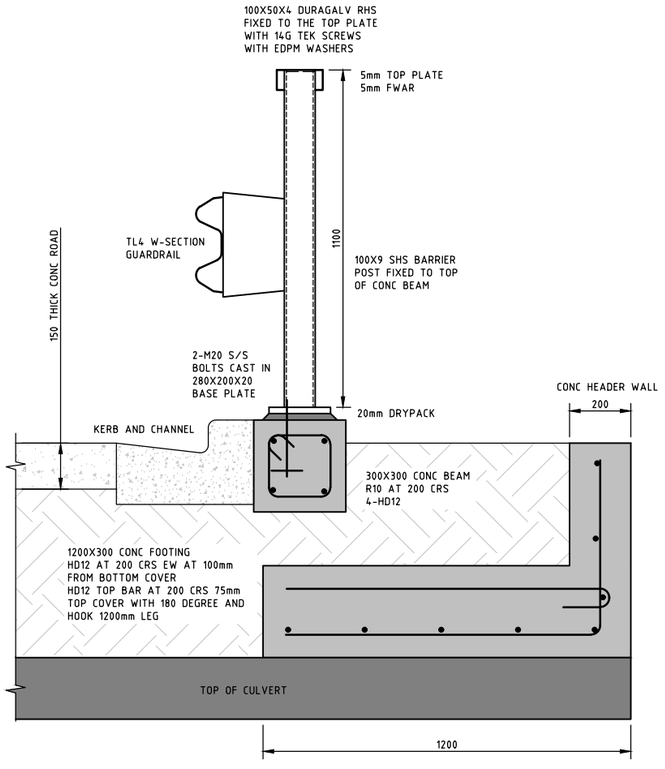
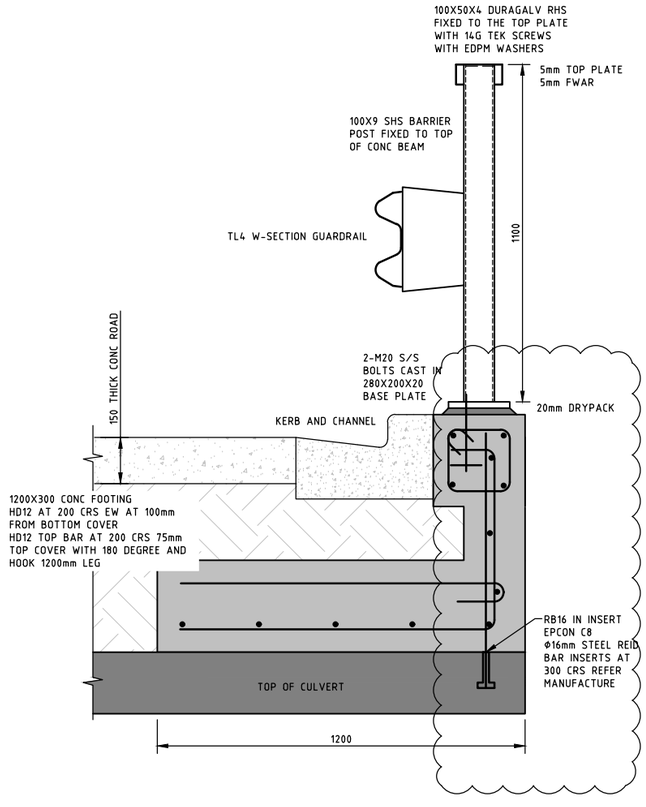


DETAIL A (23) — 1:10 AT A1, 1:20 AT A3



DETAIL B (23) — 1:10 AT A1, 1:20 AT A3



SECTION 3 (21 / 22) — 1:10 AT A1, 1:20 AT A3

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DRAWING TITLE
DETAILS
ROAD SECTION BARRIER

DESIGNED		CAD FILE	E21-0101+00
DRAWN	BES	FIELD BOOK	
CHECKED		DATE	

SCALE	SIZE
AS SHOWN	A1
DRAWING NUMBER	REV
E21-0101-24	B

RESOURCE MANAGEMENT • LAND PLANNING • SURVEYING • STRUCTURAL • CIVIL • FIRE

NO	REVISION	BY	DATE
A	CIVIL CHANGES	BES	14/12/22

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NOTE
BOX CULVERTS ARE PROPRIETARY AND DETAILS SHOWN ARE FOR INFORMATION ONLY.
REFER TO MANUFACTURER FOR ALL PRODUCT DETAILS AND INSTALLATION INFORMATION

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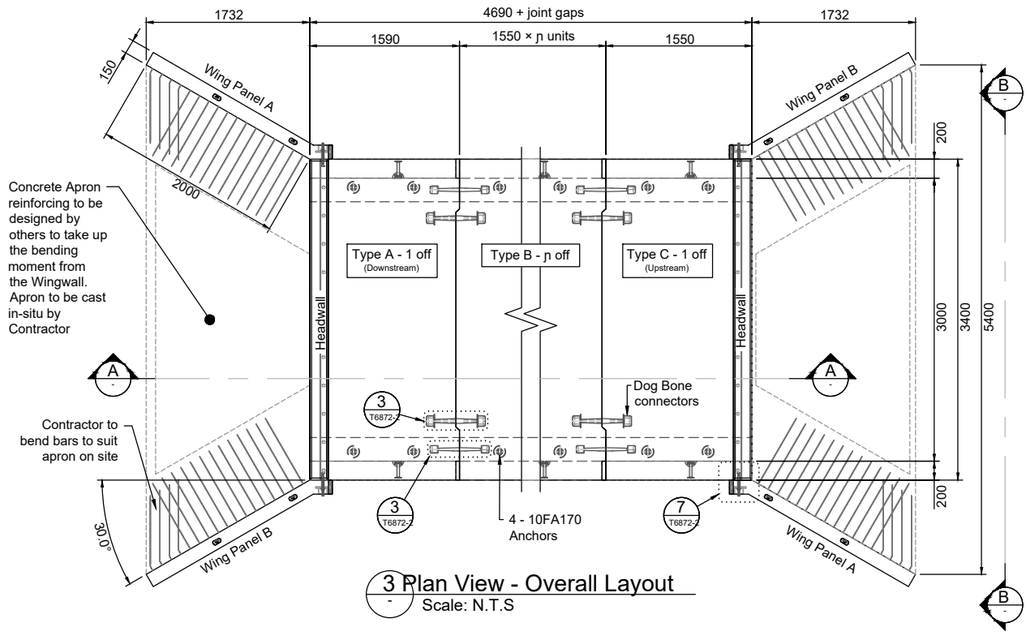
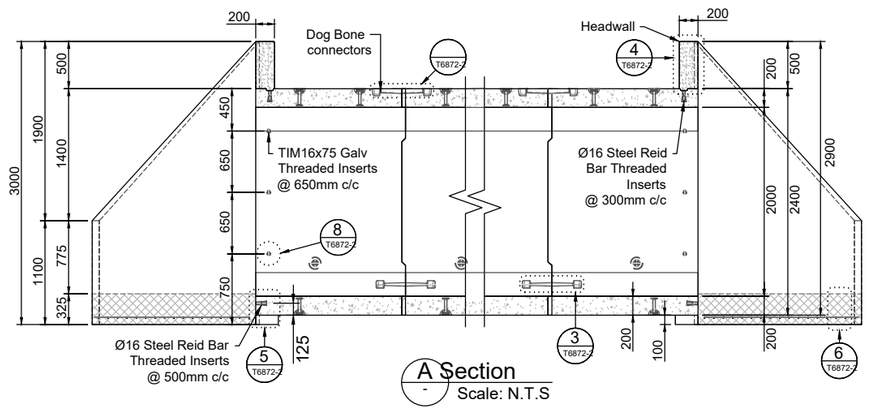
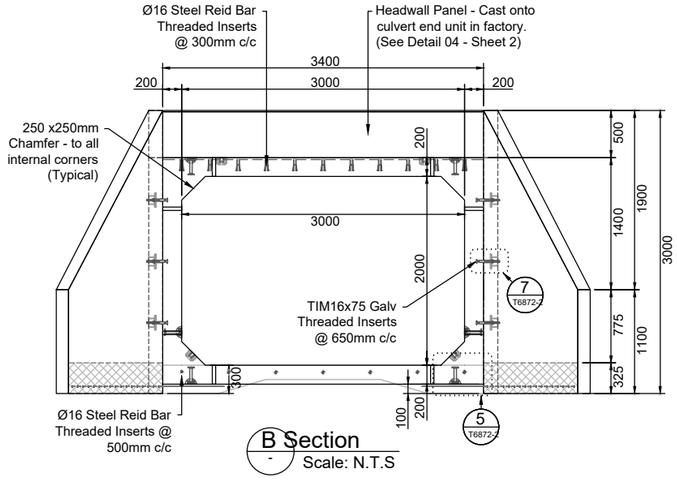


3 Plan View - Overall Layout
Scale: N.T.S



A Section
Scale: N.T.S



B Section
Scale: N.T.S

General Notes:

1. Concrete	: $f'c$ = 50MPa compressive strength at 28 days, 20mm Aggregate, or 50MPa Self-compacting concrete 10mm Aggregate.
2. Reinforcing Steel	: fy = Grade 500E MA, complying with AS/ NZS 4671.
	: Cover = 40mm min. to all steel, unless otherwise specified.
3. Min Lap Length	: 40 x Bar Diameter.
4. Dimensional tolerances	: Table 5.1-NZS3109:1997.
5. Do not re-bend reinforcing steel.	

Culvert Design Notes:

1. Traffic loading to HN-HO-72 New Zealand Transport Agency (NZTA) load criteria.
2. Fill depth (soil cover) over culvert 150mm minimum - 1000mm maximum.
3. Consult Engineer where ground water table is above the base of the culvert.
4. 100kPa minimum required soil bearing capacity.
5. Culvert is designed to exposure classification B2 as per NZS 3101 for a minimum 100-Year Design Life. Consult Engineer where exposure classification C or U is required (Saltwater Tidal / Splash Zone or other aggressive environment).
6. For areas susceptible to Seismic or Liquefaction activity, specific design of suitable foundation is required and is to be carried out by the Site Engineer to provide a uniform 100kPa safe soil bearing capacity.
7. Finish: F3 as per NZS3114.
8. Seismic design with the following design assumptions:
   a. Hazard factor = 0.4, Near-fault factor =1.
   b. Return Period Factor = 1.3
   c. Max. PGA = 0.58g for DCLS. Max. PGA = 0.87g for CALS.
   d. Site subsoil Class D and Class E
   e. Dynamic shear modulus of surrounding soil = 15000 kN/m^3 with soil Poisson ratio =0.35. Soil density = 19kN/m3
9. External water pressure and internal water pressure are balanced. Drainage design at the back of wall by others.

Wingwall Panel Design Notes:

1. Design load = 12kPa surcharge live load at back of wall with level back slope
2. Design life = 100 years
3. Active pressure coefficient Ka= 0.333
4. External water pressure and internal water pressure are balanced. Drainage design at the back of wall by others.

Site Installation Notes:

1. Place first box culvert (Type A - downstream unit) into required position.
2. Using the crane, position the second culvert (Type B) as close as possible to the previously installed culvert, and whilst being supported by the crane, pull the culverts together with come-alongs attached to the internal swiftlifts. Note: DO NOT use the dog-bone connectors to pull the culverts together.
3. Line up two half 'dog-bone' connector recesses.
4. Place threaded rod connecting set in groove.
5. Tighten nuts equally at each end, using a socket wrench to a maximum torque of:
   · Ø16 set: 100Nm (standard use).
6. Fill recess of dog-bone and all swiftlift recesses with Sikagrout 212 or equivalent.
7. Contractor to ensure joints are suitably sealed to Engineer's/ Site specified requirements.

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BENMORE CRESENT

DRAWING TITLE
BOX CULVERT DETAILS

DESIGNED		CAD FILE	E21-0101+00
DRAWN	BES	FIELD BOOK	
CHECKED		DATE	

SCALE	SIZE
AS SHOWN	A1
DRAWING NUMBER	REV
E21-0101-25	A

RESOURCE MANAGEMENT - LAND PLANNING - STRUCTURAL - CIVIL - FIRE - SURVEYING - STRUCTURAL - CIVIL - FIRE

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TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

DRAWINGS INDEX

DWG No.	DRAWING TITLE
310204837-01-100-C001	COVER AND INDEX SHEET
310204837-01-100-C100	LOCALITY, SERVICES PLAN AND NOTES
310204837-01-100-C101	GENERAL ARRANGEMENT - SHEET 1 OF 2 MANOR PARK ROAD - MC01
310204837-01-100-C102	GENERAL ARRANGEMENT - SHEET 2 OF 2 BENMORE CRESCENT - MC02
310204837-01-100-C103	GENERAL ARRANGEMENT KERB LINE - SETTING OUT MANOR PARK ROAD
310204837-01-100-C104	GENERAL ARRANGEMENT KERB LINE - SETTING OUT BENMORE CRESCENT
310204837-01-100-C105	GENERAL ARRANGEMENT LAND OWERSHIP
310204837-01-100-C130	TYPICAL PAVEMENT CROSS SECTIONS - SECTIONS 1 AND 2
310204837-01-100-C131	TYPICAL PAVEMENT CROSS SECTIONS - SECTION 3
310204837-01-100-C132	PAVEMENT NOTES
310204837-01-100-C133	PAVEMENT PLAN - SHEET 1 OF 2 MANOR PARK ROAD
310204837-01-100-C134	PAVEMENT PLAN - SHEET 2 OF 2 BENMORE CRESCENT
310204837-01-100-C140	MC01 - CROSS SECTIONS CH. 0.000 TO CH. 40.000
310204837-01-100-C141	MC01 - CROSS SECTIONS CH. 50.000 TO CH. 100.000
310204837-01-100-C142	MC01 - CROSS SECTIONS CH. 110.000 TO CH. 133.587
310204837-01-100-C143	MC02 - CROSS SECTIONS CH. 0.000 TO CH. 50.000
310204837-01-100-C144	MC02 - CROSS SECTIONS CH. 60.000 TO CH. 110.000
310204837-01-100-C145	MC02 - CROSS SECTIONS CH. 120.000 TO CH. 144.251
310204837-01-100-C150	STORMWATER PLAN - BENMORE CRESCENT
310204837-01-100-C153	STORMWATER DETAILS
310204838-01-100-C160	ROAD SIGNS AND MARKINGS MANOR PARK ROAD - MC01
310204837-01-100-C161	ROAD SIGNS AND MARKINGS BENMORE CRESCENT - MC02
310204837-01-100-C162	MEDIAN TRAFFIC ISLAND DETAILS
310204837-01-100-C170	ROAD LIGHTING INFORMATION SHEET
310204837-01-100-C171	ROAD LIGHTING LAYOUT PLAN
310204837-01-100-C180	TYPICAL DETAILS - SHEET 1
310204837-01-100-C181	TYPICAL DETAILS - SHEET 2
310204837-01-100-C190	VEHICLE TRACKING - 11.5m LARGE RIGID TRUCK AND 19m SEMI TRAILER
310204837-01-100-C191	VEHICLE TRACKING - 8m TRUCK AND 8m TRUCK AND TRAILER
310204837-01-100-C210	INTERVISIBILITY SIGHTLINE PLAN
310204837-01-100-C220	ROAD BARRIER PLAN MANOR PARK ROAD
310204837-01-100-C221	ROAD BARRIER SECTIONS MANOR PARK ROAD
310204837-01-100-C222	ROAD BARRIER SECTIONS MANOR PARK ROAD

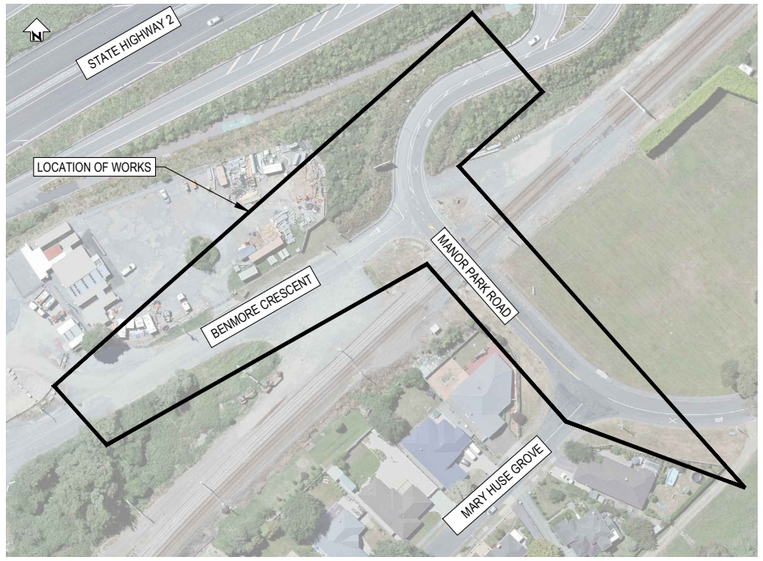
DRAWINGS INDEX

DWG No.	DRAWING TITLE
310204837-01-200-C002	PEDESTRIAN RAIL CROSSING STANDARD NOTES
310204837-01-200-C003	PEDESTRIAN RAIL CROSSING FENCING DETAILS
310204837-01-200-C004	PEDESTRIAN RAIL CROSSING EARTHING AND BONDING DETAILS
310204837-01-200-C005	PEDESTRIAN RAIL CROSSING DETAILS - SIGNAL POLE FOOTING, TRACK PAVEMENT, SIGNS
310204837-01-200-C301	PEDESTRIAN RAIL CROSSING GENERAL LAYOUT PLAN
310204837-01-200-C302	PEDESTRIAN RAIL CROSSING PEDESTRIAN QUADRANT A - LAYOUT PLAN
310204837-01-200-C303	PEDESTRIAN RAIL CROSSING PEDESTRIAN QUADRANT A - SETTING OUT PLAN
310204837-01-200-C304	PEDESTRIAN RAIL CROSSING PEDESTRIAN QUADRANT B - LAYOUT PLAN
310204837-01-200-C305	PEDESTRIAN RAIL CROSSING PEDESTRIAN QUADRANT B - SETTING OUT PLAN
310204837-01-200-C306	PEDESTRIAN RAIL CROSSING PAVEMENT CROSSING - TYPICAL DETAILS
310204837-01-200-C307	PEDESTRIAN RAIL CROSSING DUCTING LAYOUT PLAN

KIWIRAIL SUPPLIED DRAWINGS (REFER TO KIWIRAIL FOR CURRENT DRAWING REVISIONS)

300182 - S1	ROAD AND PEDESTRIAN LEVEL CROSSINGS - FORMATION AND DRAINAGE
300182 - S2	ROAD AND PEDESTRIAN LEVEL CROSSINGS - FORMATION & DRAINAGE TRACK APPROACH
300182 - S3	ROAD AND PEDESTRIAN LEVEL CROSSINGS - CROSSING TRANSITIONS
300182 - S4	ROAD AND PEDESTRIAN LEVEL CROSSINGS - RUBBER PANELS
300182 - S5	ROAD AND PEDESTRIAN LEVEL CROSSINGS - EPFLEX RAILSEAL
300182 - S6	ROAD AND PEDESTRIAN LEVEL CROSSINGS - CONCRETE PANELS
300182 - S7	ROAD AND PEDESTRIAN LEVEL CROSSINGS - CONCRETE PANELS PRECAST
300182 - S8	ROAD AND PEDESTRIAN LEVEL CROSSINGS - TIMBER OR COMPOSITE RUNNERS
300182 - S9	ROAD AND PEDESTRIAN LEVEL CROSSINGS - ASPHALT
300182 - S10	ROAD AND PEDESTRIAN LEVEL CROSSINGS - TIMBER PANELS

LOCALITY PLAN

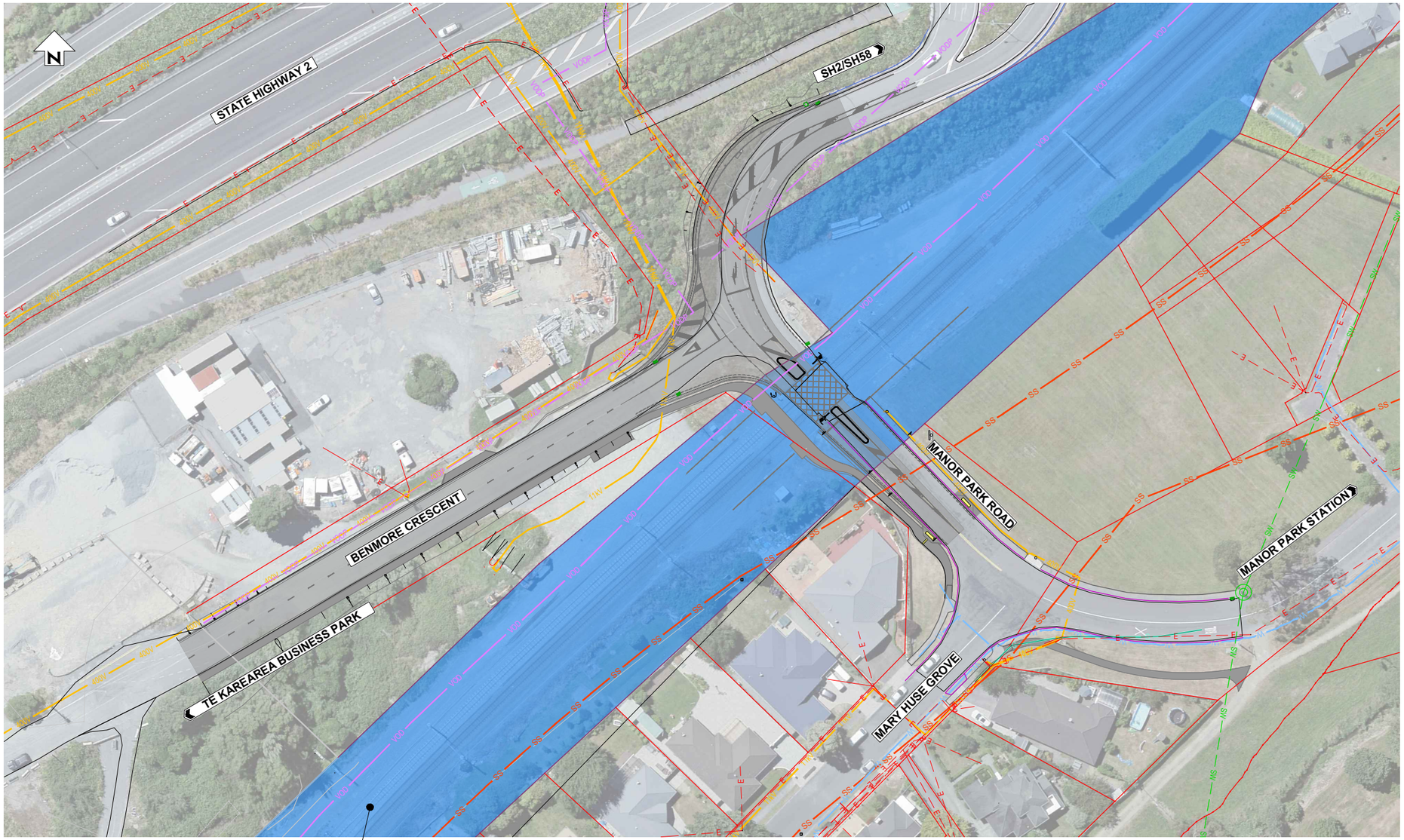


FOR CONSTRUCTION
16.05.24

Design with community in mind

Sheet No. 310204837-01-100-C001

Rev. 1



PLAN
SCALE 1 : 500 @ A1

NOTES

SURVEY

1. COORDINATES ARE IN TERMS OF NZGD 2000 (WELLINGTON).
2. HEIGHTS ARE IN TERMS OF WELLINGTON DATUM 1953.
3. ORIGIN OF LEVELS:
   - MARK NAME: PIN I SO 497033.
   - REDUCED LEVEL: 31.522m
   - SOURCE: LINZ GDB
4. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL SURVEY MARKS AND THEIR OFFSET POSITIONS.

SERVICES

1. PIPES, CABLES AND OTHER UTILITIES ON THIS DRAWING ARE BASED ONLY ON READILY AVAILABLE RECORD PLANS AND OTHER INFORMATION. SIGN INFORMATION SHOWN ON THE DRAWING ARE INDICATIVE. THIS INFORMATION MAY NOT BE COMPLETE, ACCURATE NOR UP TO DATE. PRIOR TO CARRYING OUT ANY EXCAVATION OR OTHER PHYSICAL WORKS, CONTRACTORS SHALL OBTAIN THE LATEST INFORMATION FROM UTILITY PROVIDERS AND CARRY OUT DETAILED EXPLORATORY WORK, IN ACCORDANCE WITH EACH UTILITY PROVIDERS SPECIFIAATIONS, TO ENSURE UTILITIES ARE NOT DAMAGED. TRACING, LOCATING, PROTECTION AND ALTERATIONS AS ARE REQUIRED UNDER NZS 3910 CLAUSE 5.13.

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GENERAL

1. CADASTRAL BOUNDARIES ARE INDICATIVE ONLY AND TO BE VERIFIED BY SURVEY.
2. ALL DIMENSIONS IN METRES UNLESS OTHERWISE NOTED.
3. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. ANY DISCREPANCY SHALL BE REFEREED TO THE ENGINEER.
4. ALL LOCATIONS OF STORMWATER STRUCTURES TO BE CONFIRMED BY ENGINEER PRIOR TO THE START OF ALL PAVEMENT WORKS.

BARRIERS

1. ALL ROAD SAFETY BARRIER SYSTEMS ARE TO BE IN COMPLIANCE WITH NZTA M23 AND RELEVANT WAKA KOTAHI STANDARD DRAWINGS AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURES SPECIFICATIONS.
2. EXISTING ROAD SAFETY BARRIERS TO BE RECOVERED, CHECKED FOR DAMAGE AND REUSED WITH NEW FIXING HARDWARE AS APPROPRIATE.
3. REFER TO EXISTING SERVICE PLAN FOR EXPECTED SERVICE LOCATIONS.
4. ALL BARRIERS TO BE INSTALLED WITH ASSOCIATED DELINEATION IN ACCORDANCE WITH WAKA KOTAHI TM-2014 AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURES SPECIFICATIONS.
5. BARRIER TO BE INSTALLED IN STANDARD SOIL, AS DEFINED IN AASHTO STANDARD SPECIFICATIONS "MATERIALS FOR AGGREGATE AND SOIL AGGREGATE SUBBASE, BASE AND SURFACE COURSES" DESIGNATION M147.

ROAD MARKINGS AND SIGNS

1. ALL SIGNS AND MARKINGS SHOULD BE IN ACCORDANCE WITH THE WAKA KOTAHI TRAFFIC CONTROL DEVICES (TCD) MANUAL AND/OR MANUAL OF TRAFFIC SIGNS AND MARKINGS (MOTSAM).
2. REFER TO DRAWING 310204837-01-100-C150 FOR ROAD MARKING, ROAD SIGN DETAILS.

SERVICES LEGEND

400V	WELLINGTON ELECTRICY 400V
11kV	WELLINGTON ELECTRICY 11kV
E	WELLINGTON ELECTRICITY
VOD	VODAFONE
VODP	VODAFONE (PLANNED) - POSSIBLY OBSOLETE
SS	SEWER TRUNK MAIN
W	WATER
SW	STORMWATER
G	POWERCO GAS
CHR	CHORUS (INFO TO BE SOURCED)
	RAIL CORRIDOR

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.
DIAL BEFORE YOU DIG

DO NOT SCALE - IF IN DOUBT, ASK
ORIGINAL SIZE A1

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	GD	TW	MG	16.05.24
0	FOR TENDER	JJ	GC	MG	19.12.22

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Janco Jordaan	11.2022
DRAWN	Janco Jordaan	11.2022
CAD REVIEW	Shivneel Sen	29.01.24
DESIGN CHECK	Tjaart van der Walt	29.01.24
DESIGN REVIEW	Jamie Whittaker	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

LOCALITY, SERVICES PLAN AND NOTES

Status Stamp: FOR CONSTRUCTION
Date Stamp: 16.05.24
Scales: AS SHOWN
Drawing No.: 310204837-01-100-C100
Rev.: 1

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DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1

NOTES

1. CONTRACTOR TO SETOUT ALL FINISH SURFACE PAVEMENT LEVEL WITH ENGINEER PRIOR TO COMMENCING PAVING WORKS.
2. STORMWATER DETAILS. REFER TO DRAWING 310204837-01-100-C150.
3. ROAD MARKING DETAILS. REFER TO DRAWING 310204837-01-100-C160 AND C161.
4. CONTRACTOR IS TO LIAISE WITH LOCAL ELECTRICITY SUPPLY COMPANY TO COORDINATE DUCTING FOR THE RELOCATION OF UTILITY BOXES.

LEGEND

- CADASTRAL BOUNDARY
- TOPOGRAPHICAL SURVEY FEATURES
- ROAD PAVEMENT
- NEW MEDIAN ISLAND
- NEW GRASS VERGE
- NEW CONCRETE PATHWAY
- NEW KERBING SM/STD
- TACTILE PAVERS
- FINISHED SURFACE CONTOUR (MAJOR)
- FINISHED SURFACE CONTOUR (MINOR)
- NEW MASH TL-4 W-BEAM BARRIER
- NEW MASH TL-3 BARRIER END TERMINAL
- TRAFFIC SIGN (NEW / RETAINED)
- NEW RAIL CORRIDOR FENCING
- NEW STORMWATER PIPE
- NEW SUBSOIL PIPE
- NEW STORMWATER MANHOLE / SUMP

RESOURCE CONSENT
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HUTT CITY COUNCIL

EXISTING GROUND BEAM AND BOLT DOWN THRIEBEAM TO BE RETAINED

TIE NEW THRIEBEAM INTO EXISTING THRIEBEAM BARRIER

REPLACE EXISTING W-BEAM WITH NEW MASH TL-4 THRIEBEAM ON DRIVEN POSTS (EZY-GUARD LDS ON POSTS WITH SOIL STIFFENING PLATE OR APPROVED EQUIVALENT). - REFER TO BARRIER NOTES ON DRAWING 310204837-01-100-C100

TIE NEW THRIEBEAM INTO EXISTING THRIEBEAM BARRIER

TIE NEW THRIEBEAM INTO EXITING LEADING END TERMINAL

EXISTING LEADING END TERMINAL TO REMAIN

REFER TO DETAIL 'TIE IN DETAIL - NEW TO EXISTING PAVEMENT' REFER TO DRAWING 310204837-01-100-C131

REFER TO DETAIL 'TIE IN DETAIL - NEW TO EXISTING PAVEMENT' REFER TO DRAWING 310204837-01-100-C131

ROAD MARKING. REFER TO DRAWING 310204837-01-100-C100

RELOCATE CABINET. REFER TO NOTE ON DRAWING 310204837-01-100-C100

MC01 CONTROL STRING

NEW MASH TL-4 THRIEBEAM ON DRIVEN POSTS. - REFER TO BARRIER NOTES ON DRAWING 310204837-01-100-C100

NEW RAISED MEDIAN ISLAND. REFER TO DRAWING 310204837-01-100-C162

NEW RAISED MEDIAN ISLAND. REFER TO DRAWING 310204837-01-100-C162

LIGHTING LAYOUT. REFER TO DRAWING 310204837-01-100-C171

NEW SEMI-MOUNTABLE KERB AND CHANNEL

RELOCATE CABINET. REFER TO NOTE ON DRAWING 310204837-01-100-C100

TRANSITION THRIEBEAM TO W-BEAM AT STN 60

REFER TO SERIES C200 FOR LIGHTING

INSTALL RECOVERED MASH TL-3 W-BEAM ON NEW DRIVEN POSTS. - REFER TO BARRIER NOTES ON DRAWING 310204837-01-100-C100

REFER TO KIWIRAIL DRAWINGS 300182-S1 TO 300182-S10 FOR VEHICLE RAIL CROSSING DETAILS

REFER TO DRAWINGS C301-C307 DRAWINGS FOR PEDESTRIAN RAIL CROSSING DETAILS

NEW SEMI-MOUNTABLE KERB AND CHANNEL

NEW 1.5m WIDE CONCRETE FOOTPATH

EXTENT OF PAVEMENT WORKS WITHIN THE AND ADJACENT TO THE KIWIRAIL CORRIDOR SHALL BE CONFIRMED AND APPROVED BY KIWIRAIL AND IN ACCORDANCE WITH KIWIRAIL DETAILS. ENGINEER TO AGREE WITH KIWIRAIL THE EXISTENCE OF LEVEL CROSSING WORKS AND CONSTRUCTION OF THE ASHPALT LAYERS SHALL BE CONFIRMED BY KIWIRAIL. ACCESS PERMIT SHALL BE REQUIRED FROM KIWIRAIL PRIOR COMMENCEMENT OF CONSTRUCTION WORKS

EXISTING FOOTPATH TO BE REMOVED AND REINSTATED WITH TOPSOIL AND HYDROSEED EXTENTS OF REMOVAL CH99 TO CH126

REFER TO DETAIL 'TIE IN DETAIL - NEW TO EXISTING PAVEMENT' REFER TO DRAWING 310204837-01-100-C131

NEW PEDESTRIAN RAMPS WITH TACTILE PAVERS AS PER RTS 14

NEW 1.5m WIDE CONCRETE FOOTPATH

NEW STANDARD KERB AND CHANNEL. KERB TO BE GRADED AWAY FROM LEVEL CROSSING FALLING TO EXISTING SUMP TO PREVENT PONDING IN THE CHANNEL.

REMOVE EXISTING KERB DROP DOWN REINSTATE K&C AND CONCRETE FOOTPATH

NEW 1.5m WIDE CONCRETE FOOTPATH

NEW STORMWATER SWALE

MANOR PARK ROAD

MANOR PARK STATION

MARY HUSE GROVE

TE KAREAREA BUSINESS PARK

BENMORE CRESCENT

LIMIT OF WORKS

PLAN

SCALE 1 : 250 @ A1

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	AKJ	TW	MG	16.05.24
0	FOR TENDER	JJ	GC	MG	19.12.22

SURVEYED	SPENCER HOLMES	08.2022
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DRAWN	Janco Jordaan	11.2022
CAD REVIEW	Shivneel Sen	29.01.24
DESIGN CHECK	Tjaart van der Walt	29.01.24
DESIGN REVIEW	Jamie Whittaker	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

GENERAL ARRANGEMENT - SHEET 1 OF 2
MANOR PARK ROAD - MC01

Status Stamp: **FOR CONSTRUCTION**
Date Stamp: **16.05.24**
Scales: AS SHOWN
Drawing No.: 310204837-01-100-C101
Rev.: 1

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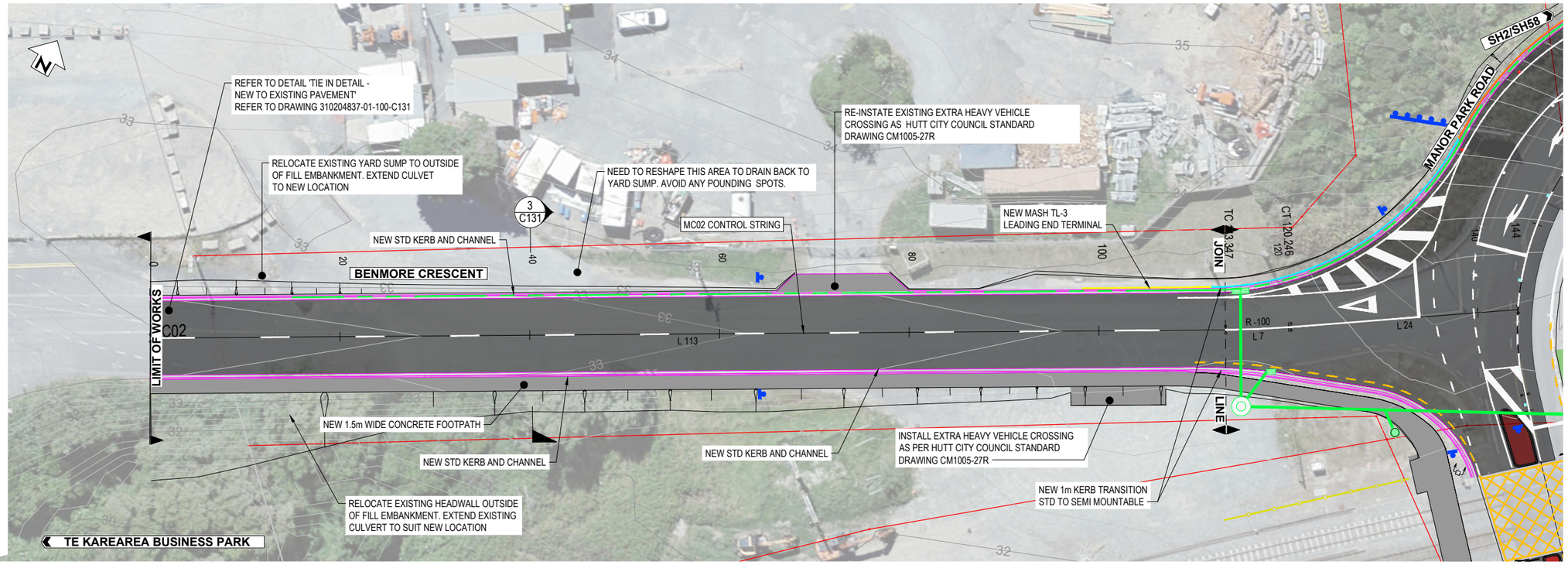


PLAN

SCALE 1 : 250 @ A1

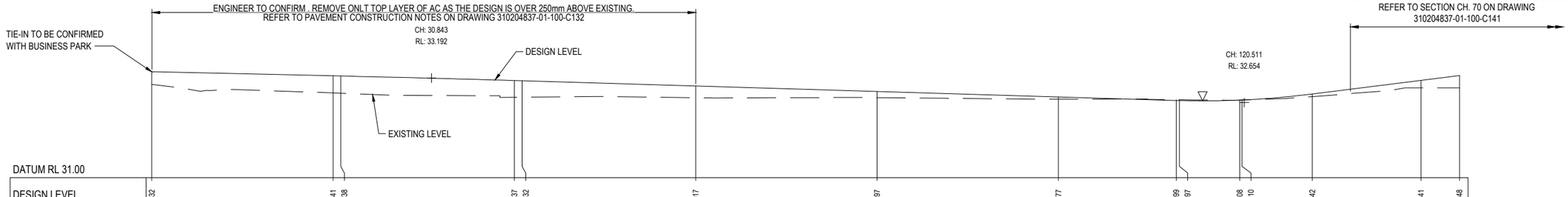
LEGEND

- CADASTRAL BOUNDARY
- TOPOGRAPHICAL SURVEY FEATURES
- ROAD PAVEMENT
- NEW MEDIAN ISLAND
- NEW GRASS VERGE
- NEW CONCRETE PATHWAY
- NEW KERBING SM/STD
- NEW KERB RAMP / RUMPSTRIP
- FINISHED SURFACE CONTOUR (MAJOR)
- FINISHED SURFACE CONTOUR (MINOR)
- NEW MASH TL-3 W-BEAM BARRIER
- NEW MASH TL-3 BARRIER END TERMINAL
- TRAFFIC SIGN (NEW / RETAINED)
- NEW RAIL CORRIDOR FENCING
- NEW STORMWATER PIPE
- NEW SUBSOIL PIPE
- NEW STORMWATER MANHOLE / SUMP

RESOURCE CONSENT
GRANTED
27/01/2025
HUTT CITY COUNCIL

NOTES

1. CONTRACTOR TO SETOUT ALL FINISH SURFACE PAVEMENT LEVEL WITH ENGINEER PRIOR TO COMMENCING PAVING WORKS.
2. STORMWATER DETAILS. REFER TO DRAWING 310204837-01-100-C150.
3. ROAD MARKING DETAILS. REFER TO DRAWING 310204837-01-100-C160 AND C161.



DATUM RL 31.00

DESIGN LEVEL	33.332	33.241	33.238	33.137	33.132	33.017	32.897	32.777	32.699	32.697	32.708	32.710	32.842	33.141	33.248
EXISTING LEVEL	33.052	32.865	32.858	32.768	32.769	32.759	32.760	32.728	32.716	32.716	32.708	32.709	32.783	32.977	32.977
CUT/FILL	0.280	0.376	0.379	0.370	0.363	0.258	0.137	0.049	-0.017	-0.018	0.000	0.001	0.059	0.164	0.271
CHAINAGE	0.000	20.000	20.843	40.000	40.843	60.000	80.000	100.000	113.011	113.347	120.000	120.246	128.011	140.000	144.251
HORIZONTAL GEOMETRY	L=113.35								R=-100 L=6.9		L=24				
VERTICAL GEOMETRY	P=-0.45% L=20.84		K=135.73 L=20			P=-0.6% L=72.17			K=4.84 L=15		P=2.5% L=16.24				
SUPERELEVATION															

MC02 - LONGITUDINAL SECTION

SCALES - HZ 1:250
VT 1:50

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	AKJ	TW	MG	16.05.24
0	FOR TENDER	JJ	GC	MG	19.12.22

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Janco Jordaan	11.2022
DRAWN	Janco Jordaan	11.2024
CAD REVIEW	Shivneel Sen	29.01.24
DESIGN CHECK	Tjaart van der Walt	29.01.24
DESIGN REVIEW	Jamie Whittaker	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

GENERAL ARRANGEMENT - SHEET 2 OF 2
BENMORE CRESCENT - MC02

Status Stamp: FOR CONSTRUCTION
Date Stamp: 16.05.24
Scales: AS SHOWN
Drawing No.: 310204837-01-100-C102
Rev.: 1

ORIGINAL SIZE A1 DO NOT SCALE - IF IN DOUBT, ASK

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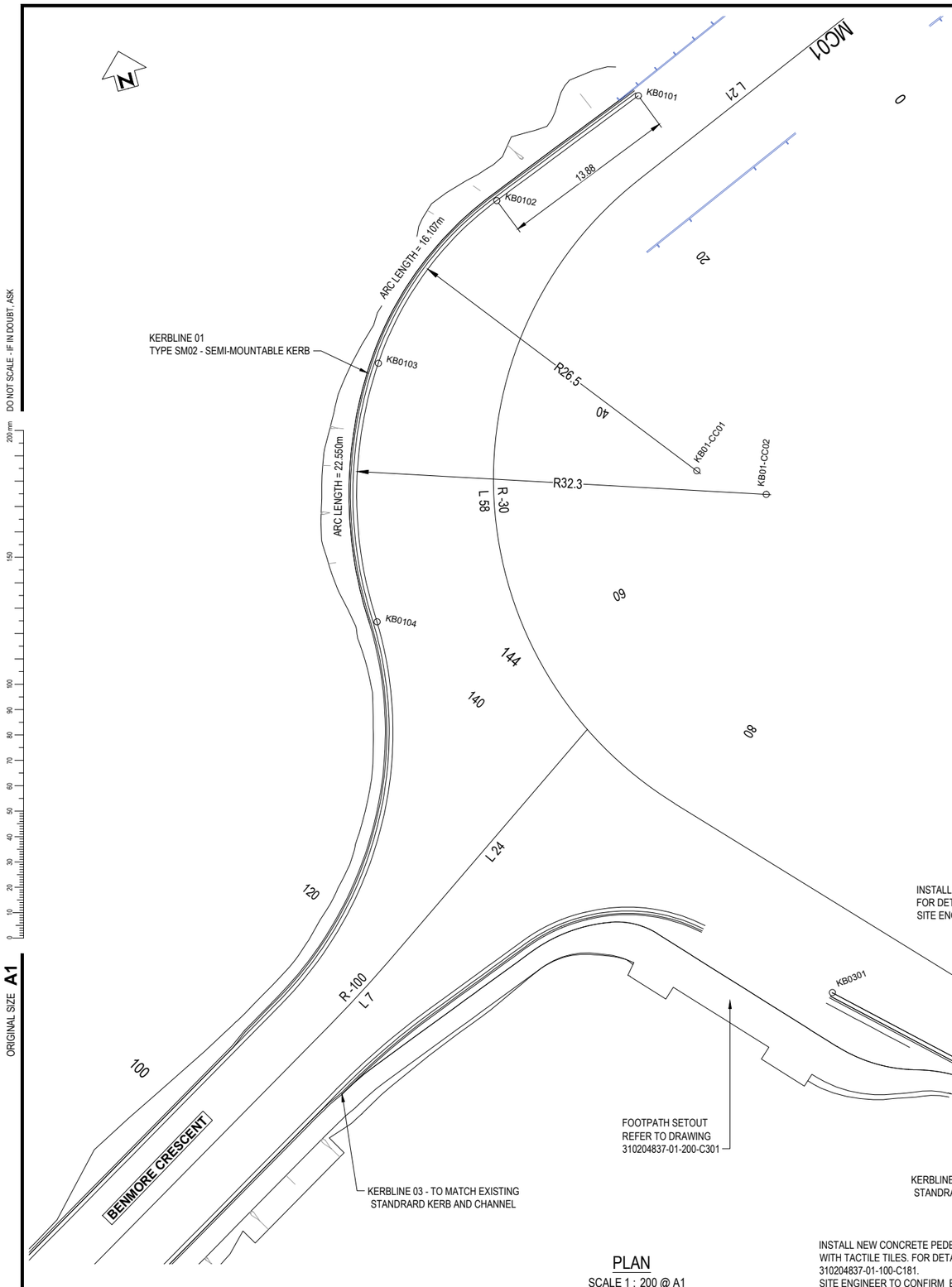
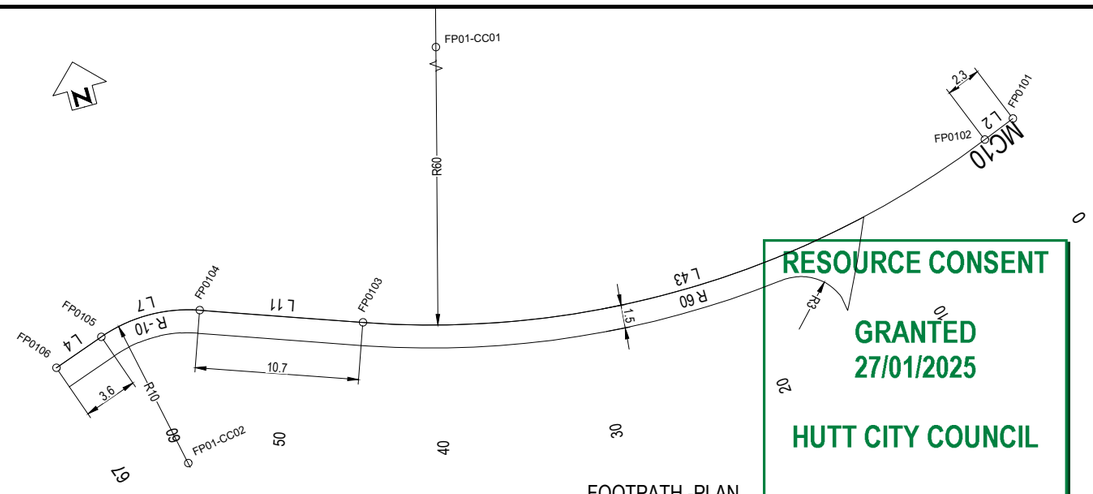
DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1



PLAN
SCALE 1 : 200 @ A1



FOOTPATH -PLAN
SCALE 1 : 200 @ A1

RESOURCE CONSENT
GRANTED
27/01/2025
HUTT CITY COUNCIL

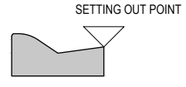
FOOTPATH LINE - SETTING OUT TABLE

POINTS	X	Y	Z
FP0101	416732.235	815655.671	0.000
FP0102	416730.106	815654.811	0.000
FP0103	416687.832	815653.797	0.000
FP0104	416677.752	815657.319	0.000
FP0105	416671.117	815657.306	0.000
FP0106	416667.757	815656.116	0.000
FP01-CC01	416707.623	815710.439	0.000
FP01-CC02	416674.454	815647.879	0.000

NOTES
1. ALL CO-ORDINATES ARE IN TERMS OF NZGD 200 - WELLINGTON CIRCUIT.
2. LEVELS ARE IN TERMS OF WELLINGTON VERTICAL DATIM 1953.
3. ALL DIMENMSIONS IN METERS UNLESS OTHERWISE NOTED.
4. SET OUT ON SITE TO BE CONFIRMED BY ENGINEER.
5. ELECTRONIC SET OUT DATA WILL BE PROVIDED TO THE CONTRACTOR.

KERB LINE - SETTING OUT TABLE

POINTS	X	Y	Z
KB0101	416631.881	815775.407	0.000
KB0102	416618.970	815770.317	0.000
KB0103	416618.970	815770.317	0.000
KB0104	416601.270	815740.687	0.000
KB01-CC02	416628.689	815745.663	0.000
KB01-CC03	416633.491	815742.465	0.000
KB0301	416628.365	815703.194	0.000
KB0302	416655.442	815678.039	0.000



REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	AKJ	TW	MG	16.05.24

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Janco Jordaan	11.2022
DRAWN	Janco Jordaan	11.2022
CAD REVIEW	Shivneel Sen	29.01.24
DESIGN CHECK	Tjaart van der Walt	29.01.24
DESIGN REVIEW	Jamie Whittaker	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

GENERAL ARRANGEMENT
KERB LINE - SETTING OUT MANOR PARK ROAD

Status Stamp: FOR CONSTRUCTION
Date Stamp: 16.05.24
Scales: AS SHOWN
Drawing No.: 310204837-01-100-C103
Rev.: 1

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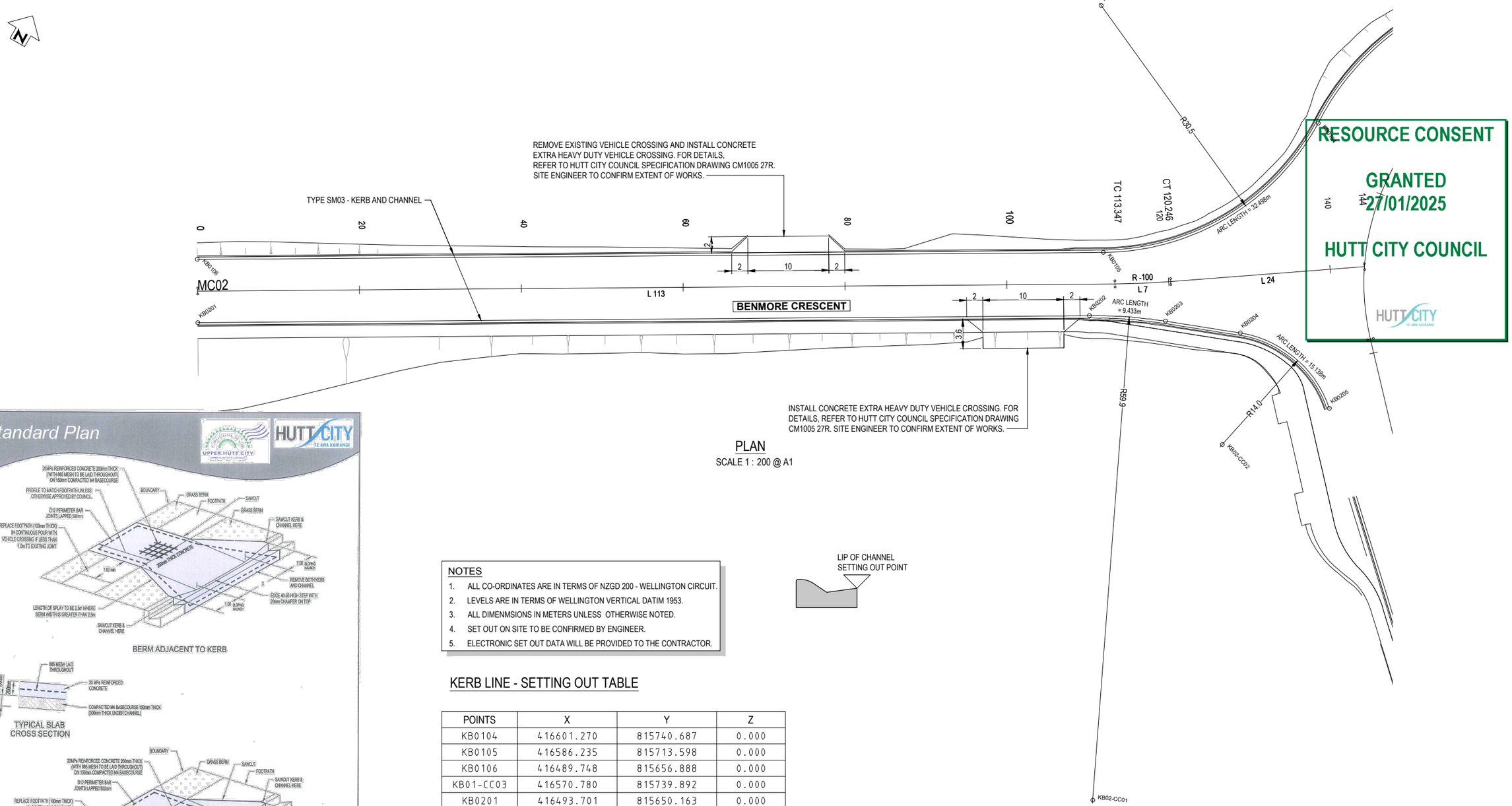
ORIGINAL SIZE A1



PLAN

SCALE 1 : 200 @ A1

RESOURCE CONSENT

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27/01/2025

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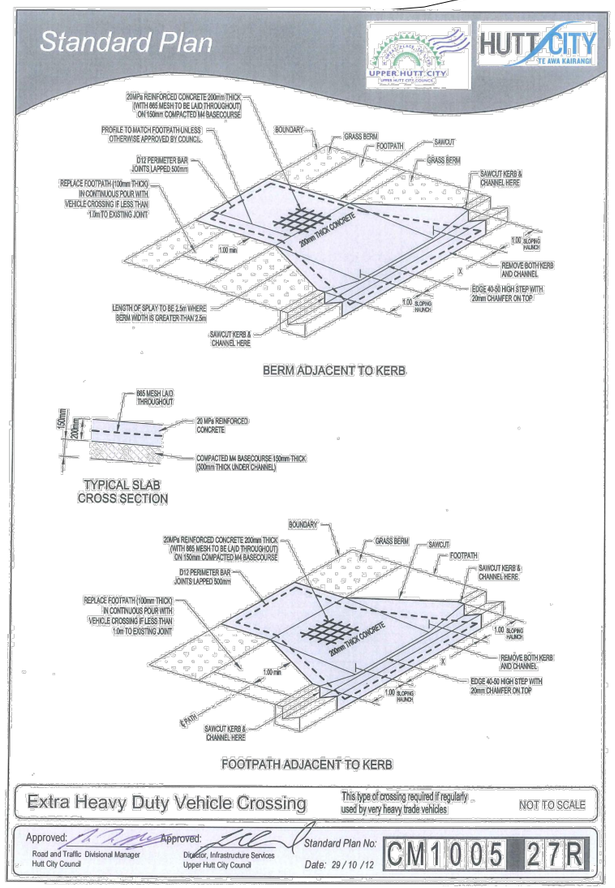

LIP OF CHANNEL SETTING OUT POINT

NOTES

1. ALL CO-ORDINATES ARE IN TERMS OF NZGD 200 - WELLINGTON CIRCUIT.
2. LEVELS ARE IN TERMS OF WELLINGTON VERTICAL DATIM 1953.
3. ALL DIMENMSIONS IN METERS UNLESS OTHERWISE NOTED.
4. SET OUT ON SITE TO BE CONFIRMED BY ENGINEER.
5. ELECTRONIC SET OUT DATA WILL BE PROVIDED TO THE CONTRACTOR.

KERB LINE - SETTING OUT TABLE

POINTS	X	Y	Z
KB0104	416601.270	815740.687	0.000
KB0105	416586.235	815713.598	0.000
KB0106	416489.748	815656.888	0.000
KB01-CC03	416570.780	815739.892	0.000
KB0201	416493.701	815650.163	0.000
KB0202	416588.659	815705.975	0.000
KB0203	416597.137	815710.092	0.000
KB0204	416605.883	815713.460	0.000
KB0205	416620.058	815710.899	0.000
KB02-CC01	416618.948	815654.358	0.000
KB02-CC02	416610.845	815700.417	0.000

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	AKJ	TW	MG	16.05.24

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Janco Jordaan	11.2022
DRAWN	Janco Jordaan	11.2022
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DESIGN CHECK	Tjaart van der Walt	29.01.24
DESIGN REVIEW	Jamie Whittaker	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

GENERAL ARRANGEMENT
KERB LINE - SETTING OUT BENMORE CRESCENT

Status Stamp: FOR CONSTRUCTION
Date Stamp: 16.05.24
Scales: AS SHOWN
Drawing No.: 310204837-01-100-C104
Rev.: 1

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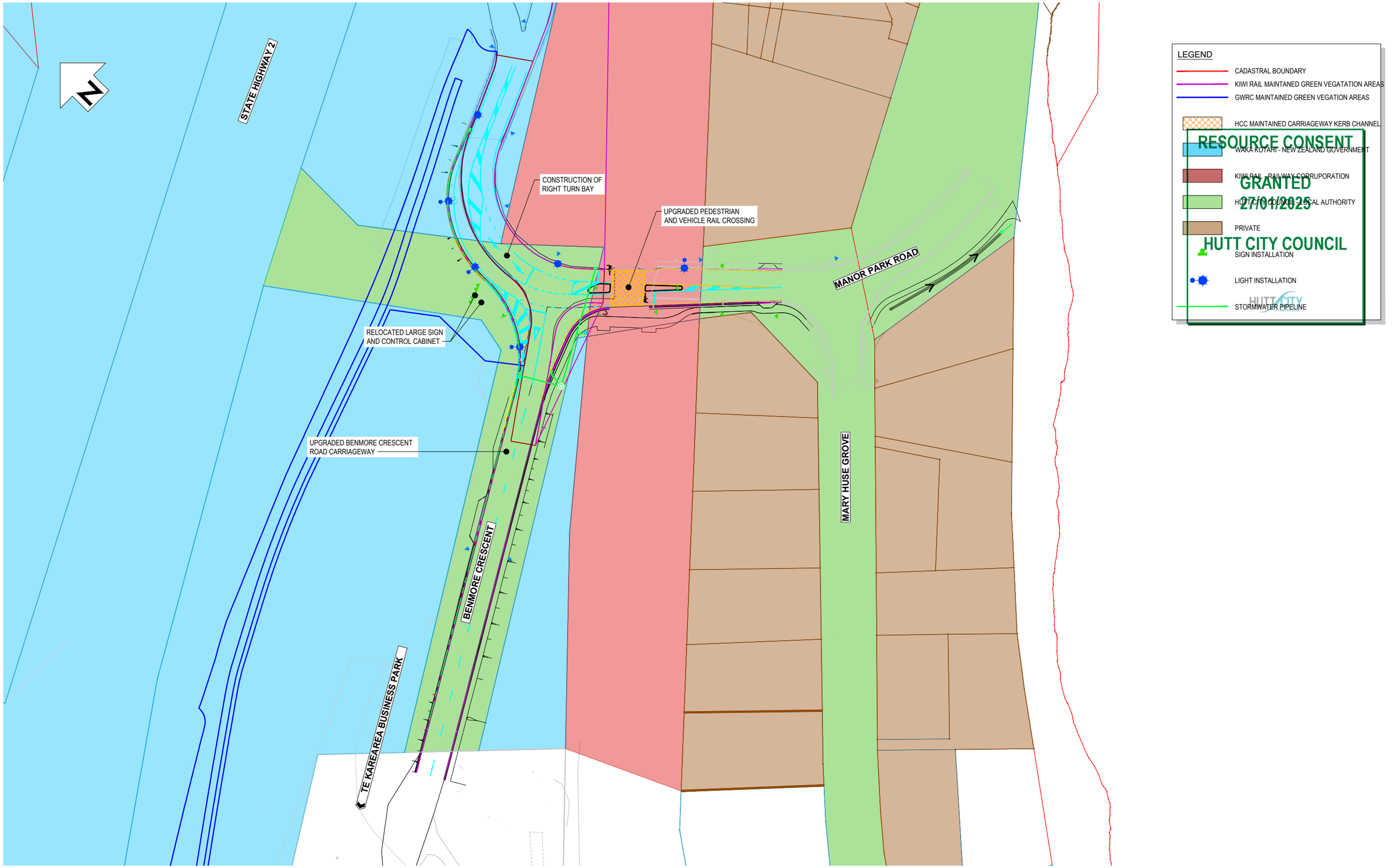
DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1



PLAN

SCALE 1 : 250 @ A1

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	AKJ	TW	MG	16.05.24

SURVEYED	SPENCER HOLMES	08.2022
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DRAWN	Janco Jordaan	11.2022
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APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

GENERAL ARRANGEMENT
LAND OWNERSHIP

Status Stamp: **FOR CONSTRUCTION**

Date Stamp: **16.05.24**

Scales: AS SHOWN

Drawing No.: 310204837-01-100-C105

Rev.: 1

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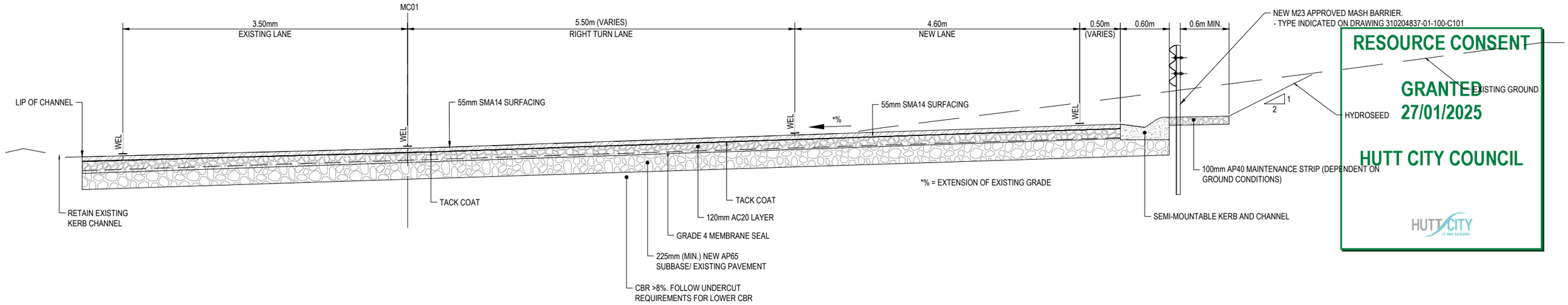
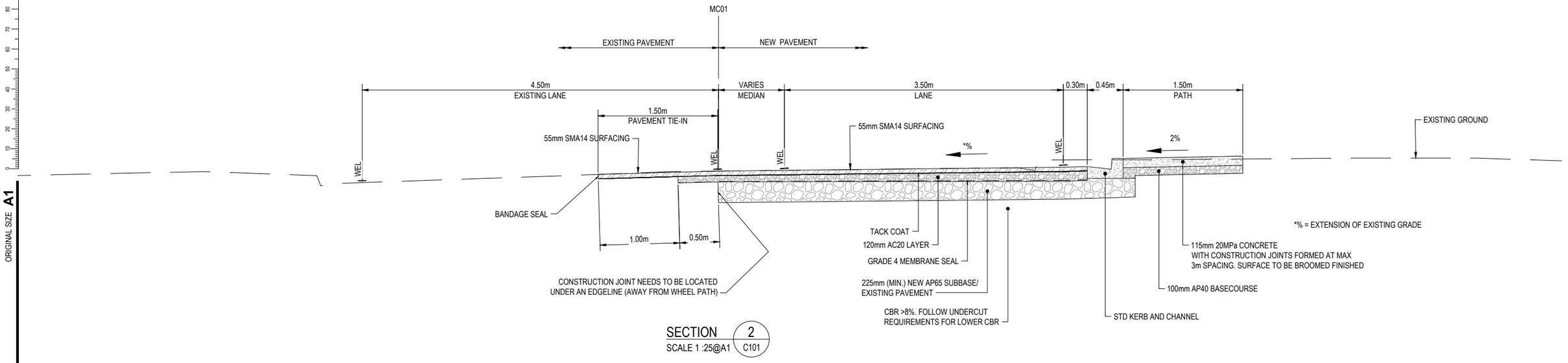
NOTE

1. REFER TO PAVEMENT CONSTRUCTION NOTES ON DRAWING 310204837-01-100-C132.



SECTION 1
SCALE 1 :25@A1 C101

RESOURCE CONSENT
GRANTED
27/01/2025
HUTT CITY COUNCIL



SECTION 2
SCALE 1 :25@A1 C101

DO NOT SCALE - IF IN DOUBT, ASK
ORIGINAL SIZE A1

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	GD	TW	MG	16.05.24
0	FOR TENDER	SS	MG	CD	19.12.22

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Randula Dias	11.2022
DRAWN	Janco Jordaan	11.2022
CAD REVIEW	Shivneel Sen	29.01.24
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DESIGN REVIEW	Martin Gribble	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

TYPICAL PAVEMENT CROSS SECTIONS
SECTIONS 1 AND 2

Status Stamp: FOR CONSTRUCTION
Date Stamp: 16.05.24
Scales: AS SHOWN
Drawing No.: 310204837-01-100-C130
Rev.: 1

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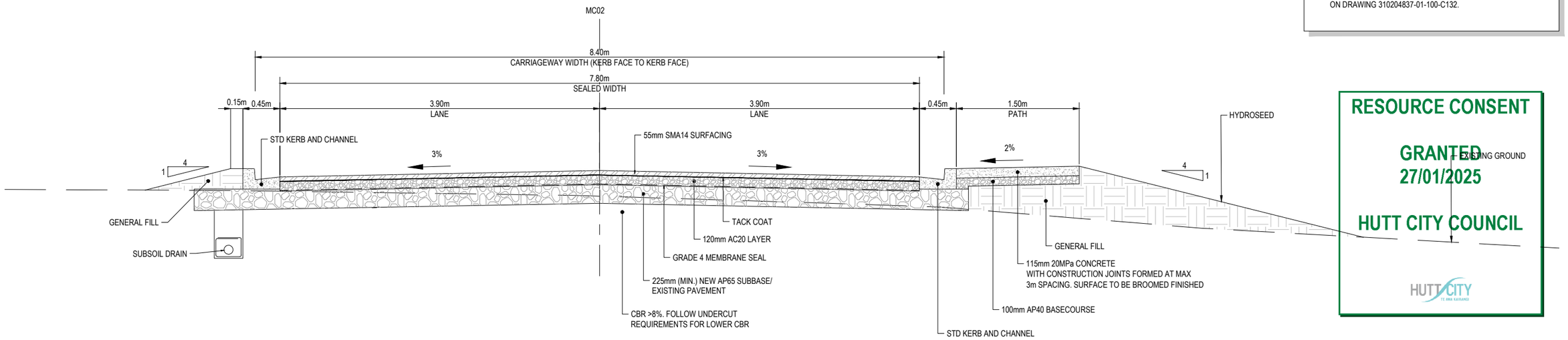
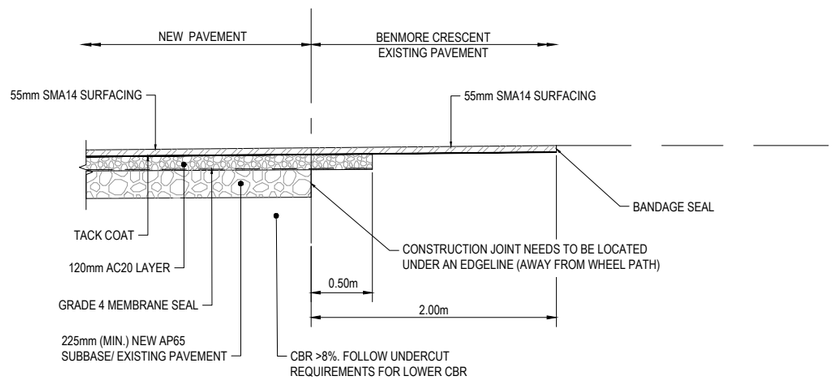
NOTE

1. REFER TO PAVEMENT CONSTRUCTION NOTES ON DRAWING 310204837-01-100-C132.



SECTION 3 / C102

SCALE 1 :25@A1



TIE IN DETAIL - NEW TO EXISTING PAVEMENT

SCALE 1 : 25 @ A1

RESOURCE CONSENT

GRANTED
27/01/2025

HUTT CITY COUNCIL

DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1

500 0 500mm 1m

SCALE 1:25

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	GD	TW	MG	16.05.24
0	FOR TENDER	SS	MG	CD	19.12.22

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Randula Dias	11.2022
DRAWN	Janco Jordaan	11.2022
CAD REVIEW	Shivneel Sen	29.01.24
DESIGN CHECK	Tjaart van der Walt	29.01.24
DESIGN REVIEW	Martin Gribble	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

TYPICAL PAVEMENT CROSS SECTIONS
SECTION 3

Status Stamp: FOR CONSTRUCTION
Date Stamp: 16.05.24
Scales: AS SHOWN
Drawing No.: 310204837-01-100-C131
Rev.: 1

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PAVEMENT CONSTRUCTION NOTES:

FOLLOWING CONSTRUCTION NOTES SHALL BE READ IN CONJUNCTION WITH PROJECT TECHNICAL SPECIFICATIONS AND THE PAVEMENT DESIGN REPORT PREPARED FOR TE RANGIHAEATA INDUSTRIAL PARK BENMORE CRESCENT UPGRADE.

CONSTRUCTION ON EXISTING PAVEMENT

1. EXCAVATE EXISTING GROUND TO 175mm BELOW FINISHED LEVEL.
2. EXISTING PAVEMENT SHALL BE SHAPED, COMPACTED PRIOR TO CONSTRUCTION OF THE AC 20 BASECOURSE LAYER.
3. BENKELMAN BEAMS SHALL BE COMPLETED ON THE SUBBASE LAYER. DEFLECTIONS LARGER THAN 1.6mm SHALL BE CONSIDERED AS A SOFT SPOT. THESE AREAS ARE TO BE EXCAVATED AND SUBGRADE CBR TO BE CONFIRMED. EXCAVATION SHALL ALSO CONFIRM A MINIMUM EXISTING PAVEMENT DEPTH OF 225mm.
4. EXCAVATED SOFT SPOT AREAS SHALL BE BACKFILLED WITH AP65 AGGREGATE.
5. BACKFILLED LAYERS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH TNZ (2005) B/02 SPECIFICATIONS
6. WHERE UNDERCUTTING OF PAVEMENT IS NECESSARY, A TENSAR TX160 GEOGRID AND A TNZ F7 CLASS C GEOTEXTILE CLOTH MAY BE REQUIRED TO BE LAID OVER THE EXPOSED SUBGRADE PRIOR TO BACKFILLING OF AGREGATE. REFER TABLE ON RIGHT FOR CONTINGENCY CONSTRUCTION NOTES.
7. SUPPLY AND LAY ASPHALT PAVEMENT LAYERS AS PER THE CROSS SECTION DRAWING AND AS PER NZTA M10 (2020) AND M27 (2020) SPECIFICATIONS. GRADE 4 MEMBRANE SEAL SHALL BE CONSTRUCTED ON THE AP65 SUBBASE PRIOR TO LAYING THE AC 20 ASPHALTIC CONCRETE BASECOURSE LAYER.
8. APPLY TACK COAT ON TOP OF THE AC 20 BASECORUSE LAYER. THE CONTRACTOR SHALL ALSO SPRAY ADJACENT VERTICAL FACES. SUPPLY AND PLACE 55mm OF SMA14 WEARING COARSE.
9. ASPHALT MIXES SHALL COMPLY WITH THE INFORMATION PROVIDED IN THE PROJECT TECHNICAL SPECIFICATIONS. BINDER FOR THE ASPHALT MIXES SHALL BE TO NZTA M1-A: (2019), PG58-16-H.
10. CORE TESTING AND PRODUCTION TESTING TO BE CARRIED OUT AS PER NZTA M/10 (2020) AND NZTA M27 (2020) SPECIFICATIONS FOR EACH LAYER OF ASPHALT LAID. EACH LAYER IS TO BE CONSTRUCTED FOLLOWING ACCEPTANCE OF THE CORE TESTING RESULTS FOR EACH LAYER. BACKFILLING OF THE CORE TESTING SHALL BE UNDERTAKEN AS PER NZTA SPECIFICATIONS.
11. AT THE INTERFACE BETWEEN THE NEW AND EXISTING PAVEMENT THE NEW PAVEMENT LAYERS SHALL BE STEPPED INTO THE EXISTING PAVEMENT WITHIN 500mm STEPS.

CONSTRUCTION ON WIDENED AREAS

12. EXCAVATE EXISTING GROUND TO 400mm BELOW FINISHED DESIGN LEVEL.
13. EXISTING SUBGRADE SHALL BE SHAPED, COMPACTED PRIOR TO CONSTRUCTION OF THE SUBBASE LAYER. SUBGRADE SHALL BE PREAPRED ACCORDING TO PROJECT TECHNICAL SPECIFICATIONS.
14. IT SHALL BE ENSURED THAT ALL TOPSOIL AND ORGANIC DETRITUS IS REMOVED PIROR TO CONSTRUCTION OF THE PAVEMENT LAYERS.
15. SCALA PENETROMETER TESTING TO BE COMPLETED TO ENSURE SUBGRADE CBR ≥8%. SOFT SPOT AREAS SHALL BE EXCAVATED TO DEPTHS SHOWN ON THE CONTINGENCY CONSTRUCTION NOTES ON RIGHT.
16. TO ENSURE CONSTRUCTABILITY AND ADEQUATE COMPACTION OF THE PAVEMENTLAYERS IN THE AREAS TO BE WIDENED, IT IS RECOMMENDED THAT A MINIMUM ALLOWABLE WIDTH OF WIDENING IS 2m. WIDENING AREAS THAT EXTEND INTO THE LIVE LANE SHALL BE CONSTRUCTED TO NEW DESIGN DEPTHS AND LONGITUDINAL JOINTS LOCATED AWAY FROM THE EXPECTED WHEEL PATHS.
17. REFER NOTES 4 TO 112 TO COMPLETE CONSTRUCTION..

CONTINGENCY CONSTRUCTION NOTES

THE FOLLOWING CONTINGENCY STRATEGIES ARE RECOMMENDED WHERE LOWER SUBGRADE STRENGTHS ARE ENCOUNTERED FROM SCALA PENETROMETER TESTING. ANY DIG-OUT REQUIREMENTS SHOULD FIRST BE DISCUSSED WITH THE ENGINEER

CBR	CONTINGENCY STRATEGY	TOTAL PAVEMENT DEPTH
SAC PAVEMENT CONSTRUCTION		
6% ≤ CBR < 8%	EXCAVATE TO 425mm, SUPPLY AND PLACE 250mm AP65, CONSTRUCT SAC LAYER AND SURFACE WITH 55mm SMA14	425mm
5% ≤ CBR < 6%	EXCAVATE TO 475mm, SUPPLY AND PLACE 300mm AP65, CONSTRUCT SAC LAYER AND SURFACE WITH 55mm SMA14	475mm
4% ≤ CBR < 5%	EXCAVATE TO 575mm, SUPPLY AND PLACE 400mm AP65, CONSTRUCT SAC LAYER AND SURFACE WITH 55mm SMA14	575mm
3% ≤ CBR < 4%	EXCAVATE TO 675mm, SUPPLY AND PLACE 500mm AP65, CONSTRUCT SAC LAYER AND SURFACE WITH 55mm SMA14	675mm
2% ≤ CBR < 3%*	EXCAVATE TO 925mm, SUPPLY, AND PLACE 170mm AP65 WORKING PLATFORM FOR THE CONSTRUCTION OF THE PAVEMENT LAYERS. SUPPLY PLACE AND COMPACT 580mm AP65 SUBBASE LAYER IN 3 LAYERS, CONSTRUCT SAC LAYER AND SURFACE WITH 55mm SMA14	755mm ON A 170mm WORKING PLATFORM
CBR < 2%*	REFER TO ENGINEER.	

* WHERE UNDERCUTTING OF PAVEMENT IS NECESSARY (FOR LOWER CBR), A TENSAR TX160 GEOGRID AND A TNZ F7 CLASS C GEOTEXTILE CLOTH MAY BE REQUIRED TO BE LAID OVER THE EXPOSED SUBGRADE PRIOR TO BACKFILLING OF AGREGATE.

RESOURCE CONSENT

GRANTED
27/01/2025

HUTT CITY COUNCIL

HUTT CITY TE AWA KAIRANGI

DO NOT SCALE - IF IN DOUBT, ASK
ORIGINAL SIZE A1

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	AKJ	TW	MG	16.05.24
0	FOR TENDER	SS	MG	CD	19.12.22

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Janco Jordaan	11.2022
DRAWN	Janco Jordaan	12.2022
CAD REVIEW	Shivneel Sen	29.01.24
DESIGN CHECK	Tjaart van der Walt	29.01.24
DESIGN REVIEW	Martin Gribble	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

PAVEMENT NOTES

Status Stamp: **FOR CONSTRUCTION**
Date Stamp: **16.05.24**
Scales: AS SHOWN
Drawing No.: 310204837-01-100-C132
Rev.: 1

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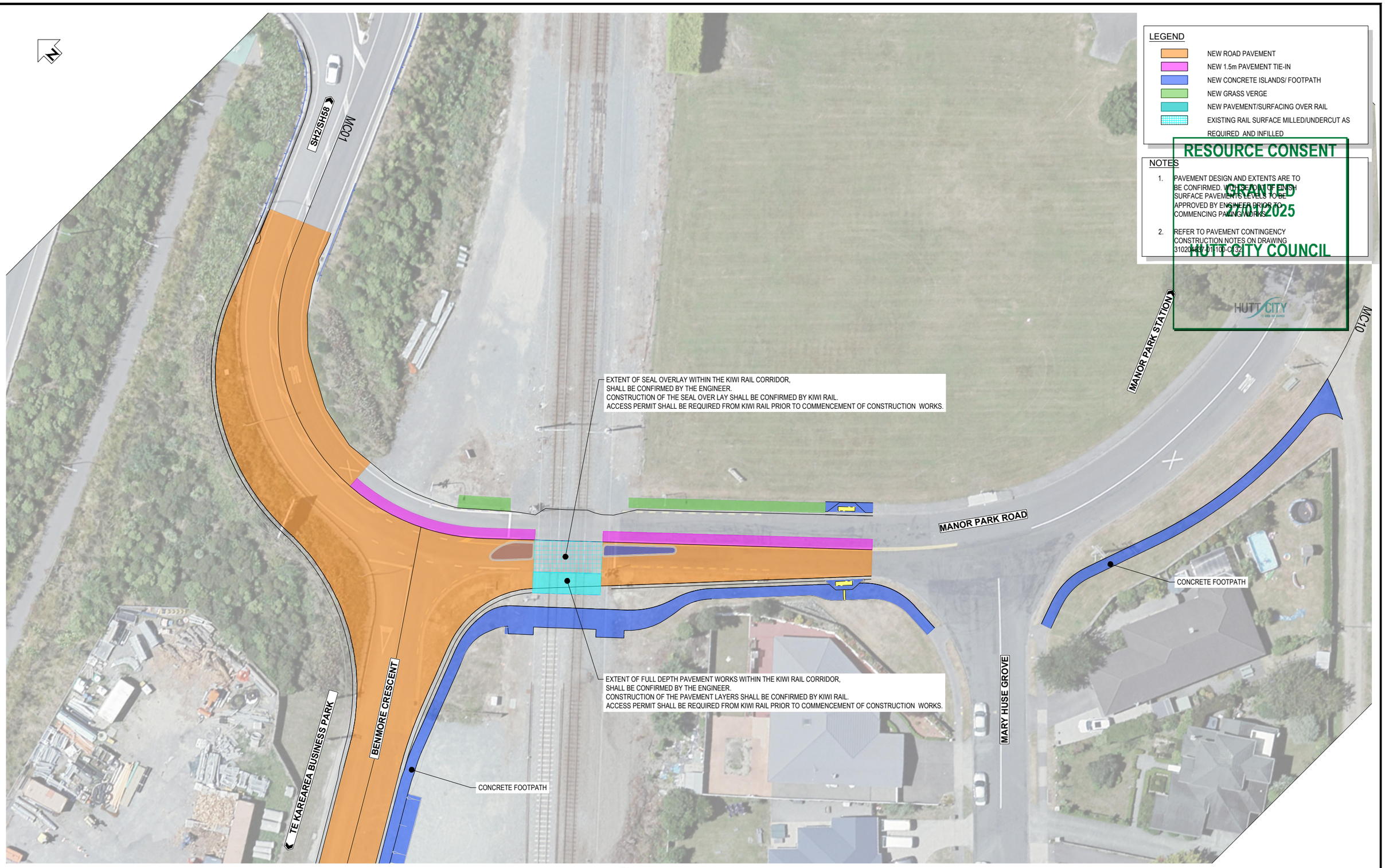

PLAN

SCALE 1 : 250 @ A1

DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	GD	TW	MG	16.05.24
0	FOR TENDER	GD	MG	CD	19.12.22

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Janco Jordaan	11.2022
DRAWN	Gordon Dobson	11.2022
CAD REVIEW	Shivneel Sen	29.01.24
DESIGN CHECK	Tjaart van der Walt	29.01.24
DESIGN REVIEW	Martin Gribble	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

PAVEMENT PLAN - SHEET 1 OF 2
MANOR PARK ROAD

Status Stamp: FOR CONSTRUCTION
Date Stamp: 16.05.24
Scales: AS SHOWN
Drawing No.: 310204837-01-100-C133
Rev.: 1

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RESOURCE CONSENT

GRANTED
27/01/2025

HUTT CITY COUNCIL

HUTT CITY TE AWA KAIRANGI

PLAN
SCALE 1 : 250 @ A1

LEGEND

- NEW ROAD PAVEMENT
- NEW 1.5m PAVEMENT TIE-IN
- NEW CONCRETE ISLANDS/ FOOTPATH
- NEW GRASS VERGE
- NEW PAVEMENT/SURFACING OVER RAIL
- EXISTING RAIL SURFACE MILLED/UNDERCUT AS REQUIRED AND INFILLED

NOTES

1. PAVEMENT DESIGN AND EXTENTS ARE TO BE CONFIRMED. WITH SETOUT OF FINISH SURFACE PAVEMENTS LEVELS TO BE APPROVED BY ENGINEER PRIOR TO COMMENCING PAVING WORKS.
2. REFER TO PAVEMENT CONTINGENCY CONSTRUCTION NOTES ON DRAWING 310204837-01-100-C132.

5 0 5 10m
SCALE 1:250

ORIGINAL SIZE A1
DO NOT SCALE - IF IN DOUBT, ASK
200mm 150 100 90 80 70 60 50 40 30 20 10 0

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	GD	TW	MG	16.05.24
0	FOR TENDER	GD	MG	CD	19.12.22

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Janco Jordaan	11.2022
DRAWN	Gordon Dobson	11.2022
CAD REVIEW	Shivneel Sen	29.01.24
DESIGN CHECK	Tjaart van der Walt	29.01.24
DESIGN REVIEW	Martin Gribble	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

PAVEMENT PLAN - SHEET 2 OF 2
BENMORE CRESCENT

Status Stamp: FOR CONSTRUCTION
Date Stamp: 16.05.24
Scales: AS SHOWN
Drawing No.: 310204837-01-100-C134
Rev.: 1

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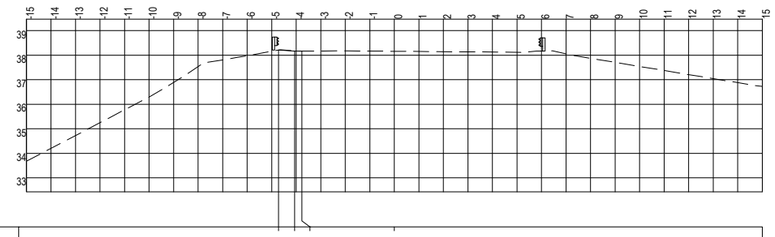
DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1



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Y = 815773.162
Z = null

DATUM RL 31.000

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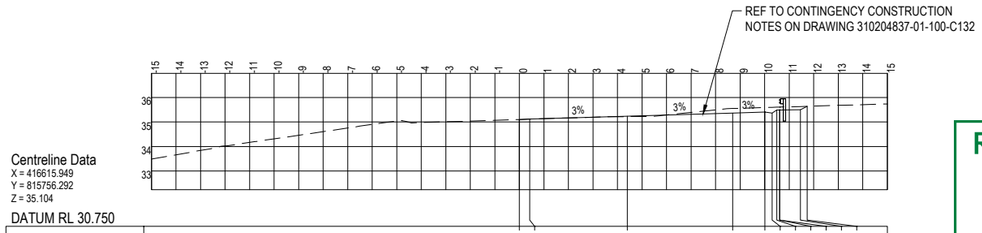
CUT/FILL																												0.000	0.000	0.000	
EXISTING LEVEL																												38.205	38.166	38.167	38.158
OFFSET																												-4.724	-4.070	-3.770	0.000

CHAINAGE 10.000



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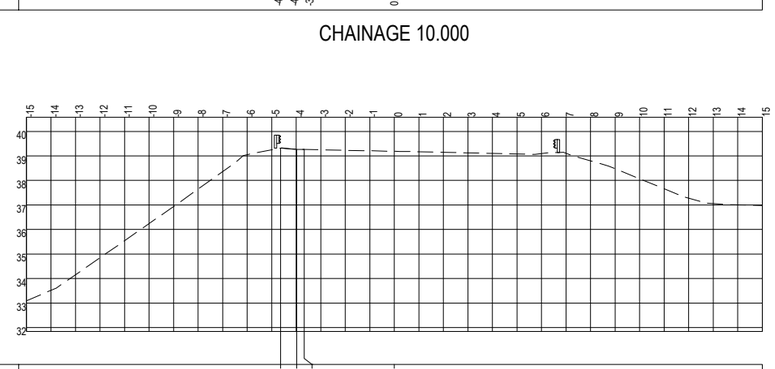
X = 416615.949
Y = 815756.292
Z = 35.104

DATUM RL 30.750

DESIGN LEVEL																												35.104	35.116	35.236	35.365	35.404	35.364	35.489	35.489	35.506	35.642
CUT/FILL																												0.000	-0.001	0.014	-0.188	-0.187	-0.236	-0.117	-0.120	-0.128	0.000
EXISTING LEVEL																												35.104	35.117	35.222	35.553	35.591	35.600	35.605	35.609	35.634	35.642
OFFSET																												0.000	0.420	4.396	8.698	10.007	10.307	10.497	10.607	10.608	11.458	11.729

CHAINAGE 40.000



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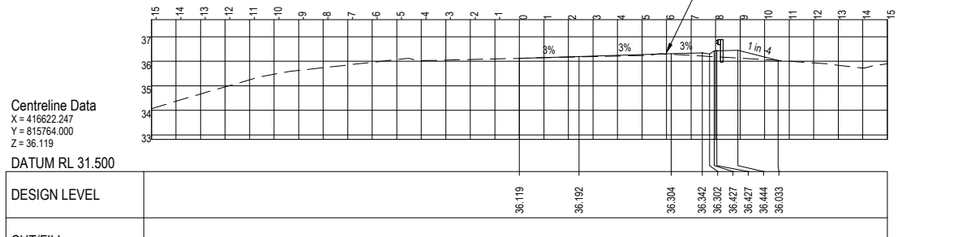
DATUM RL 30.500

DESIGN LEVEL																												39.317	39.268	39.262	
CUT/FILL																												0.000	0.000	0.000	
EXISTING LEVEL																												39.317	39.268	39.262	39.189
OFFSET																												-4.640	-3.978	-3.678	0.000

CHAINAGE 0.000

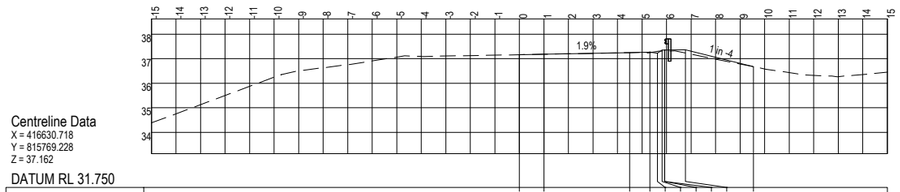


Centreline Data
X = 416622.247
Y = 815764.000
Z = 36.119

DATUM RL 31.500

DESIGN LEVEL																												36.119	36.192	36.304	36.342	36.302	36.427	36.427	36.444	36.033
CUT/FILL																												0.000	0.016	0.022	0.129	0.106	0.241	0.247	0.311	0.000
EXISTING LEVEL																												36.119	36.176	36.282	36.213	36.196	36.166	36.180	36.133	36.033
OFFSET																												0.000	2.435	6.190	7.454	7.754	7.944	8.054	8.905	10.551

CHAINAGE 30.000



Centreline Data
X = 416630.718
Y = 815769.228
Z = 37.162

DATUM RL 31.750

DESIGN LEVEL																												37.162	37.181	37.247	37.263	37.223	37.348	37.348	37.365	36.674
CUT/FILL																												0.000	0.001	0.003	0.014	-0.073	0.041	0.039	0.039	0.139	0.000
EXISTING LEVEL																												37.162	37.180	37.245	37.249	37.296	37.307	37.309	37.309	37.226	36.674
OFFSET																												0.000	1.000	4.500	5.324	5.624	5.814	5.924	5.925	6.775	9.539

CHAINAGE 20.000

RESOURCE CONSENT

GRANTED
27/01/2025

HUTT CITY COUNCIL

HUTT CITY TE AWA KAIRANGI

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	JJ	TW	MG	16.05.24
0	FOR TENDER	JJ	GC	CD	19.12.22

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Janco Jordaan	11.2022
DRAWN	Janco Jordaan	11.2022
CAD REVIEW	Shivneel Sen	29.01.24
DESIGN CHECK	Tjaart van der Walt	29.01.24
DESIGN REVIEW	Jamie Whittaker	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

MC01 - CROSS SECTIONS
CH. 0.000 TO CH. 40.000

Status Stamp: FOR CONSTRUCTION
Date Stamp: 16.05.24
Scales: AS SHOWN
Drawing No.: 310204837-01-100-C140
Rev.: 1

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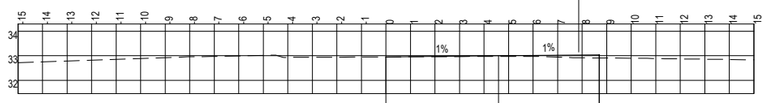
TIE-IN WITH MANOR PARK ROAD FINISH SURFACE LEVEL.
REFER TO LONG SECTION ON
DRAWING 310204837-01-100-C102

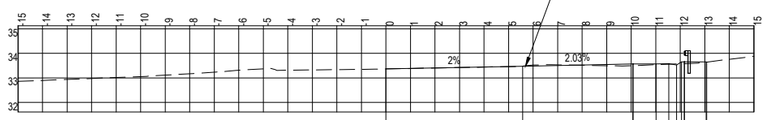


Centreline Data
X = 416615.421
Y = 815727.531
Z = 32.951

DATUM RL 30.000

DESIGN LEVEL																													
CUT/FILL																													
EXISTING LEVEL																													
OFFSET																													

CHAINAGE 70.000

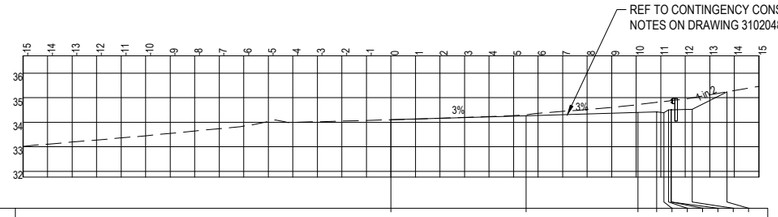


Centreline Data
X = 416612.337
Y = 815736.996
Z = 33.365

DATUM RL 30.250

DESIGN LEVEL																													
CUT/FILL																													
EXISTING LEVEL																													
OFFSET																													

CHAINAGE 60.000

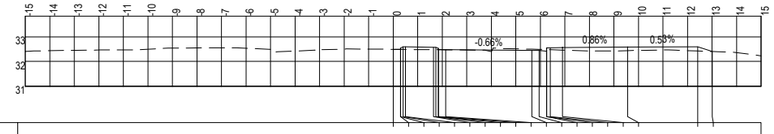


Centreline Data
X = 416612.520
Y = 815746.948
Z = 34.100

DATUM RL 30.500

DESIGN LEVEL																													
CUT/FILL																													
EXISTING LEVEL																													
OFFSET																													

CHAINAGE 50.000



Centreline Data
X = 416635.120
Y = 815705.014
Z = 32.488

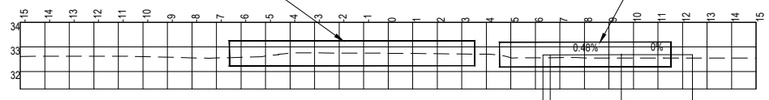
DATUM RL 29.500

DESIGN LEVEL																													
CUT/FILL																													
EXISTING LEVEL																													
OFFSET																													

CHAINAGE 100.000

REFER TO KIWIRAIL DRAWINGS 300182-31 TO
300182-S10 FOR VECHILE RAIL CROSSING DETAILS

REFER TO DRAWINGS 310204837-01-100-C301 TO
104837-01-100-C307 DRAWINGS FOR
PEDESTRIAN RAIL CROSSING DETAILS

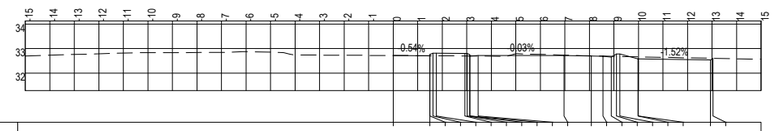


Centreline Data
X = 416628.257
Y = 815712.288
Z = null

DATUM RL 30.000

DESIGN LEVEL																													
CUT/FILL																													
EXISTING LEVEL																													
OFFSET																													

CHAINAGE 90.000



Centreline Data
X = 416621.394
Y = 815719.561
Z = 32.714

DATUM RL 30.000

DESIGN LEVEL																													
CUT/FILL																													
EXISTING LEVEL																													
OFFSET																													

CHAINAGE 80.000

RESOURCE CONSENT

GRANTED
27/01/2025

HUTT CITY COUNCIL

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	JJ	TW	MG	16.05.24
0	FOR TENDER	JJ	GC	CD	19.12.22

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Janco Jordaan	11.2022
DRAWN	Janco Jordaan	11.2022
CAD REVIEW	Shivneel Sen	29.01.24
DESIGN CHECK	Tjaart van der Walt	29.01.24
DESIGN REVIEW	Jamie Whittaker	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

MC01 - CROSS SECTIONS
CH. 50.000 TO CH. 100.000

Status Stamp: **FOR CONSTRUCTION**
Date Stamp: **16.05.24**
Scales: AS SHOWN
Drawing No.: 310204837-01-100-C141
Rev.: 1

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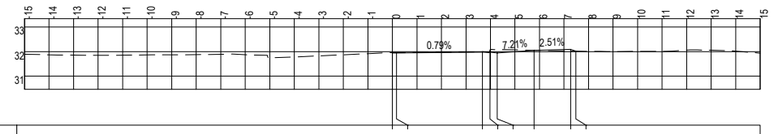
ORIGINAL SIZE A1
DO NOT SCALE - IF IN DOUBT, ASK

RESOURCE CONSENT

GRANTED
27/01/2025

HUTT CITY COUNCIL

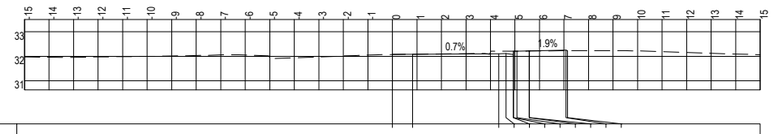


Centreline Data
X = 416655.708
Y = 815683.194
Z = 31.947

DATUM RL 29.000

DESIGN LEVEL														31.947	31.948					31.976	31.978	31.943	32.051			32.089	32.017		
CUT/FILL														-0.005	-0.006					-0.018	-0.069	-0.140	0.000			0.068	0.000		
EXISTING LEVEL														31.952	31.954					31.994	32.047	32.083	32.051			32.021	32.017		
OFFSET														0.000	0.167					3.675	3.975	4.275	5.775			7.270	7.485		

CHAINAGE 130.000

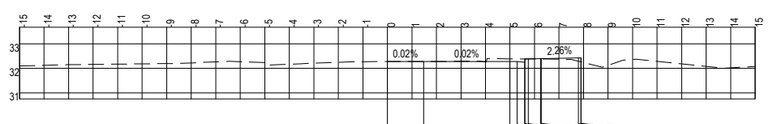


Centreline Data
X = 416648.846
Y = 815690.468
Z = 32.078

DATUM RL 29.250

DESIGN LEVEL														32.078	32.084					32.109	32.111	32.076	32.211			32.221	32.249	32.229	
CUT/FILL														0.006	0.002					-0.104	-0.103	-0.138	-0.003			0.006	0.021	-0.000	
EXISTING LEVEL														32.072	32.081					32.213	32.213	32.214	32.214			32.215	32.228	32.229	
OFFSET														0.000	0.826					4.334	4.635	4.935	4.945			5.576	5.585	7.080	7.141

CHAINAGE 120.000

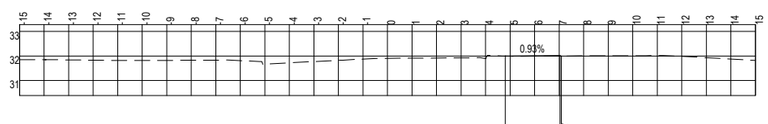


Centreline Data
X = 416641.983
Y = 815697.741
Z = 32.280

DATUM RL 29.500

DESIGN LEVEL														32.280	32.281					32.281	32.282	32.247	32.382			32.392	32.426	32.426	32.126
CUT/FILL														0.007	0.002					-0.105	-0.104	-0.138	-0.003			-0.002	0.010	0.010	0.139	0.164	-0.135
EXISTING LEVEL														32.273	32.278					32.387	32.386	32.385	32.385			32.384	32.382	32.382	32.287	32.262	32.262
OFFSET														0.000	1.466					4.993	5.294	5.594	5.604			5.744	6.244	6.270	7.788	7.889	7.890

CHAINAGE 110.000



Centreline Data
X = 416658.170
Y = 815680.586
Z = null

DATUM RL 29.000

DESIGN LEVEL																										31.998	32.019	32.001	
CUT/FILL																										0.000	0.018	0.000	
EXISTING LEVEL																				31.997						31.998	32.001	32.001	
OFFSET																				0.000						4.802	7.034	7.087	

CHAINAGE 133.587

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	JJ	TW	MG	16.05.24
0	FOR TENDER	JJ	GC	CD	19.12.22

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Janco Jordaan	11.2022
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DESIGN REVIEW	Jamie Whittaker	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

MC01 - CROSS SECTIONS
CH. 110.000 TO CH. 133.587

Status Stamp: FOR CONSTRUCTION
Date Stamp: 16.05.24
Scales: AS SHOWN
Drawing No.: 310204837-01-100-C142
Rev.: 1

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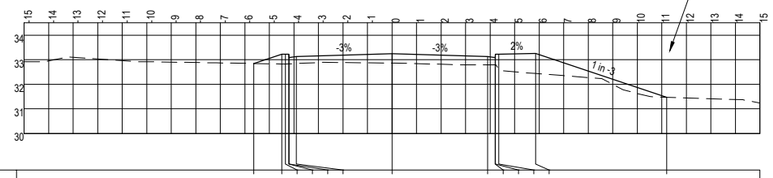
DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1

DO NOT SCALE - IF IN DOUBT, ASK
ORIGINAL SIZE A1

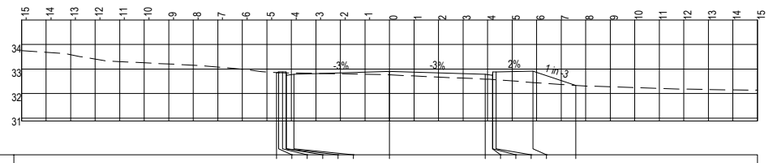
BUSINESS PARK BUND.
DESIGN REFER TO SPENCER HOLMES
BUSINESS PARK DRAWING SERIES



Centreline Data
X = 416508.967
Y = 815663.660
Z = 33.241

DATUM RL 28.500

| | | |

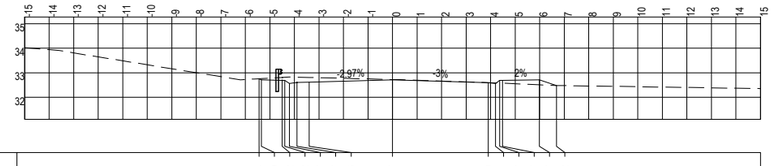


Centreline Data
X = 416560.694
Y = 815694.062
Z = 32.897

DATUM RL 29.500

DESIGN LEVEL	32.853	32.881	32.881	32.879	32.745	32.780	32.897	32.780	32.745	32.880	32.880	32.910	32.328																
CUT/FILL	0.000	0.036	0.038	0.039	-0.095	-0.055	0.137	0.192	0.174	0.310	0.320	0.461	0.000																
EXISTING LEVEL	32.853	32.845	32.843	32.840	32.840	32.835	32.760	32.588	32.571	32.571	32.560	32.450	32.328																
OFFSET	-4.601	-4.517	-4.367	-4.210	-4.200	-3.900	0.000	3.900	4.200	4.210	4.350	5.850	7.597																

CHAINAGE 80.000

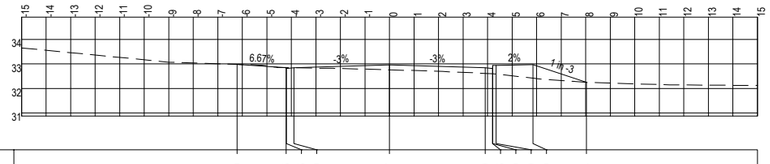


Centreline Data
X = 416586.557
Y = 815709.264
Z = 32.717

DATUM RL 29.750

DESIGN LEVEL	32.754	32.709	32.692	32.692	32.567	32.607	32.616	32.717	32.600	32.561	32.687	32.717	32.482																
CUT/FILL	-0.004	-0.053	-0.121	-0.128	-0.264	-0.217	-0.195	-0.006	0.001	-0.028	0.105	0.110	0.205	0.000															
EXISTING LEVEL	32.757	32.763	32.813	32.820	32.831	32.824	32.811	32.723	32.600	32.589	32.582	32.577	32.512	32.482															
OFFSET	-5.440	-5.351	-4.501	-4.390	-4.200	-3.900	-3.400	0.000	3.900	4.200	4.373	4.485	5.985	6.691															

CHAINAGE 110.000

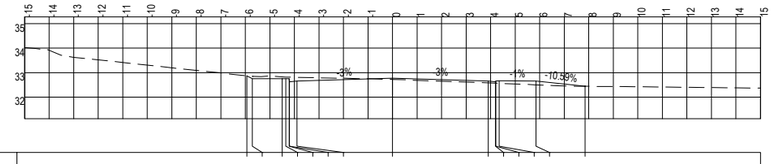


Centreline Data
X = 416552.073
Y = 815688.995
Z = 32.957

DATUM RL 29.500

DESIGN LEVEL	32.979	32.845	32.805	32.840	32.957	32.840	32.805	32.940	32.940	32.970	32.244																		
CUT/FILL	0.000	-0.002	-0.042	-0.002	0.198	0.227	0.205	0.341	0.355	0.552	0.000																		
EXISTING LEVEL	32.979	32.847	32.847	32.842	32.760	32.613	32.600	32.600	32.585	32.418	32.244																		
OFFSET	-6.210	-4.210	-4.200	-3.900	0.000	3.900	4.200	4.210	4.350	5.850	8.028																		

CHAINAGE 70.000

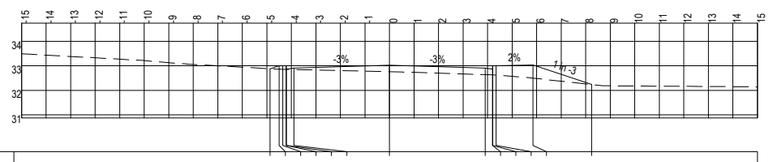


Centreline Data
X = 416577.936
Y = 815704.196
Z = 32.777

DATUM RL 29.750

DESIGN LEVEL	32.876	32.760	32.760	32.760	32.625	32.660	32.777	32.660	32.625	32.665	32.675	32.660	32.448																
CUT/FILL	0.000	-0.091	-0.072	-0.063	-0.057	-0.192	-0.151	0.049	0.075	0.051	0.091	0.107	0.154	0.000															
EXISTING LEVEL	32.876	32.851	32.833	32.824	32.818	32.817	32.811	32.728	32.585	32.575	32.574	32.568	32.507	32.448															
OFFSET	-5.942	-5.712	-4.500	-4.350	-4.210	-4.200	-3.900	0.000	3.900	4.200	4.210	4.350	5.850	7.850															

CHAINAGE 100.000

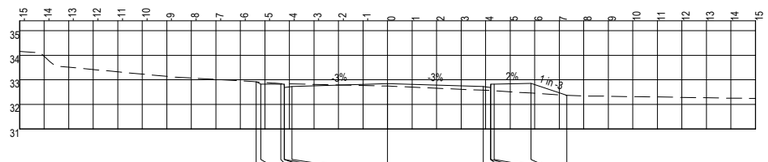


Centreline Data
X = 416543.452
Y = 815683.928
Z = 33.017

DATUM RL 29.500

DESIGN LEVEL	32.878	33.000	33.000	32.865	32.900	33.017	32.900	32.865	33.000	33.000	33.030	32.235																	
CUT/FILL	0.000	0.139	0.143	0.146	0.012	0.054	0.258	0.264	0.239	0.374	0.380	0.535	0.000																
EXISTING LEVEL	32.878	32.861	32.857	32.854	32.854	32.847	32.759	32.636	32.626	32.626	32.620	32.495	32.235																
OFFSET	-4.867	-4.500	-4.350	-4.210	-4.200	-3.900	0.000	3.900	4.200	4.210	4.350	5.850	8.237																

CHAINAGE 60.000



Centreline Data
X = 416569.315
Y = 815699.129
Z = 32.837

DATUM RL 29.500

DESIGN LEVEL	32.918	32.820	32.820	32.820	32.665	32.720	32.837	32.720	32.665	32.820	32.820	32.850	32.365																
CUT/FILL	0.000	-0.082	-0.025	-0.021	-0.156	-0.113	0.096	0.146	0.126	0.261	0.270	0.395	0.000																
EXISTING LEVEL	32.918	32.902	32.845	32.841	32.841	32.834	32.742	32.575	32.560	32.559	32.550	32.456	32.365																
OFFSET	-5.358	-5.163	-4.350	-4.210	-4.200	-3.900	0.000	3.900	4.200	4.210	4.350	5.850	7.305																

CHAINAGE 90.000

RESOURCE CONSENT

GRANTED
27/01/2025

HUTT CITY COUNCIL

HUTT CITY TE AWA KAIRANGI

DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	JJ	TW	MG	16.05.24
0	FOR TENDER	JJ	GC	CD	19.12.22

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Janco Jordaan	11.2022
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APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

MC02 - CROSS SECTIONS
CH. 60.000 TO CH. 110.000

Status Stamp: FOR CONSTRUCTION
Date Stamp: 16.05.24
Scales: AS SHOWN
Drawing No.: 310204837-01-100-C144
Rev.: 1

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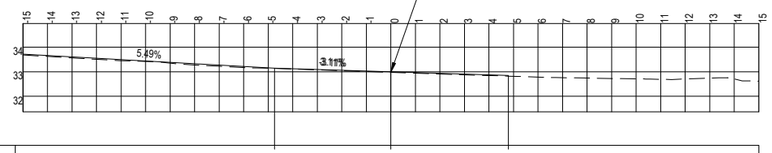
DO NOT SCALE - IF IN DOUBT, ASK
ORIGINAL SIZE A1

TO BE READ IN CONJUGATION WITH SECTION MC01 CH. 70.000 TO CH. CH. 90.000
REFER TO DRAWING 310204837-01-100-C141



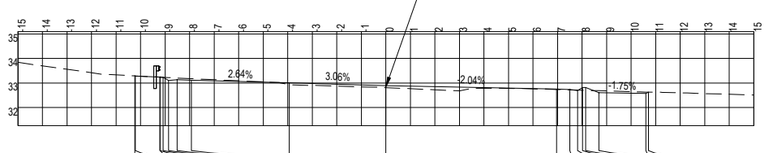
Centreline Data
X = 416611.565
Y = 815725.817
Z = 33.001

DATUM RL 30.000

DESIGN LEVEL	33.149	33.001	32.852
CUT/FILL	0.016	0.024	0.033
EXISTING LEVEL	33.133	32.977	32.820
OFFSET	-4.746	0.000	4.792

CHAINAGE 140.000

TO BE READ IN CONJUGATION WITH SECTION MC01 CH. 70.000 TO CH. CH. 90.000
REFER TO DRAWING 310204837-01-100-C141

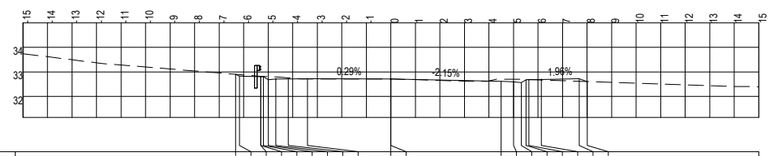


Centreline Data
X = 416603.314
Y = 815720.168
Z = 32.891

DATUM RL 30.000

DESIGN LEVEL	33.290	33.283	33.239	33.239	33.236	33.105	33.136	33.117	33.012	32.891	32.750	32.736	32.696	32.821	32.822	32.609	32.576	32.631											
CUT/FILL	0.000	-0.006	0.002	0.002	0.004	-0.116	-0.069	-0.062	0.087	0.078	0.013	0.014	-0.016	0.115	0.119	-0.077	-0.057	0.000											
EXISTING LEVEL	33.290	33.289	33.237	33.237	33.231	33.221	33.205	33.179	32.925	32.814	32.737	32.721	32.712	32.706	32.703	32.687	32.633	32.631											
OFFSET	-10.232	-10.215	-9.210	-9.209	-9.080	-8.857	-8.507	-7.925	-3.938	0.000	6.965	7.498	7.820	8.024	8.142	8.682	10.602	10.710											

CHAINAGE 130.000



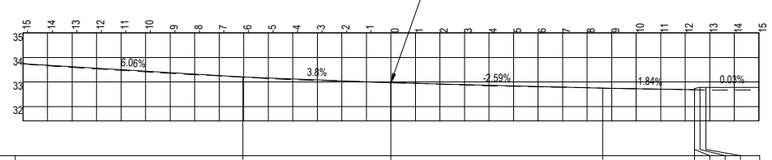
Centreline Data
X = 416595.062
Y = 815714.519
Z = 32.708

DATUM RL 29.750

DESIGN LEVEL	32.903	32.823	32.802	32.802	32.801	32.675	32.714	32.718	32.708	32.708	32.612	32.598	32.558	32.684	32.684	32.686	32.716	32.609											
CUT/FILL	0.000	-0.066	-0.018	-0.018	-0.012	-0.129	-0.077	-0.045	0.008	0.000	-0.089	-0.107	-0.141	-0.011	-0.007	0.013	0.096	0.000											
EXISTING LEVEL	32.903	32.890	32.820	32.820	32.813	32.804	32.790	32.758	32.710	32.708	32.700	32.705	32.699	32.695	32.691	32.673	32.621	32.609											
OFFSET	-6.334	-6.173	-5.306	-5.305	-5.193	-5.000	-4.684	-4.165	-3.400	-0.001	4.495	5.008	5.316	5.511	5.624	6.138	7.679	8.009											

CHAINAGE 120.000

TO BE READ IN CONJUGATION WITH SECTION MC01 CH. 70.000 TO CH. CH. 90.000
REFER TO DRAWING 310204837-01-100-C141



Centreline Data
X = 416615.073
Y = 815728.219
Z = 32.977

DATUM RL 30.000

DESIGN LEVEL	33.206	32.977	32.753	32.684	32.734	32.782	32.781																						
CUT/FILL	0.006	-0.000	0.000	-0.001	0.049	0.102	0.106																						
EXISTING LEVEL	33.200	32.977	32.753	32.685	32.684	32.680	32.675																						
OFFSET	-6.037	0.000	8.635	12.379	12.381	12.601	12.841																						

CHAINAGE 144.251

RESOURCE CONSENT

GRANTED
27/01/2025

HUTT CITY COUNCIL

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	JJ	TW	MG	16.05.24
0	FOR TENDER	JJ	GC	CD	19.12.22

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PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

MC02 - CROSS SECTIONS
CH. 120.000 TO CH. 144.251

Status Stamp: FOR CONSTRUCTION
Date Stamp: 16.05.24
Scales: AS SHOWN
Drawing No.: 310204837-01-100-C145
Rev.: 1

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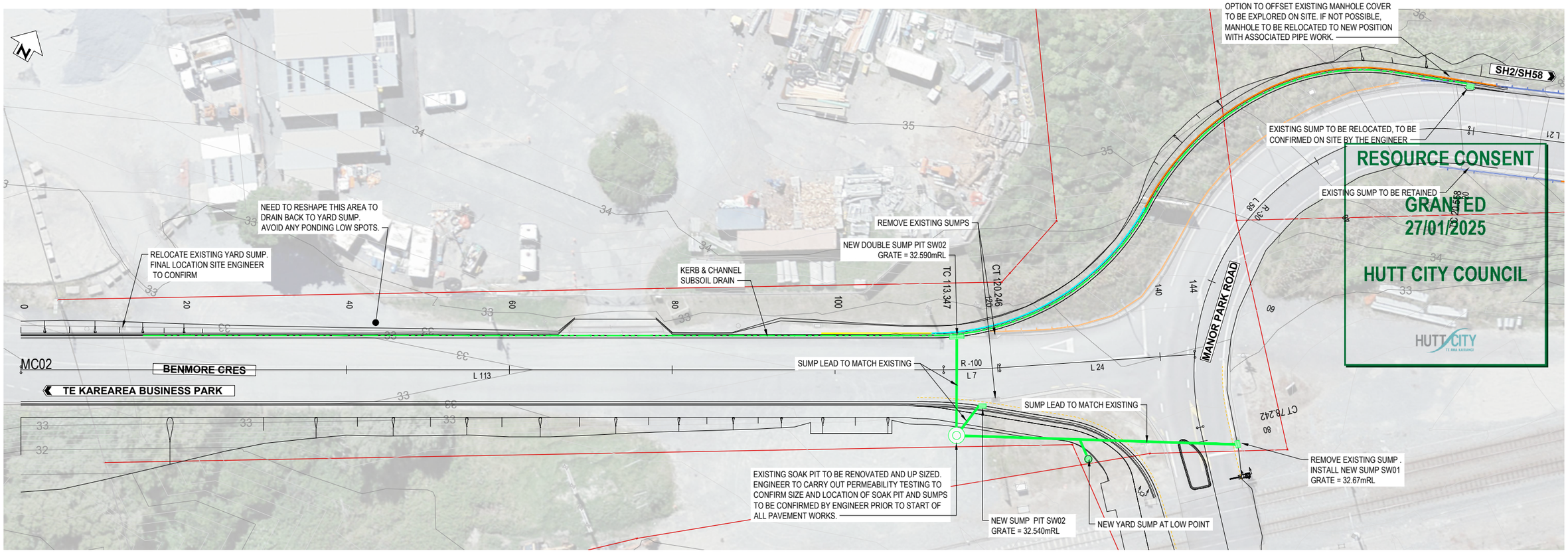

RESOURCE CONSENT
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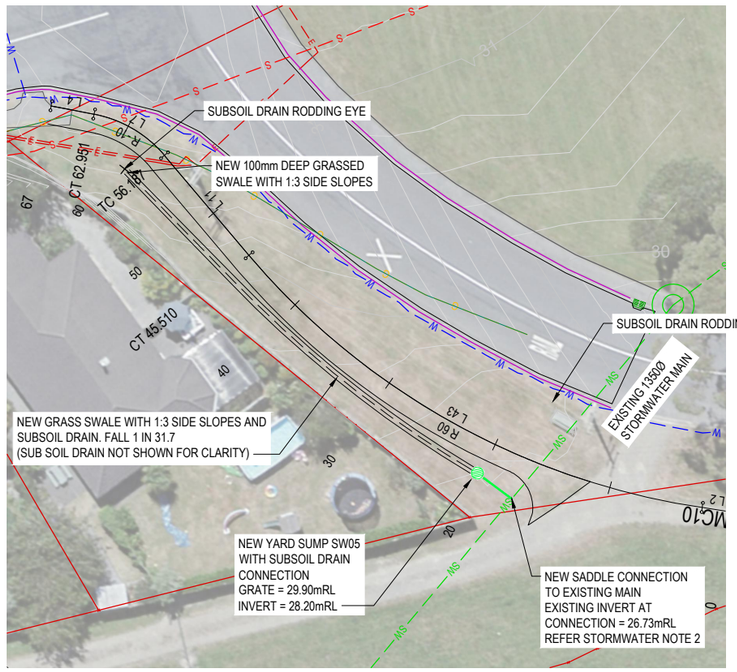
PLAN
SCALE 1 : 250 @ A1



5 0 5 10m
SCALE 1:250

NOTES

GENERAL
1. REFER TO DRAWING 310204837-01-100-C100 FOR SURVEY, SERVICES, AND GENERAL NOTES

STORMWATER
1. THE EXISTING STORMWATER NETWORK HAS NOT BEEN FULLY SURVEYED AT TIME OF DESIGN. THE CONTRACTOR IS TO INVESTIGATE PIPE AND OUTLET LOCATIONS ON SITE PRIOR TO CONSTRUCTION AND ADVISE THE ENGINEER. THE NEW STORMWATER NETWORK IS TO CONNECT TO THE UP SIZED EXISTING SOAK PIT INDICATIVELY SHOWN ON THIS DRAWING.
2. EXISTING STORMWATER MAIN LEVELS ARE FROM WELLINGTON WATER GIS SYSTEM AND ARE APPROXIMATE ONLY. LEVELS TO BE CONFIRMED ON SITE BY CONTRACTOR PRIOR TO CONSTRUCTION.

STORMWATER LEGEND

- NEW STORMWATER 225Ø uPVC SN16 @ MINIMUM 0.5% GRADE UNLESS OTHERWISE NOTED
- STORMWATER CONNECTION TO EXISTING NETWORK. REFER STORMWATER NOTE 1
- NEW STORMWATER 110Ø uPVC SUBSOIL PIPE
- NEW CONCRETE MANHOLE
- NEW HUTT CITY COUNCIL STANDARD ROAD SUMP
- NEW CONCRETE YARD SUMP (HYNDS PRECAST SILT TRAP OR SIMILAR APPROVED)

REFER TO DRAWING 310204837-01-100-C100 LEGEND FOR ALL OTHER ITEMS

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1	ISSUED FOR CONSTRUCTION	JS	TW	MG	16.05.24
0	FOR TENDER	JS	GC	CD	19.12.22

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DRAWN	Jazz Shergill	11.2022
CAD REVIEW	Shivneel Sen	30.01.24
DESIGN CHECK	Tjaart van der Walt	30.01.24
DESIGN REVIEW	Vittal Avvari	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

STORMWATER PLAN
BENMORE CRESCENT

Status Stamp: FOR CONSTRUCTION
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ORIGINAL SIZE A1
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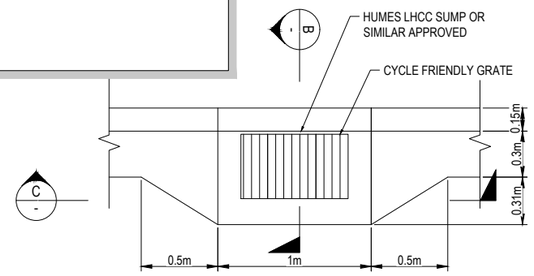
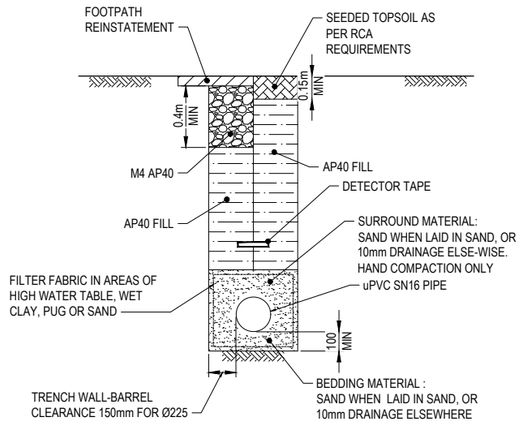
TRENCH NOTES

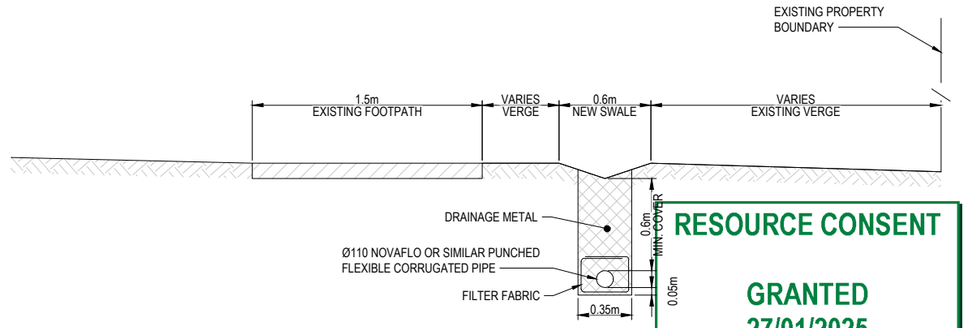
1. SELECTED FILL IS AP40.
2. ALL MATERIALS TO BE COMPACTED IN 150mm LAYERS.
3. RIGID PIPES INCLUDING: CONCRE PIPES, EARTHENWARE PIPES, CORRUGATED STEEL AND ALUMINIUM PIPES, STEEL AND DUCTILE IRON PIPES.
4. FLEXIBLE PIPES INCLUDE ALL PVC PIPES, ALL POLYTHELENE PIPES, COPPER AND POLYBUTYLENE.



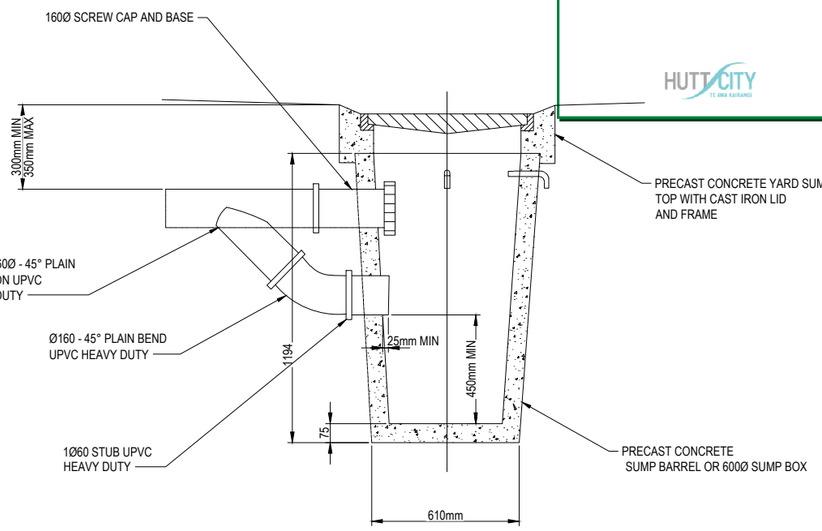
DETAIL - SINGLE SUMP
SCALE 1 : 20 @ A1



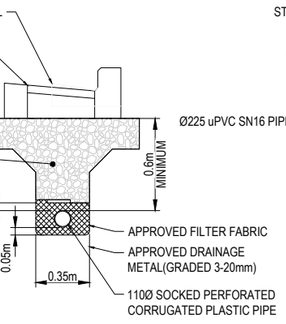
TYPICAL BEDDING AND BACKFILL DETAIL
SCALE 1 : 20 @ A1



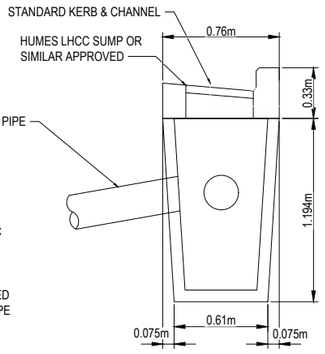
TYPICAL SECTION A
SCALE 1:20 @A1 — C500



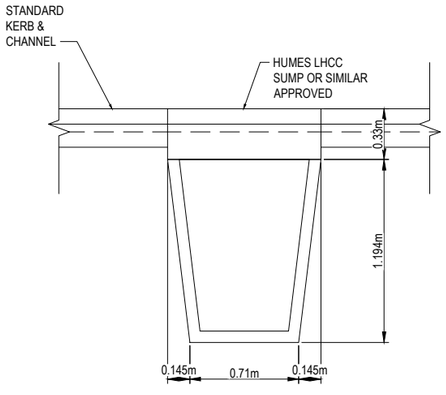
SECTION 1
NOT TO SCALE — -



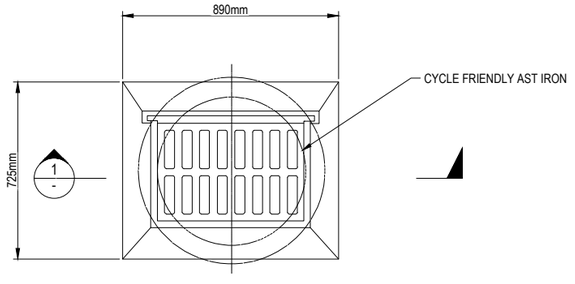
K&C - SUBSOIL DRAIN
SCALE 1 : 20 @ A1



SECTION B
SCALE 1 : 20 @A1 — -



SECTION C
SCALE 1 : 20 @A1 — -



WWL DR05YARD SUMP - PLAN
NOT TO SCALE

RESOURCE CONSENT
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HUTT CITY COUNCIL

REV	REVISIONS	DRN	CHK	APP	DATE
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APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

STORMWATER DETAILS

Status Stamp: FOR CONSTRUCTION
Date Stamp: 16.05.24
Scales: AS SHOWN
Drawing No.: 310204837-01-100-C153
Rev.: 1

ORIGINAL SIZE A1
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ORIGINAL SIZE A1

RETAIN EXISTING WX31 SIGN
RETAIN EXISTING RS1 SIGN
SH2/SH58
MANOR PARK ROAD
WB-600-RL
RETAIN EXISTING WX31 SIGN
REINSTATE EXISTING MARKINGS
WC-100-RL
WI-100-RL (1-3)
RETAIN EXISTING RJ2E SIGN ASSEMBLY
WC-100-RL
WHITE RIGHT-TURN ARROW (4.8m LONG)
WHITE RIGHT-TURN ARROW (4.8m LONG)
WB-600-RL
REINSTATE EXISTING MARKINGS
WC-100-RL
RETAIN EXISTING WXT, WX7, & RP61 SIGNS MOUNTED ON EXISTING LIGHT COLUMN
YI-100-RL (1-1)
WC-300-RL
WC-100-RL
YELLOW 100mm WIDE BORDER
YELLOW 100mm WIDE HATCHING AT 45DEG TO BORDER
INSTALL NEW RD6L SIGN
INSTALL NEW WX1R SIGN
WB-600-RL
WC-100-RL
YI-100-RL (1-1)
MANOR PARK STATION
RELOCATE EXISTING GUIDE SIGN REFER TO NOTE 3.
6
6
1.75
MANOR PARK ROAD
WC-300-RL
WI-100-RL (1-1)
RELOCATE EXISTING RP2 SIGN
WC-100-RL
WB-600-RL
WC-300-RL
GIVE-WAY TRIANGLE (4.0m LONG)
JOIN
LINE
1.5
WI-100-RL (1-1)
YI-100-RL (1-1)
WC-100-RL
INSTALL NEW RD6L SIGN
WC-100-RL
RELOCATE EXISTING STREET NAME SIGN AND FINGERBOARD
WC-300-RL
YI-100-RL (1-1)
RELOCATE EXISTING WX1L SIGN CLEAR OF FOOTPATH
RELOCATE EXISTING WXT, WX7, WX8 SIGNS
RELOCATE EXISTING RJ2E SIGN ASSEMBLY CLEAR OF FOOTPATH
MARY HUSE GROVE
ADJUST STREET SIGN TO BE 2.4m ABOVE FINISH SURFACE OF FOOTPATH
TE KAREAREA BUSINESS PARK
BENMORE CRESCENT

LINE MARKING ANNOTATION LEGEND:

W = WHITE
G = GREEN
Y = YELLOW

C = CONTINUOUS
I = INTERMITTENT
B = BAR

LINE WIDTH (mm)

LENGTH OF GAP (m)

LENGTH OF LINE (m)

RL = REFLECTORISED AND LONG LIFE

ROAD SIGNS AND MARKINGS LEGEND

WHITE PAVEMENT MARKING
WHITE PAVEMENT MARKING (DASHED)
YELLOW PAVEMENT MARKING
YELLOW PAVEMENT MARKING (DASHED)
WHITE PAVEMENT SYMBOL
BI-DIRECTIONAL WHITE RRPM
MONO-DIRECTIONAL WHITE RRPM
MONO-DIRECTIONAL RED RRPM
EXISTING SIGN TO BE RELOCATED
EXISTING SIGN TO BE RETAINED

RESOURCE CONSENT
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HUTT CITY COUNCIL

NOTES

1. ALL ROAD SIGNS AND MARKINGS AND RRPMs MUST BE IN ACCORDANCE WITH THE WAKA KOTAHI TRAFFIC CONTROL DEVICES (TCD) MANUAL AND/OR MANUAL OF TRAFFIC SIGNS AND MARKINGS (MOTSAM) AND NZTA M24:2020 SPECIFICATION FOR PERMANENT TRAFFIC SIGNS.
2. REFER TO DRAWING 310204837-01-100-C100 FOR GENERAL NOTES.
3. NEW LOCATION OF TRAFFIC SIGNS. TO BE CONFIRMED ONCE POTHOLING HAS BEEN CARRIED OUT AND ALL UTILITY LOCATIONS HAVE BEEN CONFIRMED.
4. EXISTING ROAD SIGNS TO BE RECOVERED, CHECKED FOR DAMAGE AND REUSED WITH NEW FIXING HARDWARE AS NOTED IN NOTE 1.

HUTT CITY

PLAN

SCALE 1 : 250 @ A1

REV	REVISIONS	DRN	CHK	APP	DATE
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0	FOR TENDER	JJ	GC	CD	19.12.22

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APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

ROAD SIGNS AND MARKINGS
MANOR PARK ROAD - MC01

Status Stamp: **FOR CONSTRUCTION**
Date Stamp: **16.05.24**
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Drawing No.: 310204837-01-100-C160
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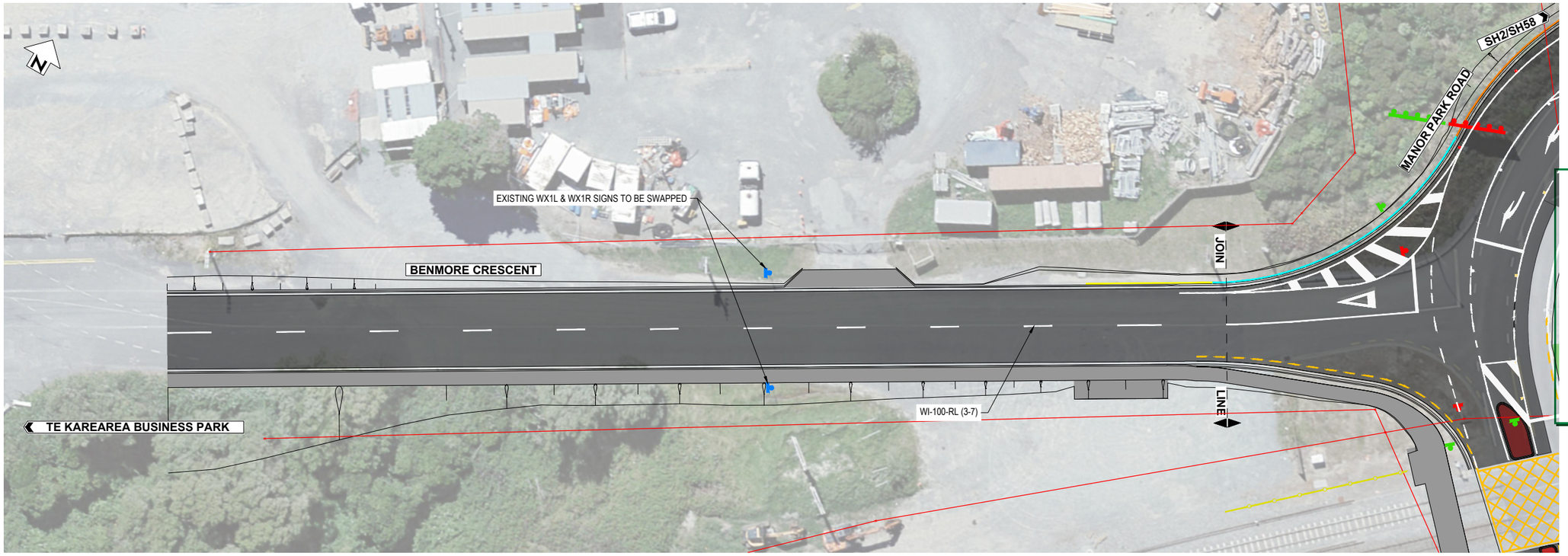

PLAN

SCALE 1 : 250 @ A1

ROAD SIGNS AND MARKINGS LEGEND

- WHITE PAVEMENT MARKING
- WHITE PAVEMENT MARKING (DASHED)
- YELLOW PAVEMENT MARKING
- YELLOW PAVEMENT MARKING (DASHED)
- WHITE PAVEMENT SYMBOL
- BI-DIRECTIONAL WHITE RRPM
- MONO-DIRECTIONAL WHITE RRPM
- MONO-DIRECTIONAL RED RRPM
- NEW SIGN (DENOTED AS NEW)
- EXISTING SIGN TO BE RELOCATED
- EXISTING SIGN TO BE RETAINED

RESOURCE CONSENT
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HUTT CITY COUNCIL

NOTES

1. ALL ROAD SIGNS AND MARKINGS AND RRPMs MUST BE IN ACCORDANCE WITH THE WAKA KOTAHI TRAFFIC CONTROL DEVICES (TCD) MANUAL AND/OR MANUAL OF TRAFFIC SIGNS AND MARKINGS (MOTSAM) AND NZTA P24:2020 SPECIFICATION FOR PERMANENT TRAFFIC SIGNS.
2. REFER TO DRAWING 310204837-01-100-C100 FOR GENERAL NOTES.
3. NEW LOCATION OF TRAFFIC SIGNS. TO BE CONFIRMED ONCE POTHOLING HAS BEEN CARRIED OUT AND ALL UTILITY LOCATIONS HAVE BEEN CONFIRMED.
4. EXISTING ROAD SIGNS TO BE RECOVERED, CHECKED FOR DAMAGE AND REUSED WITH NEW FIXING HARDWARE AS NOTED IN NOTE 1.

LINE MARKING ANNOTATION LEGEND:

- W = WHITE, G = GREEN, Y = YELLOW
- C = CONTINUOUS, I = INTERMITTENT, B = BAR
- LINE WIDTH (mm)
- LENGTH OF LINE (m)
- LENGTH OF GAP (m)
- RL = REFLECTORISED AND LONG LIFE

DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1

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Client: ROSCO INDUSTRIAL

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BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

ROAD SIGNS AND MARKINGS
BENMORE CRESCENT - MC02

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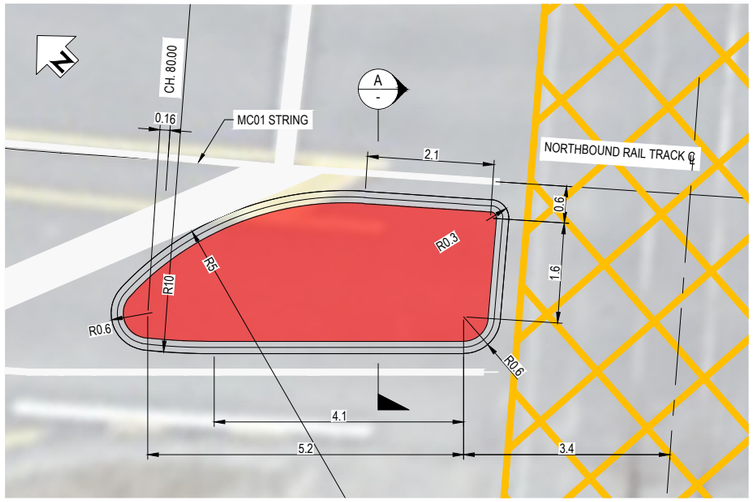
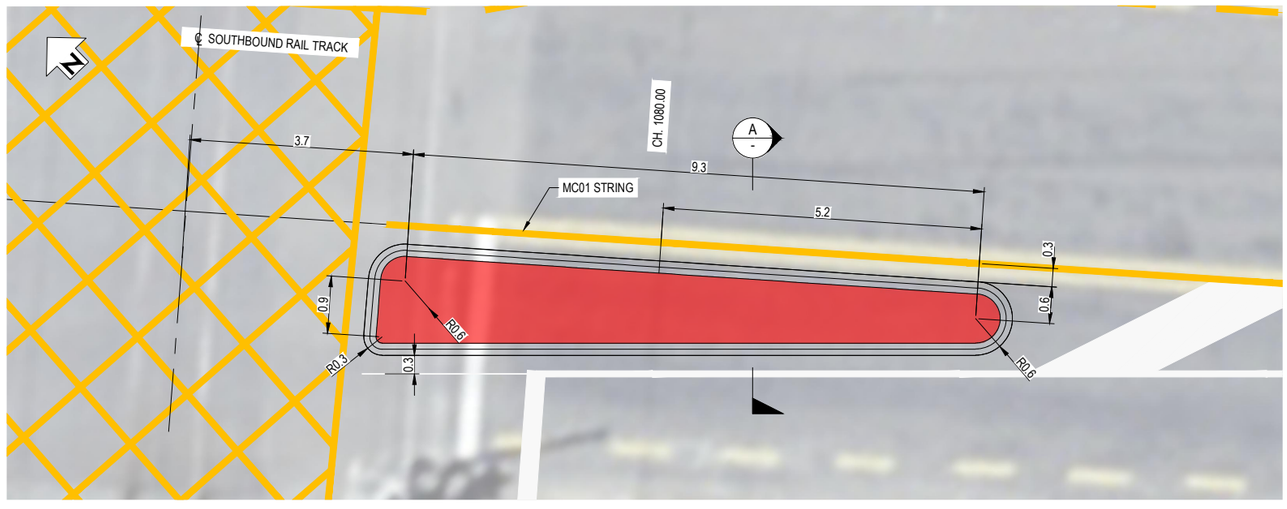


MEDIAN ISLAND - TYPE 1

SCALE 1 : 50



MEDIAN ISLAND - TYPE 2

SCALE 1 : 50

NOTES

1. MEDIAN ISLAND LOCATION, REFER TO DRAWING 310204837-01-100-C101
2. ALL DIMENMSIONS IN METERS UNLESS OTHERWISE NOTED.
3. SET OUT ON SITE TO BE CONFIRMED BY ENGINEER.

RESOURCE CONSENT

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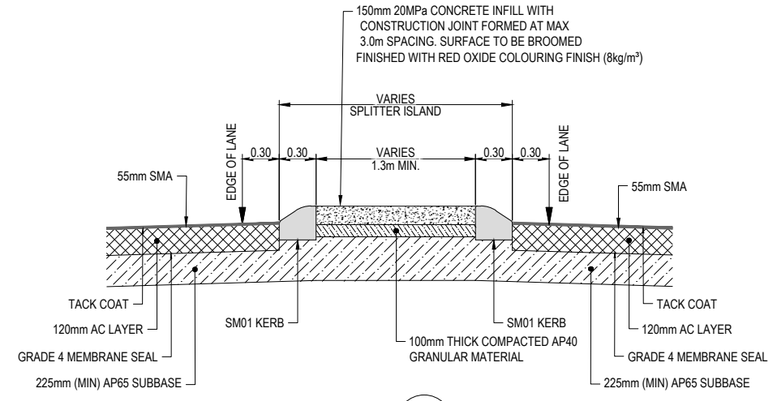

SECTION A-A

SCALE 1 : 25

500 0 500mm 1m

SCALE 1:25

1 0 1 2m

SCALE 1:50

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ORIGINAL SIZE A1

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PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

MEDIAN TRAFFIC ISLAND
DETAILS

Status Stamp: **FOR CONSTRUCTION**

Date Stamp: **16.05.24**

Scales: AS SHOWN

Drawing No.: 310204837-01-100-C162

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LUMINAIRE AND POLE LIST

TYPE	LUMINAIRE DESCRIPTION	POLE DESCRIPTION	MOUNTING HEIGHT	ARM LENGTH	TILT ANGLE	No. OF
A	AEC ITALO 2 STU-M 4000K 350mA 8M 10270 lm 75W LED	NEW HDG STEEL LIGHTING POLE C/W CURVED OUTREACH ARM	10	2	5	3
B	AEC ITALO 2 STU-M 4000K 525mA 8M 14750 lm 113W LED	NEW HDG STEEL LIGHTING POLE C/W CURVED OUTREACH ARM	10	1	0	1
C	AEC ITALO 2 STU-M 4000K 350mA 8M 10270 lm 75W LED	EXISTING HDG STEEL LIGHTING POLE C/W CURVED OUTREACH ARM	9.5	2	5	1
D	AEC ITALO 2 STU-M 4000K 700mA 8M 18580 lm 151W LED	EXISTING HDG STEEL LIGHTING POLE C/W CURVED OUTREACH ARM	9.5	2	0	1

RESOURCE CONSENT

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LEGEND

A NEW LUMINAIRE MOUNTED ON NEW LIGHTING POLE (LETTER DENOTES PARTICULAR LUMINAIRE TYPE AND POLE MOUNTING DETAILS AS PER THE LUMINAIRE AND POLE LIST)

C NEW LUMINAIRE MOUNTED ON EXISTING LIGHTING POLE (LETTER DENOTES PARTICULAR LUMINAIRE TYPE AND POLE MOUNTING DETAILS AS PER THE LUMINAIRE AND POLE LIST)

EXISTING LUMINAIRE MOUNTED ON EXISTING LIGHTING POLE (OUTSIDE SCOPE OF THIS DEIGN)

EXISTING LUMINAIRE AND LIGHTING POLE TO BE REMOVED (NOTE 7)

EXISTING POWER POLE

EXISTING OVERHEAD POWER LINES

ILLUMINANCE DESIGN AREAS

PROPOSED LIGHTING ISOLUX CONTOUR LINES

NOTES

1. THIS LIGHTING DESIGN IS LIMITED TO THE CURVE AND RAIL CROSSING AS FAR AS THE EXTENTS OF THE SPLITTER ISLAND, AND HAS BEEN DONE IN ACCORDANCE WITH THE SUBCATEGORY V4 REQUIREMENTS OF AS/NZS 1158.1.1:2022 AND NZTA M30. THE LIGHTING AT THE CURVE HAS BEEN DESIGNED IN ACCORDANCE WITH SECTION 4.3.2 (a) AND FIGURE 4.6 OF AS/NZS 1158.1.1:2022; THE LIGHTING AT THE SOUTH EAST END OF THE SPLITTER ISLAND HAS BEEN DESIGNED IN ACCORDANCE WITH SECTION 4.2.2.4 AND FIGURE 4.3 OF AS/NZS 1158.1.1:2022; AND THE LIGHTING AT THE RAIL CROSSING HAS BEEN DESIGNED IN ACCORDANCE WITH SECTION 4.6 AND FIGURE 4.17 OF AS/NZS 1158.1.1:2022. REFER TO THE ILLUMINANCE CALCULATION RESULTS SUMMARY TABLE. NOTE THAT ILLUMINANCE CALCULATIONS FOR THE NORTH WEST END OF THE SPLITTER ISLAND HAS NOT BEEN INCLUDED AS IT IS WITHIN THE DESIGN AREA OF THE CURVED SECTION OF ROADWAY.
2. ALL NEW POLES SHALL BE SPUNLITE (OR EQUAL) HOT DIP GALVANISED TAPERED OCTAGONAL STEEL FRANGIBLE GROUND PLANTED POLES C/W CURVED OUTREACH ARMS COMPLYING WITH NZTA M26. ALL POLES SHALL BE ORIENTATED SO THAT THE ARMS ARE AT RIGHT ANGLES (90°) TO THE ROADWAY CENTERLINES, UNLESS OTHERWISE SHOWN ON THE LAYOUT DRAWINGS.
3. ALL NEW LUMINAIRES SHALL BE AEC ITALO LEDs (OR EQUAL), WITH MODULES AND WATTAGES AS SPECIFIED IN THE LUMINAIRE AND POLE LIST. THE LUMINAIRES SHALL BE SUPPLIED WITH THE LATEST GENERATION LUXEON MX LED CHIPS. THE QUALITY OF MANUFACTURE AND OPTICAL PERFORMANCE OF ANY ALTERNATIVE LED LUMINAIRES SHALL MATCH OR EXCEED THAT OF THE AEC ITALO (INCLUDING THE CURRENT DESIGN SPACINGS) AND SUPPORTING CALCULATIONS (ILLUMINANCE) SHALL BE SUBMITTED ALONG WITH ANY ALTERNATIVE LUMINAIRES OFFERED. ANY ALTERNATIVE LUMINAIRES OFFERED SHALL BE ON THE NZTA APPROVED LED LUMINAIRE LIST.
4. WHEN INSTALLED ALL NEW LUMINAIRES SHALL HAVE MOUNTING HEIGHTS, OUTREACH ARM LENGTHS AND TILT ANGLES AS SPECIFIED IN THE LUMINAIRE AND POLE LIST.
5. WHEN POLES ARE SET IN PLACE THEY SHALL BE VERTICAL TO WITHIN 1°. WHEN EACH LUMINAIRE IS INSTALLED IT SHALL HAVE THE REQUIRED TILT TO WITHIN 2° AND THE AXIS OF THE LUMINAIRE BEAM SHALL BE IN A VERTICAL PLANE TO WITHIN 2°.
6. THE COMPLETE LIGHTING UPGRADE REQUIRES NEW LUMINAIRES TO BE MOUNTED ONTO NEW LIGHTING POLES AND TWO (2) EXISTING LIGHTING POLES. THE CONTRACTOR SHALL LIAISE WITH NZTA TO DETERMINE THE SUITABILITY OF THE EXISTING LIGHTING POLES TO BE REUSED (TO SUPPORT THE NEW LUMINAIRES) PRIOR TO INSTALLATION. IF THE EXISTING LIGHTING POLES (TO BE REUSED) ARE FOUND TO BE UNSUITABLE THEN THE CONTRACTOR SHALL REPLACE THEM WITH NEW LIGHTING POLES FOLLOWING APPROVAL FROM NZTA.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF EXISTING LIGHTING EQUIPMENT (LUMINAIRES, LIGHTING POLES AND ASSOCIATED EQUIPMENT) AS IDENTIFIED ON THE DRAWINGS.
8. ALL MATERIALS (INCLUDING LUMINAIRES, POLES, ARMS AND MOUNTING HARDWARE) SHALL COMPLY WITH THE DURABILITY REQUIREMENTS OF NZTA M26 AND M30.
9. THIS DRAWING ONLY DEPICTS THE LUMINAIRES, POLE LOCATIONS AND MOUNTING REQUIREMENTS ASSOCIATED WITH THE LIGHTING DESIGN. ALL WORK ASSOCIATED WITH ESTABLISHING AND/OR MODIFYING THE STREET LIGHTING NETWORK (SLN) IS OUTSIDE THE SCOPE OF THIS DESIGN.
10. THE CONTRACTOR SHALL LIAISE WITH THE LOCAL ELECTRICITY NETWORK COMPANY AND ARRANGE FOR ANY SLN WORKS (DESIGN AND CONSTRUCTION REQUIRED TO ESTABLISH AND/OR EXTEND THE SLN) AND PAY ANY ASSOCIATED LOCAL ELECTRICITY NETWORK FEES. THIS WORK SHALL ONLY BE CARRIED OUT BY A CONTRACTOR APPROVED BY THE LOCAL ELECTRICITY NETWORK COMPANY AND SHALL COMPLY WITH THE ELECTRICITY ACT, THE ELECTRICITY (SAFETY) REGULATIONS, THE NZ WIRING RULES (AS/NZS 3000) AND ANY SPECIFIC LOCAL ELECTRICITY NETWORK RULES AND PROCEDURES.
11. EACH NEW LIGHTING POLE IS A SEPARATE ELECTRICAL INSTALLATION (AS DEFINED BY AS/NZS 3000) AND SHALL BE FITTED WITH A SUITABLY SIZED FUSE BOARD (OR MODULAR ASSEMBLY) COMPLETE WITH PROTECTIVE DEVICE(S), NEUTRAL BAR (OR NEUTRAL TERMINAL), EARTH BAR (OR EARTH TERMINAL), M.E.N. LINK, DRIVEN EARTH ELECTRODE AND ALL INTERNAL WIRING AND ELECTRICAL CONNECTIONS TO THE LUMINAIRE AND EARTHING SYSTEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE ELECTRICAL INSTALLATION WORK IS CARRIED OUT BY A COMPETENT PERSON (OR PERSONS) IN ACCORDANCE WITH THE ELECTRICITY ACT, THE ELECTRICITY (SAFETY) REGULATIONS AND THE NZ WIRING RULES.

ILLUMINANCE CALCULATION RESULTS

Calculation Summary						
Label	CalcType	Units	Avg	Min	Max/Min	Description
Curve Roadway	Illuminance	Lux	N.A.	6.3	9.21	Category V4 - 5 Lux (Min) and Uniformity (Max/Min) of 8 (Max)
Curve Surround E	Illuminance	Lux	N.A.	4.4	9.59	Category V4 - 2.5 Lux (Min) and Uniformity (Max/Min) of 8 (Max)
Curve Surround W	Illuminance	Lux	N.A.	4.9	6.27	Category V4 - 2.5 Lux (Min) and Uniformity (Max/Min) of 8 (Max)
Railway Crossing Track NW Side	Illuminance	Lux	13	N.A.	N.A.	Point Vertical Illuminance of 10 Lux (Avg)
Railway Crossing Track SE Side	Illuminance	Lux	10	N.A.	N.A.	Point Vertical Illuminance of 10 Lux (Avg)
Splitter Island SE Nose	Illuminance	Lux	N.A.	19.7	1.24	Category V4 - 2.5 Lux (Min) and Uniformity (Max/Min) of 8 (Max)
Splitter Island SE Roadway	Illuminance	Lux	N.A.	13.7	2.60	Category V4 - 5 Lux (Min) and Uniformity (Max/Min) of 8 (Max)

REFERENCE DRAWINGS

310204837-01-100-C171 ROAD LIGHTING LAYOUT PLAN

DO NOnot SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	IC	TW	MG	16.05.24
0	FOR TENDER	IC	AS	CD	19.12.22

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Ian Campbell	11.2022
DRAWN	Ian Campbell	11.2022
CAD REVIEW	Shivneel Sen	29.01.24
DESIGN CHECK	Aditi Shankardas	29.01.24
DESIGN REVIEW	Aditi Shankardas	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

ROAD LIGHTING INFORMATION SHEET

Status Stamp: FOR CONSTRUCTION
Date Stamp: 16.05.24
Scales: AS SHOWN
Drawing No.: 310204837-01-100-C170
Rev.: 1

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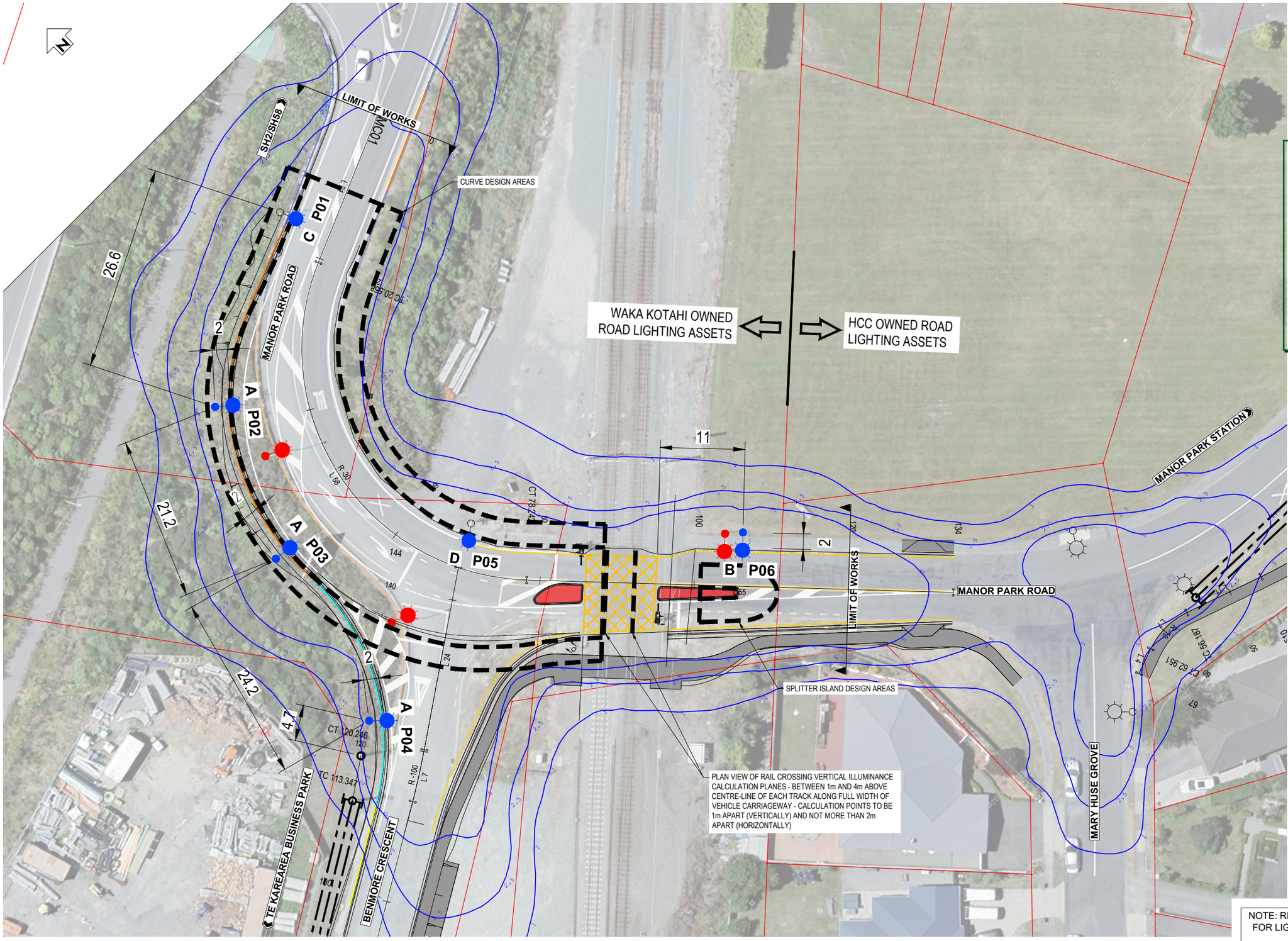

RESOURCE CONSENT

GRANTED
27/01/2025

HUTT CITY COUNCIL

NOTE: REFER TO DRAWING 310204837-01-100-C170 FOR LIGHTING LEGEND, NOTES AND EQUIPMENT SCHEDULE

PLAN

SCALE 1 : 250 @ A1

DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	IC	TW	MG	16.05.24
0	FOR TENDER	IC	AS	CD	19.12.22

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DESIGN REVIEW	Aditi Shankardas	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

ROAD LIGHTING LAYOUT PLAN

Status Stamp: FOR CONSTRUCTION

Date Stamp: 16.05.24

Scales: AS SHOWN

Drawing No.: 310204837-01-100-C171

Rev.: 1

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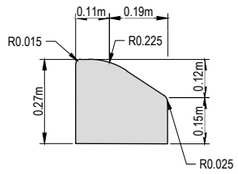
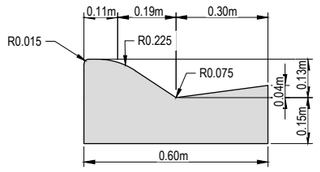


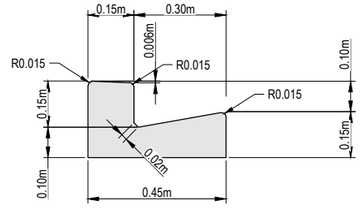
TYPE SM01 - SEMI MOUNTABLE KERB

SCALE 1 : 10 @ A1



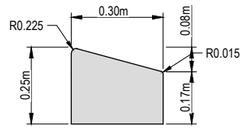
TYPE SM02 - SEMI MOUNTABLE KERB

SCALE 1 : 10 @ A1



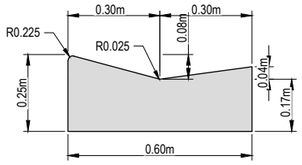
TYPE SM03 - KERB AND CHANNEL

SCALE 1 : 10 @ A1



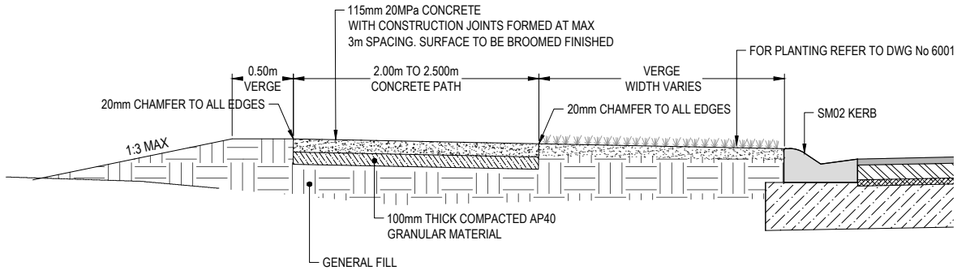
TYPE M4 - MOUNTABLE KERB

SCALE 1 : 10 @ A1



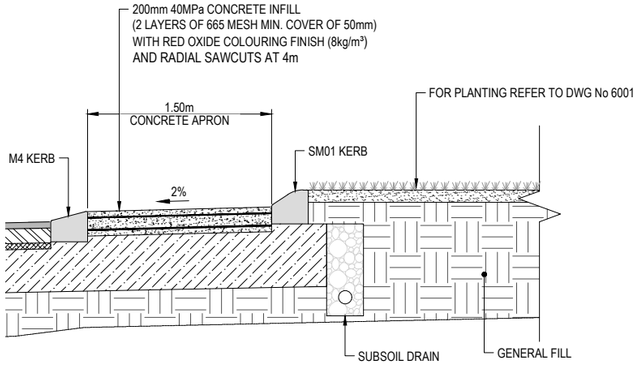
TYPE M5 - MOUNTABLE KERB

SCALE 1 : 10 @ A1



TYPICAL CONCRETE PATH DETAIL

SCALE 1 : 25 @ A1



APRON DETAIL

SCALE 1 : 25 @ A1

NOTES

1. KERB TO BE SAW CUT (SJ) FOR CONSTRUCTION JOINT AT 4.0m CENTRES.
2. REFER TO KERB LINE - SETTING OUT BENMORE CRESCENT PLANS FOR KERB LAYOUT.
3. THE CONCRETE PATH SURFACE SHALL BE SCREEDED AND AFTER THE INITIAL SET. IT SHALL BE CAREFULLY BROOMED TO PRESENT A NON-SKID SURFACE. THE SURFACE SHALL COMPLY WITH NZS 3114 CLASS U5.

RESOURCE CONSENT

GRANTED 27/01/2025

HUTT CITY COUNCIL

HUTT CITY TE AWA KAIRANGI

DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE **A1**

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	GD	TW	MG	16.05.24

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Janco Jordaan	11.2022
DRAWN	Gordon Dobson	11.2022
CAD REVIEW	Shivneel Sen	29.01.24
DESIGN CHECK	Tjaart van der Walt	29.01.24
DESIGN REVIEW	Jamie Whittaker	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

TYPICAL DETAILS - SHEET 1

Status Stamp: **FOR CONSTRUCTION**

Date Stamp: **16.05.24**

Scales: AS SHOWN

Drawing No.: 310204837-01-100-C180

Rev.: 1

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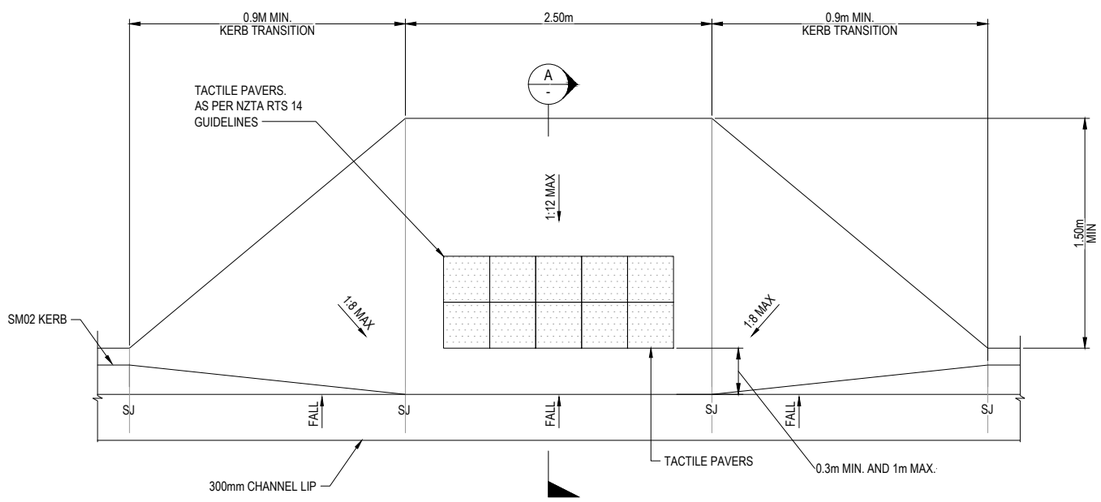
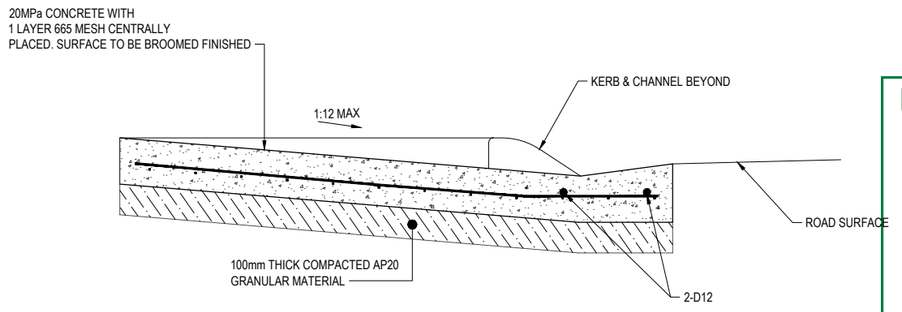


PEDESTRIAN / PRAM RAMP CROSSING - PLAN

SCALE 1 : 20 @ A1



SECTION A

SCALE 1 : 10 @A1

NOTES

1. KERB TO BE SAW CUT (SJ) FOR CONSTRUCTION JOINT AT 4,0m CENTRES.
2. KERB LINE - SETTING OUT BENMORE CRESCENT REFER TO GENERAL ARRANGEMENT PLANS FOR KERB LAYOUT.
3. THE CONCRETE PATH SURFACE SHALL BE SCREEDED AND AFTER THE INITIAL SET IT SHALL BE CAREFULLY BROOMED TO PRESENT A NON-SKID SURFACE. THE SURFACE SHALL COMPLY WITH NZS 4121 CLAUSE 11. IN AREAS DESIGNATED ON THE DRAWINGS THE SURFACE SHALL HAVE AN EXPOSED AGGREGATE FINISH IN ACCORDANCE WITH KCDC FOOTPATHS.
4. TACTILE PAVEMENT MARKERS TO BE SET OUT ON SITE AND AGREED WITH THE DESIGNER BEFORE PLACING.

RESOURCE CONSENT
GRANTED
27/01/2025
HUTT CITY COUNCIL

DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	GD	TW	MG	16.05.24

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Janco Jordaan	11.2022
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DESIGN CHECK	Tjaart van der Walt	29.01.24
DESIGN REVIEW	Jamie Whittaker	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

TYPICAL DETAILS - SHEET 2

Status Stamp: FOR CONSTRUCTION
Date Stamp: 16.05.24
Scales: AS SHOWN
Drawing No.: 310204837-01-100-C181
Rev.: 1

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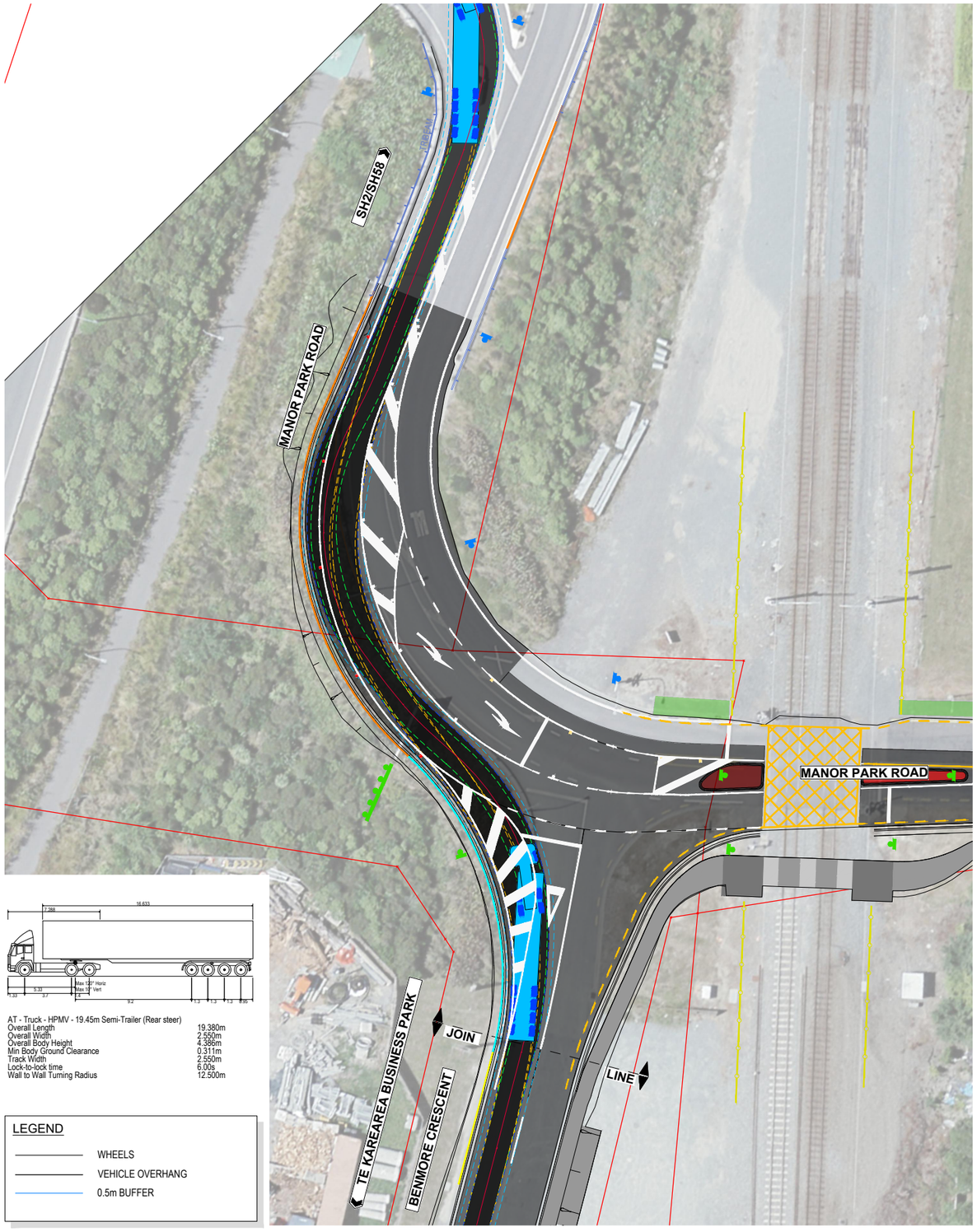
ORIGINAL SIZE A1



AT - Truck - HPMV - 19.45m Semi-Trailer (Rear steer)

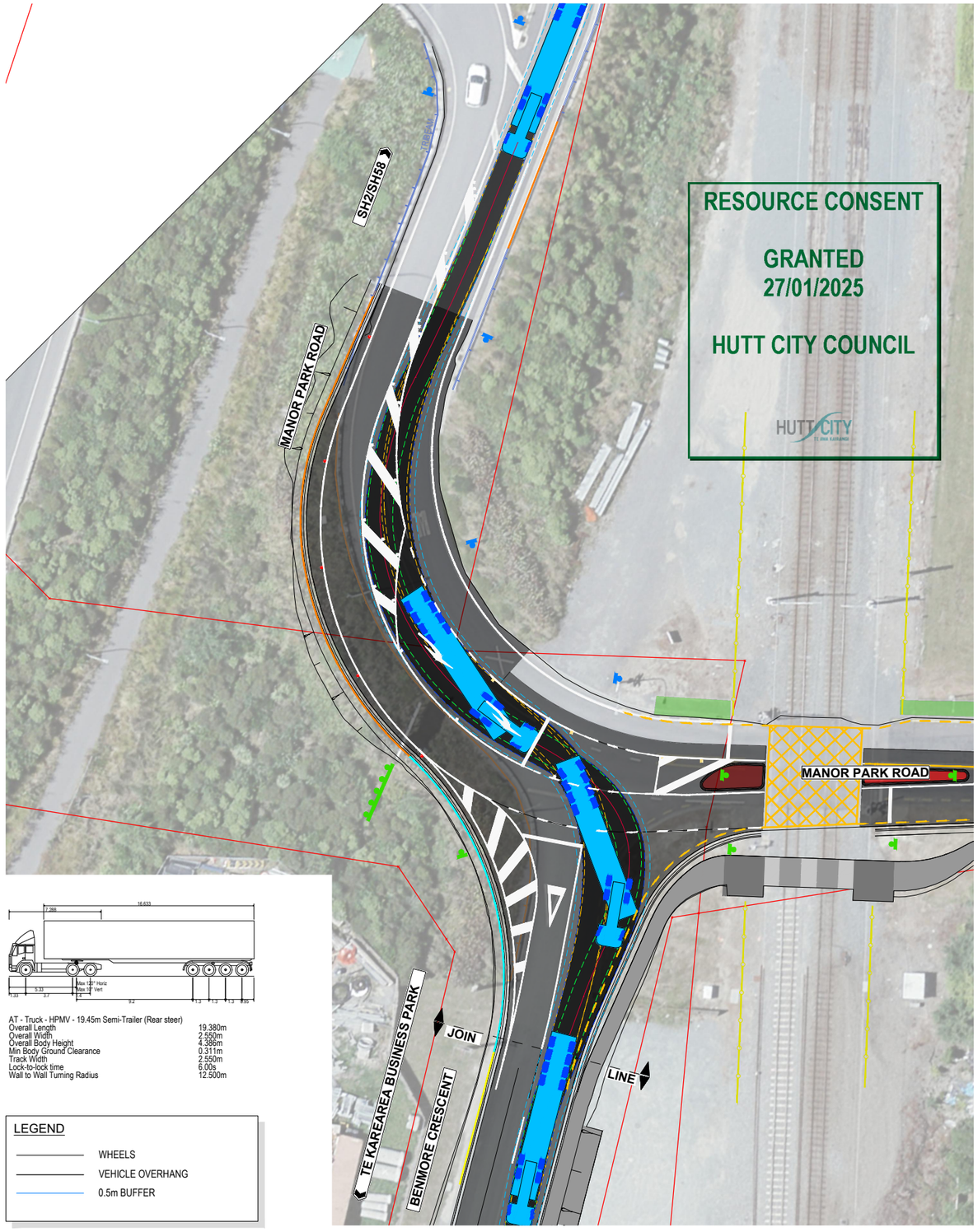
Overall Length	19.380m
Overall Width	2.550m
Overall Body Height	4.386m
Min Body Ground Clearance	0.311m
Track Width	2.550m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	12.500m

LEGEND

- WHEELS
- VEHICLE OVERHANG
- 0.5m BUFFER

19.45m SEMI-TRAILER

SCALE 1 : 250 @ A1



RESOURCE CONSENT

GRANTED
27/01/2025

HUTT CITY COUNCIL

AT - Truck - HPMV - 19.45m Semi-Trailer (Rear steer)

Overall Length	19.380m
Overall Width	2.550m
Overall Body Height	4.386m
Min Body Ground Clearance	0.311m
Track Width	2.550m
Lock-to-lock time	6.00s
Wall to Wall Turning Radius	12.500m

LEGEND

- WHEELS
- VEHICLE OVERHANG
- 0.5m BUFFER

19.45m SEMI-TRAILER

SCALE 1 : 250 @ A1

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	JJ	JW	MG	16.05.24

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Janco Jordaan	11.2022
DRAWN	Janco Jordaan	11.2022
CAD REVIEW	Shivneel Sen	29.01.24
DESIGN CHECK	Tjaart van der Walt	29.01.24
DESIGN REVIEW	Jamie Whittaker	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

VEHICLE TRACKING
19.5m SEMI TRAILER

Status Stamp: **FOR CONSTRUCTION**

Date Stamp: **16.05.24**

Scales: AS SHOWN

Drawing No.: 310204837-01-100-C190

Rev.: 1

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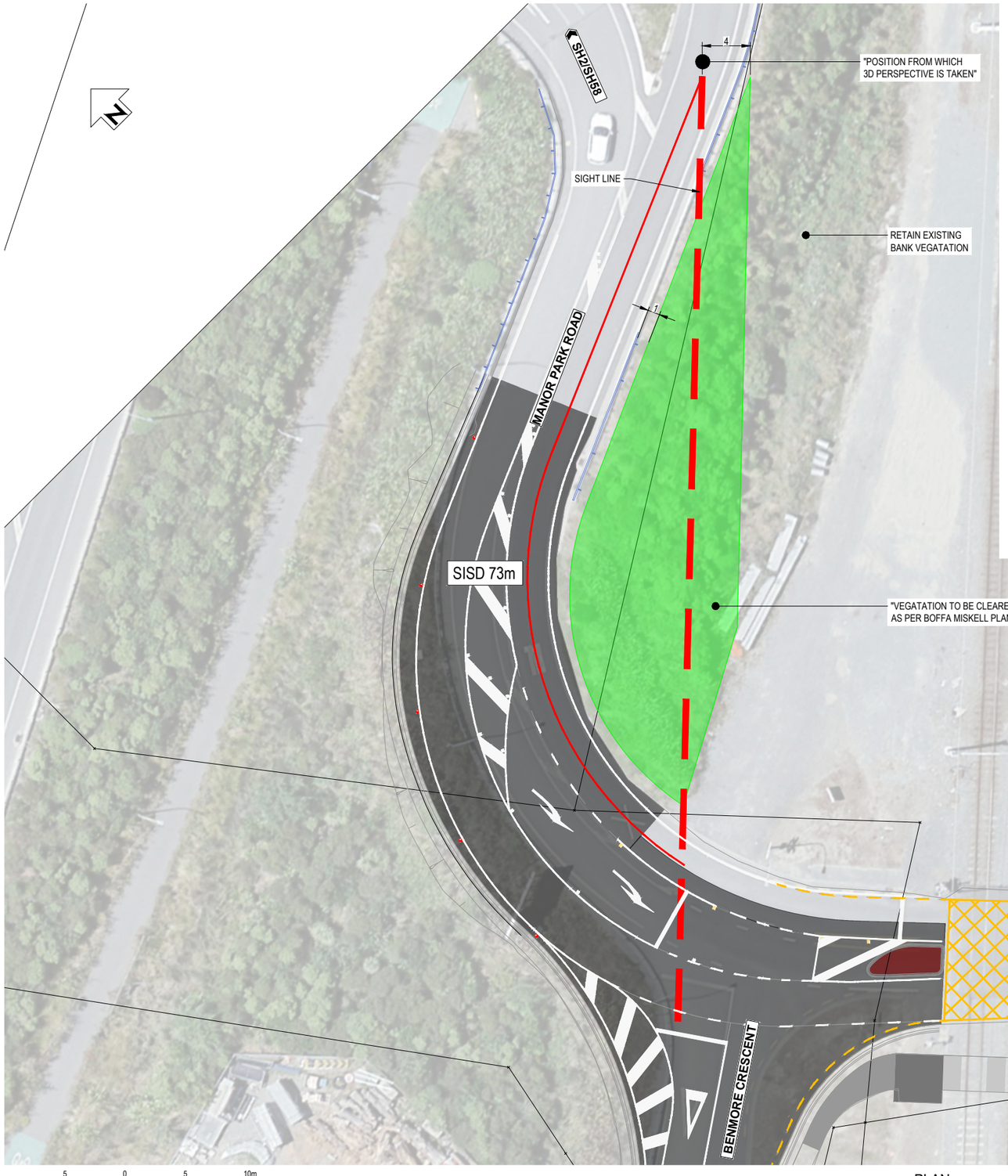
DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1

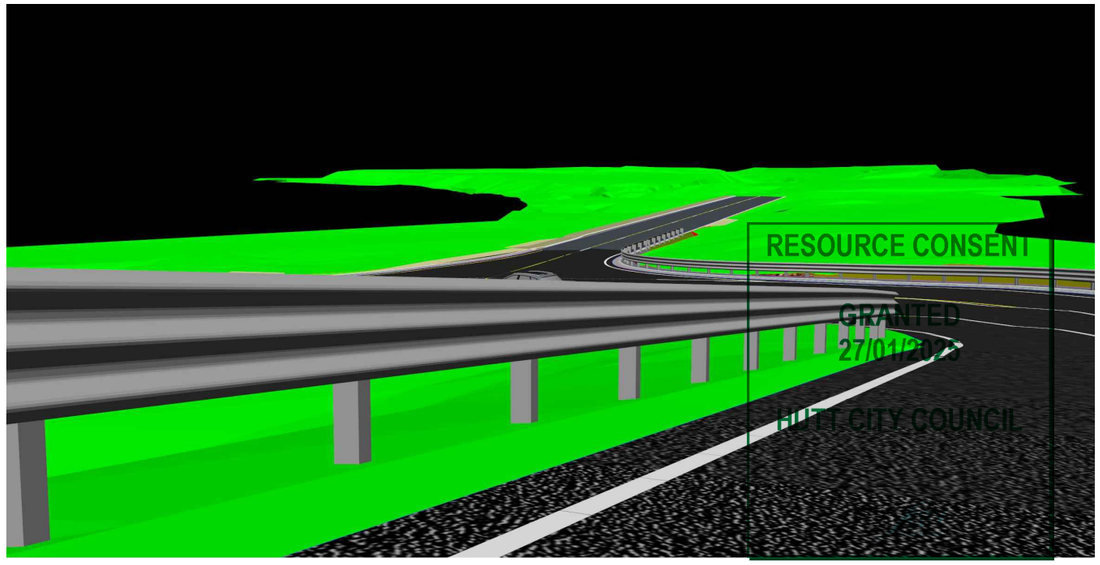


5 0 5 10m

SCALE 1:200

PLAN

SCALE 1 : 200 @ A1



3D PERSPECTIVE

NOT TO SCALE

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	JJ	TW	MG	16.05.24

SURVEYED	SPENCER HOLMES	08.2022
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DESIGN REVIEW	Jamie Whittaker	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

INTERVISIBILITY SIGHTLINE PLAN

Status Stamp: **FOR CONSTRUCTION**

Date Stamp: **16.05.24**

Scales: AS SHOWN

Drawing No.: 310204837-01-100-C210

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DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1

EXISTING GROUND BEAM AND BOLT DOWN THRIEBEAM TO BE RETAINED

TIE NEW THRIEBEAM INTO EXISTING THRIEBEAM BARRIER

REPLACE EXISTING W-BEAM WITH NEW MASH TL-4 THRIEBEAM ON DRIVEN POSTS (EZY-GUARD LDS ON POSTS WITH SOIL STIFFENING PLATE OR APPROVED EQUIVALENT). - REFER TO BARRIER NOTES ON DRAWING 310204837-01-100-C100

EXISTING GROUND BEAM AND BOLT DOWN THRIEBEAM TO BE RETAINED

TIE NEW THRIEBEAM INTO EXISTING THRIEBEAM BARRIER

TIE NEW THRIEBEAM INTO EXITING LEADING END TERMINAL

EXISTING LEADING END TERMINAL TO REMAIN

EXISTING ROAD SAFETY BARRIERS TO BE RECOVERED, CHECKED FOR DAMAGE AND REUSED WITH NEW FIXING HARDWARE AS APPROPRIATE

NEW MASH TL-4 THRIEBEAM ON DRIVEN POSTS. - REFER TO BARRIER NOTES ON DRAWING 310204837-01-100-C100

TRANSITION THRIEBEAM TO W-BEAM AT STN 56

INSTALL RECOVERED MASH TL-3 W-BEAM ON NEW DRIVEN POSTS. - REFER TO BARRIER NOTES ON DRAWING 310204837-01-100-C100

NEW M23 APPROVED MASH TL-3 LEADING END TERMINAL

TERMINAL GRADING TO COMPLY WITH NZTA RSB-3

START POINT OF SAFETY BARRIER N: 815707.282 E: 416574.206
CO-ORDINATES ARE IN TERMS OF NZDG2000 - WELLINGTON CIRCUIT

SH2/SH58

MANOR PARK ROAD

MANOR PARK STATION

MANOR PARK ROAD

BENMORE CRESCENT

TE KAREAREA BUSINESS PARK

MARY HUSE GROVE

LEGEND

- NEW MASH TL-4 THRIEBEAM BARRIER
- RECOVERED MASH TL-3 W-BEAM BARRIER
- NEW MASH TL-3 BARRIER END TERMINAL
- EXISTING ROAD BARRIER

RESOURCE CONSENT

GRANTED
27/01/2025

HUTT CITY COUNCIL

HUTT CITY TE AWA KAIRANGI

ROAD BARRIER PLAN

SCALE 1 : 250 @ A1

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	JJ	TW	MG	16.05.24

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Shivneel Sen	10.2023
DRAWN	Janco Jordaan	10.2023
CAD REVIEW	Shivneel Sen	29.01.24
DESIGN CHECK	Tjaart van der Walt	29.01.24
DESIGN REVIEW	Nigel Lister	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

ROAD BARRIER PLAN
MANOR PARK ROAD

Status Stamp: **FOR CONSTRUCTION**

Date Stamp: **16.05.24**

Scales: AS SHOWN

Drawing No.: 310204837-01-100-C220

Rev.: 1

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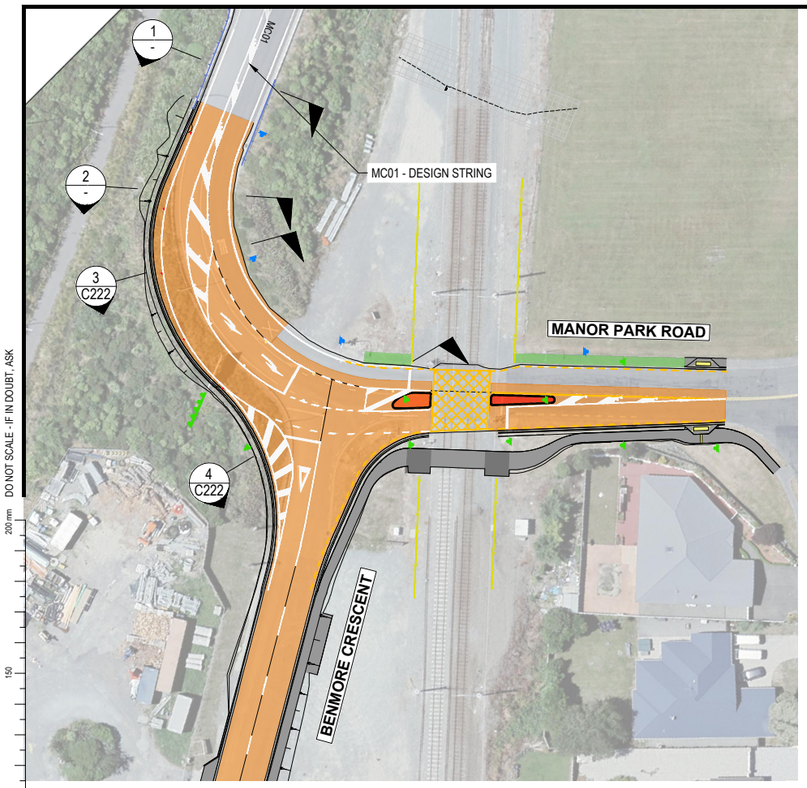
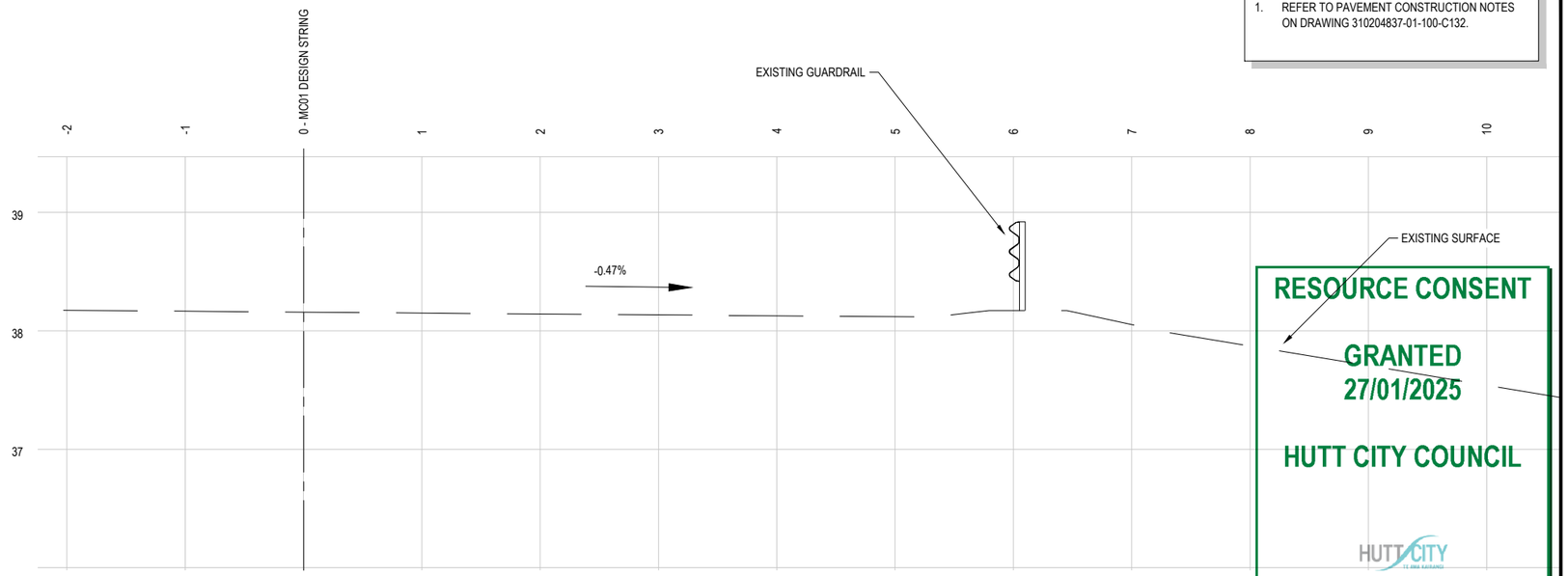


ROAD BARRIER PLAN

SCALE 1 : 500 @ A1

1. REFER TO PAVEMENT CONSTRUCTION NOTES ON DRAWING 310204837-01-100-C132.



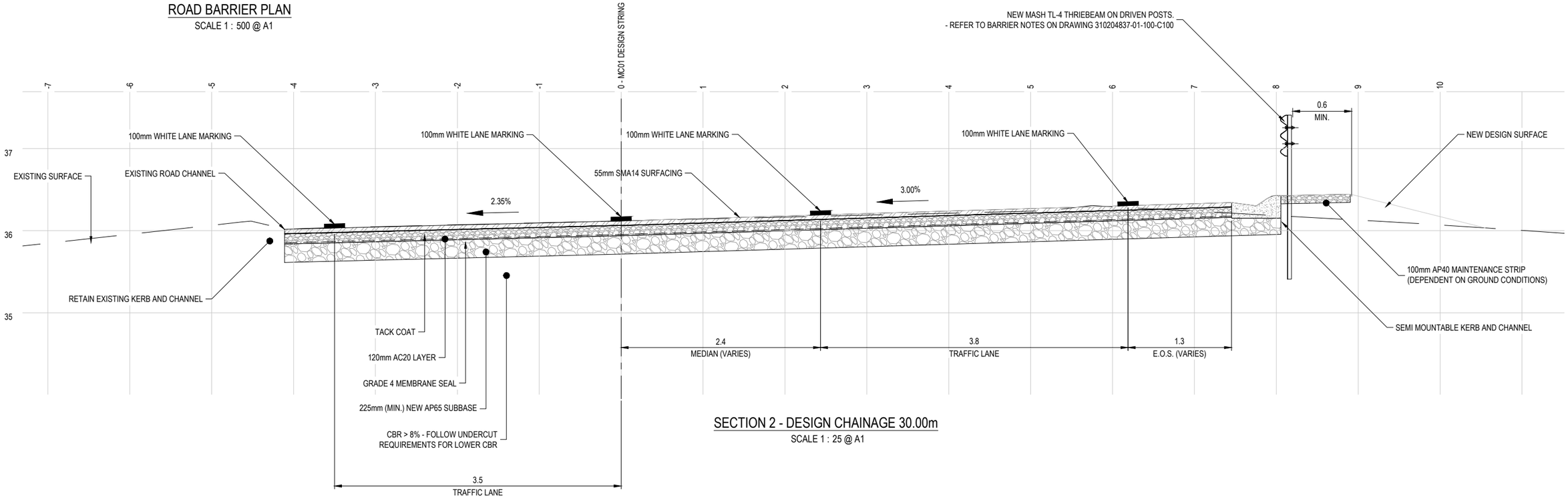
SECTION 1 - EXISTING ROAD @ DESIGN CHAINAGE 10.00m

SCALE 1 : 25 @ A1

RESOURCE CONSENT

GRANTED
27/01/2025

HUTT CITY COUNCIL



SECTION 2 - DESIGN CHAINAGE 30.00m

SCALE 1 : 25 @ A1

DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	JJ	TW	MG	16.05.24

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Shivneel Sen	10.2023
DRAWN	Janco Jordaan	10.2023
CAD REVIEW	Shivneel Sen	29.01.24
DESIGN CHECK	Tjaart van der Walt	29.01.24
DESIGN REVIEW	Nigel Lister	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

ROAD BARRIER SECTIONS
MANOR PARK ROAD

Status Stamp: FOR CONSTRUCTION

Date Stamp: 16.05.24

Scales: AS SHOWN

Drawing No.: 310204837-01-100-C221

Rev.: 1

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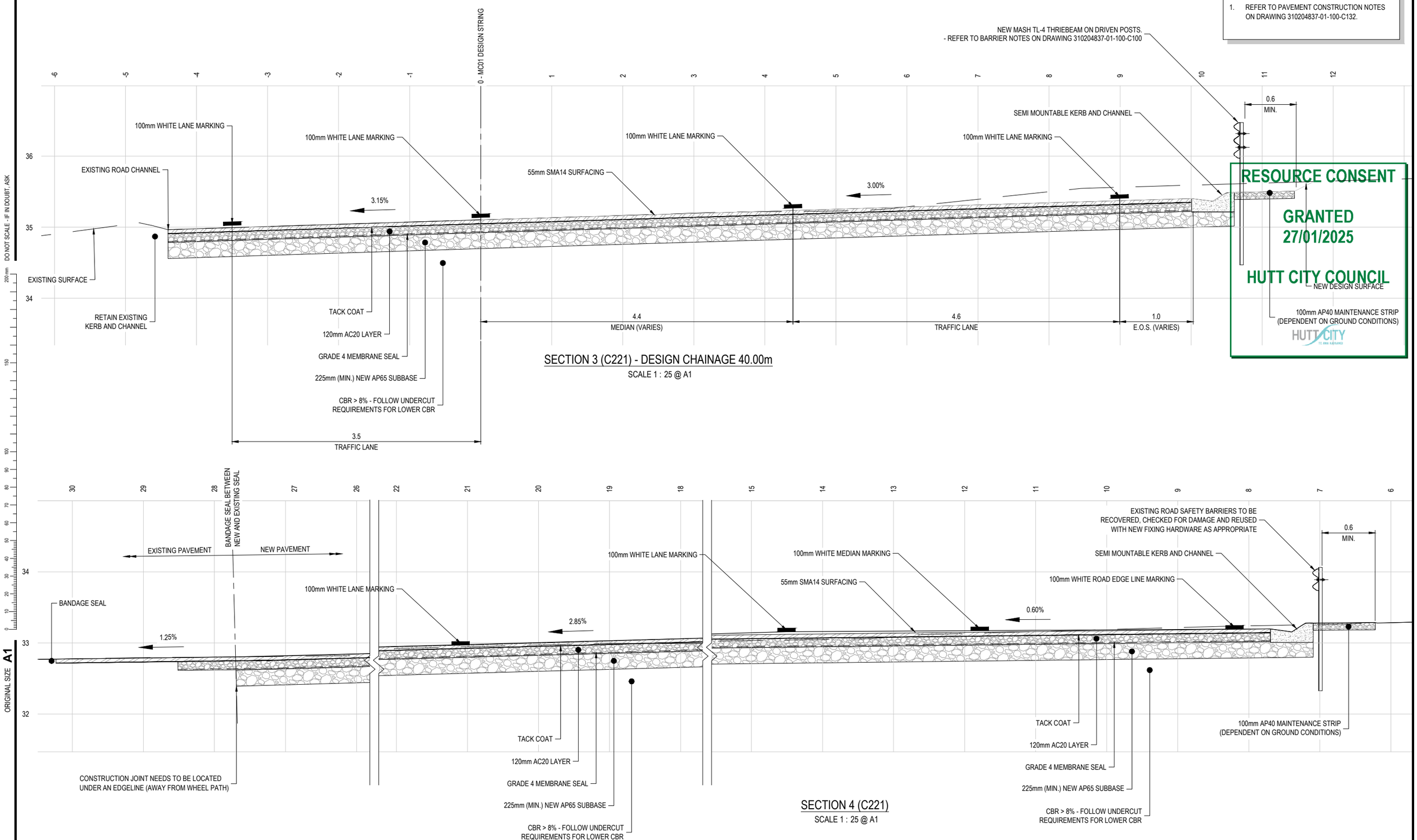
1. REFER TO PAVEMENT CONSTRUCTION NOTES ON DRAWING 310204837-01-100-C132.



SECTION 3 (C221) - DESIGN CHAINAGE 40.00m

SCALE 1 : 25 @ A1

SECTION 4 (C221)

SCALE 1 : 25 @ A1

DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1

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1	ISSUED FOR CONSTRUCTION	JJ	TW	MG	16.05.24

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DESIGN CHECK	Tjaart van der Walt	29.01.24
DESIGN REVIEW	Nigel Lister	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

ROAD BARRIER SECTIONS
MANOR PARK ROAD

Status Stamp: FOR CONSTRUCTION
Date Stamp: 16.05.24
Scales: AS SHOWN
Drawing No.: 310204837-01-100-C222
Rev.: 1

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NOTES:

1. ALL DIMENSIONS AND LEVELS ARE INDICATIVE AND HAVE POTENTIAL ACCURACY LIMITATIONS ASSOCIATED WITH THE SURVEY METHOD. THE CONTRACTOR MUST CONFIRM ALL DIMENSIONS AND LEVELS ON SITE PRIOR TO FABRICATION, FITTING AND ANY CIVIL WORKS.
2. PIPES, CABLES AND OTHER UTILITIES, FOUNDATIONS, LEVELS, REFERENCE MARKS AND OTHER OBSTRUCTIONS INDICATED ON THIS DRAWING ARE BASED ONLY ON READILY AVAILABLE RECORD PLANS AND OTHER INFORMATION. ALL UTILITY AND SIGN INFORMATION SHOWN ON THE DRAWING ARE INDICATIVE AND BASED ON WELLINGTON WATER GIS INFORMATION. THIS INFORMATION MAY NOT BE COMPLETE, ACCURATE NOR UP TO DATE. PRIOR TO CARRYING OUT ANY EXCAVATION OR OTHER PHYSICAL WORK, CONTRACTORS SHALL OBTAIN THE LATEST INFORMATION FROM UTILITY PROVIDERS AND CARRY OUT DETAILED EXPLORATORY WORK. IN ACCORDANCE WITH EACH UTILITY PROVIDERS SPECIFICATIONS TO ENSURE THE UTILITIES ARE NOT DAMAGED. TRACING, LOCATING, PROTECTION, ISOLATION AND ALTERATIONS AS ARE REQUIRED UNDER NZS 3910 CLAUSE 5.13.
3. ALL TRAFFIC MANAGEMENT TO FACILITATE THE WORKS SHALL BE IN ACCORDANCE WITH WAKA KOTAHI CODE OF PRACTICE FOR TEMPORARY TRAFFIC MANAGEMENT (CoPPTM) AND ALSO COMPLY WITH KIWIRAIL AND LOWER HUTT CITY COUNCIL REQUIREMENTS.
4. ALL KIWIRAIL APPROVALS TO ENTER SITE AND TO CARRY WORKS ADJACENTTO THE RAIL CORRIDOR. SHALL BE SIGNED OFF BEFORE ESTABLISHING ON SITE.
5. THE CONTRACTOR SHALL ENSURE THAT ALL COSTS ASSOCIATED WITH THE WORKS SHOWN ON THE DRAWING ARE INCLUDED IN THE SCHEDULED RATES WHETHER OR NOT THE ITEMS ARE SCHEDULED.
6. THE CONTRACTOR IS TO MINIMISE DAMAGE TO THE EXISTING CONCRETE PADS AND ALL MATERIALS AND INSTALLATION SHALL MEET KIWIRAIL CODE, SPECIFICATIONS AND STANDARDS.
7. ALL PANELS TO BE FIXED TO POSTS WITH GALVANISED COATED CLIPS. NUTS, BOLTS AND WASHERS SHALL BE M8 STAINLESS STEEL. SOME ON SITE FABRICATION MAY BE REQUIRED INCLUDING, BUT NOT LIMITED TO, THE RE-DRILLING OF FIXING HOLES.
8. ALL EXPOSED STEEL CAUSED BY ON SITE FABRICATION WORK INCLUDING DRILLING OR FENCE PANEL ADJUSTMENT SHALL BE SPRAY COATED WITH TWO COATS OF GALVIT PAINT OR APPROVED EQUIVALENT.
9. ALL FOLDED WIRE FENCE AND TRAFFIC SIGNS INCLUDING POST, THAT ARE REMOVED ARE TO BE STOCK PILED AND STORED IN A SECURE AND SAFE LOCATION TO PREVENT BEING DAMAGE, AND ARE TO BE REUSED WHERE INDICATED ON THE DRAWINGS AND NEW FENCING OR RELOCTE SIGN REUSED EXISTING FACING WHERE NEW FENCING IS TO BE INSTALLED.
10. ALL NEW FENCING POSTS TO BE INSTALLED AS PER DETAILS ON SHEET C003 & C004.
11. CENTRE OF NEW FLASHING LIGHT LENSES SHALL BE 1950mm ABOVE FOOTPATH LEVEL. MASTS ARE TO BE INSTALLED A MINIMUM OF 2.6m FROM THE CENTRE OF THE NEAREST TRACK.
12. ALL NEW PEDESTRIAN CROSSING DUCTING SHALL BE uPVC PIPE WITH 50mm RISERS TO NEW INFRASTRUCTURE. REFER TO DRAWING 310204837-01-200-C307.
13. ALL NEW FLASHING LIGHTS AND BELL ASSEMBLIES SHALL BE INSTALLED 1.0m FROM THE EDGE OF THE CLOSEST FENCE AND IN LINE WITH THE NEW AUTOMATIC GATES IN THE CLOSED POSITION. FINAL LOCATION OF ASSEMBLIES ARE TO BE CONFIRMED BY KIWIRAIL ENGINEER.
14. ALL NEW BELL ASSEMBLIES TO BE AN 85db UNIT UNLESS OTHERWISE NOTED.
15. REFER ELECTRICAL DRAWINGS FOR EARTHING AND BONDING DETAILS. ALL NEW FENCING AND GATES TO BE BONDED TO EXISTING, SOME CHASING OF BONDING CABLES MAY BE REQUIRED.
16. CONTRACTOR IS TO LIAISE WITH LOCAL ELECTRICITY SUPPLY COMPANY TO COORDINATE DUCTING FOR NEW LIGHTING COLUMNS AND THE RELOCATION OF UTILITY BOXES.
17. SETOUT DIMENSIONS SHOWN MAY CHANGE FOR THE CONSTRUCTION SUBJECT APROVALS FROM GWRC, HCC, KIWI RAIL AND WELLINGTON WATER LIMITED, ISSUE DRAWINGS.

RESOURCE CONSENT

GRANTED
27/01/2025

HUTT CITY COUNCIL

HUTT CITY TE AWA KAIRANGI

DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE **A1**

REV	REVISIONS	DRN	CHK	APP	DATE
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0	FOR TENDER	GD	AQ	CD	19.12.22

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DRAWN	GORDON DOBSON	11.2022
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DESIGN CHECK	Tjaart van der Walt	29.01.24
DESIGN REVIEW	Alasdair McGeachie	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

PEDESTRIAN RAIL CROSSING
STANDARD NOTES

Status Stamp: **FOR CONSTRUCTION**
Date Stamp: **16.05.24**
Scales:
Drawing No.: 310204837-01-200-C002
Rev.: 1

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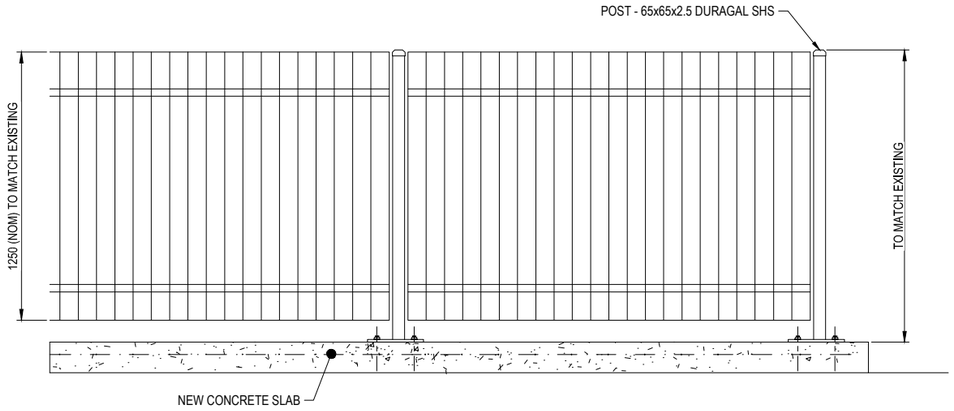
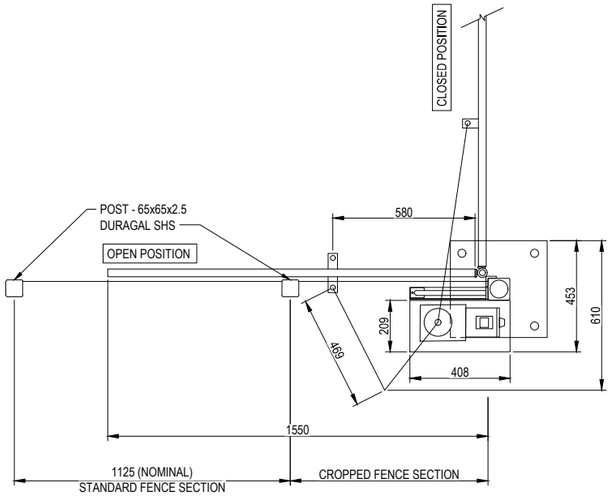


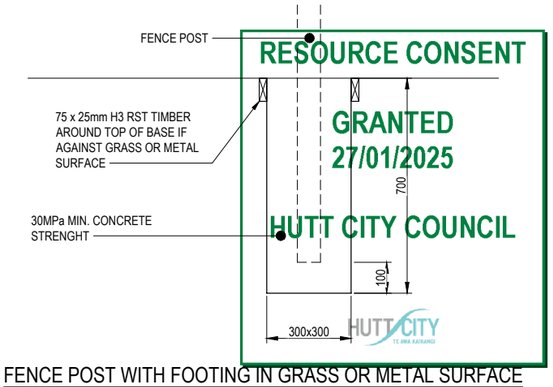
FOLDED WIRE FENCE PANEL - ELEVATION
N.T.S



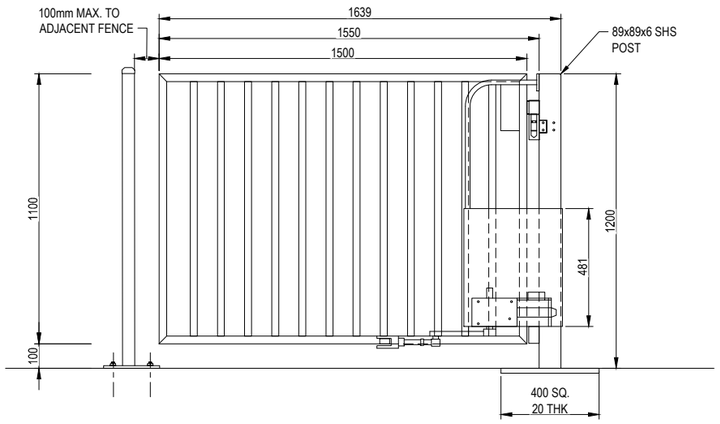
TYPICAL GATE - PLAN
N.T.S

NOTES

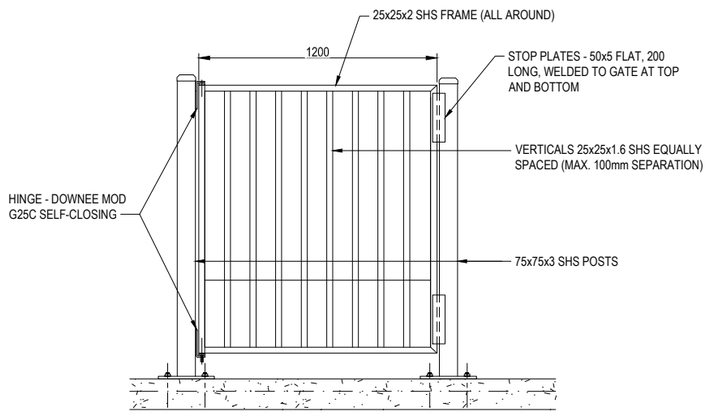
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS SHOWN OTHERWISE.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING C002 STANDARD NOTES AND PROJECT SPECFICATIONS.
3. AUTOMATIC GATE, POST, HINGES, POST BASE AND FIXING TO BE SUPPLIED BY OTHERS.
4. EMERGENCY EGRESS GATE, POSTS, HINGES, MAGLOCK SYSTEM, AND FIXINGS TO SUPPLIED BY OTHERS.
5. APPLY SILICON SEAL AROUND EDGE OF NEW GROUT TO STOP WATER EGRESS INTO JOINT.



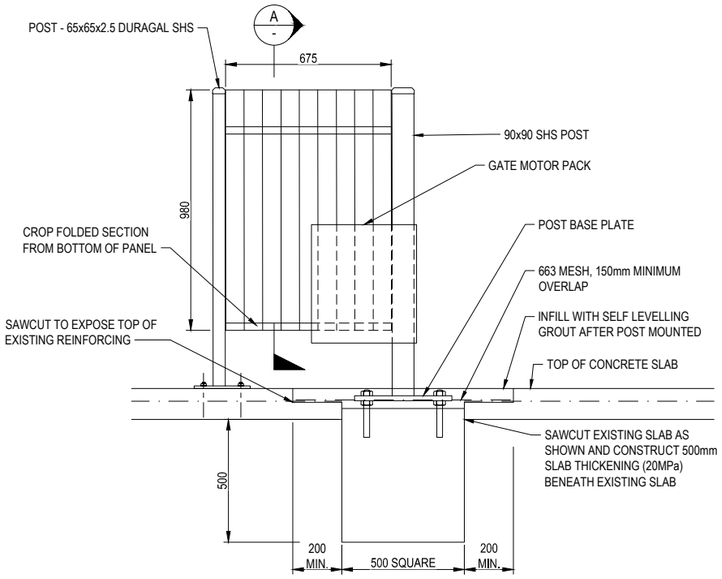
FENCE POST WITH FOOTING IN GRASS OR METAL SURFACE
N.T.S



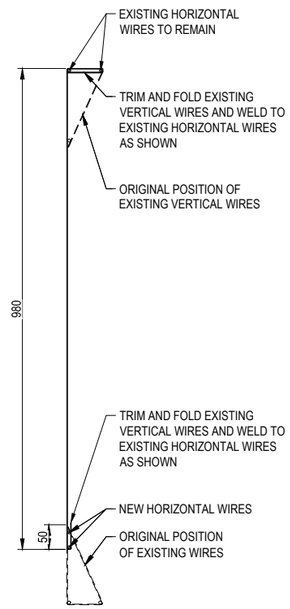
TYPICAL GATE - ELEVATION
N.T.S



EMERGENCY EGRESS GATE - ELEVATION
N.T.S
(GATE TO BE SUPPLIED BY OTHERS)

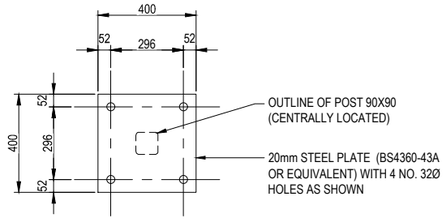


CROPPED PANEL
N.T.S



NOTE: (ALL WIRE TO BE GALVANISED 6.3mm DIAMETER)

SECTION A
N.T.S



FENCE POST BASE PLATE
N.T.S

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	GD	TW	MG	16.05.24
0	FOR TENDER	GD	AQ	CD	19.12.22

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Janco Jordaan	11.2022
DRAWN	Gordon Dobson	11.2022
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APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

PEDESTRIAN RAIL CROSSING
FENCING DETAILS

Status Stamp: **FOR CONSTRUCTION**
Date Stamp: **16.05.24**
Scales: AS SHOWN
Drawing No.: 310204837-01-200-C003
Rev.: 1

ORIGINAL SIZE A1 — DO NOT SCALE - IF IN DOUBT, ASK

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POWER SUPPLY, EARTHING AND BONDING NOTES

ALL NEW METAL STRUCTURES (LIGHTING POLES, FENCES, GATES, ETC), ASSOCIATED WITH THE NEW PEDESTRIAN RAIL CROSSINGS, THAT ARE LOCATED WITHIN THE OVERHEAD CONTACT LINE ZONE AND PANTOGRAPH ZONE (OHEPZ) OR OUTSIDE THE OHEPZ BUT IN THE EQUIPOTENTIAL ZONE SHALL BE BONDED TO THE KIWIRAIL TRACTION EARTH SYSTEM IN ACCORDANCE WITH THE REQUIREMENTS OF THE KIWIRAIL AEA EARTHING AND BONDING DESIGN STANDARD (E-ST-AE-0101).

THE FOLLOWING NOTES PROVIDE SITE SPECIFIC POWER SUPPLY, EARTHING AND BONDING REQUIREMENTS BASED ON E-ST-AE-0101:

1. ANY NEW EXPOSED METAL FENCE STRUCTURE WITHIN THE OHEPZ (WITHIN 5m OF THE TRACK CENTRE LINE) SHALL BE BONDED TO THE KIWIRAIL TRACTION EARTH SYSTEM BY A 50mm2 COPPER BLACK SHEATHED CABLE THAT SHALL BE TERMINATED ONTO THE ADJACENT KIWIRAIL METAL FENCE THAT IS ALREADY BONDED TO THE TRACTION EARTH SYSTEM. REFER TO THE TYPICAL EARTHING AND BONDING DETAILS ON THIS DRAWING.
2. ANY NEW EXPOSED METAL FENCE STRUCTURE OUTSIDE THE OHEPZ BUT IN THE EQUIPOTENTIAL ZONE (WITHIN 2.5m OF AN EXISTING METAL STRUCTURE THAT IS ALREADY CONNECTED TO THE TRACTION EARTH SYSTEM) SHALL BE BONDED TO THE EXISTING METAL STRUCTURE BY A 35mm2 COPPER OR 70mm2 ALUMINIUM BLACK SHEATHED CABLE.
3. THE METAL FENCE DETAILS ON THIS DRAWING DEPICT A TYPICAL EARTHING AND BONDING ARRANGEMENT ONLY AND THE ACTUAL TYPE OF ANY NEW METAL FENCE AND/OR GATE STRUCTURE SHALL BE DETERMINED BY OTHERS.
4. THE NEW LIGHTING POLES DO NOT NEED TO BE BONDED TO THE KIWIRAIL TRACTION EARTH SYSTEM AS THEY ARE OUTSIDE THE OHEPZ AND ARE NOT WITHIN 2.5m OF ANY EXISTING METAL STRUCTURE THAT IS CONNECTED TO THE TRACTION EARTH SYSTEM.
5. THE NEW LIGHTING SHALL BE CONNECTED TO THE NEAREST STREET LIGHTING NETWORK (SLN) CONNECTION POINT IN ACCORDANCE WITH VECTOR REQUIREMENTS.

NOTES

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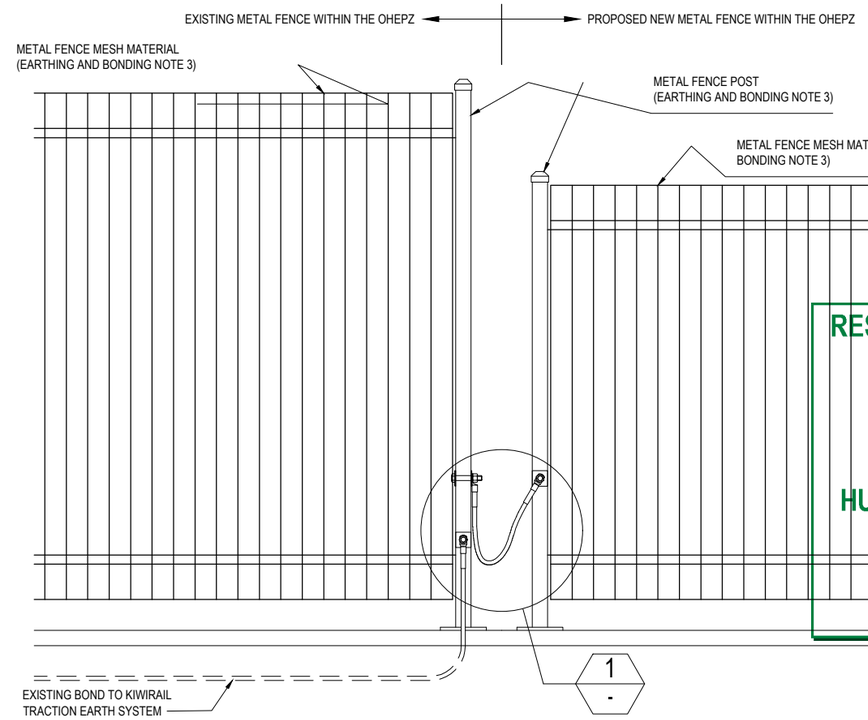
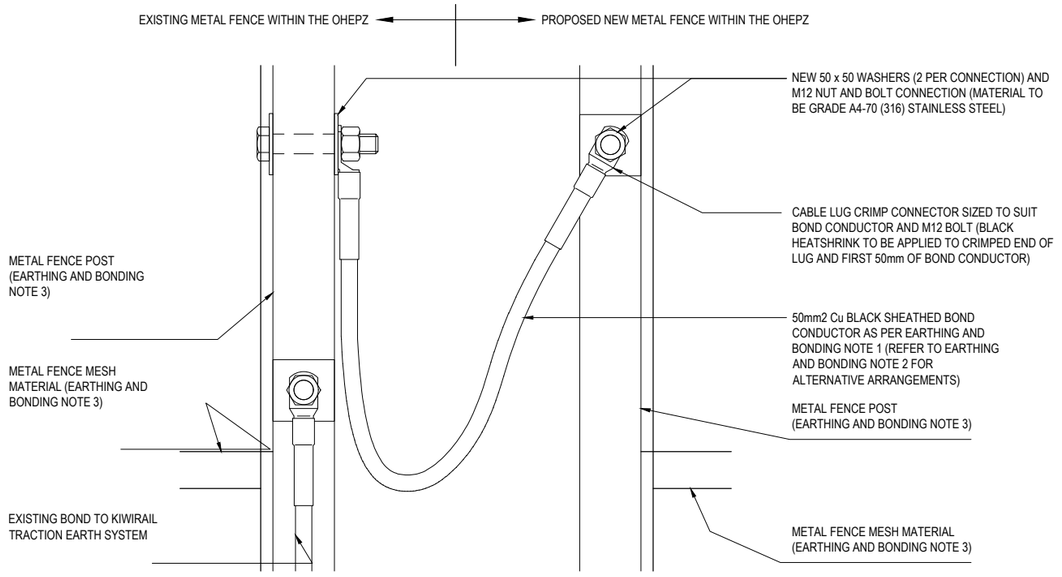
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING C002 STANDARD NOTES AND PROJECT SPECIFICATIONS.
3. AUTOMATIC GATE, POST, HINGES, POST BASE AND FIXING TO BE SUPPLIED BY OTHERS.
4. EMERGENCY EGRESS GATE, POSTS, HINGES, MAGLOCK SYSTEM, AND FIXINGS TO SUPPLIED BY OTHERS.
5. APPLY SILICON SEAL AROUND EDGE OF NEW GROUT TO STOP WATER EGRESS INTO JOINT.



TYPICAL EARTHING AND BONDING BETWEEN EXISTING METAL FENCE AND PROPOSED METAL FENCE
SCALE 1:10

RESOURCE CONSENT
GRANTED
27/01/2025
HUTT CITY COUNCIL



DETAIL 1 / -
SCALE 1 : 2.5

200 0 500mm
SCALE 1:10

ORIGINAL SIZE A1

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Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

PEDESTRIAN RAIL CROSSIING
EARTHING AND BONDING DETAILS

Status Stamp: FOR CONSTRUCTION
Date Stamp: 16.05.24
Scales: AS SHOWN
Drawing No.: 310204837-01-200-C004
Rev.: 1

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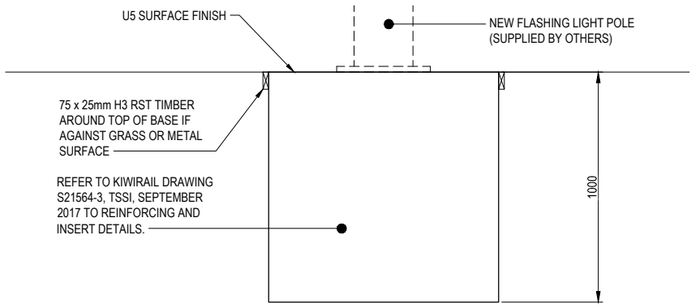
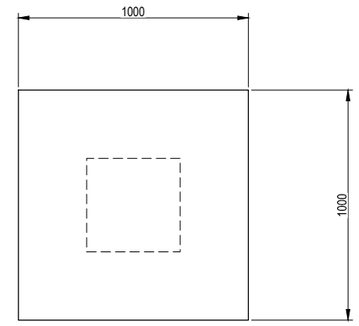


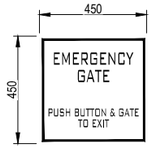
SIGNAL BASE FOOTING - ELEVATION

N.T.S



SIGNAL BASE FOOTING - PLAN

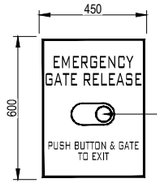
N.T.S



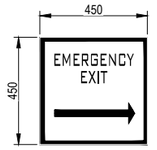
SIGN TYPE 1
EMERGENCY EXIT

SIGN TYPE 2
NO ENTRY

SIGN TYPE 3
W8X LOOK FOR TRAINS



SIGN TYPE 4
EMERGENCY EXIT



SIGN TYPE 5
EMERGENCY EXIT
*ARROW TO POINT TOWARDS EXIT

RAIL CROSSING SIGNS

N.T.S

NOTES

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5. APPLY SILICON SEAL AROUND EDGE OF NEW GROUT TO STOP WATER EGRESS INTO JOINT.

RESOURCE CONSENT

GRANTED
27/01/2025

HUTT CITY COUNCIL

HUTT CITY
TE AWA KAIRANGI

DO NOT SCALE - IF IN DOUBT, ASK

200 mm 150 100 90 80 70 60 50 40 30 20 10 0

ORIGINAL SIZE **A1**

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	GD	TW	MG	16.05.24
0	FOR TENDER	GD	AQ	CD	19.12.22

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Janco Jordaan	11.2022
DRAWN	GORDON DOBSON	11.2022
CAD REVIEW	Shivneel Sen	29.01.24
DESIGN CHECK	Tjaart van der Walt	29.01.24
DESIGN REVIEW	Alasdair McGeachie	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

PEDESTRIAN RAIL CROSSING
DETAILS - SIGNAL POLE FOOTING, TRACK PAVEMENT, SIGNS

Status Stamp: **FOR CONSTRUCTION**
Date Stamp: **16.05.24**
Scales: AS SHOWN
Drawing No.: 310204837-01-200-C005
Rev.: 1

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DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1

REMOVE EXISTING CONCRETE FOOTPATH. REPLACE WITH COMPACTED TOPSOIL AND GRASS SOWN

REMOVE AND RETAIN EXISTING FLASHING LIGHTS. REMOVE AND REPLACE POLE WITH TALLER POLE REINSTALL FLASHING LIGHTS, INSTALL NEW PEDESTRIAN FLASHING LIGHTS AND LOW NOISE BELL TO BE INSTALLED BY OTHERS. (KIWIRAIL TO ADVISE ON FOUNDATION BLOCK).

RETAIN EXISTING SERVICE PIT

CONSTRUCT NEW 1.5m WIDE FOOTPATH. REFER TO ROADING DRAWINGS FOR CONTINUATION AND DETAILS.

NEW FENCING

INSTALL NEW AUTOMATIC PEDESTRIAN GATES AND FENCING. QUADRANT A

RETAIN EXISTING TIMBER FENCING

RETAIN EXISTING SERVICE CABINET 600V TRANSFORMER #T2316

RETAIN EXISTING SERVICE PITS

INSTALL INFILLED PEDESTRIAN CROSSING PANELS. DETAILS TO BE CONFIRMED

INSTALL NEW FLASHING LIGHTS BY OTHERS

INSTALL NEW AUTOMATIC PEDESTRIAN GATES AND FENCING. QUADRANT B

RETAIN EXISTING SERVICE BUILDING CAPACITY INSUFFICIENT FOR ADDITIONAL CONTROLS. REPLACE OR EXTEND (BY OTHERS).

EXISTING ACCESS CHAMBER (COLLAPSED). WILL NEED TO BE REPLACED. RELOCATED 0.5m FROM NEW HAB FOUNDATION AND DUCTING TO BE REALIGNED (BY OTHERS).

NEW FENCING

INSTALL NEW HALF BARRIER ARM FOUNDATION, BARRIER ARM COLUMN, HALF ARM BARRIER, FLASHING LIGHTS AND LOW NOISE BELL. INSTALLED BY OTHERS.

REMOVE EXISTING HALF BARRIER ARM, WARNING BELLS, FLASHING LIGHTS, COLUMN AND FOUNDATION BY OTHERS.

INSTALL NEW HALF BARRIER ARM FOUNDATION, BARRIER ARM COLUMN, HALF ARM BARRIER, FLASHING LIGHTS AND LOW NOISE BELLS. INSTALLED BY OTHERS.

REFER TO ADJACENT VIEWPORT FOR EXTENT OF FENCING ALONG MANOR PARK ROAD

DESIGN REFERENCE STRING MC01

FENCE POST 0.5m FROM KERB FACE .

REMOVE EXISTING CONCRETE FOOTPATH. REPLACE WITH COMPACTED TOPSOIL AND GRASS SOWN. REFER TO ROADING DRAWINGS.

CONSTRUCT NEW 1.5m WIDE FOOTPATH. REFER TO ROADING DRAWINGS FOR CONTINUATION AND DETAILS.

SH2/SH58

BENMORE CRESCENT

WELLINGTON

MANOR PARK ROAD

UPMAIN - WAIRARAPA LINE

DOWNMAIN - WAIRARAPA LINE

UPPER HUTT

2.6m

11.0m

8.3m

2.6m

2 0 5m

SCALE 1:100

PLAN

SCALE 1 : 100

LEGEND:

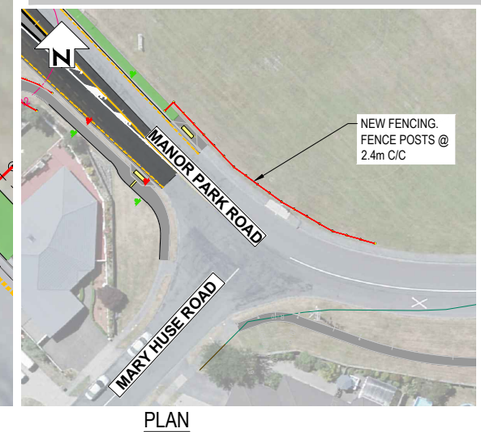
- NEW MAST FITTED WITH ONE PAIR OF FLASHING LIGHTS AND LOW LEVEL BELLS.
- NEW MAST FITTED WITH ONE PAIR OF FLASHING LIGHTS.
- NEW VEHICLE BARRIER ARM WITH ONE PAIR OF FLASHING LIGHTS AND BELL. "RAILWAY", "2", " TRACKS" SIGNS
- EXISTING PAIR OF FLASHING LIGHTS AND BELLS
- EXISTING PAIR OF LIGHTS
- EXISTING BELLS
- EXISTING VEHICLE BARRIER ARM
- NEW WARNING TACTILE PAVERS 300x300
- NEW WARNING TACTIEL PAVERS 300x150
- PROPOSED NEW FOLDED WIRE FENCE
- (A) GATE QUADRANT REFERENCE
- NEW 65mm POST
- NEW 75mm POST
- NEW 90mm POST
- NEW SIGN
- LOW NOISE
- GRASSED SIDE VERGE

RESOURCE CONSENT GRANTED 27/01/2025 HUTT CITY COUNCIL

HUTT CITY TE AWA KAIRANGI

NOTE:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH:
   - C002 STANDARD NOTES;
   - C003 STANDARD GATES DETAILS;
   - C004 STANDARD FENCE AND SIGNS DETAILS.
2. ALL DIMENSIONS TO BE CHECKED ON SITE BEFORE COMMENCING CONSTRUCTION.
3. ALL UNDER TRACK DUCTS TO BE INSTALLED AS PER THE REQUIREMENTS OF S-ST-CW-2140, PARTICULARLY SECTIONS 12 AND 13.
4. ALL SETOUT DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE QUADRANT DETAIL DRAWINGS.
5. HALF-ARM BARRIER (HAB) AND FLASHING LIGHT BEACON (FLB), ARE TO BE REPLACED IN THE 2023/24 FY. WILL NEED TO BE REPOSITIONED AS STANDARD REQUIRES NEWEST PART OF HAB / FLB TO BE 1.0m FROM EDGE OF SEAL OR KERB.



PLAN

SCALE 1 : 500

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	GD	TW	MG	16.05.24
0	FOR TENDER	GD	AQ	CD	19.12.22

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DESIGN REVIEW	Alasdair McGeachie	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

PEDESTRIAN RAIL CROSSING
GENERAL LAYOUT PLAN

Status Stamp: FOR CONSTRUCTION

Date Stamp: 16.05.24

Scales: AS SHOWN

Drawing No.: 310204837-01-200-C301

Rev.: 1

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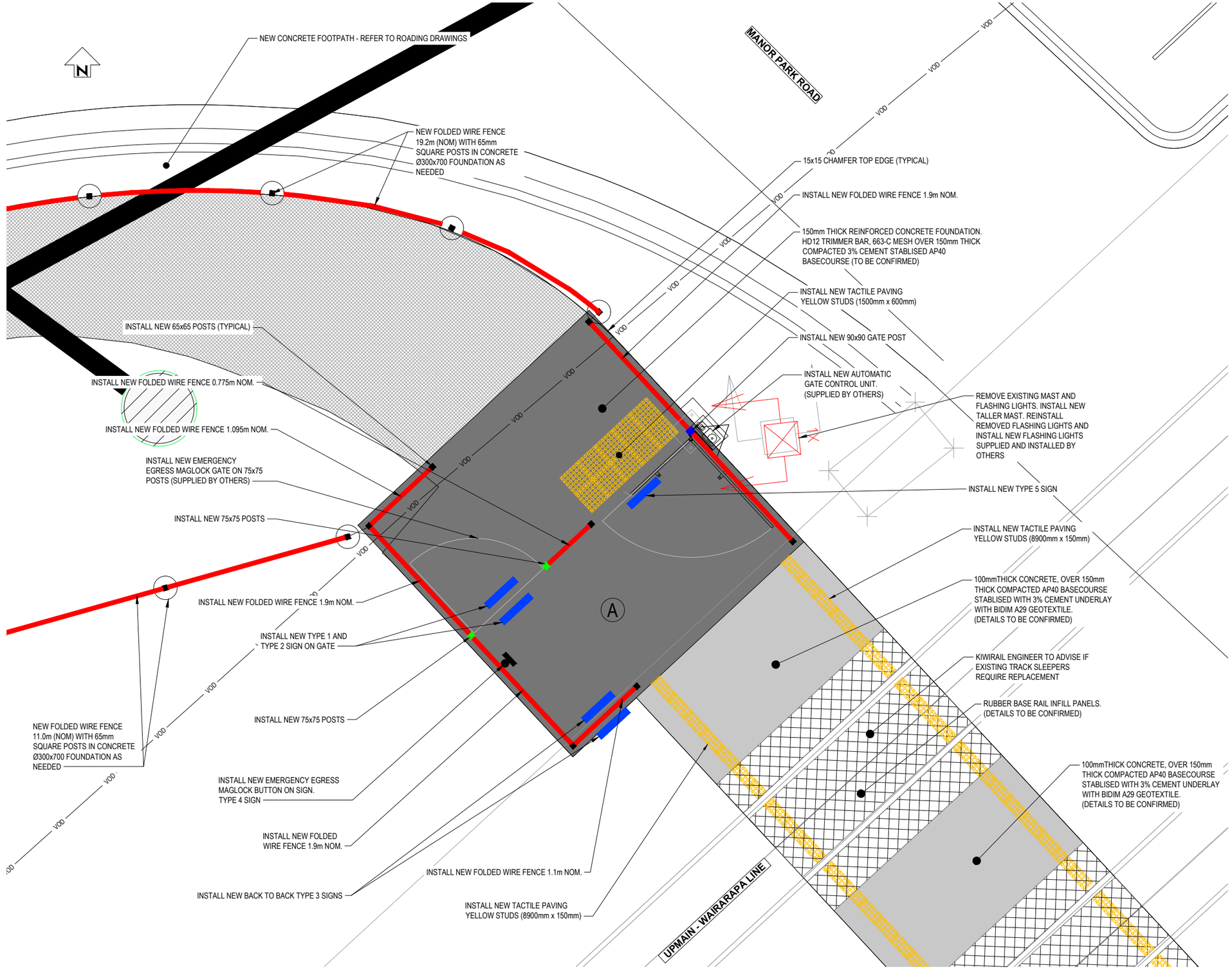

PLAN

SCALE 1 : 25

DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1

LEGEND:

- NEW MAST FITTED WITH ONE PAIR OF FLASHING LIGHTS AND LOW LEVEL BELLS.
- NEW MAST FITTED WITH ONE PAIR OF FLASHING LIGHTS.
- NEW VEHICLE BARRIER ARM WITH ONE PAIR OF FLASHING LIGHTS AND BELL. "RAILWAY", "2", " TRACKS" SIGNS
- EXISTING PAIR OF FLASHING LIGHTS AND BELLS
- EXISTING PAIR OF LIGHTS
- EXISTING BELLS
- EXISTING VEHICLE BARRIER ARM
- NEW WARNING TACTILE PAVERS 300x300
- NEW WARNING TACTIEL PAVERS 300x150
- PROPOSED NEW FOLDED WIRE FENCE
- (A) GATE QUADRANT REFERENCE
- NEW 65mm POST
- NEW 75mm POST
- NEW 90mm POST
- NEW SIGN
- LOW NOISE
- GRASSED SIDE VERGE

RESOURCE CONSENT GRANTED 27/01/2025 HUTT CITY COUNCIL

HUTT CITY TE AWA KAIRANGI

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH:
   - C002 STANDARD NOTES;
   - C003 FENCING DETAILS;
   - C004 DETAILS - SIGNAL POLE FOOTING, TRACK PAVEMENT, SIGNS.
2. ALL DIMENSIONS TO BE CHECKED ON SITE BEFORE COMMENCING CONSTRUCTION.
3. ALL SETOUT DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE QUADRANT LAYOUT PLAN DRAWINGS.

REV	REVISIONS	DRN	CHK	APP	DATE
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APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

PEDESTRIAN RAIL CROSSING
PEDESTRIAN QUADRANT A - LAYOUT PLAN

Status Stamp: FOR CONSTRUCTION
Date Stamp: 16.05.24
Scales: AS SHOWN
Drawing No.: 310204837-01-200-C302
Rev.: 1

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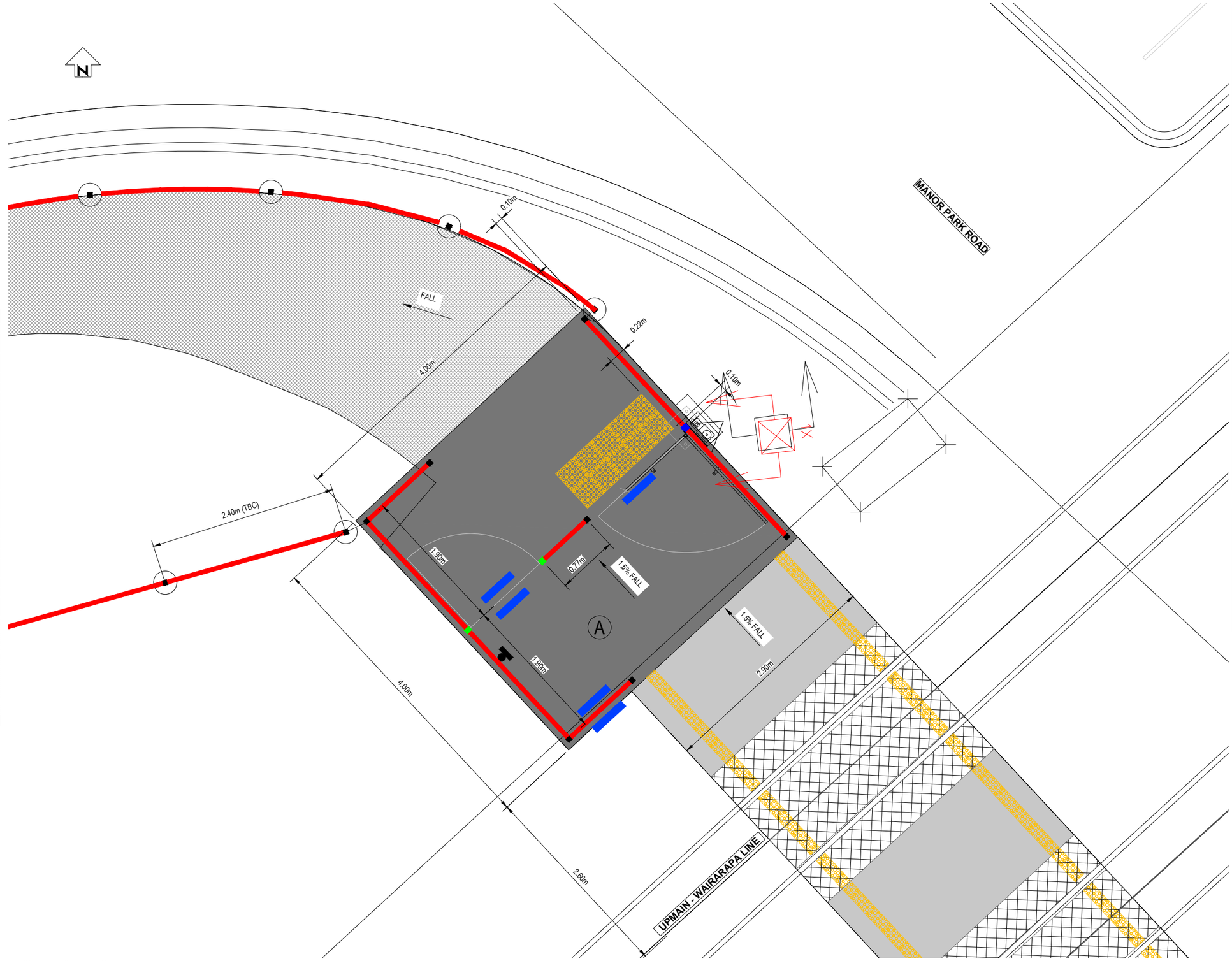

PLAN
SCALE 1 : 25

500 0 500mm 1m
SCALE 1:25

LEGEND:

- NEW MAST FITTED WITH ONE PAIR OF FLASHING LIGHTS AND LOW LEVEL BELLS.
- NEW MAST FITTED WITH ONE PAIR OF FLASHING LIGHTS.
- NEW VEHICLE BARRIER ARM WITH ONE PAIR OF FLASHING LIGHTS AND BELL. "RAILWAY", "2", " TRACKS" SIGNS
- EXISTING PAIR OF FLASHING LIGHTS AND BELLS
- EXISTING PAIR OF LIGHTS
- EXISTING BELLS
- EXISTING VEHICLE BARRIER ARM
- NEW WARNING TACTILE PAVERS 300x300
- NEW WARNING TACTIEL PAVERS 300x150
- PROPOSED NEW FOLDED WIRE FENCE
- (A) GATE QUADRANT REFERENCE
- NEW 65mm POST
- NEW 75mm POST
- NEW 90mm POST
- NEW SIGN
- LOW NOISE
- GRASSED SIDE VERGE

RESOURCE CONSENT
GRANTED
27/01/2025
HUTT CITY COUNCIL

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH:
   - C002 STANDARD NOTES;
   - C003 FENCING DETAILS;
   - C004 DETAILS - SIGNAL POLE FOOTING, TRACK PAVEMENT, SIGNS.
2. ALL DIMENSIONS TO BE CHECKED ON SITE BEFORE COMMENCING CONSTRUCTION.
3. ALL SETOUT DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE QUADRANT LAYOUT PLAN DRAWINGS.

DO NOT SCALE - IF IN DOUBT, ASK
ORIGINAL SIZE A1

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	GD	TW	MG	16.05.24
0	FOR TENDER	GD	AQ	CD	19.12.22

SURVEYED	SPENCER HOLMES	08.2022
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DESIGN REVIEW	Alasdair McGeachie	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

PEDESTRIAN RAIL CROSSING
PEDESTRIAN QUADRANT A - SETTING OUT PLAN

Status Stamp: FOR CONSTRUCTION
Date Stamp: 16.05.24
Scales: AS SHOWN
Drawing No.: 310204837-01-200-C303
Rev.: 1

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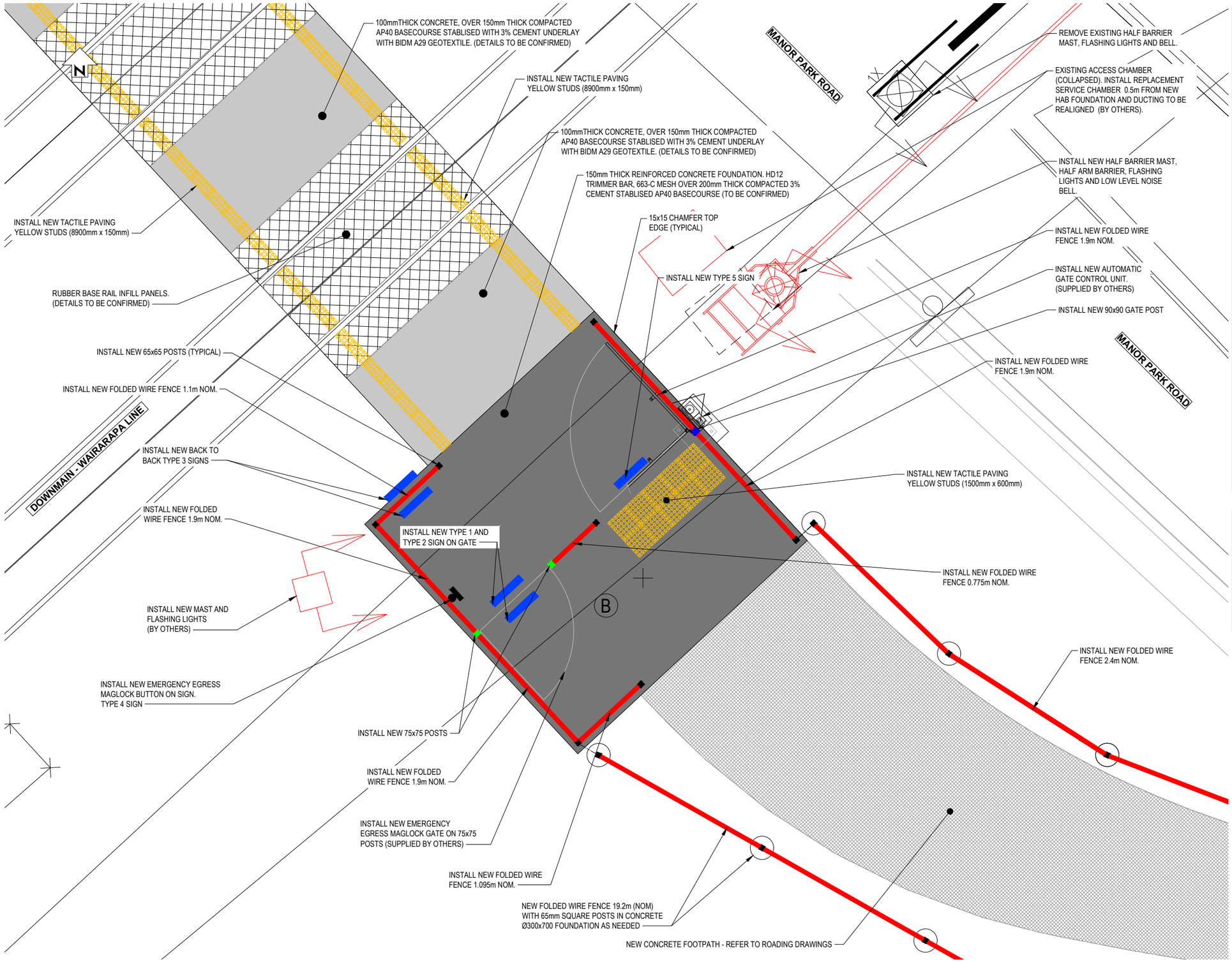

PLAN

SCALE 1 : 25

LEGEND:

- NEW MAST FITTED WITH ONE PAIR OF FLASHING LIGHTS AND LOW LEVEL BELLS.
- NEW MAST FITTED WITH ONE PAIR OF FLASHING LIGHTS.
- NEW VEHICLE BARRIER ARM WITH ONE PAIR OF FLASHING LIGHTS AND BELL. "RAILWAY", "2", " TRACKS" SIGNS
- EXISTING PAIR OF FLASHING LIGHTS AND BELLS
- EXISTING PAIR OF LIGHTS
- EXISTING BELLS
- EXISTING VEHICLE BARRIER ARM
- NEW WARNING TACTILE PAVERS 300x300
- NEW WARNING TACTIEL PAVERS 300x150
- PROPOSED NEW FOLDED WIRE FENCE
- GATE QUADRANT REFERENCE
- NEW 65mm POST
- NEW 75mm POST
- NEW 90mm POST
- NEW SIGN
- LOW NOISE
- GRASSED SIDE VERGE

RESOURCE CONSENT GRANTED 27/01/2025 HUTT CITY COUNCIL

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH:
   - C002 STANDARD NOTES;
   - C003 FENCING DETAILS;
   - C004 DETAILS - SIGNAL POLE FOOTING, TRACK PAVEMENT, SIGNS.
2. ALL DIMENSIONS TO BE CHECKED ON SITE BEFORE COMMENCING CONSTRUCTION.
3. ALL SETOUT DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE QUADRANT LAYOUT PLAN DRAWINGS.

ORIGINAL SIZE A1 — DO NOT SCALE - IF IN DOUBT, ASK

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	GD	TW	MG	16.05.24
0	FOR TENDER	GD	AQ	CD	19.12.22

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APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

PEDESTRIAN RAIL CROSSING
PEDESTRIAN QUADRANT B - LAYOUT PLAN

Status Stamp: **FOR CONSTRUCTION**
Date Stamp: **16.05.24**
Scales: AS SHOWN
Drawing No.: 310204837-01-200-C304
Rev.: 1

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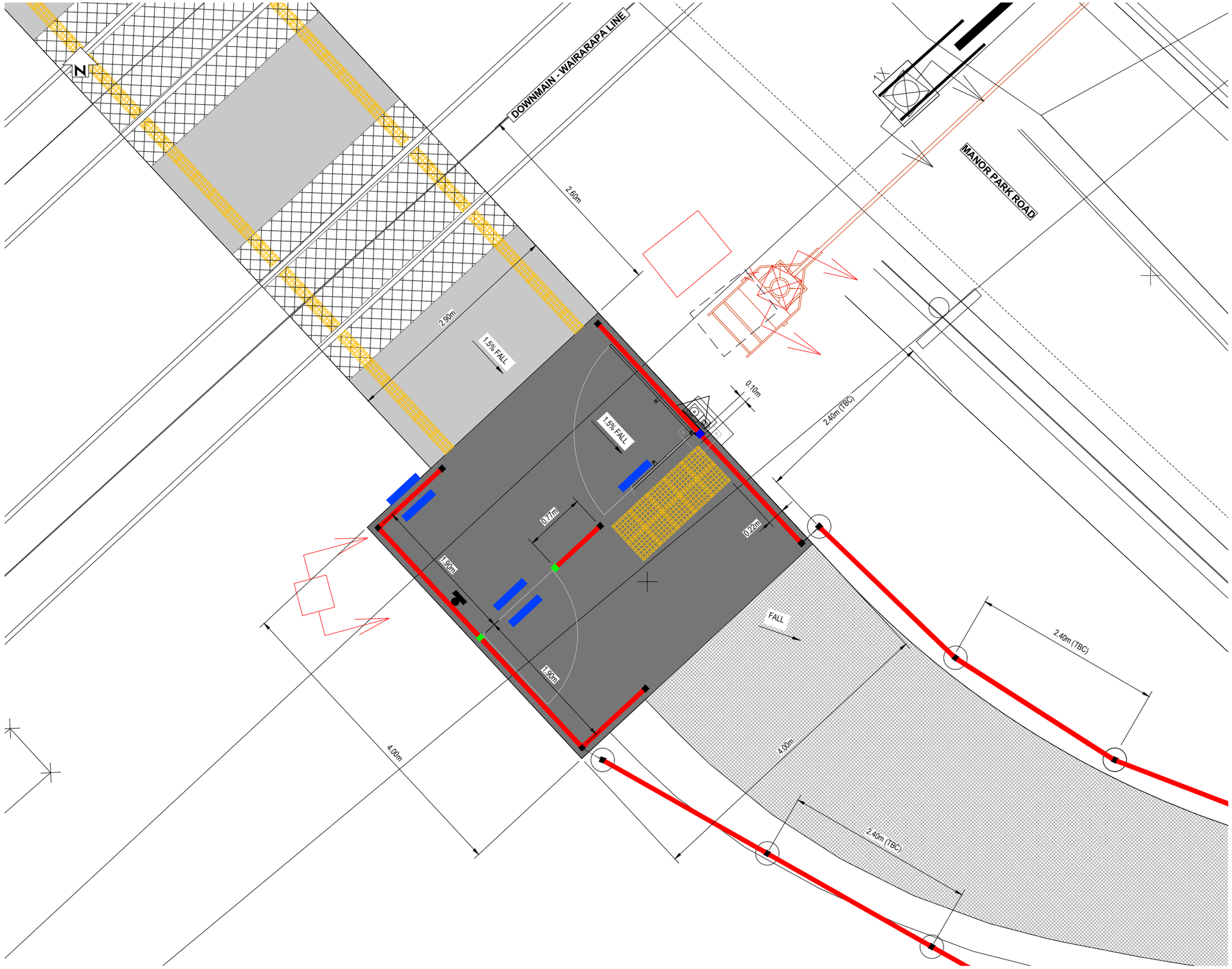

LEGEND:

- NEW MAST FITTED WITH ONE PAIR OF FLASHING LIGHTS AND LOW LEVEL BELLS.
- NEW MAST FITTED WITH ONE PAIR OF FLASHING LIGHTS.
- NEW VEHICLE BARRIER ARM WITH ONE PAIR OF FLASHING LIGHTS AND BELL. "RAILWAY", "2", " TRACKS" SIGNS
- EXISTING PAIR OF FLASHING LIGHTS AND BELLS
- EXISTING PAIR OF LIGHTS
- EXISTING BELLS
- EXISTING VEHICLE BARRIER ARM
- NEW WARNING TACTILE PAVERS 300x300
- NEW WARNING TACTIEL PAVERS 300x150
- PROPOSED NEW FOLDED WIRE FENCE
- (A) GATE QUADRANT REFERENCE
- NEW 65mm POST
- NEW 75mm POST
- NEW 90mm POST
- NEW SIGN
- 12 — 12 LOW NOISE
- GRASSED SIDE VERGE

RESOURCE CONSENT
GRANTED
27/01/2025
HUTT CITY COUNCIL

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH:
   - C002 STANDARD NOTES;
   - C003 FENCING DETAILS;
   - C004 DETAILS - SIGNAL POLE FOOTING, TRACK PAVEMENT, SIGNS.
2. ALL DIMENSIONS TO BE CHECKED ON SITE BEFORE COMMENCING CONSTRUCTION.
3. ALL SETOUT DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE QUADRANT LAYOUT PLAN DRAWINGS.

500 0 500mm 1m
SCALE 1:25

PLAN
SCALE 1 : 25

DO NOT SCALE - IF IN DOUBT, ASK
ORIGINAL SIZE A1

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	AKJ	GD	MG	16.05.24
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Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

PEDESTRIAN RAIL CROSSING
PEDESTRIAN QUADRANT B - SETTING OUT PLAN

Status Stamp: **FOR CONSTRUCTION**
Date Stamp: **16.05.24**
Scales: AS SHOWN
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Rev.: 1

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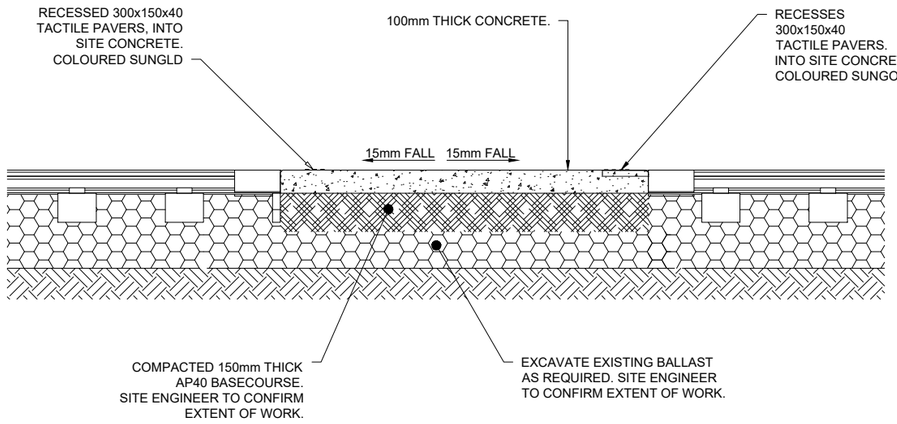
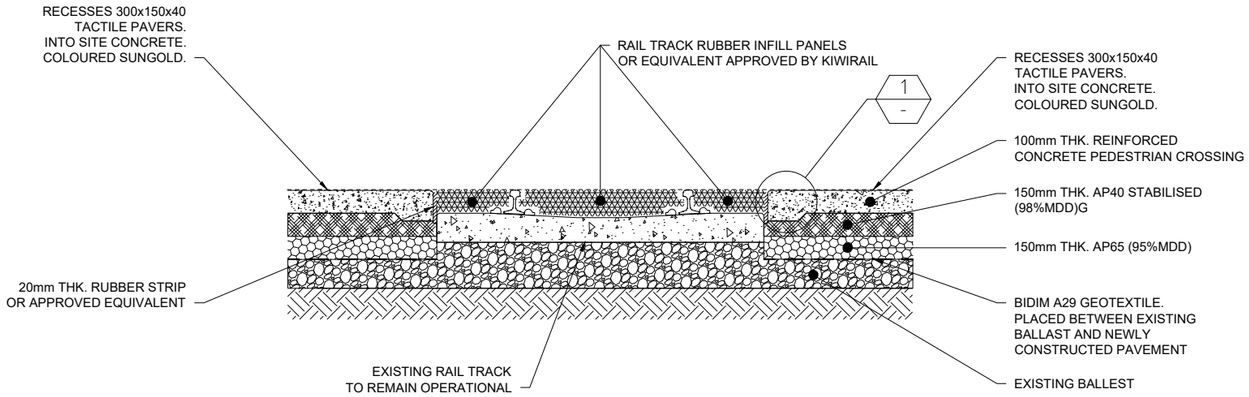


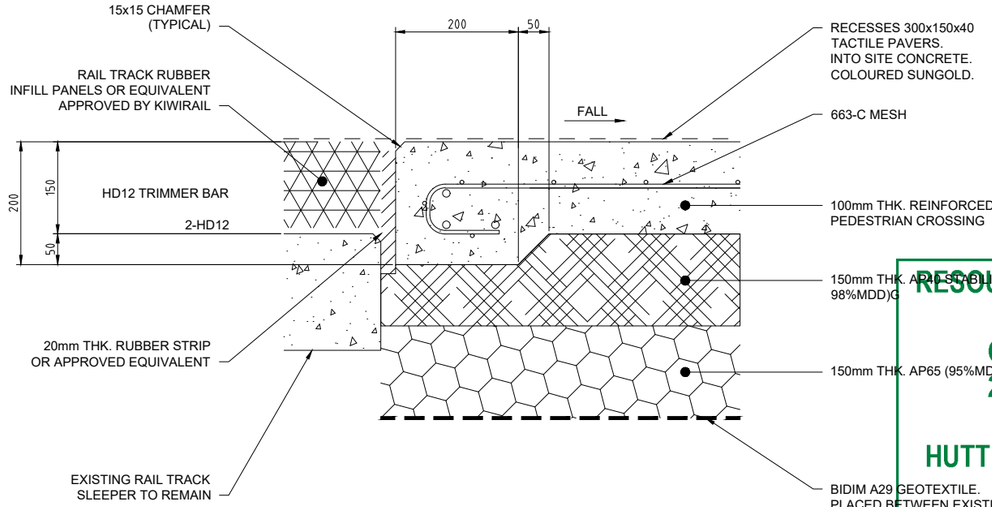
TYPICAL PEDESTRIAN CROSS SECTION

SCALE 1:20



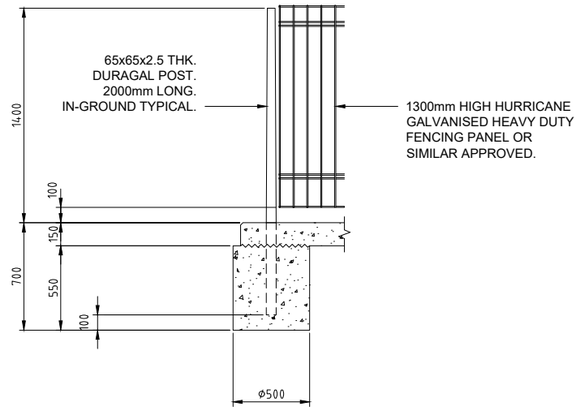
TYPICAL RAIL CROSS SECTION

SCALE 1:20



DETAIL 1

SCALE 1:5



POST DETAIL

SCALE 1:20

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS SHOWN OTHERWISE.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING C002 STANDARD NOTES.

RESOURCE CONSENT
GRANTED
27/01/2025
HUTT CITY COUNCIL

500 0 500mm 1m
SCALE 1:20

100 0 100 200mm
SCALE 1:5

DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1

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Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

PEDESTRIAN RAIL CROSSING
PAVEMENT CROSSING - TYPICAL DETAILS

Status Stamp: FOR CONSTRUCTION
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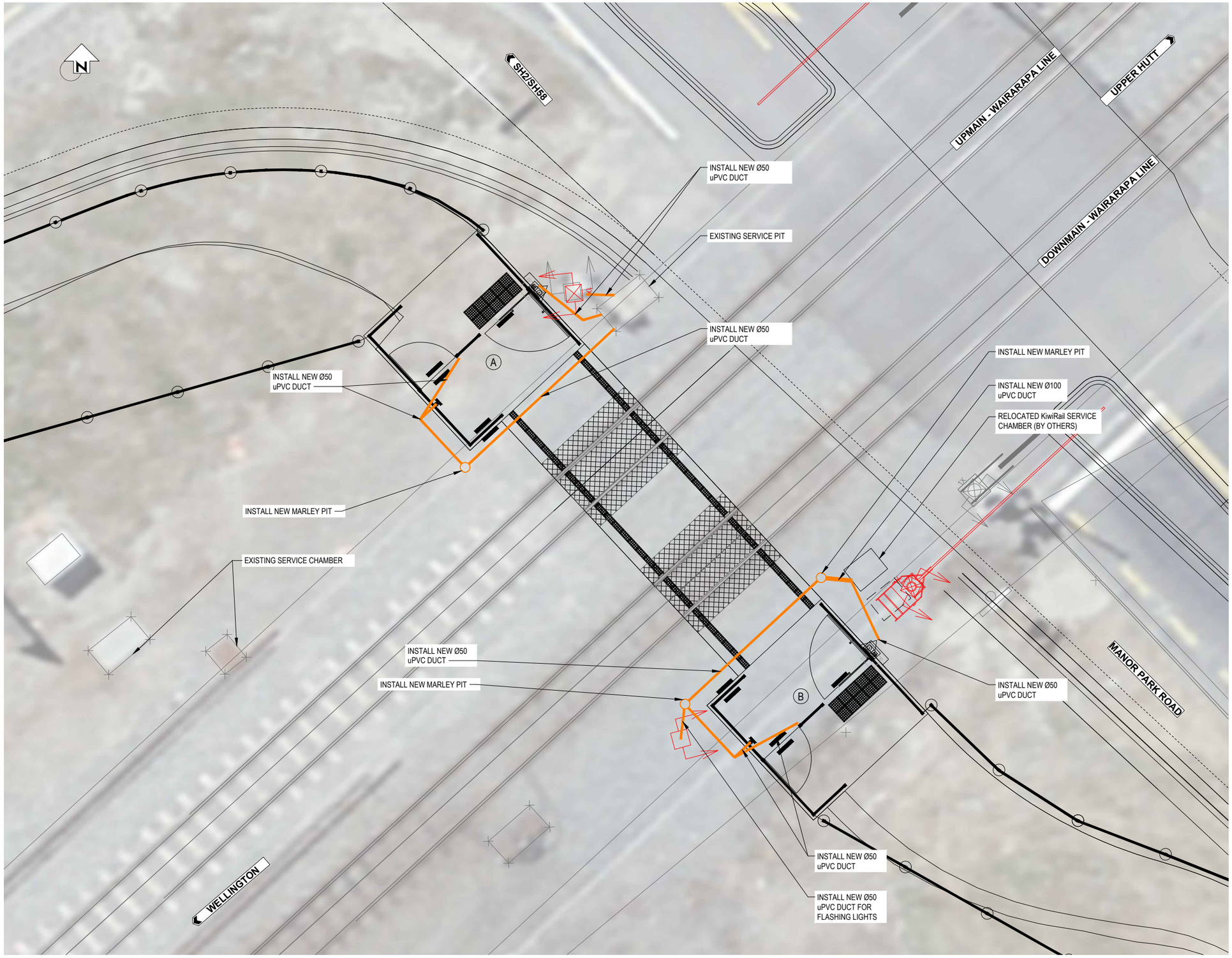

2 0 5m
SCALE 1:100

PLAN
SCALE 1 : 100

LEGEND:

- NEW DUCTING
- NEW MARLEY PIT DUCTING
- NEW MAST FITTED WITH ONE PAIR OF FLASHING LIGHTS AND LOW LEVEL BELLS.
- NEW MAST FITTED WITH ONE PAIR OF FLASHING LIGHTS.
- NEW VEHICLE BARRIER ARM WITH ONE PAIR OF FLASHING LIGHTS AND BELL. "RAILWAY", "2", " TRACKS" SIGNS
- EXISTING PAIR OF FLASHING LIGHTS AND BELLS
- EXISTING PAIR OF LIGHTS
- EXISTING BELLS
- EXISTING VEHICLE BARRIER ARM
- (A) GATE QUADRANT REFERENCE

RESOURCE CONSENT
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27/01/2025
HUTT CITY COUNCIL

NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH:
   - C002 STANDARD NOTES;
   - C003 FENCING DETAILS;
   - C004 DETAILS - SIGNAL POLE FOOTING, TRACK PAVEMENT, SIGNS
2. ALL DIMENSIONS TO BE CHECKED ON SITE BEFORE COMMENCING CONSTRUCTION.
3. ALL UNDER TRACK DUCTS TO BE INSTALLED AS PER THE REQUIREMENTS OF S-ST-CW-2140, PARTICULARLY SECTIONS 12 AND 13.

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.
DIAL BEFORE YOU DIG

DO NOT SCALE - IF IN DOUBT, ASK
ORIGINAL SIZE A1

REV	REVISIONS	DRN	CHK	APP	DATE
1	ISSUED FOR CONSTRUCTION	GD	TW	MG	16.05.24
0	FOR TENDER	GD	AQ	CD	19.12.22

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Janco Jordaan	11.2022
DRAWN	Gordon Dobson	11.2022
CAD REVIEW	Shivneel Sen	29.01.24
DESIGN CHECK	Tjaart van der Walt	29.01.24
DESIGN REVIEW	Alasdair McGeachie	29.01.24
APPROVED	Mark Georgeson	29.01.24
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

TE KAREAREA BUSINESS PARK
BENMORE CRESCENT AND MANOR PARK ROAD UPGRADES

PEDESTRIAN RAIL CROSSING
DUCTING LAYOUT PLAN

Status Stamp: **FOR CONSTRUCTION**
Date Stamp: **16.05.24**
Scales: AS SHOWN
Drawing No.: 310204837-01-200-C307
Rev.: 1

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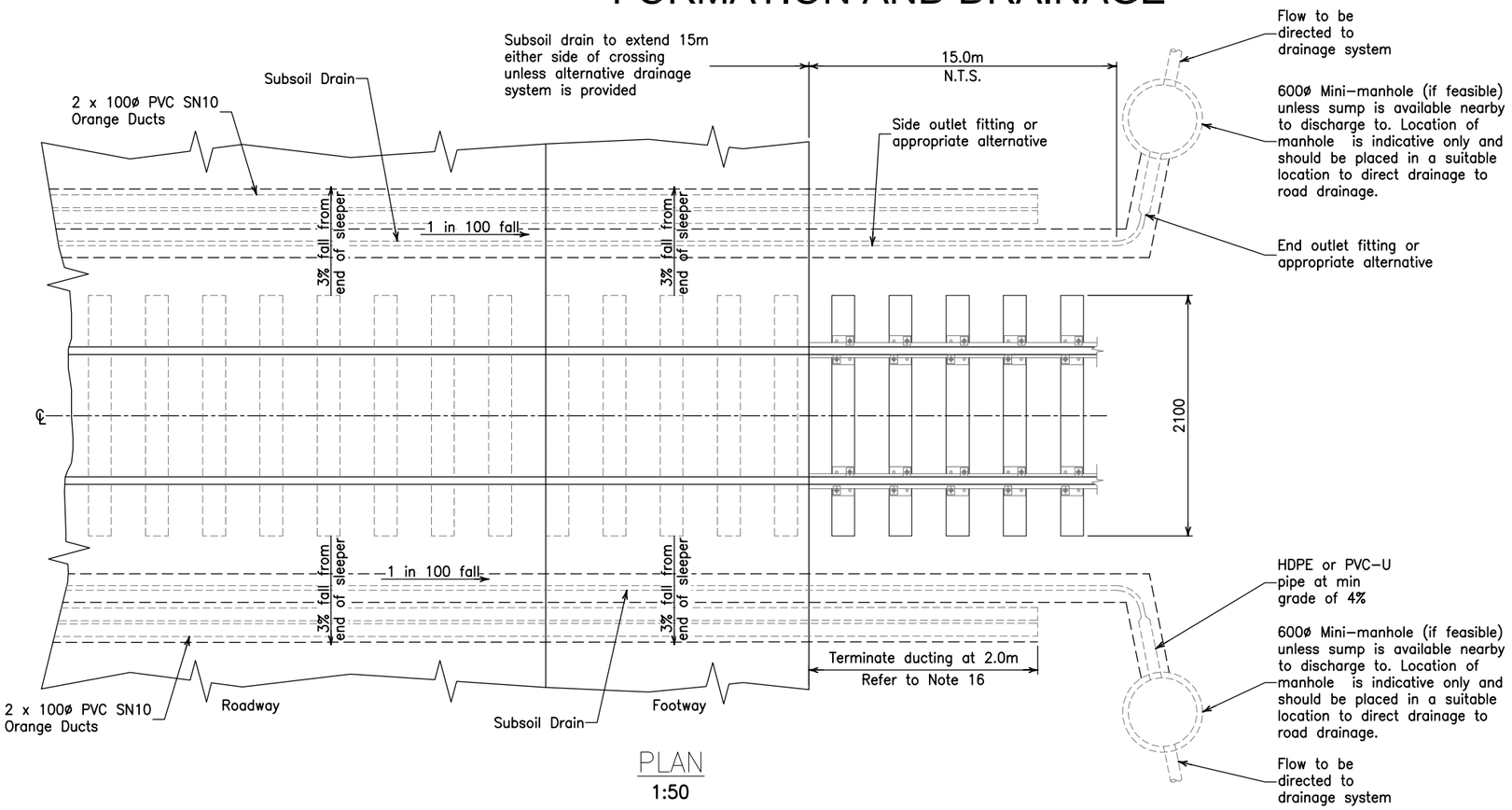
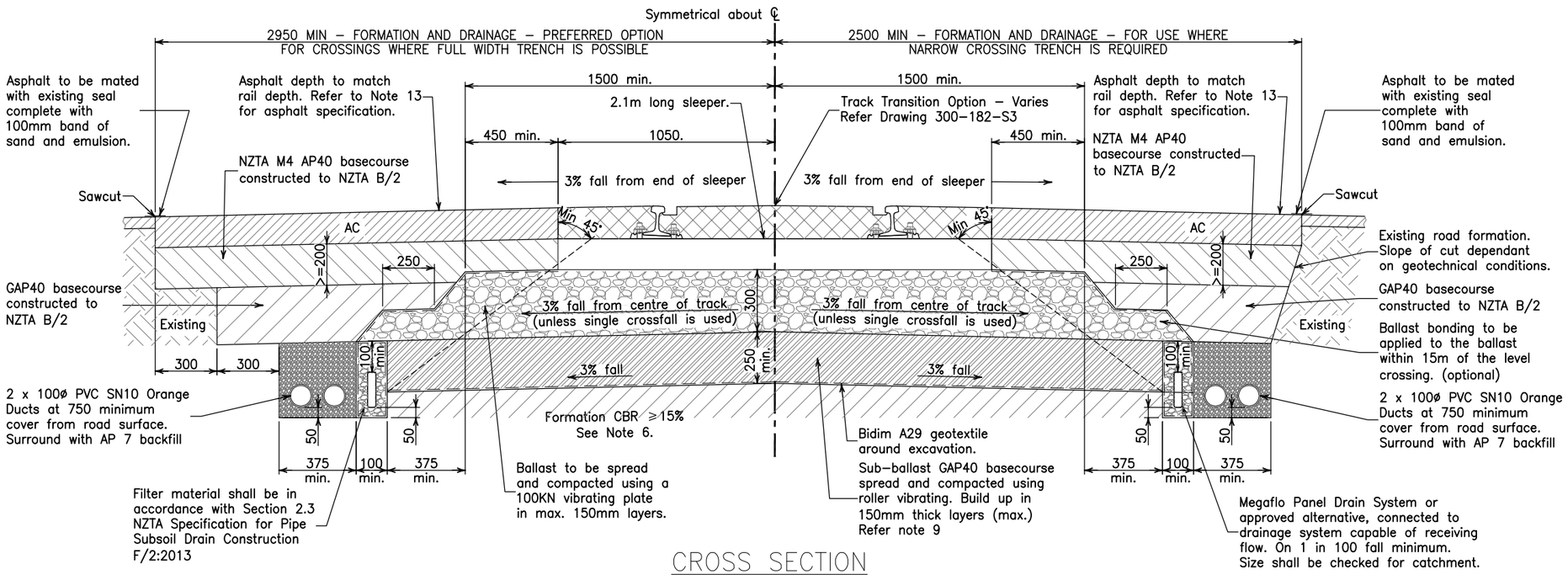
FORMATION AND DRAINAGE



PLAN
1:50



CROSS SECTION
1:25

NOTES

1. The purpose of this drawing is to give guidelines for level crossing construction. The drawing may not be suitable for all scenarios and therefore design checks should be carried out. The drawing should be read in conjunction with the KiwiRail Formation Standard C–ST–FO–4110.
2. Typical construction cross section detail on left of centreline is the preferred option and shall apply to all cases except where identified constraints require use of narrow crossing detail on right of centreline. Use of narrow crossing trench can only be used with prior approval from KiwiRail.
3. Materials can be substituted with the approval of the Professional Head of Civil Engineering where suitable, more cost effective options are available.
4. Any other variation to this must be approved by the Professional Head of Civil Engineering.
5. Location of existing services and signals to be confirmed prior to excavation.
6. The minimum formation CBR shall be ⩾15% (max 15mm / 1 blow on Scala penetrometer). Sub ballast improvements may be necessary as set out in the Formation Standard C–ST–FO–4110. Approval required required from Professional Head Civil for improvements.
7. 2 x 100ø ducts on both sides are indicative of S&T requirements for future proofing. Duct requirements to be confirmed with Network Services Cable Network Coordinator.
8. Geotextile sheets must overlap by 500mm minimum.
9. This Sub–ballast GAP 40 layer is shown only as a guide for formation conditions assumed (including CBR 15). These layers shall be constructed to the standard set out in the KiwiRail Formation Standard C–ST–FO–4110.
10. For ballast to achieve interlocking, a 100KN vibrating plate must be used (not a vibrating roller).
11. Overlift track by 25mm to allow for settlement.
12. M4 AP40 may be modified with lime and/or cement.
13. Asphaltic concrete (AC) depth to match rail depth and must not be reduced. If this is not possible, alternative crossing options shall be considered. Asphalt to NZTA M10:2014.
14. AP20 over a geotextile may be used prior to sealing road crossings (with a sacrifical chip seal in critical urban areas).
15. Crossing surface is to be graded to suit the rail. The road surface level shall be adjusted to accommodate this.
16. Where a 3% fall from end of sleeper is not possible consider installation of a slot drain across the roadway feeding into the drainpipes. Refer drawing 300–182–S2–2.
17. Sumps to be provided to ensure adequate drainage from adjacent roads if necessary.
18. Minimum 100,000 tonnes gross to pass prior to sealing crossing. (See note 14)

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PROJECT FILE No:

REV	REVISION PARTICULARS	DRAWN	DATE
0	PRELIMINARY	JH	MAR 2016
A	FOR CONSTRUCTION	JH	APR 2016
B	FOR CONSTRUCTION - UPDATED	JH	MAY 2016
C	FOR CONSTRUCTION - UPDATED	JH	AUG 2016
D	NOTES AMENDED	ES	OCT 2016

	INITIALS	DATE
DESIGNED	HP	MAR 2016
DRAWN	JH	MAR 2016
CHECKED	BP	MAR 2016
APPROVED	DH	OCT 2016

LINE: N/A Km: N/A
SCALE: AS SHOWN

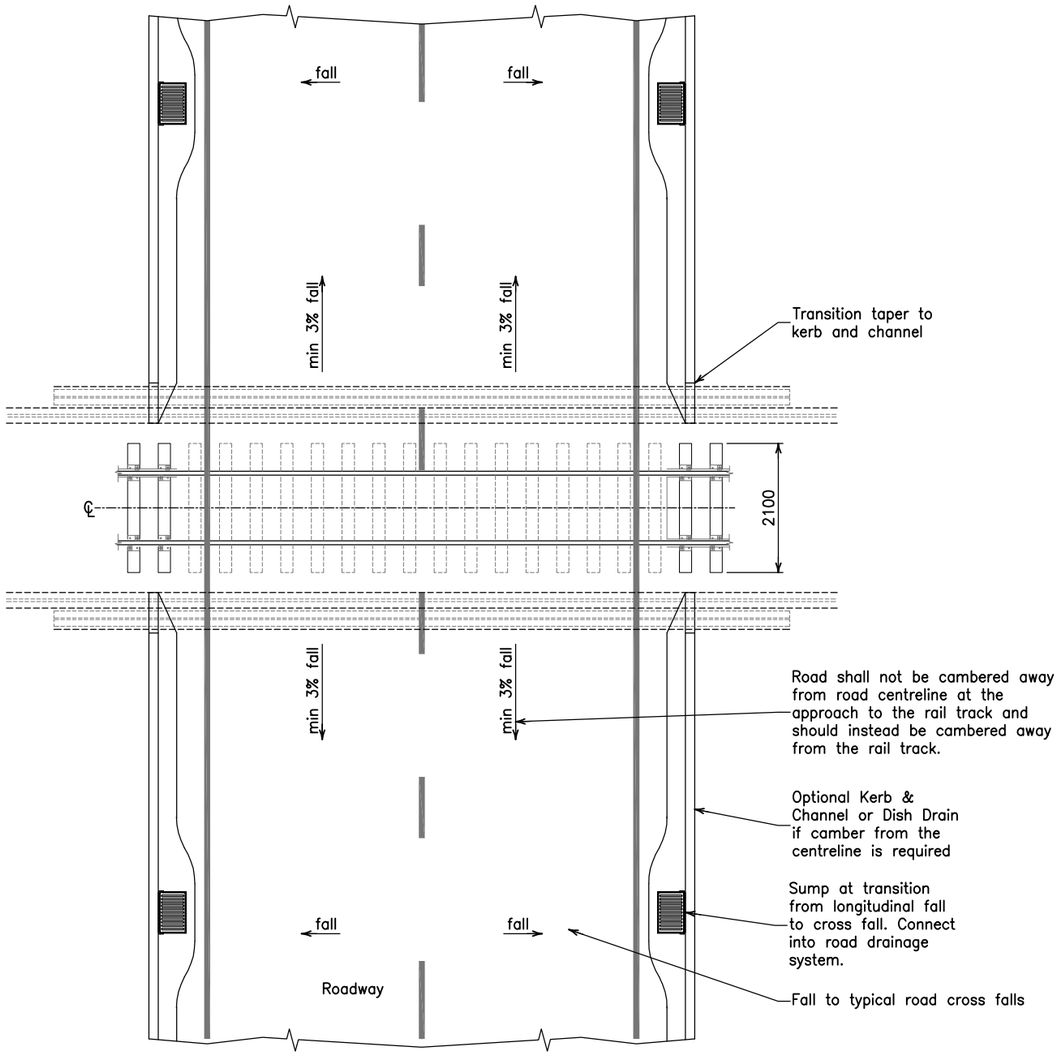
ROAD AND PEDESTRIAN
LEVEL CROSSINGS
FORMATION AND DRAINAGE

KiwiRail
Level 3, Stäbler Building, 8 - 14 Stanley St, Auckland 1010
Tel. : 0800 801 070 , Fax : +64 9 487 0117

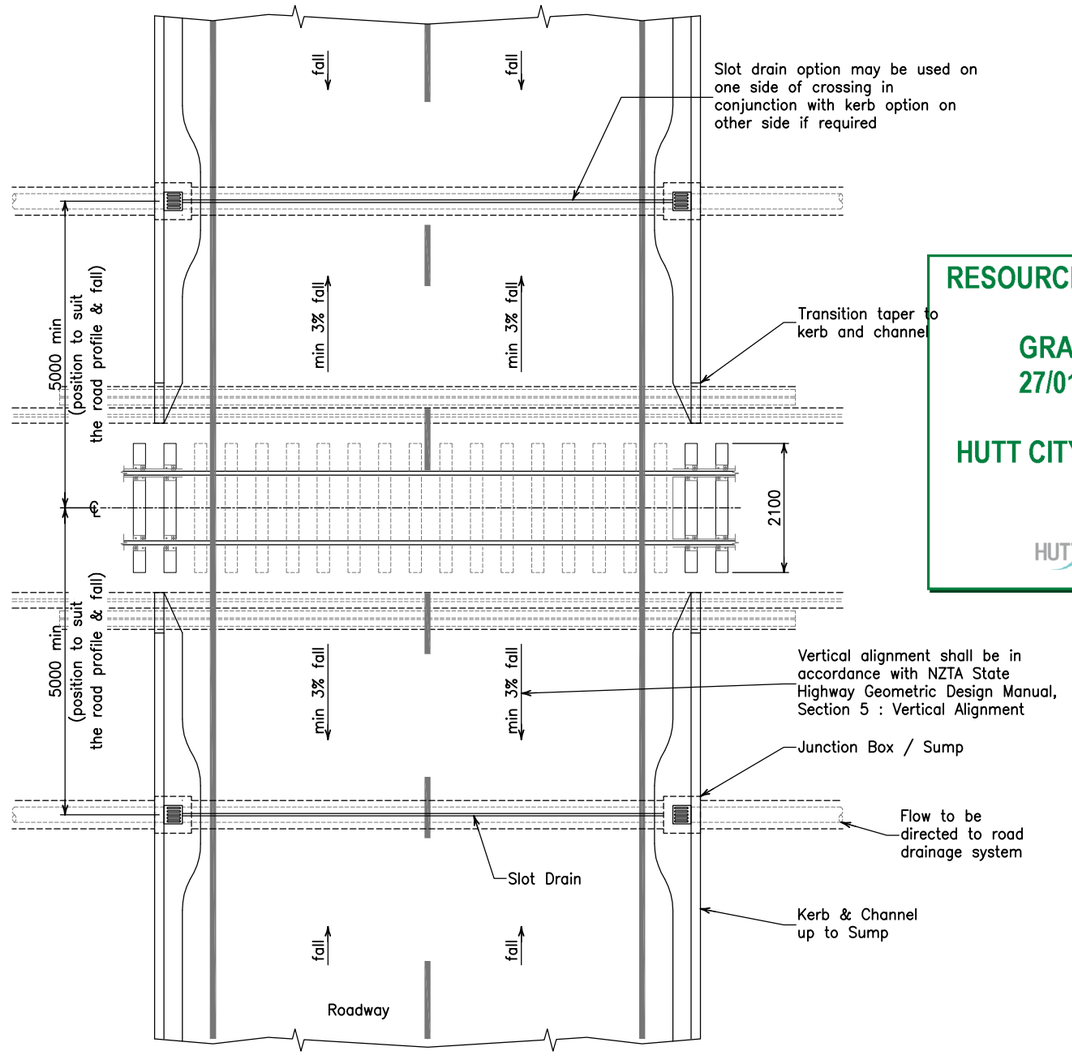
DRAWING No. 300 182 S1
Original A3 Std
REV. No. D

W:\Civil\Level Crossings (civil component)\07.10.2016\1812-2013-S2_.dwg 07-10-16 04:05 PM Itallandman

FORMATION AND DRAINAGE - TRACK APPROACH

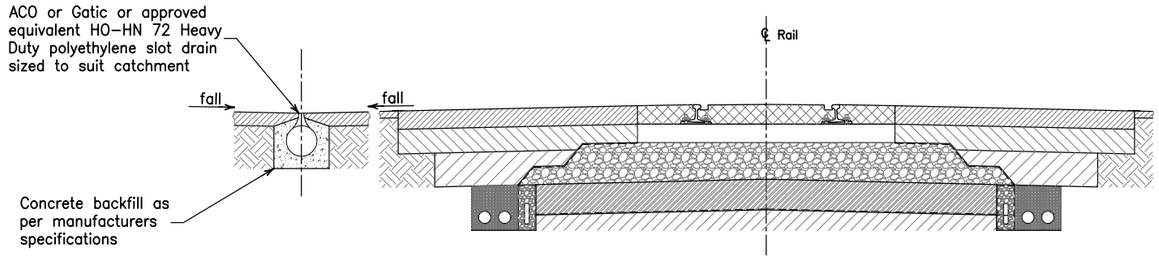


TYPICAL PLAN – TRACK APPROACH
(PREFERRED OPTION)
1:100



PLAN – TRACK APPROACH
(SLOT DRAIN OPTION)
1:100

Note: Slot drains should only be used where terrain does not allow fall away from the track



CROSS SECTION – SLOT DRAIN DETAIL
1:50

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D	NOTE AMENDED	ES	OCT 2016

		INITIALS	DATE
DESIGNED	HP	MAR 2016
DRAWN	JH	MAR 2016
CHECKED	BP	MAR 2016
APPROVED	DH	OCT 2016
LINE: N/A Km: N/A		
SCALE: AS SHOWN		

ROAD AND PEDESTRIAN
LEVEL CROSSINGS
FORMATION & DRAINAGE TRACK APPROACH

KiwiRail
Level 3, Stibbe Building, 8 - 14 Stanley St, Auckland 1010
Tel. : 0800 801 070 , Fax : +64 9 487 0117

DRAWING No. 300 182
Original A3 Std S2
REV. No. D

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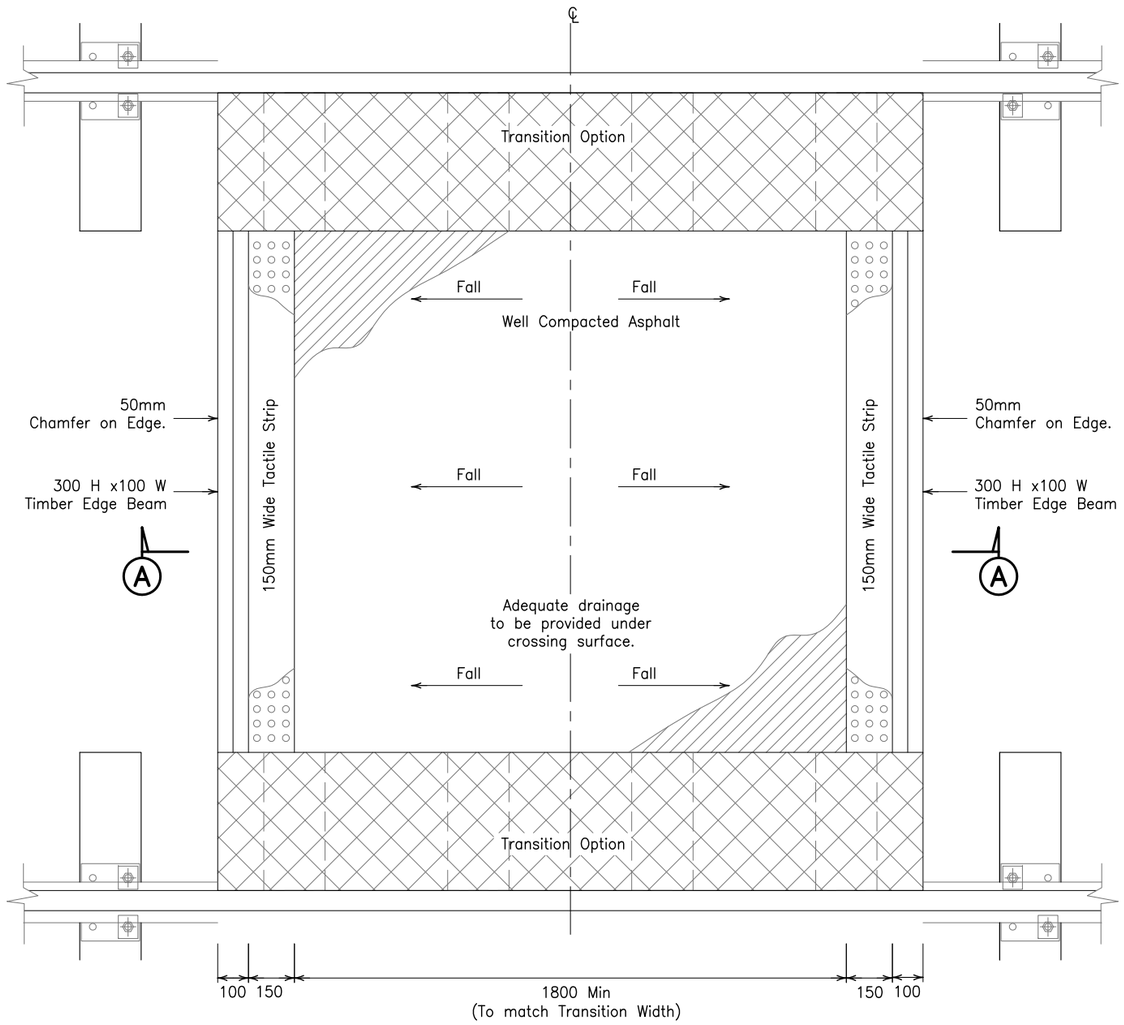
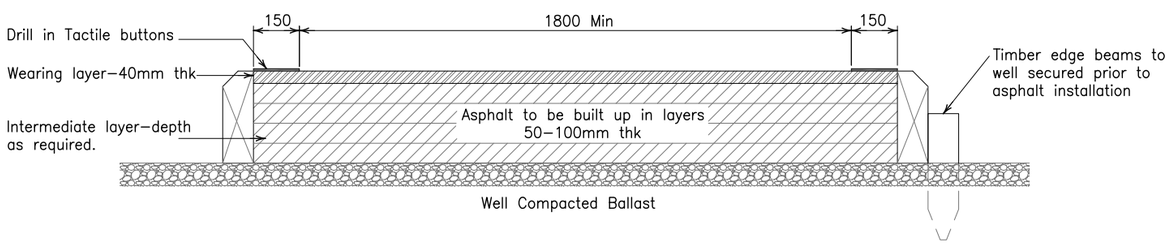
CROSSING TRANSITIONS

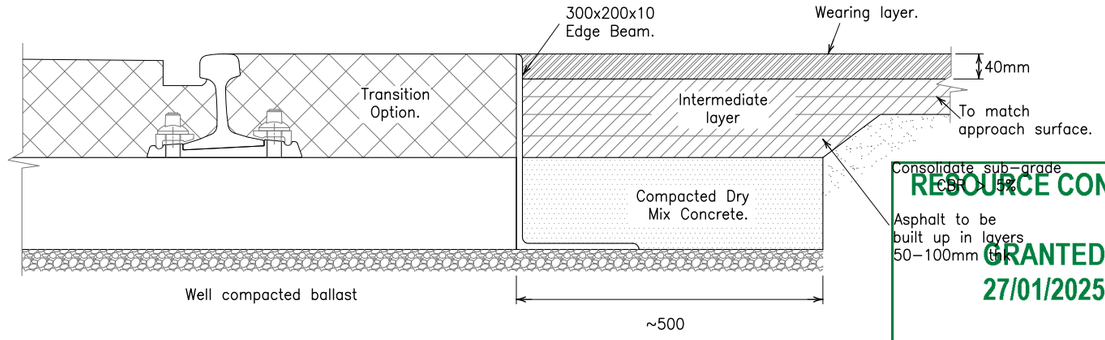


PLAN–DOUBLE TRACK TRANSITIONS
1:20



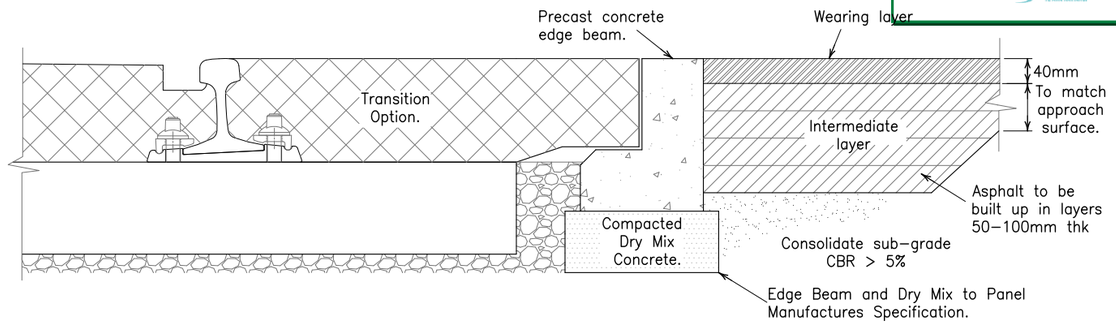
SECTION A–A
1:20

APPROACH TRANSITIONS



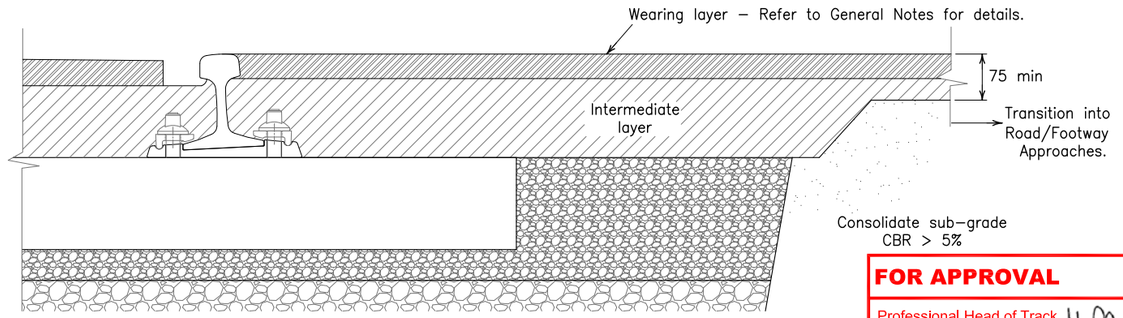
DETAIL A
1:10

Applies to : Baron Holdfast/Concrete Panels/Pedestrail Options.



DETAIL B
1:10

Applies to : Innostrail/ Velostrail – Where edge beam is required.



DETAIL C
1:10

Applies to : All Asphalt Options.

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FOR APPROVAL
Professional Head of Track
Date 13–02–15

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0	PRELIMINARY	VSR	JUNE 2013
1	FOR APPROVAL	VSR	JUNE 2013
A	FOR CONSTRUCTION	JKA	NOV 2014

	INITIALS	DATE
DESIGNED	ML	MAY 2013
DRAWN	VSR	MAY 2013
CHECKED	MS	OCT 2014
APPROVED	MS	OCT 2014

LINE: N/A Km: N/A
SCALE: AS SHOWN

ROAD AND PEDESTRIAN
LEVEL CROSSINGS
CROSSING TRANSITIONS

KiwiRail
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Tel. : 0800 801 070 . Fax : +64 9 487 0117

DRAWING No. 300 182
Original A3 Std S3
REV. No. A

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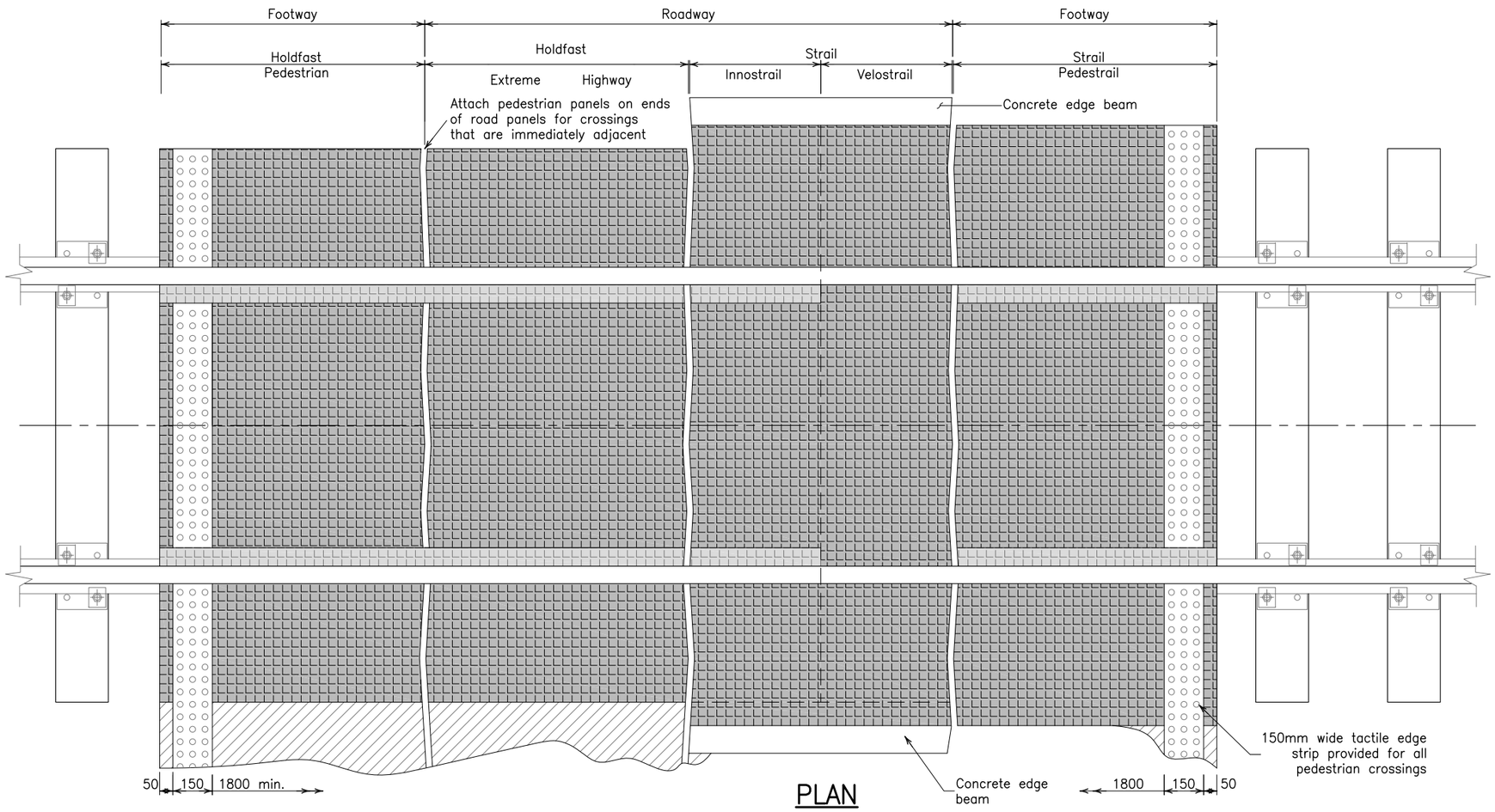
RUBBER PANEL - ROAD AND PEDESTRIAN CROSSINGS



PLAN
1:20

Notes:

- Sheet provides general layout only – Refer to Manufacture Drawings for specific details and dimensions.
- Pedestrian crossing to be 2.1 m wide minimum measured perpendicular to crossing direction. Tactiles strips to be provided on edges.
- All options require site specific design as in accordance with the manufacturers specifications.
- Refer to manufacturers guidelines for installation requirements.
- VeloStrail and flange filler options require site specific risk assessments to prevent Hirail de-railments.
- Pedestrian Rubber Panels not to be used in areas accessible to traffic loads.
- Road crossings require lateral restraint as per manufacturer's requirements.
- Concrete edge beams required for heavy traffic loads. To be detailed as per manufacturer's requirements.
- Holdfast and Strail pedestrian crossings can be used singularly or attached to other panels when crossing is immediately adjacent.

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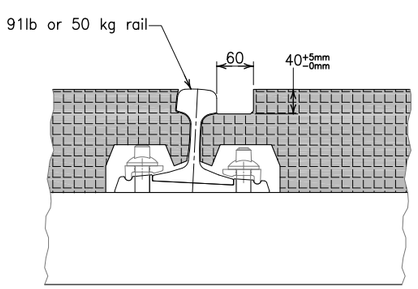
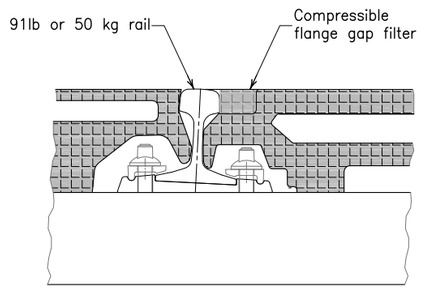
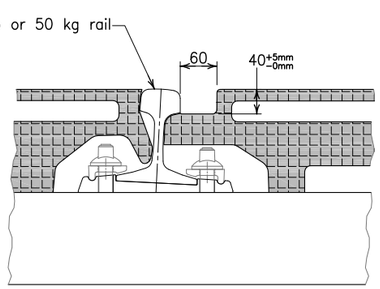


DETAIL A – HOLDFAST/INNOSTRAIL INTERFACE
1:20



DETAIL B – VELOSTRAIL INTERFACE
1:20



DETAIL C – PEDESTRAIL INTERFACE
1:20

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APPROVED	MS	OCT 2014

LINE: N/A Km: N/A
SCALE: AS SHOWN

ROAD AND PEDESTRIAN
LEVEL CROSSINGS
RUBBER PANELS

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Original A3 Std S4
REV. No. A

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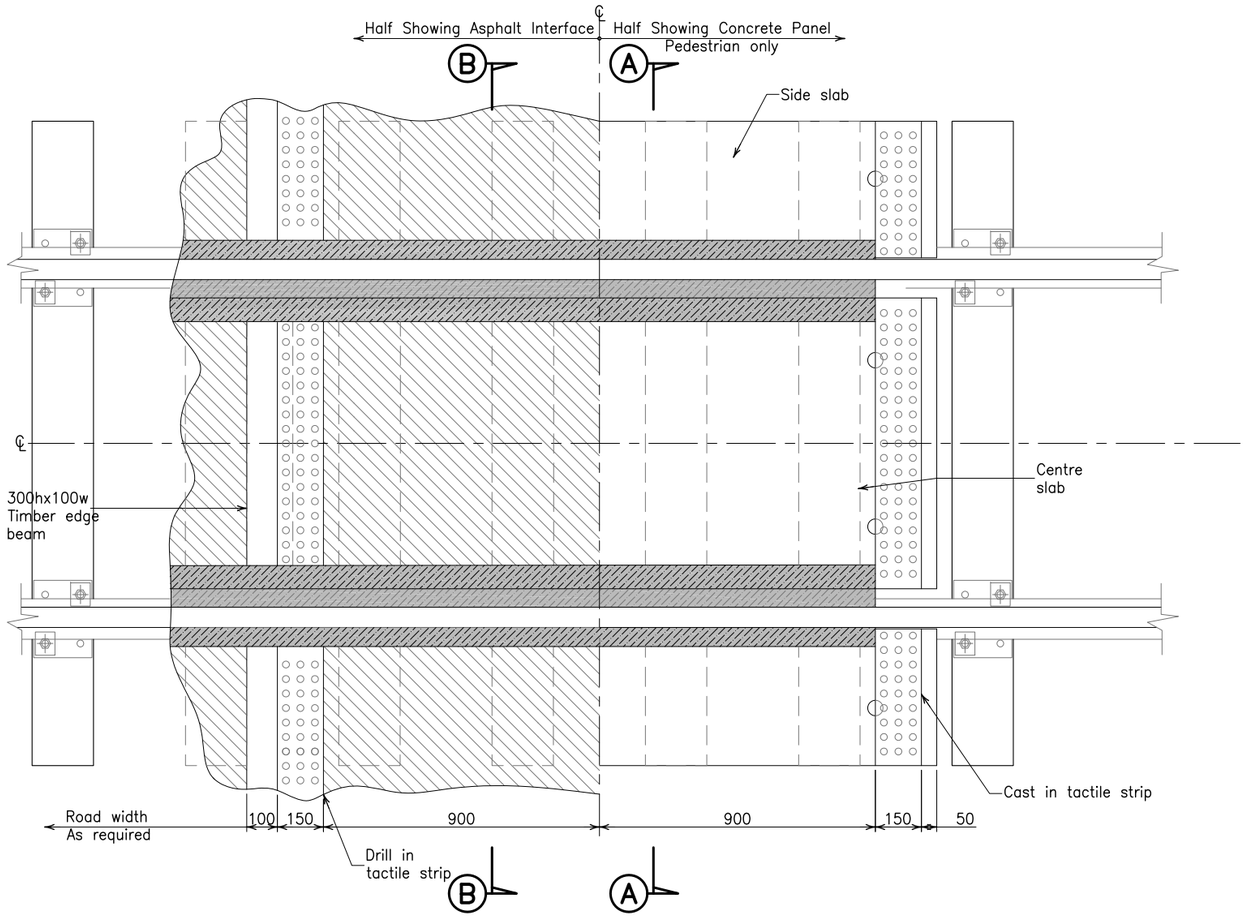
EPFLEX RAILSEAL - ROAD AND PEDESTRIAN CROSSINGS



PLAN
1:20

Notes:

- Concrete panels only to be used on pedestrian crossings with 90° skew.
- Refer to Polycorp Drawing RA 4050–1–1B (50kg) and 4091–1–1B (911b) for Rail Seal Details.
- Central slab varies in width to the concrete panel section on S6. Refer Refer to S7 for details.
- Plastic packer to match sleeper dimensions and be adequately secured prior to panel installation.

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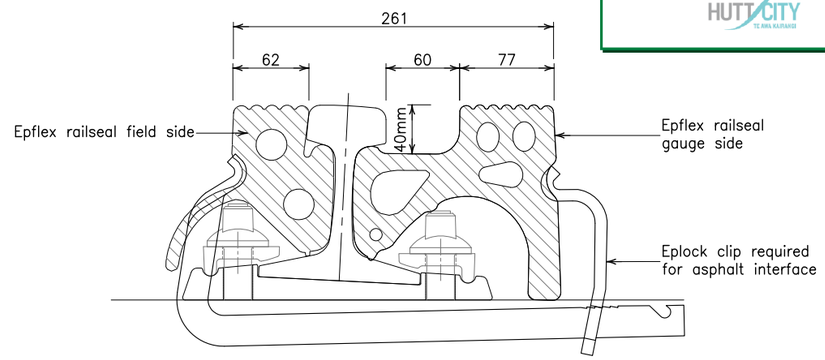
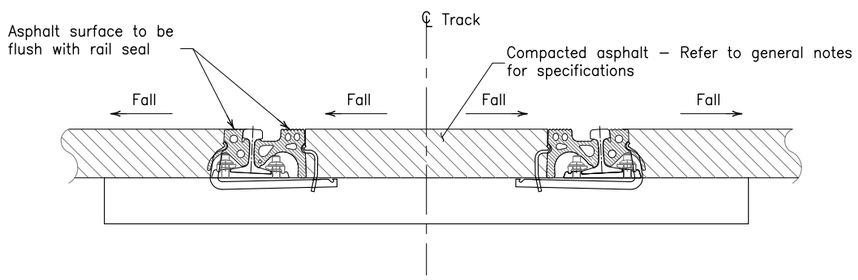
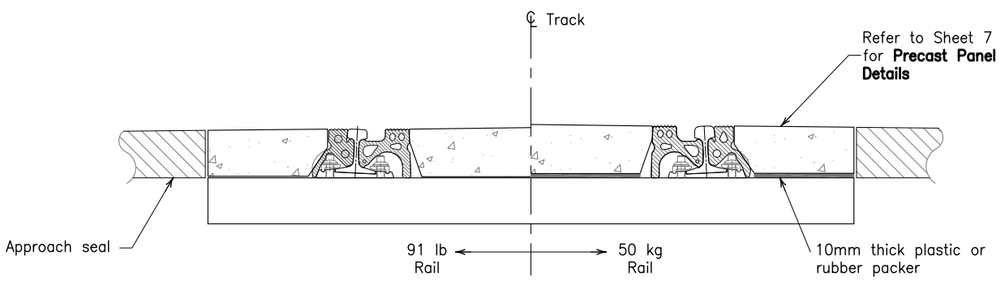


DETAIL D
1:5



SECTION B–B ASPHALT INTERFACE
1:20



SECTION A–A CONCRETE INTERFACE
1:20

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Professional Head of Track
Date 13–02–15

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DRAWN		JKA	MAY 2013
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APPROVED		MS	OCT 2014
LINE: N/A	Km: N/A		
SCALE: AS SHOWN			

ROAD AND PEDESTRIAN
LEVEL CROSSINGS
EPFLEX RAILSEAL

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Tel. : 0800 801 070 , Fax : +64 9 487 0117

DRAWING No. 300 182
Original A3 Std S5
REV. No. A

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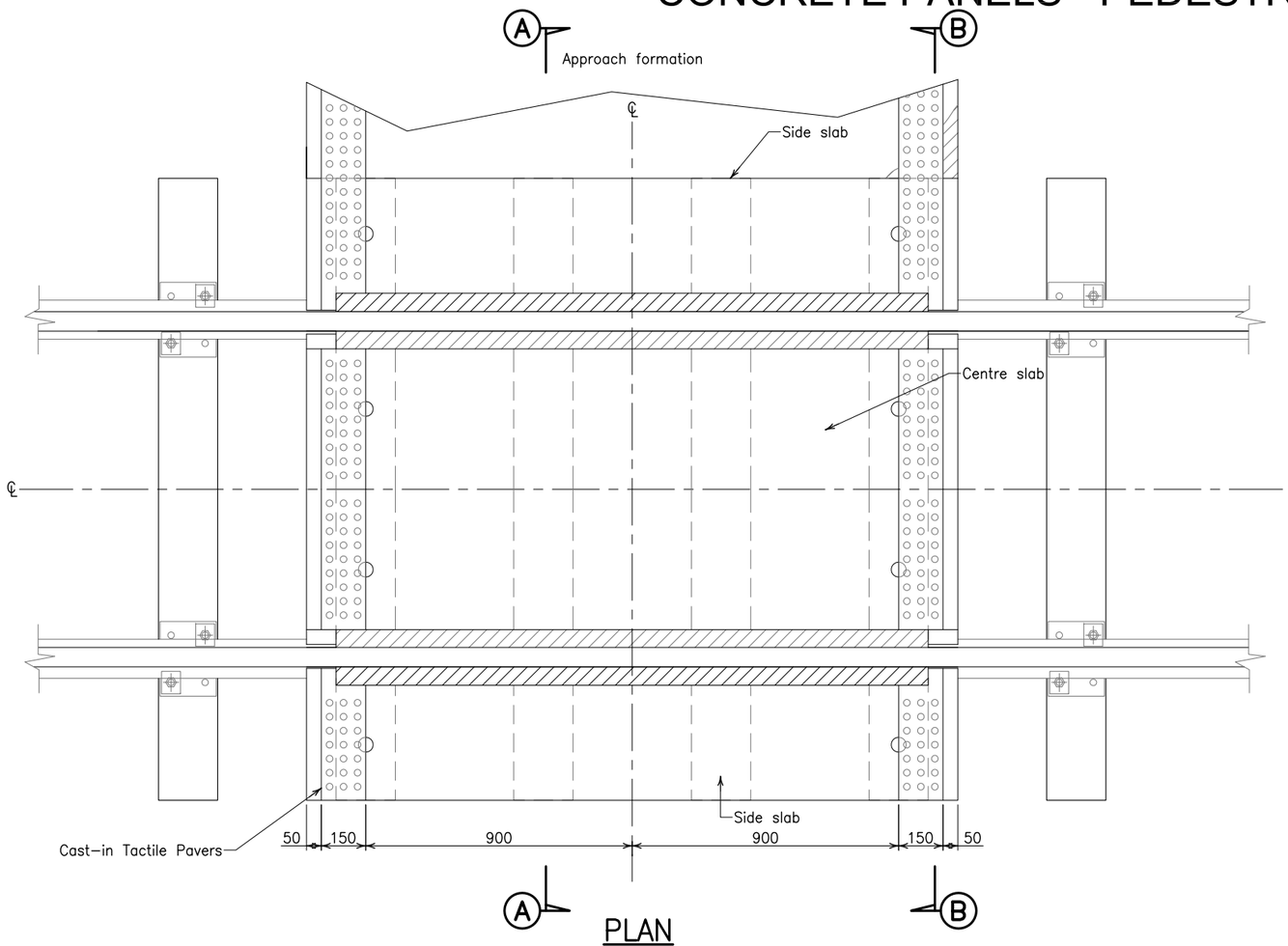
CONCRETE PANELS - PEDESTRIAN CROSSINGS



PLAN
1:20

Notes:

- Asphalt interface option to be used only if rail seal is unavailable.
- Crossing to be used when 90° to straight track only.
- Prior to installation the subsurface is to be well compacted and adequate drainage provided to prevent settlement and movement of track.
- Central slab varies in width to the rail seal concrete option on S5. Refer to S7 for details.
- Plastic packer to match sleeper dimensions and be adequately secured prior to panel installation.

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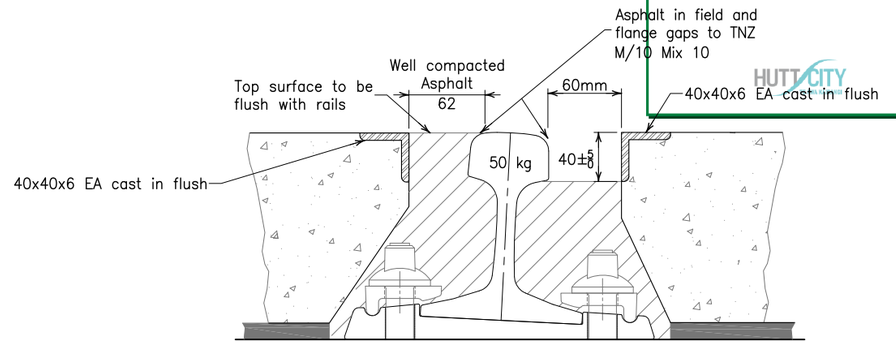
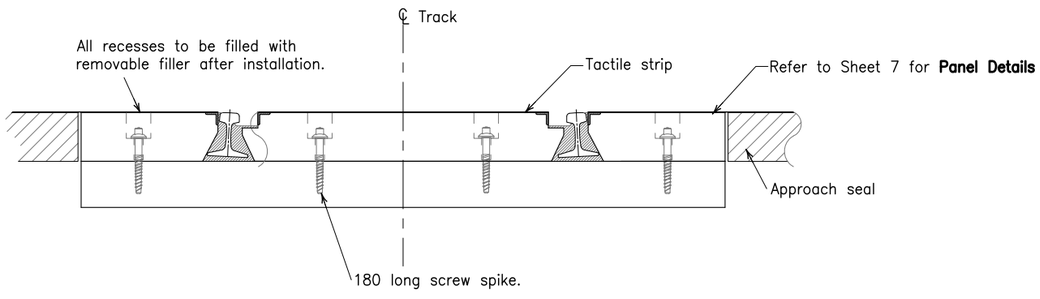
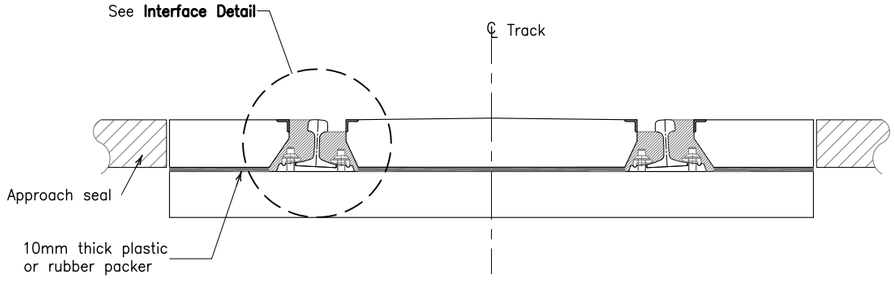


INTERFACE DETAIL
1:5



SECTION B–B – 91lb RAIL (AT ENDS)
1:20



SECTION A–A – 50kg RAIL
1:20

FOR APPROVAL

Professional Head of Track

Date. 13–02–15

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APPROVED		MS	OCT 2014
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SCALE: AS SHOWN			

ROAD AND PEDESTRIAN
LEVEL CROSSINGS
CONCRETE PANELS

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Tel. : 0800 801 070 , Fax : +64 9 487 0117

DRAWING No. 300 182
Original A3 Std S6
REV. No. A

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