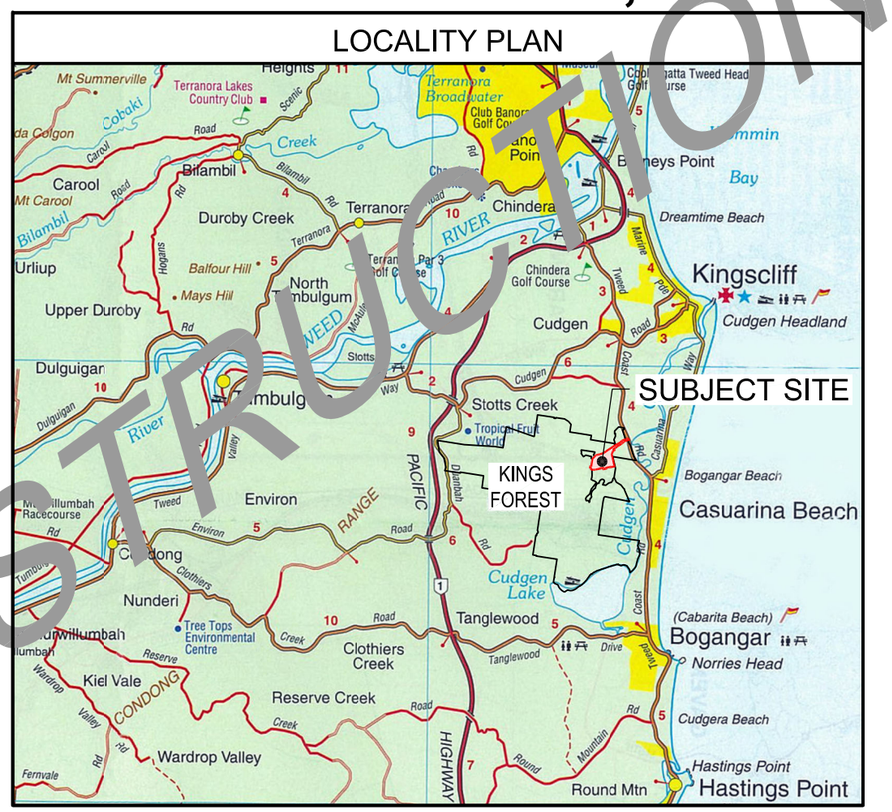
KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE STAGES 1, 2 & 3

No. 12301-P5-1,2&3

LOCALITY PLAN



CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

COMPASS ASSURANCE ISO 9001 QUALITY

REAL PROPERTY DESCRIPTION:
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT:
PROJECT 28 PTY LTD

ASSOCIATED CONSULTANTS:
LANDSURV
GILBERT SUTHERLAND

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-000	A

Y:\123 - Ledia Developments Pty Ltd\01 - Kings Forest\PREC5\Engineering Drawings\DPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-000.dwg, 6/10/2021 4:23:52 PM, 1:2

SCHEDULE OF DRAWINGS

NUMBER	REV. NO.	TITLE
GENERAL		
12301-P5-1,2&3-000	A	COVER SHEET
12301-P5-1,2&3-001	G	SCHEDULE
12301-P5-1,2&3-002	D	GENERAL NOTES
12301-P5-1,2&3-005	B	ROAD HIERARCHY AND STAGING PLAN
12301-P5-1,2&3-007	A	EXTENT PLAN SHEET 1
12301-P5-1,2&3-008	A	EXTENT PLAN SHEET 2
FENCES		
12301-P5-1,2&3-010	B	FENCING PLAN
12301-P5-1,2&3-011	C	ACOUSTIC FENCE DETAILS
12301-P5-1,2&3-012	A	RETAINING WALL DETAIL
EXISTING FEATURES		
12301-P5-1,2&3-020	B	PLAN
EARTHWORKS: FINAL SURFACE AND SEDIMENT & EROSION		
12301-P5-1,2&3-070	B	PLAN SHEET 1 OF 4
12301-P5-1,2&3-071	B	PLAN SHEET 2 OF 4
12301-P5-1,2&3-072	B	PLAN SHEET 3 OF 4
12301-P5-1,2&3-073	C	PLAN SHEET 4 OF 4
12301-P5-1,2&3-074	C	PLAN SHEET 5 OF 5
12301-P5-1,2&3-075	A	DETAIL SHEET 1
COMBINED SERVICES		
12301-P5-1,2&3-090	D	PLAN SHEET 1 OF 5
12301-P5-1,2&3-091	E	PLAN SHEET 2 OF 5
12301-P5-1,2&3-092	D	PLAN SHEET 3 OF 5
12301-P5-1,2&3-093	C	PLAN SHEET 4 OF 5
12301-P5-1,2&3-094	D	PLAN SHEET 5 OF 5
12301-P5-1,2&3-095	C	COMBINED SERVICES ROAD 08
12301-P5-1,2&3-096	C	COMBINED SECTIONS SHEET 1 OF 2
12301-P5-1,2&3-097	D	COMBINED SECTIONS SHEET 2 OF 2
ROADWORKS: PLAN		
12301-P5-1,2&3-100	C	SHEET 1 OF 4
12301-P5-1,2&3-101	D	SHEET 2 OF 4
12301-P5-1,2&3-102	C	SHEET 3 OF 4
12301-P5-1,2&3-103	C	SHEET 4 OF 4
ROADWORKS: DETAILS		
12301-P5-1,2&3-120	D	SHEET 1 OF 2
12301-P5-1,2&3-121	B	SHEET 2 OF 2
ROADWORKS: KERB LONGITUDINAL SECTIONS		
12301-P5-1,2&3-122	A	KERB LONGITUDINAL SECTIONS SHEET 1
12301-P5-1,2&3-123	A	KERB LONGITUDINAL SECTIONS SHEET 2
12301-P5-1,2&3-124	A	KERB LONGITUDINAL SECTIONS SHEET 3
12301-P5-1,2&3-125	A	KERB LONGITUDINAL SECTIONS SHEET 4
12301-P5-1,2&3-126	A	KERB LONGITUDINAL SECTIONS SHEET 5
12301-P5-1,2&3-127	A	KERB LONGITUDINAL SECTIONS SHEET 6
ROADWORKS: SWEPTH PATHS		
12301-P5-1,2&3-160	A	INTERSECTION ATURN PASSENGER CAR SHEET 1
12301-P5-1,2&3-161	A	INTERSECTION ATURN PASSENGER CAR SHEET 2
12301-P5-1,2&3-162	A	INTERSECTION ATURN PASSENGER CAR SHEET 3
12301-P5-1,2&3-163	A	INTERSECTION ATURN PASSENGER CAR SHEET 4
12301-P5-1,2&3-164	A	INTERSECTION ATURN 12.5 TRUCK SHEET 1
12301-P5-1,2&3-165	B	INTERSECTION ATURN 12.5 TRUCK SHEET 2
12301-P5-1,2&3-166	A	INTERSECTION ATURN 12.5 TRUCK SHEET 3
12301-P5-1,2&3-167	B	INTERSECTION ATURN 12.5 TRUCK SHEET 4
12301-P5-1,2&3-168	A	INTERSECTION ATURN 12.5 TRUCK SHEET 5
12301-P5-1,2&3-169	A	INTERSECTION ATURN GARBAGE TRUCK SHEET 1
ROADWORKS: LONGITUDINAL SECTION		
12301-P5-1,2&3-200	B	ROAD 07
12301-P5-1,2&3-201	B	ROAD 11 SHEET 1 OF 4
12301-P5-1,2&3-202	B	ROAD 11 SHEET 2 OF 4
12301-P5-1,2&3-203	B	ROAD 11 SHEET 3 OF 4
12301-P5-1,2&3-204	B	ROAD 11 SHEET 4 OF 4
12301-P5-1,2&3-205	B	ROAD 12 & 13

NUMBER	REV. NO.	TITLE
12301-P5-1,2&3-206	B	ROAD 14
12301-P5-1,2&3-207	B	ROAD 15 & 16
12301-P5-1,2&3-208	B	ROAD 17 & 20
12301-P5-1,2&3-209	B	ROAD 22
12301-P5-1,2&3-210	B	ROAD 29
12301-P5-1,2&3-211	B	ROAD 41
12301-P5-1,2&3-212	B	ROAD 42, 43, 44 & 99B
12301-P5-1,2&3-213	B	ROAD 50 & 99A
ROADWORKS: CROSS SECTIONS		
12301-P5-1,2&3-300	C	ROAD 07
12301-P5-1,2&3-301	B	ROAD 11 SHEET 1 OF 4
12301-P5-1,2&3-302	B	ROAD 11 SHEET 2 OF 4
12301-P5-1,2&3-303	B	ROAD 11 SHEET 3 OF 4
12301-P5-1,2&3-304	B	ROAD 11 SHEET 4 OF 4
12301-P5-1,2&3-305	B	ROAD 11 & 12
12301-P5-1,2&3-306	B	ROAD 13
12301-P5-1,2&3-307	B	ROAD 14
12301-P5-1,2&3-308	B	ROAD 15
12301-P5-1,2&3-309	B	ROAD 16
12301-P5-1,2&3-310	B	ROAD 17
12301-P5-1,2&3-311	B	ROAD 20
12301-P5-1,2&3-312	B	ROAD 22
12301-P5-1,2&3-313	A	ROAD 29
12301-P5-1,2&3-314	B	ROAD 41 SHEET 1 OF 2
12301-P5-1,2&3-315	B	ROAD 41 SHEET 2 OF 2
12301-P5-1,2&3-316	A	ROAD 42 & 44
12301-P5-1,2&3-317	B	ROAD 50
ROADWORKS: INTERSECTION GRADING DETAILS		
12301-P5-1,2&3-400	B	SHEET 1 OF 5
12301-P5-1,2&3-401	B	SHEET 2 OF 5
12301-P5-1,2&3-402	B	SHEET 3 OF 5
12301-P5-1,2&3-403	C	SHEET 4 OF 5
12301-P5-1,2&3-404	C	SHEET 5 OF 5
ROADWORKS: CONCRETE JOINTING		
12301-P5-1,2&3-410	D	PLAN SHEET 1 OF 2
12301-P5-1,2&3-411	C	PLAN SHEET 2 OF 2
12301-P5-1,2&3-412	A	PLAN SHEET 3 OF 3
ROADWORKS: LINEMARKING & SIGNAGE		
12301-P5-1,2&3-420	B	PLAN SHEET 1 OF 4
12301-P5-1,2&3-421	D	PLAN SHEET 2 OF 4
12301-P5-1,2&3-422	B	PLAN SHEET 3 OF 4
12301-P5-1,2&3-423	B	PLAN SHEET 4 OF 4
SEWER		
12301-P5-1,2&3-500	E	RETICULATION NOTES AND DETAILS
SEWER: RETICULATION PLAN		
12301-P5-1,2&3-501	B	SHEET 1 OF 5
12301-P5-1,2&3-502	C	SHEET 2 OF 5
12301-P5-1,2&3-503	B	SHEET 3 OF 5
12301-P5-1,2&3-504	B	SHEET 4 OF 5
12301-P5-1,2&3-505	E	SHEET 5 OF 5
SEWER: RETICULATION PROFILES		
12301-P5-1,2&3-530	C	SHEET 1
12301-P5-1,2&3-531	C	SHEET 2
12301-P5-1,2&3-532	C	SHEET 3
12301-P5-1,2&3-533	C	SHEET 4
12301-P5-1,2&3-534	C	SHEET 5
12301-P5-1,2&3-535	C	SHEET 6
12301-P5-1,2&3-536	C	SHEET 7
12301-P5-1,2&3-537	D	SHEET 8
12301-P5-1,2&3-538	C	SHEET 9
12301-P5-1,2&3-539	C	SHEET 10
12301-P5-1,2&3-540	C	SHEET 11
12301-P5-1,2&3-541	C	SHEET 12
12301-P5-1,2&3-542	C	SHEET 13
12301-P5-1,2&3-543	C	SHEET 14
12301-P5-1,2&3-544	D	SHEET 15
12301-P5-1,2&3-545	C	SHEET 16

NUMBER	REV. NO.	TITLE
12301-P5-1,2&3-546	C	SHEET 17
12301-P5-1,2&3-547	E	SHEET 18
12301-P5-1,2&3-548	E	SHEET 19
SEWER: RETICULATION HOUSE CONNECTION PROFILES		
12301-P5-1,2&3-570	A	SHEET 1 OF 6
12301-P5-1,2&3-571	B	SHEET 2 OF 6
12301-P5-1,2&3-572	A	SHEET 3 OF 6
12301-P5-1,2&3-573	B	SHEET 4 OF 6
12301-P5-1,2&3-574	A	SHEET 5 OF 6
12301-P5-1,2&3-575	A	SHEET 6 OF 6
SEWER: VENT DETAILS		
12301-P5-1,2&3-580	A	VENT DETAILS
SEWER: THRUST BLOCK & ANCHOR		
12301-P5-1,2&3-590	C	TYPICAL THRUST & ANCHOR BLOCKS
12301-P5-1,2&3-591	B	HORIZONTAL THRUST BLOCK
12301-P5-1,2&3-592	A	VERTICAL THRUST BLOCK
12301-P5-1,2&3-593	A	CUSTOM THRUST BLOCK
STORMWATER		
12301-P5-1,2&3-600	B	DRAINAGE PLAN SHEET 1 OF 5
12301-P5-1,2&3-601	B	DRAINAGE PLAN SHEET 2 OF 5
12301-P5-1,2&3-602	A	DRAINAGE PLAN SHEET 3 OF 5
12301-P5-1,2&3-603	B	DRAINAGE PLAN SHEET 4 OF 5
12301-P5-1,2&3-604	B	DRAINAGE PLAN SHEET 5 OF 5
STORMWATER: PROFILES		
12301-P5-1,2&3-620	B	SHEET 1
12301-P5-1,2&3-621	B	SHEET 2
12301-P5-1,2&3-622	B	SHEET 3
12301-P5-1,2&3-623	B	SHEET 4
12301-P5-1,2&3-624	B	SHEET 5
12301-P5-1,2&3-625	B	SHEET 6
12301-P5-1,2&3-626	B	SHEET 7
12301-P5-1,2&3-627	B	SHEET 8
12301-P5-1,2&3-628	B	SHEET 9
12301-P5-1,2&3-629	C	SHEET 10
12301-P5-1,2&3-630	C	SHEET 11
12301-P5-1,2&3-631	C	SHEET 12
12301-P5-1,2&3-632	C	SHEET 13
12301-P5-1,2&3-633	B	SHEET 14
12301-P5-1,2&3-634	B	SHEET 15
STORMWATER: STRUCTURE DETAILS		
12301-P5-1,2&3-640	A	SHEET 1 OF 6
12301-P5-1,2&3-641	A	SHEET 2 OF 6
12301-P5-1,2&3-642	B	SHEET 3 OF 6
12301-P5-1,2&3-643	A	SHEET 4 OF 6
12301-P5-1,2&3-644	B	SHEET 5 OF 6
12301-P5-1,2&3-645	C	SHEET 6 OF 6
STORMWATER: GRATED DRAIN DETAILS		
12301-P5-1,2&3-650	A	DRAINAGE PLAN SHEET 1 OF 2
12301-P5-1,2&3-651	A	DRAINAGE PLAN SHEET 2 OF 2
12301-P5-1,2&3-655	A	GRATED DRAIN DETAILS
STORMWATER: CATCHMENT		
12301-P5-1,2&3-670	A	PLAN SHEET 1
12301-P5-1,2&3-671	A	PLAN SHEET 2
STORMWATER: CALCULATION TABLES		
12301-P5-1,2&3-680	B	MINOR STORM EVENT - SHEET 1
12301-P5-1,2&3-681	C	MINOR STORM EVENT- SHEET 2
12301-P5-1,2&3-682	B	MAJOR STORM EVENT - SHEET 3
12301-P5-1,2&3-683	C	MAJOR STORM EVENT - SHEET 4
WATER: RETICULATION PLAN		
12301-P5-1,2&3-700	E	SHEET 1 OF 5
12301-P5-1,2&3-701	E	SHEET 2 OF 5
12301-P5-1,2&3-702	D	SHEET 3 OF 5
12301-P5-1,2&3-703	E	SHEET 4 OF 5
12301-P5-1,2&3-704	C	SHEET 5 OF 5

SHEET NO.	REV NO.	SHEET TITLE
TWEED SHIRE COUNCIL STANDARD DRAWINGS		
S.D 007	D	STANDARD KERB DETAILS SHEET 1
S.D 012	H	SUB SOIL DRAINAGE DETAILS
S.D 013	E	FOOTPATH AND CYCLEWAY DETAILS
S.D 014	F	STANDARD KERB RAMP DETAILS
S.D 103	B	STANDARD GULLY PIT - ROLL TOP KERB
S.D 104	C	STANDARD GULLY PIT - BARRIER KERB
S.D 240	C	SLUICE VALVE INSTALLATION DETAILS
S.D 242	C	DN50 & DN80 AUTOMATIC AIR RELEASE VALVE FOR USE IN DIFFICULT TO ACCESS LOCATIONS OR SPECIFIC APPLICATIONS
S.D 243	C	MANUAL AIR VALVE INSTALLATION DETAILS
S.D 250	C	PROPERTY CONNECTION DETAILS TYPE A & TYPE B
S.D 251	D	PROPERTY CONNECTION DETAILS TYPE C1 & TYPE C2
S.D 261	E	PRESSURE SEWERAGE SYSTEMS TYPICAL DETAILS
S.D 276	C	TRENCH DRAINAGE BULKHEADS & TRENCH STOPS
S.D 278	B	MAINTENANCE HOLES FOR SEWERS
S.D 301	C	WATER RETICULATION LAYOUT CUL-DE-SACS
S.D 302	C	PROPERTY SERVICE LAYOUT DN OR SMALLER SERVICES
S.D 311	A	AUTOMATIC AIR RELEASE VALVE INSTALLATION DETAILS
S.D 312	C	TYPICAL VALVE INSTALLATION DETAILS
S.D 316	D	MARKING FOR LOCATION OF HYDRANTS
S.D 320	C	PROPERTY SERVICES CONNECTION TO MAIN
S.D 341	E	TRENCH DRAINAGE BULKHEADS & TRENCH STOPS
S.D 501	C	EROSION & SILTATION PREVENTION DEVICES SHEET 1
S.D 502	B	EROSION & SILTATION PREVENTION DEVICES SHEET 2
WATER SERVICE OF AUSTRALIA STD DRAWINGS		
SEW 1200	V2.1	SOIL CLASSIFICATION GUIDELINES AND ALLOWABLE BEARING PRESSURES FOR BULKHEADS
WAT 1205	V2.2	THRUST BLOCK DETAILS CONCRETE BLOCKS
WAT 1207	V2.2	THRUST AND ANCHOR BLOCKS GATE VALVES AND VERTICAL BENDS
WAT 1208	V2.1	RESTRAINED JOINT SYSTEM DN100 TO DN375 DI MAINS
SPS 1602	V1.1	SCOUR ARRANGEMENT PUMP AND GRAVITY
SPS 1603	V1.1	SCOUR ARRANGEMENTS PRESSURE MAINS $\leq$300 $\leq$2.2 INVERT
DEPARTMENT OF TRANSPORT AND MAIN ROAD STD DRAWINGS		
S.D 1243	B	PRECAST CULVERT HEADWALLS HEADWALL CONNECTIONS FOR BOX CULVERTS HEIGHT $\geq$1200
S.D 1250	A	R C BOX CULVERTS AND SLAB LINK BOX CULVERTS - CULVERT HEIGHTS >600 GENERAL ARRANGEMENT AND NOTES
S.D 1250	A	R C BOX CULVERTS AND SLAB LINK BOX CULVERTS - CULVERT HEIGHTS >600 SLAB BASES AND APRONS
S.D 1250	A	R C BOX CULVERTS AND SLAB LINK BOX CULVERTS - CULVERT HEIGHTS >600 INSTALLATION OF PRECAST UNITS AND CONSTRUCTION OF HEADWALLS & WINGWALLS
INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA STD DWG		
RS-080	F	KERB AND CHANNEL PROFILES AND DIMENSIONS INCLUDING EDGE RESTRAINTS, MEDIAN & CHANNEL

CONSTRUCTION ISSUE

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-001	G

GENERAL

1. CONTRACT SPECIFICATIONS
   ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE CONTRACT SPECIFICATION.
2. SETOUT
   SURVEY SETOUT INFORMATION HAS BEEN ESTABLISHED ON SITE BY THE PRINCIPAL'S SURVEYOR TO ENABLE THE CONTRACTOR TO ACCURATELY SETOUT THE WORKS TO THE CO-ORDINATES SHOWN. SETOUT INFORMATION SHALL NOT BE OBTAINED BY SCALING FROM THESE DRAWINGS.
3. DATUM
   LEVELS SHOWN ARE TO A.H.D.
4. EXISTING SERVICES - External Works
   THE LOCATIONS OF ALL EXISTING SERVICES HAVE BEEN CONFIRMED BY VACUUM EXCAVATIONS AND SURVEY. THE CONTRACTOR PRIOR TO CONSTRUCTION COMMENCING SHALL CONFIRM THE LOCATION OF ALL SERVICES AND REPORT ANY DISCREPANCIES TO THE SUPERINTENDENT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE RELEVANT AUTHORITIES AND TO ENSURE THAT THE EXISTING SERVICES ARE NOT DAMAGED OR DISTURBED IN ANY WAY.
   a. ALL MATERIALS ARISING FROM ROADS AND SERVICES ARE TO BE COMPACTED TO FUTURE STAGES, TO LEVEL 1 OR IF DIRECTED BY THE SUPERINTENDENT SHALL BE TRUCKED TO A LICENSED TIP.
   b. CONTRACTOR IS RESPONSIBLE TO ENSURE ANY ELECTRONIC DATA FILES MATCH THE DRAWINGS
5. SITE ARRANGEMENTS
   a. HOURS OF WORKS ARE TO BE IN 7:00am TO 6:00pm MONDAY - FRIDAY, 8:00am TO 5:00pm SATURDAY, NO WORK SUNDAYS OR PUBLIC HOLIDAYS.
   b. COMPLAINTS ARE TO BE REGISTERED AND DEALT WITH PROMPTLY IN A PROFESSIONAL MANNER.
   c. COMMUNITY LIAISON – DETAILS OF THE CONTACT PERSON AND TELEPHONE NUMBER SHALL BE CLEARLY DISPLAYED AT THE SITE ENTRY. A SIGN IS TO BE ERECTED AT THE ENTRY OF THE SITE TO CLEARLY ADVISE THE COMMUNITY LIAISON OFFICER'S DETAILS AND CONTACT NUMBER. THESE DETAILS ARE TO BE DOCUMENTED IN THE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN.
6. SAFETY MANAGEMENT
   PRIOR TO THE COMMENCEMENT OF WORKS, A SITE-SPECIFIC SAFETY MANAGEMENT PLAN AND SAFE WORK METHODS FOR THE SUBJECT SITE HAVE BEEN PREPARED AND PUT IN PLACE IN ACCORDANCE WITH TWEED SHIRE COUNCIL GUIDELINES.
7. ABORIGINAL HERITAGE
   ABORIGINAL CULTURAL HERITAGE PROGRAM – RECORDS ARE TO BE KEPT OF WHICH STAFF / CONTRACTORS WERE INDUCTED UNDER THE ABORIGINAL CULTURAL HERITAGE PROGRAM FOR THE DURATION OF THE PROJECT.

EARTHWORKS/ROADWORKS

1. PAVEMENT
   a. BEFORE THE COMMENCEMENT OF THE RELEVANT STAGES OF ROAD CONSTRUCTION, PAVEMENT DESIGN DETAIL INCLUDING REPORTS FROM A REGISTERED NATA CONSULTANT SHALL BE SUBMITTED TO THE PRINCIPAL CERTIFIER FOR APPROVAL AND DEMONSTRATING.
   b. UPON RECEIPT OF THE CRB RESULTS THE ENGINEER HAS DESIGNED THE PAVEMENT IN ACCORDANCE WITH COUNCIL'S DEVELOPMENT DESIGN SPECIFICATION, D2.
   c. THE PAVEMENT MATERIALS TO BE USED COMPLY WITH THE SPECIFICATIONS TABLED IN TWEED SHIRE COUNCILS CONSTRUCTION SPECIFICATIONS, C242-C245, C247, C248 AND C255 (AS IN FORCE AT THE DATE OF THIS APPROVAL).
   d. THE SITE FILL AREAS HAVE BEEN COMPACTED TO THE SPECIFIED STANDARD.
   e. THE SUPERVISION OF BULK EARTHWORKS HAS BEEN TO LEVEL 1 AND FREQUENCY OF FIELD DENSITY TESTING HAS BEEN COMPLETED IN ACCORDANCE WITH TABLE 8.1 OF AS 3798-2007. DURING THE RELEVANT STAGES OF ROAD CONSTRUCTION, TESTS SHALL BE UNDERTAKEN BY A REGISTERED NATA GEOTECHNICAL FIRM. A REPORT INCLUDING COPIES OF TEST RESULTS SHALL BE SUBMITTED TO THE PRINCIPAL CERTIFIER PRIOR TO THE PLACEMENT OF THE WEARING SURFACE DEMONSTRATING:
      - THAT THE PAVEMENT LAYERS HAVE BEEN COMPACTED IN ACCORDANCE WITH COUNCIL'S DEVELOPMENT DESIGN AND CONSTRUCTION SPECIFICATIONS (AS IN FORCE AT THE DATE OF THIS APPROVAL).
      - THAT PAVEMENT TESTING HAS BEEN COMPLETED IN ACCORDANCE WITH TABLE 8.1 OF AS 3798 INCLUDING THE PROVISION OF A CORE PROFILE FOR THE FULL DEPTH OF THE PAVEMENT.
   f. ALL PIPEWORK AND EXCAVATION RATES ARE TO INCLUDE DE-WATERING AND EXCAVATION THROUGH INDURATED SAND (COFFEE ROCK).
2. SOILS
   ALL WORKS THAT INVOLVE THE DISTURBANCE OF SOILS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE APPROVED ACID SULFATE MANAGEMENT PLAN, AS REQUIRED BY CONDITION 17 OF MP08_0194.
3. MAINTAIN WORKS
   a. THE SURROUNDING ROAD CARRIAGEWAYS ARE TO BE KEPT CLEAN OF ANY MATERIAL CARRIED ONTO THE ROADWAY BY CONSTRUCTION VEHICLES. ANY WORK CARRIED OUT BY COUNCIL TO REMOVE MATERIAL FROM THE ROADWAY WILL BE TAKEN OUT OF THE 1% COMPLIANCE BOND.
   b. COMPULSORY INSPECTIONS ARE REQUIRED THROUGHOUT THE WORKS AS PER CONDITION 88 OF MP08_0194.

CONSTRUCTION SEQUENCE/SILT MANAGEMENT PROGRAM

1. CONSTRUCTION - NOISE
   CONSTRUCTION NOISE MANAGEMENT SHALL COMPLY WITH THE APPROVED NOISE AND VIBRATION MANAGEMENT PLAN AND CONDITIONS 79 & 80 OF MP08_0194.
2. CONSTRUCTION - SEDIMENT
   EROSION AND SEDIMENT CONTROL SHALL COMPLY WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN AND CONDITION 78 OF MP08_0194.
3. CONSTRUCTION - MACHINERY
   THE USE OF CRUSHING PLANT MACHINERY, MECHANICAL SCREENING OR MECHANICAL BLENDING OF MATERIALS IS NOT APPROVED. SEPARATE APPROVAL MUST BE OBTAINED FOR ANY SUCH USE OF THE SITE.



PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
D	28-07-21	NOTES AMENDED
C	26-02-21	NOTE AMENDED
B	11-06-20	NOTES AMENDED
A	19-08-19	ISSUE FOR INFORMATION

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ASSOCIATED CONSULTANTS

LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

GENERAL NOTES

CONSTRUCTION ISSUE

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Project Coordination
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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 19-08-19

DRAWING NUMBER: 12301-P5-1,2&3-002
AMEND.: D

Y:\123 - Leda Developments Pty Ltd\01 - Kings Forest\PREC5\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-001.dwg, 6/10/2021 4:24:53 PM, 1:2

LEGEND

- ACCESS LANE
- ACCESS STREET
- NEIGHBOURHOOD CONNECTOR (MINOR)
- NEIGHBOURHOOD CONNECTOR

REFER 120 SERIES DRAWINGS FOR TYPICAL SECTIONS

- EXISTING PROPERTY LINE
- EXISTING KERB (INVERT)
- FUTURE PROPERTY LINE
- FUTURE KERB (INVERT)
- PROPOSED PROPERTY LINE
- PROPOSED KERB (INVERT)
- SITE BOUNDARY
- PRECINCT BOUNDARY
- STAGE BOUNDARY
- EXISTING PERMANENT KOALA EXCLUSION FENCE
- EXISTING TEMPORARY FENCE
- ACOUSTIC FENCE IN ACCORDANCE WITH RMS NOISE WALL DESIGN GUIDELINE, INCLUDING ANTI-CLIMB PANNELING (WHERE APPLICABLE) REFER JWA FIGURE 27 FOR PANNELING
- ⊕ XX HERITAGE LOCATION
- ECOLOGICAL BUFFER

GENERAL

1. CONTRACT SPECIFICATIONS
   ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE CONTRACT SPECIFICATION.
2. SETOUT
   SURVEY SETOUT INFORMATION HAS BEEN ESTABLISHED ON SITE BY THE PRINCIPAL'S SURVEYOR TO ENABLE THE CONTRACTOR TO ACCURATELY SETOUT THE WORKS TO THE CO-ORDINATES SHOWN. SETOUT INFORMATION SHALL NOT BE OBTAINED BY SCALING FROM THESE DRAWINGS.
3. DATUM
   LEVELS SHOWN ARE TO A.H.D.
4. TRENCH SPOIL
   a. ALL MATERIALS ARISING FROM ROADS AND SERVICES ARE TO BE COMPACTED TO FUTURE STAGES, TO LEVEL 1 OR IF DIRECTED BY THE SUPERINTENDENT SHALL BE TRUCKED TO A LICENSED TIP.
   b. ALL PIPEWORK AND EXCAVATION RATES ARE TO INCLUDE DE-WATERING AND EXCAVATION THROUGH INDURATED SAND (COFFEE ROCK).
5. CHECK ELECTRONIC SETOUT
   CONTRACTOR IS RESPONSIBLE TO ENSURE ANY ELECTRONIC DATA FILES MATCH THE DRAWINGS.
6. PRE START
   a. ERECT SITE SIGNAGE. CONSTRUCT ENTRY AND EXIT POINT AS INDICATED.
   b. CONSTRUCT VEHICLE WASHDOWN AREA AND ASSOCIATED SILT MANAGEMENT DEVICES.
   c. CONSTRUCT SITE OFFICE AND STORAGE COMPOUND AREA.
   d. INSTALL EROSION AND SEDIMENT CONTROL CONTROL DEVICES AS PER THE EROSION AND SEDIMENT CONTROL PLAN.
   e. ERECT TEMPORARY TREE PROTECTION FENCING IN ACCORDANCE WITH THE APPROVED VEGETATION MANAGEMENT PLAN AND AUTHORITIES APPROVAL CONDITIONS.
7. WATER
   DRAWING RETICULATED WATER - WHERE WATER IS TO BE DRAWN FROM COUNCILS RETICULATED SYSTEM, AN APPLICATION FOR THE HIRE OF A COUNCIL METERED STANDPIPE INCLUDING COUNCILS NOMINATED POINT OF EXTRACTION IS TO BE SUBMITTED TO COUNCIL AND PAYMENT OF RELEVANT FEES IN ACCORDANCE WITH COUNCILS ADOPTED FEES AND CHARGES.
8. MAINTENANCE
   ALL WARNING SIGNS, LIGHTS, BARRIERS AND FENCES SHALL BE PROVIDED AND MAINTAINED IN ACCORDANCE WITH AS 1742 (MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES). THE CONTRACTOR SHALL BE ADEQUATELY INSURED AGAINST PUBLIC RISK LIABILITY AND BE RESPONSIBLE FOR ANY CLAIMS ARISING FROM THESE WORKS.
9. HEALTH AND SAFETY
   ALL WORKS UNDERTAKEN BY THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE WORKPLACE HEALTH AND SAFETY LEGISLATION.

B

PROJECT SPECIFIC REPORTS

THE CONTRACTOR MUST FOLLOW THE RECOMMENDATIONS AND PROCEDURES OUTLINED IN THE FOLLOWING REPORTS AT ALL TIMES

a) GEOTECHNICAL INVESTIGATION REPORTS (INCLUDING ANY ACID SULPHATE OR DISPERSIVE SOIL REPORTING)
b) VEGETATION & FAUNA MANAGEMENT PLANS
c) OTHER MANAGEMENT PLANS NOMINATED IN THE CONTRACT, AUTHORITIES APPROVAL CONDITIONS OR BY THE SUPERINTENDENT.



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PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

NORTH

0 10 20 30 40 50m
Scale 1:1000 - A1 (1:2000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	09-10-20	NOTES AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROAD HIERARCHY AND STAGING PLAN

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER 12301-P5-1,2&3-005 | AMEND. B

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LEGEND

- EXISTING PROPERTY LINE
- EXISTING KOALA EXCLUSION FENCE
- EXISTING TEMPORARY FENCE
- EXISTING TEMPORARY NO-GO FENCE
- ACOUSTIC FENCE IN ACCORDANCE WITH RMS NOISE WALL DESIGN GUIDELINE, INCLUDING ANTI-CLIMB PANNELING (WHERE APPLICABLE) REFER JWA FIGURE 27 FOR PANNELING
- ECOLOGICAL BUFFER
- EXTENT OF WORKS
- STAGE 1, 2 & 3 WORKS LIMIT
- SEWER AND STORMWATER DOWNSTREAM

DIAL BEFORE YOU DIG www.1100.com.au

PRCT 3

KINGS FOREST PARKWAY (ROAD 01)

ROAD 04

ROAD 05

ROAD 51

DWAY 99A

STG 3

ROAD 11

ROAD 17

ROAD 15

ROAD 14

ROAD 50

ROAD 22

DWAY 42

DWAY 43

STG 2

STG 1

ROAD 16

ROAD 41

ROAD 07

DWAY 44

DWAY 99B

ROAD 29

ROAD 12

ROAD 13

ROAD 20

PRCT 5

STG 4

STG 5

ROAD 19

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 10 20 30 40 50m
Scale 1:1000 - A1 (1:2000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

A	07-02-19	PRELIMINARY CLIENT ISSUE

PRE	DATE	AMENDMENT

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LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

EXTENT OF WORKS SHEET 1

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 19-12-18

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-007	A

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LEGEND

- EXISTING PROPERTY LINE
- EXISTING KOALA EXCLUSION FENCE
- EXISTING TEMPORARY FENCE
- EXISTING TEMPORARY NO-GO FENCE
- ACOUSTIC FENCE IN ACCORDANCE WITH RMS NOISE WALL DESIGN GUIDELINE, INCLUDING ANTI-CLIMB PANNELING (WHERE APPLICABLE) REFER JWA FIGURE 27 FOR PANNELING
- ECOLOGICAL BUFFER
- EXTENT OF WORKS
- STAGE 1, 2 & 3 WORKS LIMIT
- SEWER AND STORMWATER DOWNSTREAM



Scale 1:1500 - A1 (1:3000 - A3)

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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GILBERT SUTHERLAND

DRAWING TITLE

EXTENT OF WORKS SHEET 2

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 19-12-18

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-008	A

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SHEET 1

LEGEND

- EXISTING PROPERTY LINE
- EXISTING KOALA EXCLUSION FENCE
- EXISTING TEMPORARY FENCE
- EXISTING TEMPORARY NO-GO FENCE
- ACOUSTIC FENCE IN ACCORDANCE WITH RMS NOISE WALL DESIGN GUIDELINE, INCLUDING ANTI-CLIMB PANNELING (WHERE APPLICABLE) REFER JWA FIGURE 27 FOR PANNELING
- ⊕ K12 HERITAGE LOCATION
- HERITAGE EXCLUSION ZONE (NO WORKS PERMITTED)
- ECOLOGICAL BUFFER

SECTIONS IN THE AREA OF THE ECOLOGICAL BUFFER SHOULD BE CONSTRUCTED IN ACCORDANCE WITH THE CIVIL CONSTRUCTION DRAWINGS AND JWA ECOLOGICAL CONSULTANTS SPECIFICATIONS.

JWA PTY LTD Ecological Consultants

DIAL BEFORE YOU DIG www.1100.com.au

K12 K3 K4 C7

2.0m HIGH ACOUSTIC BARRIER FRONTING KINGS FOREST PARKWAY.

EXISTING TEMPORARY NO GO FENCE TO BE MAINTAINED AND KEPT OUT OF AT ALL TIMES.

FIRST 5 POSTS AT 1.250m MAX SPACINGS.

B

FIRST 5 POSTS AT 1.250m MAX SPACINGS.

REFER TO 12301-P5-1,2&3 FOR INTEGRATED RETAINING WALL AND ACOUSTIC FENCE.

FIRST 5 POSTS AT 1.250m MAX SPACINGS.

REFER TO 12301-P5-1,2&3 FOR INTEGRATED RETAINING WALL AND ACOUSTIC FENCE.

2.0m HIGH ACOUSTIC BARRIER FRONTING KINGS FOREST PARKWAY.

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 20 40 60 80 100m
Scale 1:2000 - A1 (1:4000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	28-07-21	LEGEND, NOTES AND LINETYPES AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

FENCING PLAN

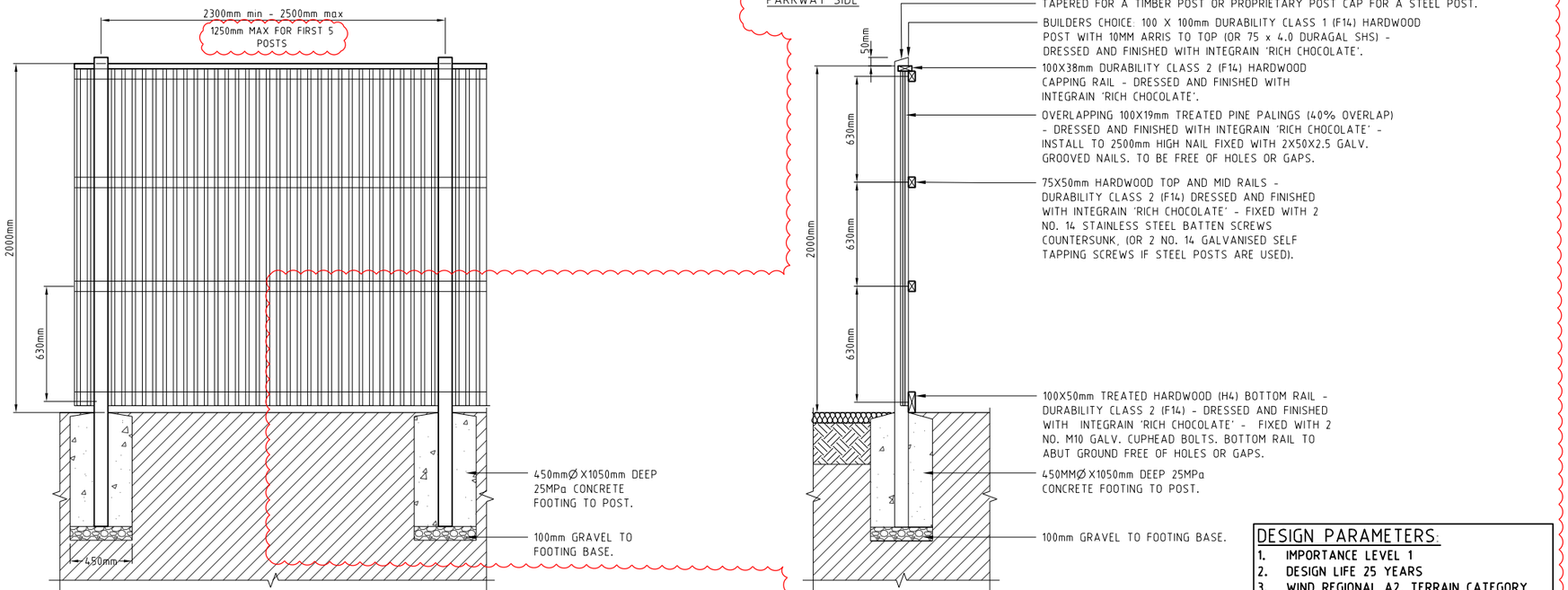
CONSTRUCTION ISSUE

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RB	CB	
APPROVED	NER 906726	DATE 19-12-18

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12301-P5-1,2&3-010	B

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ACOUSTIC FENCE

N.T.S

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 20 40 60 80 100m
Scale 1:2000 - A1 (1:4000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

C	14-07-21	DETAIL AND NOTES AMENDED
B	09-03-20	FENCE AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ACOUSTIC FENCE DETAILS

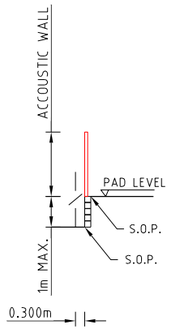
CONSTRUCTION ISSUE

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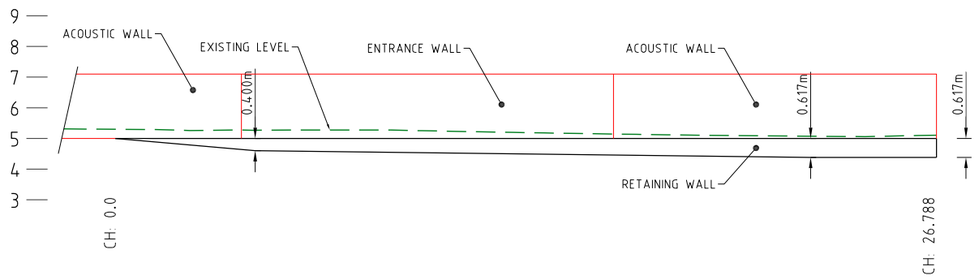
DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 19-12-18

DRAWING NUMBER: 12301-P5-1,2&3-011
AMEND.: C

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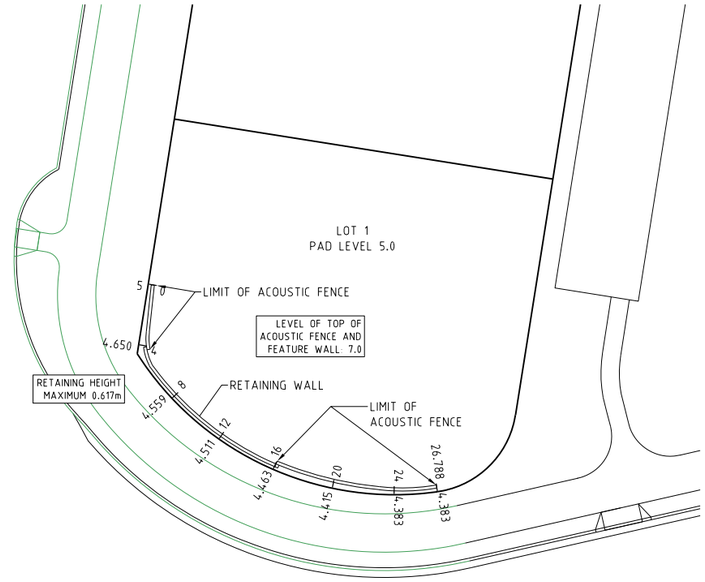


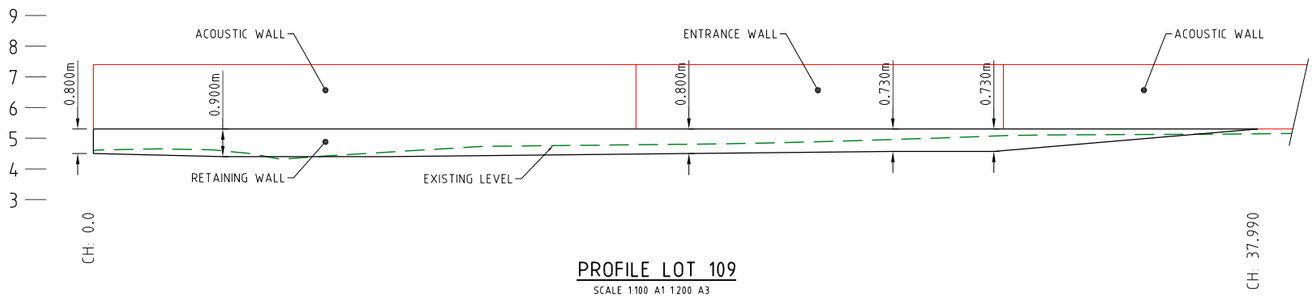
TYPICAL RETAINING ACOUSTIC FENCE



PROFILE LOT 1

SCALE 1:100 A1 1:200 A3

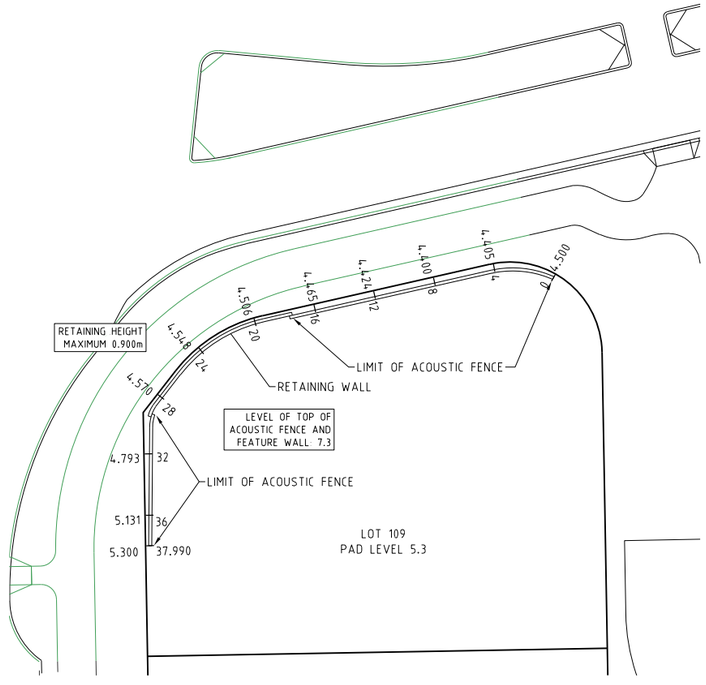




PROFILE LOT 109

SCALE 1:100 A1 1:200 A3

REFER TO STRUCUTRAL ARTS FOR DETAILS OF ACOUSTIC FENCE AND RETAINING WALL.



PLAN OF INTEGRATED RETAINING WALL & ACOUSTIC FENCE

SCALE 1:200 A1 1:400 A3

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 1 2 3 4 5m
Scale 1:100 - A1 (1:200 - A3)
0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
A	07-09-21	ISSUE FOR INFORMATION

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

INTEGRATED RETAINING WALL & ACOUSTIC FENCE DETAILS

CONSTRUCTION ISSUE

MORTONS urbansolutions
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DRAWING NUMBER	AMEND.
12301-P5-1,2&3-012	A

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LEGEND

- EXISTING PROPERTY LINE
- EXISTING KERB
- CONTROL LINE / CENTER OF ROAD
- EXISTING FOOTPATH
- S — EXISTING SEWER
- SW — EXISTING STORMWATER
- W — EXISTING WATER
- E V E V — EXISTING ELECTRICAL
- OF — EXISTING OPTIC FIBRE
- 1.0 — EXISTING CONTOURS MAJOR
- 1.5 — EXISTING CONTOURS MINOR
- SITE BOUNDARY
- PRECINCT BOUNDARY
- STAGE BOUNDARY
- EXISTING KOALA EXCLUSION FENCE
- / EXISTING TEMPORARY FENCE
- X EXISTING TEMPORARY NO-GO FENCE
- ⊕ K12 HERITAGE LOCATION
- HERITAGE EXCLUSION ZONE (NO WORKS PERMITTED)
- ECOLOGICAL BUFFER

GENERAL

1. EXISTING SERVICES - External Works
   THE LOCATIONS OF ALL EXISTING SERVICES WITHIN THE WORK AREA SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION COMMENCING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE RELEVANT AUTHORITIES AND TO ENSURE THAT THE EXISTING SERVICES ARE NOT DAMAGED OR DISTURBED IN ANY WAY.
2. EXISTING STRUCTURES -
   ALL EXISTING STRUCTURES AND ASSOCIATED INFRASTRUCTURE TO BE REMOVED AND DISPOSED OF OFF SITE.
3. EXISTING DAMS -
   EXISTING DAMS TO BE DEWATERED. ALL SILT AND DEBRIS ARE TO BE REMOVED AND AND LAWFULLY DISPOSED OF. REPLACEMENT FILL IS TO BE LOCATED AND COMPACTED IN ACCORDANCE WITH LOCAL COUNCIL'S SPECIFICATIONS.

B

NOTE:
CONTRACTOR TO MAKE ALL NECESSARY ALLOWANCES FOR EXISTING SERVICES DURING BULK EARTHWORKS EXCAVATION.

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PRCT 3

STG 3

STG 2

STG 1

PRCT 5

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 10 20 30 40 50m
Scale 1:1000 - A1 (1:2000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	28-07-21	LEGEND, HATCHING AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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GILBERT SUTHERLAND

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EXISTING FEATURES PLAN

CONSTRUCTION ISSUE

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APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-020
AMEND.: B

Y:\123 - Lusta Developments Pty Ltd\01 - Kings Forest\PREC5\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-020.dwg, 6/10/2021 4:26:26 PM, 1:2

SEDIMENT AND EROSION

1. THE OBJECTIVE OF THE EROSION AND SEDIMENT CONTROL PLAN IS TO ENSURE THAT ALL REASONABLE AND PRACTICABLE MEASURES ARE IMPLEMENTED TO MINIMISE SHORT AND LONG-TERM EROSION AND ADVERSE EFFECTS OF SEDIMENT TRANSPORT.
2. THE CONTRACTOR'S EROSION AND SEDIMENT CONTROL PLAN MUST INCLUDE WATER QUALITY MONITORING REQUIREMENTS IN ACCORDANCE WITH THE APPROVED GILBERT & SUTHERLAND STORMWATER MANAGEMENT PLAN (SMP). THE CONTRACTOR MUST CONFIRM THE PROPOSED PROCEDURES FOR THE TESTING, FLOCKING AND TRIGGERS FOR PUMP OUT OF ALL SEDIMENT BASINS IN ACCORDANCE WITH THE APPROVED SMP.
3. ALL PIPEWORK AND EXCAVATION RATES ARE TO INCLUDE DE-WATERING AND EXCAVATION THROUGH INDURATED SAND (COFFEE ROCK).
4. PRIOR TO THE COMMENCEMENT OF WORKS ONSITE THE CONTRACTOR MUST MAKE THEMSELVES AWARE OF ALL PREVIOUS GEOTECHNICAL REPORTS AND DETERMINE THE DISPERSIVE CHARACTERISTICS OF THE SOIL (INCLUDING PERFORMING ANY SOIL TESTS IF REQUIRED). A COPY OF ALL TEST RESULTS MUST BE PROVIDED TO THE SUPERINTENDENT.
5. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO CONTROL EROSION AND DOWNSTREAM SEDIMENTATION DURING ALL STAGES OF CONSTRUCTION (INCLUDING THE MAINTENANCE PERIOD). NOTWITHSTANDING THE CONTROL MEASURES OR FINISHED EARTHWORKS DESIGN SHOWN ON THESE DRAWINGS, THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING ADDITIONAL OR ALTERNATIVE EROSION & SEDIMENT CONTROL MEASURES TO MINIMISE SEDIMENT ACROSS OR LEAVING THE SITE.
6. AT ALL TIMES THE CONTRACTOR SHALL MONITOR THE PREVAILING WEATHER CONDITIONS (INCLUDING WEEKENDS AND PUBLIC HOLIDAYS) AND AT ALL TIMES REMAINS RESPONSIBLE TO:
   a) CLEAN AND REPAIR CONTROL DEVICES WHENEVER THE ACCUMULATED SEDIMENT REDUCES THEIR CAPACITY BY 50%.
   b) MAINTAIN POSITIVE GRADES OF ALL PERIMETER BANKS AND SWALES TO AN OUTLET.
   c) PROTECT ANY DOWNSTREAM CONSTRUCTION.
   d) CONTROLLING DUST.
   e) MEASURES HAVE BEEN INSTALLED IN ACCORDANCE WITH DETAILS OUTLINED IN THE APPROVED EROSION AND SEDIMENT CONTROL PLAN AND AS DIRECTED BY THE SUPERINTENDENT.
7. THE CONTRACTOR'S PLAN SHALL ALLOW FOR SUITABLE ACCESS TO ALLOW MAINTENANCE OF ALL SEDIMENT CONTROL DEVICES. NO ADDITIONAL VEGETATION CLEARING IS PERMITTED FOR GAINING ACCESS UNLESS APPROVED BY THE SUPERINTENDENT.
8. THE CONTRACTOR MAY REQUEST APPROVAL FROM THE SUPERINTENDENT TO REUSE THE STOCKPILED MULCH FOR STABILISING BATTERS ONLY IN LOCATIONS WHERE THE APPROVED LANDSCAPE OPW DESIGN REQUIRES MULCH ULTIMATELY.
9. CONSTRUCTION STOCKPILING
   a) TOPSOIL SHALL BE STRIPPED AND STOCKPILED IN LOCATIONS NOMINATED ON THE CONSTRUCTION DRAWINGS OR IN LOCATIONS AGREED WITH THE SUPERINTENDENT.
   b) ADDITIONAL VEGETATION CLEARING IS NOT PERMITTED TO FACILITATE THE STOCKPILING OF MATERIALS UNLESS SHOWN ON THE APPROVED VEGETATION MANAGEMENT PLAN.
   c) ANY STOCKPILE SITE MUST BE CLEAR OF ADJACENT PROPERTY BOUNDARIES SO AS NOT TO CAUSE A NUISANCE TO ADJOINING PROPERTIES.
   d) NO STOCKPILES ARE TO BE LOCATED WITHIN THE TREE PROTECTION ZONE OF VEGETATION.
   e) A TEMPORARY SILT FENCE IS TO BE ERECTED APPROXIMATELY 5m FROM TOE OF BATTER ON LOW SIDE OF STOCKPILING.
10. NOTWITHSTANDING THE DETAILS SHOWN IN THE CONTRACTOR'S EROSION AND SEDIMENT CONTROL PLAN, DURING CONSTRUCTION THE CONTRACTOR MUST:
   a) ENSURE ALL SEDIMENT BASINS ARE ADEQUATELY SIZED. THE SEDIMENT BASINS ARE TO ACCOUNT FOR ON-SITE AND UPSTREAM CATCHMENT AREAS. CALCULATIONS ARE TO BE PROVIDED TO DEMONSTRATE THE SEDIMENT BASINS CAN FUNCTION AS DESIGNED.
   b) PLACE A ROCK BUND AROUND ALL HEADWALLS DURING CONSTRUCTION.
   c) PROVIDE KERB INLET PROTECTION TO ALL GULLIES.
   c) PLACE A MINIMUM 1.0m WIDE TURF STRIP BEHIND ALL KERBS AND IN A HERRINGBONE LAYOUT WITHIN THE ROAD VERGE.
   d) MAINTENANCE (INCLUDING FLOCCULATION IF REQUIRED AND PUMP OUT) OF ALL CONSTRUCTION SEDIMENT BASINS (WHETHER EXISTING OR NEW).
   e) CLEAN OUT OF ALL GROSS POLLUTANT TRAPS, SEDIMENT FOREBAYS AND ALL OTHER PERMANENT SEDIMENT CONTROL DEVICES AT BOTH ON AND OFF MAINTENANCE.
11. CONTRACTOR TO CONFIRM THE EXTENTS OF REQUIRED GRASSING TREATMENTS WITH THE SUPERINTENDENT ATLEAST 7 DAYS PRIOR TO FINAL TRIMMING.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT GRASSING STRIKE RATES ARE ACHIEVED AT THE ON AND OFF MAINTENANCE INSPECTIONS IN ACCORDANCE WITH COUNCIL REQUIREMENTS. THIS INCLUDES THE SUPPLY AND INSTALLATION OF ANY REQUIRED CHEMICAL/FERTILIZER AMELIORATION TO ACHIEVE THE SPECIFIED GRASS STRIKE RATES.
13. GEOFABRIC LINING OF CHANNELS AND CHECK DAMS MAY BE REQUIRED SUBJECT TO THE SITE CONDITIONS.
14. BATTERS WITHIN PUBLIC OPEN SPACE TO BE VEGETATED IN ACCORDANCE WITH APPROVED OPEN SPACE MANAGEMENT PLAN AND LANDSCAPING OPW. CONTRACT DOCUMENTATION WILL SPECIFY WHETHER THIS IS THE CIVIL CONTRACTOR OR THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO SUPPLY AND INSTALL. THE CIVIL CONTRACTOR IS RESPONSIBLE FOR PROVIDING SUITABLE ACCESS FOR THE LANDSCAPE CONTRACTOR TO PERFORM THEIR WORKS.
15. MAINTENANCE PERIOD (PRE TO POST CONSTRUCTION)
   a) ALL PROTECTION MEASURES ARE TO BE INSPECTED AND MAINTAINED REGULARLY
   b) REPAIRS ARE TO BE EFFECTED IMMEDIATELY.
   c) SILT AFTER RAIN IS TO BE CLEANED FROM STREETS AND ALLOTMENTS IMMEDIATELY AND CORRECTIVE ACTION TAKEN TO AVOID A RE-OCCURRENCE.
   d) AT OFF-MAINTENANCE AND ONLY WHEN DIRECTED BY COUNCIL, REMOVE AND DISPOSE OFFSITE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES.
16. REFER TO LANDSCAPE ARCHITECT PLANS FOR PLANTING DETAILS OF ALL BATTERED AND NON BATTERED AREAS.
17. REFER TO T.S.C S.D 501 & 502 FOR EROSION AND SILTATION PREVENTION DEVICES.
18. EACH PHASE MUST BE TOPSOILED, DRILL SEEDED AND HYDRO MULCHED BEFORE MOVING TO THE NEXT PHASE OR NO MORE THAN 5ha OF EARTHWORKS SHALL BE EXPOSED AT ANY TIME.

LEGEND

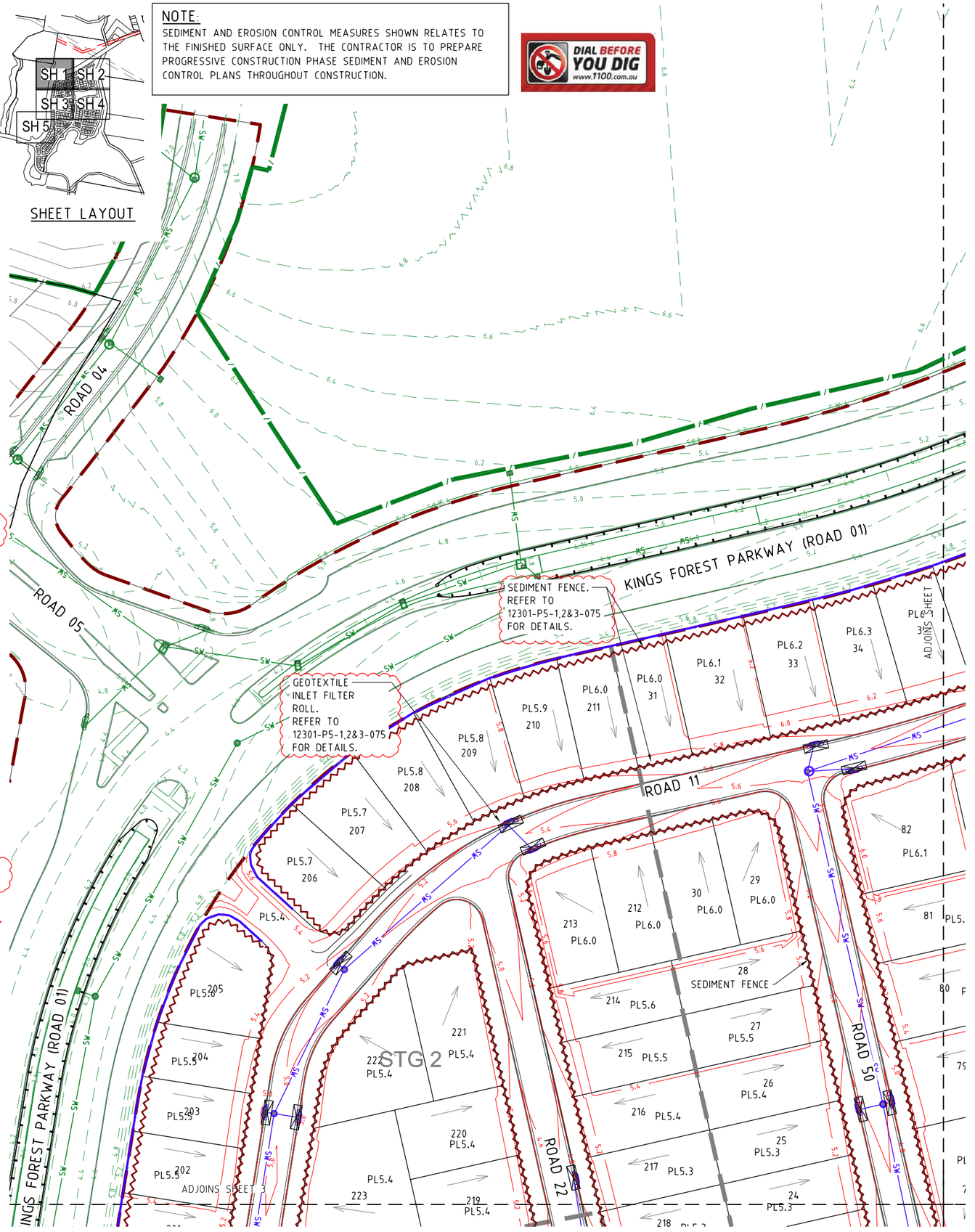
- EXISTING PROPERTY LINE
- EXISTING KERB (INVERT)
- SW EXISTING STORMWATER
- 1.0 EXISTING CONTOURS
- FUTURE PROPERTY LINE
- FUTURE KERB (INVERT)
- SW FUTURE STORMWATER
- 1.0 FUTURE CONTOURS
- PROPOSED PROPERTY LINE
- PROPOSED KERB (INVERT)
- SW PROPOSED STORMWATER
- PROPOSED GRATED DRAIN
- 1.0 DESIGN CONTOURS
- SITE BOUNDARY
- PRECINCT BOUNDARY
- STAGE BOUNDARY
- SEDIMENT FENCE
- PL50.4 NOMINAL FINISHED SURFACE PAD LEVEL
- FINISHED SURFACE PAD FALL DIRECTION
- ROCK CHECK DAM
- EXISTING KOALA EXCLUSION FENCE
- EXISTING TEMPORARY FENCE
- EXISTING TEMPORARY NO-GO FENCE
- ACOUSTIC FENCE IN ACCORDANCE WITH RMS NOISE WALL DESIGN GUIDELINE, INCLUDING ANTI-CLIMB PANNELING (WHERE APPLICABLE) REFER JWA FIGURE 27 FOR PANNELING
- K12 HERITAGE LOCATION
- HERITAGE EXCLUSION ZONE (NO WORKS PERMITTED)
- ECOLOGICAL BUFFER
- MANHOLE
- KERB INLET (ON GRADE) PIT
- KERB INLET (SAG) PIT
- HEADWALL
- SCOUR PROTECTION
- TEMPORARY SEDIMENT BASIN
- OR STORMWATER INLET FILTER
- VEHICLE SHAKEDOWN
- TEMPORARY ACCESS TRACK

B

SHEET LAYOUT

NOTE:
SEDIMENT AND EROSION CONTROL MEASURES SHOWN RELATES TO THE FINISHED SURFACE ONLY. THE CONTRACTOR IS TO PREPARE PROGRESSIVE CONSTRUCTION PHASE SEDIMENT AND EROSION CONTROL PLANS THROUGHOUT CONSTRUCTION.

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PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	02-08-21	LEGEND AND NOTES AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LandSurv
GILBERT SUTHERLAND

DRAWING TITLE

EARTHWORKS
FINAL SURFACE AND
SEDIMENT AND EROSION
PLAN
SHEET 1 OF 5

CONSTRUCTION ISSUE

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APPROVED	NER 906726
DATE 07-02-19	

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KINGS FOREST PARKWAY (ROAD 01)

SEDIMENT FENCE. REFER TO 12301-P5-1,2&3-075 FOR DETAILS.

DWAY 99A

STG 3

ROAD 11

STRAW BALE CHECK DAM. REFER TO DRAWING 12301-P5-1,2&3-075 FOR DETAILS.

ADJOINS SHEET 1

GEOTEXTILE INLET FILTER ROLL. REFER TO DRAWING 12301-P5-1,2&3-075 FOR DETAILS.

SEDIMENT FENCE

ROAD 14

ROAD 15

REFER TO BULK EARTHWORKS PLANS FOR CONSTRUCTION PHASE SEDIMENT BASIN. PLEASE NOTE EASTERN SWALE CONSTRUCTION PHASE BASIN.

ADJOINS SHEET

SHEET LAYOUT

SH 1 SH 2
SH 3 SH 4
SH 5

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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PARISH OF CUDGEN .
COUNTY OF ROUS .

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PROJECT 28 PTY LTD

NORTH

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ISSUES	DATE	
TENDER	13-11-19	
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CONSTRUCTION	..	

B	04-08-21	NOTES AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
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DRAWING TITLE

EARTHWORKS FINAL SURFACE AND SEDIMENT AND EROSION PLAN SHEET 2 OF 5

CONSTRUCTION ISSUE

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ADJOINS SHEET 1

ADJOINS SHEET 4

PROVIDE VEHICLE SHAKEDOWN FOR ACCESS TO/FROM SITE. REFER TO DRAWING 12301-P5-1,2&3-75 FOR DETAILS.

SEDIMENT FENCE. REFER TO DRAWING 12301-P5-1,2&3-75 FOR DETAILS.

GEOTEXTILE INLET FILTER ROLL. REFER TO DRAWING 12301-P5-1,2&3-75 FOR DETAILS.

REFER TO SHEET 5 FOR SPOIL AREA.

STG 4

SHEET LAYOUT

SH 1 SH 2 SH 3 SH 4 SH 5

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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PARISH OF CUDGEN .
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PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	04-08-21	SILT FENCE AND NOTES AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
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EARTHWORKS
FINAL SURFACE AND
SEDIMENT AND EROSION
PLAN
SHEET 3 OF 5

CONSTRUCTION ISSUE

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ROAD 11

ADJOINS SHEET 2

SEDIMENT FENCE. REFER TO DRAWING 12301-P5-1,2&3-075 FOR DETAILS.

ROAD 16

111

STG

UTILISE EXISTING TEMPORARY SEDIMENT BASIN, CONSTRUCTED UNDER BECC WORKS. BASIN TO REMAIN IN PLACE UNTIL CIVIL WORKS ARE FULLY CONSTRUCTED AND ULTIMATE BASIN IS ESTABLISHED.

GEOTEXTILE INLET FILTER ROLL. REFER TO DRAWING 12301-P5-1,2&3-075 FOR DETAILS.

ROAD 41

STRAW BALE CHECK DAM. REFER TO DRAWING 12301-P5-1,2&3-075 FOR DETAILS.

REFER TO BULK EARTHWORKS PLANS FOR CONSTRUCTION PHASE SEDIMENT BASIN. PLEASE NOTE EASTERN SWALE CONSTRUCTION PHASE BASIN.

91 PL5.9
90 PL5.9
89 PL5.9
88 PL5.9
87 PL6.2
86 PL6.2
85 PL6.3
84 PL6.4
95 PL5.6
94 PL5.6
93 PL5.6
92 PL5.6

ROAD 20

ROAD 13

ROAD 17

ROCK CHECK DAM. REFER TO DRAWING 12301-P5-1,2&3-075 FOR DETAILS.

PRCT 5

STG 5

ADJOINS SHEET 3

SHEET LAYOUT

SH 1 SH 2
SH 3 SH 4
SH 5

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

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PARISH OF CUDGEN .
COUNTY OF ROUS .

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PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

C	04-08-21	NOTES AND SILT FENCE AMENDED
B	10-09-20	BASIN AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
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EARTHWORKS
FINAL SURFACE AND
SEDIMENT AND EROSION
PLAN
SHEET 4 OF 5

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ALL STOCKPILE ARISING TO BE COMPACTED TO ALL SPOIL AREA SHOWN.

PRCT 4

PATH TO SPOIL AREA FROM PRECINCT 5

SPOIL AREA

TEMPORARY SEWER PUMP STATION ACCESS TRACK, 3m WIDE CBR15 (150mm THICK).

STG 4

STG 8

STG 9

ROAD 07
ROAD 29
ROAD 41
DWAY 44
DWAY 99B
ROAD 12
ROAD 13
ROAD 19
ROAD 27
ROAD 30
ROAD 40
ROAD 45
ROAD 17
ROAD 47
ROAD 08
ROAD 10
ROAD 09
KINGS

SHEET LAYOUT

SH 1 SH 2
SH 3 SH 4
SH 5

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 10 20 30 40 50m
Scale 1:1000 - A1 (1:2000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
C	04-08-21	SILT FENCES ADDED
B	31-08-20	STORMWATER ALIGNMENT AND SPOIL AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LandSurv
GILBERT SUTHERLAND

DRAWING TITLE

EARTHWORKS FINAL SURFACE AND SEDIMENT AND EROSION PLAN
SHEET 5 OF 5

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
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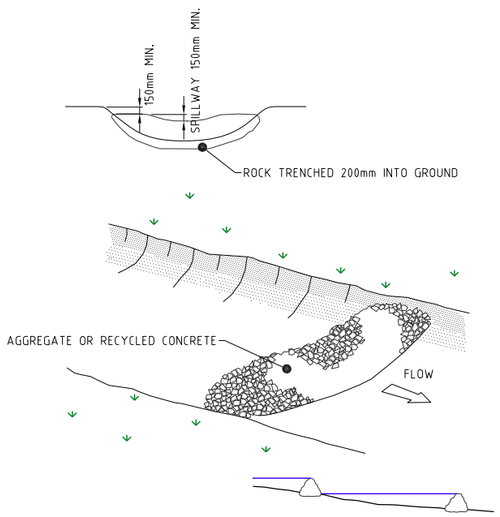
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12301-P5-1,2&3-074	C

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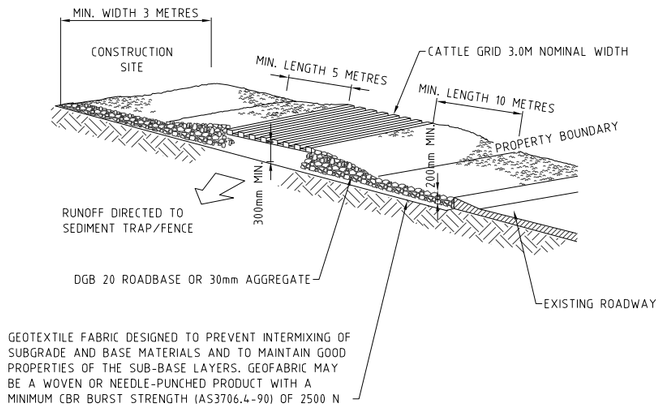
SPACING OF CHECK DAMS ALONG CENTRELINE AND SCOUR PROTECTION BELOW EACH CHECK DAM TO BE SPECIFIED ON ESCP

CONSTRUCTION NOTES:

1. CHECK DAMS CAN BE BUILT WITH VARIOUS MATERIALS, INCLUDING ROCKS, LOGS, SANDBAGS AND STRAW BALES. THE MAINTENANCE PROGRAM SHOULD ENSURE THEIR INTEGRITY IS RETAINED (ESPECIALLY WHERE CONSTRUCTED WITH STRAW BALES) WHERE BALES ARE USED, REPLACEMENT MAY BE REQUIRED EVERY TWO TO FOUR MONTHS
2. TRENCH CHECK DAM 200mm INTO THE GROUND ACROSS WHOLE WIDTH. WHERE ROCK IS USED, FILL TRENCHES TO AT LEAST 100mm ABOVE GROUND SURFACE TO REDUCE RISK OF UNDERCUTTING.
3. TRENCH MAXIMUM HEIGHT SHOULD NOT EXCEED 600mm ABOVE GULLY FLOOR. THE CENTRE SHOULD ACT AS A SPILLWAY, BEING AT LEAST 150mm LOWER THAN OUTER EDGES
4. SPACE DAMS SO THE TOE OF THE UPSTREAM DAM IS LEVEL WITH THE SPILLWAY OF THE FOLLOWING DOWNSTREAM DAM.

ROCK CHECK DAM

NOT TO SCALE



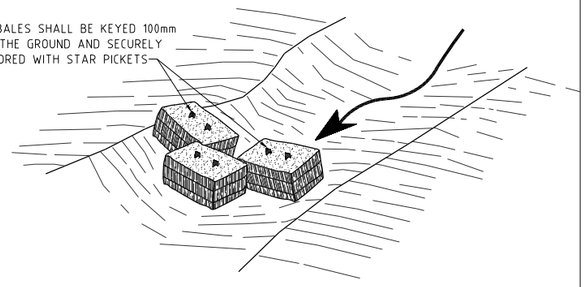
GEOTEXTILE FABRIC DESIGNED TO PREVENT INTERMIXING OF SUBGRADE AND BASE MATERIALS AND TO MAINTAIN GOOD PROPERTIES OF THE SUB-BASE LAYERS. GEOFABRIC MAY BE A WOVEN OR NEEDLE-PUNCHED PRODUCT WITH A MINIMUM CBR BURST STRENGTH (AS3706.4-90) OF 2500 N

CONSTRUCTION NOTES

1. STRIP THE TOPSOIL, LEVEL THE SITE AND COMPACT THE SUBGRADE.
2. COVER THE AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
3. CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE.
4. ENSURE THE STRUCTURE IS AT LEAST 15 METRES LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3 METRES WIDE.
5. WHERE A SEDIMENT FENCE JOINS ONTO THE STABILISED ACCESS, CONSTRUCT A HUMP IN THE STABILISED ACCESS TO DIVERT WATER TO THE SEDIMENT FENCE.

STABILISED SITE ACCESS SHAKER GRID

NOT TO SCALE

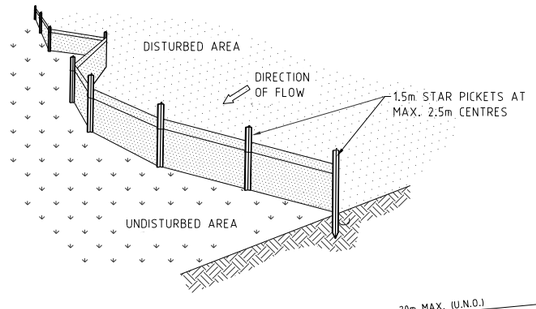


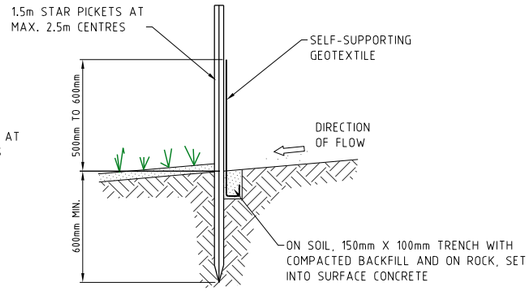
STRAW BALE CHECK DAM

NOT TO SCALE

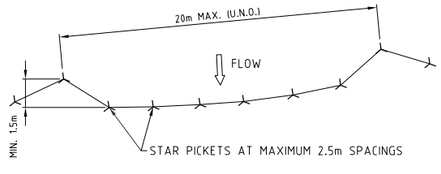
CONSTRUCTION NOTES:

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT
2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED
3. DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND AT 2.5 METRE INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS
4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY
5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE





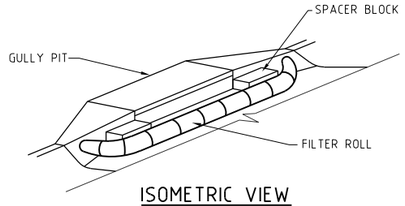
SECTION DETAIL



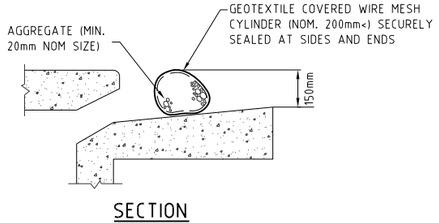
PLAN

SEDIMENT FENCE

NOT TO SCALE



ISOMETRIC VIEW



SECTION

GEOTEXTILE FILTER ROLL

NOT TO SCALE

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
A	04-08-21	ISSUE FOR INFORMATION

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GILBERT SUTHERLAND

DRAWING TITLE

SEDIMENT & EROSION DETAILS

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-075	A

Y:\123 - Leda Developments Pty Ltd\01 - Kings Forest\PRECS\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-075.dwg, 6/10/2021 4:32:04 PM, 1:2

CONSTRUCTION SERVICES

1. CONSTRUCTION OF SEWER/ROOFWATER/STORMWATER/SERVICES
   a. EXCAVATED MATERIAL TO BE PLACED ON HIGH SIDE OF TRENCH AND TO PROTECT PIPE WORK AND DIRECT SURFACE MATERIAL AWAY FROM EXCAVATIONS.
   b. TOPSOIL AND GRASS SEED AREAS IN ALLOTMENTS IMMEDIATELY AFTER COMPLETING THE SEWER AND ROOFWATER DRAINAGE CONSTRUCTION.
   c. DEPRESS GROUND AROUND TEMPORARY FIELD INLETS TO CREATE SILT POND.
   b. ALL PIPEWORK AND EXCAVATION RATES ARE TO INCLUDE DE-WATERING AND EXCAVATION THROUGH INDURATED SAND (COFFEE ROCK).
2. TRIP HAZARD
   MANHOLES OR STRUCTURES INSTALLED IN THE ROAD, FOOTPATH OR VERGE MUST MATCH NEATLY WITH NO TRIP HAZARD.
3. EXISTING SERVICES - EXTERNAL WORKS
   THE LOCATIONS OF ALL EXISTING SERVICES WITHIN THE WORK AREA SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION COMMENCING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE RELEVANT AUTHORITIES AND TO ENSURE THAT THE EXISTING SERVICES ARE NOT DAMAGED OR DISTURBED IN ANY WAY.

CLEARANCE BETWEEN WATER MAINS AND UNDERGROUND SERVICES

UTILITY (EXISTING OR PROPOSED SERVICES)	MINIMUM HORIZONTAL CLEARANCES (mm) NEW MAIN SIZE ≤DN 200	MINIMUM HORIZONTAL CLEARANCES (mm) NEW MAIN SIZE >DN 200	MINIMUM VERTICAL CLEARANCE (mm)
TELECOMMUNICATION CONDUITS AND CABLES	300[2]	600	150
ELECTRICITY CONDUITS AND CABLES	500	1000	225[6]
STORMWATER DRAINS	300[2]	600	150[3]
SEWER - GRAVITY	1000[4]/600	100[4]/600	500[3]
SEWERS - PRESSURE AND VACUUM	600	600	300
KERBS	150	600[5]	150 (WHERE POSSIBLE)

NOTES
1. VERTICAL CLEARANCES APPLY WHERE WATER MAINS CROSS ONE ANOTHER AND OTHER UTILITY SERVICES, EXCEPT IN THE CASE OF SEWERS WHERE A VERTICAL SEPARATION SHALL ALWAYS BE MAINTAINED, EVEN WHEN THE MAIN AND SEWER ARE PARALLEL. THE MAIN SHOULD ALWAYS BE LOCATED ABOVE THE SEWER TO MINIMISE THE POSSIBILITY OF BACKFLOW CONTAMINATION IN THE EVENT OF A MAIN BREAK.
2. CLEARANCES CAN BE FURTHER REDUCED TO 150mm FOR DISTANCES UP TO 2m WHERE MAINS ARE TO BE LAID PAST INSTALLATIONS SUCH AS CONCRETE BASES FOR POLES, PITS AND SMALL STRUCTURES, PROVIDING THE STRUCTURE WILL NOT BE DESTABILISED IN THE PROCESS. THE CLEARANCE FROM TIMBER POLES SHOULD BE AT LEAST 200mm AND PREFERABLY 300mm.
3. WATER MAINS SHOULD ALWAYS CROSS OVER SEWERS AND STORMWATER DRAINS. FOR CASES WHERE THERE IS NO ALTERNATIVE AND THE MAIN MUST CROSS UNDER THE SEWER, THE DESIGN SHALL NOMINATE AN APPROPRIATE TRENCHLESS CONSTRUCTION TECHNIQUE IN ACCORDANCE WITH CLAUSE 5.5 OR OTHER WATER MAIN CONSTRUCTION AND PROTECTION TREATMENT, EFFECTIVELY JOINT-FREE IN THE VICINITY OF THE SEWER.
4. WHERE A PARALLEL SEWER IS AT THE MINIMUM VERTICAL CLEARANCE LOWER THAN THE WATER MAIN (500mm), MAINTAIN A MINIMUM HORIZONTAL CLEARANCE OF 1000mm. THIS MINIMUM HORIZONTAL CLEARANCE CAN BE PROGRESSIVELY REDUCED TO 600mm AS THE VERTICAL CLEARANCE IS INCREASED TO 750mm.
5. CLEARANCE FROM KERBS SHALL BE MEASURED FROM THE NEAREST POINT OF THE KERB. FOR WATER MAINS ≤DN 375 CLEARANCES FROM KERBS CAN BE PROGRESSIVELY REDUCED UNTIL THE MINIMUM OF 150mm IS REACHED FOR MAINS ≤DN 200.
6. AN ADDITIONAL CLEARANCE FROM HIGH VOLTAGE ELECTRICAL INSTALLATIONS SHOULD BE MAINTAINED ABOVE THE CONDUITS OR CABLES TO ALLOW FOR A PROTECTIVE BARRIER AND MARKING TO BE PROVIDED.

CLEARANCE BETWEEN PRESSURE MAINS AND UNDERGROUND SERVICES

UTILITY (EXISTING SERVICES)	MINIMUM HORIZONTAL CLEARANCES (mm) PRESSURE MAIN SIZE ≤DN 200	MINIMUM HORIZONTAL CLEARANCES (mm) PRESSURE MAIN SIZE >DN 200	MINIMUM VERTICAL CLEARANCE (mm)
WATER MAINS	1000	1000	500
TELECOMMUNICATION CONDUITS AND CABLES	300[2]	600	150
ELECTRICITY CONDUITS AND CABLES	500	1000	225
SEWERS AND DRAIN	300[2]	600	150[3]
KERBS	150	600[3]	150 (WHERE POSSIBLE)

NOTES
1. VERTICAL CLEARANCES APPLY WHERE PRESSURE MAINS CROSS OTHER UTILITY SERVICES, EXCEPT IN THE CASE OF WATER MAINS WHEN A VERTICAL SEPARATION SHALL ALWAYS BE MAINTAINED, EVEN WHEN THE PRESSURE MAIN AND WATER MAIN ARE PARALLEL. THE PRESSURE MAIN SHOULD ALWAYS BE LOCATED BELOW THE WATER MAIN TO MINIMISE THE POSSIBILITY OF BACKFLOW CONTAMINATION IN THE EVENT OF A PRESSURE MAIN BREAK.
2. CLEARANCES CAN BE FURTHER REDUCED TO 150mm FOR DISTANCES UP TO 2m WHEN PASSING INSTALLATIONS SUCH AS POLES, PITS AND SMALL STRUCTURES, PROVIDING THE STRUCTURE IS NOT DESTABILISED IN THE PROCESS.
3. CLEARANCE FROM KERBS SHALL BE MEASURED FROM THE NEAREST POINT OF THE KERB. FOR PRESSURE MAINS ≤DN 375 CLEARANCES FROM KERB CAN BE PROGRESSIVELY REDUCED UNTIL THE MINIMUM OF 150mm IS REACHED FOR MAINS ≤DN 200.

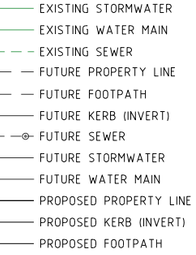
NOTE:
REFER TO 12301-P5-1,2&3-501-505 AND 12301-P5-1,2&3-700-704 FOR LIMIT OF WORKS FOR SECTION 68.

DIAL BEFORE YOU DIG www.1100.com.au

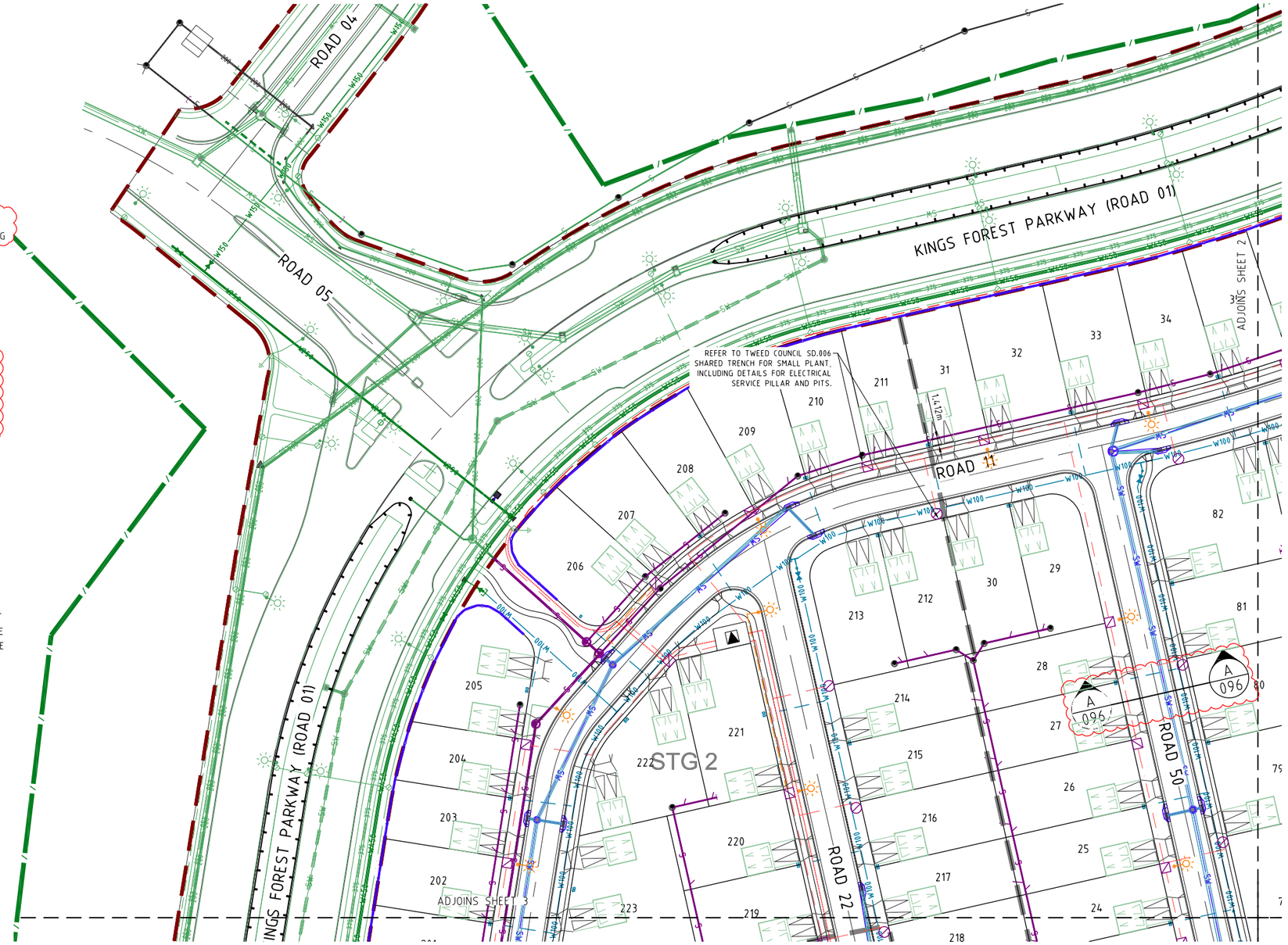
CROSSING OVER ROAD:
ANY SEWER PIPES LESS THAN 900mm COVER REQUIRED BY WSAA TO BE STABILISED SAND.

LEGEND

- EXISTING PROPERTY LINE
- EXISTING KERB (INVERT)
- EXISTING FOOTPATH
- SW EXISTING STORMWATER
- W EXISTING WATER MAIN
- S EXISTING SEWER
- FUTURE PROPERTY LINE
- FUTURE FOOTPATH
- FUTURE KERB (INVERT)
- S FUTURE SEWER
- SW FUTURE STORMWATER
- W FUTURE WATER MAIN
- PROPOSED PROPERTY LINE
- PROPOSED KERB (INVERT)
- PROPOSED FOOTPATH
- RM PROPOSED RISING MAIN
- S PROPOSED SEWER MAIN
- SW PROPOSED STORMWATER
- PROPOSED GRATED DRAIN
- IR IR PROPOSED Ø100 IRRIGATION ROAD CROSSING
- W150 PROPOSED WATER MAIN
- EXISTING KOALA EXCLUSION FENCE
- EXISTING TEMPORARY FENCE
- X EXISTING TEMPORARY NO-GO FENCE
- ACOUSTIC FENCE IN ACCORDANCE WITH DRAWING 12301-P5-4&5-011
- K12 HERITAGE LOCATION
- HERITAGE EXCLUSION ZONE (NO WORKS PERMITTED)
- ECOLOGICAL BUFFER
- INDICATIVE FUTURE DRIVEWAY/GARAGE (BY OTHERS)
- EXISTING PADMOUNT TRANSFORMER
- EXISTING ELECTRICAL POWER LINE POLES
- EXISTING ELECTRICAL SERVICE PILLAR
- EXISTING ELECTRICAL LINE - STREET LIGHT
- EXISTING ELECTRICAL LINE - LOW VOLTAGE
- EXISTING ELECTRICAL LINE - HIGH VOLTAGE
- EXISTING ELECTRICAL OVERHEAD
- PROPOSED PADMOUNT TRANSFORMER
- PROPOSED ELECTRICAL POWER LINE POLES
- PROPOSED ELECTRICAL SERVICE PILLAR
- PROPOSED ELECTRICAL LINE - STREET LIGHT
- PROPOSED ELECTRICAL LINE - LOW VOLTAGE
- PROPOSED ELECTRICAL LINE - HIGH VOLTAGE
- PROPOSED ELECTRICAL OVERHEAD
- PROPOSED STREET LIGHT



SHEET LAYOUT



PROJECT NAME
KINGS FOREST
PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
D	02-08-21	LEGEND, NOTE AND SECTION LABEL AMENDED
C	28-01-21	FENCE AND ELECTRICAL ALIGNMENT AMENDED
B	10-09-20	LEGEND, NOTES, SERVICES AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS
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DRAWING TITLE
COMBINED SERVICES PLAN
SHEET 1 OF 5

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-090
AMEND.: D

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KINGS FOREST PARKWAY (ROAD 01)

DWAY 99A

ROAD 11

ROAD 14

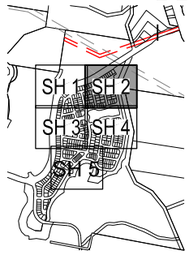
ROAD 15

STG 3

ADJOINS SHEET 1

ADJOINS SHEET 4

REFER TO TWEED COUNCIL SD.006 SHARED TRENCH FOR SMALL PLANT, INCLUDING DETAILS FOR ELECTRICAL SERVICE PILLAR AND PITS.



SHEET LAYOUT

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m

Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

E	15-09-21	SEWER ALIGNMENT AMENDED
D	12-08-21	STORMWATER ADDED
C	28-01-21	ELECTRICAL ALIGNMENT AMENDED
B	14-09-20	SERVICES AMENDED AND SECTION ADDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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COMBINED SERVICES PLAN
SHEET 2 OF 5

CONSTRUCTION ISSUE

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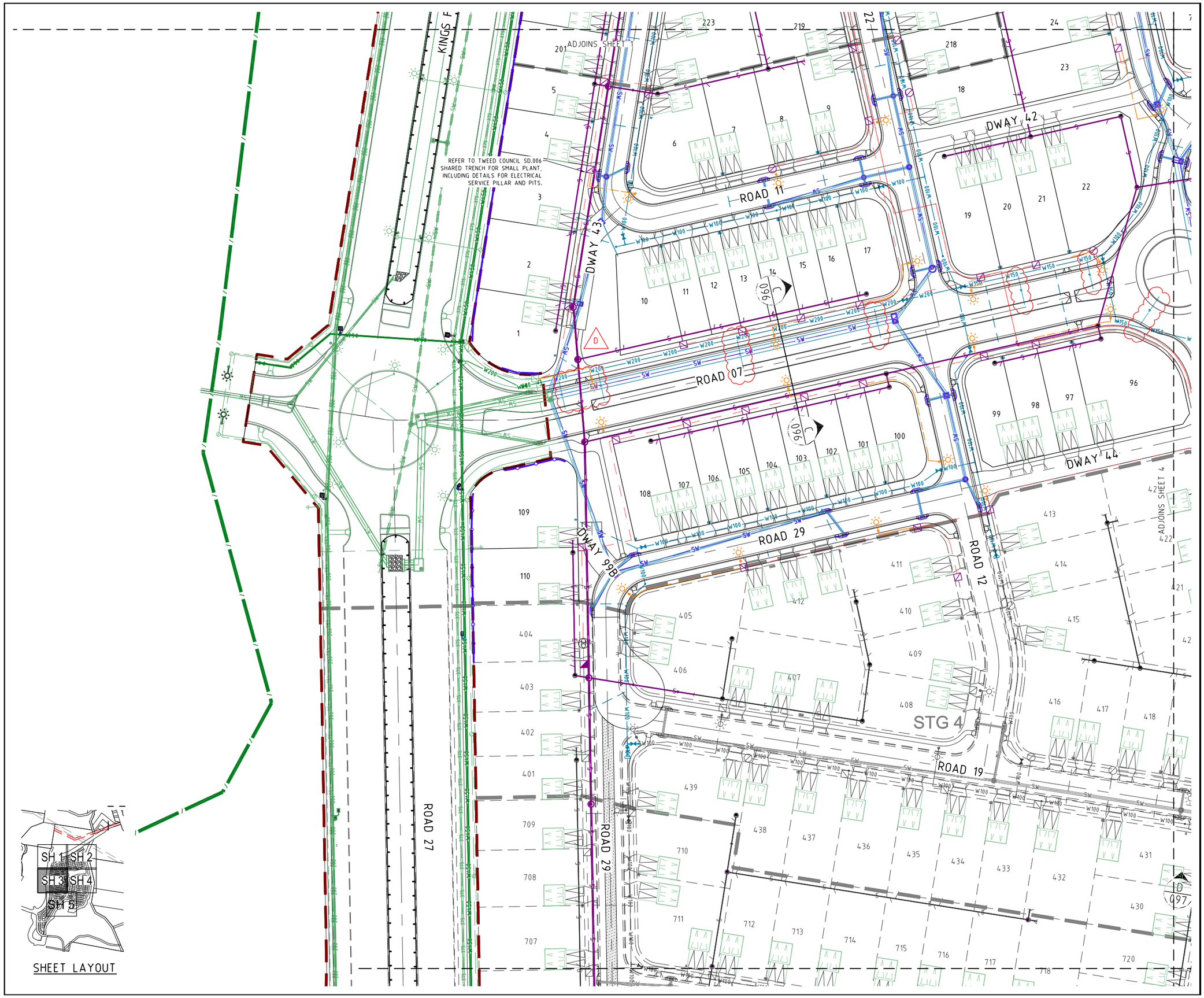
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APPROVED	NER 906726
DATE 07-02-19	

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12301-P5-1,2&3-091	E

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PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

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PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

D	09-08-21	IRRIGATION ADDED
C	28-01-21	ELECTRICAL ALIGNMENT AMENDED
B	14-09-20	SERVICES AMENDED AND SECTION ADDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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DRAWING TITLE

COMBINED SERVICES PLAN
SHEET 3 OF 5

CONSTRUCTION ISSUE

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Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-092
AMEND.: D

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ADJOINS SHEET 2

ADJOINS SHEET 3

ROAD 11

ROAD 16

ROAD 41

ROAD 13

ROAD 17

ROAD 20

STG 1

STG 5

PRCT 5

111

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SHEET LAYOUT

SH 1 SH 2
SH 3 SH 4
SH 5

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

C	28-01-21	ELECTRICAL AMENDED
B	14-09-20	SERVICES AMENDED AND SECTION ADDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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GILBERT SUTHERLAND

DRAWING TITLE

COMBINED SERVICES PLAN
SHEET 4 OF 5

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-093	C

Y:\123 - Leda Developments Pty Ltd\01 - Kings Forest\PREC5\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-090.dwg, 6/10/2021 4:33:20 PM, 1:2

ADJOINS SHEET 3

ADJOINS SHEET 4

ROAD 30

ROAD 40

ROAD 45

ROAD 46

ROAD 29

ROAD 47

ROAD 17

ROAD 13

STG 7

STG 8

D4-4 AT END OF TEMPORARY ACCESS TRACK.

SEWER PUMP STATION APART OF SEPARATE APPLICATION.

ADJOIN SHEET 05

801

ADJOIN INSET 1.0

SHEET LAYOUT

SH 1 SH 2

SH 3 SH 4

SH 5

INSET 1.0

NORTH

0 5 10 15 20 25m

Scale 1:500 - A1 (1:1000 - A3)

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

D	23-08-21	NOTE AND SIGN AMENDED
C	28-01-21	SEWER ALIGNMENT AMENDED
B	14-09-20	SERVICES AMENDED AND SECTIONS ADDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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GILBERT SUTHERLAND

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COMBINED SERVICES PLAN
SHEET 5 OF 5

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER 12301-P5-1,2&3-094 | AMEND. D

Y:\1123 - Leda Developments Pty Ltd\01 - Kings Forest\PREC5\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-090.dwg, 6/10/2021 4:33:55 PM, !:2

CUSTOM THRUST BLOCK, REFER TO DRAWING 12301-P5-1,2&3-591 FOR DETAILS.

SEWER LID 0.323m OFF KERB FACE.

ROAD 08

826 828 829 830 831 811 810 812 809

01/057 01/031 02/031 64B/064 65/064 44/063 45/063 03/021 04/021 05/017 66/064 46/063 04/017 67/064 02/058 02/021 01/021 06/024 05/024 04/024 01/045 01/029 68/064 05/021 01/028 69/064 70/064 48/063 06/021 03/17 07/021 07/048 02/051

COMBINED SERVICES OF ROAD 08

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PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

NORTH

0 1.5 3 4.5 6 7.5m
Scale 1:150 - A1 (1:300 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

C	16-06-21	SEWER AIR VALVE ADDED
B	28-01-21	SEWER ALIGNMENT AND IDS AMENEDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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DRAWING TITLE

COMBINED SERVICES
ROAD 08

CONSTRUCTION ISSUE

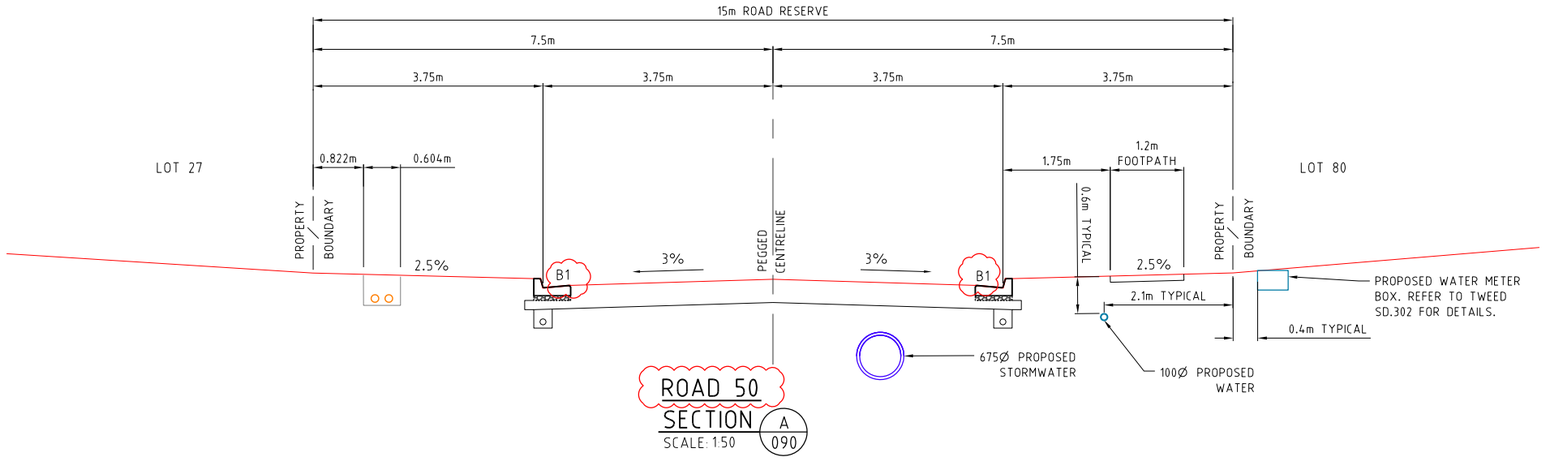
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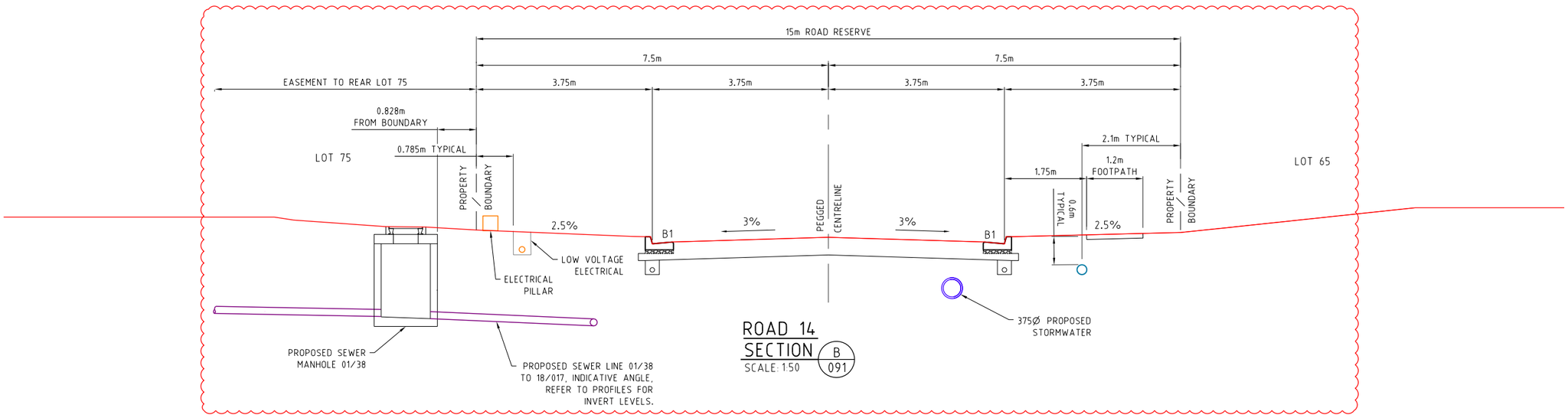
DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

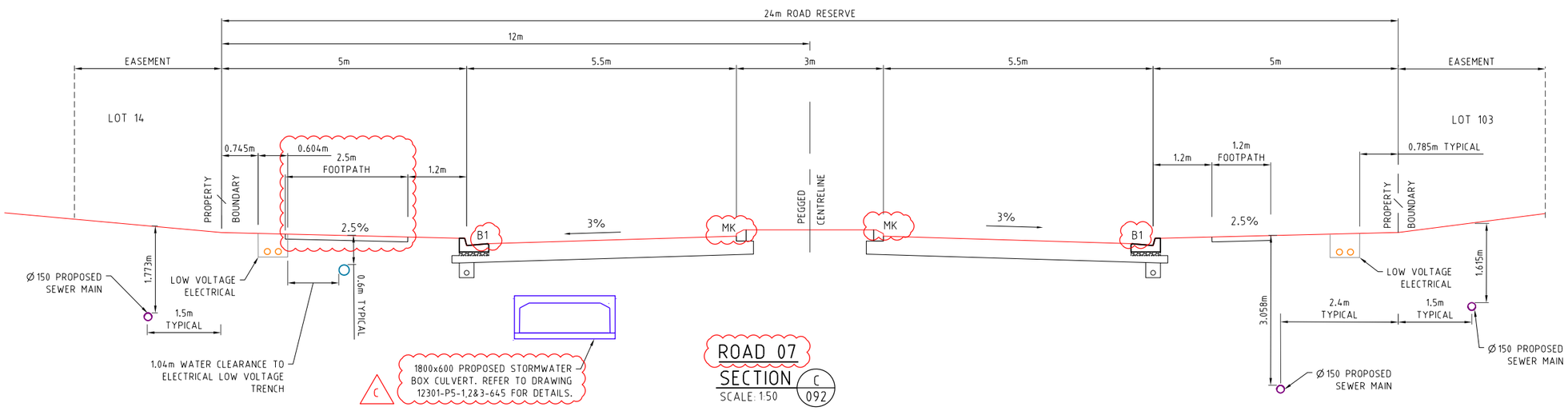
DRAWING NUMBER	AMEND.
12301-P5-1,2&3-095	C

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PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 0.5 1.0 1.5 2.0 2.5m
Scale 1:50 - A1 (1:100 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
C	02-08-21	KERBS, FOOTPATH AND NOTES AMENDED
B	30-04-21	WATER ALIGNMENT AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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DRAWING TITLE

COMBINED SERVICES SECTIONS SHEET 1

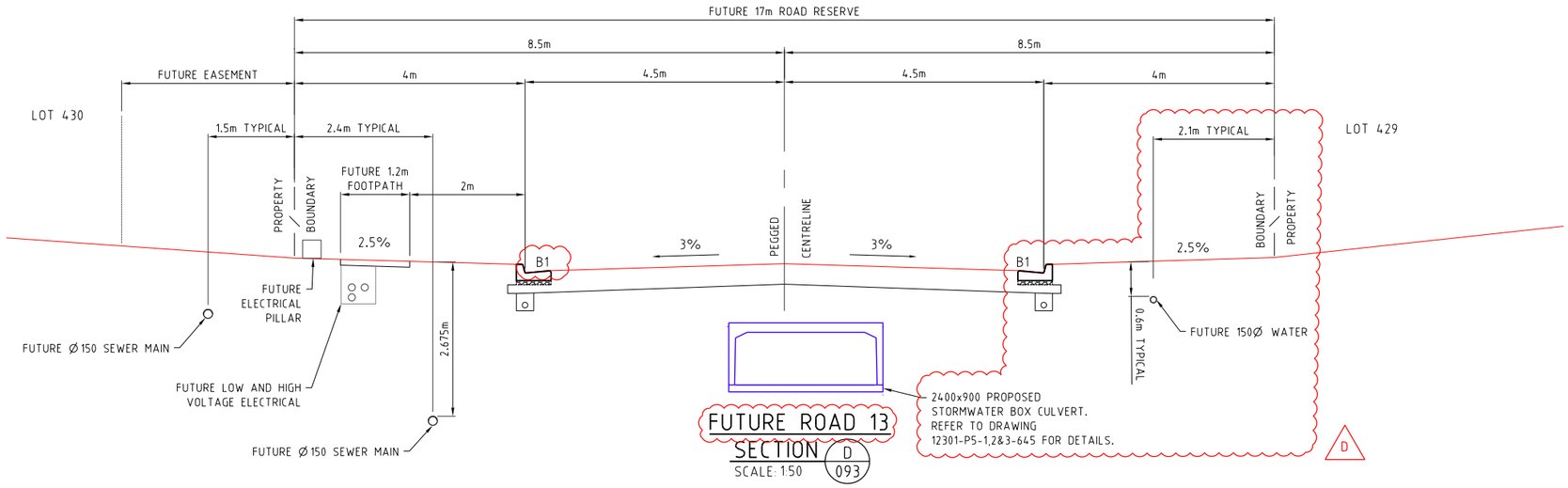
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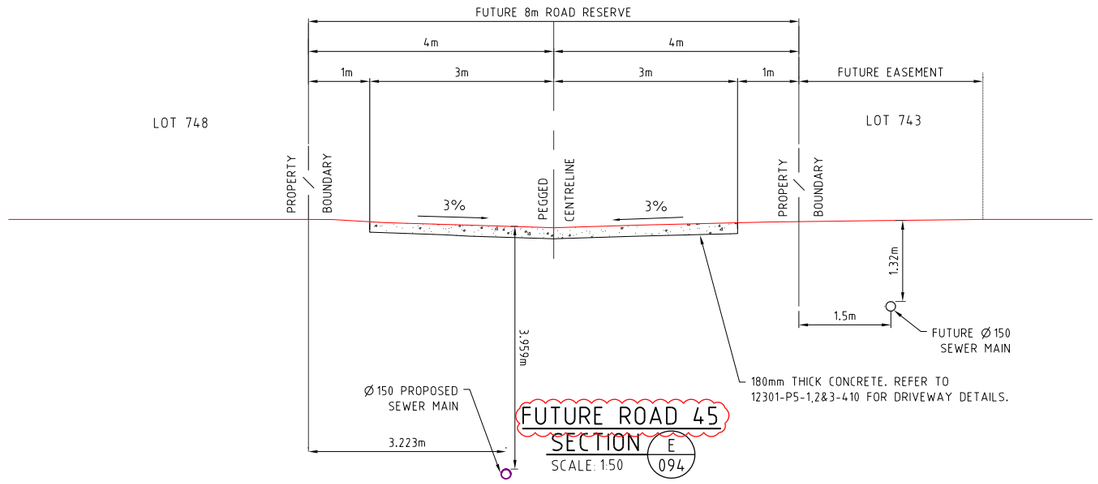
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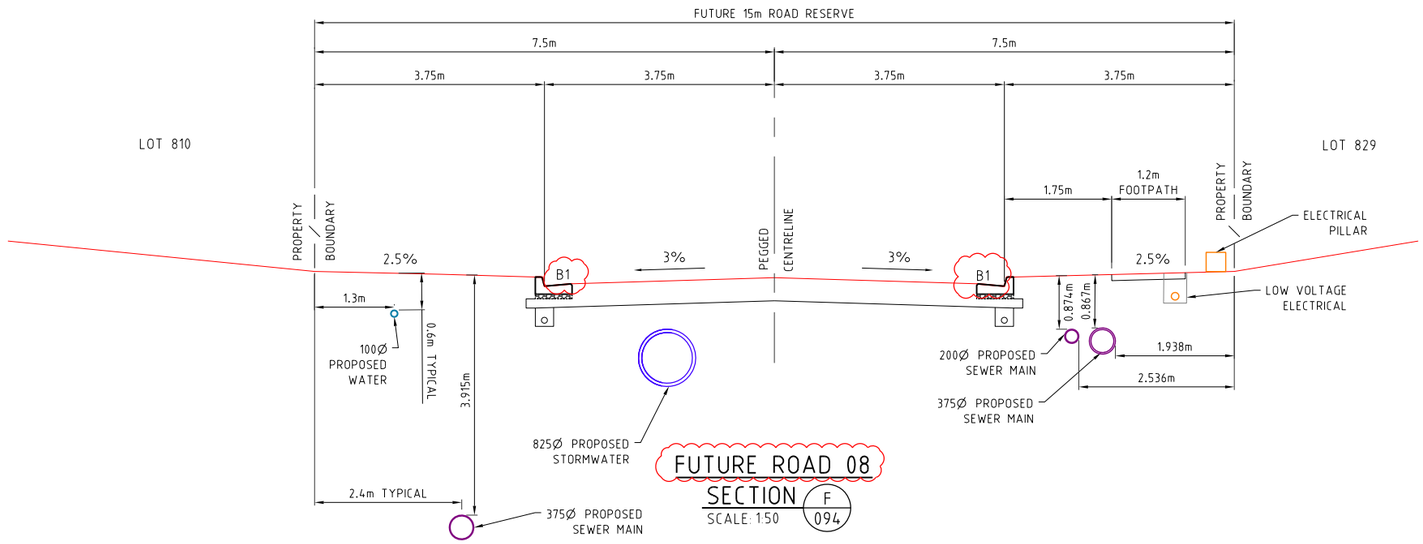
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APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-096
AMEND.: C

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PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 0.5 1.0 1.5 2.0 2.5m
Scale 1:50 - A1 (1:100 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
D	1-06-21	SECTION AMENDED
C	30-04-21	WATER ALIGNMENT AMENDED
B	28-01-21	SEWER ALIGNMENT AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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COMBINED SERVICES SECTIONS SHEET 2

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-097	D

ROADWORKS

1. PAVEMENT DEPTHS
   a) THE DESIGN PAVEMENT DEPTHS ALLOWED IN EARTHWORKS CALCULATIONS ARE BASED ON THE DEPTHS SHOWN IN THE SCHEDULE OF PAVEMENT DEPTHS ON DRAWING 120.
   b) THE PAVEMENT DEPTHS GIVEN ARE DESIGN DEPTHS ONLY AND MAY BE VARIED AFTER SUB-GRADE TESTS ARE TAKEN. THE CONTRACTOR IS TO PROVIDE THE SUPERINTENDENT A SUBGRADE C.B.R. REPORT PREPARED BY A SUITABLY QUALIFIED GEOTECHNICAL ENGINEER.
   THE SUPERINTENDENT WILL COORDINATE THE AUTHORITIES APPROVAL OF THE PAVEMENT DESIGN.
   c) REFER TO DRG. 120 FOR TYPICAL ROAD SECTIONS.
2. TESTING
   ALL COMPACTION TESTING SHALL BE CARRIED OUT BY AN APPROVED N.A.T.A. TESTING AUTHORITY. ALL SITE FILLING SHALL BE TESTED AT LEVEL 1 REQUIREMENTS.
3. SUBSOIL DRAINS
   SUBSOIL DRAINS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE LOCAL AUTHORITY'S SPECIFICATIONS. SUBSOIL DRAINS SHALL BE PLACED UNDER ALL KERB STRUCTURES AND ARE TO BE CONSTRUCTED TO A DEPTH GREATER THAN THAT OF THE INVERT OF THE DEEPEST SERVICE CROSSING.
4. MITRE DRAINS
   MITRE DRAINS ARE TO BE CONSTRUCTED ALONG THE CUT/FILL INTERFACE AND SAG/LOW POINTS OF ALL ROADS. CONTRACTOR TO REQUEST DIRECTION FROM SUPERINTENDENT WHETHER TO INSTALL MITRE DRAIN AT ROCK ENCOUNTERED IN SUBGRADE. ALL MITRE DRAINS MUST BE FREE DRAINING AND TIE INTO THE ADJACENT SUBSOIL DRAINS.
5. ROCK
   a. THE CONTRACTOR IS TO INCLUDE ROCK EXCAVATION AS PART OF THEIR RATES.
   b. ALL PIPEWORK AND EXCAVATION RATES ARE TO INCLUDE DE-WATERING AND EXCAVATION THROUGH INDURATED SAND (COFFEE ROCK).
6. TURF
   1.0m TURF STRIP TO BE INSTALLED BEHIND THE BACK OF ALL KERBS. A PERPENDICULAR TURF STRIP AT MAXIMUM 10m INCREMENTS MUST BE INSTALLED TO FULL VERGE WIDTH FOR SEDIMENT AND EROSION CONTROL PURPOSES.
7. KERBS
   ALL KERBS TO BE CONSTRUCTED IN ACCORDANCE WITH AUTHORITY STANDARDS
8. PAVEMENT TIE-IN
   PAVEMENT TIE-IN TO BE IN ACCORDANCE WITH DRG. 120
9. FOOTPATHS
   FOOTPATHS AND CYCLEWAYS TO BE CONSTRUCTED IN ACCORDANCE WITH TWEED SHIRE COUNCIL STANDARD DRAWING SD013.

SHEET LAYOUT

LEGEND

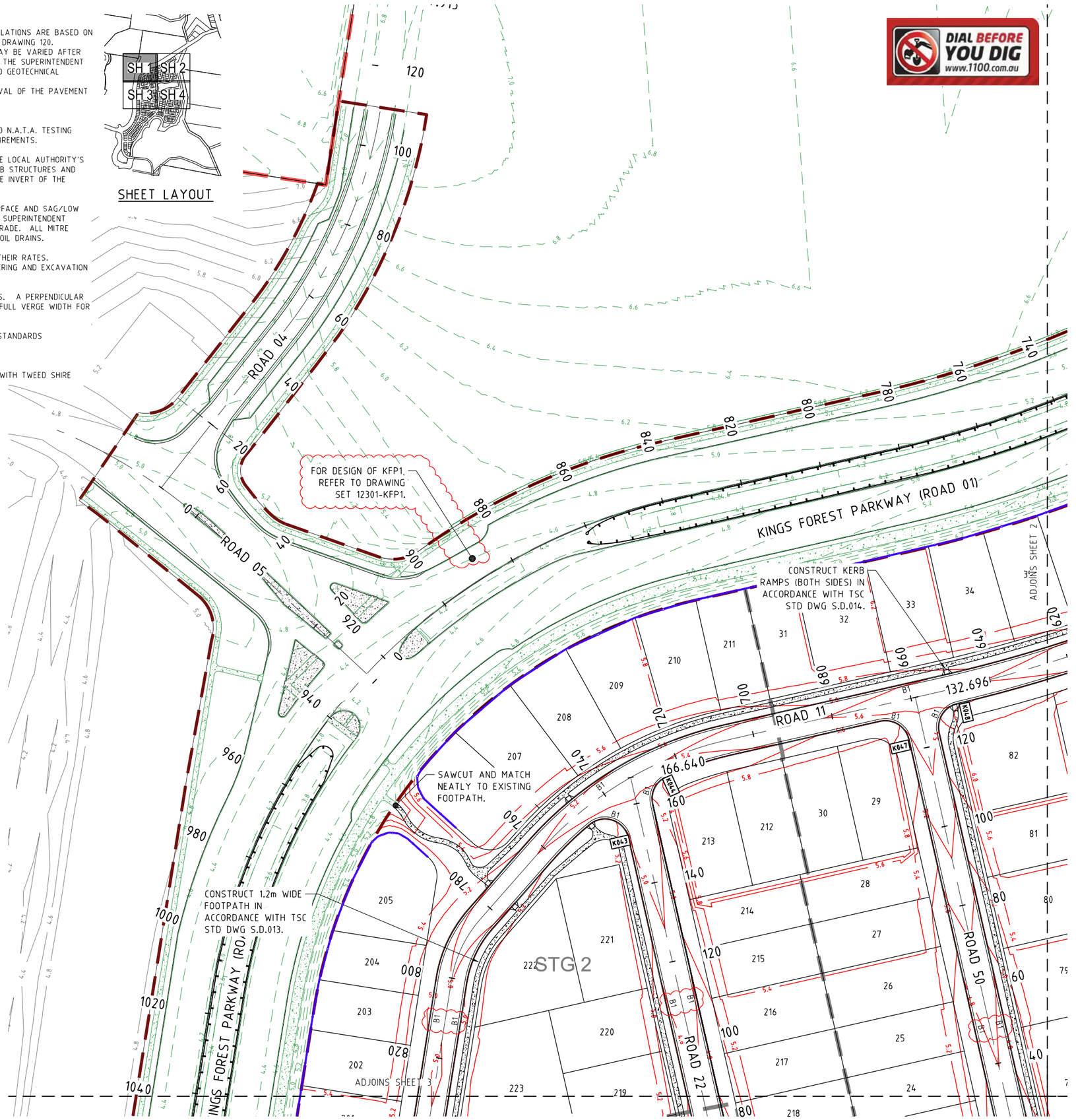
- EXISTING KERB (INVERT)
- EXISTING KERB (LIP & BACK)
- EXISTING FOOTPATH
- EXISTING PROPERTY LINE
- 1.0 EXISTING CONTOURS
- FUTURE KERB
- FUTURE FOOTPATH
- FUTURE PROPERTY LINE
- 1.0 FUTURE CONTOURS
- CONTROL LINE / CENTER OF ROAD
- PROPOSED KERB (INVERT)
- PROPOSED KERB (LIP & BACK)
- PROPOSED FOOTPATH
- PROPOSED PROPERTY LINE
- SITE BOUNDARY
- PRECINCT BOUNDARY
- STAGE BOUNDARY
- 1.0 DESIGN CONTOURS
- C
- PROPOSED LANDSCAPE ISLANDS
- PROPOSED CONCRETE
- 41.065 CENTRELINE CHAINAGE
- EXISTING KOALA EXCLUSION FENCE
- EXISTING TEMPORARY FENCE
- EXISTING TEMPORARY NO-GO FENCE
- ACOUSTIC FENCE IN ACCORDANCE WITH RMS NOISE WALL DESIGN GUIDELINE, INCLUDING ANTI-CLIMB PANNELING (WHERE APPLICABLE) REFER JWA FIGURE 27 FOR PANNELING
- ⊕ K12 HERITAGE LOCATION
- HERITAGE EXCLUSION ZONE (NO WORKS PERMITTED)
- ECOLOGICAL BUFFER
- K063 KERB LINE REFER TO DRAWING 12301-P5-1,2,3-122 TO 127 FOR LONGITUDINAL SECTIONS
- TEMPORARY ACCESS TRACK

KERB TYPE NOTE:

1. FOR KERB TYPES REFER TO DWG. 120

REFER TO DRG. 120 FOR KERB TYPES

B1	BARRIER KERB & CHANNEL
MK	MOUNTABLE KERB
ER2	EDGE RESTRAINT (WITH VEHICLE LOADING)
FES	FLUSH EDGE STRIP
B2	BARRIER KERB
CK	CASTELLATED KERB



PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

C	15-07-21	LEGEND, NOTES AND KERBS AMENDED
B	14-06-21	LEGEND AND KERB NUMBERS ADDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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GILBERT SUTHERLAND

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ROADWORKS
PLAN
SHEET 1 OF 4

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER	906726
DATE	07-02-19		

DRAWING NUMBER 12301-P5-1,2&3-100
AMEND. C

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KINGS FOREST PARKWAY (ROAD 01)

SAWCUT AND MATCH NEATLY TO EXISTING FOOTPATH.

DWAY 99A

ROAD 11

ROAD 14

ROAD 15

CONSTRUCT KERB RAMPS (BOTH SIDES) IN ACCORDANCE WITH TCS STD DWS S.D.014.

CONSTRUCT 2.5m WIDE CYCLEWAY IN ACCORDANCE WITH TSC STD DWG S.D.013.

CONSTRUCT 1.2m WIDE FOOTPATH IN ACCORDANCE WITH TSC STD DWG S.D.013.

ADJOINS SHEET 1

ADJOINS SHEET 4

STG 3

133.765

160.987

SHEET LAYOUT

SH 1 SH 2
SH 3 SH 4

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

D	15-07-21	DRIVEWAY AND KERBS AMENDED
C	14-06-21	KERB NUMBERS ADDED
B	28-01-21	FOOTPATH AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
PLAN
SHEET 2 OF 4

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-101	D

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ADJOINS SHEET 1

CONSTRUCT 1.2m WIDE FOOTPATH IN ACCORDANCE WITH TSC STD DWG S.D.013.

CONSTRUCT KERB RAMPS (BOTH SIDES) IN ACCORDANCE WITH TSC STD DWG S.D.014.

ROUNDABOUT TO BE LANDSCAPED. REFER TO LANDSCAPE SPECIFICATIONS FOR DETAILS.

CONSTRUCT 2m WIDE FOOTPATH IN ACCORDANCE WITH TSC STD DWG S.D.013.

REFER TO LANDSCAPE ARCHITECT PLANS FOR LANDSCAPE SPECIFICATIONS AND DETAIL.

CONSTRUCT 1.2m WIDE FOOTPATH IN ACCORDANCE WITH TSC STD DWG S.D.013.

SAWCUT AND MATCH NEATLY TO EXISTING PAVEMENT AND FOOTPATH (BOTH SIDES).

LIMIT ROADWORKS CH 46.49

LIMIT ROADWORKS CH 59.65

LIMIT ROADWORKS CH 272.75

PROVIDE 9m TEMPORARY TURNAROUND. 200mm GRAVEL WITH 7mm PRIMER SEAL AND APPROPRIATE 88B INSTRUMENT ALLOWING PUBLIC ACCESS. FINAL SURFACE LEVELS TO NEATLY MATCH INTO PROPOSED SEWER PUMP STATION ACCESS TRACK

PROPOSED SEWER PUMP STATION ACCESS TRACK, 3m WIDE CBR15 (150mm THICK). REFER DWG - 074 FOR EXTENTS.

ADJOINS SHEET 4

STG 4

KINGS F

DWAY 42

ROAD 11

DWAY 43

ROAD 07

DWAY 44

ROAD 29

DWAY 99B

ROAD 12

ROAD 27

ROAD 29

ROAD 19

38.073

74.415

127.

181.335

165.598

963.012

1151.162

SHEET LAYOUT

SH 1 SH 2
SH 3 SH 4

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m

Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

C	15-07-21	DRIVEWAYS, FOOTPATH, NOTES AND HATCH AMENDED
B	14-06-21	KERB NUMBERS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
PLAN
SHEET 3 OF 4

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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ABN: 39 116 375 065

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-102

AMEND.: C

Y:\123 - Leda Developments Pty Ltd\01 - Kings Forest\PREC05\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-100.dwg, 6/10/2021 4:37:23 PM, 1:2

ADJOINS SHEET 2

ADJOINS SHEET 3

ROAD 11

ROAD 16

ROAD 41

ROAD 13

ROAD 17

ROAD 20

REFER TO DRAWING 12301-P5-1,2&3-412 FOR CONCRETE DETAILS.

ROUNDABOUT TO BE LANDSCAPED. REFER TO LANDSCAPE SPECIFICATIONS FOR DETAILS.

CONSTRUCT KERB RAMPS (BOTH SIDES) IN ACCORDANCE WITH TCS STD DWS S.D.014.

CONSTRUCT 1.2m WIDE FOOTPATH IN ACCORDANCE WITH TSC STD DWG S.D.013.

CONSTRUCT 2.5m WIDE CYCLEWAY IN ACCORDANCE WITH TSC STD DWG S.D.013.

LIMIT ROADWORKS CH 257.85

LIMIT ROADWORKS CH 40.59

LIMIT ROADWORKS CH 42.94

LIMIT ROADWORKS CH 85.03

STG 1

STG 5

PRCT 5

126.267

195.413

SHEET LAYOUT

SH 1 SH 2
SH 3 SH 4

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

C	15-07-21	NOTES, DRIVEWAY, FOOTPATH AND KERBS AMENDED
B	14-06-21	KERB NUMBERS ADDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
PLAN
SHEET 4 OF 4

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER	906726
DATE	07-02-19		

DRAWING NUMBER: 12301-P5-1,2&3-103
AMEND.: C

Y:\123 - Leda Developments Pty Ltd\01 - Kings Forest\PREC05\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-100.dwg, 6/10/2021 4:37:38 PM, 1:2

SCHEDULE OF PAVEMENT DEPTHS

ROAD NAME	SURFACING	BASE	SUB-BASE	CBR	CLASSIFICATION	DESA OR VPD	DESIGN GUIDE
ROAD 07 & ROAD 13	25mm DG10 ON PRIMER SEAL *	150mm TYPE 2.1 (CBR 80)	165mm TYPE 2.3 (CBR 45)	9	NEIGHBOURHOOD CONNECTOR ST	$7.5x10^5$	D2 PAVEMENT DESIGN MANUAL
ROAD 11 , ROAD 12, ROAD 14, ROAD 15, ROAD 17, ROAD 20, ROAD 22, ROAD 29 & ROAD 41	25mm DG7 ON PRIMER SEAL *	150mm TYPE 2.1 (CBR 80)	150mm TYPE 2.4 (CBR 45)	9	LOCAL ACCESS ST	$3.7x10^4$	D2 PAVEMENT DESIGN MANUAL
ROAD 16	25mm FGG7 ON PRIMER SEAL *	150mm TYPE 2.1 (CBR 80)	150mm TYPE 2.4 (CBR 45)	9	LANEWAY	$1.5x10^4$	TSC SPECIFICATIONS TABLE D2.2
DRIVEWAY 42 & DRIVEWAY 44	175mm CONCRETE SL82 MESH REINFORCEMENT	-	-	9	LANEWAY	$1.5x10^4$	CEMENT & CONCRETE ASSOCIATION OF AUSTRALIA (C&CAAT51)

* 7mm PRIMER SEAL TACK COAT 0.22l/m^2 RES. BITUMEN PRIOR TO ASPHALT LAYING.

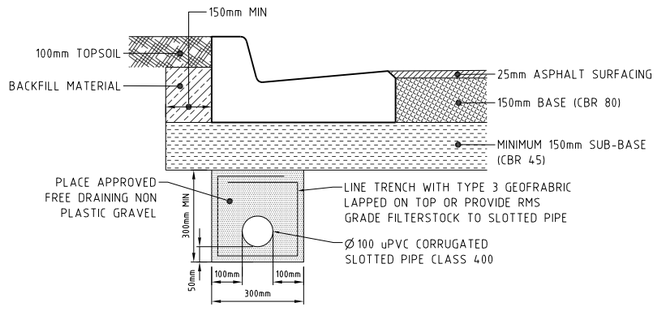
THE PAVEMENT DEPTHS ARE A GUIDE ONLY. FINAL PAVEMENT DESIGN IS SUBJECT TO INSITU SUBGRADE TESTING AND PRIVATE CERTIFIER APPROVAL.

D

SCHEDULE OF KERB TYPES

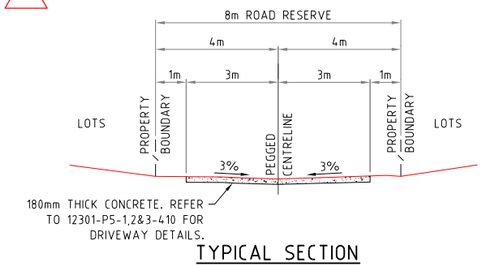
KERB TYPE	IMAGE	REFERENCE
B1 BARRIER KERB AND GUTTER		TSC DRG. SD-007
MK MOUNTABLE KERB		
FES FLUSH EDGING STRIP		
RKG ROLL TOP KERB AND GUTTER		
DD CONCRETE DISH DRAIN		
CK CASTELLATED KERB		TSC DRG. SD-008
B2 BARRIER KERB		IPWEA DRG. RS-080

NOTE: SUBSOIL DRAINS TO BE PLACED UNDER ALL KERBS.



TYPICAL BEDDING DETAIL

SCALE 1:10 - A1 (1:20 - A3)

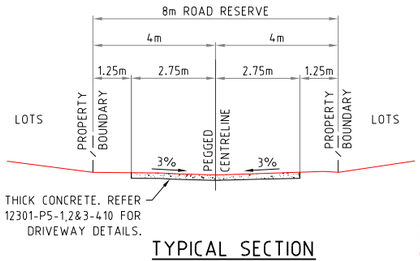


TYPICAL SECTION

6m ROAD - 8m ROAD RESERVE

DWAY 42 & 44

SCALE 1:100 - A1 (1:200 - A3)

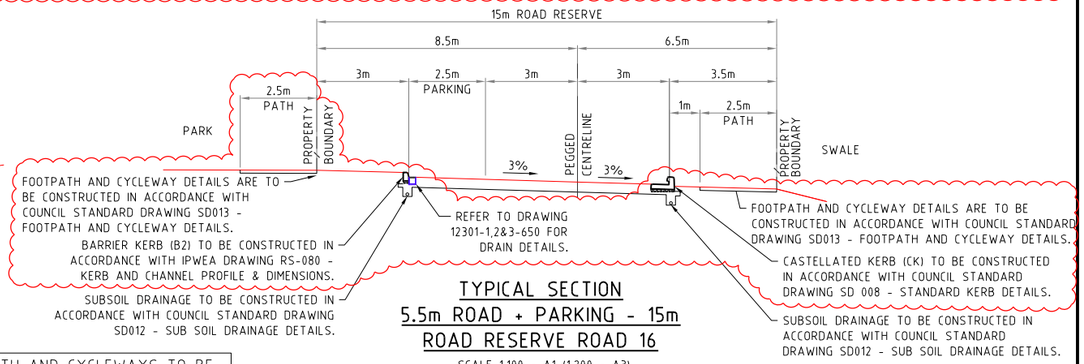


TYPICAL SECTION

5.5m ROAD - 8m ROAD RESERVE

DWAY 43, 99A & 99B

SCALE 1:100 - A1 (1:200 - A3)



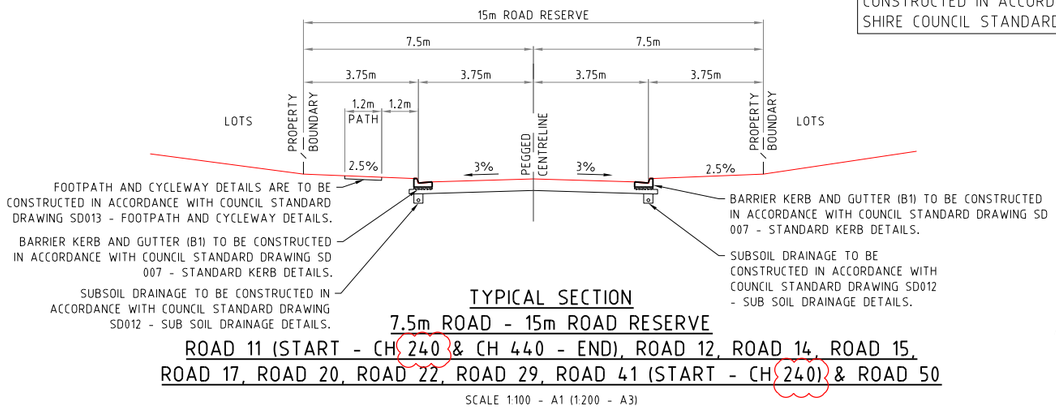
TYPICAL SECTION

5.5m ROAD + PARKING - 15m

ROAD RESERVE ROAD 16

SCALE 1:100 - A1 (1:200 - A3)

NOTE: FOOTPATH AND CYCLEWAYS TO BE CONSTRUCTED IN ACCORDANCE WITH TWEED SHIRE COUNCIL STANDARD DRAWING SD013.

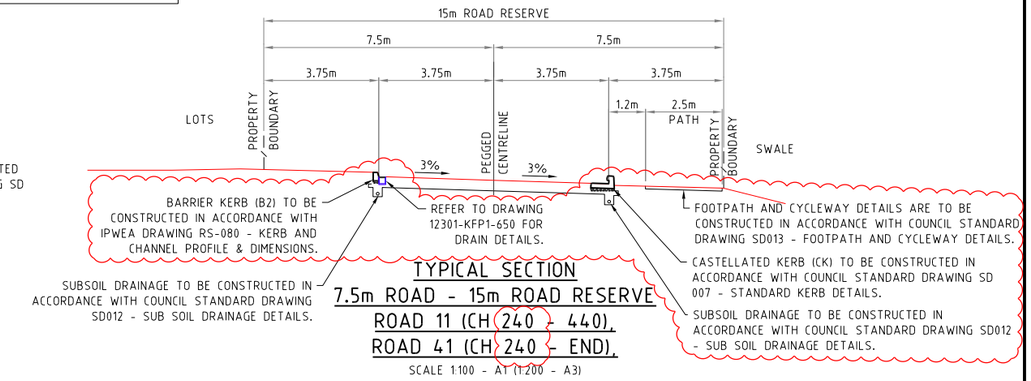


TYPICAL SECTION

7.5m ROAD - 15m ROAD RESERVE

ROAD 11 (START - CH 240 & CH 440 - END), ROAD 12, ROAD 14, ROAD 15, ROAD 17, ROAD 20, ROAD 22, ROAD 29, ROAD 41 (START - CH 240) & ROAD 50

SCALE 1:100 - A1 (1:200 - A3)



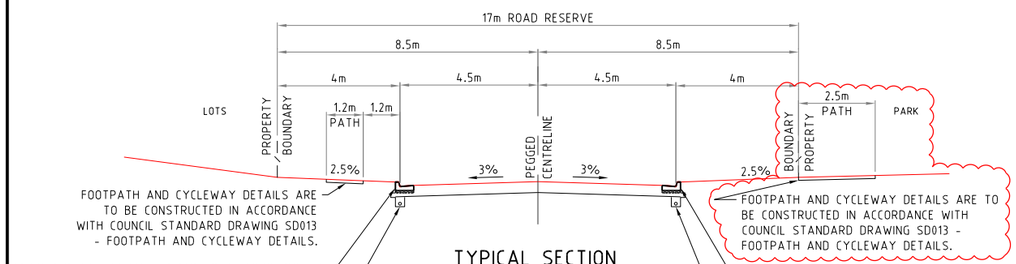
TYPICAL SECTION

7.5m ROAD - 15m ROAD RESERVE

ROAD 11 (CH 240 - 440),

ROAD 41 (CH 240 - END),

SCALE 1:100 - A1 (1:200 - A3)

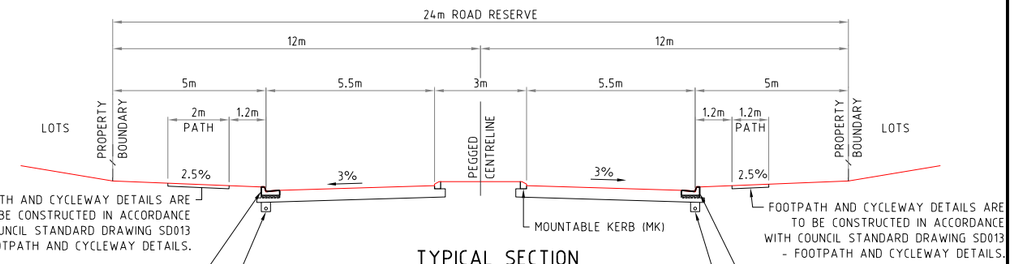


TYPICAL SECTION

9m ROAD - 17m ROAD RESERVE

ROAD 13

SCALE 1:100 - A1 (1:200 - A3)



TYPICAL SECTION

11m ROAD - 24m ROAD RESERVE

ROAD 07

SCALE 1:100 - A1 (1:200 - A3)

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN , COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 0.1 0.2 0.3 0.4 0.5m
Scale 1:10 - A1 (1:20 - A3)
0 0.2 0.4 0.6 0.8 1.0m
Scale 1:20 - A1 (1:40 - A3)
0 0.5 1.0 1.5 2.0 2.5m
Scale 1:50 - A1 (1:100 - A3)
0 1 2 3 4 5m
Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE
TENDER	13-11-19
COUNCIL	xx-xx-xx
CONSTRUCTION	..

D	02-08-21	TABLE, SECTIONS, DETAIL AND NOTES AMENEDED
C	03-06-21	TABLE AMENDED
B	16-10-20	TABLE AND SECTIONS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS DETAILS SHEET 1 OF 2

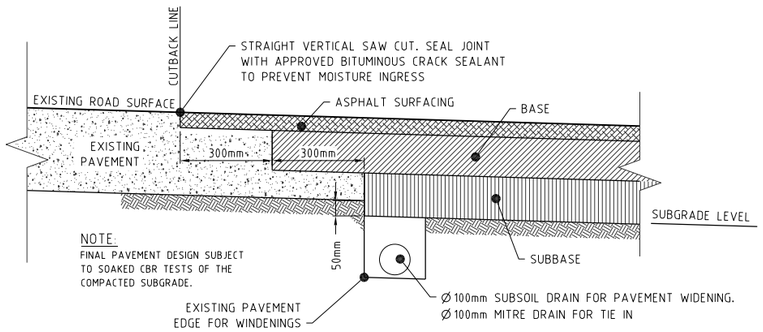
CONSTRUCTION ISSUE

MORTONS urbansolutions
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Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

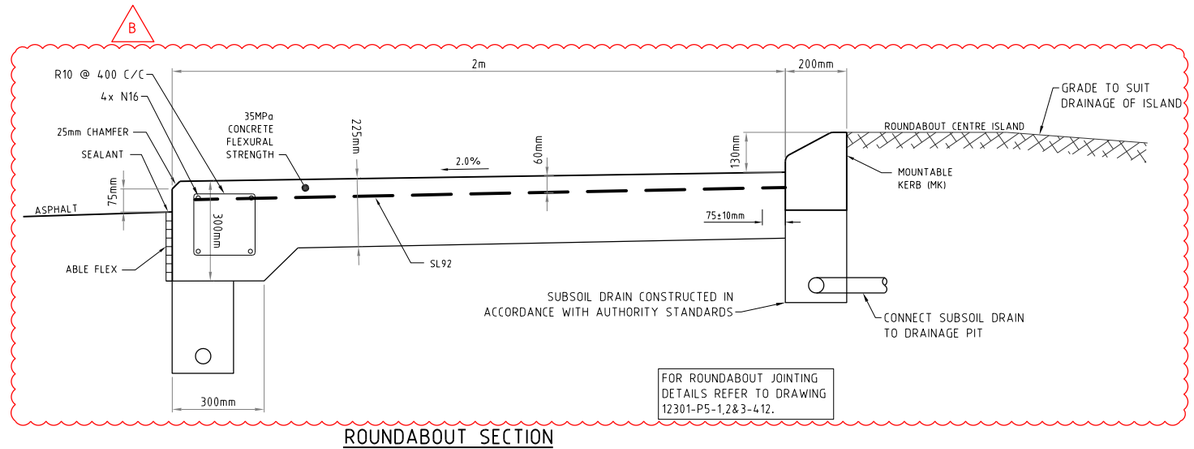
DRAWING NUMBER: 12301-P5-1,2&3-120
AMEND.: D

Y:\123 - Lusta Developments Pty Ltd\01 - Kings Forest\PRECI5\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-120.dwg, 6/10/2021 4:37:47 PM, 1:2



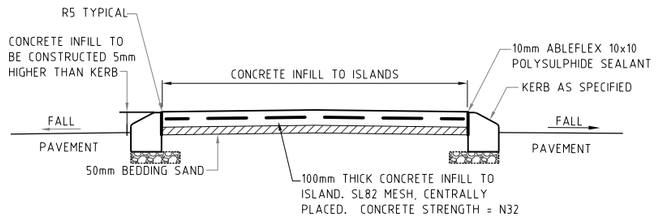
PAVEMENT WIDENING AND TIE-IN DETAIL

NOT TO SCALE



ROUNDABOUT SECTION

SCALE 1:10



ISLAND WITH CONCRETE INFILL

NOT TO SCALE

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 0.1 0.2 0.3 0.4 0.5m
Scale 1:10 - A1 (1:20 - A3)
0 0.2 0.4 0.6 0.8 1.0m
Scale 1:20 - A1 (1:40 - A3)
0 0.5 1.0 1.5 2.0 2.5m
Scale 1:50 - A1 (1:100 - A3)
0 1 2 3 4 5m
Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	09-08-21	DETAIL AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

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GILBERT SUTHERLAND

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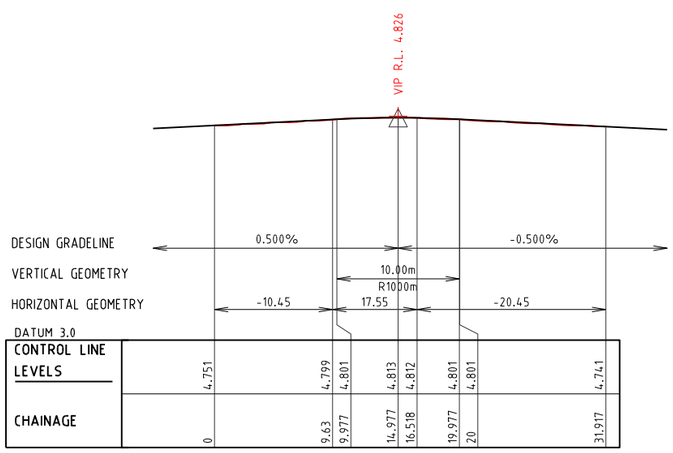
ROADWORKS DETAILS SHEET 2 OF 2

CONSTRUCTION ISSUE

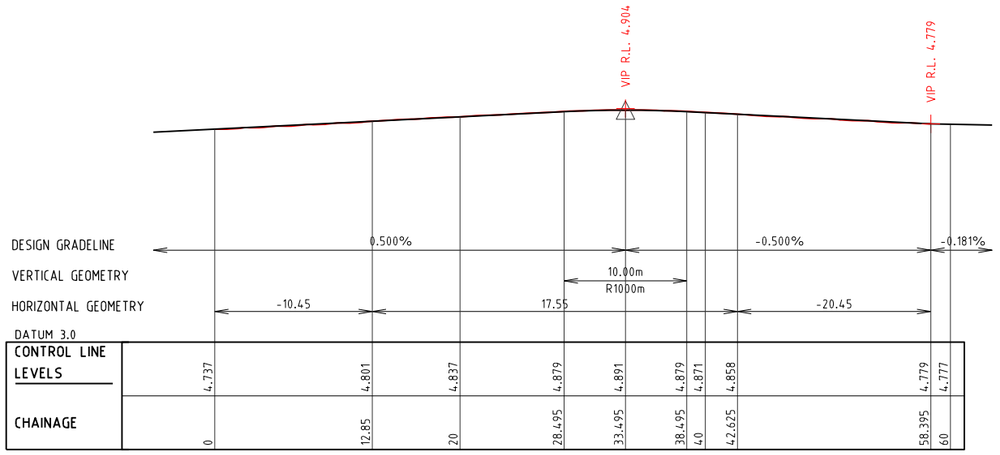
MORTONS urbansolutions
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Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

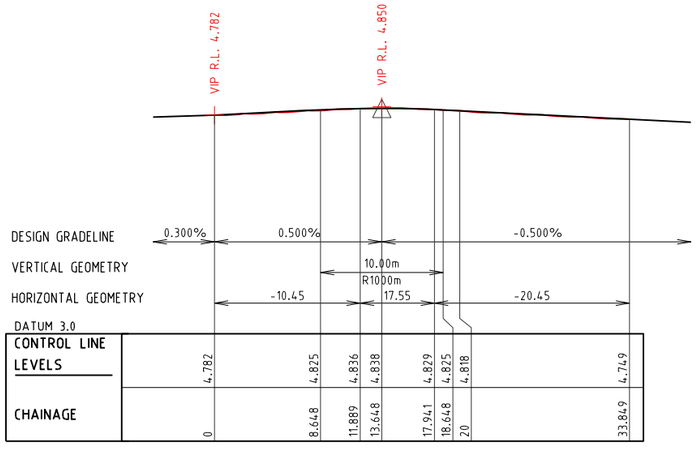
DRAWING NUMBER	AMEND.
12301-P5-1,2&3-121	B



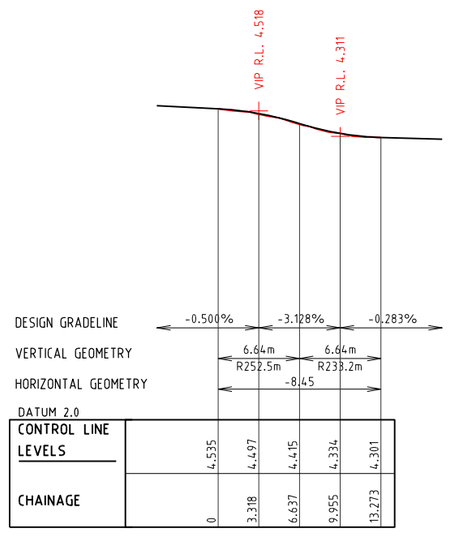
KERB SECTION 003



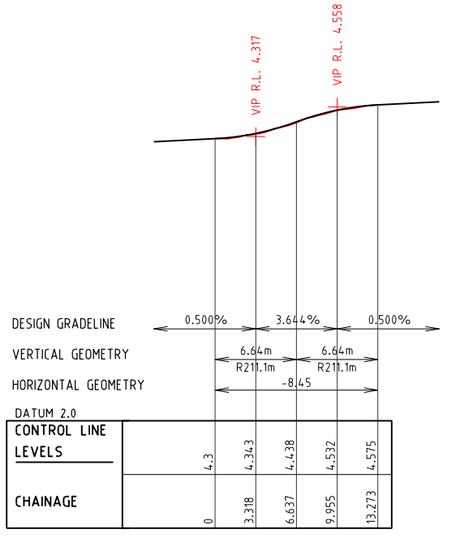
KERB SECTION 004



KERB SECTION 005



KERB SECTION 036



KERB SECTION 037

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
A	14-06-21	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
KERB LONGSECTIONS

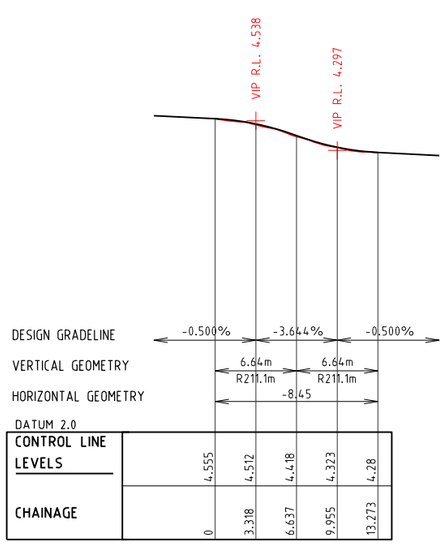
CONSTRUCTION ISSUE

MORTONS urbansolutions
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Civil Engineering
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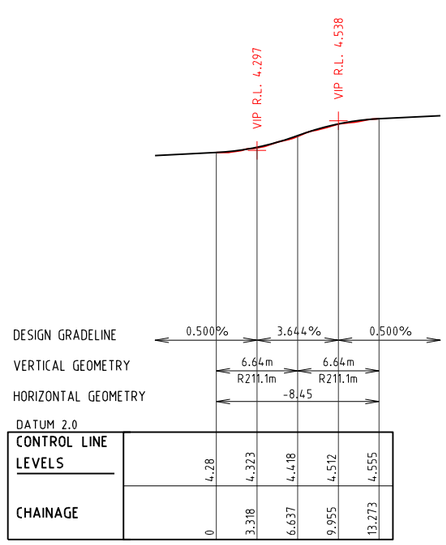
DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-122
AMEND.: A

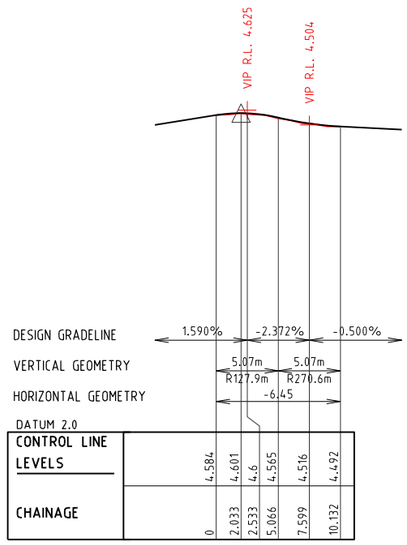
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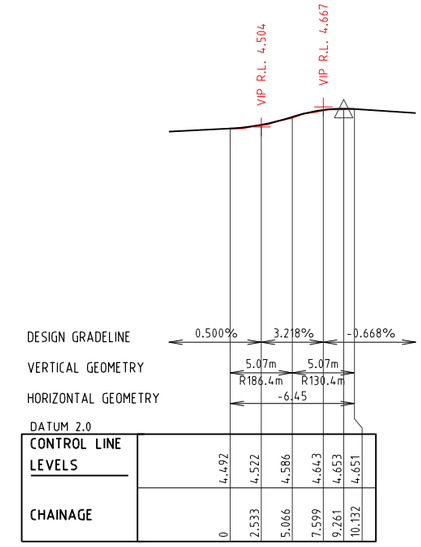
KERB SECTION 038



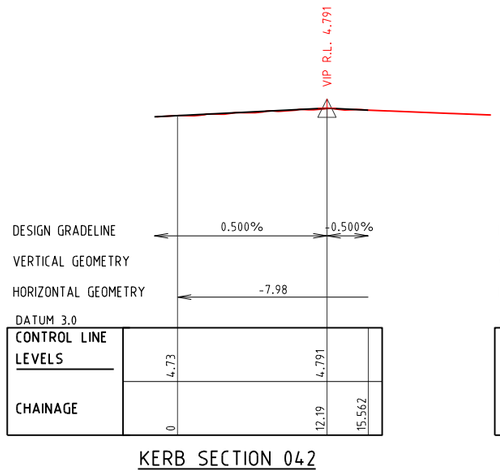
KERB SECTION 039



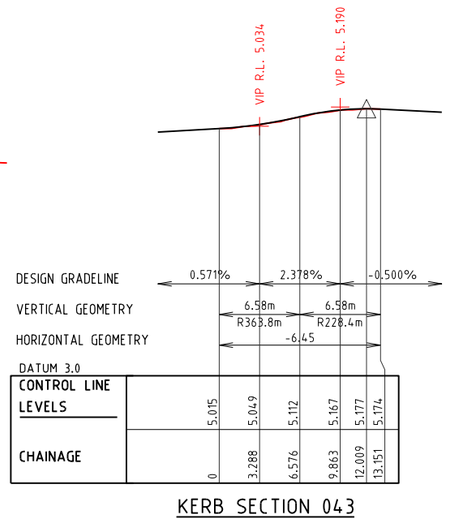
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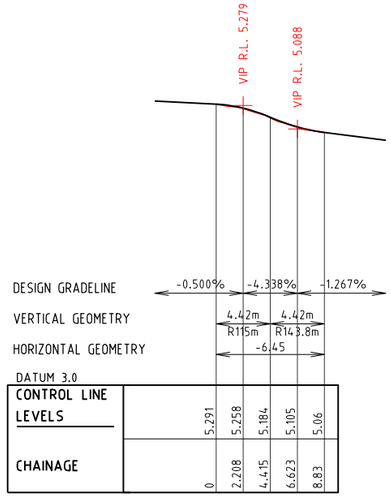
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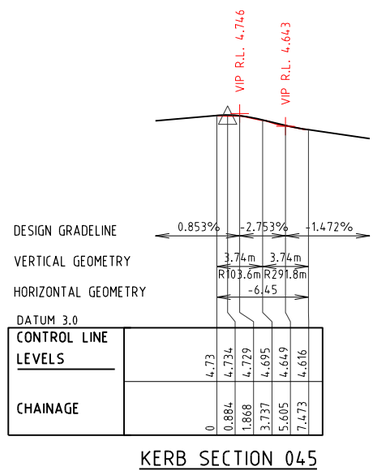
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KERB SECTION 043



KERB SECTION 044



KERB SECTION 045

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

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Scale 1:500 - A1 (1:1000 - A3)

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GILBERT SUTHERLAND

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ROADWORKS
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CONSTRUCTION ISSUE

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Civil Engineering
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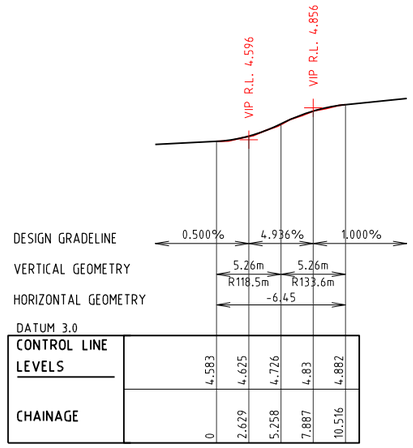
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Southport QLD 4215

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APPROVED		NER 906726	DATE 07-02-19

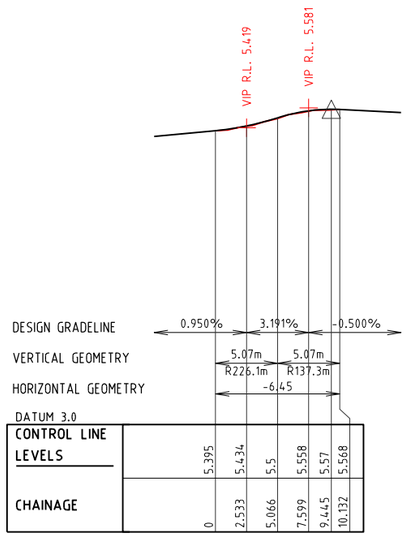
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12301-P5-1,2&3-123

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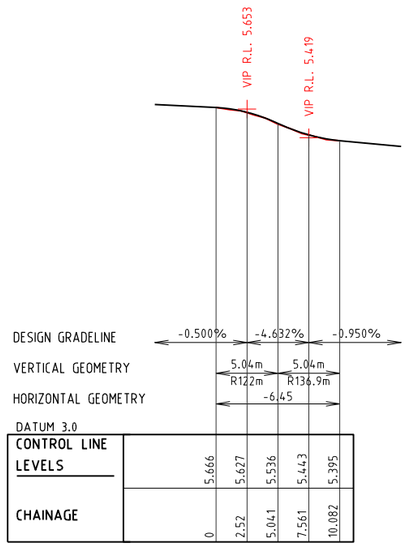
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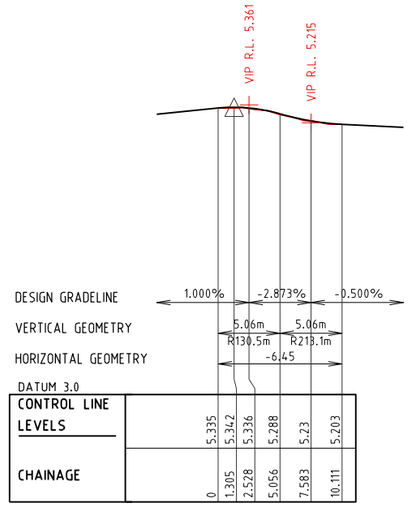
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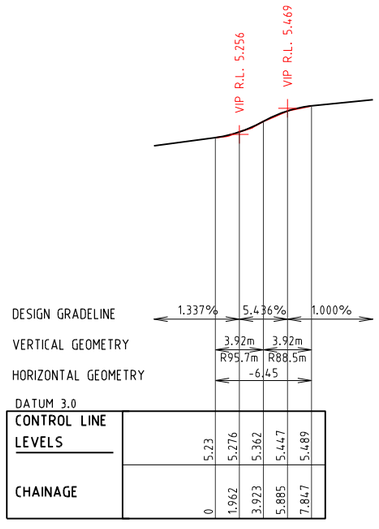
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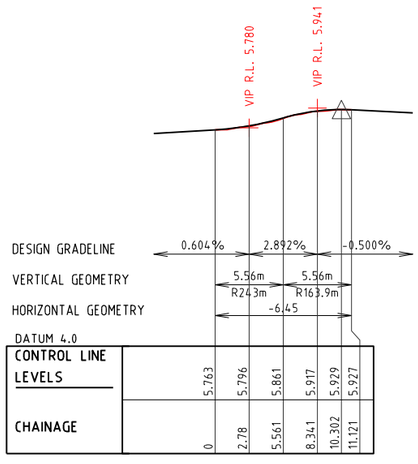
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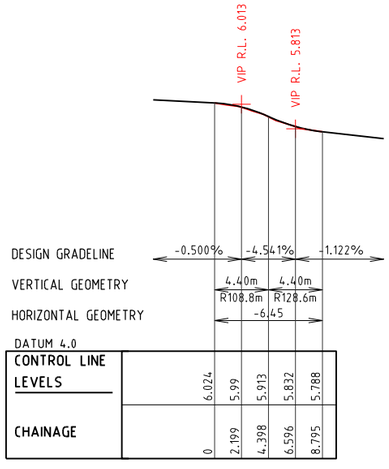
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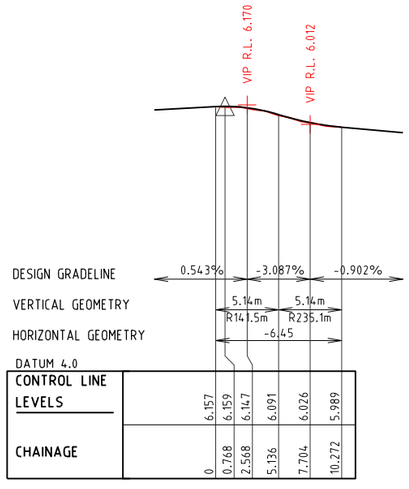
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KERB SECTION 051



KERB SECTION 052



KERB SECTION 053

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

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Scale 1:500 - A1 (1:1000 - A3)

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Fax 07 5571 1088

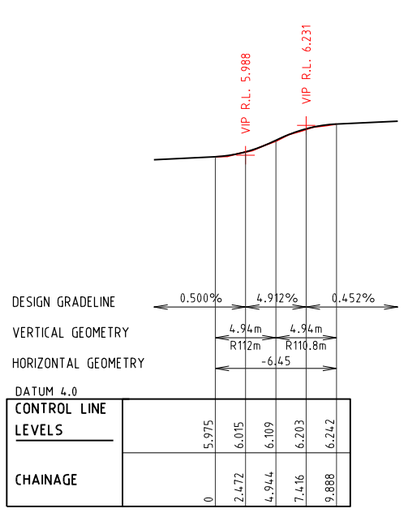
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Southport QLD 4215

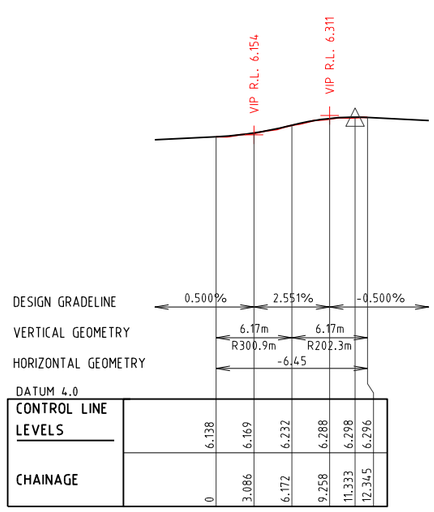
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APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-124
AMEND.: A

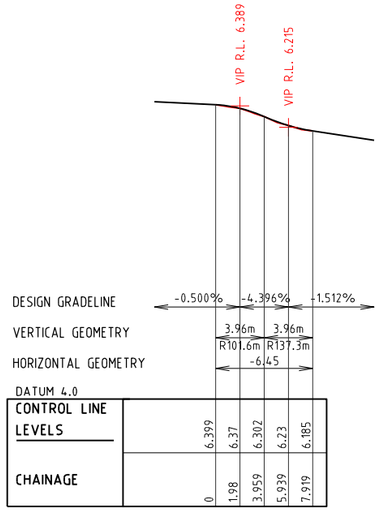
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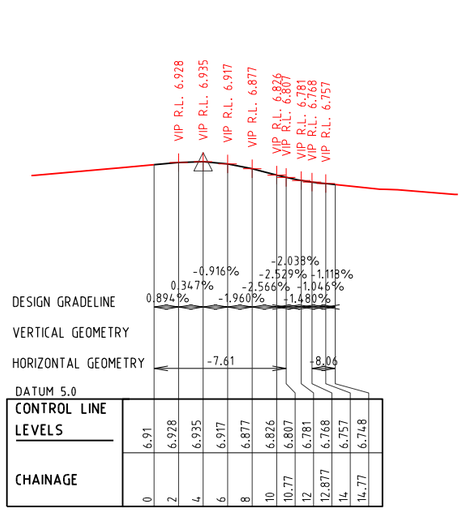
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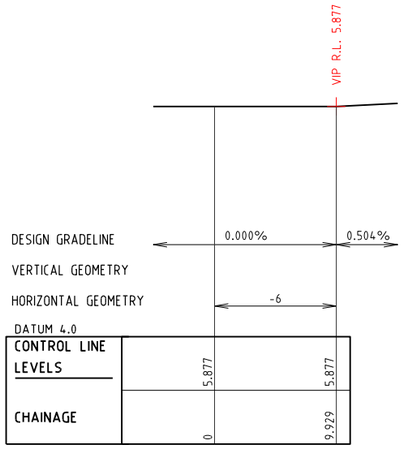
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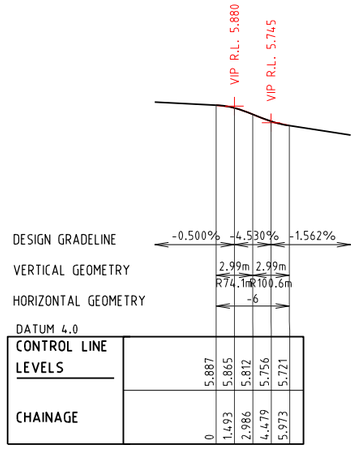
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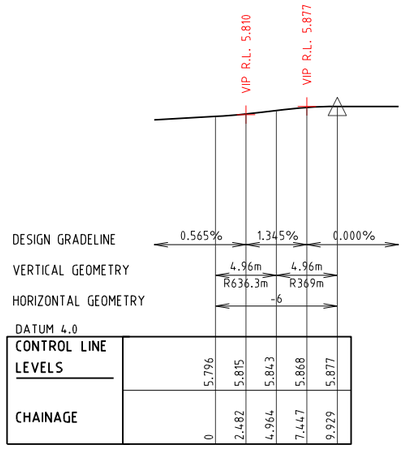
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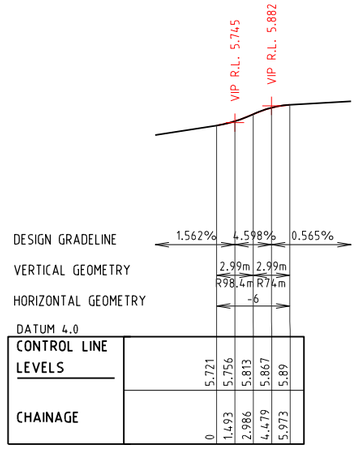
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KERB SECTION 059



KERB SECTION 060



KERB SECTION 061

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

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Scale 1:500 - A1 (1:1000 - A3)

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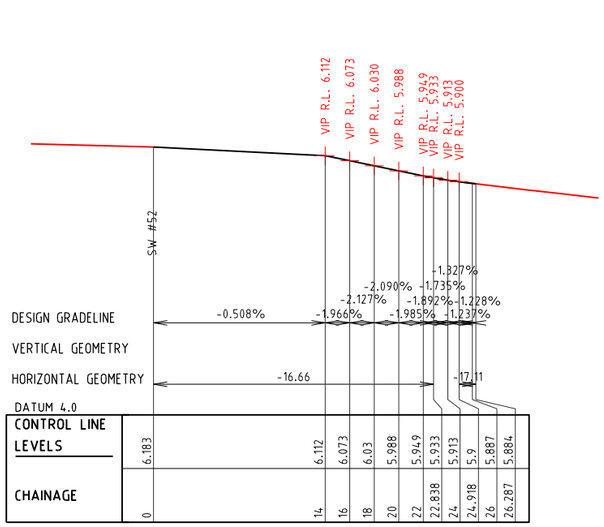
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Civil Engineering
Project Coordination
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mortons@urbansolutions.net.au
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Tel 07 5571 1099
Fax 07 5571 1088
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PO Box 2484
Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

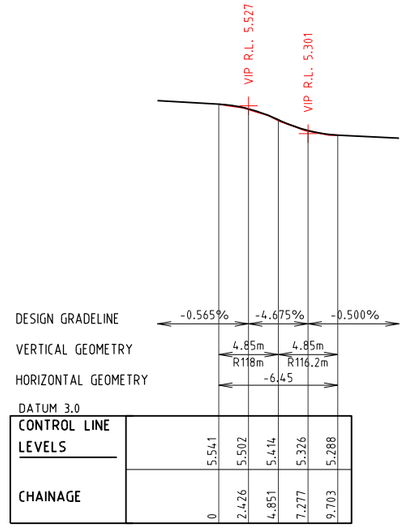
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APPROVED		NER 906726	DATE 07-02-19

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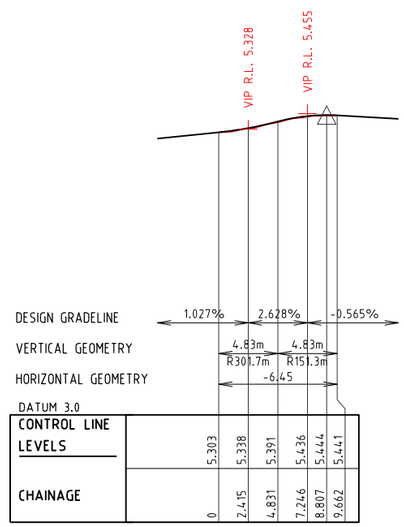
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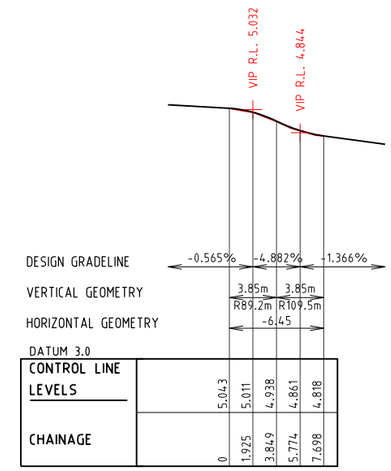
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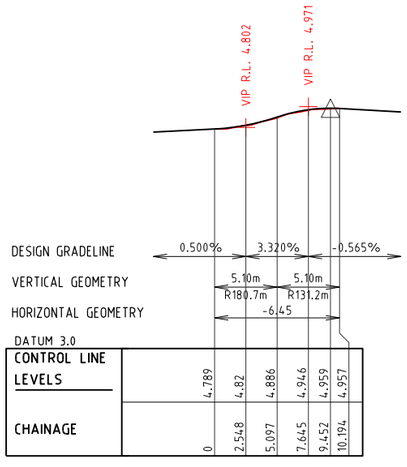
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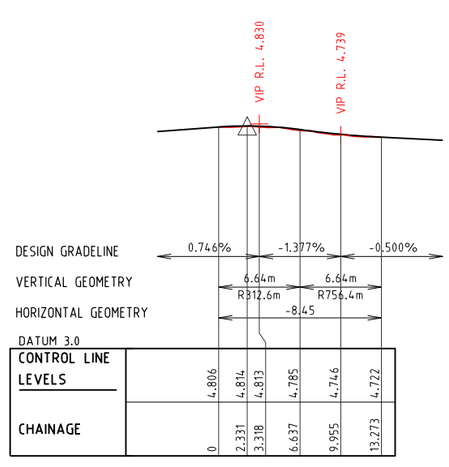
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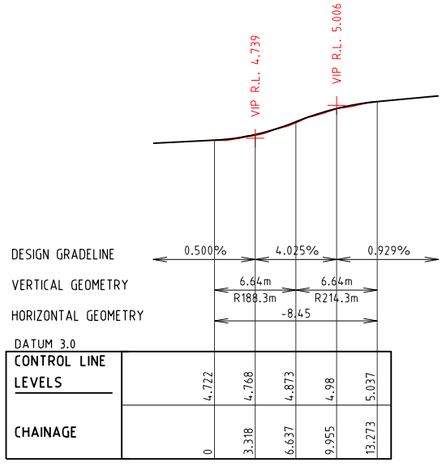
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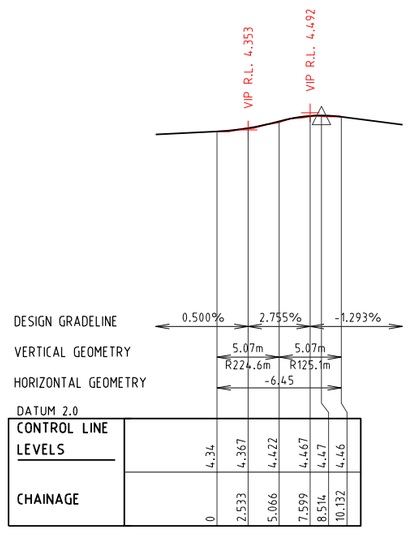
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KERB SECTION 067



KERB SECTION 068



KERB SECTION 069

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

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Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
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KERB SECTION 070

KERB SECTION 071

KERB SECTION 183

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

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Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

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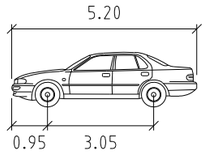
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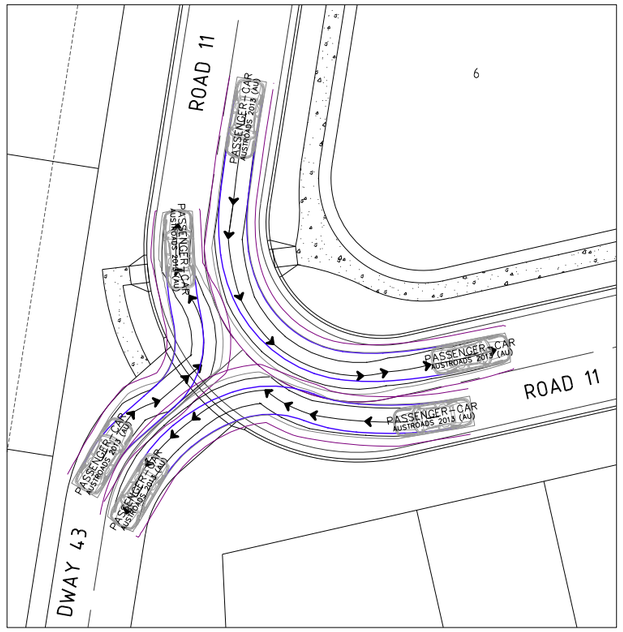
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- FRONT TIRES
- 0.5m CLEARANCE FROM BODY OF VEHICLE
- 30m SIGHT LINES

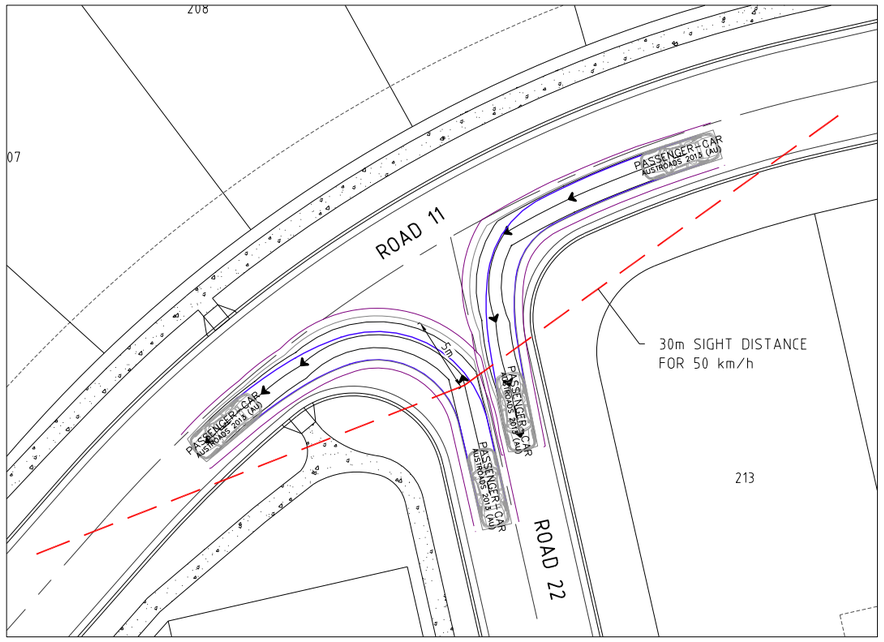


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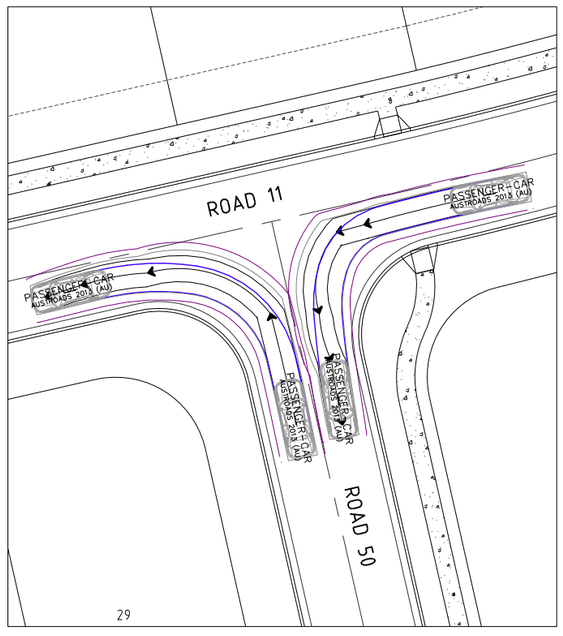
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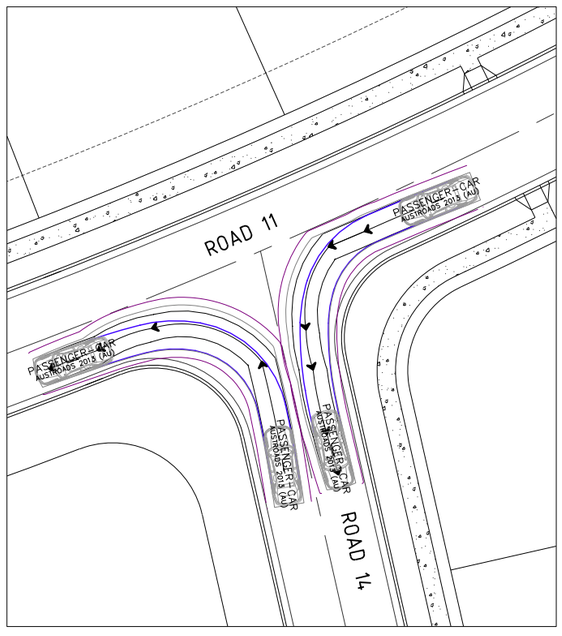
INTERSECTION 1



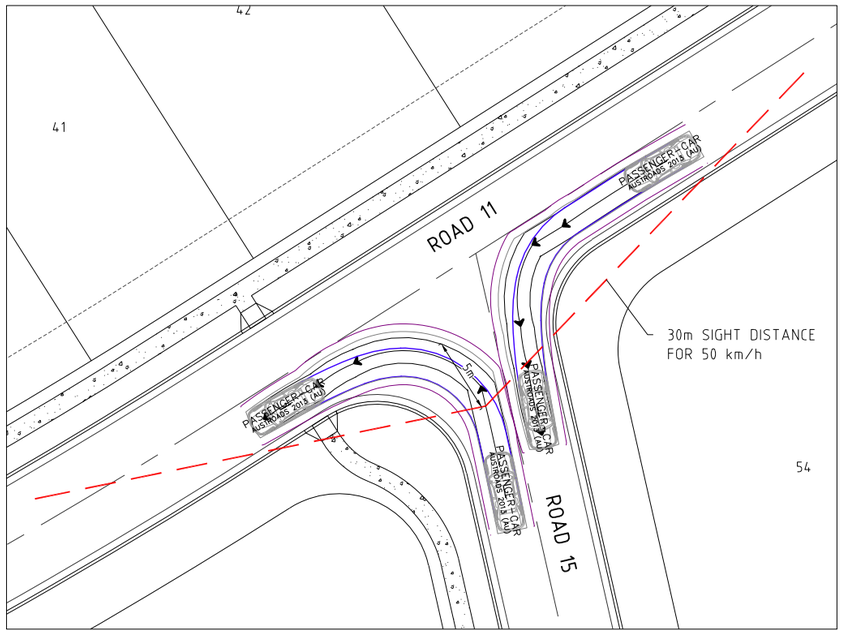
INTERSECTION 2



INTERSECTION 3



INTERSECTION 4



INTERSECTION 5

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER		
COUNCIL		
CONSTRUCTION		

PRE	DATE	AMENDMENT
A	15-06-21	ISSUE FOR INFORMATION

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

PRECIINCT 5
STAGES 1,2 & 3
INTERSECTION ATURN
PASSENGER CAR
SHEET 1

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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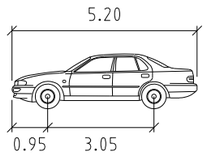
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APPROVED		NER 906726	DATE 10-06-21

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-160	A

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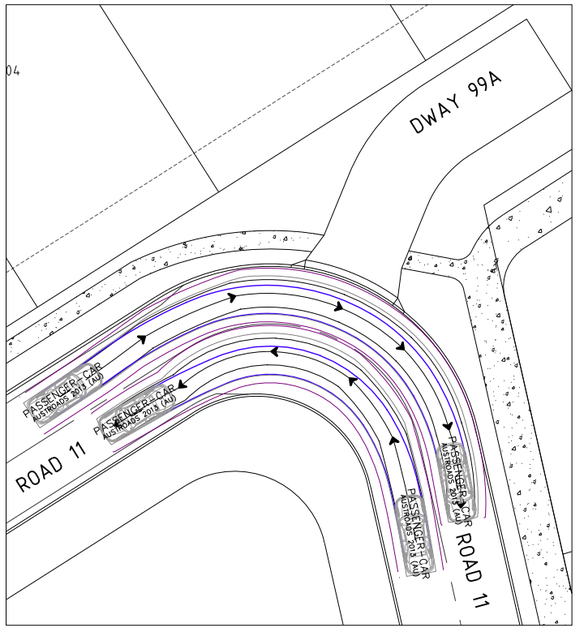
LEGEND

- BODY OF VEHICLE
- FRONT TIRES
- 0.5m CLEARANCE FROM BODY OF VEHICLE

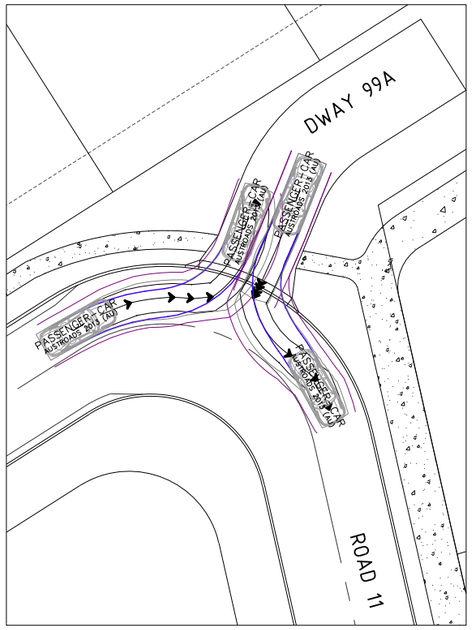


PASSENGER-CAR

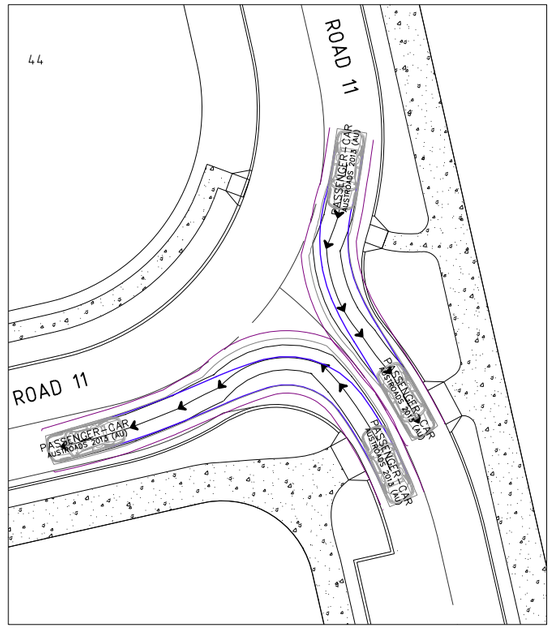
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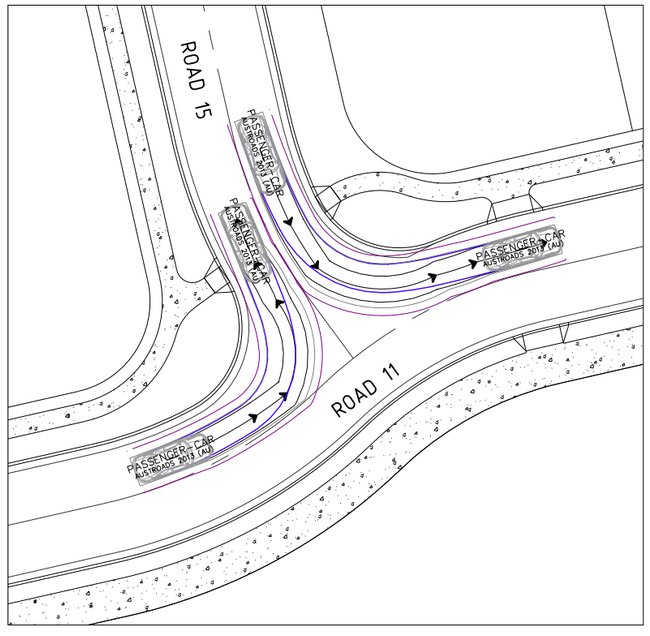
INTERSECTION 6A



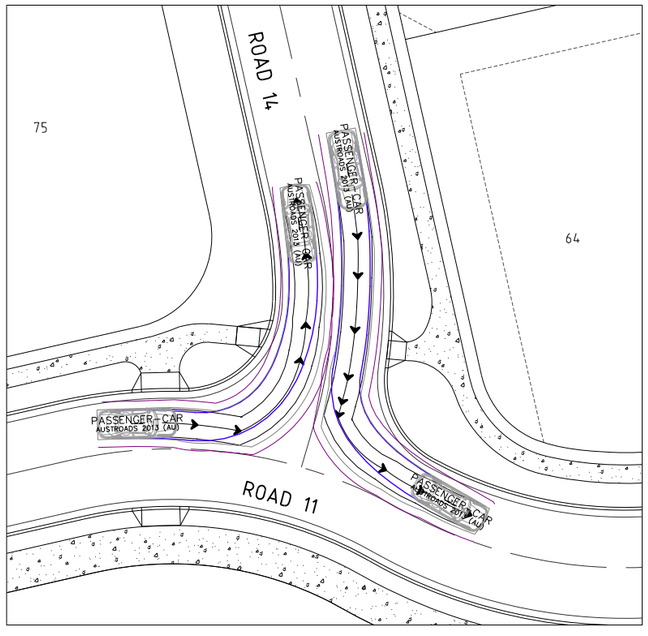
INTERSECTION 6B



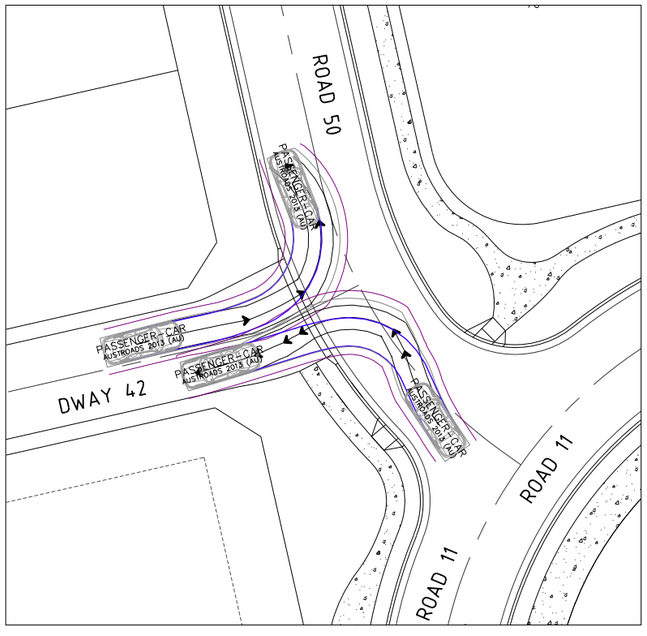
INTERSECTION 7



INTERSECTION 8



INTERSECTION 9



INTERSECTION 10

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER		
COUNCIL		
CONSTRUCTION		

PRE	DATE	AMENDMENT
A	15-06-21	ISSUE FOR INFORMATION

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LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

PRECINCT 5
STAGES 1,2 & 3
INTERSECTION ATURN
PASSENGER CAR
SHEET 2

CONSTRUCTION ISSUE

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Project Coordination
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DESIGNED	RB	DRAWN	JB
APPROVED		NER 906726	DATE 10-06-21

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-161	A

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LEGEND

BODY OF VEHICLE

FRONT TIRES

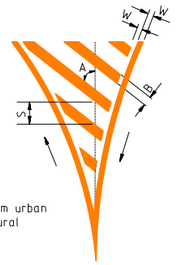
0.5m CLEARANCE FROM BODY OF VEHICLE

PAVEMENT MARKING LEGEND

EDGE LINE - EL

GIVE WAY LINE - GWL

NOTE: REFER TO: RMS/TRANSPORT FOR NSW DELINEATION GUIDELINES FOR ALL LINEMARKING AND SIGN STANDARDS.

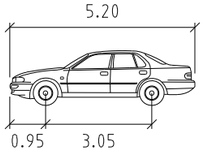


Angle A = 45° urban
30°rural

B = 1.0m min

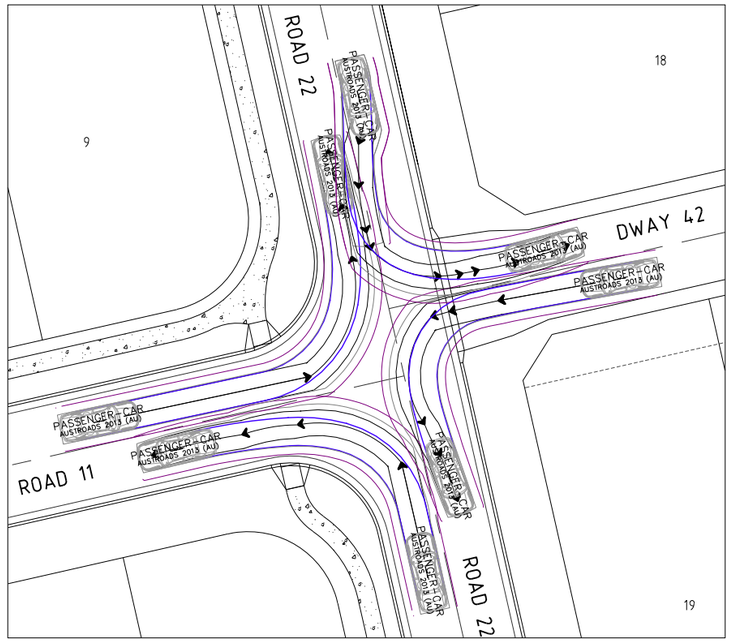
S = 1.5m to 5m urban
3m min rural

W = 150mm

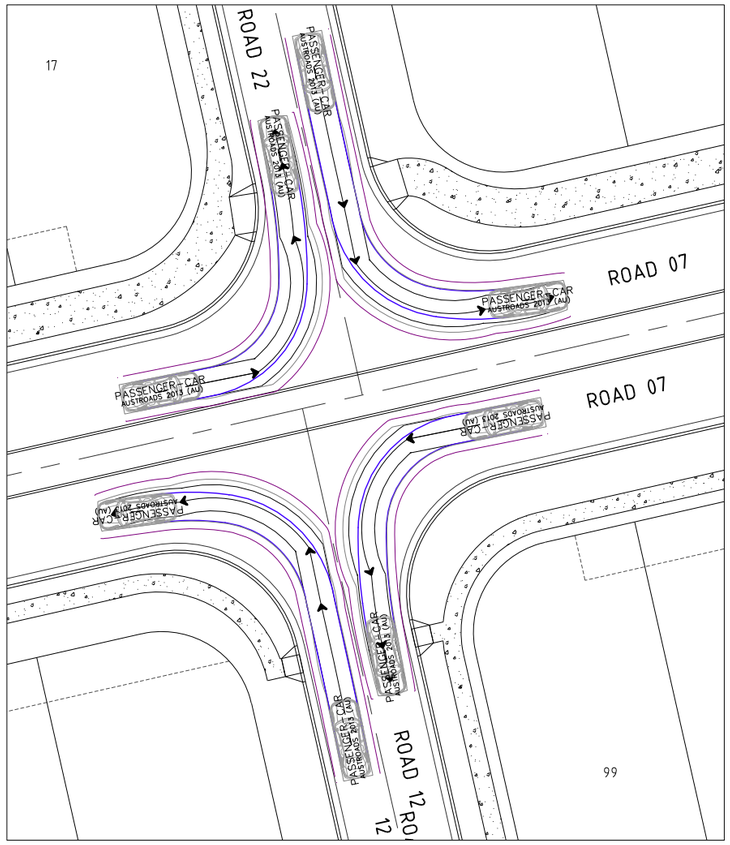


PASSENGER-CAR

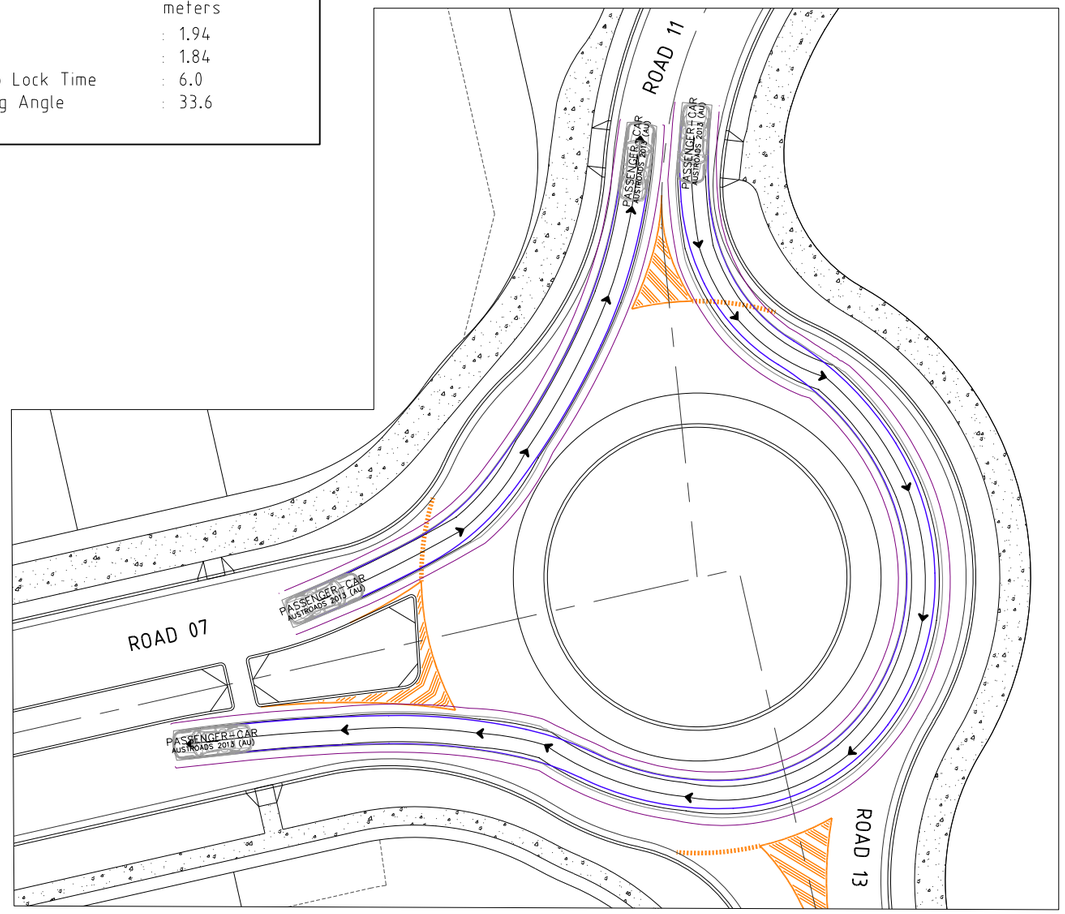
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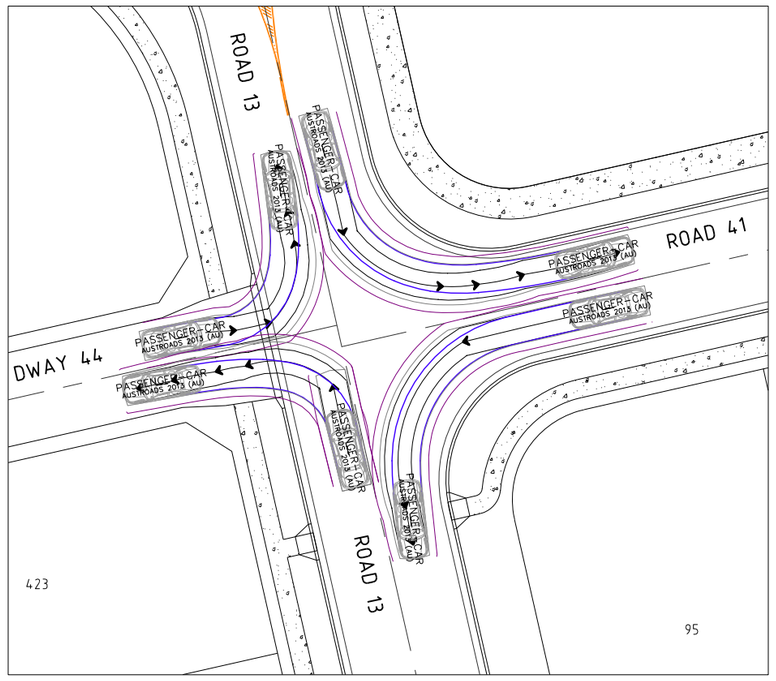
INTERSECTION 11



INTERSECTION 12



INTERSECTION 13



INTERSECTION 14

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 2 4 6 8 10m

Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER		
COUNCIL		
CONSTRUCTION		

PRE	DATE	AMENDMENT
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ASSOCIATED CONSULTANTS

LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

PRECINCT 5
STAGES 1,2 & 3
INTERSECTION ATURN
PASSENGER CAR
SHEET 3

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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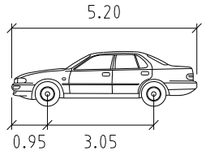
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APPROVED		NER 906726	DATE 10-06-21

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-162	A

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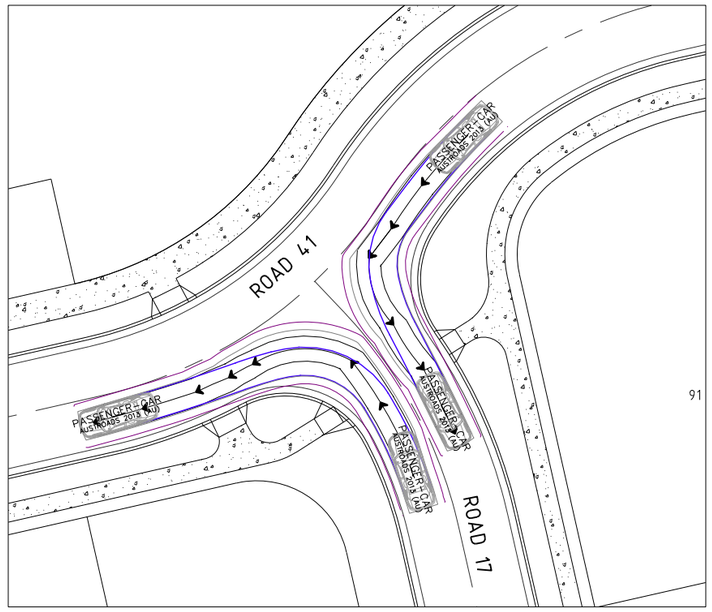
LEGEND

- BODY OF VEHICLE
- FRONT TIRES
- 0.5m CLEARANCE FROM BODY OF VEHICLE
- 30m SIGHT LINES

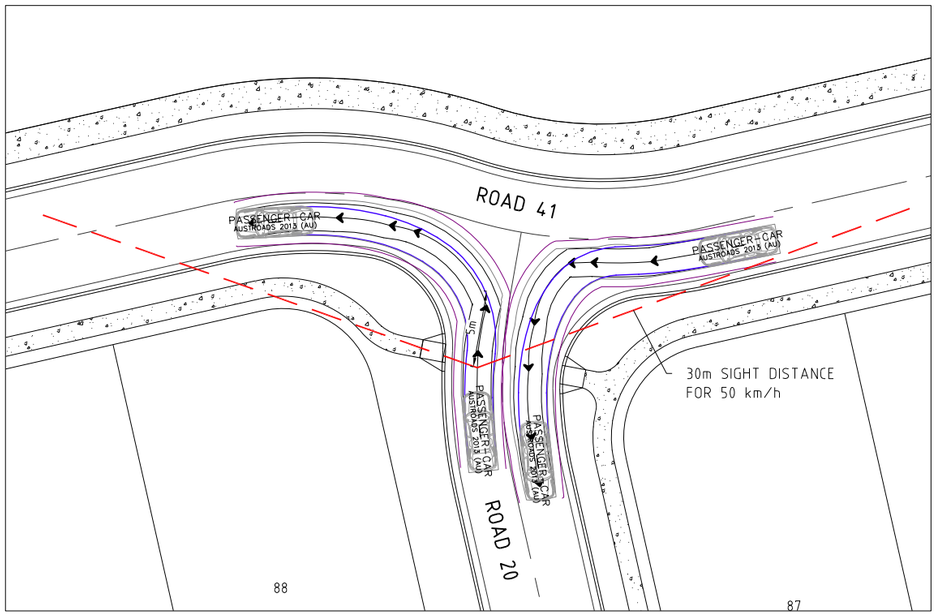


PASSENGER-CAR

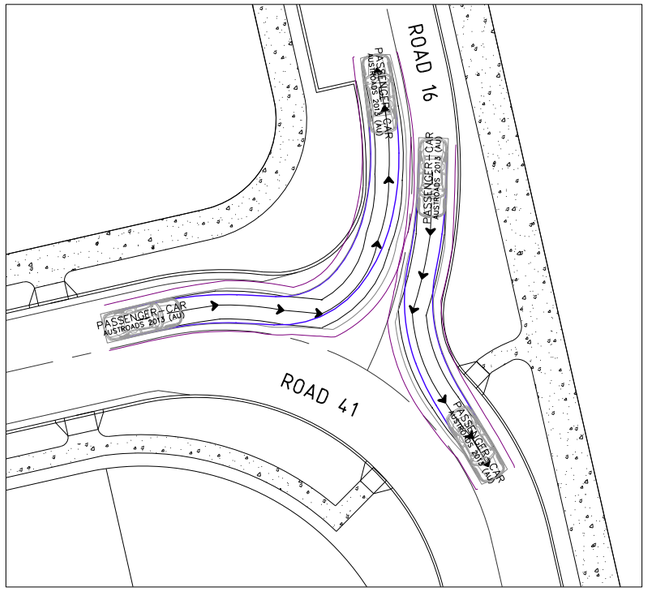
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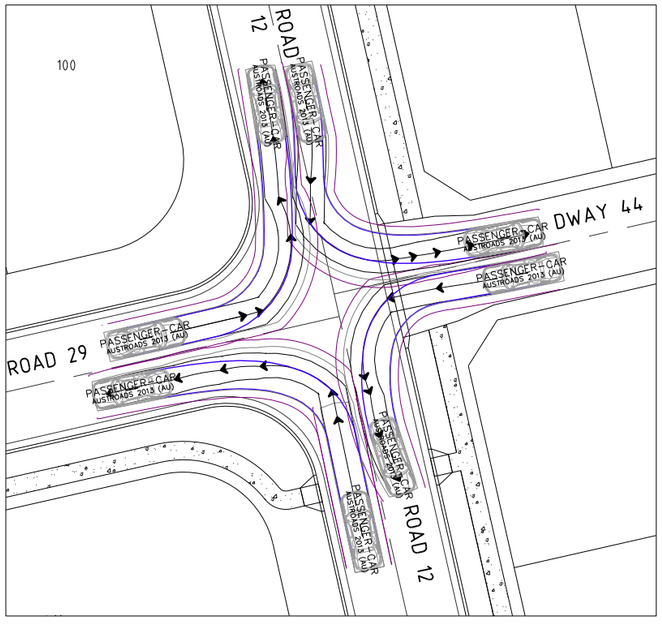
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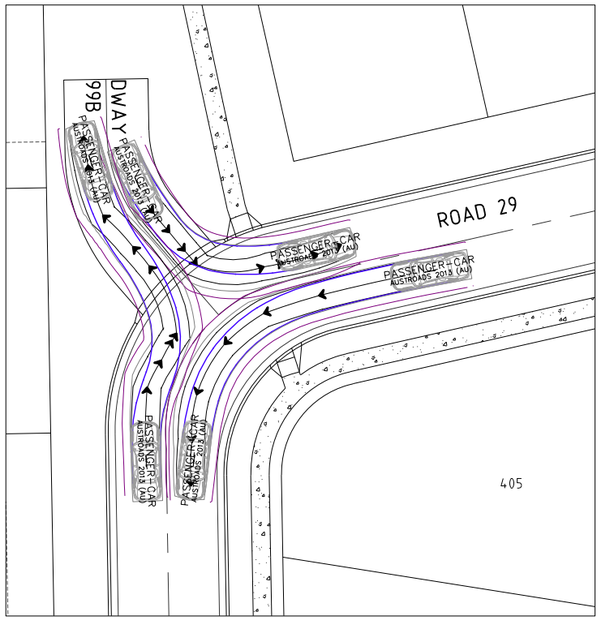
INTERSECTION 16



INTERSECTION 17



INTERSECTION 18



INTERSECTION 19

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER		
COUNCIL		
CONSTRUCTION		

PRE	DATE	AMENDMENT
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LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

PRECINCT 5
STAGES 1,2 & 3
INTERSECTION ATURN
PASSENGER CAR
SHEET 4

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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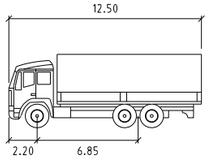
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APPROVED		NER 906726	DATE 10-06-21

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AMEND.: A

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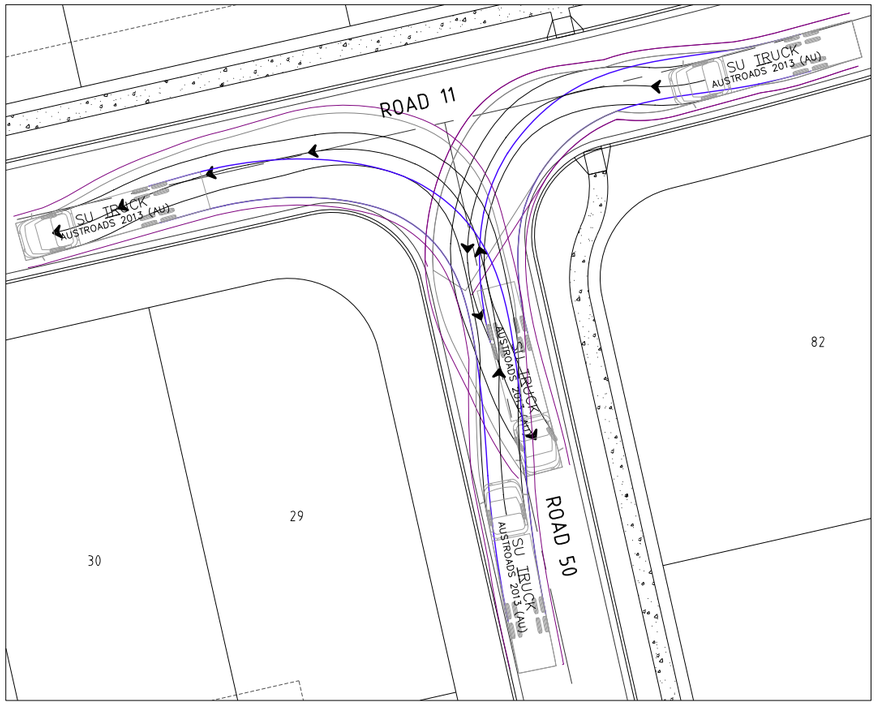
LEGEND

- BODY OF VEHICLE
- FRONT TIRES
- REAR TIRES
- 0.5m CLEARANCE FROM BODY OF VEHICLE

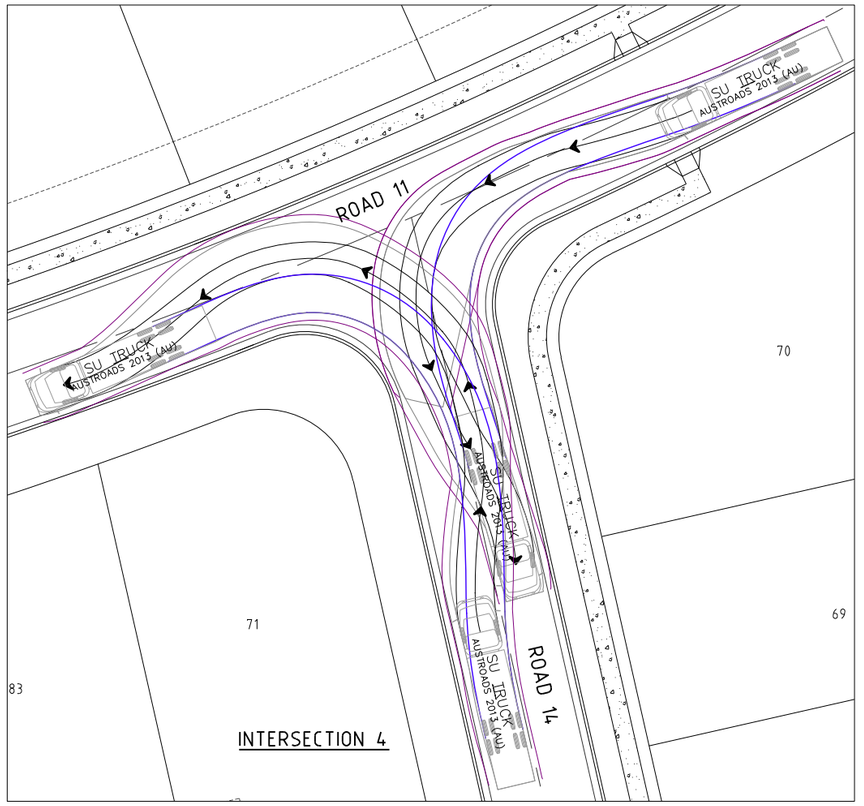


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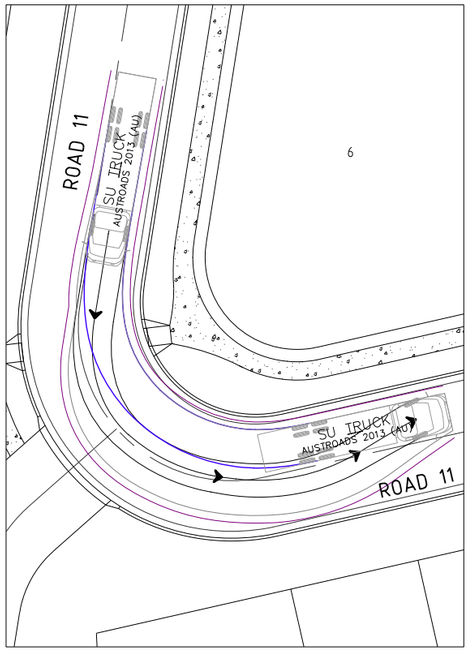
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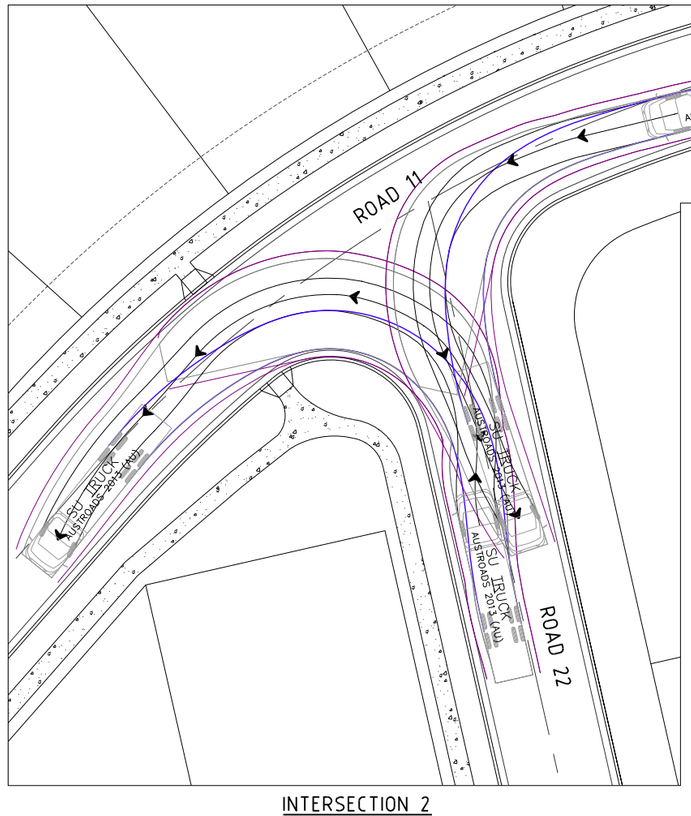
INTERSECTION 3



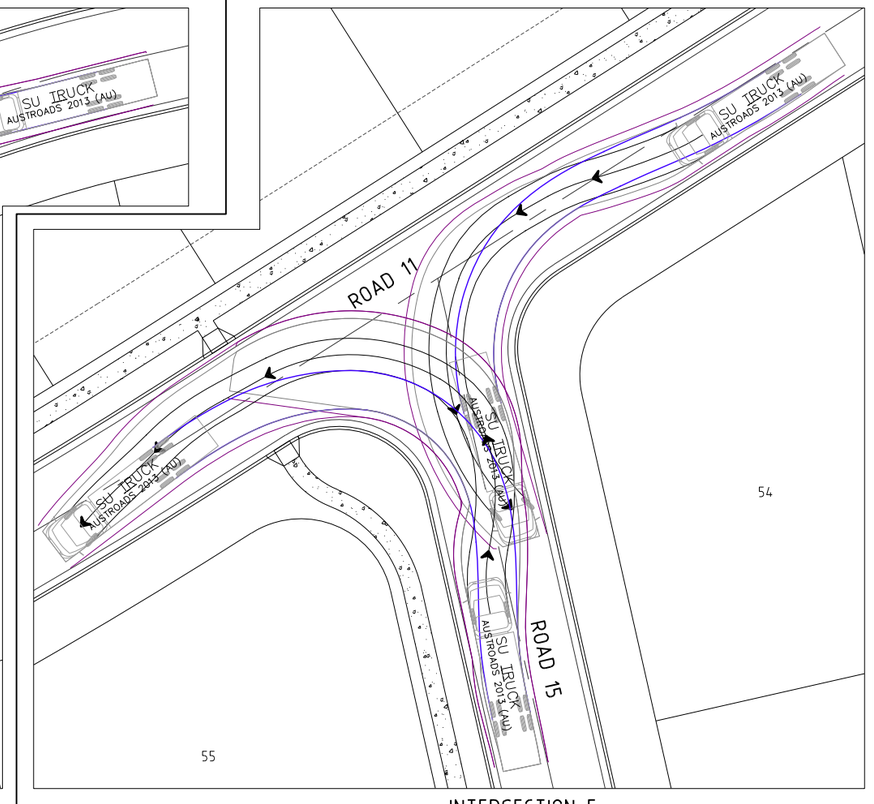
INTERSECTION 4



INTERSECTION 1



INTERSECTION 2



INTERSECTION 5

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 2 4 6 8 10m

Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER		
COUNCIL		
CONSTRUCTION		

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LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

PRECIINCT 5
STAGES 1,2 & 3
INTERSECTION ATURN
12.5m TRUCK
SHEET 1

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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DESIGNED	RB	DRAWN	JB
APPROVED		NER 906726	DATE 10-06-21

DRAWING NUMBER: 12301-P5-1,2&3-164 | AMEND.: A

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LEGEND

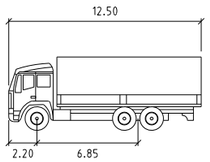
- BODY OF VEHICLE
- FRONT TIRES
- REAR TIRES
- 0.5m CLEARANCE FROM BODY OF VEHICLE

PAVEMENT MARKING LEGEND

- EDGE LINE - EL

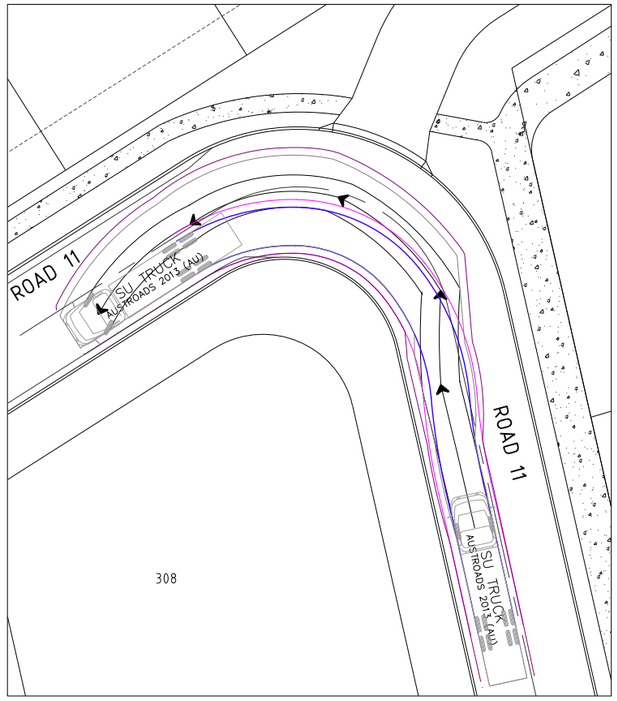
NOTE: REFER TO: RMS/TRANSPORT FOR NSW DELINEATION GUIDELINES FOR ALL LINEMARKING AND SIGN STANDARDS.

B

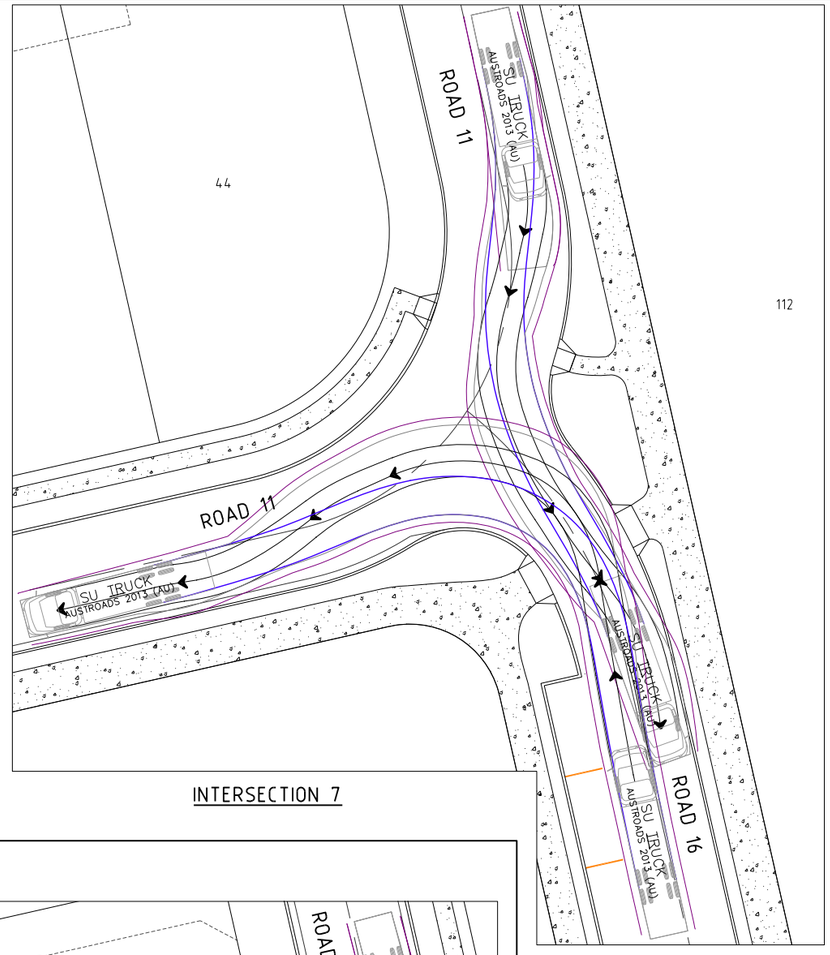


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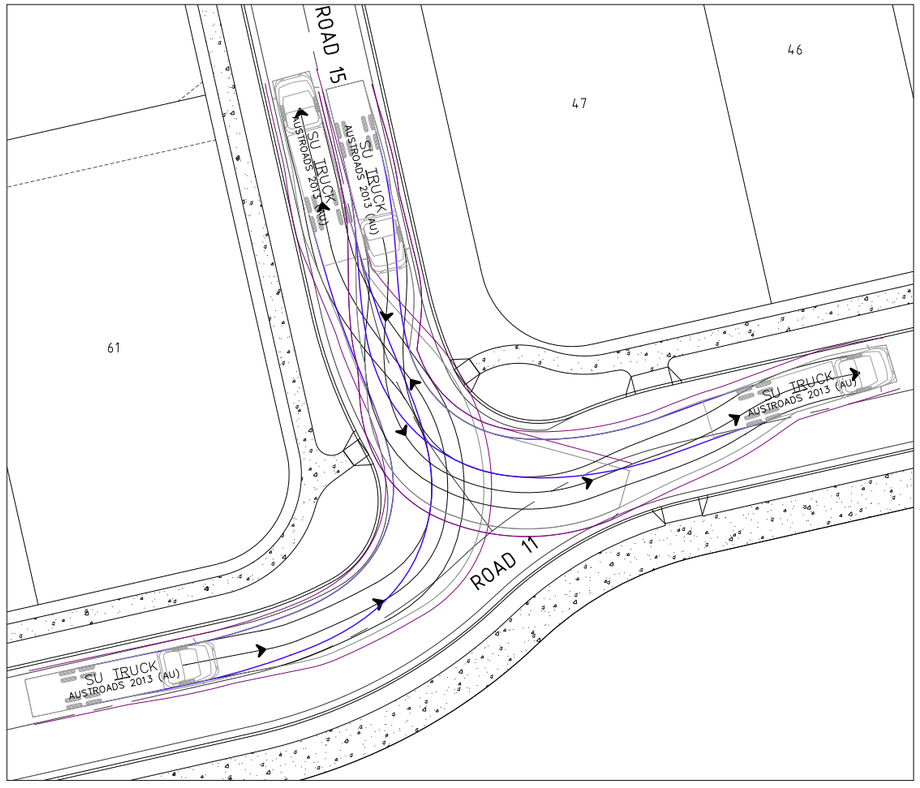
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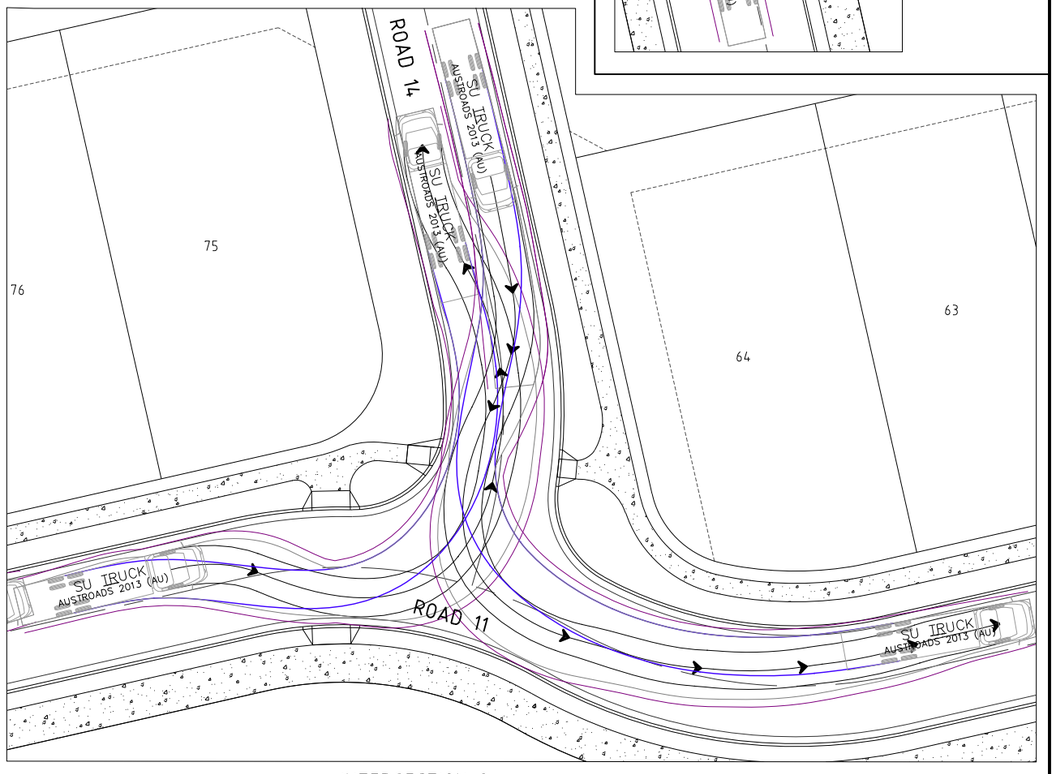
INTERSECTION 6



INTERSECTION 7



INTERSECTION 8



INTERSECTION 9

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER		
COUNCIL		
CONSTRUCTION		

PRE	DATE	AMENDMENT
B	06-09-21	LEGEND AMENDED
A	15-06-21	ISSUE FOR INFORMATION

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

PRECINCT 5
STAGES 1,2 & 3
INTERSECTION ATURN
12.5m TRUCK
SHEET 2

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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Gold Coast Office
Suite 9, 19 Short St
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DESIGNED	RB	DRAWN	JB
APPROVED		NER 906726	DATE 10-06-21

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-165	B

Y:\123 - Ledia Developments Pty Ltd\01 - Kings Forest\PRECI5\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-164.dwg, 6/10/2021 4:39:50 PM, 1:2

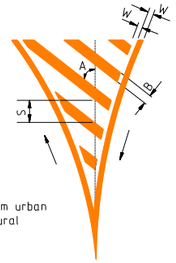
LEGEND

- BODY OF VEHICLE
- FRONT TIRES
- REAR TIRES
- 0.5m CLEARANCE FROM BODY OF VEHICLE

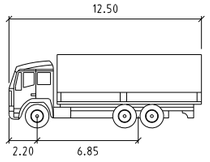
PAVEMENT MARKING LEGEND

- EDGE LINE - EL
- GIVE WAY LINE - GWL

NOTE: REFER TO: RMS/TRANSPORT FOR NSW DELINEATION GUIDELINES FOR ALL LINEMARKING AND SIGN STANDARDS.

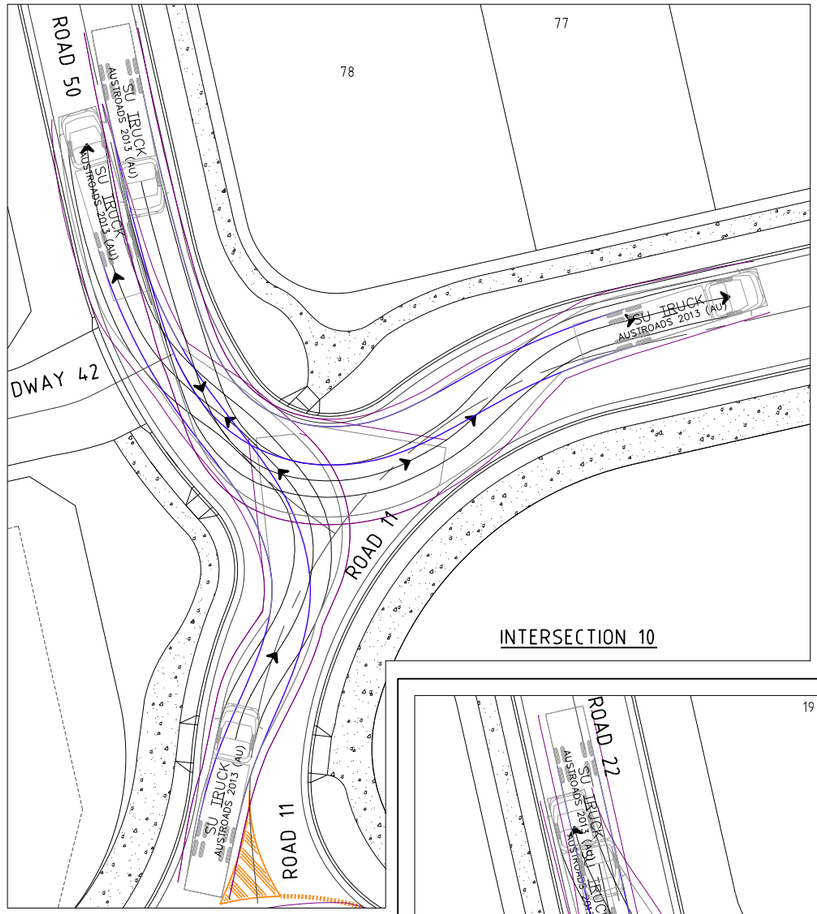


Angle A = 45° urban
30°rural
B = 1.0m min
S = 1.5m to 5m urban
3m min rural
W = 150mm

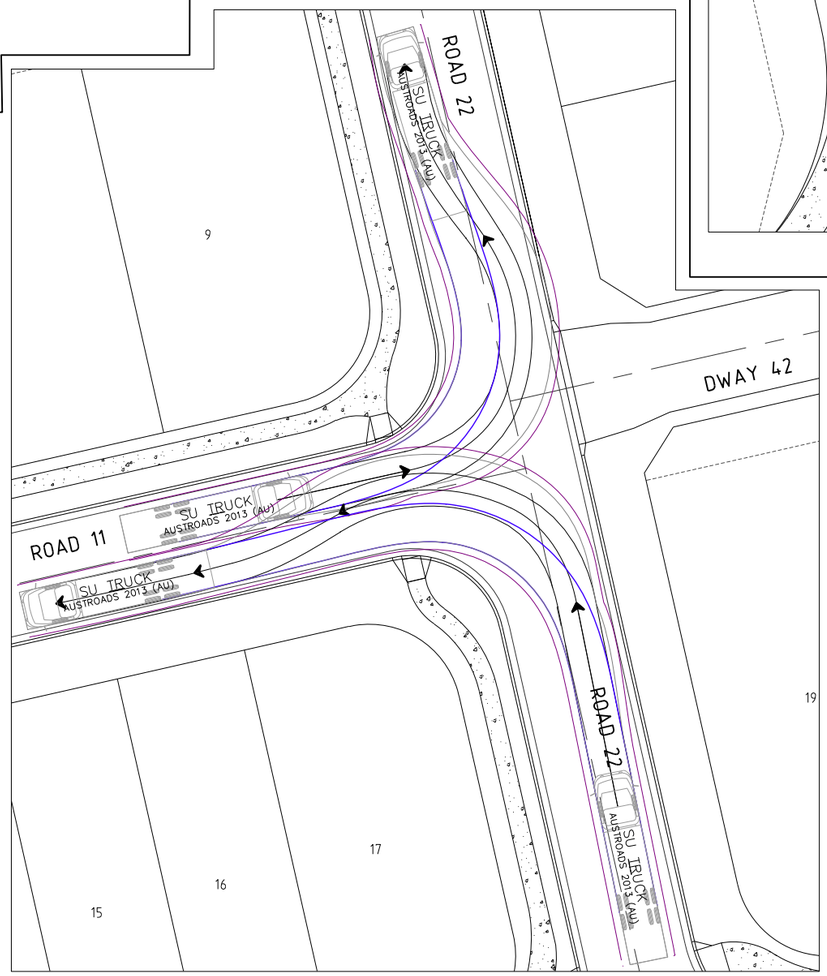


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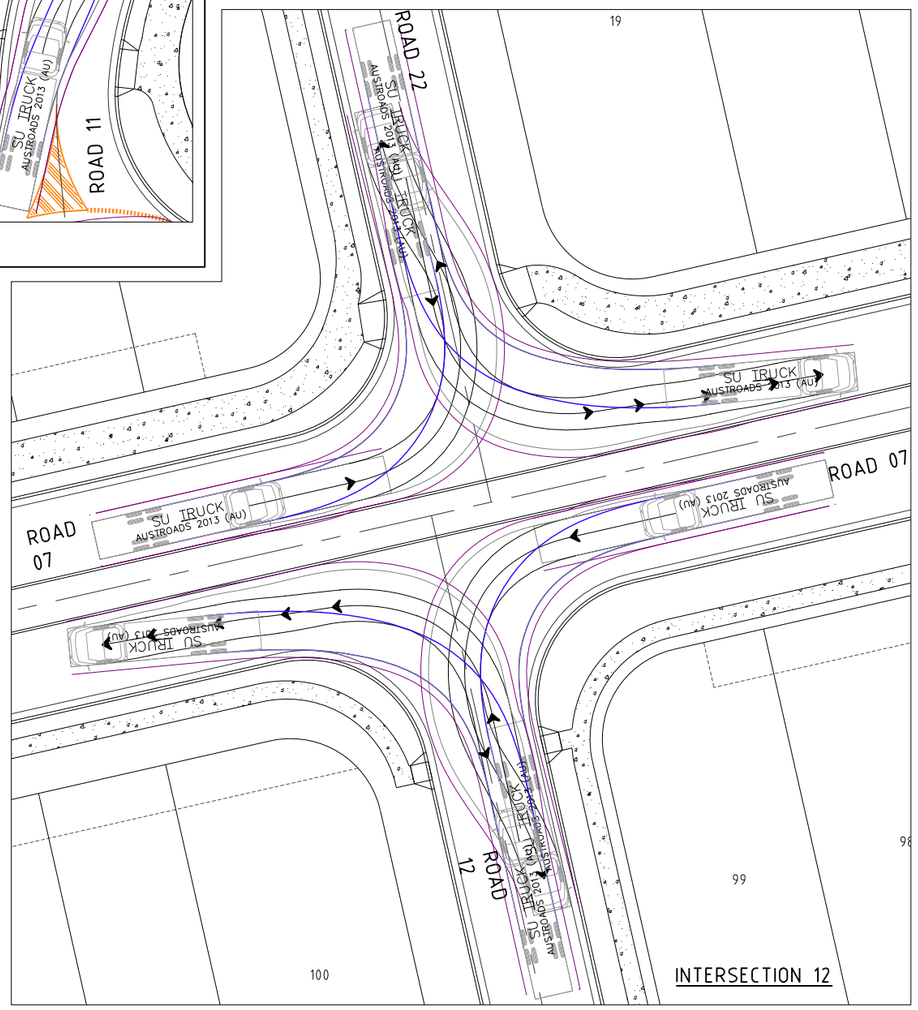
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Lock to Lock Time	6.0
Steering Angle	36.7



INTERSECTION 10



INTERSECTION 11



INTERSECTION 12

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER		
COUNCIL		
CONSTRUCTION		

PRE	DATE	AMENDMENT
A	15-06-21	ISSUE FOR INFORMATION

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

PRECINCT 5
STAGES 1,2 & 3
INTERSECTION ATURN
12.5m TRUCK
SHEET 3

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As:
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Gold Coast Office
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Southport QLD 4215

DESIGNED	RB	DRAWN	JB
APPROVED		NER 906726	DATE 10-06-21

DRAWING NUMBER: 12301-P5-1,2&3-166
AMEND.: A

Y:\123 - Leda Developments Pty Ltd\01 - Kings Forest\PREC5\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-166.dwg, 6/10/2021 4:40:03 PM, 1:2

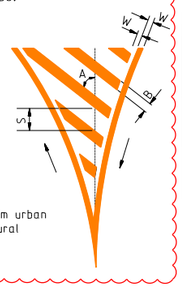
LEGEND

- BODY OF VEHICLE
- FRONT TIRES
- REAR TIRES
- 0.5m CLEARANCE FROM BODY OF VEHICLE

PAVEMENT MARKING LEGEND

- EDGE LINE - EL
- GIVE WAY LINE - GWL

NOTE: REFER TO RMS/TRANSPORT FOR NSW DELINEATION GUIDELINES FOR ALL LINEMARKING AND SIGN STANDARDS.

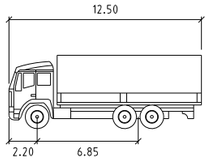


Angle A = 45° urban
30°rural

B = 1.0m min

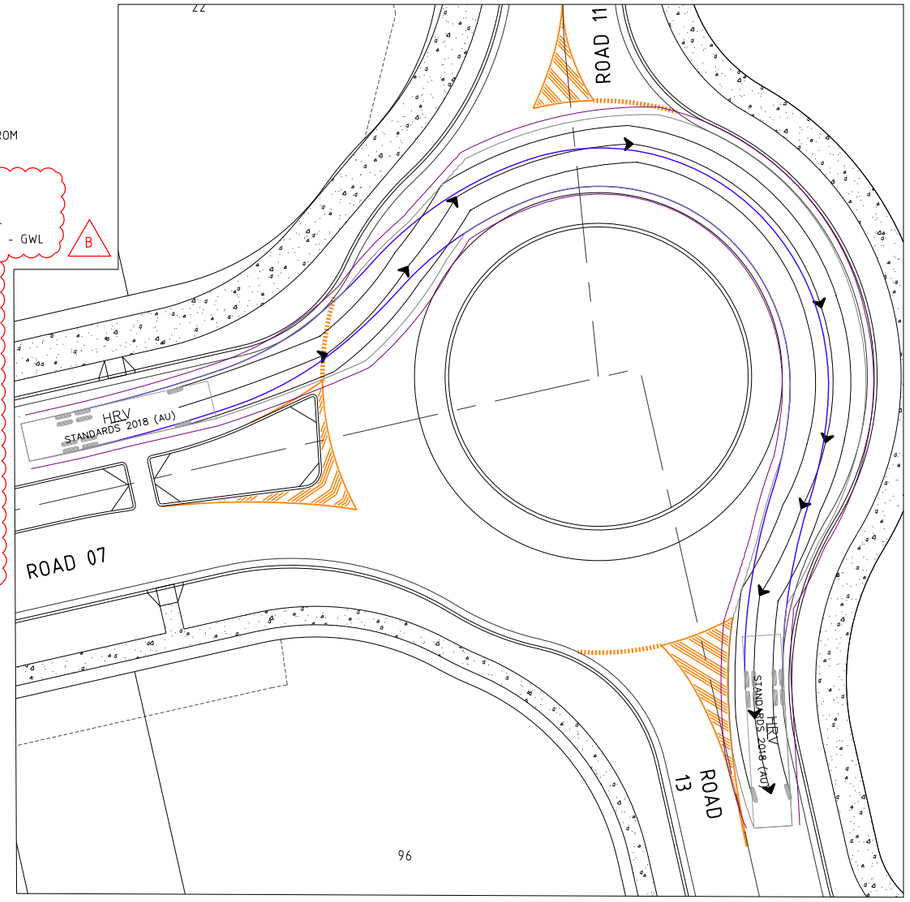
S = 1.5m to 5m urban
3m min rural

W = 150mm

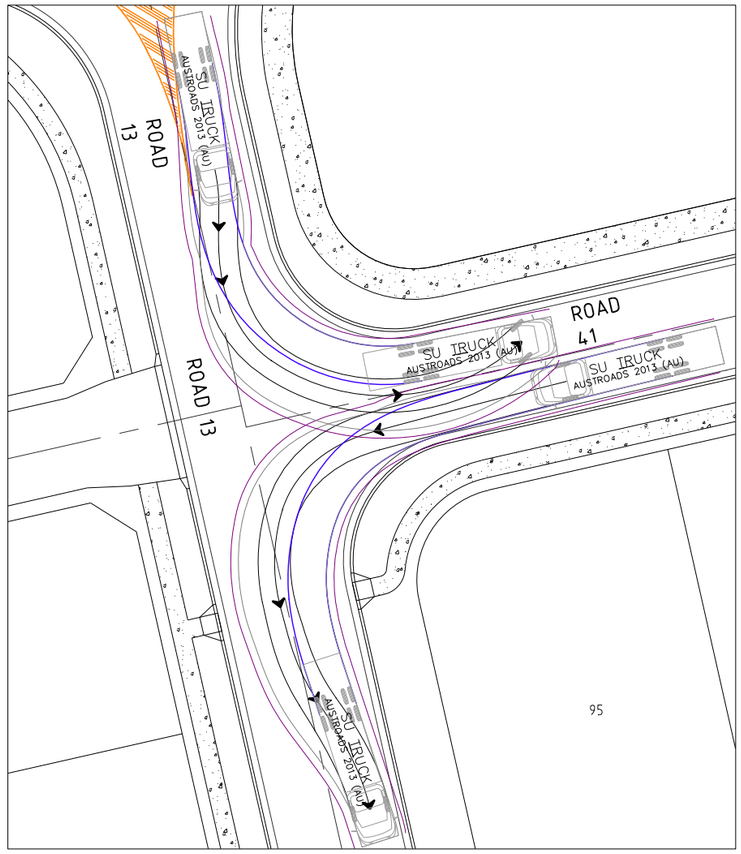


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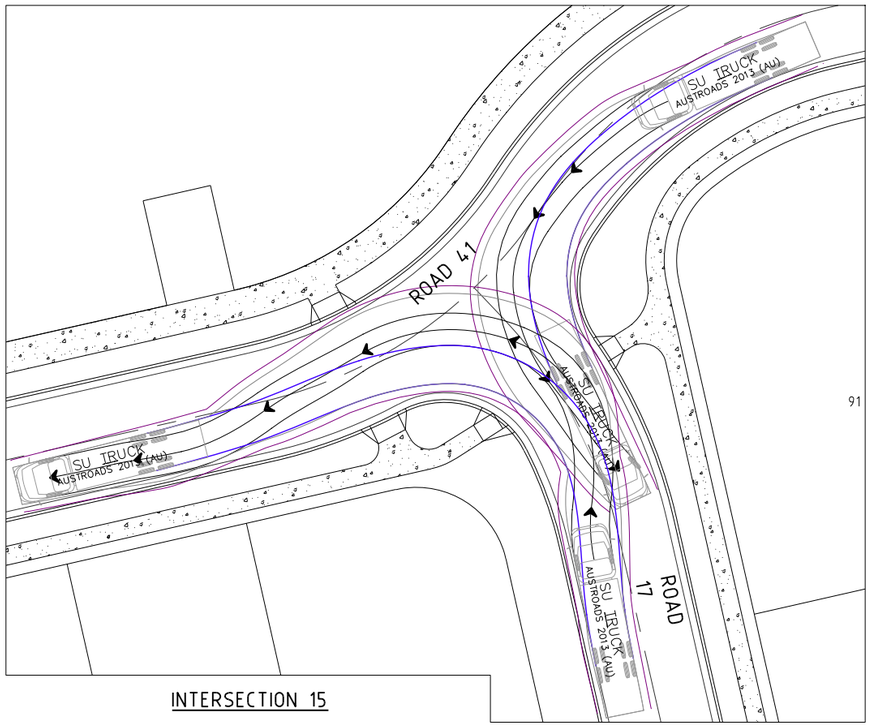
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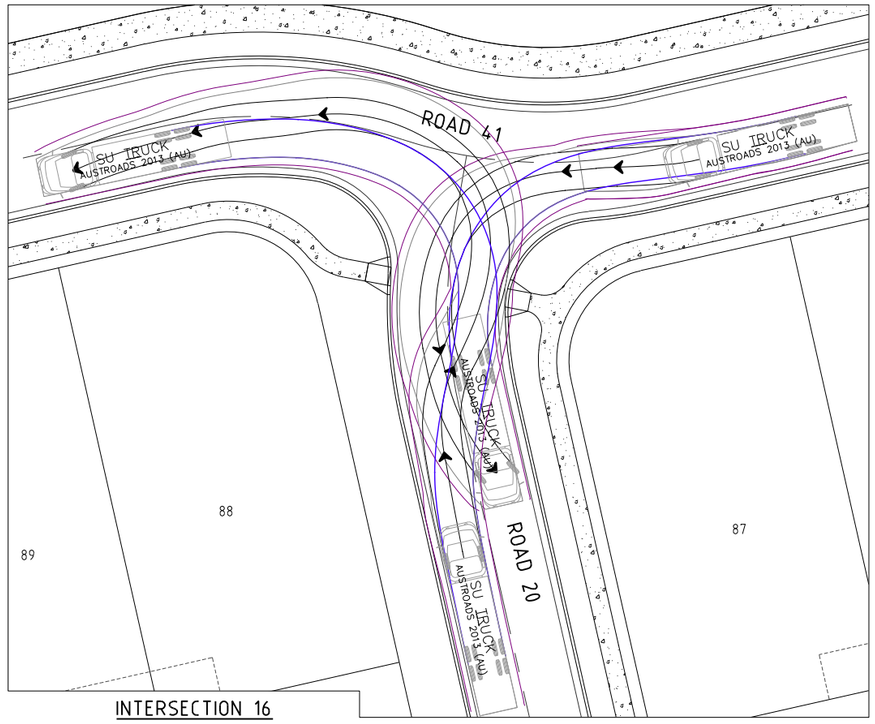
INTERSECTION 13



INTERSECTION 14



INTERSECTION 15



INTERSECTION 16

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER		
COUNCIL		
CONSTRUCTION		

PRE	DATE	AMENDMENT
B	06-09-21	LEGEND AMENDED
A	15-06-21	ISSUE FOR INFORMATION

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

PRECINCT 5
STAGES 1,2 & 3
INTERSECTION ATURN
12.5m TRUCK
SHEET 4

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As
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mortons@urbansolutions.net.au
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Fax 07 5571 1088
Postal Address
PO Box 2484
Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	JB
APPROVED		NER 906726	DATE 10-06-21

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-167	B

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LEGEND

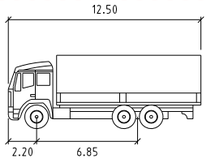
- BODY OF VEHICLE
- FRONT TIRES
- REAR TIRES
- 0.5m CLEARANCE FROM BODY OF VEHICLE

PAVEMENT MARKING LEGEND

- EDGE LINE - EL

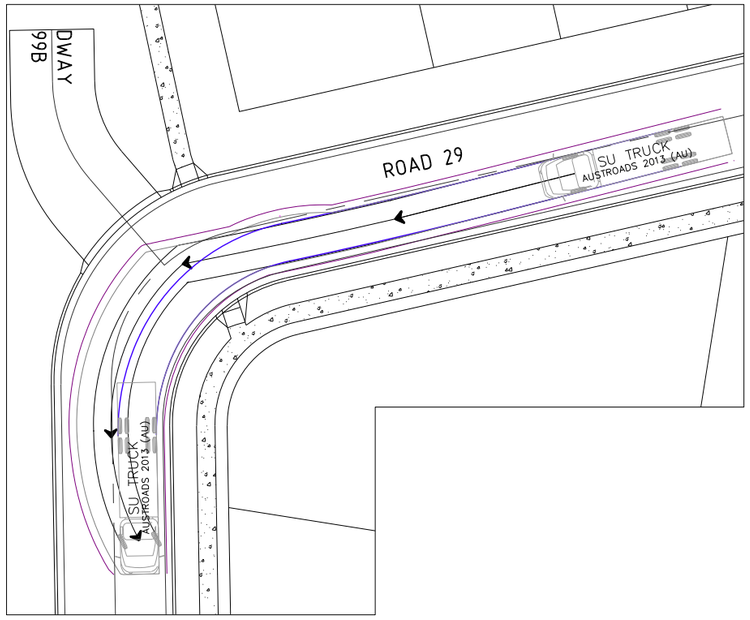
NOTE: REFER TO: RMS/TRANSPORT FOR NSW DELINEATION GUIDELINES FOR ALL LINEMARKING AND SIGN STANDARDS.

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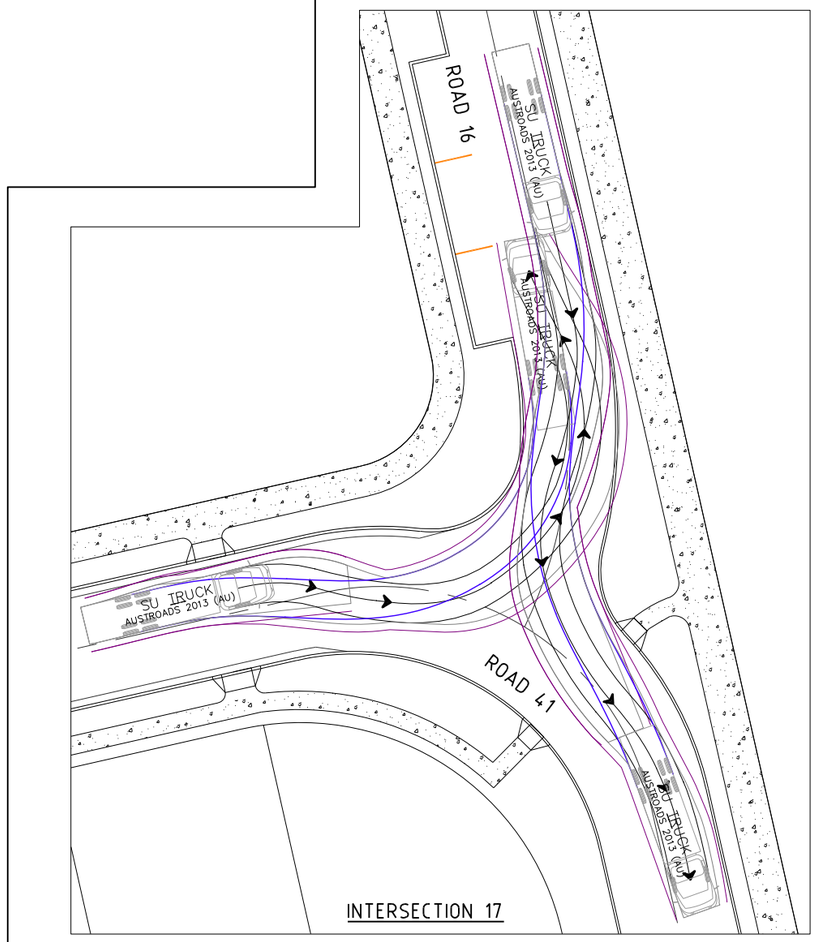


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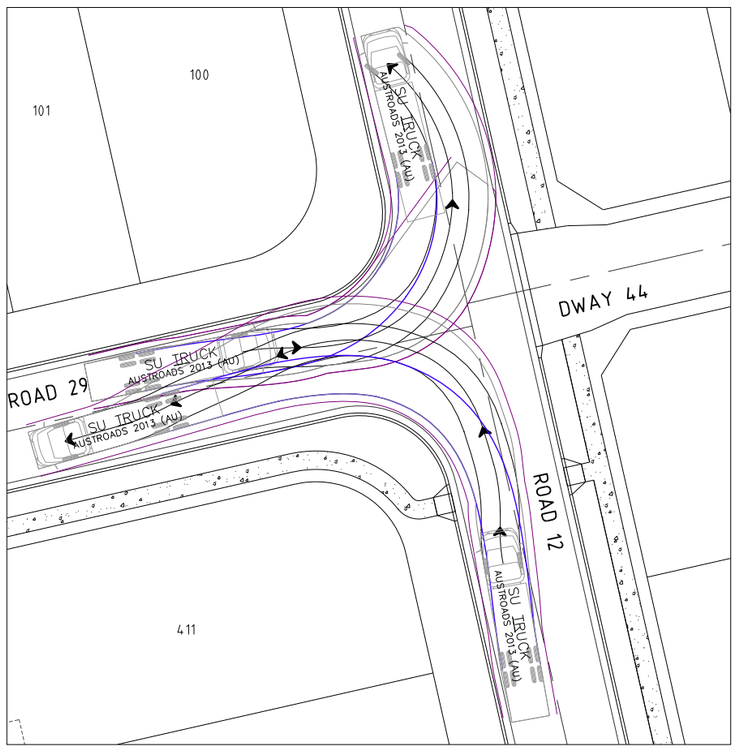
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INTERSECTION 19



INTERSECTION 17



INTERSECTION 18

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER		
COUNCIL		
CONSTRUCTION		

PRE	DATE	AMENDMENT
B	06-09-21	LEGEND AMENDED
A	30-06-21	ISSUE FOR INFORMATION

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

PRECINCT 5
STAGES 1,2 & 3
INTERSECTION ATURN
12.5m TRUCK
SHEET 5

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
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ABN 39 116 375 065
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Postal Address
PO Box 2484
Southport QLD 4215

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

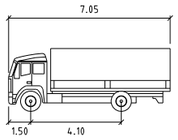
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APPROVED		NER 906726	DATE 10-06-21

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-168	A

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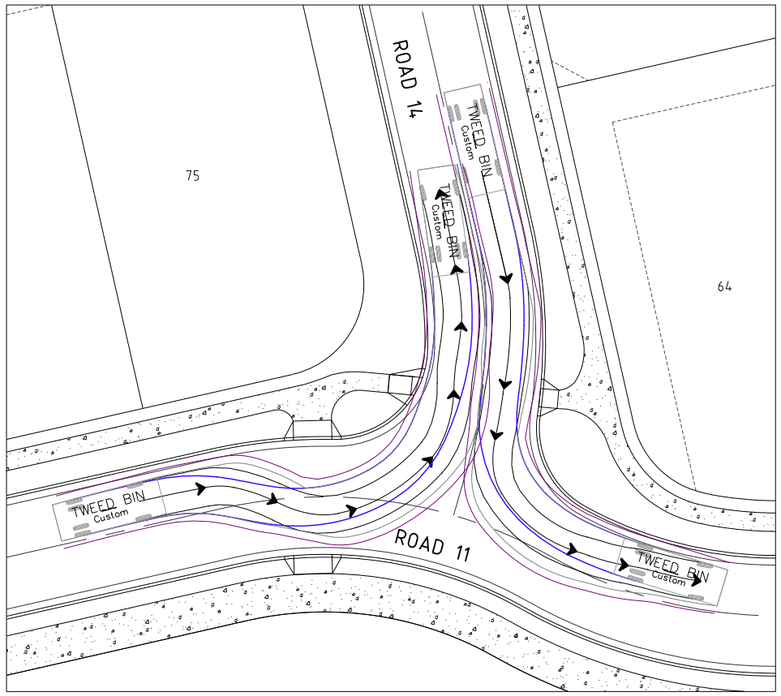
LEGEND

- BODY OF VEHICLE
- FRONT TIRES
- REAR TIRES
- 0.5m CLEARANCE FROM BODY OF VEHICLE

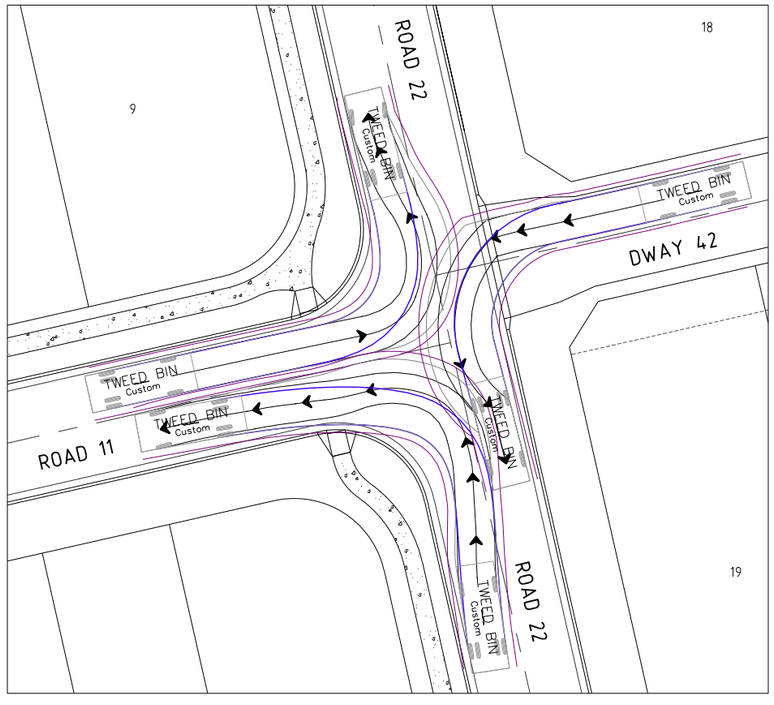


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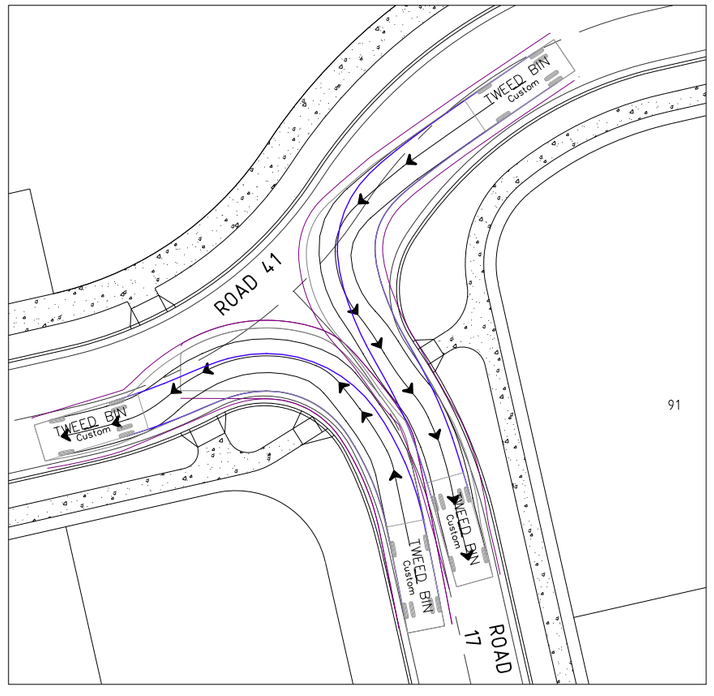
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Lock to Lock Time	: 3.0
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INTERSECTION 9



INTERSECTION 11



INTERSECTION 15

PROJECT NAME

KINGS FOREST

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER		
COUNCIL		
CONSTRUCTION		

PRE	DATE	AMENDMENT
A	30-06-21	ISSUE FOR INFORMATION

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ASSOCIATED CONSULTANTS

LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

PRECINCT 5
STAGES 1,2 & 3
INTERSECTION ATURN
GARBAGE TRUCK
SHEET 5

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
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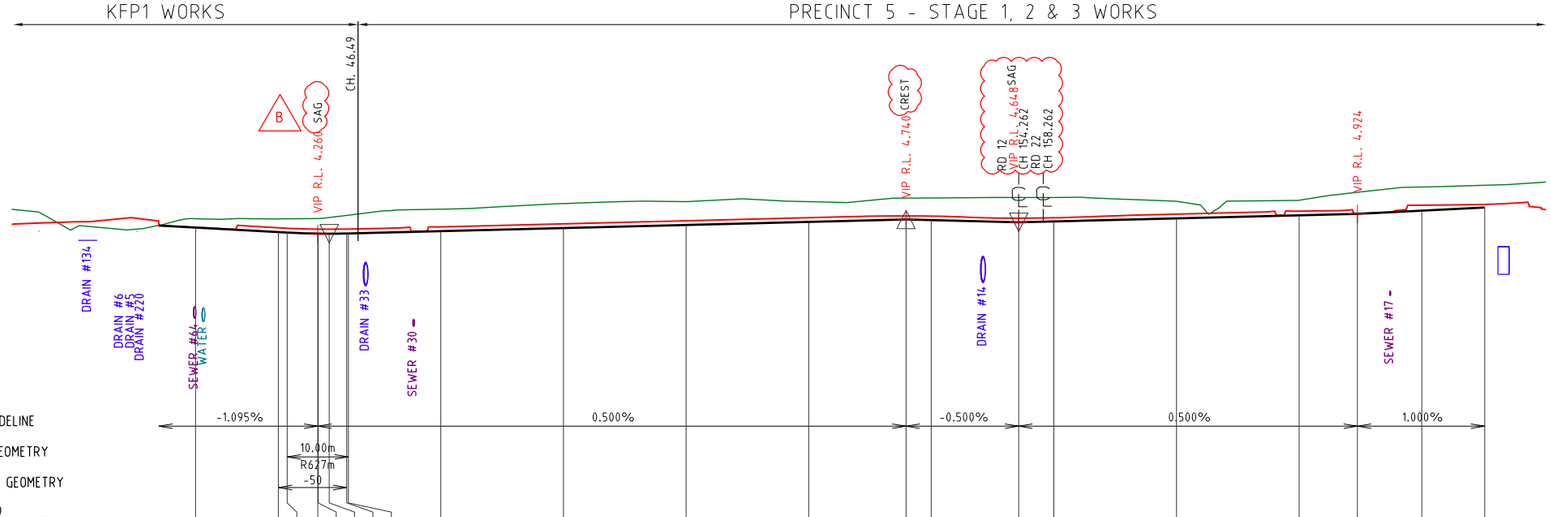
DESIGNED	RB	DRAWN	JB
APPROVED		NER 906726	DATE 10-06-21

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-169	A

Y:\123 - Leda Developments Pty Ltd\01 - Kings Forest\PREC5\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-169.dwg, 6/10/2021 4:40:45 PM, 1:2

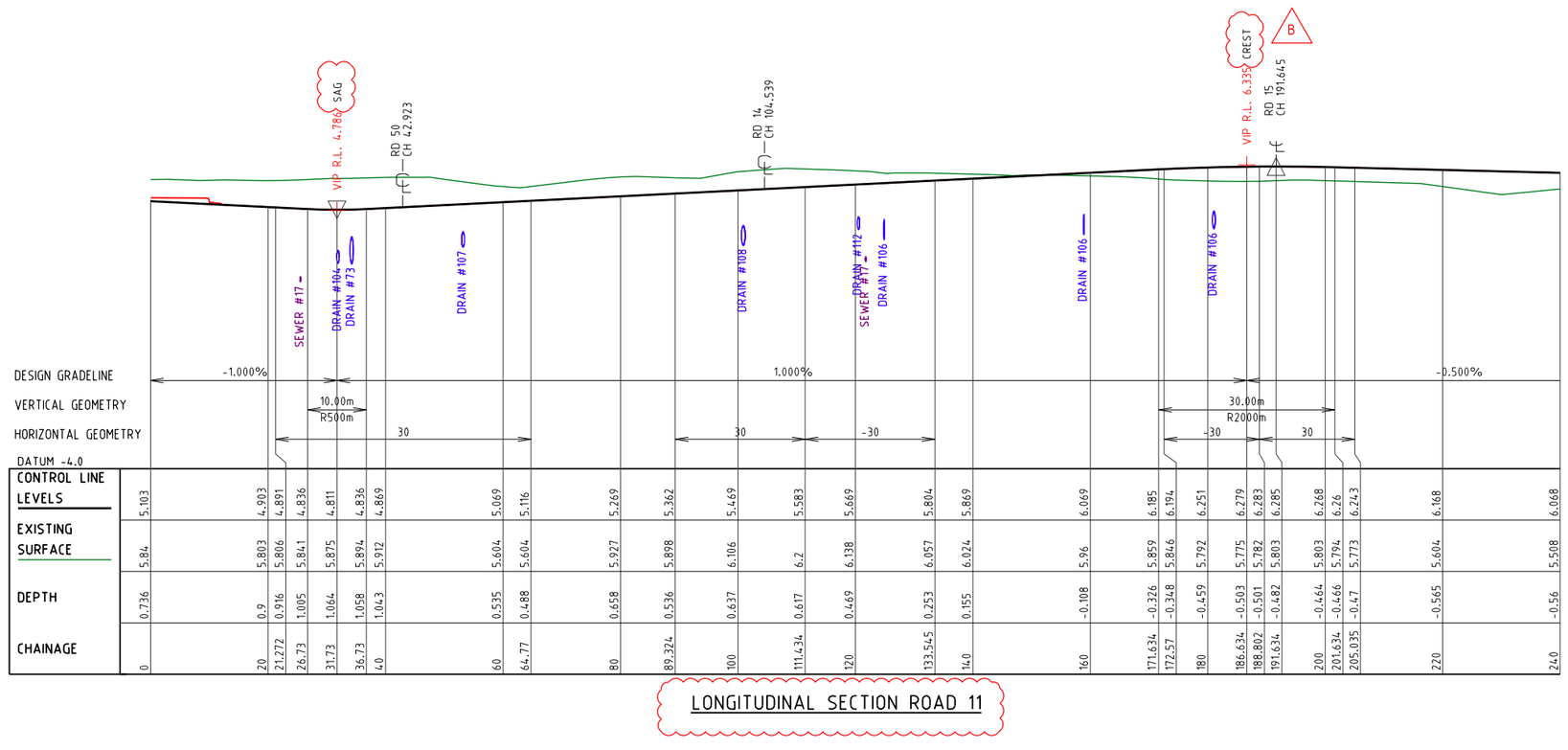
KFP1 WORKS

PRECINCT 5 - STAGE 1, 2 & 3 WORKS



| | | |

PRECINCT 5 - STAGE 1, 2 & 3 WORKS



LONGITUDINAL SECTION ROAD 11

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	02-08-21	NOTES ADDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
LONGITUDINAL SECTION
ROAD 11
SHEET 1 OF 4

CONSTRUCTION ISSUE

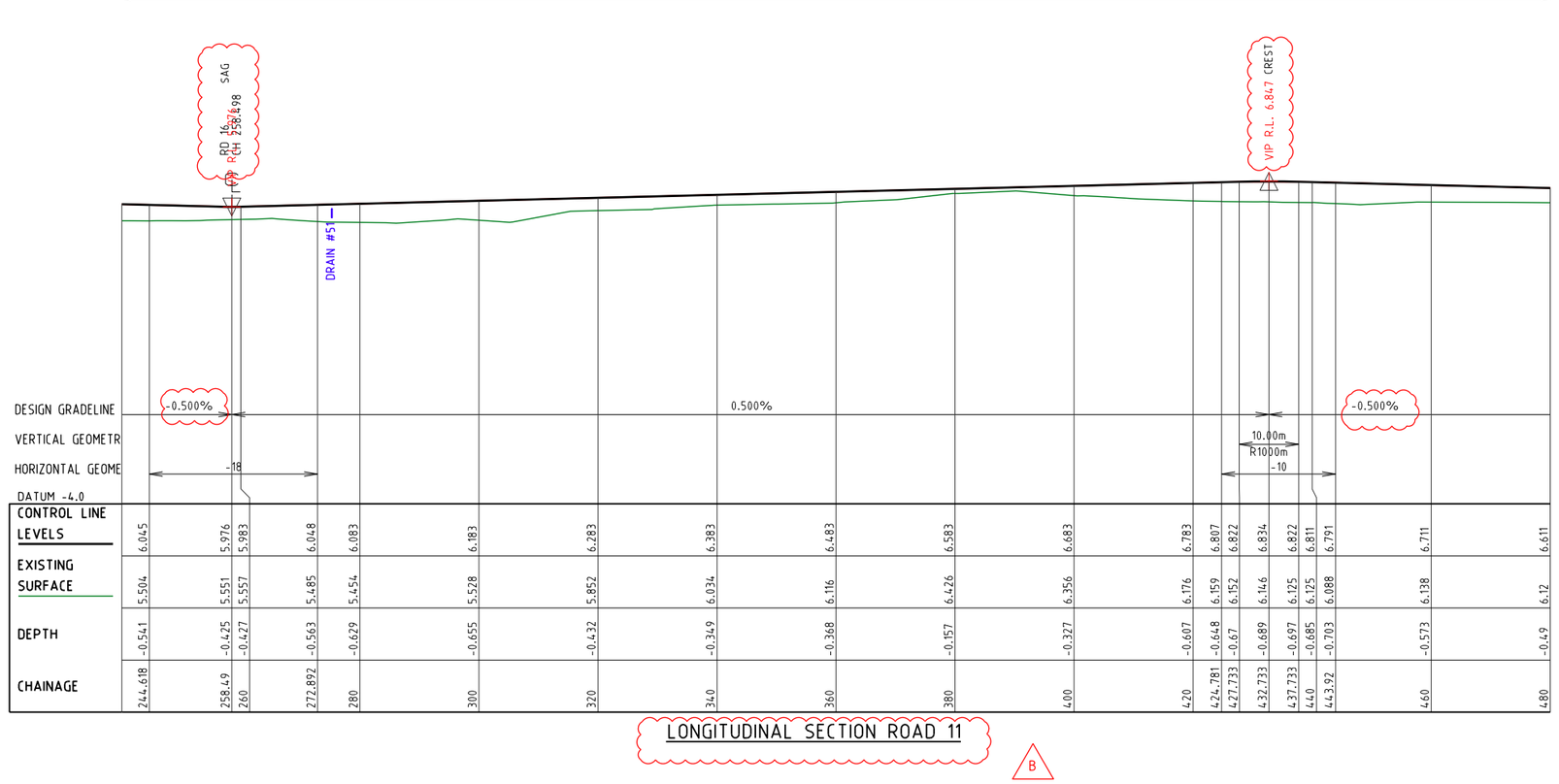
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Project Coordination
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Fax 07 5571 1088
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Southport QLD 4215
Gold Coast Office
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Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-201
AMEND.: B

Y:\123 - Leda Developments Pty Ltd\01 - Kings Forest\PRECI5\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-200.dwg, 6/10/2021 4:41:04 PM, 1:2

PRECINCT 5 - STAGE 1, 2 & 3 WORKS



LONGITUDINAL SECTION ROAD 11

B

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	02-08-21	NOTE ADDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
LONGITUDINAL SECTION
ROAD 11
SHEET 2 OF 4

CONSTRUCTION ISSUE

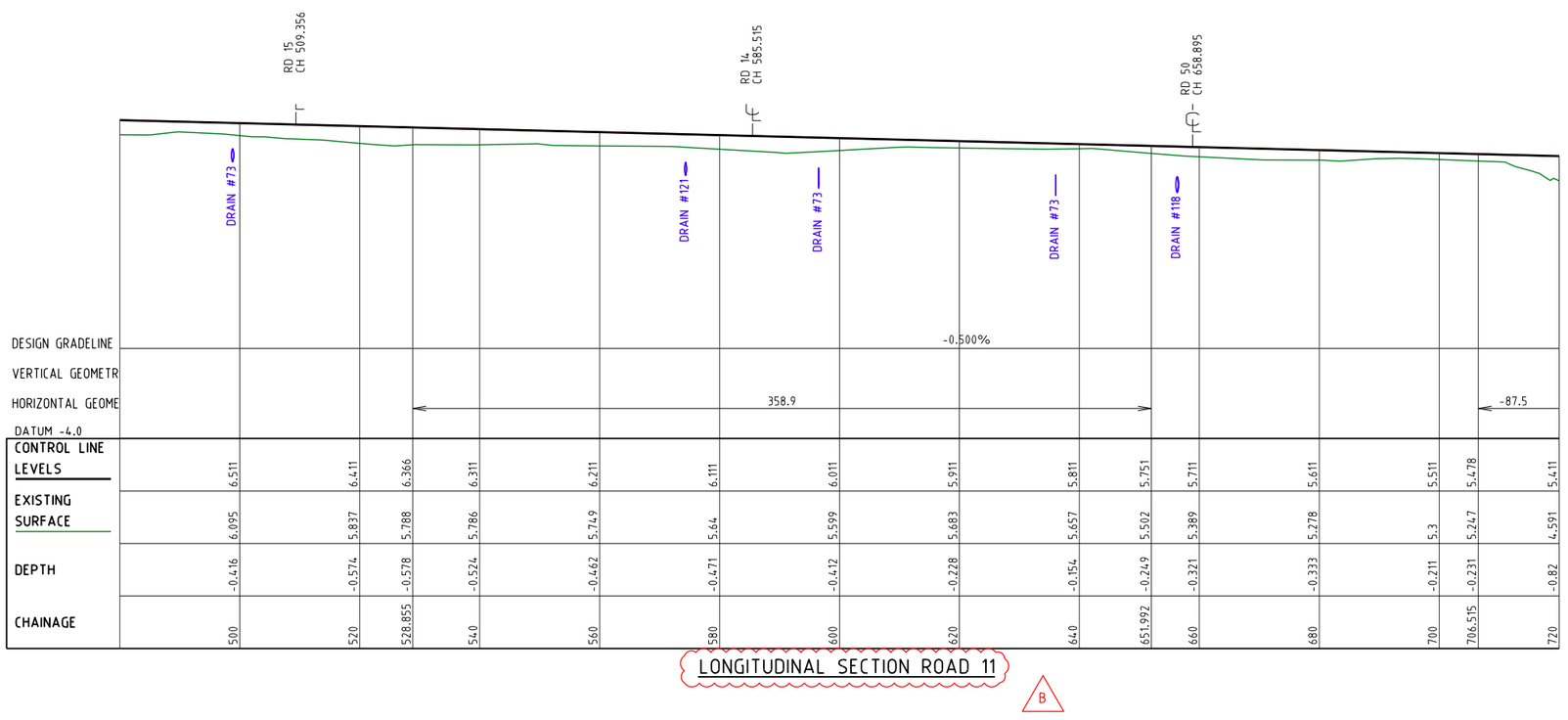
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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-202
AMEND.: B

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PRECINCT 5 - STAGE 1, 2 & 3 WORKS



LONGITUDINAL SECTION ROAD 11

B

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	04-08-21	LABEL AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
LONGITUDINAL SECTION
ROAD 11
SHEET 3 OF 4

CONSTRUCTION ISSUE

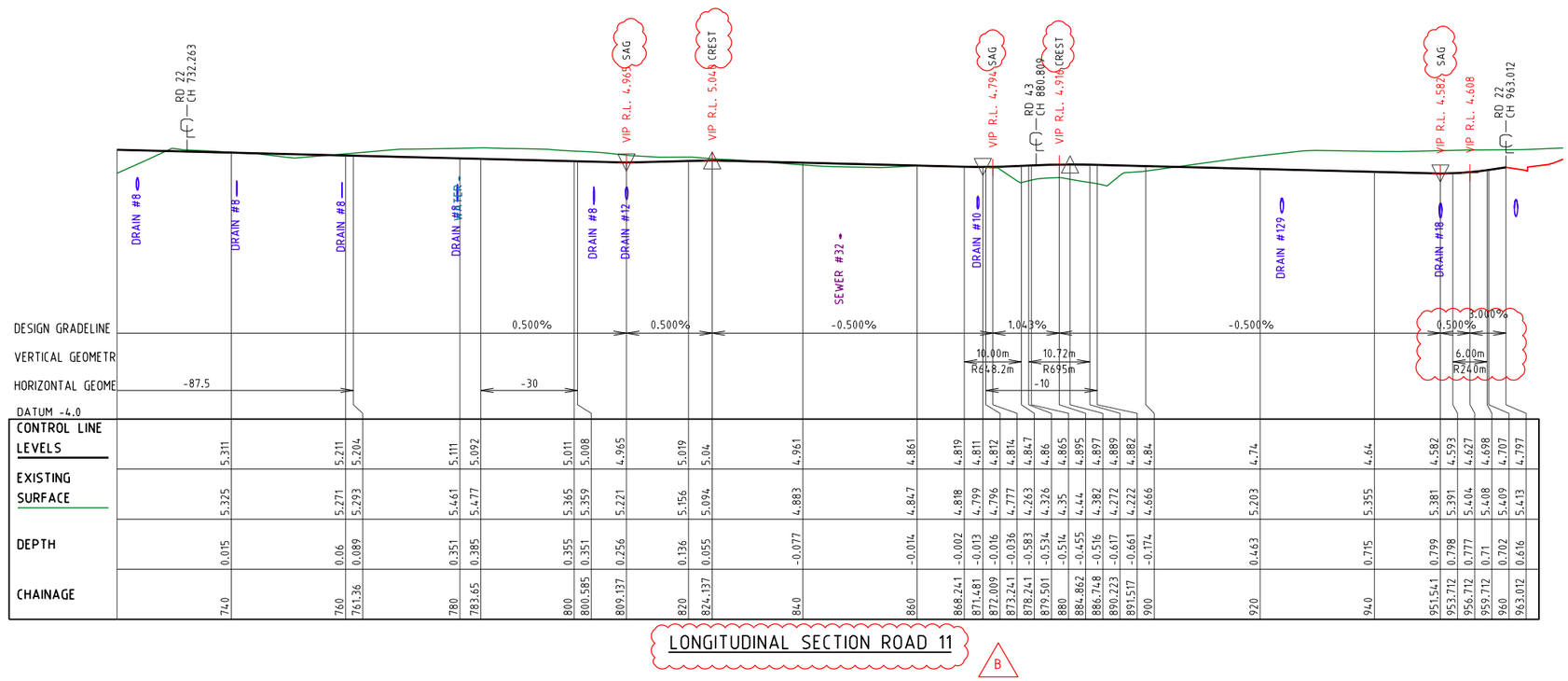
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Southport QLD 4215

DESIGNED RB	DRAWN CB	
APPROVED	NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-203
AMEND.: B

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PRECINCT 5 - STAGE 1, 2 & 3 WORKS



CONTROL LINE LEVELS	5.311	5.211	5.204	5.111	5.092	5.011	5.008	4.965	5.019	5.04	4.961	4.861	4.819	4.811	4.812	4.814	4.847	4.865	4.895	4.897	4.889	4.882	4.84	4.74	4.64	4.582	4.593	4.627	4.698	4.707	4.797
EXISTING SURFACE	5.325	5.271	5.293	5.461	5.477	5.365	5.359	5.221	5.156	5.094	4.883	4.847	4.818	4.799	4.796	4.777	4.263	4.326	4.35	4.44	4.382	4.272	4.222	4.666	5.203	5.355	5.381	5.391	5.404	5.408	5.409	5.413
DEPTH	0.015	0.06	0.089	0.351	0.385	0.355	0.351	0.256	0.136	0.055	-0.077	-0.014	-0.002	-0.013	-0.016	-0.036	-0.583	-0.534	-0.514	-0.455	-0.516	-0.617	-0.661	-0.174	0.463	0.715	0.799	0.798	0.777	0.71	0.702	0.616
CHAINAGE	740	760	761.36	780	783.65	800	800.585	809.137	820	824.137	840	860	868.241	871.481	872.009	873.241	878.241	879.501	880	884.862	886.748	890.223	891.517	900	920	940	951.541	953.712	956.712	959.712	960	963.012

LONGITUDINAL SECTION ROAD 11

B

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	02-08-21	NOTE ADDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
LONGITUDINAL SECTION
ROAD 11
SHEET 4 OF 4

CONSTRUCTION ISSUE

MORTONS urbansolutions
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Civil Engineering
Project Coordination

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Fax 07 5571 1088

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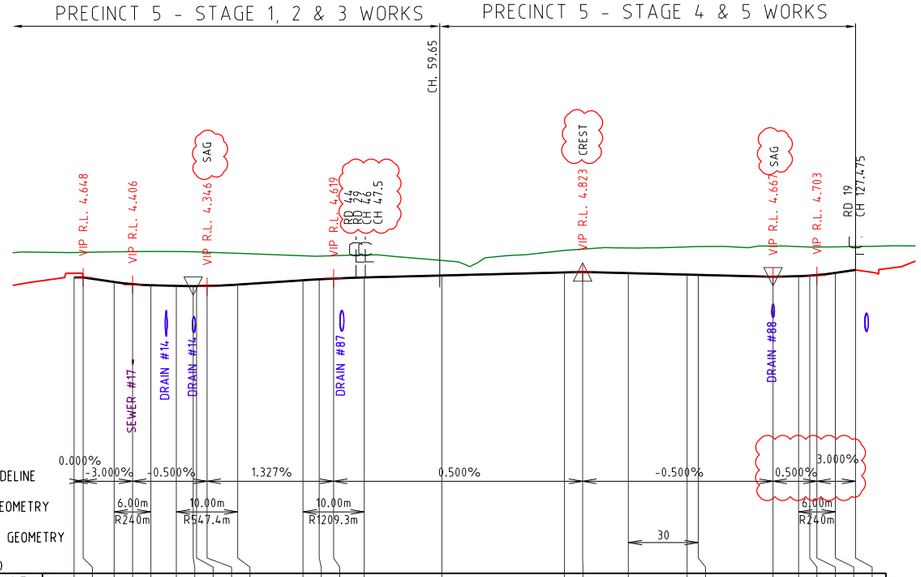
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APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-204	B

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PRECINCT 5 - STAGE 1, 2 & 3 WORKS

PRECINCT 5 - STAGE 4 & 5 WORKS

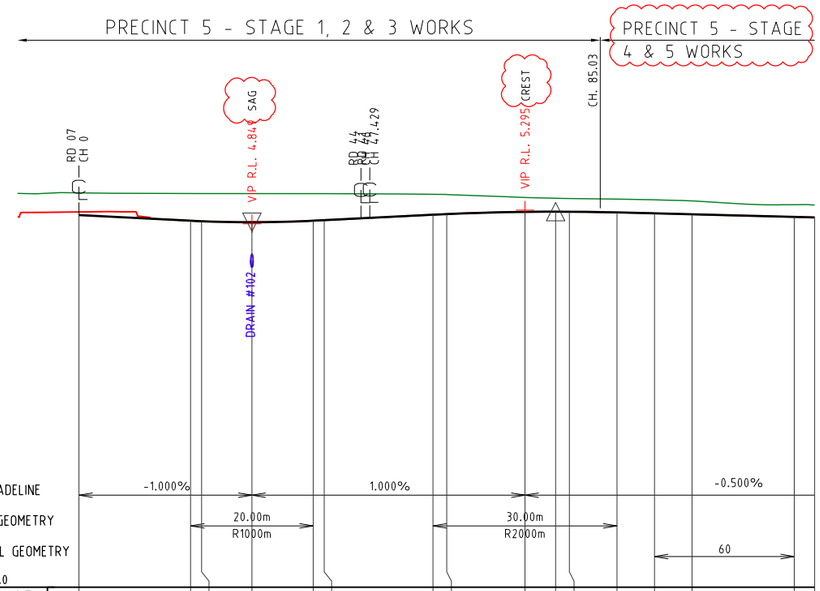


CONTROL LINE LEVELS	4.648	4.648	4.496	4.425	4.391	4.371	4.364	4.368	4.412	4.553	4.586	4.609	4.644	4.708	4.808	4.823	4.785	4.737	4.728	4.667	4.688	4.704	4.722	4.793	4.892
EXISTING SURFACE	5.456	5.463	5.481	5.489	5.488	5.487	5.482	5.478	5.466	5.431	5.354	5.339	5.354	5.381	5.199	5.528	5.568	5.606	5.642	5.652	5.67	5.651	5.638	5.637	5.643	5.653
DEPTH	0.809	0.815	0.985	1.064	1.097	1.116	1.118	1.114	1.097	1.019	0.801	0.754	0.745	0.736	0.491	0.72	0.746	0.82	0.905	0.924	1.003	0.963	0.933	0.916	0.85	0.761
CHAINAGE	0	1.5	6.55	9.55	12.55	16.697	19.434	20	21.697	26.697	37.337	40	42.337	47.337	60	80	82.953	90.415	100	101.815	114.016	118.175	120	121.175	124.175	127.475

LONGITUDINAL SECTION ROAD 12

PRECINCT 5 - STAGE 1, 2 & 3 WORKS

PRECINCT 5 - STAGE 4 & 5 WORKS



CONTROL LINE LEVELS	5.132		4.949	4.933	4.899	4.949	4.967		5.145	5.166		5.238	5.245	5.243	5.22		5.189	5.158		5.075	5.058
EXISTING SURFACE	5.856		5.837	5.836	5.834	5.83	5.83		5.811	5.803		5.711	5.685	5.673	5.652		5.63	5.596		5.472	5.457
DEPTH	0.725		0.887	0.903	0.935	0.881	0.862		0.666	0.637		0.472	0.44	0.429	0.432		0.441	0.438		0.397	0.399
CHAINAGE	0		18.22	20	28.22	38.22	40		57.751	60		72.751	77.751	80	87.751		93.869	100		116.669	120

LONGITUDINAL SECTION ROAD 13

B

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	02-08-21	NOTES ADDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
LONGITUDINAL SECTION
ROAD 12 & 13

CONSTRUCTION ISSUE

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Civil Engineering
Project Coordination

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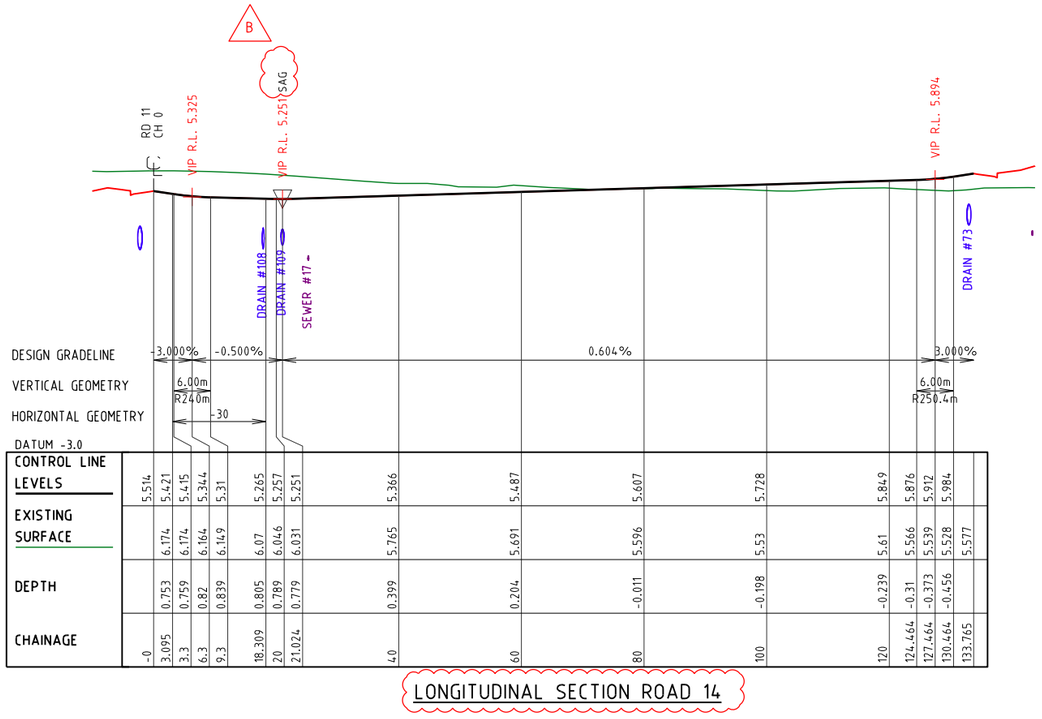
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Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-205	B

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PRECINCT 5 - STAGE 1, 2 & 3 WORKS



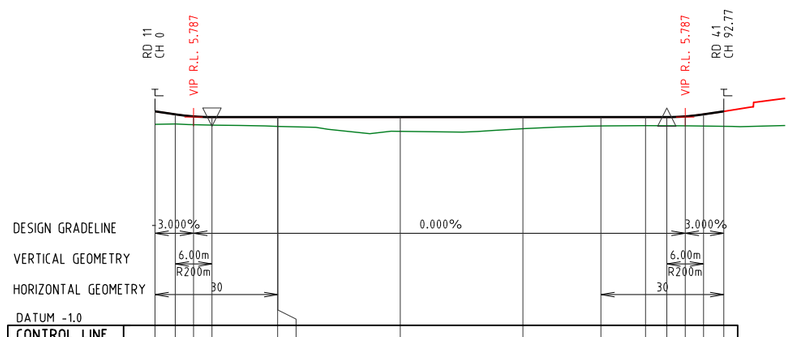
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PRECINCT 5 - STAGE 1, 2 & 3 WORKS

CONTROL LINE LEVELS	6.285	6.186	6.146	6.115	6.081	6.042	6.03	6.033	6.133	6.233	6.333	6.432	6.431	6.331	6.231	6.216	6.26	6.294	6.365	6.434	6.464	6.464
EXISTING SURFACE		5.822	5.827	5.83	5.845	5.877	5.878	5.878	6.007	6.066	6.005	5.879	5.878	5.887	6.185	6.263	6.138	6.104	6.053	6.003	5.982	
DEPTH		-0.364	-0.319	-0.285	-0.236	-0.164	-0.152	-0.154	-0.126	-0.166	-0.327	-0.553	-0.553	-0.444	-0.046	0.047	-0.122	-0.19	-0.312	-0.431	-0.482	
CHAINAGE	-0	3.3	4.781	6.3	9.3	17.194	19.489	20	40	60	80	99.857	100	120	140	142.973	151.688	154.688	157.688	160	160.987	160.988

LONGITUDINAL SECTION ROAD 15

PRECINCT 5 - STAGE 1, 2 & 3 WORKS



CONTROL LINE LEVELS	5.976	5.877	5.809	5.787	5.787	5.787	5.787	5.787	5.787	5.787	5.787	5.787	5.787	5.809	5.877	5.976
EXISTING SURFACE	5.551	5.566	5.536	5.53	5.485	5.485	5.322	5.407	5.499	5.51	5.509	5.498	5.498	5.489		
DEPTH	-0.425	-0.311	-0.273	-0.257	-0.302	-0.302	-0.464	-0.38	-0.288	-0.277	-0.278	-0.311	-0.379	-0.487		
CHAINAGE	0	3.3	6.3	9.3	20	20.051	40	60	72.719	80	83.47	86.47	89.47	92.77		

LONGITUDINAL SECTION ROAD 16

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	02-08-21	NOTES ADDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
LONGITUDINAL SECTION
ROAD 15 & 16

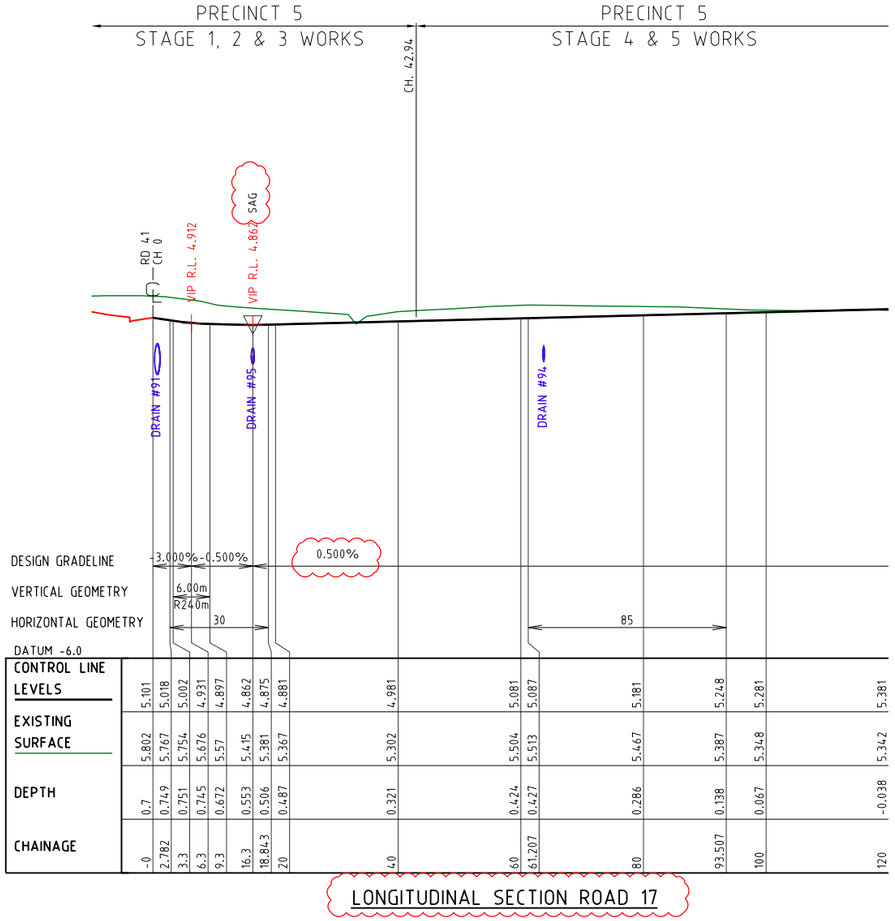
CONSTRUCTION ISSUE

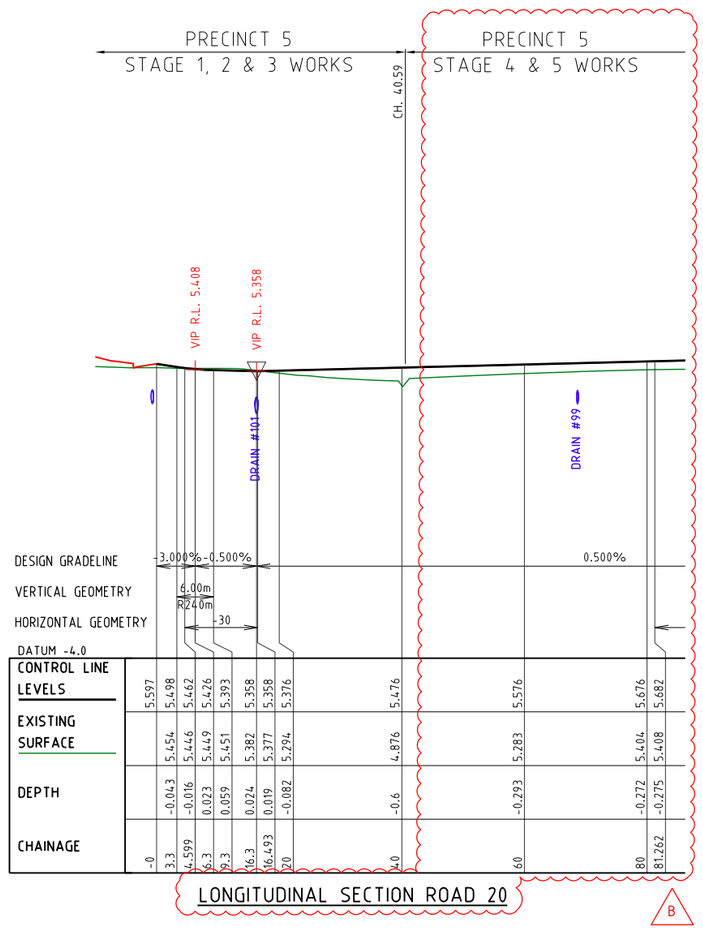
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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-207	B

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PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	02-08-21	NOTES AND LONGSECTIONS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
LONGITUDINAL SECTION
ROAD 17 & 20

CONSTRUCTION ISSUE

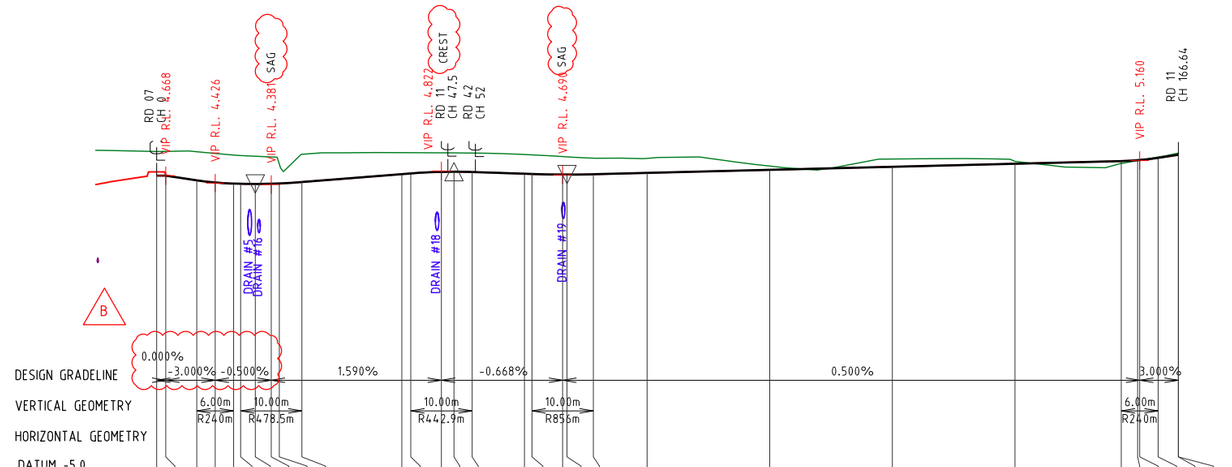
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Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER	906726
DATE	07-02-19		

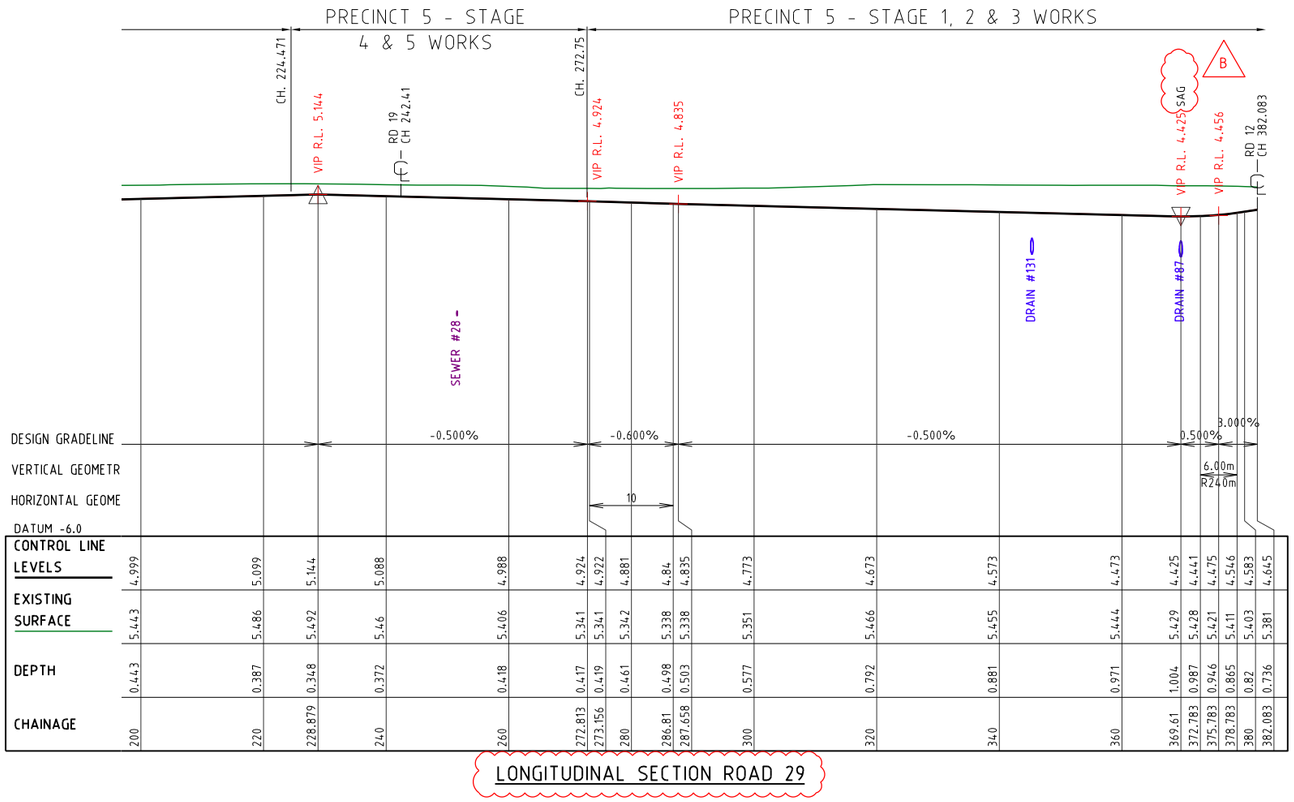
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12301-P5-1,2&3-208	B

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PRECINCT 5 - STAGE 1, 2 & 3 WORKS



| | | |



LONGITUDINAL SECTION ROAD 29

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	02-08-21	NOTE ADDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
LONGITUDINAL SECTION
ROAD 29

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As
Mortons-Urban Solutions
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Tel 07 5571 1099
Fax 07 5571 1088
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PO Box 2484
Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

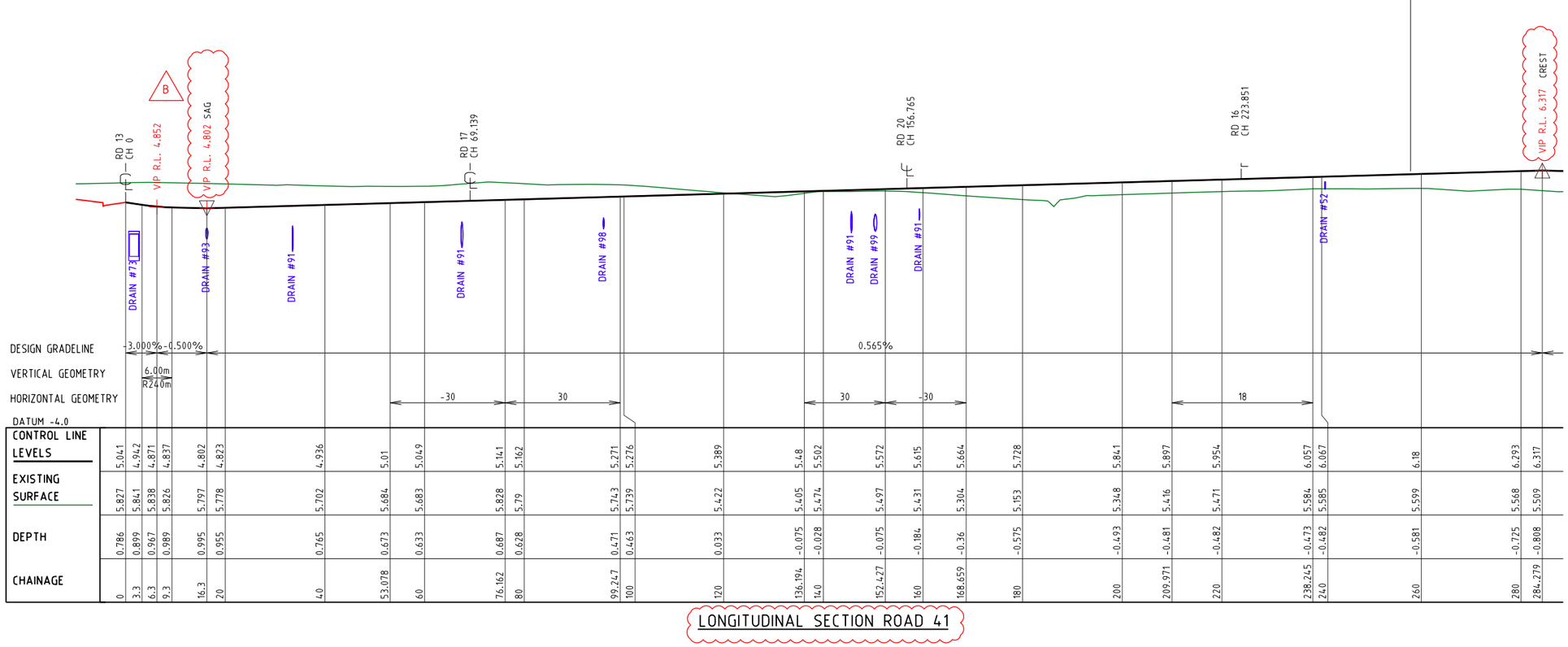
DRAWING NUMBER 12301-P5-1,2&3-210 | AMEND. B

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PRECINCT 5 - STAGE 1, 2 & 3 WORKS

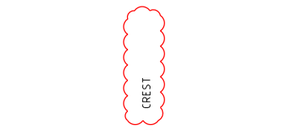
PRECINCT 5 - STAGE 4 & 5 WORKS

CH. 257.85



| | | |

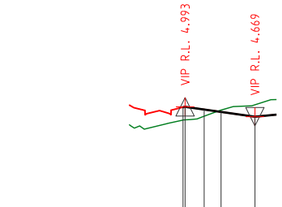
PRECINCT 5
STAGE 1, 2 & 3 WORKS



DESIGN GRADELINE		2.023%		0.657%		-0.833%		-2.576%					
VERTICAL GEOMETRY													
HORIZONTAL GEOMETRY									-10				
DATUM -3.0													
CONTROL LINE LEVELS			5.042		5.092		5.2	5.171		5.004	5	4.862	
EXISTING SURFACE	5.404	5.455		5.501		5.612	5.633		5.713	5.714	5.744	5.759	5.79
DEPTH		0.412		0.409		0.412	0.462		0.709	0.714	0.882		
CHAINAGE	0	12.5		20		36.5	40		60	60.5	65.842	68.316	74.115

LONGITUDINAL SECTION ROAD DRIVEWAY 42

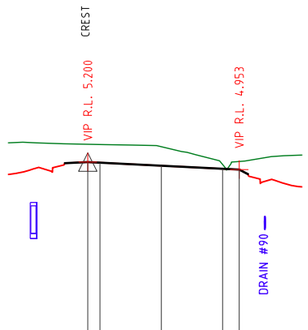
PRECINCT 5
STAGE 1, 2 &
3 WORKS



DESIGN GRADELINE		2.180%		1.423%		1.000%		
VERTICAL GEOMETRY								
HORIZONTAL GEOMETRY					-10			
DATUM -2.0								
CONTROL LINE LEVELS			4.979		4.993	4.905	4.826	4.669
EXISTING SURFACE	4.388	4.562		4.566		4.686	4.886	5.058
DEPTH		-0.417		-0.427		-0.219	0.06	0.389
CHAINAGE	0	7.588		8.262		14.496	20	31.054

LONGITUDINAL SECTION ROAD DRIVEWAY 43

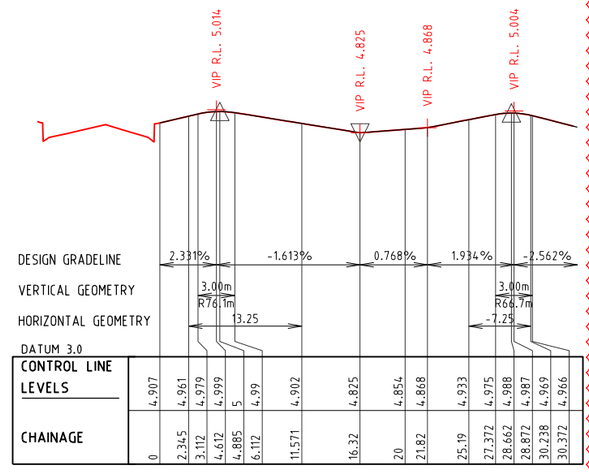
PRECINCT 5
STAGE 1, 2 & 3 WORKS



DESIGN GRADELINE		0.500%		-0.500%		-5.167%		
VERTICAL GEOMETRY								
HORIZONTAL GEOMETRY								
DATUM -4.0								
CONTROL LINE LEVELS			5.2		5.18	5.08	4.98	4.953
EXISTING SURFACE	5.829	5.781		5.776		5.699	5.117	5.219
DEPTH		0.581		0.596		0.619	0.137	0.266
CHAINAGE	0	15.999		20		40	60	65.417

LONGITUDINAL SECTION ROAD DRIVEWAY 44

PRECINCT 5 - STAGE
1, 2 & 3 WORKS



DESIGN GRADELINE		2.331%			-1.613%			0.768%		1.934%			-2.562%				
VERTICAL GEOMETRY																	
HORIZONTAL GEOMETRY																	
DATUM 3.0																	
CONTROL LINE LEVELS	4.907	4.961	4.979	4.999	5	4.99	4.902	4.825	4.854	4.868	4.933	4.975	4.988	4.987	4.969	4.966	
CHAINAGE	0	2.345	3.112	4.612	4.885	6.112	11.571	16.32	20	21.82	25.19	27.372	28.662	28.872	30.238	30.372	

LONGITUDINAL SECTION 99B DRIVEWAY

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	02-08-21	NOTES AND SECTION ADDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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PROJECT NAME
KINGS FOREST
PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)
0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE
ROADWORKS
LONGITUDINAL SECTION
ROAD 42 & 43
44 & 99B

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
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Gold Coast Office
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Southport QLD 4215

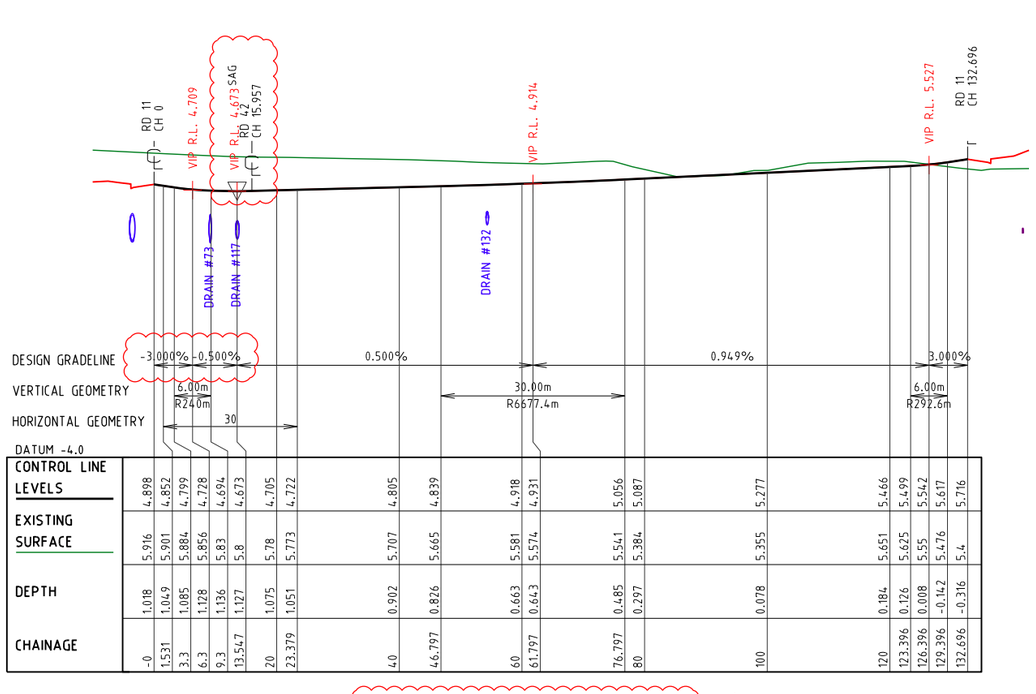
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APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER 12301-P5-1,2&3-212
AMEND. B

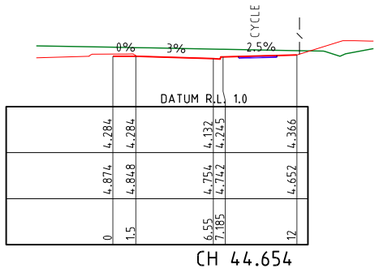
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PRECINCT 5 - STAGE 1, 2 & 3 WORKS

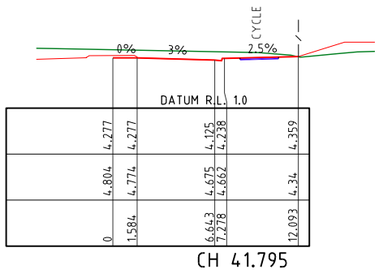
PRECINCT 5 - STAGE
1, 2 & 3 WORKS



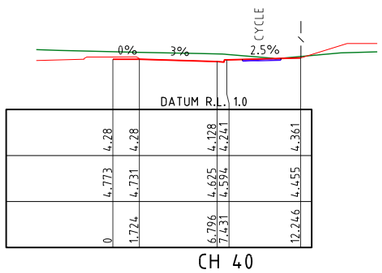
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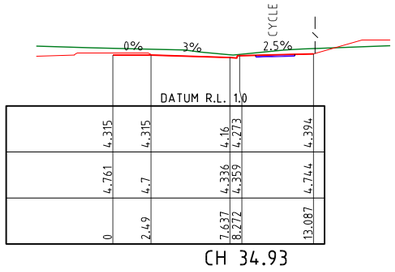
CH 44.654



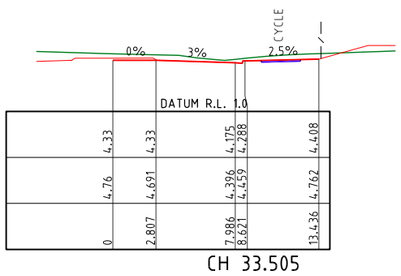
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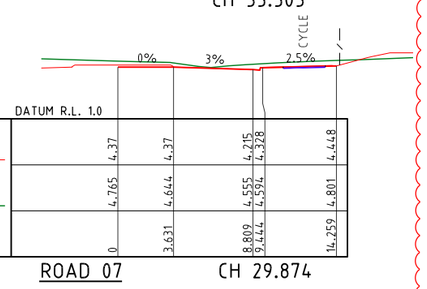
CH 40



CH 34.93



CH 33.505



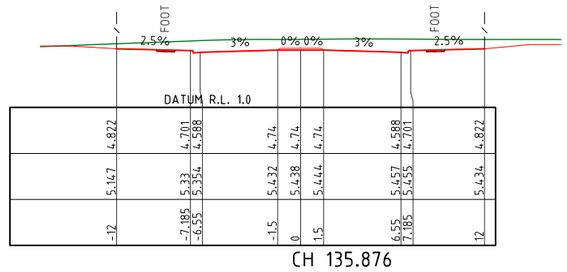
ROAD 07 CH 29.874

NOTES:

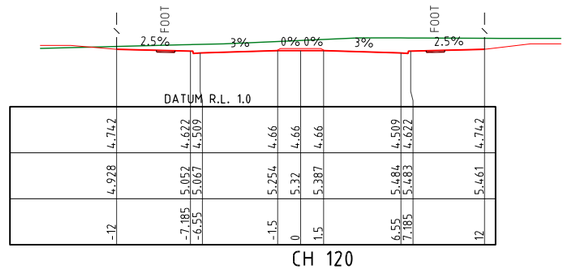
1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.

2. CROSS SECTIONS WITH NO TEMPLATE REPRESENT CONTROL LINE LEVELS AT THAT CHAINAGE.

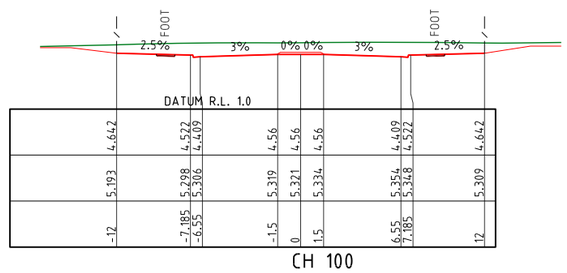
DESIGN SURFACE LEVEL	
EXISTING SURFACE LEVEL	
OFFSET	



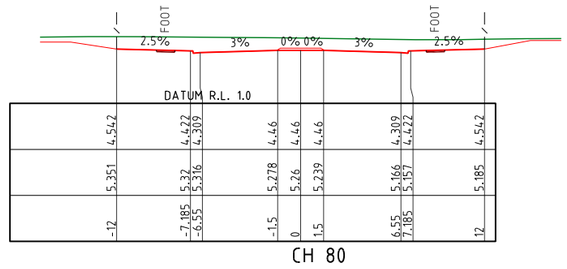
CH 135.876



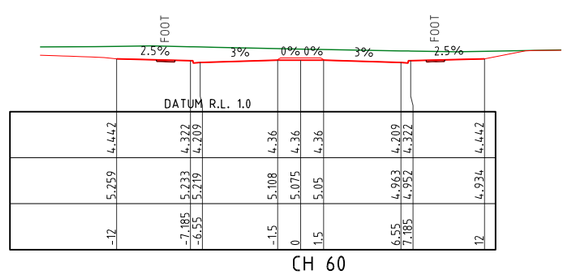
CH 120



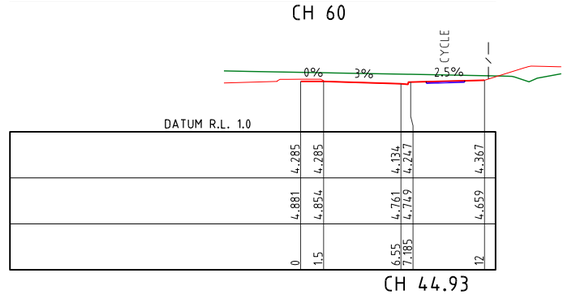
CH 100



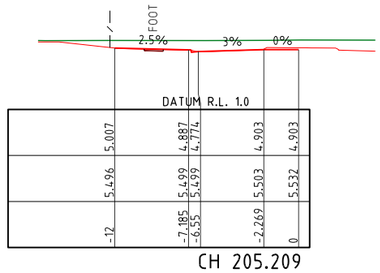
CH 80



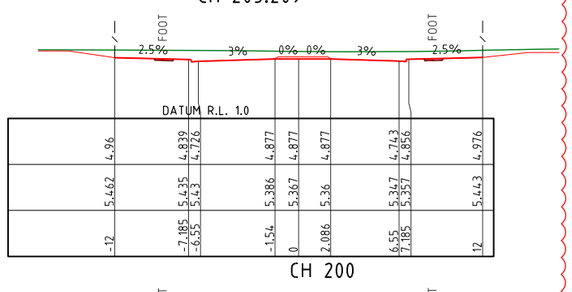
CH 60



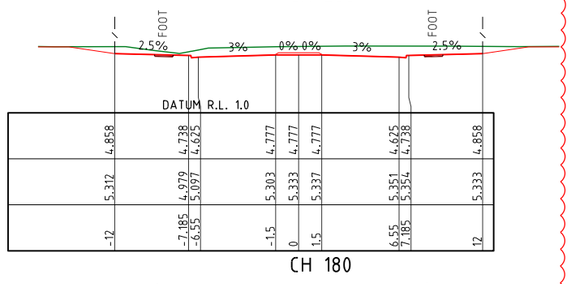
CH 44.93



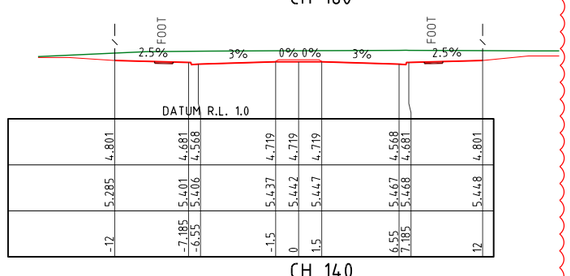
CH 205.209



CH 200



CH 180



CH 140

NOTES:

1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS SHOWN INDICATIVELY. INTERFACE TO MATCH EXISTING LEVEL.

CYCLEWAY

FOOTPATH

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
C	05-08-21	CROSS SECTION AND LEGEND AMENDED
B	31-08-20	CROSS SECTIONS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
CROSS SECTIONS
ROAD 07

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
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Tel 07 5571 1099
Fax 07 5571 1088
Postal Address
PO Box 2484
Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

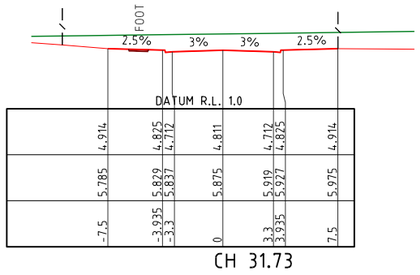
DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-300
AMEND.: C

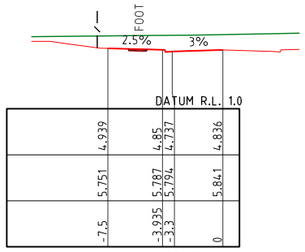
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NOTES:

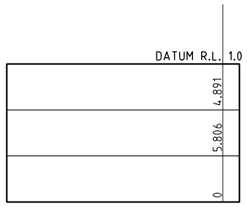
1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS SHOWN INDICATIVELY, INTERFACE TO MATCH EXISTING LEVEL.



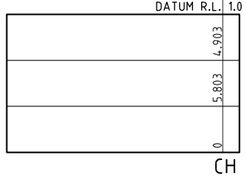
CH 31.73



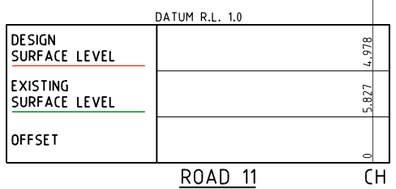
CH 26.73



CH 21.272



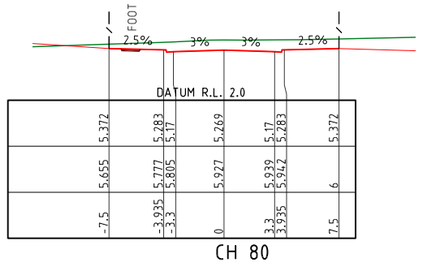
CH 20



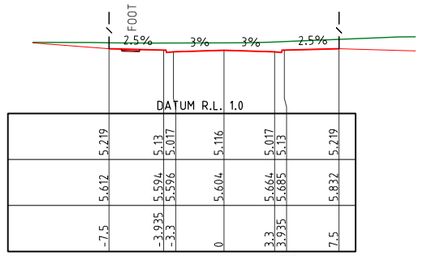
ROAD 11 CH 12.5

NOTES:

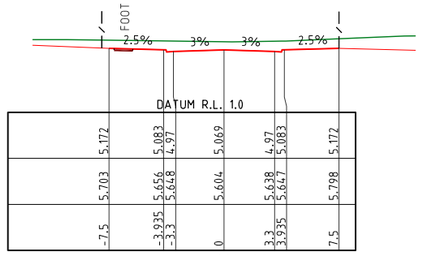
1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS WITH NO TEMPLATE REPRESENT CONTROL LINE LEVELS AT THAT CHAINAGE.



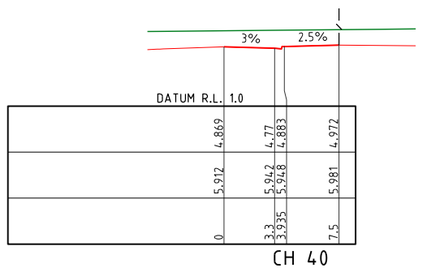
CH 80



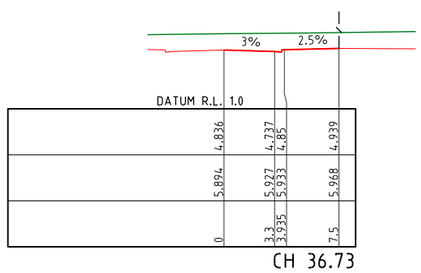
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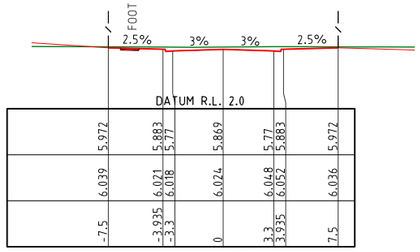
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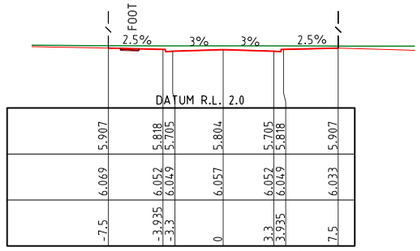
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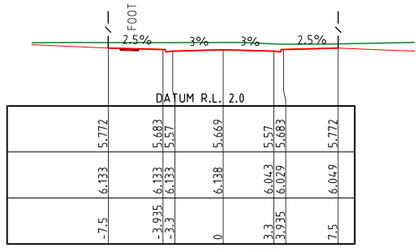
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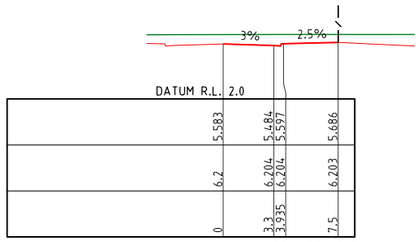
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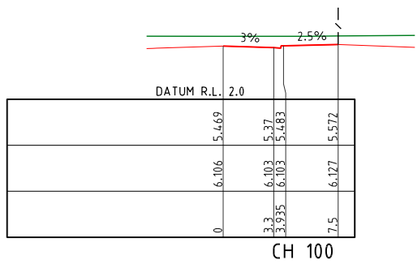
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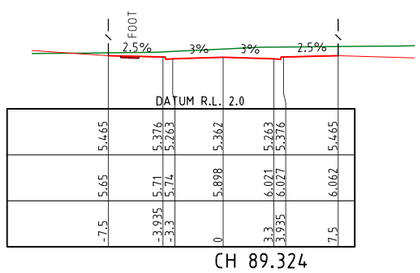
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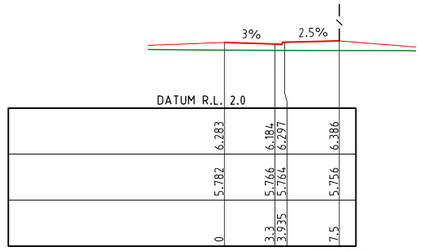
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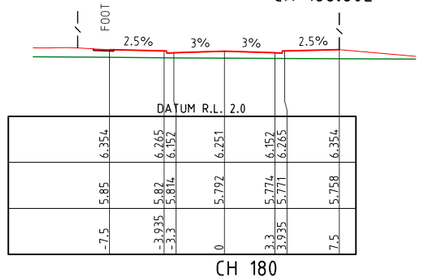
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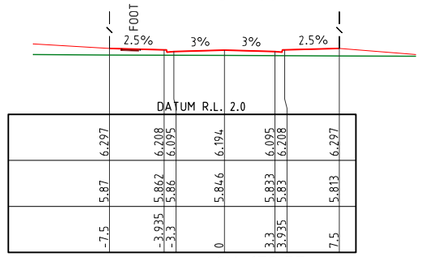
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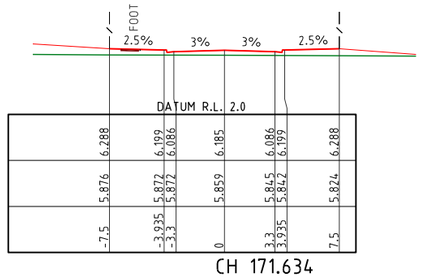
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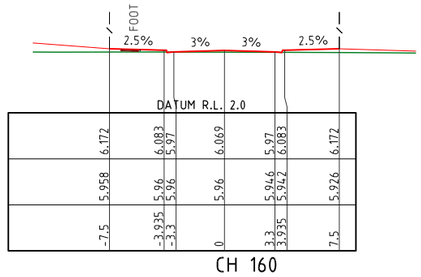
CH 180



CH 172.57



CH 171.634



CH 160

B

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	05-08-21	CROSS SECTIONS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
CROSS SECTIONS
ROAD 11
SHEET 1 OF 4

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As:
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www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088
Postal Address
PO Box 2484
Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED RB	DRAWN CB	
APPROVED	NER 906726	DATE 07-02-19

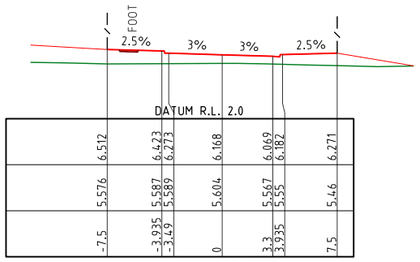
DRAWING NUMBER 12301-P5-1,2&3-301 AMEND. B

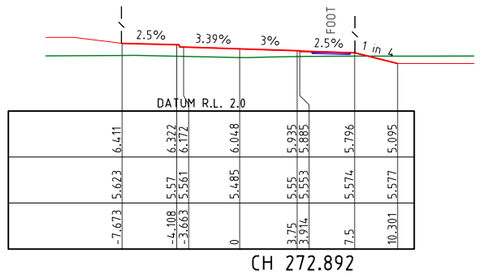
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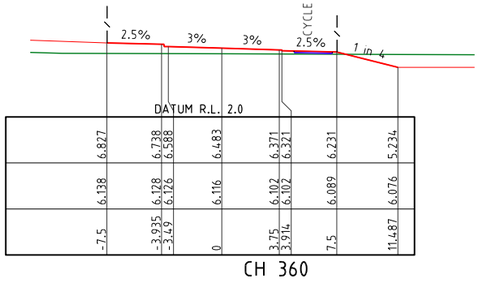
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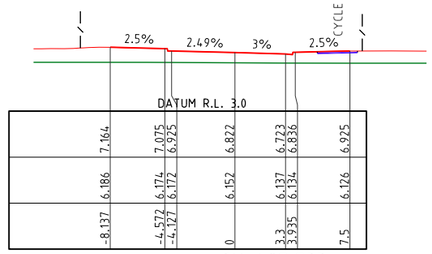
1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS SHOWN INDICATIVELY, INTERFACE TO MATCH EXISTING LEVEL.

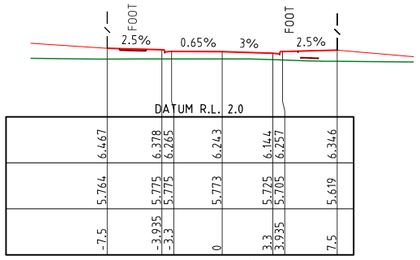
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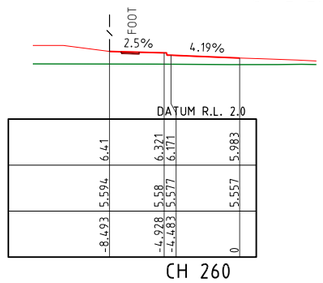


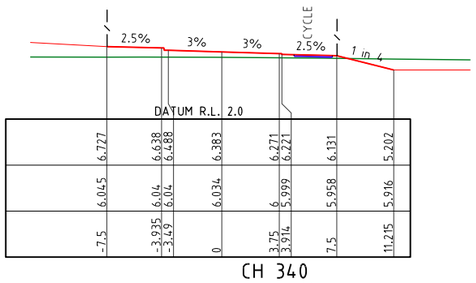


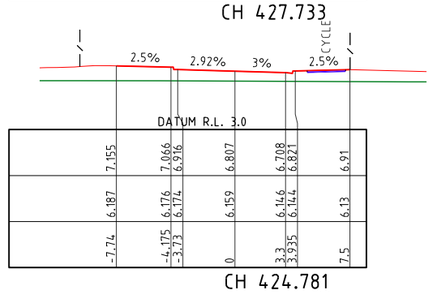


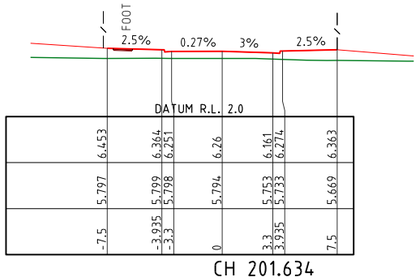


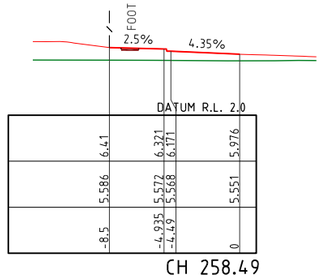


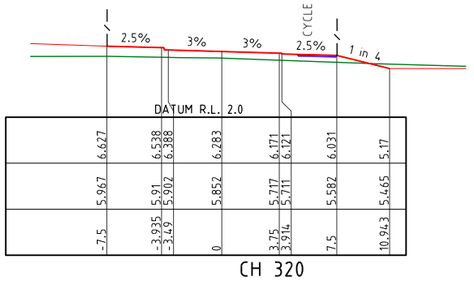


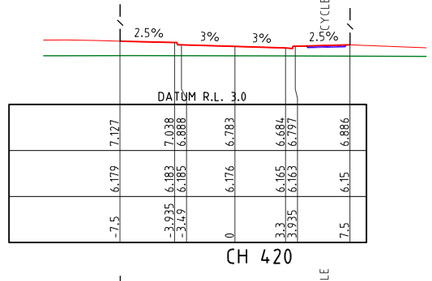


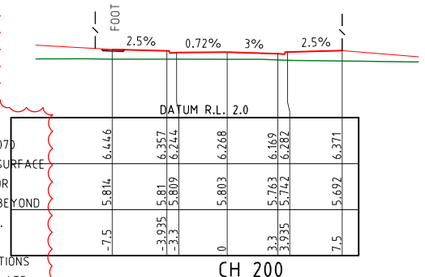


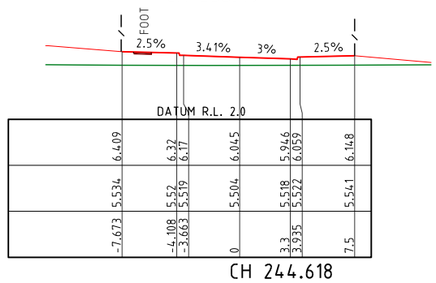


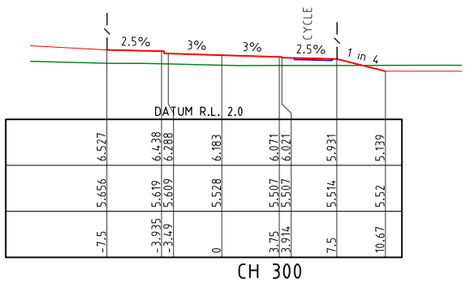


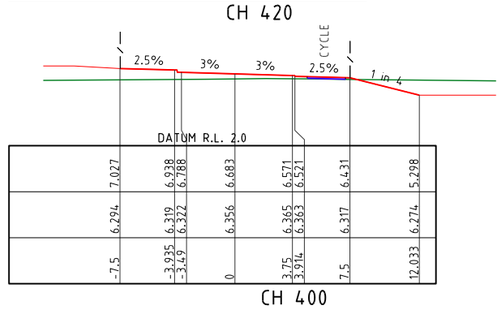


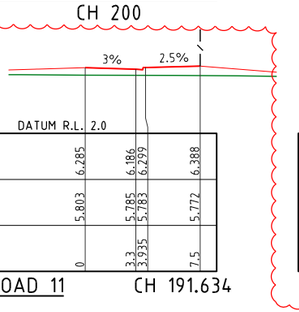


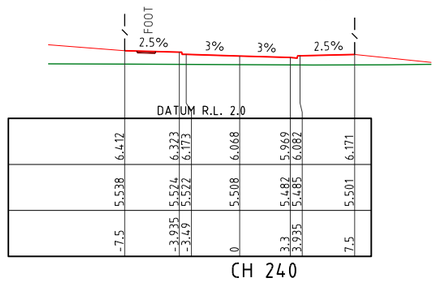


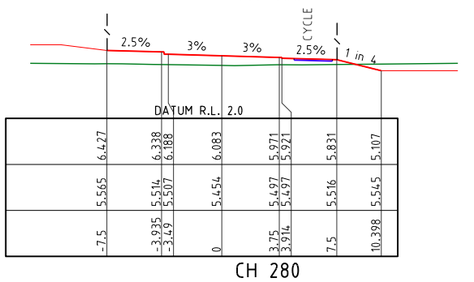


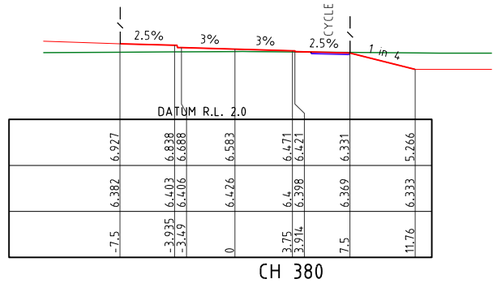












NOTES:

1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS WITH NO TEMPLATE REPRESENT CONTROL LINE LEVELS AT THAT CHAINAGE.

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	05-08-21	CROSS SECTIONS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LandSurv
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
CROSS SECTIONS
ROAD 11
SHEET 2 OF 4

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As
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mortons@urbansolutions.net.au
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Postal Address
PO Box 2484
Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED RB	DRAWN CB
APPROVED	NER 906726
DATE 07-02-19	

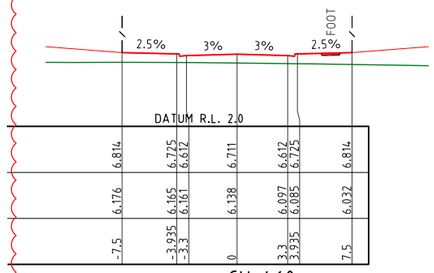
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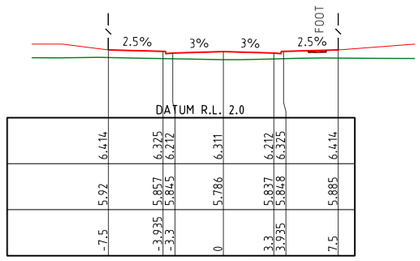
NOTES:

1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS SHOWN INDICATIVELY, INTERFACE TO MATCH EXISTING LEVEL.

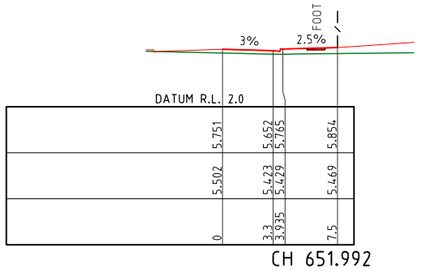
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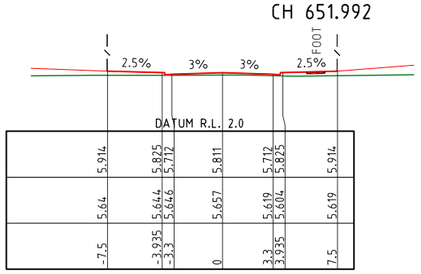
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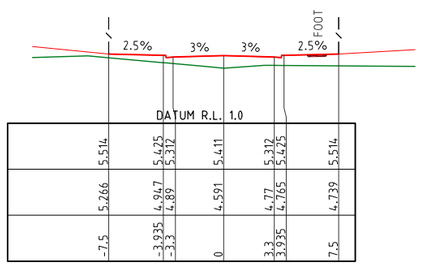
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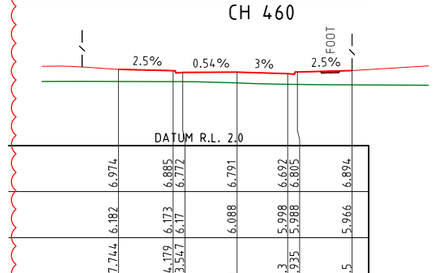
CH 651.992



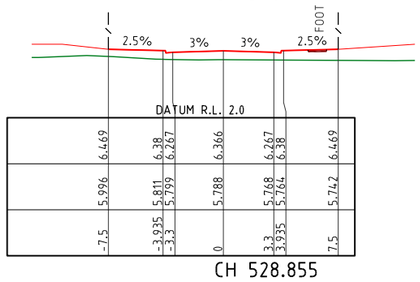
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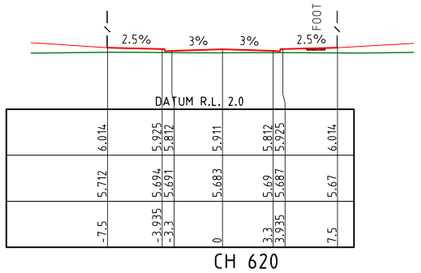
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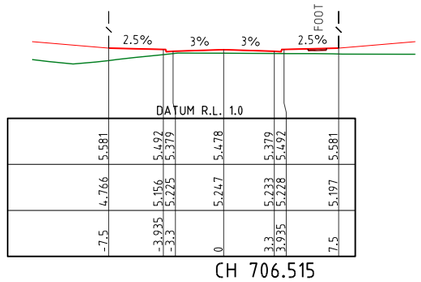
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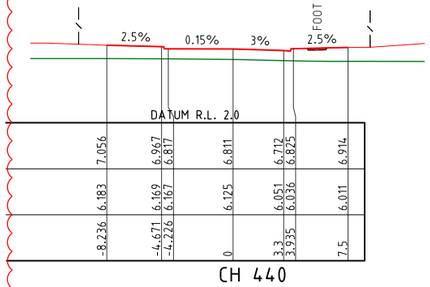
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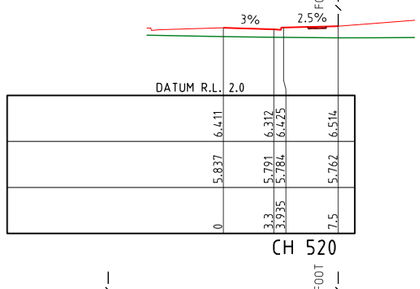
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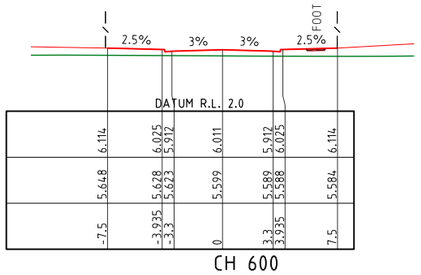
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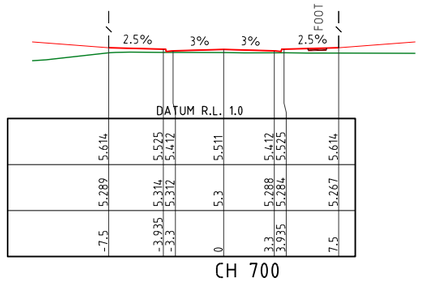
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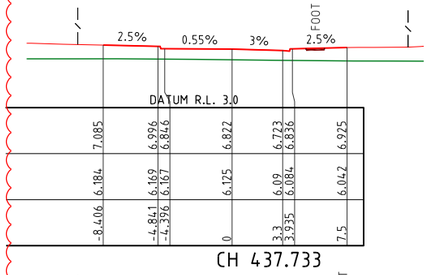
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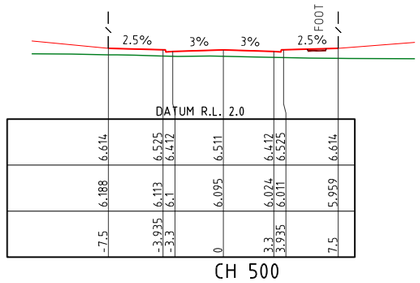
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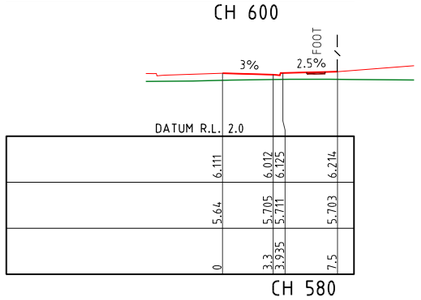
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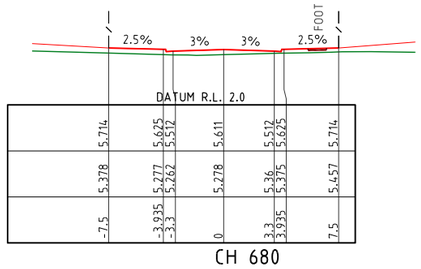
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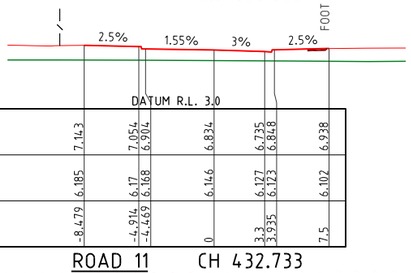
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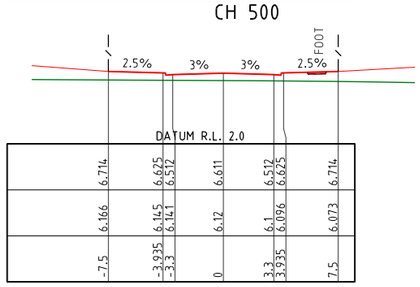
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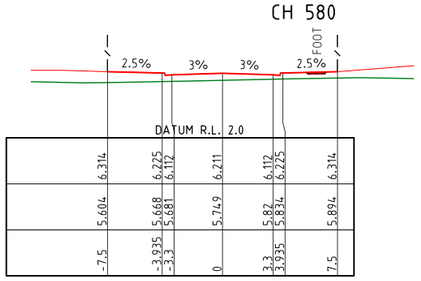
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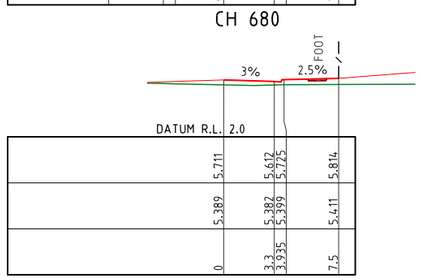
ROAD 11 CH 432.733



CH 480



CH 560



CH 660

NOTES:

1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS WITH NO TEMPLATE REPRESENT CONTROL LINE LEVELS AT THAT CHAINAGE.

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	05-08-21	CROSS SECTIONS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
CROSS SECTIONS
ROAD 11
SHEET 3 OF 4

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

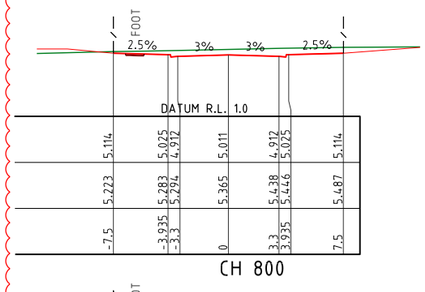
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AMEND.
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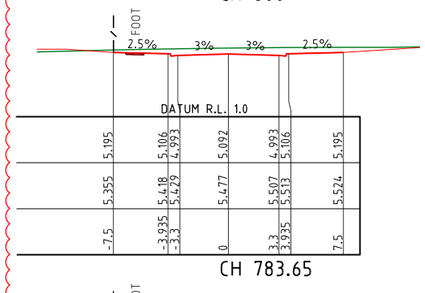
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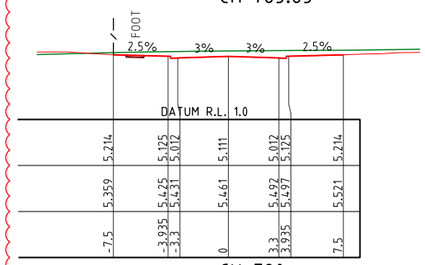
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2. CROSS SECTIONS SHOWN INDICATIVELY, INTERFACE TO MATCH EXISTING LEVEL.



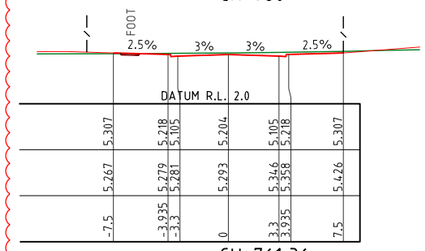
CH 800



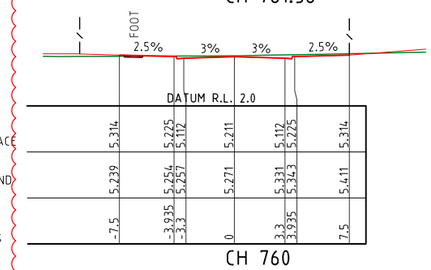
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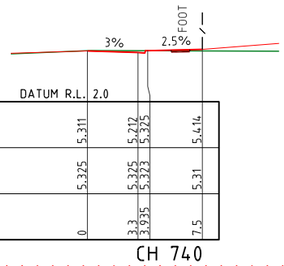
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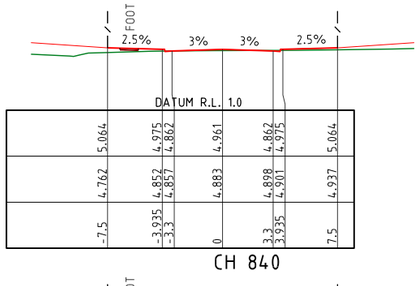
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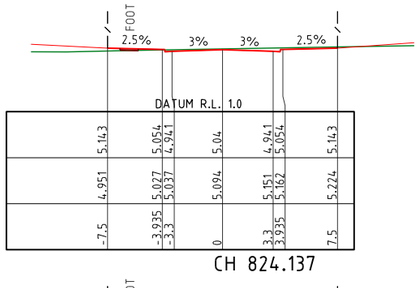
CH 760



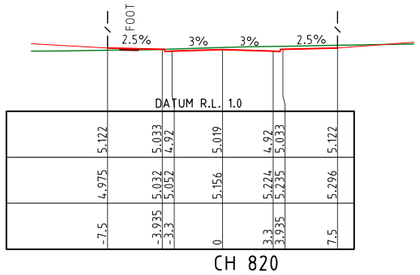
ROAD 11 CH 740



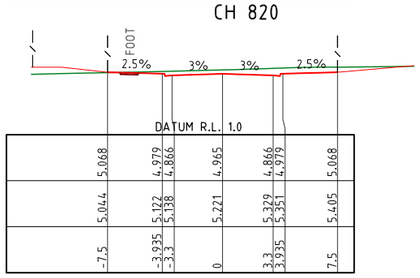
CH 840



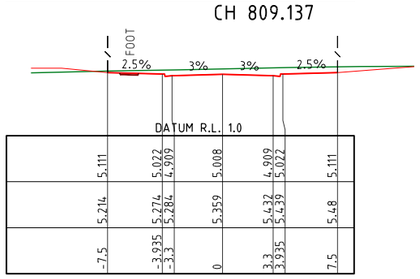
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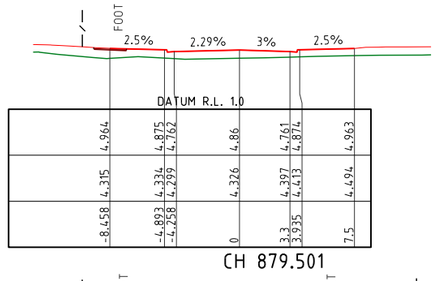
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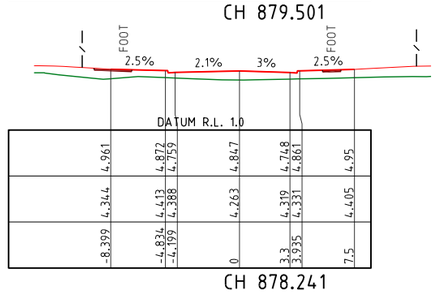
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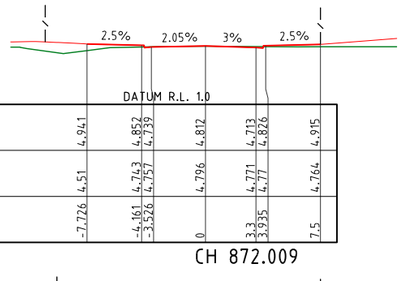
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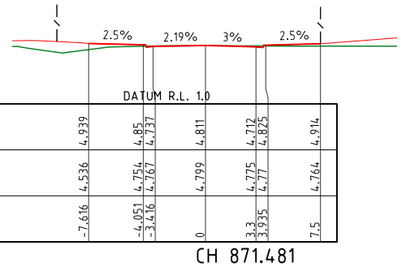
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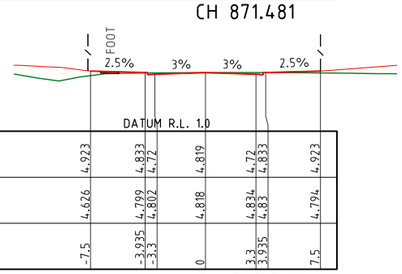
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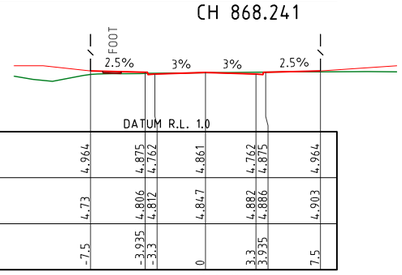
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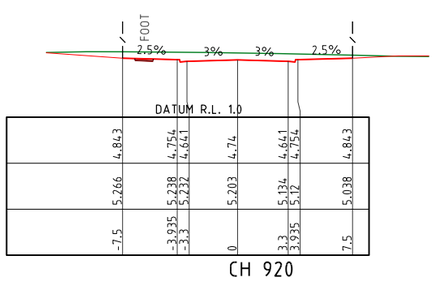
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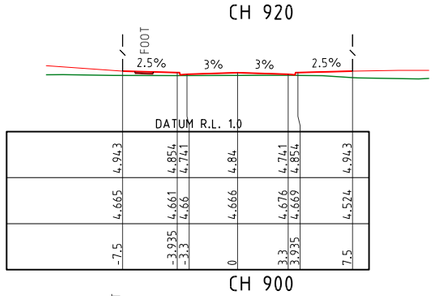
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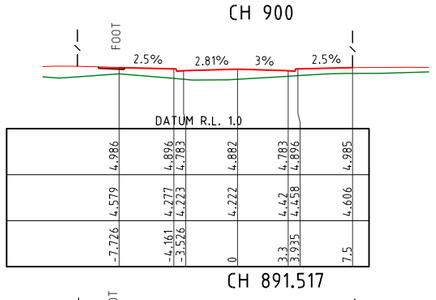
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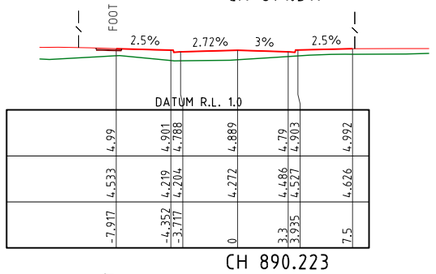
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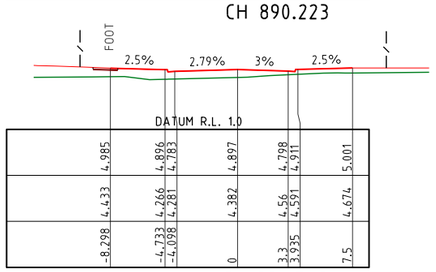
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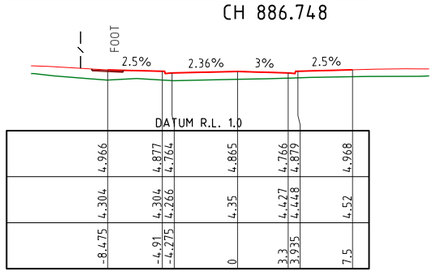
CH 891.517



CH 890.223



CH 886.748



CH 880

NOTES:

1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS WITH NO TEMPLATE REPRESENT CONTROL LINE LEVELS AT THAT CHAINAGE.

DESIGN SURFACE LEVEL

EXISTING SURFACE LEVEL

OFFSET

B

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	05-08-21	CROSS SECTIONS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
CROSS SECTIONS
ROAD 11
SHEET 4 OF 4

CONSTRUCTION ISSUE

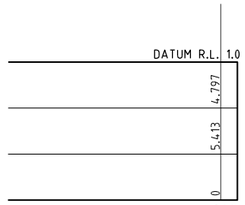
MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN: 39 116 375 065
mortons@urbansolutions.net.au
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Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED RB	DRAWN CB
APPROVED	NER 906726
DATE 07-02-19	

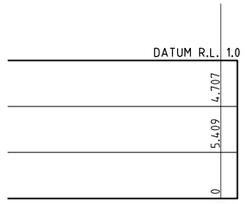
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AMEND. B

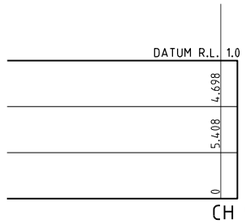
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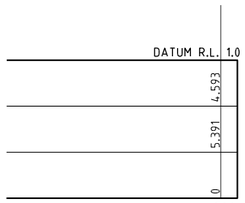
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CH 960



CH 959.712

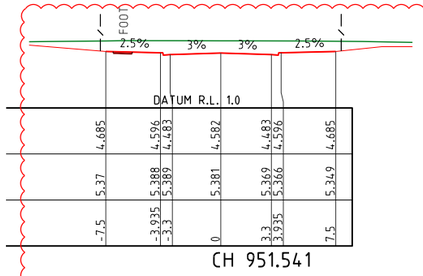


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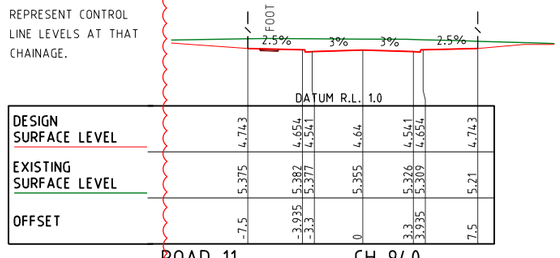
NOTES:

1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.

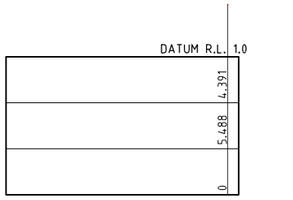
2. CROSS SECTIONS WITH NO TEMPLATE REPRESENT CONTROL LINE LEVELS AT THAT CHAINAGE.



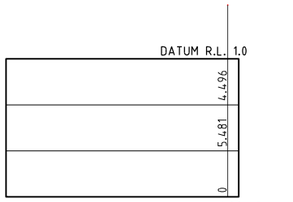
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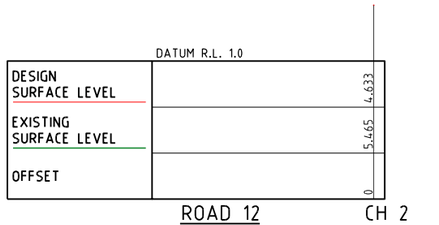
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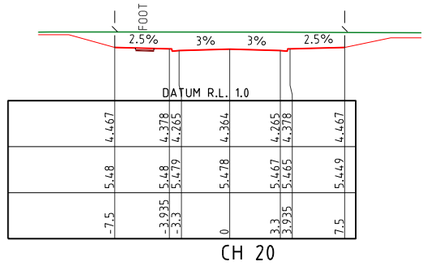
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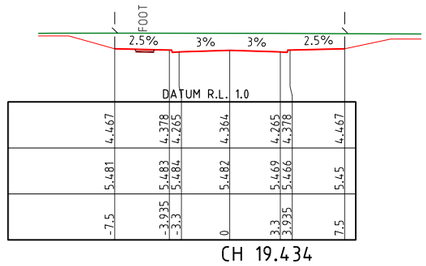
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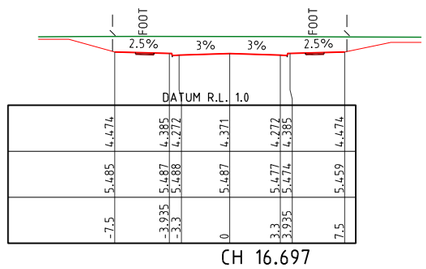
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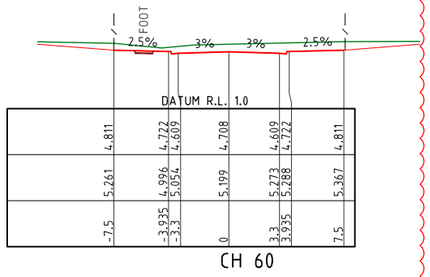
CH 20



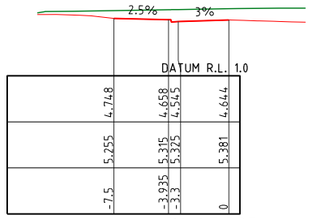
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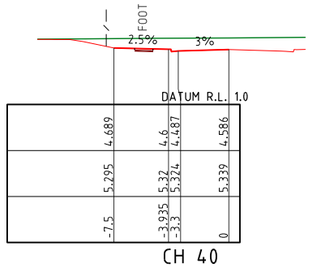
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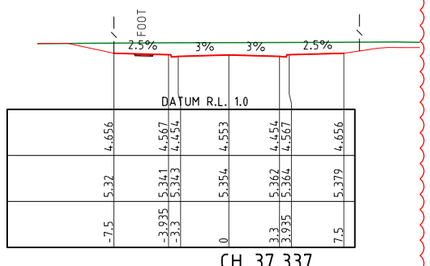
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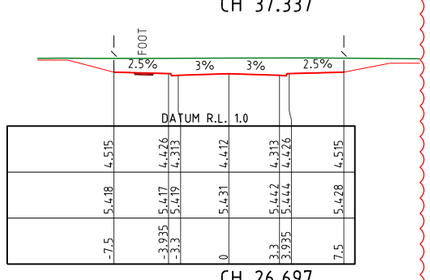
CH 47.337



CH 40



CH 37.337



CH 26.697

NOTES:

1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS SHOWN INDICATIVELY, INTERFACE TO MATCH EXISTING LEVEL.

B

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	05-08-21	CROSS SECTIONS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
CROSS SECTIONS
ROAD 11 & 12

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As
Mortons Urban Solutions
ABN 39 116 375 065

Postal Address
PO Box 2484
Southport QLD 4215

mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

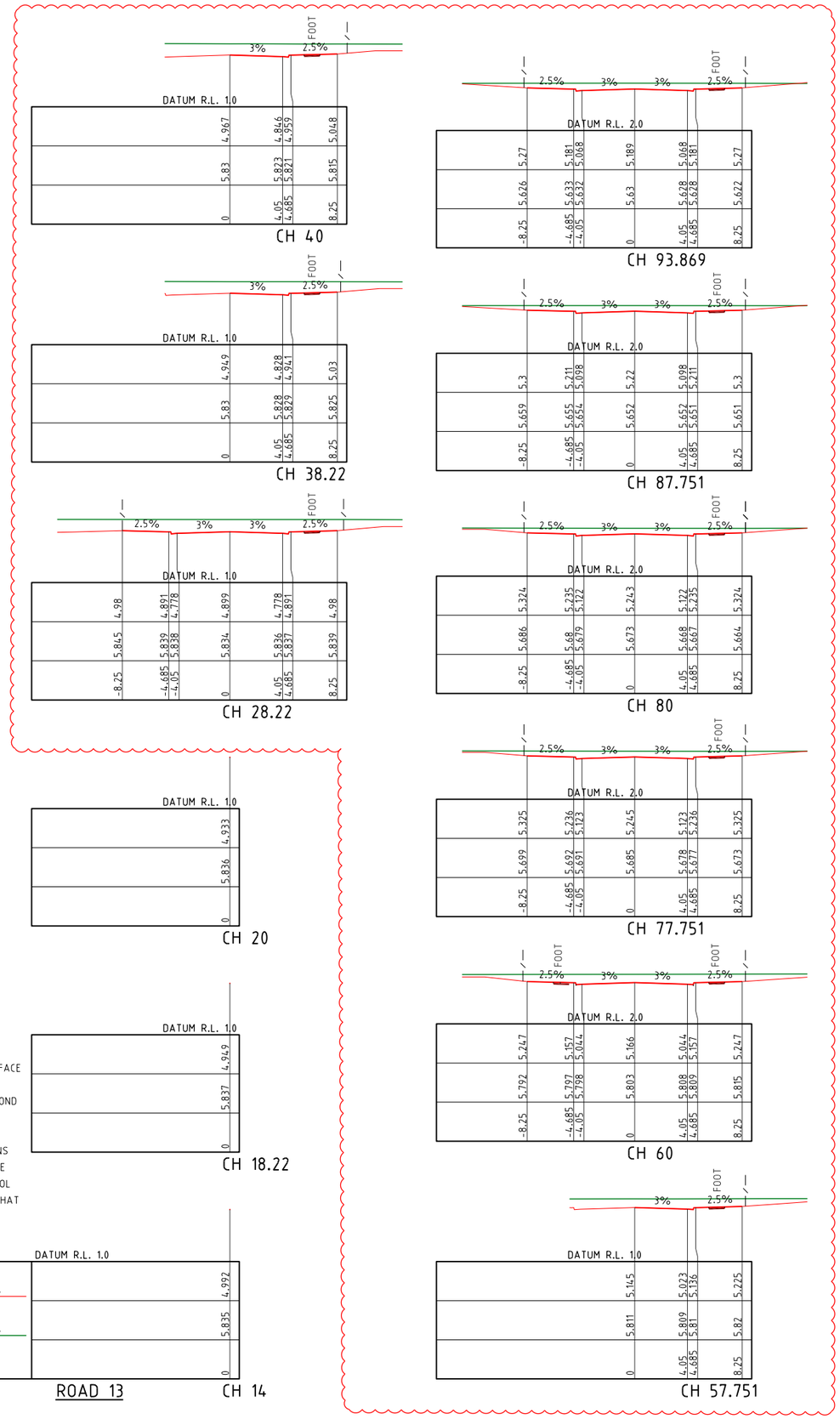
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-305

AMEND.: B

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NOTES:

1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS WITH NO TEMPLATE REPRESENT CONTROL LINE LEVELS AT THAT CHAINAGE.

NOTES:

1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS SHOWN INDICATIVELY, INTERFACE TO MATCH EXISTING LEVEL.

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	06-08-21	CROSS SECTIONS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
CROSS SECTIONS
ROAD 13

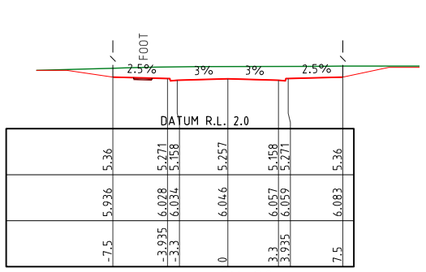
CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As:
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mortons@urbansolutions.net.au
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Tel 07 5571 1099
Fax 07 5571 1088
Postal Address
PO Box 2484
Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

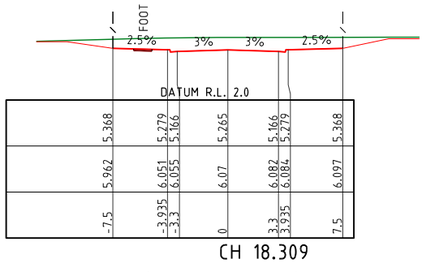
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APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER 12301-P5-1,2&3-306
AMEND. B

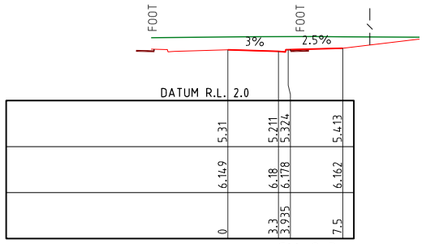
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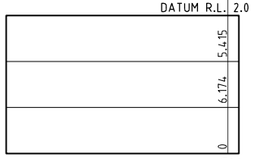
CH 20



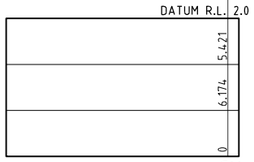
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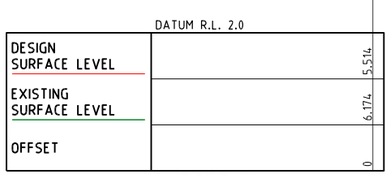
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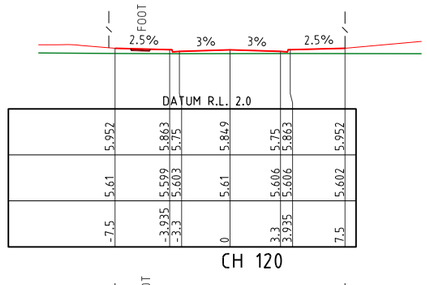
CH 3.3



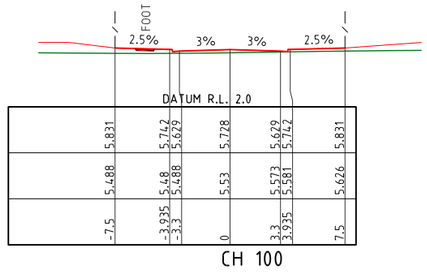
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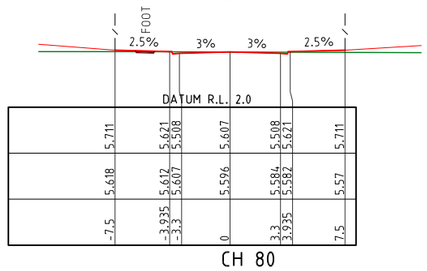
ROAD 14 CH 0



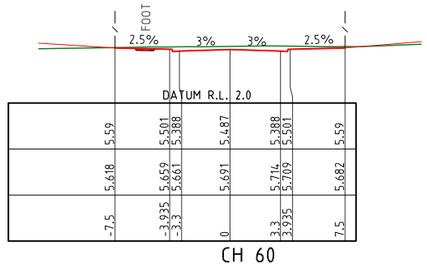
CH 120



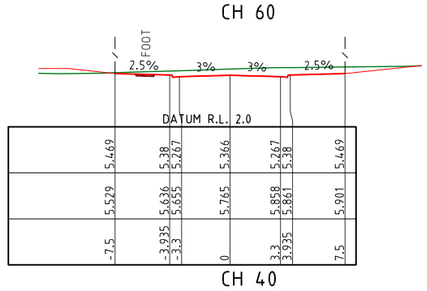
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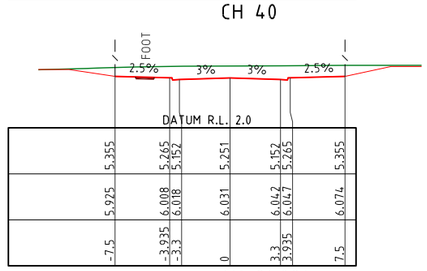
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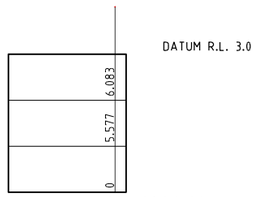
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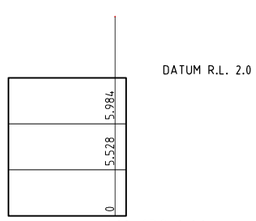
CH 40



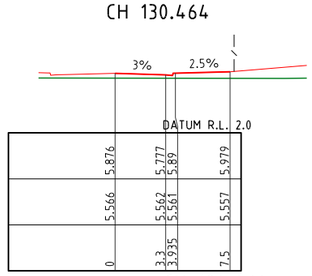
CH 21.024



CH 133.764



CH 130.464



CH 124.464

B

NOTES:

1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS SHOWN INDICATIVELY, INTERFACE TO MATCH EXISTING LEVEL.

NOTES:

1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.

2. CROSS SECTIONS WITH NO TEMPLATE REPRESENT CONTROL LINE LEVELS AT THAT CHAINAGE.

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	06-08-21	CROSS SECTIONS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LandSurv
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
CROSS SECTIONS
ROAD 14

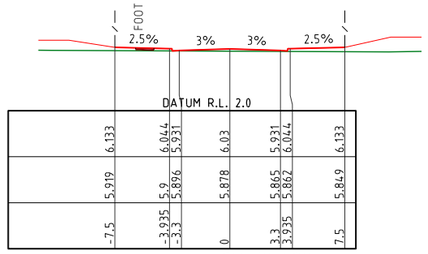
CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As
Mortons-Urban Solutions
ABN 39 116 375 065
mortons@urbansolutions.net.au
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Tel 07 5571 1099
Fax 07 5571 1088
Postal Address
PO Box 2484
Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

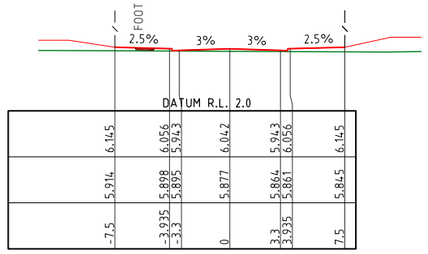
DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-307	B

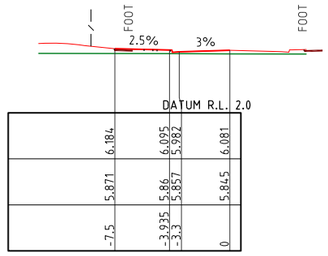
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CH 19.489



CH 17.194



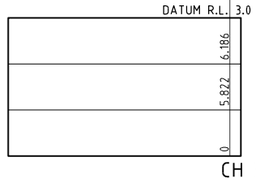
CH 9.3

CH 4.781

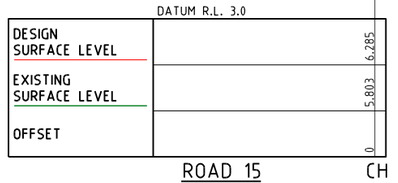
NOTES:

1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.

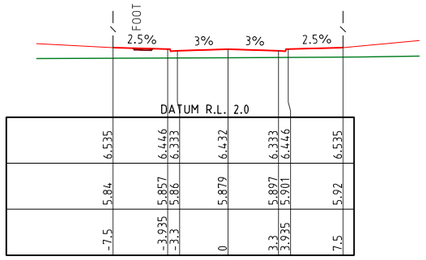
2. CROSS SECTIONS WITH NO TEMPLATE REPRESENT CONTROL LINE LEVELS AT THAT CHAINAGE.



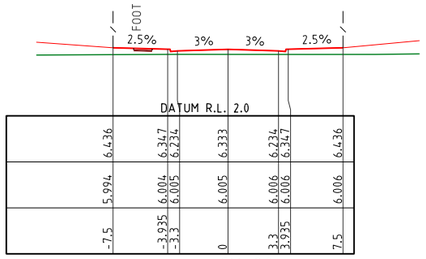
CH 3.3



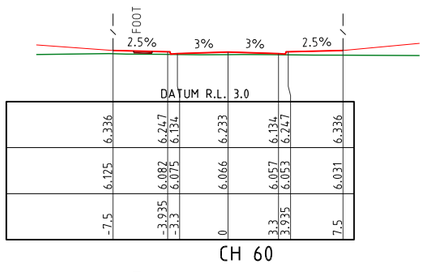
ROAD 15 CH 0



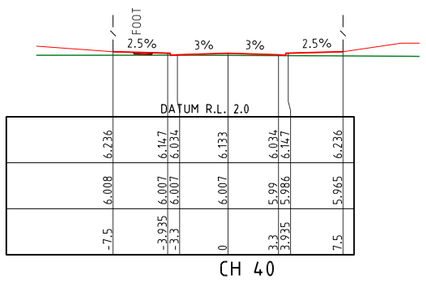
CH 99.857



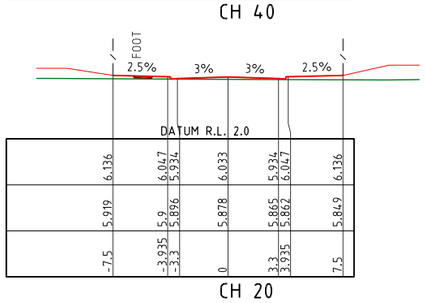
CH 80



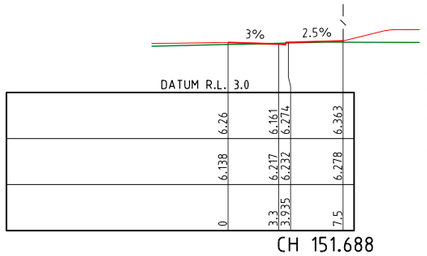
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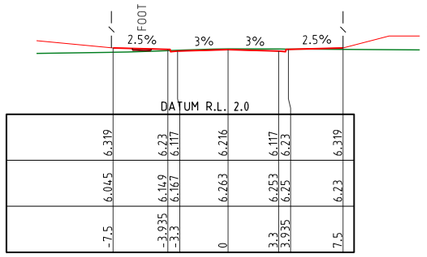
CH 40



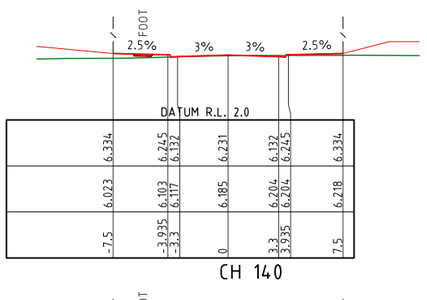
CH 20



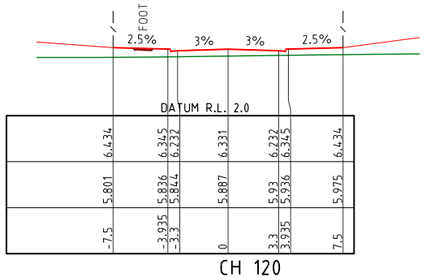
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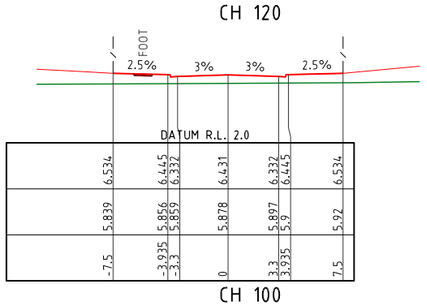
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CH 140



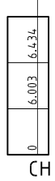
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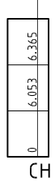
CH 100



CH 160.987



CH 160



CH 157.688

NOTES:

1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS SHOWN INDICATIVELY, INTERFACE TO MATCH EXISTING LEVEL.

B

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	06-08-21	CROSS SECTIONS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
CROSS SECTIONS
ROAD 15

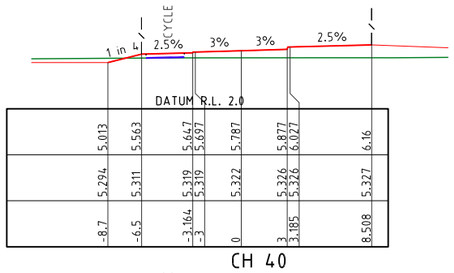
CONSTRUCTION ISSUE

MORTONS urbansolutions
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Civil Engineering
Project Coordination
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PO Box 2484
Southport QLD 4215
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Suite 9, 19 Short St
Southport QLD 4215

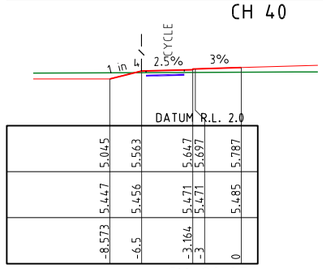
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APPROVED	NER 906726
DATE 07-02-19	

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AMEND.: B

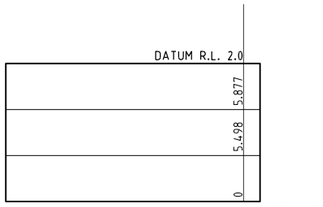
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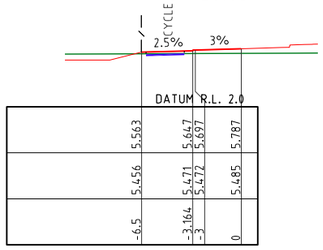
CH 40



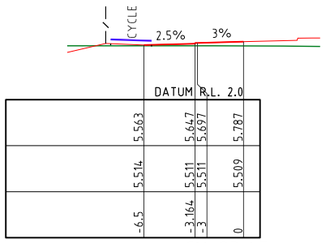
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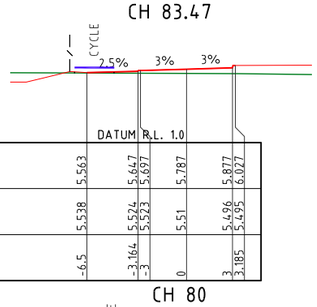
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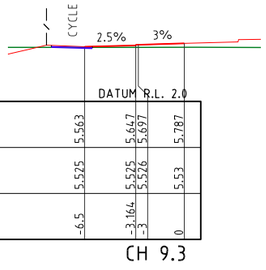
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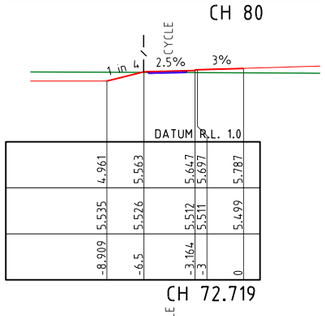
CH 83.47



CH 80



CH 9.3

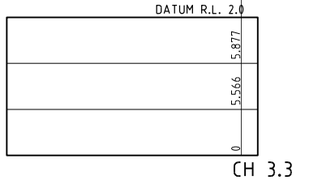


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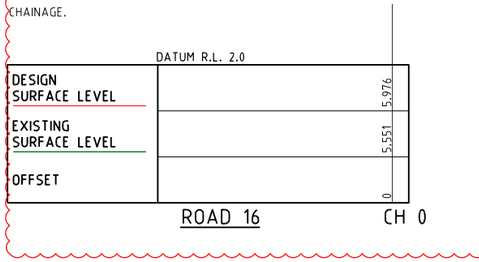
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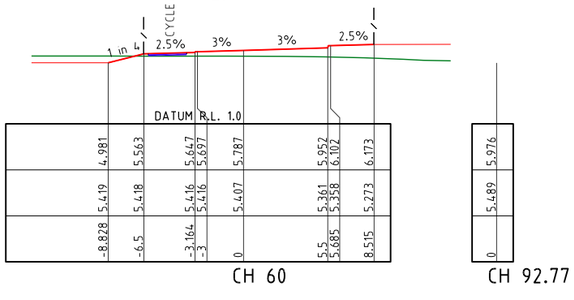
2. CROSS SECTIONS WITH NO TEMPLATE REPRESENT CONTROL LINE LEVELS AT THAT CHAINAGE.



CH 3.3



ROAD 16 CH 0



CH 60

CH 92.77

B

NOTES:

1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS SHOWN INDICATIVELY, INTERFACE TO MATCH EXISTING LEVEL.

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	06-08-21	CROSS SECTIONS AMNEDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
CROSS SECTIONS
ROAD 16

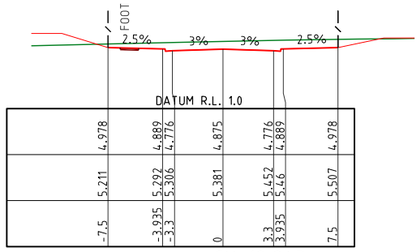
CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
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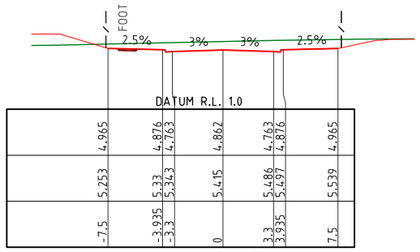
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DATE 07-02-19	

DRAWING NUMBER 12301-P5-1,2&3-309
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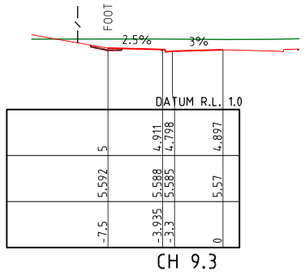
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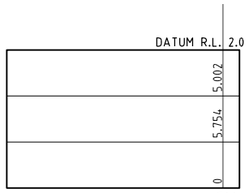
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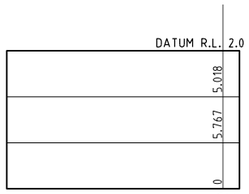
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CH 9.3



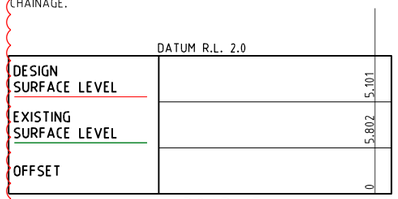
CH 3.3



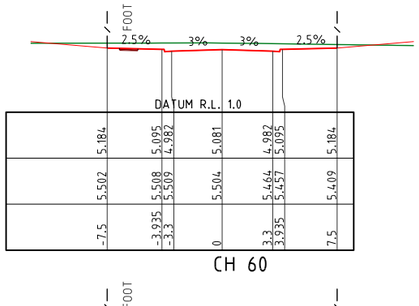
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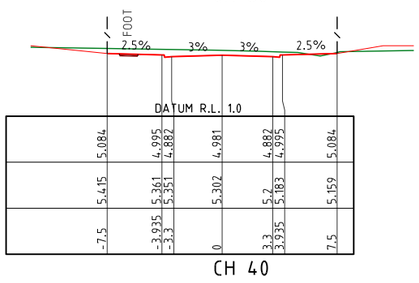
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2. CROSS SECTIONS WITH NO TEMPLATE REPRESENT CONTROL LINE LEVELS AT THAT CHAINAGE.



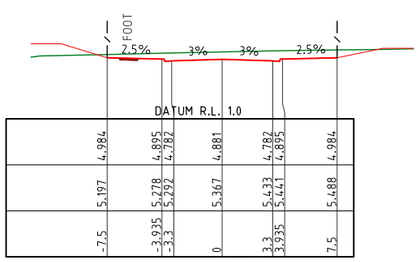
ROAD 17 CH 0



CH 60



CH 40



CH 20

B

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	06-08-21	CROSS SECTIONS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LandSurv
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
CROSS SECTIONS
ROAD 17

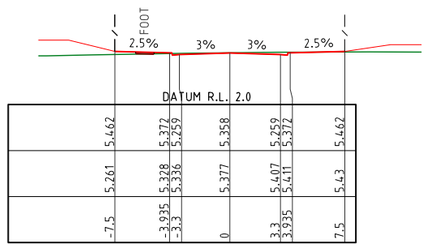
CONSTRUCTION ISSUE

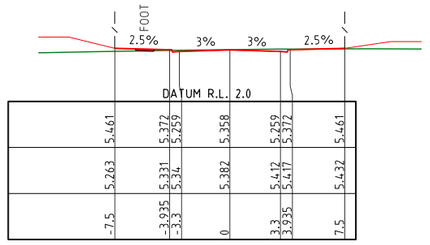
MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As
Mortons-Urban Solutions
ABN: 39 116 375 065
mortons@urbansolutions.net.au
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Gold Coast Office
Suite 9, 19 Short St
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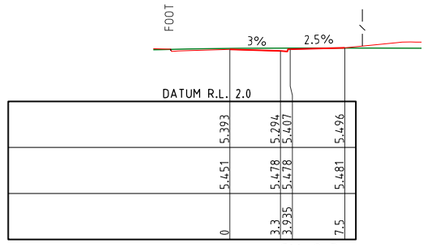
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APPROVED		NER 906726	DATE 07-02-19

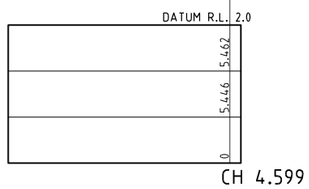
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12301-P5-1,2&3-310	B

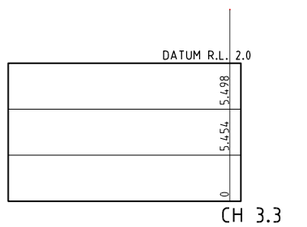
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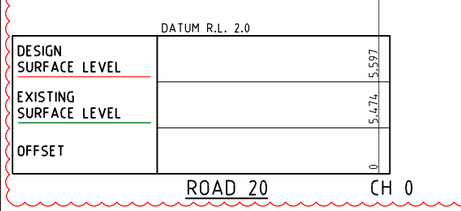


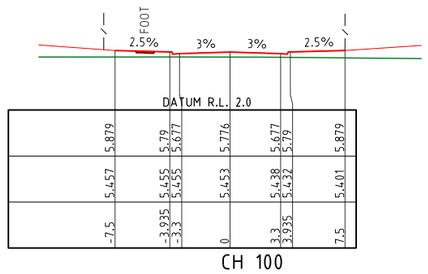


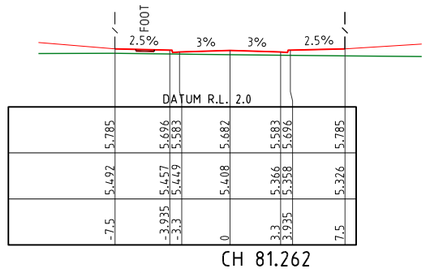


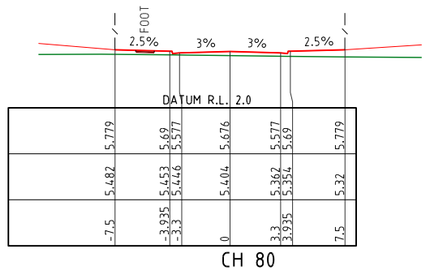
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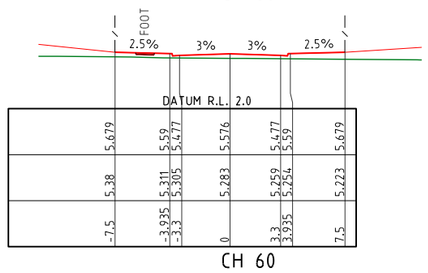
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2. CROSS SECTIONS WITH NO TEMPLATE REPRESENT CONTROL LINE LEVELS AT THAT CHAINAGE.

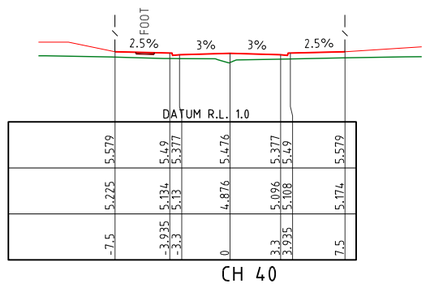


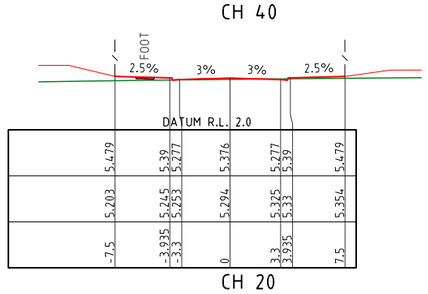












B

NOTES:

1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS SHOWN INDICATIVELY, INTERFACE TO MATCH EXISTING LEVEL.

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	06-08-21	CROSS SECTIONS AMNEDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
CROSS SECTIONS
ROAD 20

CONSTRUCTION ISSUE

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Urban & Regional Planning
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Fax 07 5571 1088
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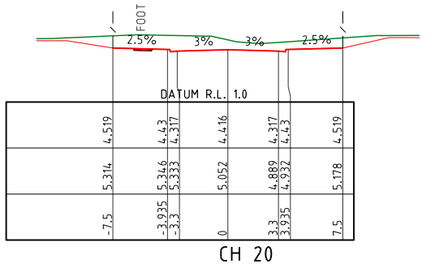
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APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-311	B

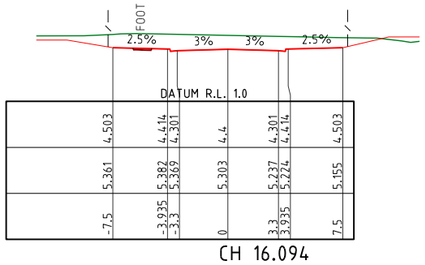
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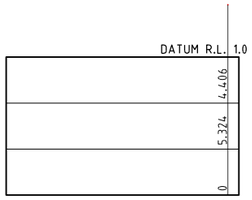
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2. CROSS SECTIONS SHOWN INDICATIVELY, INTERFACE TO MATCH EXISTING LEVEL.



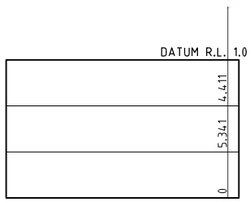
CH 20



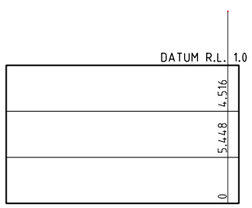
CH 16.094



CH 13.701



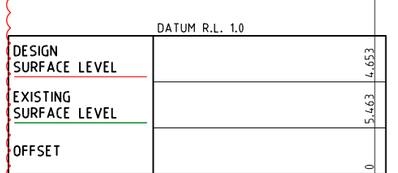
CH 12.55



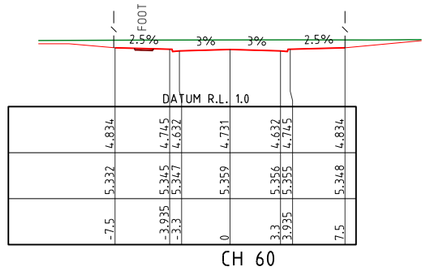
CH 6.55

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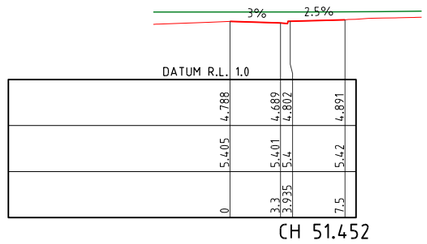
1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS WITH NO TEMPLATE REPRESENT CONTROL LINE LEVELS AT THAT CHAINAGE.



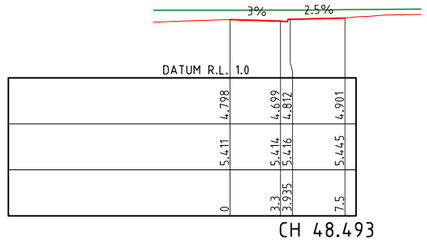
ROAD 22 CH 2



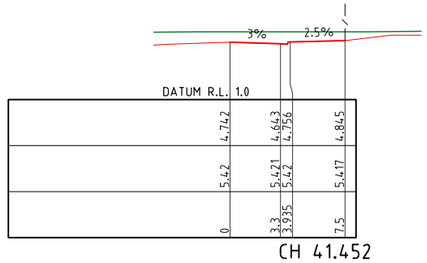
CH 60



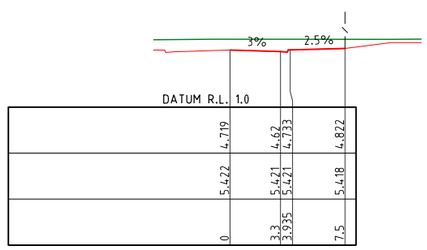
CH 51.452



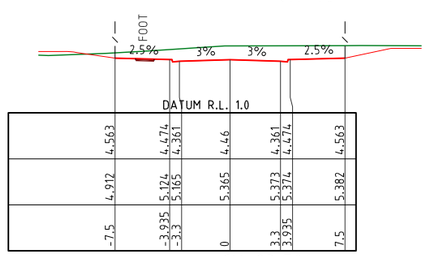
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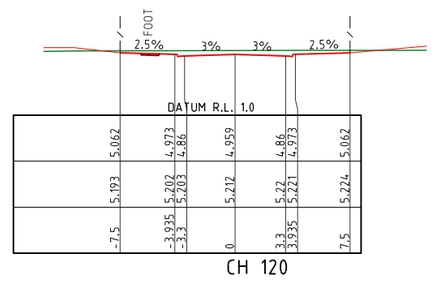
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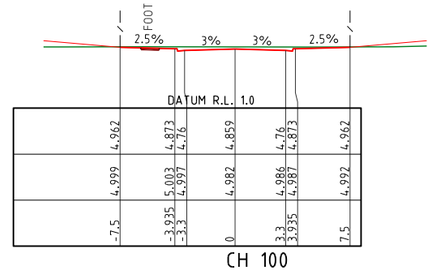
CH 40



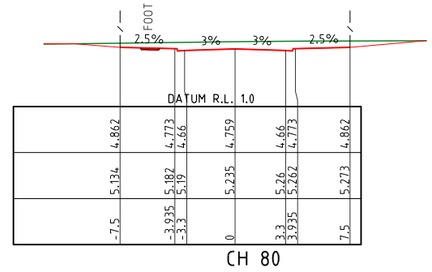
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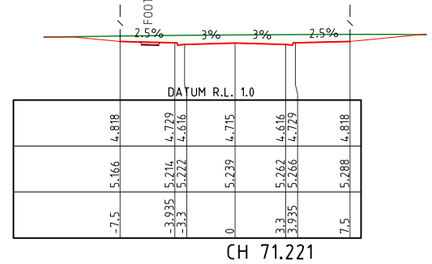
CH 120



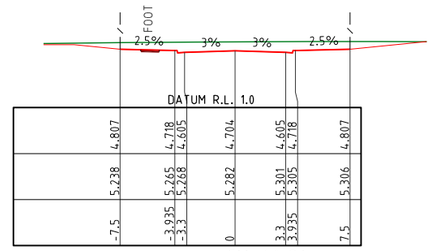
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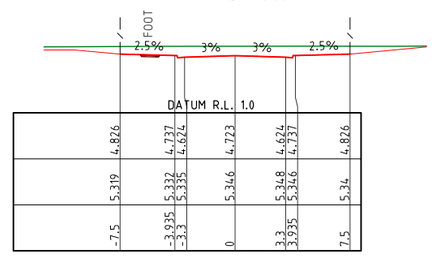
CH 80



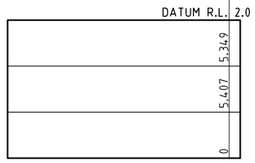
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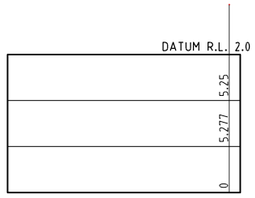
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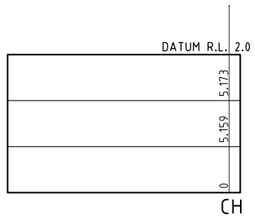
CH 61.221



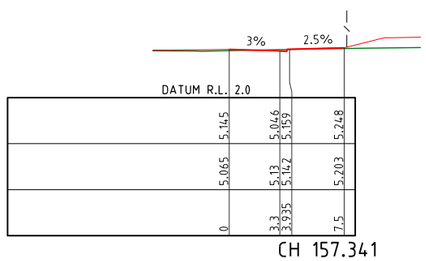
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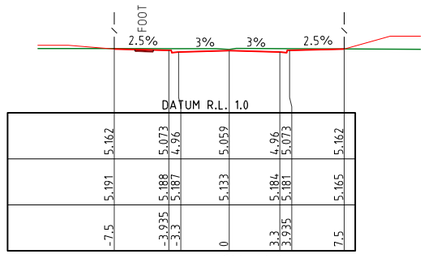
CH 163.341



CH 160



CH 157.341



CH 140

B

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	06-08-21	CROSS SECTIONS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
CROSS SECTIONS
ROAD 22

CONSTRUCTION ISSUE

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Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As
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Fax 07 5571 1088
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Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

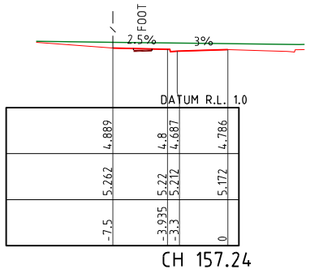
DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

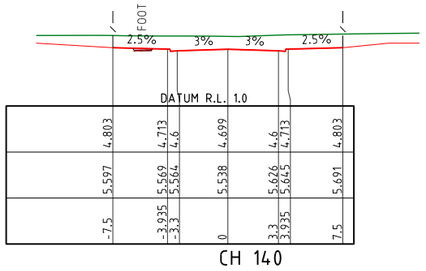
DRAWING NUMBER 12301-P5-1,2&3-312 | AMEND. B

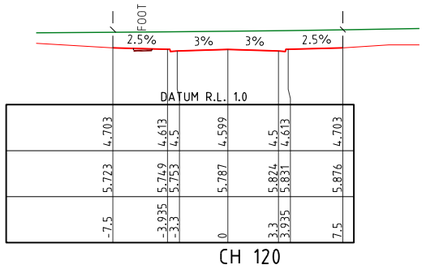
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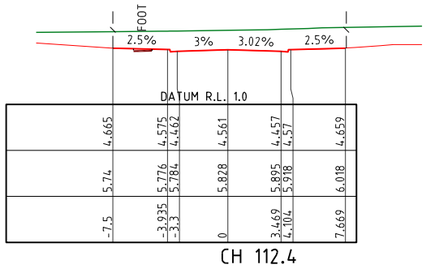
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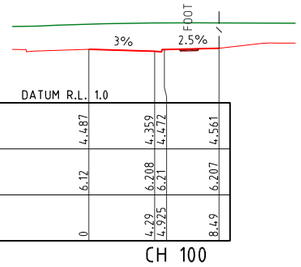
1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS SHOWN INDICATIVELY, INTERFACE TO MATCH EXISTING LEVEL.

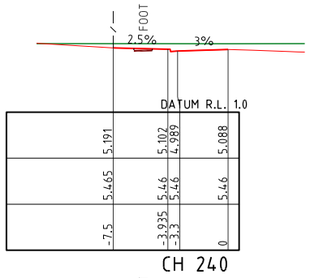


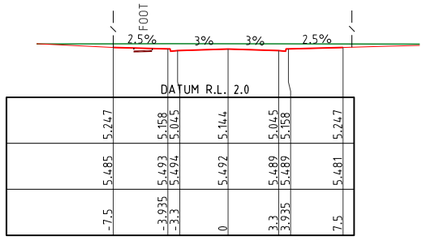


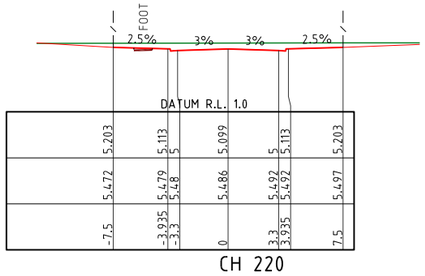


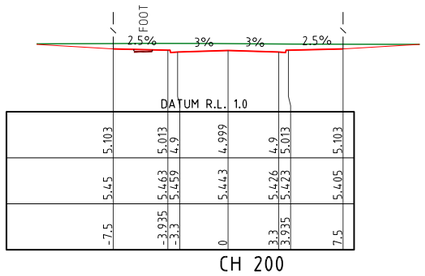


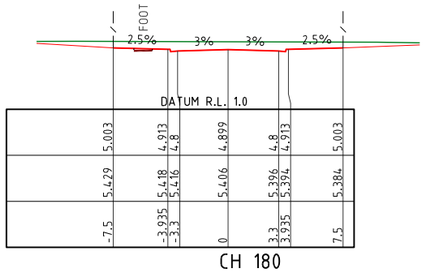


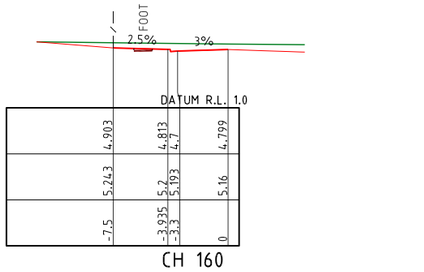


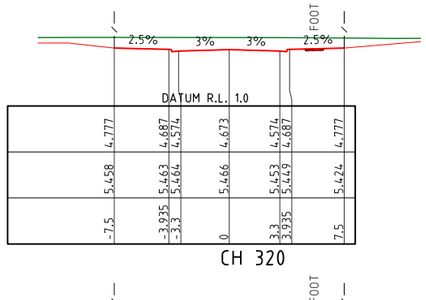


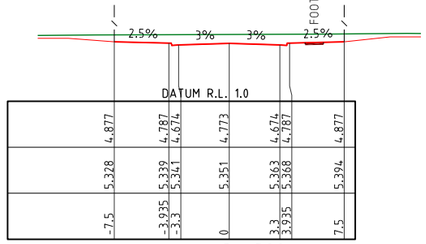


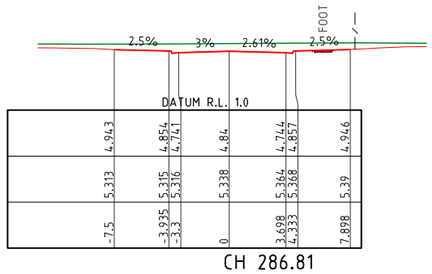


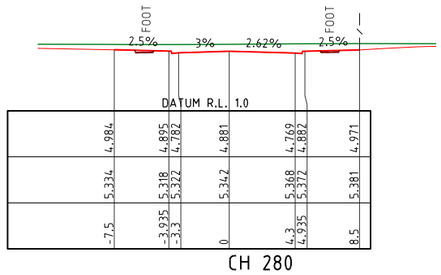


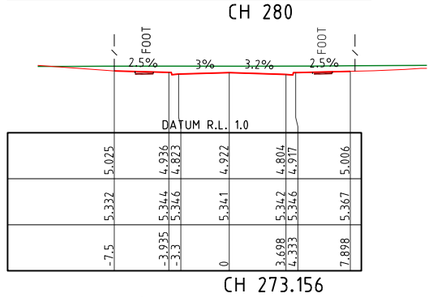


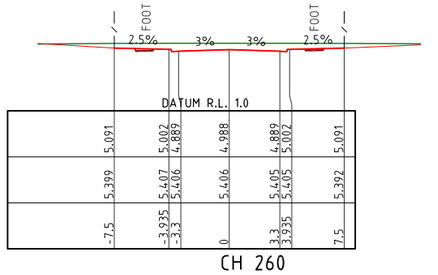


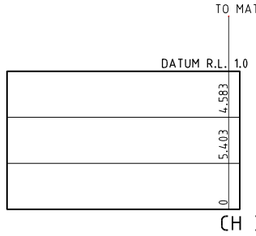


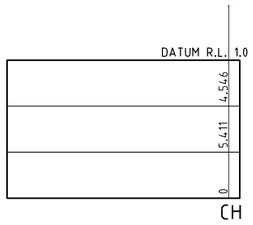


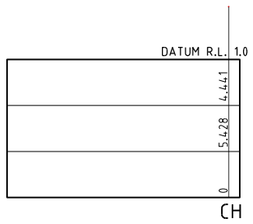


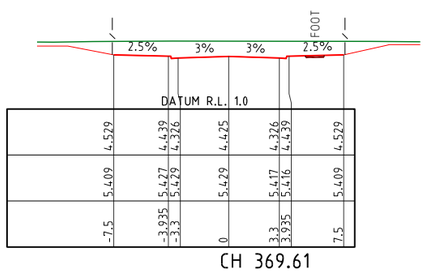


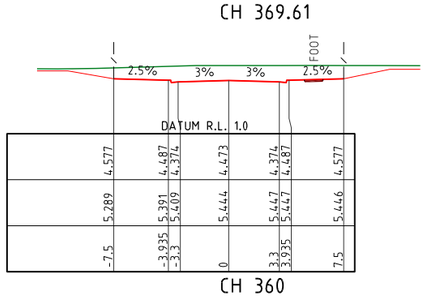


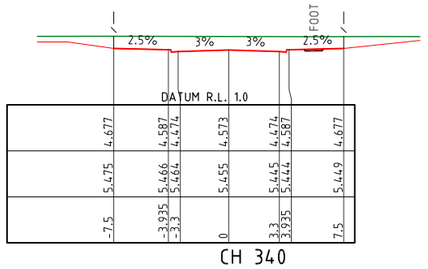












DESIGN SURFACE LEVEL
EXISTING SURFACE LEVEL
OFFSET

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
CROSS SECTIONS
ROAD 29

CONSTRUCTION ISSUE

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Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As:
Mortons-Urban Solutions
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mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088
Postal Address
PO Box 2484
Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED RB	DRAWN CB
APPROVED	NER 906726
DATE 07-02-19	

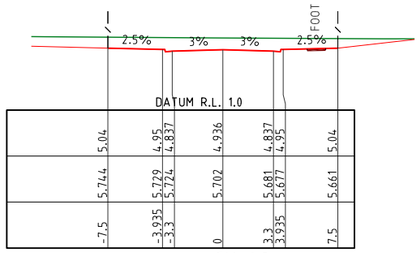
DRAWING NUMBER 12301-P5-1,2&3-313
AMEND. A

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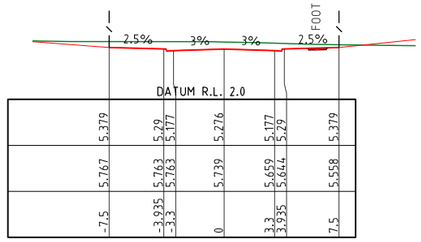
NOTES:

1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS SHOWN INDICATIVELY, INTERFACE TO MATCH EXISTING LEVEL.

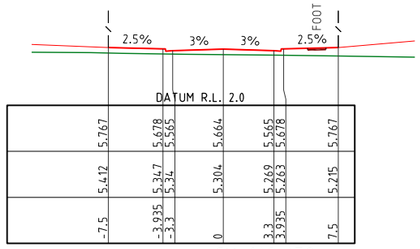
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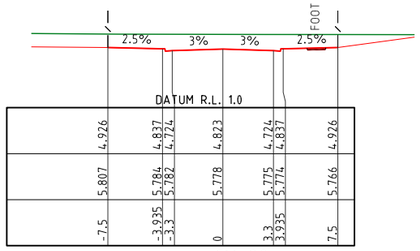
CH 40



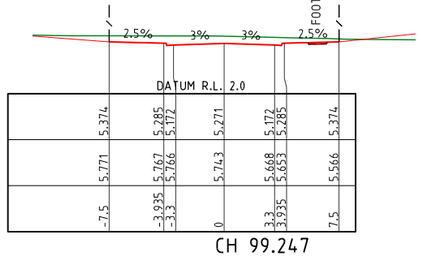
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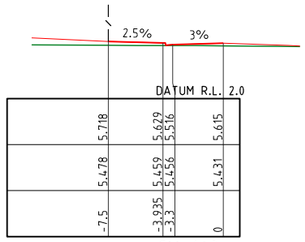
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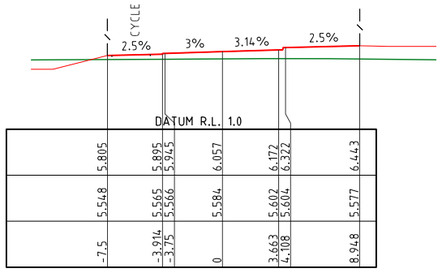
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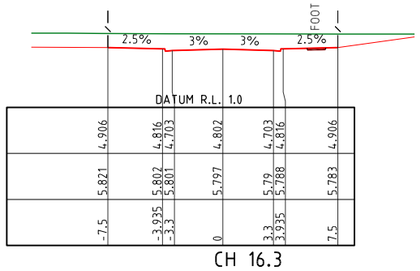
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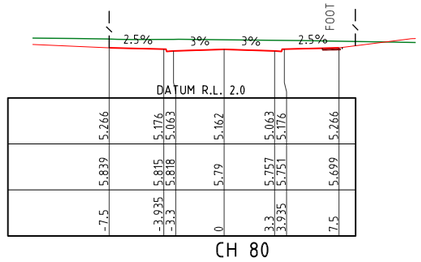
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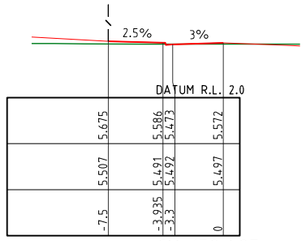
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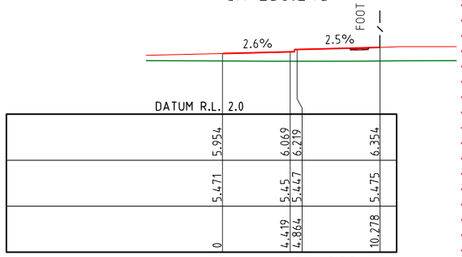
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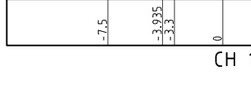
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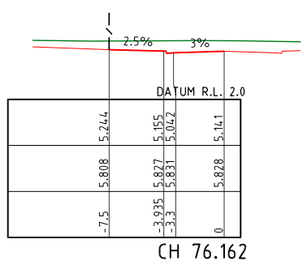
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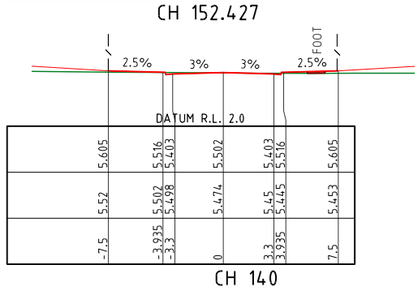
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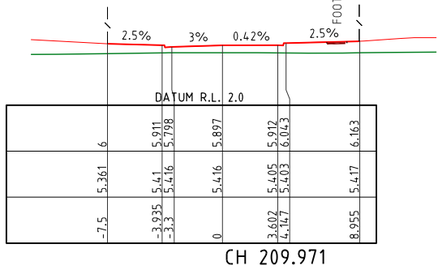
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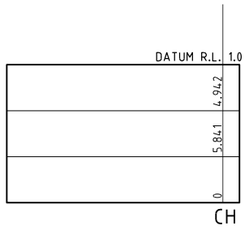
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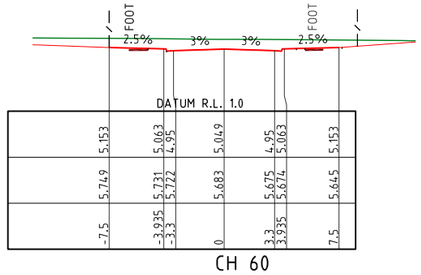
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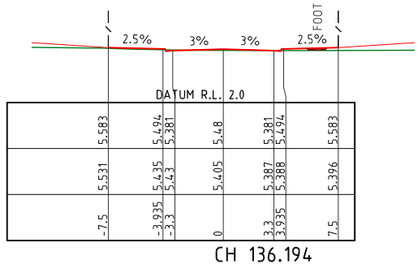
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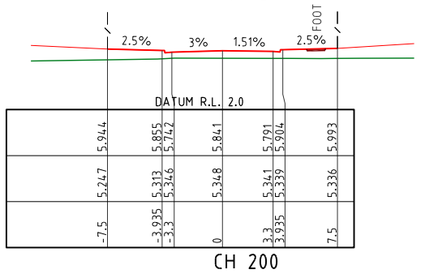
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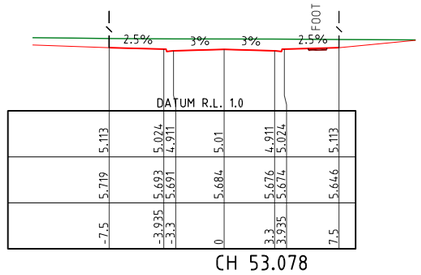
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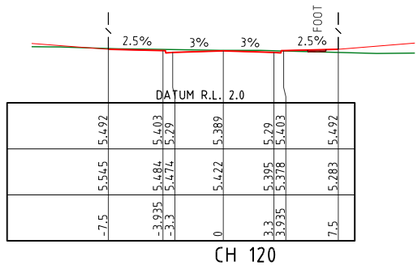
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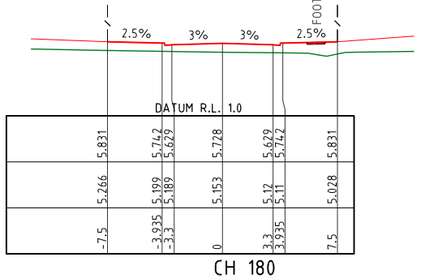
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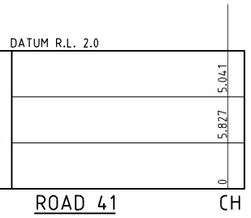
CH 53.078



CH 120



CH 180



ROAD 41 CH 0

NOTES:

1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS WITH NO TEMPLATE REPRESENT CONTROL LINE LEVELS AT THAT CHAINAGE.

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	06-08-21	CROSS SECTIONS
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
CROSS SECTIONS
ROAD 41
SHEET 1 OF 2

CONSTRUCTION ISSUE

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Project Coordination
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Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER 12301-P5-1,2&3-314

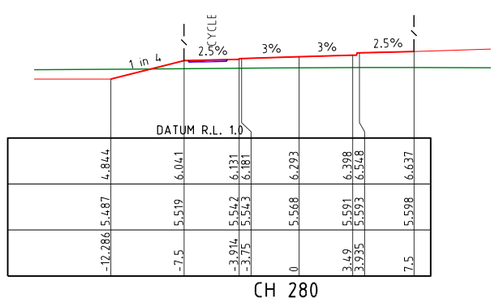
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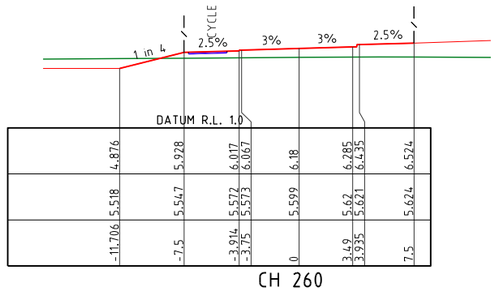
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NOTES:

1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS SHOWN INDICATIVELY, INTERFACE TO MATCH EXISTING LEVEL.

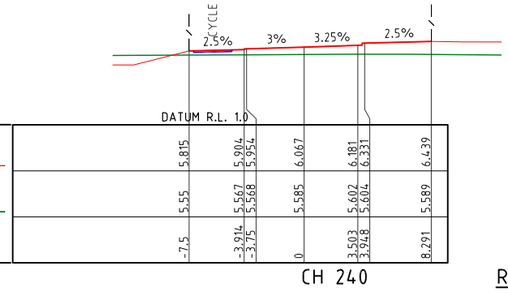
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NOTES:

1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS WITH NO TEMPLATE REPRESENT CONTROL LINE LEVELS AT THAT CHAINAGE.



ROAD 41

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	06-08-21	CROSS SECTIONS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
CROSS SECTIONS
ROAD 41
SHEET 2 OF 2

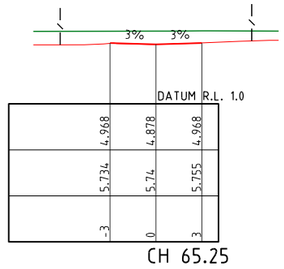
CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
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Southport QLD 4215

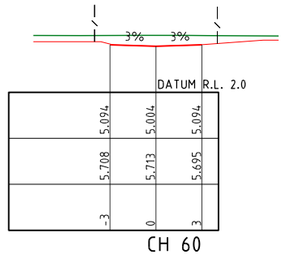
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APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
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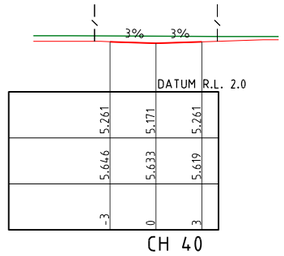
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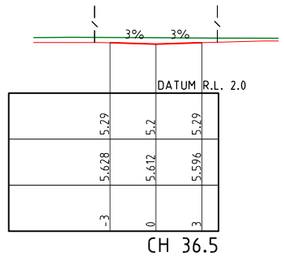
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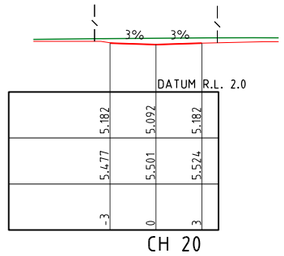
CH 60



CH 40



CH 36.5

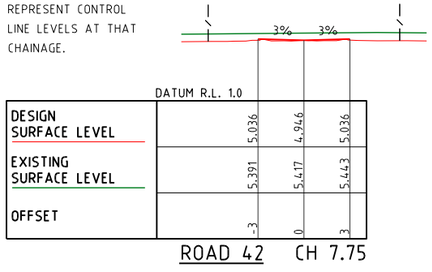


CH 20

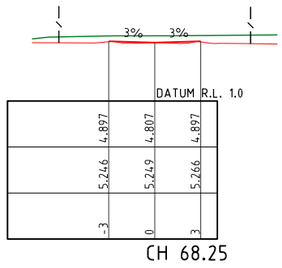
NOTES:

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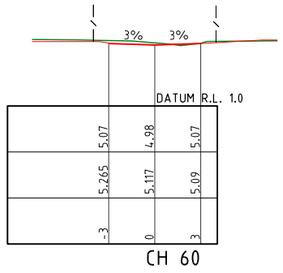
2. CROSS SECTIONS WITH NO TEMPLATE REPRESENT CONTROL LINE LEVELS AT THAT CHAINAGE.



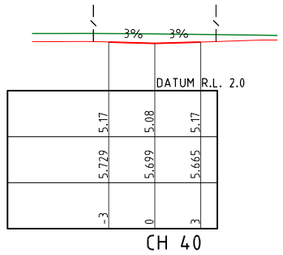
ROAD 42 CH 7.75



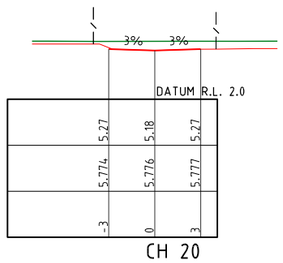
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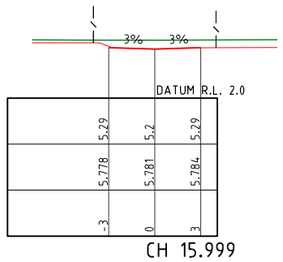
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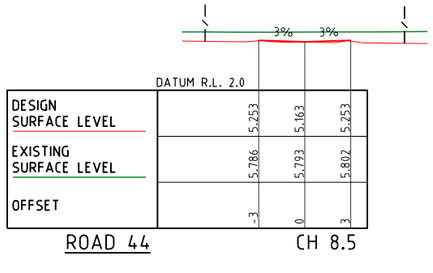
CH 40



CH 20



CH 15.999



ROAD 44 CH 8.5

NOTES:

1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS SHOWN INDICATIVELY, INTERFACE TO MATCH EXISTING LEVEL.

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
CROSS SECTIONS
ROAD 42 & 44

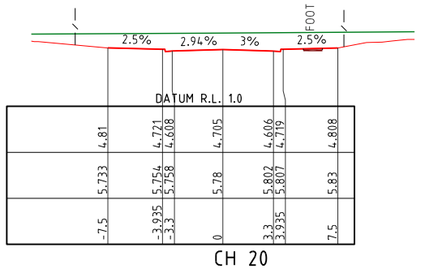
CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
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Fax 07 5571 1088
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Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

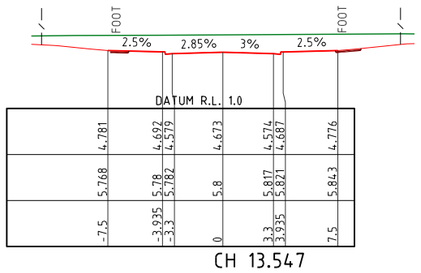
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APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-316	A

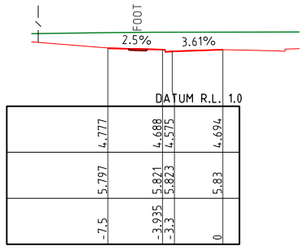
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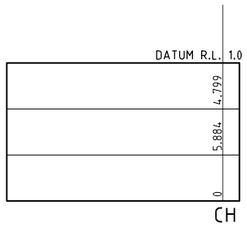
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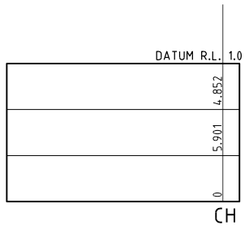
CH 13.547



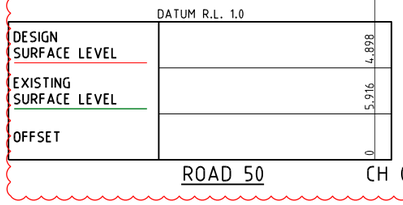
CH 9.3



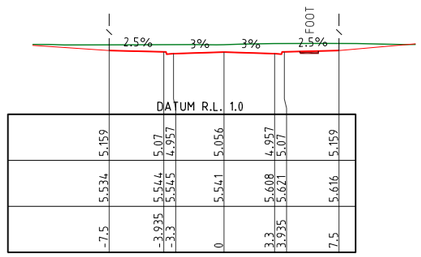
CH 3.3



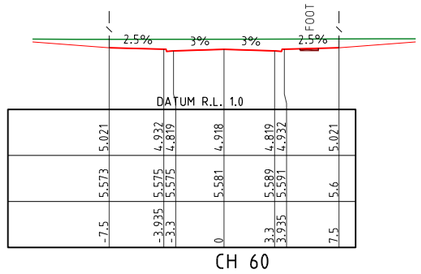
CH 1.531



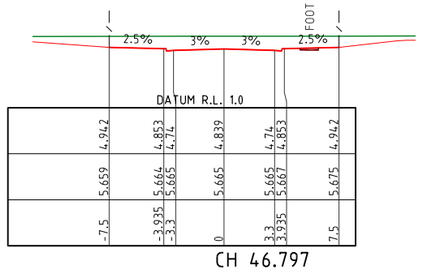
ROAD 50 CH 0



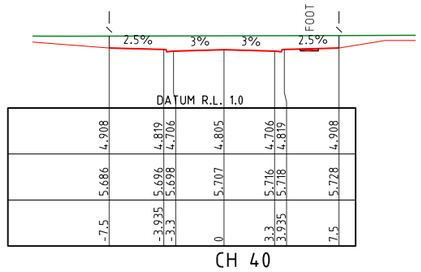
CH 76.797



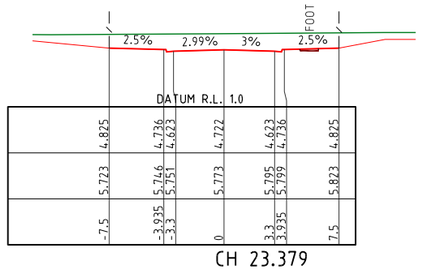
CH 60



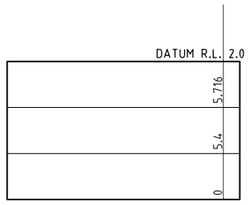
CH 46.797



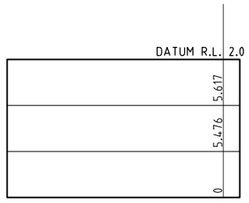
CH 40



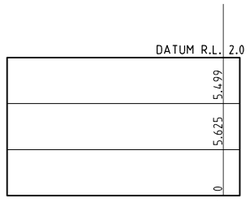
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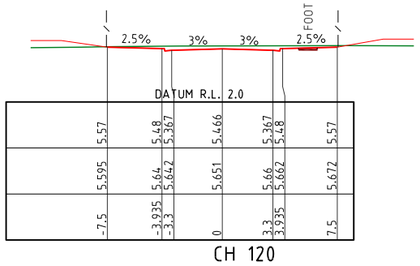
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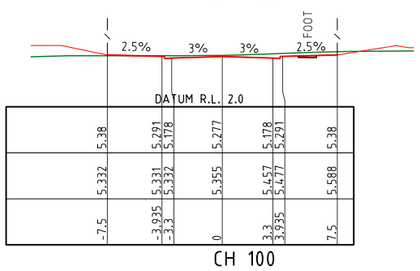
CH 129.396



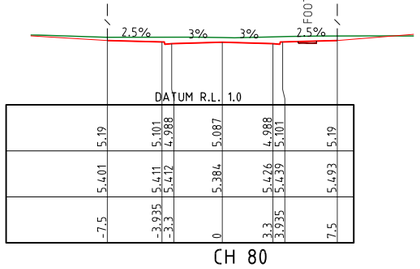
CH 123.396



CH 120



CH 100



CH 80

NOTES:

1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS WITH NO TEMPLATE REPRESENT CONTROL LINE LEVELS AT THAT CHAINAGE.

B

NOTES:

1. REFER TO 070 SERIES FINAL SURFACE PLAN DWGS FOR EARTHWORKS BEYOND ROAD RESERVE.
2. CROSS SECTIONS SHOWN INDICATIVELY, INTERFACE TO MATCH EXISTING LEVEL.

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	06-08-21	CROSS SECTIONS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
CROSS SECTIONS
ROAD 50

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER 12301-P5-1,2&3-317 AMEND. B

Y:\123 - Lusta Developments Pty Ltd\01 - Kings Forest\PREC5\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-300.dwg, 6/10/2021 4:42:39 PM, 1:2

LEGEND

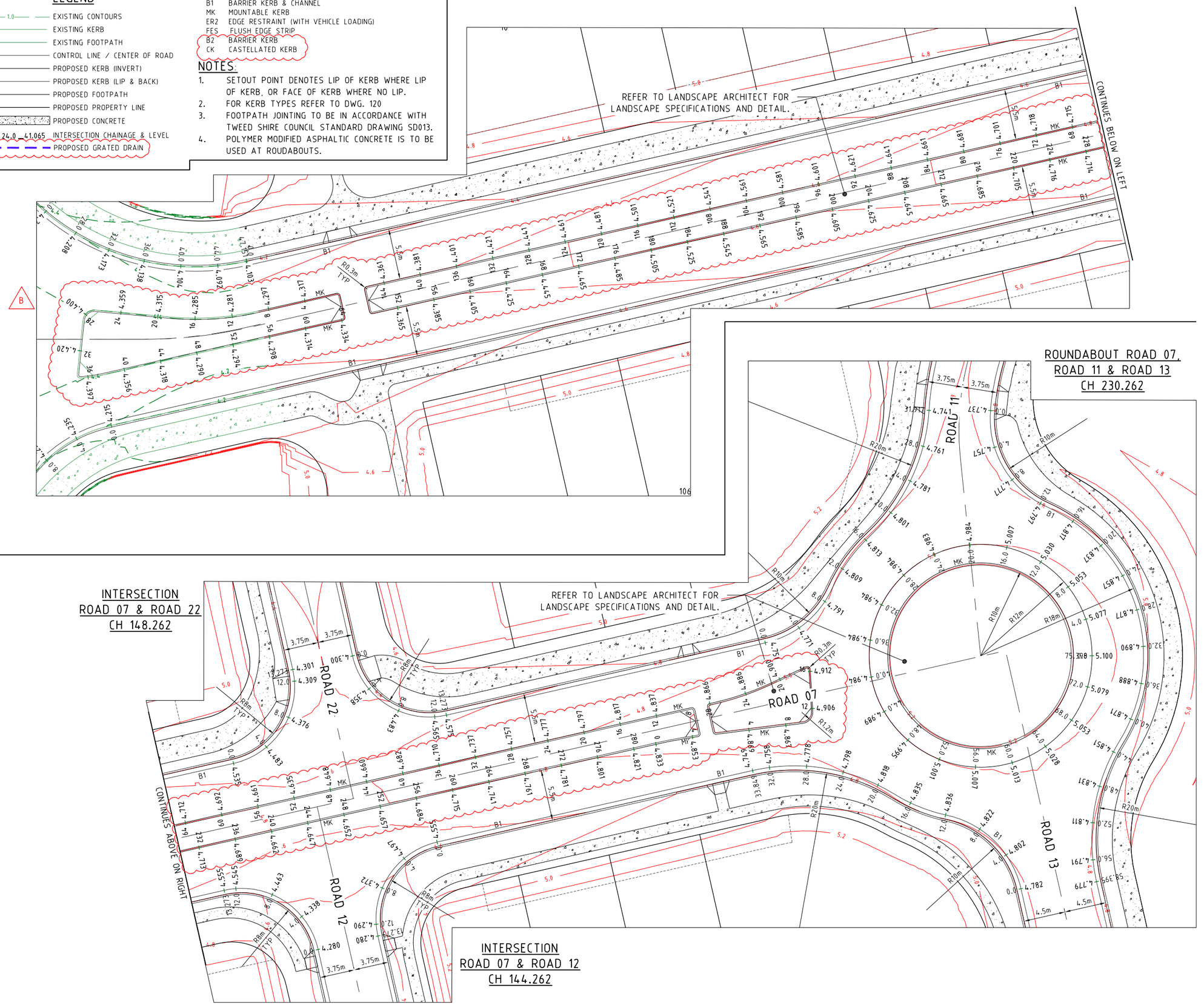
- EXISTING CONTOURS
- EXISTING KERB
- EXISTING FOOTPATH
- CONTROL LINE / CENTER OF ROAD
- PROPOSED KERB (INVERT)
- PROPOSED KERB (LIP & BACK)
- PROPOSED FOOTPATH
- PROPOSED PROPERTY LINE
- PROPOSED CONCRETE
- 24.0 41.065 INTERSECTION CHAINAGE & LEVEL
- PROPOSED GRATED DRAIN

KERB TYPES

B1	BARRIER KERB & CHANNEL
MK	MOUNTABLE KERB
ER2	EDGE RESTRAINT (WITH VEHICLE LOADING)
FES	FLUSH EDGE STRIP
B2	BARRIER KERB
CK	CASTELLATED KERB

NOTES:

1. SETOUT POINT DENOTES LIP OF KERB WHERE LIP OF KERB, OR FACE OF KERB WHERE NO LIP.
2. FOR KERB TYPES REFER TO DWG. 120
3. FOOTPATH JOINTING TO BE IN ACCORDANCE WITH TWEED SHIRE COUNCIL STANDARD DRAWING SD013.
4. POLYMER MODIFIED ASPHALTIC CONCRETE IS TO BE USED AT ROUDABOUTS.



PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 2 4 6 8 10m

Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	09-08-21	KERB TYPE, INTERSECTION CHAINAGE & LEVEL AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
INTERSECTION
GRADING DETAILS
SHEET 1 OF 5

CONSTRUCTION ISSUE

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Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
Mortons-Urban Solutions
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Southport QLD 4215

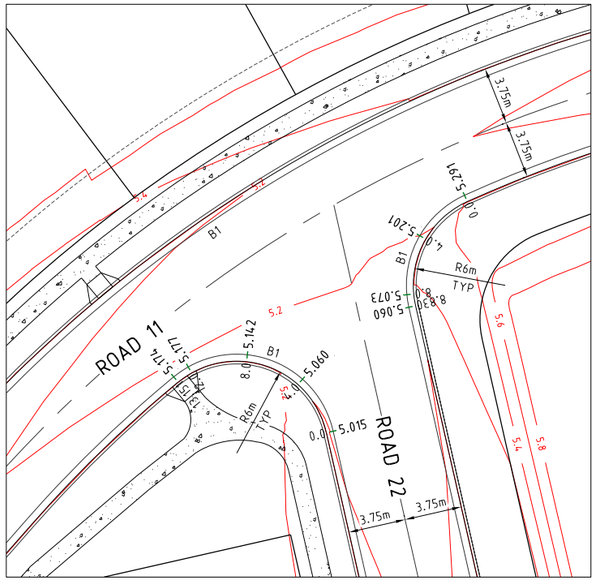
mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

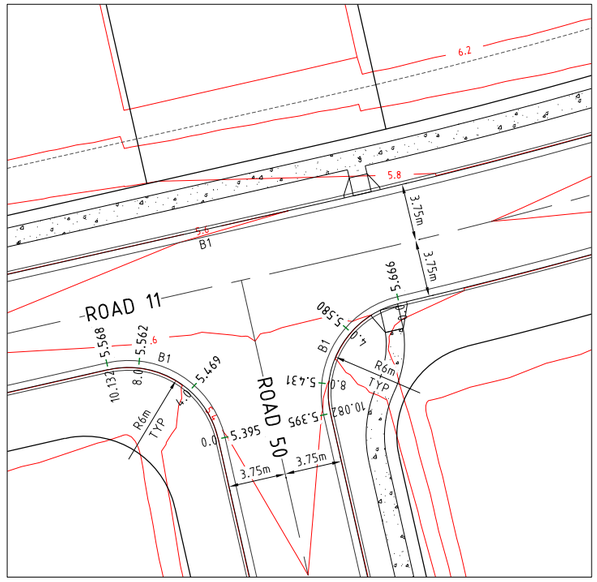
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APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-400	B

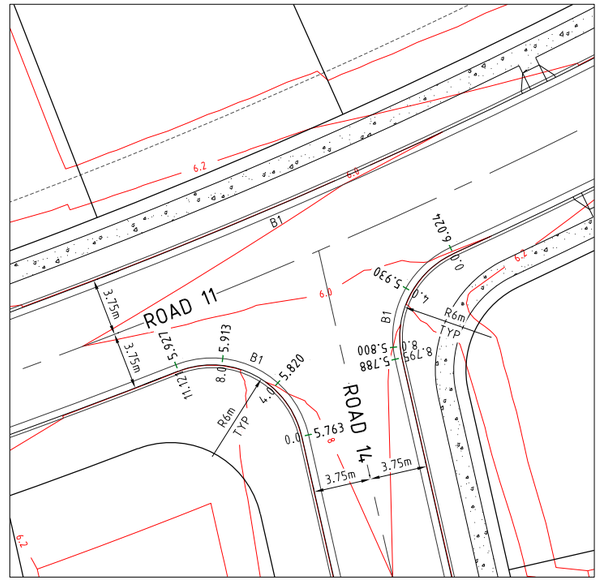
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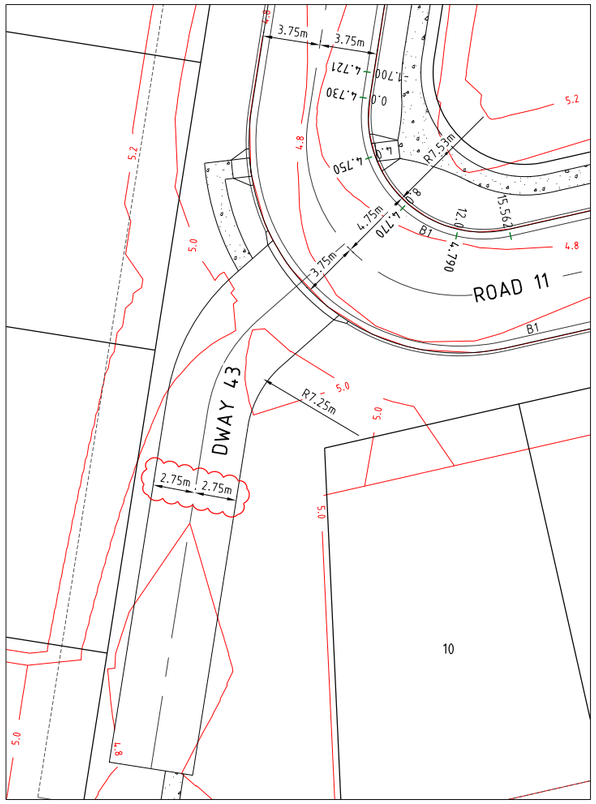
INTERSECTION
ROAD 11 & ROAD 22
CH 230.749



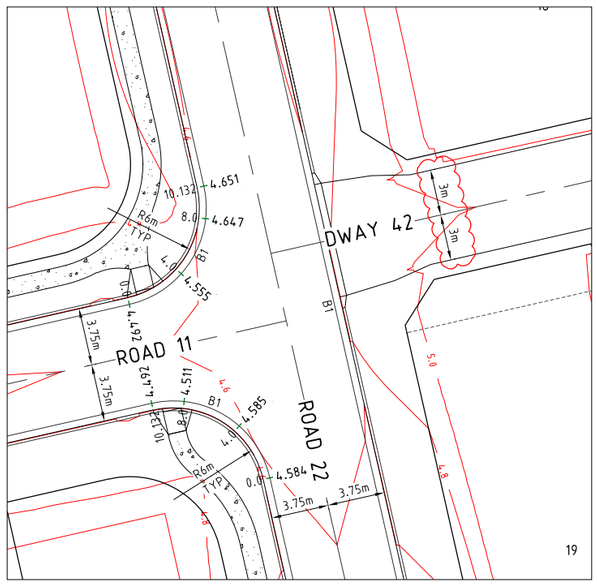
INTERSECTION
ROAD 11 & ROAD 50
CH 304.117



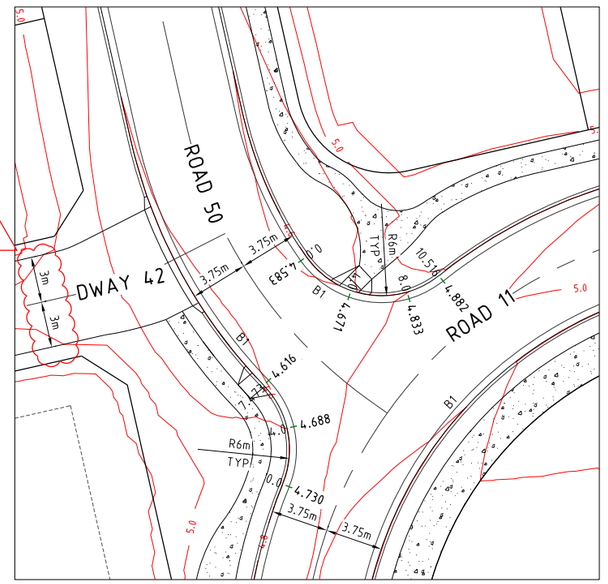
INTERSECTION
ROAD 11 & ROAD 14
CH 377.497



WIDENING ROAD 11
CH 164.361



INTERSECTION
ROAD 22 & ROAD 11
CH 47.500



INTERSECTION
ROAD 11 & ROAD 50
CH 920.089

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

NORTH

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	09-08-21	DIMENSIONS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
INTERSECTION
GRADING DETAILS
SHEET 2 OF 5

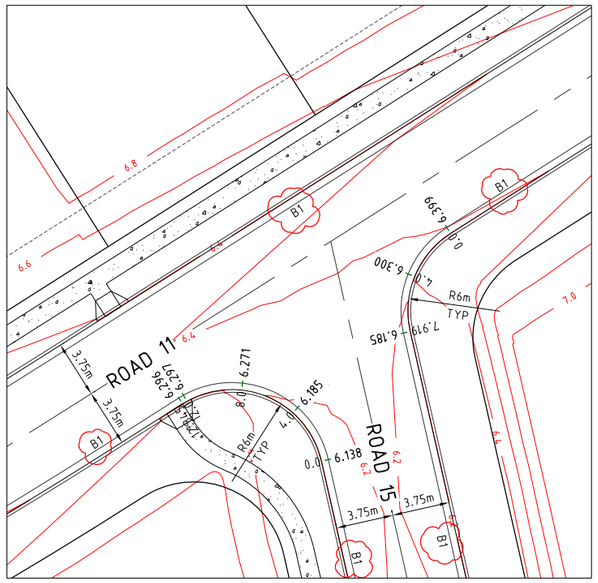
CONSTRUCTION ISSUE

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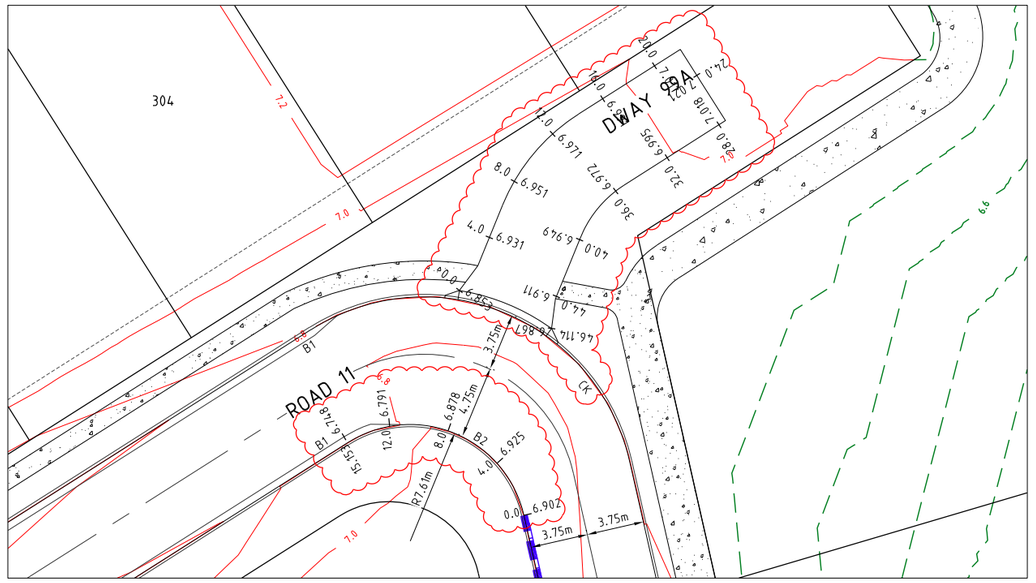
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APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-401	B

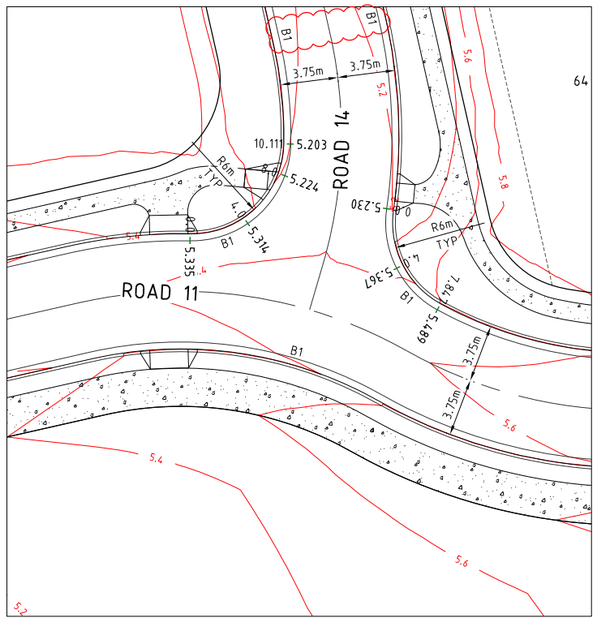
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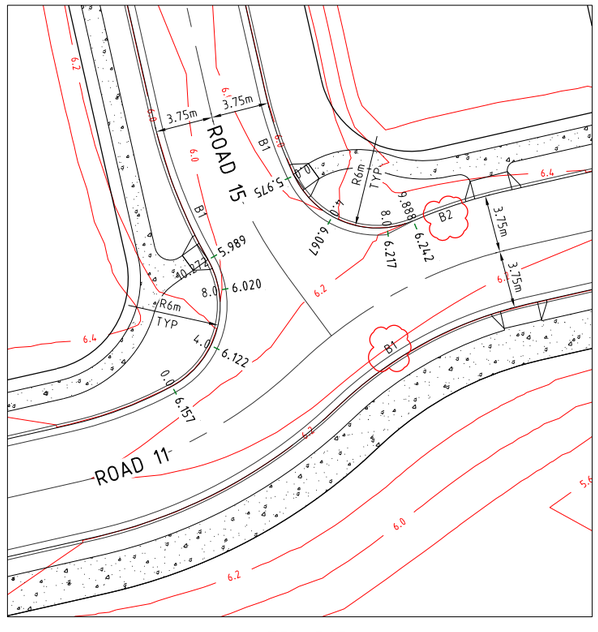
INTERSECTION
ROAD 11 & ROAD 50
CH 453.655



WIDENING ROAD 11
CH 528.661



INTERSECTION
ROAD 11 & ROAD 14
CH 858.473



INTERSECTION
ROAD 11 & ROAD 15
CH 771.367

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

NORTH

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	09-08-21	KERB AND INTERSECTION AND CHAINAGE AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
INTERSECTION
GRADING DETAILS
SHEET 3 OF 5

CONSTRUCTION ISSUE

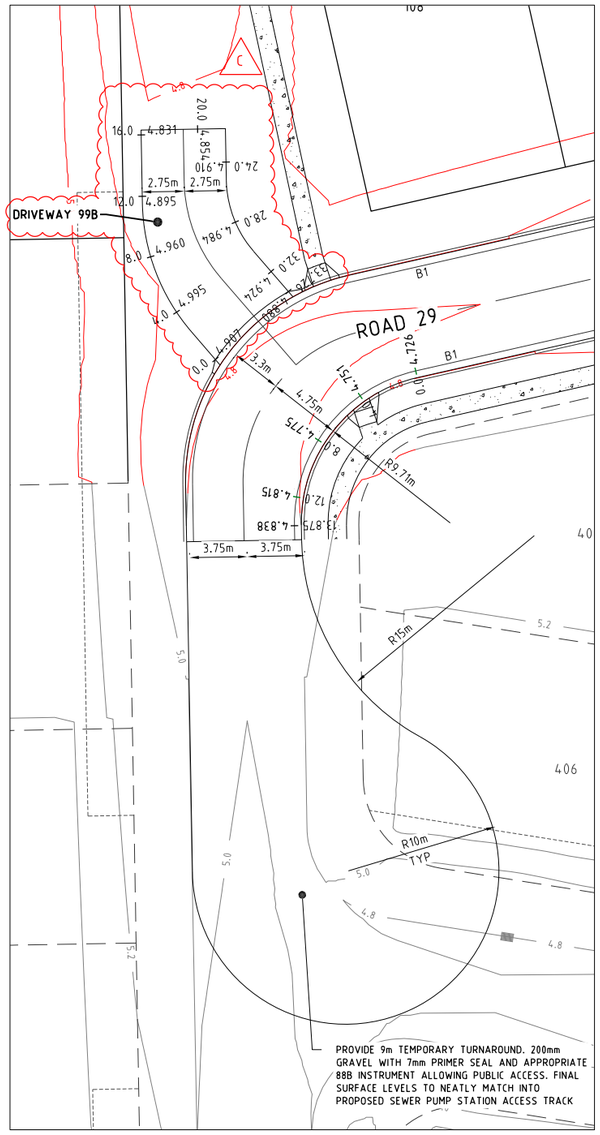
MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
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Gold Coast Office
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Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

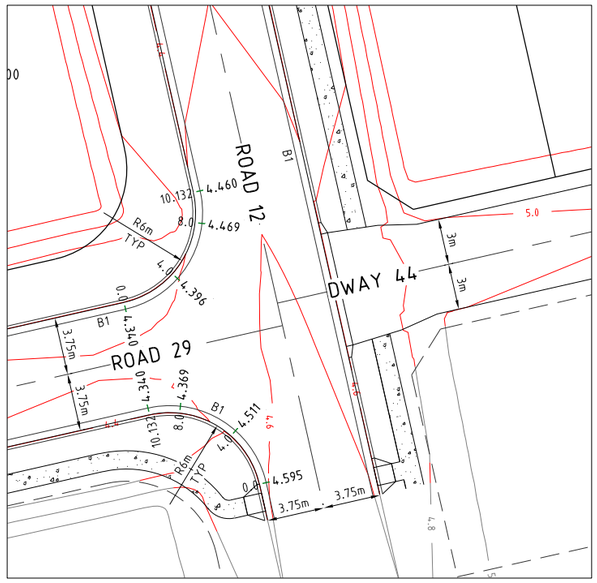
DRAWING NUMBER
12301-P5-1,2&3-402

AMEND.
B

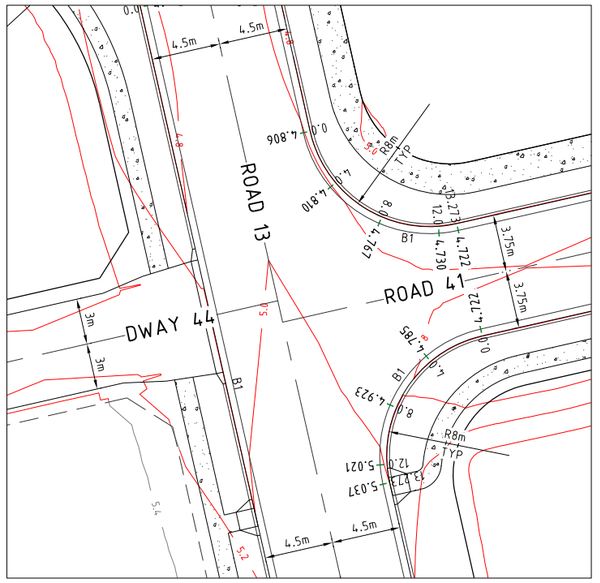
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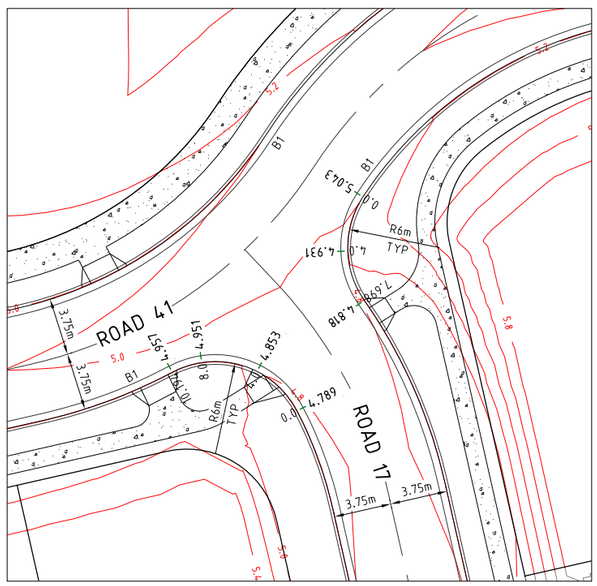
WIDENING ROAD 29
CH 283.318



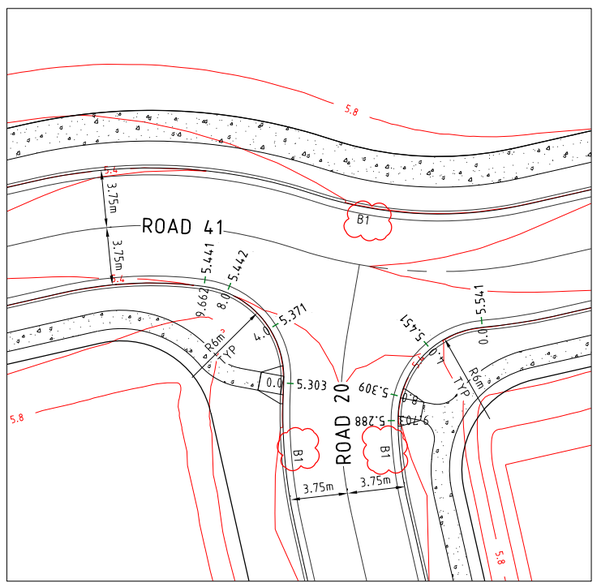
INTERSECTION
ROAD 12 & ROAD 29
CH 46.750



INTERSECTION
ROAD 13 & ROAD 41
CH 47.429



INTERSECTION
ROAD 41 & ROAD 17
CH 69.139



INTERSECTION
ROAD 41 & ROAD 20
CH 156.765

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

NORTH

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

C	09-08-21	INTERSECTION CHAINAGE AND LEVEL
B	24-11-20	DIMENSIONS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
INTERSECTION
GRADING DETAILS
SHEET 4 OF 5

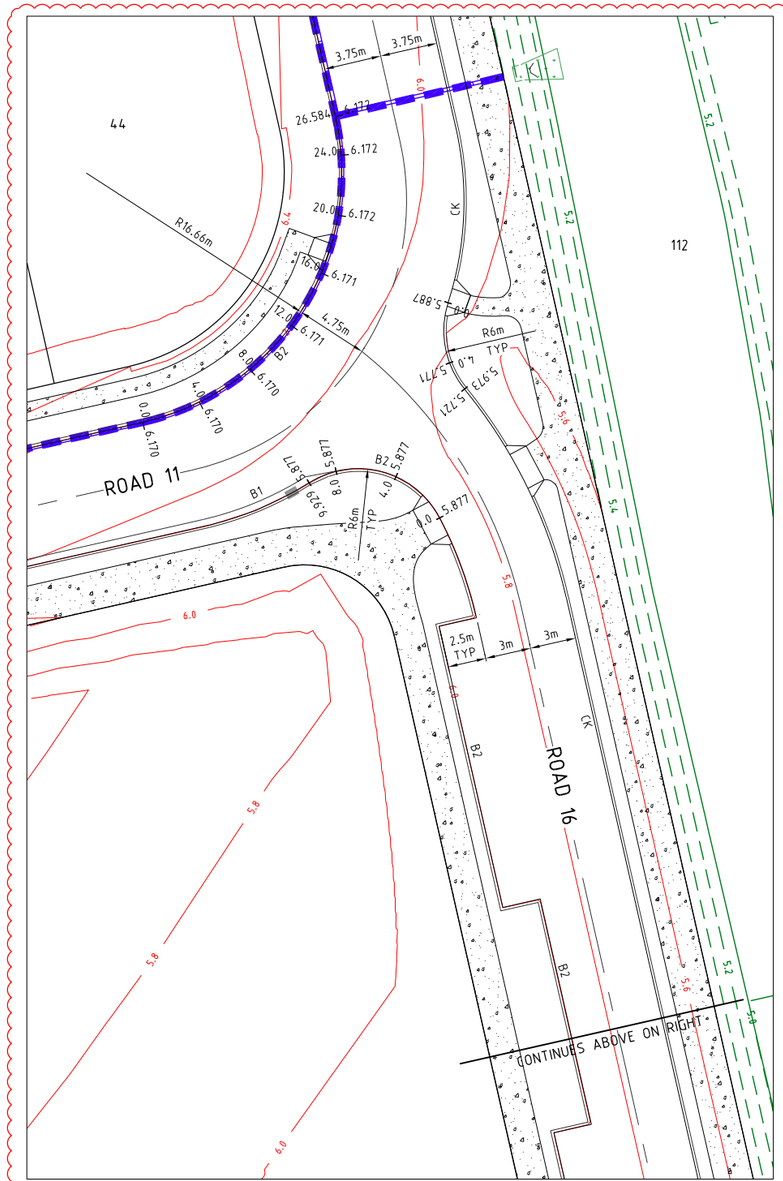
CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As:
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mortons@urbansolutions.net.au
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Tel 07 5571 1099
Fax 07 5571 1088
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Southport QLD 4215
Gold Coast Office
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Southport QLD 4215

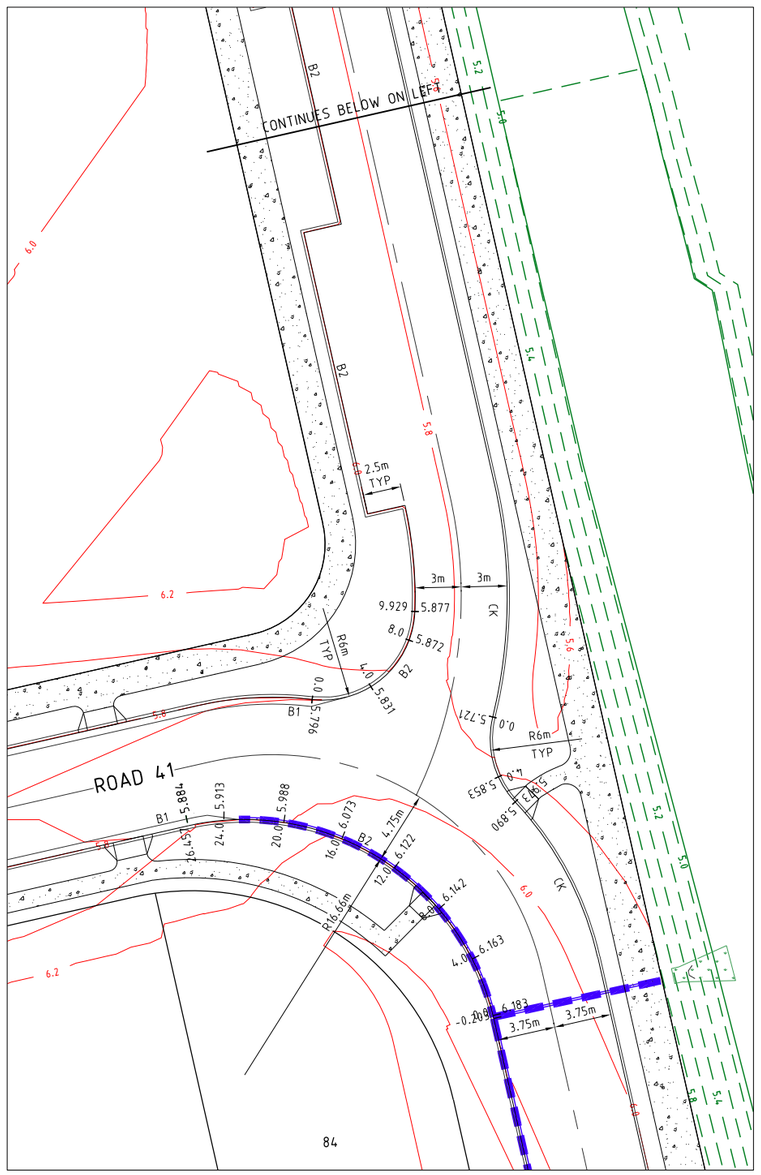
DESIGNED RB	DRAWN CB	
APPROVED	NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-403
AMEND.: C

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INTERSECTION
ROAD 11 & ROAD 16
CH 704.514



INTERSECTION
ROAD 41 & ROAD 16
CH 223.851

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

NORTH

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
C	09-08-21	KERBS AMENDED
B	24-11-20	ROAD, DIMENSIONS AND CHAINAGES AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LandSurv
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
INTERSECTION
GRADING DETAILS
SHEET 5 OF 5

CONSTRUCTION ISSUE

MORTONS urbansolutions
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Project Coordination
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Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER	906726
DATE	07-02-19		

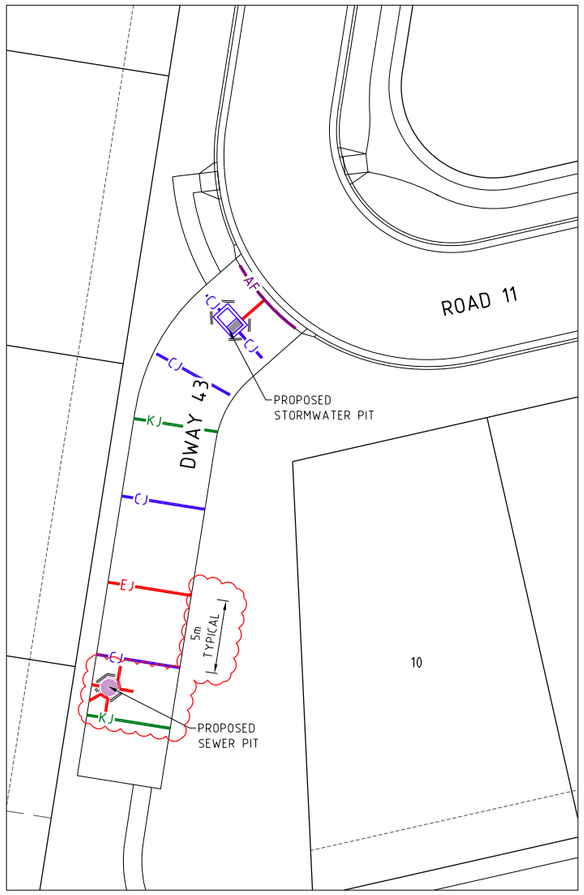
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12301-P5-1,2&3-404	C

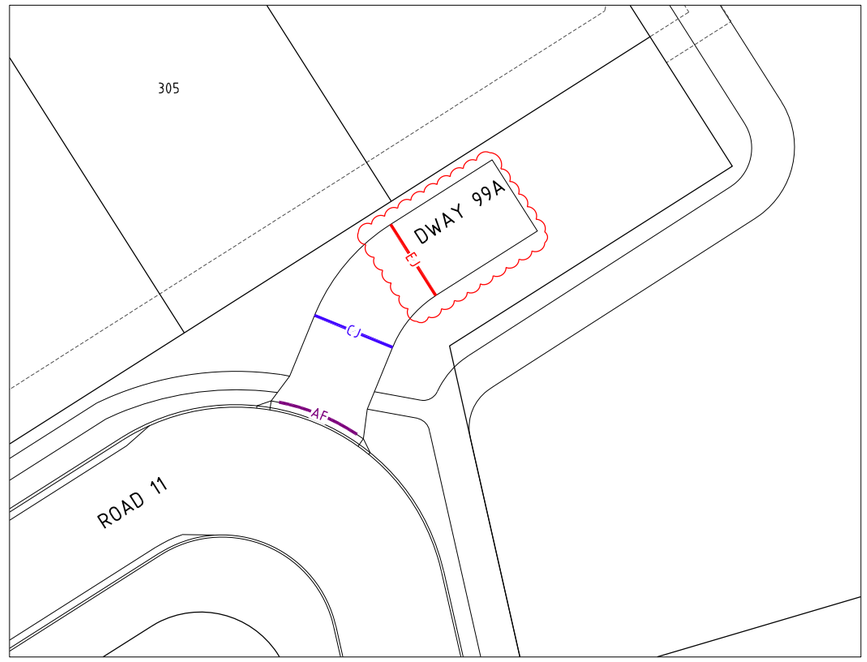
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CONCRETE PAVEMENT DRIVEWAY:

1. CONCRETE MIX
   THE CONCRETE SHALL HAVE A MINIMUM 28 DAY CHARACTERISTIC COMPRESSIVE STRENGTH AS SPECIFIED IN THE SCHEDULE OF CONCRETE PAVEMENTS TABLE. MAXIMUM WATER/CEMENT RATIO OF 0.45 AND A MINIMUM CEMENT CONTENT OF 300kg/m^3.
2. SUBGRADE PREPARATION
   THE SUBGRADE TO THE CONCRETE PAVEMENT AREAS SHALL BE PREPARED THE SAME AS CONVENTIONAL ROADS. REFER TO SCHEDULE OF CONCRETE PAVEMENTS TABLE.
3. TRAFFIC
   TRAFFIC SHALL NOT BE ALLOWED ON THE FINISHED CONCRETE PAVEMENT FOR AT LEAST 14 DAYS AFTER COMPLETION OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING MEASURES TO PREVENT UNAUTHORISED ACCESS.
4. JOINTS
   ALL JOINTS SHALL BE LOCATED GENERALLY PERPENDICULAR TO THE CENTRELINE. ALL CONTROL JOINTS TO BE COMPLETED AS SOON AS CONCRETE HAS CURED SUFFICIENTLY SO AS NOT TO DAMAGE THE SLAB SURFACE.
   ALL JOINTS ARE TO BE INSTALLED AS DETAILED ON IPWEAQ STD DWG RS-065.
5. GENERAL
   THE GRAVEL PAVEMENT SHALL BE NEATLY PROFILED AND TRIMMED TO ENSURE CONSTANT CONCRETE DEPTHS AND PROFILES. ACTUAL CONSTRUCTION REQUIREMENTS MAY VARY FROM THE DETAILS SHOWN AND THEREFORE ALL CONSTRUCTION DETAILS SHOULD BE VERIFIED BY THE SUPERINTENDENT PRIOR TO CONSTRUCTION COMMENCING. PROVIDE ABELFLEX BETWEEN KERB AND DRIVEWAY.
6. COMPLIANCE STANDARDS
   SLIP RESISTANCE OF SURFACE MATERIALS IN ACCORDANCE WITH AUSTRALIAN STANDARDS.

AS/NZS 4586:	2013 SLIP RESISTANCE OF NEW PEDESTRIAN SURFACE MATERIALS.
AS/NZS 4663:	2013 SLIP RESISTANCE MEASUREMENT OF EXISTING PEDESTRIAN SURFACES
HB.A:A 197: 1999	"AN INTRODUCTORY GUIDE TO THE SLIP RESISTANCE OF PEDESTRIAN SURFACE MATERIALS"





SCHEDULE OF CONCRETE PAVEMENTS

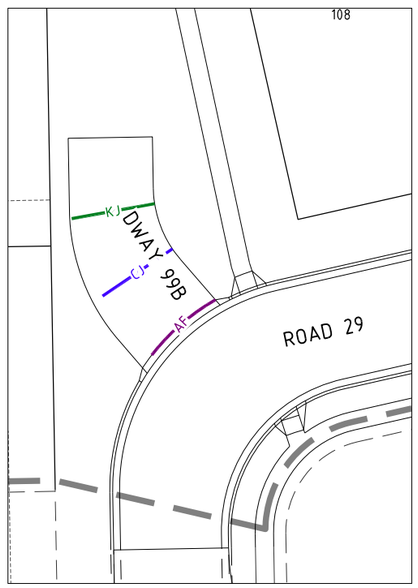
FUNCTION	SURFACING	SUBGRADE PREPARATION	THICKNESS 'T'	STRENGTH	REINCORCING	DESIGN GUIDE
DRIVEWAY 43, 99A & 99B 5.5m WIDE	BROOM FINISH	50mm COMPACTED CRUSHER DUST OR 125mm (CBR 15)	175mm	32 mPa	SL 82 MESH	TSC SD 017
LANEWAY 6m WIDE	BROOM FINISH	125mm THICK CBR 15	180mm	40 mPa	SL 82 MESH	CEMENT & CONCRETE ASSOCIATION OF AUSTRALIA (C&CAAT51)

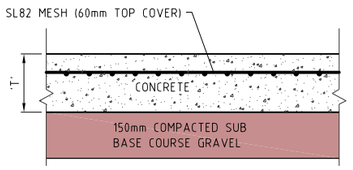
NOTES:
1. FOOTPATH JOINTING TO BE IN ACCORDANCE WITH T.S.C S.D0.13 AND TO BE HEAVY BROOM FINISH.
2. PAVEMENT DEPTHS ARE A GUIDE ONLY. FINAL PAVEMENT DESIGN IS SUBJECT TO INSITU SUBGRADE TESTING. PRELIMINARY PAVEMENT DEPTHS ABOVE ARE BASED ON A CBR OF 5.0

D

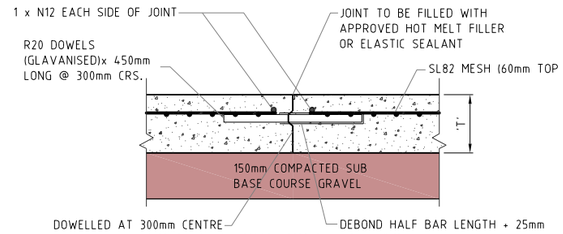
LEGEND

- EXISTING PROPERTY LINE
- EXISTING KERB
- FUTURE KERB
- FUTURE PROPERTY LINE
- PROPERTY LINE
- FACE OF KERB, FOOTPATHS
- LIP AND BACK OF KERB
- CONTROL LINE / CENTER OF ROAD
- SITE BOUNDARY
- STAGE BOUNDARY
- EJ EXPANSION JOINT
- CJ CONTRUCTION JOINT
- KJ CONTRACTION JOINT (KJ)
- AF ABLEFLEX (15mm THICK TO FULL DEPTH) 2xN12 TRIMMER BARS AROUND PENETRATIONS TYP.
- PROPOSED LANDSCAPE ISLANDS
- PROPOSED CONCRETE

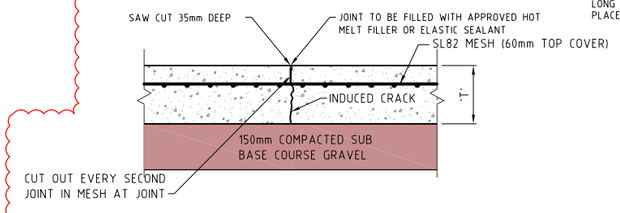




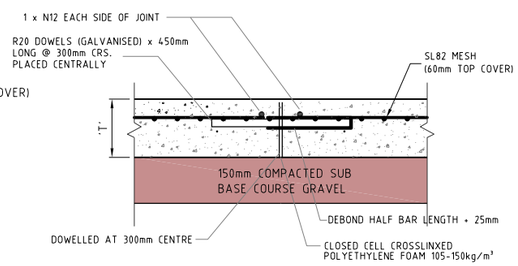
TYPICAL BROOM FINISHED CONCRETE PAVEMENT DETAIL
SCALE 1:10 - A1 (1:20 - A3)



CONTRACTION JOINT DETAIL 12m SPACING (K.J.)
SCALE 1:10 - A1 (1:20 - A3)



CONSTRUCTION JOINT 4m SPACING (C.J.)
SCALE 1:10 - A1 (1:20 - A3)



EXPANSION JOINT DETAIL 24m SPACING (E.J.)
SCALE 1:10 - A1 (1:20 - A3)

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PROJECT NAME
KINGS FOREST
PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

NORTH

0 2 4 6 8 10m
Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

D	09-08-21	LEGEND, DETAILS, TABLE AND NOTES AMENDED
C	22-04-21	TABLE AMENDED
B	26-02-21	TABLE AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS
LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE
ROADWORKS CONCRETE JOINTING PLAN SHEET 1 OF 3

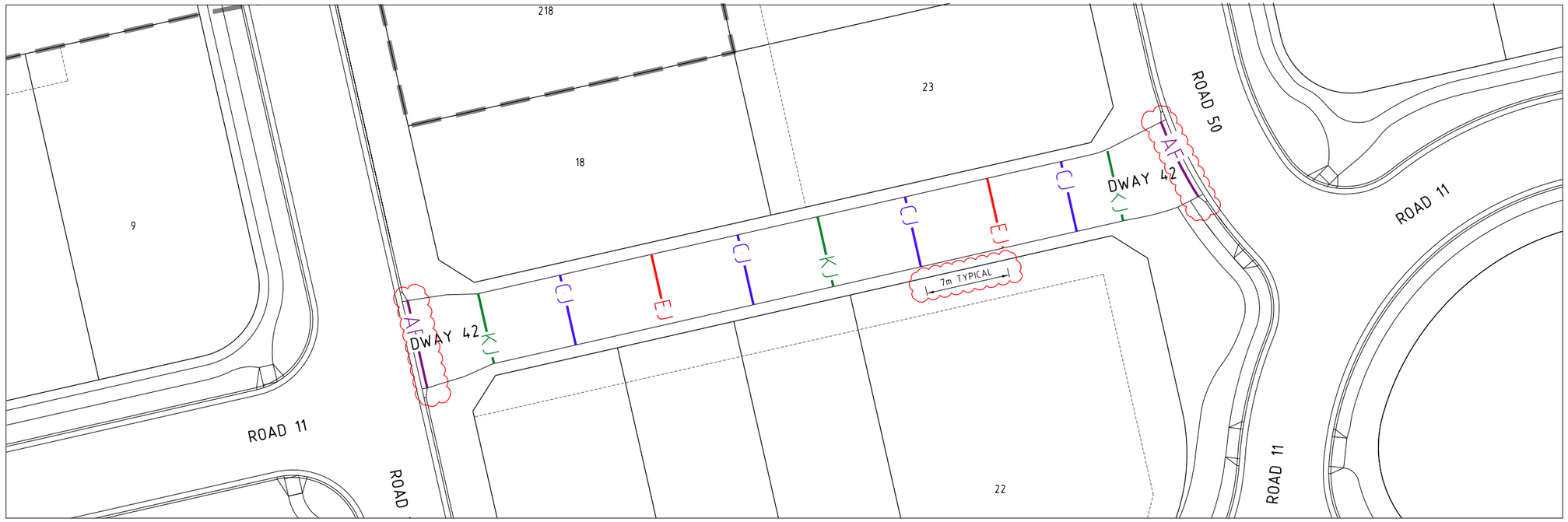
CONSTRUCTION ISSUE

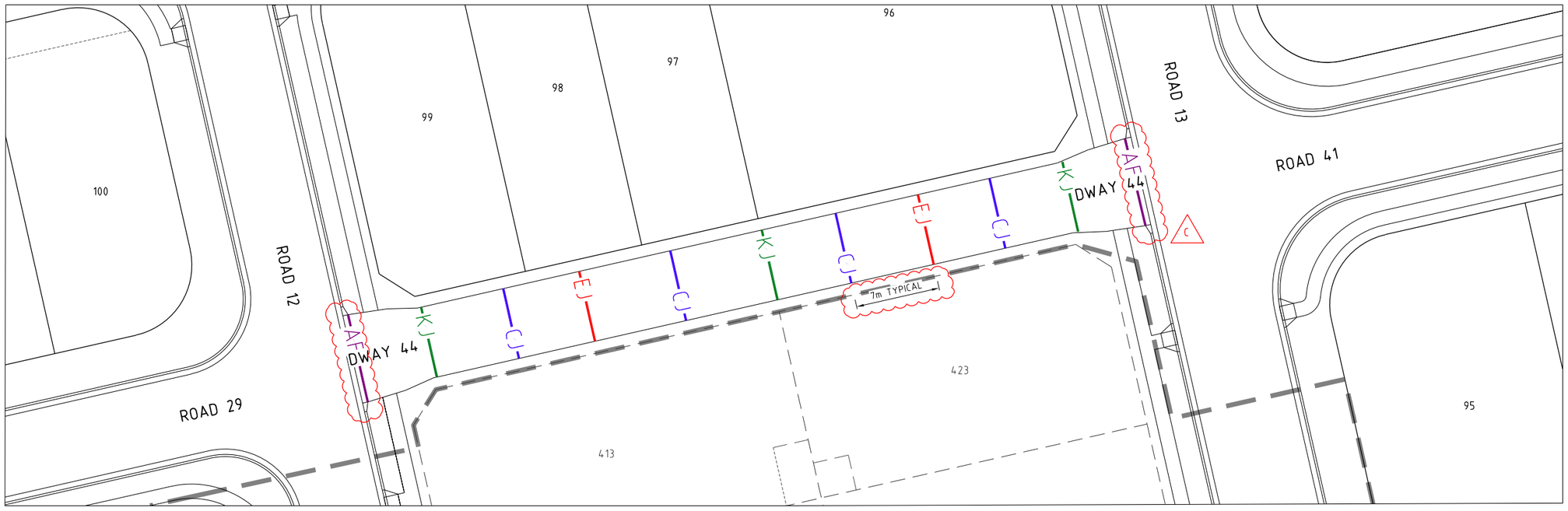
MORTONS urbansolutions
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Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER 12301-P5-1,2&3-410
AMEND. D

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PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 2 4 6 8 10m

Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
C	09-08-21	DIMENSION ADDED AND ABLEFLEX AMENDED
B	24-11-20	JOINTS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
CONCRETE
JOINTING PLAN
SHEET 2 OF 3

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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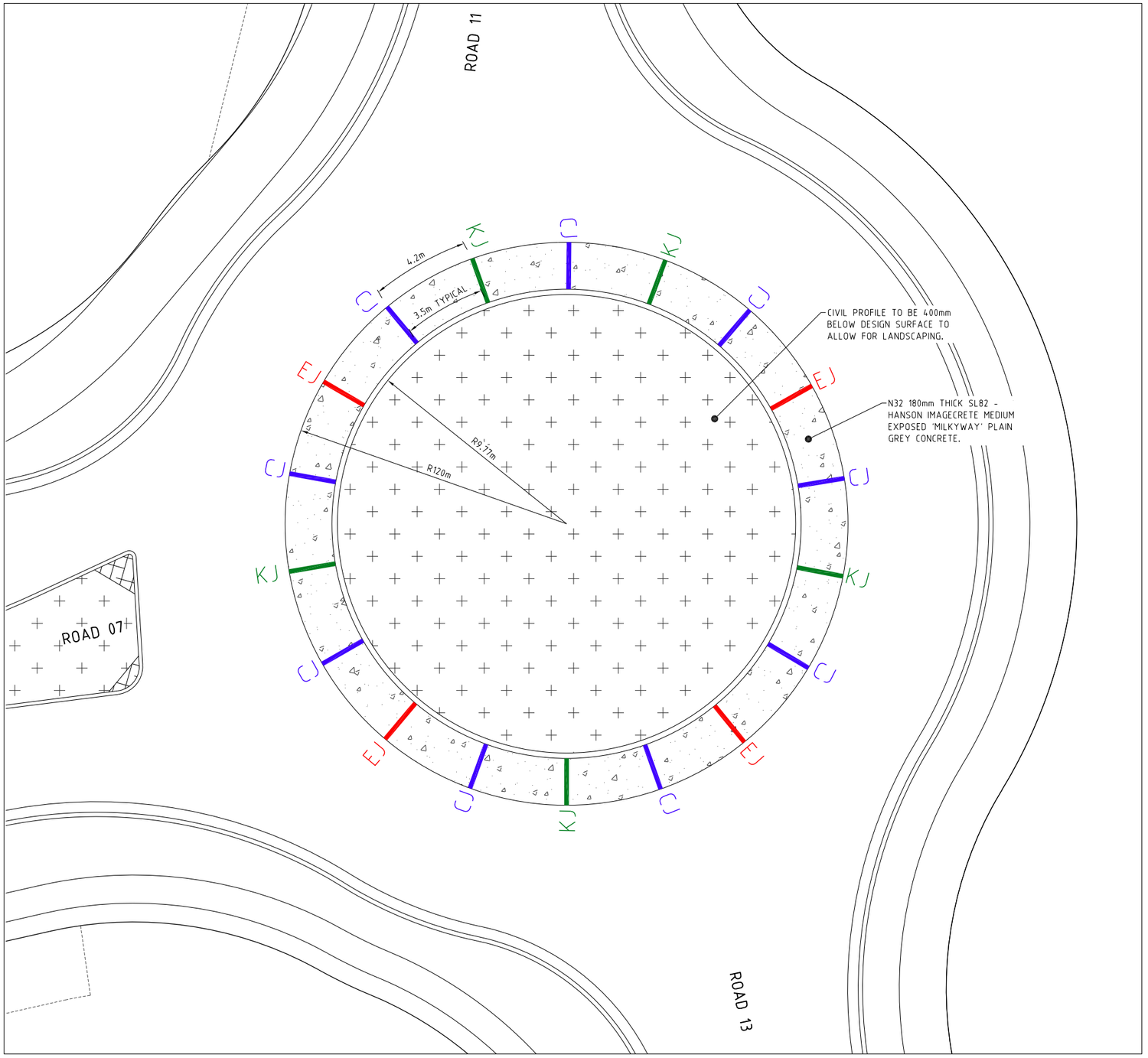
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-411

AMEND.: C

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PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 2 4 6 8 10m

Scale 1:200 - A1 (1:400 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
A	09-08-21	ISSUE FOR INFORMATION

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LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
CONCRETE
JOINTING PLAN
SHEET 3 OF 3

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-412	A

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LINEMARKING

1. LINE-MARKING AND SIGNAGE IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES". ALL SIGNAGE SHOWN IS DIAGRAMMATIC ONLY.
2. ALL SIGN POSTS & SIGN RAILS TO BE GALVANISED UNLESS NOTED OTHERWISE.
3. ALL SHRUBS AND TREES PLACED IN THE ROUNDABOUT AND APPROACHES NEED TO COMPLY WITH THE AUSROADS GUIDE TO ROAD DESIGN PART 4B.
4. ALL WARNING SIGNS, LIGHTS, BARRIERS AND FENCES SHALL BE PROVIDED AND MAINTAINED IN ACCORDANCE WITH AS 1742 (MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES). THE CONTRACTOR SHALL BE ADEQUATELY INSURED AGAINST PUBLIC RISK LIABILITY AND BE RESPONSIBLE FOR ANY CLAIMS ARISING FROM THESE WORKS.

PROPOSED PAVEMENT MARKING LEGEND

- EDGE LINE - EL
- CONTINUITY LINE - CL
- TURN LINE - TL
- BARRIER LINE - BL(B)
- BARRIER LINE - BL
- LANE LINE - LL
- LANE LINE - LL(B)
- GIVE WAY LINE - GWL
- HOLDING LINE - HL
- STOP LINE - SL
- PEDESTRIAN LINE - PL

NOTE: REFER TO: MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR ALL LINEMARKING AND SIGN STANDARDS

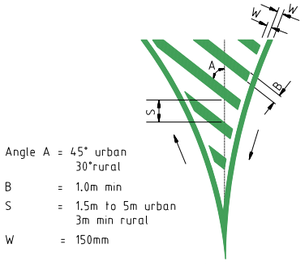
EXISTING PAVEMENT MARKING LEGEND

- EDGE LINE - EL
- CONTINUITY LINE - CL
- TURN LINE - TL
- BARRIER LINE - BL(B)
- BARRIER LINE - BL
- LANE LINE - LL
- LANE LINE - LL(B)
- GIVE WAY LINE - GWL
- HOLDING LINE - HL
- STOP LINE - SL
- PEDESTRIAN LINE - PL

NOTE: REFER TO: MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR ALL LINEMARKING AND SIGN STANDARDS

Chevrons

Angle A = 45° urban
30°rural
B = 1.0m min
S = 1.5m to 5m urban
3m min rural
W = 150mm



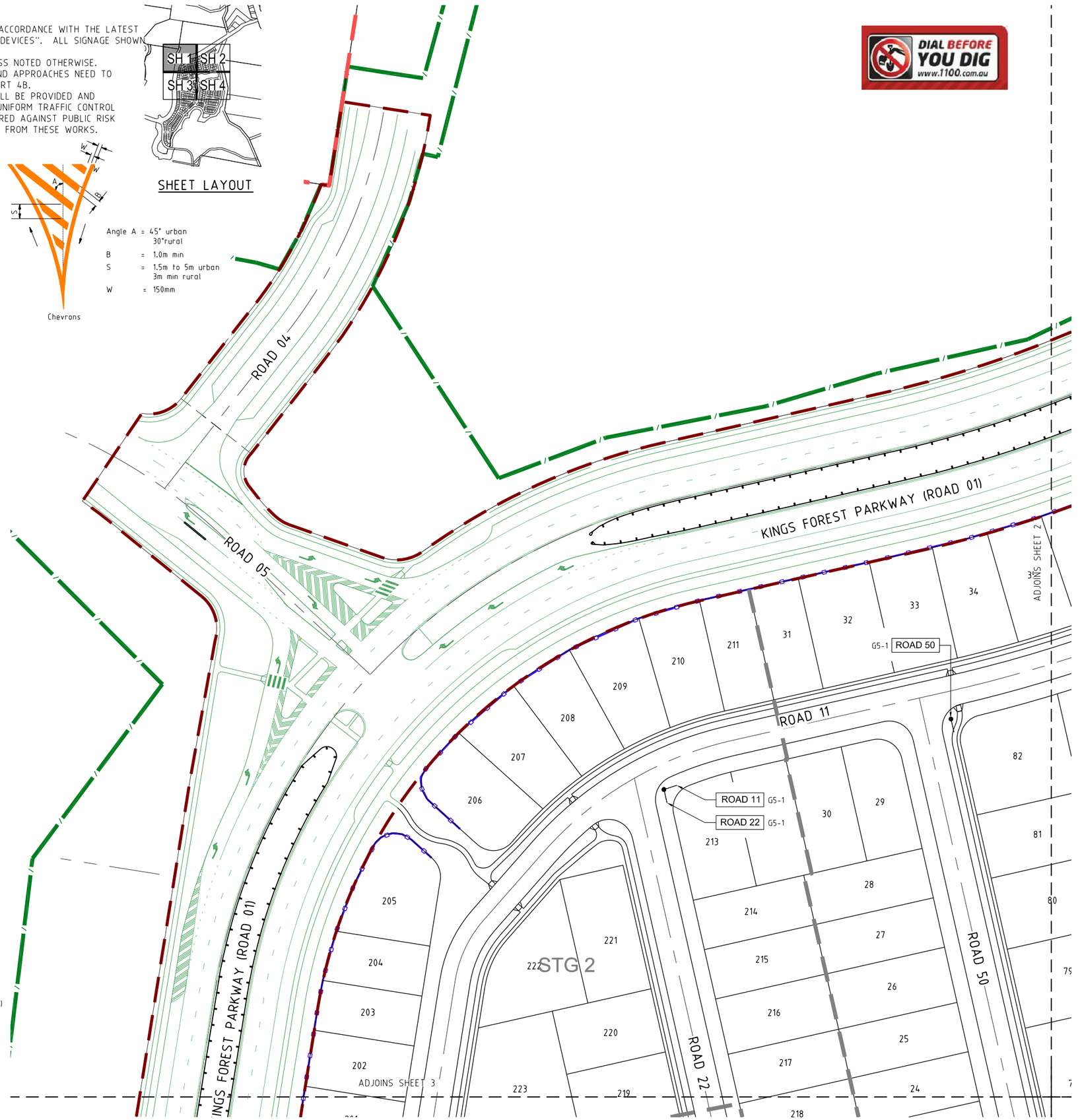
Chevrons

Angle A = 45° urban
30°rural
B = 1.0m min
S = 1.5m to 5m urban
3m min rural
W = 150mm

LEGEND

- EXISTING KERB (INVERT)
- EXISTING PROPERTY LINE
- FUTURE KERB (INVERT)
- FUTURE PROPERTY LINE
- PROPOSED KERB (INVERT)
- PROPOSED PROPERTY LINE
- SITE BOUNDARY
- STAGE BOUNDARY
- SIGN POST
- SIGN POST
- SIGN POST
- EXISTING KOALA EXCLUSION FENCE
- EXISTING TEMPORARY FENCE
- EXISTING TEMPORARY NO-GO FENCE
- ACOUSTIC FENCE IN ACCORDANCE WITH RMS NOISE WALL DESIGN GUIDELINE, INCLUDING ANTI-CLIMB PANNELING (WHERE APPLICABLE) REFER JWA FIGURE 27 FOR PANNELING
- HERITAGE LOCATION
- HERITAGE EXCLUSION ZONE (NO WORKS PERMITTED)
- ECOLOGICAL BUFFER

SHEET LAYOUT



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PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	02-09-21	LEGEND AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
LINEMARKING & SIGNAGE
PLAN
SHEET 1 OF 4

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As:
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Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER	906726
		DATE	07-02-19

DRAWING NUMBER 12301-P5-1,2&3-420
AMEND. B

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KINGS FOREST PARKWAY (ROAD 011)

DWAY 99A

ROAD 11

ROAD 14

ROAD 15

ROAD 16 G5-1

ROAD 15 G5-1

ROAD 14 G5-1

ROAD 11 G5-1

ROAD 15 G5-1

STG 3

R8-2

R8-2

R8-2

W1-7(R)

W1-7(L)

D

316

317

305

304

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ADJOINS SHEET 1

ADJOINS SHEET 4

EL

EL

SHEET LAYOUT

SH 1 SH 2

SH 3 SH 4

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m

Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

D	11-10-21	LINEMARKING AND SIGNS AMENDED
C	15-07-21	ADDED SIGN POSTS
B	24-11-20	SIGN POSTS MOVED
A	07-02-19	PRELIMINARY CLIENT ISSUE

PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LandSurv

GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
LINEMARKING & SIGNAGE
PLAN
SHEET 2 OF 4

CONSTRUCTION ISSUE

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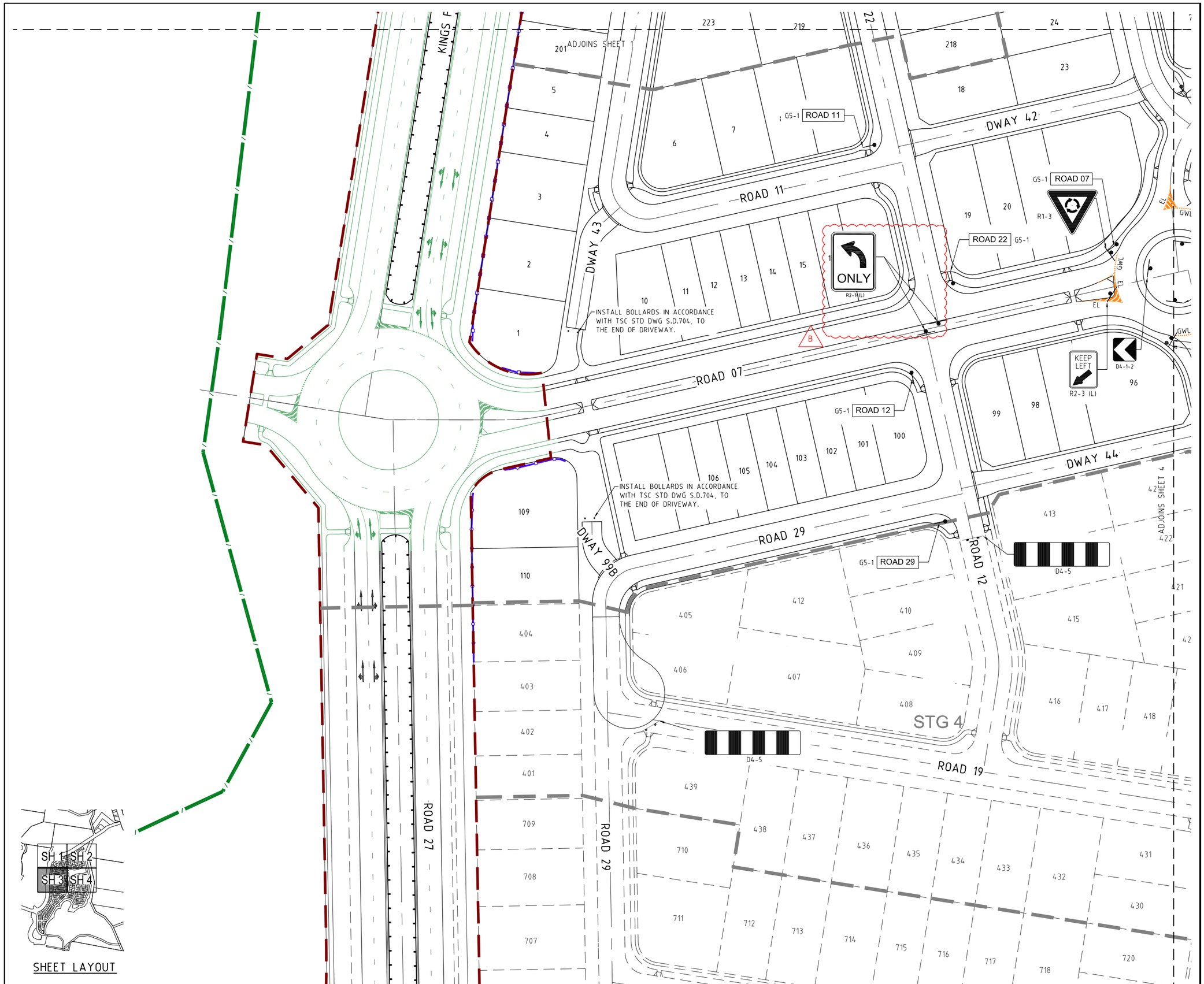
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APPROVED	NER 906726	DATE 07-02-19

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12301-P5-1,2&3-421	D

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PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

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B	15-07-21	SIGN AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LandSurv
GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
LINEMARKING & SIGNAGE
PLAN
SHEET 3 OF 4

CONSTRUCTION ISSUE

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APPROVED		NER 906726	DATE 07-02-19

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12301-P5-1,2&3-422	B

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ADJOINS SHEET 2

ADJOINS SHEET 3

ROAD 11

ROAD 14 G5-1

ROAD 50 G5-1

R1-3

ROAD 11 G5-1

D4-1-2

R1-3

ROAD 13 G5-1

ROAD 41 G5-1

ROAD 17 G5-1

ROAD 16 G5-1

ROAD 17 G5-1

R8-2

ROAD 20 G5-1

D4-5

D4-5

D4-5

D4-5

ROAD 16

ROAD 41

ROAD 20

ROAD 17

ROAD 13

ROAD 41

ROAD 20

ROAD 41

ROAD 13

ROAD 17

STG 1

STG 5

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GWL EL

B

SH 1 SH 2 SH 3 SH 4

SHEET LAYOUT

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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PARISH OF CUDGEN ,
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CLIENT

PROJECT 28 PTY LTD

NORTH

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Scale 1:500 - A1 (1:1000 - A3)

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COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

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GILBERT SUTHERLAND

DRAWING TITLE

ROADWORKS
LINEMARKING & SIGNAGE
PLAN
SHEET 4 OF 4

CONSTRUCTION ISSUE

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SEWER NOTES

VEGETATION PROTECTION

A. WHEN WORKING WITHIN 4m OF TREES, RUBBER OR HARDWOOD GIRDLES SHALL BE CONSTRUCTED WITH 1.8 m BATTENS CLOSELY SPACED AND ARRANGED VERTICALLY FROM GROUND LEVEL. GIRDLES SHALL BE STRAPPED TO TREES PRIOR TO CONSTRUCTION AND REMAIN UNTIL COMPLETION.
B. TREE ROOTS SHALL BE TUNNELLED UNDER, RATHER THAN SEVERED. IF ROOTS ARE SEVERED THE DAMAGED AREA SHALL BE TREATED WITH A SUITABLE FUNGICIDE. CONTACT RELEVANT COUNCIL ARBORIST FOR FURTHER ADVICE.
C. ANY TREE LOPPING REQUIRED SHOULD BE UNDERTAKEN BY AN APPROVED ARBORIST.

SOIL

A. TOPSOIL AND SUBSOIL SHALL BE STOCKPILED SEPARATELY.
B. CARE SHALL BE TAKEN TO PREVENT SEDIMENT FROM ENTERING THE STORMWATER SYSTEM. THIS MAY INVOLVE PLACING APPROPRIATE SEDIMENT CONTROLS AROUND STOCKPILES.
C. IF ACID SULPHATE SOILS EXIST IN THE WORKS AREA, THE CONTRACTOR MUST PREPARE A RISK ASSESSMENT BASED ON THE PROJECT ACID SULPHATE MANAGEMENT PLAN PREPARED BY GILBERT & SUTHERLAND.
D. ALL PIPEWORK AND EXCAVATION RATES ARE TO INCLUDE DE-WATERING AND EXCAVATION THROUGH INDURATED SAND (COFFEE ROCK).

CREEK CROSSINGS

A. SILTATION CONTROL MEASURES SHALL BE PLACED DOWNSTREAM OF ANY EXCAVATION WORK.
B. APPROPRIATE SEDIMENT CONTROLS SHALL BE USED TO PREVENT SEDIMENT FROM ENTERING THE CREEK.
C. NO SOIL SHALL BE STOCKPILED WITHIN 5 m OF THE CREEK.

REHABILITATION

A. PREDISTURBANCE SOIL PROFILES AND COMPACTION LEVELS SHALL BE REINSTATED.
B. PREDISTURBANCE VEGETATION PATTERNS SHALL BE RESTORED.

SAFETY

A. THE DESIGN AND CONSTRUCTION OF THE WORKS SHALL COMPLY WITH ALL NEW SOUTH WALES LEGISLATION.

GENERAL

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH SEWERAGE CODE OF AUSTRALIA WSA 02-2014; WSA 04-2005; WSA 07-2007 UNLESS OTHERWISE SPECIFIED IN TWEED SHIRE COUNCIL DEVELOPMENT DESIGN SPECIFICATION D12, OR CONSTRUCTION SPECIFICATION C402 OR OTHERWISE SPECIFIED IN TSC SUBDIVISION MANUAL.
2. UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
3. THE CONSTRUCTION OF THE SEWERAGE WORK SHOWN ON THIS DRAWING SHALL BE SUPERVISED BY A NER, TO THE SATISFACTION OF TWEED SHIRE COUNCIL. SEWERAGE WORKS NOT COMPLYING WITH THIS REQUIREMENT WILL NOT BE PERMITTED TO CONNECT INTO THE COUNCIL SEWERAGE SYSTEM.
4. ALL WORK ASSOCIATED WITH LIVE SEWERS OR MAINTENANCE HOLES SHALL BE CARRIED OUT BY THE DEVELOPER'S APPROVED CONTRACTOR UNDER THE SUPERVISION OF TWEED SHIRE COUNCIL'S AGENT AT THE DEVELOPER'S COST.
5. EACH ALLOTMENT SHALL BE SERVED BY A DN150 PVC PROPERTY CONNECTION. FOR ALLOTMENTS OTHER THAN SINGLE RESIDENTIAL,
6. PROPERTY CONNECTIONS SHALL BE LOCATED WITHIN THE PROPERTY AS SHOWN IN THE DRAWINGS.
7. PROPERTY CONNECTION BRANCHES SHALL EXTEND INTO THE PROPERTY A MINIMUM OF 300 mm AND A MAXIMUM OF 750 mm.
8. WHERE PIPES ARE LAID IN FILL, THE FILLING SHALL BE CARRIED OUT IN LAYERS NOT EXCEEDING 300 mm (LOOSE) IN DEPTH AND SHALL BE COMPACTED UNTIL THE COMPACTION IS NOT LESS THAN 95% OF THE MATERIALS MAXIMUM COMPACTION WHEN TESTED IN ACCORDANCE WITH A.S. 1289 (MODIFIED COMPACTION). TESTING SHALL BE CARRIED OUT AFTER EACH ALTERNATE LAYER. IN ALL SUCH CASES APPROVAL OF CONSTRUCTED SEWERS WILL NOT BE ISSUED BY THE TWEED SHIRE COUNCIL UNLESS CERTIFICATES ARE PRODUCED CERTIFYING THAT THE REQUIRED COMPACTION HAS BEEN ACHIEVED.
9. WHERE SEWERS HAVE A GRADE OF 15 TO 29% OR STEEPER, BULKHEADS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TWEED SHIRE COUNCIL DEVELOPMENT CONSTRUCTION SPECIFICATION C402-23.
10. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF EXISTING SERVICES ON SITE BEFORE COMMENCING WORKS.
11. BENCH MARK AND LEVELS TO AHD.
12. EXISTING ALLOTMENTS REQUIRING A PROPERTY CONNECTION FROM EXISTING SEWERS SHALL BE PROVIDED BY TWEED SHIRE COUNCIL AT THE DEVELOPERS COST.
13. CLEARANCES BETWEEN SEWERS AND OTHER UNDERGROUND SERVICES SHALL BE PROVIDED IN ACCORDANCE WITH WSA02-2014.3.1.
14. FALL THROUGH MHS SHALL BE IN ACCORDANCE WITH WSA 202-2014.31, INCLUDING:
    a) MIN 30mm WHERE DEFLECTION LESS THAN 90°C
    b) MIN 80mm WHERE DEFLECTION MORE THAN 90°C
    c) FALL SHALL NOT EXCEED GREATER OF 150mm OR DIFFERENCE BETWEEN IN/OUT PIPE DN (UNLESS NOTED OTHERWISE).
    FALL MINIMUM REQUIREMENTS ARE IN ACCORDANCE WITH TSC S.D 278

PROJECT SPECIFIC SEWER NOTES

a. ALL SEWER MAIN TO BE AS PER SEWER PIPE SPECIFICATIONS TABLE.
b. NOTWITHSTANDING THE NOTES ABOVE, ALL MATERIALS AND WORKS MUST BE IN ACCORDANCE WITH THE SERVICE PROVIDER'S APPROVAL CONDITIONS AND THE TWEED SHIRE COUNCIL DEVELOPMENT DESIGN AND CONSTRUCTION SPECIFICATIONS.
c. THE CONTRACTOR IS TO INCLUDE ROCK EXCAVATION AS PART OF THEIR SEWER RATES UNLESS SCHEDULED OTHERWISE WITHIN THE CONTRACT.
d. WATER AND ELECTRICAL CROSSING LOCATIONS ARE INDICATIVE ONLY. REFER TO PLANS TO DETERMINE PRECISE CROSSING LOCATIONS. WHERE SERVICE INDICATES CLASH WITH SEWER, SEWER TO TAKE PRECEDENCE, SERVICE TO BE CONSTRUCTED OVER OR UNDER SEWER ACCORDING TO SUPERINTENDENTS INSTRUCTION
e. CONTRACTOR TO VERIFY DOWNSTREAM EXISTING PIPE LEVELS PRIOR TO COMMENCEMENT OF WORKS ON-SITE.
f. MINIMUM 25Mpa THRUST BLOCKS TO BE CONSTRUCTED AT ALL FLEXIBLE JOINTED BENDS IN ACCORDANCE WITH TWEED SHIRE COUNCIL SPECIFICATIONS C402.30 AND C271.
g. CONTRACTOR TO PAY ALL FEES AND CHARGES ASSOCIATED WITH CONNECTIONS.
h. ALL SEWER MAINS CROSSING ROAD AND WITH A COVER <1.5m ARE TO BE BACKFILLED WITH STABILISED SAND UP TO UNDERSIDE OF ROAD SUB-BASE LAYER.

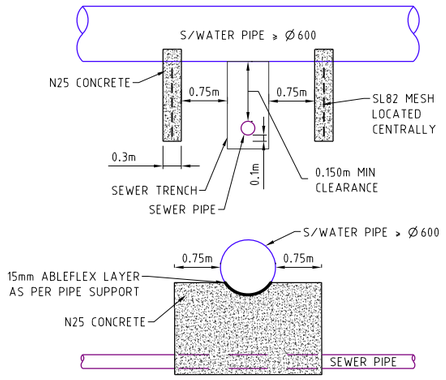
E

LEGEND

- EXISTING SEWER
- EXISTING RISING MAIN
- EXISTING KERB (INVERT)
- EXISTING PROPERTY LINE
- EXISTING CONTOURS
- FUTURE RISING MAIN
- FUTURE RISING MAIN
- FUTURE KERB (INVERT)
- FUTURE CONTOURS
- PROPOSED KERB (INVERT)
- PROPOSED PROPERTY LINE
- DESIGN CONTOURS
- PROPOSED RISING MAIN
- PROPOSED SEWER MAIN
- SEWER SCOUR VALVE (<Ø300)
- SEWER AIR VALVE (<Ø300)
- SEWER SCOUR VALVES (Ø450)
- SEWER AIR VALVE (Ø450)
- SEWER ISOLATION/SLUICE VALVE (ALL SIZES)
- SEWER PUMP STATION
- SEWER TRENCH STOP/BULKHEAD
- SECTION 68 LIMIT OF WORKS BOUNDARY
- SITE PRECINCT
- 01-10 SEWER PIT NO/LINE
- EXISTING KOALA EXCLUSION FENCE
- EXISTING TEMPORARY FENCE
- EXISTING TEMPORARY NO-GO FENCE
- ACCESS GATE IN ACCORDANCE WITH TSC STD DWG S.D.020
- ACOUSTIC FENCE IN ACCORDANCE WITH RMS NOISE WALL DESIGN GUIDELINE, INCLUDING ANTI-CLIMB PANNELING (WHERE APPLICABLE) REFER JWA FIGURE 27 FOR PANNELING
- K7 HERITAGE LOCATION
- HERITAGE EXCLUSION ZONE (NO WORKS PERMITTED)
- ECOLOGICAL BUFFER

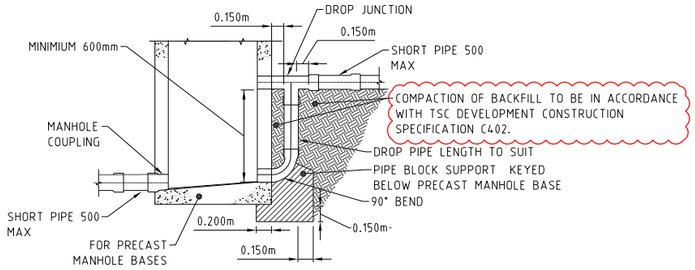
NOTE:
LIVE CONNECTION OF SEWER WILL BE PENDING ON REGIONAL PUMP STATION.

ALL ENVIRONMENT PROTECTION MEASURES SHALL BE IMPLEMENTED PRIOR TO ANY CONSTRUCTION WORK, INCLUDING CLEARING, COMMENCING.



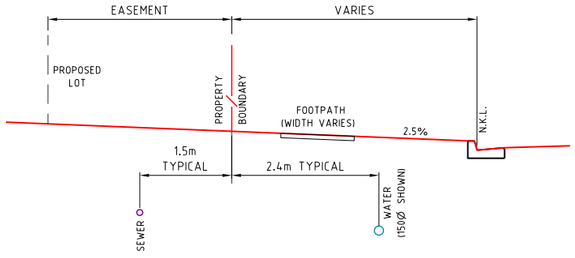
BRIDGING DETAILS FOR STORMWATER PIPES ≥ Ø600

NOT TO SCALE



EXTERNAL DROP DETAIL FOR NON-TRAFFICABLE AREAS ONLY

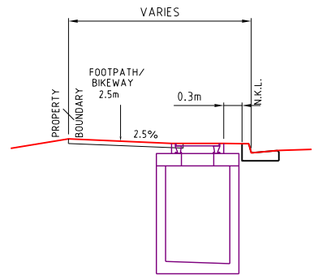
NOT TO SCALE



T.S.C. TYPICAL SERVICES SEWER AND WATER RETICULATION (SAME SIDE)

SCALE 1:50 - A1 (1:100 - A3)

1. PUBLIC UTILITIES ALLOCATIONS ARE MEASURED FROM THE REAL PROPERTY BOUNDARY.
2. LIGHT POLE, TREE ALLOCATIONS AND FOOTPATHS ARE MEASURED FROM THE NOMINAL KERB LINE.
3. REFER TO TSC SD.006 FOR SERVICE LOCATIONS IN ROADWAYS.
4. REFER TO DRAWING 12301-P5-1,2&3-096 AND 97 FOR COMBINED SERVICES LOCATED IN VERGE.



SEWER MANHOLE LID ARRANGEMENT NEAR FOOTPATH

SCALE 1:50

SEWER RISING MAIN LOCATION	PIPE MATERIAL SPECIFICATION
FOOTPATH VERGE	PVC-M OR GRP PN12 MINIMUM
ROAD CROSSING	PVC-M OR GRP PN16 MINIMUM OR DICL PN20 MINIMUM

SEWER GRAVITY MAIN LOCATION	PIPE MATERIAL SPECIFICATION
FOOTPATH VERGE	UPVC SN8
ROAD CROSSING	UPVC SN12

HORIZONTAL THRUST BLOCKS TO BE IN ACCORDANCE WITH:

Minimum Thrust Area (m^2) for Concrete Blocks given 1200kPa System Test Pressure (Sewer):

Based on Soil Classification: 100kPa					
Pipe Diameter	Bends				Tee & Valves & Dead Ends
	11.25	22.5	45	90	
100	0.21	0.21	0.21	0.21	0.21
150	0.21	0.21	0.21	0.41	0.29
200	0.21	0.21	0.35	0.65	0.46
375	0.32	0.66	1.28	2.38	1.68

Resultant Thrust (kN) given 120m Head with 1200kPa System Test Pressure (Sewer):

Pipe Diameter	Bends (kN)				Tee & Valve & Dead Ends
	11.25	22.5	45	90	
100	2.70	5.37	10.53	19.45	13.75
150	5.67	11.29	22.16	40.94	28.95
200	9.75	19.41	38.06	70.33	49.73
375	32.87	65.43	128.34	237.14	167.68

FOR FURTHER DETAIL REFER TO WSA 03-2011-3.1 TABLE 7.3.

NOTES:
a. FINISH THRUST BLOCKS APPROXIMATELY 100mm ABOVE THE TOP OF THE FITTING OR BEARING PAD AND EXTEND TO THE FLOOR OF THE TRENCH OR DEEPER IF NECESSARY, TO ACHIEVE THE REQUIRED THRUST AREA. MAXIMUM ENCASEMENT TO BE 180°.
b. FOR DOWNWARD VERTICAL THRUST, THE ALLOWABLE BEARING PRESSURES FOR VARIOUS SOILS MAY BE TAKEN AS TWICE THAT FOR HORIZONTAL THRUST SHOWN

SEWER REFERENCING STANDARDS

Ø100 - Ø300 SEWER SCOUR VALVE (<2.2m INVERT)	W.S.A SPS-1603 'SCOUR ARRANGEMENT PRESSURE MAINS'
Ø450 SCOUR VALVE & IF Ø100-Ø300 DEEPER THAN 2.2m	W.S.A SPS-1602 'SCOUR ARRANGEMENT PUMP AND GRAVITY'
Ø100-Ø450 SEWER RISING MAIN SLUICE (ISOLATION) VALVE	T.S.C S.D. 240 'SLUICE VALVE INSTALLATION DETAILS'
Ø100-Ø450 SEWER RISING MAIN AIR VALVE - MANUAL	T.S.C S.D 243 'MANUAL AIR VALVE INSTALLATION DETAILS'
SEWER THRUST CALCULATIONS	W.S.A WAT-1200 'SOIL CLASSIFICATION GUIDELINES AND ALLOWABLE BEARING PRESSURES FOR ANCHORS AND THRUST BLOCKS'
SEWER THRUST CALCULATIONS	W.S.A WAT-1208 'RESTRAINED JOINT SYSTEM DN Ø100 TO DN Ø375 DI MAINS'
SEWER THRUST CALCULATIONS	W.S.A WAT-1207 'THRUST AND ANCHOR BLOCKS GATE VALVES AND VERTICAL BENDS'
SEWER THRUST CALCULATIONS (TEST AT 120kPa)	W.S.A WAT-1205 'THRUST BLOCK DETAILS CONCRETE BLOCKS'

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PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
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CONSTRUCTION	..	

E	09-08-21	LEGEND AND NOTES AMENDED
D	04-03-21	DETAILS AMENDED
C	28-01-21	LEGEND AND TABLE AMENDED
B	27-08-20	NOTES AND DETAIL AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
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SEWER RETICULATION NOTES AND DETAILS

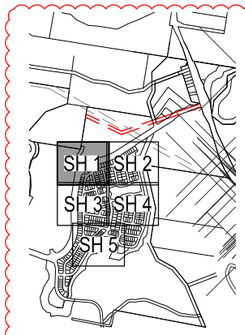
CONSTRUCTION ISSUE

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SHEET LAYOUT

B

NOTE:
SOME SEWER ID'S OMITTED FOR CLARITY.
REFER TO SEWER PROFILES FOR ALL SEWER ID DETAILS

ROAD 04

ROAD 05

KINGS FOREST PARKWAY (ROAD 01)

ADJOINS SHEET 2

ROAD 11

ROAD 50

ROAD 22

KINGS FOREST PARKWAY (ROAD 01)

ADJOINS SHEET 3

CONTRACTOR TO REMOVE ENDCAP AND CONNECT TO EXISTING SEWER STUB (NON-LIVE ROAD CROSSING)

STG 2

01/034 02/034 02/052 03/032 04/030 04/032 04/035 05/030 05/035 06/030 07/030 08/030 09/030 10/030 01/037 02/037 03/035 01/040 01/052 02/053

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	06-10-20	SEWER ALIGNMENT AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION PLAN
SHEET 1 OF 5

CONSTRUCTION ISSUE

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Urban & Regional Planning
Civil Engineering
Project Coordination

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-501	B

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NOTE:
SOME SEWER ID'S OMITTED FOR CLARITY.
REFER TO SEWER PROFILES FOR ALL SEWER ID DETAILS

KINGS FOREST PARKWAY (ROAD 01)

CONTRACTOR TO REMOVE ENDCAP AND CONNECT TO EXISTING SEWER STUB (NON-LIVE ROAD CROSSING)

REFER TO DRAWING 12301-P5-1,2&3-580 FOR VENT DETAILS.

REFER TO TWEED SHIRE COUNCIL S.D.276 FOR TRENCH STOP AND CONCRETE BULKHEAD DETAILS.

DWAY 99A

ROAD 11

ROAD 14

ROAD 15

STG 3

ADJOINS SHEET 1

ADJOINS SHEET 4

12/078 18/079 20/079 22/079 17/030 16/030 15/030 14/030 13/030 12/030 11/030 26/017 25/017 24/017 01/043 23/017 02/041 01/041 04/038 03/038 01/040 01/042 22/017 21/017 20/017 19/017 18/017 01/038 02/038 01/039

306 316 305 304 303 302 301 43 42 41 40 39 38 37 36 35 308 307 54 309 310 53 311 55 52 312 56 51 313 70 69 57 50 314 68 58 49 315 67 59 48 317 66 60 47 46 45 44 112 65 61 64 63 62 83 71 72 73 74 75 76 77 78 81 80 79

SHEET LAYOUT

SH 1 SH 2 SH 3 SH 4 SH 5

NORTH

0 5 10 15 20 25m

Scale 1:500 - A1 (1:1000 - A3)

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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& Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

C	15-09-21	SEWER ALIGNMENT AMENDED
B	27-08-20	SEWER ALIGNMENT AND ID'S AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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SEWER RETICULATION PLAN
SHEET 2 OF 5

CONSTRUCTION ISSUE

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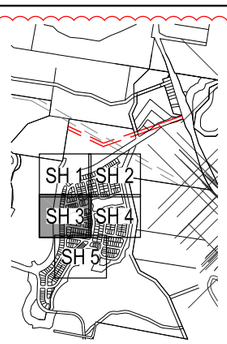
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DRAWING NUMBER	AMEND.
12301-P5-1,2&3-502	C

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SHEET LAYOUT

ADJOINS SHEET 1

KINGS F

REFER TO TWEED SHIRE COUNCIL S.D.276 FOR TRENCH STOP AND CONCRETE BULKHEAD DETAILS.

ROAD 11

DWAY 42

DWAY 43

ROAD 07

DWAY 44

ROAD 29

ROAD 12

DWAY 99B

ROAD 27

ROAD 19

STG 4

PROVIDE TEMPORARY END CAP FOR FUTURE CONNECTION

ADJOINS SHEET 4

ADJOINS SHEET 5

B

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m

Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	06-10-20	SEWER ALIGNMENT AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION PLAN
SHEET 3 OF 5

CONSTRUCTION ISSUE

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ADJOINS SHEET 2

ADJOINS SHEET 3

ADJOINS SHEET 5

ROAD 11

ROAD 16

ROAD 41

ROAD 20

ROAD 17

ROAD 13

STG 1

STG 5

PRCT 5

17/017

16/017

05/012

04/012

14/004

13/004

01/014

01/016

04/007

05/007

06/007

01/008

03/007

02/007

11/002

10/002

01/007

09/002

02/048

12/004

11/004

03/012

01/013

10/004

09/004

01/012

02/012

01/015

07/004

06/004

08/004

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515

514

513

512

511

749

SHEET LAYOUT

SH 1 SH 2

SH 3 SH 4

SH 5

B

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

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& Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m

Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

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PRE	DATE	AMENDMENT

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LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION PLAN
SHEET 4 OF 5

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

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12301-P5-1,2&3-504	B

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PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

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PARISH OF CUDGEN , COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

E	29-04-21	SEWER IDS AMENDED
D	16-03-21	SEWER ALIGNMENT & IDS AMENDED
C	28-01-21	SEWER ALIGNMENT AND IDS AMENDED
B	27-08-20	SEWER ALIGNMENT AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
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DRAWING TITLE

SEWER RETICULATION PLAN
SHEET 5 OF 5

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER	906726
DATE	07-02-19		

DRAWING NUMBER: 12301-P5-1,2&3-505
AMEND.: E

ADJOINS SHEET 3
ADJOINS SHEET 4
ROAD 30
ROAD 40
ROAD 45
ROAD 46
ROAD 17
ROAD 29
ROAD 47
ROAD 27
ROAD 13
ROAD 08
STG 7

PROVIDE TEMPORARY END CAP FOR FUTURE CONNECTION

PROVIDE TEMPORARY END CAPS x2 FOR FUTURE CONNECTION

CONTRACTOR TO REMOVE END CAPS AND CONNECT TO EXISTING.

CUSTOM THRUST BLOCK, REFER TO DRAWING 12301-P5-1,2&3-591

AIR VALVES, REFER TO TSC SD.242 FOR DETAILS

PROVIDE TEMPORARY END CAPS FOR FUTURE CONNECTION

SEWER PUMP STATION PART OF SEPARATE APPLICATION, REFER TO MUS DWGS 12301-PS02

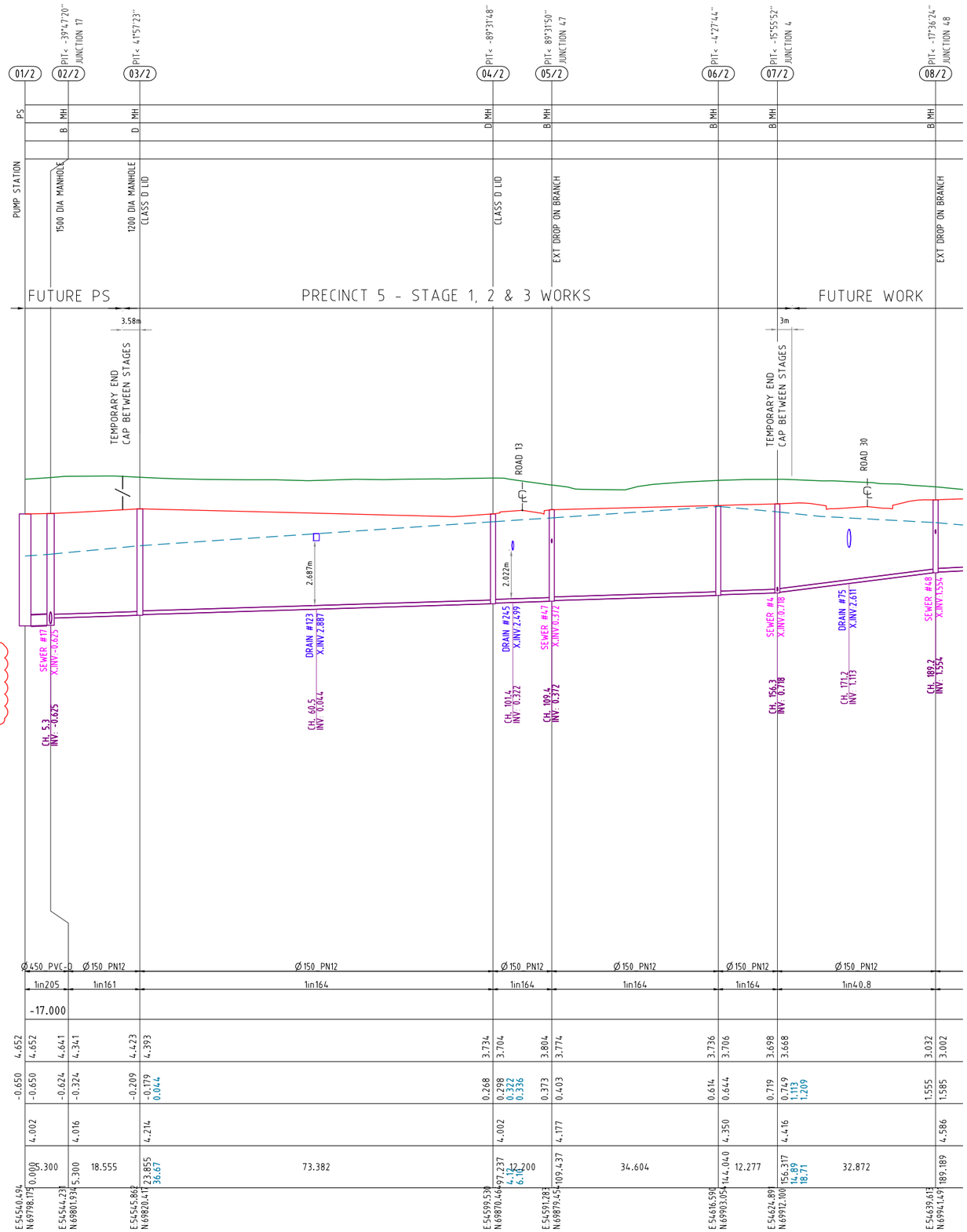
REFER TO 12301-P5-1,2&3-500 FOR SEWER LID DETAIL.

NOTE:
SOME SEWER BENDS OMITTED FOR CLARITY. REFER TO SEWER PROFILES FOR ALL SEWER ID DETAILS

SHEET LAYOUT
SH 1 SH 2
SH 3 SH 4
SH 5

SEWER END CAP DETAILS
SCALE @ 1:100

Y:\123 - Leda Developments Pty Ltd\01 - Kings Forest\PRECS\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-500.dwg, 6/10/2021 4:56:32 PM, 1:2



SEWER STRUCTURE LIDS	
D	CLASS D TO AS 3996 - 2006
B	CLASS B TO AS 3996 - 2006
M	'M' PREFIX DESIGNATES BOLT DOWN LID

* CONSTRUCT BRIDGING STRUCTURE SPANNING THE SEWER TRENCH REFER TYPICAL SECTIONS & DETAILS FOR BRIDGING STRUCTURE DETAILS

| TRENCHSTOPS, BULKHEADS & CONCRETE ENCASEMENTS TO BE INSTALLED IN ACCORDANCE WITH TWEED SHIRE COUNCIL SD 276

NOTES

1. IF SHOWN, WATER AND ELECTRICAL CROSSING LOCATIONS ARE INDICATIVE ONLY. REFER TO PLANS TO DETERMINE CROSSING LOCATIONS.
2. EMBEDMENT TYPES ARE AS SPECIFIED ON THE TWEED SHIRE COUNCIL SD 261 AND IN THE DEVELOPMENT CONSTRUCTION SPECIFICATION C402.23.
   -TYPE 'A' OUTSIDE OF ROADWORKS.
   -TYPE 'C' UNDER ROADWAYS.
3. CONTRACTOR TO VERIFY DOWNSTREAM EXISTING PIPE LEVELS PRIOR TO COMMENCEMENT OF PIPEWORK.
4. ALL DIMENSIONS ARE IN MILLIMETRES.
5. DISCHARGE CHAMBERS TO BE IN ACCORDANCE WITH TWEED SHIRE COUNCIL SD 244.
6. INTERNAL CONCRETE SURFACES OF ALL CHAMBERS IN ACCORDANCE WITH S.D.244.01 SHALL BE COATED WITH SIKA SIKAGARD 62 OR FOSROC NITOMORTAR ELS OR APPROVED EQUIVALENT. APPLICATION TO BE IN ACCORDANCE WITH PRODUCT SUPPLIER'S SPECIFICATIONS.
7. ANY CHAMBER WITHIN 100m DOWNSTREAM OF A RISING MAIN DISCHARGE CHAMBER TO BE PROTECTED IN A SIMILAR MANNER TO THE DISCHARGE CHAMBER (AS NOTED ABOVE).
8. BACKFILL IN VENT PIPE TRENCH SHALL BE COMPACTED TO AT LEAST THE SAME DENSITY AS THE SURROUNDING SOIL.
9. ALL PIPEWORK AND EXCAVATION RATES ARE TO INCLUDE DE-WATERING AND EXCAVATION THROUGH INDURATED SAND (COFFEE ROCK).
10. MASS CONCRETE THRUST BLOCKS ARE TO BE PLACED AT BENDS & PIPE JUNCTIONS ON THE SEWER RISING MAIN. REFER TO DESIGN DRAWINGS FOR LOCATION & SIZES OF THRUST BLOCKS.
11. THE SEWER RISING MAIN IS TO BE GRADED UP HILL AS IT APPROACHES THE DISCHARGE MANHOLE.
12. THE DIAMETER OF THE PIPEWORK FROM THE MAINTENANCE HOLE TO THE VENT PIPE & WITHIN THE VENT PIPE SHOULD BE EQUAL TO OR LARGER THAN THE DIAMETER OF THE LARGEST MAIN IN THE MAINTENANCE HOLE. THE VENT PIPE STRUCTURE SHOULD BE CONSTRUCTED TO MATCH THE SIZE OF THE VENT PIPEWORK.
13. PRECAST MANHOLE SYSTEMS USING REINFORCED OR UNREINFORCED CONCRETE RUBBER RING JOINTED SEGMENTS IN ACCORDANCE WITH AS 4198 (HUMES, AMATEC, EJ OR EQUIVALENT ACCEPTED) MAY BE USED. THE STANDARD MANHOLE DIAMETER SHALL BE 1050mm WITH A STANDARD CLEAR OPENING DIAMETER OF 600mm MINIMUM. FOR MANHOLES DEEPER THAN 4m, THE STANDARD DIAMETER SHALL BE 1200mm, STANDARD CLEAR OPENING 600mm X 900mm MINIMUM.
14. ACCESS COVERS SHALL BE DUCTILE IRON HINGED WITH WATERTIGHT SEAL MANUFACTURED IN ACCORDANCE WITH AS 3996. MH ACCESS OPENINGS SHALL HAVE A MINIMUM CLEAR OPENING DIAMETER OF 600mm. WHERE APPROVED, CONCRETE ACCESS COVERS SHALL COMPLY WITH AS 4198 AND SHALL HAVE A MINIMUM CLEAR OPENING DIAMETER OF 600mm.
15. MAINTENANCE HOLE UNITS CAN BE EITHER PRE-CAST OR CAST-IN-SITU. BENCHING AND INVERT LEVELS SHALL BE DESIGNED TO SUIT THE INFLOW CONDITIONS AND SHALL BE DESIGNED IN ACCORDANCE WITH WSA 02-2014, 1, 7.6. (ALSO REFER TO S.D.278 FOR STANDARD MANHOLES).
16. EXTERNAL BACKDROPS SHALL BE PROVIDED WHERE INTERNAL FALL ACROSS THE BASE OF THE MANHOLE IS NOT ACHIEVABLE PER D12.08.06

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
C	27-01-21	LEGEND AMENDED
B	28-08-20	PROFILE AND NOTES AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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LandSurv
GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION
PROFILES
SHEET 1

CONSTRUCTION ISSUE

MORTONS urbansolutions
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DESIGNED	RB	DRAWN	CB
APPROVED		NER	906726
DATE	07-02-19		

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-530	C

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STRUCTURE TYPE
LID CLASS

PROVIDE MINIMUM COVER 600mm IN VERGE, 750mm IN ROAD PAVEMENT / SHOULDER WHERE EVER POSSIBLE.

LEGEND

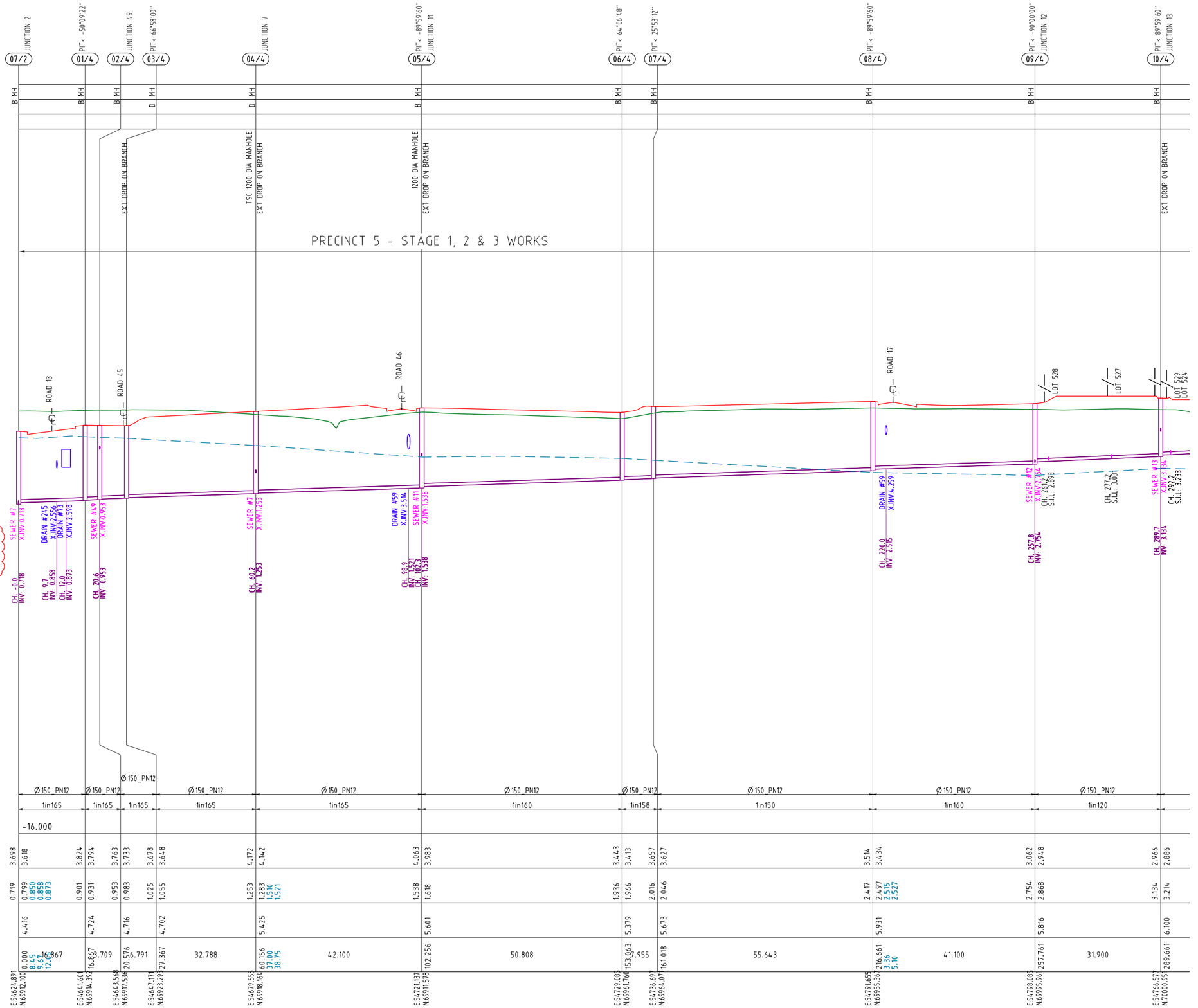
4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

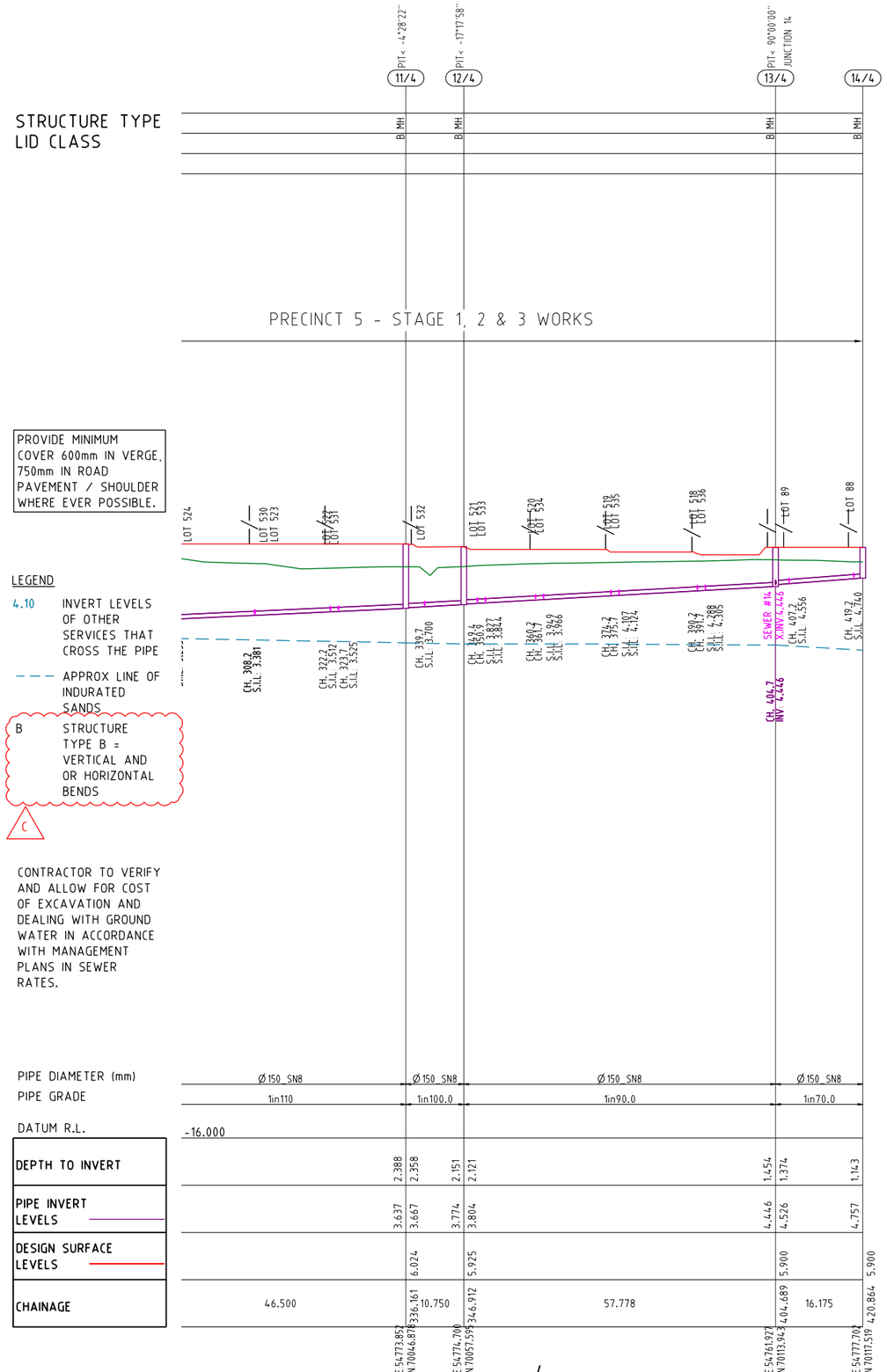
B STRUCTURE TYPE B = VERTICAL AND OR HORIZONTAL

C

CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLANS IN SEWER RATES.



| | | |



PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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& Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
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GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION
PROFILES
SHEET 3

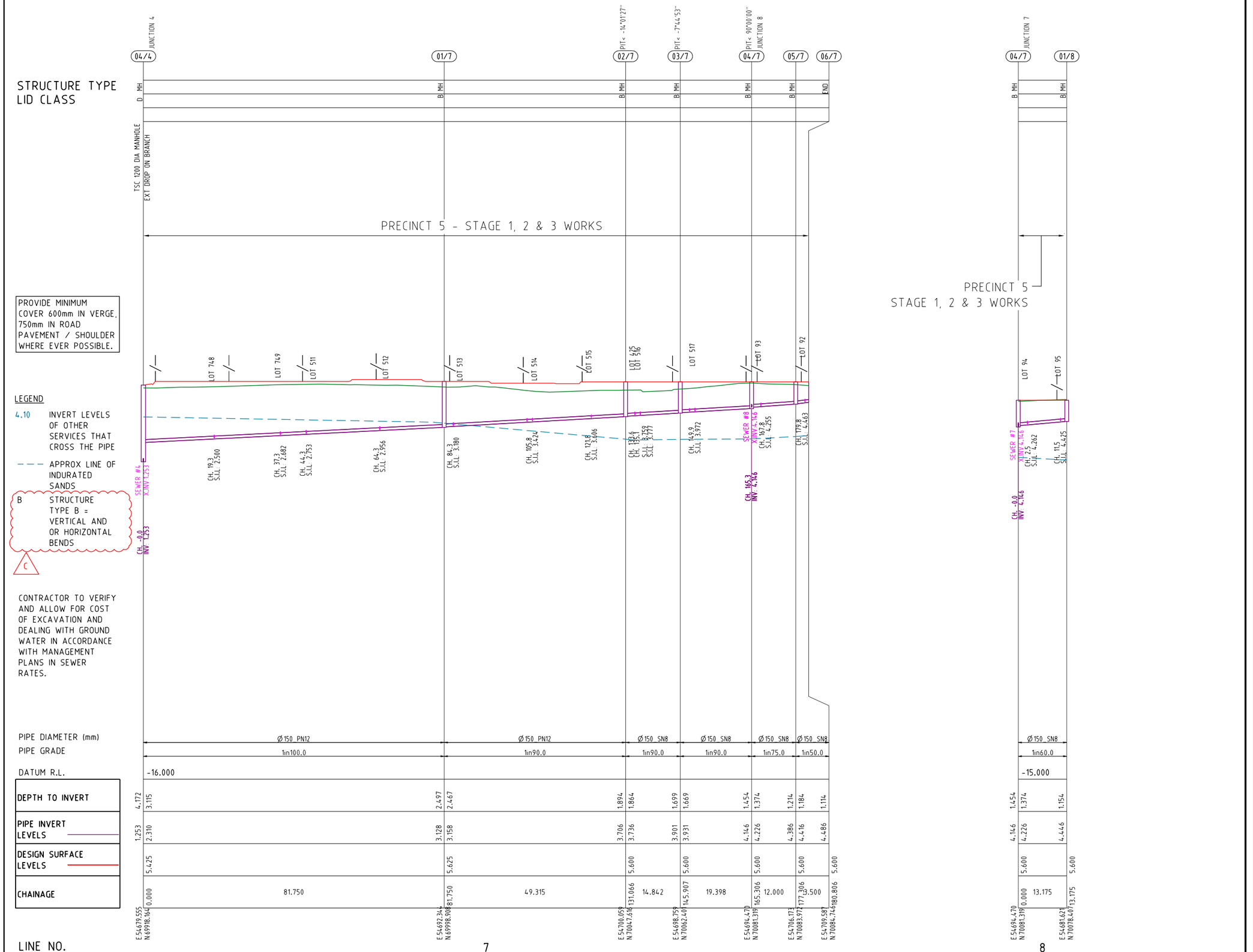
CONSTRUCTION ISSUE

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Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER	906726
DATE	07-02-19		

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-532	C

Y:\123 - Leda Developments Pty Ltd\01 - Kings Forest\PREC05\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P05-1,2&3-530.dwg, 6/10/2021 4:57:35 PM, 1:2



PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

C	27-01-21	LEGEND AMENDED
B	28-08-20	PROFILES AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION
PROFILES
SHEET 4

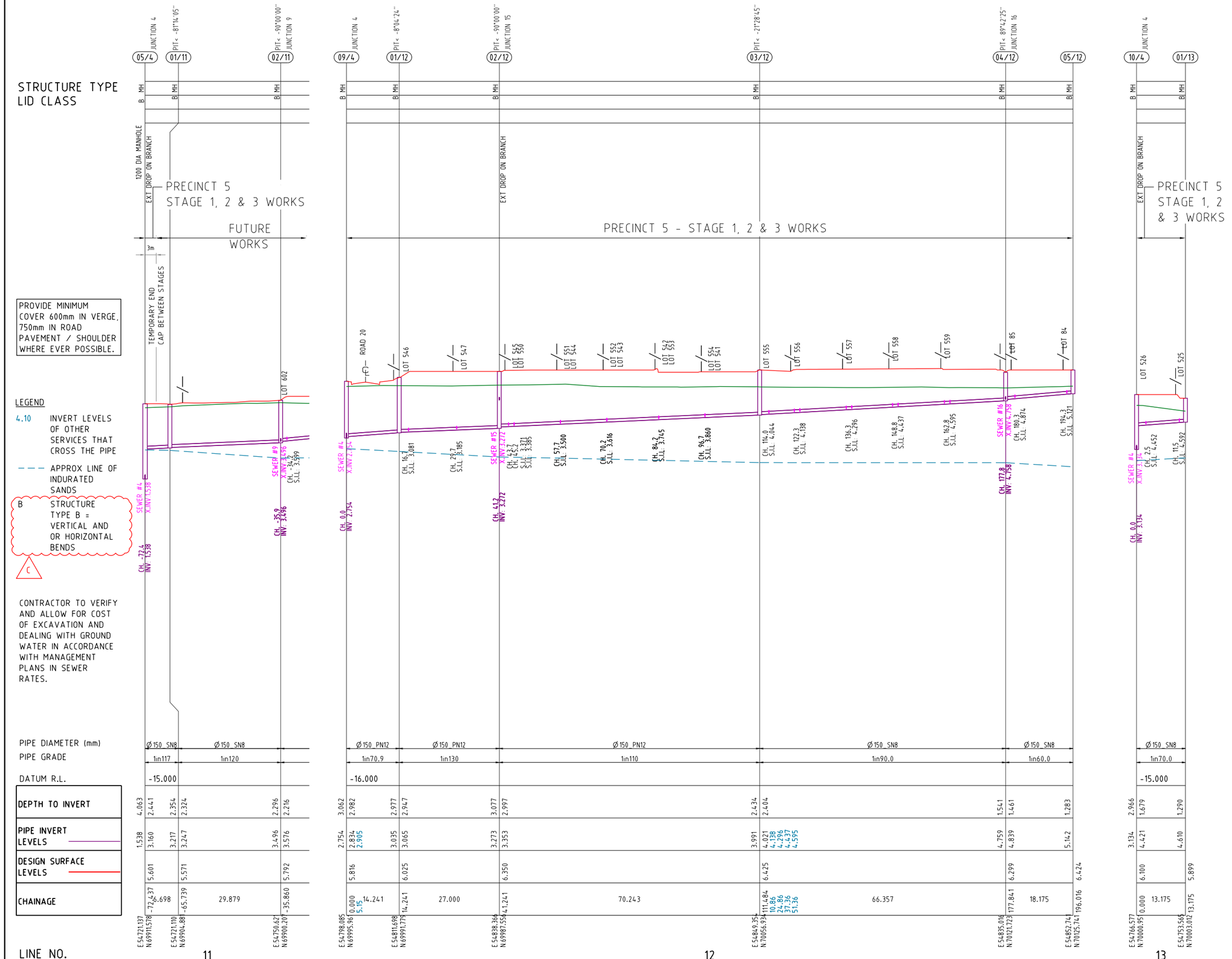
CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED	NER 906726	DATE	07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-533
AMEND.: C

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PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

C	27-01-21	LEGEND AMENDED
B	28-08-20	PROFILES AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION PROFILES SHEET 5

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-534
AMEND.: C

Y:\123 - Lusta Developments Pty Ltd\01 - Kings Forest\PRECI5\Engineering Drawings\GPWV Stages 1, 2 & 3\Current\12301-P5-1,2&3-530.dwg, 6/10/2021 4:57:44 PM, 1:2

STRUCTURE TYPE
LID CLASS

PROVIDE MINIMUM COVER 600mm IN VERGE, 750mm IN ROAD PAVEMENT / SHOULDER WHERE EVER POSSIBLE.

LEGEND

4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

B STRUCTURE TYPE B = VERTICAL AND OR HORIZONTAL BENDS

C

CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLANS IN SEWER RATES.

PRECINCT 5 STAGE 1, 2 & 3 WORKS

PRECINCT 5 STAGE 1, 2 & 3 WORKS

PRECINCT 5 STAGE 1, 2 & 3 WORKS

FUTURE PS

2.8m

PRECINCT 5 - STAGE 1, 2 & 3 WORKS

TEMPORARY END CAP BETWEEN STAGES

ROAD 13

ROAD 08

	14			15			16			17														
	13/4 JUNCTION 4		01/14	02/12 JUNCTION 12		01/15	04/12 JUNCTION 12		01/16	01/17 PIT< 90°00'00"		02/17 PIT< 53°37'03"	03/17 PIT< 22°32'02" JUNCTION 18		04/17 PIT< 15°20'31"		05/17 PIT< 105°20'31" JUNCTION 22		JUNCTION 23	06/17 PIT< 18°18'27" JUNCTION 56		07/17 PIT< 53°35'10" JUNCTION 24		
	B MH		B MH	B MH		B MH	B MH		B MH	V B MH		V B MH	V B MH		V D MH		V B MH			V B MH		V B MH		
				EXT DROP ON BRANCH						1500 DIA MANHOLE		1500 DIA MANHOLE	1500 DIA MANHOLE CLASS D LID		1500 DIA MANHOLE EXT DROP ON BRANCH		1500 DIA MANHOLE EXT DROP ON BRANCH			1500 DIA MANHOLE EXT DROP ON BRANCH		1500 DIA MANHOLE EXT DROP ON BRANCH		
	LOT 90		LOT 91	LOT 548		LOT 549	LOT 86		LOT 87															
	SEWER #4 X.INV 4.446			SEWER #12 X.INV 3.272			SEWER #12 X.INV 4.758						SEWER #18 X.INV -0.331 DRAIN #246 X.INV 2.322		DRAIN #21 X.INV 2.329		DRAIN #21 X.INV 2.778			SEWER #56 X.INV 0.147		SEWER #24 X.INV 0.265		
	CH. 2.5 S.IL 4.559		CH. 11.5 S.IL 4.710	CH. 2.5 S.IL 4.830		CH. 16.5 S.IL 5.042	CH. 2.5 S.IL 4.869		CH. 13.5 S.IL 5.038				CH. 4.15 INV -0.331 CH. 4.51 INV -0.248		CH. 54.2 INV -0.225		CH. 117.9 INV -0.033			CH. 158.6 INV 0.147		CH. 194.3 INV 0.265		
	CH. -0.0 INV 4.446			CH. 0.0 INV 3.272			CH. -0.0 INV 4.758			INV -0.531 X.INV 2.700		CH. 5.6 DRAIN #123 INV -0.531 X.INV 2.700			ELEC / COMMS		CH. 123.7 SEWER #23 SEWER #22 INV -0.020 X.INV -0.033 X.INV -0.020		CH. 178.3 DRAIN #248 INV 0.070 X.INV 2.501 CH. 129.6 SEWER #24 INV 0.074 X.INV 3.271 CH. 100.4 SEWER #56 INV 0.076 X.INV 3.063					
PIPE DIAMETER (mm)	Ø150_SN8			Ø150_SN8			Ø150_SN8			Ø450_PVC-O		Ø450_PVC-O	Ø375_PN12		Ø375_PN12		Ø375_PN12			Ø375_PN12		Ø375_PN12		
PIPE GRADE	1in65.0			1in70.0			1in70.0			1in400		1in400	1in400		1in400		1in400			1in400		1in400		
DATUM R.L.	-15.000			-15.000			-16.000			-16.000														
DEPTH TO INVERT	1.454	1.374	1.171	3.077	1.550	1.290	1.541	1.461	1.144	4.414		4.348	4.318		4.387		4.356	4.326		4.434	4.354		4.037	4.007	4.341	4.311
PIPE INVERT LEVELS	4.446	4.526	4.729	3.273	4.800	5.060	4.759	4.839	5.056	-0.451	-0.531	-0.416	-0.386	-0.330	-0.255 -0.248 -0.275 -0.222 -0.171		-0.116	-0.086 -0.037 -0.033		-0.020	0.060 0.070 0.074 0.076		0.147	0.177	0.267	0.297
DESIGN SURFACE LEVELS	5.900		5.900	6.350		6.350	6.299		6.200	4.100		4.100	4.100		4.056		4.239			4.414			4.184		4.607	
CHAINAGE	0.000	13.175	13.175	0.000	18.175	18.175	0.000	15.175	15.175	5.300	0.302	19.302	22.209	41.510	51.73 12.65 13.54 33.61		55.686	97.196 19.33 20.66	26.457	123.653 5.98 7.04		34.994	158.648		194.275		35.627
	E 547761.927 N 70113.943		E 547749.078 N 70111.030	E 546838.366 N 69987.556		E 546856.317 N 69984.713	E 546835.016 N 70121.723		E 546820.216 N 70118.368	E 545547.990 N 69798.197		E 545538.118 N 69788.268	E 545516.150 N 69791.531				E 544688.418 N 69820.211		E 544442.943 N 69827.357			E 544460.967 N 69857.344		E 544468.795 N 69882.105		

LINE NO. 14 15 16 17

PROJECT NAME
KINGS FOREST
PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

C	27-01-21	LEGEND AMENDED
B	28-08-20	PROFILES AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION
PROFILES
SHEET 6

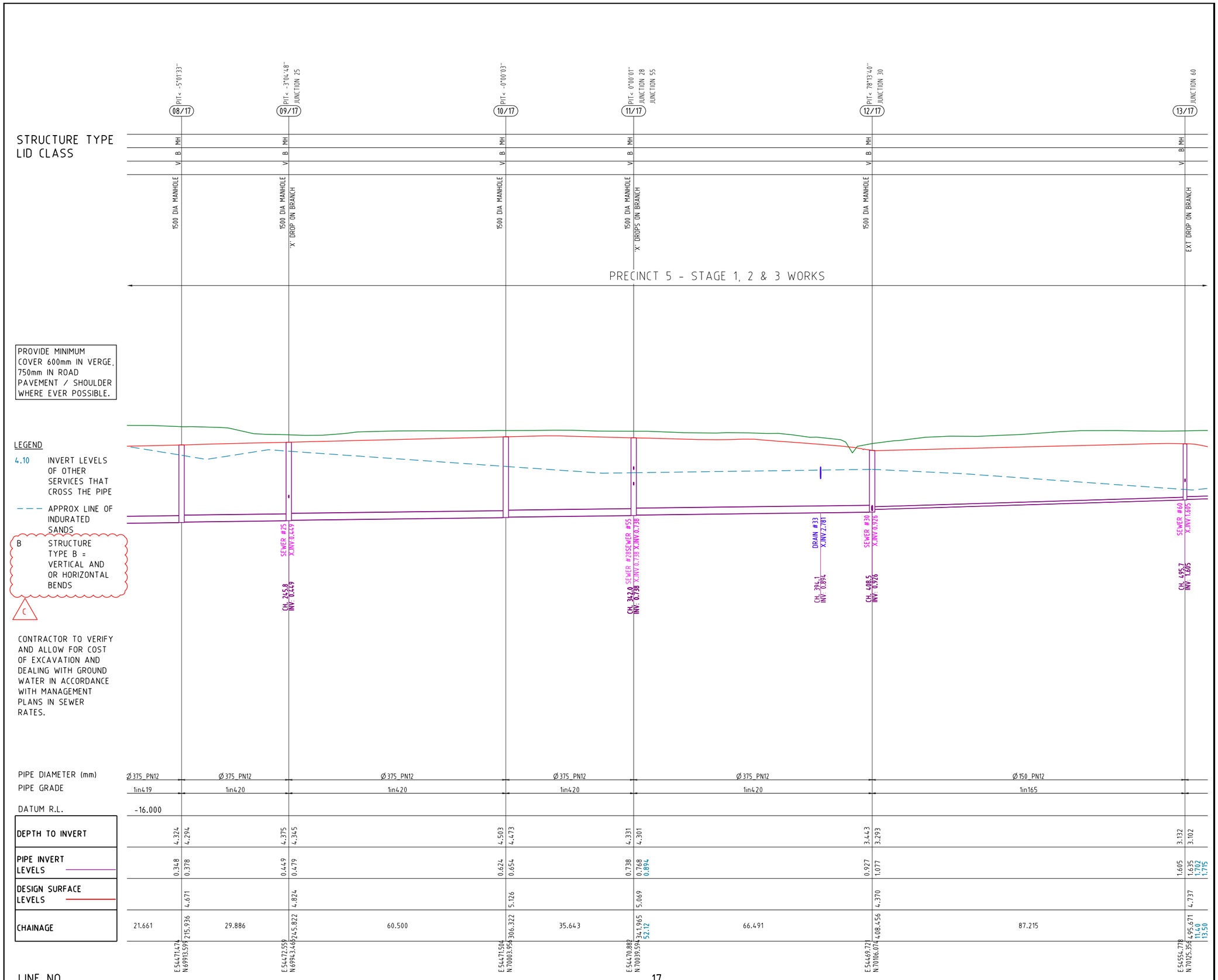
CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER 12301-P5-1,2&3-535
AMEND. C

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PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
C	27-01-21	LEGEND AMENDED
B	28-08-20	PROFILES AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION
PROFILES
SHEET 7

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-536
AMEND.: C

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STRUCTURE TYPE
LID CLASS

PROVIDE MINIMUM COVER 600mm IN VERGE, 750mm IN ROAD PAVEMENT / SHOULDER WHERE EVER POSSIBLE.

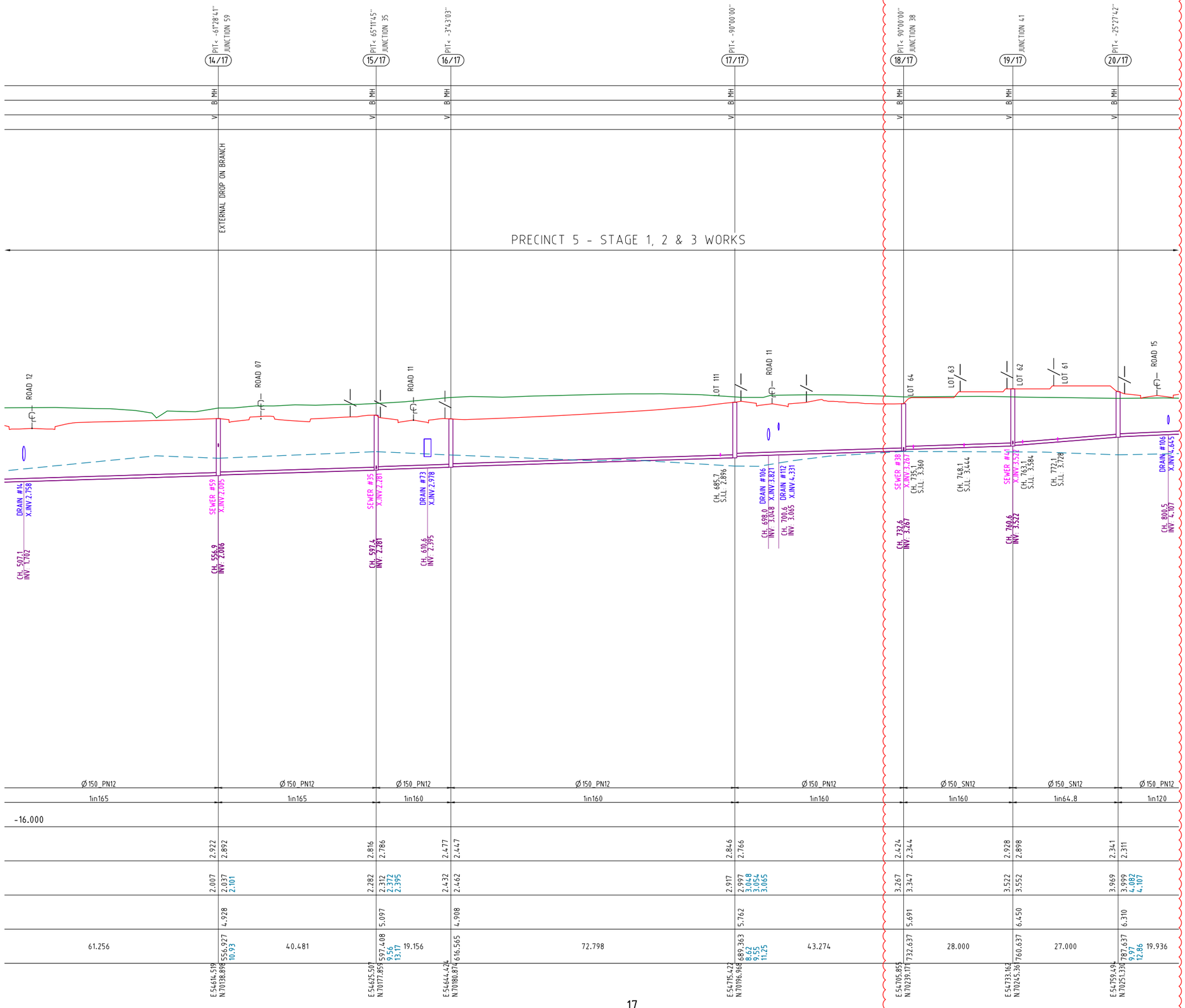
LEGEND

4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

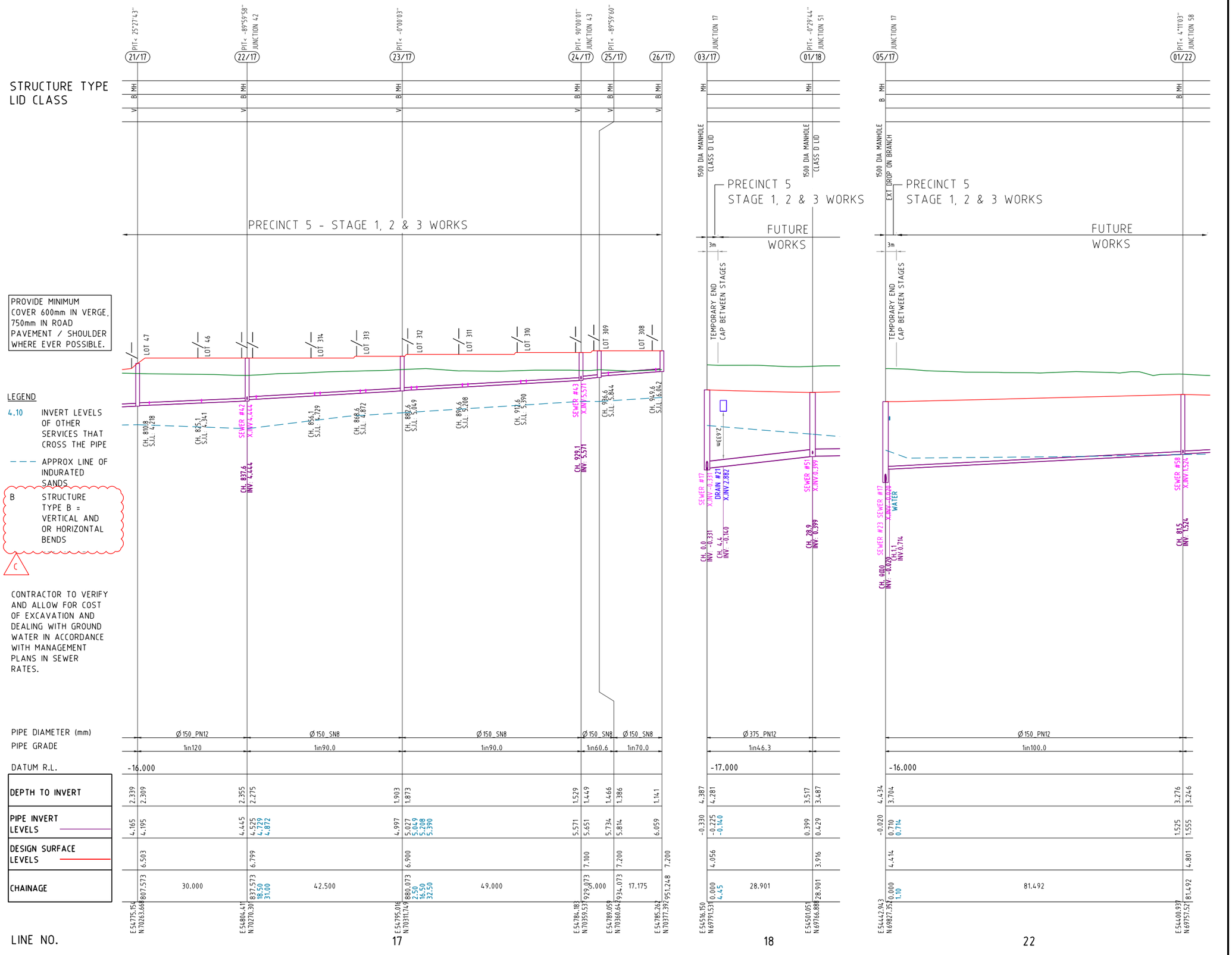
APPROX LINE OF INDURATED SANDS

B STRUCTURE TYPE B = VERTICAL AND OR HORIZONTAL BENDS

CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLANS IN SEWER RATES.



| | | |



PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

C	27-01-21	LEGEND AMENDED
B	28-08-20	PROFILES AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION
PROFILES
SHEET 9

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-538
AMEND.: C

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STRUCTURE TYPE
LID CLASS

PROVIDE MINIMUM COVER 600mm IN VERGE, 750mm IN ROAD PAVEMENT / SHOULDER WHERE EVER POSSIBLE.

LEGEND

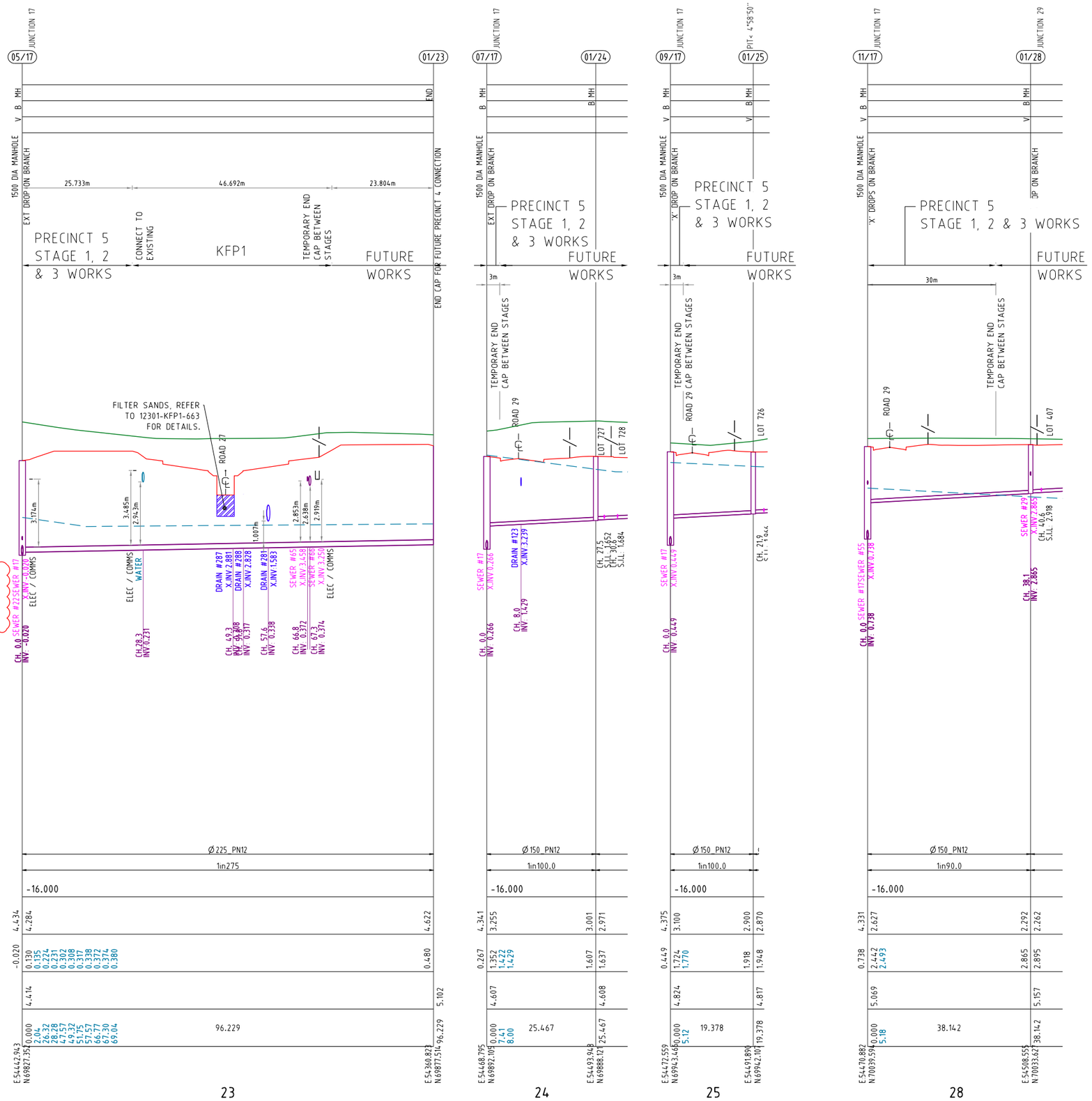
4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

B STRUCTURE TYPE B = VERTICAL AND OR HORIZONTAL BENDS

C

CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLANS IN SEWER RATES.



PIPE DIAMETER (mm)		Ø225 PN12	Ø150 PN12	Ø150 PN12	Ø150 PN12
PIPE GRADE		1in275	1in100.0	1in100.0	1in90.0
DATUM R.L.		-16.000	-16.000	-16.000	-16.000
DEPTH TO INVERT		4.434	4.284	4.341	3.255	4.375	3.100	4.331	2.627
		4.622	3.001	2.971	4.375	2.900	2.870	4.331	2.292	2.262
PIPE INVERT LEVELS		-0.020	0.130	0.267	1.352	0.449	1.724	0.738	2.442
		0.480	1.607	1.637	0.449	1.918	1.948	0.738	2.865	2.895
			0.135		1.422		1.770		2.493
			0.224		1.429				
			0.231						
			0.302						
			0.308						
			0.317						
			0.338						
			0.372						
			0.374						
			0.380						
DESIGN SURFACE LEVELS		4.414	4.607	4.824	5.069
CHAINAGE		0.000	2.04	26.32	28.28	47.57	49.32	51.75	57.57	67.77	67.30	69.04	96.229	0.000	7.41	8.00	25.467	0.000	5.12	19.378	0.000	5.18	38.142
		E544429.43 N69827.357	E544468.795 N69892.105	E544472.559 N69943.466	E544470.882 N70039.594
		E544608.821 N69877.514	E544493.948 N69888.121	E544491.890 N69942.107	E544508.555 N70033.827
LINE NO.		23	24	25	28

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
C	27-01-21	LEGEND AMENDED
B	28-08-20	PROFILES AND TRENCHSTOPS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION PROFILES SHEET 10

CONSTRUCTION ISSUE

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Suite 9, 19 Short St
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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-539	C

Y:\123 - Leda Developments Pty Ltd\01 - Kings Forest\PREC5\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-530.dwg, 6/10/2021 4:58:13 PM, 1:2

STRUCTURE TYPE
LID CLASS

PROVIDE MINIMUM COVER 600mm IN VERGE, 750mm IN ROAD PAVEMENT / SHOULDER WHERE EVER POSSIBLE.

LEGEND

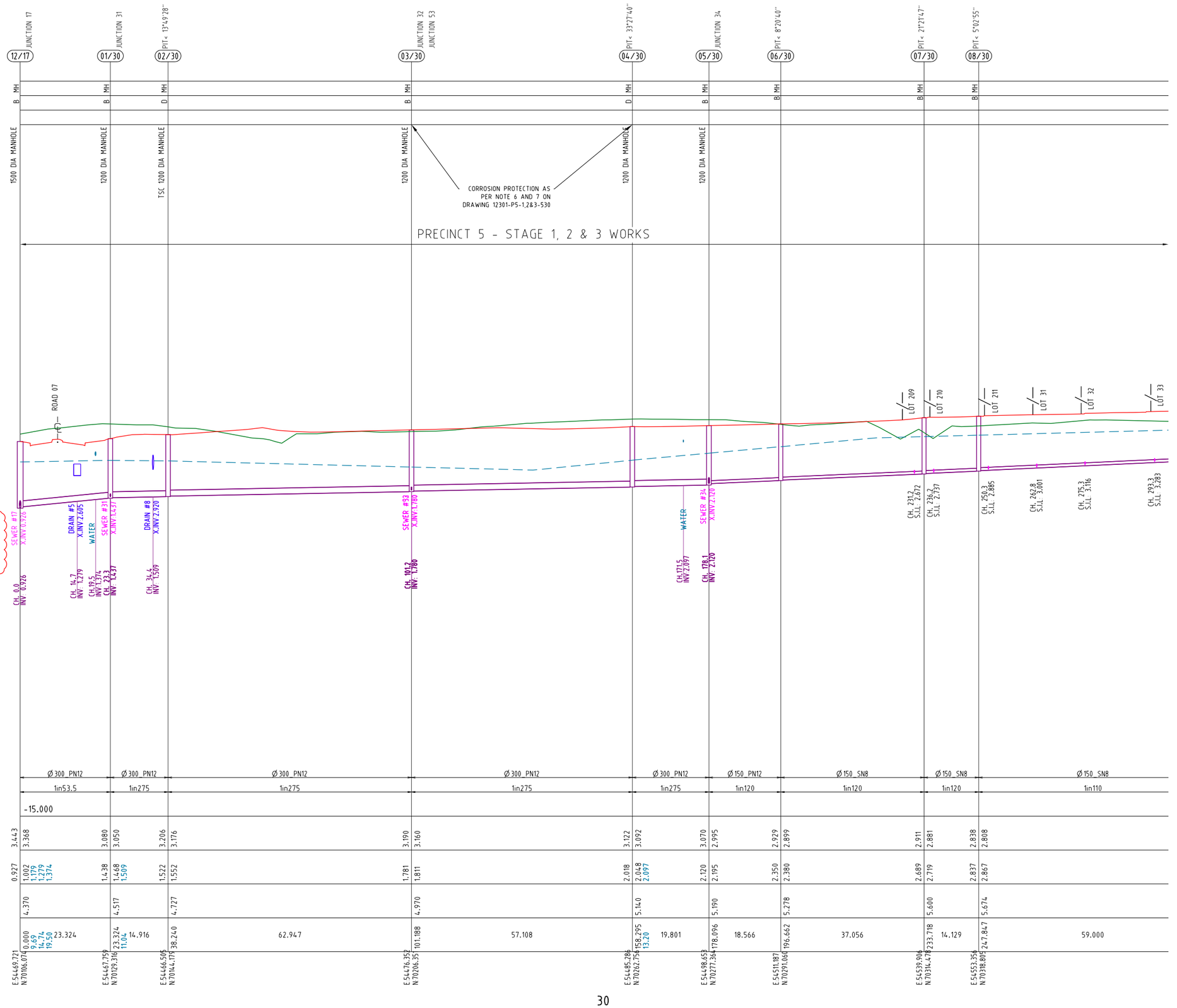
4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

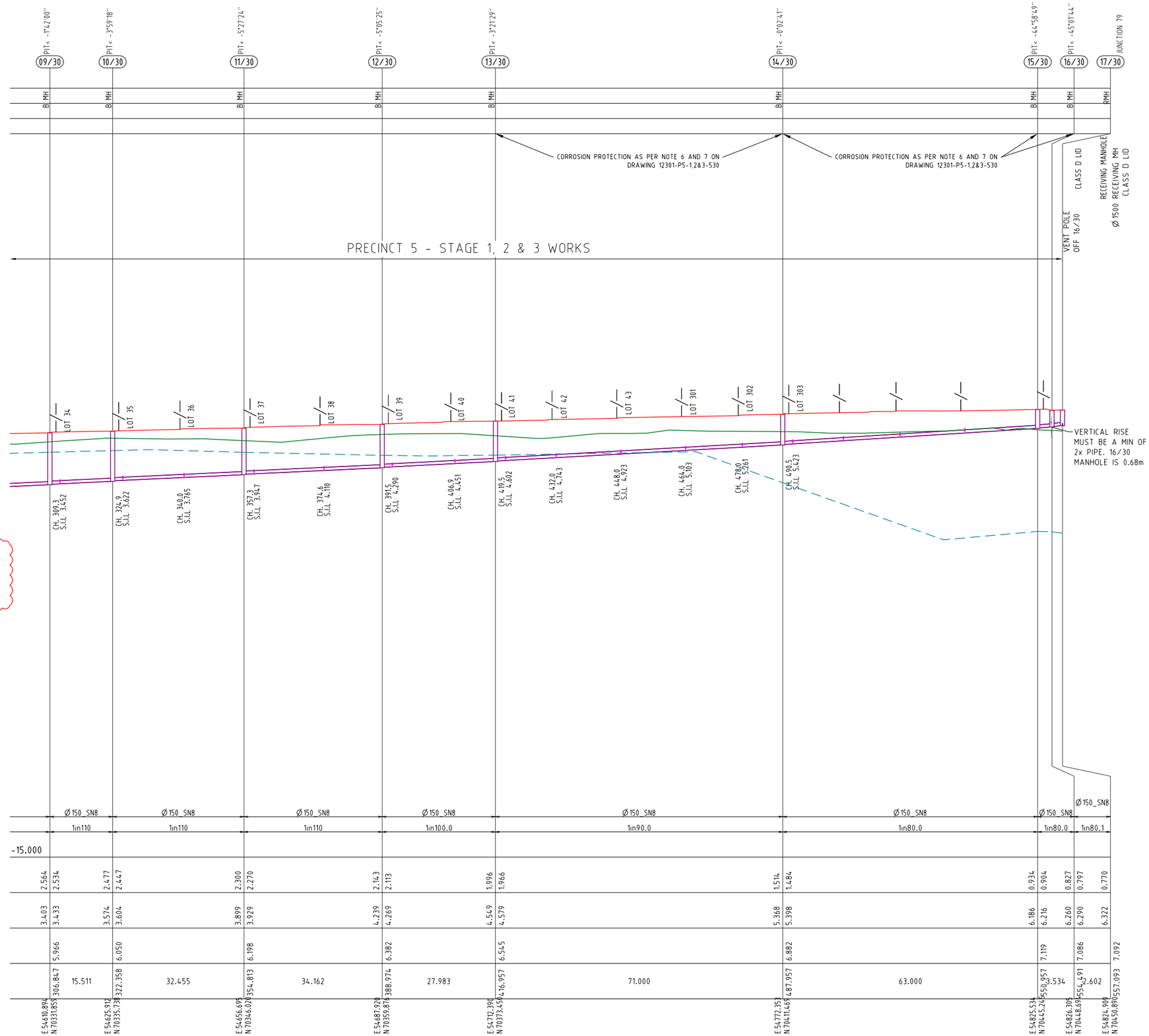
B STRUCTURE TYPE B = VERTICAL AND OR HORIZONTAL BENDS

C

CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLANS IN SEWER RATES.



| | | |



PROVIDE MINIMUM COVER 600mm IN VERGE, 750mm IN ROAD PAVEMENT / SHOULDER WHERE EVER POSSIBLE.

LEGEND

4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

B STRUCTURE TYPE B = VERTICAL AND OR HORIZONTAL BENDS

C

CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLANS IN SEWER RATES.

| | | |

STRUCTURE TYPE
LID CLASS

PROVIDE MINIMUM COVER 600mm IN VERGE, 750mm IN ROAD PAVEMENT / SHOULDER WHERE EVER POSSIBLE.

LEGEND

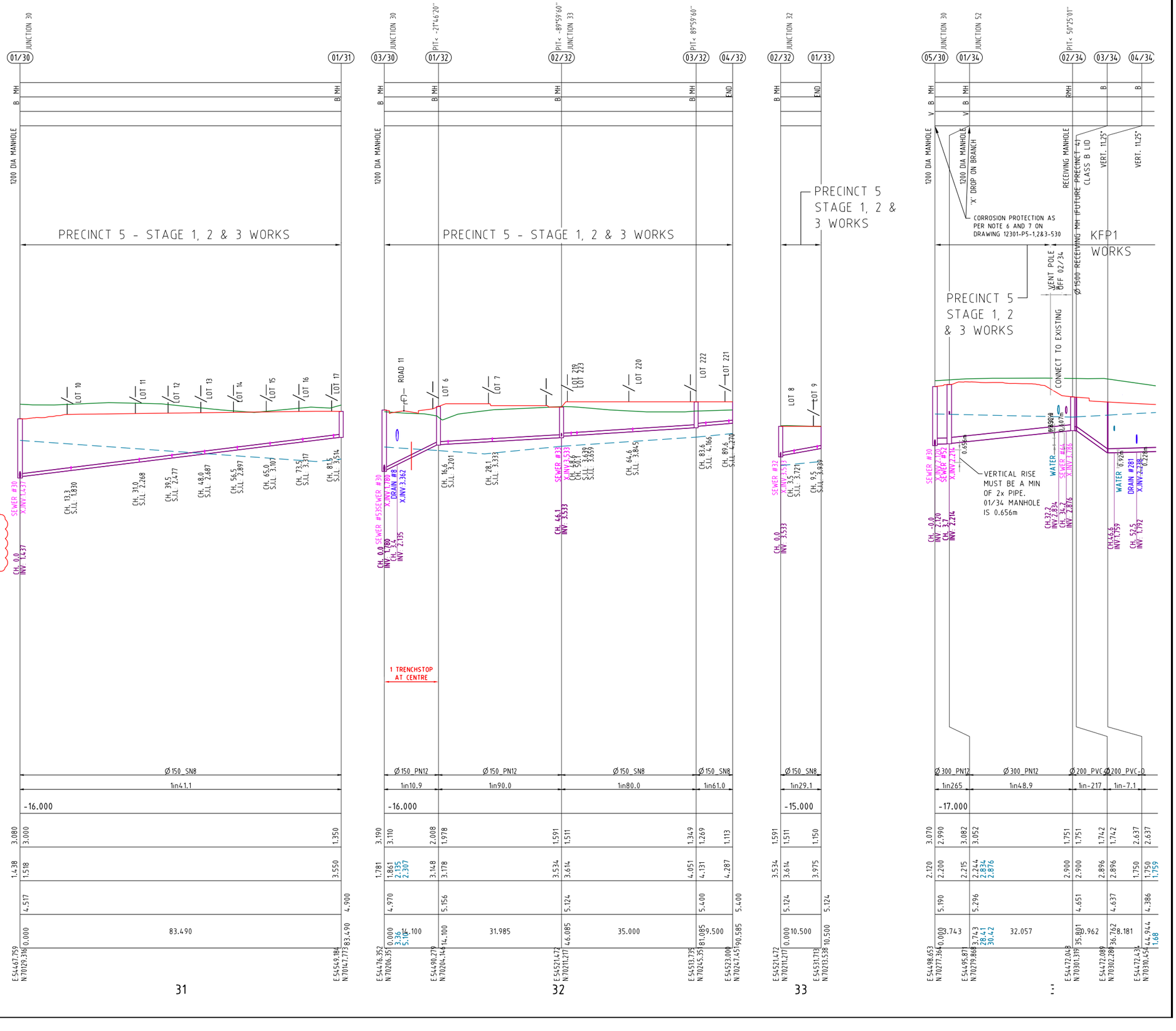
4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

B STRUCTURE TYPE B = VERTICAL AND OR HORIZONTAL BENDS

C

CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLANS IN SEWER RATES.



PIPE DIAMETER (mm)	Ø150 SN8		Ø150 PN12	Ø150 PN12	Ø150 PN12
PIPE GRADE	1in41.1		1in10.9	1in90.0	1in80.0
DATUM R.L.	-16.000		-16.000		
DEPTH TO INVERT	3.080	3.000	3.190	3.110	2.008
PIPE INVERT LEVELS	1.438	1.518	1.781	1.861	2.135
				2.135	2.307
DESIGN SURFACE LEVELS	4.517		4.970	5.156	
CHAINAGE	0.000	83.490	0.000	3.36	5.146
				14.100	31.985

PIPE DIAMETER (mm)	Ø150 SN8	Ø150 SN8	Ø150 SN8	Ø150 SN8	Ø150 SN8
PIPE GRADE	1in80.0	1in61.0	1in29.1		
DATUM R.L.			-15.000		
DEPTH TO INVERT	1.978	1.591	1.511	1.349	1.269	1.113	1.591	1.511	1.150
PIPE INVERT LEVELS	3.178	3.534	3.614	4.051	4.131	4.287	3.534	3.614	3.975
DESIGN SURFACE LEVELS	5.156	5.124		5.400		5.400	5.124		5.124
CHAINAGE	46.085	81.085	89.585				0.000	10.500	10.500
	35.000	9.500	0.500						

PIPE DIAMETER (mm)	Ø300 PN12	Ø300 PN12	Ø200 PVC-O	Ø200 PVC-O	
PIPE GRADE	1in265	1in48.9	1in-217	1in-7.1	
DATUM R.L.	-17.000				
DEPTH TO INVERT	3.070	2.990	3.082	3.052	1.751	1.751	1.742	1.742	2.637	2.637
PIPE INVERT LEVELS	2.120	2.200	2.215	2.244	2.834	2.876	2.900	2.900	2.896	2.896	1.750	1.750	1.759
DESIGN SURFACE LEVELS	5.190		5.296				4.651		4.637		4.386	
CHAINAGE	0.000	3.743	3.743	28.441	30.442		35.801	0.962	36.762	8.181	44.944	1.68
				32.057								

LINE NO. 31 32 33

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

C	27-01-21	LEGEND AMENDED
B	28-08-20	TRENCHSTOP AND PROFILES AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION
PROFILES
SHEET 13

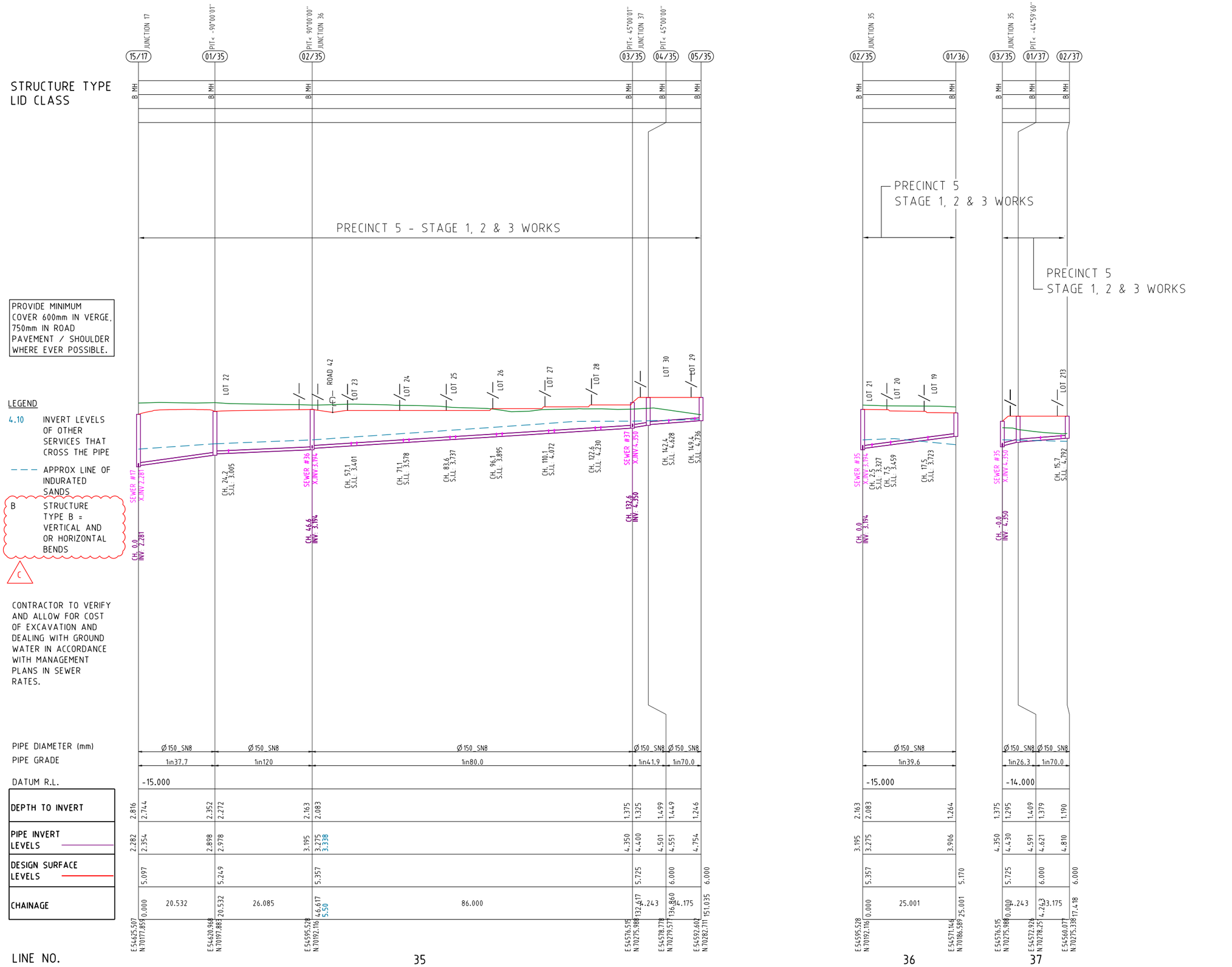
CONSTRUCTION ISSUE

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Civil Engineering
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MUS Pty Ltd T/As:
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Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER 12301-P5-1,2&3-542
AMEND. C

Y:\123 - Leda Developments Pty Ltd\01 - Kings Forest\PREC05\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-538.dwg, 6/10/2021 4:58:28 PM, 1:2



PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

C	27-01-21	LEGEND AMENDED
B	28-08-20	PROFILES AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LandSurv
GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION
PROFILES
SHEET 14

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER 12301-P5-1,2&3-543 | AMEND. C

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STRUCTURE TYPE
LID CLASS

PROVIDE MINIMUM COVER 600mm IN VERGE, 750mm IN ROAD PAVEMENT / SHOULDER WHERE EVER POSSIBLE.

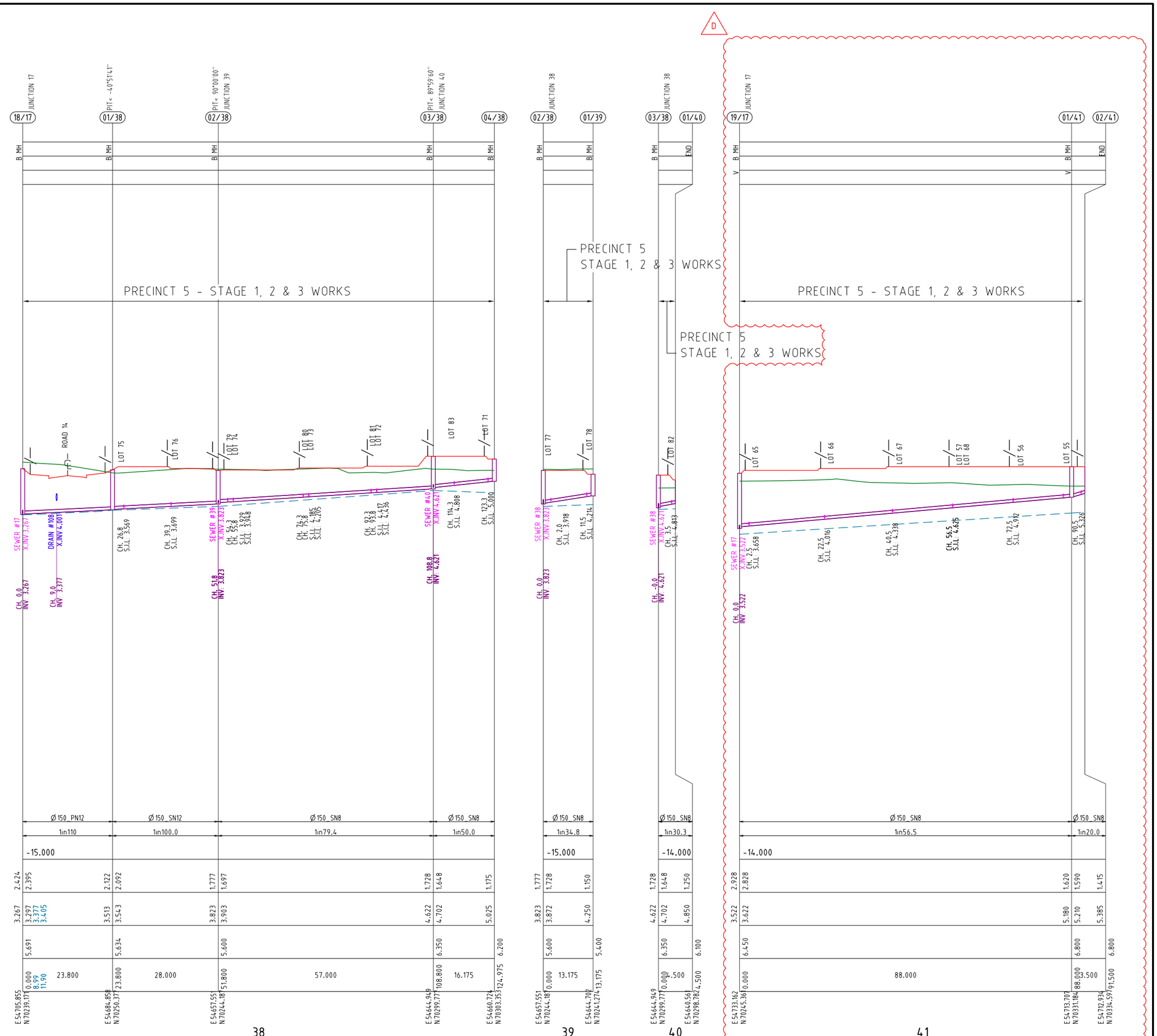
LEGEND

4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

B STRUCTURE TYPE B = VERTICAL AND OR HORIZONTAL BENDS

CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLANS IN SEWER RATES.



PIPE DIAMETER (mm)	Ø150_PN12	Ø150_SN12	Ø150_SN8	Ø150_SN8	
PIPE GRADE	1in110	1in100.0	1in79.4	1in50.0	
DATUM R.L.	-15.000				
DEPTH TO INVERT	2.424	2.395 2.122	2.092 1.777	1.697 1.728	1.648 1.175
PIPE INVERT LEVELS	3.267	3.297 3.377 3.405 3.513	3.543 3.823	3.903 4.622	4.702 5.025
DESIGN SURFACE LEVELS	5.691	5.634	5.600	6.350	6.200
CHAINAGE	0.000 8.99 11.90	23.800	28.000	57.000	108.800 16.175 124.975
	E 54,705.855 N 70,239.171	E 54,684.858 N 70,250.377	E 54,657.555 N 70,244.187	E 54,644.949 N 70,299.777	E 54,660.724 N 70,303.353
LINE NO.		38			

PIPE DIAMETER (mm)	Ø150_SN8	Ø150_SN8		
PIPE GRADE	1in34.8	1in30.3		
DATUM R.L.	-15.000	-14.000		
DEPTH TO INVERT	1.777 1.728 1.150	1.728 1.648 1.250		
PIPE INVERT LEVELS	3.823 3.872 4.250	4.622 4.702 4.850		
DESIGN SURFACE LEVELS	5.600 5.400	6.350 6.100		
CHAINAGE	0.000 13.175 13.175	0.000 4.500		
	E 54,657.551 N 70,244.187	E 54,644.702 N 70,241.274	E 54,644.949 N 70,299.777	E 54,640.568 N 70,298.782
LINE NO.		39	40	

PIPE DIAMETER (mm)	Ø150_SN8	Ø150_SN8		
PIPE GRADE	1in56.5	1in20.0		
DATUM R.L.	-14.000			
DEPTH TO INVERT	2.928 2.828	1.620 1.590 1.415		
PIPE INVERT LEVELS	3.522 3.622	5.180 5.210 5.385		
DESIGN SURFACE LEVELS	6.450	6.800		
CHAINAGE	0.000	88.000	88.000 3.500	91.500
	E 54,733.362 N 70,245.360	E 54,713.707 N 70,331.184	E 54,712.934 N 70,334.559	
LINE NO.		41		

PROJECT NAME
KINGS FOREST
PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

D	15-09-21	PROFILE AMENDED
C	27-01-21	LEGEND AMENDED
B	28-08-20	PROFILES AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION PROFILES SHEET 15

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER 12301-P5-1,2&3-544
AMEND. D

Y:\123 - Lusta Developments Pty Ltd\01 - Kings Forest\PREC5\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-530.dwg, 6/10/2021 4:58:39 PM, 1:2

STRUCTURE TYPE
LID CLASS

PROVIDE MINIMUM COVER 600mm IN VERGE, 750mm IN ROAD PAVEMENT / SHOULDER WHERE EVER POSSIBLE.

LEGEND

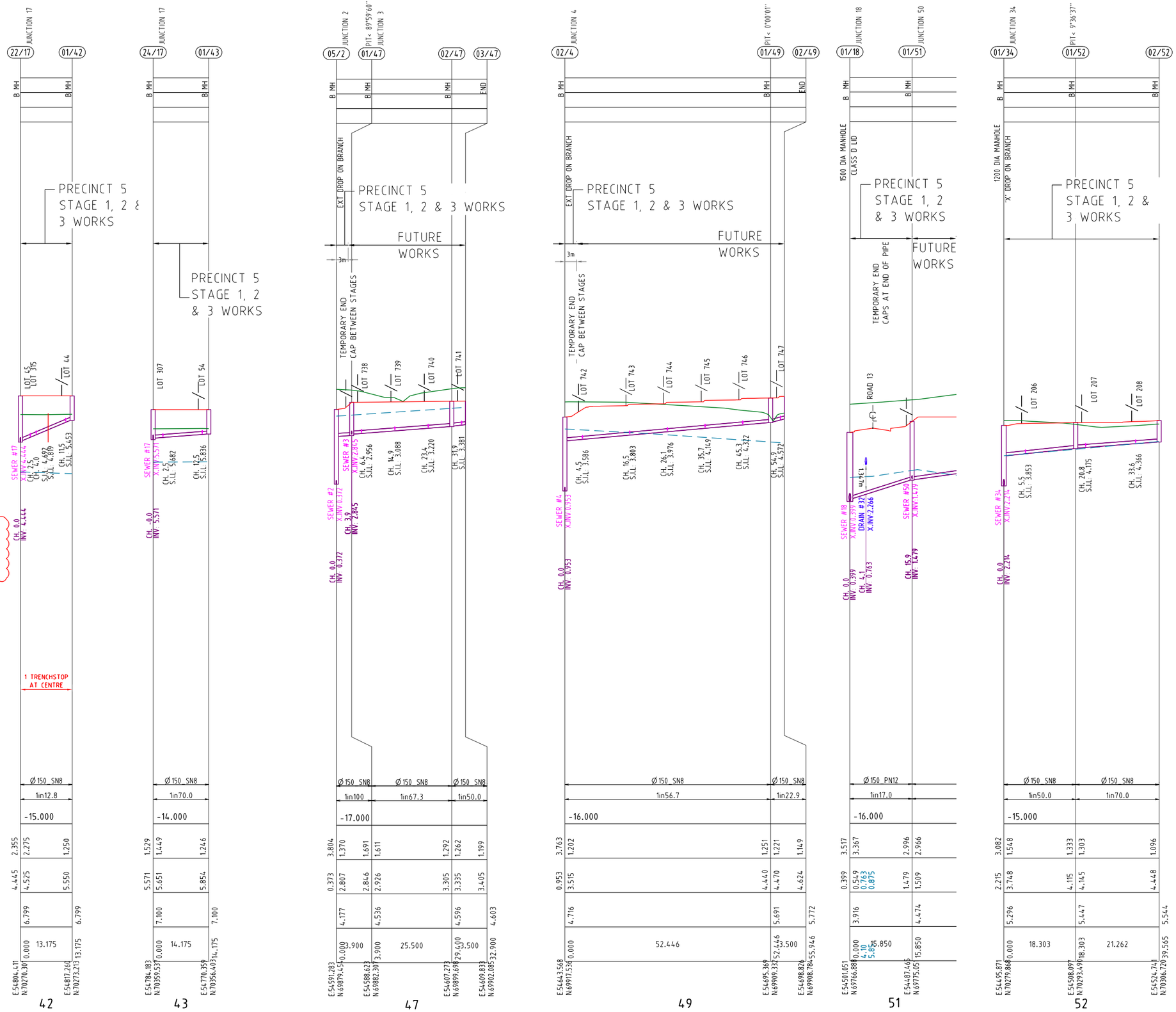
4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

B STRUCTURE TYPE B = VERTICAL AND OR HORIZONTAL BENDS

C

CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLANS IN SEWER RATES.



PIPE DIAMETER (mm)
PIPE GRADE
DATUM R.L.

	42	43	47	49	51	52
PIPE DIAMETER (mm)	Ø150 SN8	Ø150 SN8	Ø150 SN8 / Ø150 SN8 / Ø150 SN8	Ø150 SN8 / Ø150 SN8	Ø150 PN12	Ø150 SN8 / Ø150 SN8
PIPE GRADE	1in12.8	1in70.0	1in100 / 1in67.3 / 1in50.0	1in56.7 / 1in22.9	1in17.0	1in50.0 / 1in70.0
DATUM R.L.	-15.000	-14.000	-17.000	-16.000	-16.000	-15.000
DEPTH TO INVERT	2.355 / 2.275 / 1.250	1.529 / 1.449 / 1.246	3.804 / 1.370 / 1.691 / 1.611 / 1.292 / 1.262 / 1.199	3.763 / 1.202 / 1.251 / 1.221 / 1.149	3.517 / 3.367 / 2.996 / 2.966	3.082 / 1.548 / 1.333 / 1.303 / 1.096
PIPE INVERT LEVELS	4.445 / 4.525 / 5.550	5.571 / 5.651 / 5.854	0.373 / 2.807 / 2.846 / 2.926 / 3.305 / 3.335 / 3.405	0.953 / 3.515 / 4.440 / 4.470 / 4.624	0.399 / 0.549 0.763 0.875 / 1.479 / 1.509	2.215 / 3.748 / 4.115 / 4.145 / 4.448
DESIGN SURFACE LEVELS	6.799 / 6.799	7.100 / 7.100	4.177 / 4.536 / 4.596 / 4.603	4.716 / 5.691 / 5.772	3.916 / 4.474	5.296 / 5.447 / 5.544
CHAINAGE	0.000 13.175	0.000 14.175	0.000 3.900 25.500 33.500 32.900	0.000 52.446 52.446 55.946	0.000 15.850 15.850	0.000 18.303 18.303 21.262
	E 54804.411 N 70270.301	E 54817.260 N 70273.213	E 54784.183 N 70359.537 E 54770.359 N 70356.640	E 54591.283 N 69879.456 E 54588.623 N 69882.307 E 54607.273 N 69899.698 E 54609.833 N 69902.085	E 54643.568 N 69961.536 E 54695.369 N 69909.332 E 54698.824 N 69908.784	E 54501.051 N 69766.888 E 54487.465 N 69775.105	E 54495.871 N 70279.868 E 54508.097 N 70293.690 E 54524.744 N 70306.720
LINE NO.	42	43	47	49	51	52

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

C	27-01-21	LEGEND AMENDED
B	28-08-20	SEWER PROFILES AND TRENCHSTOP AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION PROFILES SHEET 16

CONSTRUCTION ISSUE

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MUS Pty Ltd T/As
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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-545
AMEND.: C

Y:\123 - Lieta Developments Pty Ltd\01 - Kings Forest\PREC05\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-530.dwg, 6/10/2021 4:58:45 PM, 1:2

STRUCTURE TYPE
LID CLASS

PROVIDE MINIMUM COVER 600mm IN VERGE, 750mm IN ROAD PAVEMENT / SHOULDER WHERE EVER POSSIBLE.

LEGEND

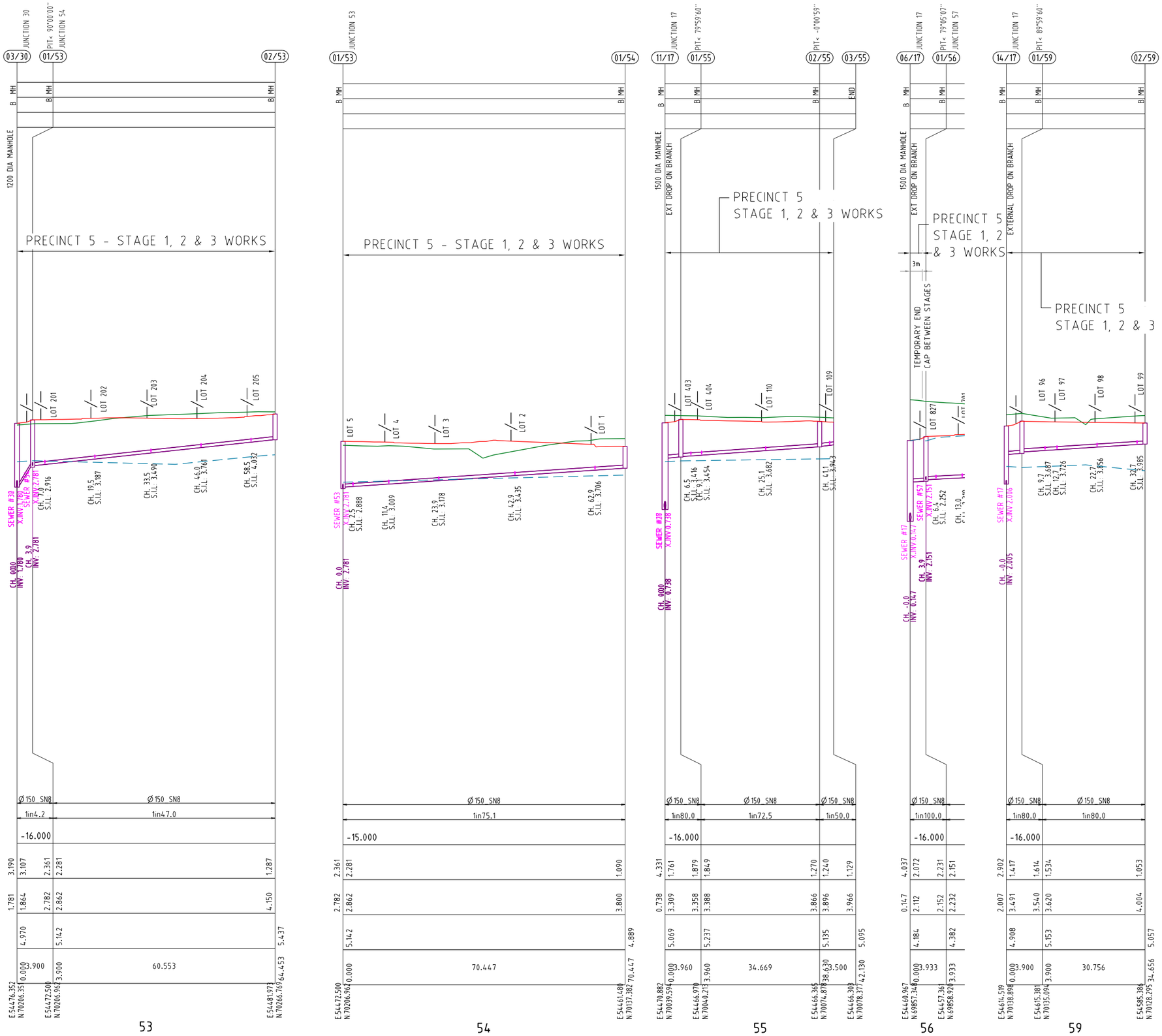
4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

B STRUCTURE TYPE B = VERTICAL AND OR HORIZONTAL BENDS

C

CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLANS IN SEWER RATES.



PIPE DIAMETER (mm)
PIPE GRADE

DATUM R.L.

DEPTH TO INVERT
PIPE INVERT LEVELS
DESIGN SURFACE LEVELS
CHAINAGE

LINE NO.

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

C	27-01-21	LEGEND AMENDED
B	28-08-20	PROFILES AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION
PROFILES
SHEET 17

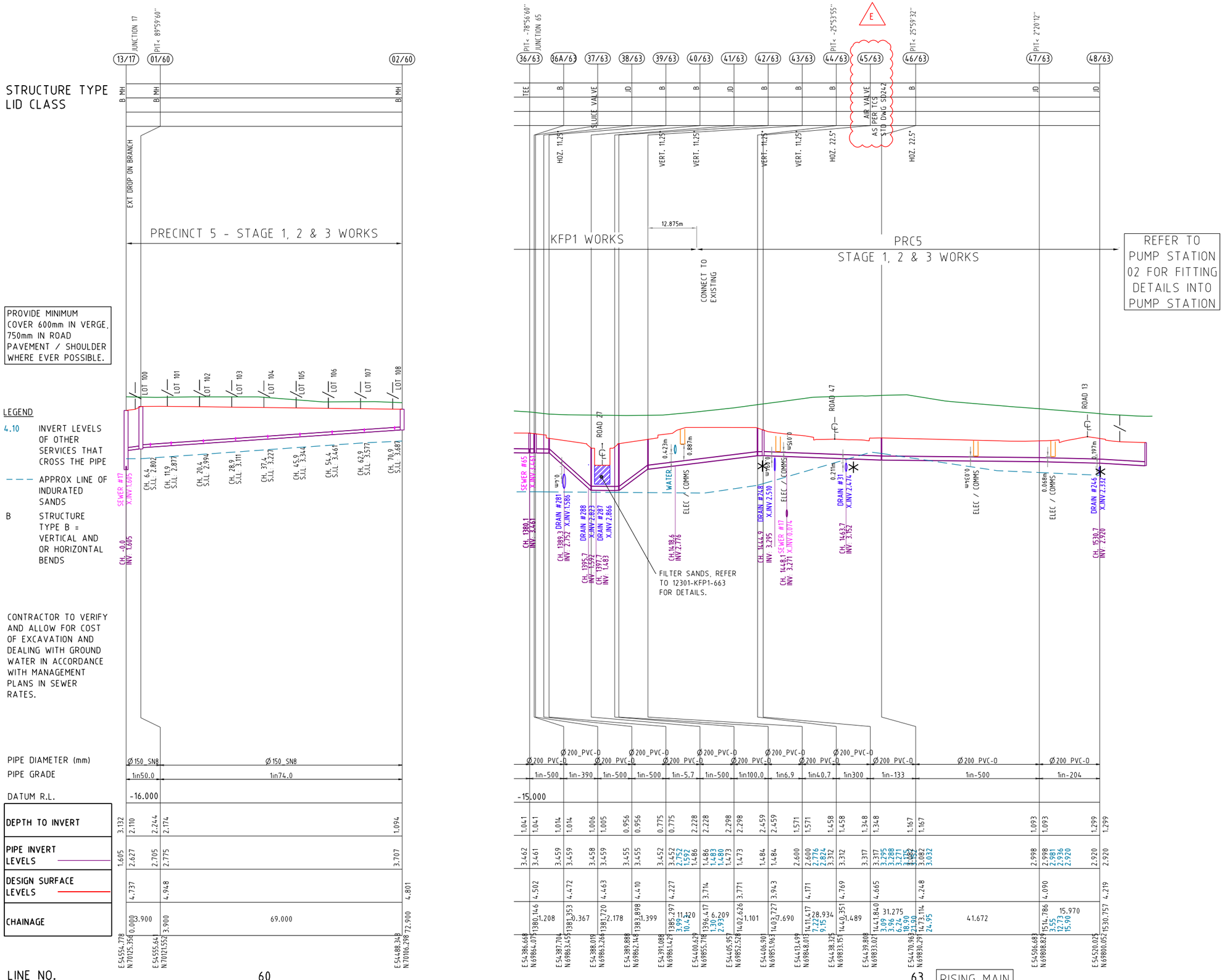
CONSTRUCTION ISSUE

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Gold Coast Office
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Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER 12301-P5-1,2&3-546
AMEND. C

Y:\123 - Leda Developments Pty Ltd\01 - Kings Forest\PREC05\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-530.dwg, 6/10/2021 4:58:53 PM, 1:2



Y:\123 - Leda Developments Pty Ltd\01 - Kings Forest\PREC5\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-530.dwg, 6/10/2021 4:59:00 PM, 1:2

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

E	04-05-21	NOTE AMENDED
D	16-03-21	PROFILE AND LEGEND AMENDED
C	25-01-21	PROFILE AND LEGEND AMENDED
B	28-08-20	PROFILES AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LandSurv
GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION
PROFILES
SHEET 18

CONSTRUCTION ISSUE

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Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER 12301-P5-1,2&3-547

AMEND. E

STRUCTURE TYPE
LID CLASS

PROVIDE MINIMUM COVER 600mm IN VERGE, 750mm IN ROAD PAVEMENT / SHOULDER WHERE EVER POSSIBLE.

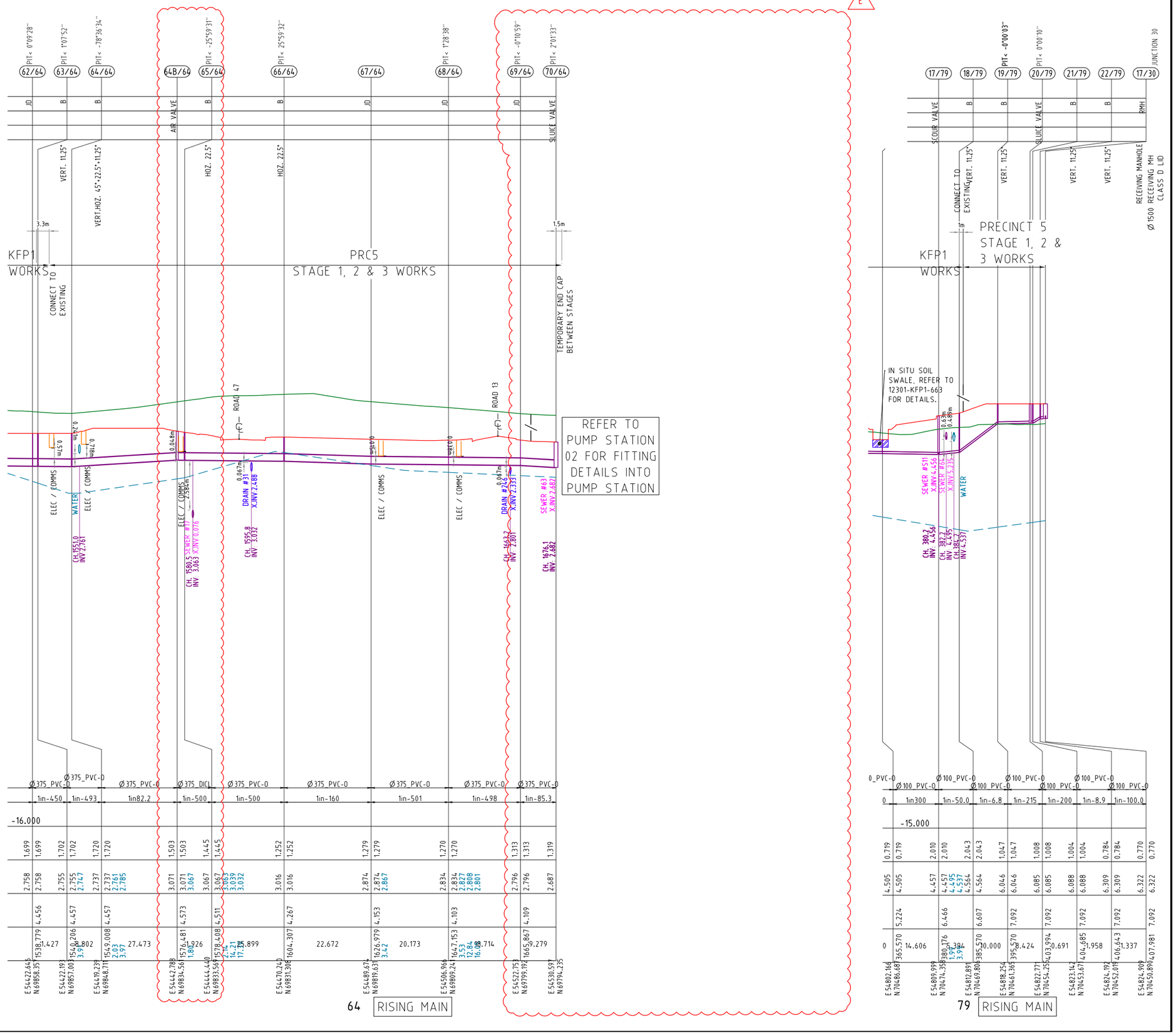
LEGEND

4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

B STRUCTURE TYPE B = VERTICAL AND OR HORIZONTAL BENDS

CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLANS IN SEWER RATES.



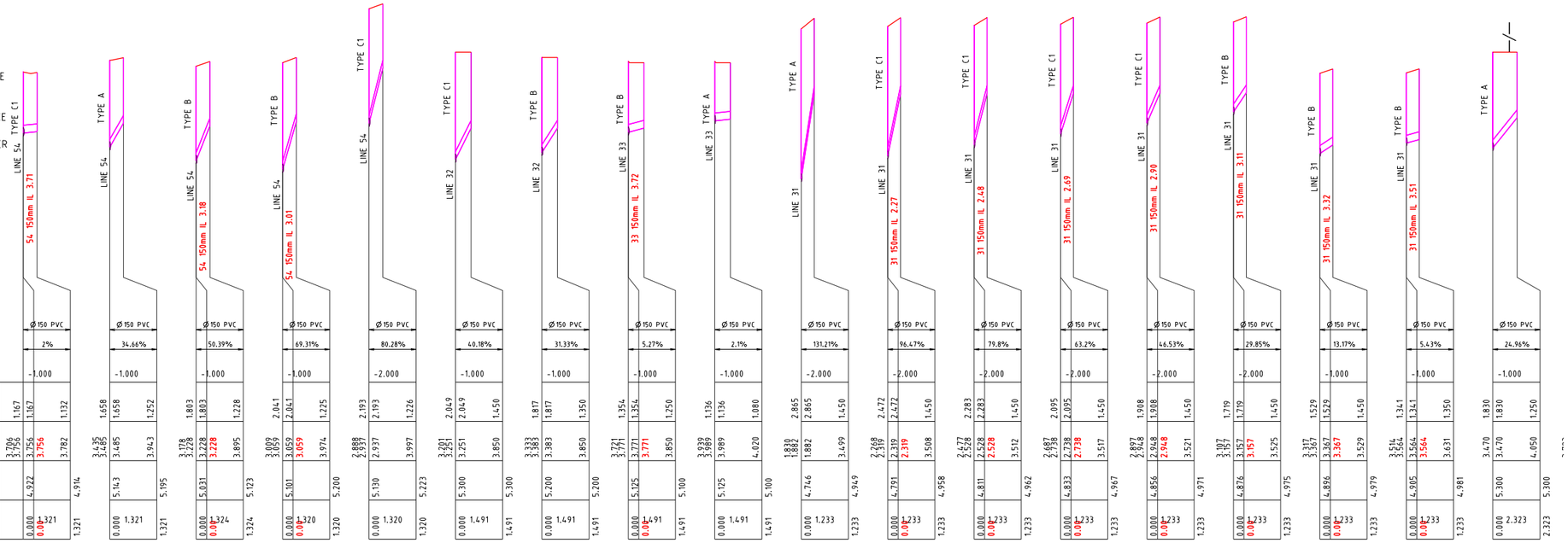
| | | |

TWEED STRUCTURE DROPS

A, B	SEWER PROPERTY CONNECTION (STANDARD & 45° BEND) REFER TO TSC STD DWG S.D-250
C1, C2	SEWER PROPERTY CONNECTION (VERTICAL BRANCH) REFER TO TSC STD DWG S.D-251

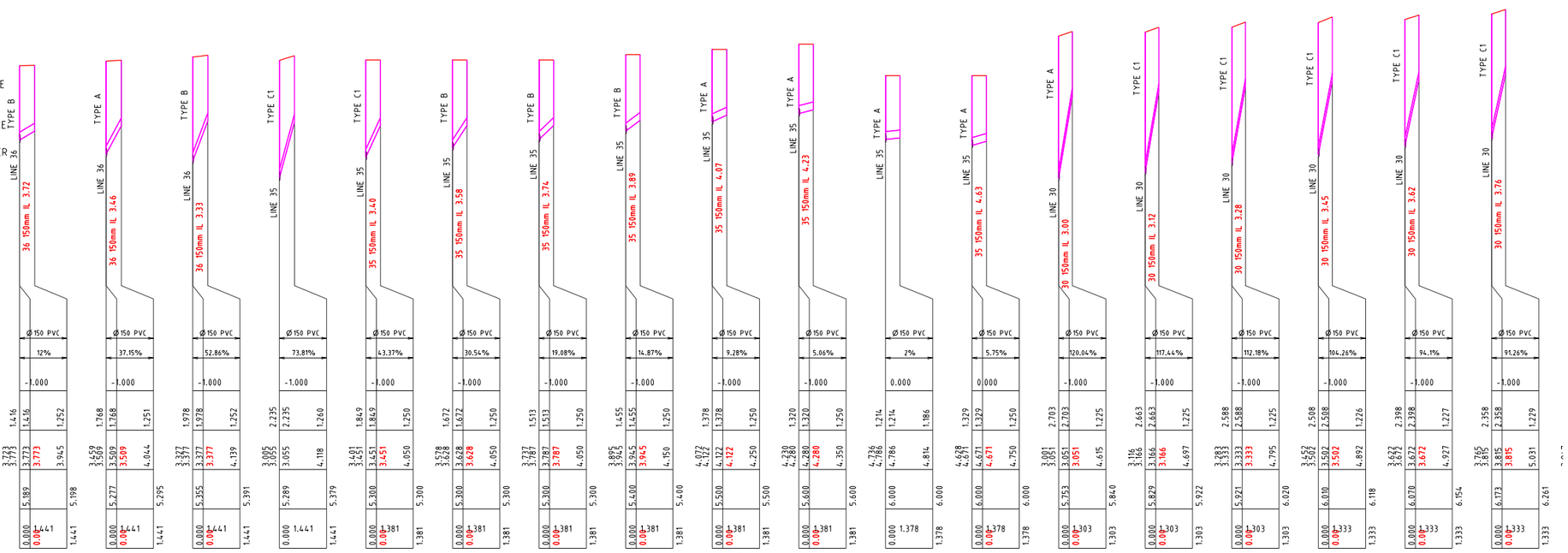
NOTES

1. WATER AND ELECTRICAL CROSSING LOCATIONS ARE INDICATIVE ONLY. REFER TO PLANS TO DETERMINE PRECISE CROSSING LOCATIONS. WHERE SERVICE INDICATES CLASH WITH SEWER, SEWER TO TAKE PRECEDENCE, SERVICE TO BE CONSTRUCTED OVER OR UNDER SEWER ACCORDING TO SUPERINTENDANTS INSTRUCTION.



NOTES

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PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 2.5 5 7.5 10 12.5m
Horiz. Scale 1:250 - A1 (1:500 - A3)

0 0.5 1.0 1.5 2.0 2.5m
Vert. Scale 1:50 - A1 (1:100 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LandSurv

GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION
HOUSE CONNECTION
PROFILES
SHEET 1 OF 6

CONSTRUCTION ISSUE

MORTONS urbansolutions
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Southport QLD 4215

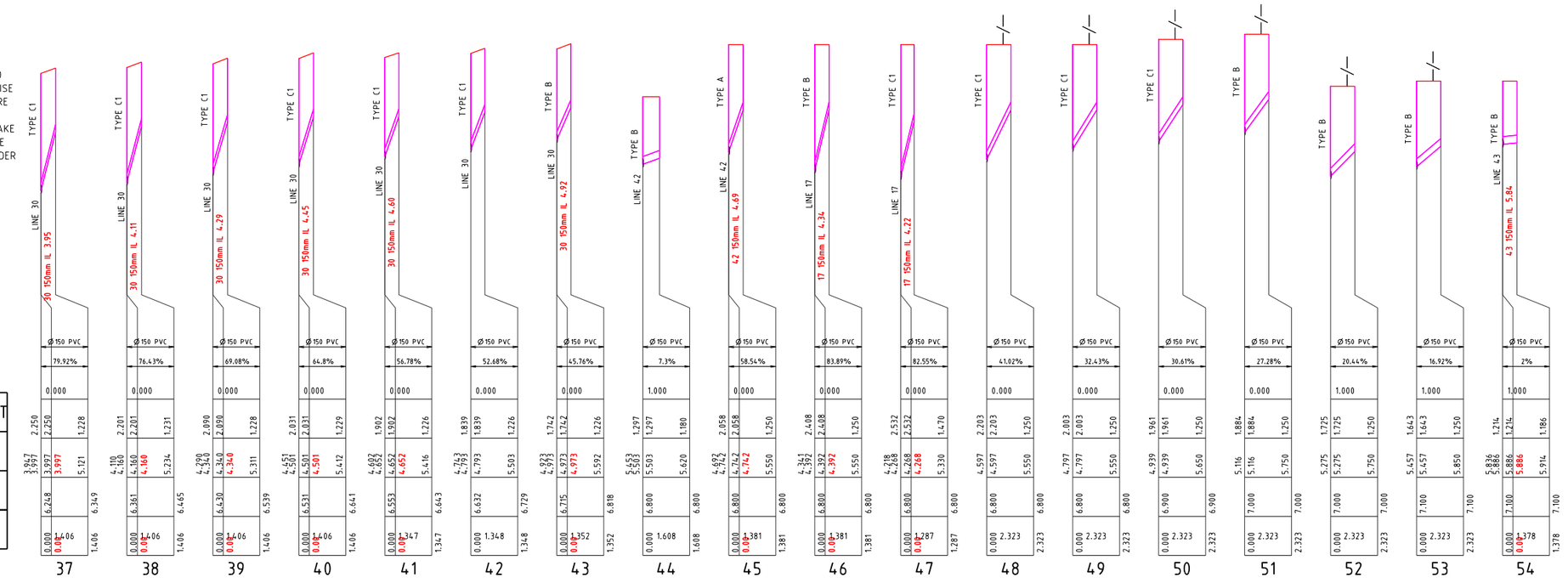
DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-570	A

Y:\123 - Lieta Developments Pty Ltd\01 - Kings Forest\PRECO\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-570.dwg, 6/10/2021 4:09:14 PM, 1:2

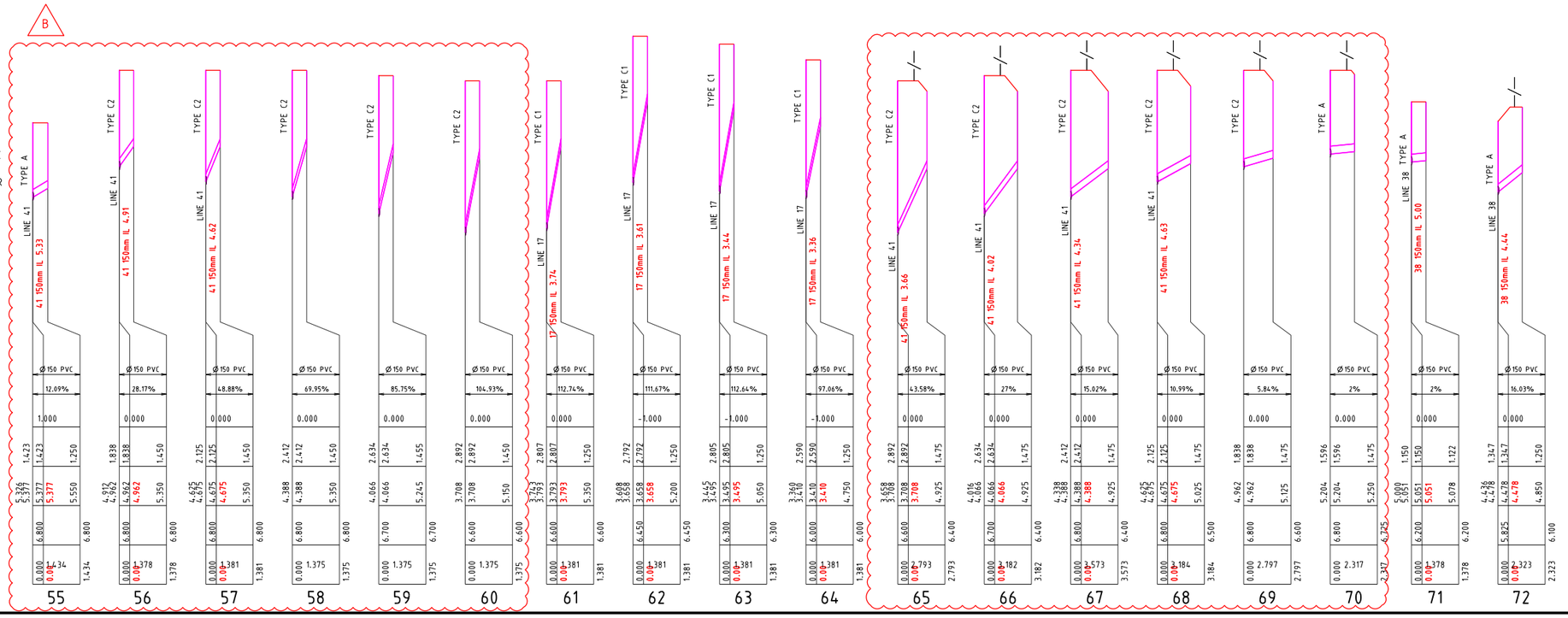
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NOTES

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PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 2.5 5 7.5 10 12.5m
Horiz. Scale 1:250 - A1 (1:500 - A3)

0 0.5 1.0 1.5 2.0 2.5m
Vert. Scale 1:50 - A1 (1:100 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	15-09-21	HOUSE CONNECTIONS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION
HOUSE CONNECTION
PROFILES
SHEET 2 OF 6

CONSTRUCTION ISSUE

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Suite 9, 19 Short St
Southport QLD 4215

DESIGNED RB	DRAWN CB
APPROVED	NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-571	B

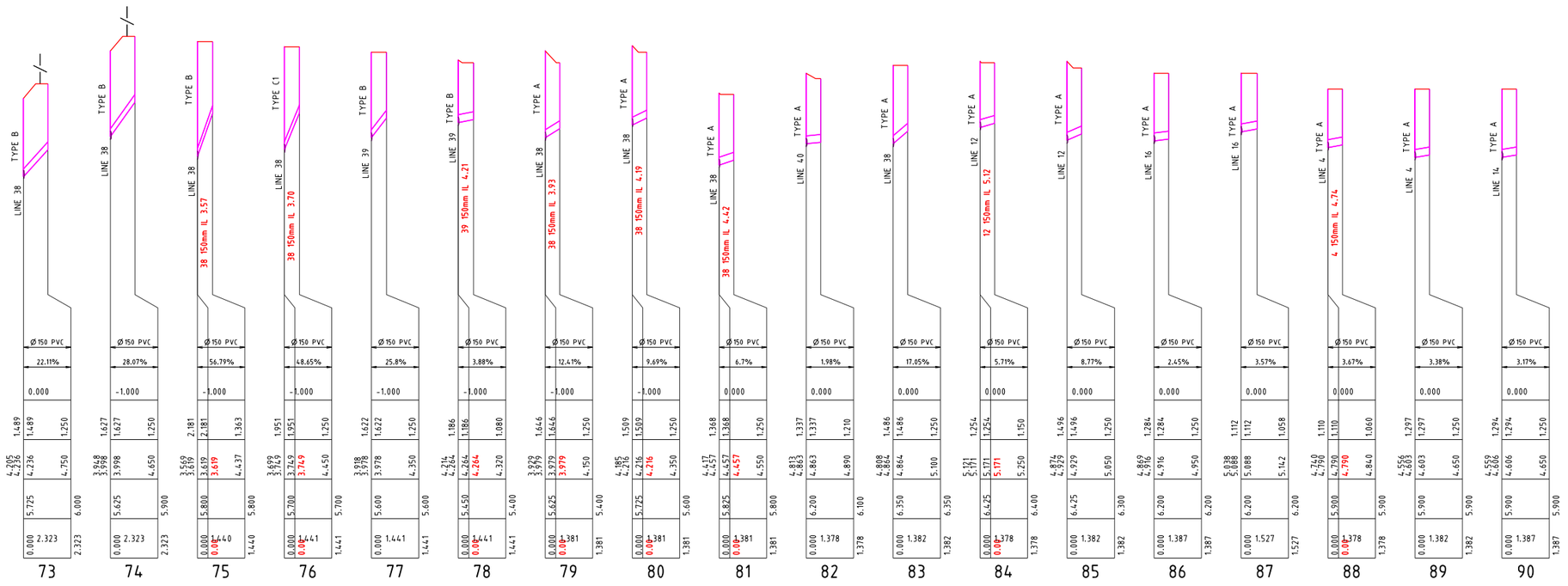
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NOTES

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PIPE DIAMETER (mm)
PIPE GRADE
DATUM R.L.

DEPTH TO INVERT
PIPE INVERT LEVELS
DESIGN SURFACE LEVELS
CHAINAGE
LOT NO.

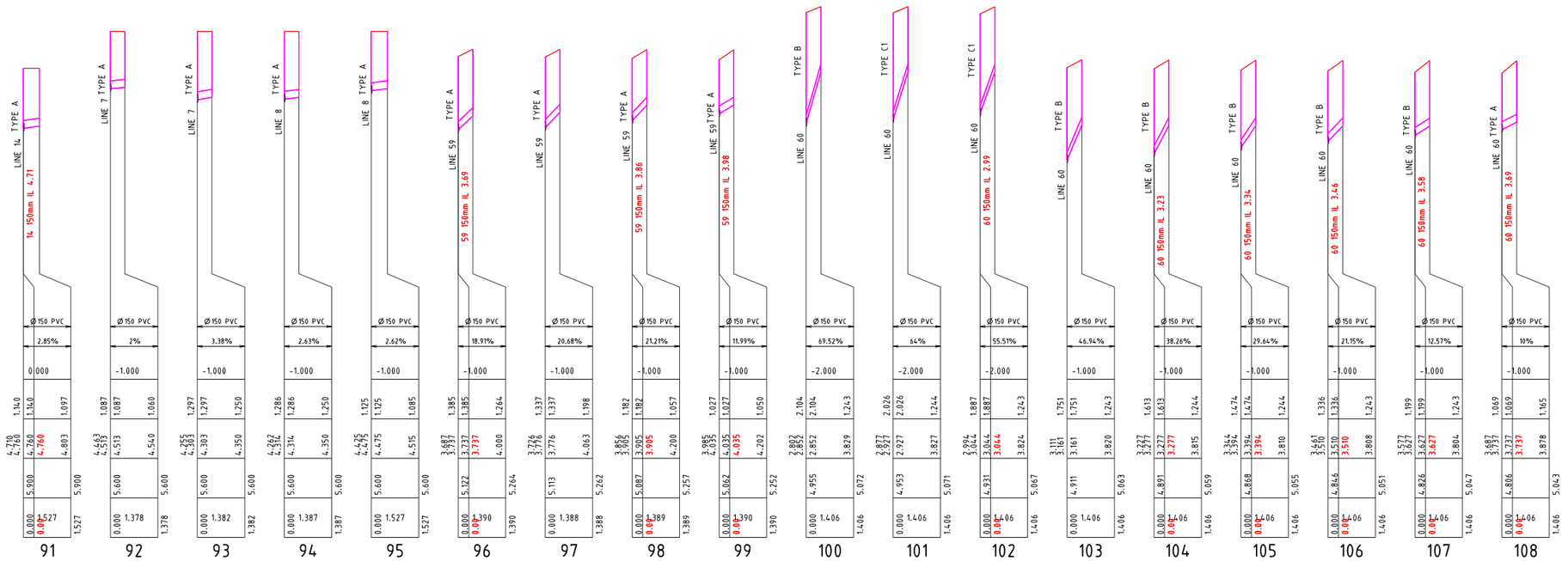


NOTES

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PIPE DIAMETER (mm)
PIPE GRADE
DATUM R.L.

DEPTH TO INVERT
PIPE INVERT LEVELS
DESIGN SURFACE LEVELS
CHAINAGE
LOT NO.



PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

0 2.5 5 7.5 10 12.5m
Horiz. Scale 1:250 - A1 (1:500 - A3)

0 0.5 1.0 1.5 2.0 2.5m
Vert. Scale 1:50 - A1 (1:100 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION
HOUSE CONNECTION
PROFILES
SHEET 3 OF 6

CONSTRUCTION ISSUE

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Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-572	A

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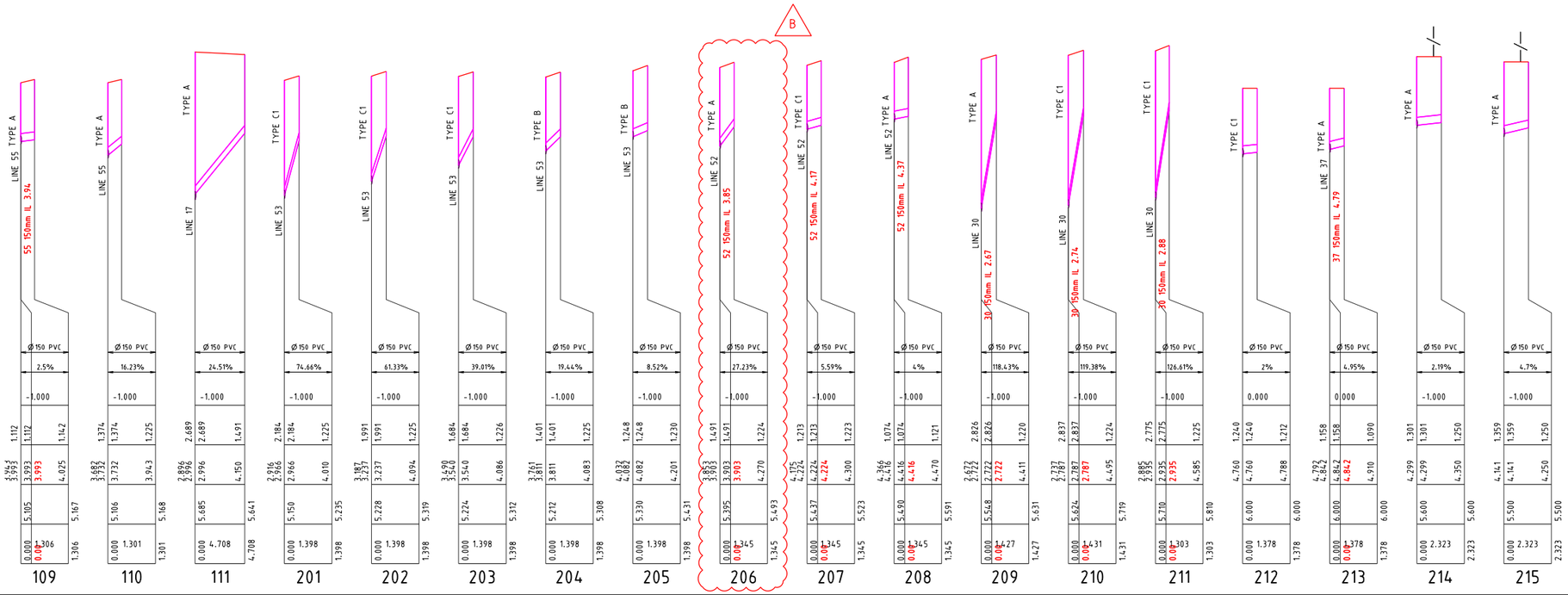
NOTES

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PIPE DIAMETER (mm)
PIPE GRADE
DATUM R.L.

DEPTH TO INVERT
PIPE INVERT LEVELS
DESIGN SURFACE LEVELS
CHAINAGE

LOT NO.



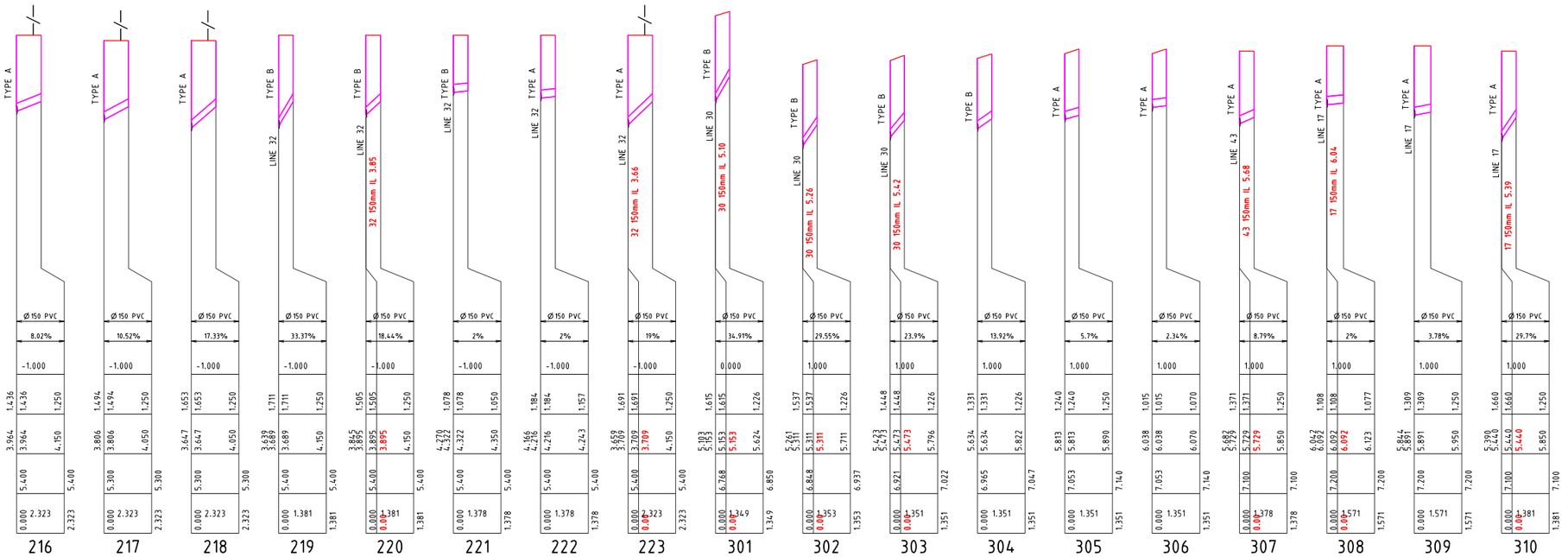
NOTES

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PIPE DIAMETER (mm)
PIPE GRADE
DATUM R.L.

DEPTH TO INVERT
PIPE INVERT LEVELS
DESIGN SURFACE LEVELS
CHAINAGE

LOT NO.



PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 2.5 5 7.5 10 12.5m
Horiz. Scale 1:250 - A1 (1:500 - A3)

0 0.5 1.0 1.5 2.0 2.5m
Vert. Scale 1:50 - A1 (1:100 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	31-08-20	HOUSE CONNECTION AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION
HOUSE CONNECTION
PROFILES
SHEET 4 OF 6

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
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Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED RB	DRAWN CB
APPROVED	NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-573	B

Y:\123 - Lesta Developments Pty Ltd\01 - Kings Forest\PREC5\Engineering Drawings\OFW Stages 1, 2 & 3\Current\12301-P5-1,2&3-570.dwg, 6/10/2021 4:58:20 PM, 1:2

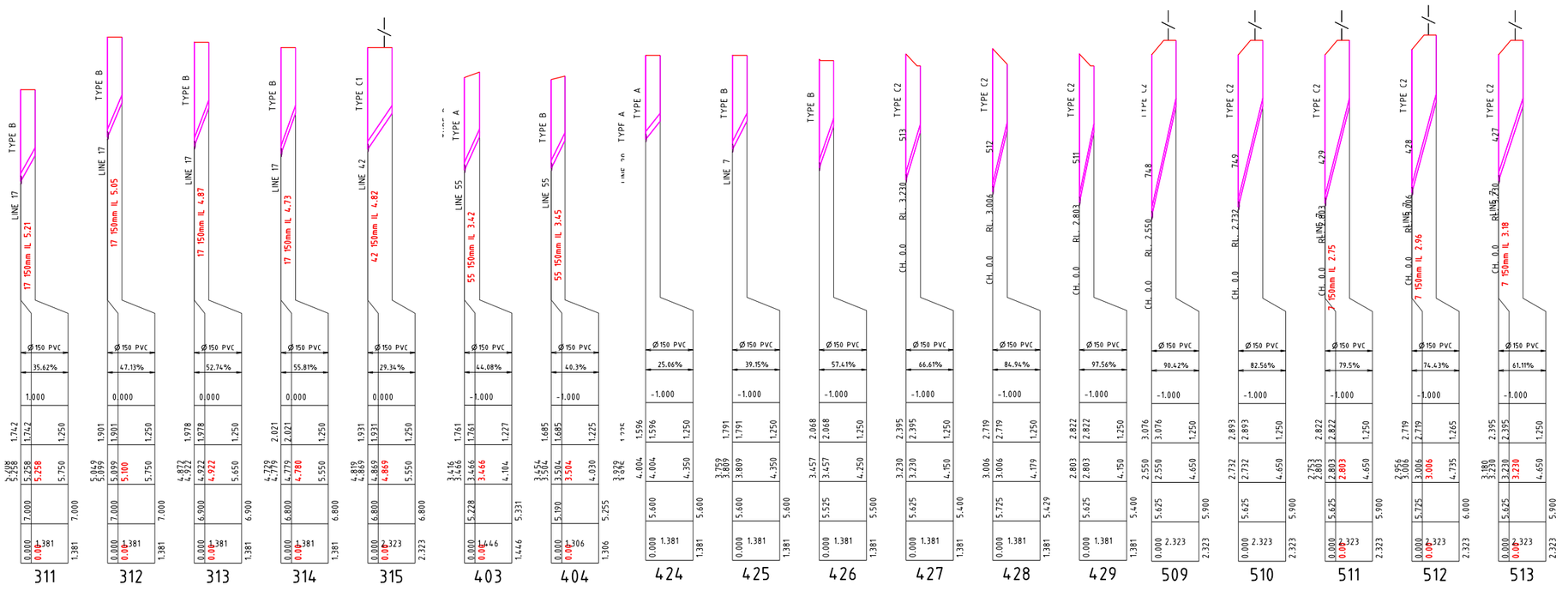
NOTES

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PIPE DIAMETER (mm)
PIPE GRADE
DATUM R.L.

DEPTH TO INVERT
PIPE INVERT LEVELS
DESIGN SURFACE LEVELS
CHAINAGE

LOT NO.



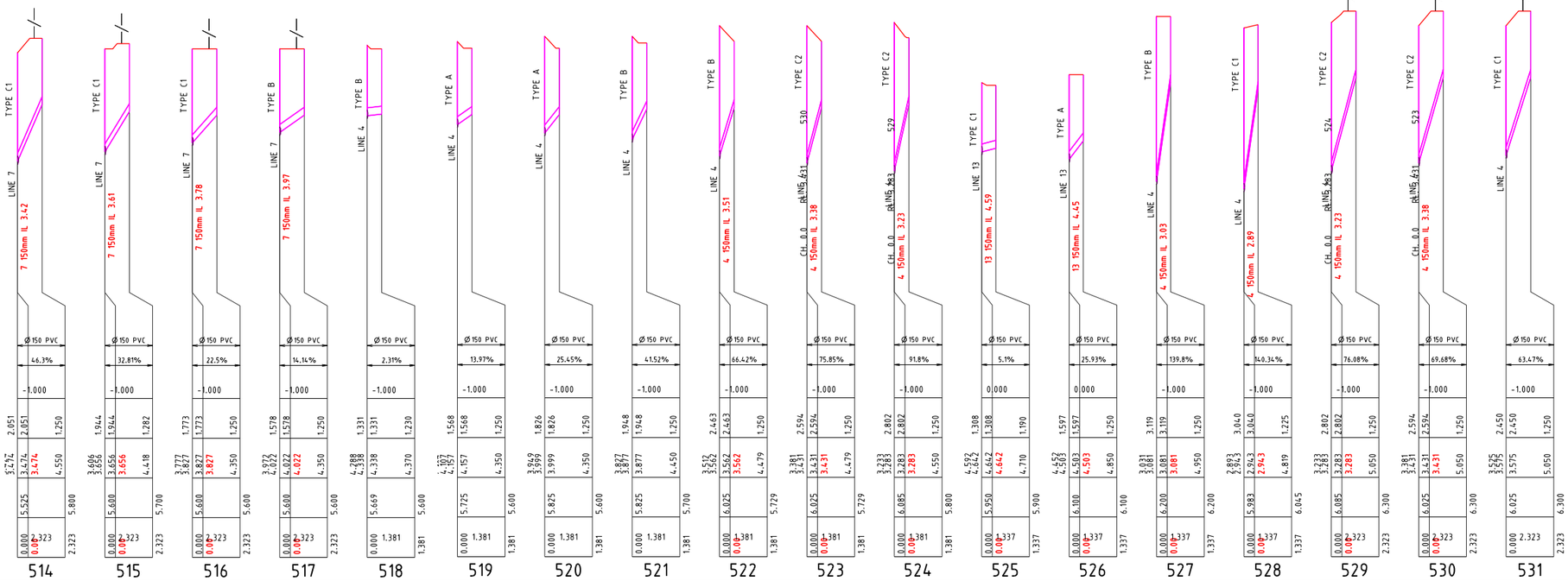
NOTES

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PIPE DIAMETER (mm)
PIPE GRADE
DATUM R.L.

DEPTH TO INVERT
PIPE INVERT LEVELS
DESIGN SURFACE LEVELS
CHAINAGE

LOT NO.



Y:\123 - Leda Developments Pty Ltd\01 - Kings Forest\PREC5\Engineering Drawings\OFW Stages 1, 2 & 3\Current\12301-P5-1,2&3-570.dwg, 6/10/2021 4:58:23 PM, 1:2

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 2.5 5 7.5 10 12.5m
Horiz. Scale 1:250 - A1 (1:500 - A3)

0 0.5 1.0 1.5 2.0 2.5m
Vert. Scale 1:50 - A1 (1:100 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION
HOUSE CONNECTION
PROFILES
SHEET 5 OF 6

CONSTRUCTION ISSUE

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Civil Engineering
Project Coordination
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Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-574
AMEND.: A

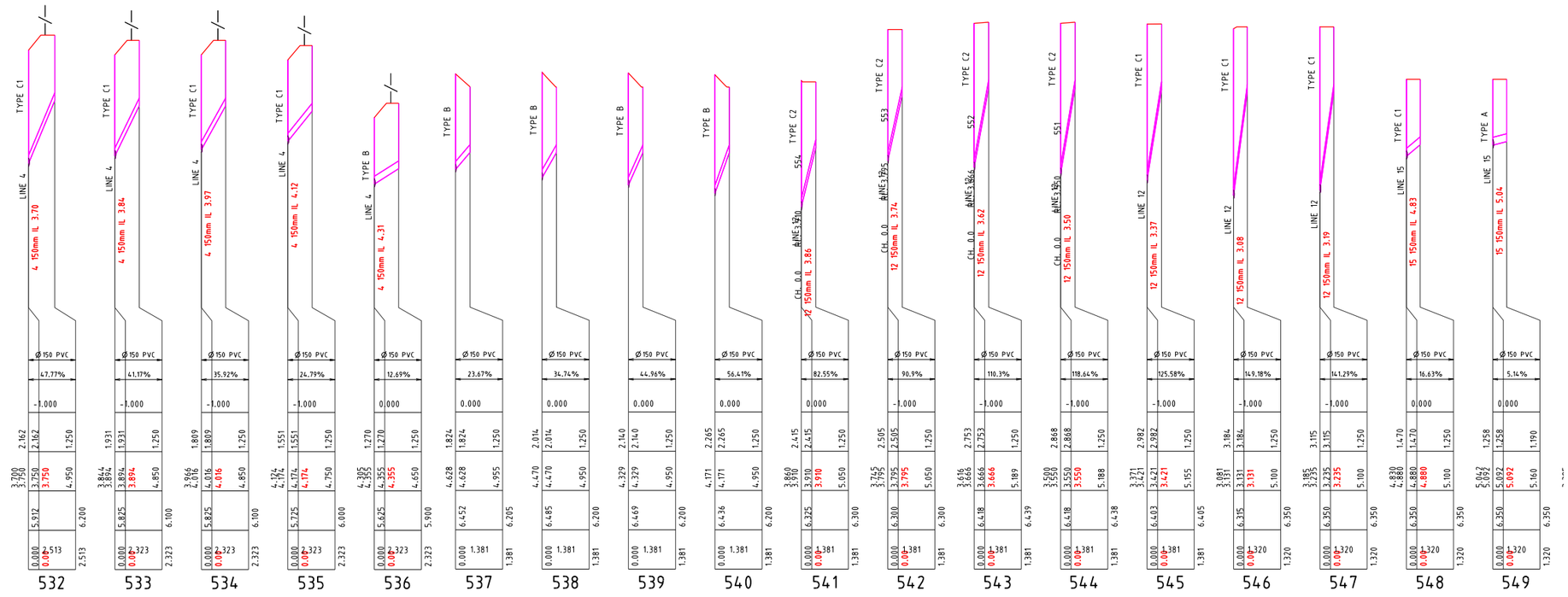
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PIPE DIAMETER (mm)
PIPE GRADE
DATUM R.L.

DEPTH TO INVERT
PIPE INVERT LEVELS
DESIGN SURFACE LEVELS
CHAINAGE

LOT NO.



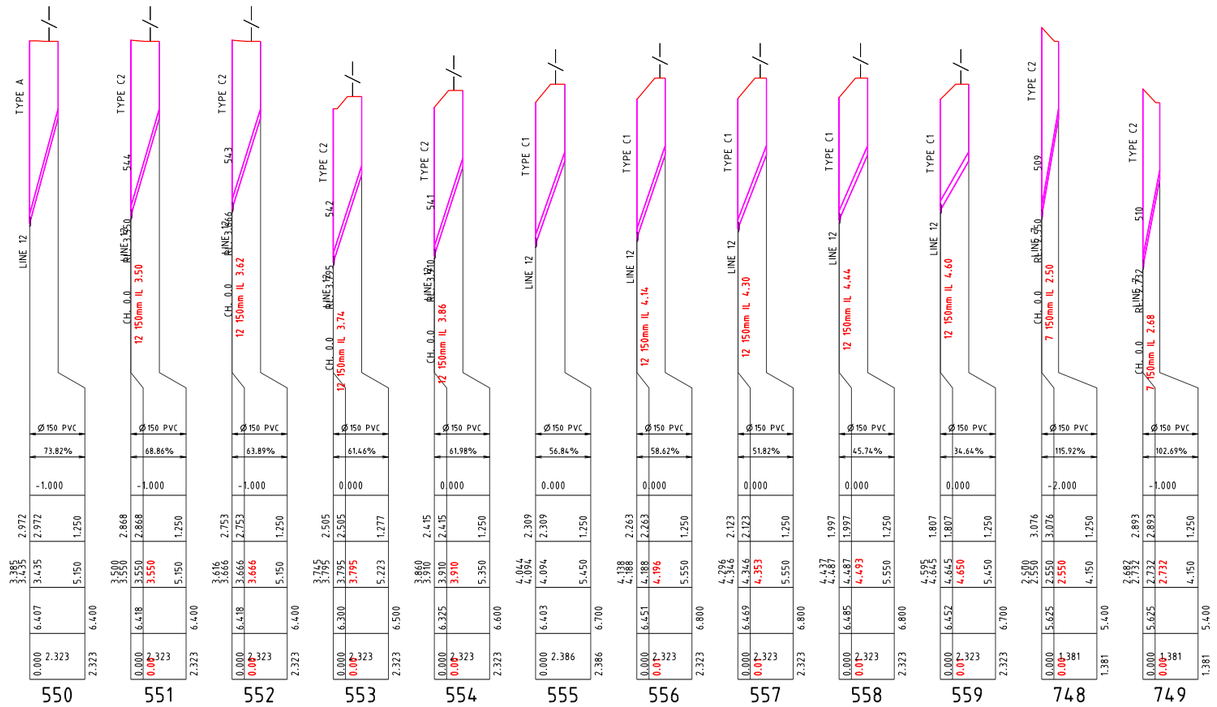
NOTES

1. WATER AND ELECTRICAL CROSSING LOCATIONS ARE INDICATIVE ONLY. REFER TO PLANS TO DETERMINE PRECISE CROSSING LOCATIONS. WHERE SERVICE INDICATES CLASH WITH SEWER, SEWER TO TAKE PRECEDENCE, SERVICE TO BE CONSTRUCTED OVER OR UNDER SEWER ACCORDING TO SUPERINTENDANTS INSTRUCTION.

PIPE DIAMETER (mm)
PIPE GRADE
DATUM R.L.

DEPTH TO INVERT
PIPE INVERT LEVELS
DESIGN SURFACE LEVELS
CHAINAGE

LOT NO.



PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

0 2.5 5 7.5 10 12.5m
Horiz. Scale 1:250 - A1 (1:500 - A3)

0 0.5 1.0 1.5 2.0 2.5m
Vert. Scale 1:50 - A1 (1:100 - A3)

ISSUES	DATE
TENDER	13-11-19
COUNCIL	xx-xx-xx
CONSTRUCTION	..

A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LandSurv
GILBERT SUTHERLAND

DRAWING TITLE

SEWER RETICULATION
HOUSE CONNECTION
PROFILES
SHEET 6 OF 6

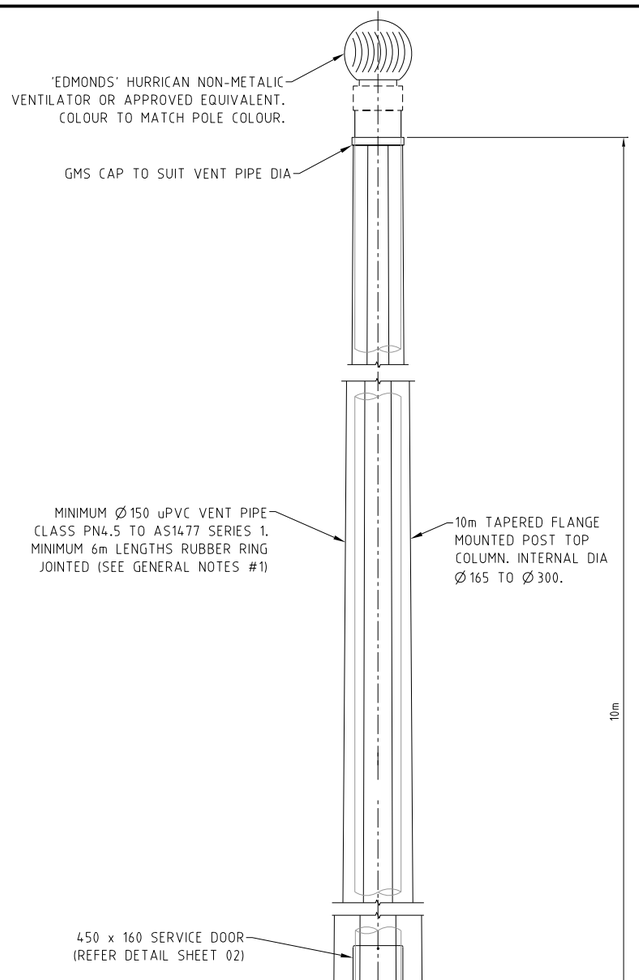
CONSTRUCTION ISSUE

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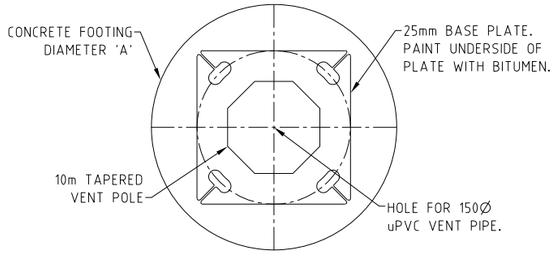
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APPROVED	NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-575	A

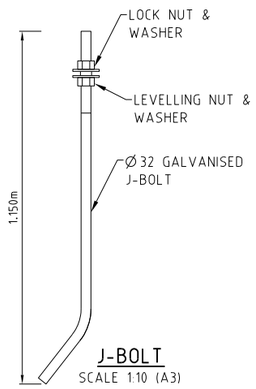
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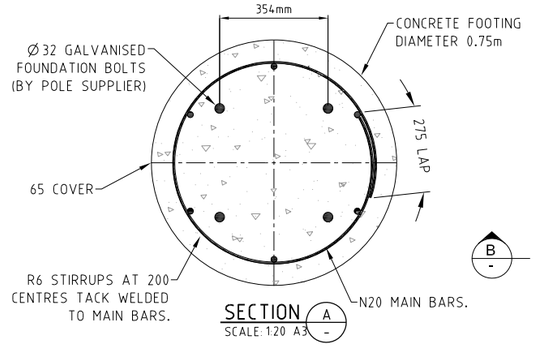
SECTIONAL ELEVATION 10m
VENT POLE DETAILS
SCALE 1:10 (A3)



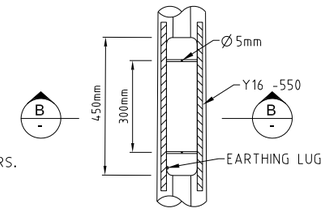
PLAN
SCALE 1:20 (A3)



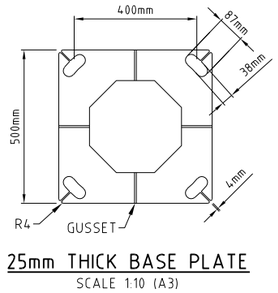
J-BOLT
SCALE 1:10 (A3)



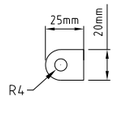
SECTION A
SCALE: 1:20 A3



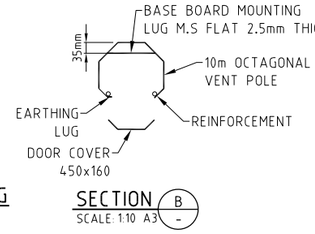
SERVICE DOOR DETAIL
SCALE 1:10 (A3)



25mm THICK BASE PLATE
SCALE 1:10 (A3)



EARTHING LUG
SCALE 1:2 (A3)



SECTION B
SCALE: 1:10 A3

GENERAL NOTES:

1. BACKFILL IN VENT TRENCH SHALL BE COMPACTED TO AT LEAST THE SAME DENSITY AS THE SURROUNDING SOIL.
2. ALL STEELWORK TO BE FULLY HOT DIP GALVANISED AFTER FABRICATION TO AS/NZS 4680.
3. ALL STEEL PLATES TO CONFORM TO AS/NZS 3678 GRADE 250 U.N.O.
4. ALL STEEL BARS AND SECTIONS TO CONFORM TO AS/NZS 3679 GRADE 250 U.N.O.
5. ALL WELDS TO CONFORM TO AS/NZS 1554 PART 1.
6. ALL NUTS, BOLTS AND WASHERS TO BE STAINLESS STEEL GRADE 316 U.N.O.
7. ALL TAPER LOCK JOINT LENGTHS ARE NOMINAL U.N.O.
8. ANTI-GALLING LUBRICANT 'LOCTILE 222 OR 567' OR SIMILAR APPROVED SHALL BE USED ON ALL THREADS AND BETWEEN ALL STAINLESS STEEL ABUTTING SURFACES.
9. VENT POLE TO BE POWDER COATED - FINISH - 'MATT', COLOUR - 'DARK GREEN'.
10. ALL DIMENSIONS IN MILLIMETERS, UNLESS OTHERWISE SPECIFIED.

FOOTING NOTES:

1. THIS FOOTING DRAWING HAS BEEN DESIGNED BY STRUCTURAL ARTS CERTIFIED BY THE ENGINEER FOR THE SITE.THE CONTRACTOR SHALL REQUEST SITE CONFIRMATION THAT SITE SOIL CONDITIONS ARE SUITABLE FOR THE DESIGN.
2. CONCRETE N32MPa, SUPPLY AND LAY TO AS3600. 65mm MINIMUM COVER TO ALL REINFORCING. LAP HD BOLTS WITH MAIN BARS.
3. PREPARE SITE SUCH THAT SURFACE RUNOFF CANNOT DRAIN OVER OR POND ADJACENT TO FOUNDATIONS.

POLE INSTALLATION NOTES:

1. BEFORE INSTALLATION OF POLE, ADJUST ALL LEVELING NUTS TO LEVEL FIRST.
2. PLACE POLE ON LEVELING NUTS AND LOCK WITH LOCKING NUTS AND WASHERS.
3. FILL GAP BETWEEN FLANGE PLATE OF POLE AND CONCRETE FOOTING WITH 40MPa NON-SHRINK GROUT.
4. THE uPVC VENT PIPE IS TO PROTRUDE AT LEAST 50mm ABOVE THE TOP OF THE COLUMN. FILL THE ANNULUS AROUND THE TOP OF THE COLUMN WITH AN WEATHER SEALANT.
5. PROVIDE A DRAINAGE POINT AT THE BASE OF THE COLUMN.

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 0.1 0.2 0.3 0.4 0.5m
Scale 1:10 - A1 (1:20 - A3)

ISSUES	DATE	
TENDER	20-12-19	
COUNCIL	24-01-20	
CONSTRUCTION	..	

A	24-01-20	ISSUE FOR INFORMATION
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

SEWER AIR VENT DETAILS

CONSTRUCTION ISSUE

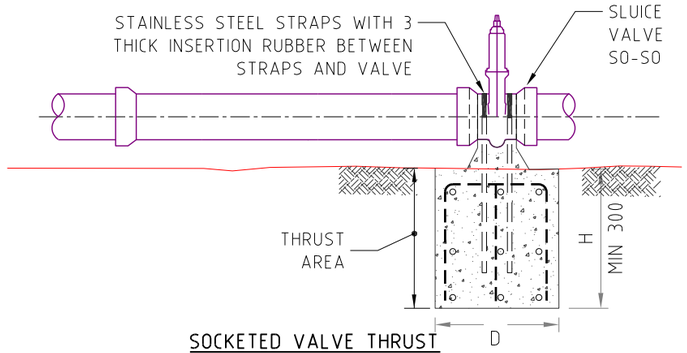
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APPROVED		NER 906726	DATE 04-09-17

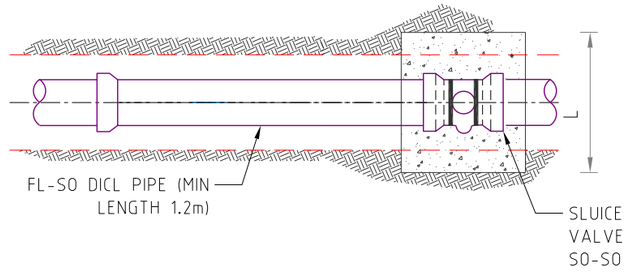
DRAWING NUMBER: 12301-P5-1,2&3-580
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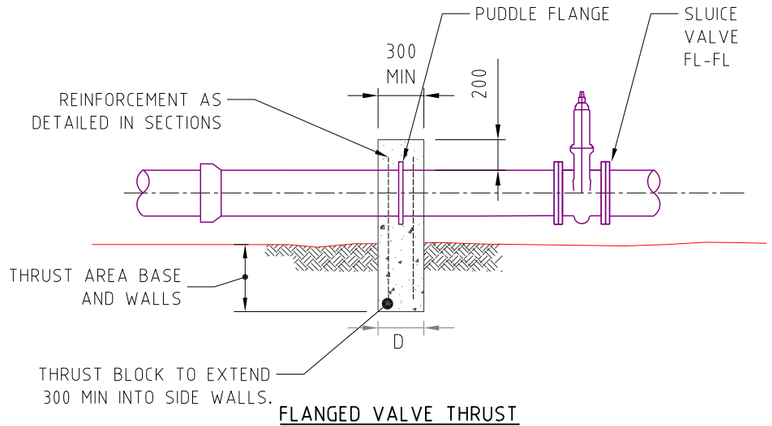
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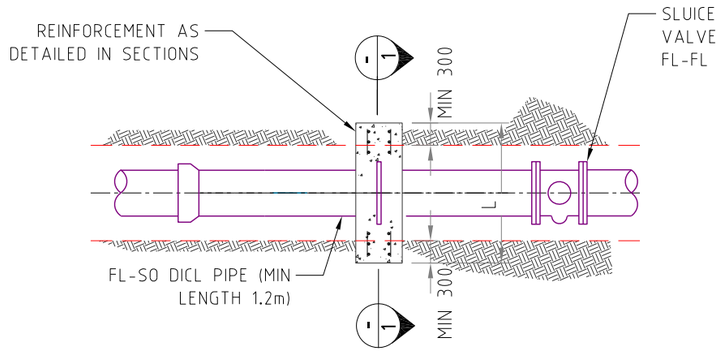
SOCKETED VALVE THRUST BLOCK DETAIL



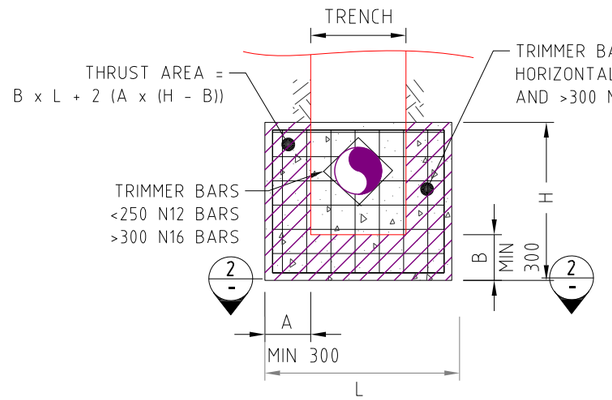
SOCKETED VALVE -TOP VIEW
FOR ALL PIPE SIZES



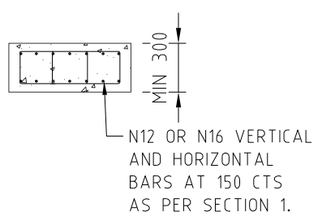
FLANGED VALVE THRUST BLOCK DETAIL



FLANGED VALVE THRUST BLOCK -TOP VIEW
FOR ALL PIPE SIZES



SECTION 1



SECTION 2

Horizontal Thrust Block Dimensions for Sewer Valve (mm). 1200kPa Test Pressure. See Note 5.

Valve Type	Valve Size		100 (122 OD)	150 (177 OD)	200 (232 OD)	225 (259 OD)	250 (286 OD)	300 (345 OD)	375 (OD 426)	450 (507 OD)
	Min Thrust Area (m^2)		**0.21**	**0.29**	**0.46**	**0.62**	**0.70**	**1.10**	**1.68**	**2.38**
	Resultant Thrust (kN)		**13.75**	**28.95**	**49.73**	**61.98**	**75.58**	**109.98**	**167.68**	**237.51**
Socketed	Dimension	L	700	1000	1150	1200	1200	1200	1500	1700
		H	300	300	400	550	600	950	1150	1400
		D	300	300	300	300	300	300	400	600
Flanged	Dimension	L	1050	1050	1200	1200	1200	1200	1500	1700
		H	600	650	700	750	750	1100	1450	1700
		D	300	300	300	300	300	300	400	600

NOTES:
1. POUR BASE CONCRETE AGAINST A SOLID EXCAVATION FACE.
2. USE N32 GRADE CONCRETE.
3. KEEP CONCRETE CLEAR OF ALL BOLT, NUTS AND PIPE JOINTS.
4. LOCATE ANCHOR BLOCK CENTRALLY AROUND FITTING.
5. THRUST BLOCK DIMENSIONS CAN BE INDIVIDUALLY ADJUSTED TO SUIT LOCATION. MINIMUM THRUST AREA MUST BE ACHIEVED WHERE SITE CONDITIONS ALLOW, KEY INTO SIDES OF TRENCH TO REDUCE THRUST BLOCK DEPTH.

NOTE:
THRUST AREAS AND DIMENSIONS ARE GIVEN AS A GUIDE ONLY. FINAL THRUST BLOCK DESIGN IS TO BE DETERMINED BY CONTRACTOR AFTER DETERMINATION OF SOIL CLASSIFICATION TESTING.

PROJECT NAME
KINGS FOREST
PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

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ISSUES	DATE	
TENDER	14-03-19	
COUNCIL	19-12-18	
CONSTRUCTION	01-09-20	

C	06-09-21	DETAIL, NOTES AND TABLES AMENDED
B	28-01-21	DETAIL AND TABLE AMENDED
A	19-08-20	COUNCIL ISSUE
PRE	DATE	AMENDMENT

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LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE
TYPICAL THRUST AND ANCHOR BLOCKS FOR SEWER VALVES

CONSTRUCTION ISSUE

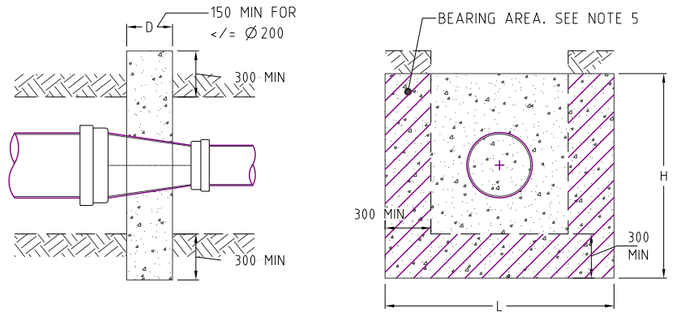
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Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 04-09-17

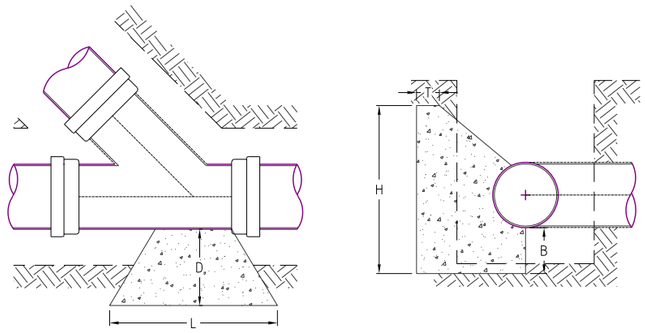
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AMEND. C

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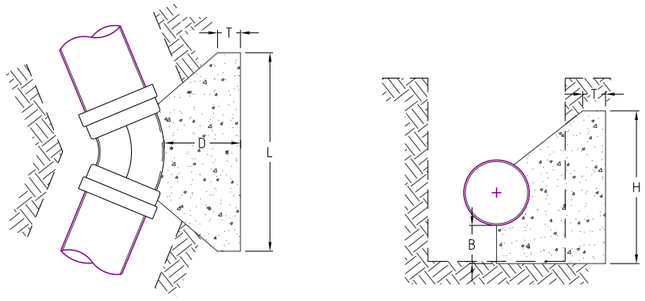
TYPICAL THRUST BLOCK FOR REDUCERS



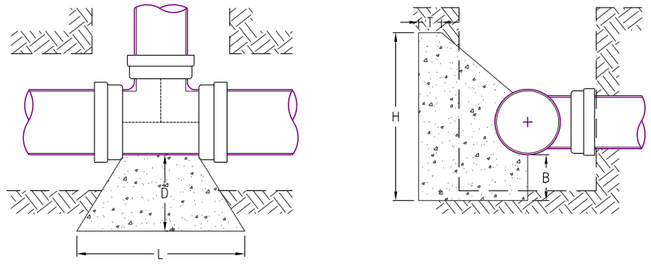
TYPICAL THRUST BLOCK FOR WYES (SPIGOT)



TYPICAL THRUST BLOCK FOR BENDS



TYPICAL THRUST BLOCK FOR TEES



HORIZONTAL THRUST BLOCK CONSTRUCTION NOTES:

1. POUR BASE CONCRETE AGAINST A SOLID EXCAVATION FACE.
2. USE GRADE N20 CONCRETE. TABLE OF DIMENSIONS BASED ON REQUIRED TEST PRESSURE OF 1200kPa AND ACTUAL PIPE DIAMETERS.
3. KEEP CONCRETE CLEAR OF ALL BOLTS, NUTS AND PIPE JOINTS.
4. FINISH THRUST BLOCKS APPROXIMATELY 100mm ABOVE THE TOP OF THE FITTING OR BEARING PAD AND EXTEND TO THE FLOOR OF THE TRENCH OR DEEPER IF NECESSARY, TO ACHIEVE THE REQUIRED THRUST AREA. MAXIMUM ENCASEMENT TO BE 180°.
5. THE MINIMUM THRUST AREA FOR TAPER THRUST BLOCK TO BE EQUAL TO THE DIFFERENCE BETWEEN THE THRUST AREA FOR TEES OF EQUIVALENT DIAMETER TO THOSE EACH SIDE OF TAPER. FOR MAINS LARGER THAN DN 200, THE TAPER THRUST BLOCK SHALL BE REINFORCED.
6. THRUST BLOCK DIMENSIONS CAN BE INDIVIDUALLY ADJUSTED TO SUIT LOCATION. MINIMUM THRUST AREA MUST BE ACHIEVED.

NOTE: THRUST AREAS AND DIMENSIONS ARE GIVEN AS A GUIDE ONLY. FINAL THRUST BLOCK DESIGN IS TO BE DETERMINED BY CONTRACTOR AFTER DETERMINATION OF SOIL CLASSIFICATION TESTING.

B

Horizontal Thrust Block Dimensions for Sewer Reducers (mm). 1200kPa Test Pressure. See Note 5.

Reducer Size		300-200	375-225	375-300	600-375
Min Thrust Area (m^2)		**0.64**	**1.06**	**0.58**	**2.44**
Resultant Thrust (kN)		**60.25**	**105.70**	**57.70**	**243.39**
Dimension	L	1200	1500	1500	1850
	H	1050	1300	1300	1800
	D	300	400	400	600

NOTE: REFER TO DRAWING 12301-P5-1,2&3-592 FOR VERTICAL THRUST AND SOCKETED VALVE DETAILS AND 12301-P5-1,2&3-590 FOR FLANGED VALVE THRUST DETAILS.

Horizontal Thrust Block Dimensions for Sewer Wyes (mm). 1200kPa Test Pressure

Wye Size		375x375x375	300x300x225	300x300x300	375x375x200
Min Thrust Area (m^2)		**1.28**	**0.84**	**0.84**	**1.28**
Resultant Thrust (kN)		**128.34**	**84.17**	**84.17**	**128.34**
Dimension	L	1300	1000	1000	1300
	H	1000	900	900	1000
	D	500	450	450	500
	B	300	150	150	300
	T	150	125	125	150

Horizontal Thrust Block Dimensions for Sewer Tees, Bends and Dead Ends (1200kPa Test Pressure)

Pipe Diameter		Bends (°)				Tees and Dead Ends
		11.25	22.5	45	90	
100 (122 OD)	Min Thrust Area (m^2)	**0.21**	**0.21**	**0.21**	**0.21**	**0.21**
	Resultant Thrust (kN)	**2.70**	**5.37**	**10.53**	**19.45**	**13.75**
Dimension (mm)	L	600	600	600	600	600
	H	600	600	600	600	600
	D	300	300	300	300	300
	B	150	150	150	150	150
	T	100	100	100	100	100
150 (177 OD)	Min Thrust Area (m^2)	**0.21**	**0.21**	**0.21**	**0.41**	**0.29**
	Resultant Thrust (kN)	**5.67**	**11.29**	**22.16**	**40.94**	**28.95**
Dimension (mm)	L	600	600	600	700	600
	H	600	600	600	600	600
	D	300	300	300	300	300
	B	150	150	150	150	150
	T	100	100	100	100	100
200 (OD 232)	Min Thrust Area (m^2)	**0.21**	**0.21**	**0.35**	**0.65**	**0.46**
	Resultant Thrust (kN)	**9.75**	**19.41**	**38.06**	**70.33**	**49.73**
Dimension (mm)	L	600	600	600	1100	700
	H	600	600	600	600	700
	D	300	300	300	300	300
	B	150	150	150	150	150
	T	100	100	100	100	100
225 (OD 259)	Min Thrust Area (m^2)	**0.21**	**0.24**	**0.48**	**0.88**	**0.62**
	Resultant Thrust (kN)	**12.15**	**24.18**	**47.44**	**87.66**	**61.98**
Dimension (mm)	L	600	600	800	1000	900
	H	600	600	600	900	700
	D	300	300	300	300	300
	B	150	150	150	150	150
	T	100	100	100	100	100
250 (286 OD)	Min Thrust Area (m^2)	**0.21**	**0.28**	**0.53**	**0.98**	**0.70**
	Resultant Thrust (kN)	**14.82**	**29.49**	**57.85**	**106.89**	**75.58**
Dimension (mm)	L	600	600	800	1000	900
	H	600	600	700	1000	800
	D	300	300	600	600	600
	B	150	150	250	300	300
	T	100	100	200	200	200
300 (OD 345)	Min Thrust Area (m^2)	**0.21**	**0.43**	**0.84**	**1.56**	**1.10**
	Resultant Thrust (kN)	**21.56**	**42.91**	**84.17**	**155.53**	**109.98**
Dimension (mm)	L	600	800	1000	1400	1100
	H	600	600	900	1200	1000
	D	450	450	450	450	450
	B	150	150	150	150	150
	T	125	125	125	125	125
375 (OD 426)	Min Thrust Area (m^2)	**0.32**	**0.66**	**1.28**	**2.38**	**1.68**
	Resultant Thrust (kN)	**32.87**	**65.43**	**128.34**	**237.14**	**167.68**
Dimension (mm)	L	600	900	1300	2000	1300
	H	600	800	1000	1200	1300
	D	500	500	500	500	500
	B	250	250	250	250	250
	T	150	150	150	150	150
450 (OD 507)	Min Thrust Area (m^2)	**0.47**	**0.92**	**1.81**	**3.36**	**2.38**
	Resultant Thrust (kN)	**46.56**	**92.67**	**181.78**	**335.89**	**237.51**
Dimension (mm)	L	700	1000	1600	2400	1800
	H	700	1000	1150	1400	1350
	D	600	600	600	600	600
	B	250	300	350	350	350
	T	200	200	200	200	200

PROJECT NAME
KINGS FOREST
PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

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ISSUES	DATE	
TENDER	14-03-19	
COUNCIL	19-12-18	
CONSTRUCTION	01-09-20	

PRE	DATE	AMENDMENT
B	07-09-21	DETAILS AND TABLES AMENDED
A	19-08-20	COUNCIL ISSUE

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

SEWER HORIZONTAL THRUST BLOCK DETAIL

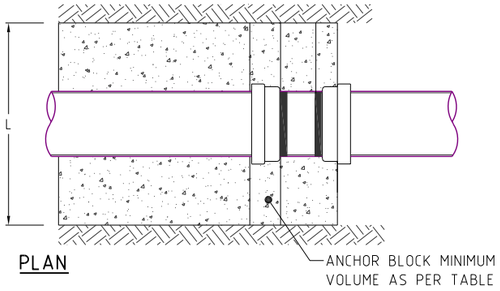
CONSTRUCTION ISSUE

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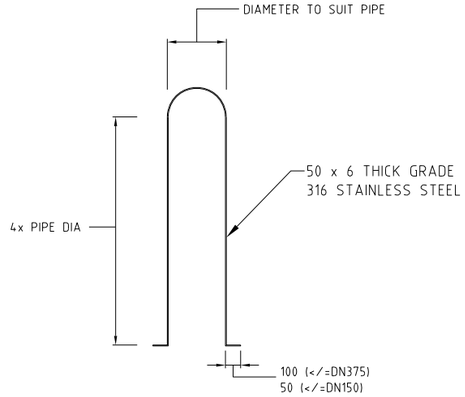
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APPROVED		NER 906726	DATE 04-09-17

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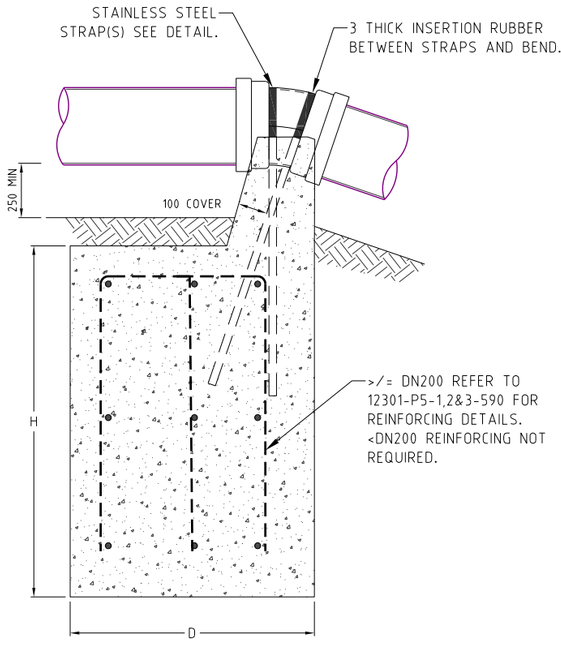
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PLAN



TYPICAL STAINLESS STEEL STRAP



ELEVATION VERTICAL BENDS

Sewer Typical Thrust and Anchor Blocks for Vertical Bends
Minimum Block Volume for Anchorage of Vertical Component of Thrust
Vertical Bends for Test Pressure of 1200kPa and minimum soil allowable horizontal bearing pressure of 50kPa (See Notes)

Pipe DN	Fitting	Bend		
		11.25	22.5	45
100 (122OD)	Min Block Volume (m^3)	**0.12**	**0.23**	**0.42**
	Resultant Thrust	**2.70**	**5.37**	**10.53**
Dimensions	L	750	800	750
	D	400	400	600
	H	400	750	950
150 (177OD)	Min Block Volume (m^3)	**0.24**	**0.48**	**0.89**
	Resultant Thrust	**5.67**	**11.29**	**22.16**
Dimensions	L	750	800	800
	D	450	800	900
	H	750	800	1250
200 (232OD)	Min Block Volume (m^3)	**0.42**	**0.83**	**1.53**
	Resultant Thrust	**9.75**	**19.41**	**38.06**
Dimensions	L	800	900	950
	D	750	950	1200
	H	750	1000	1350
225 (OD)	Min Block Volume (m^3)	**0.52**	**1.03**	**1.90**
	Resultant Thrust	**12.15**	**24.18**	**47.44**
Dimensions	L	850	900	1000
	D	700	1050	1250
	H	900	1100	1550
250 (286OD)	Min Block Volume (m^3)	**0.64**	**1.25**	**2.32**
	Resultant Thrust	**14.82**	**29.49**	**57.85**
Dimensions	L	800	1000	1200
	D	800	1050	1200
	H	1000	1200	1650
300 (345OD)	Min Block Volume (m^3)	**0.93**	**1.83**	**3.37**
	Resultant Thrust	**21.56**	**42.91**	**84.17**
Dimensions	L	900	1150	1250
	D	900	1150	1350
	H	1150	1400	2000
375 (426OD)	Min Block Volume (m^3)	**1.42**	**2.78**	**5.14**
	Resultant Thrust	**32.87**	**65.43**	**128.34**
Dimensions	L	1050	1300	1400
	D	1050	1300	1600
	H	1300	1650	2300
450 (507OD)	Min Block Volume (m^3)	**2.01**	**3.94**	**7.28**
	Resultant Thrust	**46.56**	**92.67**	**181.78**
Dimensions	L	1200	1250	1750
	D	1200	1600	1750
	H	1400	2050	2400

NOTE: THRUST AREAS AND DIMENSIONS ARE GIVEN AS A GUIDE ONLY. FINAL THRUST BLOCK DESIGN IS TO BE DETERMINED BY CONTRACTOR AFTER DETERMINATION OF SOIL CLASSIFICATION TESTING.

VERTICAL THRUST BLOCK CONSTRUCTION NOTES:

1. POUR BASE CONCRETE AGAINST A SOLID EXCAVATION FACE.
2. USE GRADE N20 CONCRETE FOR NON REINFORCED THRUST BLOCKS AND N32 FOR REINFORCED THRUST BLOCKS. TABLE OF DIMENSIONS BASED ON REQUIRED TEST PRESSURE OF 1200kPa AND ACTUAL PIPE DIAMETERS.
3. KEEP CONCRETE CLEAR OF ALL BOLTS, NUTS AND PIPE JOINTS.
4. LOCATE ANCHOR BLOCK CENTRALLY AROUND FITTING.
5. DESIGN OF ANCHOR BLOCKS AT VERTICAL BENDS INCLUDE ALLOWANCE FOR THE HORIZONTAL COMPONENT OF THRUST.
6. THRUST BLOCK DIMENSIONS CAN BE INDIVIDUALLY ADJUSTED TO SUIT LOCATION. MINIMUM BLOCK VOLUME MUST BE ACHIEVED.

PROJECT NAME
KINGS FOREST
PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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PARISH OF CUDGEN .
COUNTY OF ROUS .

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PROJECT 28 PTY LTD

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ISSUES	DATE	
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CONSTRUCTION	01-09-20	

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ASSOCIATED CONSULTANTS

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GILBERT SUTHERLAND

DRAWING TITLE

SEWER VERTICAL THRUST BLOCK DETAIL

CONSTRUCTION ISSUE

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APPROVED		NER 906726	DATE 04-09-17

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-592	A

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Minimum Thrust Area (m^2) for Concrete Blocks given 1200kPa System Test Pressure (Sewer):

Based on Soil Classification: 100kPa					
Pipe Diameter	Bends m^2				Tee & Dead Ends
	11.25	22.5	45	90	
375	0.32	0.66	1.28	2.38	1.68
200	0.21	0.21	0.35	0.65	0.46

Resultant Thrust (kN) given 135m Head with 1200kPa System Test Pressure (Sewer):

Pipe Diameter	Bends kN				Tee & Dead Ends	Reducers
	11.25	22.5	45	90		
375	32.87	65.43	128.34	237.14	167.68	N/A
200	9.75	19.41	38.06	70.33	49.73	N/A

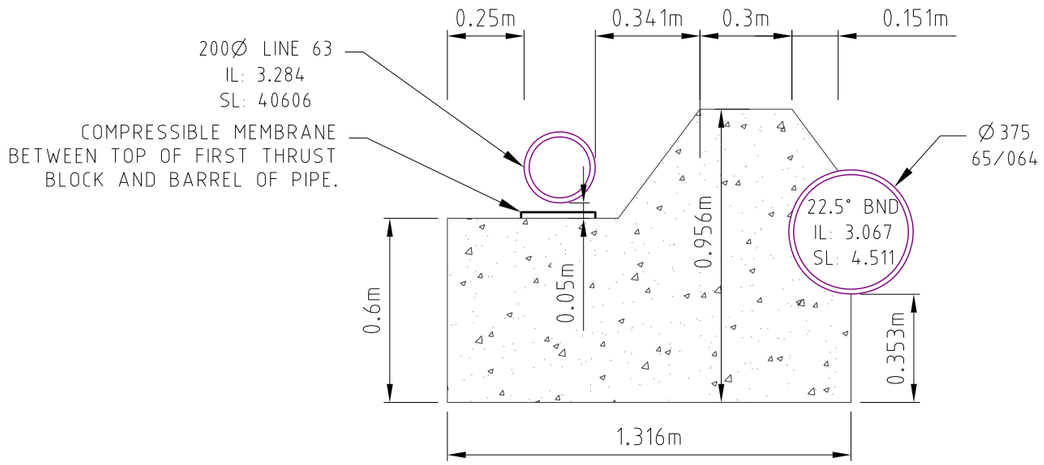
FOR FURTHER DETAIL REFER TO WSA 03-2011-3.1 TABLE 7.3.

NOTES:

a. THE NOMINAL THRUST AREA 'N' TO BE ACHIEVED BY POURING CONCRETE THE FULL LENGTH OF THE FITTING AND EXTENDING FROM THE FLOOR OF THE TRENCH TO ABOVE THE FITTING.

b. FINISH THRUST BLOCKS APPROXIMATELY 100mm ABOVE THE TOP OF THE FITTING OR BEARING PAD AND EXTEND TO THE FLOOR OF THE TRENCH OR DEEPER IF NECESSARY, TO ACHIEVE THE REQUIRED THRUST AREA. MAXIMUM ENCASEMENT TO BE 180°.

c. FOR DOWNWARD VERTICAL THRUST, THE ALLOWABLE BEARING PRESSURES FOR VARIOUS SOILS MAY BE TAKEN AS TWICE THAT FOR HORIZONTAL THRUST SHOWN



CUSTOM THRUST BLOCK

SCALE 1:10

REFER TO STRUCTURAL ARTS DRAWING P5-1,2&3-S300 FOR STRUCTURAL DETAILS.

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 0.1 0.2 0.3 0.4 0.5m

Scale 1:10 - A1 (1:20 - A3)

ISSUES	DATE	
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CONSTRUCTION	01-09-20	

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ASSOCIATED CONSULTANTS

LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

CUSTOM THRUST BLOCK

CONSTRUCTION ISSUE

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APPROVED		NER 906726	DATE 04-09-17

DRAWING NUMBER: 12301-P5-1,2&3-593

AMEND.: A

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STORMWATER

1. STORMWATER INFRASTRUCTURE TO BE INSTALLED IN ACCORDANCE WITH TWEED SHIRE COUNCIL CONSTRUCTION SPECIFICATIONS AND STANDARD DRAWINGS.
2. ALL FIELD GULLIES SHALL CONTAIN A 150mm DIA STUB 600mm BELOW GRADE LEVEL FOR FUTURE ROOFWATER DRAINAGE.
3. MANHOLES AND FIELD INLETS TO BE IN ACCORDANCE WITH TWEED SHIRE COUNCIL SD 106 OR STRUCTURAL DRAWINGS (STRUCTURAL DRAWINGS TAKE PRECEDENCE).
4. OUTLET HEADWALLS TO BE IN ACCORDANCE WITH LOCAL COUNCIL STANDARD DRAWINGS.
5. ALL HEADWALLS WITH A HEIGHT GREATER THAN 900mm HIGH REQUIRE INSTALLATION OF PEDESTRIAN SAFETY FENCES.
6. ALL PIPES 600mm DIA OR LESS TO BE SOCKETED CONCRETE PIPES WITH RUBBER RING JOINTS.
7. ALL ALLOTMENTS TO BE GRADED SUCH THAT FUTURE ROOFWATER DRAINAGE DISCHARGES TO KERB OR TO PIPED DRAINAGE SYSTEM.
8. ALL PIPE 375mm DIA AND GREATER SHALL BE CONSTRUCTED USING SRC PIPES.
9. FOR SETOUT DETAILS REFER TO 640 SERIES DRAWINGS (PROFILES AND PIT DETAILS).
10. GULLY PITS TO BE IN ACCORDANCE WITH TWEED SHIRE COUNCIL SD 103 AND SD 104
11. LOTS WHICH CAN DRAIN OVERLAND FLOW TO THE STREET SWALE / DRAINAGE WITHOUT FLOWING THROUGH ADJOINING PROPERTIES NEED TO PROVIDE FOR Q100 OVERLAND FLOW TO THE ROAD
12. LOT EARTHWORKS DURING BUILDING CONSTRUCTION MUST NOT CHANGE FLOW PATH DIRECTION UNLESS IT IS REPLACED WITH ANOTHER FLOW PATH DRAINING TO THE ROAD SWALE / DRAINAGE.
13. THE CONTRACTOR IS TO INCLUDE ROCK EXCAVATION AS PART OF THEIR STORMWATER RATE.
14. ALL PIPEWORK AND EXCAVATION RATES ARE TO INCLUDE DE-WATERING AND EXCAVATION THROUGH INDURATED SAND (COFFEE ROCK).
15. PIPE CLASS - PIPE CLASSES/TRENCH BEDDING SHOWN ON THE DRAWINGS ARE SUBJECT TO THE CONTRACTORS PREFERRED INSTALLATION METHOD. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING THE APPROPRIATE PIPE CLASSES AND BEDDING.
16. KERB ADAPTORS ARE TO BE INSTALLED TO AUTHORITY'S REQUIREMENTS AT ALL LOT FRONTAGES THAT CANNOT CONNECTION DIRECTLY TO GULLY PIT. B

LEGEND

- EXISTING KERB (INVERT)
- EXISTING KERB (LIP & BACK)
- EXISTING PROPERTY LINE
- EXISTING RETAINING WALL
- SW EXISTING STORMWATER
- RW EXISTING ROOFWATER
- SS EXISTING SUBSOIL
- EXISTING CONTOURS
- FUTURE KERB
- FUTURE PROPERTY LINE
- FUTURE RETAINING WALL
- SW FUTURE STORMWATER
- RW FUTURE ROOFWATER
- SS FUTURE SUBSOIL
- SITE BOUNDARY
- STAGE BOUNDARY
- CONTROL LINE / CENTER OF ROAD
- PROPOSED KERB (INVERT)
- PROPOSED KERB (LIP & BACK)
- PROPOSED PROPERTY LINE
- PROPOSED RETAINING WALL
- 1.0 DESIGN CONTOURS
- PROPOSED GRATED DRAIN
- SW PROPOSED STORMWATER
- RW PROPOSED ROOFWATER
- SS PROPOSED SUBSOIL
- MANHOLE
- KERB INLET (ON GRADE) PIT
- KERB INLET (SAG) PIT
- HEADWALL
- SCOUR PROTECTION
- 10/001 DRAINAGE PIT & LINE NO.

- EXISTING KOALA EXCLUSION FENCE
- EXISTING TEMPORARY FENCE
- X EXISTING TEMPORARY NO-GO FENCE
- ACOUSTIC FENCE IN ACCORDANCE WITH RMS NOISE WALL DESIGN GUIDELINE, INCLUDING ANTI-CLIMB PANNELING (WHERE APPLICABLE) REFER JWA FIGURE 27 FOR PANNELING
- ECOLOGICAL BUFFER
- FUTURE DRIVEWAY/ GARAGE (BY OTHERS)

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REFERENCE POINT LOCATION FOR DRAINAGE STRUCTURES

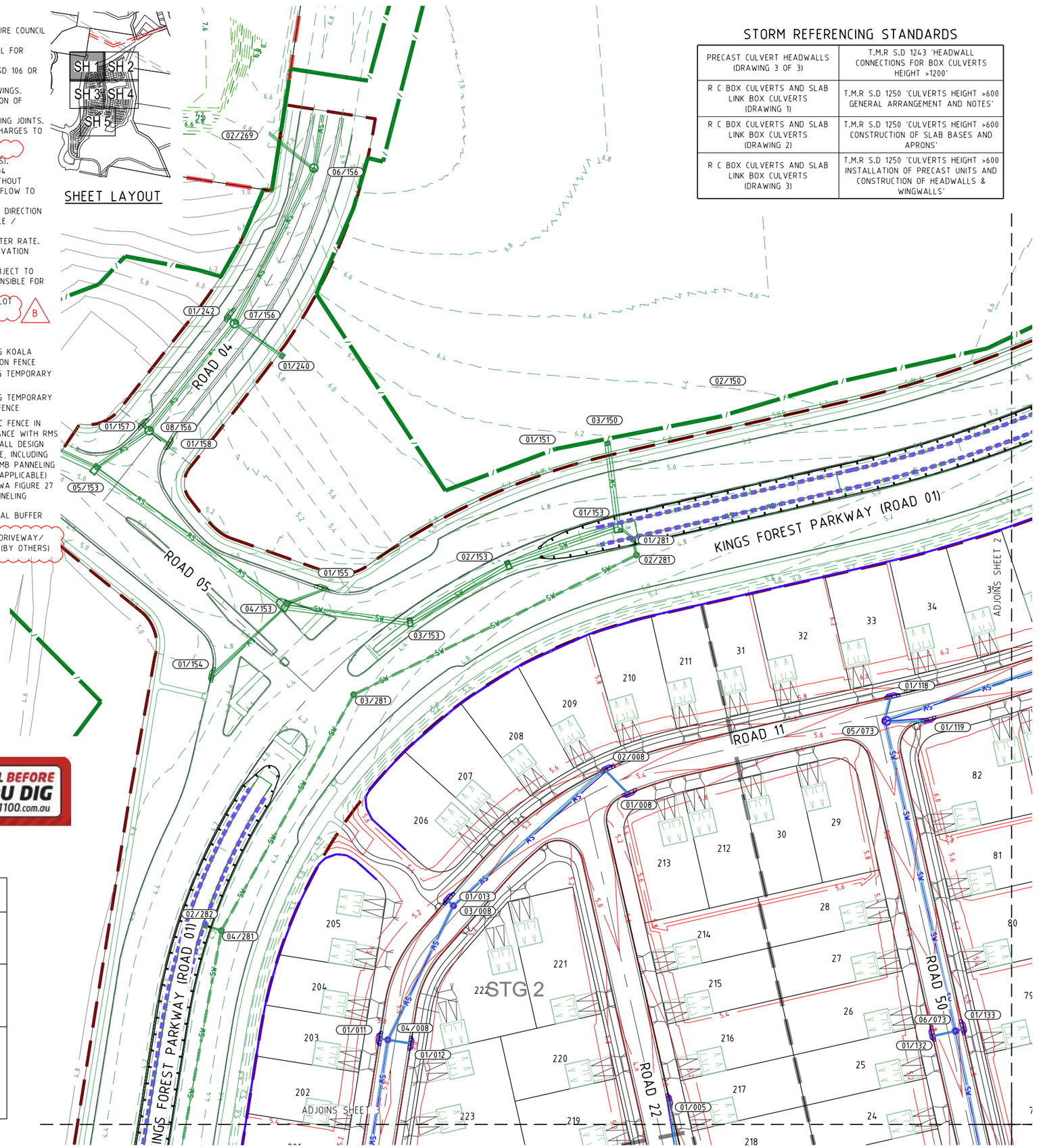
STRUCTURE TYPE	HORIZONTAL CONTROL (Reference Point Location)	VERTICAL CONTROL (Reference Level)
MANHOLE	CENTRE OF MANHOLE	FINISHED SURFACE LEVEL
GULLY PIT	LIP AT CENTRE OF PIT	FINISHED SURFACE LEVEL (LIP OF CHANNEL)
HEADWALL	INTERSECTION OF HEADWALL FACE & PIPE CENTRELINE	INVERT LEVEL

REFER TO DWG SERIES 640 FOR ALL DRAINAGE STRUCTURE SETOUT AND/OR CUSTOM DETAILS.

SHEET LAYOUT

STORM REFERENCING STANDARDS

PRECAST CULVERT HEADWALLS (DRAWING 3 OF 3)	T.M.R S.D 1243 'HEADWALL CONNECTIONS FOR BOX CULVERTS HEIGHT >1200'
R C BOX CULVERTS AND SLAB LINK BOX CULVERTS (DRAWING 1)	T.M.R S.D 1250 'CULVERTS HEIGHT >600 GENERAL ARRANGEMENT AND NOTES'
R C BOX CULVERTS AND SLAB LINK BOX CULVERTS (DRAWING 2)	T.M.R S.D 1250 'CULVERTS HEIGHT >600 CONSTRUCTION OF SLAB BASES AND APRONS'
R C BOX CULVERTS AND SLAB LINK BOX CULVERTS (DRAWING 3)	T.M.R S.D 1250 'CULVERTS HEIGHT >600 INSTALLATION OF PRECAST UNITS AND CONSTRUCTION OF HEADWALLS & WINGWALLS'



PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
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B	09-08-21	NOTES AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
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LandSurv
GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER DRAINAGE PLAN SHEET 1 OF 5

CONSTRUCTION ISSUE

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DRAWING NUMBER 12301-P5-1,2&3-600	AMEND. B

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KINGS FOREST PARKWAY (ROAD 01)

ROAD 11

ROAD 14

ROAD 15

DWAY 99A

STG 3

PROVIDE 2x 100mm ROOF WATER OUTLET PIPES WITH CONCRETE SURROUND OUTLET & RISER 400mm INSIDE LOT BOUNDARY.

GRATED DRAINS TO BE INSTALLED AS PER GRATED POLYCRETE CHANNEL, SITE INSTALLATION MANUAL. ALL GRATES TO BE CLASS D. REFER TO 12301-P5-1,2&3-655 FOR DETAILS.

REFER TO 12301-P5-1,2&3-650 FOR GRATED DRAIN DETAILS.

ADJOINS SHEET 1

ADJOINS SHEET 4

01/073 02/073 03/073 04/073 01/120 01/121 01/122 02/122 01/106 02/106 03/106 01/108 01/109 01/110 02/108 01/113 00/113 01/114 01/115

SHEET LAYOUT

SH 1 SH 2 SH 3 SH 4 SH 5

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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PARISH OF CUDGEN ,
COUNTY OF ROUS .

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PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m

Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	09-08-21	STORMWATER LINE AND NOTE ADDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
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STORMWATER DRAINAGE PLAN SHEET 2 OF 5

CONSTRUCTION ISSUE

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APPROVED		NER	906726
DATE	07-02-19		

DRAWING NUMBER: 12301-P5-1,2&3-601

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PROVIDE 2x 100mm ROOF WATER OUTLET PIPES WITH CONCRETE SURROUND OUTLET & RISER 400mm INSIDE LOT BOUNDARY.

PROVIDE 2x 100mm ROOF WATER OUTLET PIPES WITH CONCRETE SURROUND OUTLET & RISER 400mm INSIDE LOT BOUNDARY.

REMOVE END CAPS AND CONNECT TO EXISTING.

ADJOINS SHEET 4

ADJOINS SHEET 5

KINGS F

ROAD 11

ROAD 07

DWAY 42

DWAY 44

ROAD 29

ROAD 12

ROAD 19

ROAD 27

DRIVEWAY 99B

DRIVEWAY 99B

STG 4

SHEET LAYOUT

SH 1 SH 2

SH 3 SH 4

SH 5

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m

Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LandSurv

GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER DRAINAGE PLAN
SHEET 3 OF 5

CONSTRUCTION ISSUE

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APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-602
AMEND.: A

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ADJOINS SHEET 2

ADJOINS SHEET 3

ADJOINS SHEET 5

ROAD 11

ROAD 13

ROAD 16

ROAD 17

ROAD 20

ROAD 41

STG 1

STG 5

PRCT 5

BLANK OFF END FOR FUTURE CONNECTION

BLANK OFF END FOR FUTURE CONNECTION

REFER TO 12301-P5-1,2&3-650 FOR GRATE DRAIN DETAILS.

GRATE DRAINS TO BE INSTALLED AS PER GRATED POLYCRETE CHANNEL, SITE INSTALLATION MANUAL. ALL GRATES TO BE TRAFFICABLE. REFER TO 12301-P5-1,2&3-655 FOR DETAILS.

SHEET LAYOUT

SH 1 SH 2 SH 3 SH 4 SH 5

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m

Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	26-08-21	NOTE ADDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER DRAINAGE PLAN SHEET 4 OF 5

CONSTRUCTION ISSUE

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DRAWING NUMBER: 12301-P5-1,2&3-603

AMEND.: B

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PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	25-03-20	STORMWATER LINE AND PITS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER
DRAINAGE
PLAN
SHEET 5 OF 5

CONSTRUCTION ISSUE

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APPROVED		NER	906726
DATE	07-02-19		

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-604	B

ADJOINS SHEET 3
ADJOINS SHEET 4
ADJOIN SHEET 05
ADJOIN INSET 1.0

ROAD 30
ROAD 40
ROAD 45
ROAD 46
ROAD 17
ROAD 29
ROAD 47
ROAD 27
ROAD 08
ROAD 13

STG 7
STG 8
STG 9

REMOVE END CAP AND CONNECT TO EXISTING.
REMOVE END CAP AND CONNECT TO EXISTING.

SHEET LAYOUT
SH 1 SH 2
SH 3 SH 4
SH 5

INSET 1.0

Y:\123 - Leda Developments Pty Ltd\01 - Kings Forest\PRECS\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-600.dwg, 6/10/2021 5:07:00 PM, 1:2

STRUCTURE NAME

STRUCTURE DESCRIPTION

ALL TYPE D TRAFFICABLE LIDS

B

* CONSTRUCT BRIDGING STRUCTURE SPANNING THE SEWER TRENCH. REFER TO 12301-P5-1,2&3-600 FOR DETAILS.

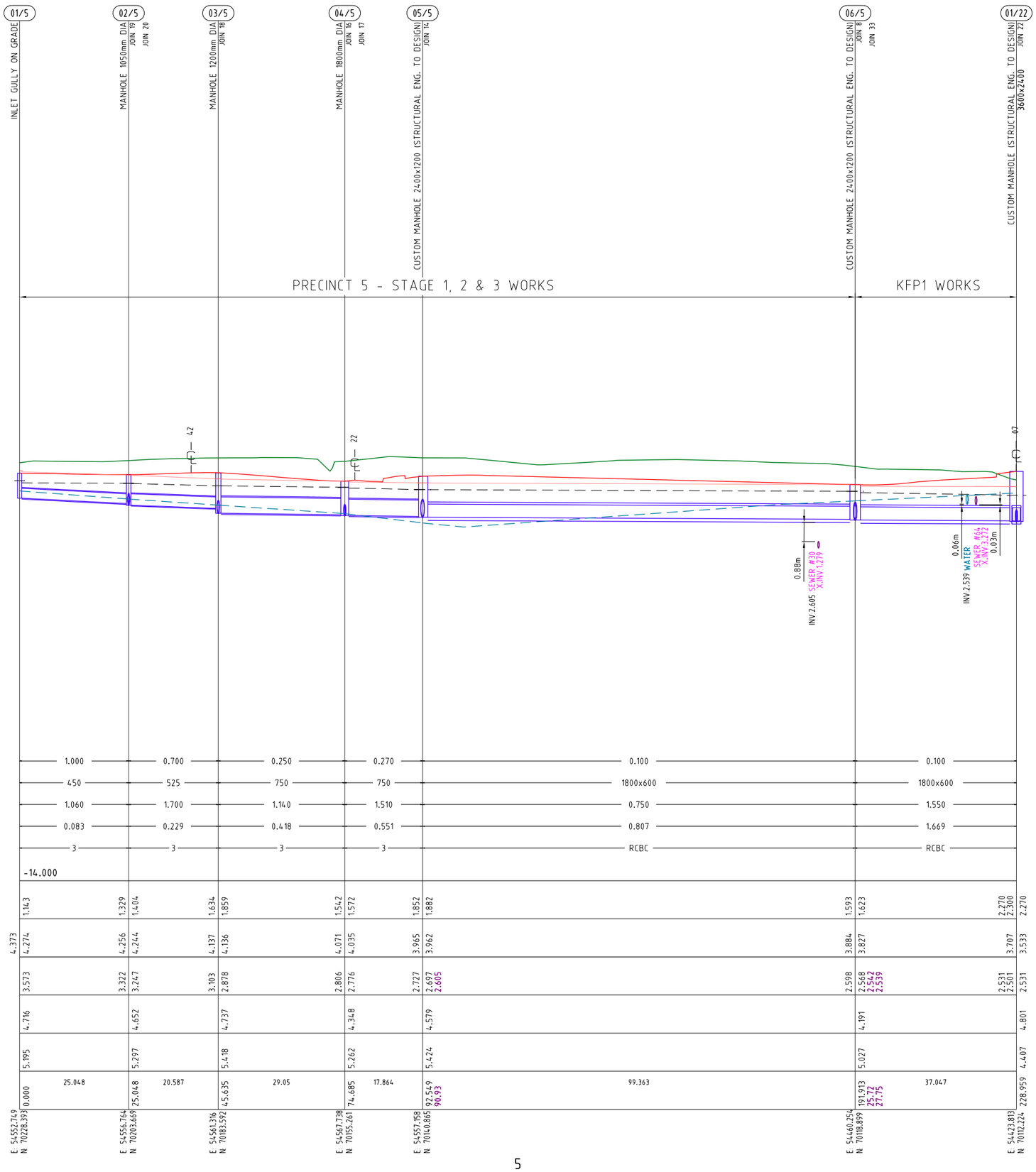
LEGEND

Q100 HYDRAULIC GRADE LINE

4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLA-US IN SEWER RATES.



DRAINAGE LINE

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	31-08-20	LEGEND AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER PROFILES SHEET 1

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

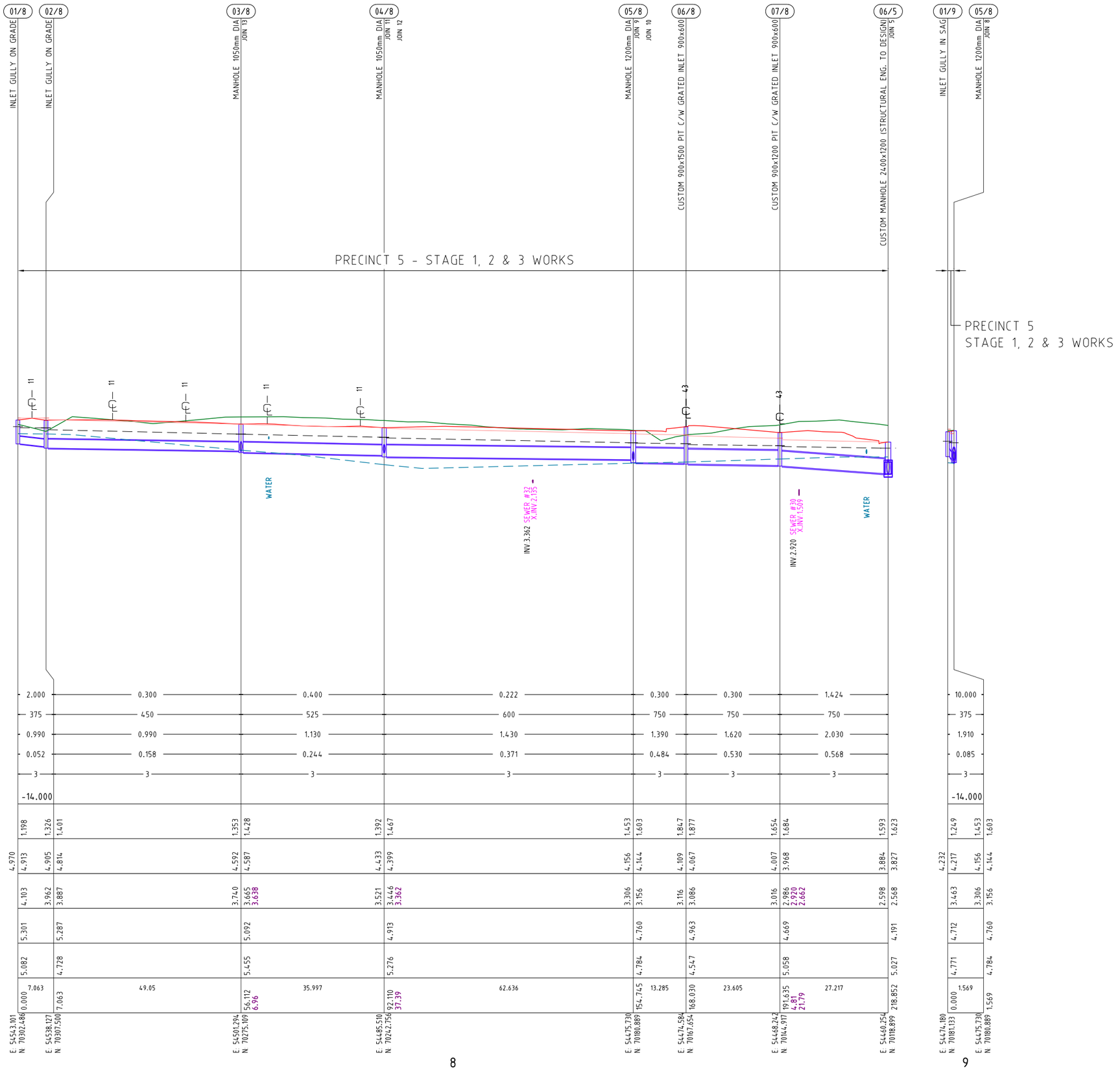
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12301-P5-1,2&3-620	B

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STRUCTURE NAME

STRUCTURE DESCRIPTION

ALL TYPE D TRAFFICABLE LIDS



B

LEGEND

Q100 HYDRAULIC GRADE LINE

4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLA-US IN SEWER RATES.

DRAINAGE LINE

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	31-08-20	LEGEND AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER PROFILES SHEET 2

CONSTRUCTION ISSUE

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DESIGNED RB	DRAWN CB
APPROVED	NER 906726 DATE 07-02-19

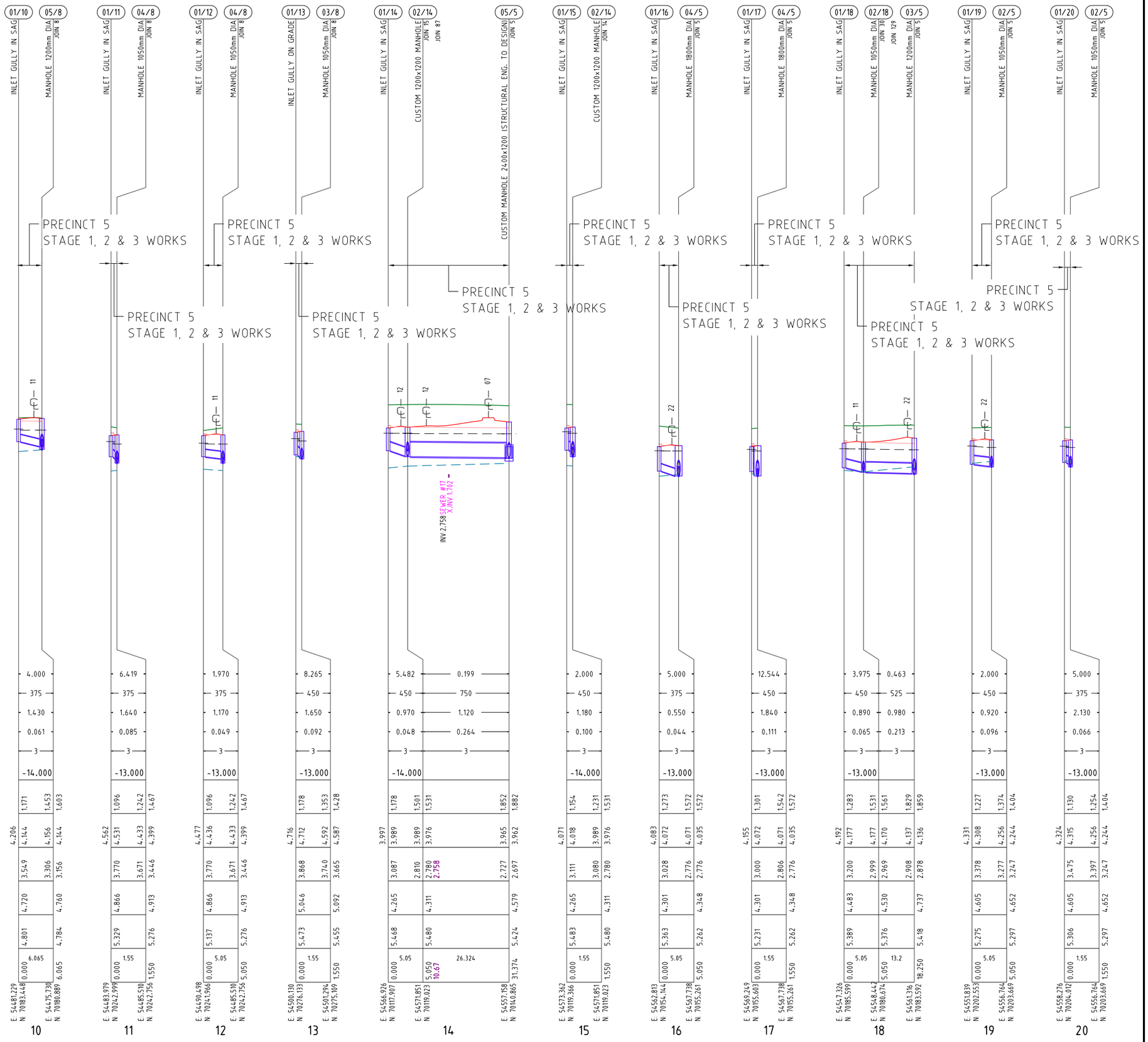
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STRUCTURE NAME

STRUCTURE DESCRIPTION

ALL TYPE D TRAFFICABLE LIDS



B

LEGEND

Q100 HYDRAULIC GRADE LINE

4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLA-US IN SEWER RATES.

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	31-08-20	LEGEND AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LANDSURV

GILBERT + SUTHERLAND

DRAWING TITLE

STORMWATER PROFILES SHEET 3

CONSTRUCTION ISSUE

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APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-622

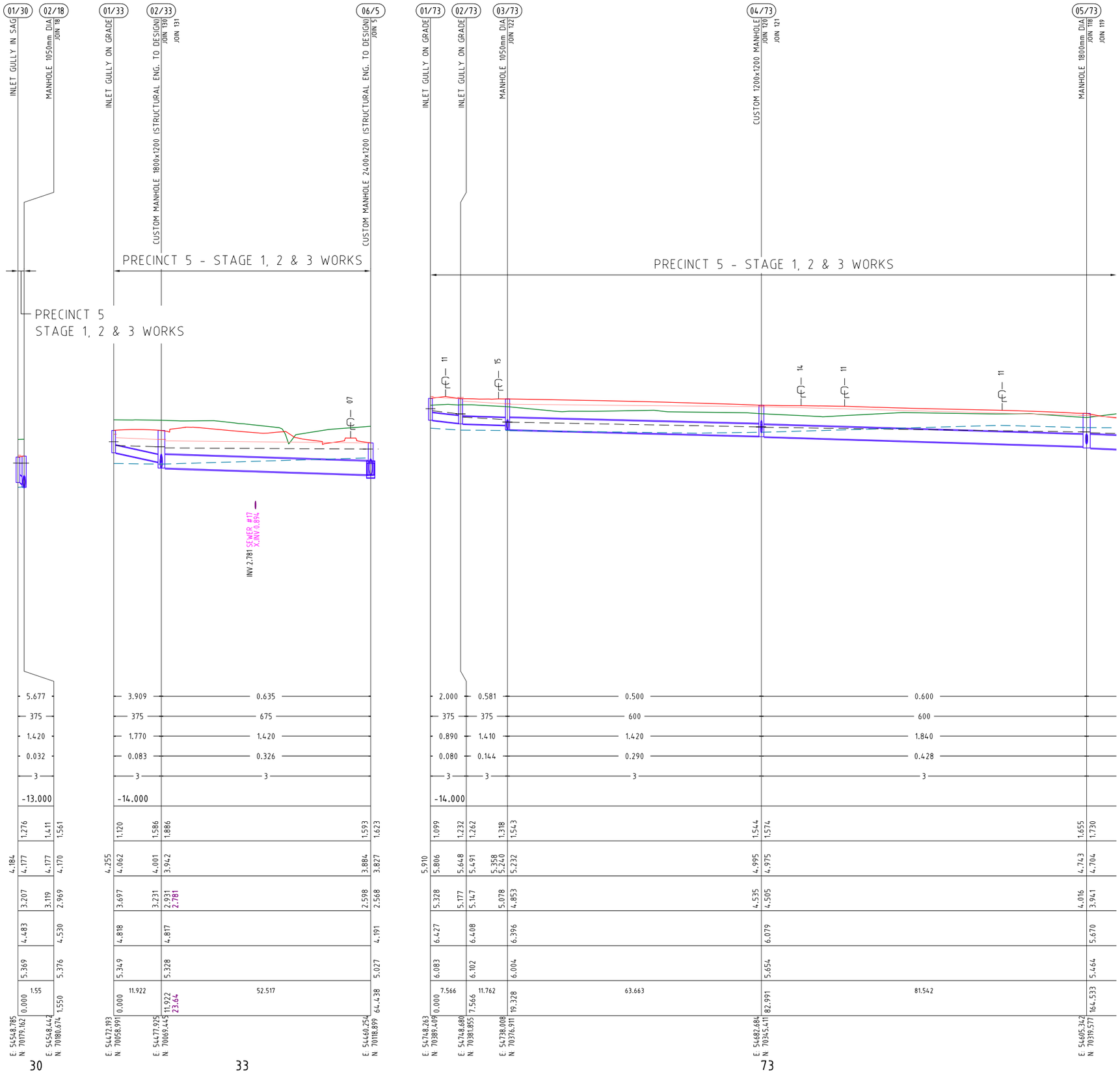
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STRUCTURE NAME

STRUCTURE DESCRIPTION

ALL TYPE D TRAFFICABLE LIDS



B

LEGEND

- Q100 HYDRAULIC GRADE LINE
- 4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE
- APPROX LINE OF INDURATED SANDS

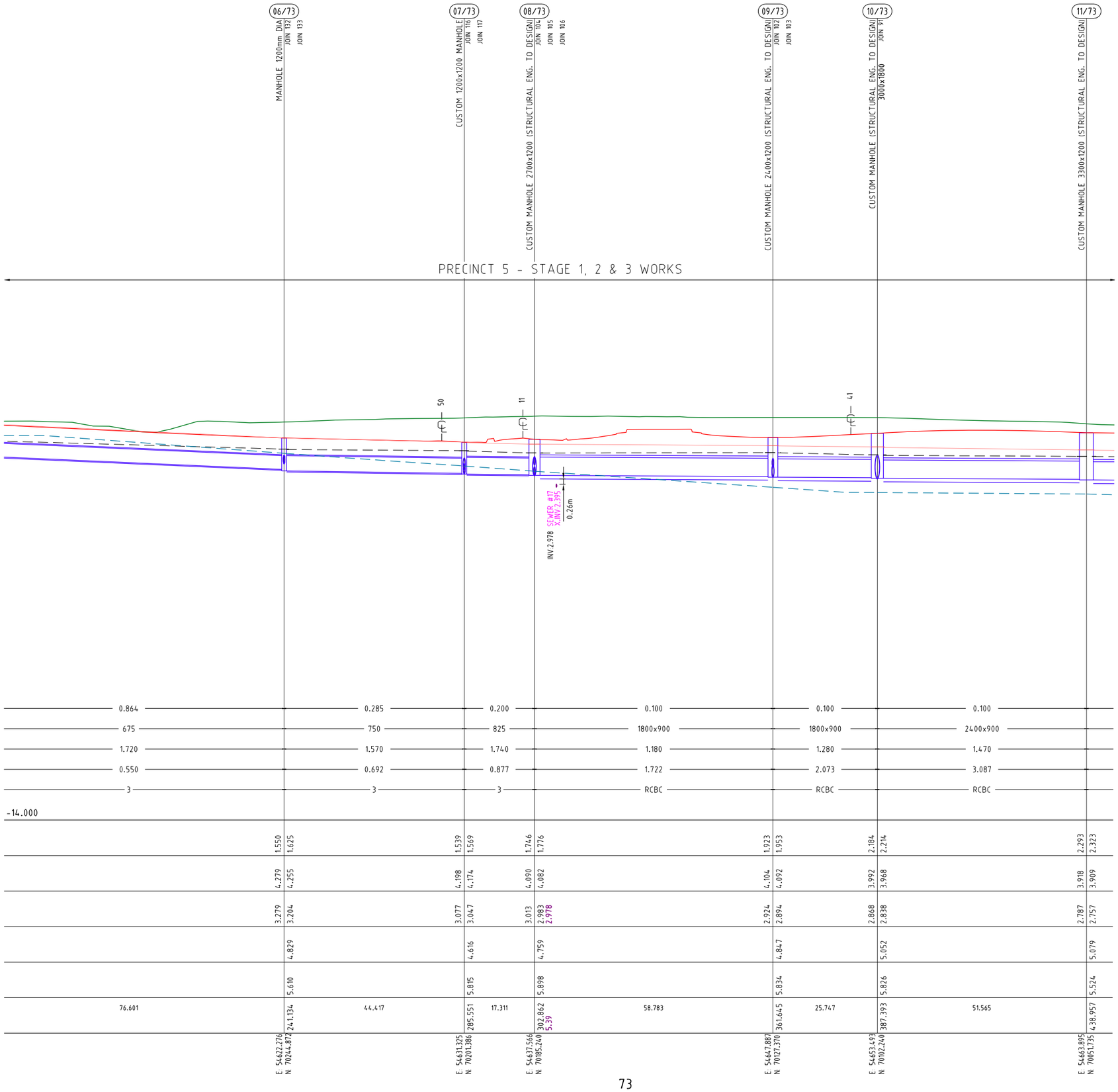
CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLA-US IN SEWER RATES.

| | 30 | | |

STRUCTURE NAME

STRUCTURE DESCRIPTION

ALL TYPE D TRAFFICABLE LIDS



B

LEGEND

Q100 HYDRAULIC GRADE LINE

4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

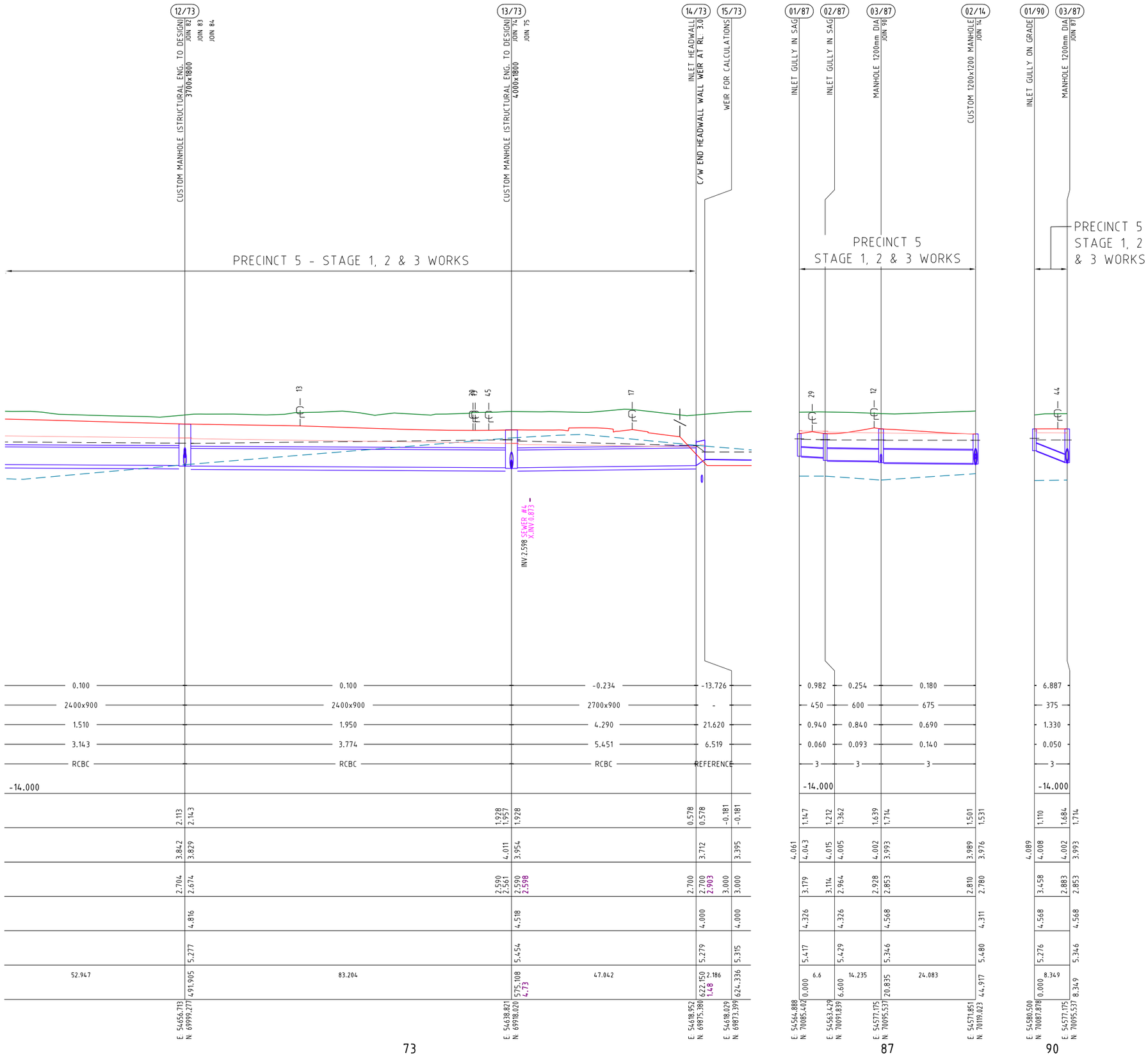
CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLA-US IN SEWER RATES.

| | | |

STRUCTURE NAME

STRUCTURE DESCRIPTION

ALL TYPE D TRAFFICABLE LIDS



B

LEGEND

Q100 HYDRAULIC GRADE LINE

4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

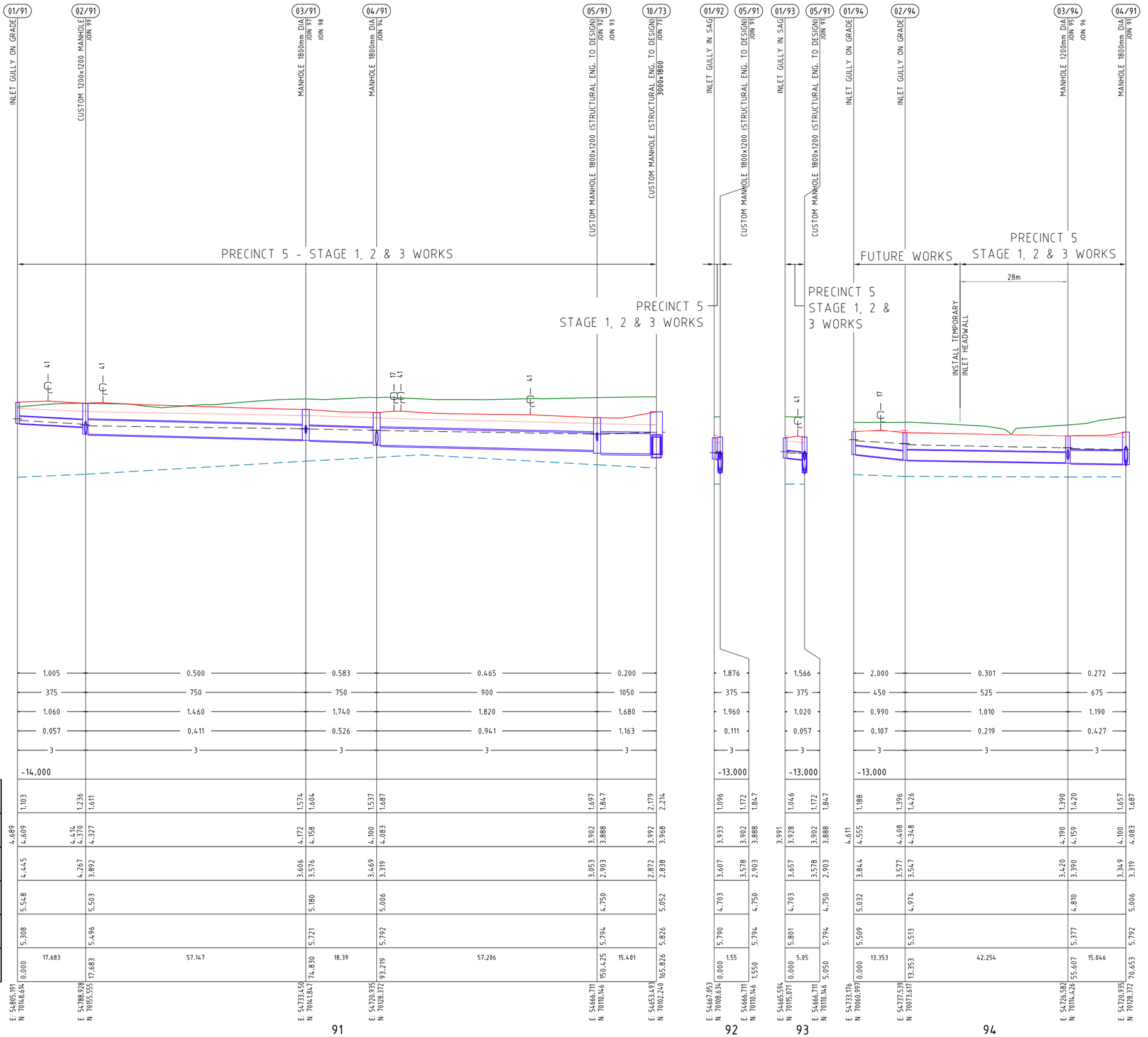
CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLA-US IN SEWER RATES.

| | | |

STRUCTURE NAME

STRUCTURE DESCRIPTION

ALL TYPE D TRAFFICABLE LIDS



B

LEGEND

Q100 HYDRAULIC GRADE LINE

4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLA-US IN SEWER RATES.

DRAINAGE LINE

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
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LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER PROFILES SHEET 7

CONSTRUCTION ISSUE

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APPROVED	NER 906726
DATE 07-02-19	

DRAWING NUMBER 12301-P5-1,2&3-626

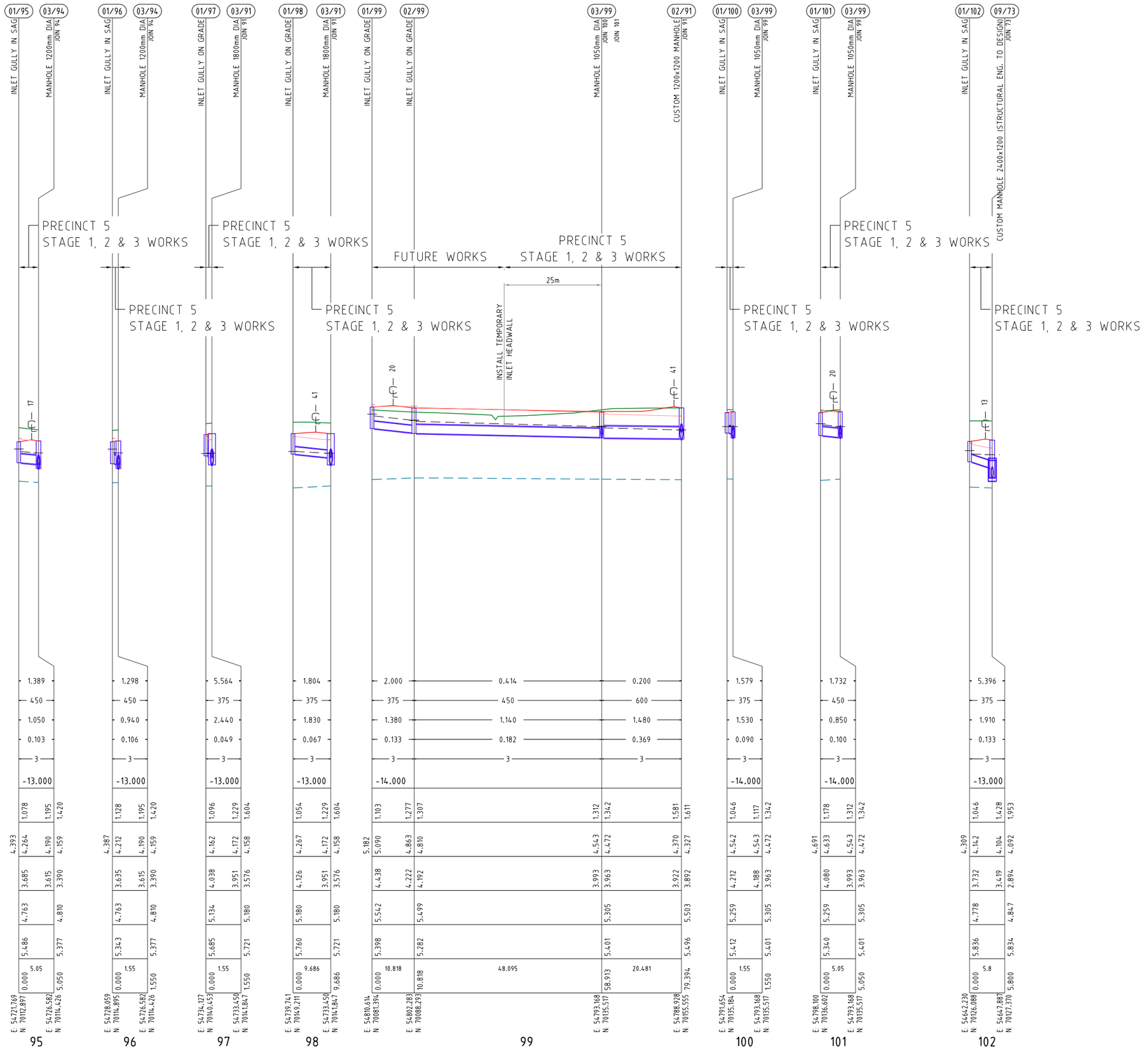
AMEND. B

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STRUCTURE NAME

STRUCTURE DESCRIPTION

ALL TYPE D TRAFFICABLE LIDS



B

LEGEND

Q100 HYDRAULIC GRADE LINE

4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLA-US IN SEWER RATES.

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	31-08-20	LEGEND AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER PROFILES SHEET 8

CONSTRUCTION ISSUE

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APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER 12301-P5-1,2&3-627

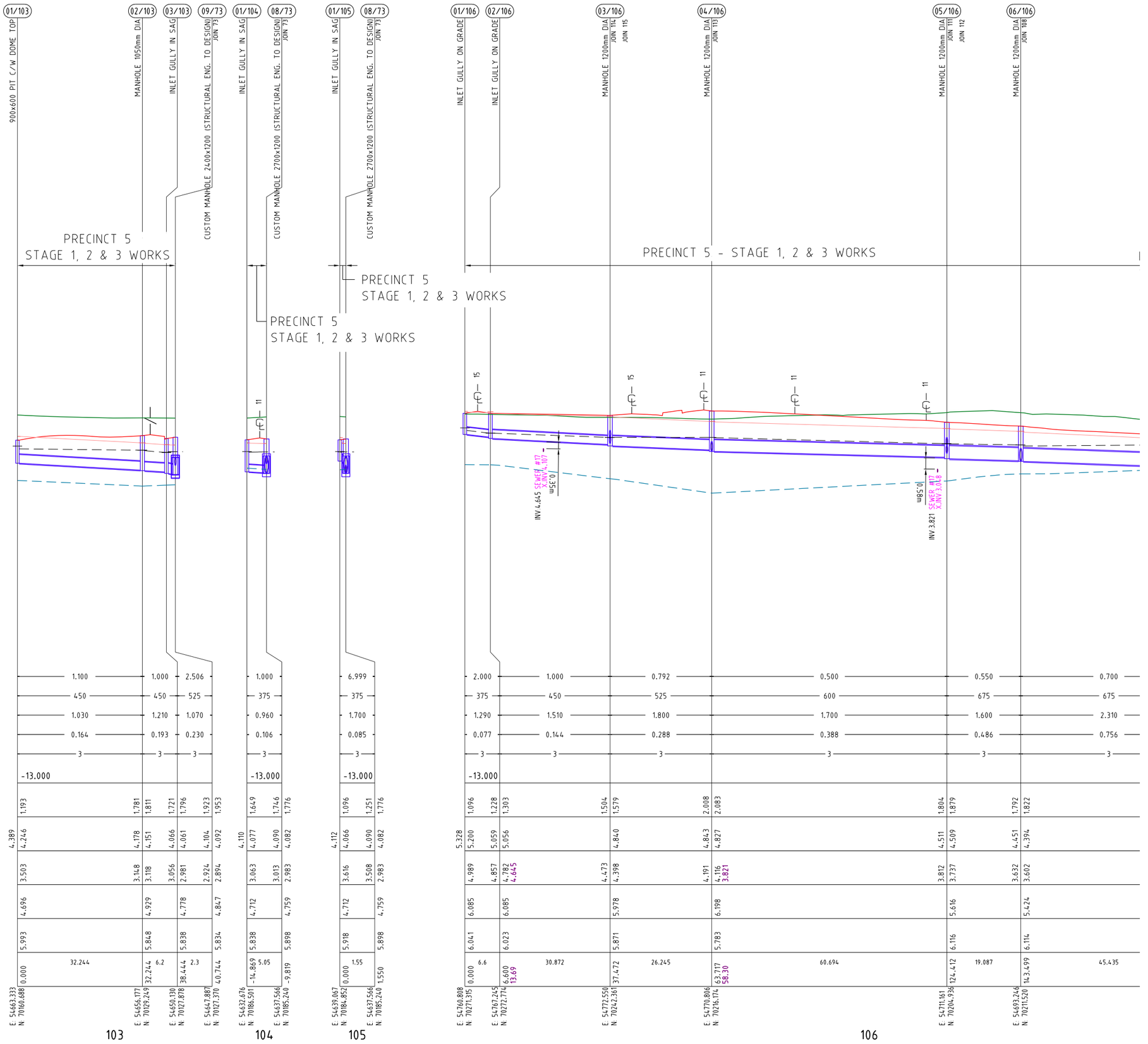
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STRUCTURE NAME

STRUCTURE DESCRIPTION

ALL TYPE D TRAFFICABLE LIDS



B

LEGEND

Q100 HYDRAULIC GRADE LINE

4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLA-US IN SEWER RATES.

DRAINAGE LINE

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	31-08-20	LEGEND AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER PROFILES SHEET 9

CONSTRUCTION ISSUE

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APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER 12301-P5-1,2&3-628

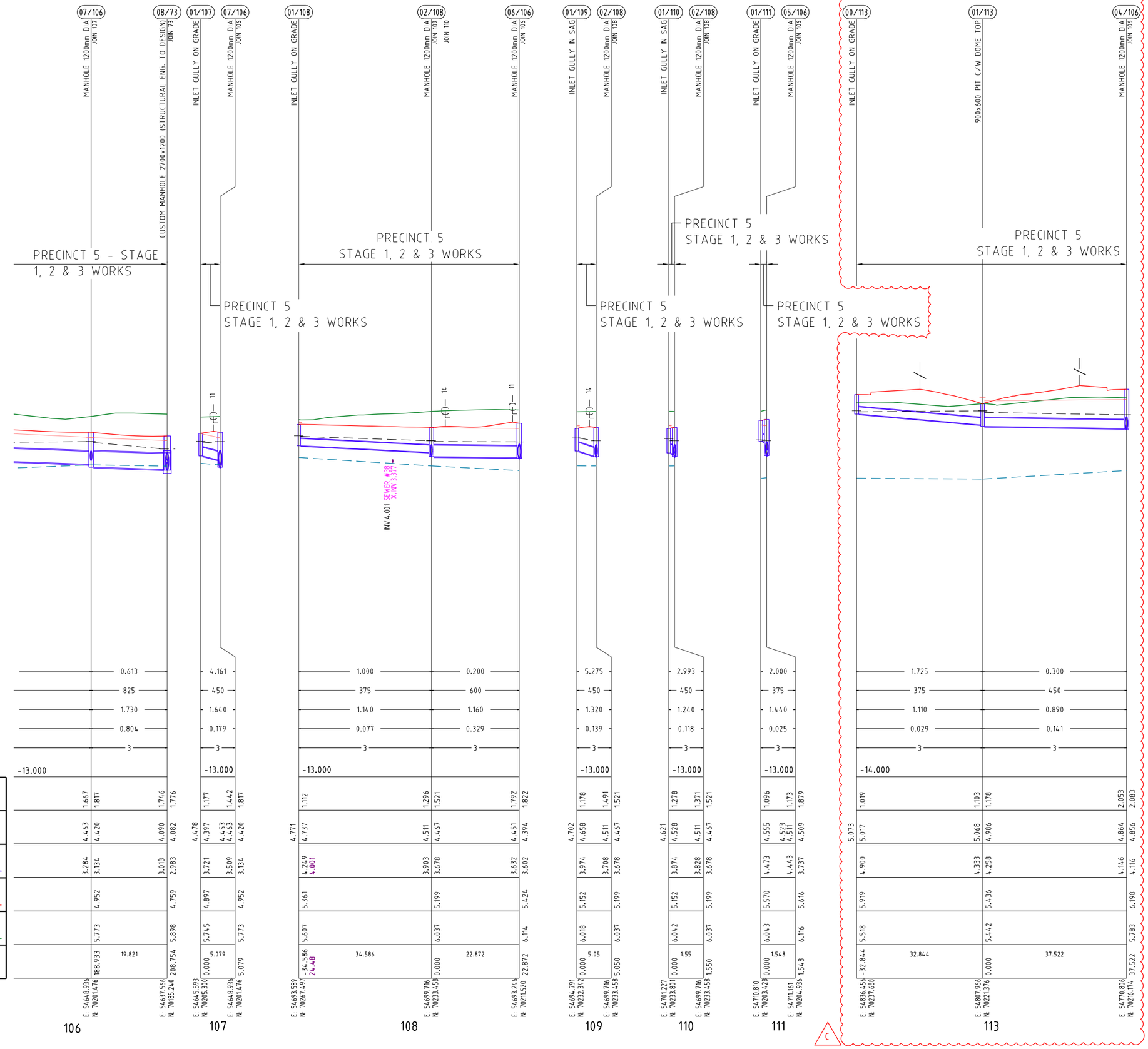
AMEND. B

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STRUCTURE NAME

STRUCTURE DESCRIPTION

ALL TYPE D TRAFFICABLE LIDS



LEGEND

Q100 HYDRAULIC GRADE LINE

4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLA-US IN SEWER RATES.

DRAINAGE LINE

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

C	09-08-21	STORMWATER PROFILE AMENDED
B	31-08-20	LEGEND AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER PROFILES SHEET 10

CONSTRUCTION ISSUE

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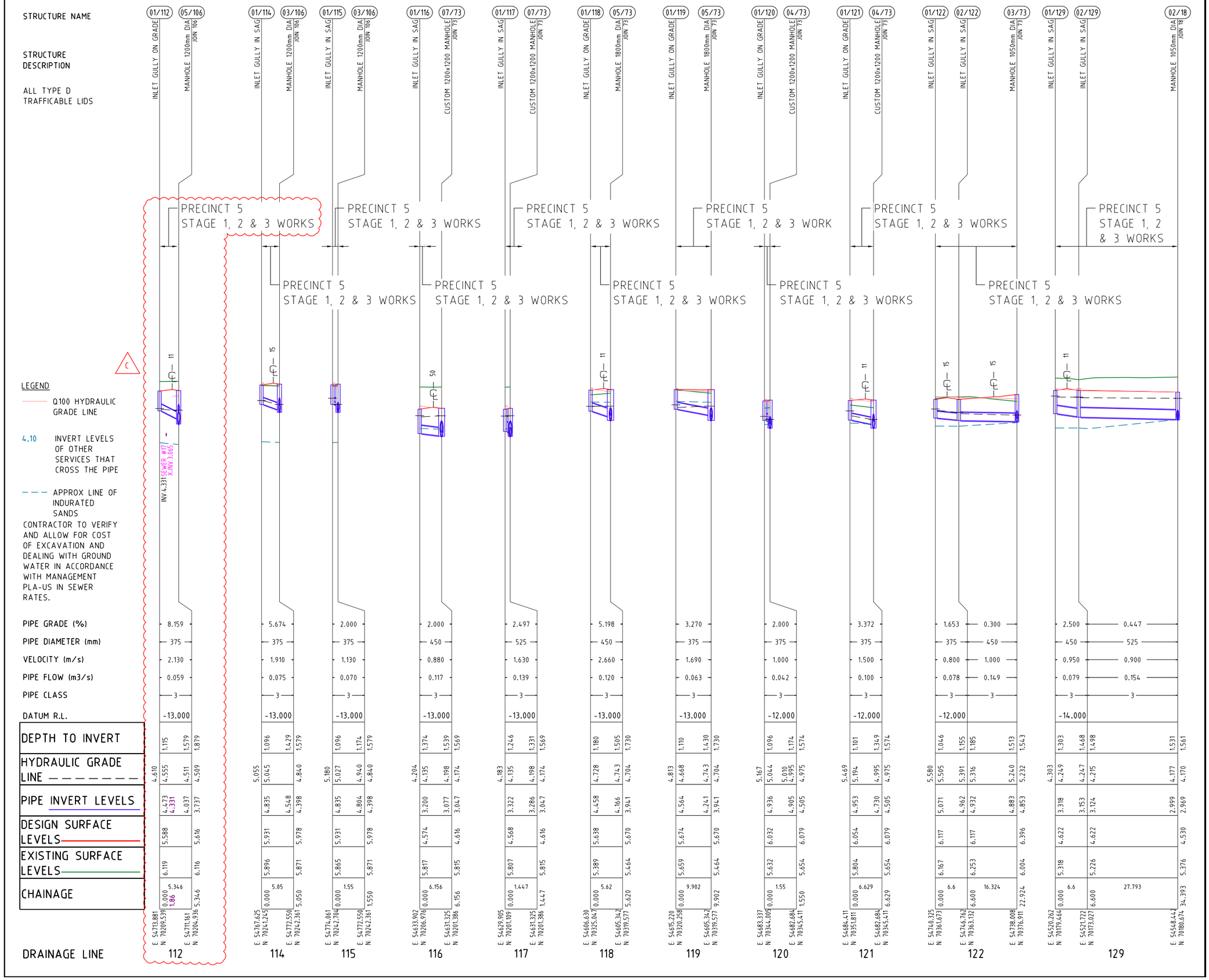
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Southport QLD 4215

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APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-629

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PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
C	09-08-21	STORMWATER PROFILE AMENDED
B	31-08-20	LEGEND AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER PROFILES SHEET 11

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER 12301-P5-1,2&3-630
AMEND. C

STRUCTURE NAME

STRUCTURE DESCRIPTION

ALL TYPE D TRAFFICABLE LIDS

C

* CONSTRUCT BRIDGING STRUCTURE SPANNING THE SEWER TRENCH. REFER TO 12301-P5-1,2&3-500 FOR DETAILS.

LEGEND

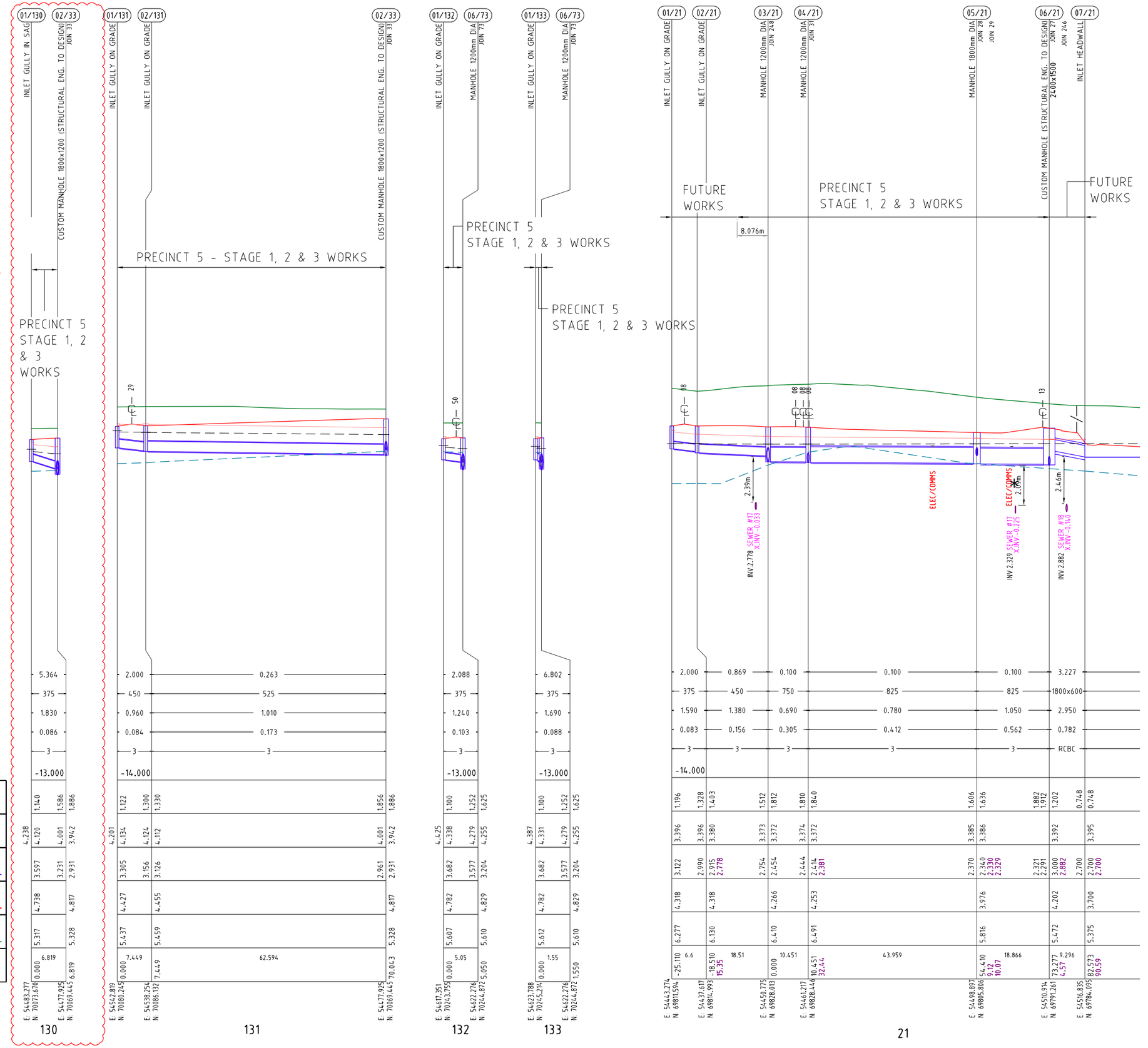
Q100 HYDRAULIC GRADE LINE

4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLA-US IN SEWER RATES.

DRAINAGE LINE



PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
C	09-08-21	STORMWATER PROFILE AMENDED
B	31-08-20	LEGEND AND PROFILE AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER PROFILES SHEET 12

CONSTRUCTION ISSUE

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APPROVED | NER 906726 | DATE 07-02-19

DRAWING NUMBER 12301-P5-1,2&3-631 | AMEND. C

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STRUCTURE NAME

STRUCTURE DESCRIPTION

ALL TYPE D TRAFFICABLE LIDS

✳ CONSTRUCT BRIDGING STRUCTURE SPANNING THE SEWER TRENCH. REFER TO 12301-P5-1,2&3-500 FOR DETAILS.

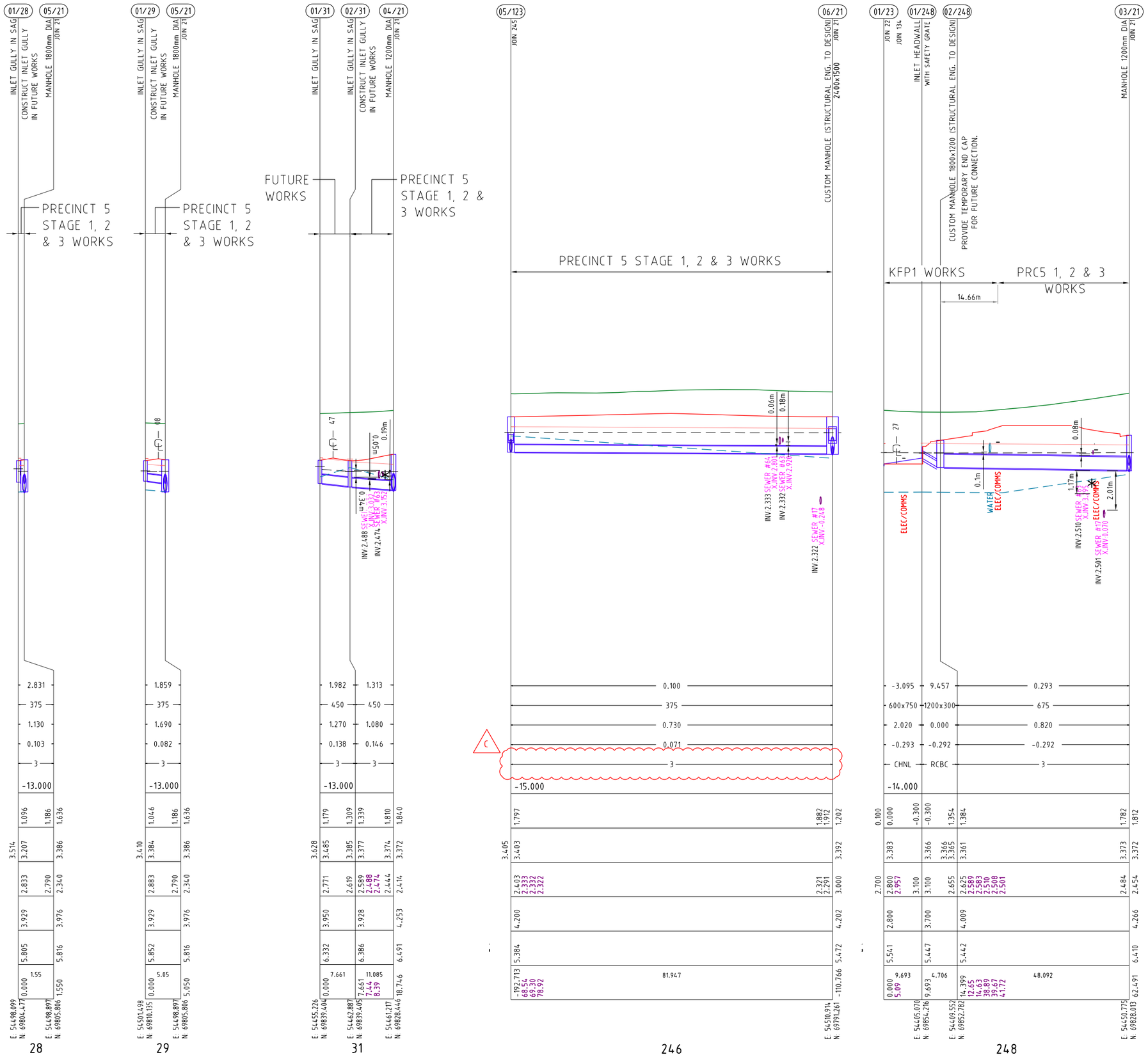
LEGEND

Q100 HYDRAULIC GRADE LINE

4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLA-US IN SEWER RATES.



	28	29	31	246	248
PIPE GRADE (%)	2.831	1.859	1.982 / 1.313	0.100	-3.095 / 9.457 / 0.293
PIPE DIAMETER (mm)	375	375	450 / 450	375	600x750 / 1200x300 / 675
VELOCITY (m/s)	1.130	1.690	1.270 / 1.080	0.730	2.020 / 0.000 / 0.820
PIPE FLOW (m3/s)	0.103	0.082	0.138 / 0.146	0.071	-0.293 / -0.292 / -0.292
PIPE CLASS	3	3	3 / 3	3	CHNL / RCBC / 3
DATUM R.L.	-13.000	-13.000	-13.000	-15.000	-14.000
DEPTH TO INVERT	3.514	3.410	3.628		
HYDRAULIC GRADE LINE	1.096 / 3.207 / 1.186	1.046 / 3.384 / 1.186	1.179 / 3.485 / 1.309	1.797 / 3.403 / 1.882	0.100 / 0.000 / -0.300
PIPE INVERT LEVELS	1.636 / 2.833 / 2.790	1.636 / 2.883 / 2.790	1.339 / 2.771 / 1.810 / 2.619 / 1.840	1.972 / 2.403 / 2.333 / 2.322 / 2.322 / 1.202	-0.300 / 3.383 / 3.366 / 3.366 / 3.354 / 3.361 / 1.384 / 1.782
DESIGN SURFACE LEVELS	2.340 / 3.929 / 3.976	2.340 / 3.929 / 3.976	2.589 / 2.474 / 3.950 / 3.928 / 2.444	2.321 / 2.291 / 3.000	2.700 / 2.800 / 2.957 / 3.100 / 3.100 / 2.655 / 2.625 / 2.589 / 2.563 / 2.508 / 2.501 / 2.484
EXISTING SURFACE LEVELS	3.386 / 5.805 / 5.816	3.386 / 5.852 / 5.816	3.374 / 3.372 / 6.332 / 6.386 / 4.253	3.392 / 5.384 / 4.200 / 5.472	3.373 / 3.372 / 5.541 / 2.800 / 5.447 / 3.700 / 5.442 / 4.009 / 6.410 / 4.266
CHAINAGE	0.000 / 1.55 / 1.550	0.000 / 5.05 / 5.050	0.000 / 7.661 / 11.085 / 18.746	-192.713 / 68.54 / 69.30 / 78.92 / 81.947 / -110.766	0.000 / 9.693 / 5.09 / 4.706 / 14.399 / 12.65 / 14.63 / 39.89 / 39.67 / 41.72 / 48.092 / 62.491
E	54498.099	54501.498	54455.226	54510.914	54405.070 / 54409.552 / 54450.775
N	69804.477 / 54498.897 / 69805.800	69810.135 / 54498.897 / 69805.806	69839.400 / 54462.887 / 69839.405 / 54461.217 / 69828.446	69791.261	69854.216 / 69852.782 / 69828.013

DRAINAGE LINE

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

C	26-02-21	PROFILE AMENDED
B	31-08-20	PROFILE AND LEGEND MENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER PROFILES SHEET 13

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

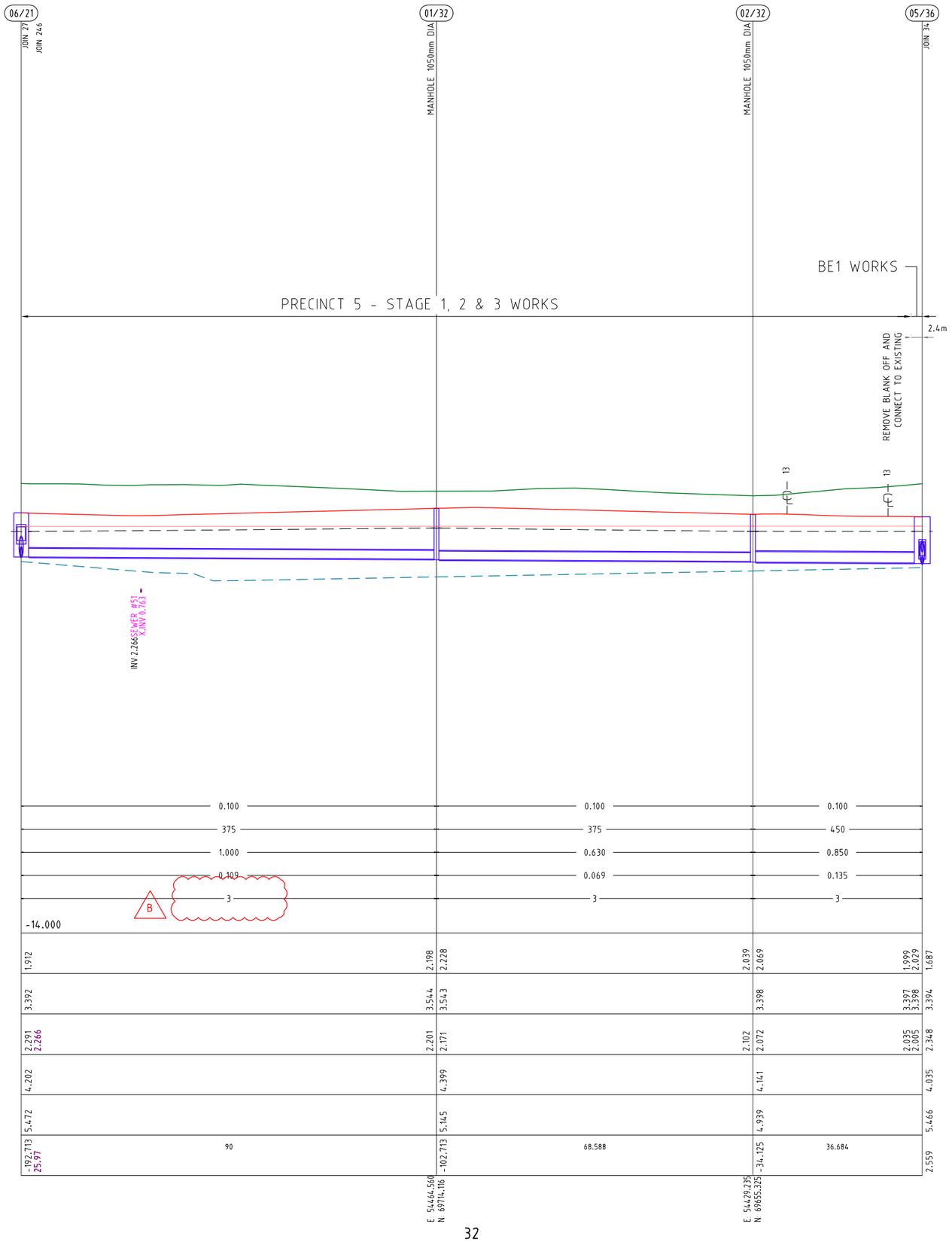
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AMEND.: C

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STRUCTURE NAME

STRUCTURE DESCRIPTION

ALL TYPE D TRAFFICABLE LIDS



LEGEND

Q100 HYDRAULIC GRADE LINE

4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLA-US IN SEWER RATES.

DRAINAGE LINE

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

B	26-02-21	PROFILE AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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DRAWING TITLE

STORMWATER PROFILES SHEET 14

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

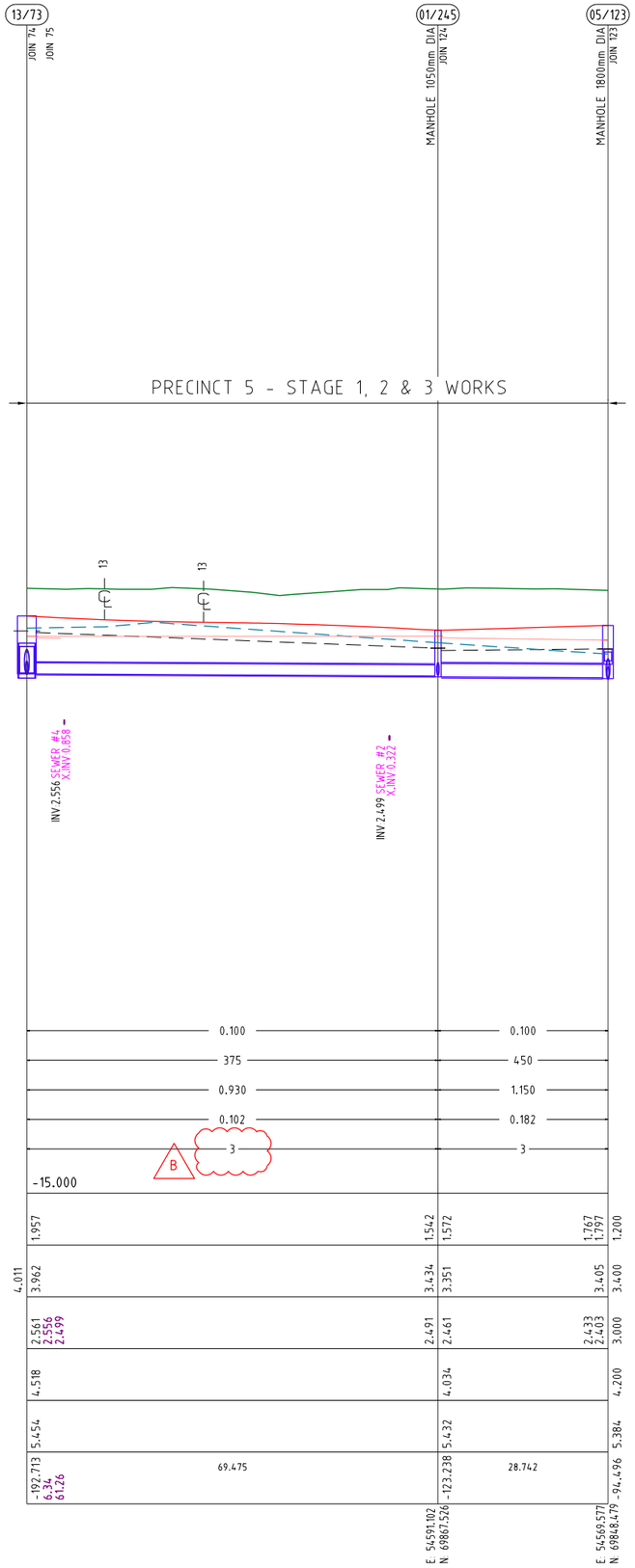
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STRUCTURE NAME

STRUCTURE DESCRIPTION

ALL TYPE D TRAFFICABLE LIDS



LEGEND

Q100 HYDRAULIC GRADE LINE

4.10 INVERT LEVELS OF OTHER SERVICES THAT CROSS THE PIPE

APPROX LINE OF INDURATED SANDS

CONTRACTOR TO VERIFY AND ALLOW FOR COST OF EXCAVATION AND DEALING WITH GROUND WATER IN ACCORDANCE WITH MANAGEMENT PLA-US IN SEWER RATES.

PIPE GRADE (%)

PIPE DIAMETER (mm)

VELOCITY (m/s)

PIPE FLOW (m3/s)

PIPE CLASS

DATUM R.L.

DEPTH TO INVERT

HYDRAULIC GRADE LINE

PIPE INVERT LEVELS

DESIGN SURFACE LEVELS

EXISTING SURFACE LEVELS

CHAINAGE

DRAINAGE LINE

245

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

0 5 10 15 20 25m
Horiz. Scale 1:500 - A1 (1:1000 - A3)

0 1 2 3 4 5m
Vert. Scale 1:100 - A1 (1:200 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	26-02-21	PROFILE AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER PROFILES SHEET 15

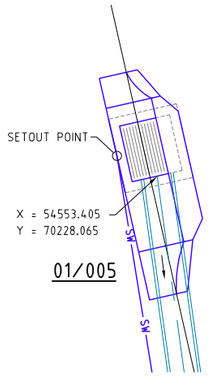
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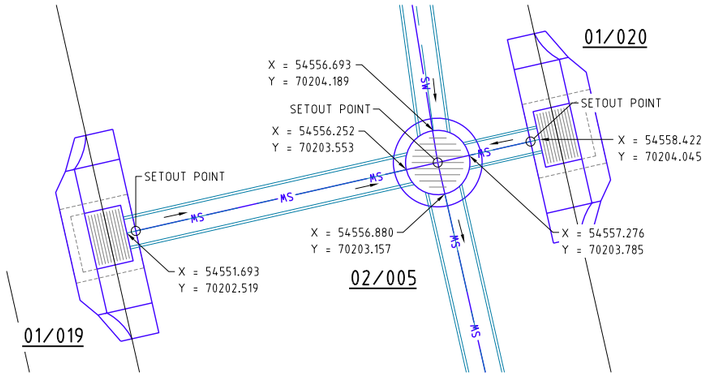
MORTONS urbansolutions
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Tel 07 5571 1099
Fax 07 5571 1088
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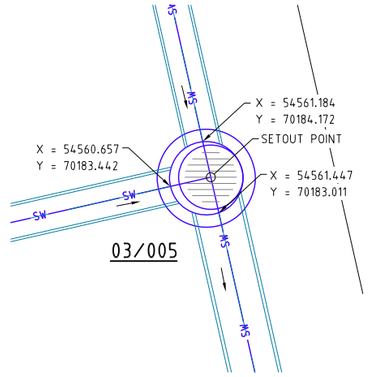
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APPROVED		NER 906726	DATE 07-02-19

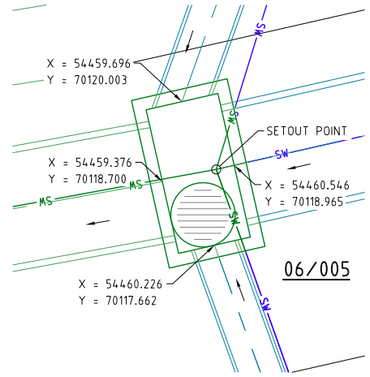
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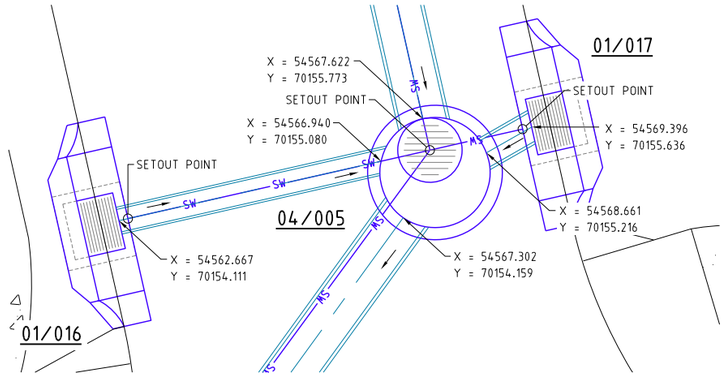
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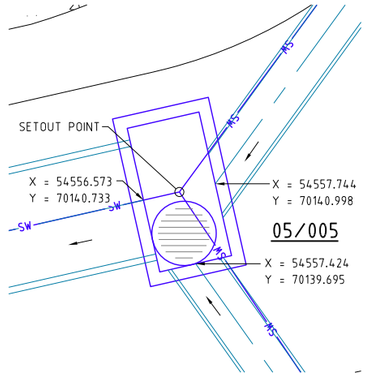


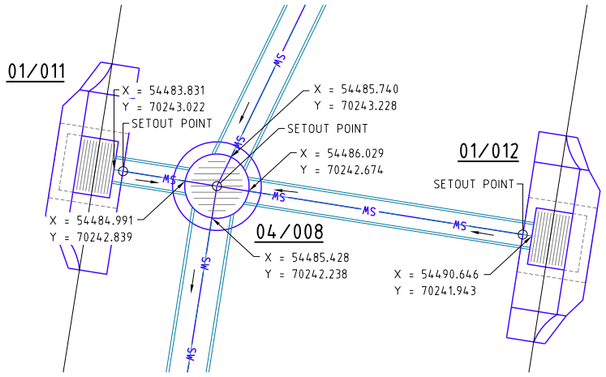


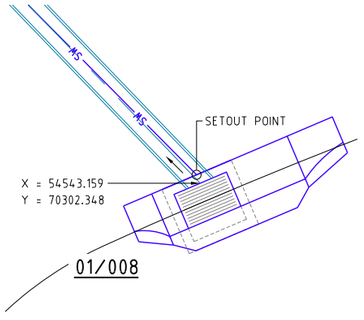


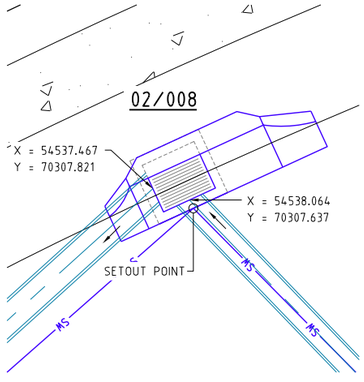


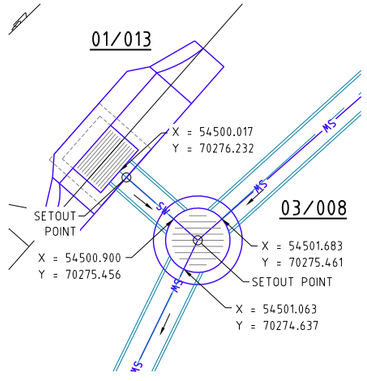


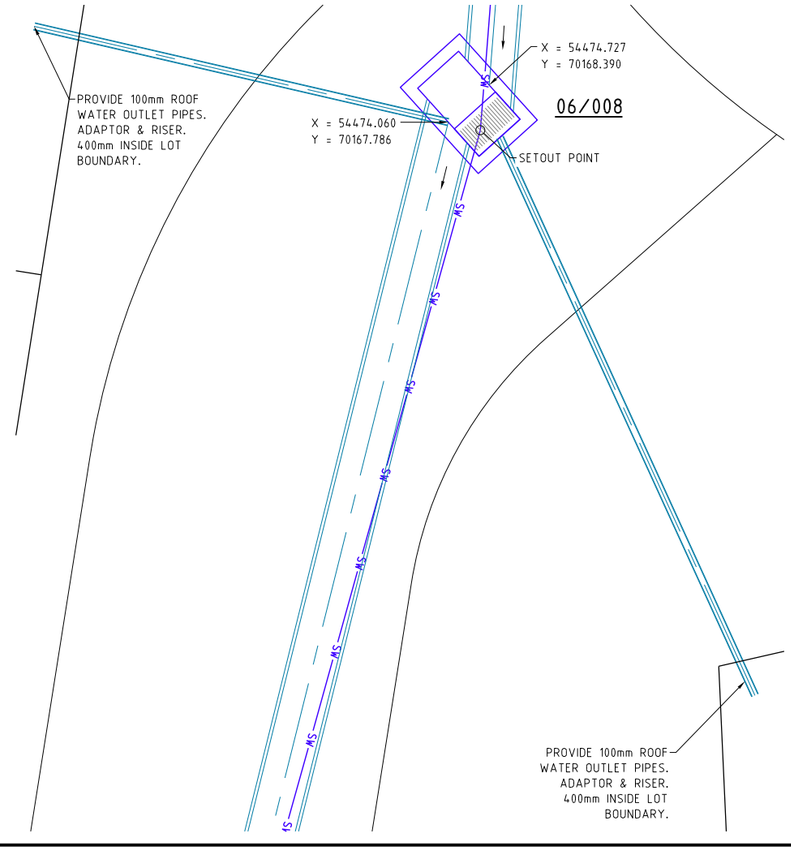


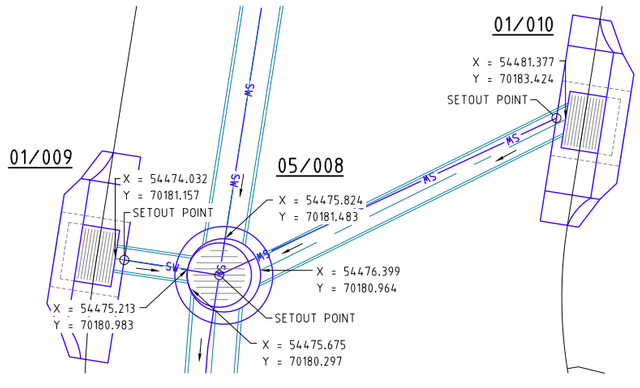


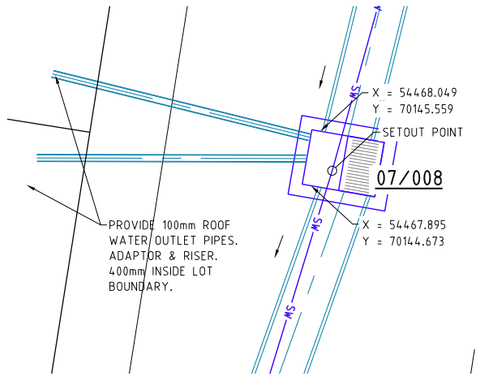












PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 0.5 1.0 1.5 2.0 2.5m
Scale 1:50 - A1 (1:100 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER
STRUCTURE DETAILS
SHEET 1 OF 6

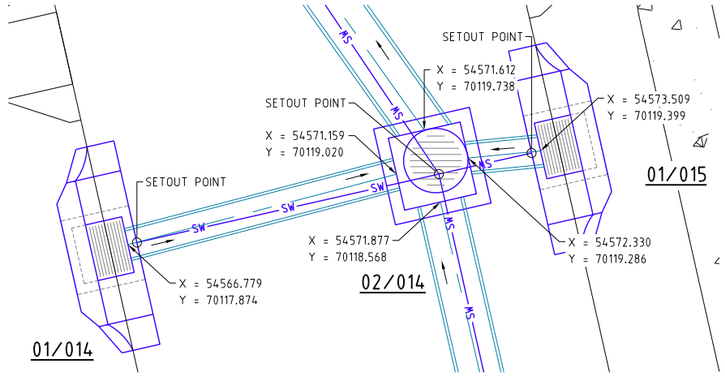
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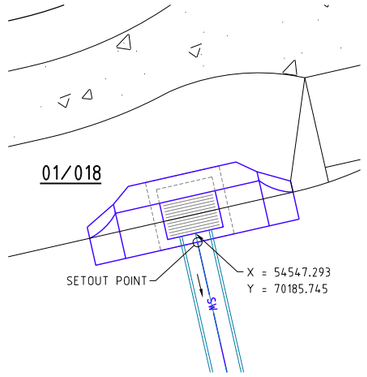
MORTONS urbansolutions
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MUS Pty Ltd T/As:
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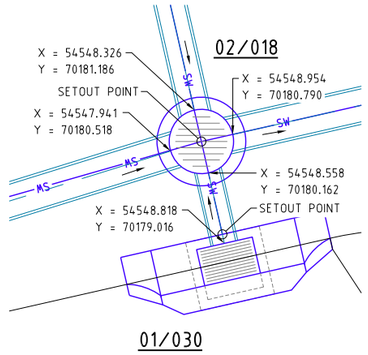
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APPROVED		NER 906726	DATE 07-02-19

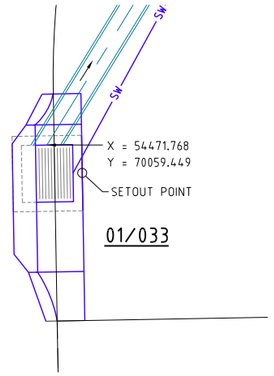
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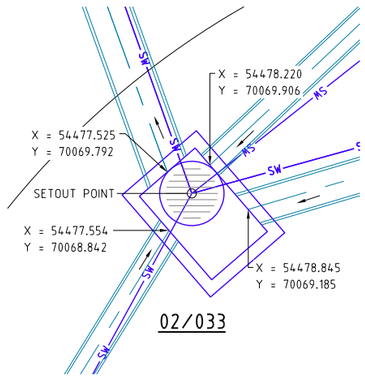
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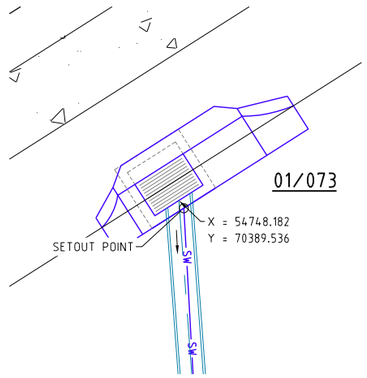


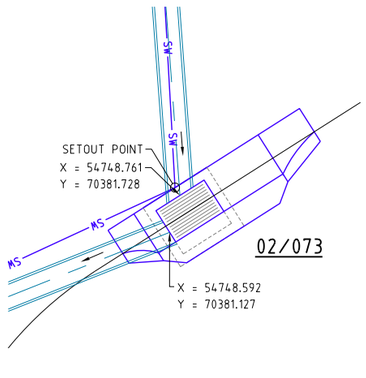


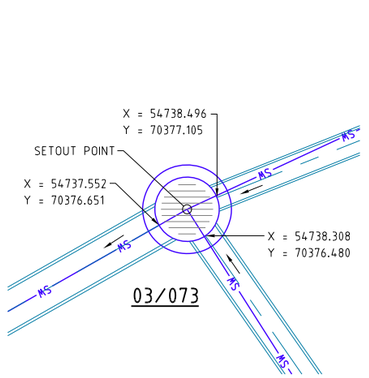


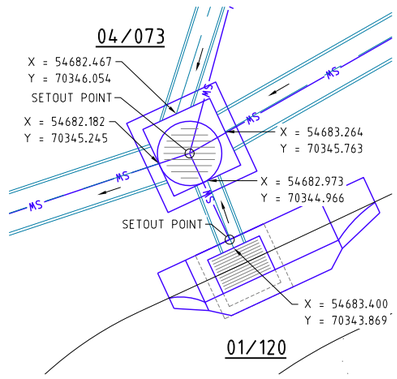


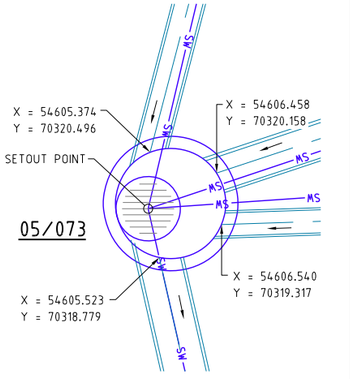


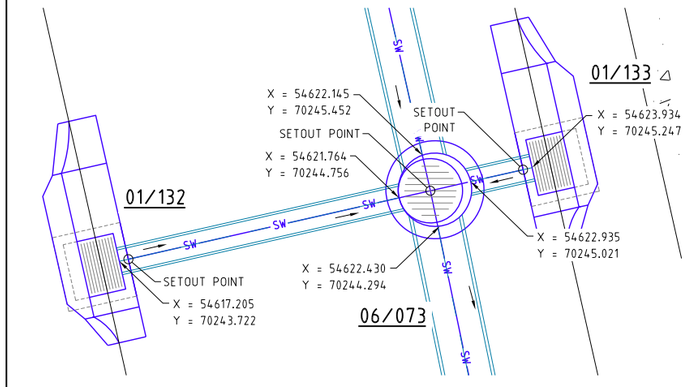


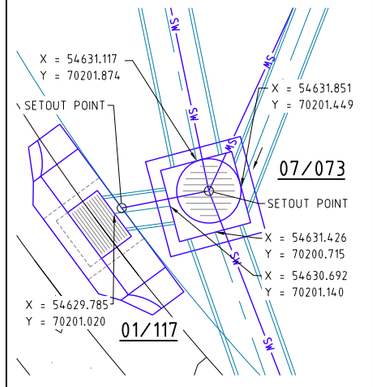


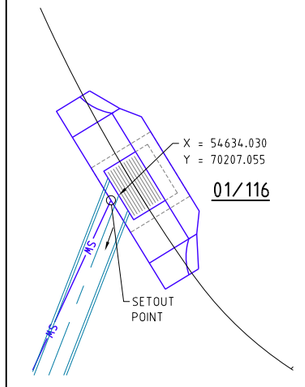


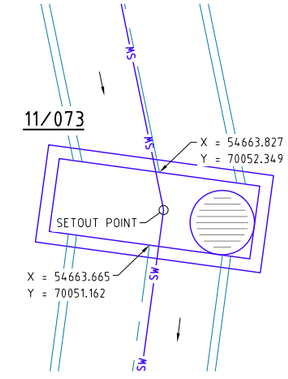


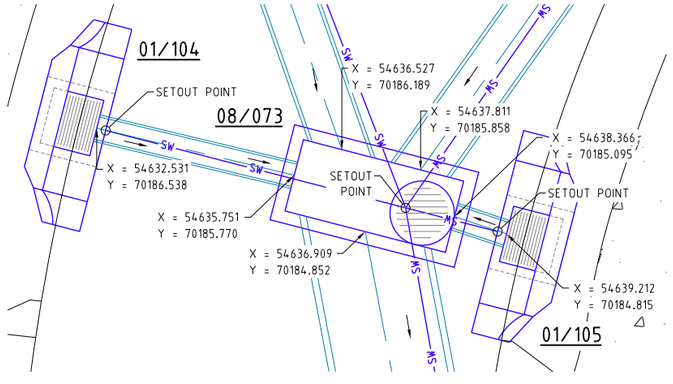


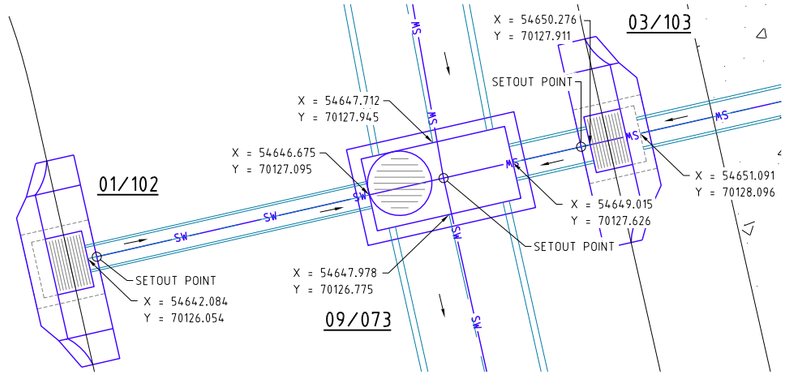


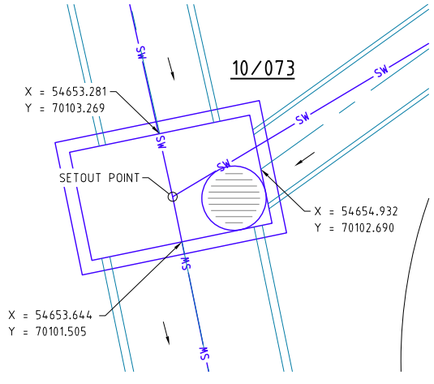












PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 0.5 1.0 1.5 2.0 2.5m
Scale 1:50 - A1 (1:100 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
A	07-02-19	PRELIMINARY CLIENT ISSUE

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LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER
STRUCTURE DETAILS
SHEET 2 OF 6

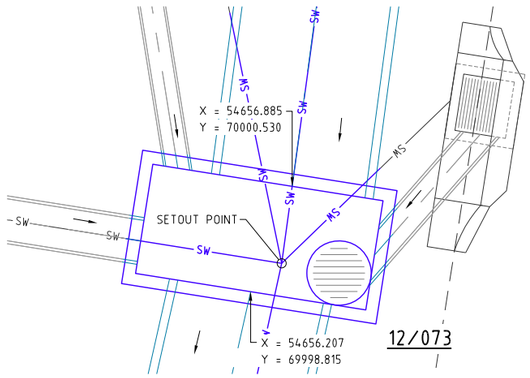
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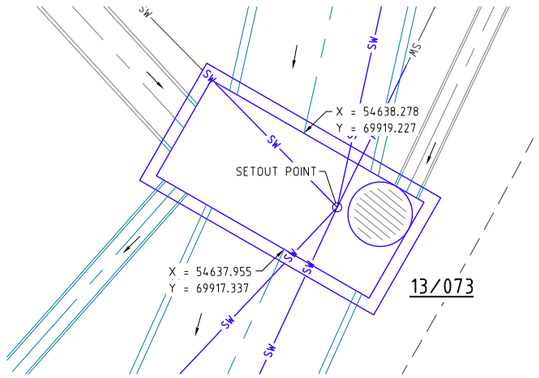
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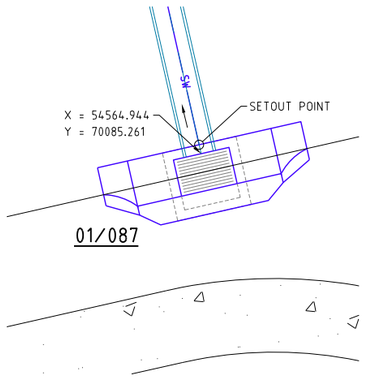
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APPROVED		NER 906726	DATE 07-02-19

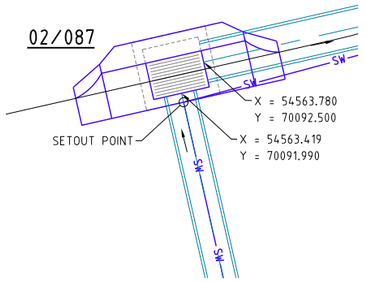
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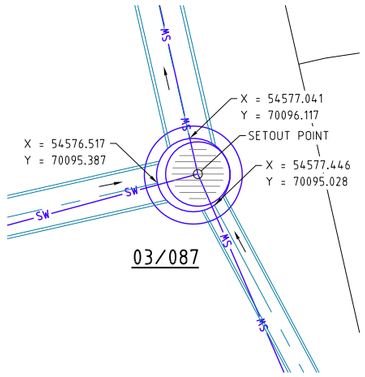
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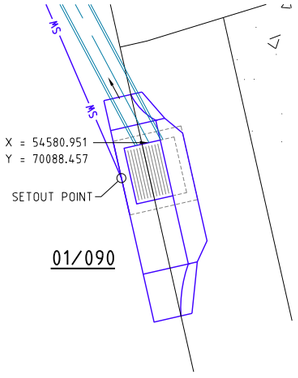


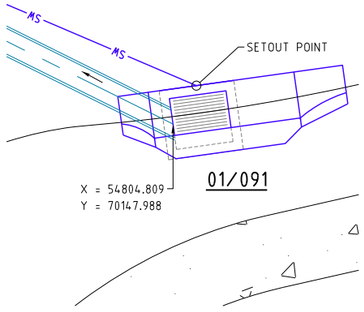


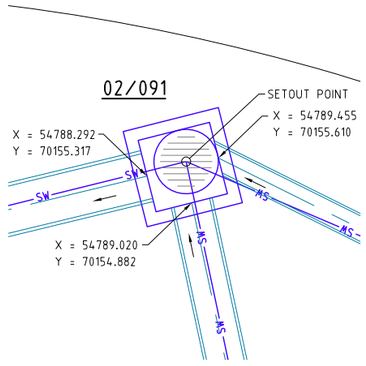


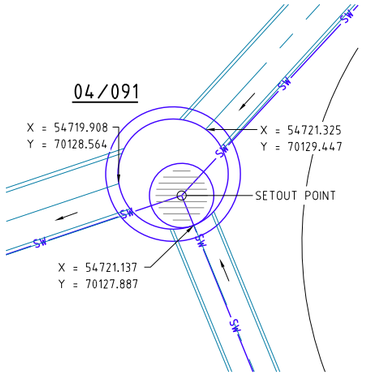


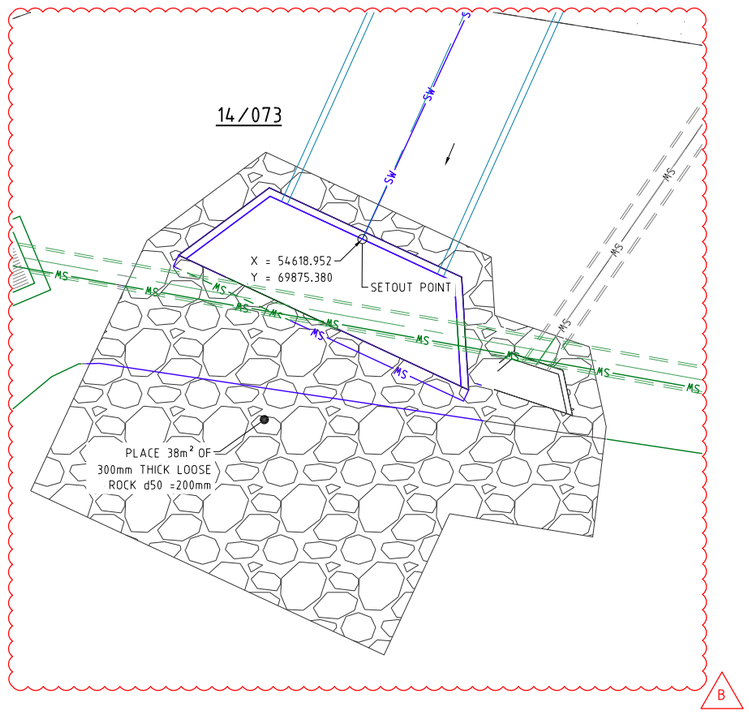


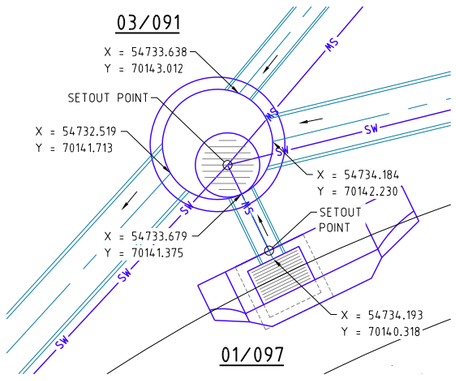


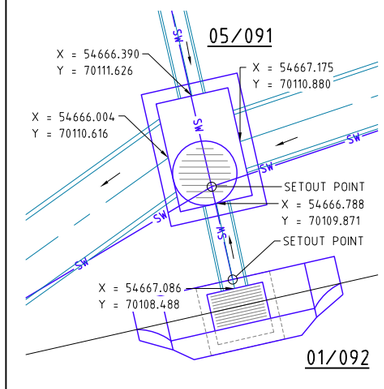


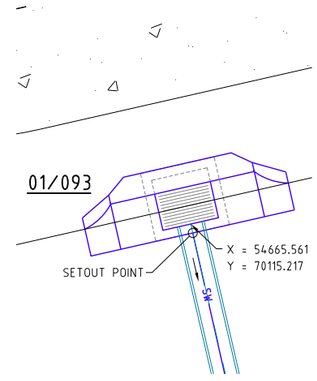


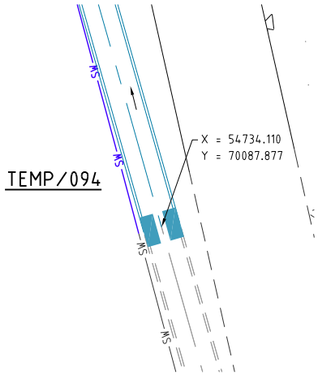


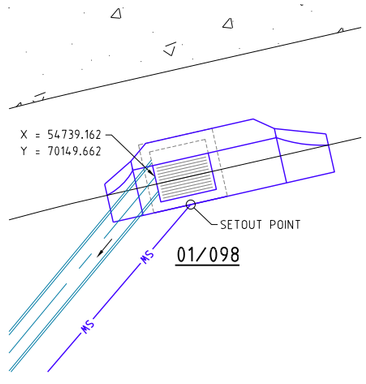


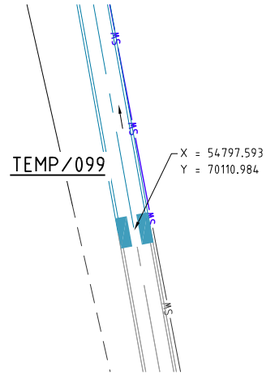












PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 0.5 1.0 1.5 2.0 2.5m
Scale 1:50 - A1 (1:100 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	30-09-20	STORM AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER STRUCTURE DETAILS SHEET 3 OF 6

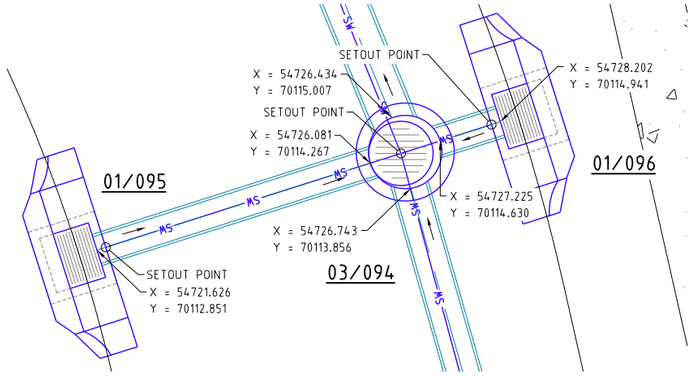
CONSTRUCTION ISSUE

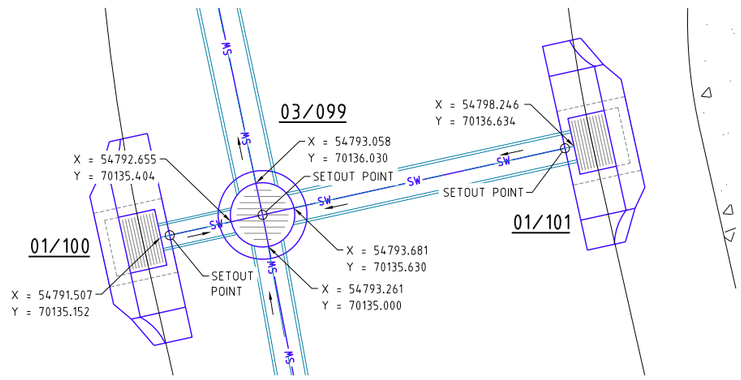
MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination
MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN 39 116 375 065
mortons@urbansolutions.net.au
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Tel 07 5571 1099
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Postal Address
PO Box 2484
Southport QLD 4215
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

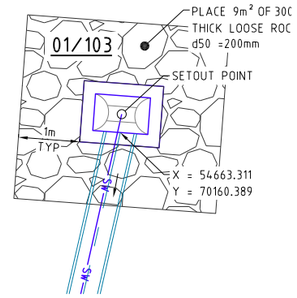
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APPROVED		NER 906726	DATE 07-02-19

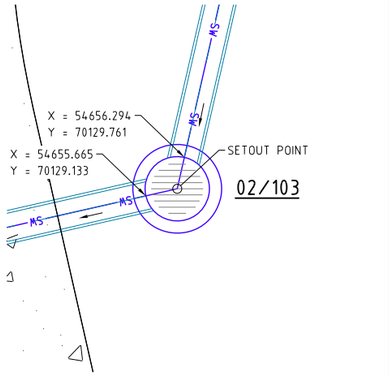
DRAWING NUMBER	AMEND.
12301-P5-1,2&3-642	B

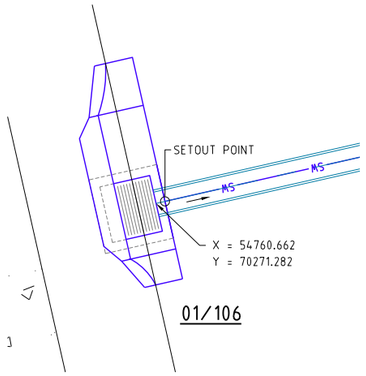
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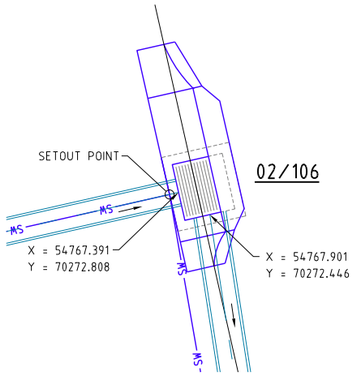


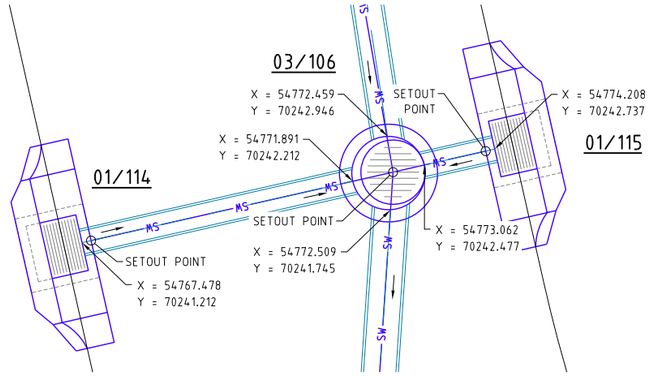


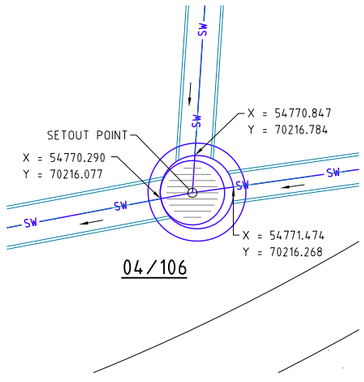


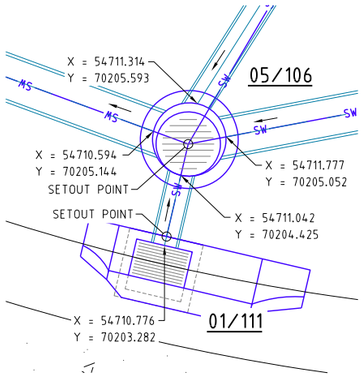


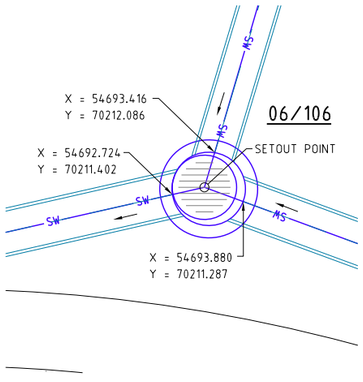


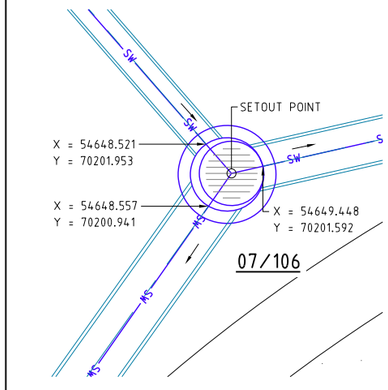


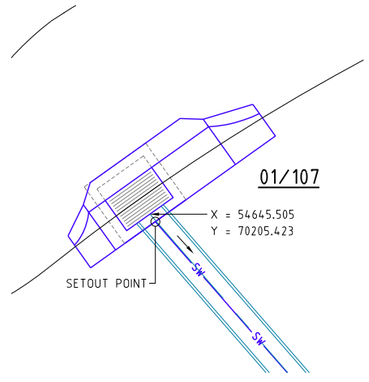


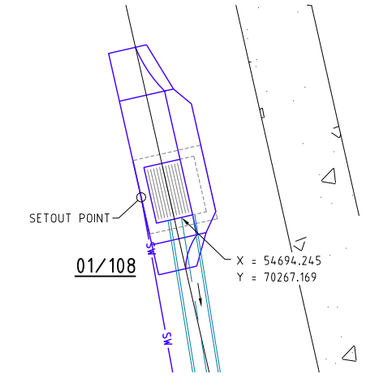


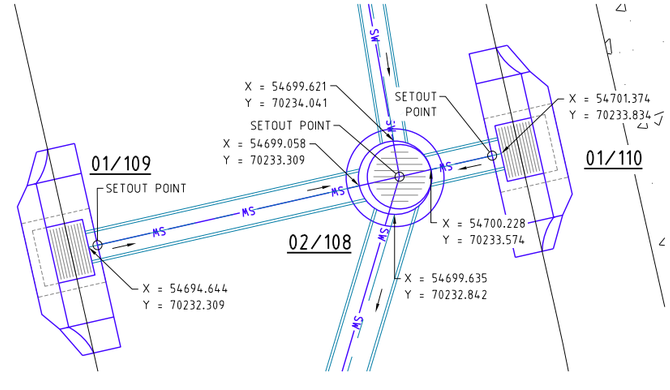


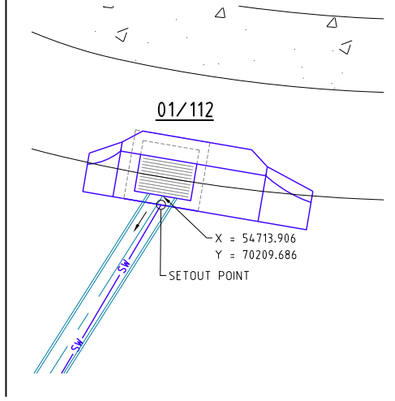


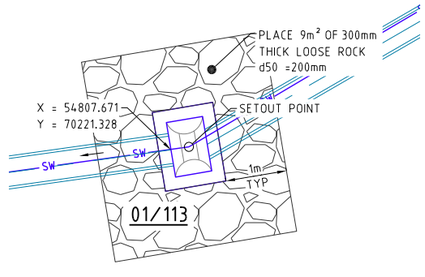












PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 0.5 1.0 1.5 2.0 2.5m

Scale 1:50 - A1 (1:100 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER STRUCTURE DETAILS SHEET 4 OF 6

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

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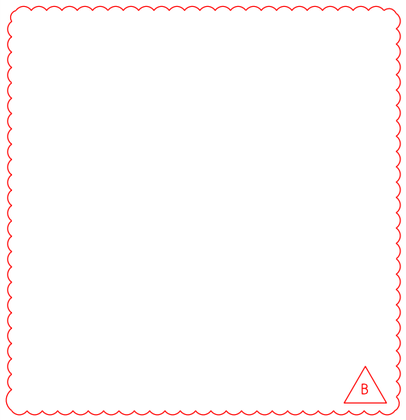
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PO Box 2484
Southport QLD 4215

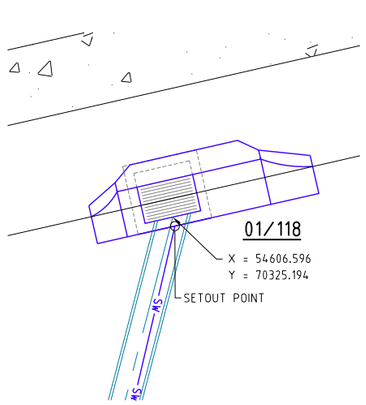
Gold Coast Office
Suite 9, 19 Short St
Southport QLD 4215

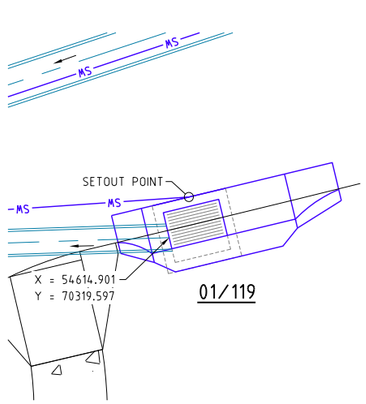
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APPROVED		NER 906726	DATE 07-02-19

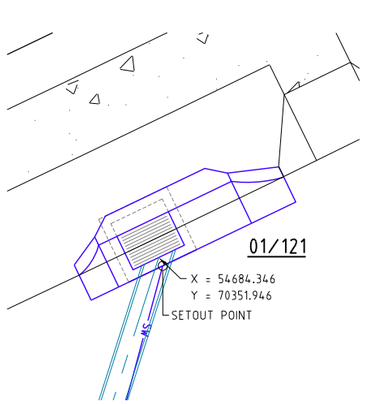
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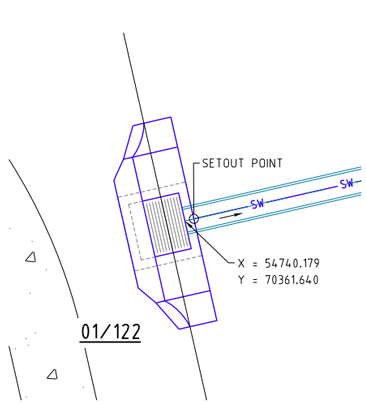
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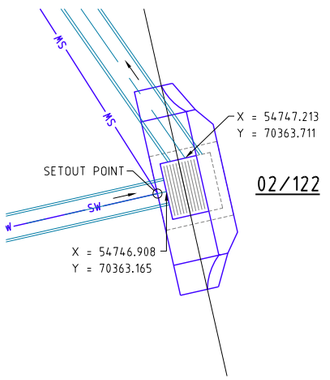


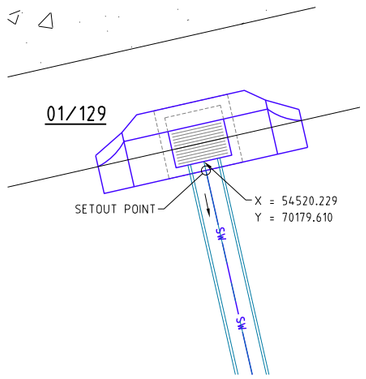


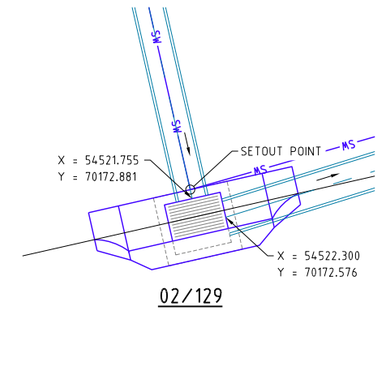


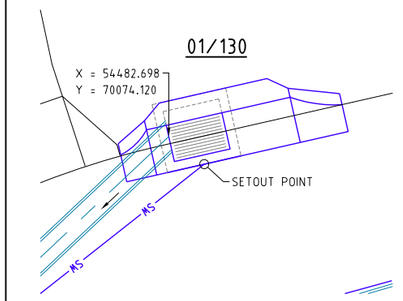


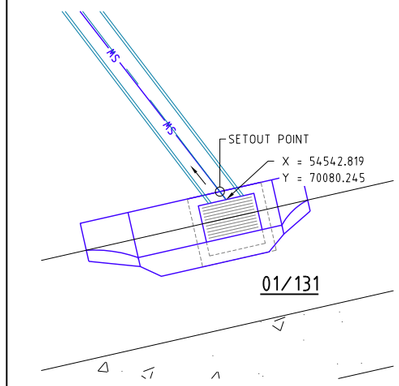


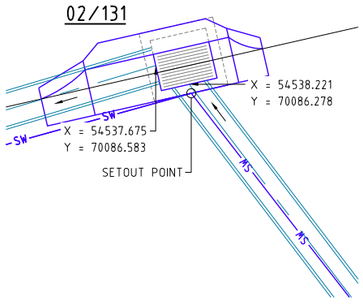


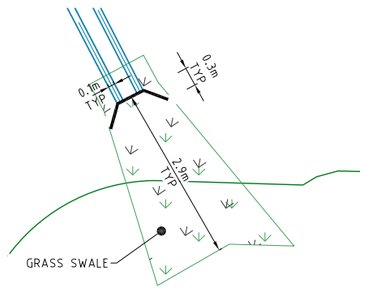


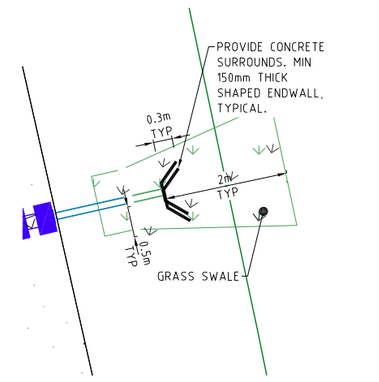


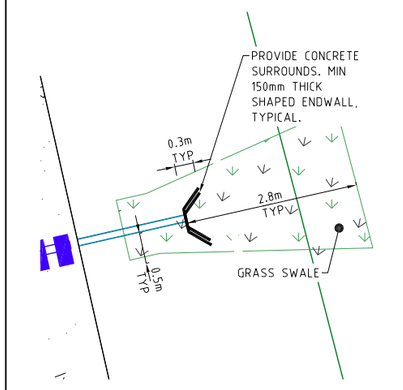


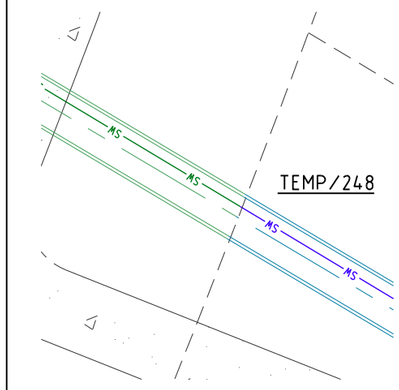


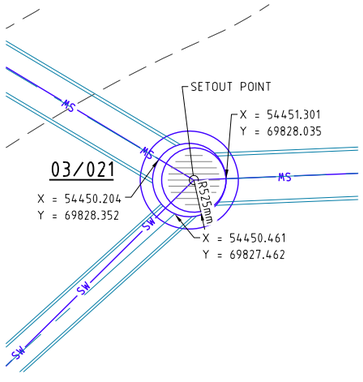


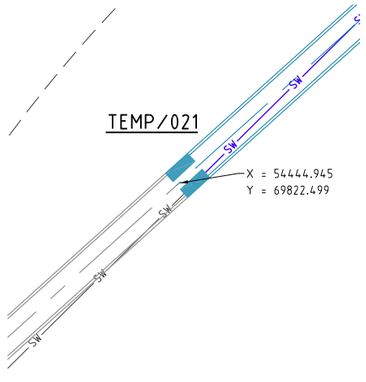


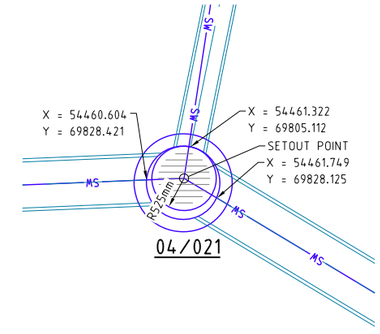


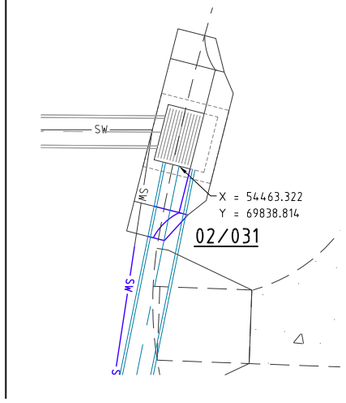


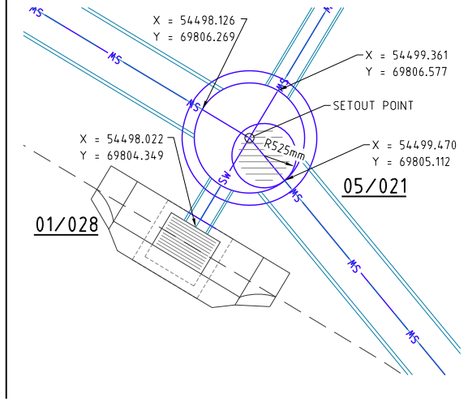












PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 0.5 1.0 1.5 2.0 2.5m
Scale 1:50 - A1 (1:100 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	07-09-21	DETAIL REMOVED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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ASSOCIATED CONSULTANTS

LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER
STRUCTURE DETAILS
SHEET 5 OF 6

CONSTRUCTION ISSUE

MORTONS urbansolutions
Urban & Regional Planning
Civil Engineering
Project Coordination

MUS Pty Ltd T/As:
Mortons-Urban Solutions
ABN: 39 116 375 065

mortons@urbansolutions.net.au
www.urbansolutions.net.au
Tel 07 5571 1099
Fax 07 5571 1088

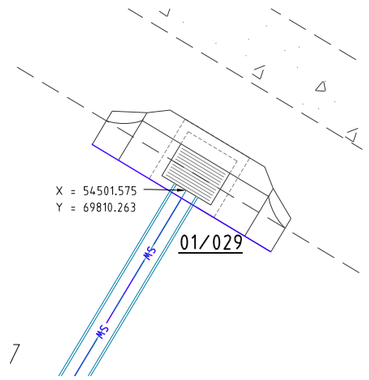
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PO Box 2484
Southport QLD 4215

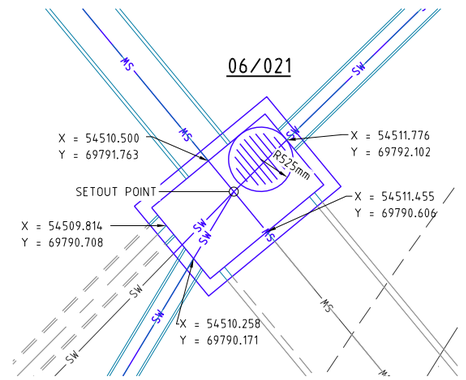
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Southport QLD 4215

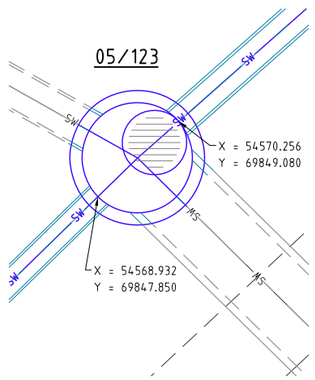
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APPROVED		NER 906726	DATE 07-02-19

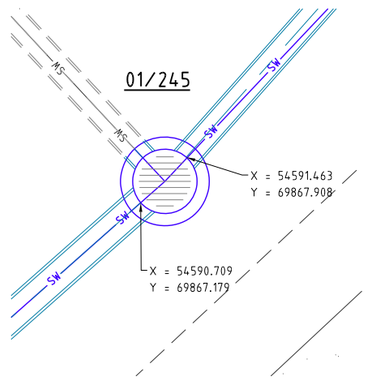
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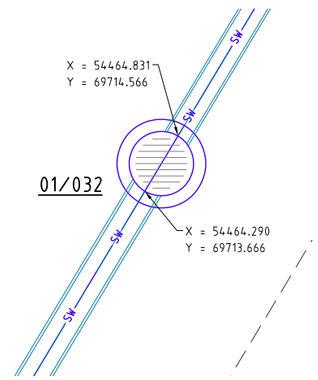
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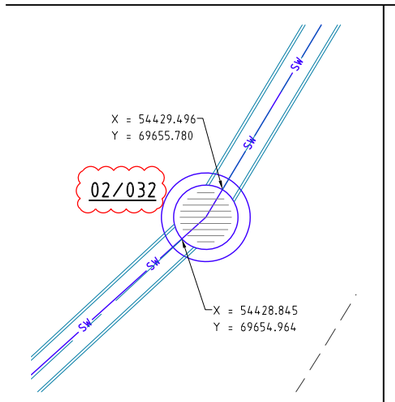


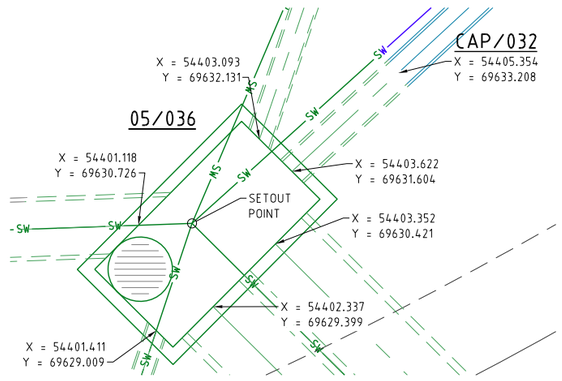


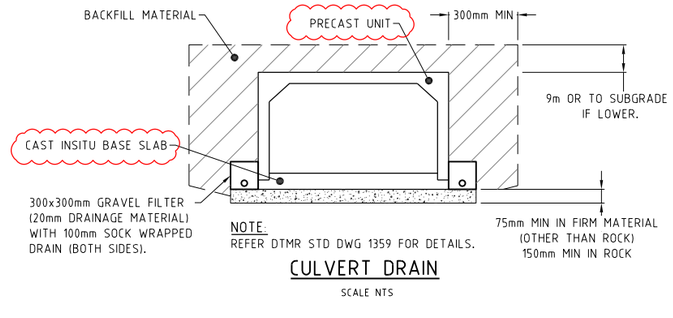










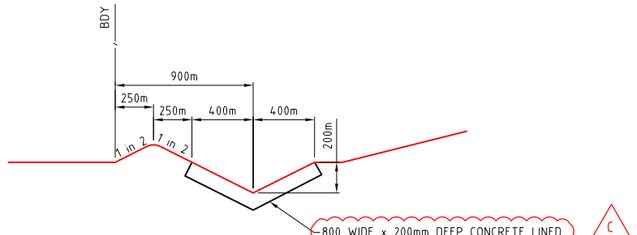


NOTE:
REFER DTMR STD DWG 1359 FOR DETAILS.

CULVERT DRAIN

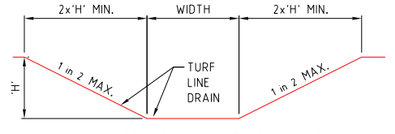
SCALE NTS

NOTE:
REFER TO STRUCTURAL ARTS DRAWINGS P5-1,2&3-S100 TO S106 FOR PIT DETAILS.



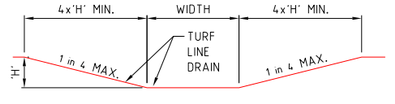
TYPICAL CONCRETE LINED CATCH DRAIN DETAIL (A)

SCALE 1:50 - A1
1:100 - A3



1 IN 2 GRASS LINED CHANNEL

SCALE 1:10 - A1 (1:20 - A3)



1 IN 4 GRASS LINED CHANNEL

SCALE 1:10 - A1 (1:20 - A3)

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 0.5 1.0 1.5 2.0 2.5m

Scale 1:50 - A1 (1:100 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

C	09-08-21	NOTES AMENDED
B	25-03-20	PITS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER STRUCTURE DETAILS SHEET 6 OF 6

CONSTRUCTION ISSUE

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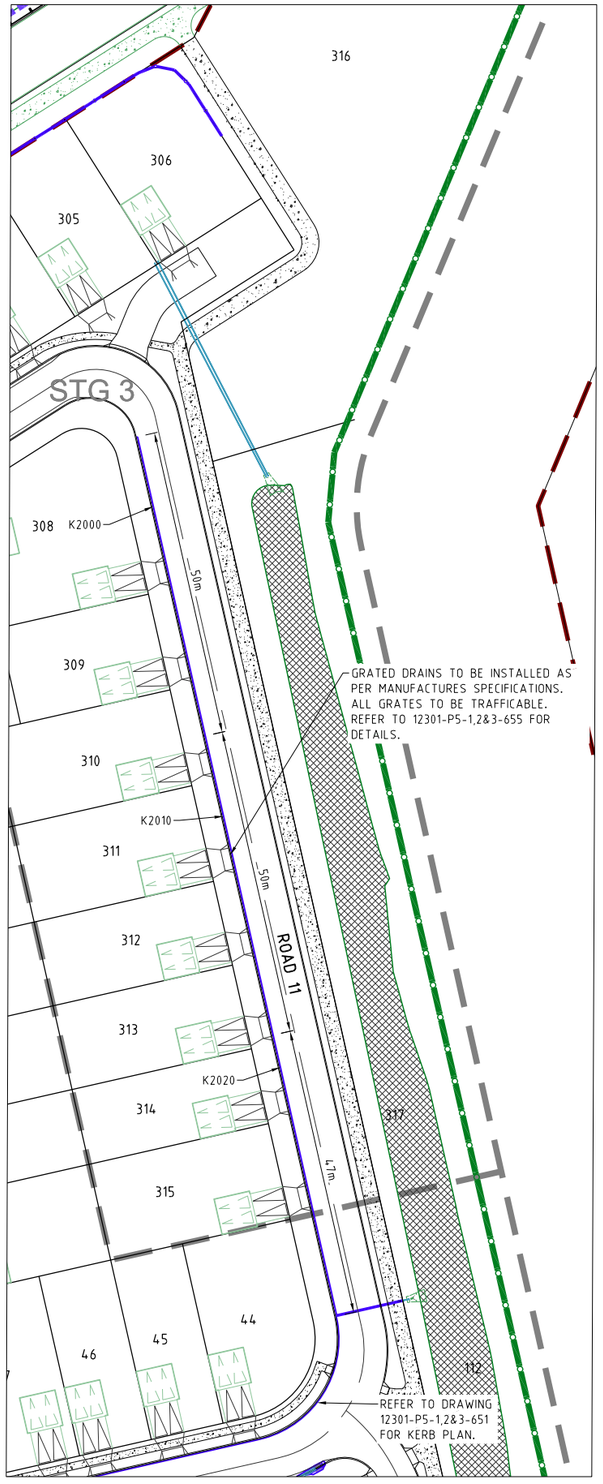
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Southport QLD 4215

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APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER
12301-P5-1,2&3-645

AMEND.
C

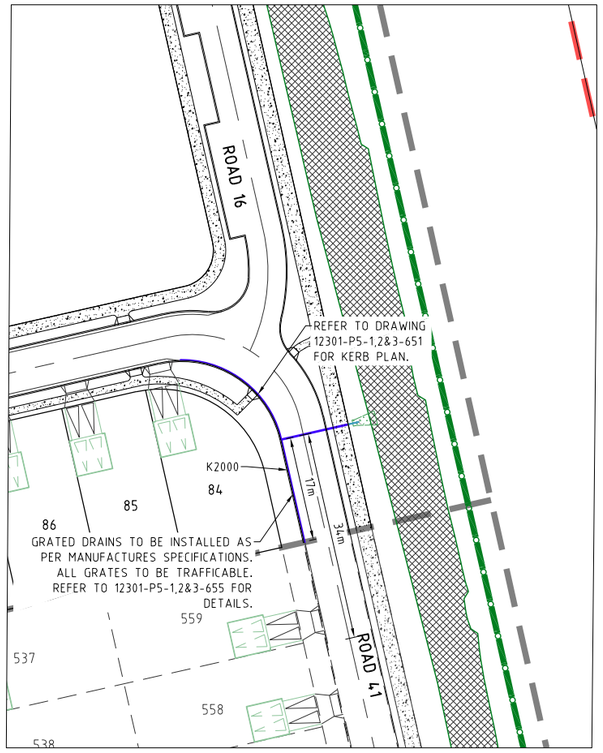
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GRATED DRAIN 1.0

NOTES:

1. GRATES TO BE CLASS D SLOTTED DUCTILE IRON OR APPROVED EQUIVALENT. GRATE DRAINS TO BE INSTALLED AS PER GRATED POLYCRETE CHANNEL, SITE INSTALLATION MANUAL. ALL GRATES TO BE TRAFFICABLE.
2. REFER TO DRAWING 12301-P5-1,2&3-655 FOR SECTIONS OF DRAINS IN ROAD AND FOOTPATHS.



GRATED DRAIN 2.0

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
A	26-08-21	ISSUE FOR INFORMATION

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ASSOCIATED CONSULTANTS

LandSurv
GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER
GRATED DRAINS
PLAN
SHEET 1 OF 2

CONSTRUCTION ISSUE

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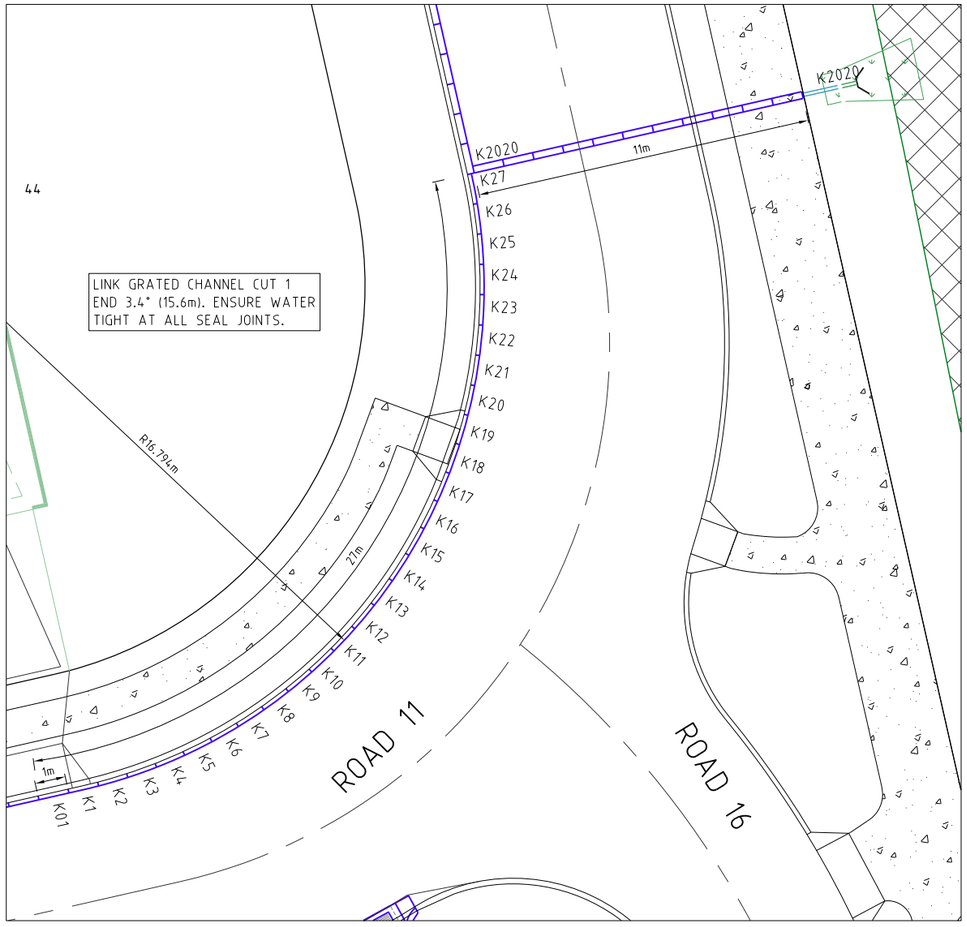
DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-650	A

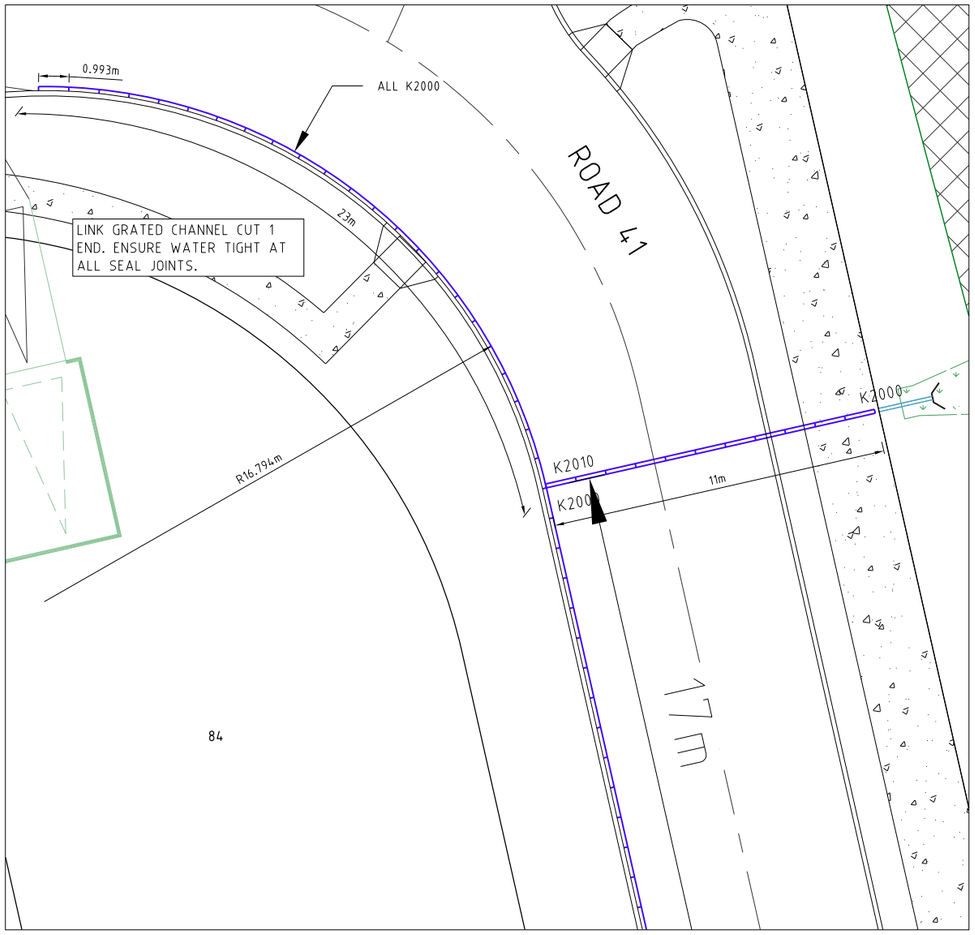
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NOTES:

1. GRATES TO BE CLASS D SLOTTED DUCTILE IRON OR APPROVED EQUIVALENT. GRATE DRAINS TO BE INSTALLED AS PER GRATED POLYCRETE CHANNEL, SITE INSTALLATION MANUAL. ALL GRATES TO BE TRAFFICABLE.
2. REFER TO DRAWING 12301-95-1,2&3-655 FOR SECTIONS OF DRAINS IN ROAD AND FOOTPATHS.



GRATED DRAIN 3.0



GRATED DRAIN 4.0

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 2.5 5 7.5 10 12.5m

Scale 1:250 - A1 (1:500 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
A	24-08-21	ISSUE FOR INFORMATION

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LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER
GRATED DRAINS
PLAN
SHEET 2 OF 2

CONSTRUCTION ISSUE

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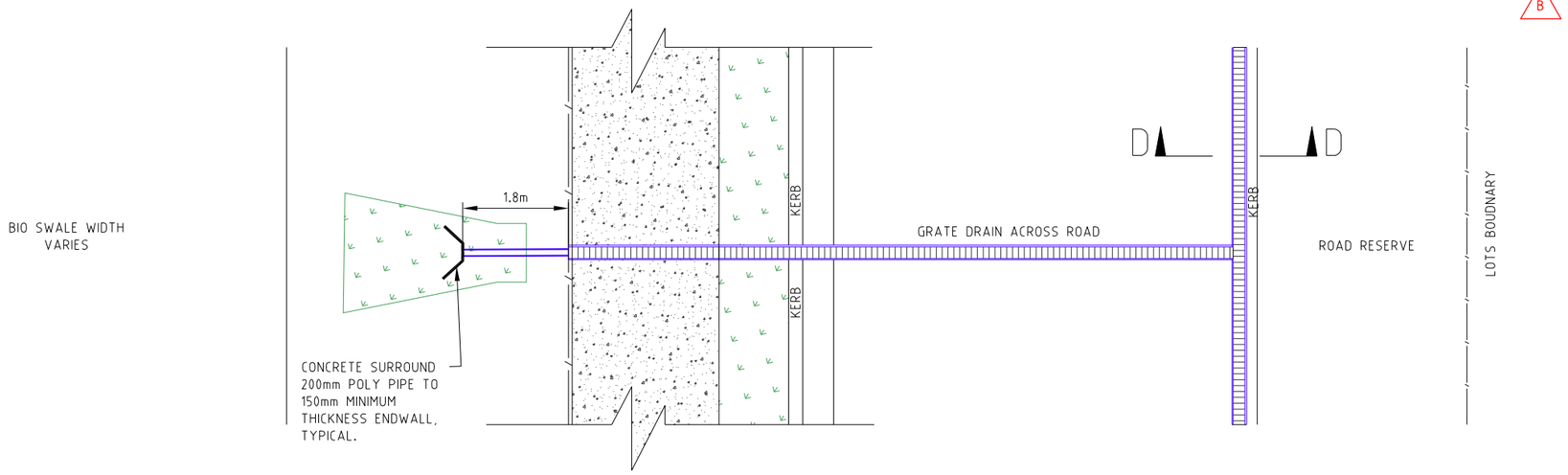
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Southport QLD 4215

DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

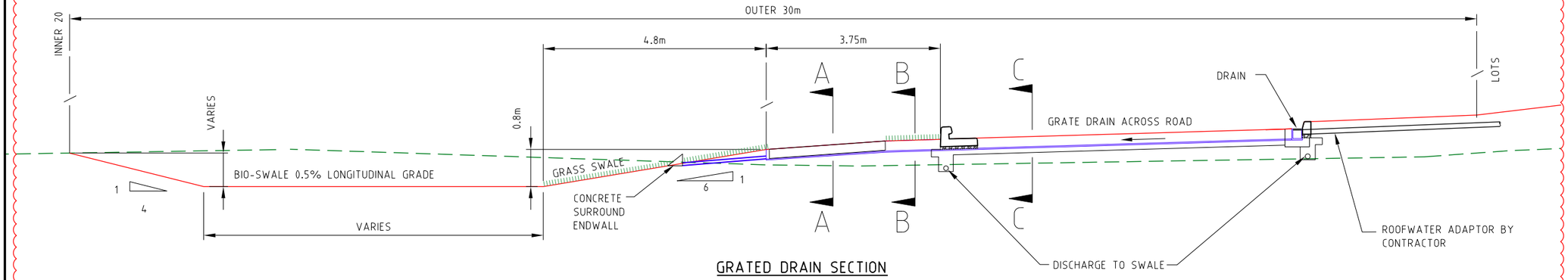
DRAWING NUMBER	AMEND.
12301-P5-1,2&3-651	A

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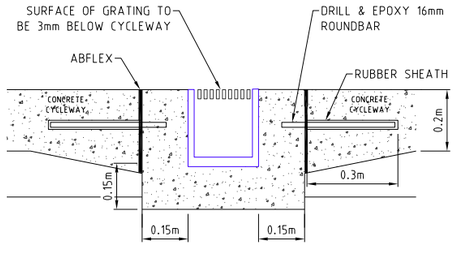
NOTE:
GRATES TO BE CLASS D SLOTTED DUCTILE IRON OR APPROVED EQUIVALENT. GRATE DRAINS TO BE INSTALLED AS PER GRATED POLYCRETE CHANNEL, SITE INSTALLATION MANUAL. ALL GRATES TO BE TRAFFICABLE.



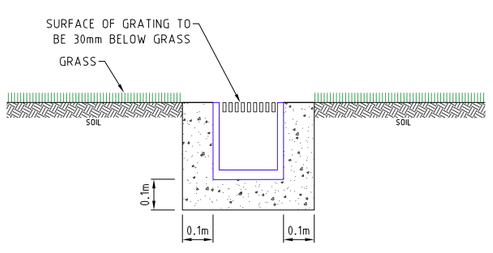
GRATED DRAIN TOP VIEW
SCALE: 1:50 @ A1
1:100 @ A3



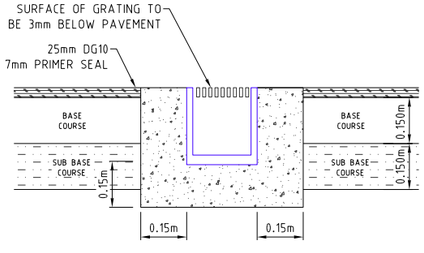
GRATED DRAIN SECTION
SCALE: 1:50 @ A1
1:100 @ A3



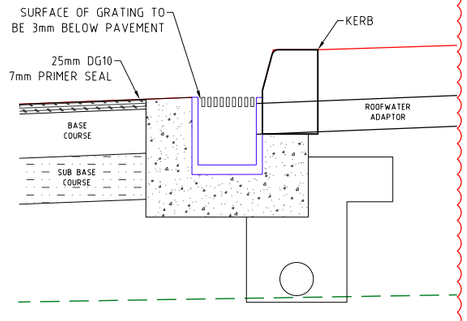
GRATED DRAIN
FOOTPATH SECTION A-A
SCALE: 1:10 @ A1
1:20 @ A3



GRATED DRAIN GRASS
SECTION B-B
SCALE: 1:10 @ A1
1:20 @ A3



GRATED DRAIN ROAD
SECTION C-C
SCALE: 1:10 @ A1
1:20 @ A3



GRATED DRAIN KERB
SECTION D-D
SCALE: 1:10 @ A1
1:20 @ A3

PROJECT NAME
KINGS FOREST
PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

0 0.1 0.2 0.3 0.4 0.5m
Scale 1:10 - A1 (1:20 - A3)
0 0.5 1.0 1.5 2.0 2.5m
Scale 1:50 - A1 (1:100 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
B	12-08-21	GRATE, KERBS, NOTES AND DETAILS AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE
STORMWATER
GRATED DRAIN SECTION
& DETAILS

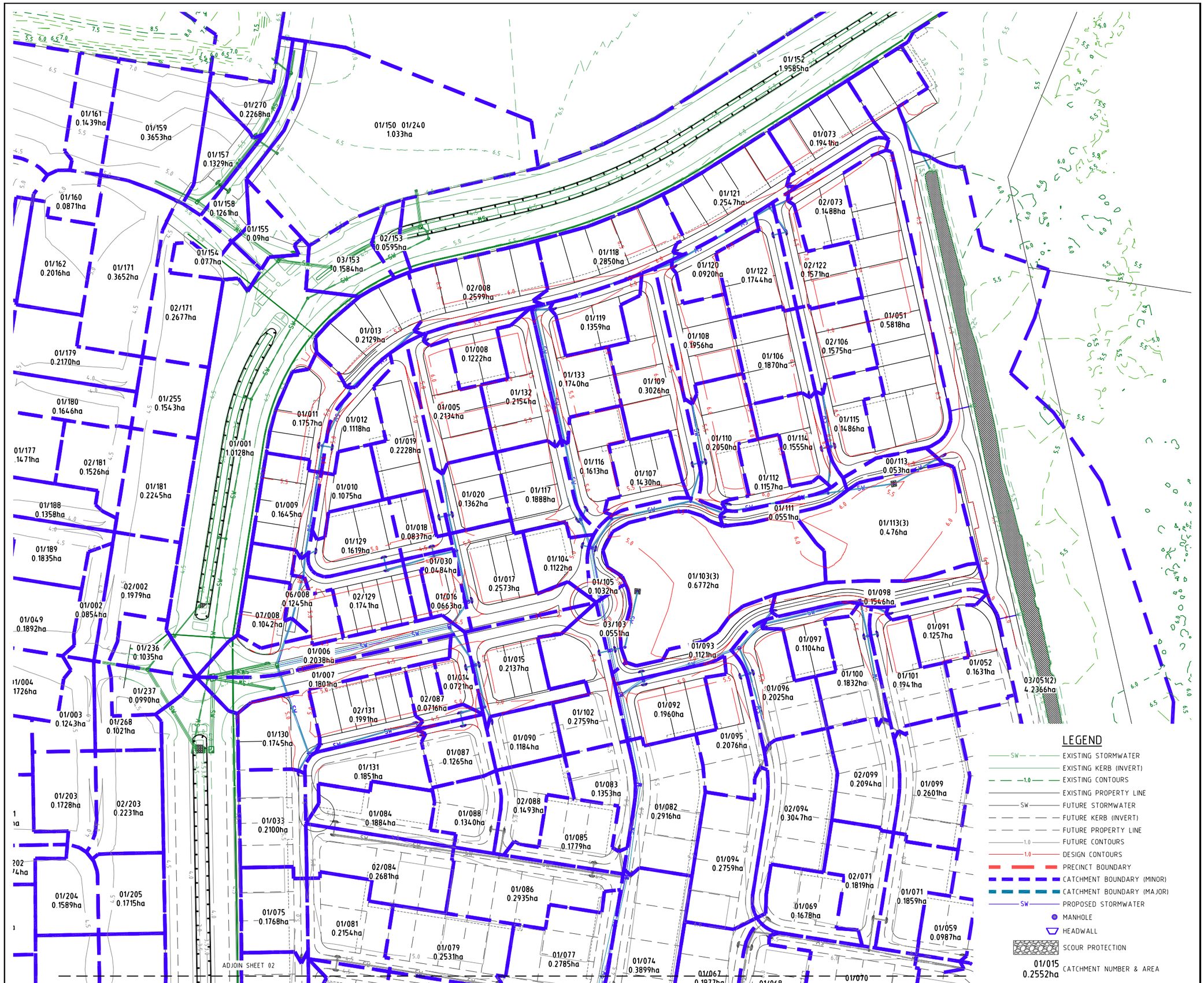
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APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-655
AMEND.: A

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PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 10 20 30 40 50m

Scale 1:1000 - A1 (1:2000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
A	07-02-19	PRELIMINARY CLIENT ISSUE

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GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER CATCHMENT PLAN SHEET 1 OF 2

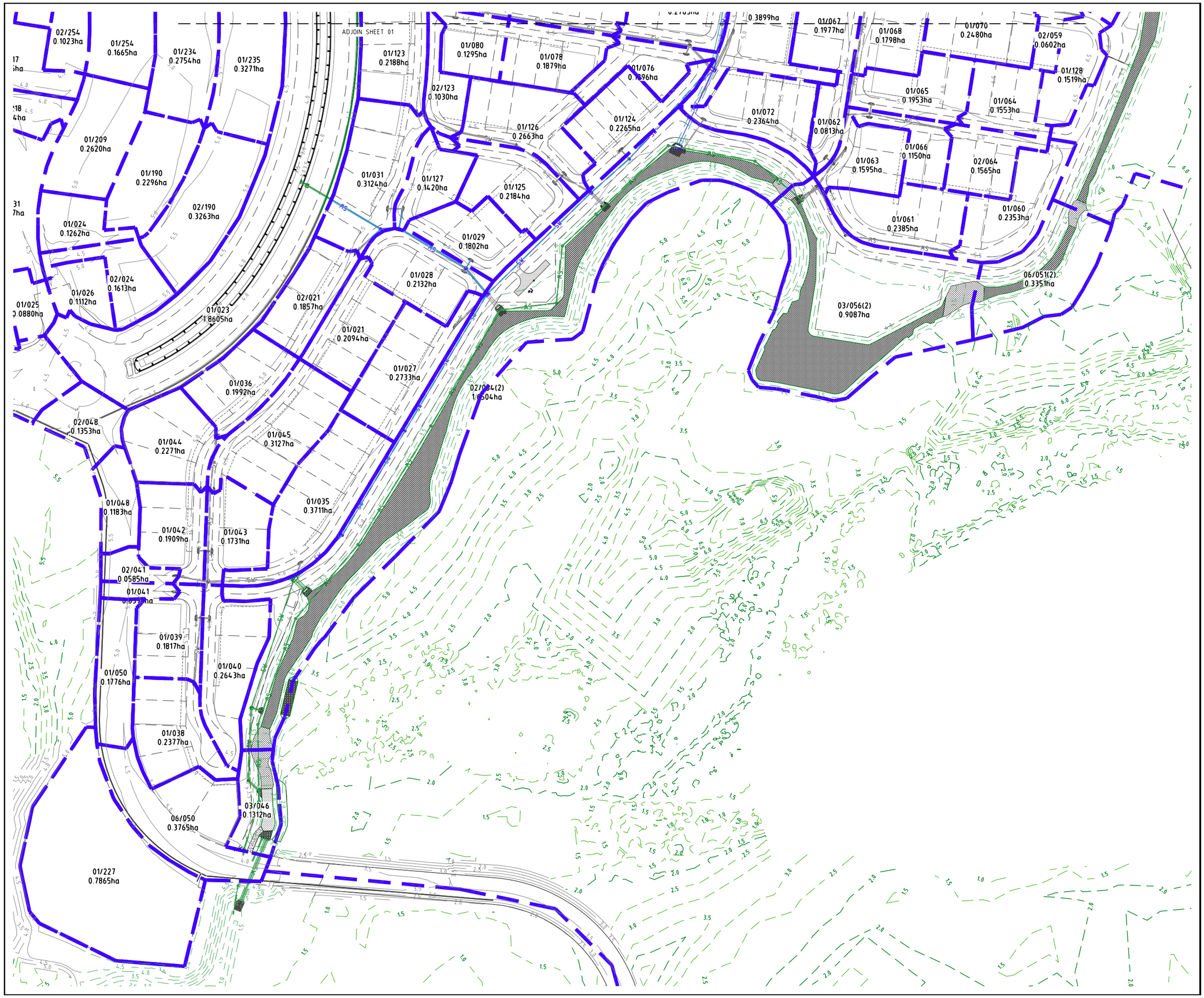
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12301-P5-1,2&3-670	A

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PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 10 20 30 40 50m

Scale 1:1000 - A1 (1:2000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

A	07-02-19	PRELIMINARY CLIENT ISSUE
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LANDSURV

GILBERT SUTHERLAND

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STORMWATER CATCHMENT PLAN SHEET 2 OF 2

CONSTRUCTION ISSUE

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12301-P5-1,2&3-671	A

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0.2 ARI (Q5) MINOR FLOW - 12D DYNAMIC DRAINAGE RESULTS * REFER TO IFD TABLE FOR MAXIMUM INTENSITY DURING STORM

NOTE: NEGATIVE FLOW VALUES INDICATE REVERSE FLOWS

NODE FROM	NODE TO	NODE TYPE	CATCHMENT AREA A1 HA	CATCHMENT AREA A2 HA	CATCHMENT AREA A3 HA	RAINFALL VOLUME* CRITICAL STORM	RAINFALL VOLUME* INTENSITY MM/HR	RAINFALL Coef 10 YR	RAINFALL Coef CURRENT Storm	CATCHMENT FLOW A1 HA	CATCHMENT FLOW A2 HA	CATCHMENT FLOW A3 HA	CATCHMENT FLOW CRITICAL ARI MIN.	APPROACH FLOW GRADE %	APPROACH FLOW FLOW L/S	APPROACH FLOW FLOW WIDTH	APPROACH FLOW FLOW DxV	FLOW AT PIT CAPTURED L/S	FLOW AT PIT BYPASS L/S	FLOW AT PIT BYPASS DxV	FLOW AT PIT BYPASS NODE	PIT GRADE %	PIT GRATE RL	HGL PIT RL	HGL PIPE U/S RL	HGL PIPE D/S RL	PIPE GRADE %	PIPE FLOW M3/S	HEADLOSSES COEFFICIENT Ku	HEADLOSSES COEFFICIENT Kw	HEADLOSS Ku	HEADLOSS Kw	CAPACITY RATIO	VELOCITY M/S	NODE
01/5	02/5	INLET GULLY ON GRADE	0.213			25	43.0	0.819	0.801	0.097			25		97	1.05	0.02	86	7	0.02	01/20		4.716	4.35	4.26	4.24	0.07	0.08	9.7	0.0	0.1	0.0	0.29	1.04	01/5
02/5	03/5	MANHOLE 1050mm DIA											25		0			0					4.652	4.24	4.23	4.13	0.50	0.23	1.3	0.0	0.1	0.0	0.65	1.55	02/5
03/5	04/5	MANHOLE 1200mm DIA											25		0			0					4.737	4.13	4.13	4.06	0.22	0.42	0.6	0.0	0.0	0.0	0.76	1.13	03/5
04/5	05/5	MANHOLE 1800mm DIA											25		0			0					4.348	4.06	4.03	3.95	0.40	0.55	0.8	0.0	0.0	0.0	0.95	1.51	04/5
05/5	06/5	CUSTOM MANHOLE 2400x1200 (STRUCTURAL ENG. TO DESIGN)											25		0			0					4.579	3.95	3.95	3.87	0.08	0.81	0.7	0.0	0.0	0.0	0.83	0.75	05/5
06/5	01/22	CUSTOM MANHOLE 2400x1200 (STRUCTURAL ENG. TO DESIGN)											25		0			0					4.191	3.87	3.81	3.69	0.32	1.67	0.6	0.0	0.1	0.0	1.72	1.55	06/5
01/8	02/8	INLET GULLY ON GRADE	0.122			25	43.0	0.819	0.801	0.056			25		56	0.00	0.00	56	0	0.00	01/5		5.301	4.94	4.89	4.88	0.11	0.05	7.8	0.0	0.1	0.0	0.21	0.99	01/8
02/8	03/8	INLET GULLY ON GRADE	0.260			25	43.0	0.819	0.801	0.118			25		135	1.69	0.03	109	19	0.03	01/13		5.287	4.88	4.80	4.58	0.45	0.16	4.3	0.0	0.1	0.0	1.01	1	02/8
03/8	04/8	MANHOLE 1050mm DIA											25		0			0					5.092	4.58	4.58	4.42	0.43	0.25	0.7	0.0	0.0	0.0	0.9	1.13	03/8
04/8	05/8	MANHOLE 1050mm DIA											25		0			0					4.913	4.42	4.39	4.14	0.40	0.37	0.7	0.0	0.0	0.0	1.28	1.44	04/8
05/8	06/8	MANHOLE 1200mm DIA											25		0			0					4.760	4.14	4.13	4.10	0.27	0.48	0.3	0.0	0.0	0.0	0.79	1.39	05/8
06/8	07/8	CUSTOM 900x1500 PIT C/W GRATED INLET 900x600	0.125			25	43.0	0.819	0.801	0.057			25		57	0.00	0.00	57	0	0.00	02/129		4.963	4.10	4.07	3.99	0.35	0.53	0.8	0.0	0.0	0.0	0.87	1.62	06/8
07/8	06/5	CUSTOM 900x1200 PIT C/W GRATED INLET 900x600	0.104			25	43.0	0.819	0.801	0.047			25		47	0.00	0.00	47	0	0.00	01/6		4.669	3.99	3.95	3.87	0.28	0.57	0.7	0.0	0.1	0.0	0.43	2.02	07/8
06/5	01/22	CUSTOM MANHOLE 2400x1200 (STRUCTURAL ENG. TO DESIGN)											25		0			0					4.191	3.87											06/5
01/9	05/8	INLET GULLY IN SAG	0.165			25	43.0	0.819	0.801	0.075			25		76	0.27	0.00	75	0	0.00	02/129		4.712	4.22	4.18	4.14	2.42	0.08	6.6	0.0	0.1	0.0	0.15	1.91	01/9
05/8	06/8	MANHOLE 1200mm DIA											25		0			0					4.760	4.14											05/8
01/10	05/8	INLET GULLY IN SAG	0.108			25	43.0	0.819	0.801	0.049			25		49	0.00	0.00	49	0	0.00	01/129		4.720	4.19	4.13	4.14	-0.08	0.06	9.7	0.0	0.2	0.0	0.17	1.43	01/10
05/8	06/8	MANHOLE 1200mm DIA											25		0			0					4.760	4.14											05/8
01/11	04/8	INLET GULLY IN SAG	0.176			25	43.0	0.819	0.801	0.080			25		90	0.39	0.00	88	1	0.00	01/9		4.866	4.54	4.52	4.42	6.32	0.09	6.2	0.0	0.1	0.0	0.19	1.64	01/11
04/8	05/8	MANHOLE 1050mm DIA											25		0			0					4.913	4.42											04/8
01/12	04/8	INLET GULLY IN SAG	0.112			25	43.0	0.819	0.801	0.051			25		51	0.00	0.00	51	0	0.00	01/10		4.866	4.47	4.43	4.42	0.10	0.05	6.0	0.0	0.1	0.0	0.2	1.17	01/12
04/8	05/8	MANHOLE 1050mm DIA											25		0			0					4.913	4.42											04/8
01/13	03/8	INLET GULLY ON GRADE	0.213			25	43.0	0.819	0.801	0.097			25		112	1.43	0.02	95	13	0.03	01/11		5.046	4.69	4.67	4.58	5.87	0.09	9.1	0.0	0.1	0.0	0.11	1.65	01/13
03/8	04/8	MANHOLE 1050mm DIA											25		0			0					5.092	4.58											03/8
01/14	02/14	INLET GULLY IN SAG	0.072			25	43.0	0.819	0.801	0.033			25		34	0.00	0.00	34	0	0.00	01/7		4.265	3.99	3.98	3.98	0.02	0.04	7.0	0.0	0.1	0.0	0.06	0.97	01/14
02/14	05/5	CUSTOM 1200x1200 MANHOLE											25		0			0					4.311	3.98	3.97	3.95	0.05	0.26	0.8	0.0	0.0	0.0	0.52	1.12	02/14
05/5	06/5	CUSTOM MANHOLE 2400x1200 (STRUCTURAL ENG. TO DESIGN)											25		0			0					4.579	3.95											05/5
01/15	02/14	INLET GULLY IN SAG	0.214			25	43.0	0.819	0.801	0.097			25		103	0.49	0.00	99	1	0.01	01/14		4.265	4.06	4.01	3.98	2.00	0.10	7.0	0.0	0.1	0.0	0.24	1.18	01/15
02/14	05/5	CUSTOM 1200x1200 MANHOLE											25		0			0					4.311	3.98											02/14
01/16	04/5	INLET GULLY IN SAG	0.066			25	43.0	0.819	0.801	0.030			25		32	0.00	0.00	32	0	0.00	01/6		4.301	4.07	4.06	4.06	0.02	0.04	7.0	0.0	0.1	0.0	0.1	0.56	01/16
04/5	05/5	MANHOLE 1800mm DIA											25		0			0					4.348	4.06											04/5
01/17	04/5	INLET GULLY IN SAG	0.257			25	43.0	0.819	0.801	0.117			25		117	0.79	0.01	110	2	0.01	01/16		4.301	4.14	4.06	4.06	0.06	0.11	7.0	0.0	0.1	0.0	0.11	1.85	01/17
04/5	05/5	MANHOLE 1800mm DIA											25		0			0					4.348	4.06											04/5
01/18	02/18	INLET GULLY IN SAG	0.084			25	43.0	0.819	0.801	0.038			25		42	0.00	0.00	42	0	0.00	01/30		4.483	4.18	4.17	4.17	0.00	0.06	9.7	0.0	0.1	0.0	0.11	0.89	01/18
02/18	03/5	MANHOLE 1050mm DIA											25		0			0					4.530	4.17	4.16	4.13	0.23	0.20	0.6	0.0	0.0	0.0	0.67	0.9	02/18
03/5	04/5	MANHOLE 1200mm DIA											25		0			0					4.737	4.13											03/5
01/19	02/5	INLET GULLY IN SAG	0.223			25	43.0	0.819	0.801	0.101			25		101	0.49	0.01	98	3	0.01	01/18		4.605	4.32	4.29	4.24	0.87	0.10	6.8	0.0	0.1	0.0	0.24	0.92	01/19
02/5	03/5	MANHOLE 1050mm DIA											25		0			0					4.652	4.24											02/5
01/20	02/5	INLET GULLY IN SAG	0.136			25	43.0	0.819	0.801	0.062			25		67	0.19	0.00	67	0	0.00	01/17		4.605	4.31	4.30	4.24	3.29	0.06	7.9	0.0	0.1	0.0	0.16	1.46	01/20
02/5	03/5	MANHOLE 1050mm DIA											25		0			0					4.652	4.24											02/5
01/21	02/21	INLET GULLY ON GRADE	0.209			25	43.0	0.819	0.801	0.095			25		95	1.06	0.02	85	8	0.02	01/28		4.318	3.62	3.54	3.41	2.06	0.08	7.9	0.0	0.1	0.0	0.34	1.16	01/21
02/21	03/21	INLET GULLY ON GRADE	0.186			25	43.0	0.819	0.801	0.084			25		84	0.66	0.02	77	6	0.01	01/31		4.318	3.41	3.41	3.37	0.19	0.16	4.8	0.0	0.1	0.0	0.59	1.38	02/21
03/21	04/21	MANHOLE 1200mm DIA											25		0			0					4.266	3.37	3.37	3.37	-0.01	0.29	2.1	0.0	0.0	0.0	0.82	0.66	03/21
04/21	05/21	MANHOLE 1200mm DIA											25		0			0					4.253	3.37	3.37	3.38	-0.03	0.40	1.0	0.0	0.0	0.0	0.87	0.74	04/21
05/21	06/21	MANHOLE 1800mm DIA											25		0			0					3.976	3.39	3.39	3.39	-0.03	0.54	0.6	0.0	0.0	0.0	1.19	1.02	05/21
06/21	07/21	CUSTOM MANHOLE ;STRUCTURAL ENG. TO DESIGN)											25		0			0					4.202	3.39	3.39	3.39	-0.03	0.77	2.0	0.0	0.0	0.0	0.14	3.02	06/21
07/21	02/34	INLET HEADWALL											25	0.6	0			0				0.558	3.700	3.39	3.39	3.39	0.00	0.77	0.0	0.0	0.0	0.0			07/21
01/28	05/21	INLET GULLY IN SAG	0.213			25	43.0	0.819	0.801	0.097			25		107	0.60	0.01	102	-3	0.02	01/27		3.929	3.44	3.23	3.39	-9.94	0.10	6.0	0.0	0.2	0.0	0.35	1.07	01/28
05/21	06/21	MANHOLE 1800mm DIA											25		0			0					3.976	3.39											05/21
01/29	05/21	INLET GULLY IN SAG	0.180			25	43.0	0.819	0.801	0.082			25		83	0.33	0.01	82	-1	0.01	01/28		3.929	3.41	3.38	3.39	-0.06	0.08	7.6	0.0	0.1	0.0	0.34	1.24	01/29
05/21	06/21	MANHOLE 1800mm DIA											25		0			0					3.976	3.39											05/21
01/30	02/18	INLET GULLY IN SAG	0.048			25	43.0	0.819	0.801	0.022			25		23	0.00	0.00	23	0	0.00	01/16		4.483	4.17	4.17	4.17	0.00	0.03	9.7	0.0	0.1	0.0	0.07	1.26	01/30
02/18	03/5	MANHOLE 1050mm DIA											25		0			0					4.530	4.17											02/18
01/31	02/31	INLET GULLY IN SAG	0.312			25	43.0	0.819	0.801	0.142			25	1.0	148	1.41	0.01	140	7	0.02	02/31	1.048	3.950	3.58	3.50	3.38	1.53	0.14	6.1	0.0	0.1	0.0	0.34	1.27	01/31
02/31	04/21	INLET GULLY IN SAG											25		7	0.11	0.00	7	0	0.00	01/29		3.928	3.38	3.38	3.37	0.04	0.14	1.9	0.0	0.1	0.0	0.44	1.08	02/31
04/21	05/21	MANHOLE 1200mm DIA											25		0			0					4.253	3.37											04/21
06/21	07/21	CUSTOM MANHOLE ;STRUCTURAL ENG. TO DESIGN)											25		0			0					4.202	3.39	3.39	3.56	-0.19	0.11	2.1	0.0	0.0	0.0	1.95	1	06/21
01/32	02/32	MANHOLE 1050mm DIA											25		0			0					4.399	3.56	3.56	3.40	0.24	0.07	0.2	0.0	0.0	0.0	1.27	0.64	01/32
02/32	05/36	MANHOLE 1050mm DIA											25		0			0					4.141	3.40	3.40	3.40	0.00	0.14	2.1	0.0	0.1	0.0	1.56	0.88	02/32
05/36	06/36	CUSTOM MANHOLE ;STRUCTURAL ENG. TO DESIGN)											25		0			0					4.035	3.40											05/36
01/33	02/33	INLET GULLY ON GRADE	0.210			25	43.0	0.819	0.801	0.095			25		95	1.34	0.02	85	10	0.03	01/130		4.818	4.20	4.01	3.99	0.18	0.09	8.5	0.0	0.2	0.0	0.25	1.77	01/33
02/33	06/5	CUSTOM MANHOLE 1800x1200 (STRUCTURAL ENG. TO DESIGN)											25		0			0					4.817	3.99	3.93	3.87	0.11	0.33	1.6	0.0	0.1	0.0	0.49	1.38	02/33
01/73	02/73	INLET GULLY ON GRADE	0.194			25	43.0	0.819	0.801	0.088			25		88	0.85	0.02	80	6	0.01	01/121		6.427	5.85	5.80	5.64	2.05	0.08	7.4	0.0	0.1	0.0	0.32	0.89	01/73
02/73	03/73	INLET GULLY ON GRADE	0.149			25	43.0	0.819	0.801	0.068			25		68	0.31	0.01	65	2	0.01	02/122		6.408	5.64	5.49	5.36	1.13	0.14	2.0	0.0	0.2	0.0	1.08	1.41	02/73
03/73	04/73	MANHOLE 1050mm DIA											25		0			0					6.396	5.24	5.23	4.97	0.42	0.29	0.7	0.0	0.0	0.0	0.67	1.42	03/73
04/73	05/73	CUSTOM 1200x1200 MANHOLE											25		0			0					6.079	4.97	4.96	4.63	0.41	0.43	0.4	0.0	0.0	0.0	0.89	1.84	04/73
05/73	06/73	MANHOLE 1800mm DIA											25		0			0					5.670	4.63	4.58	4.10	0.63	0.55	1.6	0.0	0.1	0.0	0.7	1.7	05/73
06/73	07/73	MANHOLE 1200mm DIA											25		0			0					4.829	4.10	4.09	3.90	0.41	0.68	0.3	0.0	0.0	0.0	1.15	1.54	06/73
07/73	08/73	CUSTOM 1200x1200 MANHOLE											25		0			0					4.616	3.90	3.89	3.82	0.39	0.83	0.3	0.0	0.0	0.0	1.29	1.71	07/73
08/73	09/73	CUSTOM MANHOLE 2700x1200 (STRUCTURAL ENG. TO DESIGN)											25		0			0					4.759	3.82	3.82	3.78	0.07	1.70	0.2	0.0	0.0	0.0	0.96	1.17	08/73
09/73	10/73	CUSTOM MANHOLE 2400x1200 (STRUCTURAL ENG. TO DESIGN)											25		0			0					4.847	3.78	3.77	3.75	0.07	1.96	0.2	0.0	0.0	0.0	1.11	1.28	09/73
10/73	11/73	CUSTOM MANHOLE ;STRUCTURAL ENG. TO DESIGN)											25		0			0					5.052	3.75	3.74	3.85	-0.20	3.01	0.3	0.0	0.0	0.0	1.21	1.5	10/73
11/73	12/73	CUSTOM MANHOLE 3300x1200 (STRUCTURAL ENG. TO DESIGN)											25		0			0					5.079	3.85	3.83	3.69	0.26	2.90	0.3	0.0	0.0	0.0	1.16	1.49	11/73
12/73	13/73	CUSTOM MANHOLE ;STRUCTURAL ENG. TO DESIGN)											25		0			0					4.816	3.69	3.68	3.61	0.08	3.49	0.3	0.0	0.0	0.0	1.39	1.94	12/73
13/73	14/73	CUSTOM MANHOLE ;STRUCTURAL ENG. TO DESIGN)											25		0			0					4.518	3.61	3.57	3.41	0.33	4.67	0.3	0.0	0.1	0.0	1.06	3.64	13/73
14/73	15/73	INLET HEADWALL											25		0			0					4.000	3.41	3.41	3.39	0.87	4.58	0.0	0.0	0.0	0.0	0.02	7.16	14/73
15/73	02/34	WEIR FOR CALCULATIONS											25		0			0					4.000	3.39	3.39	3.39	0.00	4.58	0.0	0.0	0.0	0.0			15/73
01/87	02/87	INLET GULLY IN SAG	0.127			25	43.0	0.819	0.801	0.058			25		60	0.13	0.00	60	0	0.00	02/87		4.326	4.05	4.03	4.01	0.36	0.06	9.7	0.0	0.1	0.0	0.2	0.94	01/87
02/87	03/87	INLET GULLY IN SAG	0.072			25	43.0	0.819	0.801	0.033			25		38	0.00	0.00	38	0	0.00	01/14		4.326	4.01	4.00	3.99	0.02	0.09	2.2	0.0	0.0	0.0	0.3	0.83	02/87
03/87	02/14	MANHOLE 1200mm DIA											25		0			0					4.568	3.99	3.98	3.98	0.02	0.14	1.2	0.0	0.0	0.0	0.39	0.69	03/87
01/90	03/87	INLET GULLY ON GRADE	0.118			25	43.0	0.819	0.801	0.054			25		54	0.00	0.00	54	0	0.00	01/15		4.568	4.07	4.00	3.99	0.07	0.05	9.7	0.0	0.2	0.0	0.11	1.33	01/90
03/87	02/14	MANHOLE 1200mm DIA											25		0			0					4.568	3.99											03/87
01/91	02/91	INLET GULLY ON GRADE	0.126			25	43.0	0.819	0.801	0.057			25		57	0.00	0.00	57	0	0.00	01/101		5.548	4.69	4.61	4.41	1.10	0.06	9.7	0.0	0.1	0.0	0.32	1.06	01/91
02/91	03/91	CUSTOM 1200x1200 MANHOLE											25		0			0					5.503	4.37	4.34	4.14	0.36	0.42	1.8	0.0	0.0	0.0	0.53	1.45	02/91
03/91	04/91	MANHOLE 1800mm DIA											25		0			0					5.180	4.14	4.13	4.05	0.39	0.52	0.5	0.0	0.0	0.0	0.61	1.74	03/91
04/91	05/91	MANHOLE 1800mm DIA											25		0			0					5.006	4.05	4.04	3.79	0.44	0.93	1.0	0.0	0.1	0.0	0.75	1.82	04/91
05/91	10/73	CUSTOM MANHOLE 1800x1200 (STRUCTURAL ENG. TO DESIGN)											25		0			0					4.750	3.79	3.78	3.75	0.15	1.06	0.2	0.0	0.0	0.0	0.86	1.68	05/91
10/73	11/73	CUSTOM MANHOLE ;STRUCTURAL ENG. TO DESIGN)											25		0			0					5.052	3.75											10/73
01/92	05/91	INLET GULLY IN SAG	0.196			25	43.0	0.819	0.801	0.089			25		90	0.39	0.00	89	1	0.00	01/93		4.703	4.09	3.85	3.79	3.87	0.09	7.4	0.0	0.2	0.0	0.37	1.06	01/92
05/91	10/73	CUSTOM MANHOLE 1800x1200 (STRUCTURAL ENG. TO DESIGN)											25		0			0					4.750	3.79											05/91

INTENSITY - FREQUENCY - DURATION (IFD) TABLE

DURATION MINUTES	ARI INTENSITY (YEAR) TREAT	1	2	5	10	20	50	100
5	65.7	131.5	165.5	199.8	218.4	244.7	278.3	303.2
5.5	63.6	127.2	160.0	193.4	211.5	236.9	269.6	293.8
6	61.6	123.2	155.0	187.5	205.1	229.9	261.8	285.3
6.5	59.8	119.6	150.5	182.2	199.4	223.5	254.6	277.6
7	58.1	116.3	146.4	177.3	194.1	217.7	248.0	270.5
7.5	56.6	113.2	142.6	172.8	189.2	212.3	241.9	263.9
8	55.2	110.4	139.0	168.6	184.7	207.3	236.3	257.8
8.5	53.9	107.8	135.8	164.8	180.5	202.7	231.1	252.2
9	52.8	105.3	132.7	161.1	176.6	198.3	226.2	246.9
9.5	51.5	103.0	129.9	157.8	173.0	194.2	221.6	241.9
10	50.4	100.9	127.2	154.6	169.5	190.4	217.3	237.3
12	46.7	93.4	117.8	143.5	157.5	177.1	202.3	221.0
13	45.1	90.2	113.8	138.8	152.4	171.4	195.9	214.0
14	43.6	87.3	110.2	134.4	147.7	166.2	190.0	207.7
15	42.3	84.6	106.9	130.5	143.4	161.4	184.6	201.8
16	41.1	82.2	103.8	126.8	139.4	157.0	179.6	196.5
17	39.9	79.9	101.0	123.5	135.8	153.0	175.0	191.5
18	38.9	77.8	98.4	120.3	132.4	149.2	170.7	186.8
19	37.9	75.8	95.9	117.4	129.2	145.6	166.7	182.5
20	37.0	74.0	93.6	114.6	126.2	142.3	162.9	178.4
21	36.1	72.3	91.4	112.0	123.4	139.2	159.4	174.5
22	35.3	70.6	89.4	109.6	120.7	136.2	156.1	170.9
23	34.5	69.1	87.5	107.3	118.2	133.4	152.9	167.5
24	33.8	67.7	85.7	105.1	115.9	130.8	149.9	164.2
25	33.1	66.3	83.9	103.1	113.6	128.3	147.1	161.1
26	32.5	65.0	82.3	101.1	111.5	125.9	144.4	158.2
27	31.8	63.7	80.7	99.2	109.4	123.6	141.8	155.4
28	31.2	62.5	79.2	97.5	107.5	121.4	139.3	152.7
29	30.7	61.4	77.8	95.7	105.6	119.4	137.0	150.2
30	30.1	60.3	76.5	94.1	103.9	117.4	134.7	147.7
32	29.1	58.3	73.9	91.1	100.5	113.7	130.5	143.2
34	28.2	56.4	71.6	88.2	97.5	110.2	126.6	138.9
36	27.3	54.7	69.4	85.6	94.6	107.0	123.0	135.0
38	26.5	53.1	67.4	83.2	92.0	104.1	119.7	131.3
40	25.8	51.6	65.5	80.9	89.5	101.3	116.5	127.9
45	24.1	48.3	61.3	75.9	84.0	95.1	109.5	120.3
50	22.7	45.5	57.8

C

0.2 ARI (Q5) MINOR FLOW - 12D DYNAMIC DRAINAGE RESULTS * REFER TO IFD TABLE FOR MAXIMUM INTENSITY DURING STORM

NOTE: NEGATIVE FLOW VALUES INDICATE REVERSE FLOWS

NODE FROM	NODE TO	NODE TYPE	CATCHMENT AREA A1 HA	A2 HA	A3 HA	RAINFALL VOLUME* CRITICAL STORM	INTENSITY MM/HR	10 YR	RAINFALL Coef. CURRENT Storm	CATCHMENT FLOW A1 HA	A2 HA	A3 HA	CRITICAL ARI MIN.	GRADE %	APPROACH FLOW L/S	FLOW WIDTH	DxV	FLOW AT PIT CAPTURED L/S	BYPASS L/S	DxV	NODE	GRADE %	PIT GRATE RL	PIT RL	HGL PIPE U/S RL.	PIPE D/S RL.	GRADE %	PIPE FLOW M3/S	HEADLOSSES COEFFICIENT Ku	Kw	HEADLOSS Ku	Kw	CAPACITY RATIO	VELOCITY M/S	NODE
01/93	05/91	INLET GULLY IN SAG	0.112			25	43.0	0.819	0.801	0.051			25		52	0.00	0.00	52	0	0.00	03/103		4.703	3.94	3.83	3.79	0.89	0.05	9.7	0.0	0.1	0.0	0.23	1.01	01/93
05/91	10/73	CUSTOM MANHOLE 1800x1200 (STRUCTURAL ENG. TO DESIGN)											25		0			0					4.750	3.79											05/91
01/94	02/94	INLET GULLY ON GRADE	0.276			25	43.0	0.819	0.801	0.125			25		127	1.49	0.03	104	15	0.03	01/95		5.032	4.52	4.44	4.34	0.79	0.10	8.2	0.0	0.2	0.0	0.26	0.99	01/94
02/94	03/94	INLET GULLY ON GRADE	0.305			25	43.0	0.819	0.801	0.139			25		140	1.72	0.03	112	20	0.04	01/96		4.974	4.34	4.29	4.14	0.36	0.21	2.3	0.0	0.0	0.0	0.91	0.99	02/94
03/94	04/91	MANHOLE 1200mm DIA											25		0			0					4.810	4.14	4.11	4.05	0.39	0.42	0.8	0.0	0.0	0.0	0.96	1.18	03/94
04/91	05/91	MANHOLE 1800mm DIA											25		0			0					5.006	4.05											04/91
01/95	03/94	INLET GULLY IN SAG	0.208			25	43.0	0.819	0.801	0.094			25		108	0.64	0.01	104	1	0.01	01/92		4.763	4.32	4.21	4.14	1.43	0.10	8.2	0.0	0.1	0.0	0.31	1.05	01/95
03/94	04/91	MANHOLE 1200mm DIA											25		0			0					4.810	4.14											03/94
01/96	03/94	INLET GULLY IN SAG	0.203			25	43.0	0.819	0.801	0.092			25		110	0.69	0.00	106	1	0.00	01/95		4.763	4.31	4.16	4.14	1.35	0.11	7.7	0.0	0.2	0.0	0.33	0.93	01/96
03/94	04/91	MANHOLE 1200mm DIA											25		0			0					4.810	4.14											03/94
01/97	03/91	INLET GULLY ON GRADE	0.110			25	43.0	0.819	0.801	0.050			25		51	0.00	0.00	51	0	0.00	01/96		5.134	4.30	4.20	4.14	4.19	0.05	9.7	0.0	0.1	0.0	0.12	1.44	01/97
03/91	04/91	MANHOLE 1800mm DIA											25		0			0					5.180	4.14											03/91
01/98	03/91	INLET GULLY ON GRADE	0.155			25	43.0	0.819	0.801	0.070			25		70	0.30	0.00	67	1	0.00	01/93		5.180	4.41	4.31	4.14	1.82	0.07	9.7	0.0	0.1	0.0	0.28	1.22	01/98
03/91	04/91	MANHOLE 1800mm DIA											25		0			0					5.180	4.14											03/91
01/99	02/99	INLET GULLY ON GRADE	0.260			25	43.0	0.819	0.801	0.118			25		118	1.59	0.03	99	17	0.03	01/101		5.542	5.11	5.08	4.86	2.04	0.10	8.4	0.0	0.0	0.0	0.4	1.07	01/99
02/99	03/99	INLET GULLY ON GRADE	0.209			25	43.0	0.819	0.801	0.095			25		95	1.20	0.02	85	9	0.02	01/100		5.499	4.86	4.81	4.55	0.56	0.18	1.9	0.0	0.0	0.0	0.99	1.14	02/99
03/99	02/91	MANHOLE 1050mm DIA											25		0			0					5.305	4.55	4.47	4.37	0.52	0.37	0.8	0.0	0.1	0.0	1.35	1.45	03/99
02/91	03/91	CUSTOM 1200x1200 MANHOLE											25		0			0					5.503	4.37											02/91
01/100	03/99	INLET GULLY IN SAG	0.183			25	43.0	0.819	0.801	0.083			25		93	0.41	0.00	90	1	0.00	01/97		5.259	4.73	4.57	4.55	1.81	0.09	5.4	0.0	0.2	0.0	0.41	1.03	01/100
03/99	02/91	MANHOLE 1050mm DIA											25		0			0					5.305	4.55											03/99
01/101	03/99	INLET GULLY IN SAG	0.194			25	43.0	0.819	0.801	0.088			25		104	0.54	0.01	101	1	0.01	01/100		5.259	4.68	4.63	4.55	1.76	0.10	6.6	0.0	0.1	0.0	0.27	0.85	01/101
03/99	02/91	MANHOLE 1050mm DIA											25		0			0					5.305	4.55											03/99
01/102	09/73	INLET GULLY IN SAG	0.276			25	43.0	0.819	0.801	0.125			25		125	0.94	0.02	116	6	0.02	01/15		4.778	4.10	4.07	3.78	5.07	0.12	6.7	0.0	0.1	0.0	0.28	1.91	01/102
09/73	10/73	CUSTOM MANHOLE 2400x1200 (STRUCTURAL ENG. TO DESIGN)											25		0			0					4.847	3.78											09/73
01/103	02/103	900x600 PIT C/W DOME TOP			0.677							0.159	25		159			151					4.696	4.23	4.22	3.86	1.09	0.15	9.7	0.0	0.2	0.0	0.51	0.95	01/103
02/103	03/103	MANHOLE 1050mm DIA											25		0			0					4.929	3.86	3.85	3.79	1.03	0.15	1.4	0.0	0.0	0.0	0.54	0.96	02/103
03/103	09/73	INLET GULLY IN SAG	0.055			25	43.0	0.819	0.801	0.025			25		25	0.00	0.00	25	0	0.00	01/105		4.778	3.79	3.79	3.78	0.35	0.17	6.2	0.0	0.1	0.0	0.24	1.04	03/103
09/73	10/73	CUSTOM MANHOLE 2400x1200 (STRUCTURAL ENG. TO DESIGN)											25		0			0					4.847	3.78											09/73
01/104	08/73	INLET GULLY IN SAG	0.112			25	43.0	0.819	0.801	0.051			25		51	0.05	0.00	51	0	0.00	01/17		4.712	3.86	3.84	3.82	0.50	0.05	7.0	0.0	0.0	0.0	0.28	0.77	01/104
08/73	09/73	CUSTOM MANHOLE 2700x1200 (STRUCTURAL ENG. TO DESIGN)											25		0			0					4.759	3.82											08/73
01/105	08/73	INLET GULLY IN SAG	0.103			25	43.0	0.819	0.801	0.047			25		52	0.85	0.02	51	-7	0.01	01/103		4.712	3.89	3.86	3.82	2.65	0.05	7.0	0.0	0.1	0.0	0.11	1.7	01/105
08/73	09/73	CUSTOM MANHOLE 2700x1200 (STRUCTURAL ENG. TO DESIGN)											25		0			0					4.759	3.82											08/73
01/106	02/106	INLET GULLY ON GRADE	0.187			25	43.0	0.819	0.801	0.085			25		85	0.99	0.02	78	6	0.02	01/114		6.085	5.33	5.20	5.12	1.30	0.08	7.0	0.0	0.1	0.0	0.31	1.29	01/106
02/106	03/106	INLET GULLY ON GRADE	0.158			25	43.0	0.819	0.801	0.072			25		72	0.47	0.01	68	3	0.01	01/115		6.085	5.12	5.01	5.04	-0.09	0.15	2.9	0.0	0.1	0.0	0.53	1.43	02/106
03/106	04/106	MANHOLE 1200mm DIA											25		0			0					5.978	5.04	5.04	4.86	0.66	0.28	0.7	0.0	0.1	0.0	0.73	1.71	03/106
04/106	05/106	MANHOLE 1200mm DIA											25		0			0					6.198	4.86	4.86	4.54	0.52	0.39	1.0	0.0	0.0	0.0	0.9	1.57	04/106
05/106	06/106	MANHOLE 1200mm DIA											25		0			0					5.616	4.54	4.54	4.44	0.54	0.45	0.7	0.0	0.0	0.0	0.72	1.45	05/106
06/106	07/106	MANHOLE 1200mm DIA											25		0			0					5.424	4.44	4.38	3.95	0.95	0.72	0.7	0.0	0.1	0.0	1.03	2.03	06/106
07/106	08/73	MANHOLE 1200mm DIA											25		0			0					4.952	3.95	3.94	3.82	0.64	0.78	0.7	0.0	0.0	0.0	0.7	1.64	07/106
08/73	09/73	CUSTOM MANHOLE 2700x1200 (STRUCTURAL ENG. TO DESIGN)											25		0			0					4.759	3.82											08/73
01/107	07/106	INLET GULLY ON GRADE	0.143			25	43.0	0.819	0.801	0.065			25		72	0.28	0.01	68	2	0.01	01/116		4.897	4.03	3.90	3.95	-1.08	0.07	9.2	0.0	0.1	0.0	0.11	1.64	01/107
07/106	08/73	MANHOLE 1200mm DIA											25		0			0					4.952	3.95											07/106
01/108	02/108	INLET GULLY ON GRADE	0.196			25	43.0	0.819	0.801	0.089			25		89	0.76	0.02	80	5	0.02	01/110		5.361	4.77	4.71	4.53	0.53	0.08	6.3	0.0	0.1	0.0	0.45	1.14	01/108
02/108	06/106	MANHOLE 1200mm DIA											25		0			0					5.199	4.53	4.51	4.44	0.30	0.30	1.0	0.0	0.1	0.0	1.11	1.07	02/108
06/106	07/106	MANHOLE 1200mm DIA											25		0			0					5.424	4.44											06/106
01/109	02/108	INLET GULLY IN SAG	0.303			25	43.0	0.819	0.801	0.138			25		138	1.13	0.02	125	7	0.02	01/107		5.152	4.69	4.60	4.53	1.45	0.13	6.3	0.0	0.1	0.0	0.19	1.32	01/109
02/108	06/106	MANHOLE 1200mm DIA											25		0			0					5.199	4.53											02/108
01/110	02/108	INLET GULLY IN SAG	0.205			25	43.0	0.819	0.801	0.093			25		101	0.51	0.01	99	-3	0.01	01/109		5.152	4.63	4.57	4.53	2.45	0.10	5.4	0.0	0.1	0.0	0.21	1.24	01/110
02/108	06/106	MANHOLE 1200mm DIA											25		0			0					5.199	4.53											02/108
01/111	05/106	INLET GULLY ON GRADE	0.055			25	43.0	0.819	0.801	0.025			25		25	0.00	0.00	25	0	0.00	01/105		5.570	4.61	4.56	4.54	1.16	0.03	9.7	0.0	0.1	0.0	0.1	0.99	01/111
05/106	06/106	MANHOLE 1200mm DIA											25		0			0					5.616	4.54											05/106
01/112	05/106	INLET GULLY ON GRADE	0.116			25	43.0	0.819	0.801	0.053			25		53	0.00	0.00	53	0	0.00	O 01/112		5.588	4.63	4.55	4.54	0.15	0.06	9.7	0.0	0.1	0.0	0.11	2.13	01/112
05/106	06/106	MANHOLE 1200mm DIA											25		0			0					5.616	4.54											05/106
00/113	01/113	INLET GULLY ON GRADE	0.055			25	43.0	0.819	0.801	0.025			25		25			25					5.919	5.07	5.02	5.07	-0.16	0.03	3.9	0.0	0.1	0.0	0.13	1.11	00/113
01/113	04/106	900x600 PIT C/W DOME TOP			0.476							0.112	25		112			111					5.436	5.07	4.99	4.86	0.33	0.14	6.3	0.0	0.1	0.0	0.9	0.89	01/113
04/106	05/106	MANHOLE 1200mm DIA											25		0			0					6.198	4.86											04/106
01/114	03/106	INLET GULLY IN SAG	0.156			25	43.0	0.819	0.801	0.071			25		77	0.27	0.00	75	1	0.00	01/112		5.931	5.14	5.03	5.04	-0.10	0.08	7.0	0.0	0.2	0.0	0.18	1.89	01/114
03/106	04/106	MANHOLE 1200mm DIA											25		0			0					5.978	5.04											03/106
01/115	03/106	INLET GULLY IN SAG	0.149			25	43.0	0.819	0.801	0.068			25		70	0.22	0.00	70	0	0.00	01/114		5.931	5.19	5.06	5.04	1.74	0.07	6.4	0.0	0.2	0.0	0.29	1.2	01/115
03/106	04/106	MANHOLE 1200mm DIA											25		0			0					5.978	5.04											03/106
01/116	07/73	INLET GULLY IN SAG	0.161			25	43.0	0.819	0.801	0.073			25		76	0.28	0.00	76	0	0.00	01/117		4.574	3.98	3.93	3.90	0.41	0.08	9.7	0.0	0.1	0.0	0.19	0.88	01/116
07/73	08/73	CUSTOM 1200x1200 MANHOLE											25		0			0					4.616	3.90											07/73
01/117	07/73	INLET GULLY IN SAG	0.189			25	43.0	0.819	0.801	0.086			25		86	0.37	0.00	85	0	0.00	01/104		4.568	3.95	3.94	3.90	2.49	0.08	7.0	0.0	0.0	0.0	0.12	1.24	01/117
07/73	08/73	CUSTOM 1200x1200 MANHOLE											25		0			0					4.616	3.90											07/73
01/118	05/73	INLET GULLY ON GRADE	0.285			25	43.0	0.819	0.801	0.130			25		140	1.67	0.03	112	20	0.03	02/8		5.638	4.81	4.71	4.63	1.46	0.11	9.0	0.0	0.1	0.0	0.17	1.88	01/118
05/73	06/73	MANHOLE 1800mm DIA											25		0			0					5.670	4.63											05/73
01/119	05/73	INLET GULLY ON GRADE	0.136			25	43.0	0.819	0.801	0.062			25		62	0.00	0.00	61	0	0.00	01/133		5.674	4.74	4.70	4.63	0.69	0.06	6.8	0.0	0.1	0.0	0.19	1.69	01/119
05/73	06/73	MANHOLE 1800mm DIA											25		0			0					5.670	4.63											05/73
01/120	04/73	INLET GULLY ON GRADE	0.092			25	43.0	0.819	0.801	0.042			25		42	0.00	0.00	42	0	0.00	01/108		6.032	5.17	5.04	5.01	2.19	0.04	9.7	0.0	0.1	0.0	0.17	0.99	01/120
04/73	05/73	CUSTOM 1200x1200 MANHOLE											25		0			0					6.079	4.97											04/73
01/121	04/73	INLET GULLY ON GRADE	0.255			25	43.0	0.819	0.801	0.116			25		121	1.32	0.02	100	12	0.02	01/118		6.054	5.37	5.19	4.97	3.39	0.10	7.4	0.0	0.2	0.0	0.31	1.5	01/121
04/73	05/73	CUSTOM 1200x1200 MANHOLE											25		0			0					6.079	4.97											04/73
01/122	02/122	INLET GULLY IN SAG	0.174			25	43.0	0.819	0.801	0.079			25		79	0.30	0.00	78	0	0.00	01/120		6.117	5.56	5.51	5.39	1.73	0.08	6.1	0.0	0.1	0.0	0.35	0.8	01/122
02/122	03/73	INLET GULLY IN SAG	0.157			25	43.0	0.819	0.801	0.071			25		73	0.24	0.00	73	0	0.00	01/122		6.117	5.39	5.32	5.24	0.47	0.15	2.0	0.0	0.1	0.0	0.96	1	02/122
03/73	04/73	MANHOLE 1050mm DIA											25		0			0					6.396	5.24											03/73
01/129	02/129	INLET GULLY IN SAG	0.162			25	43.0	0.819	0.801	0.074			25		74	0.25	0.00	73	0	0.00	01/18		4.622	4.29	4.24	4.24	0.03	0.07	9.7	0.0	0.1	0.0	0.16	0.95	01/129
02/129	02/18	INLET GULLY IN SAG	0.174			25	43.0	0.819	0.801	0.079			25		80	0.30	0.00	78	1	0.00	01/30		4.622	4.24	4.20	4.17	0.13	0.15	4.5	0.0	0.1	0.0	0.51	0.89	02/129
02/18	03/5	MANHOLE 1050mm DIA											25		0			0					4.530	4.17											02/18
01/130	02/33	INLET GULLY IN SAG	0.175			25	43.0	0.819	0.801	0.079			25		89	0.38	0.01	86	2	0.00	02/131		4.738	4.18	4.02	3.99	0.47	0.09	9.7	0.0	0.2	0.0	0.21	1.83	01/130
02/33	06/5	CUSTOM MANHOLE 1800x1200 (STRUCTURAL ENG. TO DESIGN)											25		0			0					4.817	3.99											02/33
01/131	02/131	INLET GULLY ON GRADE	0.185			25	43.0	0.819	0.801	0.084			25		85	0.59	0.01	78	3	0.01	01/87		4.427	4.19	4.12	4.12	0.08	0.08	9.1	0.0	0.1	0.0	0.2	0.96	01/131
02/131	02/33	INLET GULLY ON GRADE	0.199			25	43.0	0.819	0.801	0.091			25		92	0.95	0.02	82	6	0.02	02/87		4.455	4.12	4.10	3.99	0.19	0.17	7.6	0.0	0.1	0.0	0.77	1.01	02/131
02/33	06/5	CUSTOM MANHOLE 1800x1200 (STRUCTURAL ENG. TO DESIGN)											25		0			0					4.817	3.99											02/33
01/132	06/73	INLET GULLY ON GRADE	0.215			25	43.0	0.819	0.801	0.098			25		98	1.05	0.03	87	11	0.03	O 01/132		4.782	4.24	4.19	4.10	1.92	0.09	7.0	0.0	0.1	0.0	0.34	1.24	01/132
06/73	07/73	MANHOLE 1200mm DIA											25		0			0					4.829	4.10											06/73
01/133	06/73	INLET GULLY ON GRADE	0.174			25	43.0	0.819	0.801	0.079			25		79	0.44	0.01	73	2	0.01	01/116		4.782	4.21	4.19	4.10	6.06	0.07	6.3	0.0	0.1	0.0	0.16	1.69	01/133
06/73	07/73	MANHOLE 1200mm DIA											25		0			0					4.829	4.10											06/73
01/245	05/123	MANHOLE 1050mm DIA											25		0			0					4.034	3.43	3.40	3.40	0.00	0.13	1.6	0.0	0.0	0.0	1.47	0.84	01/245
05/123	06/123	MANHOLE 1800mm DIA											25		0			0					4.200	3.40											05/123
05/123	06/123	MANHOLE 1800mm DIA											25		0			0					4.200	3.40	3.40	3.39	0.01	0.07	2.1	0.0	0.0	0.0	1.27	0.68	05/123
06/21	07/21	CUSTOM MANHOLE (STRUCTURAL ENG. TO DESIGN)											25		0			0					4.202	3.39											06/21
03/46	04/46	BASIN NODE FOR CALCULATIONS	0.131			25	43.0	0.819	0.801	0.060			25		60			60					2.800	2.50	2.50	2.50	0.00	0.00	0.0	0.0	0.0	0.0			03/46
01/247	02/247	WEIR FOR CALCULATIONS											25		0			0					2.800	2.50	2.50	2.50	0.30	0.00	0.0	0.0	0.0	0.0	0	0	01/247
02/247	03/247	WEIR FOR CALCULATIONS											25		0			0					2.800	2.50	2.50	1.75	25.05	0.00	0.0	0.0	0.0	0.0	0	0	02/247
03/247		CALCULATION PURPOSES											25		0			0					2.500	1.75											03/247
01/23	02/23	BASIN NODE FOR CALCULATIONS	1.861			25	43.0	0.819	0.801	0.846			25		846			846					2.800	3.38	3.38	3.36	0.18	-0.29	0.0	0.0	0.0	0.0	-0.16	1.77	01/23
01/248	02/248	INLET HEADWALL											25		0			0					3.700	3.36	3.36	3.36	0.00	-0.29	0.0	0.0	0.0	0.0			01/248
02/248	03/21	CUSTOM MANHOLE 1800x1200 (STRUCTURAL ENG. TO DESIGN)											25		0			0					4.009	3.36	3.36	3.37	-0.02	-0.29	2.1	0.0	0.1	0.0	-0.64	0.82	02/248
03/21	04/21	MANHOLE 1200mm DIA											25		0			0					4.266	3.37											03/21

Y:\123 - Leda Developments Pty Ltd\01 - Kings Forest\PRECO\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-680.dwg, 6/10/2021 5:21:08 PM, 1:2

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446,
Lot 1 on DP781633, Lot 40 on DP7482,
Lot 2 on DP819015, Lot 1 on DP129737,
Lot 37A on DP13727, Lot 38A on DP13727,
Lot 38B on DP13727, Lot 1 on DP706497,
Lot 76 on DP755701, Lot 323 on DP755701,
Lot 272 on DP755701, Lot 96 on DP755701
& Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

C	09-08-21	TABLE AMENDED
B	25-03-20	CALCULATION TABLE AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LANDSURV

GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER
CALCULATION TABLES
MINOR STORM EVENT
SHEET 2 OF 4

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER	AMEND.
12301-P5-1,2&3-681	C

1.01 ARI (Q100) Major FLOW - 12D DYNAMIC DRAINAGE RESULTS

* REFER TO IFD TABLE FOR MAXIMUM INTENSITY DURING STORM

NOTE: NEGATIVE FLOW VALUES INDICATE REVERSE FLOWS

NODE			CATCHMENT AREA			RAINFALL VOLUME*		RAINFALL Coef.		CATCHMENT FLOW				APPROACH FLOW				FLOW AT PIT					PIT		HGL			PIPE	HEADLOSSES						
			A1	A2	A3	CRITICAL	INTENSITY		CURRENT	A1	A2	A3	CRITICAL	GRADE	FLOW			CAPTURED		BYPASS		GRADE	GRADE	PIT	PIPE		GRADE	FLOW	COEFFICIENT		HEADLOSS		CAPACITY	VELOCITY	NODE
FROM:	TO:	NODE TYPE	HA	HA	HA	STORM	MM/HR	10 YR	Storm	HA	HA	HA	ARI MIN.	%	L/S	W/DTH	DxV	L/S	L/S	DxV	NODE	%	RL.	RL	U/S RL.	D/S RL.	%	M3/S	Ku	Kw	Ku	Kw	RATIO	M/S	
01/5	02/5	INLET GULLY ON GRADE	0.213			60	102.9	0.819	0.896	0.141			60		195	2.70	0.05	130	58	0.06	01/20		4.716	4.82	4.77	4.64	0.52	0.13	9.7	0.0	0.1	0.0	0.46	1.05	01/5
02/5	03/5	MANHOLE 1050mm DIA											60		0			0					4.652	4.64	4.62	4.46	0.77	0.30	1.2	0.0	0.1	0.0	0.82	1.54	02/5
03/5	04/5	MANHOLE 1200mm DIA											60		0			0					4.737	4.46	4.45	4.35	0.33	0.52	0.7	0.0	0.0	0.0	0.94	1.18	03/5
04/5	05/5	MANHOLE 1800mm DIA											60		0			0					4.348	4.35	4.31	4.30	0.04	0.57	0.8	0.0	0.0	0.0	0.99	1.47	04/5
05/5	06/5	CUSTOM MANHOLE 2400x1200 (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.579	4.30	4.30	4.27	0.03	0.89	0.7	0.0	0.0	0.0	0.92	0.83	05/5
06/5	01/22	CUSTOM MANHOLE 2400x1200 (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.191	4.27	4.21	4.13	0.22	1.87	0.6	0.0	0.1	0.0	1.92	1.73	06/5
01/8	02/8	INLET GULLY ON GRADE	0.122			60	102.9	0.819	0.896	0.081			60		81	2.48	0.06	58	62	0.06	01/5		5.301	5.40	5.40	5.40	0.00	0.05	8.9	0.0	0.1	0.0	0.22	0.98	01/8
02/8	03/8	INLET GULLY ON GRADE	0.260			60	102.9	0.819	0.896	0.172			60		236	3.01	0.07	149	81	0.06	01/13		5.287	5.40	5.32	5.09	0.46	0.17	4.6	0.0	0.1	0.0	1.07	1.05	02/8
03/8	04/8	MANHOLE 1050mm DIA											60		0			0					5.092	5.09	5.08	4.92	0.47	0.27	0.7	0.0	0.0	0.0	0.98	1.23	03/8
04/8	05/8	MANHOLE 1050mm DIA											60		0			0					4.913	4.92	4.89	4.65	0.38	0.41	0.7	0.0	0.1	0.0	1.4	1.44	04/8
05/8	06/8	MANHOLE 1200mm DIA											60		0			0					4.760	4.65	4.63	4.58	0.40	0.57	0.4	0.0	0.0	0.0	0.94	1.4	05/8
06/8	07/8	CUSTOM 900x1500 PIT C/W GRATED INLET 900x600	0.125			60	102.9	0.819	0.896	0.082			60		82	0.00	0.00	82	0	0.00	02/129		4.963	4.58	4.54	4.43	0.47	0.64	0.7	0.0	0.0	0.0	1.04	1.64	06/8
07/8	06/5	CUSTOM 900x1200 PIT C/W GRATED INLET 900x600	0.104			60	102.9	0.819	0.896	0.069			60		69	0.00	0.00	69	0	0.00	01/6		4.669	4.43	4.36	4.27	0.35	0.70	0.7	0.0	0.1	0.0	0.53	1.98	07/8
06/5	01/22	CUSTOM MANHOLE 2400x1200 (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.191	4.27											06/5
01/9	05/8	INLET GULLY IN SAG	0.165			60	102.9	0.819	0.896	0.109			60		200	3.40	0.03	142	47	0.05	02/129		4.712	4.84	4.79	4.65	9.30	0.14	6.5	0.0	0.1	0.0	0.26	1.92	01/9
05/8	06/8	MANHOLE 1200mm DIA											60		0			0					4.760	4.65											05/8
01/10	05/8	INLET GULLY IN SAG	0.108			60	102.9	0.819	0.896	0.071			60		85	1.46	0.02	71	10	0.01	01/129		4.720	4.79	4.66	4.65	0.18	0.07	9.7	0.0	0.1	0.0	0.2	1.41	01/10
05/8	06/8	MANHOLE 1200mm DIA											60		0			0					4.760	4.65											05/8
01/11	04/8	INLET GULLY IN SAG	0.176			60	102.9	0.819	0.896	0.116			60		211	4.07	0.06	103	111	0.08	01/9		4.866	5.01	5.01	4.92	5.94	0.10	6.9	0.0	0.1	0.0	0.23	1.61	01/11
04/8	05/8	MANHOLE 1050mm DIA											60		0			0					4.913	4.92											04/8
01/12	04/8	INLET GULLY IN SAG	0.112			60	102.9	0.819	0.896	0.074			60		74	2.04	0.02	56	18	0.03	01/10		4.866	4.95	4.92	4.92	0.08	0.06	6.4	0.0	0.1	0.0	0.23	1.16	01/12
04/8	05/8	MANHOLE 1050mm DIA											60		0			0					4.913	4.92											04/8
01/13	03/8	INLET GULLY ON GRADE	0.213			60	102.9	0.819	0.896	0.141			60		210	3.35	0.08	112	106	0.06	01/11		5.046	5.17	5.12	5.09	1.48	0.11	9.3	0.0	0.1	0.0	0.13	1.65	01/13
03/8	04/8	MANHOLE 1050mm DIA											60		0			0					5.092	5.09											03/8
01/14	02/14	INLET GULLY IN SAG	0.072			60	102.9	0.819	0.896	0.048			60		173	3.25	0.04	102	49	0.03	01/7		4.265	4.39	4.32	4.31	0.14	0.10	7.0	0.0	0.1	0.0	0.15	0.87	01/14
02/14	05/5	CUSTOM 1200x1200 MANHOLE											60		0			0					4.311	4.31	4.31	4.30	0.02	0.34	0.8	0.0	0.0	0.0	0.68	1.04	02/14
05/5	06/5	CUSTOM MANHOLE 2400x1200 (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.579	4.30											05/5
01/15	02/14	INLET GULLY IN SAG	0.214			60	102.9	0.819	0.896	0.142			60		205	3.55	0.05	113	75	0.07	01/14		4.265	4.39	4.35	4.31	2.13	0.11	7.0	0.0	0.2	0.0	0.28	1.18	01/15
02/14	05/5	CUSTOM 1200x1200 MANHOLE											60		0			0					4.311	4.31											02/14
01/16	04/5	INLET GULLY IN SAG	0.066			60	102.9	0.819	0.896	0.044			60		163	3.34	0.04	78	57	0.04	01/6		4.301	4.42	4.36	4.35	0.20	0.08	7.0	0.0	0.1	0.0	0.2	0.71	01/16
04/5	05/5	MANHOLE 1800mm DIA											60		0			0					4.348	4.35											04/5
01/17	04/5	INLET GULLY IN SAG	0.257			60	102.9	0.819	0.896	0.170			60		222	3.78	0.05	121	79	0.07	01/16		4.301	4.44	4.35	4.35	0.19	0.12	7.0	0.0	0.1	0.0	0.12	1.69	01/17
04/5	05/5	MANHOLE 1800mm DIA											60		0			0					4.348	4.35											04/5
01/18	02/18	INLET GULLY IN SAG	0.084			60	102.9	0.819	0.896	0.055			60		130	2.86	0.03	88	36	0.04	01/30		4.483	4.59	4.54	4.53	0.10	0.09	9.7	0.0	0.1	0.0	0.16	0.81	01/18
02/18	03/5	MANHOLE 1050mm DIA											60		0			0					4.530	4.53	4.53	4.46	0.47	0.25	0.6	0.0	0.0	0.0	0.85	1.15	02/18
03/5	04/5	MANHOLE 1200mm DIA											60		0			0					4.737	4.46											03/5
01/19	02/5	INLET GULLY IN SAG	0.223			60	102.9	0.819	0.896	0.148			60		148	2.37	0.05	97	50	0.05	01/18		4.605	4.70	4.67	4.64	0.53	0.10	6.4	0.0	0.1	0.0	0.24	0.89	01/19
02/5	03/5	MANHOLE 1050mm DIA											60		0			0					4.652	4.64											02/5
01/20	02/5	INLET GULLY IN SAG	0.136			60	102.9	0.819	0.896	0.090			60		138	2.55	0.06	86	60	0.04	01/17		4.605	4.71	4.70	4.64	3.87	0.09	7.0	0.0	0.1	0.0	0.22	1.44	01/20
02/5	03/5	MANHOLE 1050mm DIA											60		0			0					4.652	4.64											02/5
01/21	02/21	INLET GULLY ON GRADE	0.209			60	102.9	0.819	0.896	0.139			60		139	2.01	0.04	103	33	0.03	01/28		4.318	4.06	4.02	3.90	1.88	0.10	9.1	0.0	0.1	0.0	0.41	1.16	01/21
02/21	03/21	INLET GULLY ON GRADE	0.186			60	102.9	0.819	0.896	0.123			60		123	1.61	0.05	94	28	0.02	01/31		4.318	3.90	3.89	3.79	0.55	0.19	5.0	0.0	0.1	0.0	0.73	1.31	02/21
03/21	04/21	MANHOLE 1200mm DIA											60		0			0					4.266	3.79	3.78	3.76	0.16	0.39	0.5	0.0	0.0	0.0	1.1	0.88	03/21
04/21	05/21	MANHOLE 1200mm DIA											60		0			0					4.253	3.76	3.75	3.69	0.14	0.47	1.0	0.0	0.0	0.0	1.04	0.88	04/21
05/21	06/21	MANHOLE 1800mm DIA											60		0			0					3.976	3.69	3.66	3.61	0.24	0.73	0.6	0.0	0.0	0.0	1.6	1.36	05/21
06/21	07/21	CUSTOM MANHOLE (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.202	3.61	3.61	3.61	0.06	0.94	1.6	0.0	0.0	0.0	0.17	2.52	06/21
07/21	02/34	INLET HEADWALL											60	0.6	0			0				0.558	3.700	3.61	3.61	3.61	0.00	0.94	0.0	0.0	0.0	0.0			07/21
01/28	05/21	INLET GULLY IN SAG	0.213			60	102.9	0.819	0.896	0.141			60		204	3.33	0.04	146	-33	0.02	01/27		3.929	4.05	3.71	3.69	1.55	0.15	3.3	0.0	0.2	0.0	0.49	1.31	01/28
05/21	06/21	MANHOLE 1800mm DIA											60		0			0					3.976	3.69											05/21
01/29	05/21	INLET GULLY IN SAG	0.180			60	102.9	0.819	0.896	0.119			60		157	2.95	0.04	137	-46	0.03	01/28		3.929	4.04	3.75	3.69	1.29	0.14	3.4	0.0	0.2	0.0	0.57	1.23	01/29
05/21	06/21	MANHOLE 1800mm DIA											60		0			0					3.976	3.69											05/21
01/30	02/18	INLET GULLY IN SAG	0.048			60	102.9	0.819	0.896	0.032			60		103	2.28	0.05	58	44	0.04	01/16		4.483	4.58	4.53	4.53	0.13	0.06	9.7	0.0	0.1	0.0	0.14	1.27	01/30
02/18	03/5	MANHOLE 1050mm DIA											60		0			0					4.530	4.53											02/18
01/31	02/31	INLET GULLY IN SAG	0.312			60	102.9	0.819	0.896	0.207			60	1.0	234	3.54	0.05	149	79	0.07	02/31	1.048	3.950	4.08	4.06	3.92	1.72	0.15	9.7	0.0	0.1	0.0	0.37	1.28	01/31
02/31	04/21	INLET GULLY IN SAG											60		96	1.99	0.01	90	-17	0.05	01/29		3.928	4.01	3.88	3.76	1.07	0.23	1.5	0.0	0.1	0.0	0.71	1.47	02/31
04/21	05/21	MANHOLE 1200mm DIA											60		0			0					4.253	3.76											04/21
06/21	07/21	CUSTOM MANHOLE (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.202	3.61	3.61	3.62	-0.01	0.10	2.0	0.0	0.0	0.0	1.8	0.93	06/21
01/32	02/32	MANHOLE 1050mm DIA											60		0			0					4.399	3.62	3.62	3.63	-0.01	0.07	0.2	0.0	0.0	0.0	1.22	0.61	01/32
02/32	05/36	MANHOLE 1050mm DIA											60		0			0					4.141	3.63	3.63	3.63	0.00	0.12	1.8	0.0	0.0	0.0	1.37	0.78	02/32
05/36	06/36	CUSTOM MANHOLE (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.035	3.63											05/36
01/33	02/33	INLET GULLY ON GRADE	0.210			60	102.9	0.819	0.896	0.139			60		139	2.22	0.04	103	35	0.04	01/130		4.818	4.61	4.44	4.41	0.27	0.10	9.7	0.0	0.2	0.0	0.29	1.77	01/33
02/33	06/5	CUSTOM MANHOLE 1800x1200 (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.817	4.41	4.34	4.27	0.14	0.35	1.6	0.0	0.1	0.0	0.52	1.32	02/33
01/73	02/73	INLET GULLY ON GRADE	0.194			60	102.9	0.819	0.896	0.129			60		129	2.22	0.05	92	39	0.04	01/121		6.427	6.52	6.48	6.41	0.90	0.09	7.1	0.0	0.1	0.0	0.37	0.88	01/73
02/73	03/73	INLET GULLY ON GRADE	0.149			60	102.9	0.819	0.896	0.099			60		99	1.24	0.04	80	18	0.02	02/122		6.408	6.47	6.29	6.16	1.06	0.16	2.0	0.0	0.2	0.0	1.22	1.51	02/73
03/73	04/73	MANHOLE 1050mm DIA											60		0			0					6.396	6.16	6.14	6.02	0.18	0.34	0.8	0.0	0.1	0.0	0.77	1.41	03/73
04/73	05/73	CUSTOM 1200x1200 MANHOLE											60		0			0					6.079	6.02	6.02	5.57	0.55	0.45	0.4	0.0	0.1	0.0	0.94	1.85	04/73
05/73	06/73	MANHOLE 1800mm DIA											60		0			0					5.670	5.57	5.54	4.83	0.93	0.66	1.6	0.0	0.2	0.0	0.85	1.85	05/73
06/73	07/73	MANHOLE 1200mm DIA											60		0			0					4.829	4.83	4.82	4.62	0.45	0.71	0.4	0.0	0.0	0.0	1.19	1.61	06/73
07/73	08/73	CUSTOM 1200x1200 MANHOLE											60		0			0					4.616	4.62	4.59	4.52	0.39	0.93	0.3	0.0	0.0	0.0	1.44	1.73	07/73
08/73	09/73	CUSTOM MANHOLE 2700x1200 (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.759	4.52	4.52	4.45	0.13	1.91	0.2	0.0	0.0	0.0	1.08	1.19	08/73
09/73	10/73	CUSTOM MANHOLE 2400x1200 (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.847	4.45	4.43	4.39	0.19	2.23	0.3	0.0	0.0	0.0	1.27	1.38	09/73
10/73	11/73	CUSTOM MANHOLE (STRUCTURAL ENG. TO DESIGN)											60		0			0					5.052	4.39	4.36	4.24	0.22	3.50	0.5	0.0	0.0	0.0	1.4	1.62	10/73
11/73	12/73	CUSTOM MANHOLE 3300x1200 (STRUCTURAL ENG. TO DESIGN)											60		0			0					5.079	4.24	4.22	4.11	0.22	3.50	0.3	0.0	0.0	0.0	1.4	1.62	11/73
12/73	13/73	CUSTOM MANHOLE (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.816	4.11	4.07	3.96	0.14	4.33	0.3	0.0	0.0	0.0	1.73	2.13	12/73
13/73	14/73	CUSTOM MANHOLE (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.518	3.96	3.90	3.81	0.20	5.78	0.3	0.0	0.1	0.0	1.32	4.36	13/73
14/73	15/73	INLET HEADWALL											60		0			0					4.000	3.81	3.81	3.61	9.06	6.07	0.0	0.0	0.0	0.0	0.03	20.05	14/73
15/73	02/34	WEIR FOR CALCULATIONS											60		0			0					4.000	3.61	3.61	3.61	0.00	6.07	0.0	0.0	0.0	0.0			15/73
01/87	02/87	INLET GULLY IN SAG	0.127			60	102.9	0.819	0.896	0.084			60		209	4.40	0.07	75	129	0.09	02/87		4.326	4.48	4.46	4.46	0.03	0.08	9.7	0.0	0.1	0.0	0.27	0.94	01/87
02/87	03/87	INLET GULLY IN SAG	0.072			60	102.9	0.819	0.896	0.047			60		209	3.54	0.05	132	74	0.06	01/14		4.326	4.46	4.41	4.36	0.31	0.18	3.6	0.0	0.0	0.0	0.6	0.82	02/87
03/87	02/14	MANHOLE 1200mm DIA											60		0			0					4.568	4.36	4.36	4.31	0.20	0.24	1.2	0.0	0.0	0.0	0.68	0.67	03/87
02/14	05/5	CUSTOM 1200x1200 MANHOLE											60		0			0					4.311	4.31											02/14
01/88	02/88	INLET GULLY IN SAG	0.134			60	102.9	0.819	0.896	0.089			60		89	1.60	0.03	71	15	0.01	01/87		4.568	4.64	4.59	4.58	0.14	0.08	7.0	0.0	0.1	0.0	0.3	1.26	01/88
02/88	03/84	INLET GULLY IN SAG	0.149			60	102.9	0.819	0.896	0.099			60		99	1.99	0.01	90	5	0.01	01/90		4.568	4.65	4.47	4.43	0.29	0.16	9.7	0.0	0.1	0.0	0.38	1.31	02/88
03/84	04/84	MANHOLE 1050mm DIA											60		0			0					4.823	4.43											03/84
01/90	03/87	INLET GULLY ON GRADE	0.118			60	102.9	0.819	0.896	0.078			60		83	0.93	0.02	71	9	0.01	01/15		4.568	4.46	4.37	4.36	0.11	0.07	8.9	0.0	0.1	0.0	0.15	1.21	01/90
03/87	02/14	MANHOLE 1200mm DIA											60		0			0					4.568	4.36											03/87
01/91	02/91	INLET GULLY ON GRADE	0.126			60	102.9	0.819	0.896	0.083			60		83	0.93	0.03	71	12	0.01	01/101		5.548	5.22	5.19	5.09	0.57	0.07	9.7	0.0	0.1	0.0	0.4	1.06	01/91
02/91	03/91	CUSTOM 1200x1200 MANHOLE											60		0			0					5.503	5.09	5.07	4.87	0.36	0.48	1.8	0.0	0.1	0.0	0.61	1.44	02/91
03/91	04/91	MANHOLE 1800mm DIA											60		0			0					5.180	4.87	4.86	4.74	0.63	0.65	0.5	0.0	0.0	0.0	0.77	1.75	03/91
04/91	05/91	MANHOLE 1800mm DIA											60		0			0					5.006	4.74	4.73	4.45	0.49	1.04	1.1	0.0	0.1	0.0	0.84	1.79	04/91
05/91	10/73	USTOM MANHOLE 1800x1200 (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.750	4.45	4.44	4.39	0.32	1.28	0.3	0.0	0.0	0.0	1.05	1.58	05/91
10/73	11/73	CUSTOM MANHOLE (STRUCTURAL ENG. TO DESIGN)											60		0			0					5.052	4.39											10/73
01/92	05/91	INLET GULLY IN SAG	0.196			60	102.9	0.819	0.896	0.130			60		211	3.40	0.04	148	60	0.05	01/93		4.703	4.83	4.49	4.45	2.45	0.15	3.0	0.0	0.2	0.0	0.61	1.34	01/92
05/91	10/73	USTOM MANHOLE 1800x1200 (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.750	4.45											05/91
01/93	05/91	INLET GULLY IN SAG	0.112			60	102.9	0.819	0.896	0.074			60		136	2.73	0.04	128	2	0.00	03/103		4.703	4.81	4.55	4.45	1.92	0.13	9.7	0.0	0.2	0.0	0.58	1.16	01/93
05/91	10/73	USTOM MANHOLE 1800x1200 (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.750	4.45											05/91
01/94	02/94	INLET GULLY ON GRADE	0.276			60	102.9	0.819	0.896	0.183			60		214	3.13	0.07	125	92	0.05	01/95		5.032	5.15	5.07	5.07	0.01	0.13	8.5	0.0	0.2	0.0	0.33	0.91	01/94
02/94	03/94	INLET GULLY ON GRADE	0.305			60	102.9	0.819	0.896	0.202			60		220	2.80	0.06	142	68	0.04	01/96		4.974	5.08	4.99	4.81	0.42	0.26	1.7	0.0	0.1	0.0	1.1	1.2	02/94
03/94	04/91	MANHOLE 1200mm DIA											60		0			0					4.810	4.81	4.79	4.74	0.34	0.50	0.9	0.0	0.1	0.0	1.15	1.4	03/94
04/91	05/91	MANHOLE 1800mm DIA											60		0			0					5.006	4.74											04/91
01/95	03/94	INLET GULLY IN SAG	0.208			60	102.9	0.819	0.896	0.138			60		273	5.54	0.05	145	110	0.08	01/92		4.763	4.94	4.89	4.81	1.47	0.15	5.9	0.0	0.1	0.0	0.43	1.04	01/95
03/94	04/91	MANHOLE 1200mm DIA											60		0			0					4.810	4.81											03/94
01/96	03/94	INLET GULLY IN SAG	0.203			60	102.9	0.819	0.896	0.134			60		211	5.61	0.03	149	63	0.03	01/95		4.763	4.94	4.83	4.81	1.42	0.15	7.9	0.0	0.2	0.0	0.46	0.94	01/96
03/94	04/91	MANHOLE 1200mm DIA											60		0			0					4.810	4.81											03/94
01/97	03/91	INLET GULLY ON GRADE	0.110			60	102.9	0.819	0.896	0.073			60		132	1.64	0.05	99	29	0.01	01/96		5.134	5.02	4.95	4.87	5.68	0.10	9.7	0.0	0.1	0.0	0.24	1.41	01/97
03/91	04/91	MANHOLE 1800mm DIA										

C

0.01 ARI (Q100) Major FLOW - 12D DYNAMIC DRAINAGE RESULTS

* REFER TO IFD TABLE FOR MAXIMUM INTENSITY DURING STORM

NOTE: NEGATIVE FLOW VALUES INDICATE REVERSE FLOWS

NODE FROM:	NODE TO:	NODE TYPE	CATCHMENT AREA A1 HA	CATCHMENT AREA A2 HA	CATCHMENT AREA A3 HA	RAINFALL VOLUME* CRITICAL STORM	RAINFALL VOLUME* INTENSITY MM/HR	RAINFALL Coef 10 YR	CURRENT Storm	CATCHMENT FLOW A1 HA	CATCHMENT FLOW A2 HA	CATCHMENT FLOW A3 HA	CRITICAL ARI MIN.	APPROACH FLOW GRADE %	APPROACH FLOW FLOW L/S	APPROACH FLOW WIDTH	APPROACH FLOW DxV	FLOW AT PIT CAPTURED FLOW L/S	FLOW AT PIT BYPASS L/S	FLOW AT PIT BYPASS DxV	FLOW AT PIT BYPASS NODE	PIT GRADE %	PIT GRATE RL.	HGL PIT RL	HGL PIPE U/S RL.	HGL PIPE D/S RL.	PIPE GRADE %	PIPE FLOW M3/S	HEADLOSSES COEFFICIENT Ku	HEADLOSSES COEFFICIENT Kw	HEADLOSS Ku	HEADLOSS Kw	CAPACITY RATIO	VELOCITY M/S	NODE
09/73	10/73	USTOM MANHOLE 2400x1200 (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.847	4.45											
01/103	02/103	900x600 PIT C/W DOME TOP			0.677							0.338	60		338			206					4.696	4.89	4.89	4.56	1.01	0.21	7.4	0.0	0.2	0.0	0.69	1.3	01/103
02/103	03/103	MANHOLE 1050mm DIA											60		0			0					4.929	4.56	4.53	4.46	1.13	0.21	1.2	0.0	0.1	0.0	0.75	1.34	02/103
03/103	09/73	INLET GULLY IN SAG	0.055			60	102.9	0.819	0.896	0.037			60		38	0.48	0.02	37	-4	0.00	01/105		4.778	4.46	4.45	4.45	0.26	0.24	7.0	0.0	0.0	0.0	0.34	1.09	03/103
09/73	10/73	USTOM MANHOLE 2400x1200 (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.847	4.45											09/73
01/104	08/73	INLET GULLY IN SAG	0.112			60	102.9	0.819	0.896	0.074			60		74	0.93	0.02	58	6	0.00	01/17		4.712	4.56	4.55	4.52	0.44	0.14	1.0	0.0	0.1	0.0	0.77	1.22	01/104
08/73	09/73	USTOM MANHOLE 2700x1200 (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.759	4.52											08/73
01/105	08/73	INLET GULLY IN SAG	0.103			60	102.9	0.819	0.896	0.068			60		155	3.21	0.08	140	-108	0.04	01/103		4.712	4.83	4.63	4.52	6.97	0.14	6.2	0.0	0.1	0.0	0.31	1.68	01/105
08/73	09/73	USTOM MANHOLE 2700x1200 (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.759	4.52											08/73
01/106	02/106	INLET GULLY ON GRADE	0.187			60	102.9	0.819	0.896	0.124			60		124	2.37	0.05	87	46	0.05	01/114		6.085	6.18	6.14	6.10	0.55	0.09	7.0	0.0	0.1	0.0	0.35	1.28	01/106
02/106	03/106	INLET GULLY ON GRADE	0.158			60	102.9	0.819	0.896	0.104			60		104	1.64	0.03	84	19	0.02	01/115		6.085	6.16	6.04	5.92	0.40	0.16	6.3	0.0	0.2	0.0	0.56	1.45	02/106
03/106	04/106	MANHOLE 1200mm DIA											60		0			0					5.978	5.92	5.90	5.66	0.91	0.35	0.7	0.0	0.1	0.0	0.91	1.71	03/106
04/106	05/106	MANHOLE 1200mm DIA											60		0			0					6.198	5.66	5.64	5.30	0.56	0.45	1.1	0.0	0.1	0.0	1.04	1.69	04/106
05/106	06/106	MANHOLE 1200mm DIA											60		0			0					5.616	5.30	5.28	5.15	0.65	0.51	0.7	0.0	0.1	0.0	0.81	1.45	05/106
06/106	07/106	MANHOLE 1200mm DIA											60		0			0					5.424	5.15	5.11	4.69	0.92	0.76	0.7	0.0	0.1	0.0	1.08	2.12	06/106
07/106	08/73	MANHOLE 1200mm DIA											60		0			0					4.952	4.69	4.66	4.52	0.70	0.85	0.7	0.0	0.1	0.0	0.76	1.61	07/106
08/73	09/73	USTOM MANHOLE 2700x1200 (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.759	4.52											08/73
01/107	07/106	INLET GULLY ON GRADE	0.143			60	102.9	0.819	0.896	0.095			60		203	2.03	0.08	134	66	0.04	01/116		4.897	4.85	4.80	4.69	2.24	0.15	9.7	0.0	0.2	0.0	0.26	1.64	01/107
07/106	08/73	MANHOLE 1200mm DIA											60		0			0					4.952	4.69											07/106
01/108	02/108	INLET GULLY ON GRADE	0.196			60	102.9	0.819	0.896	0.130			60		139	2.06	0.04	100	36	0.03	01/110		5.361	5.45	5.39	5.20	0.55	0.10	9.7	0.0	0.2	0.0	0.57	1.14	01/108
02/108	06/106	MANHOLE 1200mm DIA											60		0			0					5.199	5.20	5.18	5.15	0.13	0.30	1.1	0.0	0.0	0.0	1.08	1.05	02/108
06/106	07/106	MANHOLE 1200mm DIA											60		0			0					5.424	5.15											06/106
01/109	02/108	INLET GULLY IN SAG	0.303			60	102.9	0.819	0.896	0.200			60		228	3.68	0.07	119	114	0.09	01/107		5.152	5.29	5.21	5.20	0.16	0.12	7.0	0.0	0.2	0.0	0.18	1.16	01/109
02/108	06/106	MANHOLE 1200mm DIA											60		0			0					5.199	5.20											02/108
01/110	02/108	INLET GULLY IN SAG	0.205			60	102.9	0.819	0.896	0.136			60		162	3.75	0.02	120	38	0.03	01/109		5.152	5.29	5.25	5.20	3.10	0.12	3.8	0.0	0.1	0.0	0.25	1.25	01/110
02/108	06/106	MANHOLE 1200mm DIA											60		0			0					5.199	5.20											02/108
01/111	05/106	INLET GULLY ON GRADE	0.055			60	102.9	0.819	0.896	0.036			60		36	0.00	0.00	36	0	0.00	01/105		5.570	5.33	5.32	5.30	1.42	0.04	9.7	0.0	0.1	0.0	0.15	1.29	01/111
05/106	06/106	MANHOLE 1200mm DIA											60		0			0					5.616	5.30											05/106
01/112	05/106	INLET GULLY ON GRADE	0.116			60	102.9	0.819	0.896	0.077			60		118	1.57	0.04	91	25	0.04	O 01/112		5.588	5.45	5.32	5.30	0.26	0.09	9.7	0.0	0.2	0.0	0.18	2.12	01/112
05/106	06/106	MANHOLE 1200mm DIA											60		0			0					5.616	5.30											05/106
00/113	01/113	INLET GULLY ON GRADE	0.055			60	102.9	0.819	0.896	0.037			60		37			37					5.919	5.76	5.75	5.75	0.01	0.05	7.0	0.0	0.1	0.0	0.21	1.11	00/113
01/113	04/106	900x600 PIT C/W DOME TOP			0.476							0.238	60		238			302					5.436	5.75	5.59	5.66	-0.18	0.31	2.4	0.0	0.4	0.0	2	1.97	01/113
04/106	05/106	MANHOLE 1200mm DIA											60		0			0					6.198	5.66											04/106
01/114	03/106	INLET GULLY IN SAG	0.156			60	102.9	0.819	0.896	0.103			60		156	2.57	0.05	94	48	0.05	01/112		5.931	6.03	5.93	5.92	0.26	0.09	7.0	0.0	0.2	0.0	0.22	1.88	01/114
03/106	04/106	MANHOLE 1200mm DIA											60		0			0					5.978	5.92											03/106
01/115	03/106	INLET GULLY IN SAG	0.149			60	102.9	0.819	0.896	0.098			60		117	2.58	0.01	98	11	0.01	01/114		5.931	6.03	5.95	5.92	2.19	0.10	7.0	0.0	0.2	0.0	0.4	1.07	01/115
03/106	04/106	MANHOLE 1200mm DIA											60		0			0					5.978	5.92											03/106
01/116	07/73	INLET GULLY IN SAG	0.161			60	102.9	0.819	0.896	0.107			60		215	5.08	0.03	131	63	0.04	01/117		4.574	4.74	4.74	4.62	1.90	0.13	9.7	0.0	0.1	0.0	0.32	0.82	01/116
07/73	08/73	CUSTOM 1200x1200 MANHOLE											60		0			0					4.616	4.62											07/73
01/117	07/73	INLET GULLY IN SAG	0.189			60	102.9	0.819	0.896	0.125			60		183	5.35	0.07	165	-8	0.00	01/104		4.568	4.74	4.66	4.62	2.63	0.17	3.3	0.0	0.1	0.0	0.24	1.23	01/117
07/73	08/73	CUSTOM 1200x1200 MANHOLE											60		0			0					4.616	4.62											07/73
01/118	05/73	INLET GULLY ON GRADE	0.285			60	102.9	0.819	0.896	0.189			60		248	3.03	0.07	154	83	0.07	02/8		5.638	5.75	5.63	5.57	1.03	0.15	9.7	0.0	0.2	0.0	0.24	1.87	01/118
05/73	06/73	MANHOLE 1800mm DIA											60		0			0					5.670	5.57											05/73
01/119	05/73	INLET GULLY ON GRADE	0.136			60	102.9	0.819	0.896	0.090			60		90	1.07	0.03	75	12	0.01	01/133		5.674	5.73	5.61	5.57	0.42	0.08	6.0	0.0	0.1	0.0	0.26	1.69	01/119
05/73	06/73	MANHOLE 1800mm DIA											60		0			0					5.670	5.57											05/73
01/120	04/73	INLET GULLY ON GRADE	0.092			60	102.9	0.819	0.896	0.061			60		128	1.94	0.05	89	36	0.05	01/108		6.032	6.11	6.04	6.02	1.55	0.09	9.7	0.0	0.2	0.0	0.36	1.13	01/120
04/73	05/73	CUSTOM 1200x1200 MANHOLE											60		0			0					6.079	6.02											04/73
01/121	04/73	INLET GULLY ON GRADE	0.255			60	102.9	0.819	0.896	0.169			60		203	2.95	0.07	122	79	0.06	01/118		6.054	6.17	6.10	6.02	1.25	0.14	7.1	0.0	0.2	0.0	0.44	1.48	01/121
04/73	05/73	CUSTOM 1200x1200 MANHOLE											60		0			0					6.079	6.02											04/73
01/122	02/122	INLET GULLY IN SAG	0.174			60	102.9	0.819	0.896	0.116			60		124	4.50	0.04	93	79	0.07	01/120		6.117	6.27	6.27	6.27	-0.02	0.10	3.0	0.0	0.1	0.0	0.42	0.87	01/122
02/122	03/73	INLET GULLY IN SAG	0.157			60	102.9	0.819	0.896	0.104			60		130	4.52	0.04	133	-45	0.03	01/122		6.117	6.27	6.22	6.16	0.39	0.18	2.3	0.0	0.1	0.0	1.13	1.15	02/122
03/73	04/73	MANHOLE 1050mm DIA											60		0			0					6.396	6.16											03/73
01/129	02/129	INLET GULLY IN SAG	0.162			60	102.9	0.819	0.896	0.107			60		114	1.92	0.04	81	28	0.03	01/18		4.622	4.70	4.66	4.65	0.08	0.08	9.7	0.0	0.1	0.0	0.18	0.9	01/129
02/129	02/18	INLET GULLY IN SAG	0.174			60	102.9	0.819	0.896	0.115			60		141	2.20	0.04	100	38	0.05	01/30		4.622	4.71	4.65	4.53	0.42	0.18	3.9	0.0	0.1	0.0	0.63	0.89	02/129
02/18	03/5	MANHOLE 1050mm DIA											60		0			0					4.530	4.53											02/18
01/130	02/33	INLET GULLY IN SAG	0.175			60	102.9	0.819	0.896	0.116			60		150	2.29	0.05	105	42	0.04	02/131		4.738	4.59	4.44	4.41	0.54	0.11	9.7	0.0	0.2	0.0	0.26	1.83	01/130
02/33	06/5	USTOM MANHOLE 1800x1200 (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.817	4.41											02/33
01/131	02/131	INLET GULLY ON GRADE	0.185			60	102.9	0.819	0.896	0.123			60		172	3.58	0.08	88	121	0.07	01/87		4.427	4.56	4.55	4.55	0.00	0.09	9.7	0.0	0.1	0.0	0.21	0.92	01/131
02/131	02/33	INLET GULLY ON GRADE	0.199			60	102.9	0.819	0.896	0.132			60		172	2.43	0.05	119	49	0.05	02/87		4.455	4.55	4.53	4.41	0.20	0.18	6.3	0.0	0.1	0.0	0.81	1.01	02/131
02/33	06/5	USTOM MANHOLE 1800x1200 (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.817	4.41											02/33
01/132	06/73	INLET GULLY ON GRADE	0.215			60	102.9	0.819	0.896	0.143			60		143	2.60	0.08	94	81	0.08	O 01/132		4.782	4.88	4.84	4.83	0.12	0.10	7.0	0.0	0.1	0.0	0.39	1.23	01/132
06/73	07/73	MANHOLE 1200mm DIA											60		0			0					4.829	4.83											06/73
01/133	06/73	INLET GULLY ON GRADE	0.174			60	102.9	0.819	0.896	0.115			60		126	2.46	0.05	85	51	0.03	01/116		4.782	4.88	4.83	4.83	0.13	0.09	5.7	0.0	0.1	0.0	0.2	1.65	01/133
06/73	07/73	MANHOLE 1200mm DIA											60		0			0					4.829	4.83											06/73
01/245	05/123	MANHOLE 1050mm DIA											60		0			0					4.034	3.84	3.78	3.70	0.27	0.19	1.4	0.0	0.1	0.0	2.1	1.19	01/245
05/123	06/123	MANHOLE 1800mm DIA											60		0			0					4.200	3.70											05/123
05/123	06/123	MANHOLE 1800mm DIA											60		0			0					4.200	3.70	3.70	3.61	0.11	0.08	2.1	0.0	0.0	0.0	1.38	0.69	05/123
06/21	07/21	CUSTOM MANHOLE (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.202	3.61											06/21
03/46	04/46	BASIN NODE FOR CALCULATICNS	0.131			60	102.9	0.819	0.896	0.087			60		87			87					2.800	2.55	2.55	2.55	0.00	1.07	0.0	0.0	0.0	0.0			03/46
01/247	02/247	WEIR FOR CALCULATIONS											60		0			0					2.800	2.55	2.55	2.55	0.20	1.07	0.0	0.0	0.0	0.0	0.25	1.07	01/247
02/247	03/247	WEIR FOR CALCULATIONS											60		0			0					2.800	2.53	2.53	1.77	25.38	1.20	0.0	0.0	0.0	0.0	0.01	2.48	02/247
03/247		CALCULATION PURPOSES											60		0			0					2.500	1.77											03/247
01/23	02/23	BASIN NODE FOR CALCULATICNS	1.861			60	102.9	0.819	0.896	1.232			60		1239			1239					2.800	3.87	3.87	3.87	0.07	0.30	0.0	0.0	0.0	0.0	0.16	1.57	01/23
01/248	02/248	INLET HEADWALL											60		0			0					3.700	3.87	3.87	3.87	0.00	0.31	0.0	0.0	0.0	0.0			01/248
02/248	03/21	USTOM MANHOLE 1800x1200 (STRUCTURAL ENG. TO DESIGN)											60		0			0					4.009	3.86	3.83	3.79	0.09	0.31	2.1	0.0	0.1	0.0	0.67	0.85	02/248
03/21	04/21	MANHOLE 1200mm DIA											60		0			0					4.266	3.79											03/21

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

C	09-08-21	TABLE AMENDED
B	25-03-20	CALCULATION TABLE AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LandSurv

GILBERT SUTHERLAND

DRAWING TITLE

STORMWATER
CALCULATION TABLES
MAJOR STORM EVENT
SHEET 4 OF 4

CONSTRUCTION ISSUE

MORTONS urbansolutions
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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER 12301-P5-1,2&3-683

AMEND. C

Y:\123 - Leda Developments Pty Ltd\01 - Kings Forest\PREC5\Engineering Drawings\OPW Stages 1, 2 & 3\Current\12301-P5-1,2&3-680.dwg, 6/10/2021 12:21:50 PM, 1:2

LEGEND

- EXISTING 100Ø WATER MAIN
- EXISTING 150Ø WATER MAIN
- EXISTING 200Ø WATER MAIN
- EXISTING KERB (INVERT)
- EXISTING PROPERTY LINE
- FUTURE 100Ø WATER MAIN
- FUTURE 150Ø WATER MAIN
- FUTURE 200Ø WATER MAIN
- FUTURE KERB (INVERT)
- FUTURE PROPERTY LINE
- PROPOSED KERB (INVERT)
- PROPOSED PROPERTY LINE
- SECTION 68 - LIMIT OF WORKS BOUNDARY
- SITE PRECINCT
- PROPOSED 100Ø WATER MAIN
- PROPOSED 150Ø WATER MAIN
- PROPOSED 200Ø WATER MAIN
- HYDRANT
- SCOUR VALVE
- AIR VALVE
- ISOLATION / SLUICE VALVE
- BEND
- VERTICAL BEND
- WATER METER FOR HOUSE CONNECTION
- PROPOSED Ø100 IRRIGATION ROAD CROSSING
- EXISTING KOALA EXCLUSION FENCE
- EXISTING TEMPORARY FENCE
- EXISTING TEMPORARY NO-GO FENCE
- ACOUSTIC FENCE IN ACCORDANCE WITH RMS NOISE WALL DESIGN GUIDELINE, INCLUDING ANTI-CLIMB PANNELING (WHERE APPLICABLE) REFER JWA FIGURE 27 FOR PANNELING
- K12 HERITAGE LOCATION
- HERITAGE EXCLUSION ZONE (NO WORKS PERMITTED)
- ECOLOGICAL BUFFER
- FUTURE DRIVEWAY/GARAGE (BY OTHERS)

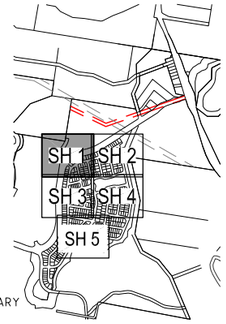
WATER METER NOTES

LOT 223 CONTAINS 3 RESIDENCE WITH THE SERVICE SIZE OF 50 OD.
LOTS 6, 9, 54, 55, 82, 87, 88, 205, 221, 222 AND 308 CONTAIN 2 RESIDENCE WITH THE SERVICE SIZE OF 40 OD.
ALL OTHER SINGLE LOTS ARE 32 OD.

WATER OFFSET:

2.1m TYPICAL WATER OFFSET, UNLESS SHOWN OTHERWISE.

SHEET LAYOUT



ALL ENVIRONMENT PROTECTION MEASURES SHALL BE IMPLEMENTED PRIOR TO ANY CONSTRUCTION WORK, INCLUDING CLEARING, COMMENCING.

WATER PIPE SPECIFICATIONS

WATER MAIN LOCATION	PIPE MATERIAL SPECIFICATION
FOOTPATH VERGE	DICL PN20
ROAD CROSSING	DICL PN20

WATER REFERENCING STANDARDS

WATER BULKHEADS	T.S.C S.D. 341 'TRENCH DRAINAGE BULKHEADS & TRENCH STOPS'
Ø450 WATER SLUICE (ISOLATION) VALVES	T.S.C S.D. 312 'TYPICAL VALVE INSTALLATION DETAILS'
Ø450 WATER AIR	T.S.C S.D. 311 'AUTOMATIC AIR RELEASE VALVE INSTALLATION DETAILS'
Ø450 WATER SCOUR	WSAA-03 '8.6 SCOURS AND PUMP-OUT BREACHES'
WATER THRUST CALCULATIONS	WSA-03 '7.9 PIPELINE ANCHORAGE'

PROJECT SPECIFIC WATER NOTES

1. ALL PROPERTY CONNECTION ROAD CROSSINGS TO BE SLEEVED WITH DN100 mPVC CONDUIT.
2. ALL WORK AND MATERIALS FOR WATER RETICULATION INFRASTRUCTURE ARE TO BE SUPPLIED AND CONSTRUCTED IN ACCORDANCE WITH TWEED SHIRE COUNCIL DEVELOPMENT SPECIFICATIONS D11 AND C401 AND TWEED SHIRE COUNCIL STANDARD DRAWING SD 302 & 320.
3. UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
4. WATER SERVICE CONNECTIONS ARE TO BE PROVIDED TO EACH LOT. WATER METERS TO BE SUPPLIED AND INSTALLED BY TWEED SHIRE COUNCIL UNDER SEPARATE APPLICATION.
5. THRUST BLOCKS, TRENCH STOPS AND BULK HEADS TO BE LOCATED AND INSTALLED BY CONTRACTOR IN ACCORDANCE WITH TWEED SHIRE COUNCIL DEVELOPMENT CONSTRUCTION SPECIFICATION C401.33.
6. TRENCH STOPS AND BULKHEADS (IF REQUIRED) TO BE IN ACCORDANCE WITH TWEED SHIRE COUNCIL STD DWG SD-341.
7. THE CONTRACTOR IS TO INCLUDE ROCK EXCAVATION AS PART OF THEIR WATER RATES UNLESS SCHEDULED OTHERWISE WITHIN THE CONTRACT.
8. ALL PIPEWORK AND EXCAVATION RATES ARE TO INCLUDE DE-WATERING AND EXCAVATION THROUGH INDURATED SAND (COFFEE ROCK).
9. FOOTPATHS SHOWN FOR INFORMATION PURPOSES ONLY.
10. ALL WATER CONSTRUCTION WORK UNDERTAKEN BY THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE WORKPLACE HEALTH AND SAFETY LEGISLATION.
11. MINIMUM WATERMAIN COVER TO BE IN ACCORDANCE WITH TWEED SHIRE COUNCIL DESIGN SPECIFICATION D11.
12. CONTRACTOR TO PAY ALL FEES AND CHARGES ASSOCIATED WITH CONNECTIONS.
13. END OF LINE ARRANGEMENTS (EG. CUL-DE-SAC HEADS) TO BE CONSTRUCTED IN ACCORDANCE WITH TWEED SHIRE COUNCIL STD DWG SD-301.
14. ALL LIVE WATER CONNECTIONS TO BE UNDERTAKEN BY THE CONTRACTOR AND WITNESSED BY TWEED SHIRE COUNCIL..
15. THE CONSTRUCTION OF THE WATER RETICULATION WORK SHOWN ON THIS DRAWING MUST BE SUPERVISED BY AN ENGINEER WHO HAS NER REGISTRATION TO THE SATISFACTION OF TWEED SHIRE COUNCIL. WORKS NOT COMPLYING WITH THIS REQUIREMENT WILL NOT BE PERMITTED TO CONNECT TO THE COUNCIL RETICULATION SYSTEM.
16. DRAWING RETICULATED WATER – WHERE WATER IS TO BE DRAWN FROM COUNCIL'S RETICULATED SYSTEM, AN APPLICATION FOR THE HIRE OF A COUNCIL METERED STANDPIPE INCLUDING COUNCIL'S NOMINATED POINT OF EXTRACTION IS TO BE SUBMITTED TO COUNCIL AND PAYMENT OF RELEVANT FEES IN ACCORDANCE WITH COUNCIL'S ADOPTED FEES AND CHARGES.
17. ALL WATERMAINS CROSSING ROADS TO BE BACKFILLED WITH STABILISED SAND UP TO UNDERSIDE OF SUB-BASE LAYER.

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HORIZONTAL THRUST BLOCKS TO BE IN ACCORDANCE WITH:

Minimum Thrust Area (m^2) for Concrete Blocks given 1350kPa System Test Pressure (Water):

Pipe Diameter	Bends				Tee & Dead Ends
	11.25	22.5	45	90	
100	0.21	0.21	0.21	0.21	0.21
150	0.21	0.21	0.21	0.46	0.32
200	0.21	0.21	0.39	0.73	0.51

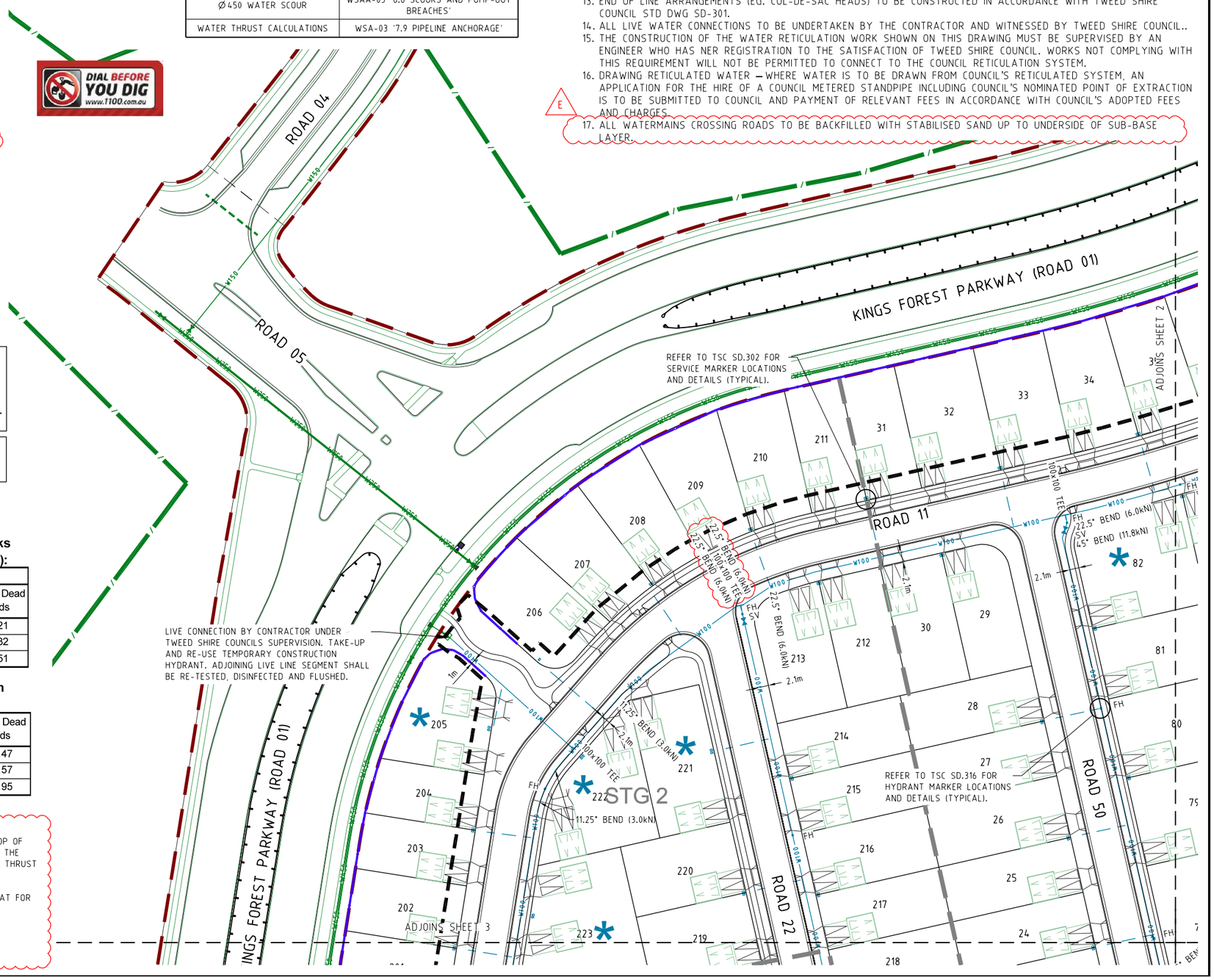
Based on Soil Classification: 100kPa

Resultant Thrust (kN) given 135m Head with 1350kPa System Test Pressure (Water):

Pipe Diameter	Bends				Tee & Dead Ends
	11.25	22.5	45	90	
100	3.03	6.04	11.84	21.88	15.47
150	6.38	12.71	24.93	46.06	32.57
200	10.97	21.83	42.82	79.13	55.95

FOR FURTHER DETAIL REFER TO WSA 03-2011-3.1 TABLE 7.3.

NOTES:
a. FINISH THRUST BLOCKS APPROXIMATELY 100mm ABOVE THE TOP OF THE FITTING OR BEARING PAD AND EXTEND TO THE FLOOR OF THE TRENCH OR DEEPER IF NECESSARY, TO ACHIEVE THE REQUIRED THRUST AREA. MAXIMUM ENCASEMENT TO BE 180°.
b. FOR DOWNWARD VERTICAL THRUST, THE ALLOWABLE BEARING PRESSURES FOR VARIOUS SOILS MAY BE TAKEN AS TWICE THAT FOR HORIZONTAL THRUST SHOWN



PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT
PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

E	09-08-21	LEGEND AND NOTES AMENDED
D	04-05-21	WATER ALIGNMENT, NOTES AND DIMENSIONS AMENEDED
C	28-01-21	WATER SYMBOL, TABLES AND NOTES AMENDED
B	31-08-20	WATER ALIGNMENT AND NOTES AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

WATER RETICULATION PLAN SHEET 1 OF 5

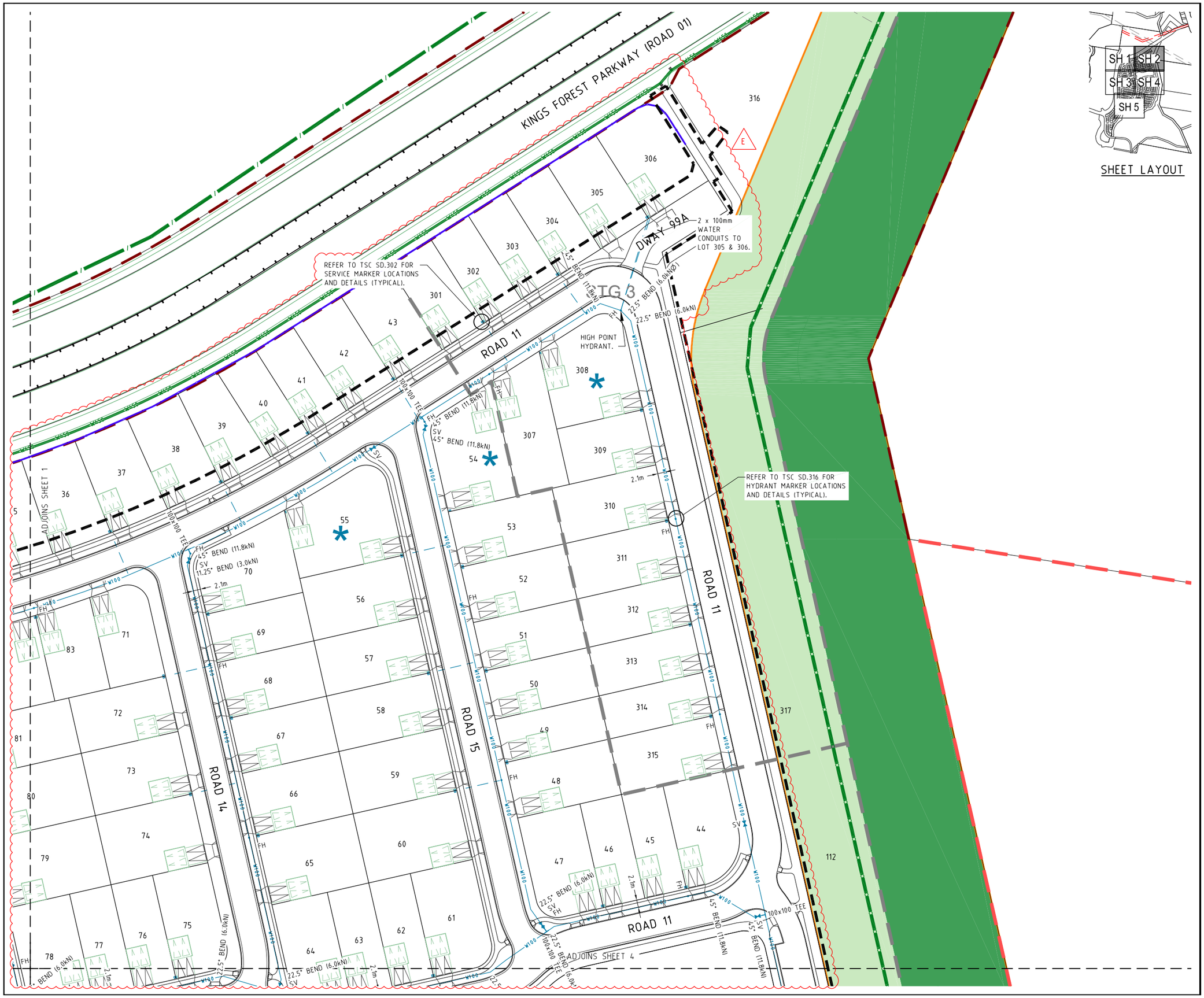
CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER 12301-P5-1,2&3-700
AMEND. E

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SHEET LAYOUT

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	xx-xx-xx	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

E	04-05-21	WATER ALIGNMENT AND DIMENSIONS AMENDED
D	02-03-21	WATER AMENDED AND NOTE ADDED
C	01-12-20	WATER SYMBOL ADDED
B	25-08-20	WATER ALIGNMENT AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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WATER RETICULATION PLAN SHEET 2 OF 5

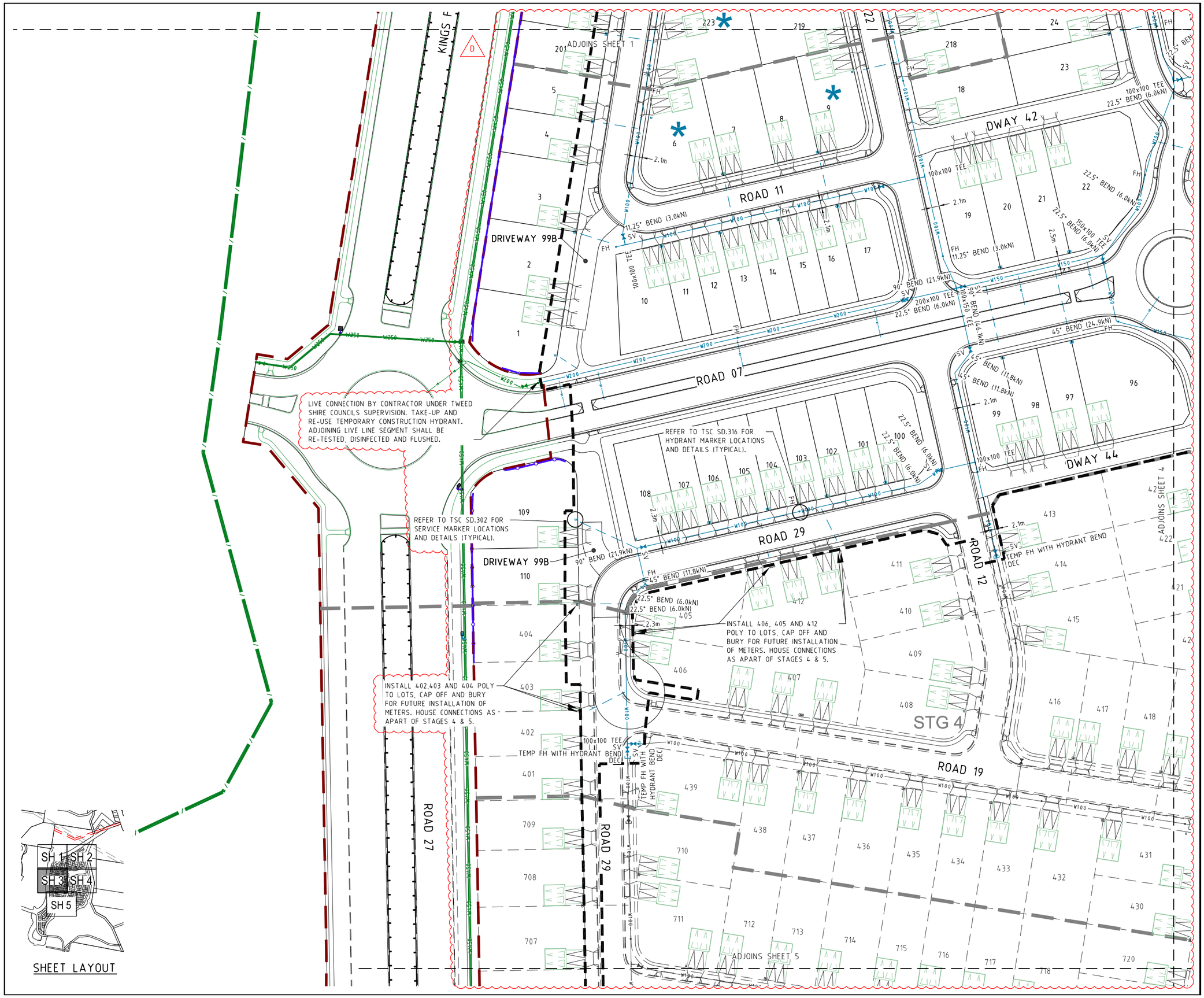
CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-701
AMEND.: E

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SHEET LAYOUT

PROJECT NAME

KINGS FOREST

PRECINCT 5

CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
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PARISH OF CUDGEN .
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

PRE	DATE	AMENDMENT
D	04-05-21	WATER ALIGNMENT AND DIMENSIONS AMENDED
C	01-12-20	WATER SYMBOLS ADDED
B	26-08-20	WATER ALIGNMENT AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE

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WATER RETICULATION PLAN SHEET 3 OF 5

CONSTRUCTION ISSUE

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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-702
AMEND.: D

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JOINS SHEET 2

ADJOINS SHEET 3

ADJOINS SHEET 5

STG 1

STG 5

ROAD 11

ROAD 13

ROAD 16

ROAD 17

ROAD 20

ROAD 41

REFER TO TSC SD.316 FOR HYDRANT MARKER LOCATIONS AND DETAILS (TYPICAL).

REFER TO TSC SD.302 FOR SERVICE MARKER LOCATIONS AND DETAILS (TYPICAL).

TEMP FH WITH HYDRANT BEND DEC

INSTALL 559 POLY TO LOT, CAP OFF AND BURY FOR FUTURE INSTALLATION OF METERS. HOUSE CONNECTIONS AS APART OF STAGES 4 & 5.

INSTALL 518, 519 AND 536 POLY TO LOTS, CAP OFF AND BURY FOR FUTURE INSTALLATION OF METERS. HOUSE CONNECTIONS AS APART OF STAGES 4 & 5.

INSTALL 422 AND 423 POLY TO LOTS, CAP OFF AND BURY FOR FUTURE INSTALLATION OF METERS. HOUSE CONNECTIONS AS APART OF STAGES 4 & 5.

SHEET LAYOUT

SH 1 SH 2
SH 3 SH 4
SH 5

PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
PARISH OF CUDGEN ,
COUNTY OF ROUS .

CLIENT

PROJECT 28 PTY LTD

NORTH

0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

D	04-05-21	WATER ALIGNMENT AND DIMENSIONS AMENDED
C	01-12-20	WATER SYMBOL ADDED
B	26-08-20	WATER ALIGNMENT AMENDED
A	07-02-19	PRELIMINARY CLIENT ISSUE
PRE	DATE	AMENDMENT

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ASSOCIATED CONSULTANTS

LandSurv
GILBERT SUTHERLAND

DRAWING TITLE

WATER RETICULATION PLAN
SHEET 4 OF 5

CONSTRUCTION ISSUE

MORTONS urbansolutions
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Civil Engineering
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DESIGNED	RB	DRAWN	CB
APPROVED		NER 906726	DATE 07-02-19

DRAWING NUMBER: 12301-P5-1,2&3-703
AMEND.: E

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PROJECT NAME

KINGS FOREST

PRECINCT 5
CONSTRUCTION CERTIFICATE - STAGES 1, 2 &3

REAL PROPERTY DESCRIPTION
Lot 7 on DP875447, Part of Lot 6 on DP875446, Lot 1 on DP781633, Lot 40 on DP7482, Lot 2 on DP819015, Lot 1 on DP129737, Lot 37A on DP13727, Lot 38A on DP13727, Lot 38B on DP13727, Lot 1 on DP706497, Lot 76 on DP755701, Lot 323 on DP755701, Lot 272 on DP755701, Lot 96 on DP755701 & Lot 326 on DP755701
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CLIENT

PROJECT 28 PTY LTD

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0 5 10 15 20 25m
Scale 1:500 - A1 (1:1000 - A3)

ISSUES	DATE	
TENDER	13-11-19	
COUNCIL	xx-xx-xx	
CONSTRUCTION	..	

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ASSOCIATED CONSULTANTS

LANDSURV
GILBERT SUTHERLAND

DRAWING TITLE

WATER RETICULATION PLAN
SHEET 5 OF 5

CONSTRUCTION ISSUE

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Y:\123 - Lesta Developments Pty Ltd\01 - Kings Forest\PREC5\Engineering Drawings\OFW Stages 1, 2 & 3\Current\12301-P5-1,2&3-700.dwg, 6/10/2021 5:22:48 PM, 1:2