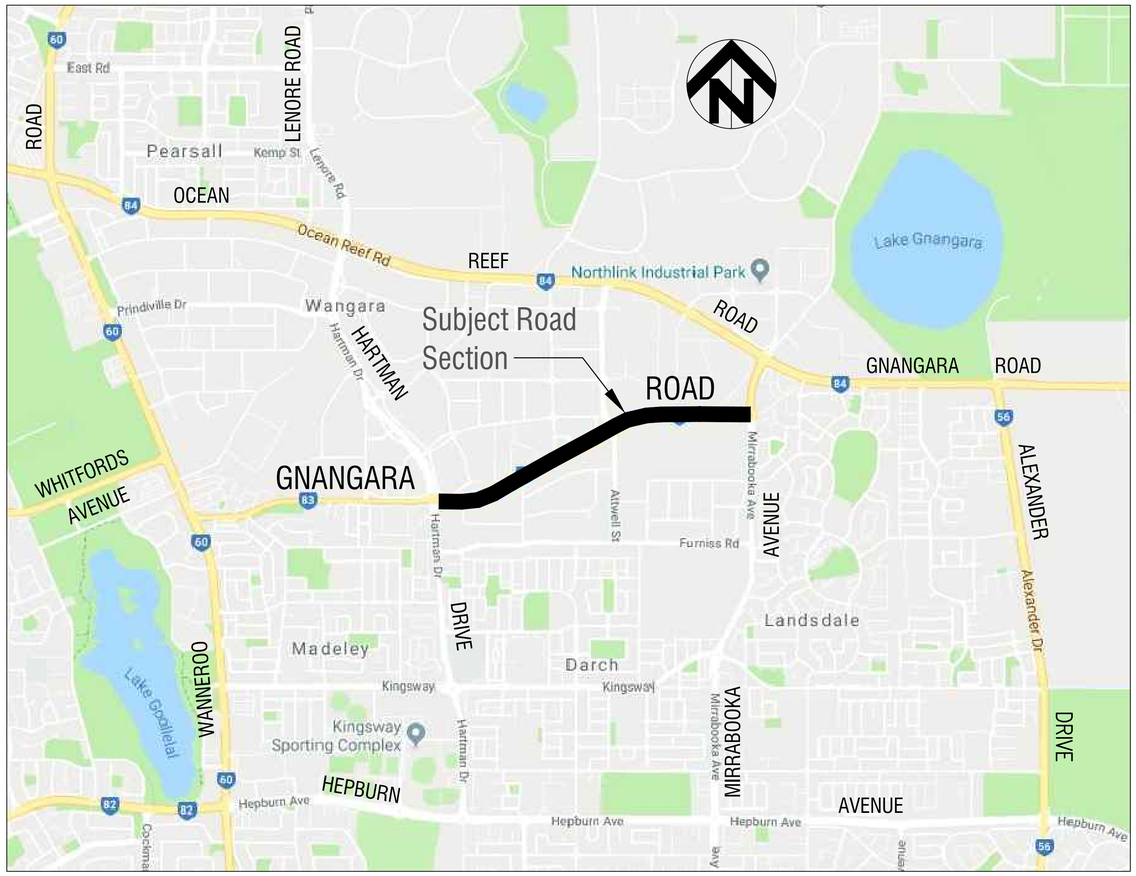
GNANGARA ROAD

HARTMAN DRIVE TO MIRRABOOKA AVENUE

STAGE 2: DUAL CARRIAGEWAY - PRELIMINARY DESIGN



LOCALITY PLAN

SCALE 1:20,000

DRAWING INDEX

DRG NO	DRAWING DESCRIPTION
3466 – 01	DRAWING INDEX AND LOCALITY PLAN
3466 – 02	REFERENCE LINE SETOUT PLAN – CH 00 TO CH 1200
3466 – 03	REFERENCE LINE SETOUT PLAN – CH 1200 TO CH 2194
3466 – 04	EXISTING SERVICES PLAN – CH 00 TO CH 650
3466 – 05	EXISTING SERVICES PLAN – CH 650 TO CH 1300
3466 – 06	EXISTING SERVICES PLAN – CH 1300 TO CH 1900
3466 – 07	EXISTING SERVICES PLAN – CH 1900 TO CH 2194
3466 – 08	PLAN AND PROFILE – CH 00 TO CH 600
3466 – 09	PLAN AND PROFILE – CH 600 TO CH 1200
3466 – 10	PLAN AND PROFILE – CH 1200 TO CH 1800
3466 – 11	PLAN AND PROFILE – CH 1800 TO CH 2194
3466 – 12	TYPICAL CROSS SECTIONS
3466 – 13	CROSS SECTIONS CH 20 TO CH 360
3466 – 14	CROSS SECTIONS CH 400 TO CH 760
3466 – 15	CROSS SECTIONS CH 800 TO CH 1200
3466 – 16	CROSS SECTIONS CH 1240 TO CH 1600
3466 – 17	CROSS SECTIONS CH 1640 TO CH 2000
3466 – 18	CROSS SECTIONS CH 2040 TO CH 2170
3466 – 19	LAND REQUIREMENTS PLAN – SHEET 1 OFF 2
3466 – 20	LAND REQUIREMENTS PLAN – SHEET 2 OFF 2

NOTES:

1. STAGE 2: ULTIMATE FOUR LANE DUAL CARRIAGEWAY – PRELIMINARY DESIGN (NOT FOR CONSTRUCTION).
2. THIS DUAL CARRIAGEWAY DESIGN (ROADWAY ONLY) HAS BEEN UNDERTAKEN TO A FINAL DETAIL STAGE TO ACHIEVE AN ACCEPTABLE LEVEL OF ACCURACY WITH RESPECT TO THE PURPOSES LISTED BELOW. HOWEVER, THE DESIGN SHOULD BE CONSIDERED AS A PRELIMINARY, DUE TO THE ANTICIPATED DURATION OF TIME WHICH WILL ELAPSE BEFORE CONSTRUCTION IS LIKELY TO OCCUR.
3. DESIGN CRITERIA: DESIGN SPEED = 80kph; DESIGN VEHICLE: 27.5m 'B' DOUBLE PRIME MOVER + SEMI–TRAILER + TRAILER.
4. THESE DRAWINGS ARE ISSUED FOR THE PURPOSES OF:
   - 4.1. EAST WANNEROO STRUCTURE PLAN CELL 8 COST ALLOCATION REVIEW;
   - 4.2. BUDGET ESTIMATION AND;
   - 4.3. LAND ACQUISITION.
5. REFER TO THE FOLLOWING EDRMS DOCUMENTS FOR FURTHER DETAILS:
   - 5.1 18/265892 DUAL CARRIAGEWAY DESIGN DRAWINGS;
   - 5.2 18/266309 3D DIGITAL GROUND DATA AND DESIGN DATA;
   - 5.3 18/275192 DUAL CARRIAGEWAY CONSTRUCTION ESTIMATES:
     - 5.3.1 TOTAL COSTS;
     - 5.3.2 EAST WANNEROO CELL COSTS;
     - 5.3.3 MUNICIPAL COSTS.

No.	REVISION	BY	DATE	AUTH
A	DRAFT COPY	NR	5/2018	
0	ISSUED FOR EWSP CELL 8 COST ALLOCATION REVIEW, BUDGET ESTIMATION AND LAND ACQUISITION PURPOSES ONLY. NOT FOR CONSTRUCTION.	NR	7/2018	

No.	REVISION	BY	DATE	AUTH

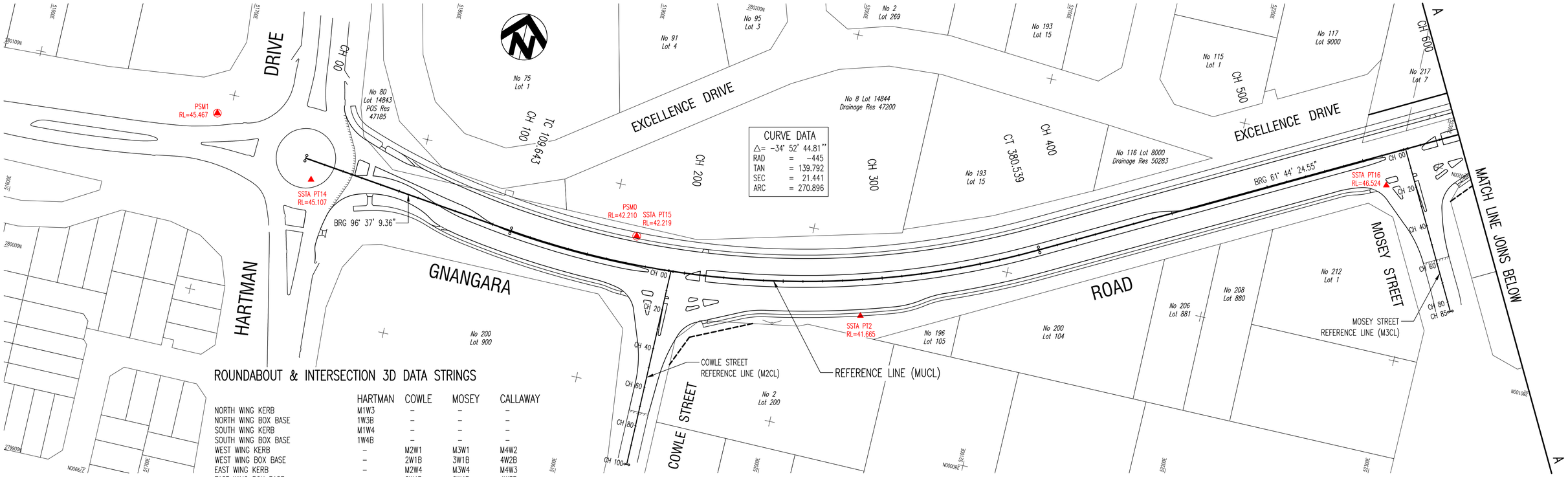
SCALE: 1:20000 (200 0 200 400 600 800 1000 SCALE IN METRES)
DATUM: AHD
GRID: PCG 94
SURVEYED: W.A. PRECISION SURVEYS 4/2013
SURVEYOR:
DESIGNED: N.RAINFORD 11/2017
CIVIL DESIGNER
DRAWN: N.RAINFORD 5/2018
CIVIL DESIGNER
CHECKED: 27/05/22
COORDINATOR DESIGN
AUTHORISED: 27/05/22
MANAGER INFRASTRUCTURE CAPITAL WORKS
APPROVED: 09/06/22
DIRECTOR ASSETS
FINANCE CODE: PR-2602
PMO No.: 16058
DRAWING SET REF: 18/265892
PMO CONTAINER No.: 23897

CITY OF WANNEROO
ASSETS

GNANGARA ROAD
HARTMAN DRIVE TO MIRRABOOOKA AVENUE
STAGE 2: DUAL CARRIAGEWAY - PRELIMINARY DESIGN
WANGARA

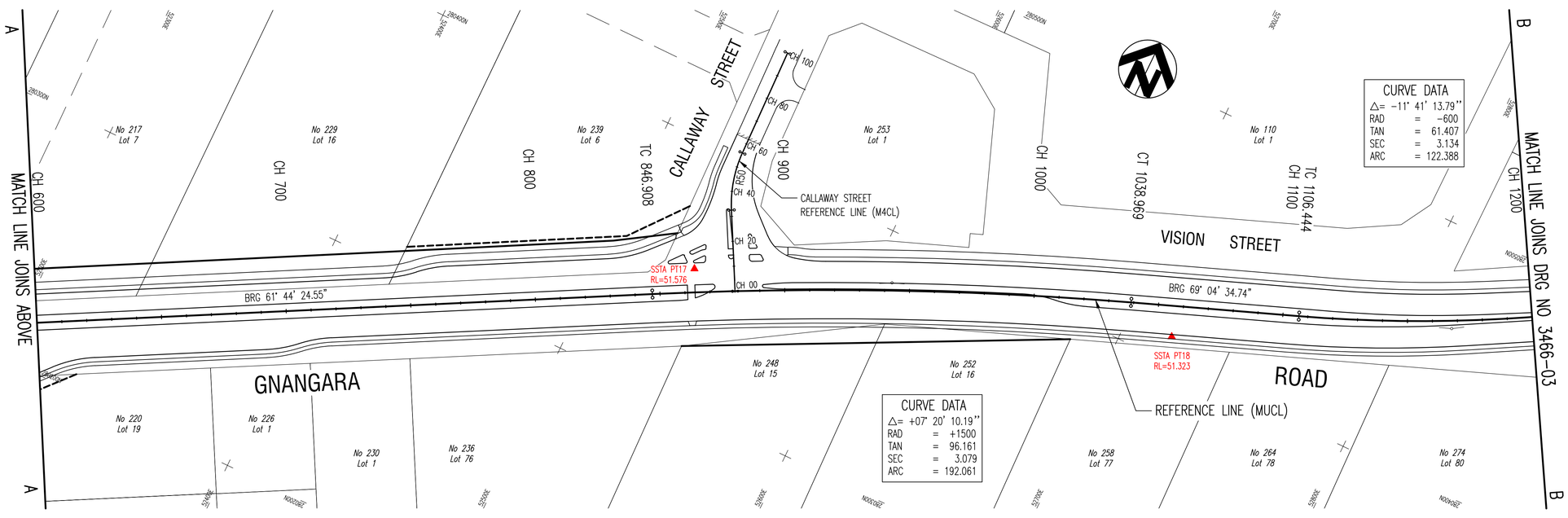
DRAWING INDEX AND LOCALITY PLAN
SHEET 1 OF 1

DRAWING No.	SHEET	REVISION	ORIGINAL DRG. SIZE
3466	01	0	A1



ROUNDABOUT & INTERSECTION 3D DATA STRINGS

	HARTMAN	COWLE	MOSEY	CALLAWAY
NORTH WING KERB	M1W3	–	–	–
NORTH WING BOX BASE	1W3B	–	–	–
SOUTH WING KERB	M1W4	–	–	–
SOUTH WING BOX BASE	1W4B	–	–	–
WEST WING KERB	–	M2W1	M3W1	M4W2
WEST WING BOX BASE	–	2W1B	3W1B	4W2B
EAST WING KERB	–	M2W4	M3W4	M4W3
EAST WING BOX BASE	–	2W4B	2W4B	4W3B
WEST MEDIAN KERB	M1M3	M2M2	M3M2	M4M1
WEST MEDIAN BOX BASE	1M3B	2M2B	3M2B	4M1B
EAST MEDIAN KERB	–	M2M3	M3M3	M4M4
EAST MEDIAN BOX BASE	–	2M3B	3M3B	4M4B
WEST SPLITTER ISLAND	–	M2S1	M3S1	M4S2
EAST SPLITTER ISLAND	–	M2S4	M3S4	M4S3
SIDE ROAD CENTRAL ISLAND	–	M2C4	M3C4	M4C2
SIDE ROAD CENTRE REFERENCE LINE	–	M2CL	M3CL	M4CL



DUAL CARRIAGEWAY 3D DATA STRINGS

	LEFT C'WAY	RIGHT C'WAY
MEDIAN BOX TOP	LUMT	RUMT
MEDIAN BOX BASE	LUMB	RUMB
MEDIAN KERB	LUMK	RUMK
OUTER KERB	LUOK	RUOK
OUTER BOX TOP – THRU C'WAY	LUOT	RUOT
OUTER BOX TOP – COMBINED *	LUOC	RUOC
OUTER BOX BASE	LUOB	RUOB
SHARED PATH FRONT	LUFF	–
SHARED PATH BACK	LUBF	–
FOOTPATH FRONT	–	RUFF
FOOTPATH BACK	–	RUBF
BACK OF VERGE	LUOV	RUOV
TOE OF FILL BATTER	ILUF	IRUF
TOP OF CUT BATTER	ILUC	IRUC

* COMBINED THROUGH CARRIAGEWAY AND ROUNDABOUTS OUTER BOX TOP

KEY:

SURVEY REFERENCE MARKS (SSMs, SSs & TBMs)

NOTES:

1. FOR GROUND SURVEY AND DUAL CARIAGEWAY PRELIMINARY DESIGN 3D DIGITAL DATA REFER TO EDRMS FILE REF: 18/266309.
2. CADASTRAL INFORMATION APPROXIMATE ONLY.

CITY OF WANNEROO
ASSETS

GNANGARA ROAD

HARTMAN DRIVE TO MIRRABOOOKA AVENUE
STAGE 2: DUAL CARRIAGEWAY - PRELIMINARY DESIGN
WANGARA

REFERENCE LINE AND SET OUT DATA PLAN

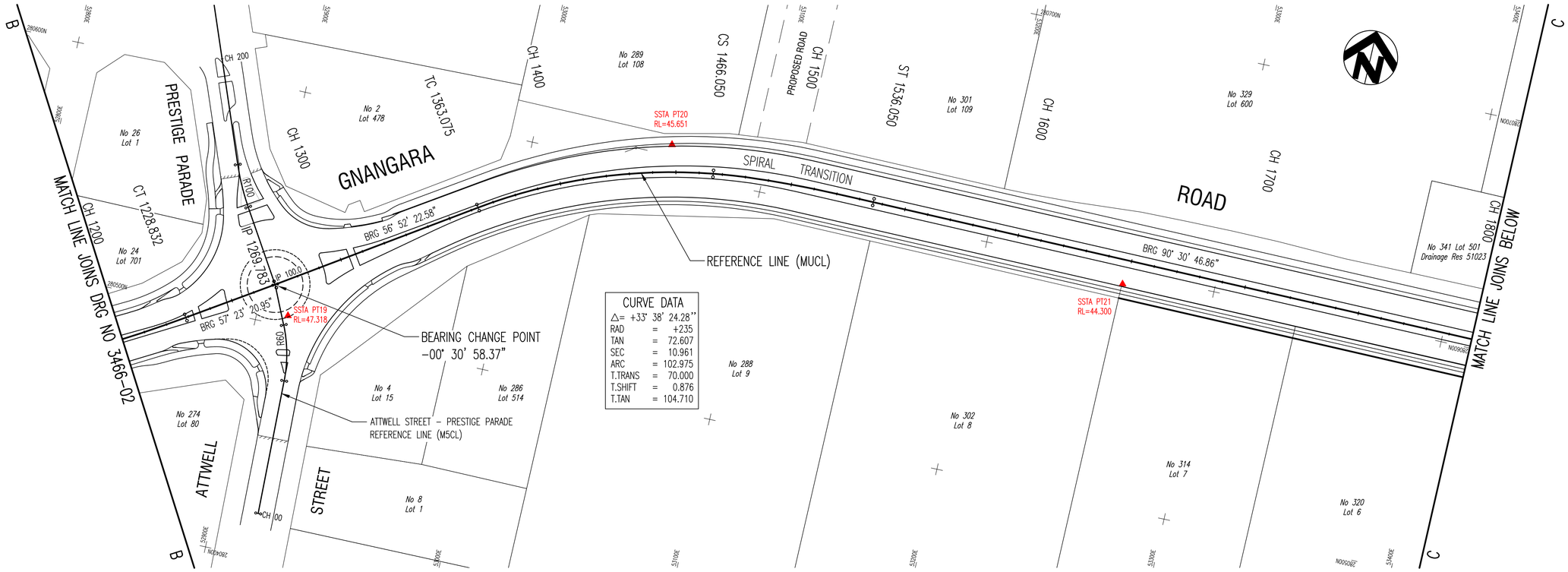
SHEET 1 OF 2

No.	REVISION	BY	DATE	AUTH
A	DRAFT COPY	NR	5/2018	
0	ISSUED FOR EWSP CELL 8 COST ALLOCATION REVIEW, BUDGET ESTIMATION AND LAND ACQUISITION PURPOSES ONLY. NOT FOR CONSTRUCTION.	NR	7/2018	

No.	REVISION	BY	DATE	AUTH

SCALE: 1:1000 (10 0 10 20 30 40 50 SCALE IN METRES)	SURVEYED: W.A. PRECISION SURVEYS 4/2013 SURVEYOR	DRAWN: N.RAINFORD 5/2018 CIVIL DESIGNER	AUTHORISED: 27/05/22 MANAGER INFRASTRUCTURE CAPITAL WORKS
DATUM: AHD	GRID: PCG 94	DESIGNED: N.RAINFORD 11/2017 CIVIL DESIGNER	CHECKED: Philip Williams 27/05/22 COORDINATOR DESIGN
			APPROVED: 09/06/22 DIRECTOR ASSETS

FINANCE CODE	PMO No.	DRAWING No.	SHEET	REVISION	ORIGINAL DRG. SIZE
PR-2602	16058	3446	02	0	A1
DRAWING SET REF 18/265892	PMO CONTAINER No. 23897				



CURVE DATA		
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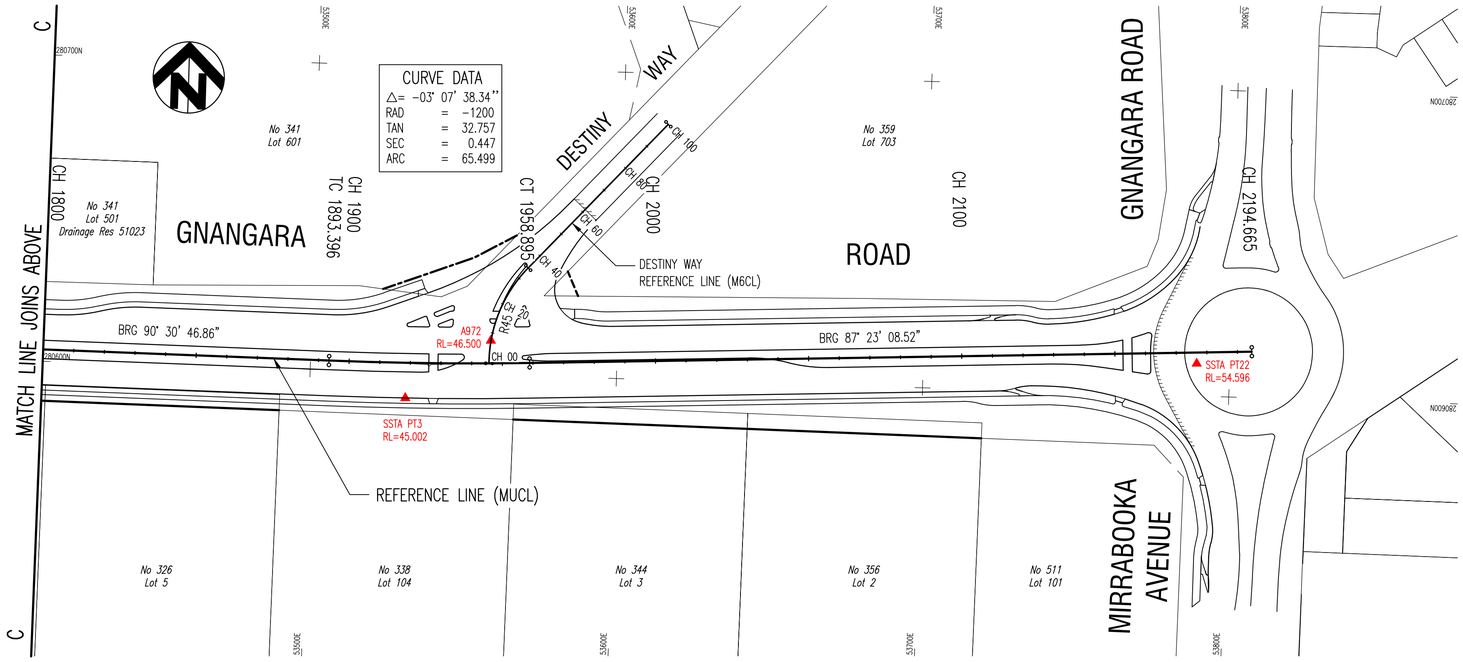
RAD	=	+235
TAN	=	72.607
SEC	=	10.961
ARC	=	102.975
T.TRANS	=	70.000
T.SHIFT	=	0.876
T.TAN	=	104.710

ROUNDABOUT & INTERSECTION 3D DATA STRINGS

	PRESTIGE	DESTINY	MIRRABOOKA
SOUTH WEST WING KERB	M5W1	–	M7W1
SOUTH WEST WING BOX BASE	5W1B	–	7W1B
SOUTH WEST WING MOUNTABLE APRON	M5X1	–	–
SOUTH WEST WING APRON BOX BASE	5X1B	–	–
NORTH WEST WING KERB	M5W2	–	M7W2
NORTH WEST WING BOX BASE	5W2B	–	7W2B
NORTH EAST WING KERB	M5W3	M6W2	–
NORTH EAST WING BOX BASE	5W3B	6W2B	–
SOUTH EAST WING KERB	M5W4	M6W3	–
SOUTH EAST WING BOX BASE	5W4B	6W3B	–
SOUTH MEDIAN KERB	M5M1	–	–
SOUTH MEDIAN BOX BASE	5M1B	–	–
WEST MEDIAN KERB	M5M2	M6M1	M7M2
WEST MEDIAN BOX BASE	M52B	6M1B	7M2B
NORTH MEDIAN KERB	M5M3	–	–
NORTH MEDIAN BOX BASE	5M3B	–	–
EAST MEDIAN KERB	M5M4	M6M4	–
EAST MEDIAN BOX BASE	5M4B	6M4B	–
ROUNDABOUT OUTER ANNULUS	M5C1	–	–
ROUNDABOUT OUTER ANNULUS BOX BASE	5C1B	–	–
ROUNDABOUT INNER ANNULUS	M5C2	–	–
ROUNDABOUT INNER ANNULUS BOX BASE	5C2B	–	–
WEST SPLITTER ISLAND	–	M6S2	–
EAST SPLITTER ISLAND	–	M6S3	–
SIDE ROAD CENTRAL ISLAND	–	M6C2	–
SIDE ROAD CENTRE REFERANCE LINE	–	M6CL	–



CURVE DATA		
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RAD	=	-1200
TAN	=	32.757
SEC	=	0.447
ARC	=	65.499

DUAL CARRIAGEWAY 3D DATA STRINGS

	LEFT C'WAY	RIGHT C'WAY
MEDIAN BOX TOP	LUMT	RUMT
MEDIAN BOX BASE	LUMB	RUMB
MEDIAN KERB	LUMK	RUMK
OUTER KERB	LUOK	RUOK
OUTER BOX TOP – THRU C'WAY	LUOT	RUOT
OUTER BOX TOP – COMBINED *	LUOC	RUOC
OUTER BOX BASE	LUOB	RUOB
SHARED PATH FRONT	LUFF	–
SHARED PATH BACK	LUBF	–
FOOTPATH FRONT	–	RUFF
FOOTPATH BACK	–	RUBF
BACK OF VERGE	LUOV	RUOV
TOE OF FILL BATTER	ILUF	IRUF
TOP OF CUT BATTER	ILUC	IRUC

* COMBINED THROUGH CARRIAGEWAY AND ROUNDABOUTS OUTER BOX TOP

KEY:

SURVEY REFERENCE MARKS (SSMs, SSs & TBMs)

NOTES:

1. FOR GROUND SURVEY AND DUAL CARIAGEWAY DESIGN 3D DIGITAL DATA REFER TO EDRMS FILE REF: 18/266309.
2. CADASTRAL INFORMATION APPROXIMATE ONLY.

CITY OF WANNEROO
ASSETS

GNANGARA ROAD

HARTMAN DRIVE TO MIRRABOOOKA AVENUE
STAGE 2: DUAL CARRIAGEWAY - PRELIMINARY DESIGN
WANGARA

REFERENCE LINE AND SET OUT DATA PLAN
SHEET 2 OF 2

No.	REVISION	BY	DATE	AUTH
A	DRAFT COPY	NR	5/2018	
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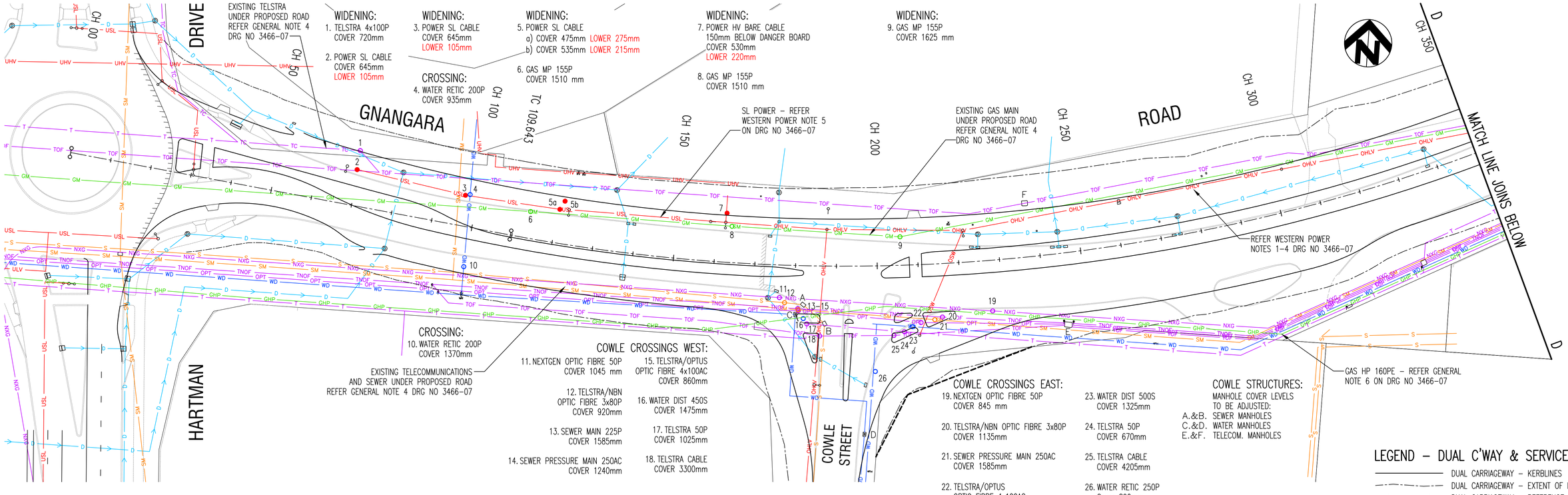
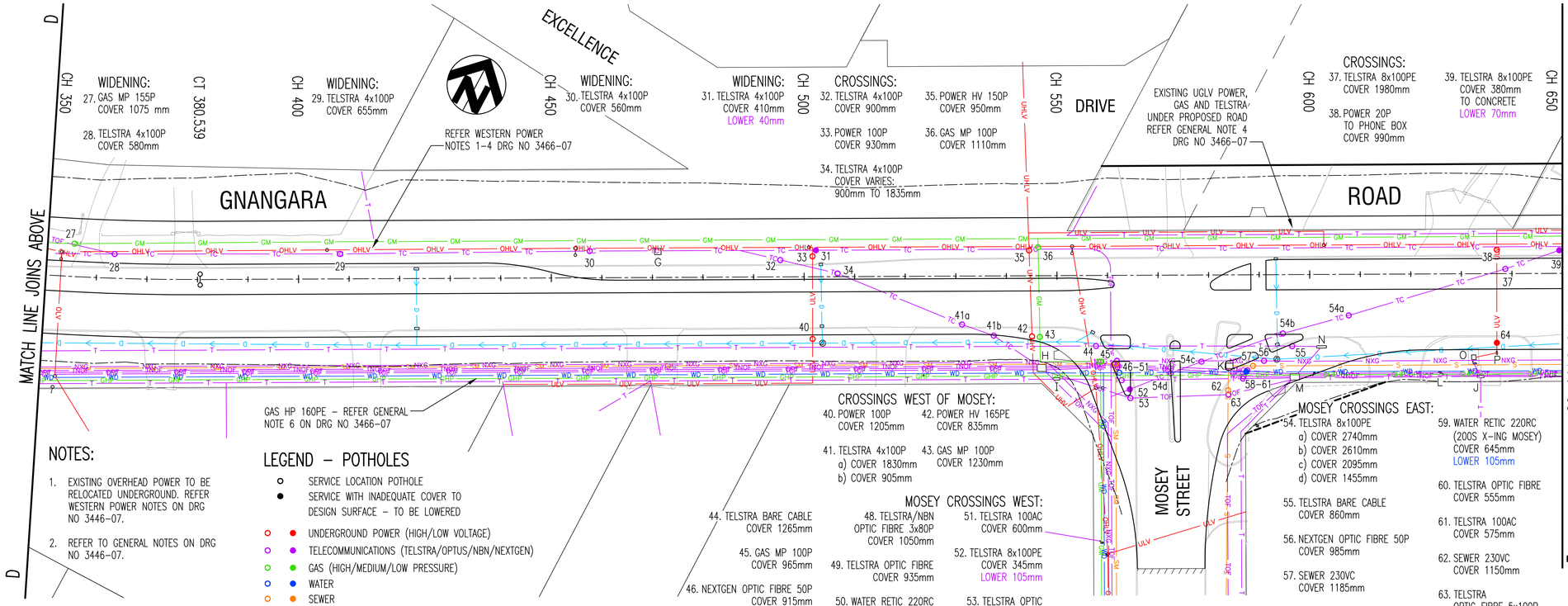
CIVIL DESIGNER
DRAWN: N.RAINFORD 5/2018
CIVIL DESIGNER
CHECKED: 27/05/22
COORDINATOR DESIGN
AUTHORISED: 27/05/22
MANAGER INFRASTRUCTURE CAPITAL WORKS
APPROVED: 09/06/22
DIRECTOR ASSETS
FINANCE CODE: PR-2602
DRAWING SET REF: 18/265892
PMO No.: 16058
PMO CONTAINER No.: 23897
DRAWING No.: 3466 - 03 - 0
SHEET
REVISION
ORIGINAL DRG. SIZE: A1





NOTES:

1. EXISTING OVERHEAD POWER TO BE RELOCATED UNDERGROUND. REFER WESTERN POWER NOTES ON DRG NO 3446-07.
2. REFER TO GENERAL NOTES ON DRG NO 3446-07.

LEGEND – POTHOLES

- SERVICE LOCATION POTHOLE
- SERVICE WITH INADEQUATE COVER TO DESIGN SURFACE – TO BE LOWERED
- UNDERGROUND POWER (HIGH/LOW VOLTAGE)
- TELECOMMUNICATIONS (TELSTRA/OPTUS/NBN/NEXTGEN)
- GAS (HIGH/MEDIUM/LOW PRESSURE)
- WATER
- SEWER

CITY OF WANNEROO
ASSETS

GNANGARA ROAD

HARTMAN DRIVE TO MIRRABOOOKA AVENUE
STAGE 2: DUAL CARRIAGEWAY - PRELIMINARY DESIGN
WANGARA

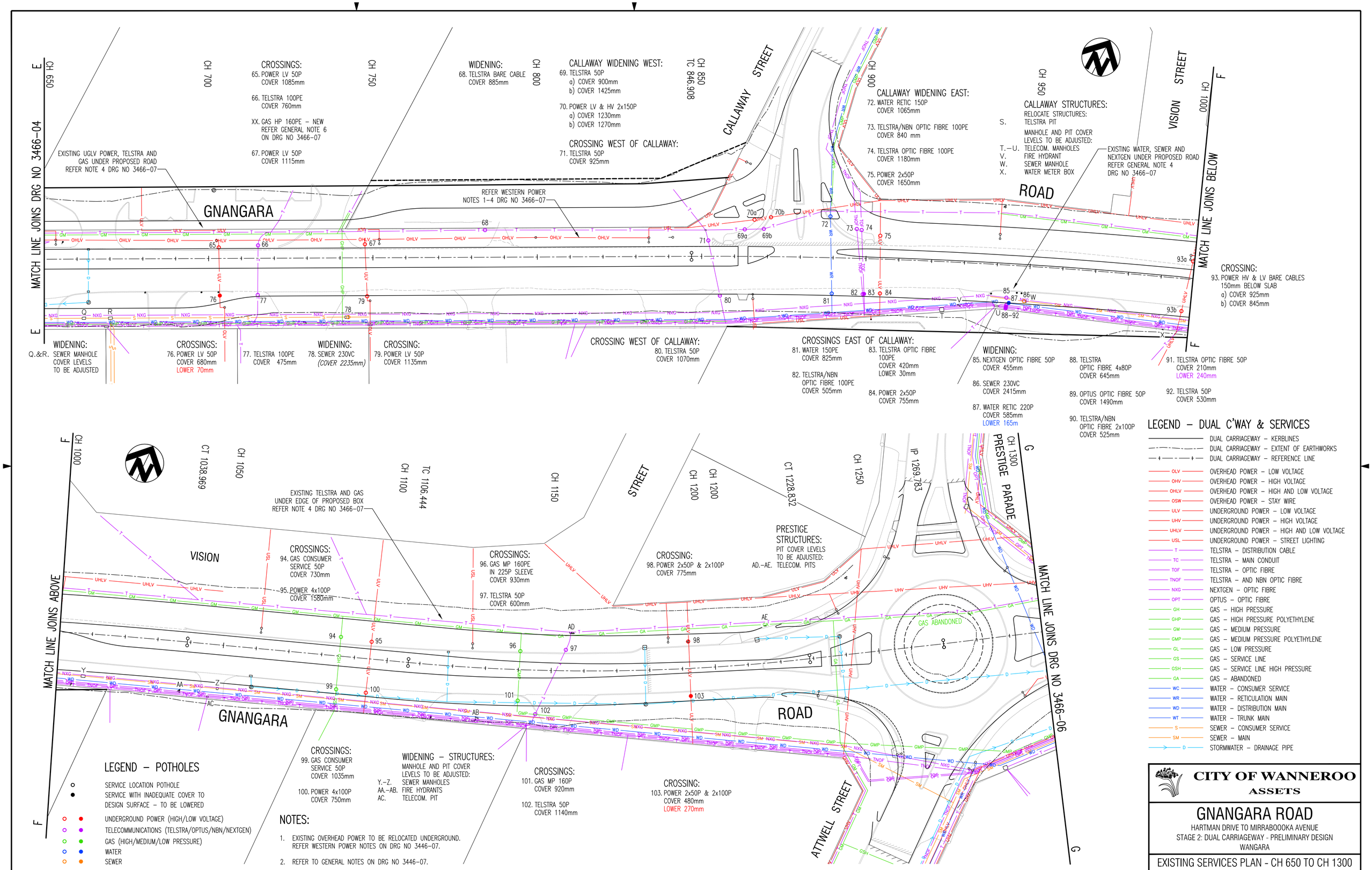
EXISTING SERVICES PLAN - CH 00 TO CH 650

SHEET 1 OF 4

No.	REVISION	BY	DATE	AUTH
A	DRAFT COPY	NR	5/2018	
0	ISSUED FOR EWSP CELL 8 COST ALLOCATION REVIEW, BUDGET ESTIMATION AND LAND ACQUISITION PURPOSES ONLY. NOT FOR CONSTRUCTION.	NR	7/2018	

No.	REVISION	BY	DATE	AUTH

SCALE: 1:500 (5 0 5 10 15 20 25 SCALE IN METRES)	SURVEYED: W.A. PRECISION SURVEYS 4/2013 SURVEYOR	DRAWN: N.RAINFORD 5/2018 CIVIL DESIGNER	AUTHORISED: 27/05/22 MANAGER INFRASTRUCTURE CAPITAL WORKS	FINANCE CODE PR-2602	PMO No. 16058	DRAWING No. 3466	SHEET 04	REVISION 0
DATUM: AHD	GRID: PCG 94	DESIGNED: N.RAINFORD 11/2017 CIVIL DESIGNER	CHECKED: Philip Williams 27/05/22 COORDINATOR DESIGN	APPROVED: 09/06/22 DIRECTOR ASSETS	DRAWING SET REF 18/265892	PMO CONTAINER No. 23897	ORIGINAL DRG. SIZE A1	



CITY OF WANNEROO
ASSETS

GNANGARA ROAD

HARTMAN DRIVE TO MIRRABOOOKA AVENUE
STAGE 2: DUAL CARRIAGEWAY - PRELIMINARY DESIGN
WANGARA

EXISTING SERVICES PLAN - CH 650 TO CH 1300

SHEET 2 OF 4

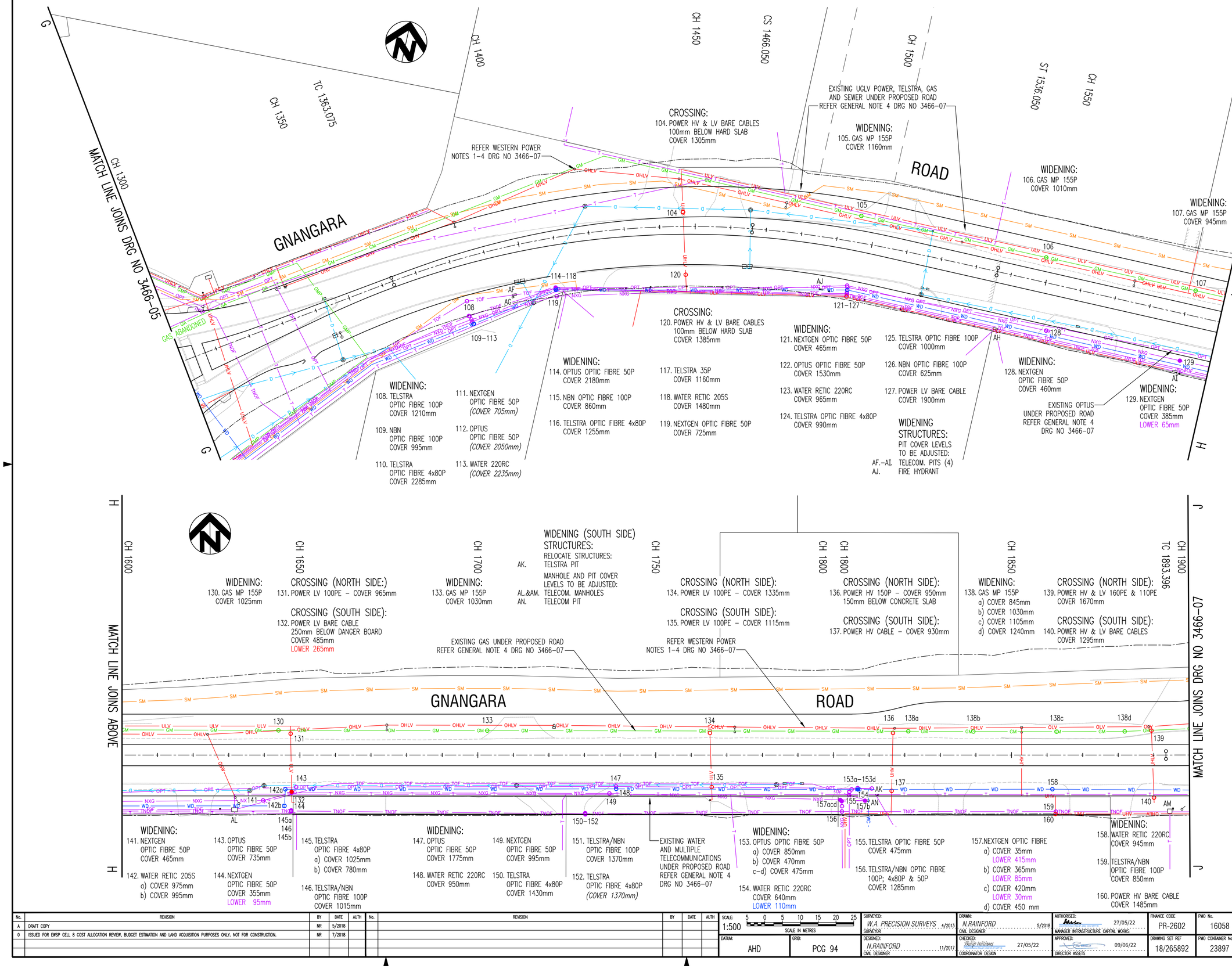
No.	REVISION	BY	DATE	AUTH
A	DRAFT COPY	NR	5/2018	
0	ISSUED FOR EWSP CELL 8 COST ALLOCATION REVIEW, BUDGET ESTIMATION AND LAND ACQUISITION PURPOSES ONLY. NOT FOR CONSTRUCTION.	NR	7/2018	

No.	REVISION	BY	DATE	AUTH

SCALE: 1:500 (5 0 5 10 15 20 25 SCALE IN METRES)	SURVEYED: W.A. PRECISION SURVEYS 4/2013 SURVEYOR	DRAWN: N.RAINFORD 5/2018 CIVIL DESIGNER	AUTHORISED: 27/05/22 MANAGER INFRASTRUCTURE CAPITAL WORKS
DATUM: AHD	GRID: PCG 94	DESIGNED: N.RAINFORD 11/2017 CIVIL DESIGNER	CHECKED: Philip Williams 27/05/22 COORDINATOR DESIGN
			APPROVED: 09/06/22 DIRECTOR ASSETS

FINANCE CODE	PMO No.
PR-2602	16058
DRAWING SET REF	PMO CONTAINER No.
18/265892	23897

DRAWING No.	SHEET	REVISION	ORIGINAL DRG. SIZE
3466	05	0	A1



NOTES:

1. EXISTING OVERHEAD POWER TO BE RELOCATED UNDERGROUND. REFER WESTERN POWER NOTES ON DRG NO 3446-07.
2. REFER TO GENERAL NOTES ON DRG NO 3446-07.

LEGEND - DUAL C'WAY & SERVICES

- DUAL CARRIAGEWAY - KERBLINES
- DUAL CARRIAGEWAY - EXTENT OF EARTHWORKS
- DUAL CARRIAGEWAY - REFERENCE LINE
- OLV — OVERHEAD POWER - LOW VOLTAGE
- OHV — OVERHEAD POWER - HIGH VOLTAGE
- OHLV — OVERHEAD POWER - HIGH AND LOW VOLTAGE
- OSW — OVERHEAD POWER - STAY WIRE
- ULV — UNDERGROUND POWER - LOW VOLTAGE
- UHV — UNDERGROUND POWER - HIGH VOLTAGE
- UHLV — UNDERGROUND POWER - HIGH AND LOW VOLTAGE
- USL — UNDERGROUND POWER - STREET LIGHTING
- T — TELSTRA - DISTRIBUTION CABLE
- TC — TELSTRA - MAIN CONDUIT
- TOF — TELSTRA - OPTIC FIBRE
- TNOF — TELSTRA - AND NBN OPTIC FIBRE
- NXG — NEXTGEN - OPTIC FIBRE
- OPT — OPTUS - OPTIC FIBRE
- GH — GAS - HIGH PRESSURE
- GHP — GAS - HIGH PRESSURE POLYETHYLENE
- GM — GAS - MEDIUM PRESSURE
- GMP — GAS - MEDIUM PRESSURE POLYETHYLENE
- GL — GAS - LOW PRESSURE
- GS — GAS - SERVICE LINE
- GSH — GAS - SERVICE LINE HIGH PRESSURE
- GA — GAS - ABANDONED
- WC — WATER - CONSUMER SERVICE
- WR — WATER - RETICULATION MAIN
- WD — WATER - DISTRIBUTION MAIN
- WT — WATER - TRUNK MAIN
- S — SEWER - CONSUMER SERVICE
- SM — SEWER - MAIN
- D — STORMWATER - DRAINAGE PIPE

LEGEND - POTHOLES

- SERVICE LOCATION POTHOLE
- SERVICE WITH INADEQUATE COVER TO DESIGN SURFACE - TO BE LOWERED
- UNDERGROUND POWER (HIGH/LOW VOLTAGE)
- TELECOMMUNICATIONS (TELSTRA/OPTUS/NBN/NEXTGEN)
- GAS (HIGH/MEDIUM/LOW PRESSURE)
- WATER
- SEWER

CITY OF WANNEROO
ASSETS

GNANGARA ROAD

HARTMAN DRIVE TO MIRRABOOOKA AVENUE
STAGE 2: DUAL CARRIAGEWAY - PRELIMINARY DESIGN
WANGARA

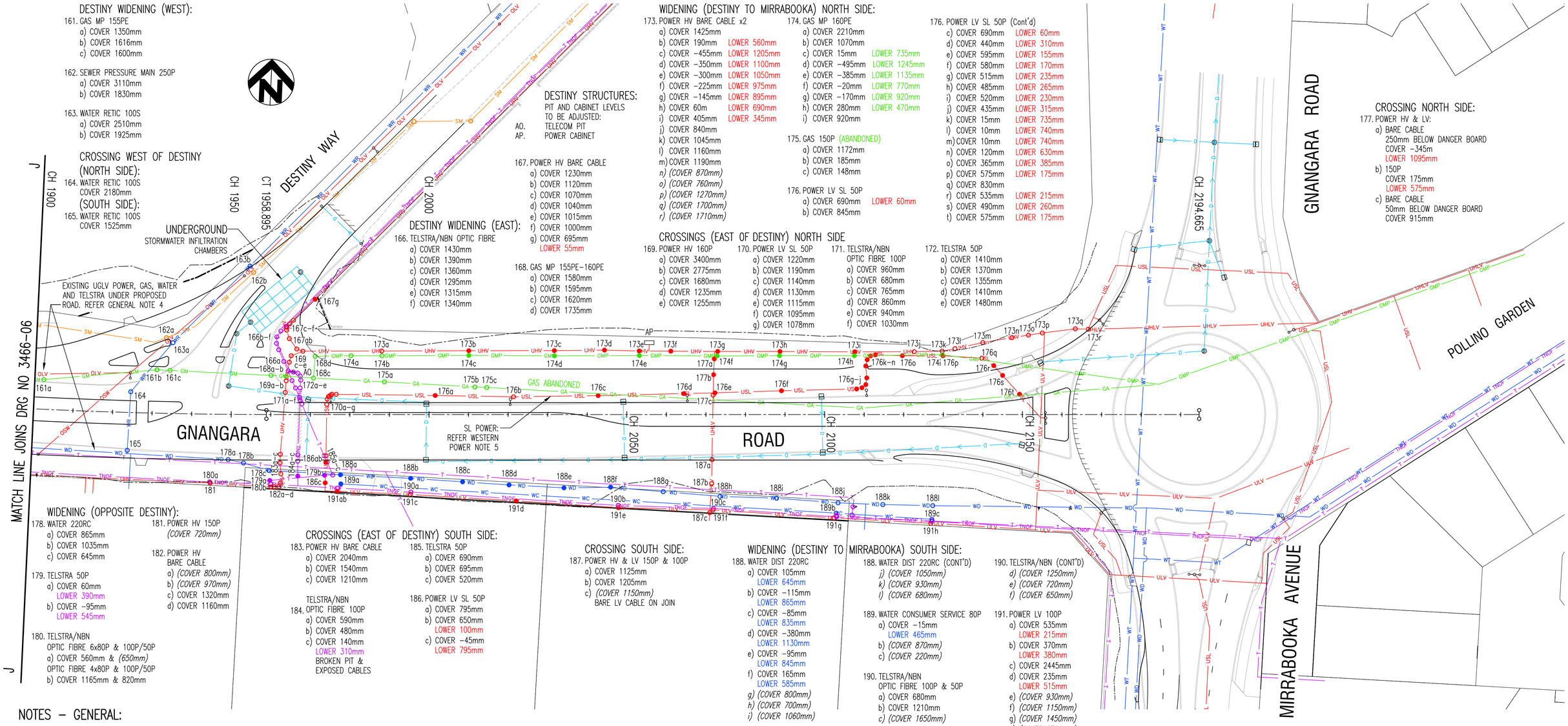
EXISTING SERVICES PLAN - CH 1300 TO CH 1900

SHEET 3 OF 4

No.	REVISION	BY	DATE	AUTH
A	DRAFT COPY	NR	5/2018	
0	ISSUED FOR EWSP CELL 8 COST ALLOCATION REVIEW, BUDGET ESTIMATION AND LAND ACQUISITION PURPOSES ONLY. NOT FOR CONSTRUCTION.	NR	7/2018	

No.	REVISION	BY	DATE	AUTH

SCALE: 1:500 (5 0 5 10 15 20 25 SCALE IN METRES)	SURVEYED: W.A. PRECISION SURVEYS SURVEYOR 4/2013	DRAWN: N.RAINFORD CIVIL DESIGNER 5/2018	AUTHORISED: 27/05/22 MANAGER INFRASTRUCTURE CAPITAL WORKS	FINANCE CODE PR-2602	PMO No. 16058	DRAWING No. 3466	SHEET 06	REVISION 0	ORIGINAL DRG. SIZE A1
DATUM: AHD	GRID: PCG 94	DESIGNED: N.RAINFORD CIVIL DESIGNER 11/2017	CHECKED: Philip Williams COORDINATOR DESIGN 27/05/22	APPROVED: 09/06/22 DIRECTOR ASSETS	DRAWING SET REF 18/265892	PMO CONTAINER No. 23897			



DESTINY WIDENING (WEST):

161. GAS MP 155PE
- a) COVER 1350mm
- b) COVER 1616mm
- c) COVER 1600mm

162. SEWER PRESSURE MAIN 250P
- a) COVER 3110mm
- b) COVER 1830mm

163. WATER RETIC 100S
- a) COVER 2510mm
- b) COVER 1925mm

CROSSING WEST OF DESTINY (NORTH SIDE):

164. WATER RETIC 100S
COVER 2180mm

(SOUTH SIDE):

165. WATER RETIC 100S
COVER 1525mm

DESTINY STRUCTURES:

PIT AND CABINET LEVELS TO BE ADJUSTED:
AO. TELECOM PIT
AP. POWER CABINET

167. POWER HV BARE CABLE
- a) COVER 1230mm
- b) COVER 1120mm
- c) COVER 1070mm
- d) COVER 1040mm
- e) COVER 1015mm
- f) COVER 1000mm
- g) COVER 695mm
  LOWER 55mm

168. GAS MP 155PE-160PE
- a) COVER 1580mm
- b) COVER 1595mm
- c) COVER 1620mm
- d) COVER 1735mm

DESTINY WIDENING (EAST):

166. TELSTRA/NBN OPTIC FIBRE
- a) COVER 1430mm
- b) COVER 1390mm
- c) COVER 1360mm
- d) COVER 1295mm
- e) COVER 1315mm
- f) COVER 1340mm

WIDENING (DESTINY TO MIRRABOOKA) NORTH SIDE:

173. POWER HV BARE CABLE x2
- a) COVER 1425mm
- b) COVER 190mm LOWER 560mm
- c) COVER -455mm LOWER 1205mm
- d) COVER -350mm LOWER 1100mm
- e) COVER -300mm LOWER 1050mm
- f) COVER -225mm LOWER 975mm
- g) COVER -145mm LOWER 895mm
- h) COVER 60m LOWER 690mm
- i) COVER 405mm LOWER 345mm
- j) COVER 840mm
- k) COVER 1045mm
- l) COVER 1160mm
- m) COVER 1190mm
- *n) (COVER 870mm)*
- *o) (COVER 760mm)*
- *p) (COVER 1270mm)*
- *q) (COVER 1700mm)*
- *r) (COVER 1710mm)*

174. GAS MP 160PE
- a) COVER 2210mm
- b) COVER 1070mm
- c) COVER 15mm LOWER 735mm
- d) COVER -495mm LOWER 1245mm
- e) COVER -385mm LOWER 1135mm
- f) COVER -20mm LOWER 770mm
- g) COVER -170mm LOWER 920mm
- h) COVER 280mm LOWER 470mm
- i) COVER 920mm

175. GAS 150P (ABANDONED)
- a) COVER 1172mm
- b) COVER 185mm
- c) COVER 148mm

176. POWER LV SL 50P
- a) COVER 690mm LOWER 60mm
- b) COVER 845mm

176. POWER LV SL 50P (Cont'd)
- c) COVER 690mm LOWER 60mm
- d) COVER 440mm LOWER 310mm
- e) COVER 595mm LOWER 155mm
- f) COVER 580mm LOWER 170mm
- g) COVER 515mm LOWER 235mm
- h) COVER 485mm LOWER 265mm
- i) COVER 520mm LOWER 230mm
- j) COVER 435mm LOWER 315mm
- k) COVER 15mm LOWER 735mm
- l) COVER 10mm LOWER 740mm
- m) COVER 10mm LOWER 740mm
- n) COVER 120mm LOWER 630mm
- o) COVER 365mm LOWER 385mm
- p) COVER 575mm LOWER 175mm
- q) COVER 830mm
- r) COVER 535mm LOWER 215mm
- s) COVER 490mm LOWER 260mm
- t) COVER 575mm LOWER 175mm

CROSSINGS (EAST OF DESTINY) NORTH SIDE

169. POWER HV 160P
- a) COVER 3400mm
- b) COVER 2775mm
- c) COVER 1680mm
- d) COVER 1235mm
- e) COVER 1255mm

170. POWER LV SL 50P
- a) COVER 1220mm
- b) COVER 1190mm
- c) COVER 1140mm
- d) COVER 1130mm
- e) COVER 1115mm
- f) COVER 1095mm
- g) COVER 1078mm

171. TELSTRA/NBN OPTIC FIBRE 100P
- a) COVER 960mm
- b) COVER 680mm
- c) COVER 765mm
- d) COVER 860mm
- e) COVER 940mm
- f) COVER 1030mm

172. TELSTRA 50P
- a) COVER 1410mm
- b) COVER 1370mm
- c) COVER 1355mm
- d) COVER 1410mm
- e) COVER 1480mm

CROSSING NORTH SIDE:

177. POWER HV & LV:
- a) BARE CABLE
  250mm BELOW DANGER BOARD
  COVER -345m
  LOWER 1095mm
- b) 150P
  COVER 175mm
  LOWER 575mm
- c) BARE CABLE
  50mm BELOW DANGER BOARD
  COVER 915mm

WIDENING (OPPOSITE DESTINY):

178. WATER 220RC
- a) COVER 865mm
- b) COVER 1035mm
- c) COVER 645mm

179. TELSTRA 50P
- a) COVER 60mm
  LOWER 390mm
- b) COVER -95mm
  LOWER 545mm

180. TELSTRA/NBN
OPTIC FIBRE 6x80P & 100P/50P
- a) COVER 560mm & *(650mm)*

OPTIC FIBRE 4x80P & 100P/50P
- b) COVER 1165mm & 820mm

181. POWER HV 150P
(COVER 720mm)

182. POWER HV
BARE CABLE
- a) *(COVER 800mm)*
- b) *(COVER 970mm)*
- c) COVER 1320mm
- d) COVER 1160mm

CROSSINGS (EAST OF DESTINY) SOUTH SIDE:

183. POWER HV BARE CABLE
- a) COVER 2040mm
- b) COVER 1540mm
- c) COVER 1210mm

TELSTRA/NBN

184. OPTIC FIBRE 100P
- a) COVER 590mm
- b) COVER 480mm
- c) COVER 140mm
  LOWER 310mm
  BROKEN PIT & EXPOSED CABLES

185. TELSTRA 50P
- a) COVER 690mm
- b) COVER 695mm
- c) COVER 520mm

186. POWER LV SL 50P
- a) COVER 795mm
- b) COVER 650mm
  LOWER 100mm
- c) COVER -45mm
  LOWER 795mm

CROSSING SOUTH SIDE:

187. POWER HV & LV 150P & 100P
- a) COVER 1125mm
- b) COVER 1205mm
- c) *(COVER 1150mm)*
  BARE LV CABLE ON JOIN

WIDENING (DESTINY TO MIRRABOOKA) SOUTH SIDE:

188. WATER DIST 220RC
- a) COVER 105mm
  LOWER 645mm
- b) COVER -115mm
  LOWER 865mm
- c) COVER -85mm
  LOWER 835mm
- d) COVER -380mm
  LOWER 1130mm
- e) COVER -95mm
  LOWER 845mm
- f) COVER 165mm
  LOWER 585mm
- *g) (COVER 800mm)*
- *h) (COVER 700mm)*
- *i) (COVER 1060mm)*

188. WATER DIST 220RC (CONT'D)
- *j) (COVER 1050mm)*
- *k) (COVER 930mm)*
- *l) (COVER 680mm)*

189. WATER CONSUMER SERVICE 80P
- a) COVER -15mm
  LOWER 465mm
- b) *(COVER 870mm)*
- c) *(COVER 220mm)*

190. TELSTRA/NBN
OPTIC FIBRE 100P & 50P
- a) COVER 680mm
- b) COVER 1210mm
- *c) (COVER 1650mm)*

190. TELSTRA/NBN (CONT'D)
- *d) (COVER 1250mm)*
- *e) (COVER 720mm)*
- *f) (COVER 650mm)*

191. POWER LV 100P
- a) COVER 535mm
  LOWER 215mm
- b) COVER 370mm
  LOWER 380mm
- c) COVER 2445mm
- d) COVER 235mm
  LOWER 515mm
- *e) (COVER 930mm)*
- *f) (COVER 1150mm)*
- *g) (COVER 1450mm)*
- *h) (COVER 2700mm)*

NOTES – GENERAL:

1. NOTED COVER DEPTHS HAVE BEEN CALCULATED FROM FINISHED DUAL CARRIAGEWAY DESIGN SURFACE TO TOP OF UNDERGROUND SERVICES.
2. NOTED SERVICE LOWERING DEPTHS ARE THE MINIMUM VERTICAL ADJUSTMENT REQUIRED TO MEET SERVICE AUTHORITY STANDARD MINIMUM COVER REQUIREMENTS; AS PER NOTE 5. THE EXTENT OF LOWERING OF UNDERGROUND SERVICES IS SUBJECT TO LIAISON WITH THE RELEVANT SERVICE AUTHORITIES.
3. NOTED COVER DEPTHS SHOWN THUS: *(COVER XXmm)* ARE EXISTING COVER DEPTHS TO UNDERGROUND SERVICES LOCATED BEYOND THE EXTENT OF THE PROPOSED DUAL CARRIAGEWAY PAVEMENT AND EARTHWORKS.
4. HORIZONTAL RELOCATION OF UNDERGROUND SERVICES, CLEAR OF PROPOSED ROAD PAVEMENT SURFACES, SUBJECT TO LIAISON WITH THE RELEVANT SERVICE AUTHORITIES.
5. MINIMUM STANDARD COVERS TO BE MET, AS SPECIFIED BY UNDER GROUND SERVICE AUTHORITIES:

5.1	GAS – CONSUMER SERVICES	600mm
5.2	GAS – STREET MAINS	750mm
5.3	GAS – HIGH PRESSURE DISTRIBUTION PIPELINES	1200mm
5.4	UNDERGROUND POWER – IN VERGES & UNDER ROAD SURFACES	750mm
5.5	TELECOMMUNICATIONS – STREET MAINS & CONSUMER SERVICES	450mm
5.6	SEWER – MAINS & CONSUMER SERVICES	900mm
5.7	WATER – CONSUMER SERVICES	450mm
5.8	WATER – RETICULATION MAINS	600mm
5.9	WATER – DISTRIBUTION MAINS	750mm
5.10	WATER – TRUNK MAINS	SUBJECT TO LIAISON WITH WATER CORP

6. EXISTING 160PE HP GAS MAIN (WANNEROO ROAD TO CALLAWAY STREET) YET TO BE POTHOLED. THIS GAS MAIN INSTALLED AFTER POTHOLING CONTRACT COMPLETED.
7. FURTHER TECHNICAL DETAILS REGARDING THE UNDERGROUND SERVICES MAY BE FOUND IN THE UNDERGROUND SERVICES SPREADSHEET MATRICES AT EDRMS FILE REF: 18/199531.

NOTES – WESTERN POWER:

1. ALL EXISTING OVERHEAD POWER IN THE NORTHERN VERGE, BETWEEN COWLE STREET AND CALLAWAY STREET AND BETWEEN PRESTIGE PARADE AND DESTINY WAY, TO BE RELOCATED UNDERGROUND. REFER TO WESTERN POWER FEASIBILITY STUDY REPORT MF010541 AT EDRMS REF 16/237406.
2. NEW UNDERGROUNDED POWER TO BE SITUATED IN ACCORDANCE WITH STANDARD ROAD RESERVE ALLOCATIONS AND PROPERTY BOUNDARY OFFSET ALIGNMENTS, FOR UTILITY SERVICE PROVIDERS.
3. EXISTING OVERHEAD POWER ADJACENT TO PROPOSED ROAD RESERVE WIDENING, TO BE RELOCATED UNDERGROUND TO PROPOSED PROPERTY BOUNDARIES AT STANDARD ROAD RESERVE ALLOCATIONS AND PROPERTY BOUNDARY OFFSET ALIGNMENTS, FOR UTILITY SERVICE PROVIDERS.
4. EXISTING STREET LIGHTING AND ASSOCIATED UNDERGROUND POWER TO BE RELOCATED WHERE NECESSARY TO SUIT PROPOSED LIGHTING SCHEME FOR DUAL CARRIAGEWAY AND INTERSECTION UPGRADES. NEW LIGHTING SUBJECT TO DETAIL LIGHTING DESIGN IN ACCORDANCE WITH AS1158. EXISTING LIGHTING WHICH IS TO REMAIN SHALL BE SUBJECT TO AS1158 COMPLIANCE REVIEW.

LEGEND – DUAL CARRIAGEWAY & SERVICES

- DUAL CARRIAGEWAY – KERBLINES
- DUAL CARRIAGEWAY – EXTENT OF EARTHWORKS
- DUAL CARRIAGEWAY – REFERENCE LINE
- OLV – OVERHEAD POWER – LOW VOLTAGE
- OHV – OVERHEAD POWER – HIGH VOLTAGE
- OHLV – OVERHEAD POWER – HIGH AND LOW VOLTAGE
- OSW – OVERHEAD POWER – STAY WIRE
- ULV – UNDERGROUND POWER – LOW VOLTAGE
- UHV – UNDERGROUND POWER – HIGH VOLTAGE
- UHLV – UNDERGROUND POWER – HIGH AND LOW VOLTAGE
- USL – UNDERGROUND POWER – STREET LIGHTING
- T – TELSTRA – DISTRIBUTION CABLE
- TC – TELSTRA – MAIN CONDUIT
- TOF – TELSTRA – OPTIC FIBRE
- TNOF – TELSTRA – AND NBN OPTIC FIBRE
- NXG – NEXTGEN – OPTIC FIBRE
- OPT – OPTUS – OPTIC FIBRE
- GH – GAS – HIGH PRESSURE
- GHP – GAS – HIGH PRESSURE POLYETHYLENE
- GM – GAS – MEDIUM PRESSURE
- GMP – GAS – MEDIUM PRESSURE POLYETHYLENE
- GL – GAS – LOW PRESSURE
- GS – GAS – SERVICE LINE
- GSH – GAS – SERVICE LINE HIGH PRESSURE
- GA – GAS – ABANDONED
- WC – WATER – CONSUMER SERVICE
- WR – WATER – RETICULATION MAIN
- WD – WATER – DISTRIBUTION MAIN
- WT – WATER – TRUNK MAIN
- S – SEWER – CONSUMER SERVICE
- SM – SEWER – MAIN
- D – STORMWATER – DRAINAGE PIPE

LEGEND – POTHOLES

- SERVICE LOCATION POTHOLE
- SERVICE WITH INADEQUATE COVER TO DESIGN SURFACE – TO BE LOWERED
- UNDERGROUND POWER (HIGH/LOW VOLTAGE)
- TELECOMMUNICATIONS (TELSTRA/OPTUS/NBN/NEXTGEN)
- GAS (HIGH/MEDIUM/LOW PRESSURE)
- WATER
- SEWER

CITY OF WANNEROO
ASSETS

GNANGARA ROAD

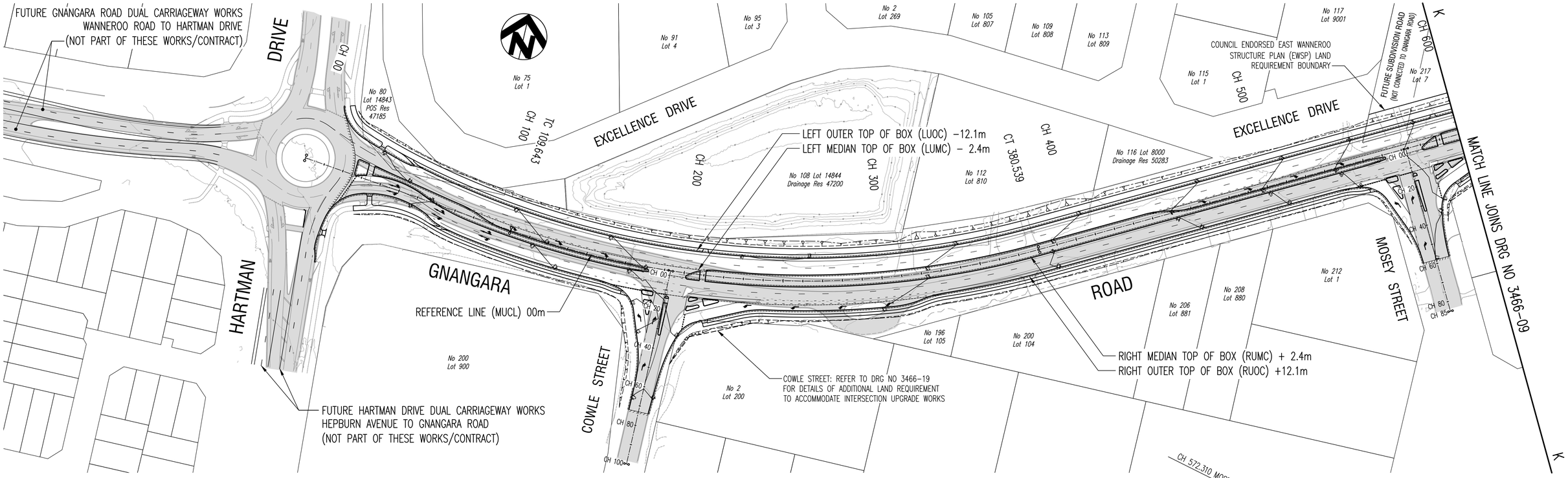
HARTMAN DRIVE TO MIRRABOOOKA AVENUE
STAGE 2: DUAL CARRIAGEWAY - PRELIMINARY DESIGN
WANGARA

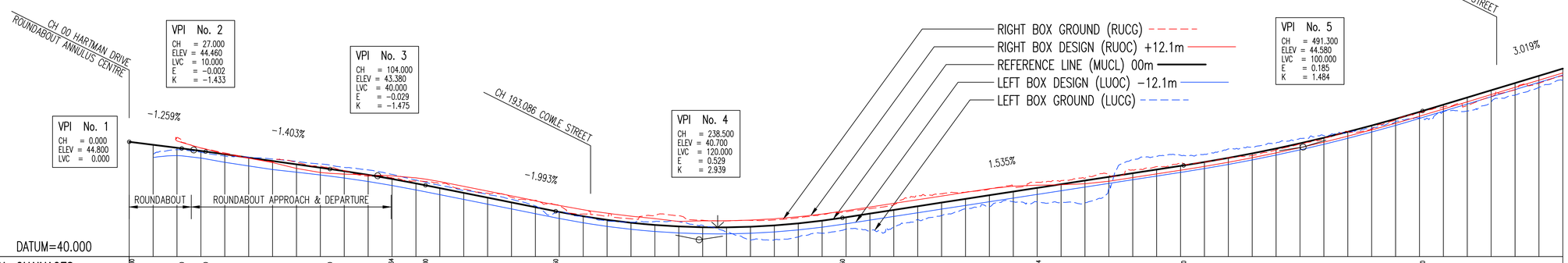
EXISTING SERVICES PLAN - CH 1900 TO CH 2194
SHEET 4 OF 4

No.	REVISION	BY	DATE	AUTH
A	DRAFT COPY	NR	5/2018	
0	ISSUED FOR EWSP CELL 8 COST ALLOCATION REVIEW, BUDGET ESTIMATION AND LAND ACQUISITION PURPOSES ONLY. NOT FOR CONSTRUCTION.	NR	7/2018	

No.	REVISION	BY	DATE	AUTH

SCALE: 1:500 (5 0 5 10 15 20 25 SCALE IN METRES)	SURVEYED: W.A. PRECISION SURVEYS 4/2013 SURVEYOR	DRAWN: N.RAINFORD 5/2018 CIVIL DESIGNER	AUTHORISED: 27/05/22 MANAGER INFRASTRUCTURE CAPITAL WORKS	FINANCE CODE PR-2602	PMO No. 16058	DRAWING No. 3466	SHEET 07	REVISION 0
DATUM: AHD	GRID: PCG 94	DESIGNED: N.RAINFORD 11/2017 CIVIL DESIGNER	CHECKED: Philip Williams 27/05/22 COORDINATOR DESIGN	APPROVED: 09/06/22 DIRECTOR ASSETS	DRAWING SET REF 18/265892	PMO CONTAINER No. 23897	ORIGINAL DRG. SIZE A1	





KEY:

▨ EXISTING PAVEMENT SURFACE

SPECIAL CHAINAGES		HV0.000		V22.00	V32.00					V84.00			H109.64	V124.00			
CROSSFALL	LEFT %		-1.62	-1.37	-1.36	-2.19	-2.81	-2.98	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00
	RIGHT %			1.28	0.13	-2.46	-3.11	-3.01	-2.99	-2.54	-1.43	-0.01	1.44	2.56	3.00	3.00	3.00
VERTICAL ALIGNMENT		L=22.000 P=-1.259%			R	P=-1.403% L=52.000					R=-6780.033 L=40.000				P=-1.993% L=54.500		
HORIZONTAL ALIGNMENT		D=109.643											R=-445.000 L=270.896				
LEFT BOX GROUND (LUCG)			44.29	44.47	44.36	44.20	44.15	44.06	43.98	43.87	43.73	43.62	43.44	43.20	42.98	42.76	42.60
LEFT BOX DESIGN (LUOC)			44.15	44.22	44.12	43.94	43.79	43.64	43.53	43.41	43.29	43.14	42.97	42.79	42.59	42.39	42.19
CENTRE REF LINE (MUCL)		44.80	44.67	44.55	44.42	44.28	44.14	44.00	43.86	43.72	43.57	43.42	43.25	43.06	42.86	42.66	42.46
RIGHT BOX DESIGN (RUOC)				44.84	44.54	44.29	44.11	43.93	43.69	43.52	43.45	43.42	43.38	43.29	43.13	42.94	42.74
RIGHT BOX GROUND (RUCG)				45.01	44.54	44.33	44.12	43.97	43.95	43.78	43.59	43.36	43.30	43.16	43.07	42.82	42.65
CUT(-) OR FILL(+) AT MUCL		-0.23	-0.19	0.03	-0.12	0.01	0.03	0.04	0.04	0.04	0.02	0.02	0.03	0.05	0.05	0.05	0.06
CHAINAGE		0.0	10.0	20.0	30.0	40.0	50.0	60.0	70.0	80.0	90.0	100.0	110.0	120.0	130.0	140.0	150.0

SPECIAL CHAINAGES				V178.50												V298.50	
CROSSFALL	LEFT %	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00
	RIGHT %	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
VERTICAL ALIGNMENT				R=3401.963 L=120.000												P=1.535% L=142.800	
HORIZONTAL ALIGNMENT																	
LEFT BOX GROUND (LUCG)		42.39	42.12	41.86	41.68	41.49	41.44	41.46	41.47	41.30	41.02	40.69	40.70	40.82	40.98	41.15	41.09
LEFT BOX DESIGN (LUOC)		41.99	41.79	41.59	41.41	41.26	41.14	41.05	40.99	40.95	40.95	40.97	41.03	41.11	41.23	41.37	41.52
CENTRE REF LINE (MUCL)		42.26	42.06	41.87	41.69	41.54	41.41	41.32	41.26	41.23	41.22	41.25	41.30	41.39	41.50	41.64	41.80
RIGHT BOX DESIGN (RUOC)		42.54	42.33	42.14	41.96	41.81	41.69	41.59	41.47	41.50	41.50	41.52	41.58	41.66	41.78	41.92	42.07
RIGHT BOX GROUND (RUCG)		42.48	42.35	42.14	41.78	41.69	41.58	41.73	41.71	41.52	41.49	41.52	41.53	41.63	41.76	41.88	42.01
CUT(-) OR FILL(+) AT MUCL		0.07	0.04	-0.02	-0.02	0.01	0.01	0.03	0.05	0.06	0.09	0.08	0.09	0.10	0.13	0.14	0.13
CHAINAGE		160.0	170.0	180.0	190.0	200.0	210.0	220.0	230.0	240.0	250.0	260.0	270.0	280.0	290.0	300.0	310.0

SPECIAL CHAINAGES								H380.54						V441.30		
CROSSFALL	LEFT %	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00
	RIGHT %	3.00	3.00	3.00	3.00	3.00	2.48	1.24	-0.24	-1.48	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00
VERTICAL ALIGNMENT															R=6739.727 L=100.000	
HORIZONTAL ALIGNMENT									D=466.369							
LEFT BOX GROUND (LUCG)		41.23	41.55	41.71	41.99	42.09	42.29	42.29	42.26	42.25	42.88	44.06	44.20	44.24	44.28	44.50
LEFT BOX DESIGN (LUOC)		41.68	41.83	41.98	42.14	42.29	42.45	42.60	42.75	42.91	43.06	43.21	43.37	43.52	43.68	43.85
CENTRE REF LINE (MUCL)		41.95	42.10	42.26	42.41	42.56	42.72	42.87	43.03	43.18	43.33	43.49	43.64	43.79	43.95	44.13
RIGHT BOX DESIGN (RUOC)		42.22	42.38	42.53	42.68	42.84	42.94	42.98	43.00	43.04	43.15	43.30	43.46	43.61	43.77	43.94
RIGHT BOX GROUND (RUCG)		42.17	42.57	42.63	42.69	42.83	42.89	43.11	43.17	43.28	43.47	43.62	43.76	43.91	43.95	44.13
CUT(-) OR FILL(+) AT MUCL		0.12	0.11	0.10	0.10	0.08	0.07	0.09	0.10	0.11	0.11	0.12	0.12	0.12	0.12	0.10
CHAINAGE		320.0	330.0	340.0	350.0	360.0	370.0	380.0	390.0	400.0	410.0	420.0	430.0	440.0	450.0	460.0

SPECIAL CHAINAGES								V541.30						
CROSSFALL	LEFT %	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00
	RIGHT %	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00
VERTICAL ALIGNMENT									P=3.019% L=82.900						
HORIZONTAL ALIGNMENT															
LEFT BOX GROUND (LUCG)		44.58	44.75	44.94	45.06	45.18	45.37	45.64	45.81	46.06	46.09	46.46	46.75	47.08	47.38
LEFT BOX DESIGN (LUOC)		44.04	44.24	44.46	44.70	44.94	45.21	45.48	45.78	46.08	46.38	46.68	46.98	47.29	47.59
CENTRE REF LINE (MUCL)		44.31	44.52	44.74	44.97	45.22	45.48	45.76	46.05	46.35	46.65	46.96	47.26	47.56	47.86
RIGHT BOX DESIGN (RUOC)		44.13	44.34	44.55	44.79	45.04	45.30	45.58	45.87	46.17	46.47	46.78	47.08	47.38	47.68
RIGHT BOX GROUND (RUCG)		44.23	44.46	44.71	44.93	45.22	45.33	45.72	46.01	46.25	46.32	46.70	46.97	47.25	47.56
CUT(-) OR FILL(+) AT MUCL		0.09	0.07	0.10	0.10	0.12	0.15	0.20	0.21	0.23	0.20	0.21	0.21	0.19	0.23
CHAINAGE		470.0	480.0	490.0	500.0	510.0	520.0	530.0	540.0	550.0	560.0	570.0	580.0	590.0	600.0

LONGITUDINAL SECTION – COMBINED THROUGH CARRIAGEWAY & ROUNDABOUT BOX TOP EDGE PROFILES

VERT SCALE: 1:100 (1 0 1 2 3 4 5 SCALE IN METRES)

SCALES: HORIZ 1:1000 VERT 1:100

No.	REVISION	BY	DATE	AUTH
A	DRAFT COPY	NR	5/2018	
0	ISSUED FOR EWSP CELL 8 COST ALLOCATION REVIEW, BUDGET ESTIMATION AND LAND ACQUISITION PURPOSES ONLY. NOT FOR CONSTRUCTION.	NR	7/2018	

No.	REVISION	BY	DATE	AUTH

HORIZ SCALE: 1:1000 (10 0 10 20 30 40 50 SCALE IN METRES)

DATUM: AHD

GRID: PCG 94

SURVEYED: W.A. PRECISION SURVEYS 4/2013
SURVEYOR

DESIGNED: N.RAINFORD 11/2017
CIVIL DESIGNER

DRAWN: N.RAINFORD 5/2018
CIVIL DESIGNER

CHECKED: Philip Williams 27/05/22
Philip Williams (May 27, 2022 15:37 GMT+8)
COORDINATOR DESIGN

AUTHORISED: 27/05/22
Lionel Nicholson (May 27, 2022 16:02 GMT+8)
MANAGER INFRASTRUCTURE CAPITAL WORKS

APPROVED: 09/06/22
DIRECTOR ASSETS

FINANCE CODE: PR-2602

PMO No.: 16058

DRAWING SET REF: 18/265892

PMO CONTAINER No.: 23897

CITY OF WANNEROO
ASSETS

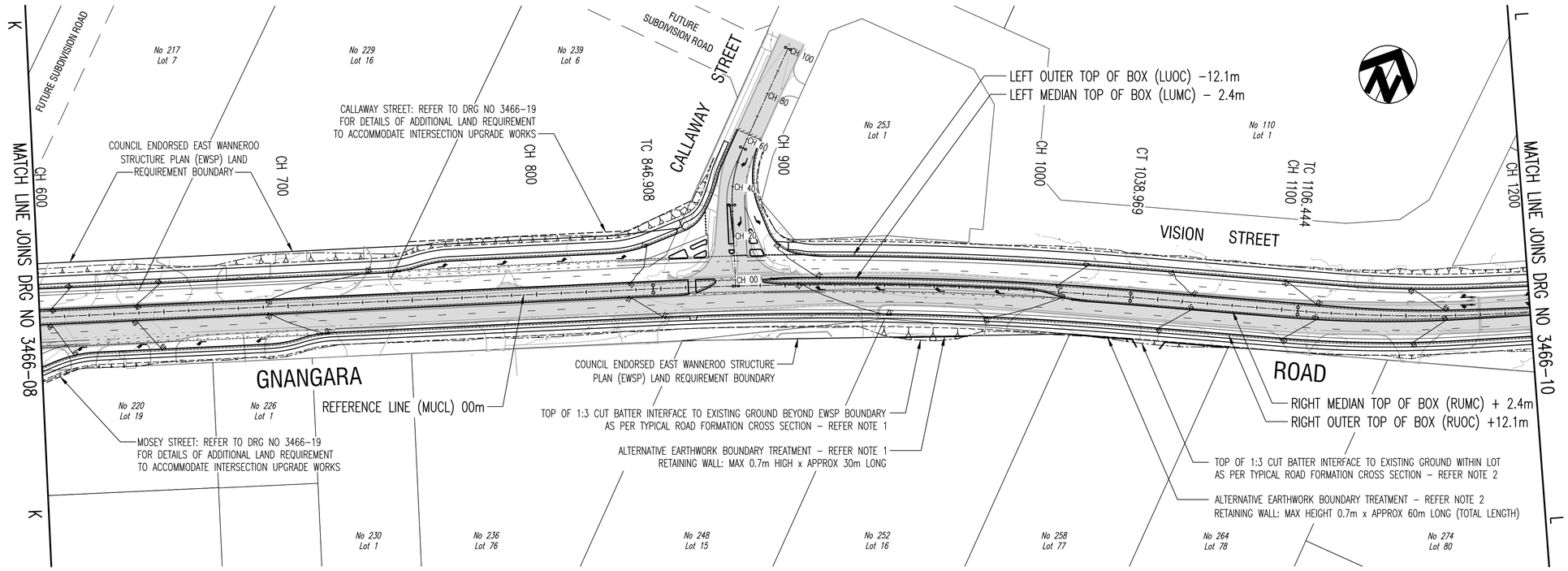
GNANGARA ROAD

HARTMAN DRIVE TO MIRRABOOOKA AVENUE
STAGE 2: DUAL CARRIAGEWAY PRELIMINARY DESIGN CH 00 - CH 600
WANGARA

PLAN AND PROFILE

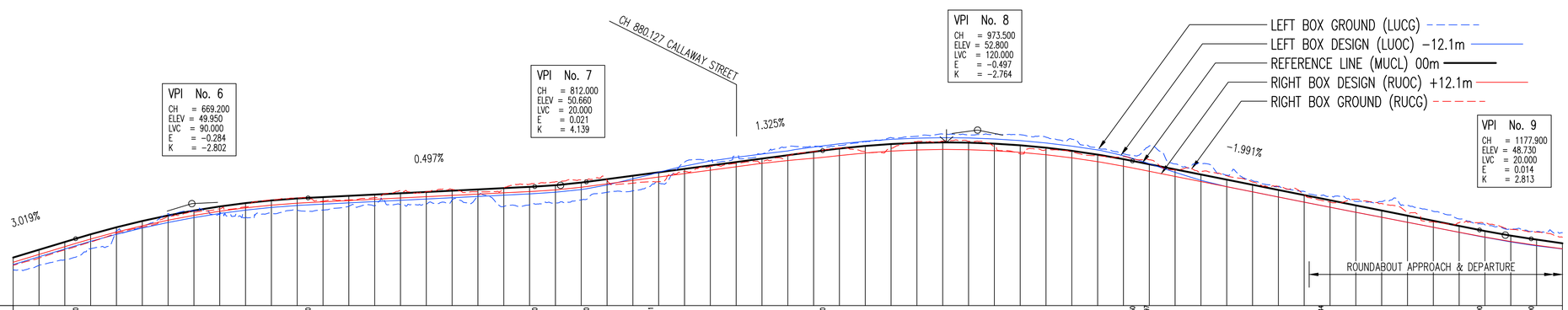
SHEET 1 OF 4

DRAWING No.	SHEET	REVISION	ORIGINAL DRG. SIZE
3466	08	0	A1



KEY:

▨	EXISTING PAVEMENT SURFACE



DATUM=46.000

SPECIAL CHAINAGES			V624.20									V714.20				
CROSSFALL LEFT %	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00
CROSSFALL RIGHT %	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00
VERTICAL ALIGNMENT	P=3.019% L=82.900		R=-3569.515 L=90.000									P=0.497% L=87.800				
HORIZONTAL ALIGNMENT	D=466.369															
LEFT BOX GROUND (LUCG)	47.38	47.56	47.77	48.20	48.90	49.07	49.56	49.67	49.49	49.42	49.58	49.69	49.70	49.85	49.86	49.91
LEFT BOX DESIGN (LUOC)	47.59	47.89	48.19	48.49	48.76	49.00	49.22	49.41	49.57	49.70	49.80	49.88	49.93	49.98	50.03	50.08
CENTRE REF LINE (MUCL)	47.86	48.16	48.46	48.76	49.03	49.28	49.49	49.68	49.84	49.97	50.07	50.15	50.20	50.25	50.30	50.35
RIGHT BOX DESIGN (RUOC)	47.68	47.98	48.28	48.58	48.85	49.09	49.31	49.50	49.66	49.79	49.89	49.97	50.02	50.07	50.12	50.17
RIGHT BOX GROUND (RUCG)	47.56	47.84	48.16	48.46	48.80	49.04	49.47	49.62	49.75	49.82	50.09	50.17	50.05	50.09	50.18	50.46
CUT(-) OR FILL(+) AT MUCL	0.23	0.19	0.19	0.22	0.21	0.17	0.16	0.17	0.17	0.15	0.14	0.11	0.10	0.09	0.10	0.11
CHAINAGE	600.0	610.0	620.0	630.0	640.0	650.0	660.0	670.0	680.0	690.0	700.0	710.0	720.0	730.0	740.0	750.0

SPECIAL CHAINAGES					V802.00		V822.00		H846.91							V913.50
CROSSFALL LEFT %	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-2.47	-1.30	0.05	1.22	1.93	2.00	2.00	2.00	2.00
CROSSFALL RIGHT %	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.26	-2.74
VERTICAL ALIGNMENT					R		P=1.325% L=91.500									
HORIZONTAL ALIGNMENT									R=1500.000 L=192.060							
LEFT BOX GROUND (LUCG)	49.93	50.09	50.25	49.84	49.90	49.98	50.10	50.39	50.45	50.74	51.55	51.60	51.80	51.87	52.16	52.18
LEFT BOX DESIGN (LUOC)	50.13	50.18	50.23	50.28	50.33	50.39	50.49	50.67	50.91	51.17	51.41	51.60	51.74	51.87	51.99	52.14
CENTRE REF LINE (MUCL)	50.40	50.45	50.50	50.55	50.60	50.66	50.77	50.90	51.03	51.16	51.30	51.43	51.56	51.69	51.83	51.96
RIGHT BOX DESIGN (RUOC)	50.22	50.27	50.32	50.37	50.42	50.48	50.58	50.72	50.85	50.98	51.11	51.25	51.38	51.51	51.62	51.71
RIGHT BOX GROUND (RUCG)	50.41	50.51	50.41	50.54	50.70	50.80	50.86	50.85	50.74	50.80	51.20	51.40	51.51	51.58	51.82	51.96
CUT(-) OR FILL(+) AT MUCL	0.11	0.13	0.16	0.15	0.13	0.11	0.10	0.11	0.09	0.07	0.05	-0.00	-0.04	-0.04	0.01	0.05
CHAINAGE	760.0	770.0	780.0	790.0	800.0	810.0	820.0	830.0	840.0	850.0	860.0	870.0	880.0	890.0	900.0	910.0

SPECIAL CHAINAGES												V1033.50 H1038.97			
CROSSFALL LEFT %	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.48	0.24	-1.24	-2.48
CROSSFALL RIGHT %	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00
VERTICAL ALIGNMENT	R=-3618.522 L=120.000											P=-1.991% L=134.400			
HORIZONTAL ALIGNMENT												D=67.476			
LEFT BOX GROUND (LUCG)	52.20	52.35	52.51	52.56	52.65	52.61	52.62	52.62	52.52	52.45	52.09	51.88	52.18	51.49 51.49	51.51
LEFT BOX DESIGN (LUOC)	52.27	52.37	52.44	52.49	52.50	52.49	52.46	52.39	52.30	52.18	52.03	51.81	51.50	51.16	50.85
CENTRE REF LINE (MUCL)	52.09	52.19	52.26	52.30	52.32	52.31	52.28	52.21	52.12	52.00	51.85	51.67	51.48	51.28	51.08
RIGHT BOX DESIGN (RUOC)	51.81	51.91	51.99	52.03	52.05	52.04	52.00	51.94	51.84	51.72	51.58	51.40	51.20	51.00	50.80
RIGHT BOX GROUND (RUCG)	52.10	51.97	52.10	52.35	52.37	52.37	52.17	51.88	52.04	51.94	51.81	51.77	51.65	51.26	51.16
CUT(-) OR FILL(+) AT MUCL	0.09	0.10	0.12	0.10	0.09	0.09	0.09	0.09	0.10	0.08	0.08	0.08	0.07	0.08	0.08
CHAINAGE	920.0	930.0	940.0	950.0	960.0	970.0	980.0	990.0	1000.0	1010.0	1020.0	1030.0	1040.0	1050.0	1060.0

SPECIAL CHAINAGES				H1106.44						V1167.90		V1187.90		
CROSSFALL LEFT %	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-2.99	-2.82
CROSSFALL RIGHT %	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-2.97	-2.81
VERTICAL ALIGNMENT										R		P		
HORIZONTAL ALIGNMENT				R=-600.000 L=122.388										
LEFT BOX GROUND (LUCG)	51.05	50.84	50.62	50.42	50.24	50.03	50.03	49.88	49.65	49.36	49.13	48.98	48.88	48.83
LEFT BOX DESIGN (LUOC)	50.61	50.41	50.21	50.01	49.81	49.61	49.42	49.23	49.03	48.84	48.64	48.47	48.32	48.19
CENTRE REF LINE (MUCL)	50.88	50.68	50.48	50.28	50.08	49.88	49.68	49.48	49.29	49.09	48.89	48.71	48.56	48.41
RIGHT BOX DESIGN (RUOC)	50.61	50.41	50.21	50.01	49.81	49.61	49.42	49.23	49.03	48.84	48.65	48.48	48.33	48.20
RIGHT BOX GROUND (RUCG)	51.03	50.79	50.60	50.29	50.01	50.12	49.95	49.60	49.24	49.21	49.18	48.95	48.85	48.65
CUT(-) OR FILL(+) AT MUCL	0.10	0.10	0.14	0.16	0.16	0.19	0.17	0.17	0.16	0.14	0.08	0.04	0.04	0.05
CHAINAGE	1070.0	1080.0	1090.0	1100.0	1110.0	1120.0	1130.0	1140.0	1150.0	1160.0	1170.0	1180.0	1190.0	1200.0

LONGITUDINAL SECTION - COMBINED THROUGH CARRIAGEWAY & ROUNDABOUT BOX TOP EDGE PROFILES

VERT SCALE: 1 0 1 2 3 4 5
1:100
SCALE IN METRES

SCALES: HORIZ 1:1000 VERT 1:100

NOTES:

1. LOT NO 16:
EARTHWORKS TO BE ACCOMMODATED WITHIN THE COUNCIL ENDORSED EWSP LAND REQUIREMENT; BY EITHER:

2.1 MATCHING FUTURE LOT DEVELOPMENT LEVELS WITHIN THE ABUTTING PROPERTY TO DUAL CARRIAGEWAY FORMATION DESIGN LEVELS AT THE ROAD RESERVE BOUNDARY; OR

2.2 CONSTRUCTING A RETAINING WALL AT THE ROAD RESERVE BOUNDARY, SIMILAR TO THAT SHOWN ON THE PLAN; OR

2.3 CONSTRUCTING A STEEPER CUT BATTER AT GRADE 1:2.

SUBJECT TO NEGOTIATION WITH THE PROPERTY OWNER.

2. LOT NO 77:
EARTHWORKS TO BE ACCOMMODATED WITHIN THE EXISTING ROAD RESERVE; BY EITHER:

2.1 MATCHING FUTURE LOT DEVELOPMENT LEVELS WITHIN THE ABUTTING PROPERTY TO DUAL CARRIAGEWAY FORMATION DESIGN LEVELS AT THE ROAD RESERVE BOUNDARY; OR

2.2 CONSTRUCTING A RETAINING WALL AT THE ROAD RESERVE BOUNDARY, SIMILAR TO THAT SHOWN ON THE PLAN.

SUBJECT TO NEGOTIATION WITH THE PROPERTY OWNER.

CITY OF WANNEROO
ASSETS

GNANGARA ROAD
HARTMAN DRIVE TO MIRRABOOOKA AVENUE
STAGE 2: DUAL CARRIAGEWAY PRELIMINARY DESIGN CH 600 - CH 1200
WANGARA

PLAN AND PROFILE
SHEET 2 OF 4

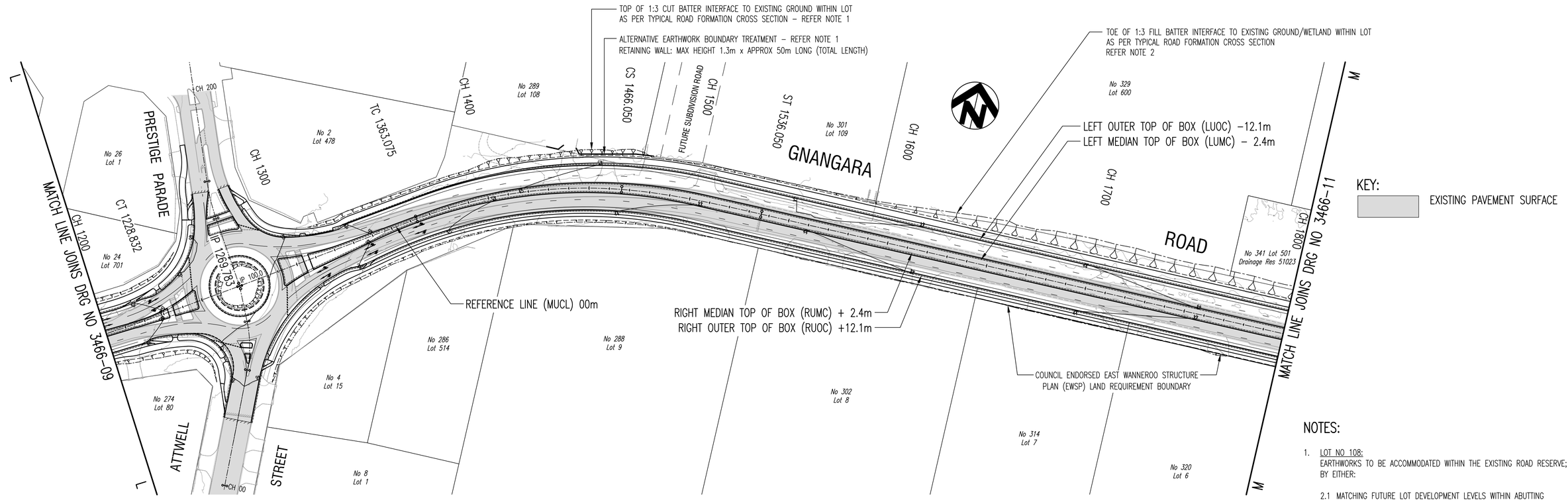
No.	REVISION	BY	DATE	AUTH	No.	REVISION	BY	DATE	AUTH
A	DRAFT COPY	NR	5/2018						
0	ISSUED FOR EWSP CELL 8 COST ALLOCATION REVIEW, BUDGET ESTIMATION AND LAND ACQUISITION PURPOSES ONLY. NOT FOR CONSTRUCTION.	NR	7/2018						

HORIZ SCALE: 10 0 10 20 30 40 50
1:1000
SCALE IN METRES

DATUM: AHD	GRID: PCG 94	SURVEYED: W.A. PRECISION SURVEYS 4/2013 SURVEYOR	DRAWN: N.RAINFORD 5/2018 CIVIL DESIGNER	AUTHORISED: Lionel Nicholson (May 27, 2022 16:02 GMT+8) 27/05/22 MANAGER INFRASTRUCTURE CAPITAL WORKS	FINANCE CODE: PR-2602
		DESIGNED: N.RAINFORD 11/2017 CIVIL DESIGNER	CHECKED: Philip Williams (May 27, 2022 15:37 GMT+8) 27/05/22 COORDINATOR DESIGN	APPROVED: 09/06/22 DIRECTOR ASSETS	DRAWING SET REF: 18/265892

PMO No. 16058
PMO CONTAINER No. 23897

DRAWING No.	SHEET	REVISION	ORIGINAL DRG. SIZE
3466	09	0	A1



NOTES:

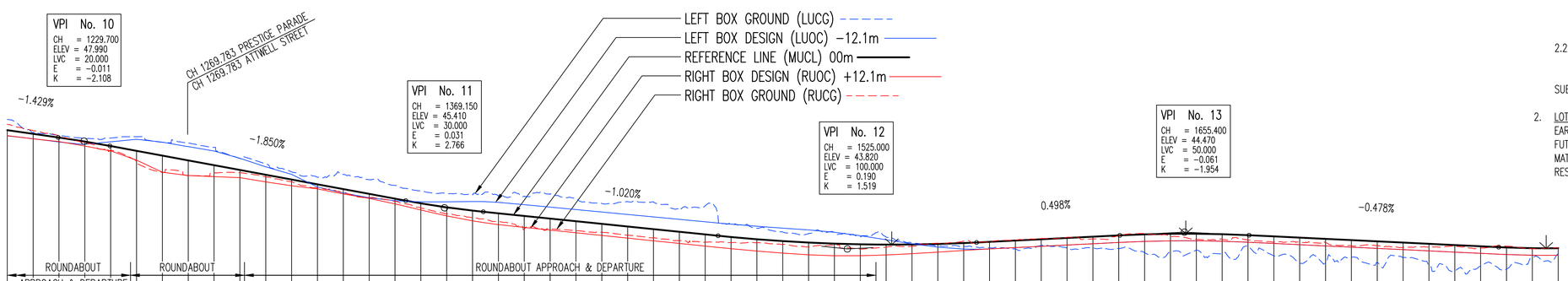
1. LOT NO 108:
   EARTHWORKS TO BE ACCOMMODATED WITHIN THE EXISTING ROAD RESERVE; BY EITHER:

   2.1 MATCHING FUTURE LOT DEVELOPMENT LEVELS WITHIN ABUTTING PROPERTY TO DUAL CARRIAGEWAY VERGE/BATTER DESIGN LEVELS AT THE ROAD RESERVE BOUNDARY; OR

   2.2 CONSTRUCTING A RETAINING WALL AT THE ROAD RESERVE BOUNDARY, SIMILAR TO THAT SHOWN ON THE PLAN.

   SUBJECT TO NEGOTIATION WITH THE PROPERTY OWNER.

2. LOT NO 600:
   EARTHWORKS TO BE ACCOMMODATED WITHIN THE EXISTING ROAD RESERVE. FUTURE LOT DEVELOPMENT LEVELS WITHIN THE ABUTTING PROPERTY TO MATCH DUAL CARRIAGEWAY FORMATION DESIGN LEVELS AT THE ROAD RESERVE BOUNDARY. SUBJECT TO NEGOTIATION WITH THE PROPERTY OWNER.



DATUM=42.000

SPECIAL CHAINAGES	V1219.70	H1228.83	V1239.70	H1269.77	H1269.80	V1354.15	H1363.07	V1384.15	H1466.05	V1475.00	H1536.05	V1575.00	V1630.40	V1680.40	V1777.00

CHAINAGE	CROSSFALL LEFT %	CROSSFALL RIGHT %	VERTICAL ALIGNMENT	HORIZONTAL ALIGNMENT	LEFT BOX GROUND (LUCG)	LEFT BOX DESIGN (LUOC)	CENTRE REF LINE (MUCL)	RIGHT BOX DESIGN (RUOC)	RIGHT BOX GROUND (RUCG)	CUT(–) OR FILL(+) AT MUCL
1200.0	–2.82	–2.81	P	R=–600.000 L=122.388	48.83	48.19	48.41	48.20	48.65	0.05
1210.0	–2.50	–2.49			48.33	48.08	48.27	48.08	48.40	0.04
1220.0	–2.14	–2.18	R		48.21	47.96	48.13	47.97	48.19	–0.08
1230.0	–1.38	–2.00		D=40.934	48.09	47.87	47.97	47.80	47.95	–0.09
1240.0	1.21	–1.46			48.11	47.96	47.80	47.61	47.64	–0.12
1250.0	2.12	–1.65			48.16	48.06	47.61	47.25	47.14	–0.00
1260.0	3.44	–0.61			47.95	47.95	47.43	46.79	46.78	–0.36
1270.0	3.41	–0.50			47.92	47.78	47.24	46.66	46.66	–0.44
1280.0	3.69	0.26			47.75	47.61	47.06	46.62	46.76	–0.37
1290.0	2.08	–1.57			47.32	47.33	46.67	46.58	46.77	–0.03
1300.0	2.48	–2.08			47.11	46.99	46.69	46.41	46.61	–0.12
1310.0	1.95	–2.38			46.80	46.70	46.50	46.26	46.42	–0.09
1320.0	–1.58	–2.00			46.59	46.21	46.32	46.14	46.18	–0.06
1330.0	–2.00	–2.00			46.70	45.99	46.13	45.95	46.01	–0.06
1340.0	–2.01	–2.00			46.50	45.80	45.95	45.77	45.81	–0.07
1350.0	–1.38	–2.21			46.28	45.69	45.76	45.56	45.66	0.06
1360.0	0.06	–2.71			46.06	45.64	45.58	45.33	45.40	0.04
1370.0	1.86	–3.29		R=3614.833 L=30.000	45.96	45.64	45.43	45.10	45.18	0.04
1380.0	3.27	–3.77			45.92	45.65	45.30	44.91	45.03	0.04
1390.0	4.00	–4.00		P=–1.850% L=114.450	45.87	45.62	45.20	44.76	44.87	0.06
1400.0	4.00	–4.00			45.86	45.53	45.10	44.65	44.58	0.09
1410.0	4.00	–4.00			45.95	45.44	44.99	44.55	44.59	0.12
1420.0	4.00	–4.00			45.75	45.34	44.89	44.44	44.52	0.13
1430.0	4.00	–4.00			45.58	45.25	44.79	44.34	44.46	0.10
1440.0	4.00	–4.00			45.65	45.15	44.69	44.24	44.35	0.08
1450.0	4.00	–4.00			45.64	45.06	44.59	44.13	44.25	0.02
1460.0	4.00	–4.00			45.32	44.96	44.48	44.03	44.14	–0.02
1470.0	4.00	–4.00			45.49	44.87	44.38	43.93	44.08	–0.02
1480.0	4.00	–4.00			44.79	44.78	44.28	43.83	44.06	–0.05
1490.0	4.00	–4.00			44.62	44.70	44.19	43.74	44.06	–0.04
1500.0	4.00	–4.00			44.48	44.62	44.12	43.66	43.99	–0.02
1510.0	4.00	–4.00			44.41	44.56	44.07	43.59	43.90	0.00
1520.0	4.00	–4.00			44.44	44.46	44.02	43.56	43.95	–0.01
1530.0	4.00	–4.00			44.29	44.33	44.00	43.56	43.81	–0.00
1540.0	4.00	–4.00			44.28	44.17	43.99	43.59	43.89	0.06
1550.0	4.00	–4.00			44.05	44.02	43.99	43.64	43.92	0.04
1560.0	4.00	–4.00			43.94	44.01	44.01	43.70	44.04	0.02
1570.0	4.00	–4.00			43.91	43.89	44.05	43.76	44.12	0.05
1580.0	4.00	–4.00			43.86	43.82	44.09	43.82	44.07	0.06
1590.0	4.00	–4.00			43.82	43.87	44.14	43.87	44.17	0.07
1600.0	4.00	–4.00			43.96	43.92	44.19	43.92	44.22	0.08
1610.0	4.00	–4.00			43.84	43.97	44.24	43.97	44.27	0.08
1620.0	4.00	–4.00			43.86	44.02	44.29	44.02	44.21	0.09
1630.0	4.00	–4.00			43.83	44.07	44.34	44.07	44.34	0.12
1640.0	4.00	–4.00			43.67	44.11	44.38	44.11	44.42	0.15
1650.0	4.00	–4.00			43.72	44.13	44.41	44.13	44.30	0.17
1660.0	4.00	–4.00			43.77	44.13	44.41	44.13	44.19	0.17
1670.0	4.00	–4.00			43.64	44.12	44.39	44.12	44.19	0.16
1680.0	4.00	–4.00			43.92	44.08	44.35	44.08	44.17	0.12
1690.0	4.00	–4.00			43.55	44.03	44.30	44.03	44.09	0.11
1700.0	4.00	–4.00			43.27	43.98	44.26	43.98	44.08	0.10
1710.0	4.00	–4.00			43.29	43.94	44.21	43.94	44.06	0.10
1720.0	4.00	–4.00			43.50	43.89	44.16	43.89	43.94	0.12
1730.0	4.00	–4.00			43.29	43.84	44.11	43.84	43.95	0.12
1740.0	4.00	–4.00			43.49	43.79	44.07	43.79	43.88	0.12
1750.0	4.00	–4.00			43.19	43.74	44.02	43.74	43.90	0.11
1760.0	4.00	–4.00			42.97	43.70	43.97	43.70	43.91	0.07
1770.0	4.00	–4.00			43.16	43.65	43.92	43.65	43.85	0.04
1780.0	4.00	–4.00			43.04	43.60	43.88	43.60	43.93	0.02
1790.0	4.00	–4.00			43.48	43.58	43.85	43.58	43.83	–0.01
1800.0	4.00	–4.00			43.64	43.57	43.85	43.57	43.83	–0.04

LONGITUDINAL SECTION – COMBINED THROUGH CARRIAGEWAY & ROUNDABOUT BOX TOP EDGE PROFILES

VERT SCALE: 1:100 (SCALE IN METRES)

SCALES: HORIZ 1:1000 VERT 1:100

No.	REVISION	BY	DATE	AUTH
A	DRAFT COPY	NR	5/2018	
0	ISSUED FOR EWSP CELL 8 COST ALLOCATION REVIEW, BUDGET ESTIMATION AND LAND ACQUISITION PURPOSES ONLY. NOT FOR CONSTRUCTION.	NR	7/2018	

HORIZ SCALE: 1:1000 (SCALE IN METRES)

DATUM: AHD | GRID: PCG 94

SURVEYED: W.A. PRECISION SURVEYS 4/2013 | SURVEYOR:
DRAWN: N.RAINFORD 5/2018 | CIVIL DESIGNER
DESIGNED: N.RAINFORD 11/2017 | CIVIL DESIGNER
CHECKED: 27/05/22 | COORDINATOR DESIGN
AUTHORISED: 27/05/22 | MANAGER INFRASTRUCTURE CAPITAL WORKS
APPROVED: 09/06/22 | DIRECTOR ASSETS

FINANCE CODE: PR-2602
PMO No.: 16058
DRAWING SET REF: 18/265892
PMO CONTAINER No.: 23897

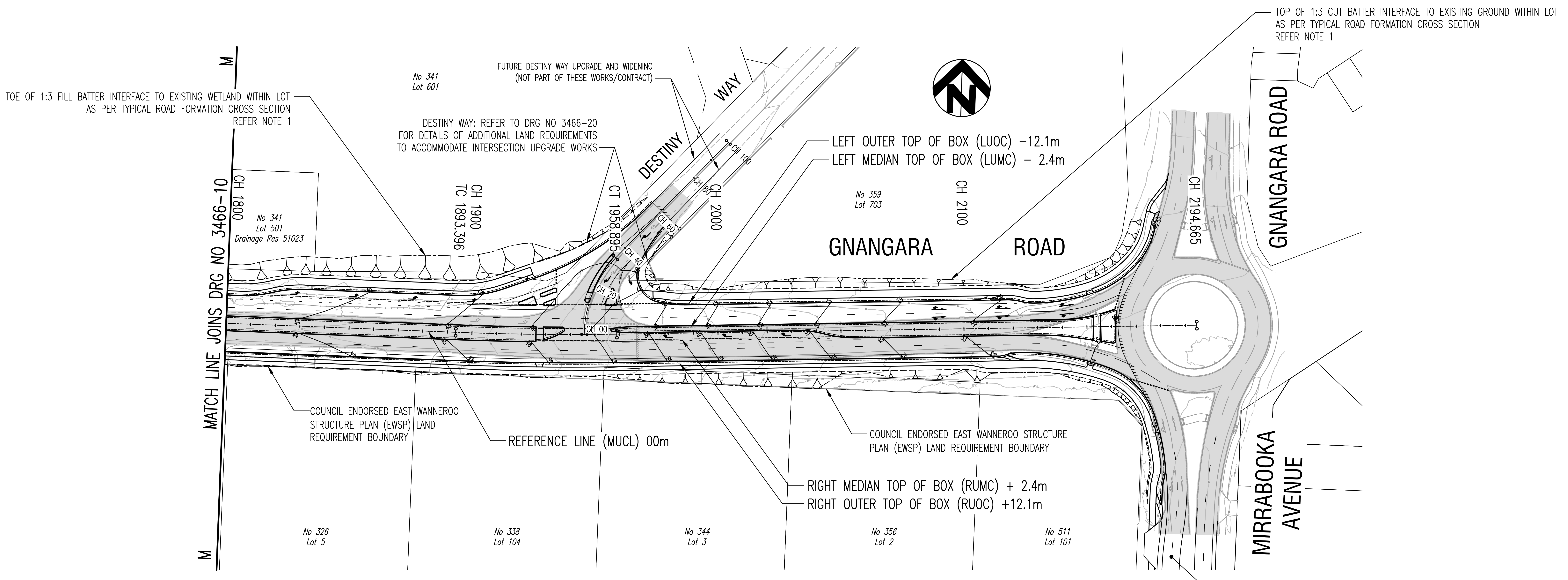
CITY OF WANNEROO
ASSETS

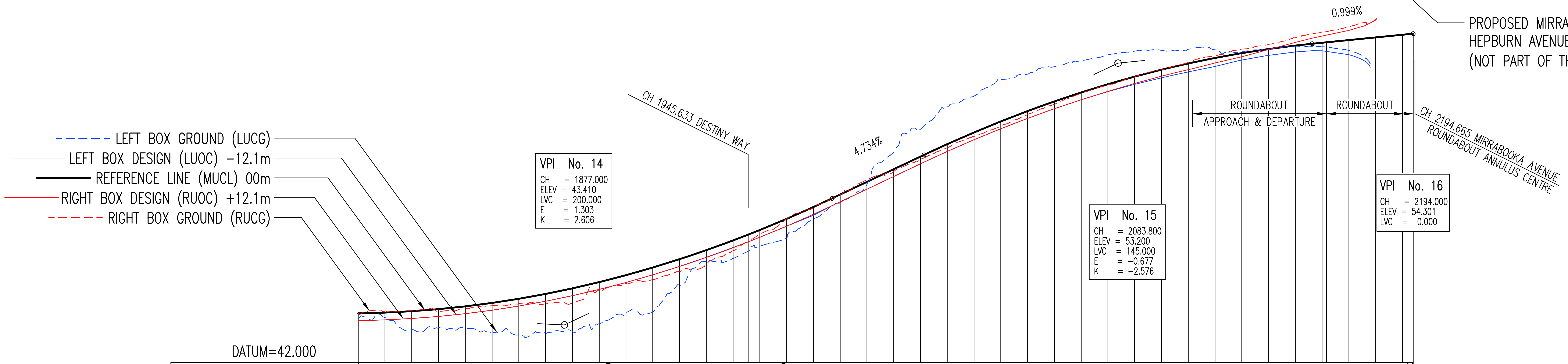
GNANGARA ROAD

HARTMAN DRIVE TO MIRRABOOOKA AVENUE
STAGE 2: DUAL CARRIAGEWAY PRELIMINARY DESIGN CH 1200 - CH 1800
WANGARA

PLAN AND PROFILE
SHEET 3 OF 4

DRAWING No. 3466 - 10 - 0 | SHEET | REVISION | ORIGINAL DRG. SIZE A1





SPECIAL CHAINAGES: H1893.40, H1958.89, V1977.00, V2011.30, V2156.30, HV2194.00

VERTICAL ALIGNMENT: R=3837.017 L=200.000; P=4.734% L=34.300; R=-3882.058 L=145.000; P=0.999% L=37.700

HORIZONTAL ALIGNMENT: D=357.346; R=-1200.000 L=65.498; D=235.771

CROSSFALL LEFT %	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00
CROSSFALL RIGHT %	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00
LEFT BOX GROUND (LUCG)	43.64	43.69	43.23	43.32	43.29	43.15	43.04	43.11	43.17	43.46	43.85	43.90	44.90
LEFT BOX DESIGN (LUOC)	43.57	43.60	43.65	43.73	43.83	43.96	44.12	44.30	44.51	44.74	45.00	45.28	45.60
CENTRE REF LINE (MUCL)	43.85	43.87	43.92	44.00	44.10	44.23	44.39	44.57	44.78	45.01	45.27	45.56	45.87
RIGHT BOX DESIGN (RUOC)	43.57	43.60	43.65	43.73	43.83	43.96	44.12	44.30	44.51	44.74	45.00	45.28	45.60
RIGHT BOX GROUND (RUCG)	43.83	43.93	43.94	43.91	44.01	44.13	44.21	44.20	44.23	44.68	44.96	45.10	45.41
CUT(-) OR FILL(+) AT MUCL	-0.04	-0.03	-0.01	0.03	0.10	0.19	0.29	0.39	0.40	0.45	0.47	0.45	0.41
CHAINAGE	1800.0	1810.0	1820.0	1830.0	1840.0	1850.0	1860.0	1870.0	1880.0	1890.0	1900.0	1910.0	1920.0

CROSSFALL LEFT %	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00
CROSSFALL RIGHT %	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00
LEFT BOX GROUND (LUCG)	45.81	45.90	46.36	46.65	47.38	47.98	48.67	49.87	50.73	51.56	51.97	52.58	52.79	53.07
LEFT BOX DESIGN (LUOC)	45.94	46.31	46.69	47.10	47.51	48.01	48.49	48.96	49.43	49.90	50.34	50.75	51.13	51.49
CENTRE REF LINE (MUCL)	46.21	46.57	46.96	47.38	47.82	48.29	48.76	49.23	49.71	50.17	50.61	51.02	51.41	51.77
RIGHT BOX DESIGN (RUOC)	45.93	46.30	46.69	47.10	47.55	48.01	48.49	48.96	49.43	49.90	50.34	50.75	51.13	51.49
RIGHT BOX GROUND (RUCG)	45.67	46.19	46.82	47.38	47.78	48.29	48.84	49.14	49.62	50.03	50.46	50.86	51.28	51.66
CUT(-) OR FILL(+) AT MUCL	0.35	0.30	0.25	0.20	0.16	0.16	0.15	0.13	0.12	0.13	0.14	0.13	0.11	0.10
CHAINAGE	1930.0	1940.0	1950.0	1960.0	1970.0	1980.0	1990.0	2000.0	2010.0	2020.0	2030.0	2040.0	2050.0	2060.0

CROSSFALL LEFT %	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-2.77	-2.26	-1.82	-2.12	-2.42	-2.94	
CROSSFALL RIGHT %	-3.00	-3.00	-3.00	-3.00	-3.00	-3.00	-2.30	-0.67	0.62	0.76	1.08	0.80	
LEFT BOX GROUND (LUCG)	53.29	53.51	53.65	53.68	53.72	53.70	53.63	53.70	53.83	53.81	53.67	53.17	
LEFT BOX DESIGN (LUOC)	51.83	52.13	52.41	52.65	52.87	53.08	53.32	53.49	53.62	53.66	53.52	53.05	
CENTRE REF LINE (MUCL)	52.10	52.41	52.70	52.95	53.19	53.39	53.57	53.73	53.86	53.96	54.06	54.16	54.26 54.30
RIGHT BOX DESIGN (RUOC)	51.83	52.14	52.44	52.71	52.95	53.21	53.44	53.71	53.98	54.21	54.42	54.82	
RIGHT BOX GROUND (RUCG)	52.06	52.39	52.68	52.95	53.23	53.48	53.73	53.90	54.15	54.35	54.56	54.83	
CUT(-) OR FILL(+) AT MUCL	0.09	0.09	0.09	0.08	0.08	0.06	0.05	-0.09	-0.12	-0.18	-0.06	-0.44	-0.58
CHAINAGE	2070.0	2080.0	2090.0	2100.0	2110.0	2120.0	2130.0	2140.0	2150.0	2160.0	2170.0	2180.0	2190.0 2194.0

LONGITUDINAL SECTION – COMBINED THROUGH CARRIAGEWAY & ROUNDABOUT BOX TOP EDGE PROFILES

VERT SCALE: 1:100 (1 0 1 2 3 4 5 SCALE IN METRES)

SCALES: HORIZ 1:1000 VERT 1:100

KEY:

▨ EXISTING PAVEMENT SURFACE

NOTES:

1. LOT NOS 601 AND 703:
EARTHWORKS TO BE ACCOMMODATED WITHIN THE EXISTING ROAD RESERVE. FUTURE LOT DEVELOPMENT LEVELS WITHIN THE ABUTTING PROPERTY TO MATCH DUAL CARRIAGEWAY FORMATION DESIGN LEVELS AT THE ROAD RESERVE BOUNDARY. SUBJECT TO NEGOTIATION WITH THE PROPERTY OWNER.

CITY OF WANNEROO
ASSETS

GNANGARA ROAD

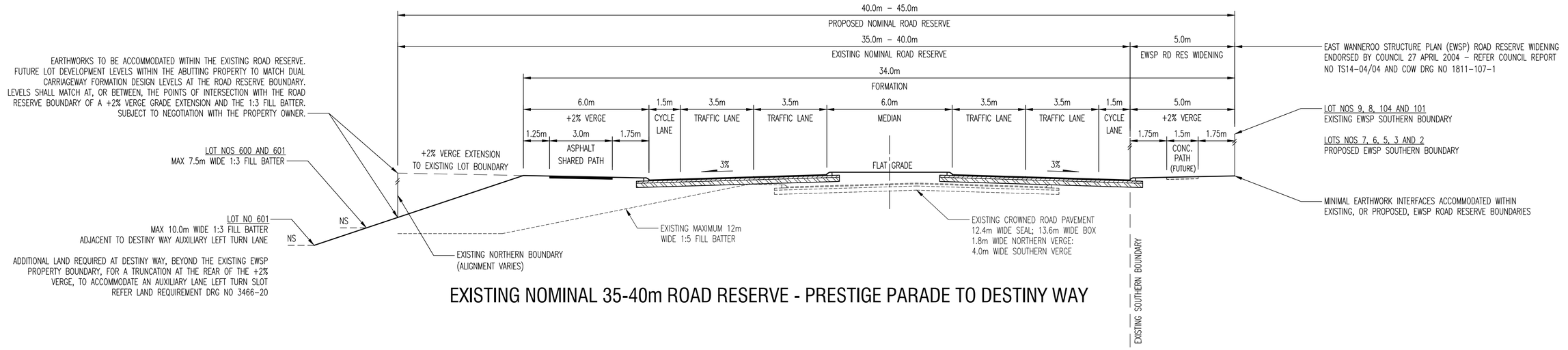
HARTMAN DRIVE TO MIRRABOOOKA AVENUE
STAGE 2: DUAL CARRIAGEWAY PRELIMINARY DESIGN CH 1800 - CH 2194
WANGARA

PLAN AND PROFILE

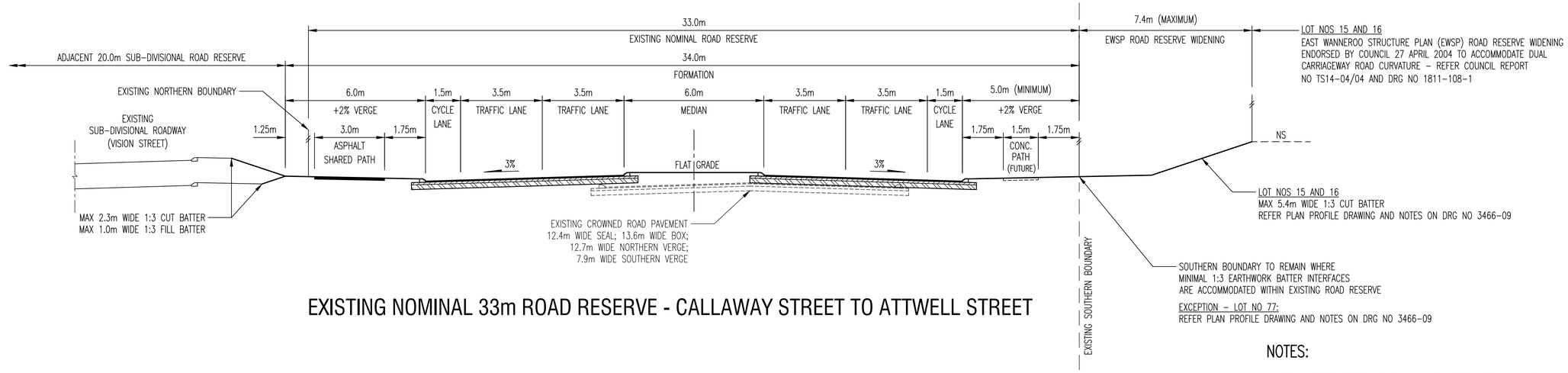
SHEET 4 OF 4

No.	REVISION	BY	DATE	AUTH	No.	REVISION	BY	DATE	AUTH
A	DRAFT COPY	NR	5/2018						
0	ISSUED FOR EWSP CELL 8 COST ALLOCATION REVIEW, BUDGET ESTIMATION AND LAND ACQUISITION PURPOSES ONLY. NOT FOR CONSTRUCTION.	NR	7/2018						

HORIZ SCALE: 1:1000 (10 0 10 20 30 40 50 SCALE IN METRES)
DATUM: AHD
GRID: PCG 94
SURVEYED: W.A. PRECISION SURVEYS 4/2013 SURVEYOR
DESIGNED: N.RAINFORD 11/2017 CIVIL DESIGNER
DRAWN: N.RAINFORD 5/2018 CIVIL DESIGNER
CHECKED: Philip Williams 27/05/22 COORDINATOR DESIGN
AUTHORISED: 27/05/22 MANAGER INFRASTRUCTURE CAPITAL WORKS
APPROVED: 09/06/22 DIRECTOR ASSETS
FINANCE CODE: PR-2602
PMO No.: 16058
DRAWING SET REF: 18/265892
PMO CONTAINER No.: 23897
DRAWING No. / SHEET / REVISION: 3466 - 11 - 0
ORIGINAL DRG. SIZE: A1



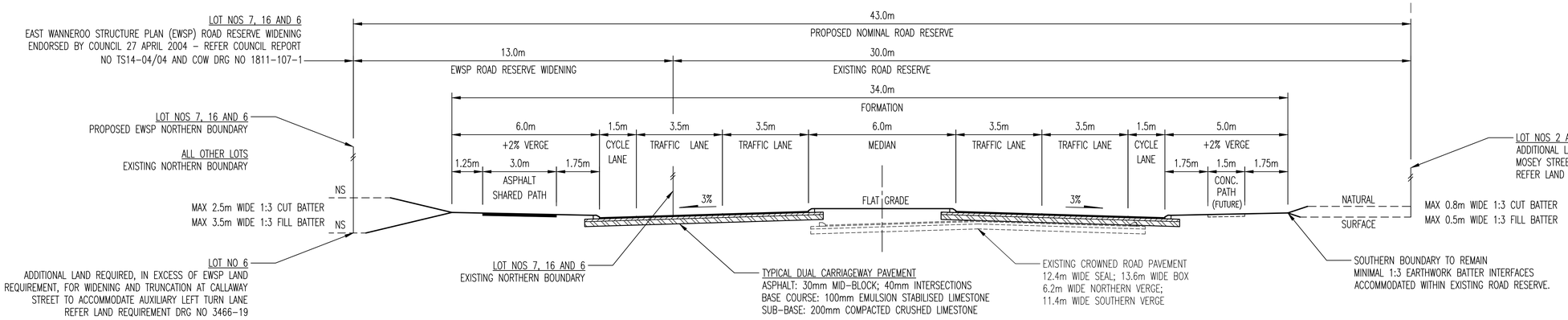
EXISTING NOMINAL 35-40m ROAD RESERVE - PRESTIGE PARADE TO DESTINY WAY



EXISTING NOMINAL 33m ROAD RESERVE - CALLAWAY STREET TO ATTWELL STREET

NOTES:

1. TYPICAL CROSS SECTION DIMENSIONS AND WIDTHS ARE NOMINAL ONLY AND DO NOT REFLECT VARIATIONS IN ROAD DESIGN CURVATURE AND SUPERELEVATION, NOR VARIATIONS IN ROAD RESERVE BOUNDARIES AND EXISTING ROAD WIDTHS.
2. LOT 703
   NORTHERN BOUNDARY BEWTEEN DESTINY WAY AND MIRRABOOKA AVENUE:
   EARTHWORKS TO BE ACCOMMODATED WITHIN THE EXISTING ROAD RESERVE.
   FUTURE LOT DEVELOPMENT LEVELS WITHIN THE ABUTTING PROPERTY TO MATCH DUAL CARRIAGEWAY FORMATION DESIGN LEVELS AT THE ROAD RESERVE BOUNDARY.
   SUBJECT TO NEGOTIATION WITH THE PROPERTY OWNER. REFER PLAN PROFILE DRAWING AND NOTES ON DRG NO 3466–11



EXISTING NOMINAL 30m ROAD RESERVE - COWLE STREET TO CALLAWAY STREET

CITY OF WANNEROO
ASSETS

GNANGARA ROAD

HARTMAN DRIVE TO MIRRABOOOKA AVENUE
STAGE 2: DUAL CARRIAGEWAY - PRELIMINARY DESIGN
WANGARA

TYPICAL CROSS SECTION
SHEET 1 OF 1

No.	REVISION	BY	DATE	AUTH
A	DRAFT COPY	NR	5/2018	
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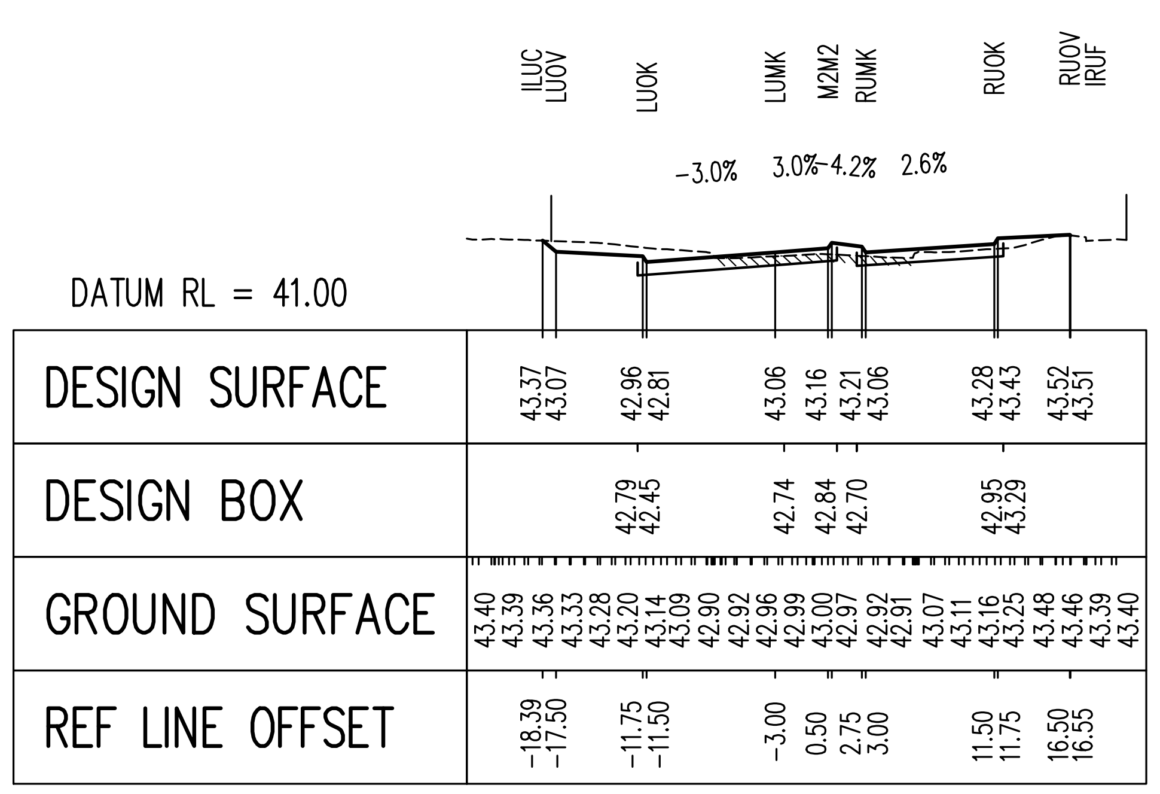
No.	REVISION	BY	DATE	AUTH

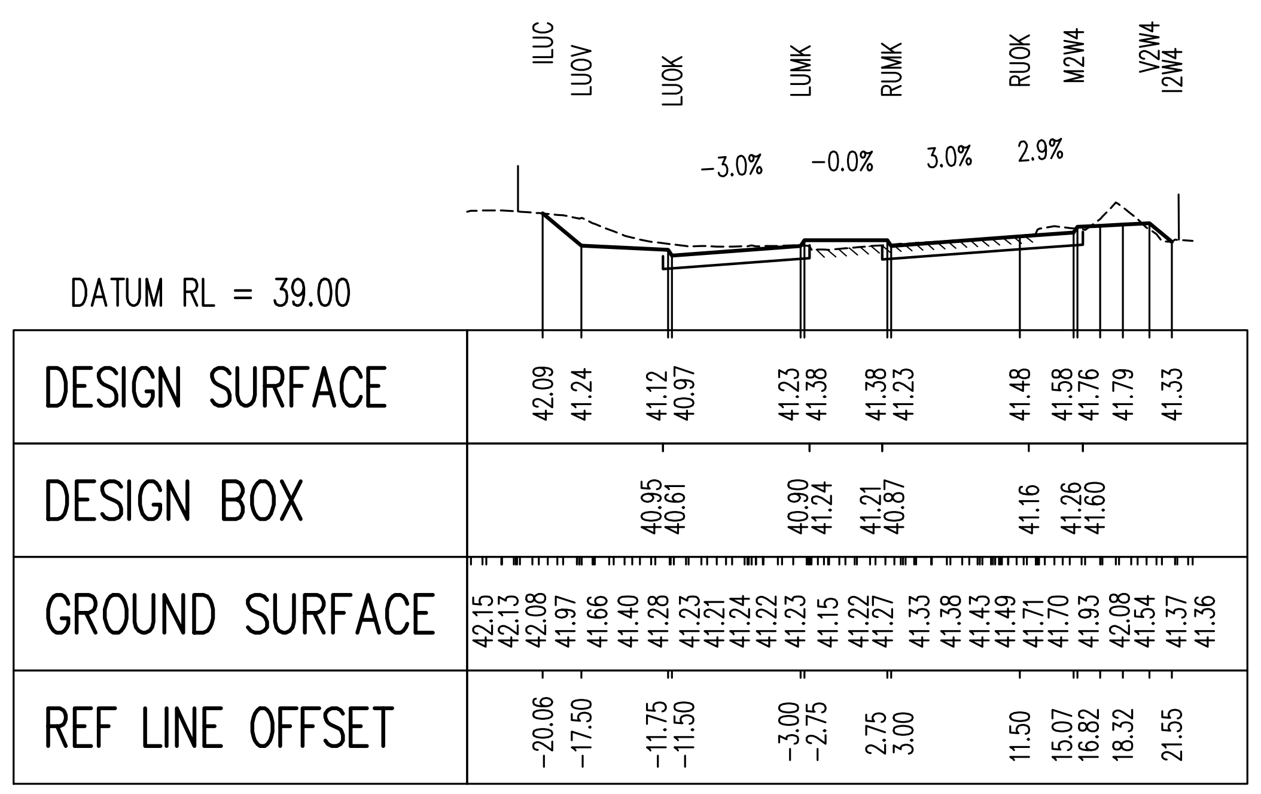
SCALE: 1:100 (1.0 0 1.0 2.0 3.0 4.0 5.0 SCALE IN METRES)
DATUM: AHD
GRID: PCG 94
SURVEYED: W.A. PRECISION SURVEYS 4/2013
SURVEYOR:
DESIGNED: N.RAINFORD 11/2017
CIVIL DESIGNER
DRAWN: N.RAINFORD 7/2018
CIVIL DESIGNER
CHECKED: 27/05/22
COORDINATOR DESIGN
AUTHORISED: 27/05/22
MANAGER INFRASTRUCTURE CAPITAL WORKS
APPROVED: 09/06/22
DIRECTOR ASSETS

FINANCE CODE	PMO No.
PR-2602	16058
DRAWING SET REF	PMO CONTAINER No.
18/265892	23897

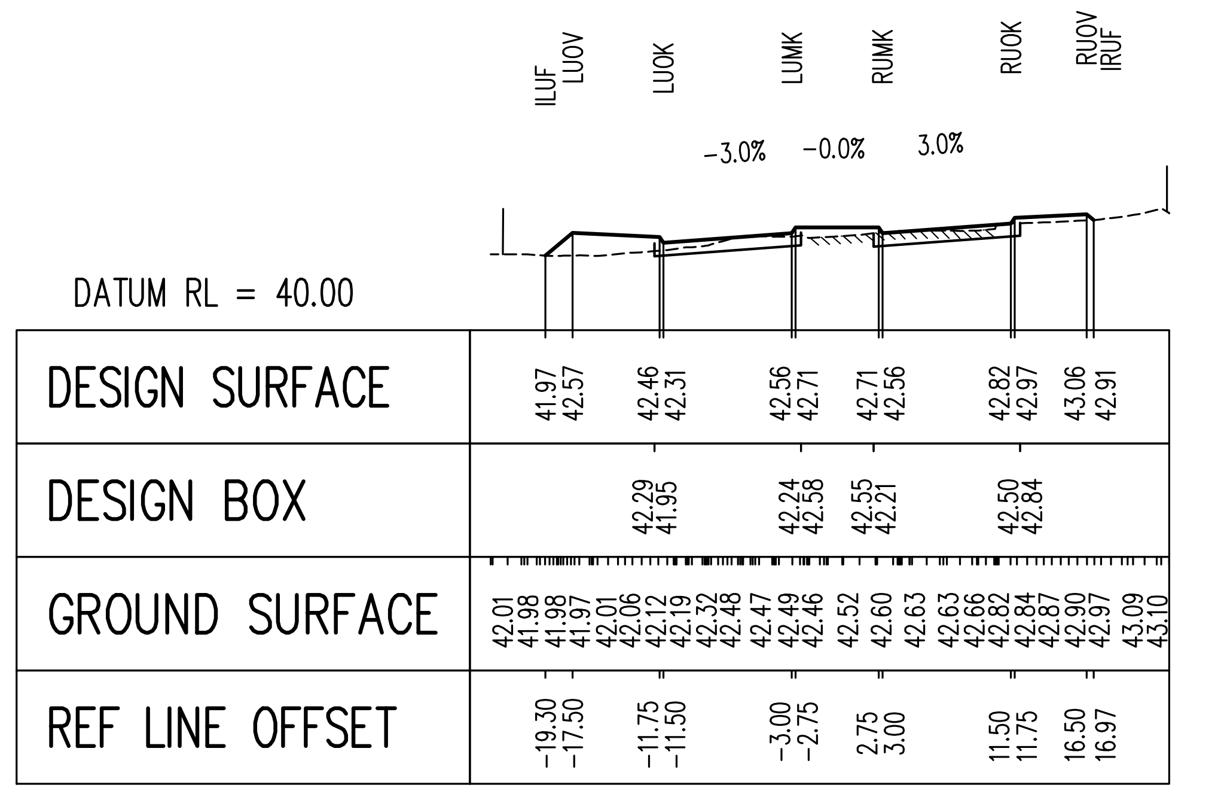
DRAWING No.	SHEET	REVISION	ORIGINAL DRG. SIZE
3466	12	0	A1



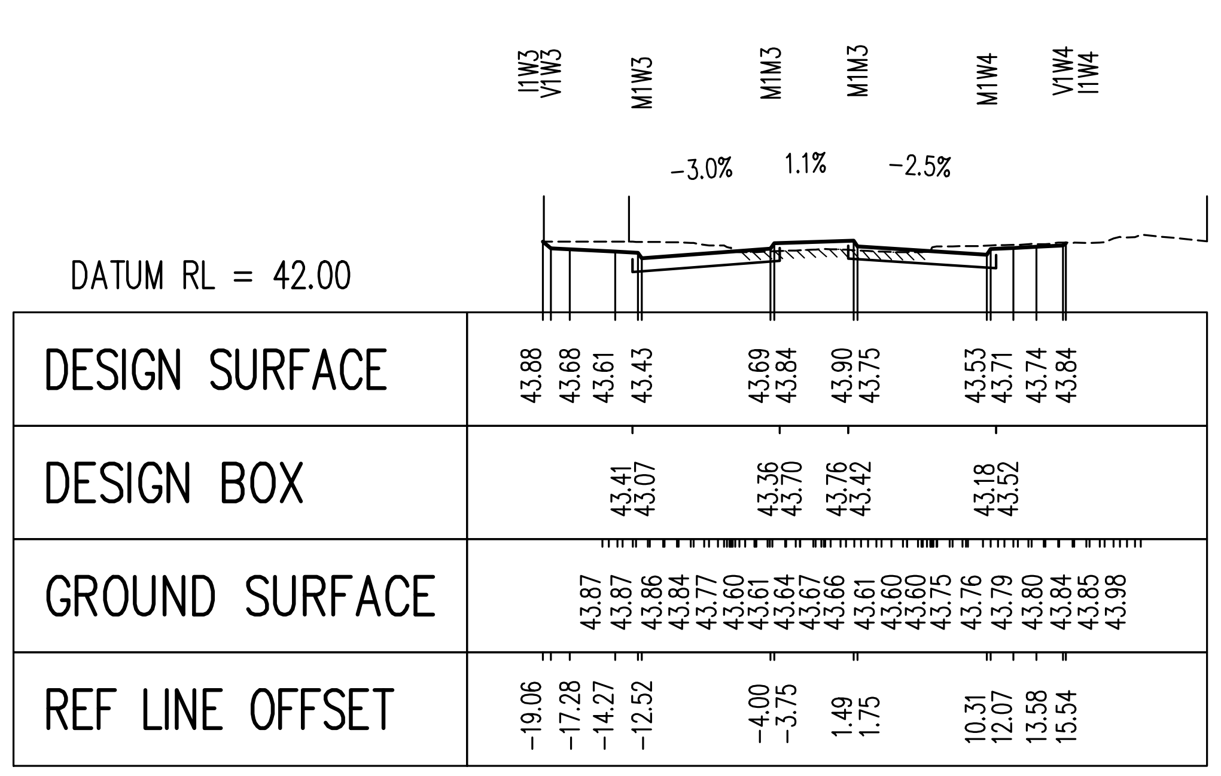
CHAINAGE 120



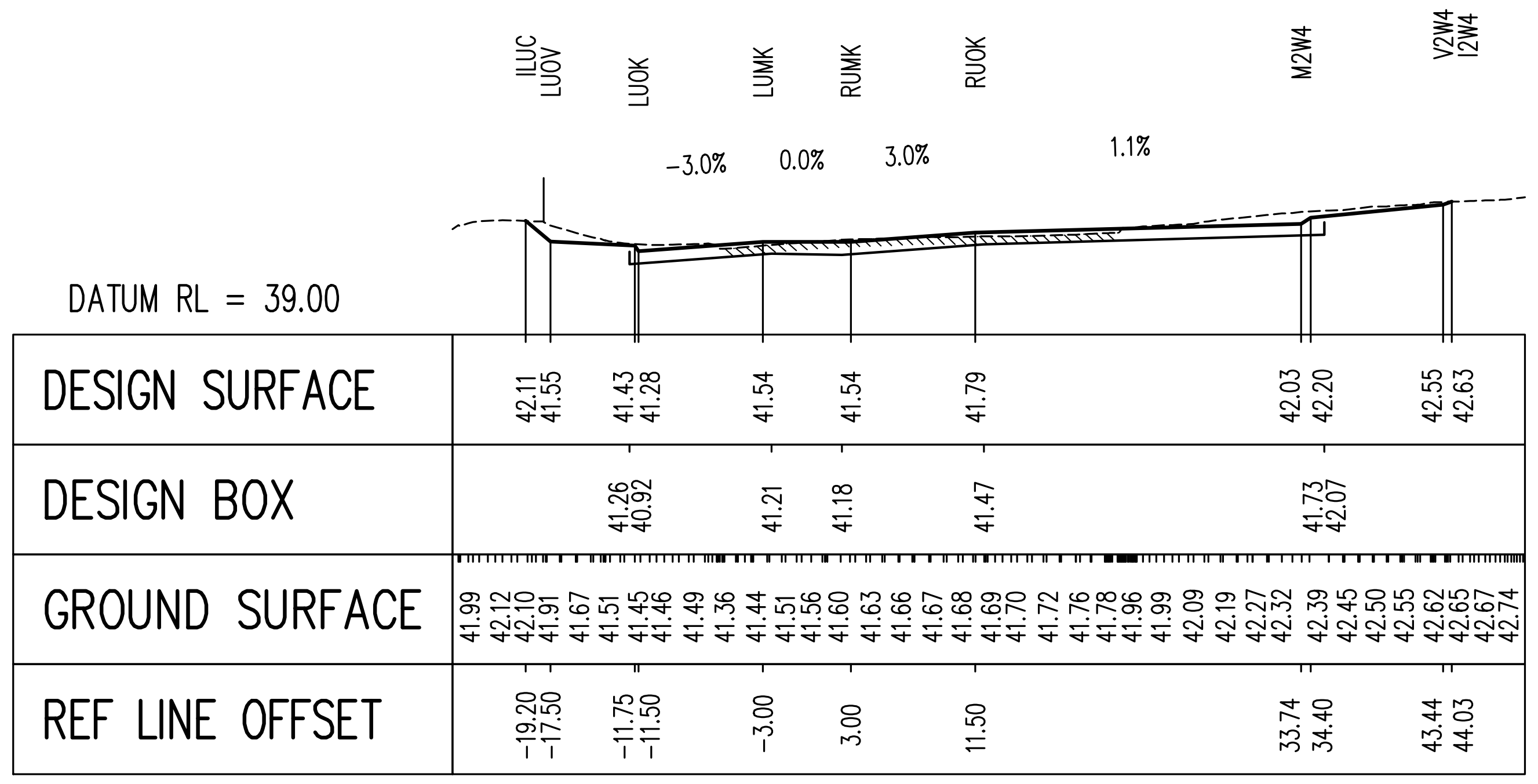
CHAINAGE 240



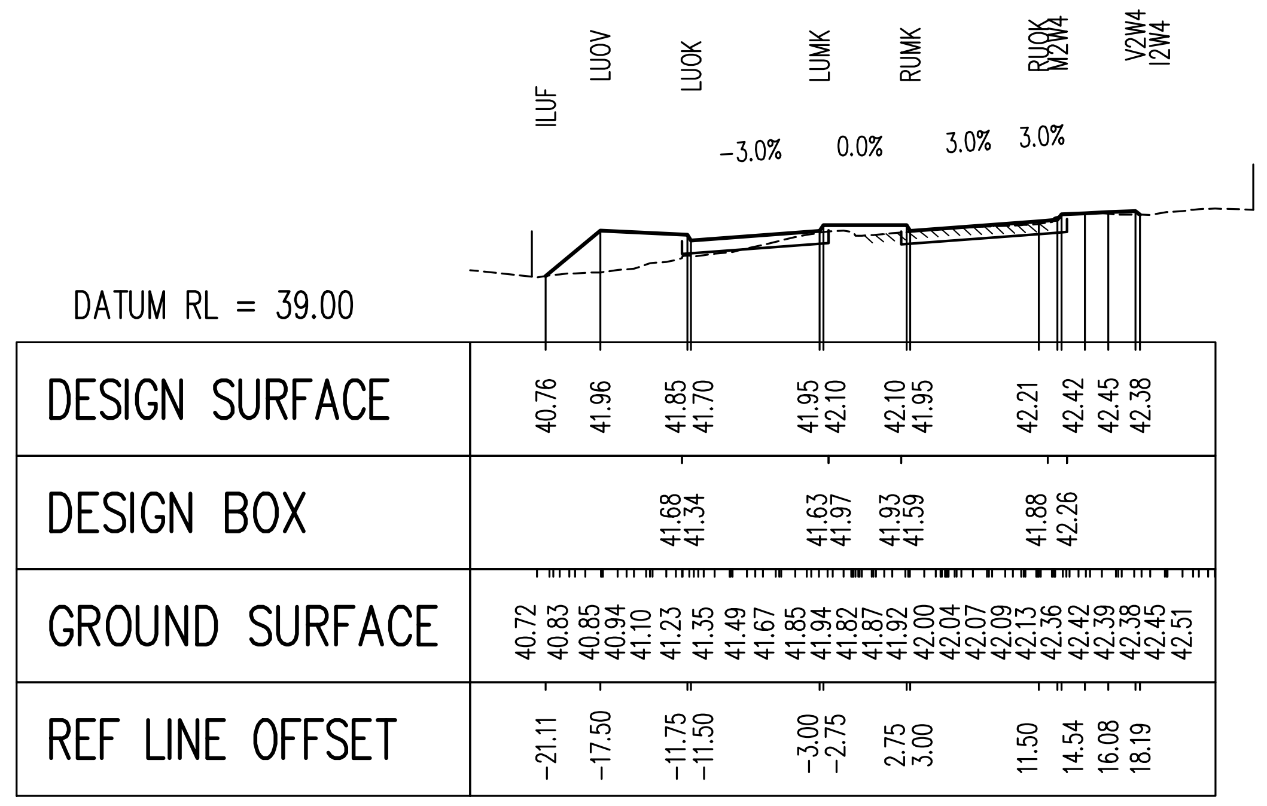
CHAINAGE 360



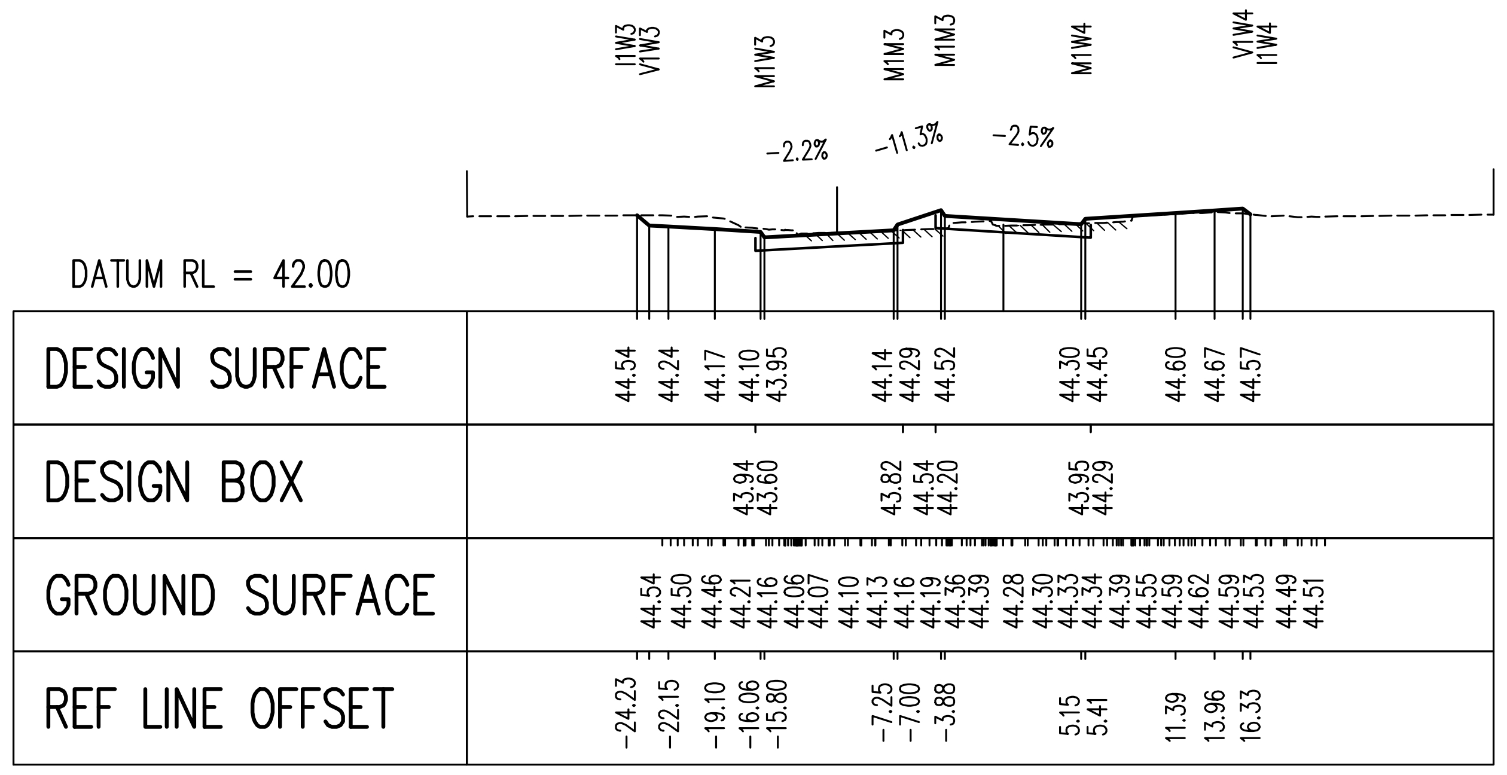
CHAINAGE 80



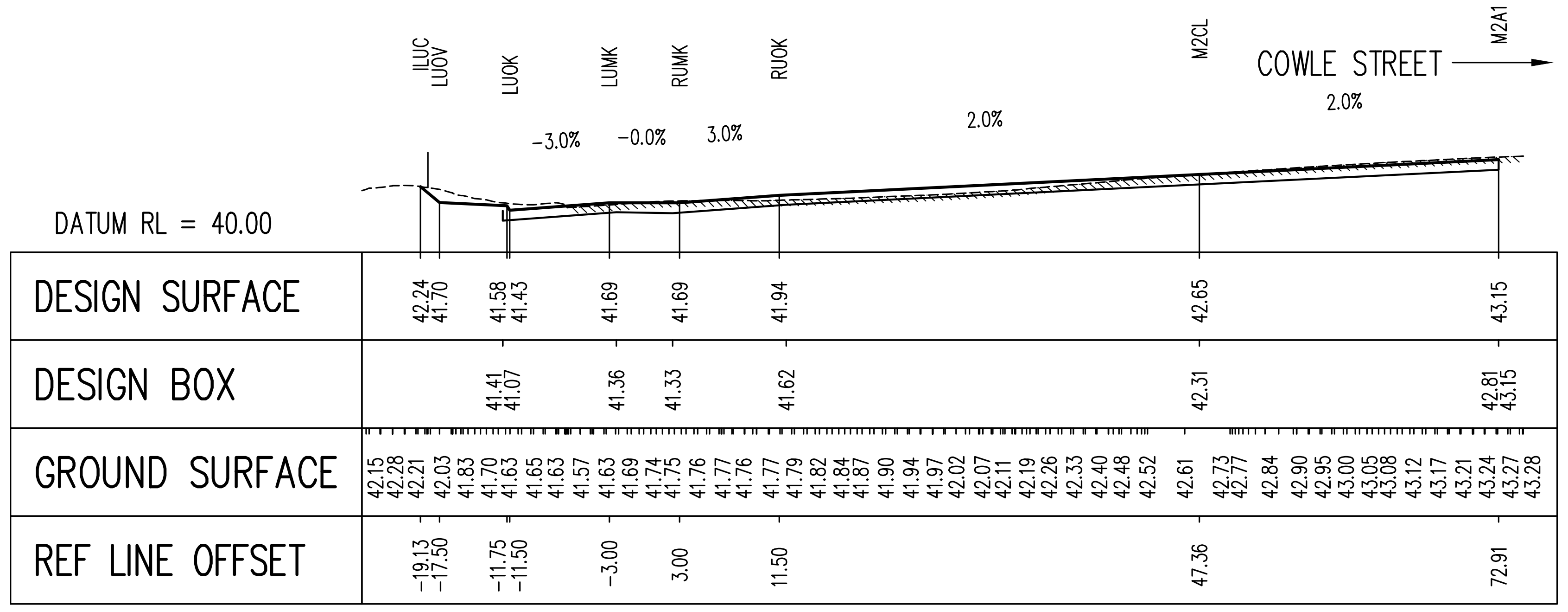
CHAINAGE 200



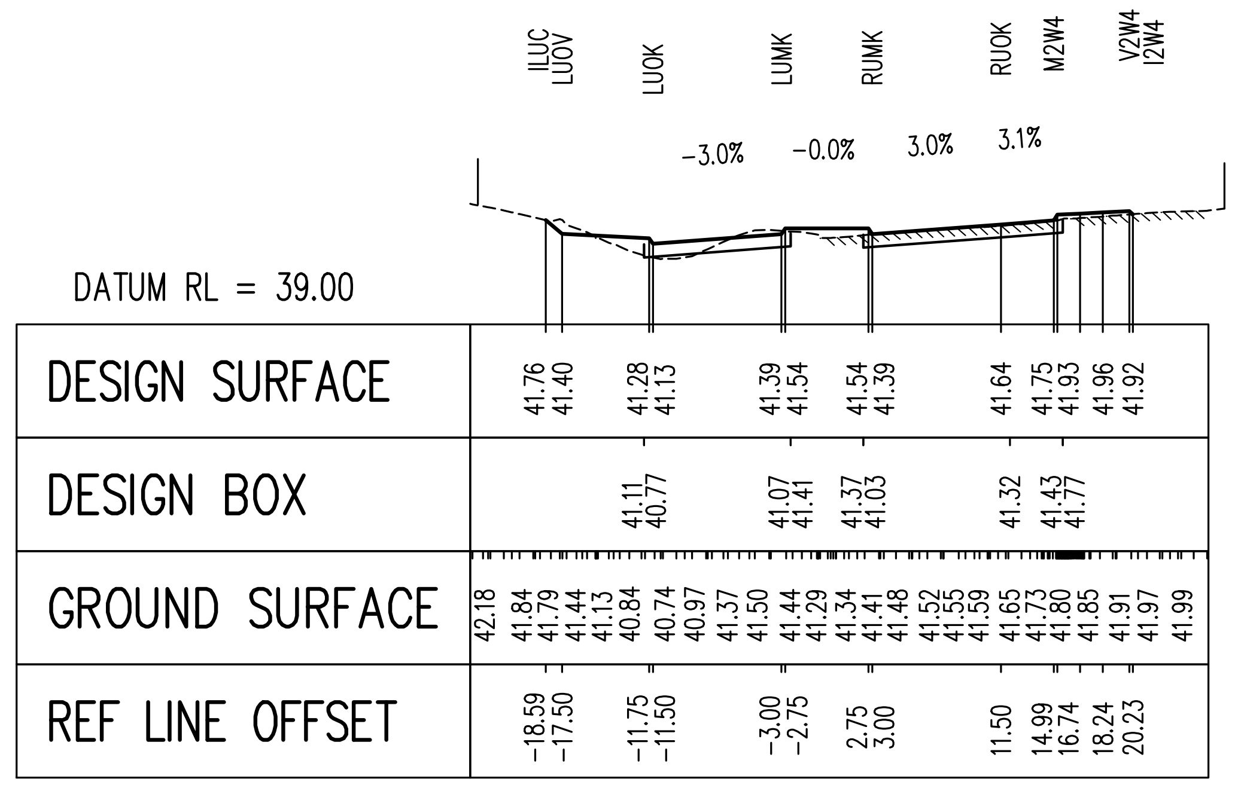
CHAINAGE 320



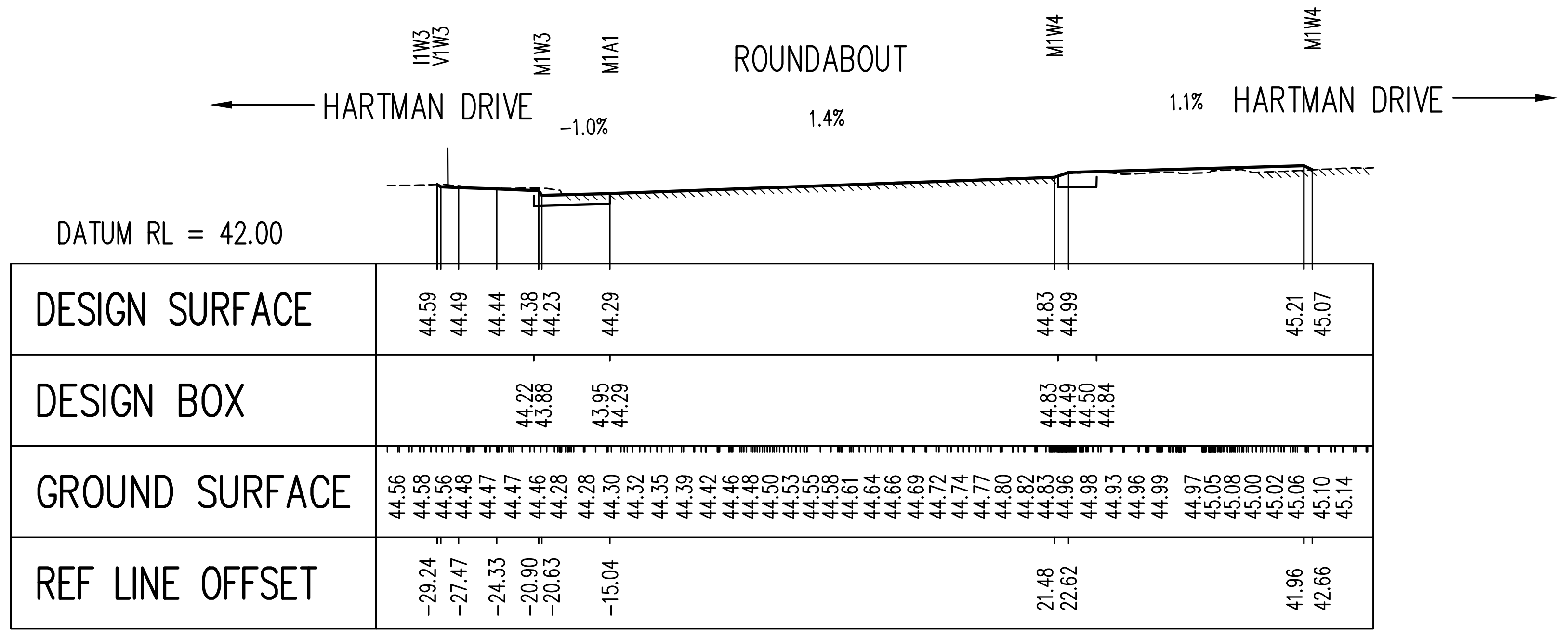
CHAINAGE 40



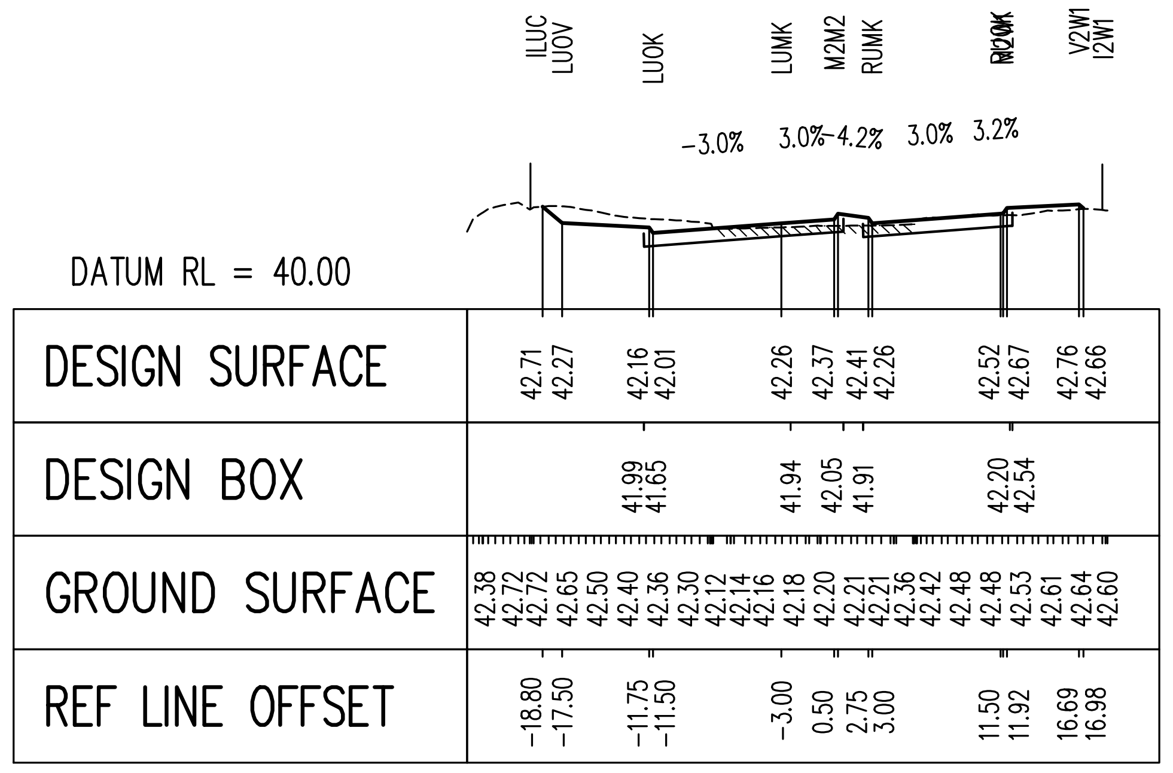
CHAINAGE 190



CHAINAGE 280



CHAINAGE 20



CHAINAGE 160

SECTION KEY:

- - - - - -	EXISTING GROUND
▨	EXISTING ROAD PAVEMENT
———	DESIGN SURFACE DUAL CARRIAGEWAY
└──┘	DESIGN BOX DUAL CARRIAGEWAY
|	EXISTING BOUNDARY
LOT 2	EWSP LAND REQUIRMENT BOUNDARY (COUNCIL ENDORSED APRIL 2004)

VERT SCALE: 2 0 2 4 6 8 10
1:200
SCALE IN METRES

HORIZ SCALE: 5 0 5 10 15 20 25
1:500
SCALE IN METRES

No.	REVISION	BY	DATE	AUTH
A	DRAFT COPY	NR	5/2018	
0	ISSUED FOR EWSP CELL 8 COST ALLOCATION REVIEW, BUDGET ESTIMATION AND LAND ACQUISITION PURPOSES ONLY. NOT FOR CONSTRUCTION.	NR	7/2018	

DATUM: AHD
GRID: PCG 94

SURVEYED: W.A. PRECISION SURVEYS 4/2013 SURVEYOR
DESIGNED: N.RAINFORD 11/2017 CIVIL DESIGNER
DRAWN: N.RAINFORD 6/2018 CIVIL DESIGNER
CHECKED: Philip Williams 27/05/22 COORDINATOR DESIGN
AUTHORISED: 27/05/22 MANAGER INFRASTRUCTURE CAPITAL WORKS
APPROVED: 09/06/22 DIRECTOR ASSETS
FINANCE CODE: PR-2602
PMO No.: 16058
DRAWING SET REF: 18/265892
PMO CONTAINER No.: 23897

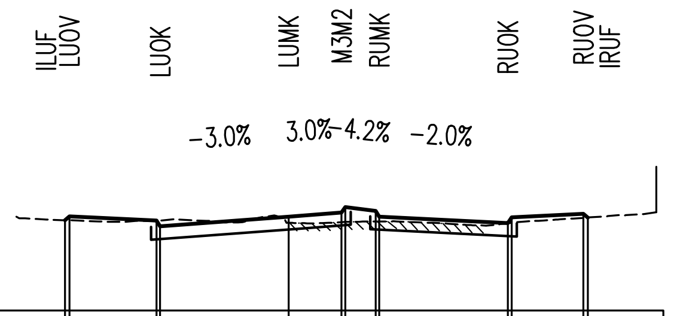
CITY OF WANNEROO
ASSETS

GNANGARA ROAD

HARTMAN DRIVE TO MIRRABOOOKA AVENUE
STAGE 2: DUAL CARRIAGEWAY - PRELIMINARY DESIGN
WANGARA

CROSS SECTIONS CH 20 TO CH 360
SHEET 1 OF 5

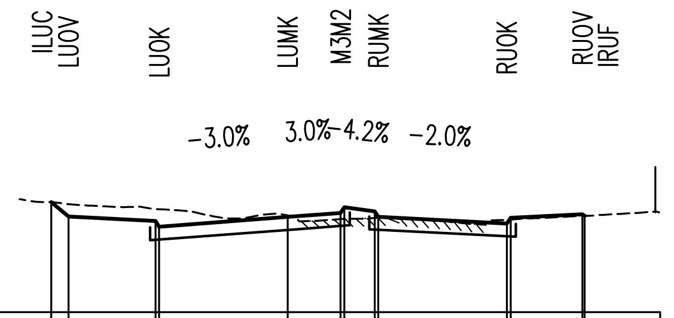
DRAWING No. 3466 - SHEET 13 - REVISION 0
ORIGINAL DRG. SIZE A1



DATUM RL = 43.00

DESIGN SURFACE	45.39 45.49 45.37 45.22 45.48 45.59 45.63 45.48 45.31 45.46 45.55 45.46
DESIGN BOX	45.21 44.87 45.16 45.26 45.15 44.96 45.30
GROUND SURFACE	45.48 45.40 45.39 45.35 45.37 45.42 45.37 45.33 45.50 45.31 45.31 45.35 45.36 45.34 45.30 45.25 45.28 45.35 45.40 45.45 45.53 45.55
REF LINE OFFSET	−17.80 −17.50 −11.75 −11.50 −3.00 0.50 2.75 3.00 11.50 11.75 16.50 16.79

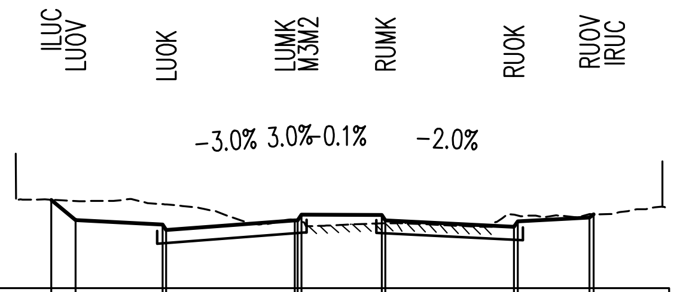
CHAINAGE 520



DATUM RL = 42.00

DESIGN SURFACE	44.91 44.53 44.41 44.26 44.52 44.62 44.67 44.52 44.35 44.50 44.59 44.55
DESIGN BOX	44.24 43.90 44.20 44.30 44.19 44.00 44.34
GROUND SURFACE	44.99 44.91 44.82 44.79 44.75 44.70 44.59 44.48 44.61 44.40 44.44 44.48 44.49 44.46 44.39 44.33 44.43 44.48 44.52 44.56 44.60 44.65 44.64
REF LINE OFFSET	−18.65 −17.50 −11.75 −11.50 −3.00 0.50 2.75 3.00 11.50 11.75 16.50 16.63

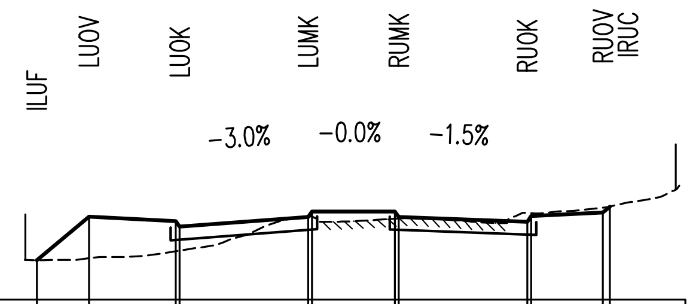
CHAINAGE 480



DATUM RL = 42.00

DESIGN SURFACE	44.34 43.80 43.69 43.54 43.79 43.95 43.94 43.79 43.62 43.77 43.87 43.96
DESIGN BOX	43.52 43.18 43.47 43.82 43.80 43.46 43.27 43.61
GROUND SURFACE	44.35 44.35 44.31 44.31 44.25 44.18 44.04 43.79 43.71 43.75 43.67 43.71 43.72 43.70 43.66 43.63 43.85 43.92 43.93 43.96 44.01 44.09 44.14
REF LINE OFFSET	−19.11 −17.50 −11.75 −11.50 −3.00 −2.57 2.75 3.00 11.50 11.75 16.50 16.77

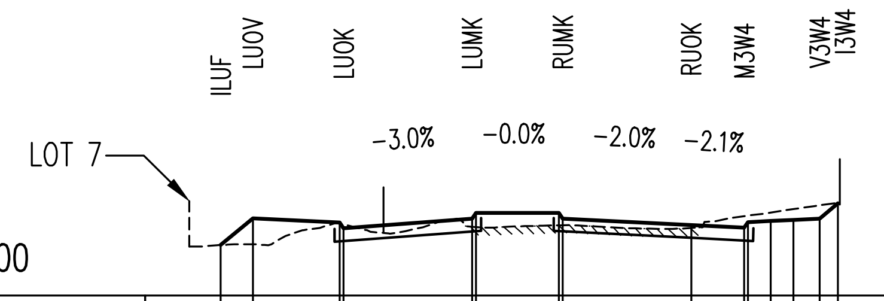
CHAINAGE 440



DATUM RL = 41.00

DESIGN SURFACE	42.04 43.19 43.07 42.92 43.18 43.33 43.33 43.18 43.05 43.20 43.30 43.45
DESIGN BOX	42.91 42.57 42.86 43.20 43.19 42.85 42.70 43.04
GROUND SURFACE	42.04 42.05 42.09 42.12 42.16 42.27 42.42 42.72 43.07 43.20 43.06 43.09 43.14 43.13 43.06 43.02 43.28 43.34 43.39 43.51 43.69 44.02
REF LINE OFFSET	−20.95 −17.50 −11.75 −11.50 −3.00 −2.75 2.75 3.00 11.50 11.75 16.50 16.97

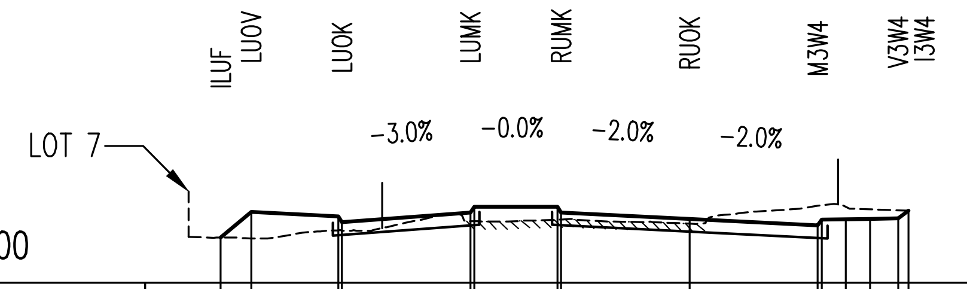
CHAINAGE 400



DATUM RL = 47.00

DESIGN SURFACE	48.33 49.04 48.93 48.78 49.03 49.18 49.18 49.03 48.86 48.79 48.97 49.00 49.43
DESIGN BOX	48.76 48.42 48.71 49.05 49.05 48.71 48.51 48.44 48.78
GROUND SURFACE	48.29 48.34 48.36 48.58 48.79 48.81 48.65 48.75 48.95 48.92 48.79 48.83 48.86 48.84 48.79 48.77 48.77 48.91 49.05 49.17 49.31 49.44
REF LINE OFFSET	−19.63 −17.50 −11.75 −11.50 −3.00 −2.75 2.75 3.00 11.50 15.00 16.75 18.25 21.20

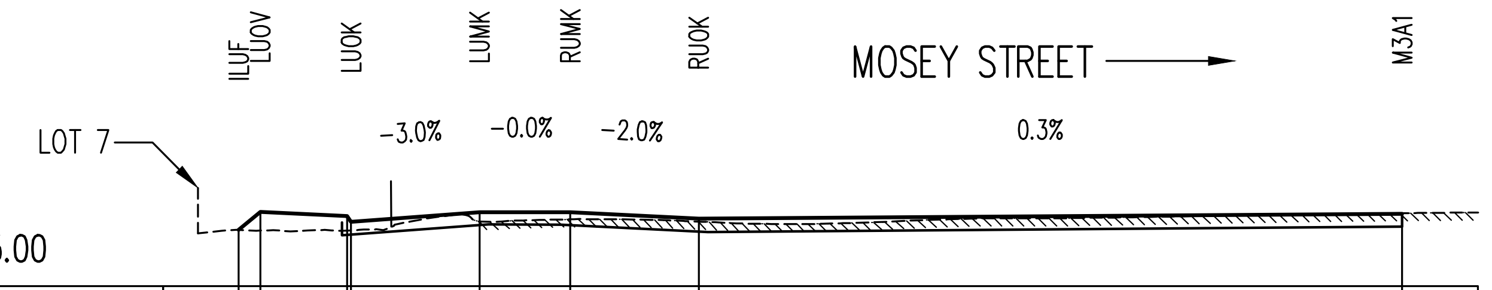
CHAINAGE 640



DATUM RL = 46.00

DESIGN SURFACE	47.20 47.87 47.76 47.61 47.86 48.01 48.01 47.86 47.69 47.52 47.68 47.69 47.91
DESIGN BOX	47.59 47.25 47.54 47.88 47.87 47.53 47.34 47.17 47.51
GROUND SURFACE	47.19 47.18 47.21 47.36 47.38 47.38 47.59 47.78 47.79 47.62 47.63 47.65 47.69 47.64 47.61 47.61 47.58 47.58 47.81 47.89 47.93 48.02 48.07 47.96
REF LINE OFFSET	−19.53 −17.50 −11.75 −11.50 −3.00 −2.75 2.75 3.00 11.50 19.98 21.84 23.43 25.98

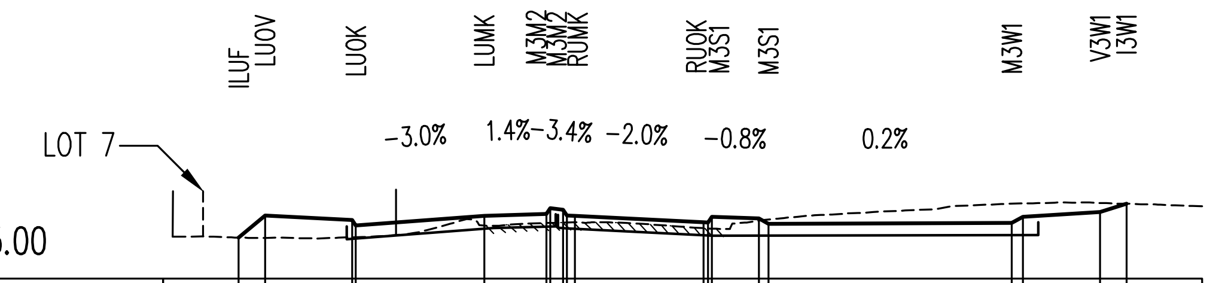
CHAINAGE 600



DATUM RL = 45.00

DESIGN SURFACE	46.49 46.97 46.85 46.70 46.96 46.96 46.79 46.92
DESIGN BOX	46.68 46.34 46.63 46.63 46.43 46.58 46.92
GROUND SURFACE	46.47 46.47 46.45 46.48 46.46 46.50 46.71 46.86 46.84 46.70 46.74 46.76 46.77 46.77 46.76 46.74 46.70 46.66 46.65 46.64 46.65 46.68 46.71 46.75 46.78 46.79 46.80 46.80 46.80 46.82 46.83 46.85 46.86 46.87 46.89 46.90 46.91 46.92 46.93 46.94 46.95
REF LINE OFFSET	−18.93 −17.50 −11.75 −11.50 −3.00 3.00 11.50 58.02

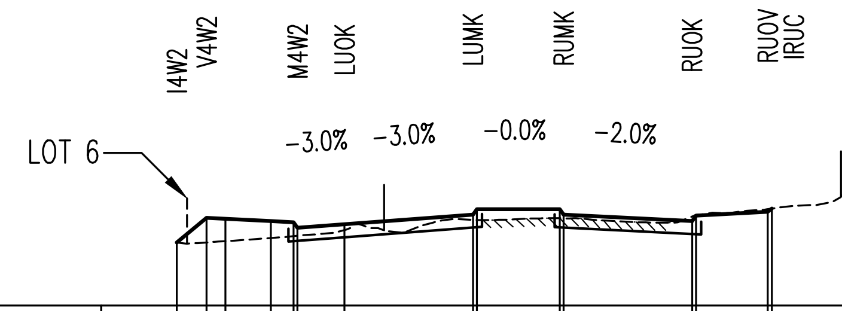
CHAINAGE 570



DATUM RL = 45.00

DESIGN SURFACE	46.08 46.66 46.55 46.40 46.65 46.71 46.65 46.48 46.63 46.44 46.47 46.63 46.76 46.97
DESIGN BOX	46.38 46.04 46.33 46.37 46.33 46.13 46.15 46.49
GROUND SURFACE	46.11 46.08 46.08 46.06 46.09 46.11 46.16 46.27 46.48 46.45 46.42 46.46 46.49 46.49 46.47 46.43 46.38 46.32 46.45 46.55 46.63 46.69 46.73 46.78 46.82 46.92 46.95 46.99 47.01 47.01 46.99 46.97 46.94
REF LINE OFFSET	−19.25 −17.50 −11.75 −11.50 −3.00 1.12 3.00 11.50 12.05 15.79 31.89 32.62 37.74 39.48

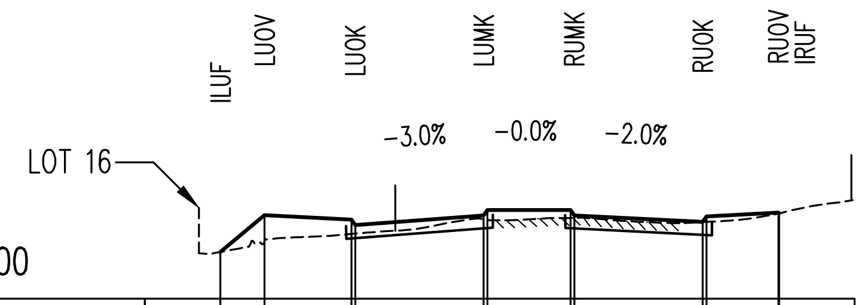
CHAINAGE 560



DATUM RL = 48.00

DESIGN SURFACE	49.67 50.29 50.23 50.05 50.15 50.40 50.55 50.55 50.40 50.23 50.38 50.48 50.57
DESIGN BOX	50.03 49.69 49.79 50.08 50.42 50.41 50.07 49.88 50.22
GROUND SURFACE	49.65 49.71 49.77 49.86 49.93 50.11 49.92 50.19 50.27 50.26 50.29 50.31 50.27 50.23 50.20 50.19 50.38 50.45 50.53 50.63 50.70 50.96
REF LINE OFFSET	−22.59 −19.37 −16.37 −14.61 −11.50 −3.00 −2.75 2.75 3.00 11.50 11.75 16.50 16.77

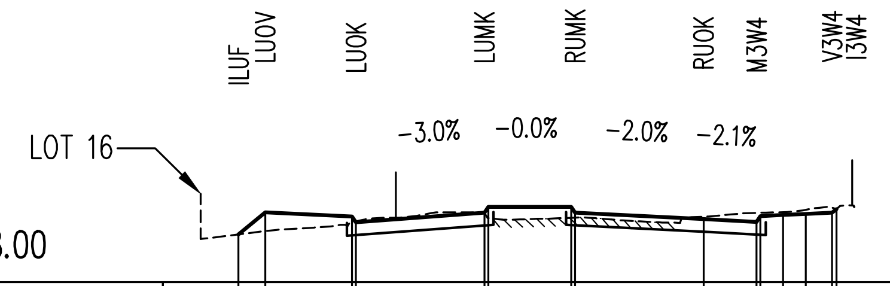
CHAINAGE 760



DATUM RL = 48.00

DESIGN SURFACE	49.24 50.21 50.10 49.95 50.20 50.35 50.35 50.20 50.03 50.18 50.28 50.26
DESIGN BOX	49.93 49.59 49.88 50.22 50.21 49.87 49.68 50.02
GROUND SURFACE	49.19 49.32 49.50 49.62 49.66 49.74 49.80 49.90 50.06 50.09 50.09 50.13 50.15 50.10 50.04 50.01 50.01 50.05 50.09 50.19 50.35 50.51 50.61
REF LINE OFFSET	−20.42 −17.50 −11.75 −11.50 −3.00 −2.75 2.75 3.00 11.50 11.75 16.50 16.55

CHAINAGE 720



DATUM RL = 48.00

DESIGN SURFACE	49.26 49.85 49.73 49.58 49.84 49.99 49.99 49.84 49.67 49.60 49.78 49.81 49.93
DESIGN BOX	49.57 49.23 49.52 49.86 49.85 49.51 49.32 49.24 49.58
GROUND SURFACE	49.18 49.28 49.38 49.43 49.51 49.66 49.71 49.83 49.85 49.66 49.67 49.69 49.70 49.65 49.59 49.57 49.74 49.82 49.85 49.90 50.00 50.02 49.99
REF LINE OFFSET	−19.27 −17.50 −11.75 −11.50 −3.00 −2.75 2.75 3.00 11.50 15.00 16.75 18.25 20.28

CHAINAGE 680

SECTION KEY:

- - - - - - - - EXISTING GROUND
▨ EXISTING ROAD PAVEMENT
— DESIGN SURFACE DUAL CARRIAGEWAY
⊔ DESIGN BOX DUAL CARRIAGEWAY
| EXISTING BOUNDARY
↙ LOT 2 EWSP LAND REQUIRMENT BOUNDARY
(COUNCIL ENDORSED APRIL 2004)

VERT SCALE: 1:200 (2 0 2 4 6 8 10 SCALE IN METRES)

HORIZ SCALE: 1:500 (5 0 5 10 15 20 25 SCALE IN METRES)

No.	REVISION	BY	DATE	AUTH	No.	REVISION	BY	DATE	AUTH
A	DRAFT COPY	NR	5/2018						
0	ISSUED FOR EWSP CELL 8 COST ALLOCATION REVIEW, BUDGET ESTIMATION AND LAND ACQUISITION PURPOSES ONLY. NOT FOR CONSTRUCTION.	NR	7/2018						

DATUM: AHD
GRID: PCG 94
SURVEYED: W.A. PRECISION SURVEYS 4/2013 SURVEYOR
DESIGNED: N.RAINFORD 11/2017 CIVIL DESIGNER
DRAWN: N.RAINFORD 6/2018 CIVIL DESIGNER
CHECKED: Philip Williams Philip Williams (May 27, 2022 15:37 GMT+8) 27/05/22 COORDINATOR DESIGN
AUTHORISED: Lionel Nicholson (May 27, 2022 16:02 GMT+8) 27/05/22 MANAGER INFRASTRUCTURE CAPITAL WORKS
APPROVED: 09/06/22 DIRECTOR ASSETS
FINANCE CODE: PR-2602
PMO No.: 16058
DRAWING SET REF: 18/265892
PMO CONTAINER No.: 23897

CITY OF WANNEROO
ASSETS

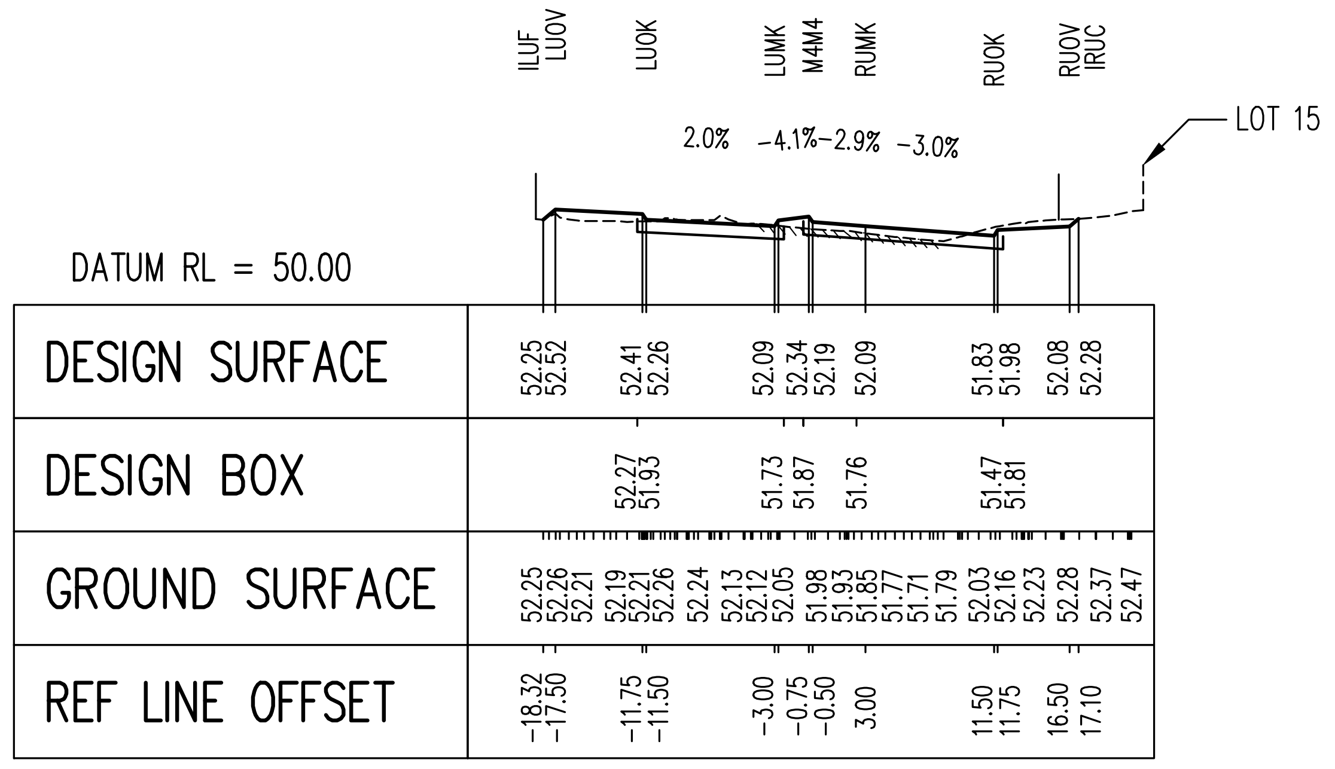
GNANGARA ROAD

HARTMAN DRIVE TO MIRRABOOOKA AVENUE
STAGE 2: DUAL CARRIAGEWAY - PRELIMINARY DESIGN
WANGARA

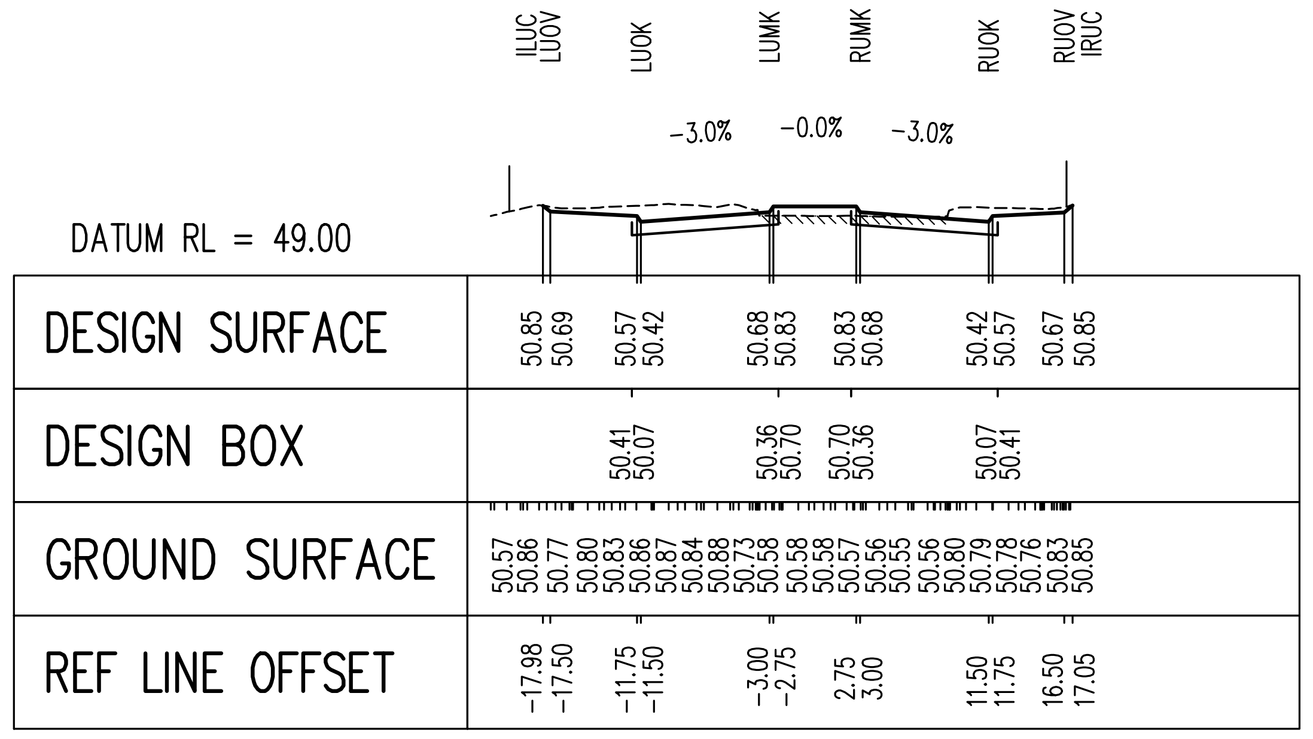
CROSS SECTIONS CH 400 TO CH 760

SHEET 2 OF 5

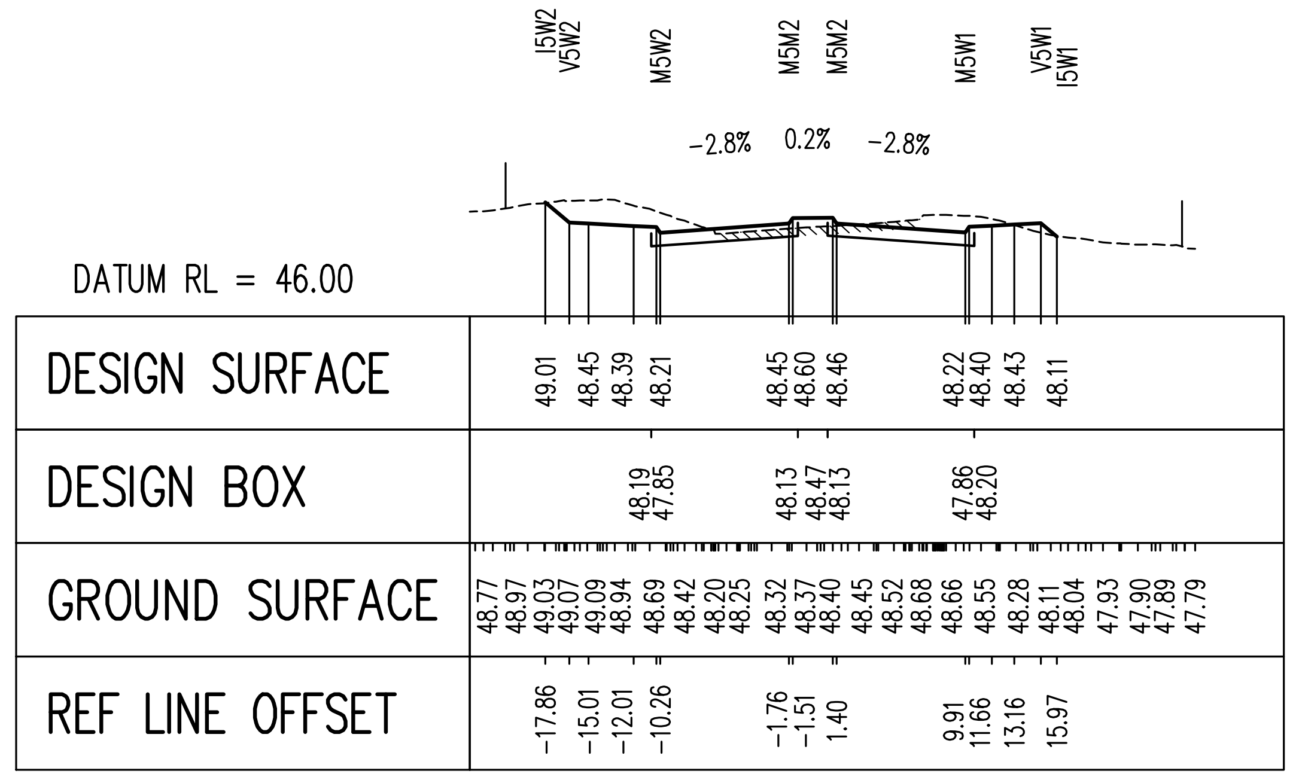
DRAWING No.	SHEET	REVISION	ORIGINAL DRG. SIZE
3466	14	0	A1



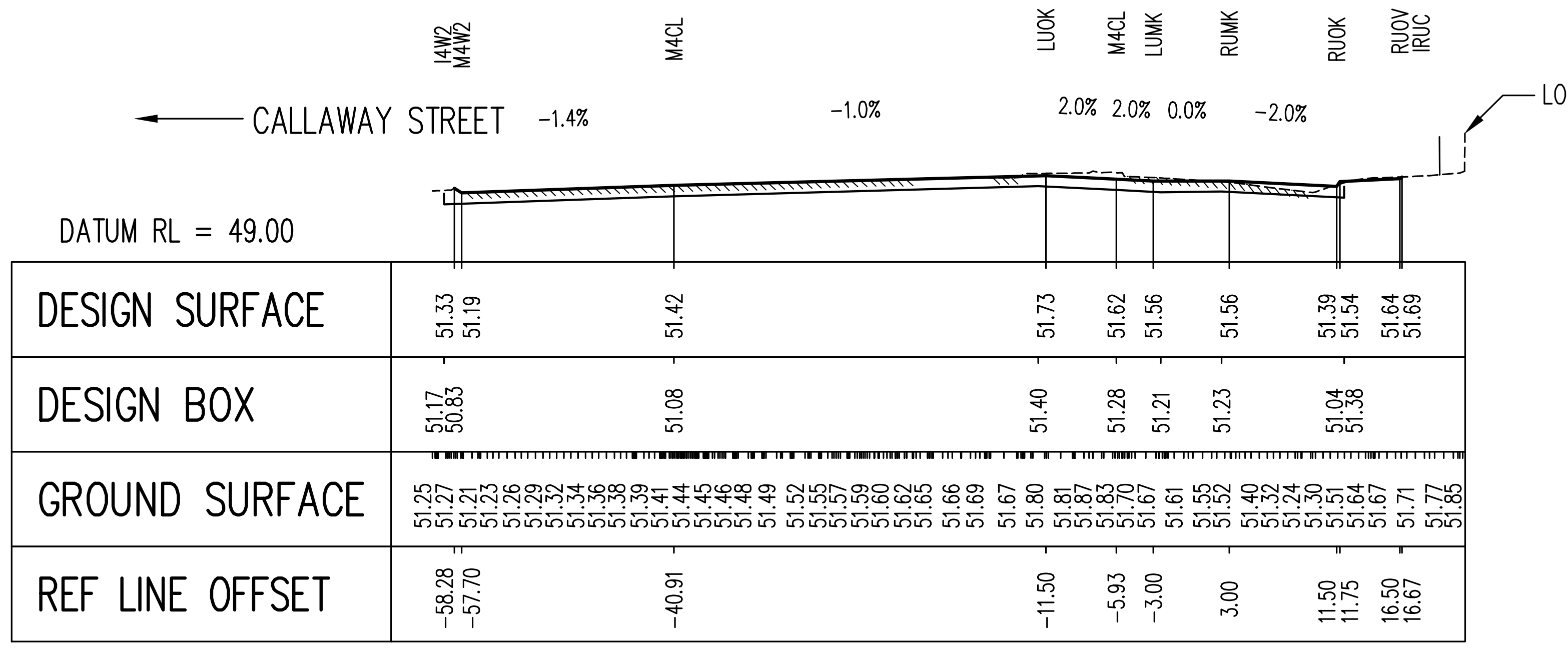
CHAINAGE 920



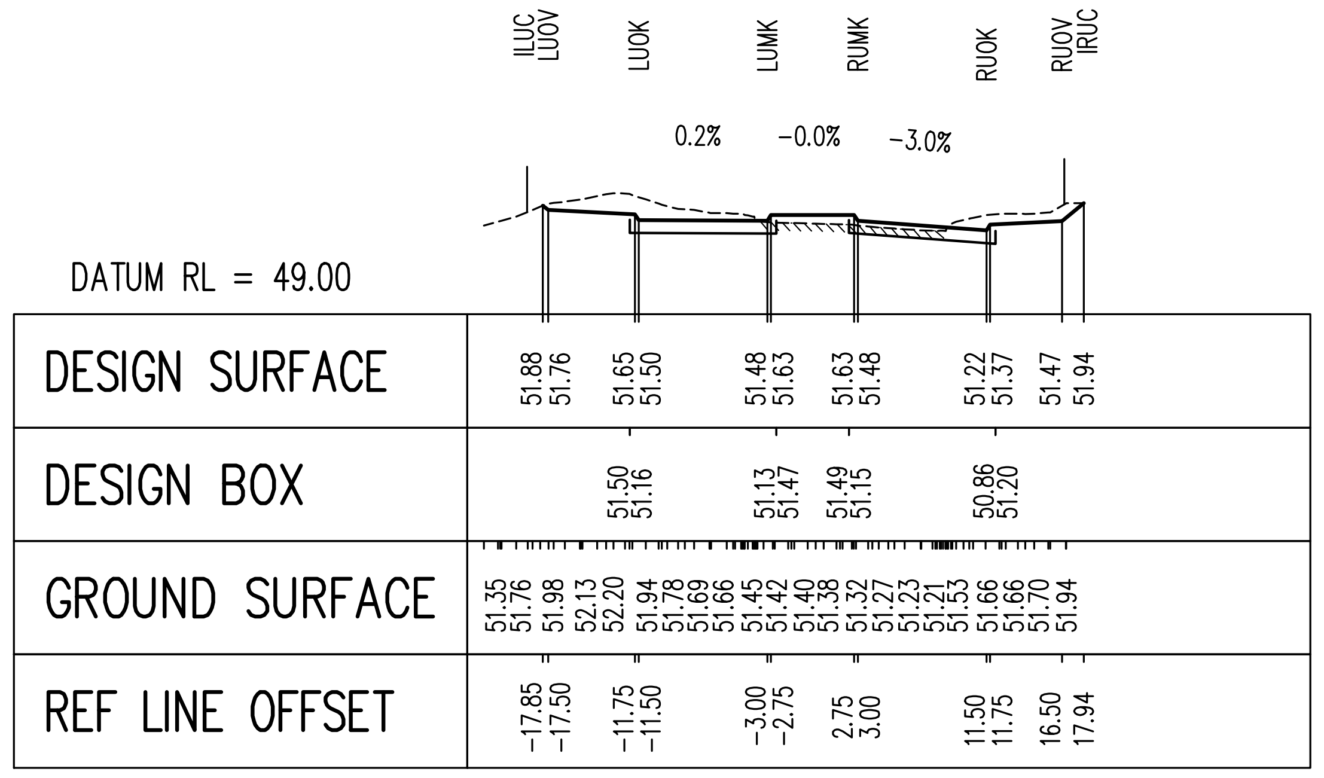
CHAINAGE 1080



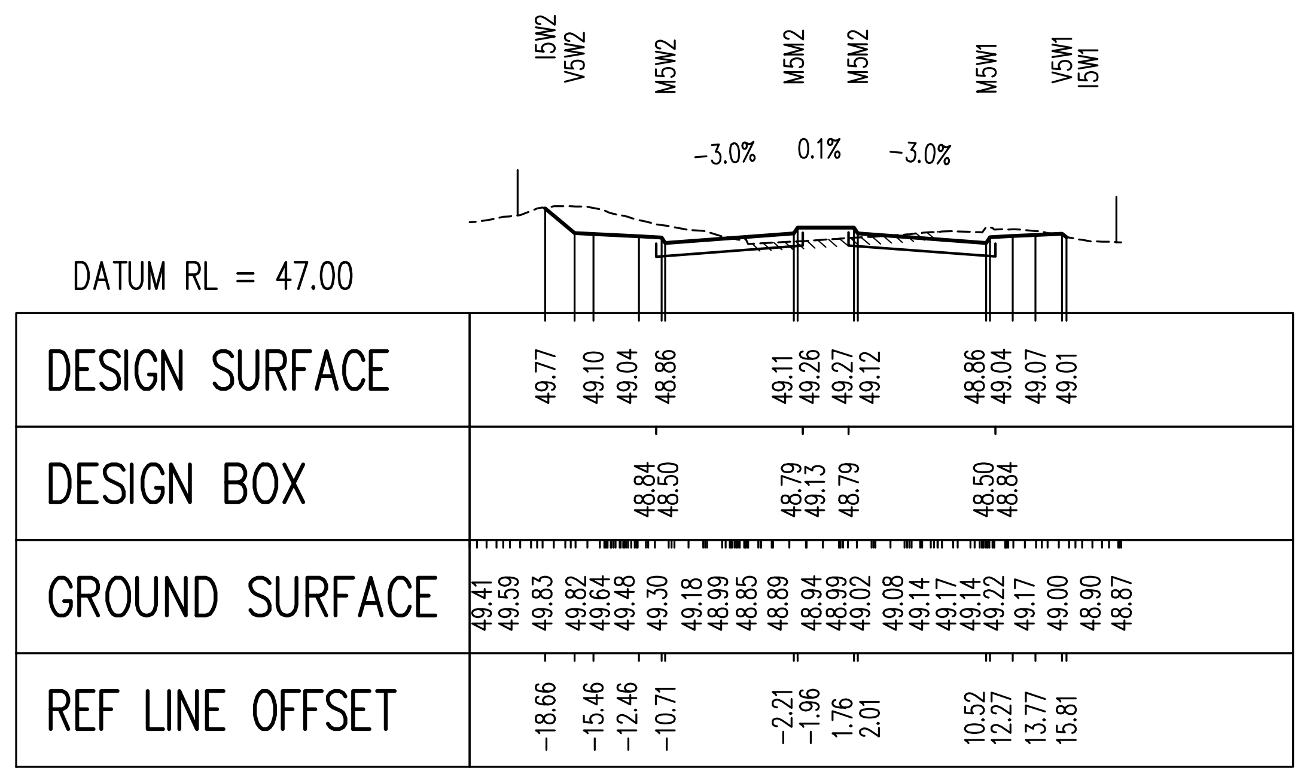
CHAINAGE 1200



CHAINAGE 880



CHAINAGE 1040



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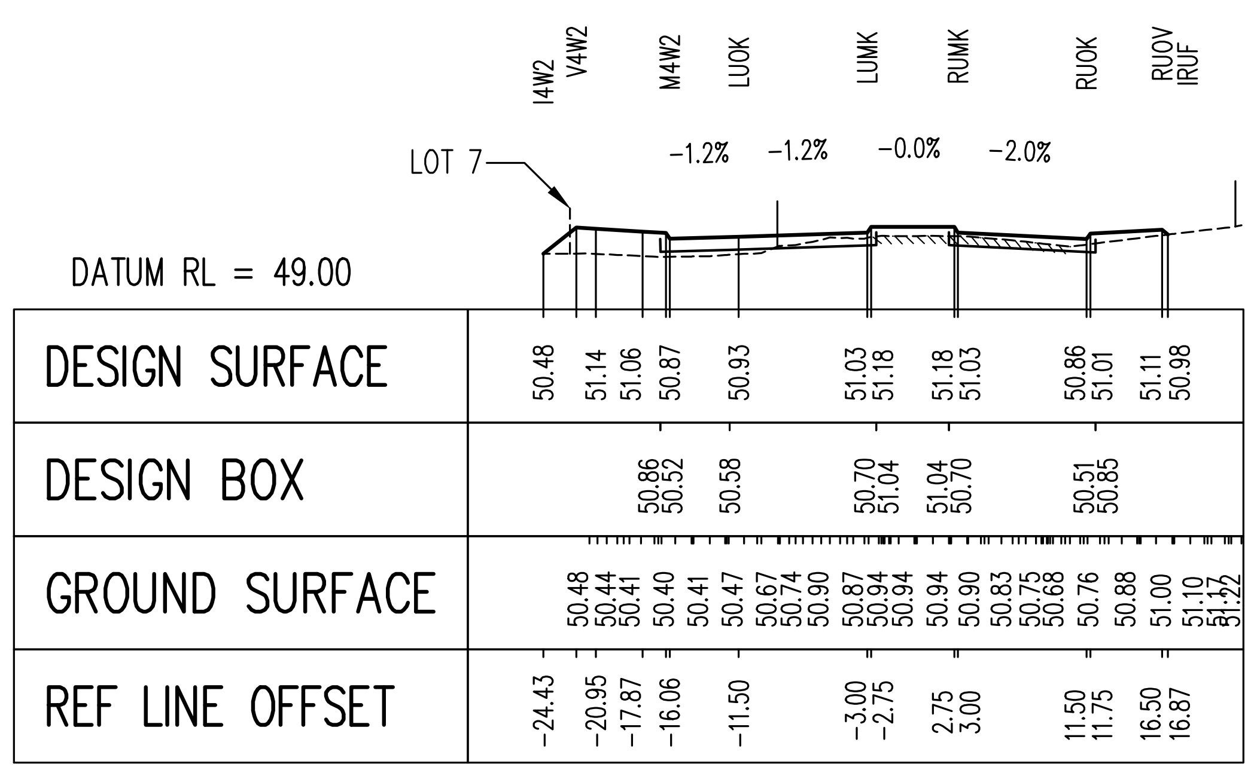
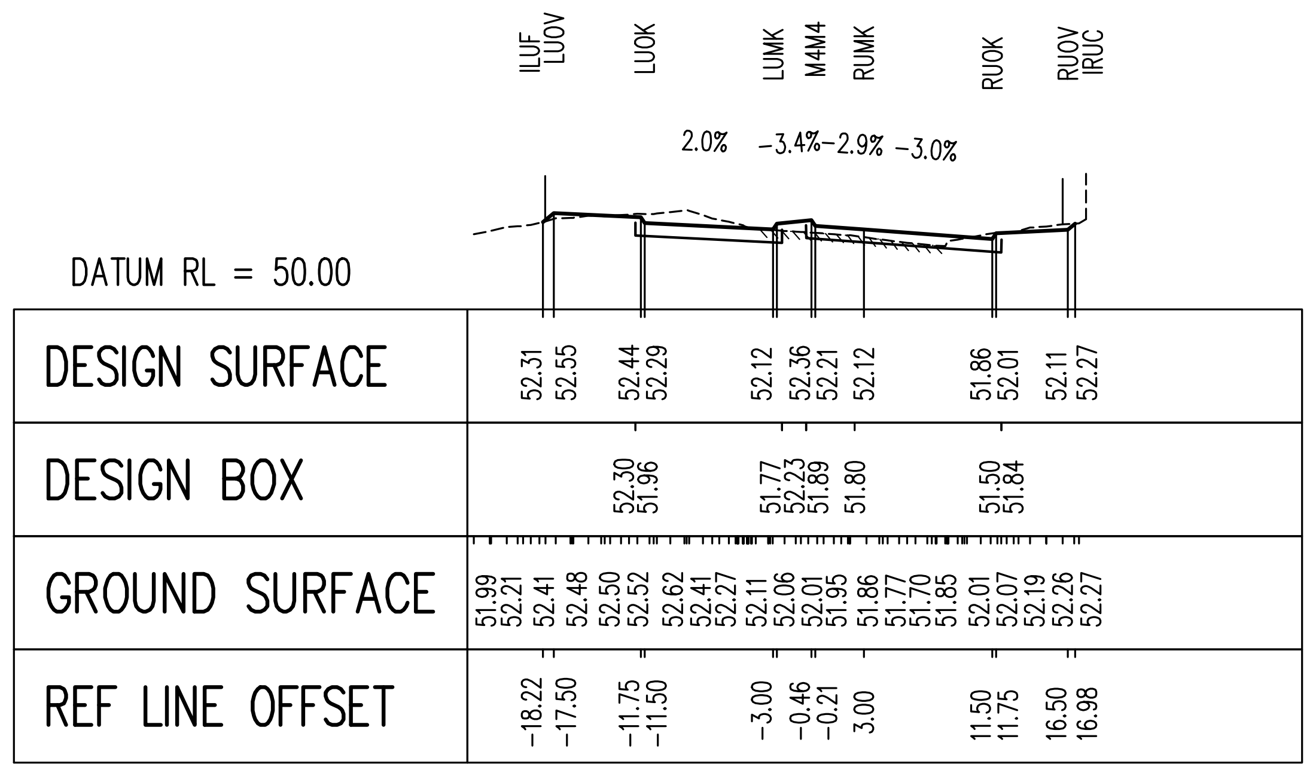
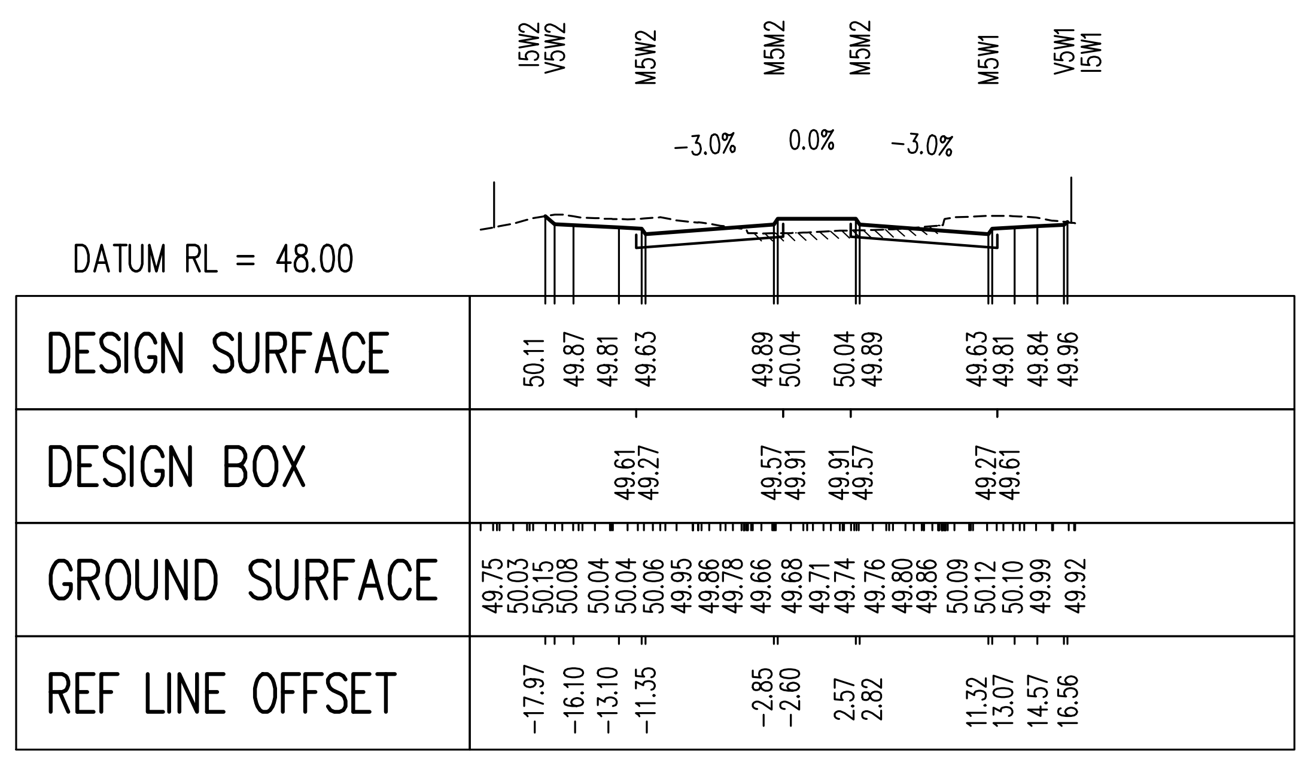


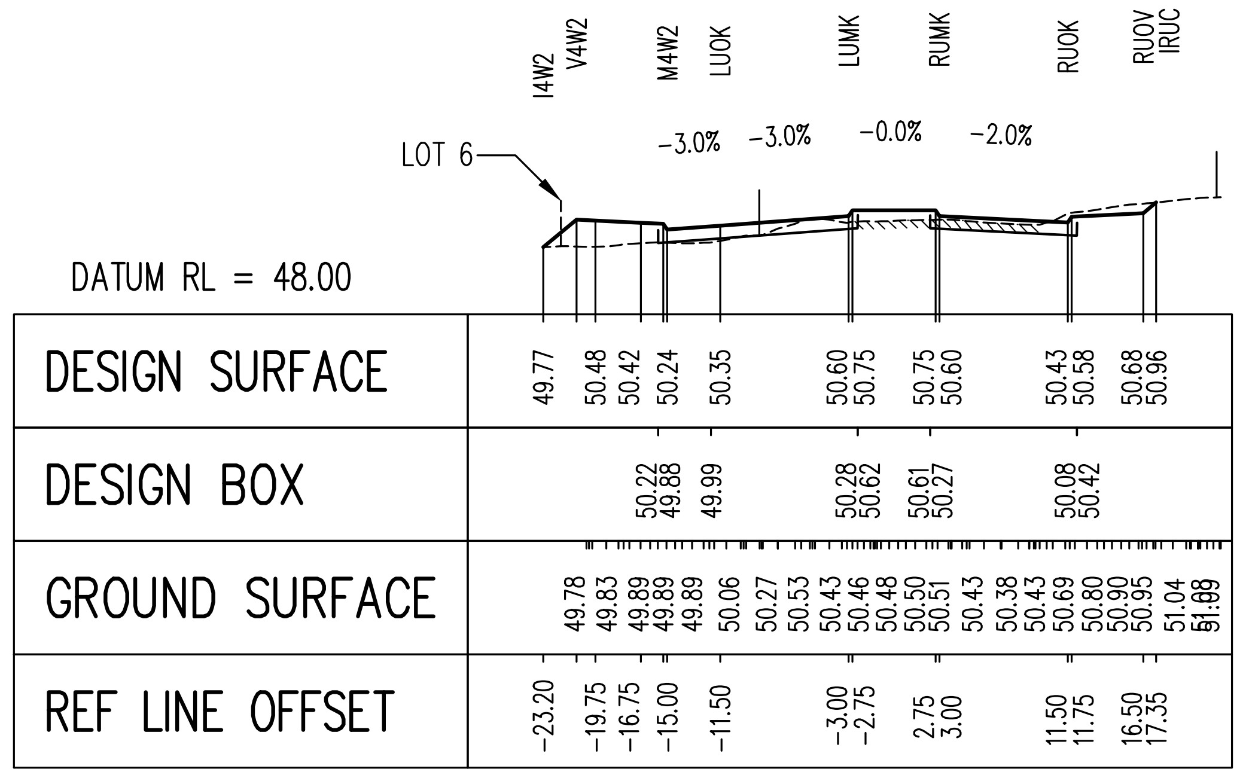
CHAINAGE 840



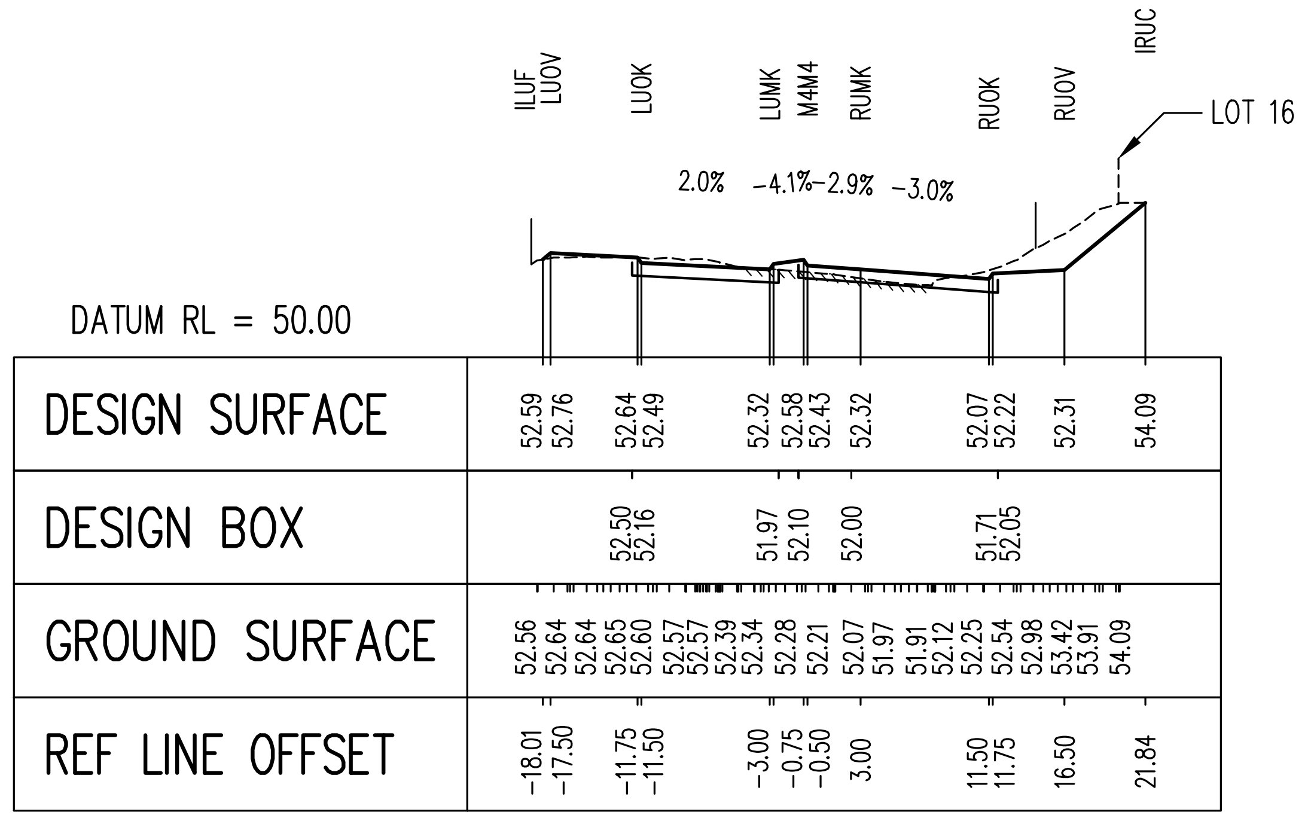
CHAINAGE 1000



CHAINAGE 1120



CHAINAGE 800



CHAINAGE 960

SECTION KEY:

- - - - -	EXISTING GROUND
▨	EXISTING ROAD PAVEMENT
──	DESIGN SURFACE DUAL CARRIAGEWAY
──	DESIGN BOX DUAL CARRIAGEWAY
|	EXISTING BOUNDARY
LOT 2	EWSP LAND REQUIRMENT BOUNDARY (COUNCIL ENDORSED APRIL 2004)

VERT SCALE: 2 0 2 4 6 8 10
1:200
SCALE IN METRES

CITY OF WANNEROO
ASSETS

GNANGARA ROAD

HARTMAN DRIVE TO MIRRABOOOKA AVENUE
STAGE 2: DUAL CARRIAGEWAY - PRELIMINARY DESIGN
WANGARA

CROSS SECTIONS CH 800 TO CH 1200

SHEET 3 OF 5

No.	REVISION	BY	DATE	AUTH
A	DRAFT COPY	NR	5/2018	
0	ISSUED FOR EWSP CELL 8 COST ALLOCATION REVIEW, BUDGET ESTIMATION AND LAND ACQUISITION PURPOSES ONLY. NOT FOR CONSTRUCTION.	NR	7/2018	

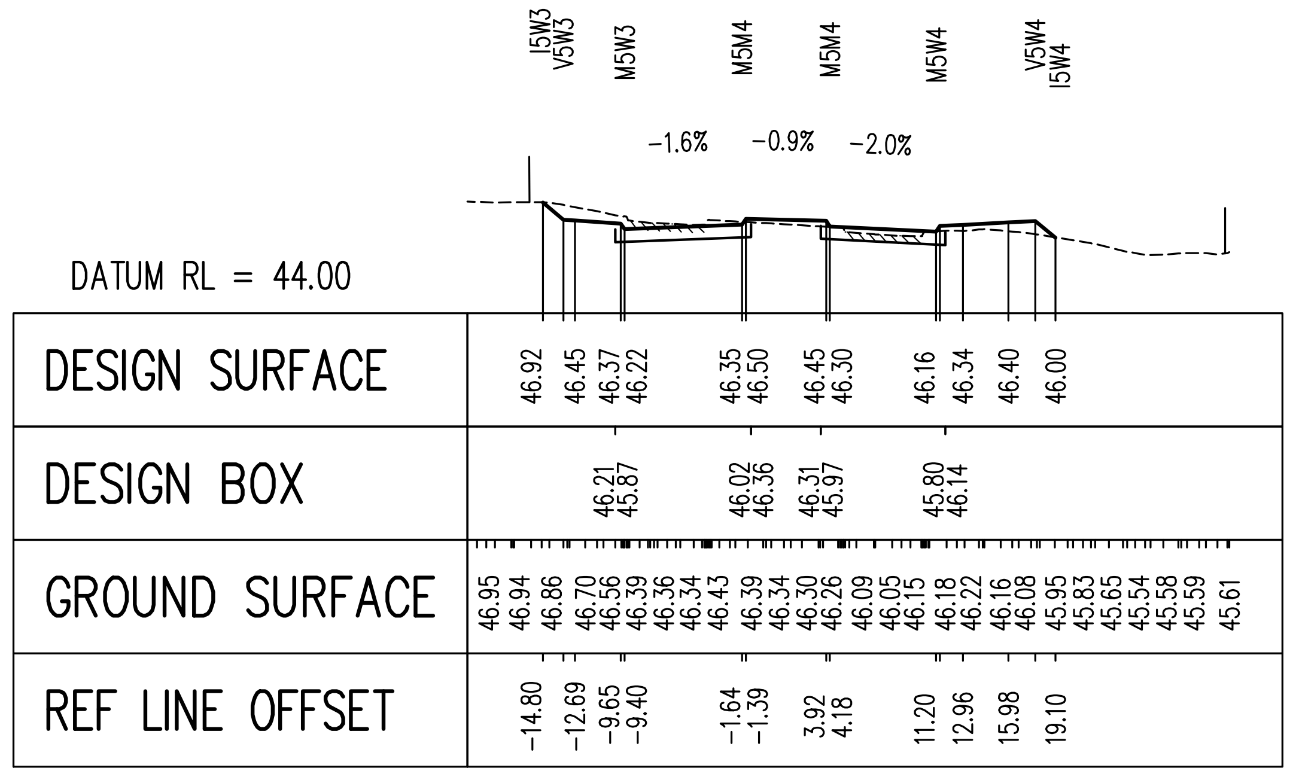
HORIZ SCALE: 5 0 5 10 15 20 25
1:500
SCALE IN METRES

DATUM: AHD
GRID: PCG 94

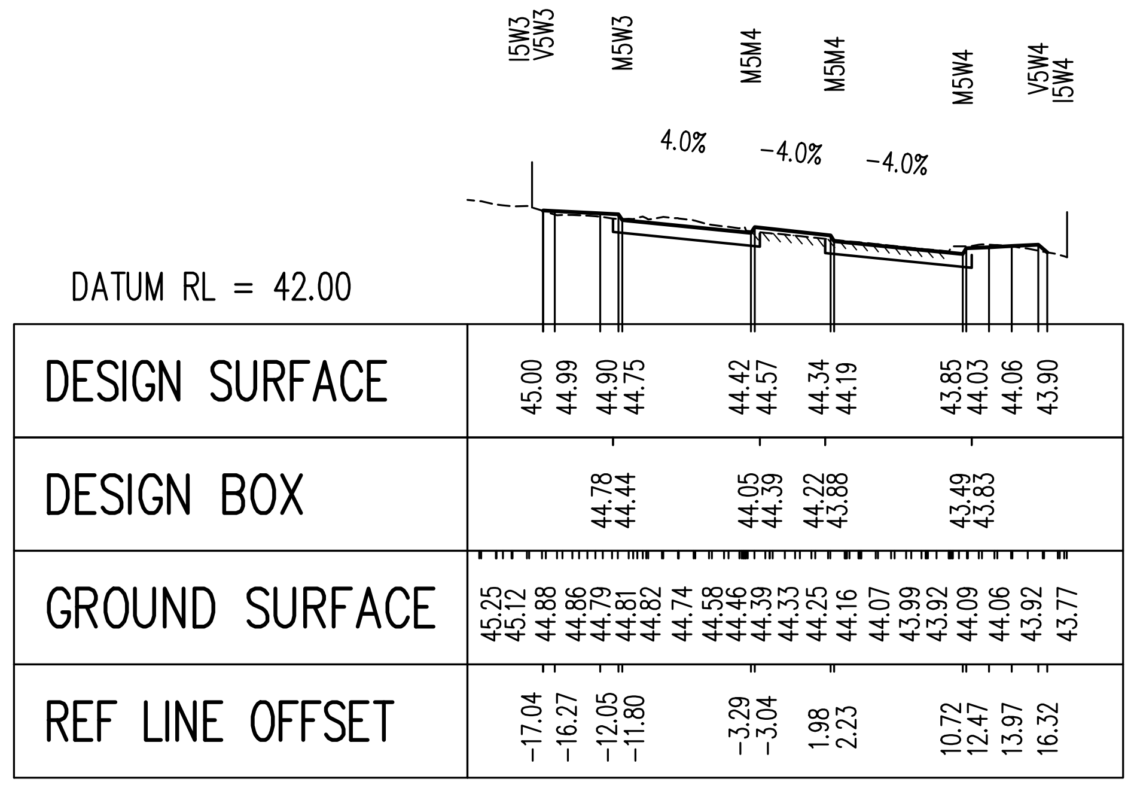
SURVEYED: W.A. PRECISION SURVEYS 4/2013 SURVEYOR
DESIGNED: N.RAINFORD 11/2017 CIVIL DESIGNER
DRAWN: N.RAINFORD 6/2018 CIVIL DESIGNER
CHECKED: Phillip Williams 27/05/22 COORDINATOR DESIGN
AUTHORISED: 27/05/22 MANAGER INFRASTRUCTURE CAPITAL WORKS
APPROVED: 09/06/22 DIRECTOR ASSETS

FINANCE CODE: PR-2602
PMO No.: 16058
DRAWING SET REF: 18/265892
PMO CONTAINER No.: 23897

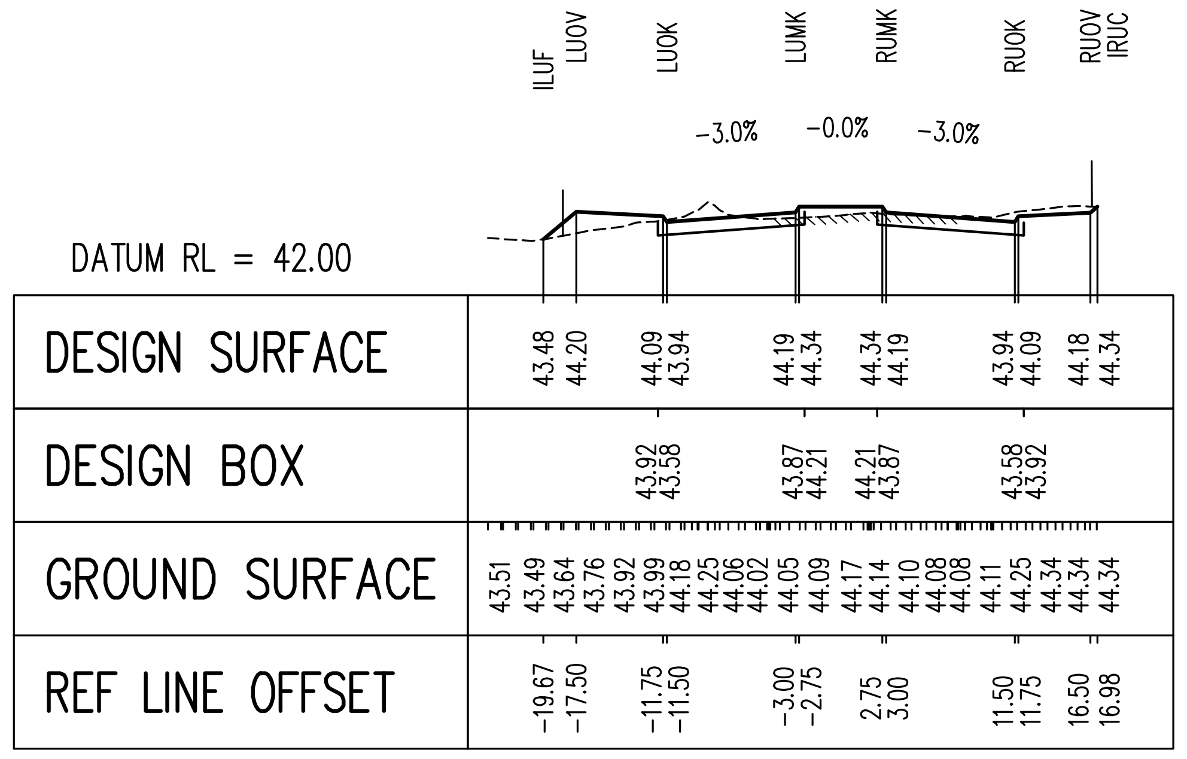
DRAWING No.	SHEET	REVISION	ORIGINAL DRG. SIZE
3466	15	0	A1



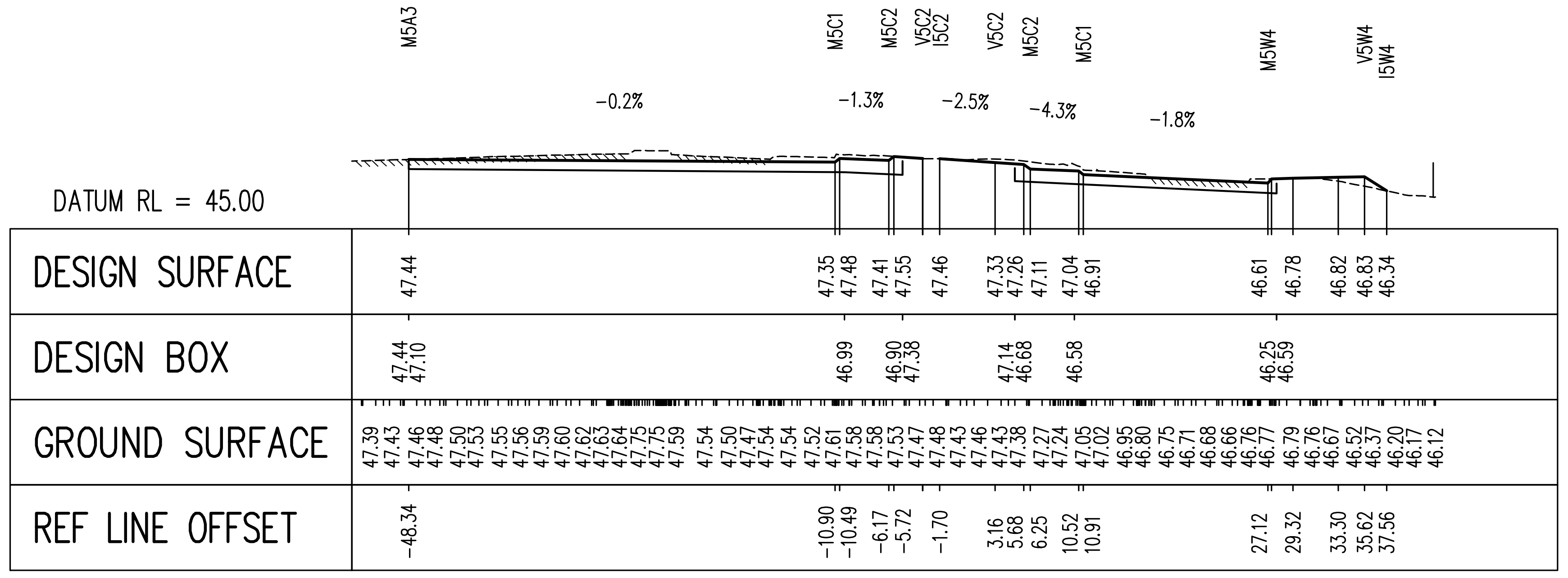
CHAINAGE 1320.000



CHAINAGE 1480



CHAINAGE 1600



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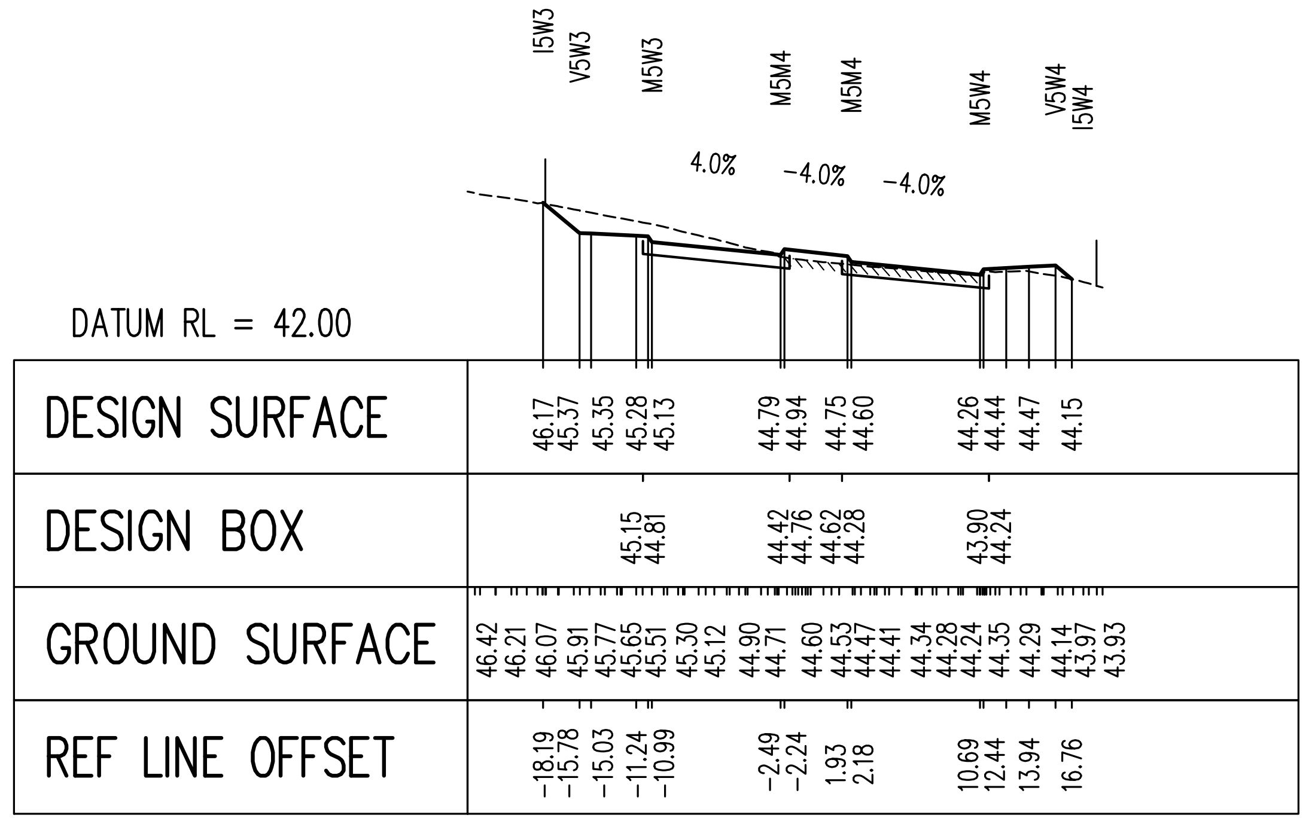

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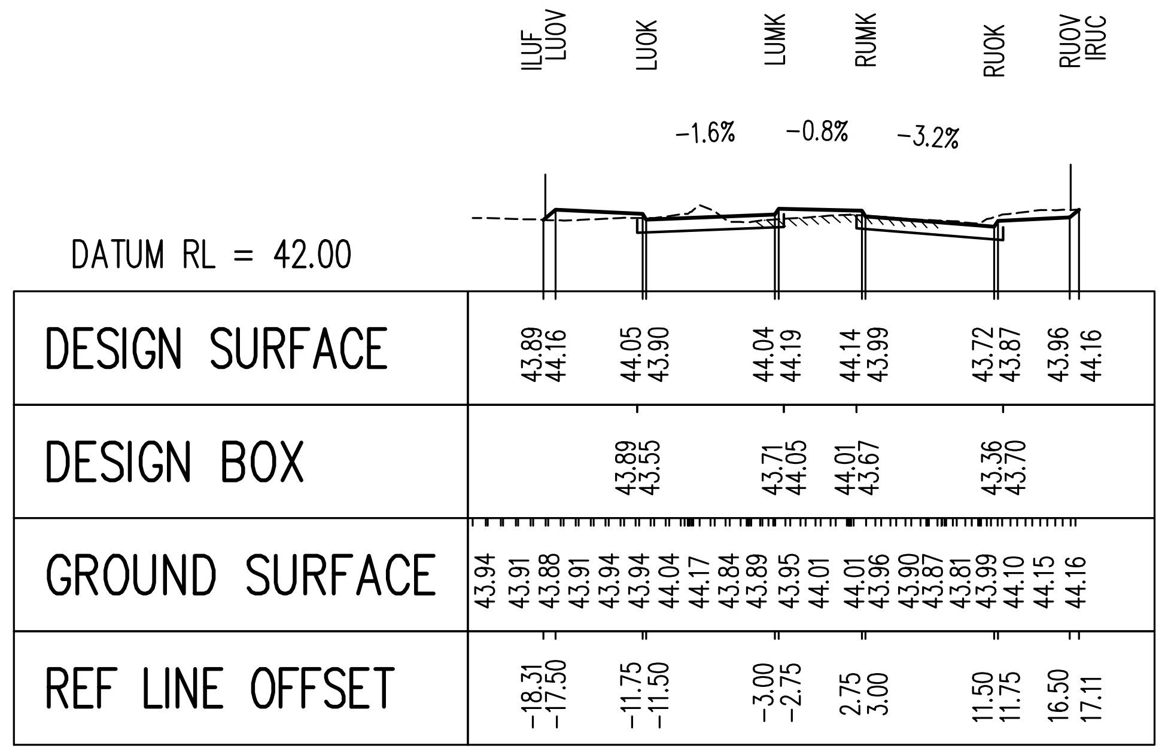

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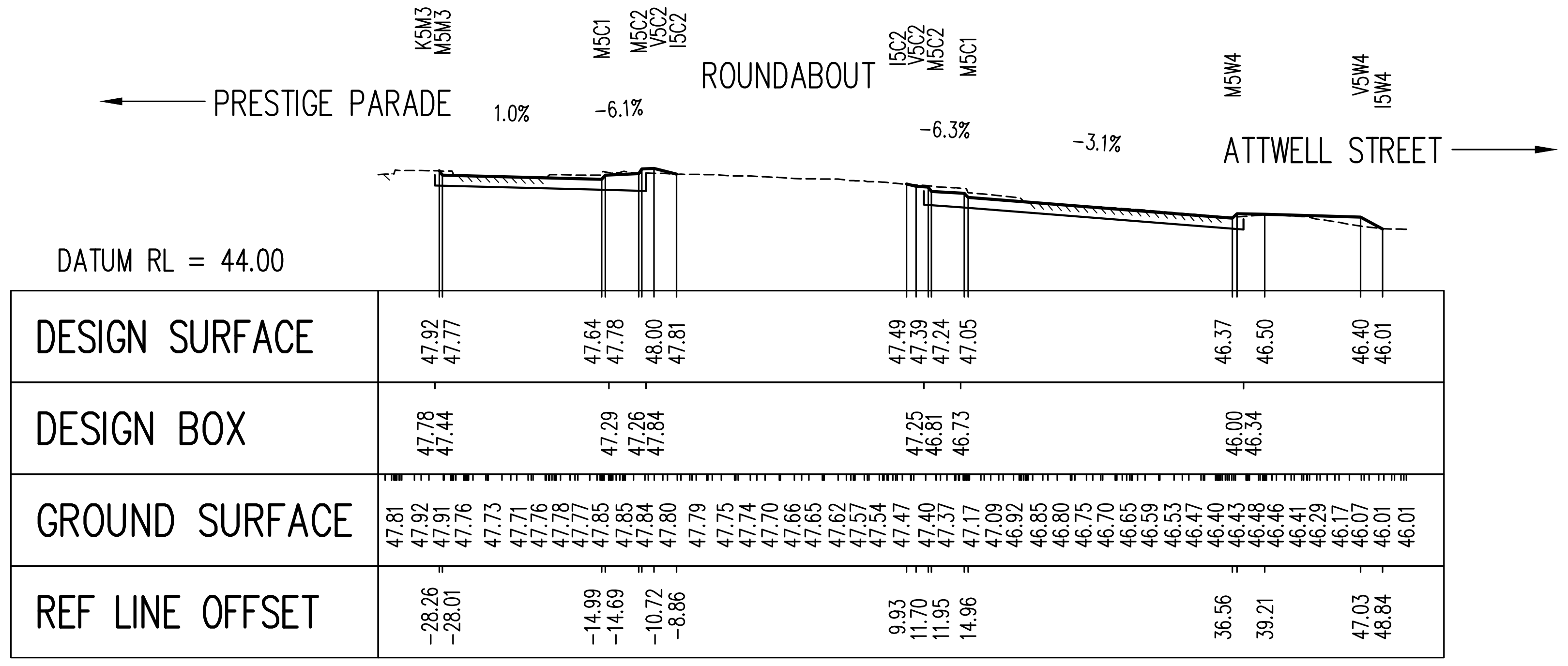

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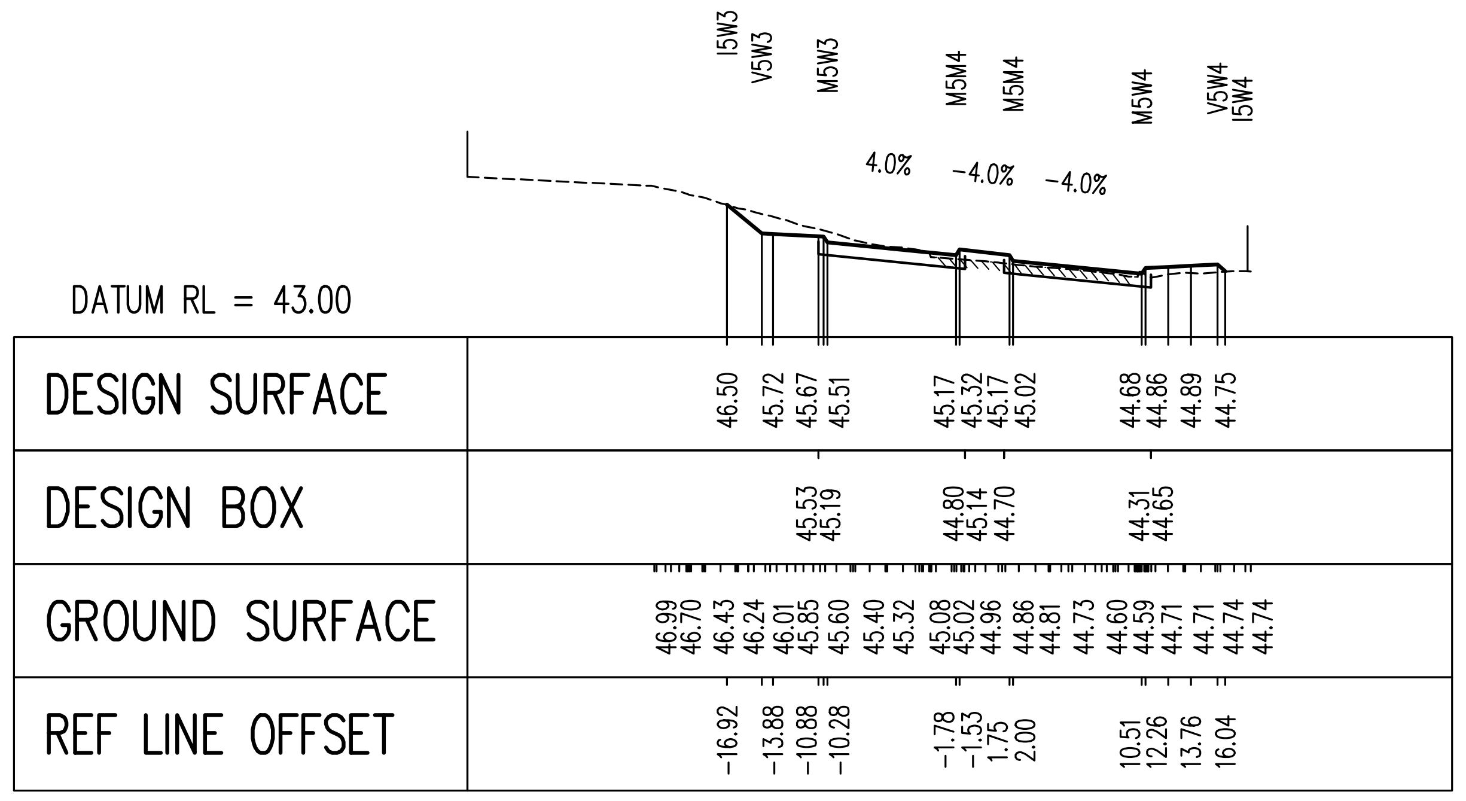
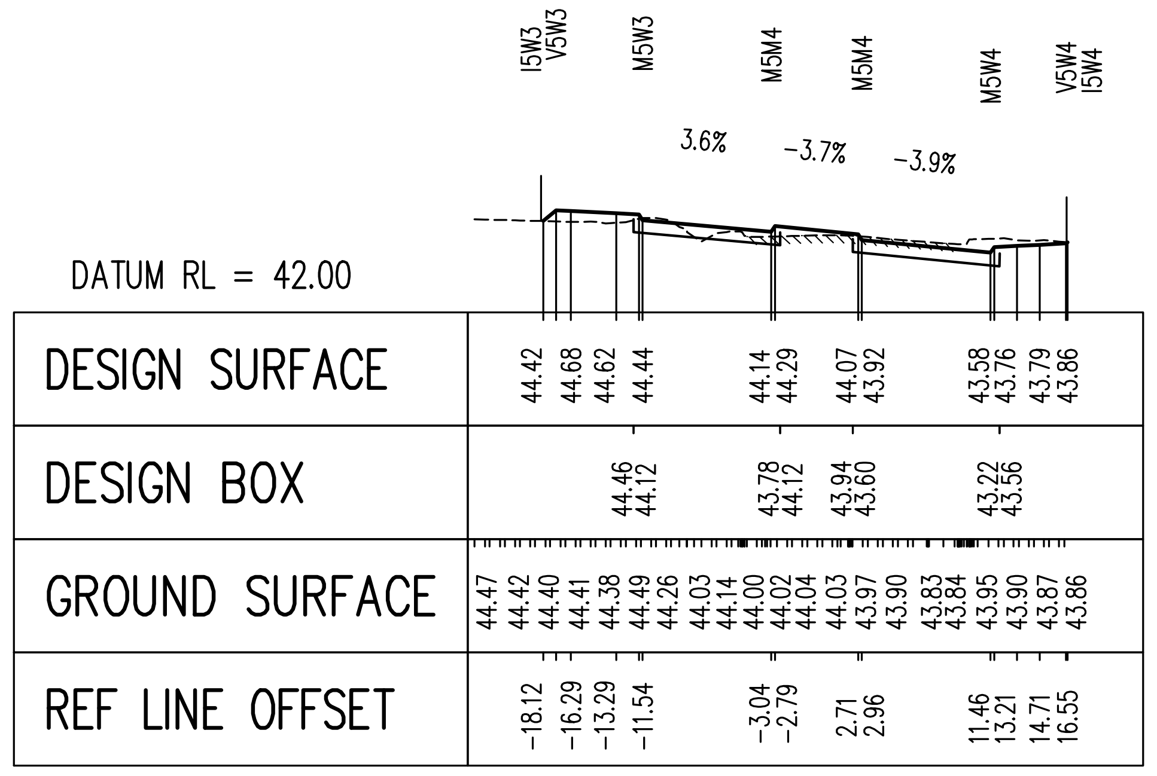
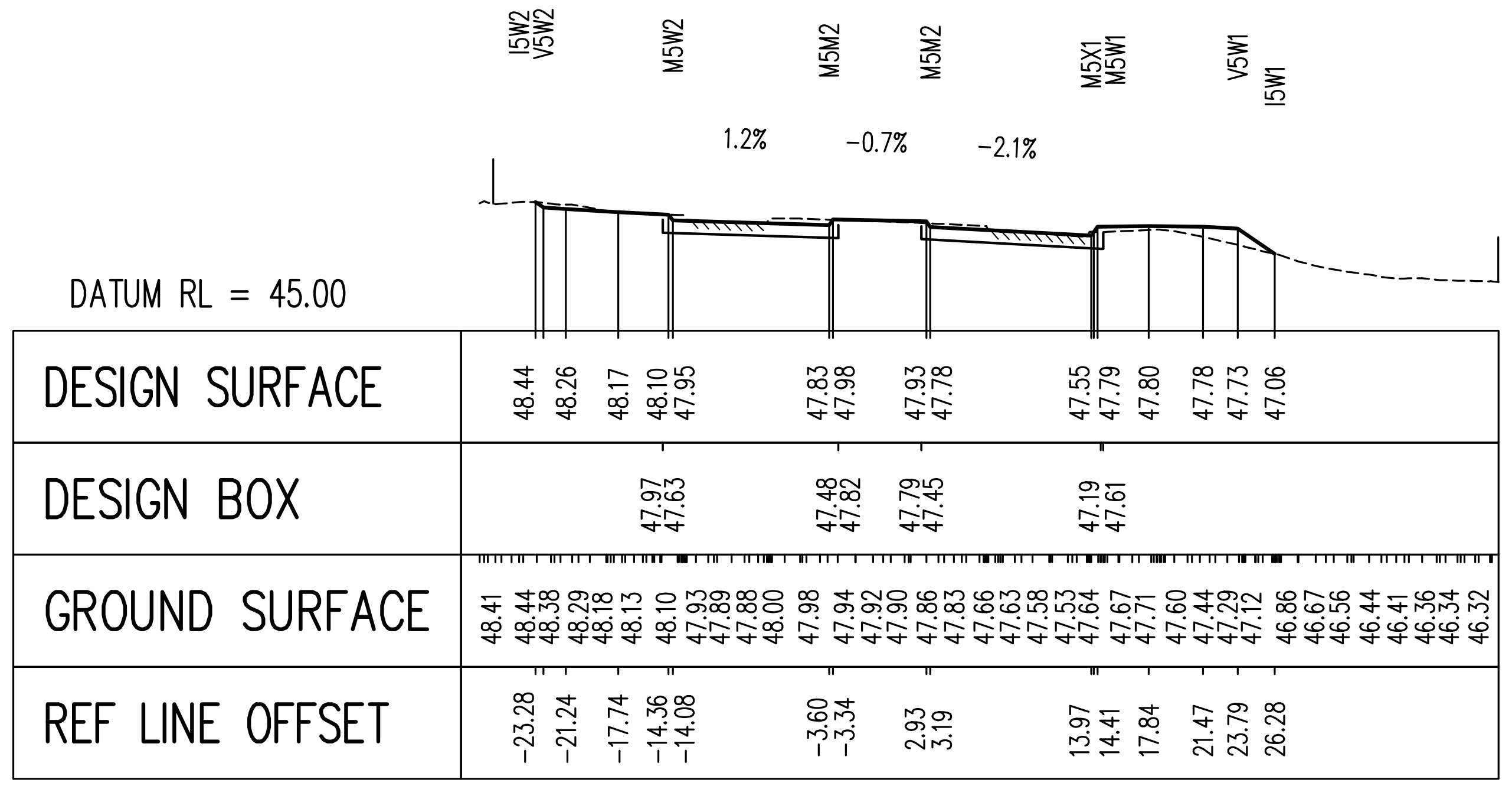


CHAINAGE 1400



CHAINAGE 1520



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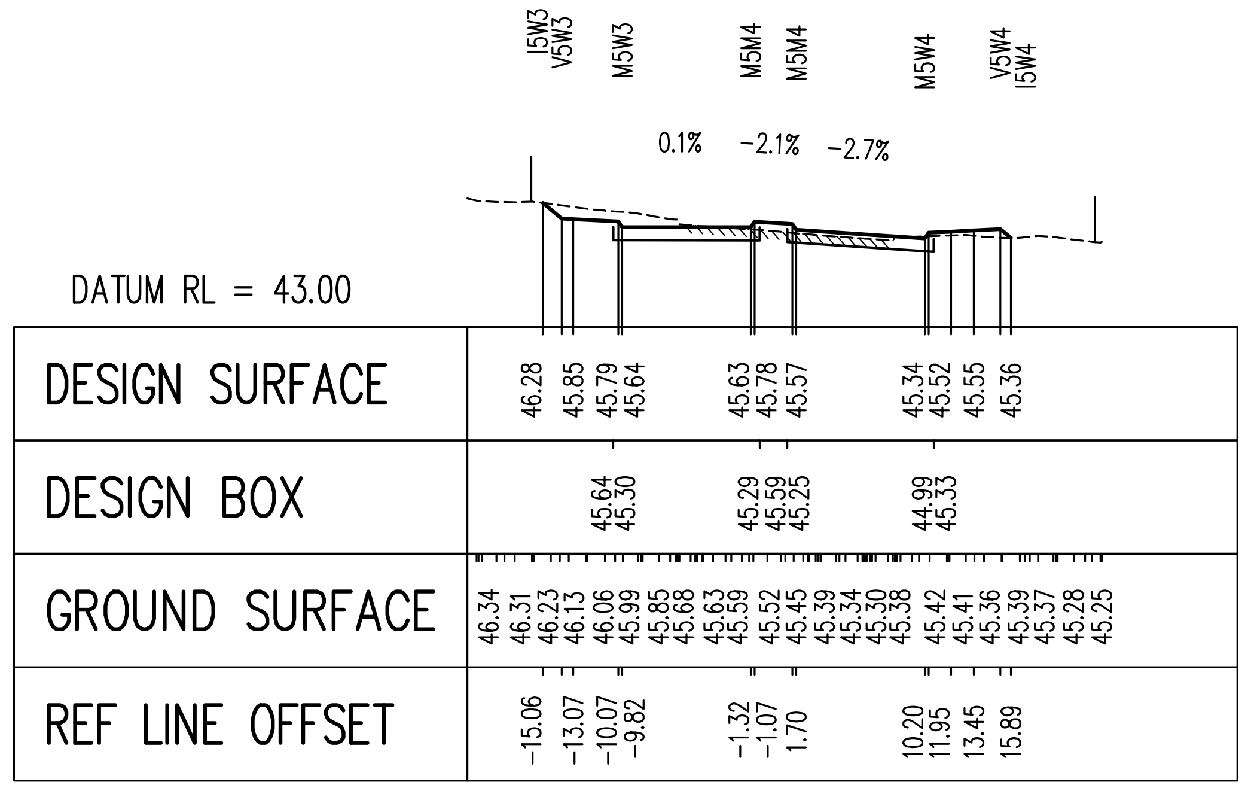

CHAINAGE 1360.000

SECTION KEY:

- EXISTING GROUND
- EXISTING ROAD PAVEMENT
- DESIGN SURFACE DUAL CARRIAGEWAY
- DESIGN BOX DUAL CARRIAGEWAY
- EXISTING BOUNDARY
- LOT 2 EWSP LAND REQUIRMENT BOUNDARY (COUNCIL ENDORSED APRIL 2004)

VERT SCALE: 1:200 SCALE IN METRES
HORIZ SCALE: 1:500 SCALE IN METRES

No.	REVISION	BY	DATE	AUTH
A	DRAFT COPY	NR	5/2018	
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DATUM: AHD
GRID: PCG 94

SURVEYED: W.A. PRECISION SURVEYS 6/2013 SURVEYOR
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DRAWN: N.RAINFORD 6/2018 CIVIL DESIGNER
CHECKED: Philip Williams 27/05/22 COORDINATOR DESIGN
AUTHORISED: 27/05/22 MANAGER INFRASTRUCTURE CAPITAL WORKS
APPROVED: 09/06/22 DIRECTOR ASSETS
FINANCE CODE: PR-2602
PMO No.: 16058
DRAWING SET REF: 18/265892
PMO CONTAINER No.: 23897

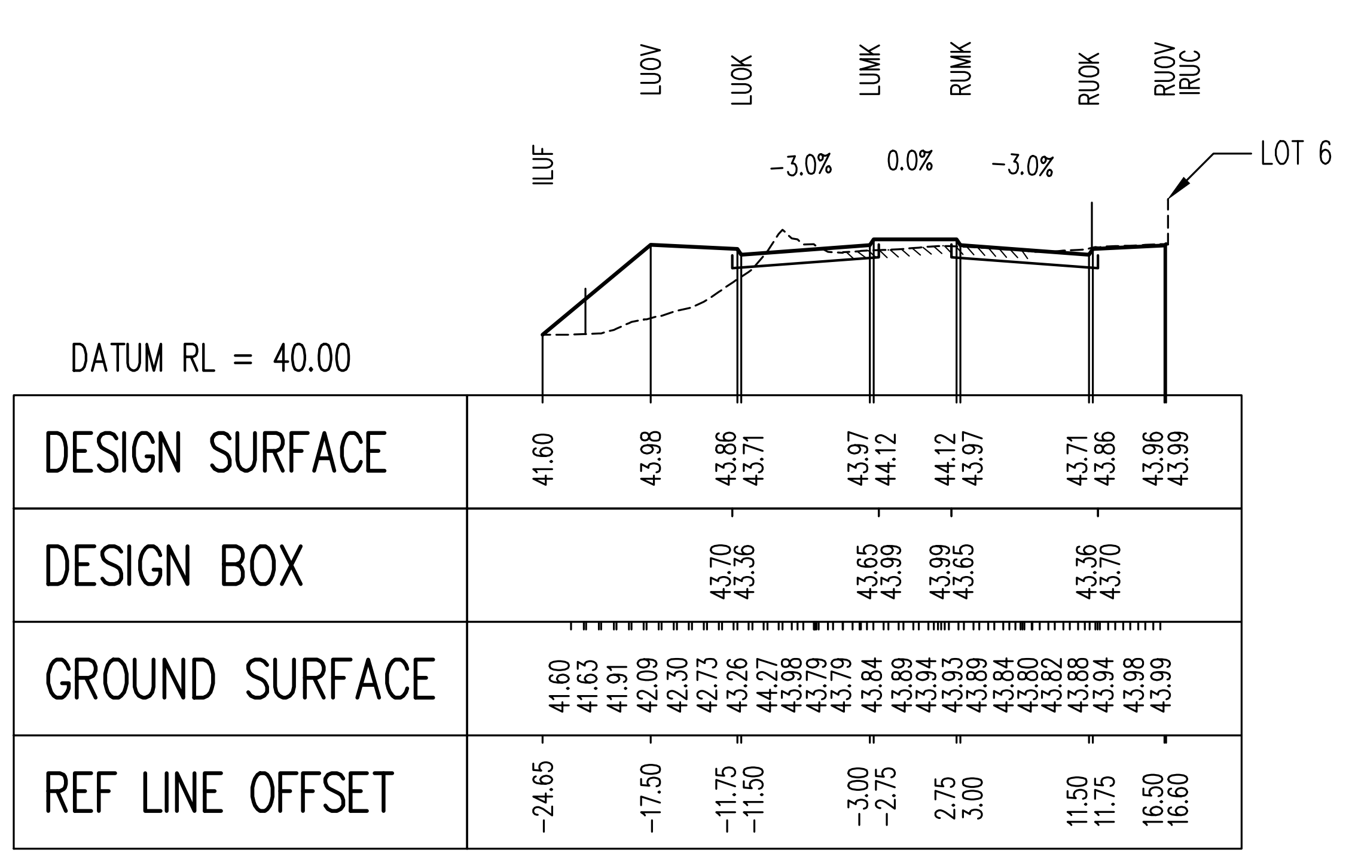
CITY OF WANNEROO
ASSETS

GNANGARA ROAD

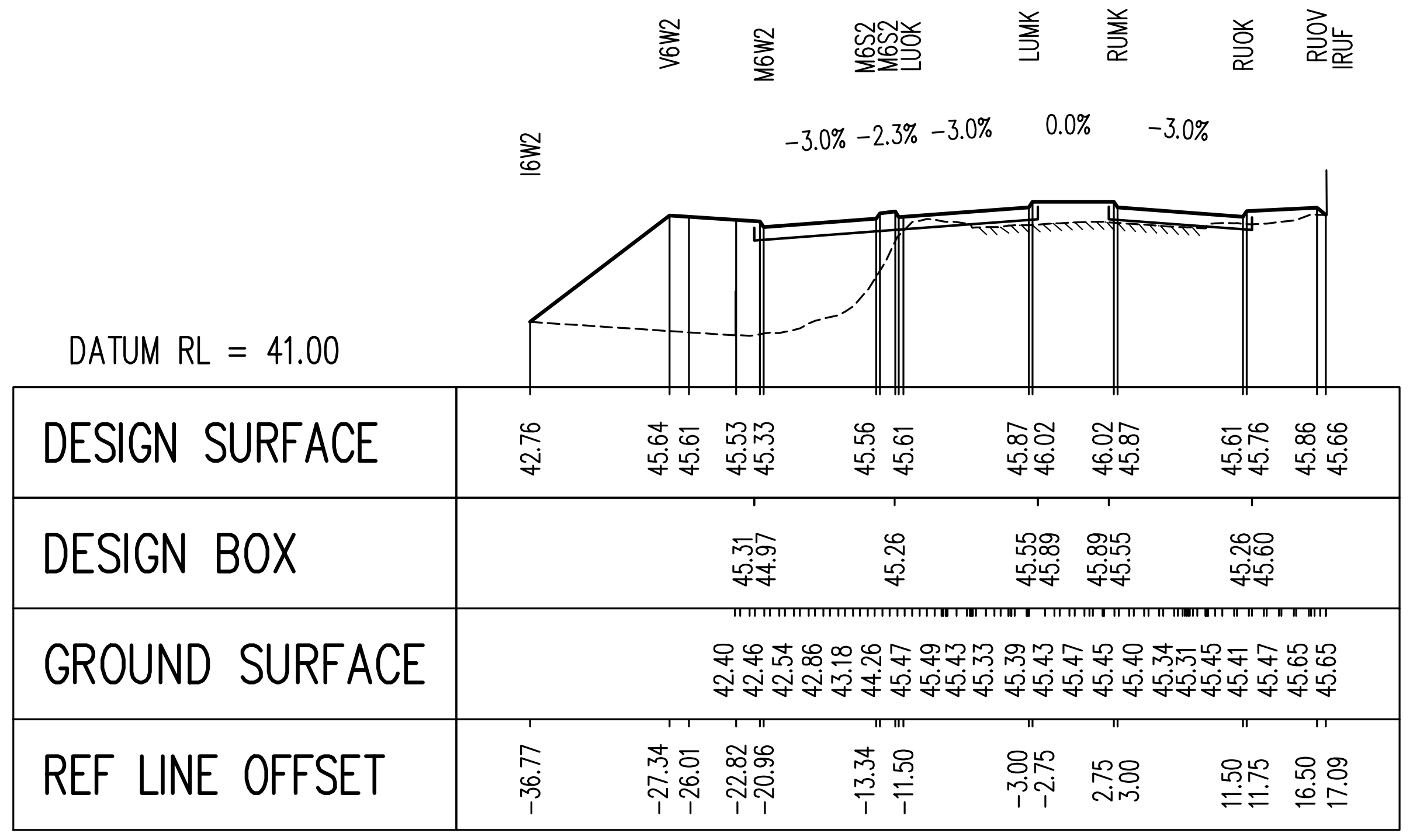
HARTMAN DRIVE TO MIRRABOOOKA AVENUE
STAGE 2: DUAL CARRIAGEWAY - PRELIMINARY DESIGN
WANGARA

CROSS SECTIONS CH 1240 TO CH 1600
SHEET 4 OF 5

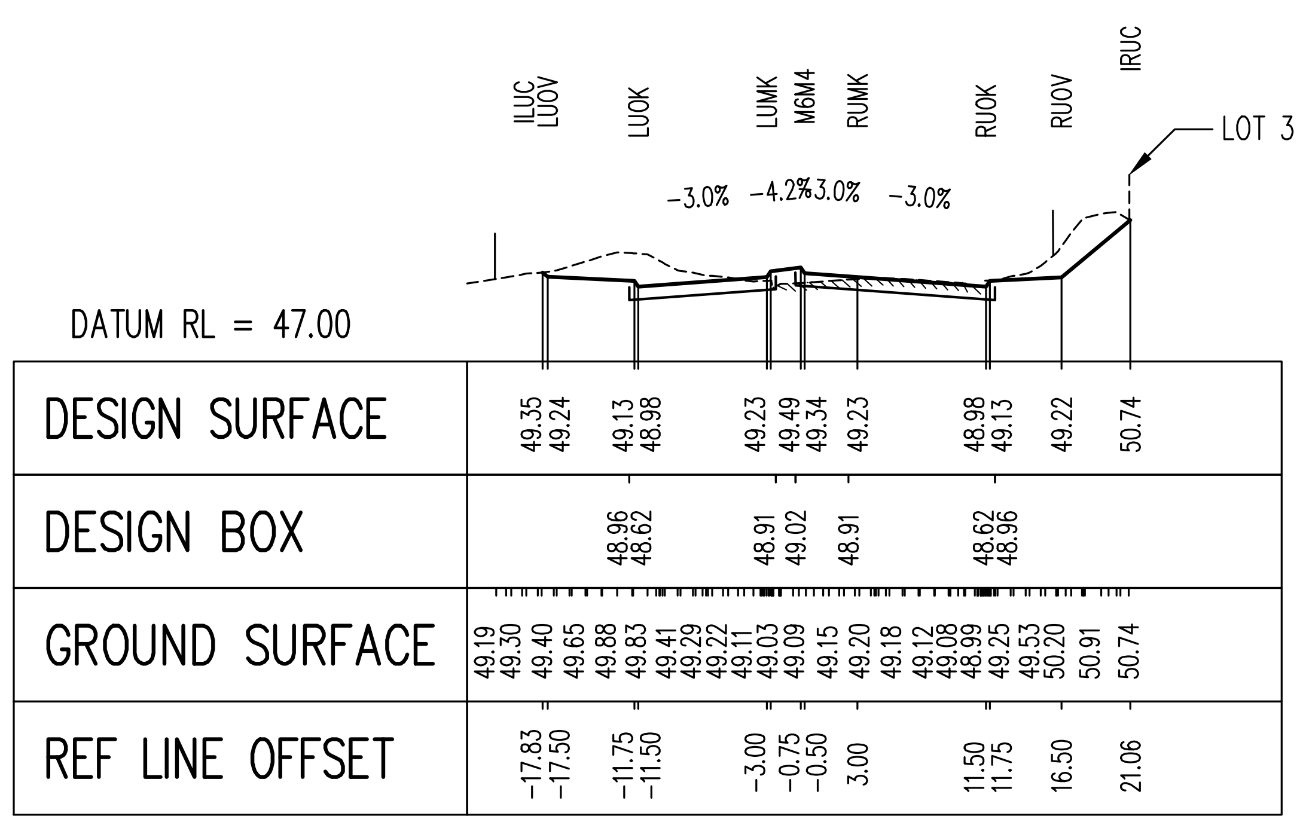
DRAWING No. 3466 - SHEET 16 - REVISION 0
ORIGINAL DRG. SIZE A1



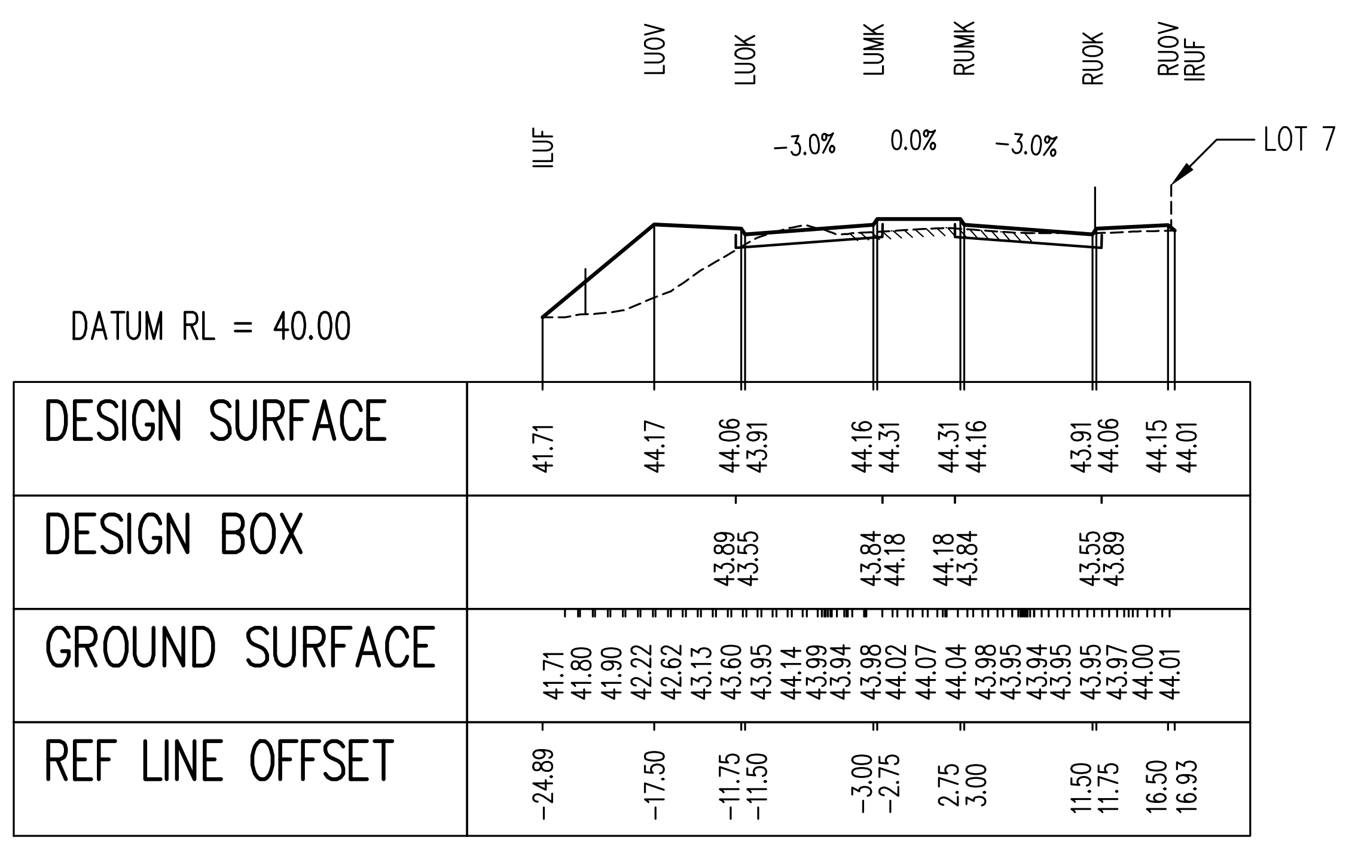
CHAINAGE 1760



CHAINAGE 1920



CHAINAGE 2000



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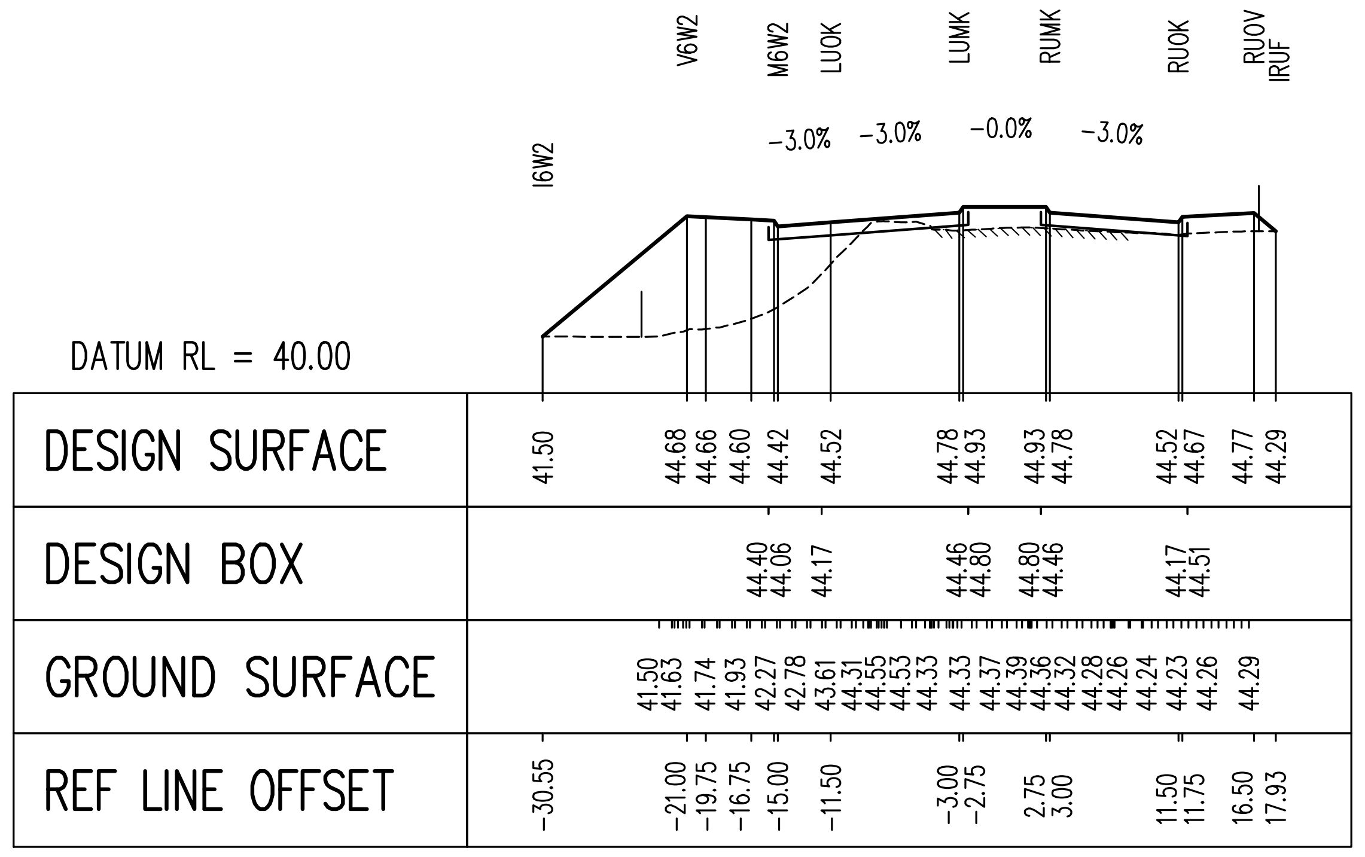
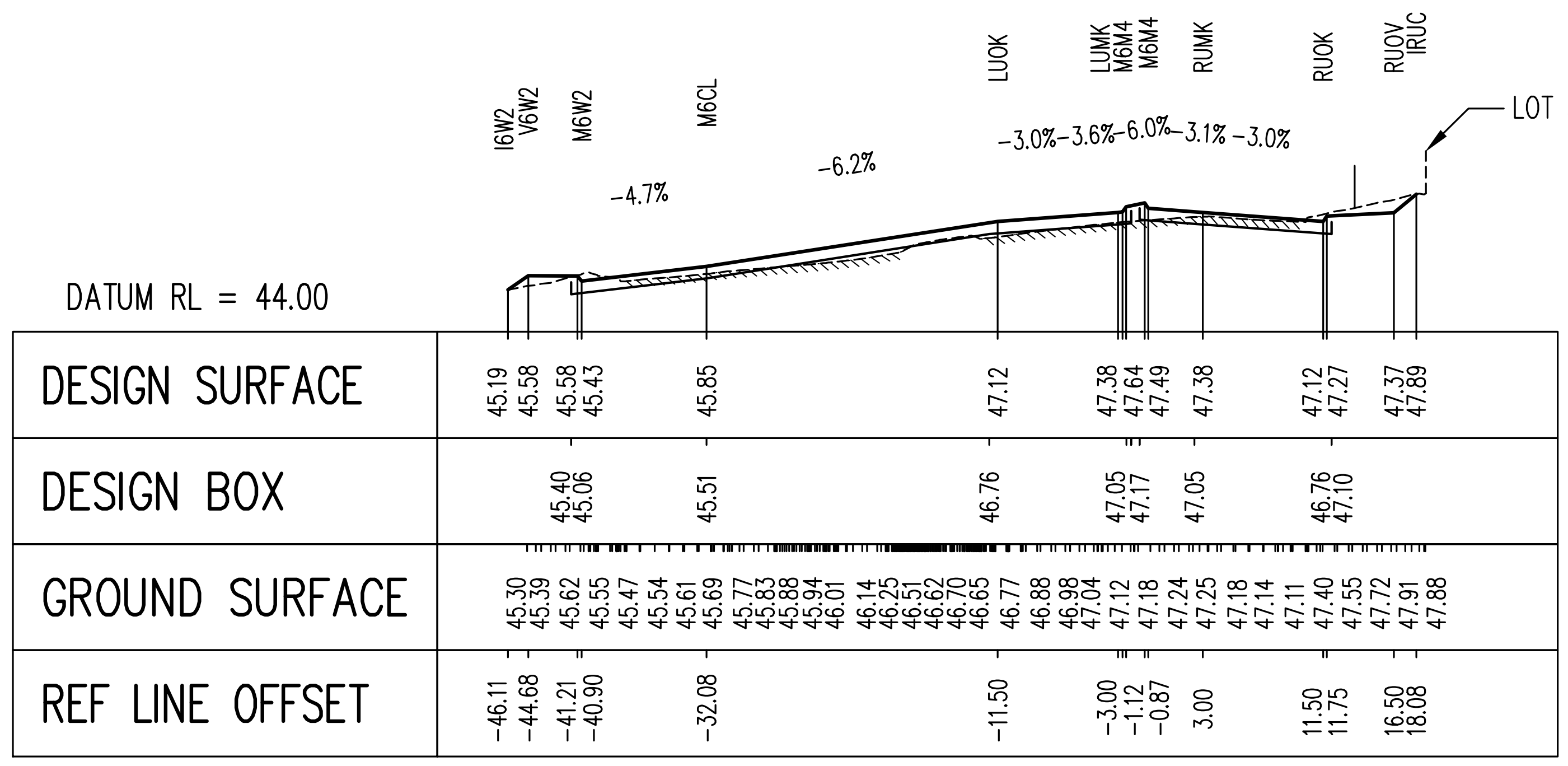
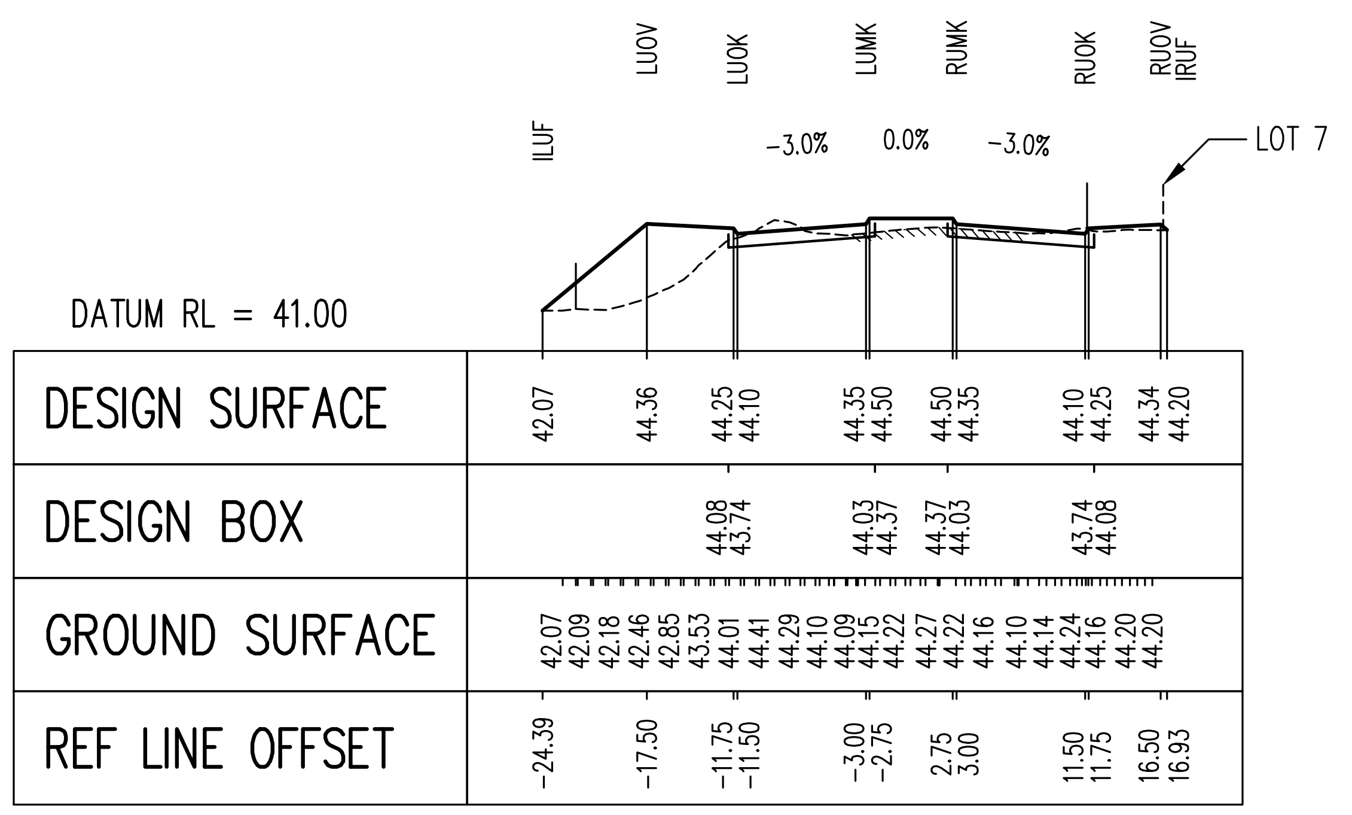


CHAINAGE 1880



CHAINAGE 1960



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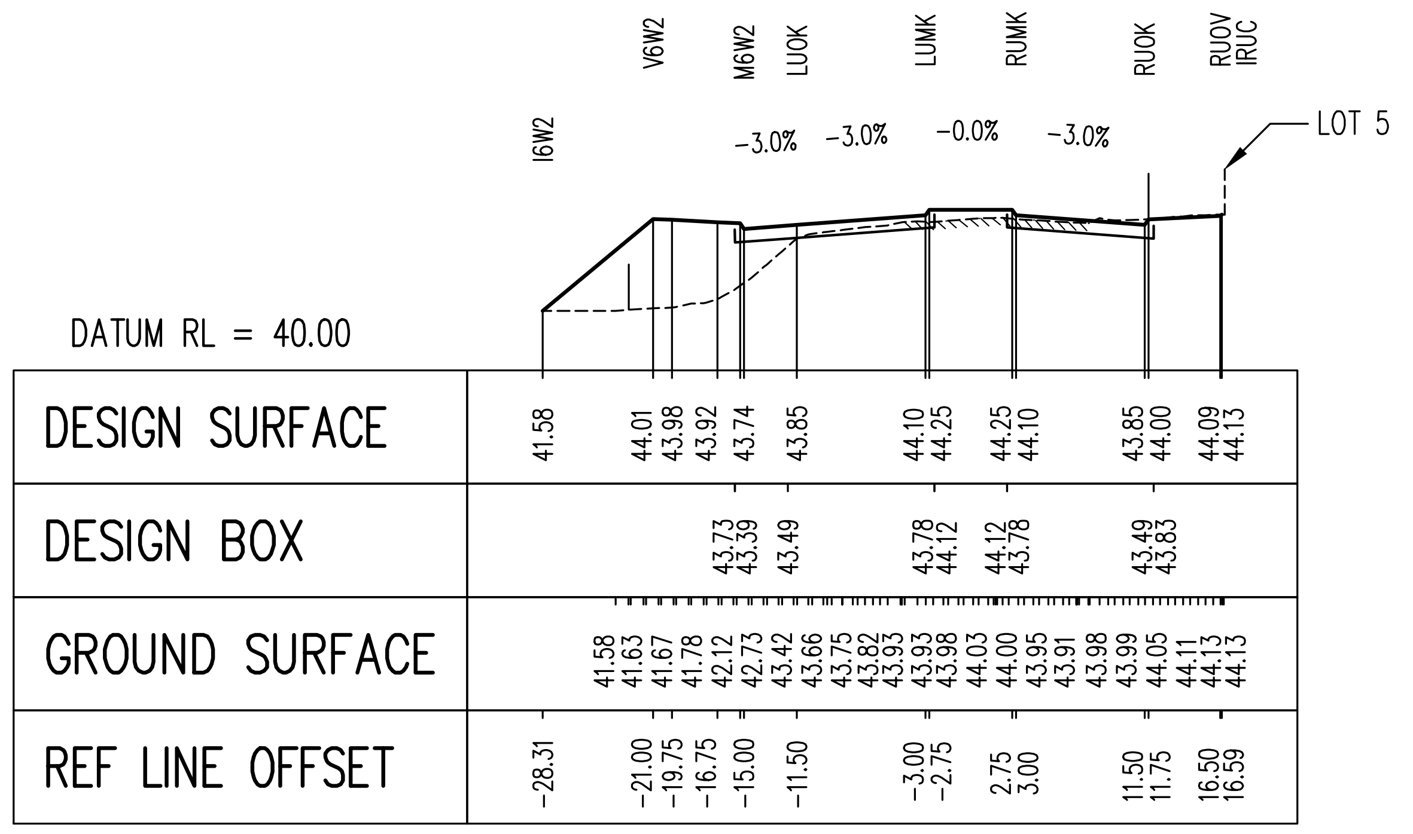
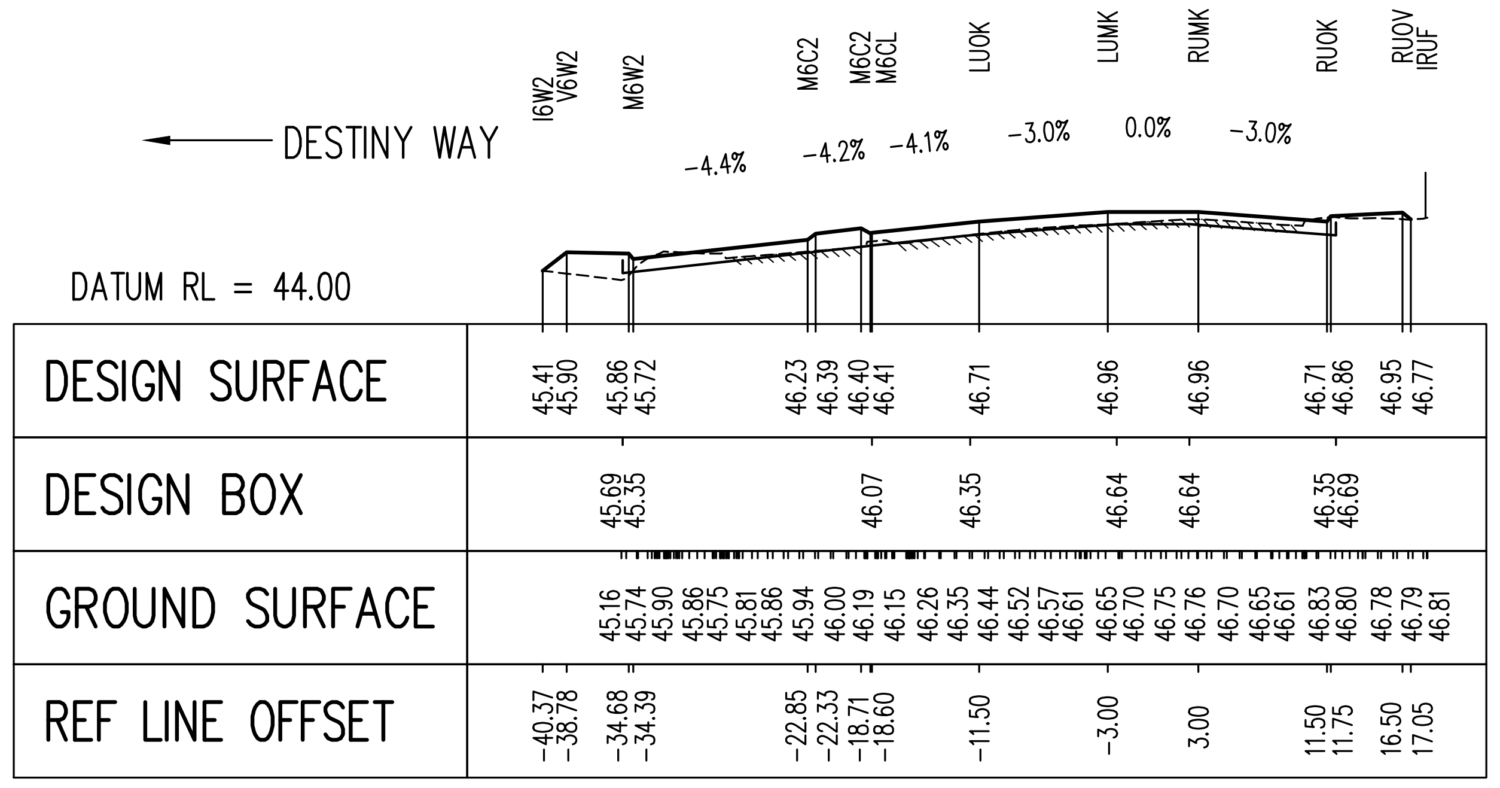
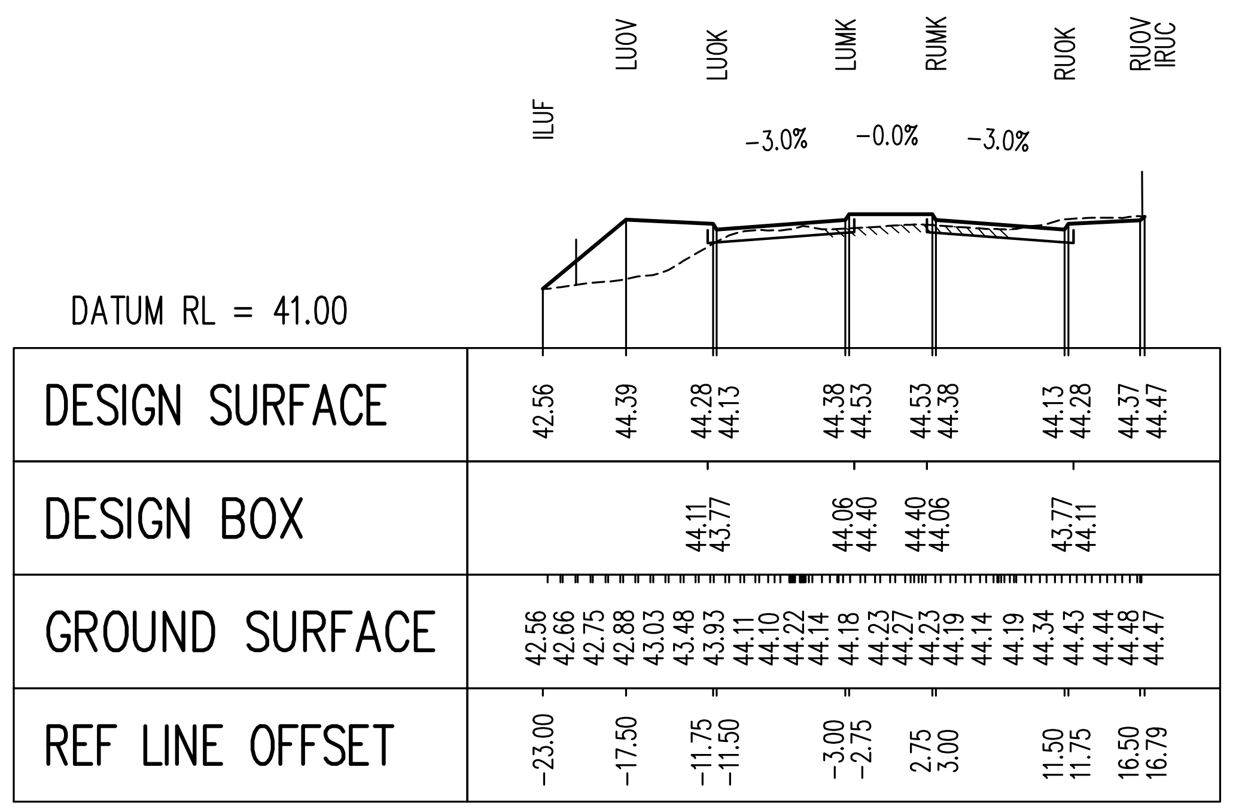


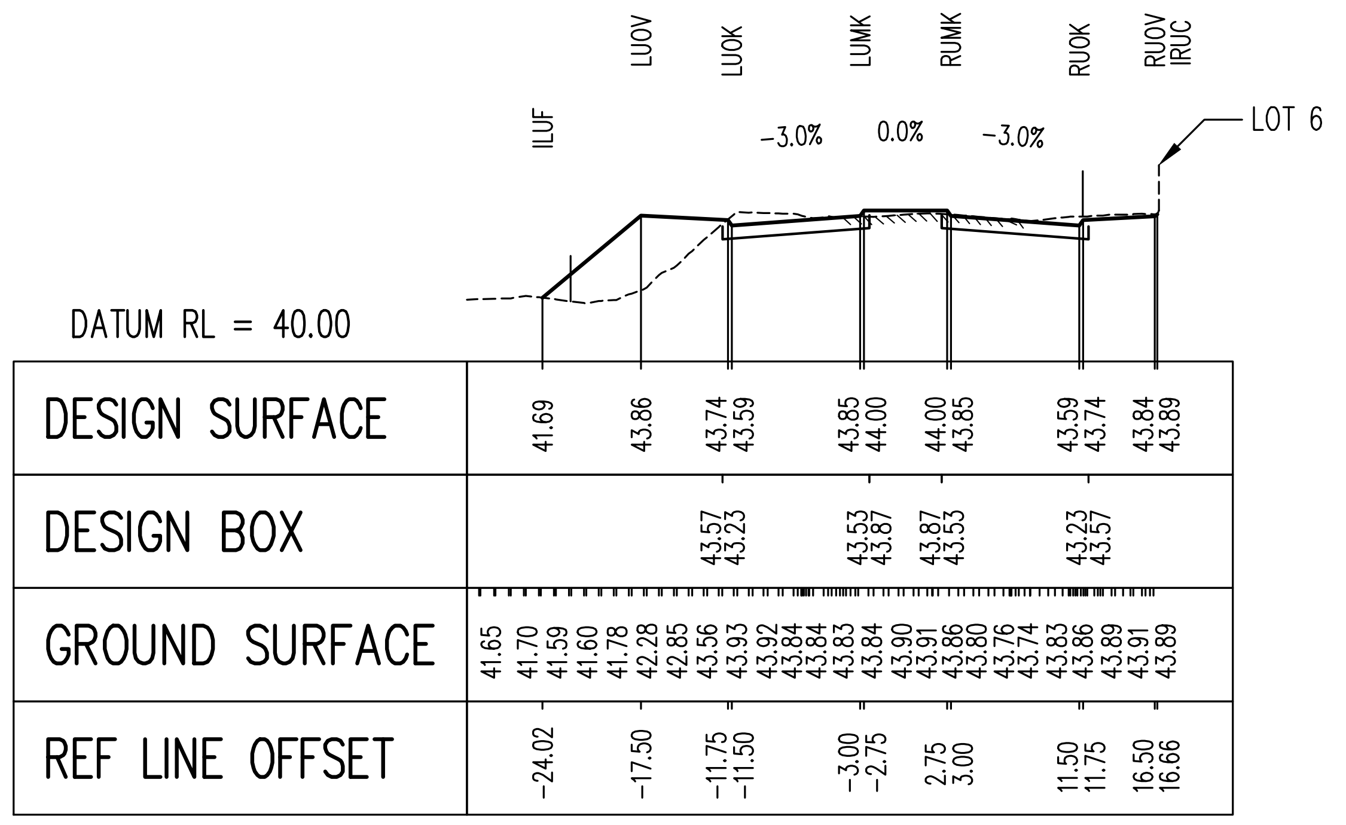
CHAINAGE 1840



CHAINAGE 1950



CHAINAGE 1640



CHAINAGE 1800

SECTION KEY:

- - - - - - EXISTING GROUND
▨ EXISTING ROAD PAVEMENT
—— DESIGN SURFACE DUAL CARRIAGEWAY
—— DESIGN BOX DUAL CARRIAGEWAY
| EXISTING BOUNDARY
LOT 2 EWSP LAND REQUIRMENT BOUNDARY
(COUNCIL ENDORSED APRIL 2004)

VERT SCALE: 2 0 2 4 6 8 10
1:200
SCALE IN METRES

HORIZ SCALE: 5 0 5 10 15 20 25
1:500
SCALE IN METRES

No.	REVISION	BY	DATE	AUTH
A	DRAFT COPY	NR	5/2018	
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No.	REVISION	BY	DATE	AUTH

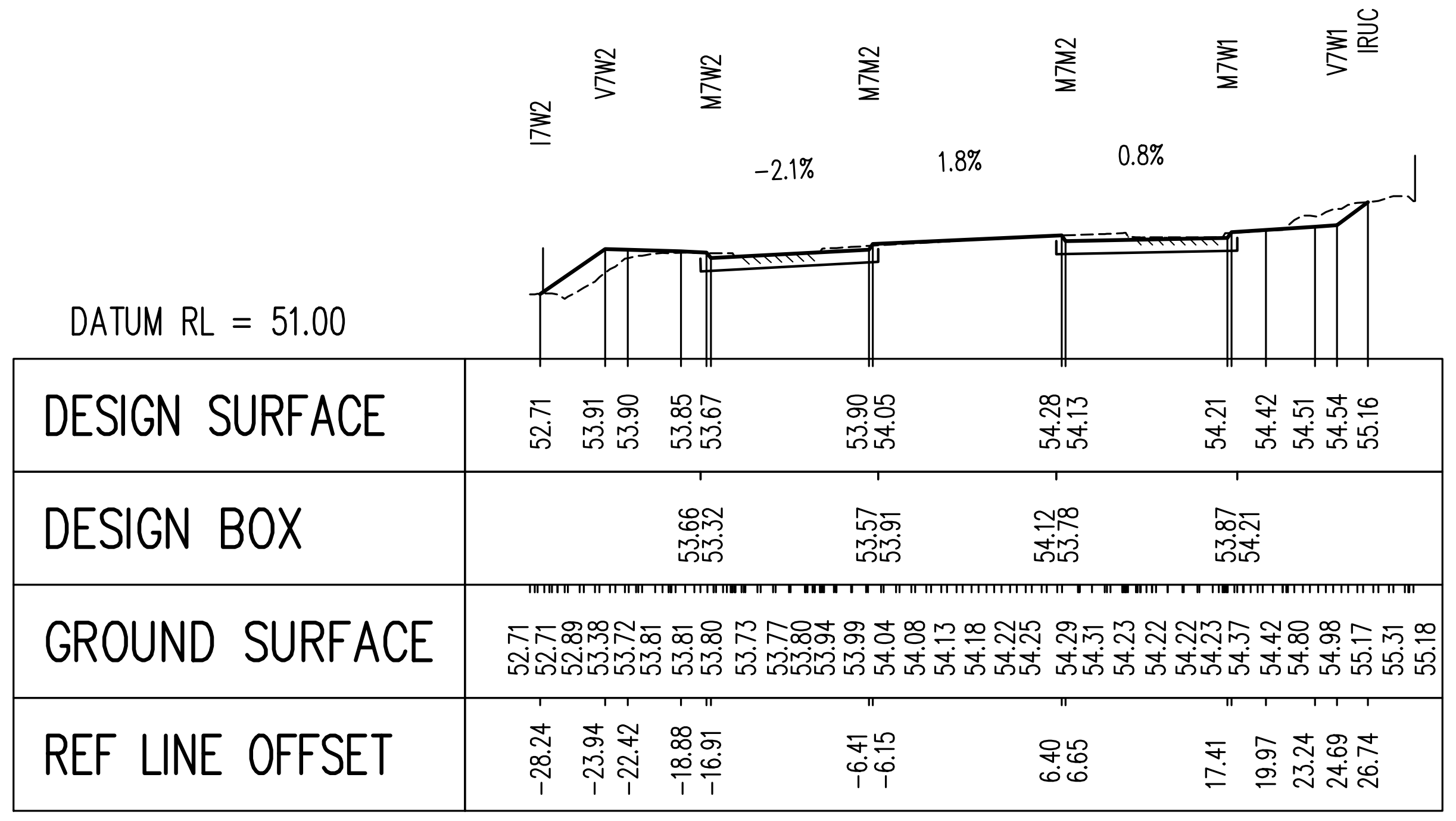
DATUM: AHD
GRID: PCG 94
SURVEYED: W.A. PRECISION SURVEYS 4/2013 SURVEYOR
DESIGNED: N.RAINFORD 11/2017 CIVIL DESIGNER
DRAWN: N.RAINFORD 6/2018 CIVIL DESIGNER
CHECKED: Philip Williams 27/05/22 COORDINATOR DESIGN
AUTHORISED: 27/05/22 MANAGER INFRASTRUCTURE CAPITAL WORKS
APPROVED: 09/06/22 DIRECTOR ASSETS
FINANCE CODE: PR-2602
PMO No.: 16058
DRAWING SET REF: 18/265892
PMO CONTAINER No.: 23897

CITY OF WANNEROO
ASSETS

GNANGARA ROAD
HARTMAN DRIVE TO MIRRABOOOKA AVENUE
STAGE 2: DUAL CARRIAGEWAY - PRELIMINARY DESIGN
WANGARA

CROSS SECTIONS CH 1640 TO CH 2000
SHEET 5 OF 5

DRAWING No.: 3466 - 17 - 0
SHEET
REVISION
ORIGINAL DRG. SIZE: A1



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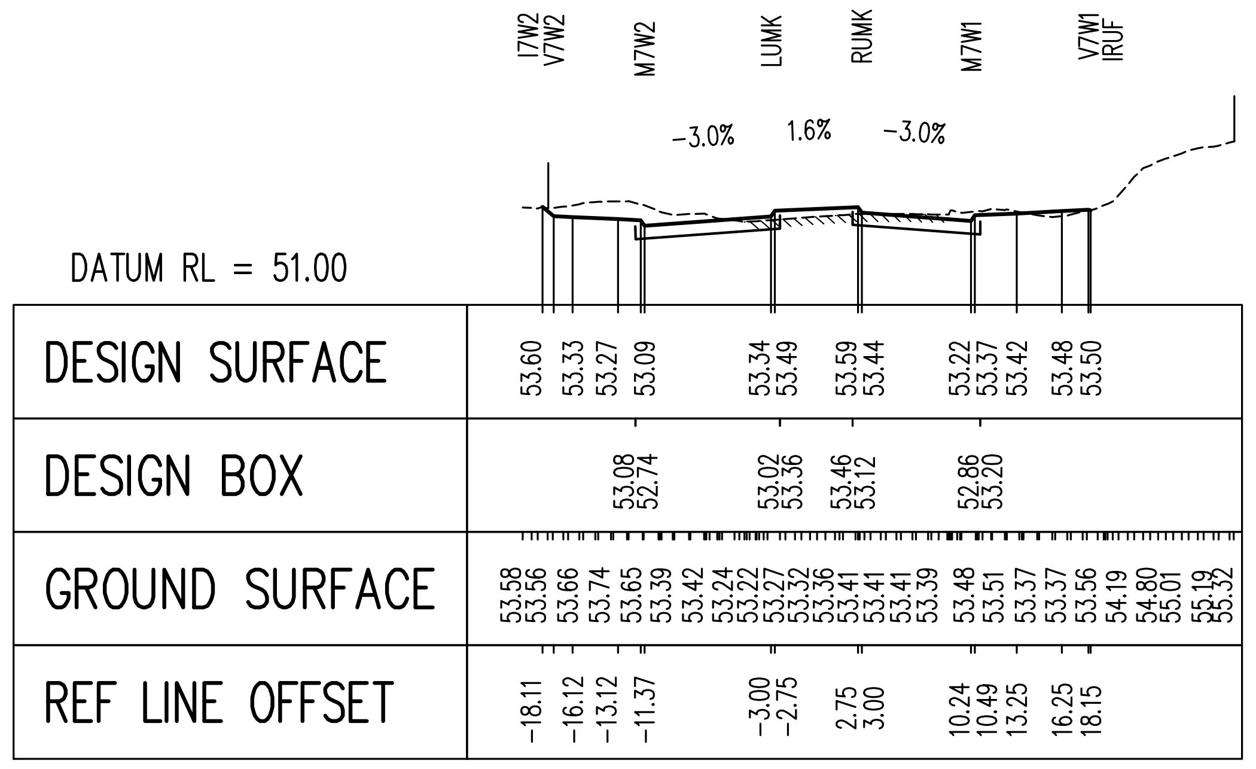

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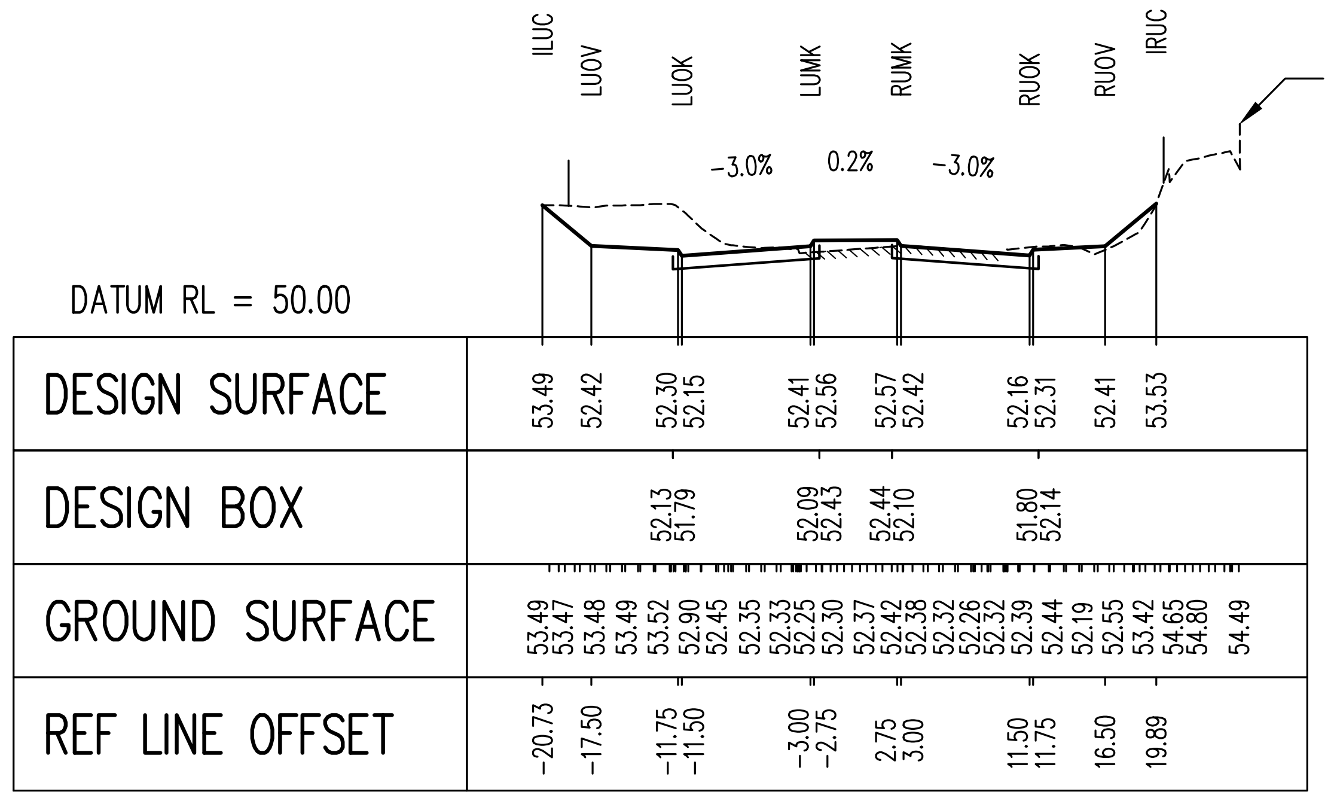
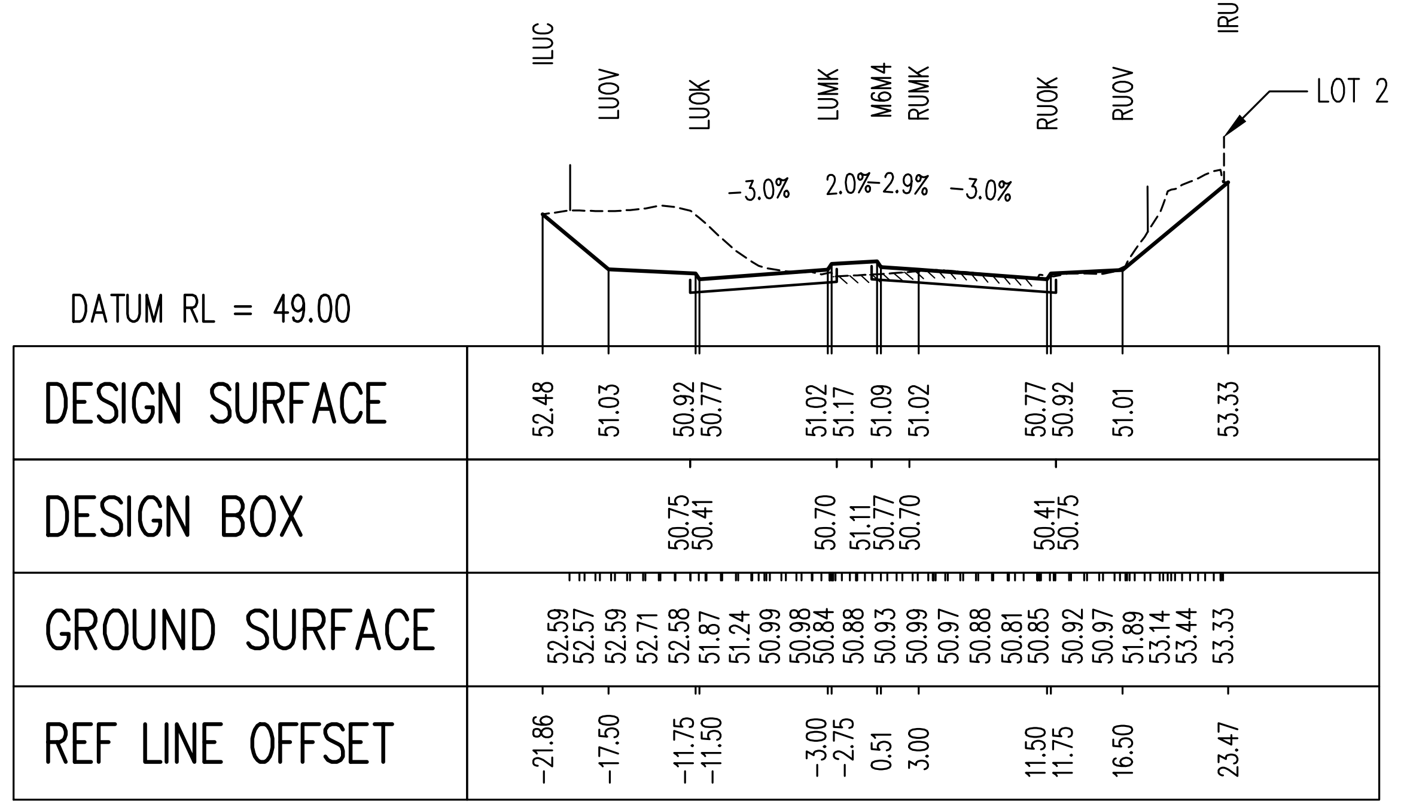
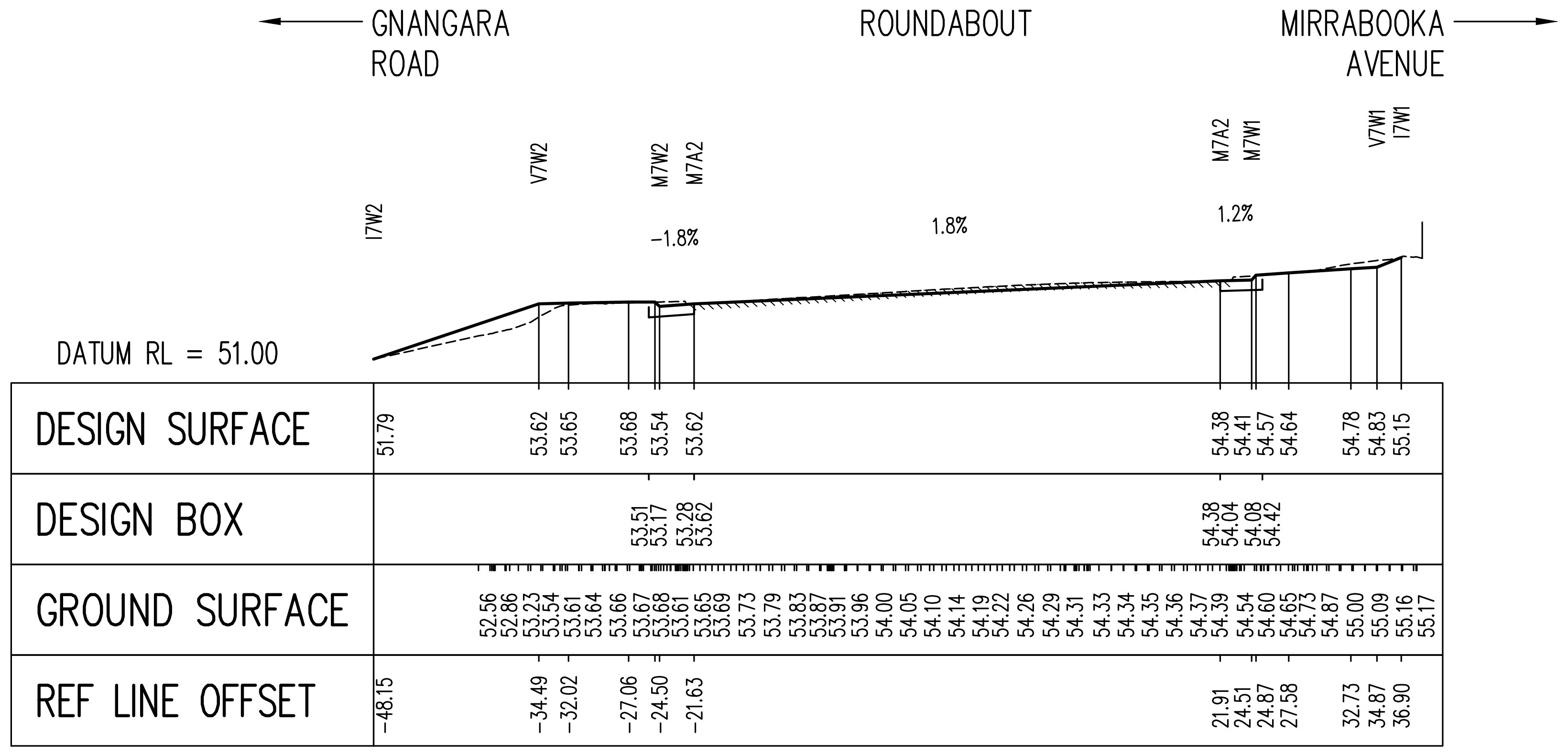


CHAINAGE 2080.000



CHAINAGE 2040



CHAINAGE 2170

SECTION KEY:

- - - - - EXISTING GROUND
EXISTING ROAD PAVEMENT
DESIGN SURFACE DUAL CARRIAGEWAY
DESIGN BOX DUAL CARRIAGEWAY
| EXISTING BOUNDARY
LOT 2 EWSP LAND REQUIRMENT BOUNDARY
(COUNCIL ENDORSED APRIL 2004)

No.	REVISION	BY	DATE	AUTH	No.	REVISION	BY	DATE	AUTH
A	DRAFT COPY	NR	5/2018						
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VERT SCALE: 1:200 (2 0 2 4 6 8 10 SCALE IN METRES)
HORIZ SCALE: 1:500 (5 0 5 10 15 20 25 SCALE IN METRES)
DATUM: AHD
GRID: PCG 94

SURVEYED: W.A. PRECISION SURVEYS 4/2013 SURVEYOR
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DRAWN: N.RAINFORD 6/2018 CIVIL DESIGNER
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DRAWING SET REF: 18/265892
PMO CONTAINER No.: 23897

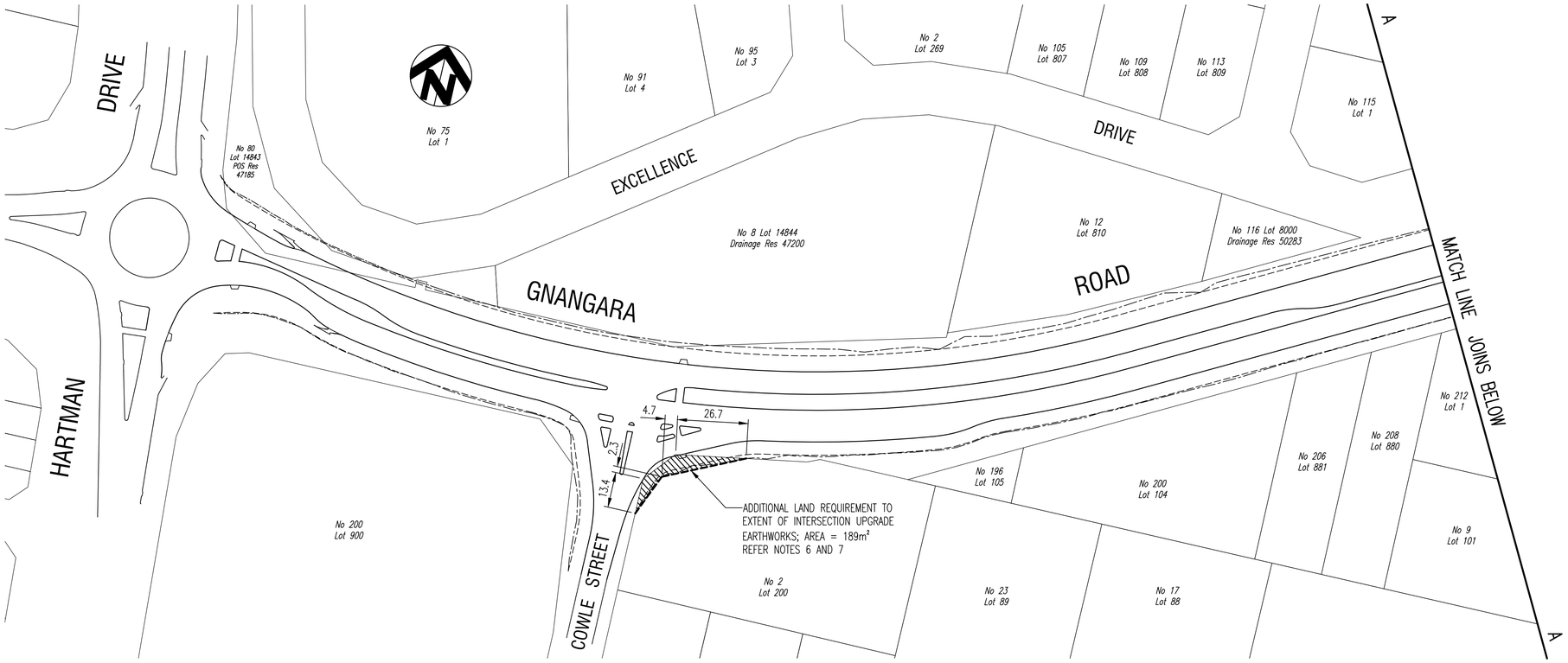
CITY OF WANNEROO
ASSETS

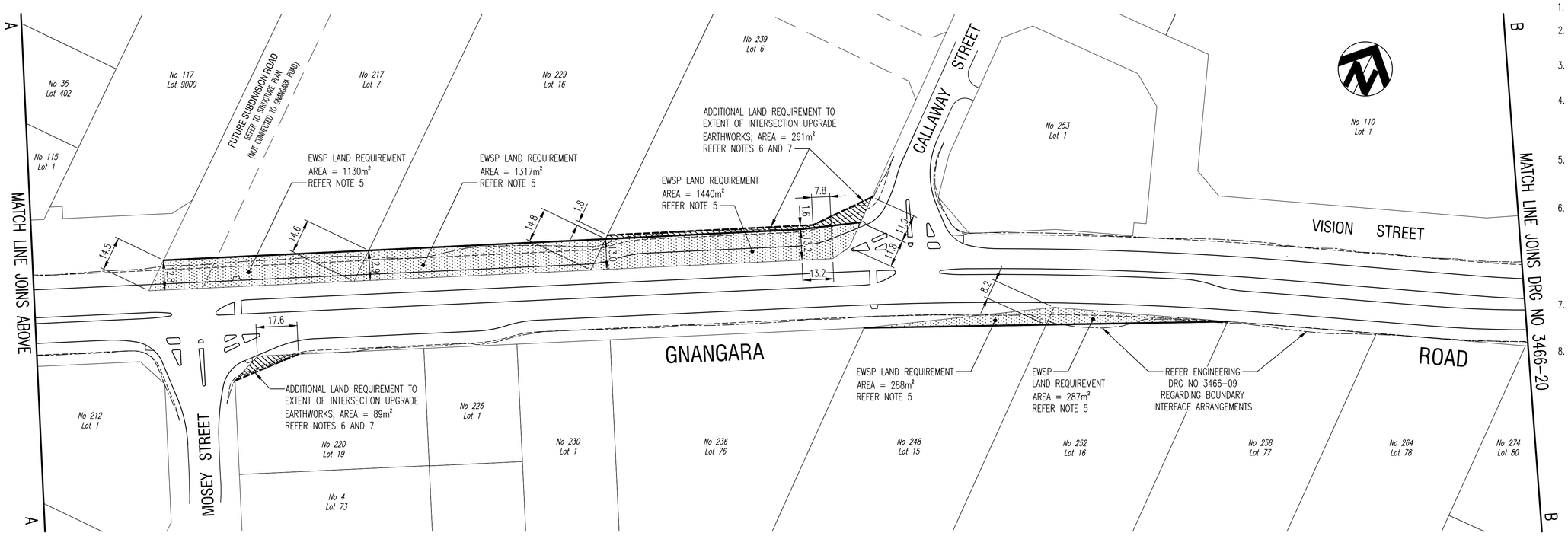
GNANGARA ROAD

HARTMAN DRIVE TO MIRRABOOOKA AVENUE
STAGE 2: DUAL CARRIAGEWAY - PRELIMINARY DESIGN
WANGARA

CROSS SECTIONS CH 2040 TO CH 2170
SHEET 5 OF 5

DRAWING No. 3466 - SHEET 18 - REVISION 0
ORIGINAL DRG. SIZE A1





LEGEND:

EXISTING:

- KERB LINE
- PROPERTY BOUNDARY

PROPOSED DUAL CARRIAGEWAY:

- KERB LINE / RAMP
- BACK OF +2% VERGE
- EXTENT EARTHWORKS – 1:3 CUT/FILL BATTER
- EWSP LAND REQUIREMENT BOUNDARY
- ADDITIONAL LAND REQUIREMENT BOUNDARY – AT BACK OF +2% VERGE
- ADDITIONAL LAND REQUIREMENT BOUNDARY – AT EXTENT OF EARTHWORKS
- EWSP LAND REQUIREMENT AREA
- ADDITIONAL LAND REQUIREMENT AREA – TO BACK OF VERGE
- ADDITIONAL LAND REQUIREMENT AREA – TO EXTENT OF EARTHWORKS

FUTURE:

- PROPERTY BOUNDARY (APPROXIMATE) – REFER TO STRUCTURE PLAN

LAND REQUIREMENT SCHEDULE

LOT NO	STREET ADDRESS	AREA OF LAND REQUIRED		TOTAL AREA OF LAND REQUIRED (m^2)
		EAST WANNEROO STRUCTURE PLAN (m^2)	ADDITIONAL INTERSECTION UPGRADE (m^2)	
200	2 COWLE STREET	–	189	189
7	217 GNANGARA ROAD	1130	–	1130
19	220 GNANGARA ROAD	–	89	89
16	229 GNANGARA ROAD	1317	–	1317
6	239 GNANGARA ROAD	1440	261	1701
15	248 GNANGARA ROAD	288	–	288
16	252 GNANGARA ROAD	287	–	287
			SHEET TOTAL (m^2)	5001

NOTES:

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4. THIS PLAN SHOULD BE READ IN CONJUNCTION WITH THE ENGINEERING DRAWINGS TO DETERMINE THE EXTENT OF EARTHWORKS REQUIRED AT THE BOUNDARY AND BOUNDARY INTERFACE ARRANGMENTS. REFER TO ROAD DESIGN PLAN AND PROFILE DRG NOS 3466–08 TO 3466–11.
5. EAST WANNEROO STRUCTURE PLAN (EWSP) LAND REQUIREMENTS WERE ENDORSED BY COUNCIL ON 27 APRIL 2004. REFER COUNCIL REPORT NO TS14–04/04 AND COW DRG NOS 1811–107–1 AND 1811–108–1.
6. ADDITIONAL LAND REQUIREMENTS FOR INTERSECTIONS ARE TO ACCOMMODATE THE SWEPT PATH TURNING MOVEMENTS OF THE MAIN ROADS WA (MRWA) RESTRICTED ACCESS VEHICLE (RAV). FOR GNANGARA ROAD AND INTERSECTING ROADS, THIS HAS BEEN DETERMINED BY MRWA, AS OF 23 MAY 2018, TO BE THE NETWORK CATEGORY 4 VEHICLE: TANDEM DRIVE ≤ 27.5m PRIME MOVER AND SEMI TRAILER, TOWING A 6 AXLE DOG TRAILER. REFER TO MRWA WEBSITE RAV NETWORK MAPPING TOOL.
7. ADDITIONAL LAND REQUIREMENTS LOCATED AT EXTENT OF EARTHWORKS ACCOMMODATE ONLY MINOR LEVEL DIFFERENCES. SUBJECT TO NEGOTIATION WITH THE PROPERTY OWNER.
8. ADDITIONAL LAND REQUIREMENTS LOCATED AT THE BACK OF +2% VERGES ARE SUBJECT TO NEGOTIATION WITH THE PROPERTY OWNER, TO ENSURE THAT ABUTTING FUTURE LOT DEVELOPMENT LEVELS MATCH TO DUAL CARRIAGEWAY DESIGN FORMATION LEVELS AT THE ROAD RESERVE BOUNDARY.

CITY OF WANNEROO
ASSETS

GNANGARA ROAD

HARTMAN DRIVE TO MIRRABOOOKA AVENUE
STAGE 2: DUAL CARRIAGEWAY - PRELIMINARY DESIGN
WANGARA

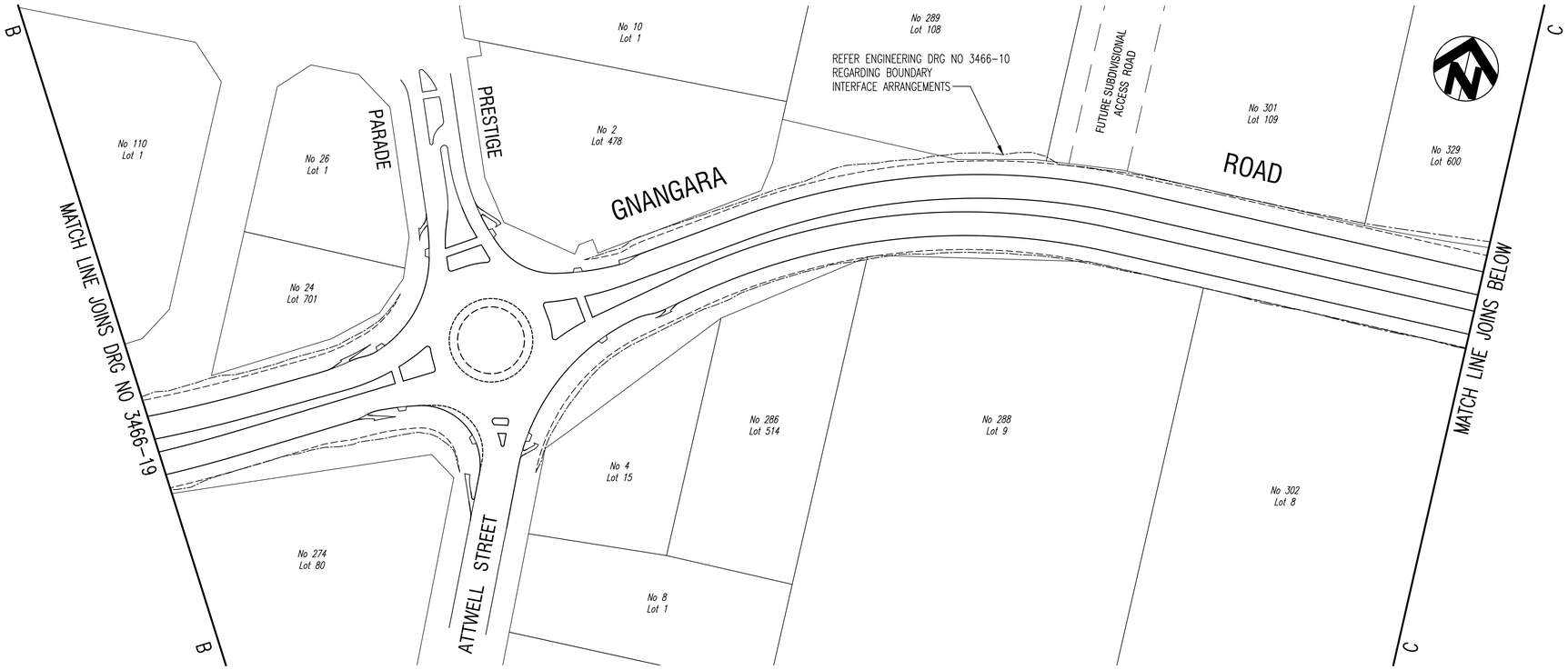
LAND REQUIREMENTS PLAN

SHEET 1 OF 2

No.	REVISION	BY	DATE	AUTH
A	DRAFT COPY	NR	5/2018	
0	ISSUED FOR COUNCIL ENDORSEMENT	NR	7/2018	

SCALE: 1:1000 (10 0 10 20 30 40 50 SCALE IN METRES)	SURVEYED: W.A. PRECISION SURVEYS 4/2013 SURVEYOR	DRAWN: N.RAINFORD 7/2018 CIVIL DESIGNER	AUTHORISED: 27/05/22 MANAGER INFRASTRUCTURE CAPITAL WORKS
DATUM: AHD	GRID: PCG 94	DESIGNED: N.RAINFORD 11/2017 CIVIL DESIGNER	CHECKED: Philip Williams 27/05/22 COORDINATOR DESIGN
			APPROVED: 09/06/22 DIRECTOR ASSETS

FINANCE CODE	FMO No.	DRAWING No.	SHEET	REVISION	ORIGINAL DRG. SIZE
PR-2602	16058	3446	19	0	A1
DRAWING SET REF 18/265892	FMO CONTAINER No. 23897				



LEGEND:

EXISTING:

- KERB LINE
- PROPERTY BOUNDARY

PROPOSED DUAL CARRIAGEWAY:

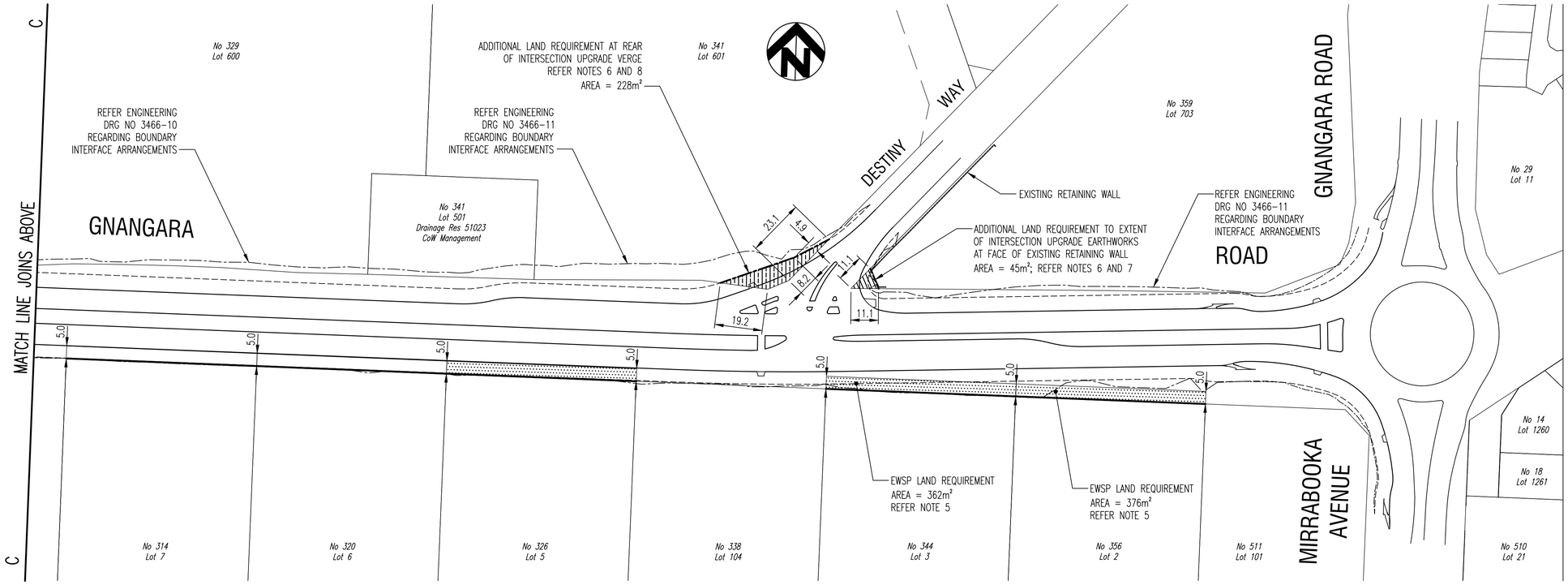
- KERB LINE / RAMP
- BACK OF +2% VERGE
- EXTENT EARTHWORKS – 1:3 CUT/FILL BATTER
- EWSP LAND REQUIREMENT BOUNDARY
- ADDITIONAL LAND REQUIREMENT BOUNDARY – AT REAR OF +2% VERGE
- ADDITIONAL LAND REQUIREMENT BOUNDARY – AT EXTENT OF EARTHWORKS
- EAST WANNEROO STRUCTURE PLAN LAND REQUIREMENT AREA
- ADDITIONAL LAND REQUIREMENT AREA – TO BACK OF VERGE
- ADDITIONAL LAND REQUIREMENT AREA – TO EXTENT OF EARTHWORKS

FUTURE:

- PROPERTY BOUNDARY (APPROXIMATE) – REFER TO STRUCTURE PLAN

LAND REQUIREMENT SCHEDULE

LOT NO	ADDRESS STREET	AREA OF LAND REQUIRED		TOTAL AREA OF LAND REQUIRED (m^2)
		EAST WANNEROO STRUCTURE PLAN (m^2)	ADDITIONAL INTERSECTION UPGRADE (m^2)	
7	314 GNANGARA ROAD	378	–	378
6	320 GNANGARA ROAD	371	–	371
5	326 GNANGARA ROAD	366	–	366
601	341 GNANGARA ROAD	–	228	228
3	344 GNANGARA ROAD	362	–	362
2	356 GNANGARA ROAD	376	–	376
703	359 GNANGARA ROAD	–	45	45
			SHEET TOTAL (m^2)	2126



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CITY OF WANNEROO
ASSETS

GNANGARA ROAD

HARTMAN DRIVE TO MIRRABOOOKA AVENUE
STAGE 2: DUAL CARRIAGEWAY - PRELIMINARY DESIGN
WANGARA

LAND REQUIREMENTS PLAN

SHEET 2 OF 2

No.	REVISION	BY	DATE	AUTH
A	DRAFT COPY	NR	5/2018	
0	ISSUED FOR COUNCIL ENDORSEMENT	NR	7/2018	

No.	REVISION	BY	DATE	AUTH

SCALE: 1:1000 (10 0 10 20 30 40 50 SCALE IN METRES)	SURVEYED: W.A. PRECISION SURVEYS 4/2013	DRAWN: N.RAINFORD 7/2018 CIVIL DESIGNER	AUTHORISED: 27/05/22 MANAGER INFRASTRUCTURE CAPITAL WORKS	FINANCE CODE PR-2602	PMO No. 16058	DRAWING No. 3466	SHEET - 20	REVISION - 0
DATUM: AHD	SURVEYOR	DESIGNED: N.RAINFORD 11/2017 CIVIL DESIGNER	CHECKED: 27/05/22 COORDINATOR DESIGN	APPROVED: 09/06/22 DIRECTOR ASSETS	DRAWING SET REF 18/265892	PMO CONTAINER No. 23897	ORIGINAL DRG. SIZE A1
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