

- NOTES:**
- THIS DRAWING IS TO BE READ IN ACCORDANCE WITH THE CIVIL SPECIFICATION 262556-C-SPC-0002.
 - ALL DIMENSIONS IN METRES UNLESS OTHERWISE SHOWN.
 - TOPOGRAPHICAL SURVEY AS PER FEATURE AND LEVEL SURVEY OVERALL SURVEY PLAN DRAWING No. 61-35360-V01 REV 0 BY GHD DATED 07/02/17 (PHG 94).
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ARUP DRAWINGS JOB NO. 262556-TP.
 - REFER TO LANDSCAPE DOCUMENTATION FOR PIT LID FINISH REQUIREMENTS.
 - EXISTING GROUND LEVEL IS DEFINED AS GROUND LEVEL PRIOR TO TOPSOIL STRIP.
 - REFER TO MRWA STANDARD DRAWINGS FOR DRAINAGE STRUCTURE DETAILS AND PROPOSED PIPE DETAILS.
 - ALL DRAINAGE STRUCTURES TO BE PROTECTED AND MODIFIED TO SUIT FINAL PROPOSED LEVELS UNLESS NOTED OTHERWISE ON THE DRAINAGE PLAN DRAWINGS.
 - SETOUT FOR PROPOSED PITS AND MANHOLES SHALL BE TO FACE OF KERB UNLESS OTHERWISE NOTED.
 - WHERE CONNECTION IS TO BE MADE TO AN EXISTING DRAINAGE PIPE OR STRUCTURE, THE LEVEL OF THE EXISTING STRUCTURE MUST BE CONFIRMED PRIOR TO CONSTRUCTION OF THE NEW INFRASTRUCTURE.
 - ROCK PROTECTION TO BE TYPE 'A' ROCK CLASS, IN ACCORDANCE WITH MRWA SPECIFICATION 406.
 - ALL DRAINAGE PIPES TO BE SOCKET AND SPIGOT RUBBER JOINTED REINFORCED CONCRETE PIPE OF MINIMUM CLASS 2 UNLESS OTHERWISE SPECIFIED.
 - ALL GRATES AND COVERS TO BE CLASS 'D' AND 50mm RAISED WITHIN ROADWAY ASPHALT AREAS.
 - DISPOSAL OF EXISTING ASBESTOS CEMENT PIPES TO BE IN ACCORDANCE WITH ALL RELEVANT ASBESTOS MANAGEMENT GUIDELINES.

- LEGEND**
- SITE BOUNDARY
 - DESIGN MINOR CONTOUR
 - DESIGN MAJOR CONTOUR
 - EXISTING PIPE TO BE REMOVED
 - EXISTING STORMWATER
 - PROPOSED STORMWATER PIPE
 - PROPOSED SUBSOIL PIPE
 - PROPOSED ACO STRIP DRAIN
 - ROCK PITCHING
 - PROPOSED HEADWALL
 - PROPOSED BUBBLE UP PIT
 - PROPOSED GULLY PIT
 - PROPOSED ACO PIT
 - EXISTING PIT CONVERTED TO MANHOLE
 - EXISTING PIT CONVERTED TO GULLY

WARNING
BWARE OF UNDERGROUND SERVICES
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DIAL 1100
BEFORE YOU DIG

Issue	Description	Date	By	Chkd	Apprd
B	Design Development	05.07.19	BH	MM	MA
A	Schematic Design	17.06.19	BH	MM	MA

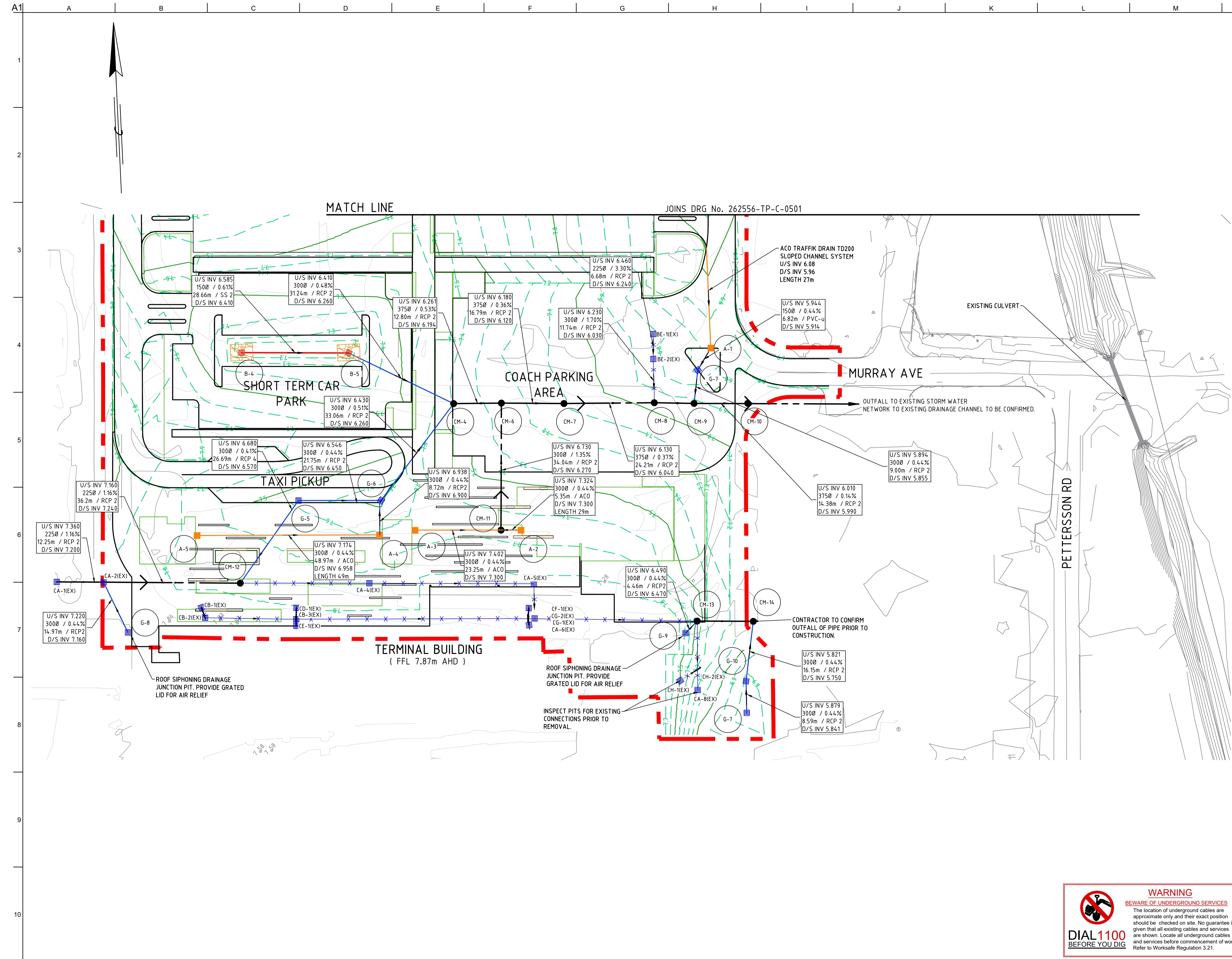


Client
 Port Hedland International Airport
 Terminal Precinct

Job Title
 Terminal Precinct
 Storm Water Drainage Plan
 Sheet 1 of 2

Scale at A1 1:500

Discipline	CIVIL
Job No	262556-01
Drawing Status	DESIGN DEVELOP.
Drawing No	262556-TP-C-0501
Issue	B



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- LEGEND**
- SITE BOUNDARY
 - - - 7.4 - - - DESIGN MINOR CONTOUR
 - - - 7.5 - - - DESIGN MAJOR CONTOUR
 - X X X EXISTING PIPE TO BE REMOVED
 - EXISTING STORMWATER
 - PROPOSED STORMWATER PIPE
 - PROPOSED SUBSOIL PIPE
 - PROPOSED ACO STRIP DRAIN
 - ROCK PITCHING
 - PROPOSED HEADWALL
 - B-X PROPOSED BUBBLE UP PIT
 - G-X PROPOSED GULLY PIT
 - A-X PROPOSED ACO PIT
 - CM-X EXISTING PIT CONVERTED TO MANHOLE
 - CG-X EXISTING PIT CONVERTED TO GULLY

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DIAL 1100
BEFORE YOU DIG

Issue	Description	Date	By	Chkd	Apprd
B	Design Development	05.07.19	BH	MM	MA
A	Schematic Design	17.06.19	BH	MM	MA

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 Level 14, Exchange Tower, 2 The Esplanade, Perth, Western Australia, 6005
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CONSULT AUSTRALIA
 Member Firm
 Arup Pty Ltd
 ABN 18 000 966 165

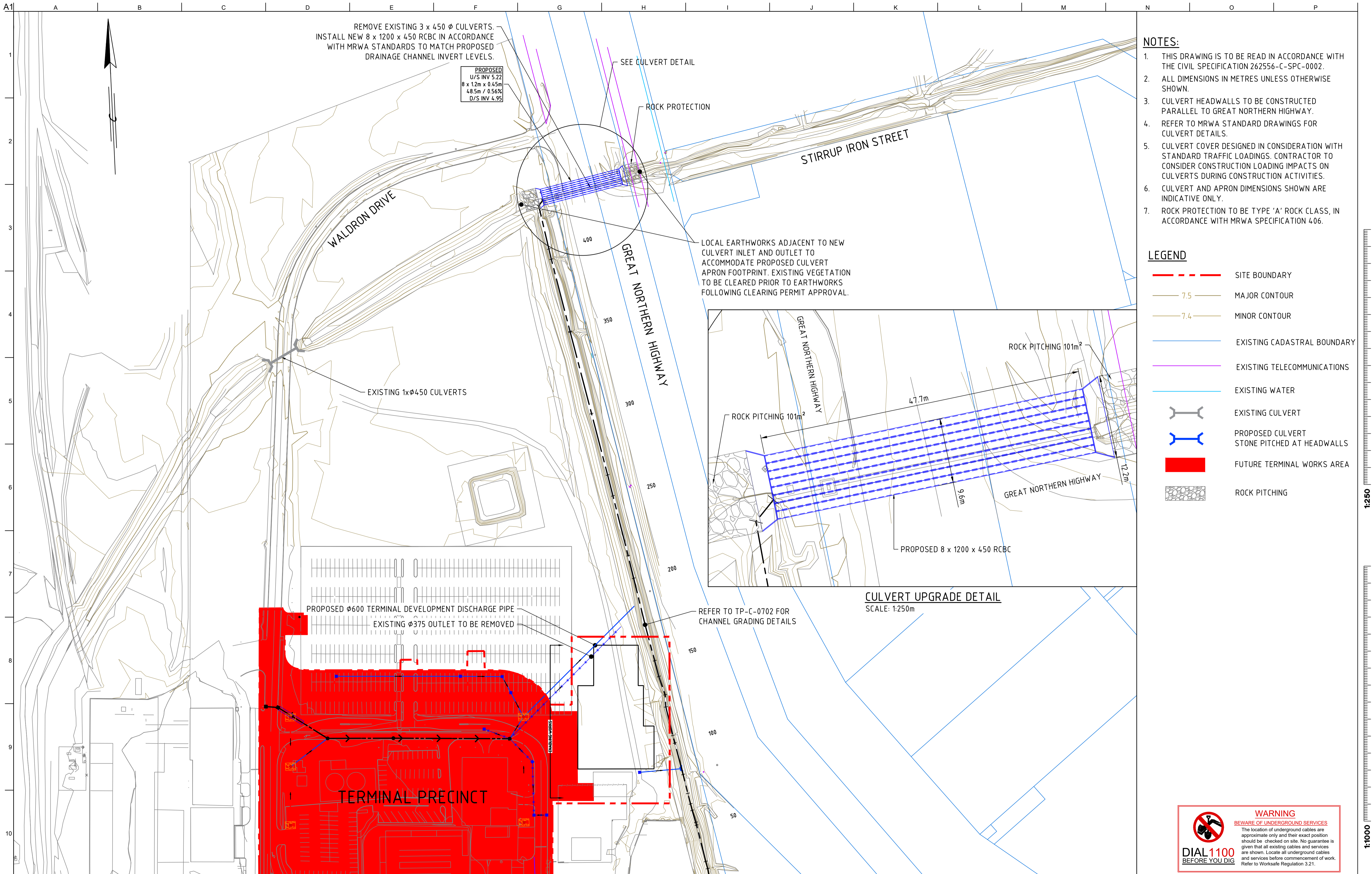
Port Hedland INTERNATIONAL AIRPORT
 GATEWAY TO THE PILBARA

Client
 Port Hedland International Airport
 Terminal Precinct

Job Title
 Terminal Precinct Storm Water Drainage Plan
 Sheet 2 of 2

Drawing Title
 Terminal Precinct Storm Water Drainage Plan
 Sheet 2 of 2

Scale at A1 1:500
 Discipline CIVIL
 Job No 262556-01 Drawing Status DESIGN DEVELOP.
 Drawing No 262556-TP-C-0502 Issue B



REMOVE EXISTING 3 x 450 Ø CULVERTS.
INSTALL NEW 8 x 1200 x 450 RBC IN ACCORDANCE
WITH MRWA STANDARDS TO MATCH PROPOSED
DRAINAGE CHANNEL INVERT LEVELS.

PROPOSED
U/S INV 5.22
8 x 1.2m x 0.45m
4.85m / 0.56%
D/S INV 4.95

SEE CULVERT DETAIL

ROCK PROTECTION

STIRRUP IRON STREET

WALDRON DRIVE

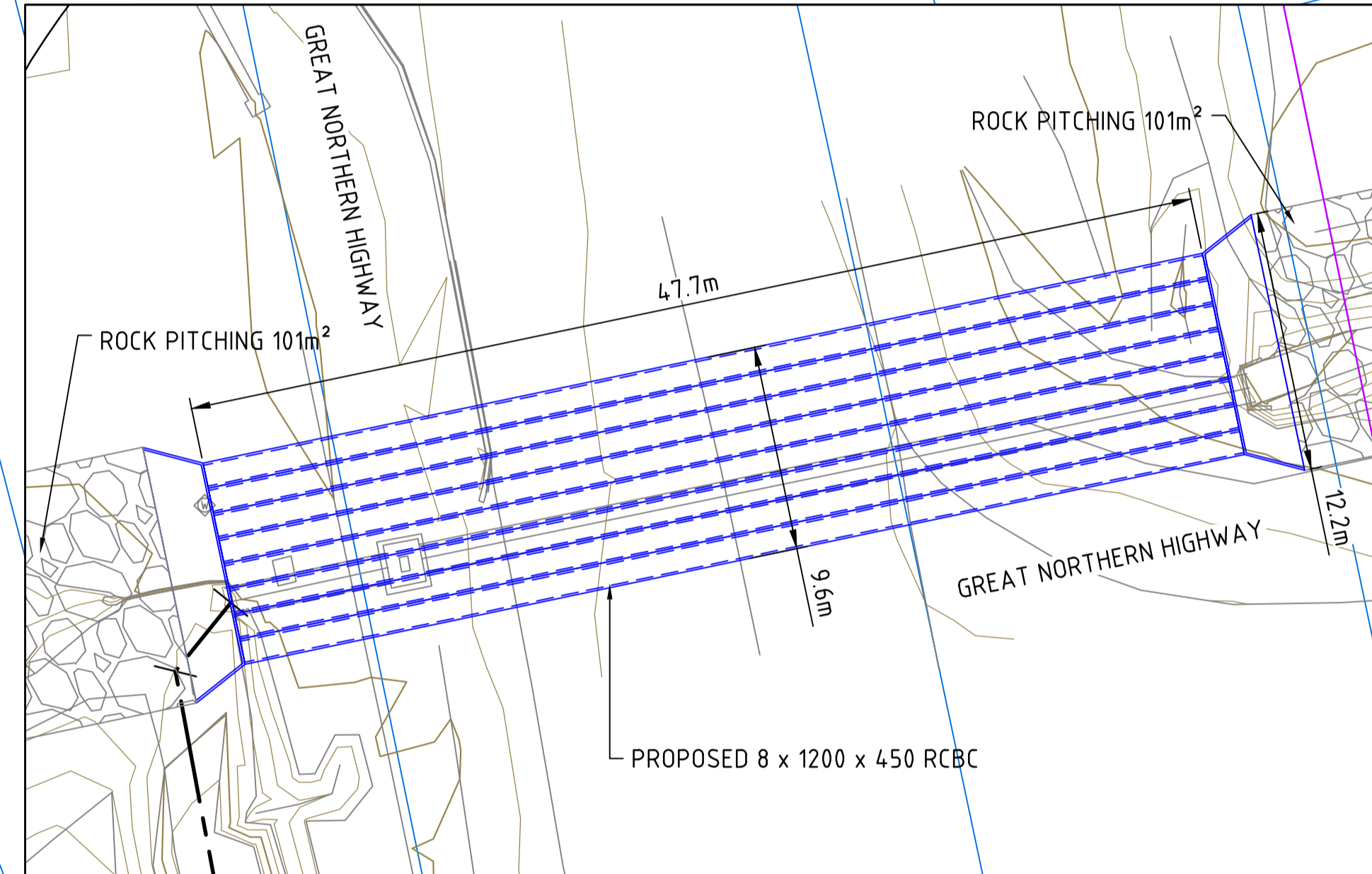
GREAT NORTHERN HIGHWAY

LOCAL EARTHWORKS ADJACENT TO NEW
CULVERT INLET AND OUTLET TO
ACCOMMODATE PROPOSED CULVERT
APRON FOOTPRINT. EXISTING VEGETATION
TO BE CLEARED PRIOR TO EARTHWORKS
FOLLOWING CLEARING PERMIT APPROVAL.

EXISTING 1xØ450 CULVERTS

PROPOSED Ø600 TERMINAL DEVELOPMENT DISCHARGE PIPE
EXISTING Ø375 OUTLET TO BE REMOVED

REFER TO TP-C-0702 FOR
CHANNEL GRADING DETAILS



CULVERT UPGRADE DETAIL
SCALE: 1:250m

NOTES:

1. THIS DRAWING IS TO BE READ IN ACCORDANCE WITH THE CIVIL SPECIFICATION 262556-C-SPC-0002.
2. ALL DIMENSIONS IN METRES UNLESS OTHERWISE SHOWN.
3. CULVERT HEADWALLS TO BE CONSTRUCTED PARALLEL TO GREAT NORTHERN HIGHWAY.
4. REFER TO MRWA STANDARD DRAWINGS FOR CULVERT DETAILS.
5. CULVERT COVER DESIGNED IN CONSIDERATION WITH STANDARD TRAFFIC LOADINGS. CONTRACTOR TO CONSIDER CONSTRUCTION LOADING IMPACTS ON CULVERTS DURING CONSTRUCTION ACTIVITIES.
6. CULVERT AND APRON DIMENSIONS SHOWN ARE INDICATIVE ONLY.
7. ROCK PROTECTION TO BE TYPE 'A' ROCK CLASS, IN ACCORDANCE WITH MRWA SPECIFICATION 406.

LEGEND

- SITE BOUNDARY
- 7.5 MAJOR CONTOUR
- 7.4 MINOR CONTOUR
- EXISTING CADASTRAL BOUNDARY
- EXISTING TELECOMMUNICATIONS
- EXISTING WATER
- EXISTING CULVERT
- PROPOSED CULVERT
- STONE PITCHED AT HEADWALLS
- FUTURE TERMINAL WORKS AREA
- ROCK PITCHING

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DIAL 1100
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A	Schematic Design	17.06.19	BH	MM	MA

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ABN 18 000 966 165

Client
Port Hedland
INTERNATIONAL AIRPORT
GATEWAY TO THE
PILBARA

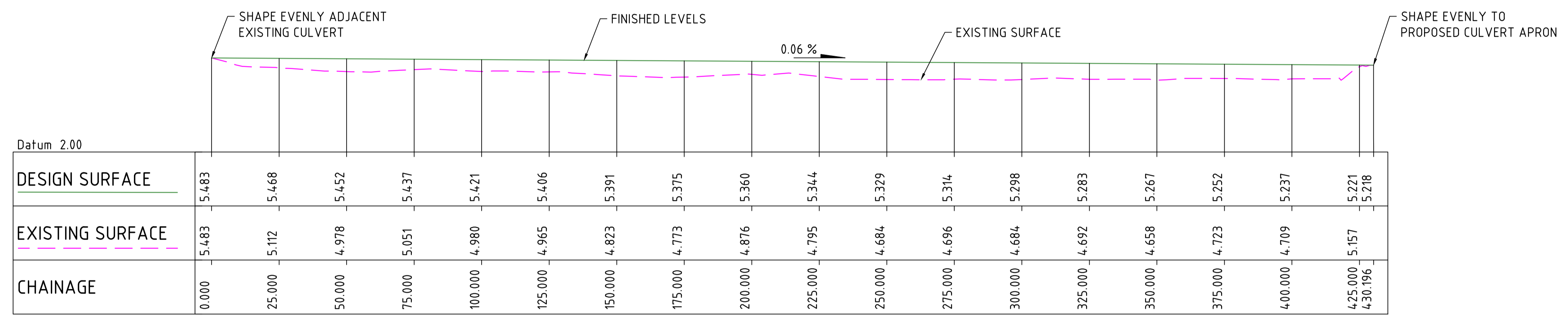
Job Title
Port Hedland International Airport
Terminal Precinct

Drawing Title
Wider Terminal
Precinct - Upgrade Works
Option 1
Layout Plan

Scale at A1	1:1000
Discipline	CIVIL
Job No	262556-01
Drawing Status	DESIGN DEVELOP.
Drawing No	262556-TP-C-0701
Issue	B

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 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ARUP DRAWINGS JOB NO. 262556-TP.
 - EXISTING GROUND LEVEL IS DEFINED AS GROUND LEVEL PRIOR TO TOPSOIL STRIP,
 - PROPOSED EARTHWORKS FORMATION LEVELS SHALL MEAN:
-ROAD: UNDERSIDE OF SUBBASE
-SWALES: BASE SIDES

- LEGEND**
- PROPOSED FINISHED SURFACE LEVEL OF CHANNEL
 - EXISTING GROUND LEVELS



MODIFIED CHANNEL PROFILE
HORIZONTAL SCALE 1:1000
VERTICAL SCALE 1:100

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DIAL 1100
BEFORE YOU DIG

1:1000
0 10m 20 30 40 50 60 70 80 90 100 110 120 130 140 150

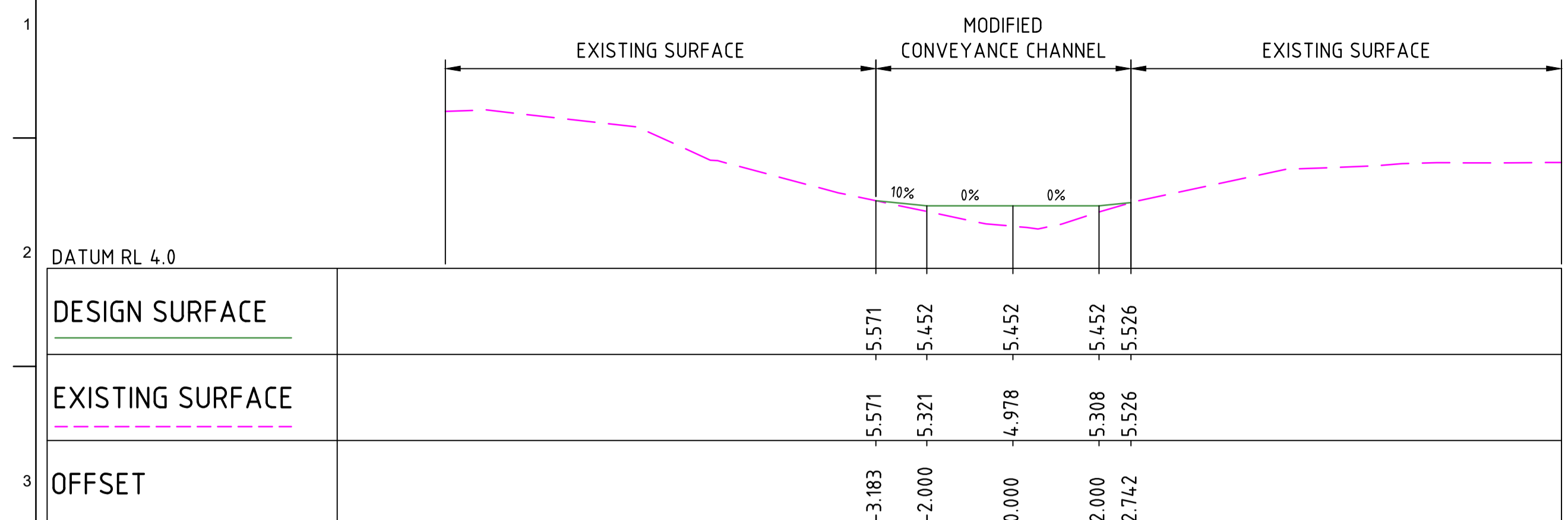
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B	Design Development	05.07.19	BH	MM	MA
A	Schematic Design	17.06.19	BH	MM	MA



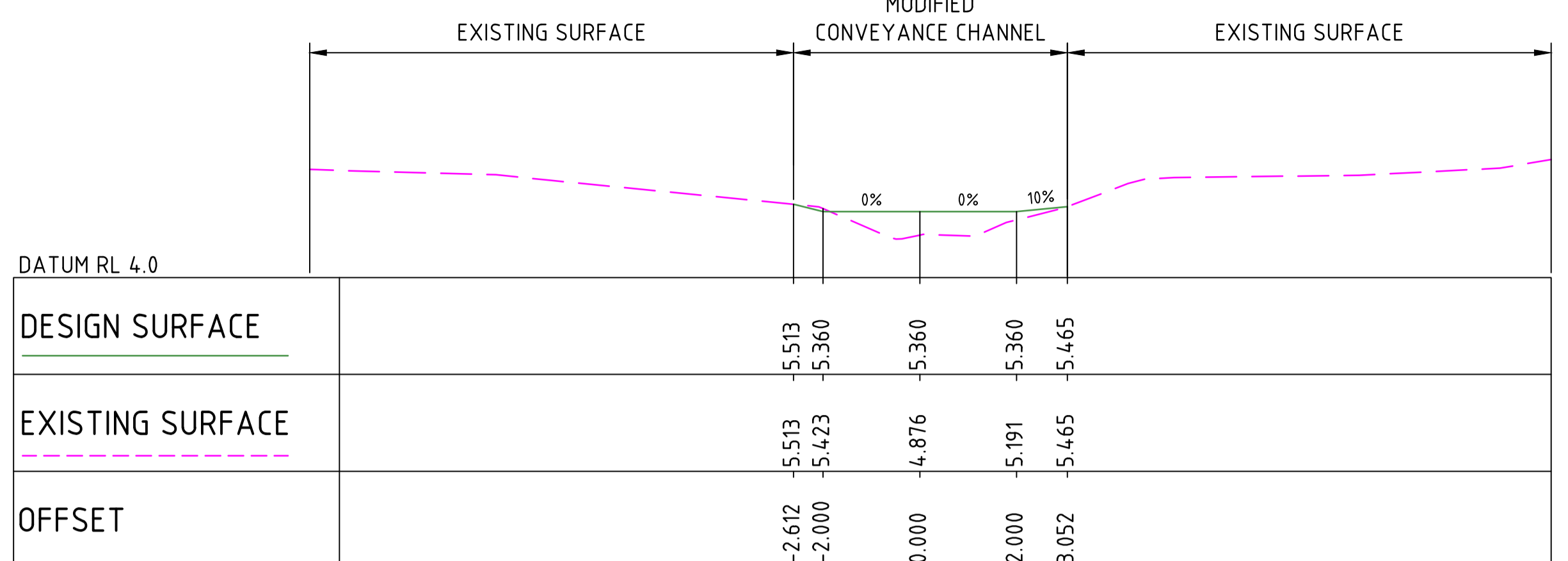
Job Title
Port Hedland International Airport
Terminal Precinct

Drawing Title
Wider Terminal
Precinct - Upgrade Works
Option 1 Channel Regrading
Long Section

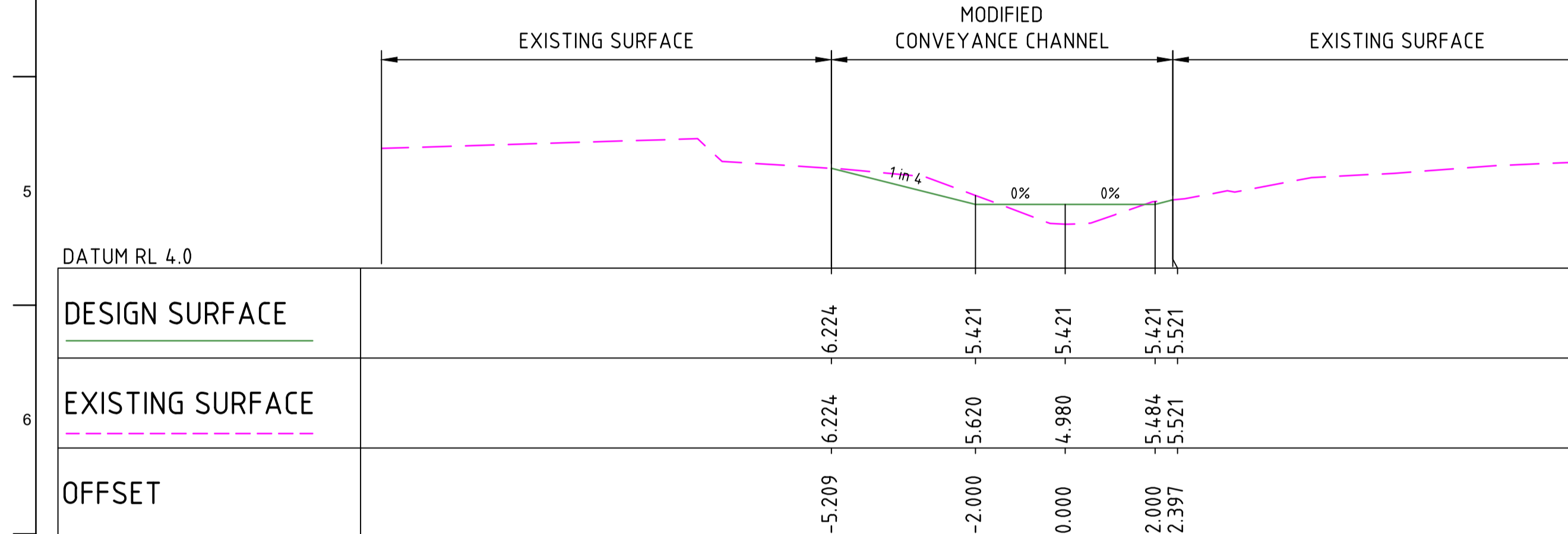
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Discipline	CIVIL
Job No	262556-01
Drawing Status	DESIGN DEVELOP.
Drawing No	262556-TP-C-0702
Issue	B



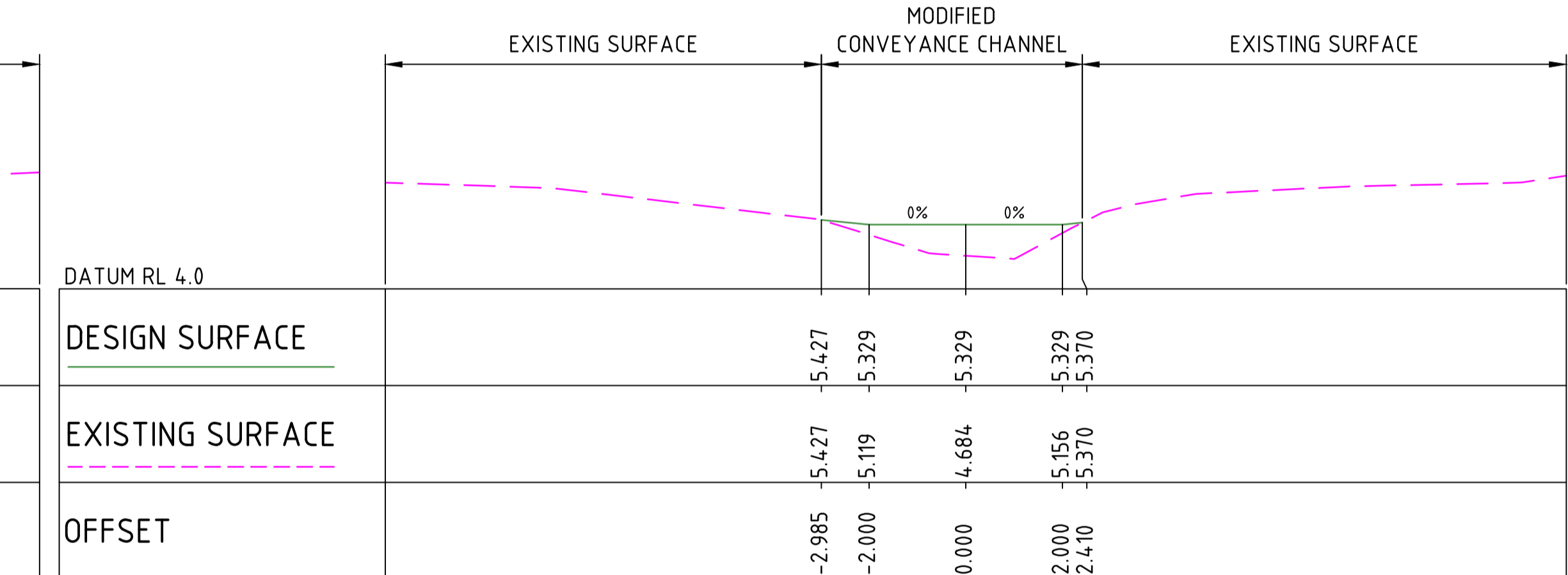
CHAINAGE 50.000
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:50



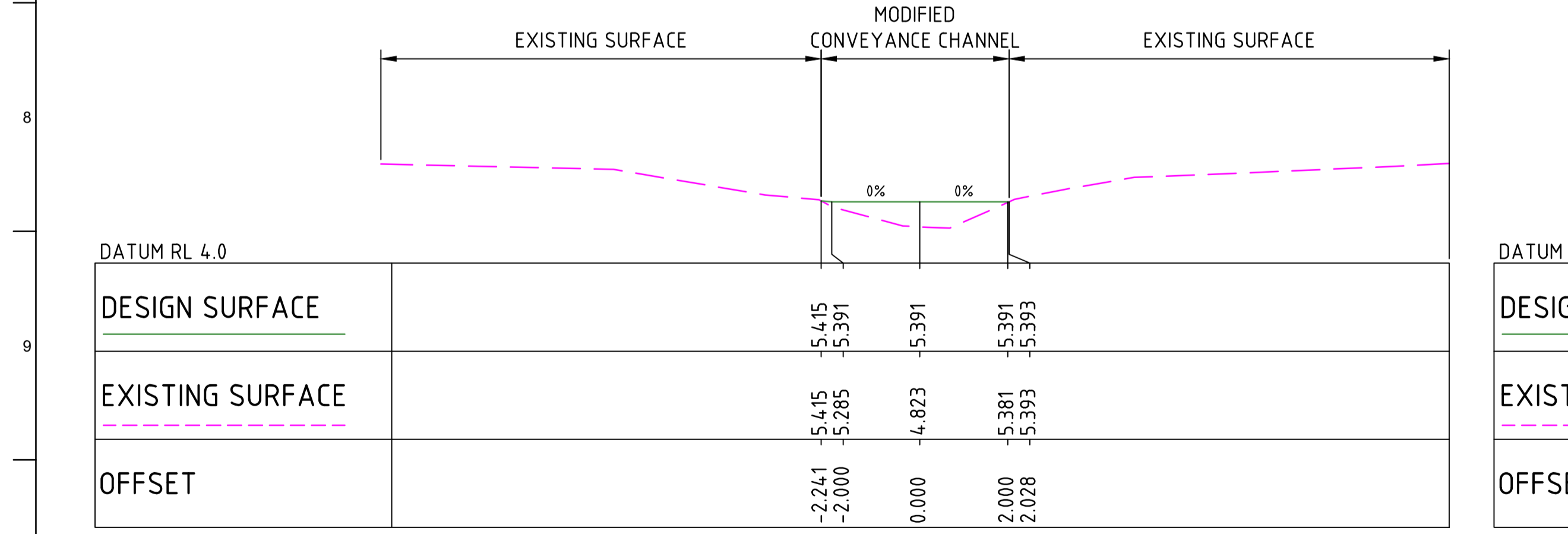
CHAINAGE 200.000
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:50



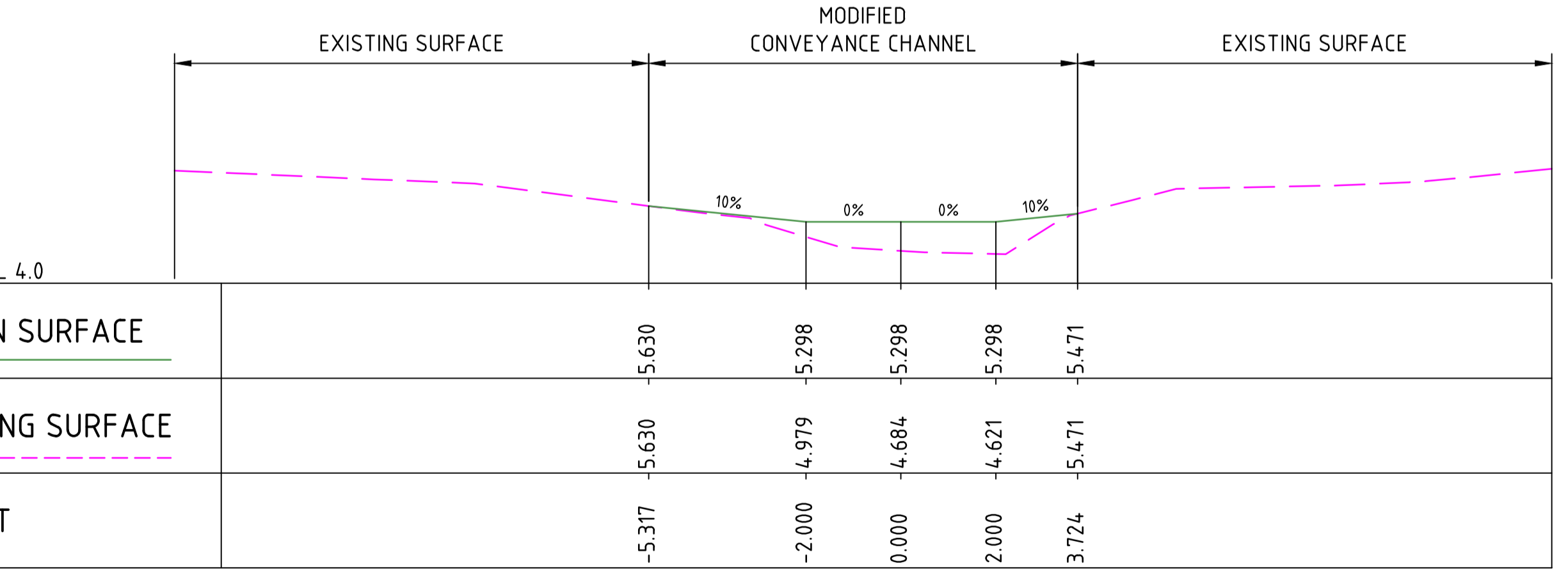
CHAINAGE 100.000
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:50



CHAINAGE 250.000
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:50



CHAINAGE 150.000
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:50



CHAINAGE 300.000
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:50

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- LEGEND**
- PROPOSED FINISHED SURFACE LEVEL OF CHANNEL
 - EXISTING GROUND LEVELS

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A	Schematic Design	17.06.19	BH	MM	MA
Issue	Description	Date	By	Chkd	Appd

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Member Firm
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ABN 18 000 966 165

INTERNATIONAL AIRPORT
GATEWAY TO THE
PILBARA

Client
Port Hedland International Airport
Terminal Precinct

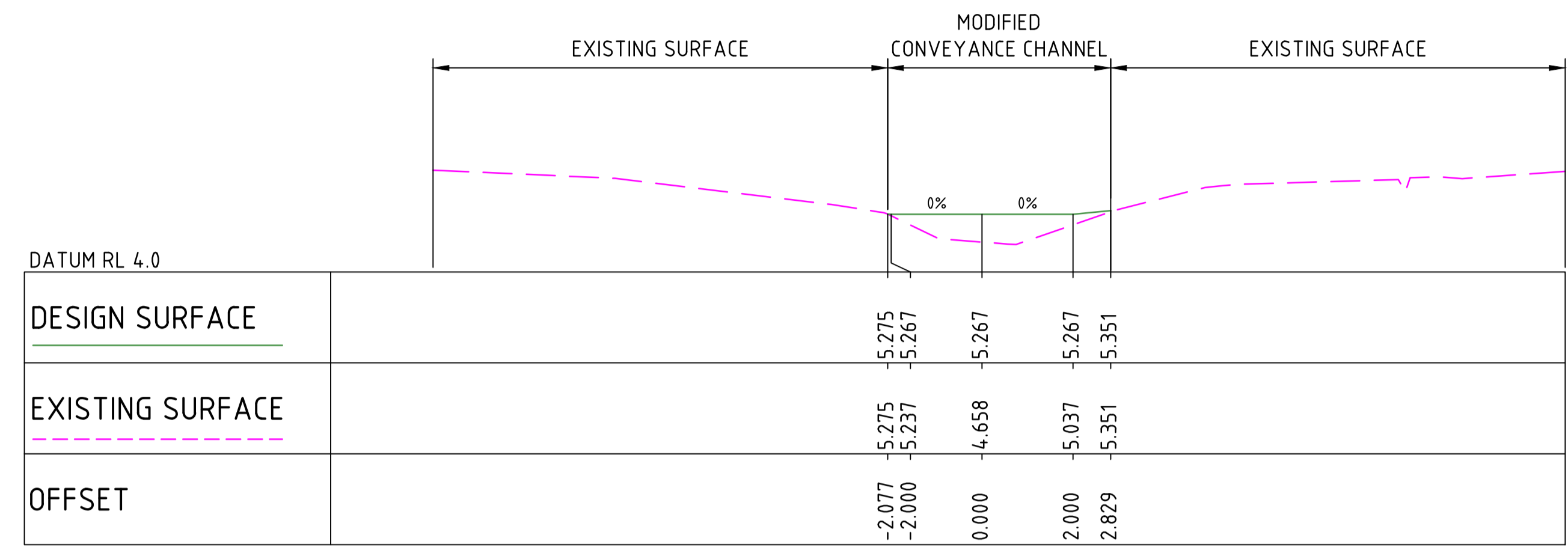
Job Title
Wider Terminal
Precinct - Upgrade Works
Option 1 Channel Regrading
Cross Section Sheet 1 of 2

Drawing Title
Wider Terminal
Precinct - Upgrade Works
Option 1 Channel Regrading
Cross Section Sheet 1 of 2

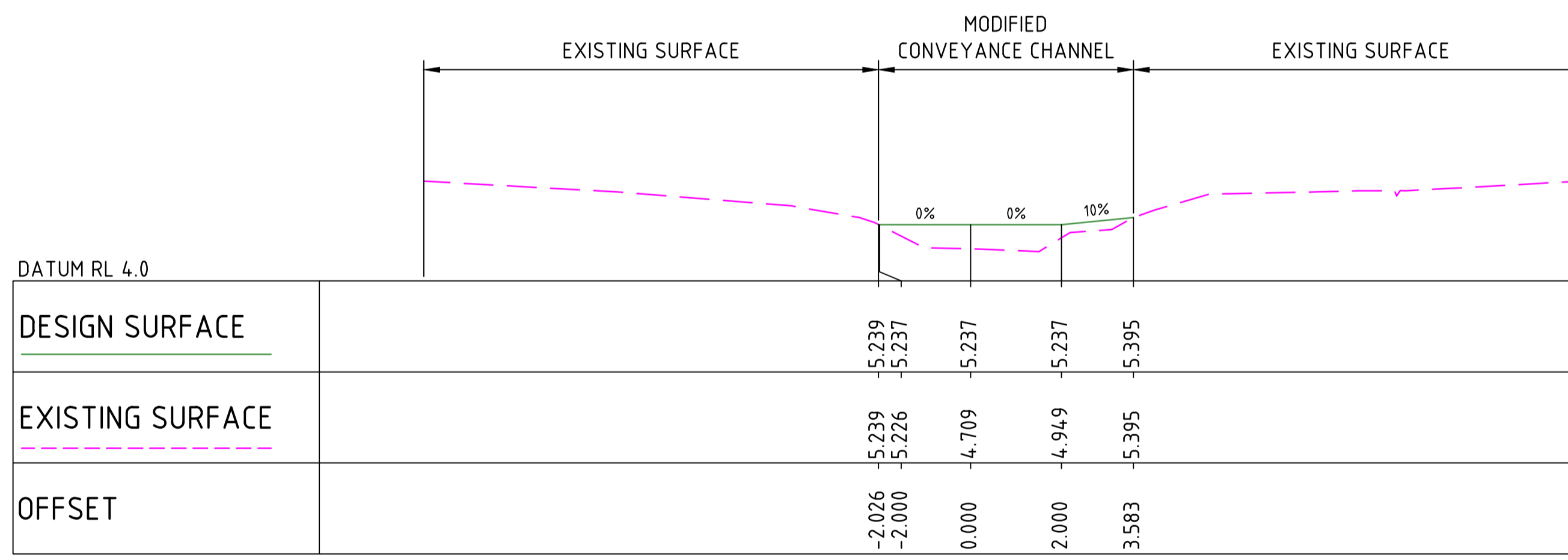
Scale at A1 1:500
Discipline CIVIL
Job No 262556-01 Drawing Status
DESIGN DEVELOP.
Drawing No 262556-TP-C-0703 Issue
B

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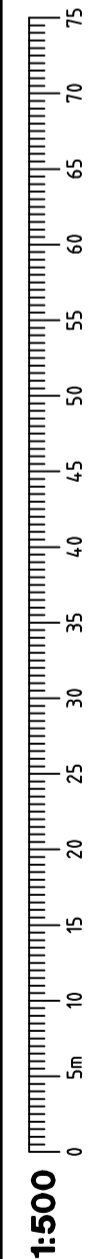
- LEGEND**
- PROPOSED FINISHED SURFACE LEVEL OF CHANNEL
 - EXISTING GROUND LEVELS



CHAINAGE 350.000
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:50



CHAINAGE 400.000
HORIZONTAL SCALE 1:500
VERTICAL SCALE 1:50



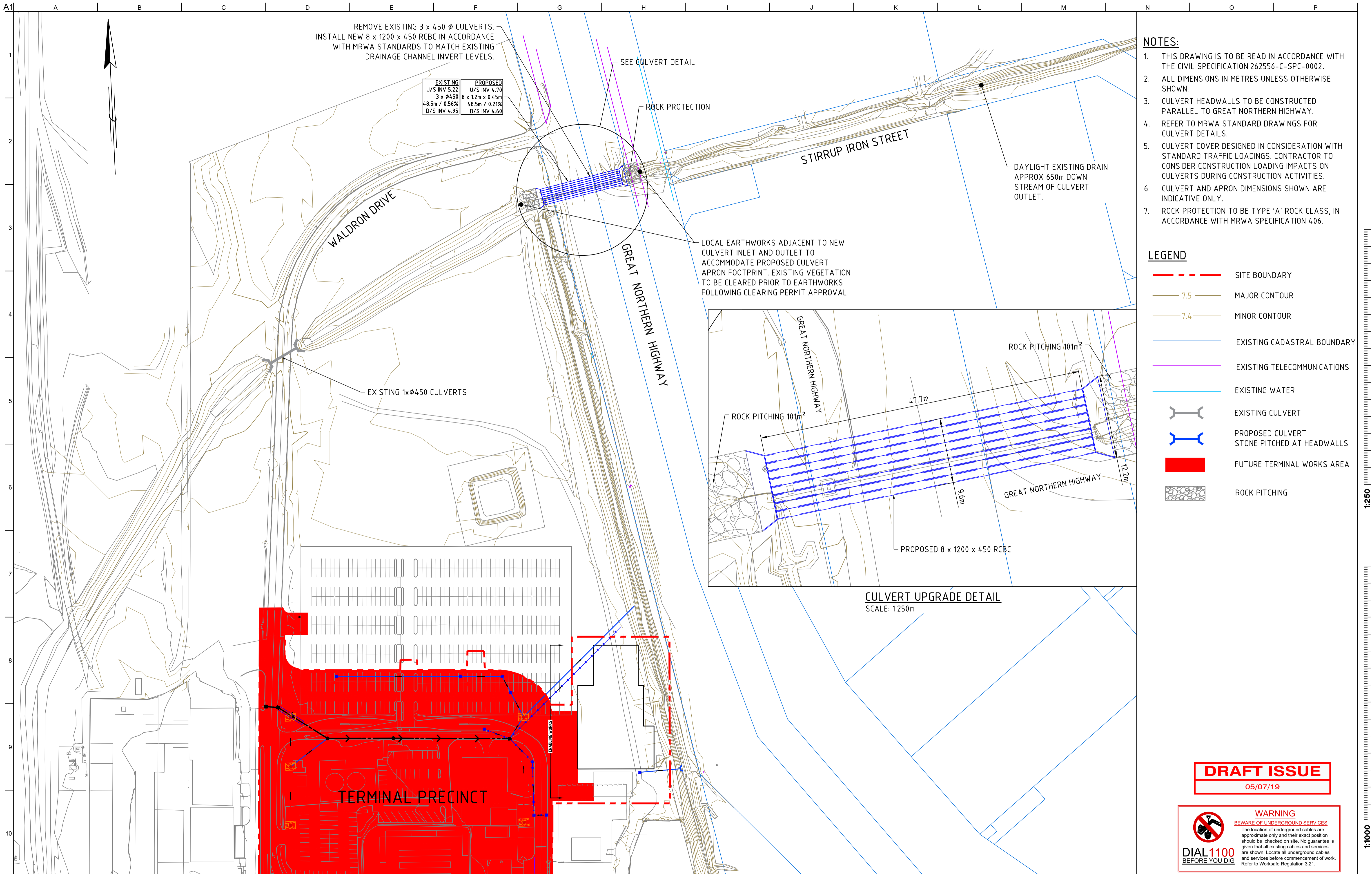
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 Level 14, Exchange Tower, 2 The Esplanade, Perth, Western Australia, 6008 Tel +61 8 9227 5508 www.arup.com	 Member Firm Arup Pty Ltd ABN 18 000 968 165	Client Port Hedland International Airport GATEWAY TO THE PILBARA	Job Title Port Hedland International Airport Terminal Precinct	Drawing Title Wider Terminal Precinct - Upgrade Works Option 1 Channel Regrading Cross Section Sheet 2 of 2	Scale at A1 1:1000 Discipline CIVIL Job No 262556-01 Drawing Status 262556-TP-C-0704 DESIGN DEVELOP. Drawing No Issue 262556-TP-C-0704 B
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Client
Port Hedland International Airport
Terminal Precinct

Drawing Title
Wider Terminal
Precinct - Upgrade Works
Option 2
Layout Plan

Scale at A1	1:1000
Discipline	CIVIL
Job No	262556-01
Drawing Status	DESIGN DEVELOP.
Drawing No	262556-TP-C-0705
Issue	B