

Epuron Typical Wind Farm Design Criteria

Onshore Wind Farms in Australia



EPURON



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Job Number	22-155
Date	22/08/2022
Document Name	22-155 - Epuron - Typical WF Design Criteria.docx
Version	V1.0

Document Revision History

Version	Revision History
1	Issued to client



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1 Introduction

This document is to be used as an example showing typical Wind Farm design criteria, considerations and details.

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2 Typical Design Criteria

Internal Access Track

Width	6.0m (5.0m Trafficable)
Maximum Longitudinal Grade	18% (15% to Substation)
Cross fall	2%
Minimum Horizontal Curve	R 130m
Minimum Vertical Curve	R 600m

Hardstand (includes WTG pad)

Length	64.5m
Width	42m
Maximum fall	1%

Intersections

Over Dimensional Radius	60m
Heavy Rigid Radius	15m
Turnarounds at dead ends for empty 16 Row Float	42m Length x 30m Radius

Blade Laydown

Area free of obstructions	83.35m x 19m
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Ancillary Crane Pads *designed to accommodate LG1750 crane or similar, lifting to a maximum hub height of 160 m.*

2 pads with access ramp (track grade <5%)	21m x 8m
2 pads – 2 access ramp (track grade 5-8%)	21m x 12m + Taper (12m includes varying step)
Cross fall	1% min - 5% max

Benches

Construction Compound	100m x 200m
Batch Plant (number to be confirmed)	100m x 200m
Switching Yard	100m x 200m
Internal Substation	100m x 200m
O+M Compound	100m x 100m
Satellite Construction Compound	50m x 50m
Cross fall	1% to 2%

Cut and Fill batters

Cut	Typically 1V : 3 H, or upto 1V :1H in rock*
Fill	Typically 1V : 3 H*

**steeper batters to be confirmed by geotechnical engineer*

<u>Strip</u>	100mm
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Clearance Envelope

Footprint / Width outside of Earthworks batter

Temporary Footing backfill stockpile

20m x 40m

Construction movements (including vehicles passing)

The clearance buffers are 30m and 15m either side of the batter interface for the typical cut and fill batters. Refer sketch below.

Buffer zones are required adjacent to the earthworks formations for a number of practical purposes such as:

- Implementation of sediment and erosion control measures.\
- Efficient circulation of earthmoving plant
- Temporary storage of topsoil materials, close to the final placement position
- Underground MV and Comms Cable Alignments, where terrain permits.
- Drainage inlet and outlet controls

(refer sketch below)

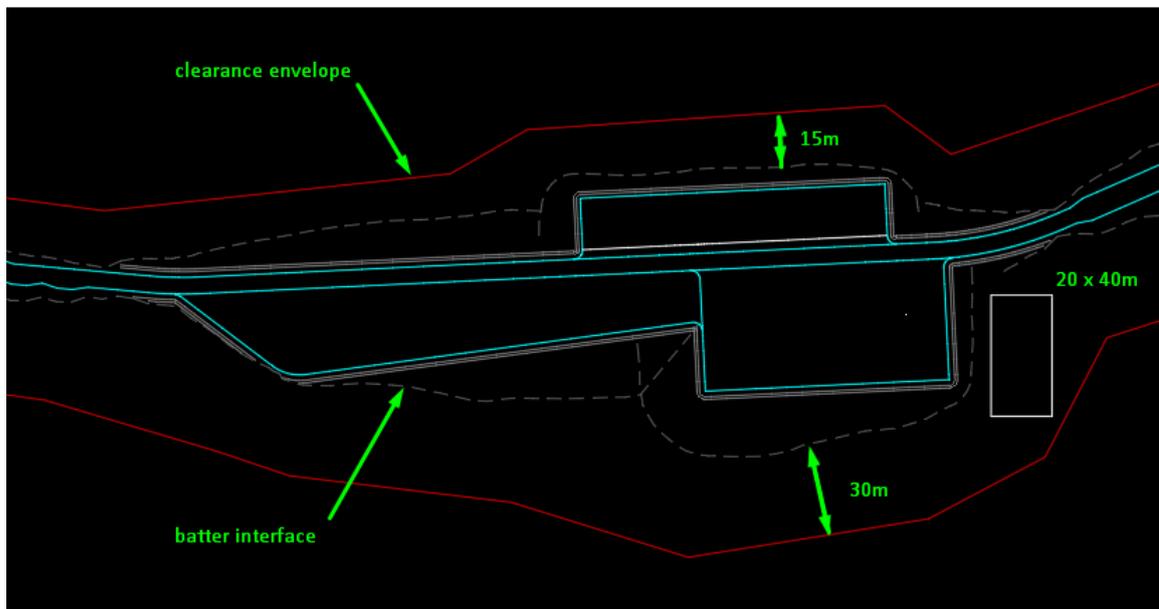


Figure 1 Clearance Envelope Buffers

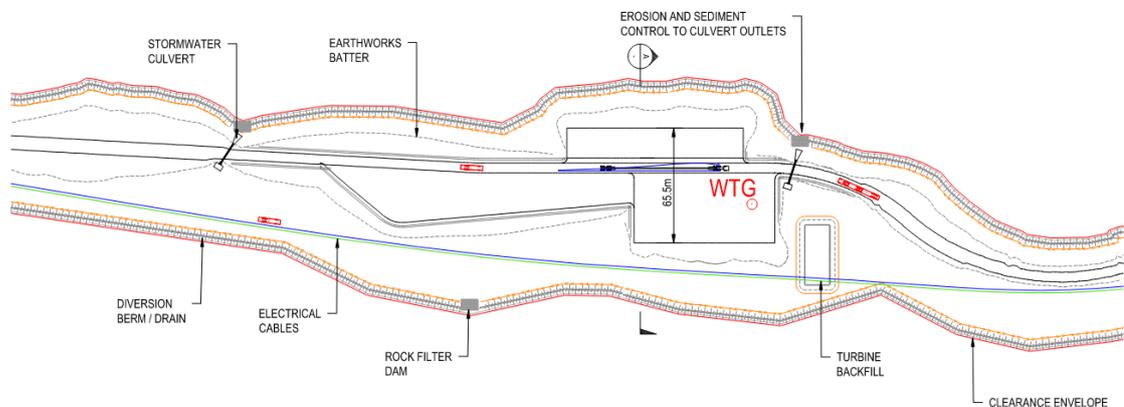


Figure 2 Typical Clearance Envelope Detail

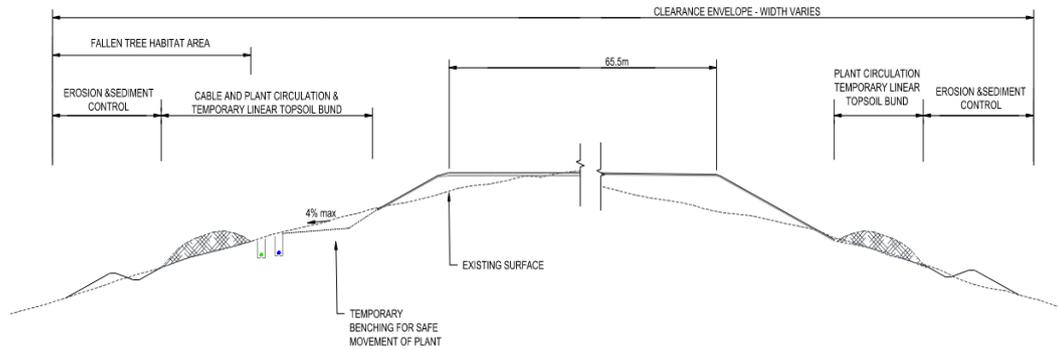


Figure 3 Typical Clearance Envelope Section A

3 List of Typical Drawings

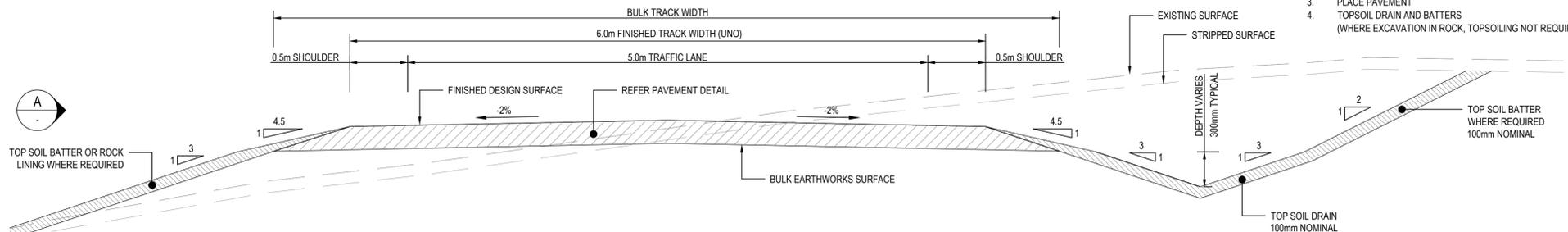
- Typical Access Track Cross Section Details and Notes
- Typical Intersection and Widening Details
- Typical Hardstand Layout
- Typical Landowner Boundary Crossing Details
- Typical Access track / Farmers Track Interface Details
- Typical Erosion and Sediment Control Plan and Details
- Typical Stormwater Details – Sheet 1
- Typical Stormwater Details – Sheet 2

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TOPSOILED DRAIN ORDER

1. STRIP SURFACE
2. CUT BULK EARTHWORKS SURFACE
3. PLACE PAVEMENT
4. TOPSOIL DRAIN AND BATTERS (WHERE EXCAVATION IN ROCK, TOPSOILING NOT REQUIRED)

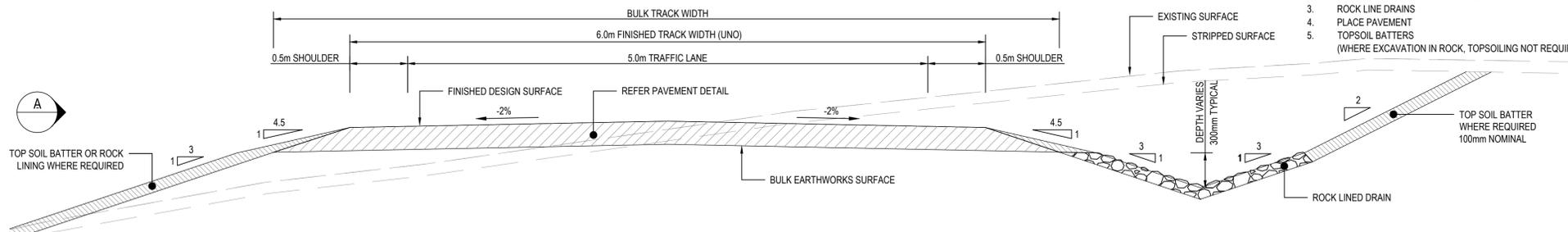


TYPICAL WIND FARM ACCESS TRACK CROSS SECTION - TOP SOIL DRAIN

NTS

ROCK LINED DRAIN ORDER

1. STRIP SURFACE
2. CUT BULK EARTHWORKS SURFACE
3. ROCK LINE DRAINS
4. PLACE PAVEMENT
5. TOPSOIL BATTERS (WHERE EXCAVATION IN ROCK, TOPSOILING NOT REQUIRED)

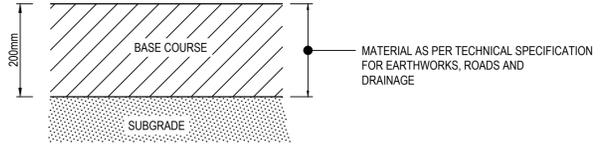


TYPICAL WIND FARM ACCESS TRACK CROSS SECTION - ROCK LINED DRAIN

NTS

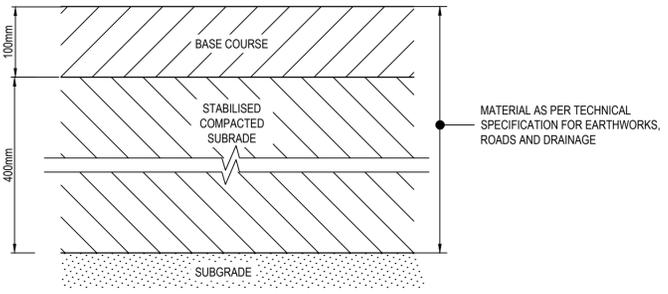
PAVEMENT NOTES

ALL PAVEMENTS ARE BASED ON A SOUND AND TRAFFICABLE SUBGRADE. WET AND/OR SOFT AREAS FAILING THE SUBGRADE PROOF ROLL TEST MAY REQUIRE SOME FORM OF SUBGRADE IMPROVEMENT. THE DESIGN ENGINEER SHALL BE CONSULTED TO ASSESS OPTIONS SUCH AS:
 - STABILISATION
 - GEOTEXTILE STRENGTHENING
 - COARSE ROCKFILL STRENGTHENING
 - SUBGRADE REPLACEMENT
 OR A COMBINATION OF ALL THESE OPTIONS. SUBGRADE UNDRAINED SHEAR STRENGTH TO BE TBC OR BETTER.



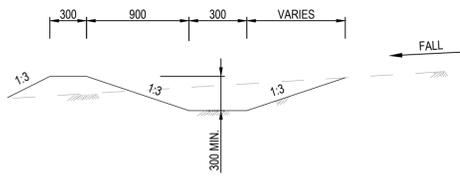
ACCESS TRACK PAVEMENT DETAILS

SUBJECT TO FINAL DESIGN BASED ON INSITU STRENGTH TESTING



ALTERNATIVE PAVEMENTS - STABILISED SUBGRADE DETAILS

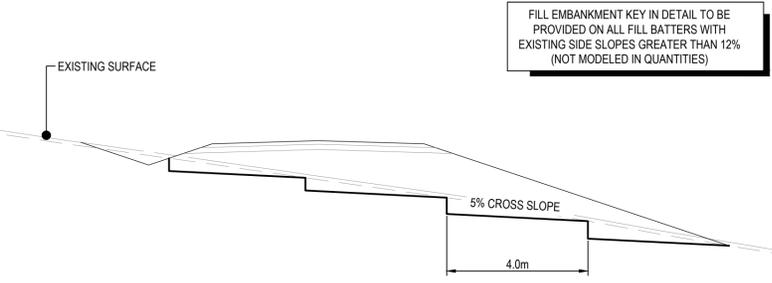
SUBJECT TO FINAL DESIGN BASED ON INSITU STRENGTH TESTING



TYPICAL CUTOFF DRAIN DETAIL

NTS

CUTOFF DRAIN NOTE: CUTOFF DRAINS SHALL BE CONSTRUCTED AT THE TOP OF CUT BATTERS TO DIVERT CLEAN UPSLOPE WATER AWAY FROM CUT BATTERS.



TYPICAL EMBANKMENT FILL KEY DETAIL

NTS

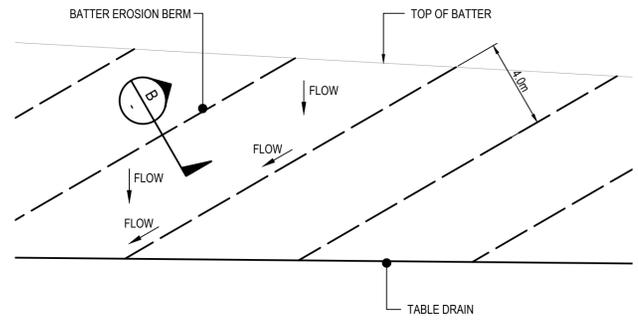
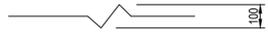
ACCESS TRACK NOTES

1. DRAIN TO BE TOP SOILED, ROCK LINED OR LEFT UN-TREATED AS REQUIRED. FINAL FINISH TO BE DETERMINED BY CONSULTING ENGINEER FOLLOWING GEOTECHNICAL BATTER STABILITY STUDY.
 2. BATTERS TO BE TOP SOILED, ROCK LINED OR LEFT UN-TREATED AS REQUIRED. FINAL FINISH TO BE DETERMINED BY CONSULTING ENGINEER FOLLOWING GEOTECHNICAL BATTER STABILITY STUDY.
 3. TRACK WIDTH 6.0m EXCEPT WHERE STRAIGHT SEGMENTS ARE IN A COMPLETE CUT ON BOTH SIDES.
 4. LG1750 MUST TRAVEL CENTRALLY ALONG TRACK.
- * FINAL BATTER SLOPE TO BE DETERMINED BY CONSULTING ENGINEER FOLLOWING GEOTECHNICAL BATTER STABILITY STUDY.
 ** FINAL CHANGE OF BATTER DEPTH TO BE DETERMINED BY CONSULTING ENGINEER FOLLOWING GEOTECHNICAL BATTER STABILITY STUDY.

BATTER EROSION BERMS SHALL BE PROVIDED ON ALL CUT AND FILL BATTER

BATTER EROSION BERM SECTION

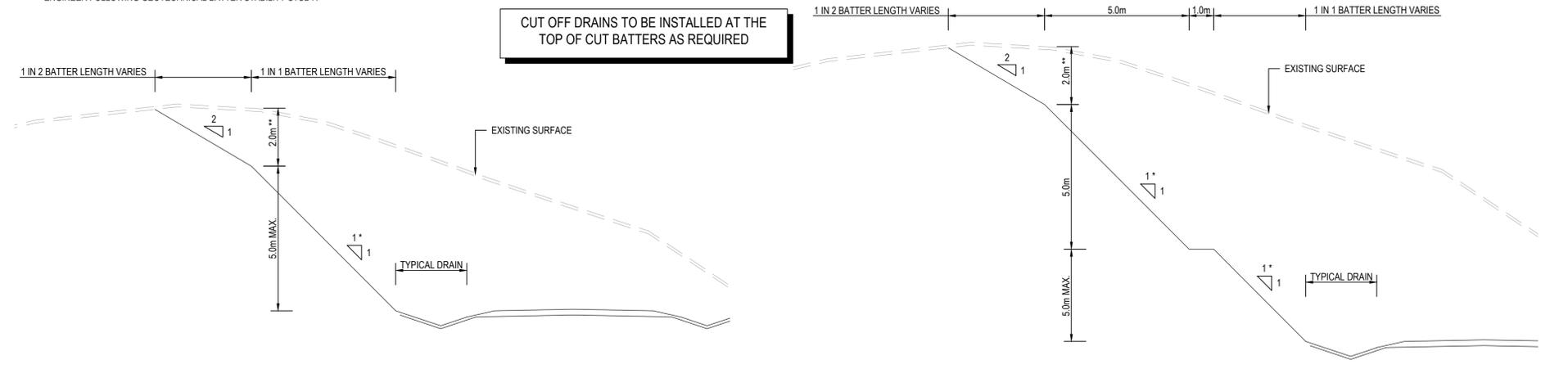
NTS



BATTER EROSION BERM ELEVATION

NTS

CUT OFF DRAINS TO BE INSTALLED AT THE TOP OF CUT BATTERS AS REQUIRED



TYPICAL BATTER SECTION - BATTERS IN CUT GREATER THAN 2m DEPTH

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TYPICAL BATTER SECTION - BATTERS IN CUT GREATER THAN 7m DEPTH

NTS

No	DESCRIPTION	L.K.	DES	DRN	B.P.	CHK	N.C.	APP	DATE
A	PRELIMINARY								04.08.22

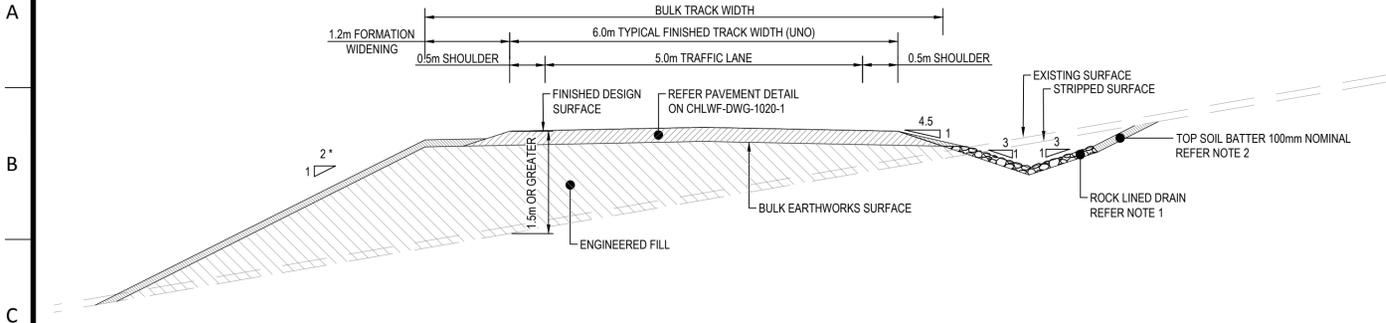
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SIZE A1	SCALE AS SHOWN	PROJECT TYPICAL WIND FARM
STATUS PRELIMINARY NOT FOR CONSTRUCTION	TITLE TYPICAL ACCESS TRACK CROSS SECTION DETAILS AND NOTES	
COORDINATE REFERENCE SYSTEM N/A	DRAWING No. 22-155-WF-TYP-001	REV A

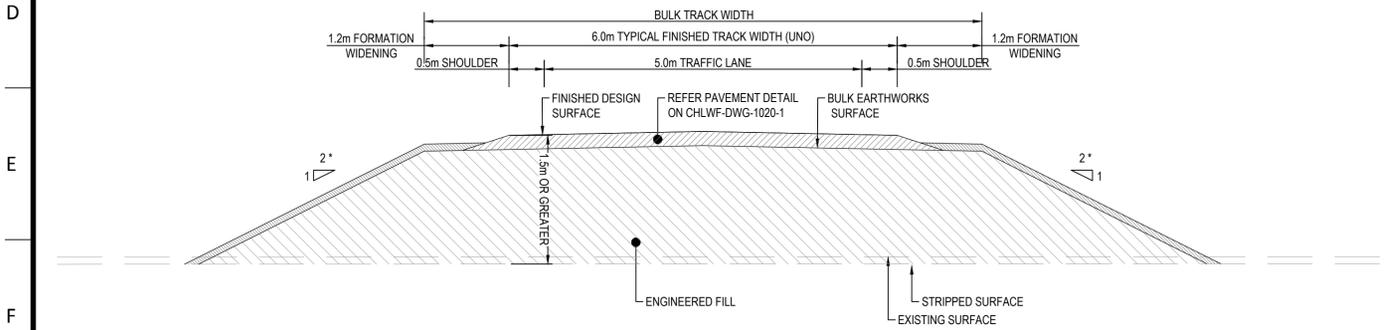
ACCESS TRACK WIDENING NOTES

PARAMETERS FOR TRACK WIDENING ARE TYPICAL ONLY AND FINAL WIDENING IS AT THE DISCRETION OF THE DESIGNER AND ON SITE CONSULTING ENGINEERS.



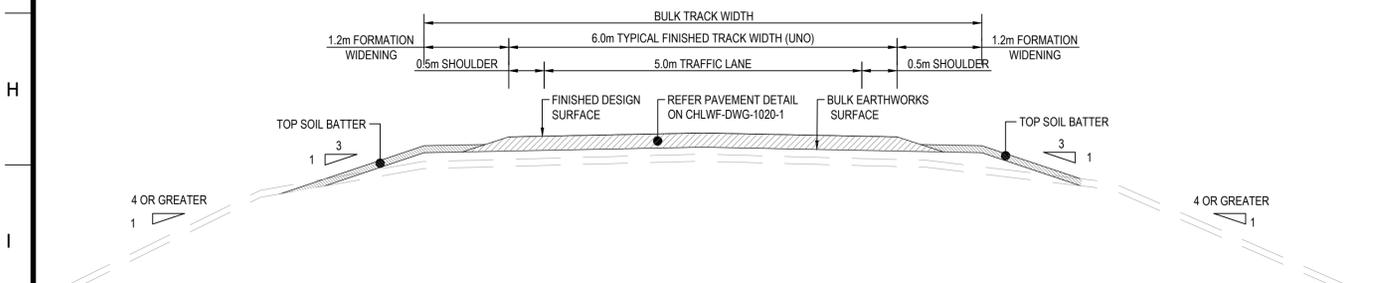
TYPICAL WIND FARM ACCESS TRACK WIDENING - CROSS SECTION TYPE 1

NTS



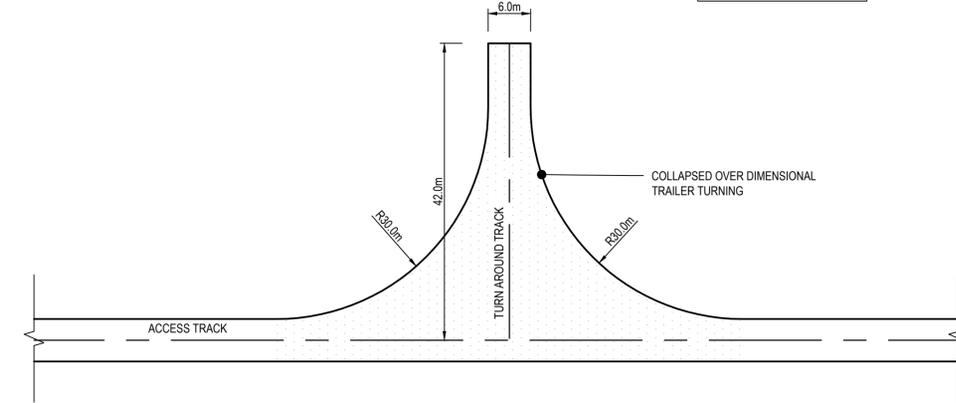
TYPICAL WIND FARM ACCESS TRACK WIDENING - CROSS SECTION TYPE 2

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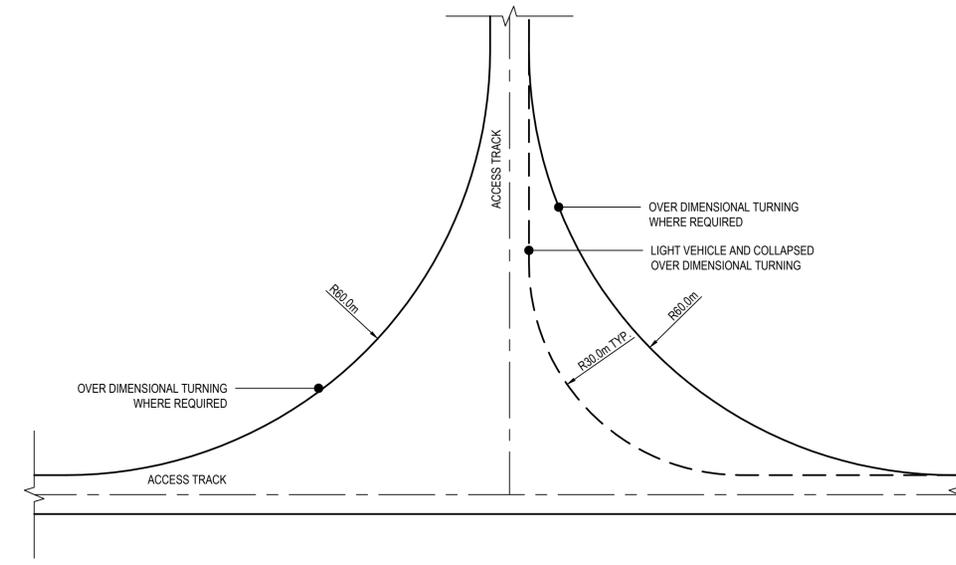
TYPICAL WIND FARM ACCESS TRACK WIDENING - CROSS SECTION TYPE 3

NTS



TYPICAL HARDSTAND TURNAROUND DETAIL

NTS



TYPICAL INTERSECTION DETAIL

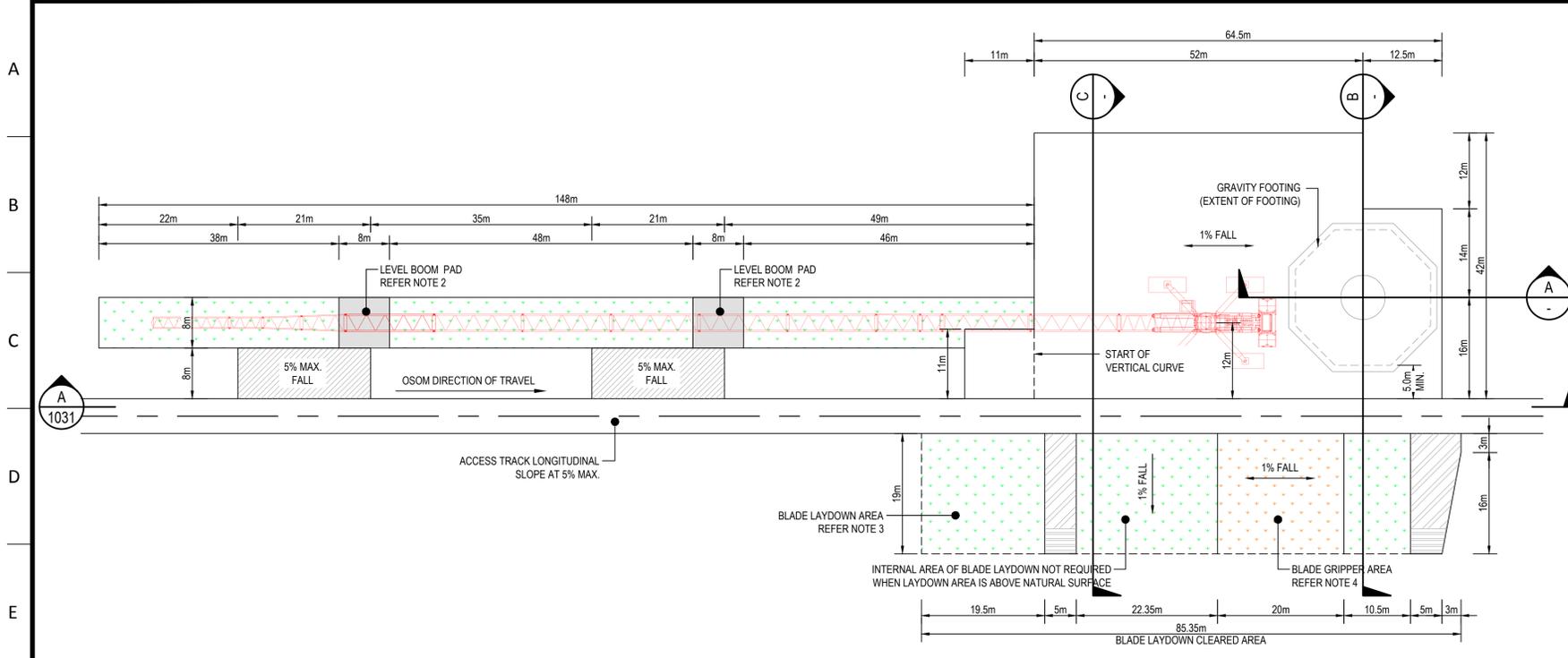
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No	DESCRIPTION	DES	DRN	CHK	APP	DATE
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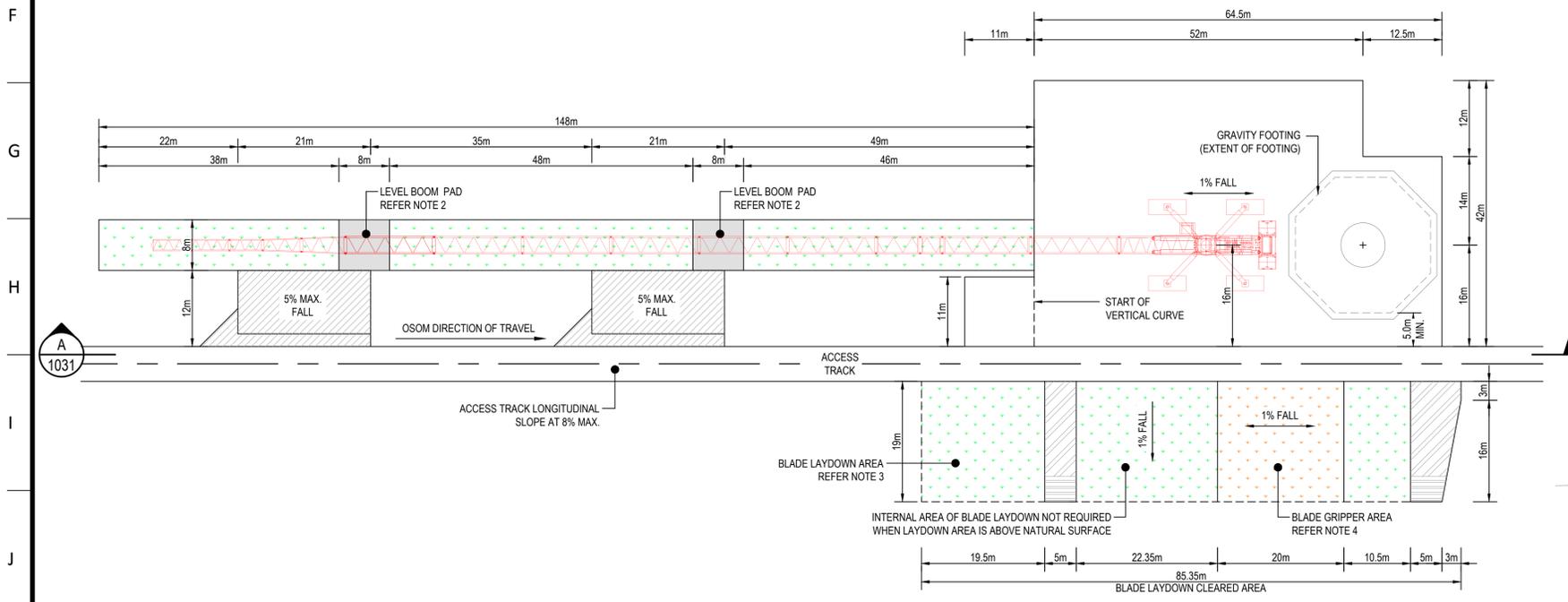
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SIZE A1	SCALE AS SHOWN	PROJECT TYPICAL WIND FARM
STATUS PRELIMINARY NOT FOR CONSTRUCTION	COORDINATE REFERENCE SYSTEM N/A	TITLE TYPICAL INTERSECTION AND WIDENING DETAILS
DRAWING No. 22-155-WF-TYP-002		REV A



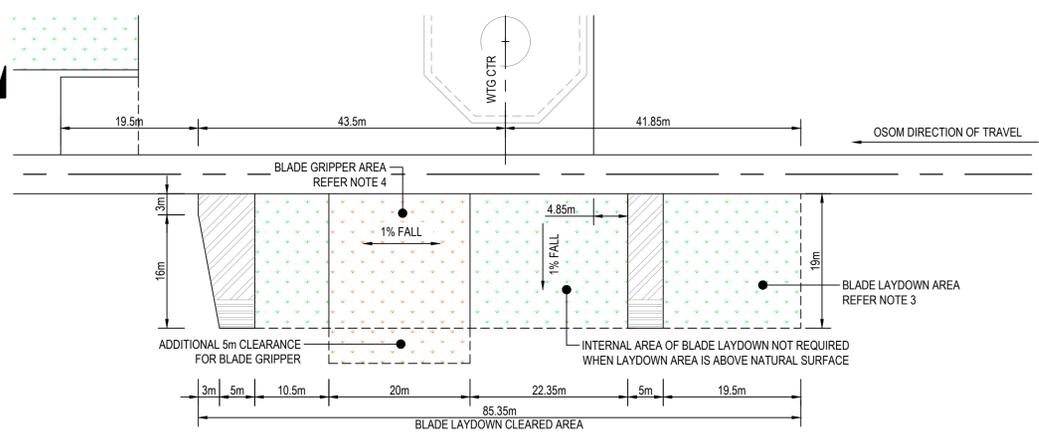
MOBILE HARDSTAND GENERAL ARRANGEMENT TYPE 1 - < 5% LONGITUDINAL SLOPE
SCALE 1:500



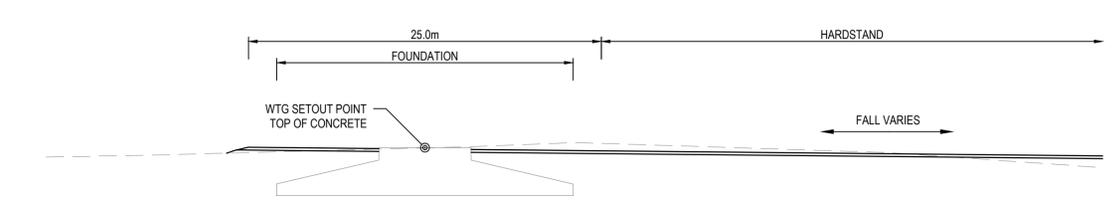
MOBILE HARDSTAND GENERAL ARRANGEMENT TYPE 1 - 5-8% LONGITUDINAL SLOPE
SCALE 1:500

HARDSTAND NOTES

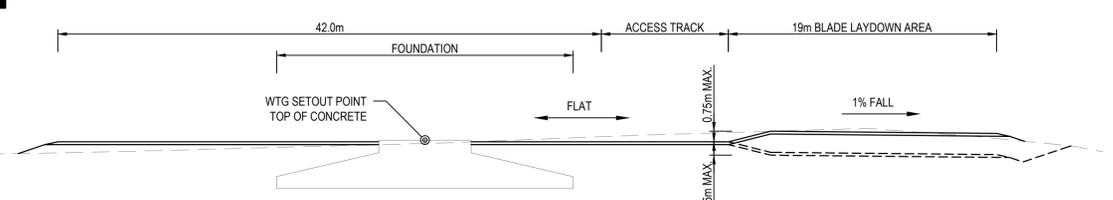
1. CRANE BOOM ASSEMBLY AREA TO BE CLEAR OF OBSTRUCTIONS AND NON-TRAFFICABLE.
2. BOOM PAD TO BE TYPICALLY CONSTRUCTED FLAT AND WITHIN ± 8% ELEVATION FROM THE EDGE OF HARDSTAND.
3. LONGITUDINAL SLOPE BETWEEN BLADE SUPPORT PADS TO BE MAXIMUM 1%. BLADE SUPPORT PADS TO BE WITHIN ± 0.75m OF THE ACCESS TRACK. BLADE LAYDOWN AREA TO BE CLEARED OF OBSTRUCTIONS AND NON-TRAFFICABLE.
4. BLADE GRIPPER AREA TO BE MINIMUM 0.5m LOWER THAN BLADE FINGERS.
5. CRANE ESTABLISHMENT ON THE HARDSTANDS AND IN PROXIMITY TO SLOPES AND TRENCHES, SHALL BE IN ACCORDANCE WITH PARTICULAR CRANE'S OPERATIONS MANUAL AND THE CRANE INDUSTRY COUNCIL GUIDANCE NOTE, CICA-GN-0013-C.
6. HARDSTAND ARRANGEMENT, ORIENTATION AND DIRECTION OF TRAVEL TO BE DETERMINED BY DESIGNER TO BEST SUIT EARTHWORKS.



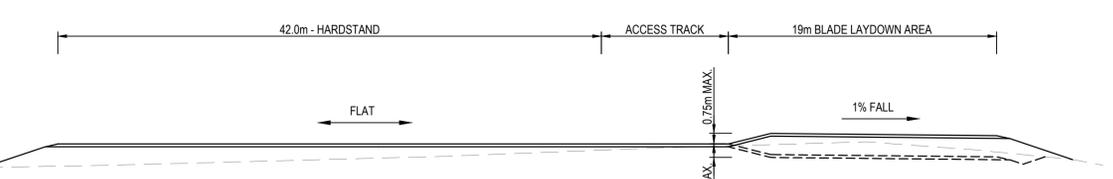
BLADE LAYDOWN ALTERNATE ARRANGEMENT
SCALE 1:500



A WTG - HARDSTAND TYPICAL SECTION
SCALE 1:250



B WTG - TRACK TYPICAL SECTION
SCALE 1:250



C HARDSTAND TYPICAL SECTION
SCALE 1:250

No	DESCRIPTION	L.K.	DES	DRN	B.P.	CHK	N.C.	APP	DATE
A	PRELIMINARY								04.08.22

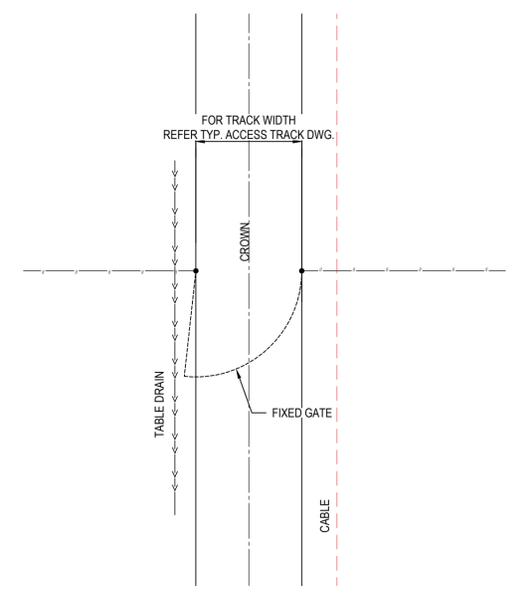
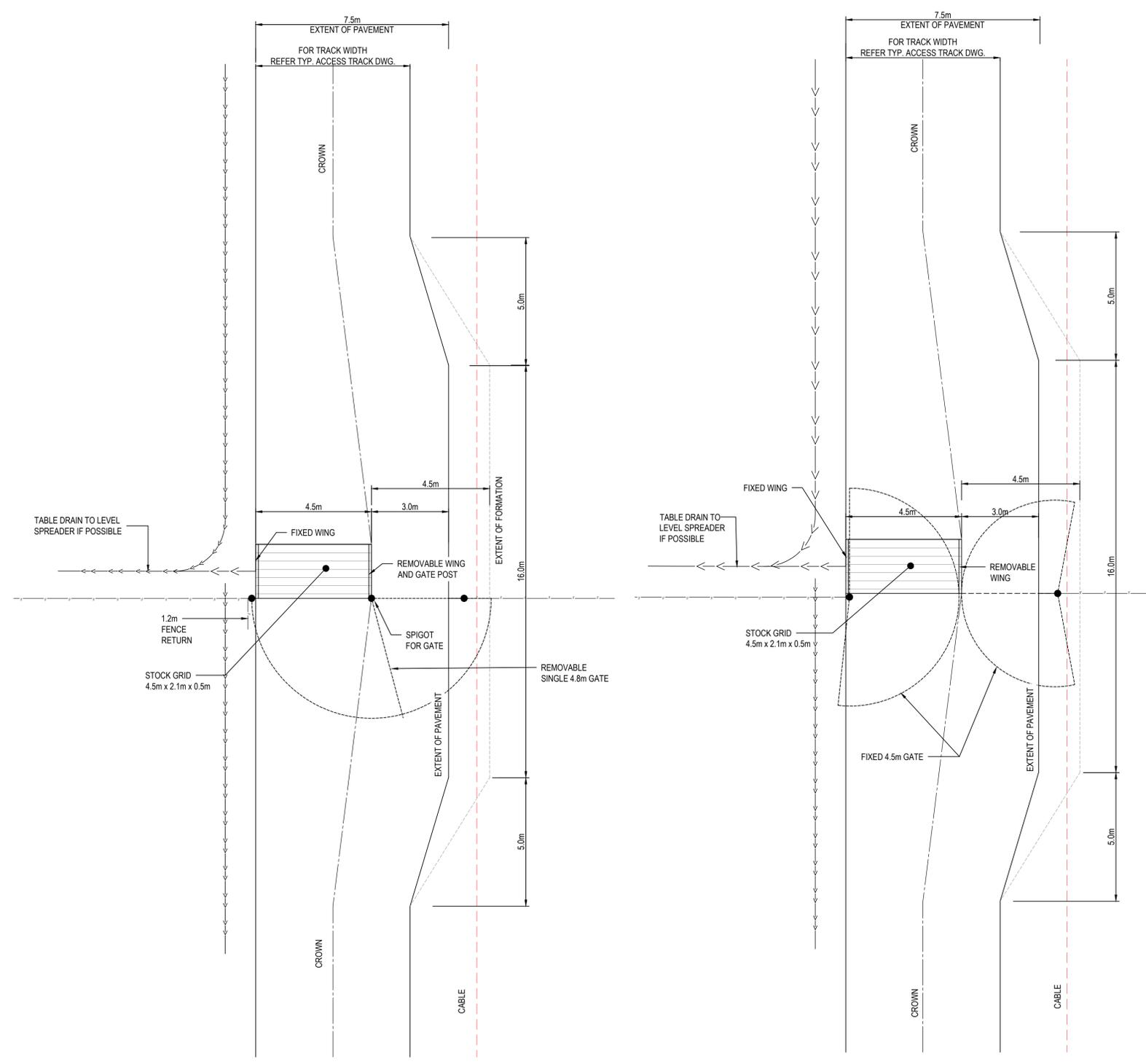
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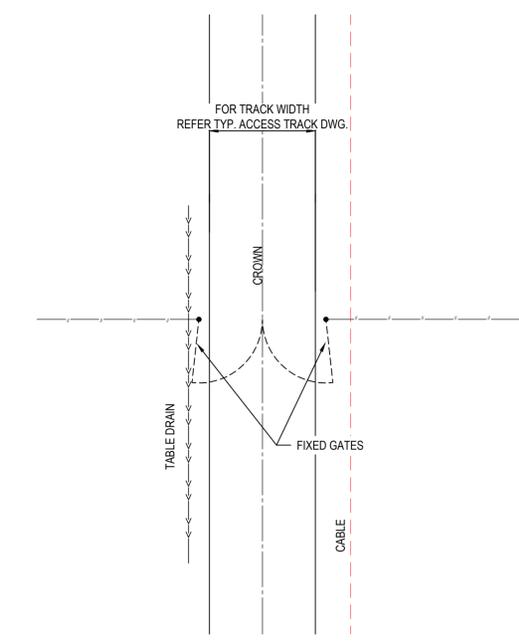
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SCALE	AS SHOWN
STATUS	PRELIMINARY NOT FOR CONSTRUCTION
COORDINATE REFERENCE SYSTEM	N/A

PROJECT	TYPICAL WIND FARM
TITLE	TYPICAL HARDSTAND LAYOUT
DRAWING No.	22-155-WF-TYP-003
REV	A

- NOTES**
- HEAVY DUTY GRID TO ASS100 BRIDGE DESIGN 16T AXLE, 42.7T MAX LOAD APRILLA S4-5H OR EQUIVALENT.
 - GRID WING TO BE REMOVED AND STEEL PLATES USED FOR MAIN CRAWLER CRANE.
 - CROSS FALL OF GRID TO SUIT ROAD GRADES.
 - WIDEN TO OPPOSITE SIDE OF CABLE TRENCH.
 - FARM GATES SHALL BE HEAVY DUTY, 25Nb TUBE.
 - PAVEMENT WIDENING AT GRIDS AND GATES HAS NOT BEEN MODELED IN DESIGN STRINGS.
 - WHERE POSSIBLE GRIDS ARE TO BE LOCATED ON THE PADDOCK SIDE OF STOCK LANEWAYS
 - ALLOWANCE IS TO BE MADE FOR THE CONTINUATION OF ELECTRIC FENCING WHERE EXISTING



TYPICAL SINGLE 6m GATE DETAIL
SCALE 1:200



TYPICAL TWIN 3.6m GATE DETAIL
SCALE 1:200

TYPICAL SINGLE 4.8m GATE AND GRID DETAIL
SCALE 1:100

TYPICAL TWIN 4.8m GATE AND GRID DETAIL
SCALE 1:100

No	DESCRIPTION	L.K.	DES	DRN	B.P.	N.C.	APP	DATE
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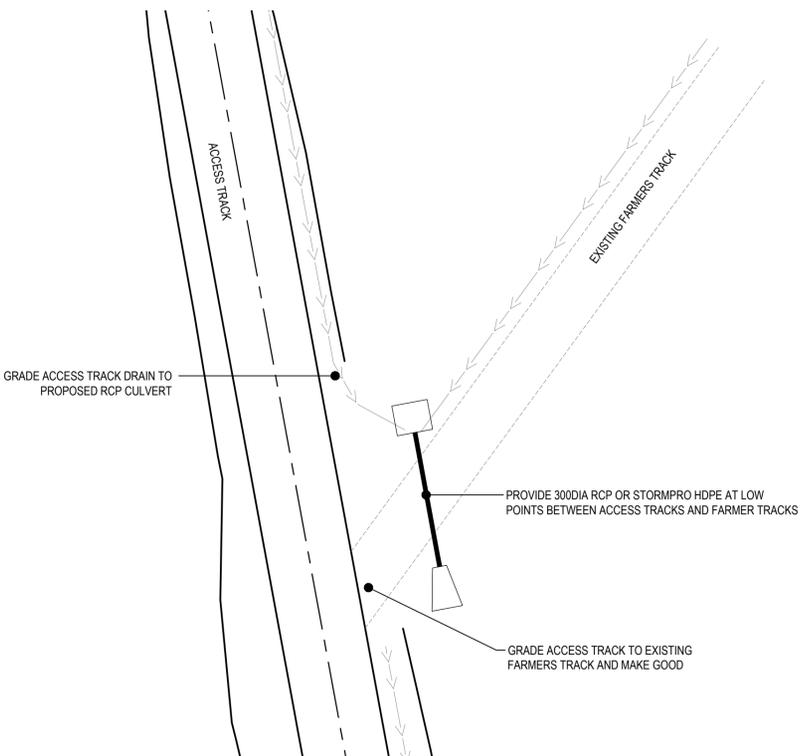
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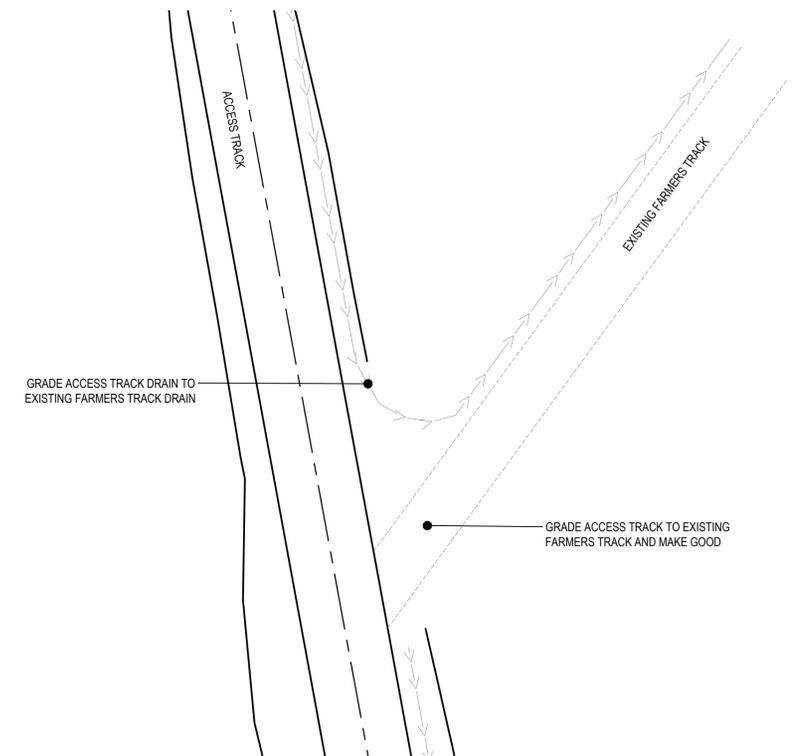
SIZE	A1	SCALE	AS SHOWN
STATUS	PRELIMINARY NOT FOR CONSTRUCTION		
COORDINATE REFERENCE SYSTEM	N/A		

PROJECT	TYPICAL WIND FARM	
TITLE	TYPICAL LANDOWNER BOUNDARY CROSSING DETAILS	
DRAWING No.	22-155-WF-TYP-004	REV A

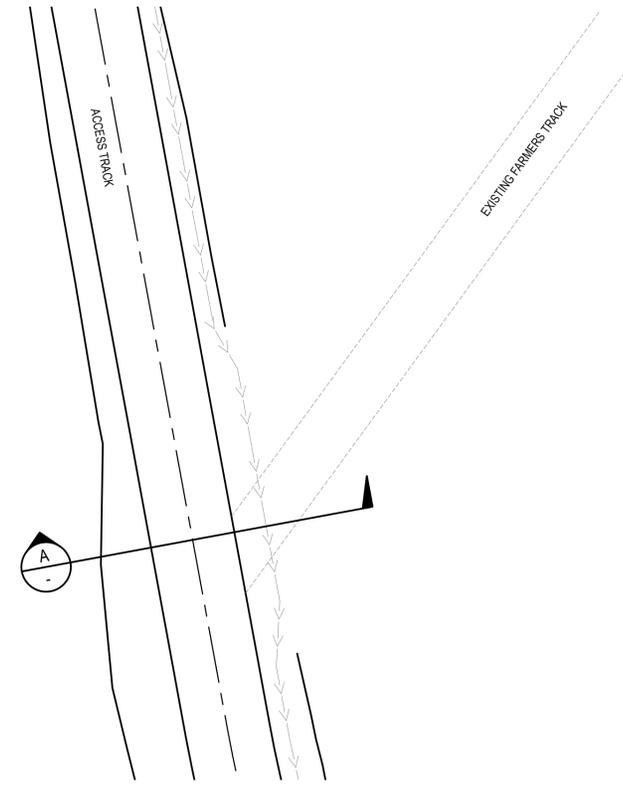
- NOTES**
1. THE INTERFACE BETWEEN DESIGN ACCESS TRACKS AND EXISTING FARMERS TRACKS HAVE NOT BEEN MODELLED. CONSULTING ENGINEER TO ADVISE AND MAKE CONSTRUCTION TEAM AWARE PRIOR TO CONSTRUCTION
 2. THE INTERFACE BETWEEN THE TOE OF BATTERS, NATURAL SURFACE AND EXISTING FARMERS TRACKS SHALL BE SHAPED LOCALLY AS REQUIRED TO AVOID PONDING.
 3. INTERFACE TO BE AGREED WITH THE LAND HOLDER.
 4. CONTRACTOR TO COORDINATE WITH ON SITE TEAM TO ENSURE NO WORKS ARE CONSTRUCTED OUTSIDE OF THE SITE BOUNDARY OR SITE ENTRY CORRIDOR.



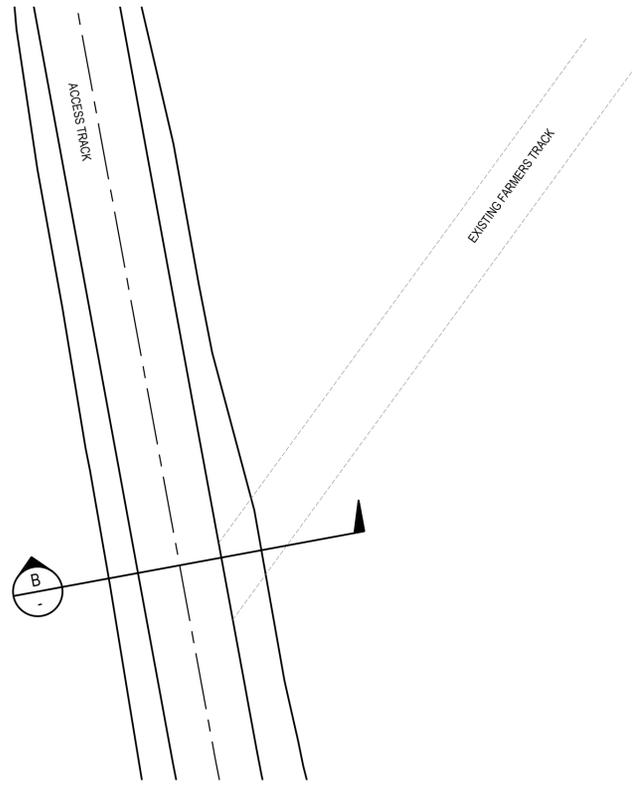
TYPICAL ACCESS TRACK/ FARMERS TRACK INTERFACE DETAIL 1
NTS



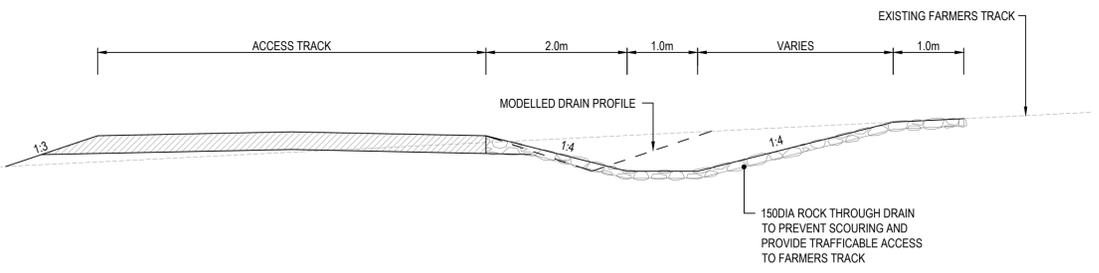
TYPICAL ACCESS TRACK/ FARMERS TRACK INTERFACE DETAIL 2
NTS



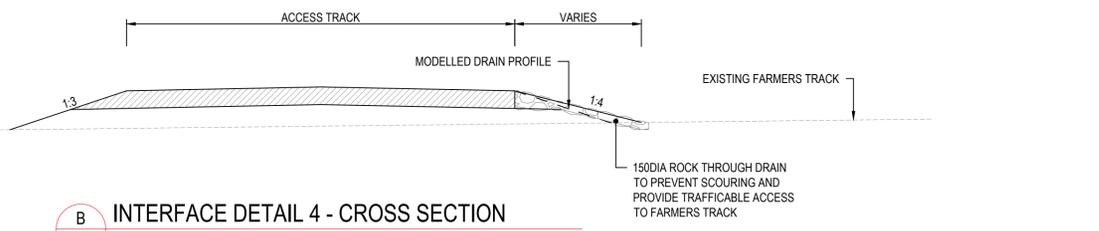
TYPICAL ACCESS TRACK/ FARMERS TRACK INTERFACE DETAIL 3
NTS



TYPICAL ACCESS TRACK/ FARMERS TRACK INTERFACE DETAIL 4
NTS



A INTERFACE DETAIL 3 - CROSS SECTION
NTS



B INTERFACE DETAIL 4 - CROSS SECTION
NTS

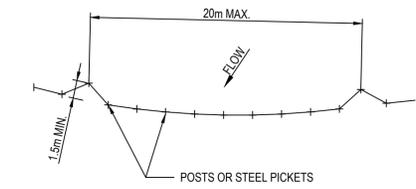
No	DESCRIPTION	L.K.	DES	DRN	B.P.	CHK	N.C.	APP	DATE
A	PRELIMINARY								04.08.22

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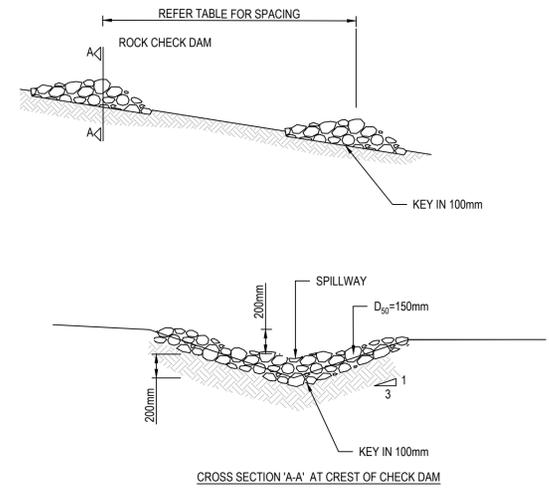
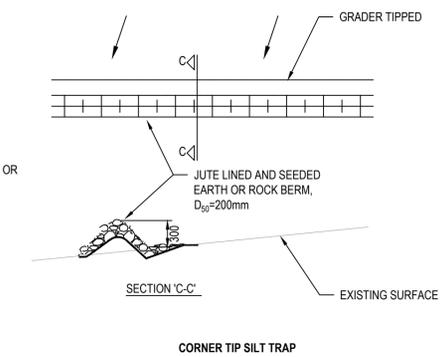
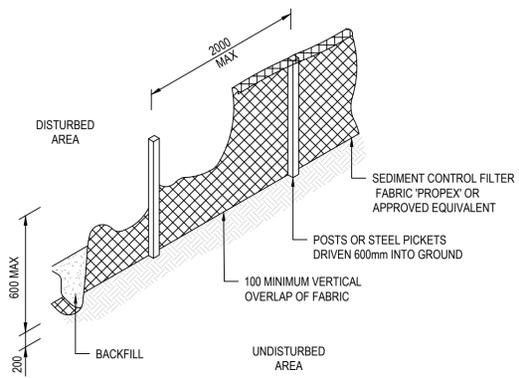
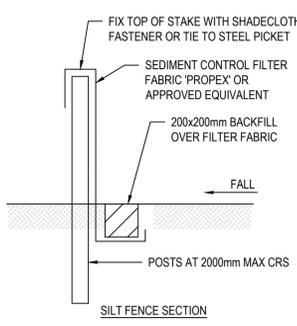
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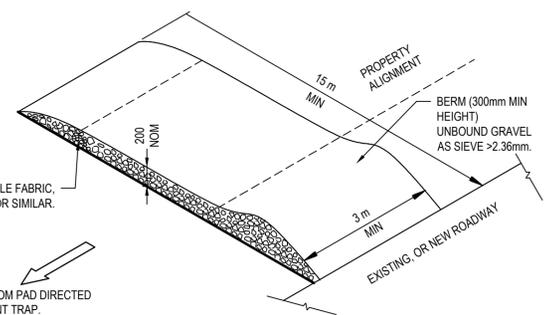
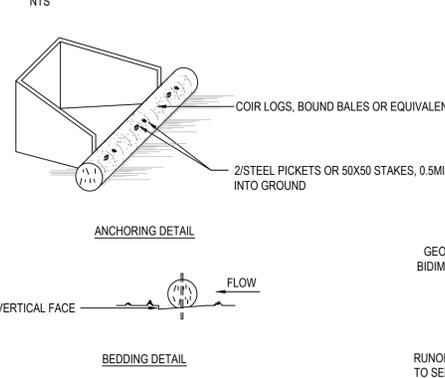
SIZE A1	SCALE AS SHOWN	PROJECT TYPICAL WIND FARM
STATUS PRELIMINARY NOT FOR CONSTRUCTION	COORDINATE REFERENCE SYSTEM N/A	TITLE TYPICAL ACCESS TRACK FARMERS TRACK INTERFACE DETAILS
DRAWING No. 22-155-WF-TYP-005		REV A



ENSURE POST HOLES AND TRENCH ARE PROPERLY BACKFILLED AND COMPACTED



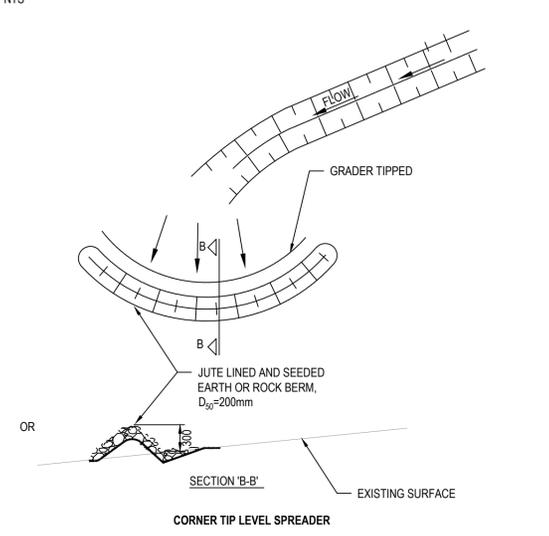
SILT ENTRAPMENT OPTIONS



INLET CONTROL DETAIL



SHAKEDOWN DETAIL



LEVEL SPREADER OPTIONS

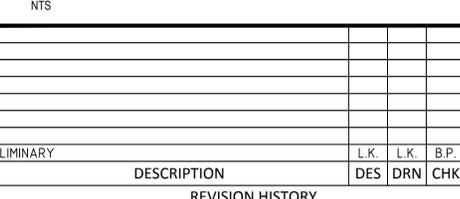


TABLE DRAINS & CUTOFF DRAINS - SCOUR PROTECTION TREATMENTS				
GRADE < 2.5%	2.5% < GRADE < 5%	5% < GRADE < 7%	7% < GRADE < 10%	GRADE > 10%
TOP SOILED & GRASSED WITH ROCK CHECK DAMS AT 20m CENTRES	TOP SOILED & GRASSED WITH ROCK CHECK DAMS AT 10m CENTRES	TOP SOILED & GRASSED WITH ROCK CHECK DAMS AT 5m CENTRES	ROCK LINED WITH COMPACTED D50=100mm CRUSHED ROCK (150mm THICK)	ROCK LINED WITH COMPACTED D50=100mm CRUSHED ROCK (150mm THICK)

OPERATIONS & MAINTENANCE NOTES

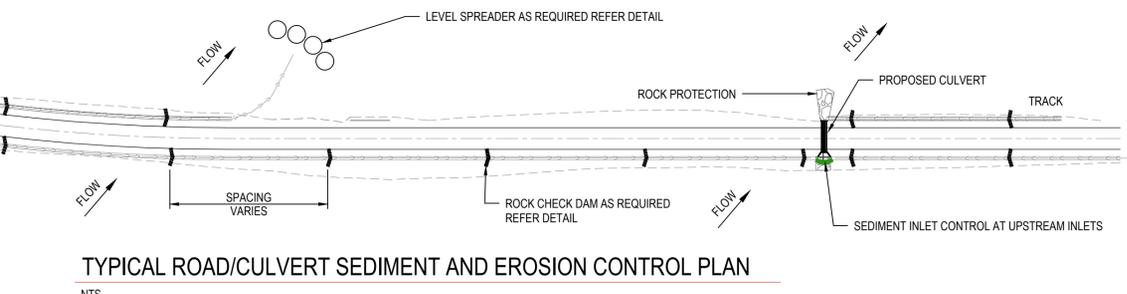
ALL ESC MEASURES MUST BE INSPECTED:
 - AT LEAST DAILY (WHEN WORK IS OCCURRING ON SITE) OR WEEKLY (WHEN WORK IS NOT OCCURRING ON SITE);
 - WITHIN 24 HOURS OF EXPECTED RAIN; AND
 - WITHIN 18 HOURS OF A RAINFALL EVENT (ie AN EVENT OF SUFFICIENT INTENSITY AND DURATION TO MOBILISE SEDIMENT ON SITE).

ESC MEASURE	MAINTENANCE TRIGGER	TIMEFRAME FOR COMPLETION OF MAINTENANCE
OTHER ESC MEASURES	THE CAPACITY OF ESC MEASURES FALLS BELOW 70%.	WITHIN 7 DAYS OF THE INSPECTION.

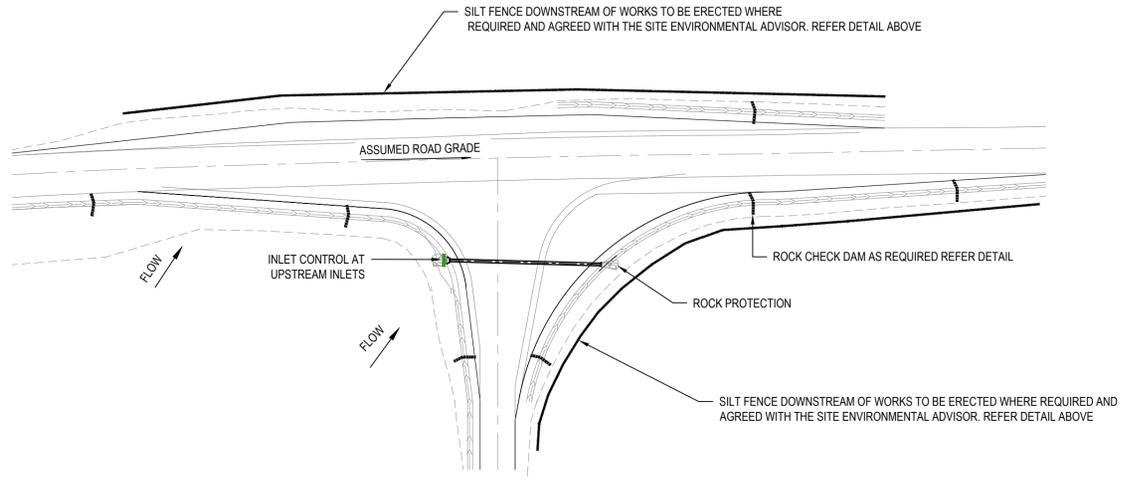
PRIOR TO LONG PERIOD OF SHUT DOWN ALL ESC MEASURES TO BE INSPECTED AND CLEANED.

EROSION & SEDIMENT CONTROL NOTES

- CONSTRUCTION OF ALL SEDIMENT MANAGEMENT DEVICES SHALL BE COMPLETED AND EFFECTIVE PRIOR TO:
 - STRIPPING OF TOPSOIL AND GRASS
 - BULK EARTHWORKS TO THE SITE.
 - SERVICE INSTALLATION
- PRIOR TO CLEARING, AREAS OF PROTECTED VEGETATION AND SIGNIFICANT AREAS OF RETAINED VEGETATION SHALL BE CLEARLY IDENTIFIED (WITH HIGH VISIBILITY TAPE OR SIMILAR) FOR THE PURPOSES OF MINIMISING THE RISK OF UNNECESSARY CLEARING.
- ESC FOR DRAINS AND DISTURBED AREAS SHOULD BE PROVIDED IN ORDER OF PREFERENCE FROM SITE ENGINEER
 - SCARIFY AND GRASS SEED
 - SCARIFY, JUTE MAT AND GRASS SEED
 - SHOT ROCK AROUND CULVERT INLETS AND OUTLETS
 - SHOT ROCK CHECK DAMS IN TABLE DRAINS WHERE REQUIRED
- ENSURE NO RUN OFF OR SEDIMENT DISCHARGES TO ROAD, LAND, DRAINAGE LINES, WATER BODIES OR ADJOINING PROPERTIES.
- CONTRACTOR TO NOMINATE SITE REPRESENTATIVE TO BE RESPONSIBLE FOR THE IMPLEMENTATION AND UP KEEP OF THE EROSION AND SEDIMENT MANAGEMENT CONTROLS.
- ALL EROSION AND SEDIMENT CONTROLS ARE TO REMAIN UNTIL WRITTEN NOTICE FROM THE PROJECTS ENVIRONMENTAL ADVISOR/S.
- BOTH TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROLS SHALL BE MAINTAINED DURING CONSTRUCTION.
- SEDIMENT FENCES ARE TO BE CLEANED OUT WHEN CAPACITY IS REDUCED BY 30%.
- IF EROSION AND SEDIMENT CONTROL DEVICES HAVE BEEN FOUND TO BE DEFICIENT OR FAILED IN SERVICE, DUE TO UNFORESEEN CIRCUMSTANCES, CORRECTIVE ACTION IS TO BE UNDERTAKEN IMMEDIATELY WHICH MAY INCLUDE AMENDMENTS/ADDITIONS TO THE ORIGINAL APPROVED EROSION CONTROL PLANS. SUCH ADDITIONS OR AMENDMENTS ARE TO BE APPROVED BY THE PROJECTS ENVIRONMENTAL ADVISOR/S.
- THE INSTALLATION, REMOVAL, RELOCATION OR MODIFICATION TO EROSION AND SEDIMENT CONTROL DEVICES MAY BE MADE BY THE PROJECTS ENVIRONMENTAL ADVISOR/S, IF DEEMED NECESSARY AND RELEVANT.
- ALL TEMPORARY EARTH BANKS, FLOW DIVERSION SYSTEMS AND EMBANKMENTS SHALL BE MACHINE-COMPACTED AND STABILISED WITH APPROPRIATE COVER APPROVED BY THE PROJECTS ENVIRONMENTAL ADVISOR/S WITHIN 10 DAYS OF DISTURBANCE.
- ALL EARTHWORKS ENVIRONMENTAL CONTROLS SHALL BE GENERALLY IN ACCORDANCE WITH 'MANAGING URBAN STORMWATER: SOILS AND CONSTRUCTION' BY LANDCOM.
- SILT FENCE MAY BE USED AS AN ALTERNATE AT DRAINAGE INLETS.
- SHAKEDOWNS TO BE CONSTRUCTED AT EXITS TO COUNCIL ROADS OR WHERE DEEMED NECESSARY BY THE PROJECTS ENVIRONMENTAL ADVISOR.



TYPICAL ROAD/CULVERT SEDIMENT AND EROSION CONTROL PLAN



TYPICAL INTERSECTION SEDIMENT AND EROSION CONTROL PLAN

- SOIL AND STOCKPILE MANAGEMENT**
- STOCKPILES SHALL BE APPROPRIATELY PROTECTED FROM THE WIND, RAIN, CONCENTRATED SURFACE FLOW AND EXCESSIVE UP-SLOPE STORMWATER SURFACE FLOWS.
 - STOCKPILES SHALL BE LOCATED UPSTREAM OF AN APPROPRIATE SEDIMENT CONTROL SYSTEM. IF THE MATERIALS ARE LIKELY TO BE STOCKPILED FOR LONGER THAN 28 DAYS THEY SHALL BE PROTECTED BY PROVIDING AN APPROPRIATE COVER APPROVED BY THE PROJECTS ENVIRONMENTAL ADVISOR/S WITHIN 10 DAYS.

TABLE DRAINS, CATCH DRAINS AND DIVERSION DRAINS SHALL BE STABILISED WITH APPROPRIATE COVER APPROVED BY THE PROJECTS ENVIRONMENTAL ADVISOR/S AND SUPPLEMENTED WITH ROCK WEIRS AS DETAILED.

No	DESCRIPTION	L.K.	L.K.	B.P.	N.C.	DATE
DES	DRN	CHK	APP			
A	PRELIMINARY					04.08.22

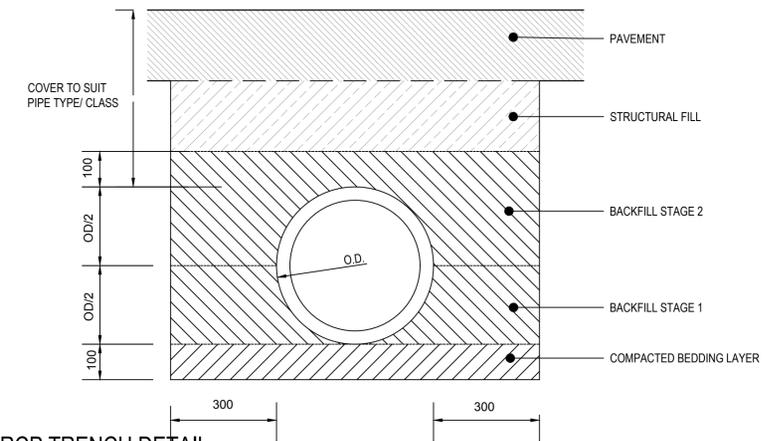
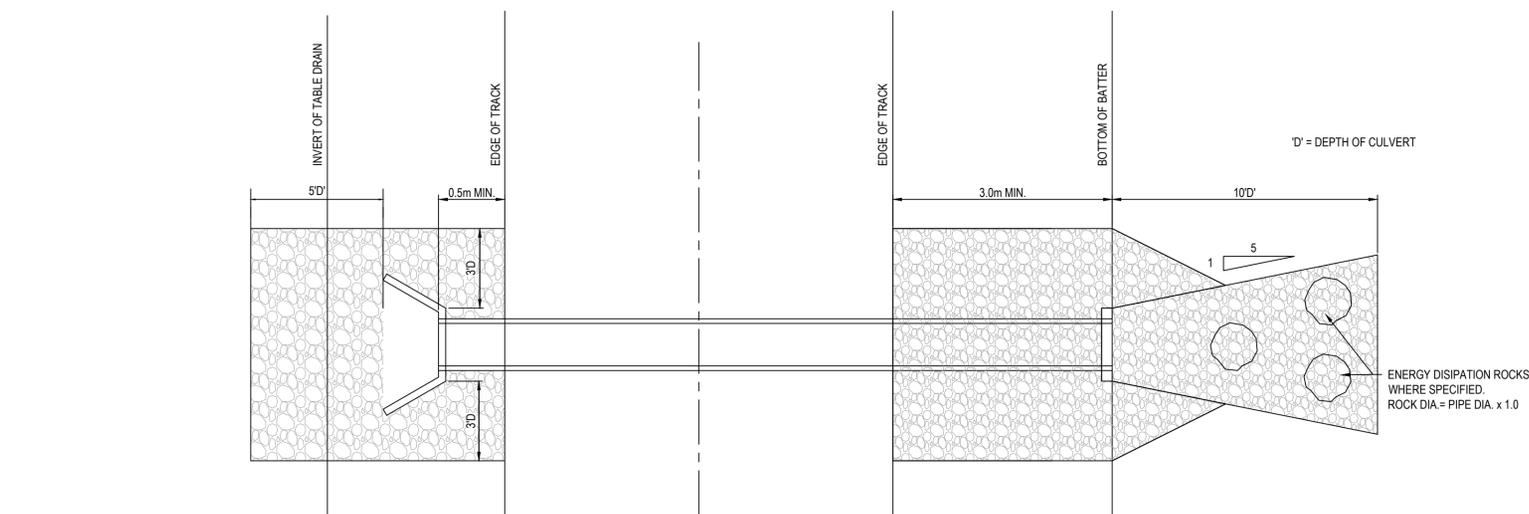
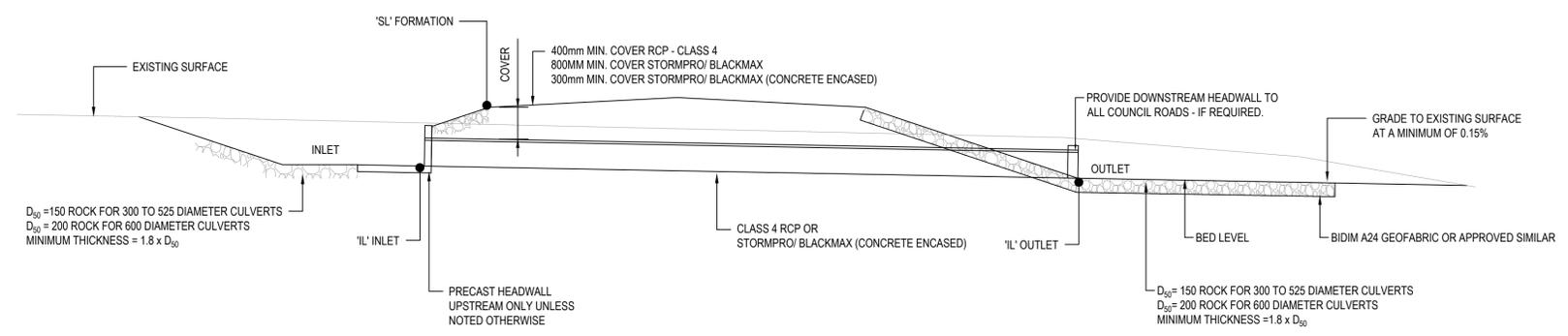
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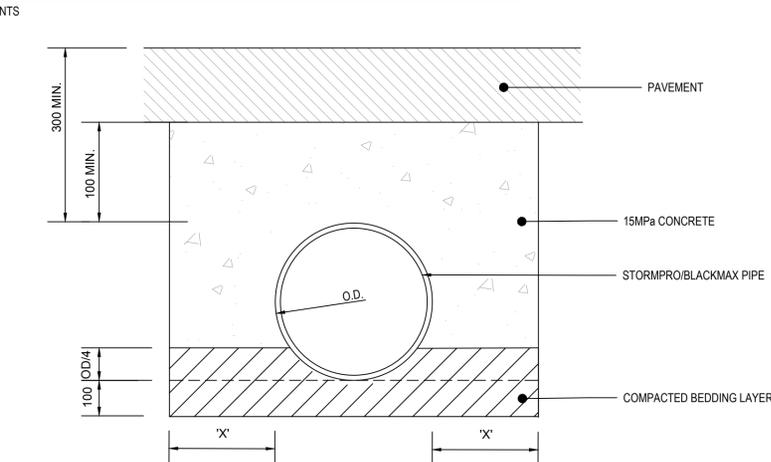
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SIZE	A1
SCALE	AS SHOWN
STATUS	PRELIMINARY NOT FOR CONSTRUCTION
COORDINATE REFERENCE SYSTEM	N/A

PROJECT	TYPICAL WIND FARM	
TITLE	TYPICAL EROSION AND SEDIMENT CONTROL PLAN AND DETAILS	
DRAWING No.	22-155-WF-TYP-006	REV A



RCP TRENCH DETAIL



STORMPRO/ BLACKMAX (CONCRETE ENCASED) TRENCH DETAIL

BEDDING LEGEND

- EVENLY GRADED BED, 20mm NOMINAL SIZE CLASS 2 FCR OR OTHER APPROVED BEDDING
- CLASS 3 FCR, 30mm NOMINAL SIZE OR OTHER APPROVED MATERIAL

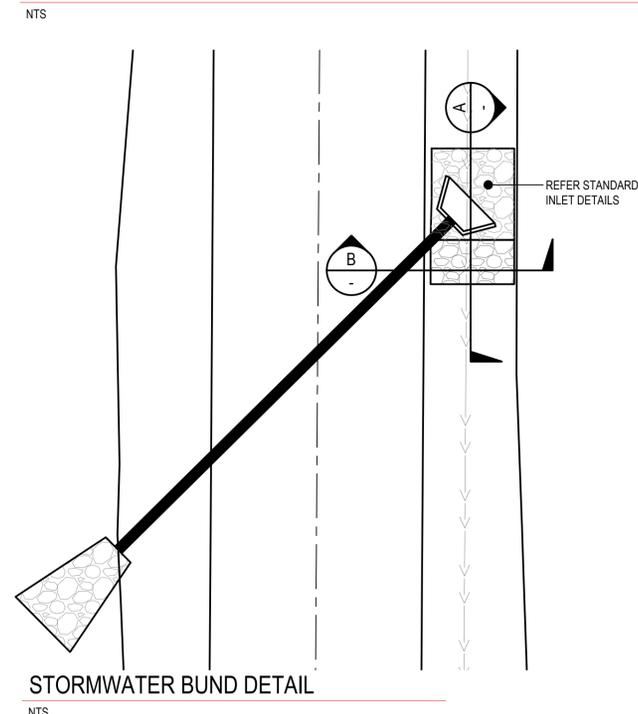
- DRAINAGE NOTES**
- THE USE OF FIBRE REINFORCED CONCRETE CULVERTS IS NOT APPROVED.
 - STORMPRO/BLACKMAX WITH AT MINIMUM 0.8m COVER REFER RCP TRENCH DETAILS. STORMPRO/BLACKMAX WITH LESS THAN 0.8m COVER REFER CONCRETE ENCASED TRENCH DETAILS.
 - RCP-CLASS 4 PIPES WITH LESS THAN 400mm COVER MUST BE CONCRETE ENCASED.

- GENERAL NOTES**
- ALL DIMENSIONS WITH DECIMALS ARE IN METRES. ALL THOSE WITHOUT ARE IN MILLIMETRES
 - BACKFILL SHALL BE COMPACTED TO 98% STANDARD MDD COMPACTED AT ± 3% OMC. PAVEMENT LAYERS SHALL BE AS PER TYPICAL ACCESS TRACK

TRENCH DIMENSIONS

PIPE SIZE	'X' MINIMUM
300 DIA	0.15m
375 DIA	0.175m
450 DIA	0.2m

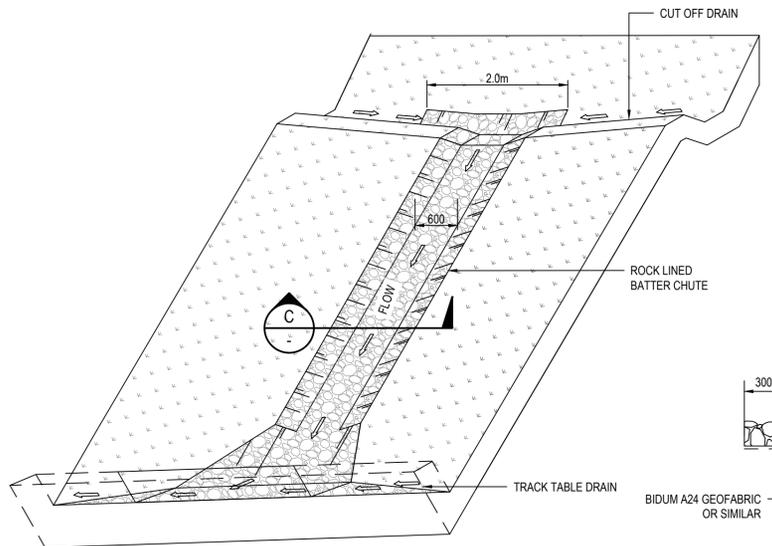
STORMWATER RCP CULVERT DETAIL - 0.4m TO 2.0m COVER



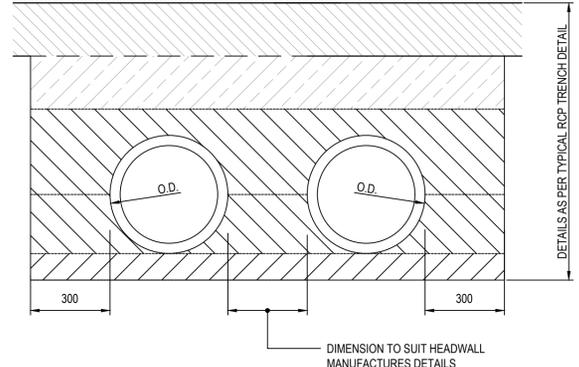
A STORMWATER BUND SECTION



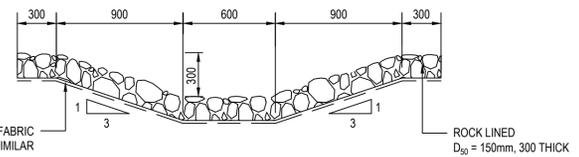
B STORMWATER BUND SECTION



BATTER CHUTE DETAIL



MULTI BARREL - RCP DETAIL



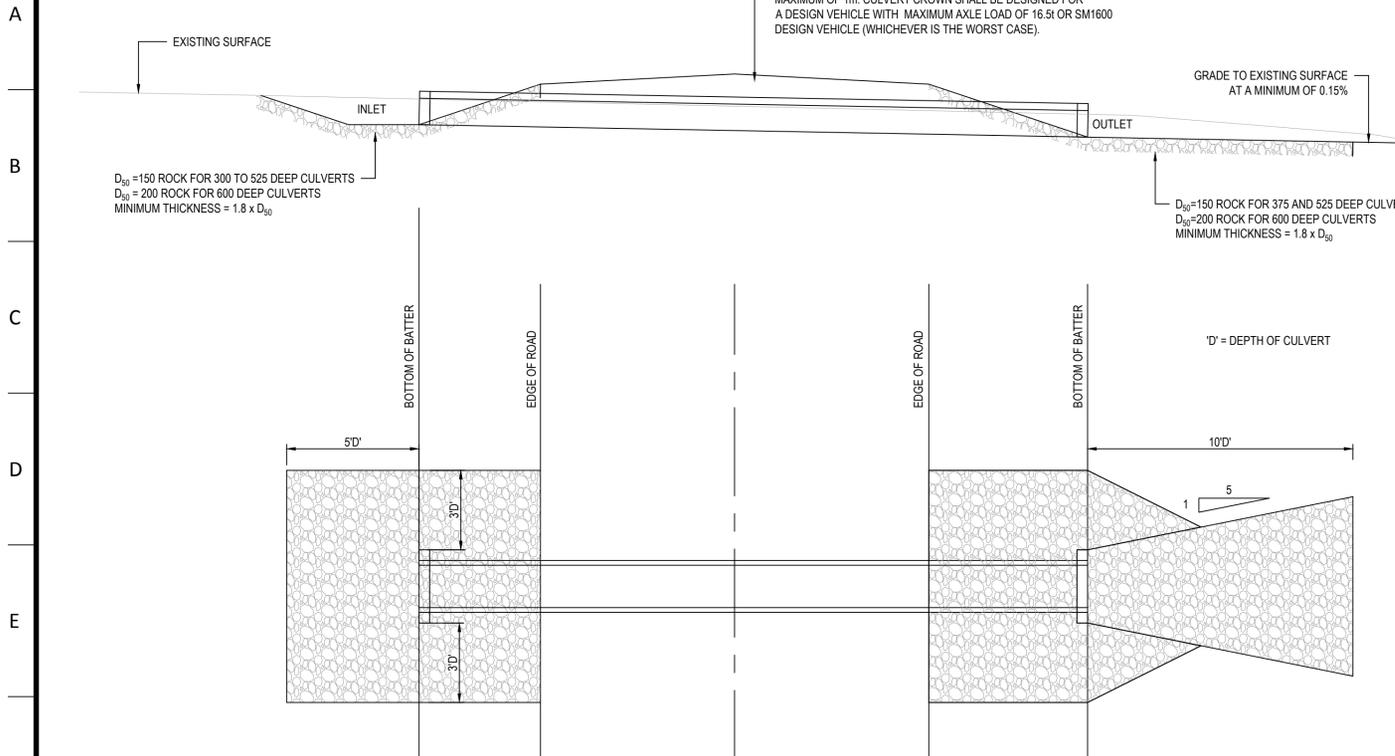
C BATTER CHUTE DETAIL

No	DESCRIPTION	L.K.	L.K.	B.P.	N.C.	DATE
DES	DRN	CHK	APP			
A	PRELIMINARY					04.08.22
REVISION HISTORY						

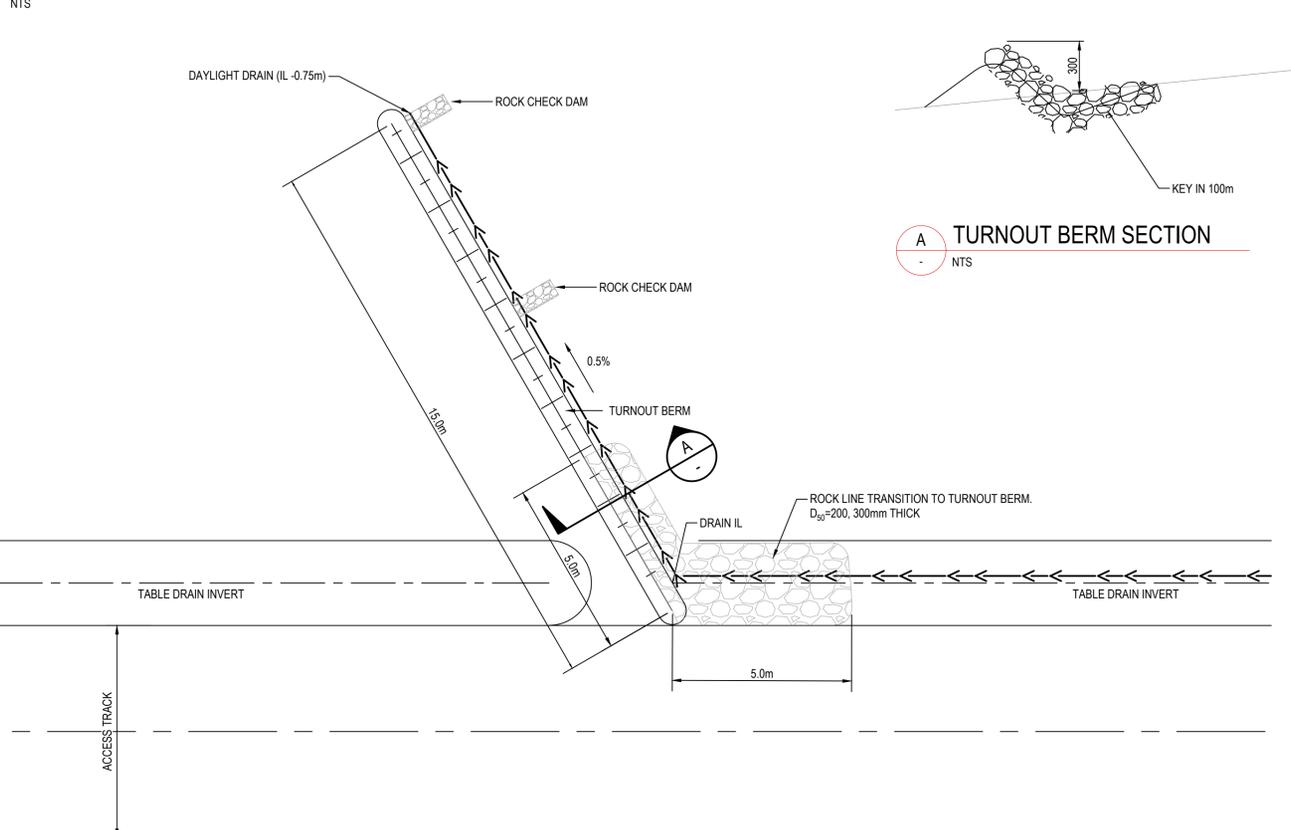
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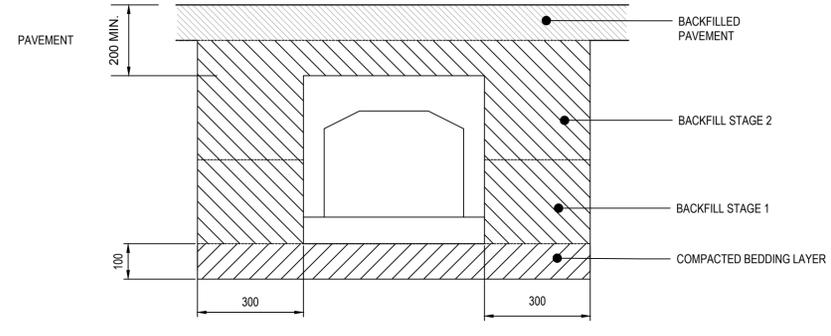
SIZE A1	SCALE AS SHOWN	PROJECT TYPICAL WIND FARM
STATUS PRELIMINARY NOT FOR CONSTRUCTION	TITLE TYPICAL STORMWATER DETAILS SHEET 1	
COORDINATE REFERENCE SYSTEM N/A	DRAWING No. 22-155-WF-TYP-007	REV A



STORMWATER RCBC CULVERT DETAIL

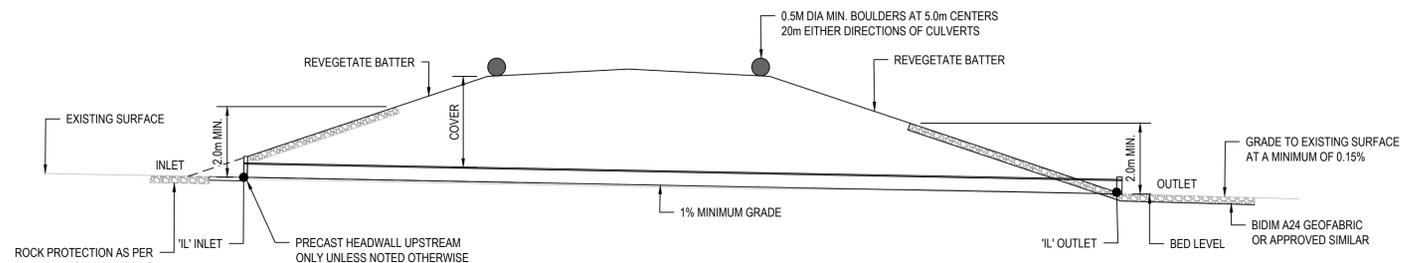


TURNOUT BERM TYPICAL DETAIL



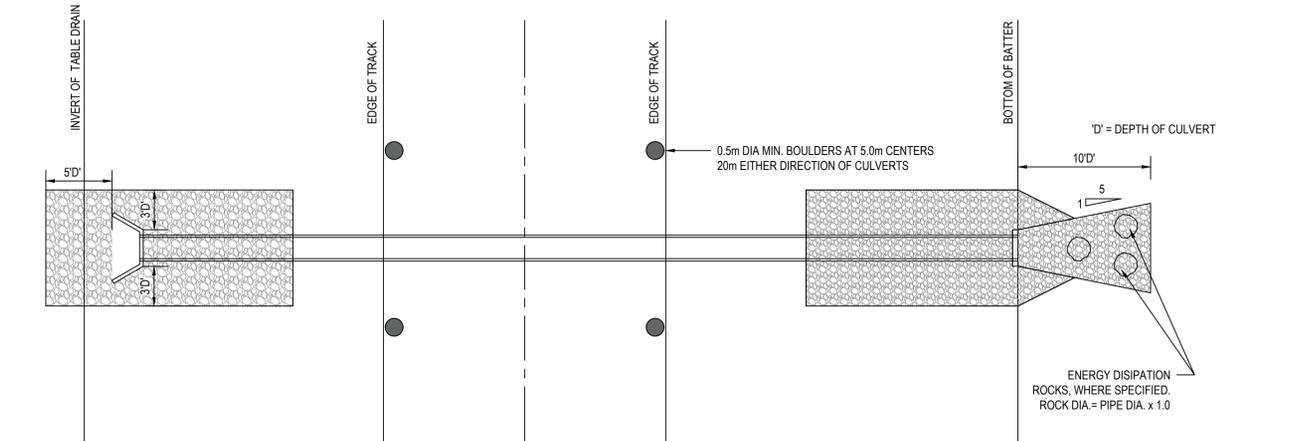
RCBC TRENCH DETAIL

NOTE: IF BOTTOM OF PAVEMENT IS ABOVE 100mm ABOVE THE TOP OF CULVERT, INCLUDE BACKFILL STAGE 3.



STORMWATER CULVERT DETAIL - 2.0m + COVER

NOTE: IF BOTTOM OF PAVEMENT IS ABOVE 100mm ABOVE THE TOP OF CULVERT, INCLUDE BACKFILL STAGE 3.



BEDDING LEGEND

- EVENLY GRADED BED, 20mm NOMINAL SIZE CLASS 2 FCR OR OTHER APPROVED BEDDING
- CLASS 3 FCR, 30mm NOMINAL SIZE OR OTHER APPROVED MATERIAL

GENERAL NOTES

- ALL DIMENSIONS WITH DECIMALS ARE IN METRES. ALL THOSE WITHOUT ARE IN MILLIMETRES
- BACKFILL SHALL BE COMPACTED TO 98% STANDARD MDD COMPACTED AT $\pm 3\%$ OMC. PAVEMENT LAYERS SHALL BE AS PER TYPICAL ACCESS TRACK

No	DESCRIPTION	DES	DRN	CHK	APP	DATE
A	PRELIMINARY	L.K.	L.K.	B.P.	N.C.	04.08.22
REVISION HISTORY						

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SIZE A1	SCALE AS SHOWN	PROJECT TYPICAL WIND FARM
STATUS PRELIMINARY NOT FOR CONSTRUCTION	TITLE TYPICAL STORMWATER DETAILS SHEET 2	
COORDINATE REFERENCE SYSTEM N/A	DRAWING No. 22-155-WF-TYP-008	REV A