Submission Guidelines

DEWA Digital Portal

Infrastructure Projects Services

Version: 4.2

CONTENTS

Our Vision

A globally leading sustainable innovative corporation

Our Mission

We are committed and aligned to Dubai's 8 Principles and 50-years charter supporting the UAE's directions through the delivery of global leading services and innovative energy solutions enriching lives and ensuring happiness of our stakeholders in a sustainable manner.

Our Motto

For Generations to Come

Our Values

- Stakeholders Happiness
- Sustainability
- Innovation
- Excellence
- Good Governance

INTRODUCTION

Infrastructure Information & Permits Department has updated Technical Services guideline to provide basic information for submission of various approval requests within R.O.W. for the following:

- Infrastructure Project Completion Certificate
- Infrastructure Project As-built Approval
- Material Sample & Specification Approval (HV Cable Diversion & Ducts)
- Estimate for HV Cable Diversion
- Bill of Quantity for DEWA-ED Betterment Ducts (RTA Projects Only)
- Electrical Sub Contractor Approval for cable diversion work
- Miscellaneous
- GIS Land Base Update

Infrastructure projects specifications are as follows:

- Road Projects
- Utilities Network Projects
- General Projects

DIRECTORY OF SERVICES

SERVICE OWNER

The custodian of this service is Infrastructure Information & Permits Department – Technical Services & Coordination section.

OFFICE WORKING HOURS

Sunday to Thursday: 08:00 AM to 02:00 PM

SERVICE SUBMISSION CHANNELS

This document includes contact details for better communication with Technical Service & Coordination Staff.

The applications can be submitted online through the following link DEWA Portal

https://crm.dewa.gov.ae/irj/portal/anonymous

SERVICES LOCATION

- **DEWA WARSAN COMPLEX LOCATION:**
  - Coordinates DLTM:
    - E: 510197
    - N: 2782326
  - WGS84 – LONGITUDE & LATITUDE
    - E: 55° 26' 4"
    - N: 25° 8' 48"

- **DEWA AL HUDAIBA LOCATION:**
  - Coordinates DLTM:
    - E: 494784
    - N: 2793118
  - WGS84 – LONGITUDE & LATITUDE
    - E: 55°16'54"
    - N: 25°14'40"

SERVICES COMMUNICATION

The Customer can communicate with Infrastructure Information & Permits Department to avail the Technical Services at Customer Service Center NOC – Ground Floor at DEWA Warsan Complex as per the following details:

- General Inquiry: 04-3221614 OR 04-3221280
- E-Mail: tp.ii&p@dewa.gov.ae

TYPE OF TECHNICAL SERVICES

TECHNICAL SERVICES & COORDINATION section are provided to its valued customers the following services:

- Infrastructure Project Completion Certificate
- Infrastructure Project As-built Approval
- Material Sample & Specification Approval (HV Cable Diversion & Ducts)
- Estimate for HV Cable Diversion
- Bill of Quantity for DEWA future Ducts
- Electrical Sub Contractor Approval for cable diversion work
- GIS Landbase Update
- Miscellaneous

TECHNICAL SERVICES & COORDINATION'S PRINCIPLES

INFRASTRUCTURE INFORMATION & PERMITS DEPARTMENT highlight the following TECHNICAL SERVICES & COORDINATION principles to customers for their full adherence and strict compliance wherever applicable in order to facilitate a smooth and fast approval process.

- The sample drawings are indicative, no referral made against sample drawings.
- Duplicating / copying DEWA's stamp or malpractice the approved DEWA drawings will lead to legal actions as per law number 6/2015.
- If the scope of work has changed from the initial submission a new approval should be acquired from INFRASTRUCTURE INFORMATION & PERMITS DEPARTMENT.
- All customers are hereby instructed to submit project as built drawing and obtain a completion certificate to avoid to be blacklisted by DEWA in the future.
- If the main contractor will be intended to sublet the DEWA related work, then the approval of the same sub-contractor is necessary prior to start the work.
- All the customers should complete DEWA requirements prior submission of any application in line to avoid the rejection of the required application.

APPLICATION TYPE VS APPLICANT TYPES

TS&C APPLICATION TYPES	APPLICANT TYPES			
	Client / Developer	Consultant	Contractor	Sub-Contractor
BOQ (Betterment Work)DEWA Future Ducts (RTA Projects only)	✓	✓	✗	✗
Estimate (HV Cable Diversion)	✓	✓	✗	✗
Electrical Sub Contractor Approval (Cable Diversion Works)	✓	✓	✗	✗
Material Sample Approval (HV Cable Diversion, Future Ducts & Betterment Works)	✓	✓	✗	✗
Material Specification Approval (HV Cable Diversion, Future Ducts & Betterment Work)	✓	✓	✗	✗
Infrastructure Project As-built Approval	✓	✓	✗	✗
Completion Certificate	✗	✗	✓	✓
Miscellaneous	✓	✓	✓	✓
GIS Land Base Update	✓	✓	✗	✗

Note: If any application will be submitted other than, which is mentioned above will be rejected.

INFRASTRUCTURE PROJECTS CLASSIFICATION

General Projects

Network Services

Road Projects

Submission Requirements For Completion Certificate & As Built Approval

Service Type	Completion Certificate (FINAL CLEARANCE)/As Built Approval	
Project Type	All Projects	
S.No.	Submission Requirements	
1.	Covering Letter Addressed to Senior Manager – Infrastructure Information & Permits (II&P) Department.	
2.	Copy of DEWA(ED) approved as built drawing. (PDF Format if available) (For Completion Certificate Application only).	
3.	Full set of DEWA(ED) approved shop drawing NOC for ED -Ducts / Cable Diversions along with NOC letter (PDF Format)	
4.	Full set of DEWA(WD) approved shop drawing NOC for Water Network Diversions / protection works along with NOC letter as per scope of work. (PDF Format) (For Completion Certificate Application only).	
5.	Full set of DEWA (ED & WD) construction NOC along with NOC letter (PDF Format)	
6.	Key plan showing the full project area (For Completion Certificate Application only).	
7.	Project As Built Drawing incorporating DEWA services approved by project consultant & contractor as follows :	
	7.1	As Built Drawing of DEWA (ED) Distribution Services (LV & HV Services) showing completed future ducts & extension of the existing, spare & split ducts in different color with duct details. (V7 / DWG & PDF Format) (For Detailed Information “As Built Approval / Completion Certificate (All Duct Works)”
	7.2	As-Built drawings for (6.6kv, 11kv, 33kv) cable diversion work prior approved by DEWA DPP-Road Projects. (PDF Format) (For Detailed Information “As Built Approval / Completion Certificate (All Cable Works & All Joint Works)”
	7.3	As built drawings should be Incorporated the existing 132KV /400kv cables & O.H.L Services cable routes, along with TLP staff verification to confirm the clearance between existing 132KV trough/cable & 400kv cables / O.H.L Services to finish work and 132KV/400 KV cable route marker location in the project completed area. (For Detailed Information “As Built Approval / Completion Certificate (Cable Works & OHL Works)” (Verification should not exceed 6 months old)

	7.4	As Built Water layout drawing, profile & cross section acknowledged by DEWA Project & Engineering Water Department. (For Completion Certificate Application only).
8.	The following to be provided whatever is applicable: 1. For RTA Road projects, As Built cross section showing clearly DEWA reservation and type of construction on top of DEWA corridor according to the site condition and approved by RTA. (PDF Format) 2. For Developer Road projects, As Built cross section showing clearly DEWA reservation and type of construction on top of DEWA corridor according to the site condition and approved by the Consultant and contractor. (PDF Format) 3. For Services Projects, As Built cross section showing clearly DEWA reservation and type of construction on top of DEWA corridor according to the site condition and approved by the client. (PDF Format)	
9.	Material Reconciliation Statement (MRS) as per DEWA standard format for cable & Betterment ducts (PDF Format) along with the following documents (For Completion Certificate Application only): • DEWA store issued voucher/store return. • Material transfer note if any.	
10.	Final Duct summary details for DEWA (ED) Betterment Work only as per DEWA standard format signed and stamped by project consultant and contractor. (PDF Format)	
11.	DEWA Approval letter of material if procured from outside.	
12.	Copy of DEWA-ED Approved BOQ for Betterment Work. (Applicable to RTA Projects only)	
13.	Final actual Cost BOQ for DEWA (ED) betterment work acknowledged by RTA. (Applicable to RTA Projects only) (For Completion Certificate Application only).	
14.	Duct & Duct Marker inspection record singed by DEWA (ED.) representative for the future proposed, spare, split and extension Ducts.	
15.	CSV files as per DEWA digital submission standard.	
16.	DEWA Water Department checklist clearance acknowledged by DEWA Water Project. (For Completion Certificate Application only).	
17.	Cable backfilling checklist for 6.6KV, 11KV & 33KV slewing, raising and lowering work. (If Applicable).	

Submission Requirements

For

Betterment Work

RTA Projects Only

Service Type	BOQ Approval (Betterment Work) for RTA Projects Only
Project Type	Road Projects
S.No.	Submission Requirements
1.	Covering Letter Addressed to Senior Manager – Infrastructure Information & Permits (II&P) Department.
2.	Full set of DEWA Approved Final Design NOC & Construction NOC (if issued) along with NOC letters. (PDF Format)
3.	DEWA (ED) Proposed Ducts layout drawing. (PDF & DWG/V7 Format)
4.	Bill of Quantity for DEWA (ED) betterment works signed and stamped by the contractor & Consultant and same should be acknowledged by RTA in PDF format and should be as per the followings: • Collect & lay BOQ (material will be provided by DEWA). • If supply & lay BOQ (will be procured by the contractor) is in your contract, then submit as follows both option of BOQ for DEWA approval: ○ Supply & Lay BOQ ○ Collect & Lay BOQ.
5.	Duct Summary Details for DEWA (ED) proposed Ducts Only as per DEWA format signed and stamped by the contractor & Consultant. (PDF Format)
6.	CSV File for the proposed ducts as per DEWA standard digital requirements.
7.	RTA Approved Cross Section along with cross section marker layout.
8.	Full Project Layout showing all proposed ducts in PDF with high resolution in one sheet.
9.	Work program for collection of material (ducts) should be signed and stamped by the contractor and consultant.

Submission Requirements

For

Estimate

HV Cable Diversions within ROW

Service Type	Estimate for HV Cable Diversion within ROW
Project Type	Infrastructure Projects
S.No.	Submission Requirements
1.	Covering Letter indicating the Type & Quantity of Materials, Addressed to Senior Manager – Infrastructure Information & Permits (II&P) Department along with confirmation of that "The Type of cables which have been approved in the shop drawing are accurate and matching with site condition, otherwise DEWA will not be accountable for any mistake".
2.	DEWA approved Shop Drawing NOC Shows the proposed & existing Cable Diversion & Joints details with clear legend along with the following details: (PDF Format)
3.	Full set of DEWA Approved Construction NOC along with NOC letter. (PDF Format)
4.	Proposed Work Program for cable diversion work signed & stamped by the Sub Contractor, Contractor & Consultant. (PDF Format)
5.	DEWA Sub-Contractor Approval of diversion work for the project (33kv, 11kv & LV). (PDF Format)
6.	DEWA material approval if planned to procure from outside of DEWA. (PDF Format)
7.	Full Name of customer who is going to pay the Estimate along with DEWA Business Partner Number & contract account number.
8.	Trench Detail showing the numbers of cables with length of each trench signed and stamped by Sub Contractor, consultant & contractor. (PDF Format)
9.	Cable summary details as per DEWA standard stamped and signed by Sub Contractor, Consultant & Contractor.
10.	For RTA projects, in case cables Not procured from DEWA, Manufacturer's Invoice of procured Cable should attach.
11.	For RTA projects, in case the material will be procured from DEWA, No Objection Letter from RTA should attach.

Submission Requirements

For

Material Sample & Specification Approval

HV Cable Diversions & Ducts

Service Type	Material Sample & Specification Approval (HV Cable Diversion & Ducts)	
Project Type	Infrastructure Projects	
S.No.	Submission Requirements	
1.	Covering letter from consultant mentioned the purpose of requesting the material, Addressing to Senior Manager – Infrastructure Information & Permits (II&P) Department.	
2.	Consultant approved Material Submittal Form.	
3.	Relevant Material Specification must be as per DEWA standard.	
4.	The required Specification (6.6kv, 11kv & 33kv Material) which should state in Consultant / Contractor submittal as follows:	
	4.1	The following details of UPVC pipe duct should be mentioned: 1-Size 2-Pipe Standard (British standard) 3-Class 4-Colour 5-wall thickness of the pipes 6- Markings should be on both sides and Purpose of uses to be clarify (DEWA Betterment; Spare, Split, Extension ducts, or Diversion works)
	4.2	The following details of HDPE pipe duct should be mentioned: 1. SDR 2. PN 3. PE 4. Pipe Diameter 5. Color 6. wall thickness of the pipes and proposed drilling length to be clarify.
	4.3	Aluminum / Concrete Duct Marker – As per DEWA Standard, and Section view of product drawing to be submitted and approved by the project Consultant, Contractor and Manufacturer.

	4.4	The following details of Warning Tape / Cable Protection Tiles should be mentioned: 1. Lot Number 2. Year of Manufacture 3. Color 4. Width 5. Thickness and Purposed Works to be clarified (Cable Diversion, New Laying or Road Crossing Duct) (if for cables diversion, kindly confirm the cables will be procured by your contractor or supply by DEWA according to your project BOQ)
	4.5	The following detail of Nylon Draw Rope should be mentioned: 1-Size 2-Colour 3-Weight 4-Minimum Breaking Load
	4.6	The following detail of Cable, Joint & Termination should be provided: 1- Technical submittals in DEWA Format Schedule "C". 2- Type Test Reports (not more than 5 years old). 3- Cable Cross Section Detailed drawing. 4- Estimated Quantity of above item to be utilized for the project. 5- Sample of Joint & Termination will be forwarded to T&E D at DEWA Al Hudaiba Office directly.
5.	The Manufacturer of 6.6kv, 11kv & 33kv Materials must be under DEWA approved list.	
6.	Material Specification of 132kv Proposed, Future & Protection works and suppliers/manufactures must be as per TED DEWA approved List.	
7.	Material Sample if requested by DEWA, it should be forwarded to T&ED / DPE at DEWA Al Hudaiba Office directly.	
8.	• Full set of DEWA (ED) construction NOC along with NOC letter (PDF Format). • DEWA(ED) approved shop drawing NOC (if the material related to HV Diversions works) along with NOC letter (PDF Format). • DEWA(ED) approved construction NOC for NDRC/HDD (for HDPE Pipe Material) along with NOC letter (PDF Format).	
9.	Clear photographs of material showing marking of manufacturer and DEWA's required details.	

Submission Requirements
For
Subcontractor Prequalification Approval for Cable Diversions under Infrastructure Projects Within ROW

Service Type	Sub-Contractor Prequalification Approval (HV 6.6, 11 & 33KV Cable Diversion works)
Project Type	All Projects
S.No.	Submission Requirements
1.	Covering letter mentioned the scope of work, Addressed to Senior Manager – Infrastructure Information & Permits (II&P) Department.
2.	The purpose and Scope of Work to be clarified (Diversion, slewing, new laying, protection .... etc.)
3.	Proposed Electrical Voltage of cable to be clarified (6.6kv, 11kv, 33kv or 132kv).
4.	Full set of DEWA Construction NOC issued to the project along with NOC letter. (Proposed Works to be highlighted on the drawing)
5.	Prequalification documents with the following valid documents. • Trade License • Commercial License • Key Personal CVs • Jointers IDs • List Issued by MOL (UAE Ministry of Labor) • Previous DEWA's approval if available

Submission Requirements

For

GIS Landbase Update

Service Type	GIS Land base update (CSD, DM plots and Customer Request)
Project Type	All Projects
S.No.	Submission Requirements
1.	Covering letter mentioned the scope of work, Addressed to Senior Manager – Infrastructure Information & Permits (II&P) Department.
2.	Approved Site plan or Affection plan in PDF format.
3.	Land base (Parcels, Road Layout and X-Sections) files should be as follows: • All submitted files should be in DWG/DXF/DGN/SHP formats only. • Coordinate system should be DLTM (Dubai Local Transverse Mercator) projection only. • Parcels, road layouts and cross sections data should be prepared in different levels or layers and free from topological errors. • All the submitted drawings should be free from any kind of external references link. • All submitted files should be in AutoCAD 2010 version or Microstation V7 format only.

DEWA SUBMISSION'S STANDARDS

DEWA's standard Details of Ducts in As Built Drawings

DEWA's standard Details of Ducts in As Built Drawings	
Project Type	**Road Works**
S. No.	**Specific Submission Requirements**
1.	Number of Way layers, length & coordinates.
2.	As-laid cross section of ducts.
3.	Type of duct (road cutting / drilling).
4.	Spare, Split & Extended ducts details in different color.
5.	NOC / Clarification – if proposed installed duct utilized before hand over to DEWA.
6.	Depth of ducts.

DEWA's standard Details of HV Diverted Cables in As Built

DEWA's standard Details of HV Diverted Cables in As Built Drawings	
Project Type	**ALL PROJECTS**
S. No.	**Specific Submission Requirements**
1.	Cable contract no & cable joint manufacture name & supplier contact no.
2.	Date of Cable laid.
3.	The followings should be shown in the Table: • Cable length, • Cable Type & Size, • Cable circuit name, • No. of joints, • Shutdown date
4.	No. of Cables.
5.	Bend Coordinate shown in the As built drawings.
6.	Offset Distance shown in the As built drawings (Building line / ROW)
7.	Distance between cables center to center.
8.	New laid cable Start, End, Diverted, Cancelled Cable, Bend & Corner Point Coordinates.
9.	Corridor cross section, Duct utilized & Cable laying cross section.
10.	Jointer Name & Jointing Date
11.	Joint Coordinate
12.	Supply Contract number
13.	Joint Type (Heat/Cold Shrinkable/Compound Filled/XLPE .....etc.)

DEWA's standard Details of 132KV/400KV Underground Cables in As Built Drawings

DEWA's standard Details of 132KV/400KV Underground Cables in As Built Drawings	
Project Type	**ALL PROJECTS**
S. No.	**Specific Submission Requirements**
1.	As built drawing submitted in scale (1:1000) incorporating the Existing 132/400kV cable/OHL route, circuit names, cable joint/link box location, clearance from the proposed road edge to the cable/trough edge, OHL Horizontal and vertical clearance from the proposed road, Horizontal clearance from the tower foundation to the road edge.
2.	Clearance details from the proposed bridge, ramp, and sidewall of ramp, bridge pillar/pier, and underpass to the existing 132/400 kV cable and crossing details, cable protection details to be submitted.
3.	Details of OHL tower protection (crash barrier) Height limit gantry, fencing details, access from the proposed road to the OHL corridor (If the proposed road is close/crossing to the OHL corridor).
4.	Access to the substation to be shown to the drawing (If the proposed road close to the substation.
5.	If the proposed road is over the existing 132 kV cable/trough, Length of the cable protection, spare duct details with ends coordinates to be shown to the drawing.
6.	The proposed road/road widening over the existing duct bank, edge of the proposed road to the existing cable duct bank edge to be shown. If the duct bank is extended details and ends coordinates to be provided.
7.	If the Proposed road edge is close to the cable joint/link box locations, 4 corners coordinates of the joint box, Horizontal clearance from the joint/link box to the road edge to be shown to the drawing.
8.	If any utility services / diversions included in the proposed roadwork contract, horizontal & vertical clearance details of the services, (Water, Drainage, storm water, Irrigation pipelines

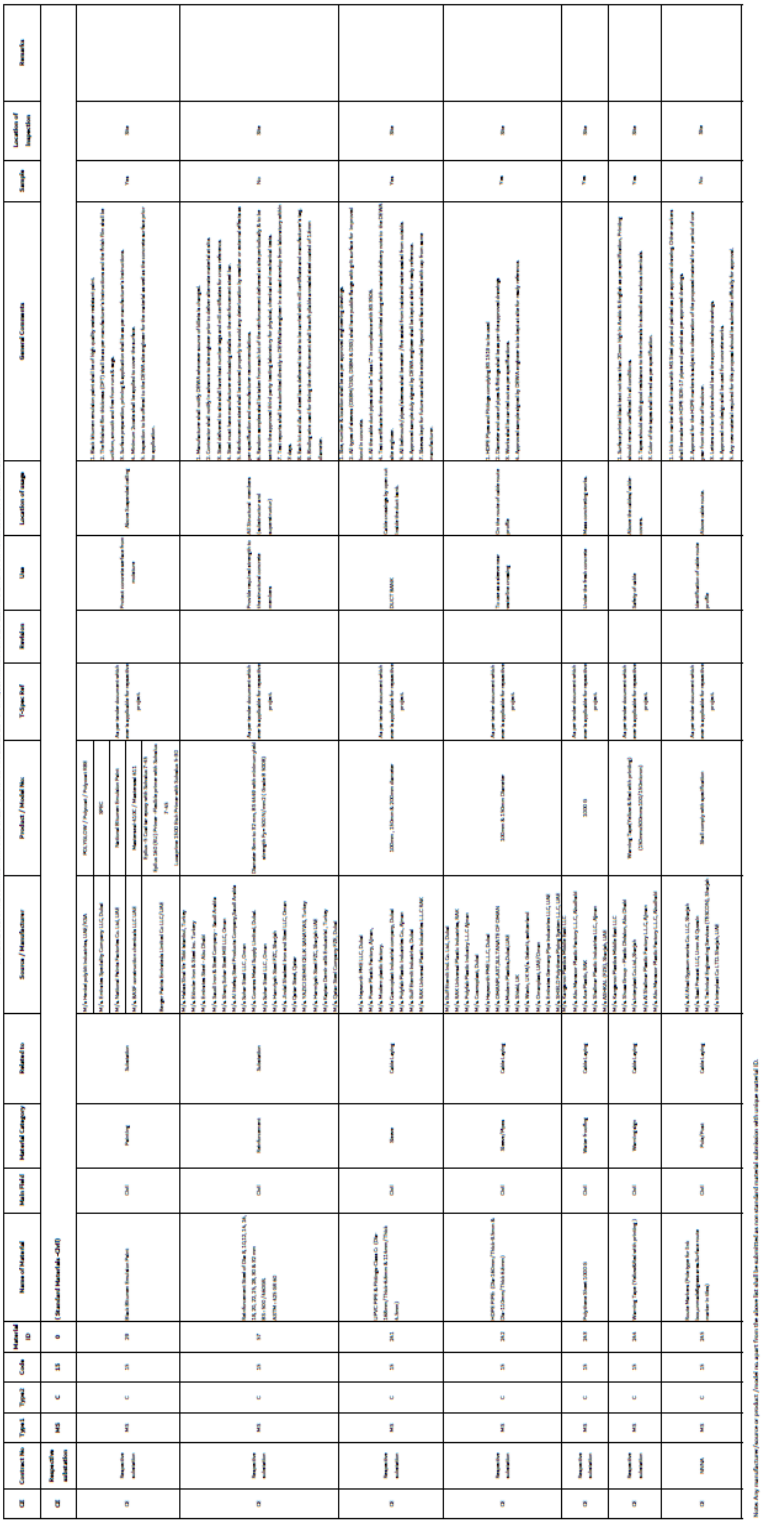
	Etc., Etisalat duct, Electricity HV and LV) Crossing details, Protection details to be submitted.
9.	If any landscaping work included under the road project within the vicinity of the existing 132/400 kV cable and OHL services those details to be submitted.
10.	Clearance from the road signal post, street light poles to the existing 132/400 kV cable and OHL to be provided.
11.	If the 132 kV Cable diversions/OHL raising included under the road contract, Separate As built drawing to be submitted as per DEWA standard. (Refer to General Requirements).
12.	The contractor and the consultant make sure that back filling works over the existing cable route where the construction related works carried out over/within the vicinity of the 132/400 kV cable and OHL area and route markers displaced/removed/damaged during the work execution are replaced. (If any).
13.	If the existing link box level is below the proposed road /landscaping level, the existing link box to be lifted above the proposed road/landscaping level and protected with suitable protection in order to avoid water stagnation around/inside the link box area.
14.	Joint site inspection from TLM personnel may be required to confirm the above details provided.

DEWA's standard Details of 132KV/400KV OHL in As Built Drawings

DEWA's standard Details of 132KV/400KV OHL in As Built Drawings	
Project Type	**ALL PROJECTS**
S. No.	**Specific Submission Requirements**
1.	Clearance from the boundary line /ROW/ Road edge to the cable diversion to be marked on the drawing.
2.	Cross section details of services crossing i.e. mainly for water and other pressure pipe line crossings, Existing 132 KV cable crossing, Road crossing etc...
3.	Detailed cross section for 132KV cable corridor.
4.	Duct bank/Drilling portion including length and GPS coordinates.
5.	Directional Drilling profile details with GPS coordinates.
6.	Cable schedule showing the section wise route length.
7.	Pilot /F.O cable joint location marked with GPS coordinates and detailed section.
8.	Cable route layout inside the substation (if any).
9.	Updated substation layout showing new 132 KV cable route along with existing provided (If any).
10.	Single line drawing showing cable in duct bank area/ protection with Inter lock tile/Directly buried area.
11.	Cable diversion contract No., Cable manufacture name, Cable test report, Data of cable laid, Cable type and size, No. Of cables, Cable Warranty, Distance between cable center to center and cable circuit Name.
12.	**Cable joint details** I.e. Coordinates (Four corners, DLTM), Joint type, Jointer name and date, Joint Manufacture name.
13.	**Spare Duct details**. Duct coordinates, No. Of ways/layers, Duct inspection checklist (Signed by DEWA Inspector), Type of duct (road cutting/drilling), Extended duct/split duct details (If any). (Refer to

14.	Type of proposed OHL Tower, Test report, Technical specifications, Plan, Elevation, Cross section of the tower with dimensions, insulator and other used component for the proposed tower to be provided.
15.	Profile drawings including the nearest existing OHL to the proposed OHL's to be submitted.
16.	Horizontal clearance from the proposed road edge to the proposed tower foundation / tower protection barrier edge to be provided.
17.	Vertical clearance details from the proposed road level to the lowest OHL conductor (After raising the tower) to be provided.
18.	Existing and proposed Tower Nos., distance between either sides of the existing towers to the proposed the tower(s), to be provided.
19.	Access road to the proposed tower location to be provided.

TED DEWA Approved List



Civil Materials - Cable Projects.pdf

ISSUED DUCT MATERIAL MEASUREMENT SHEET FOR RECONCILIATION STATEMENT FOR DEWA (ED)

DETAILED MEASUREMENT SHEET

STANDARD FORMAT FOR DEWA ED MATERIAL RECONCILIATION STATEMENT

Contract No.: _____ **Consultant :** _____

Project Name : _____ **Contractor :** _____

Date:

Sr. No. of Duct	As Built Sheet No.	DEWA (ED) NOC Sheet NO.	Road No.	Chainage	DEWA Requirement as per NOC	Actual No. of Laid At Site	Length (m)	Total Length (m)	No. of Ducts Laid in Top Layer	Length of Warning Tape Used	Length of Nylon Rope Used	No. of End Cap Used
A	B	C	D	E	F	G	H	I = G X H	J	K = JX H	L=G X (H+3)	M = G X 2
								-		-	-	-
								-		-	-	-
								-		-	-	-
								-		-	-	-
								-		-	-	-
								-		-	-	-
								-		-	-	-
								-		-	-	-
								-		-	-	-
								-		-	-	-
								-		-	-	-
								-		-	-	-

NOTE:

F Add 3% wastage for uPVC pipes only.

F Clarification of ducts that are not laid as per DEWA NOC requirement shall be submitted separately through consultant.

F Materials for spare, split, extended ducts shall not be added in DEWA material reconciliation statement.

Contractor's Signature & Stamp ***Consultant's Signature & Stamp***

SUMMARY OF MATERIAL RECONCILIATION STATEMENT

STANDARD FORMAT FOR DEWA ED MATERIAL RECONCILIATION STATEMENT

Contract No.: _____ **Consultant :** _____

Project Name : _____ **Contractor :** _____

Date:

Sr. No.	Item Description	Unit	Total Quantity issued by DEWA	Total Quantity used at Site	Material Already Returned	Total Used & Returned Material	Balance to be Returned to DEWA	DEWA to issue Excess Used	Remarks
			A	B	C	D=B+C	E=A-D	F=D-A	
1	150mm dia uPVC Pipe Class C	Mtrs				-	-	-	
2	150mm dia uPVC End Cap	Nos				-	-	-	
3	Nylon Rope	Yards				-	-	-	
4	Tape Allen Marking	Rolls				-	-	-	

Contractor's Signature & Stamp ***Consultant's Signature & Stamp***

ISSUED CABLES & JOINTS MATERIAL

RECONCILIATION STATEMENT FOR DEWA (ED)

STANDARD FORMAT FOR DEWA ED MATERIAL RECONCILIATION STATEMENT FOR CABLES & JOINTS

Project _____ JOB NO. _____ Date: _____

GI/SIV No.	CABLES					11 KV JOINTS				FERRUL	33 KV JOINTS			TILE		TAPE
	11KV 240/CU	11KV 300/CU	11KV AL	33 KV	PILOT	ST/CU	ST/AL	TRNS	I/T		33KV ST.	33KV TRNS	PILOT	200MM	150MM	
TOTAL RECEIVED																
TOTAL UTILIZED AT SITE & AS IN AS BUILT																
BALANCE/ RETURNED TO DEWA STORE																

Consultant's Signature & Stamp

Electrical Contractor's Signature & Stamp

DETAILED MEASUREMENT SHEET

STANDARD FORMAT FOR DEWA ED DUCTS MATERIAL RECONCILIATION STATEMENT

Contract No.: _____ **Consultant :** _____

Project Name : _____ **Contractor :** _____

DETAILS OF MATERIALS COLLECTED FROM DEWA STORES

Date:

S.NO.	Material Requisition (MRQ) No.	Store Issue Voucher SIV No.	Date	6 Meter Pipes (Nos).	3 Meter Pipes (Nos).	End Caps (Nos.)	Nylon Ropes (Yards)	Warning Tapes (Rolls)	Remarks
TOTAL									
TOTAL in Running meters =				-	-				

Contractor's Signature & Stamp

Consultant's Signature & Stamp

DUCT SUMMARY FOR PROPOSED DEWA (ED) BETTERMENT WORKS

DETAILED MEASUREMENT SHEET

STANDARD FORMAT FOR DEWA-ED PROPOSED DUCTS DETAILS

BETTERMENT WORK APPROVAL

Contract No: Consultant :

Project Name : Contractor :

No. of Ways	NOC Drawing No.	Duct Location No.	Proposed Road Crossing Length in	Total Length of Duct in L.M	Total No. of End Cap	X1 Coordinates	Y1 Coordinates	X2 Coordinates	Y2 Coordinates
2 way LV	UED - 1	1	10.00	20.00	4				
2 way HV	UED - 6	2		-	4				
2 way LV	UED - 7	3		-	4				
2 way HV	UED - 7	4		-	4				
2 way LV	UED - 7	7		-	4				
	(A) Total Of 2W		10.00	20.00	20				
4 way LV	UED - 1	1	10.00	40.00	8				
4 way HV	UED - 3	2		-	8				
4 way LV	UED - 5	3		-	8				
4 way HV	UED - 7	4		-	8				
4 way LV	UED - 7	7		-	8				
	(B) Total Of 4W		10.00	40.00	40				
6 way HV	UED - 1	8	10.00	60.00	12				
6 way HV	UED - 3	9		-	12				
6 way HV	UED - 3	10		-	12				
6 way HV	UED - 4	11		-	12				
6 way HV	UED - 6	14		-	12				
	(C) Total Of 6W		10.00	60.00	60				
	Grand Total Of A+B+C		30.00	120.00	120				

SUMMARY OF BETTERMENT WORK

Description	Total Proposed Road Crossing	Total Length of Duct	Total No. of End Cap
Total 2Way =	10.00	20.00	20
Total 4Way =	10.00	40.00	40
Total 6Way =	10.00	60.00	60
GRAND TOTAL =	30.00	120.00	120

Consultant's Signature & Stamp

Contractor's Signature & Stamp

DUCTS & DUCTS MARKER INSPECTION RECORD FOR DEWA (ED) WORKS

DISTRIBUTION PROJECTS PLANNING DEPARTMENT - ROAD PROJECTS

DUCTS & MARKER INSPECTION RECORD

Project Name: ______________________________ **Date:** ______________

Location: ______________________________

Consultant: ______________________________ **Contractor** ______________________________

S.No.	Drg. Sheet No.	No. of Ducts as NOC	Road No.	Duct Location No.	Chainage	No. of Ducts As Laid	Duct Length (m)	End Cap (Yes/No)	Rope (Yes/No)	Duct Markers (Yes/No)	Type of Ducts*	Remarks

Inspected by: ....

(DEWA-ED Representative's Name & Designation (Signature)

Witnessed by: ....

(Contractor's Representative's Name & Designation (Signature)

Verified by: (AE/E) ....

(Signature)

Spare / Betterment / Extension / Split / Slewing ducts

DEWA HV CABLES DIVERSION DETAILS

Project No.: _____ Project Name: _____

Client: _____ Consultant: _____

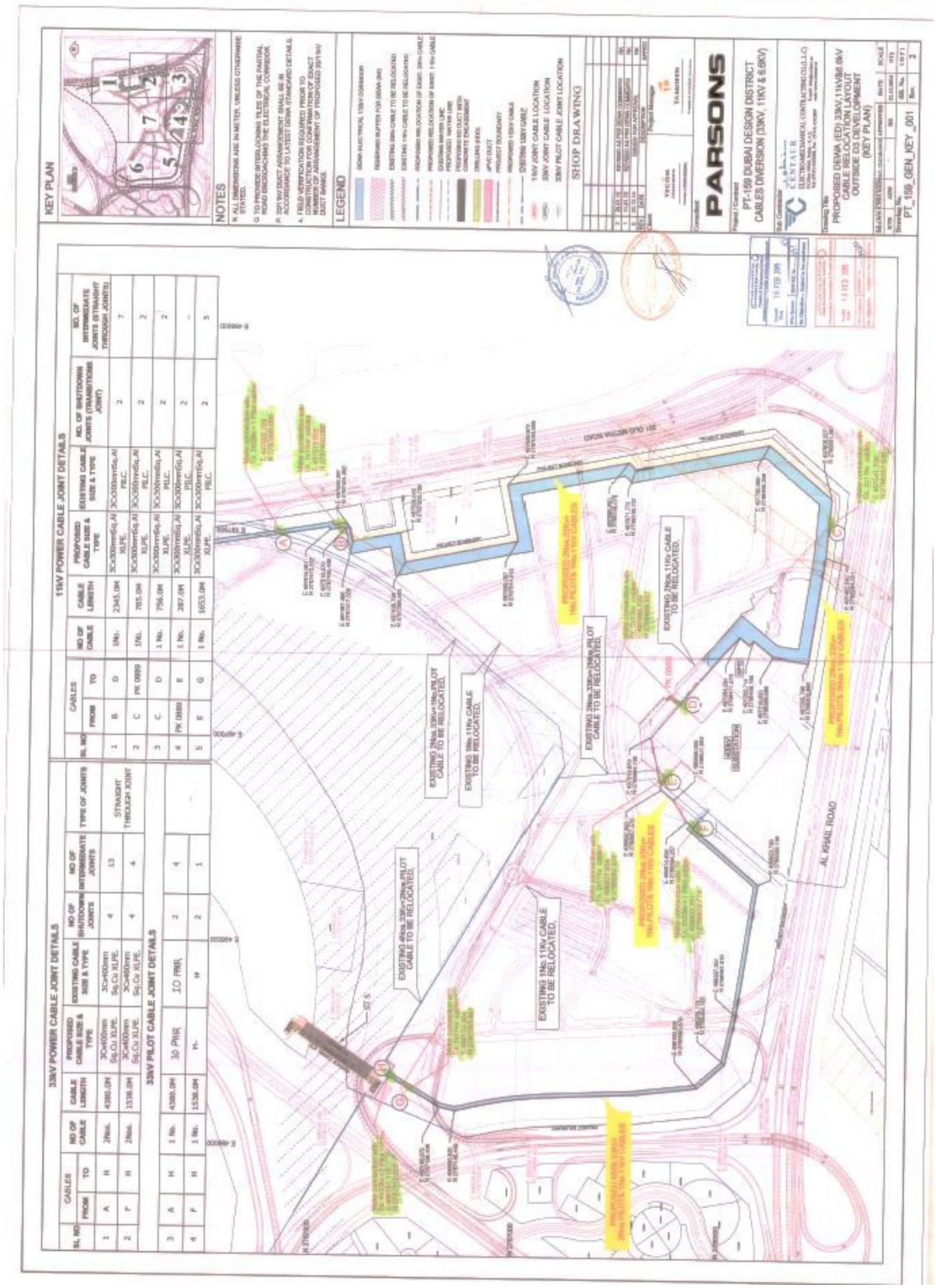
Contractor: _____ Sub-Contractor (If any): _____

Sr. No.	Circuit ID (As Per Shop Drawing)	Drawing Sheet No.	Existing Cable Data				Proposed (New) Cable Data						Joints (If any)				Remarks
			Size & Type	Voltage	Length (m)	Manufactured Year	Size & Type	Voltage	Length (m)	Type of Cable Work (Slewing/Diversion)	Cable Protection Tiles	Warning Tape	Straight	Transition	Termination	33kv Pilot Cable Joint	
1	C1-C2		240mm2 AL 11kv Cable	6.6 KV	288.32	1999	240mm2 AL 11kv Cable	11 KV	300	Diversion	300	300	1	0	0	0	Joint will be done by Sub-contractor
2	C3-C4		Cu. 300mm2 XLPE 33kv Cable	33 KV	345.5	2011	Cu. 300mm2 XLPE 33kv Cable	33 KV	400	Slewing	400	400	0	0	0	0	Joint will be done by Sub-contractor
3	C5-C6		10 Pair Pilot Cable for 33kv Cable	33 KV	450	2013	10 Pair Pilot Cable for 33kv Cable	33 KV	350	Diversion	350	350	1	0	1	1	DEWA will do the jointing

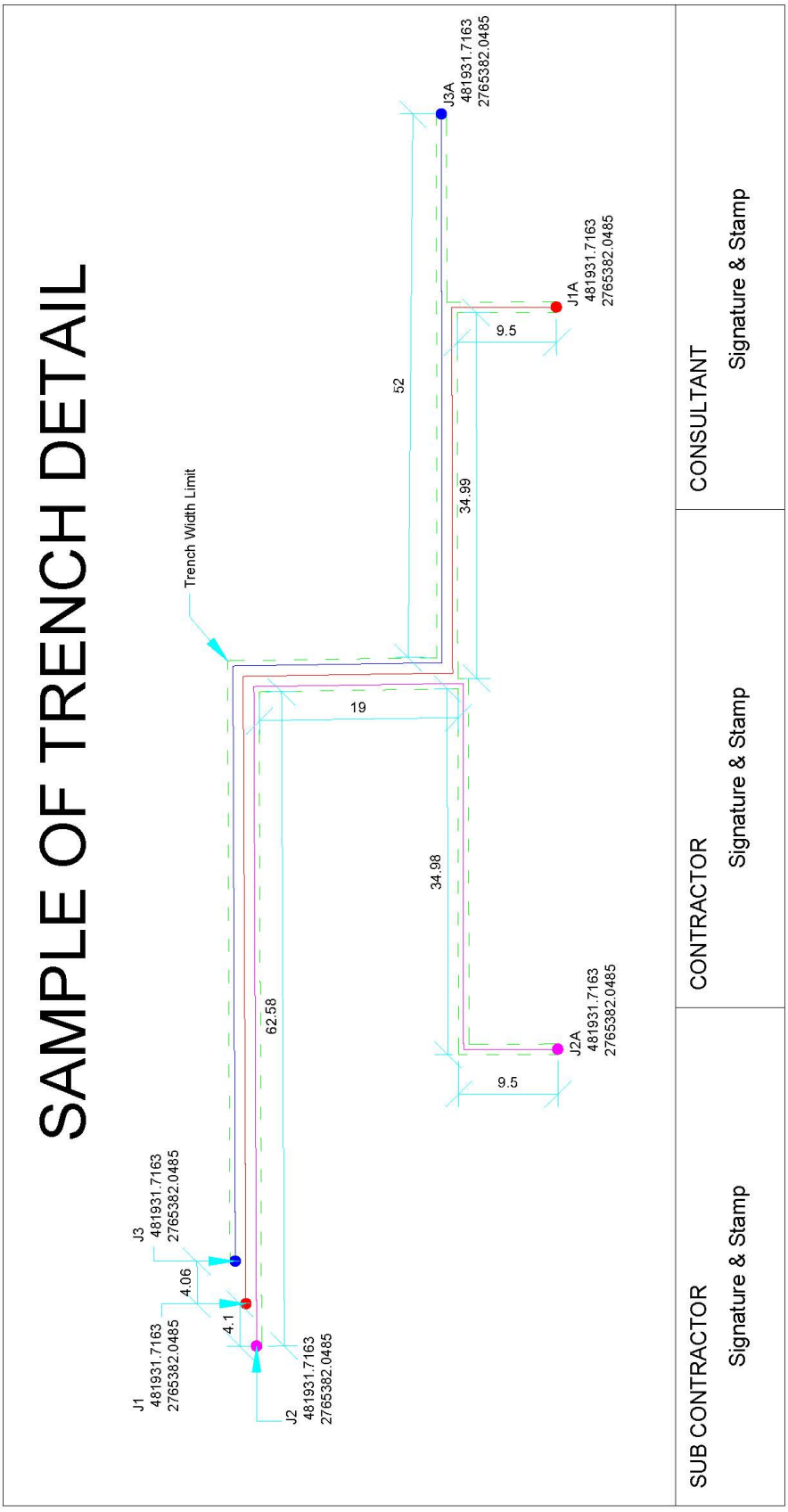
Material Summary			
Sr. No.	Type of Material	Unit	Total Quantity
1	240mm2 AL 11kv Cable	M	300
2	Cu. 300mm2 XLPE 33kv Cable	M	400
3	10 Pair Pilot Cable for 33kv Cable	M	350
4	Straight Joint	M	350
5	Transition Joint	M	1
6	Termination Joint	M	1
7	Warning Tape	M	5
8	Cable Protection Tile	M	5

Sub-Contractor's Sign & Stamp ***Contractor's Sign & Stamp*** ***Consultant's Sign & Stamp***

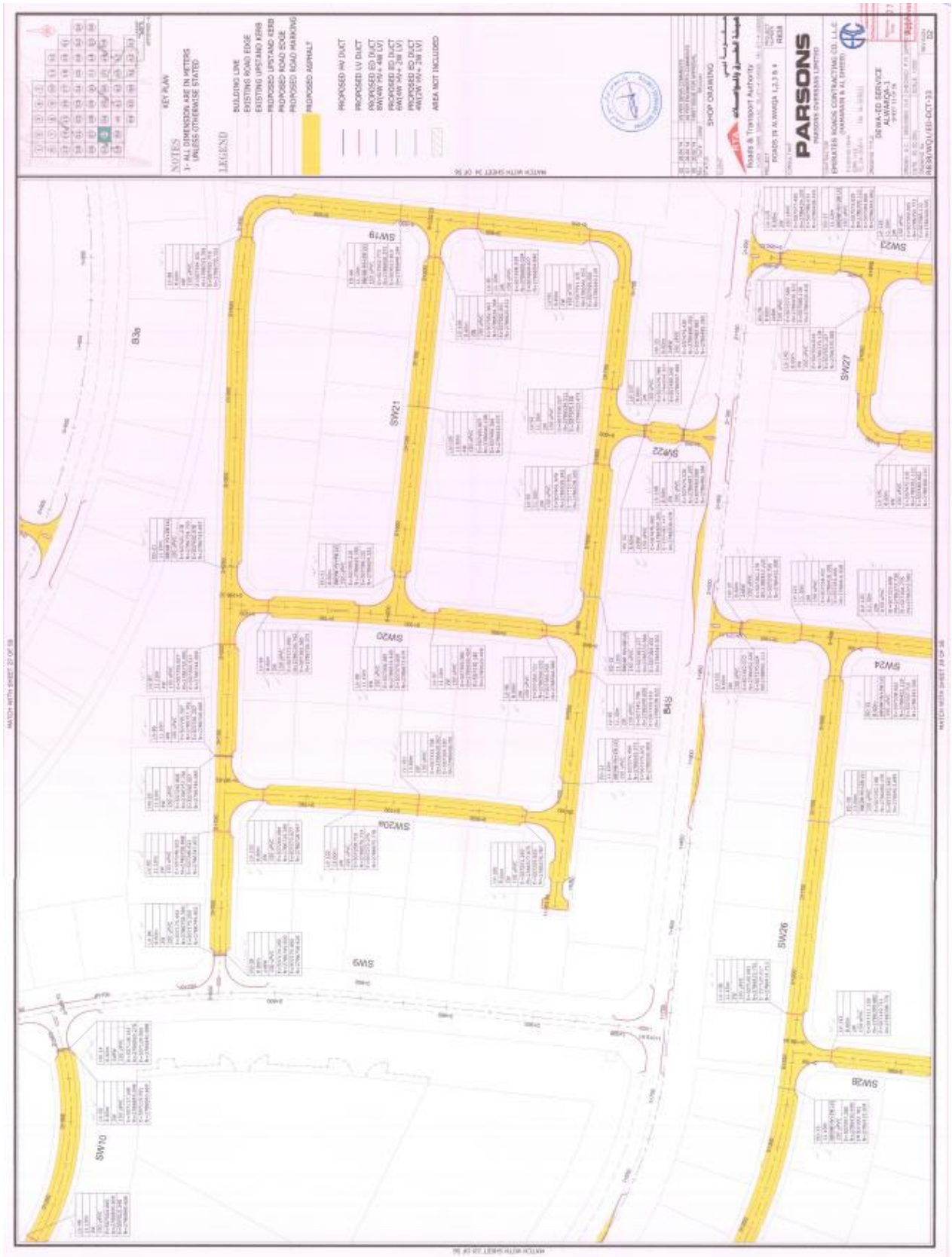
CABLE DIVERSION DETAILS DRAWING



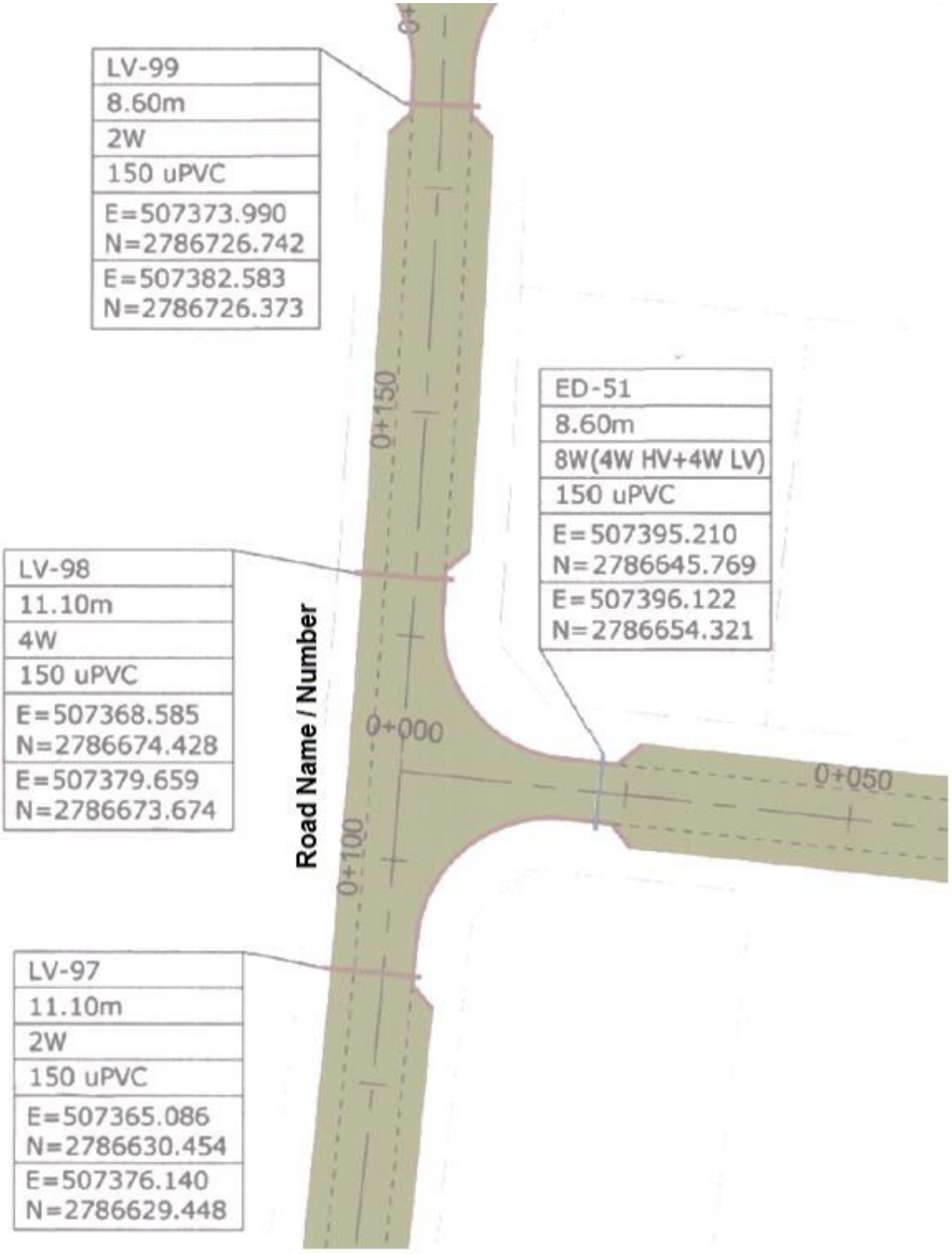
TRENCH DETAIL



BETTERMENT WORK – AS BUILT DRAWINGS



BETTERMENT WORK APPROVAL DRAWING



BETTERMENT WORK DUCT SUMMARY (Proposed)

DETAILED MEASUREMENT SHEET

STANDARD FORMAT FOR DEWA-ED PROPOSED DUCTS DETAILS

BETTERMENT WORK APPROVAL

Contract No.: _____ **Consultant :** _____

Project Name : _____ **Contractor :** _____

No. of Ways	NOC Drawing No.	Duct Location No.	Proposed Road Crossing Length in	Total Length of Duct in L.M	Total No. of End Cap	X1 Coordinates	Y1 Coordinates	X2 Coordinates	Y2 Coordinates
2 way LV	UED - 1	1	10.00	20.00	4				
2 way HV	UED - 6	2		-	4				
2 way LV	UED - 7	3		-	4				
2 way HV	UED - 7	4		-	4				
2 way LV	UED - 7	7		-	4				
(A) Total Of 2W			10.00	20.00	20				
4 way LV	UED - 1	1	10.00	40.00	8				
4 way HV	UED - 3	2		-	8				
4 way LV	UED - 5	3		-	8				
4 way HV	UED - 7	4		-	8				
4 way LV	UED - 7	7		-	8				
(B) Total Of 4W			10.00	40.00	40				
6 way HV	UED - 1	8	10.00	60.00	12				
6 way HV	UED - 3	9		-	12				
6 way HV	UED - 3	10		-	12				
6 way HV	UED - 4	11		-	12				
6 way HV	UED - 6	14		-	12				
(C) Total Of 6W			10.00	60.00	60				
Grand Total Of A+B+C			30.00	120.00	120				

SUMMARY OF BETTERMENT WORK

Description	Total Proposed Road Crossing	Total Length of Duct	Total No. of End Cap
Total 2Way =	10.00	20.00	20
Total 4Way =	10.00	40.00	40
Total 6Way =	10.00	60.00	60
GRAND TOTAL =	30.00	120.00	120

Contractor's Signature & Stamp

Consultant's Signature & Stamp

Go to Index

GOVERNMENT OF DUBAI

هيئة كهرباء ومياه دبي
Dubai Electricity & Water Authority

DEWA WATER DEPARTMENT CLEARANCE CHECKLIST

Project No. : ..... Project Name:.....Client.....

Consultant: ..... Contractor:.....

S.NO.	ATTACHMENTS (If Water Works Carried out under this Project)	STATUS			
1	Box file containing the following documents:	☐	YES	☐	NO
	a. Cover Letter by project consultant containing Subject, Contact Name, Contact Number, and Email Address including the starting & completion date and liability period should be mentioned.	☐	YES	☐	NO
	b. A full set of DEWA-WD Construction NOC for the same project.	☐	YES	☐	NO
	c. Soft Copy of DEWA-WD approved Shop Drawings.	☐	YES	☐	NO
	d. Complete Test Reports including Hydraulic Leakage, Chlorination & Bacterial.	☐	YES	☐	NO
	e. 3 set of hard & soft copies of As Built drawings of water layout, profile & cross sections.	☐	YES	☐	NO
	f. Material Approved Documents for water works at the Development.	☐	YES	☐	NO
2	Joint Site Survey & Inspection with Snag List confirmation.	☐	YES	☐	NO
3	Copy of clearance from Legal Advisor / Finance Department.	☐	YES	☐	NO
4	Soft Copy of the above documents & drawings (PDF & CAD / Microstation Formats).	☐	YES	☐	NO

☐ This is to certify that there is no water works has been carried out under the above project.

Engineer	Manager	Senior Manager
DEWA (WD)	DEWA (WD)	DEWA (EW)

Go to Index

GOVERNMENT OF DUBAI
هيئة كهرباء ومياه دبي
Dubai Electricity & Water Authority

COVERING LETTER FORMAT

Letter Ref. No: .....

Date: .....

Dubai Electricity & Water Authority,

P.O. Box No. 564, DUBAI,

United Arab Emirates

Attention: **Eng. Amina Ali Hashem**

Senior Manager – Infrastructure Information & Permits Department

Project No & Name: .....

Subject: .....

"Scope of Work in detail"

.....

.....

Titles of Drawings / Documents attached with this application

.....

Contact Details of concerned Engineer for technical discussion or information along with name & designation.

Manager / Authorized Signatory,

Name & Signature

Contact Details

BUSINESS SUPPORT CONTACT DETAILS

Sl No	Services Description	Function Department	Email	Contact No	Fax No
1.	No Objection Certificate (NOC)	Infrastructure Information & Permits (II&P)	TP.II&P@dewa.gov.ae	04-3221614	04-3072239
2.	Shop drawing approval-Electricity	Infrastructure Information & Permits (II&P)	TP.II&P@dewa.gov.ae	04-3221262	04-3072239
3.	BOQ approval for Electricity Ducts	Infrastructure Information & Permits (II&P)	TP.II&P@dewa.gov.ae	04-3221280 04-3221268	04-3072239
4.	Material approval for cable diversion-Electricity	Infrastructure Information & Permits (II&P)	TP.II&P@dewa.gov.ae	04-3221280 04-3221268	04-3072239
5.	Estimation for Cable relocation within R.O.W(Under Road Projects)- HV	Infrastructure Information & Permits (II&P)	TP.II&P@dewa.gov.ae	04-3221280 04-3221268	04-3072239
6.	Infrastructure Project As Built drawing approval-(Electricity &Water)	Infrastructure Information & Permits (II&P)	TP.II&P@dewa.gov.ae	04-3221280 04-3221268	04-3072239
7.	Infrastructure Project Completion Certificate - (Electricity & Water)	Infrastructure Information & Permits (II&P)	TP.II&P@dewa.gov.ae	04-3221280 04-3221268	04-3072239
8.	Work supervision request for Existing HV cable Protection	Distribution Maintenance (DM)	DP.MZ3@dewa.gov.ae	04-5066630 04-5066570	04-5066791 04-5066794
9.	HV Cables Shutdown for Relocation	Distribution Project Planning	Mohamed.Hathab@dewa.gov.ae	04-5066272 055-9338638	04-3983635
			ananthakumar.r@dewa.gov.ae	04-5066189 055-8369550	
			Muthukumar.R@dewa.gov.ae	04-5066531 050-2365817	

10.	Supervision request for diversion	Project execution	Mhossain@dewa.gov.ae Ratan.Roy@dewa.gov.ae	04-5066251 04-5066250	04-3983635
	Existing HV Services (Cables and Ducts)	(Distribution Project Planning)			
11.	Laying of HV Cables (6.6/11/33 kV)	Project execution (Distribution)	Amrou.Mousa@dewa.gov.ae Biju.Nair@dewa.gov.ae	055-5100210	04-3983635
12.	Estimation for HV cable diversion within the plot	PN&E-NM	CS.InfrastructureServices@dewa.	04-3227965	04-3229094
13.	Sample Submission for Material Approval	Tendering & Engineering Department	DP.TE@dewa.gov.ae	04-3227663	04-3229037

Digital Data Submission Requirements for Conduit System (CSV FILE)

Geospatial Data Submission File Format details

The format of the GDS file can be either AutoCAD (DWG) or MicroStation (DGN). DEWA will agree both formats for data exchange from Customer.

The GDS file defines the following

- What coordinate system to be used in drawing preparation
- How map features are organized into layers,
- How those layers are named,
- How existing features and layers in DEWA's GIS are symbolized.

Once the customers started to submit the drawings in the above specified manner then DEWA's IIPD GIS team and Connection Services GIS team can update database in DEWA GIS.

Important note:

Drawing files submitted by the customers should strictly follow this guideline requirements such as "Level Name" "Symbology" "Coordinate system" etc..., that are mentioned in the **Layers Data field definition** (Ref 1.2) for example if the customer submit drawing with proper Level name then the GDS System will recognize the Level therefore the data will be considered by the system. In case the customer submitting the drawings with improper Level Name not matching as specified **Layers Data field definition** then GDS System will not consider as data.

Most importantly, the drawing file submitted by the customer must not contain the following.

- Title block
- Border line
- Notes in the drawing.

The following guidelines should be considered while preparing GIS Road Network Layers and CSV for asbuilt Duct/utility cross-section marker submissions. The File name should start with Project Name along with file details. For example DubaiExpo2020_Crosssection.csv, DubaiExpo2020_Dist_duct.csv, DubaiExpo2020_roadlayout.dgn, DubaiExpo2020roadlayout.dwg, DubaiExpo2020_Trans_duct.csv. (Ref. Appendix 1)

Layers, Data Field and Definitions

ROAD NETWORK LAYERS			
S.no.	**Layer_Name**	**Description**	**Geometry Type and Color Code**
1	Road Width	The width allocated to lanes for motorists, buses, trucks, bikes and this is also called carriage way-RGB(0,0,255)	Polyline and Point (RGB: 0:0:255)
2	Round about	Non-pedestrian islands in the road surface, that normally contains grass, trees, flowers or other plantations.	Polyline and Point(RGB: 255:102:102)
4	Road Divider	The area that separates opposing lanes of traffic on divided roadways. Also called central reservation.	Polyline and Point(RGB: 255:0:255)
5	Right-of-way	Right-of-Way is the land on which a roadway and its associated facilities and appurtenances are located. Highway right-of-way accommodates the entire roadway (i.e., travel lanes and shoulders), as well as adjacent sidewalks and the roadside corridors on which utilities are located	Polyline(RGB: 0:255:0)
6	Pavements	A path consisting of a paved area on the side of a road for Pedestrians, also called a sidewalk.	Polyline and Point (RGB: 204:0:0)
7	Parking Lots	Should Represent vehicles Parking lot boundaries.	Polyline and Point (RGB: 0:255:0)
8	Crosssection	The simple line should be captured across the road which covers all road utilities allocations and road associated features(make sure the crosssection marker should not extend beyond the ROW).The crosssection ID should be provided in Text format, which should match with section id in detailed section view PDF file. Alternatively, CSV file should have both start and end coordinates with DEWA specified attributes. The start coordinate (X1 Y1) should be Southern/bottom point of the ROW and end coordinate (X2 Y2) should be Northern/Top side of the ROW when crosssection facing eastern direction.In other way around, The start coordinate (X1 Y1) should be Northern/Top point of the ROW and end coordinate (X2 Y2) should be Southern/Bottom side of the ROW when crosssection facing western direction	Line, Text and CSV(RGB: 255:255:255)
9	Parcels	The boundary and ID of the parcel should match with Authorities (DM, DSO and so on.)	Polyline and Text (RGB:51:0:0)
10	Conduit132kV	Should represent simple line	Line and CSV(RGB:255:170:0)
11	Conduit11kV_33kV	Should represent simple line	Line and CSV(RGB:76:230:0)

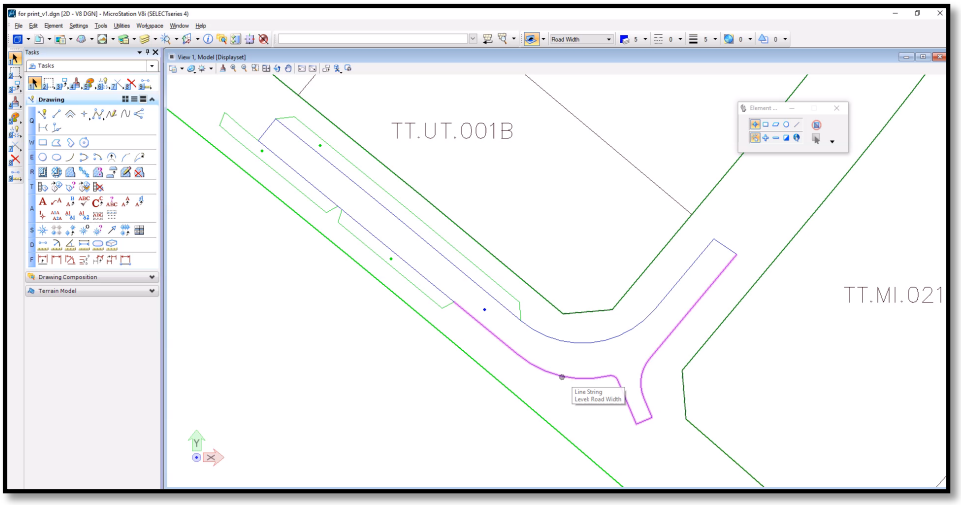
12	ConduitLV	Should represent simple line	Line and CSV(RGB:244:179:252)
13	Duct_No and No.of Ways	This Duct ID should match with DEWA CSV file RefNo Column	Text(RGB:204:204:0)
14	UG_400kV	Should represent simple line	Polyline(RGB:0:0:255)
15	SecUG_400V	Should represent simple line	Polyline(RGB:255:0:197)
16	UG_6_6kV	Should represent simple line	Polyline(RGB:230:0:0)
17	UG_11kV	Should represent simple line	Polyline(RGB:76:230:0)
18	UG_132kV	Should represent simple line	Polyline(RGB:255:170:0)
19	UG_33kV	Should represent simple line	Polyline(RGB:0:77:168)
20	OH_400kV	Should represent simple line	Polyline(RGB:0:92:230)
21	WD_450MM	Should represent simple line	Polyline (RGB:230:0:0)
22	WD_300MM	Should represent simple line	Polyline(RGB:255:0:197)
23	WD_225MM	Should represent simple line	Polyline (RGB:0:92:230)
24	WD_150MM	Should represent simple line	Polyline (RGB:38:115:0
25	WD_100MM	Should represent simple line	Polyline (RGB:115:0:0)
26	WT_1400MM	Should represent simple line	Polyline(RGB:56:160:200)
27	WT_1200MM	Should represent simple line	Polyline(RGB:169:0:230)
28	WT_900MM	Should represent simple line	Polyline(RGB:197:0:255)
29	WT_600MM	Should represent simple line	Polyline (RGB:255:0:0)
30	WT_550MM	Should represent simple line	Polyline (RGB:255:0:0)
31	Lateral32MM	Should represent simple line	Polyline(RGB:169:0:230)
32	OH_400kVAbandoned	Should represent crossed simple line	Polyline(RGB:0:92:230)
33	SecUG_400VAbandoned	Should represent crossed simple line	Polyline(RGB:255:0:197)
34	UG_6_6kVAbandoned	Should represent crossed simple line	Polyline(RGB:230:0:0)
35	UG_11kVAbandoned	Should represent crossed simple line	Polyline(RGB:76:230:0)
36	UG_33kVAbandoned	Should represent crossed simple line	Polyline(RGB:0:77:168)
37	UG_132kVAbandoned	Should represent crossed simple line	Polyline(RGB:255:170:0)
38	UG_400kVAbandoned	Should represent crossed simple line	Polyline(RGB:0:0:255)
39	Lateral32MMAbandoned	Should represent crossed simple line	Polyline(RGB:169:0:230)
40	WD_100MMAbandoned	Should represent crossed simple line	Polyline (RGB:115:0:0)
41	WD_150MMAbandoned	Should represent crossed simple line	Polyline (RGB:38:115:0)
42	WD_225MMAbandoned	Should represent crossed simple line	Polyline (RGB:0:92:230
43	WD_300MMAbandoned	Should represent crossed simple line	Polyline(RGB:255:0:197)
44	WD_450MMAbandoned	Should represent crossed simple line	Polyline (RGB:230:0:0)
45	WT_550MMAbandoned	Should represent crossed simple line	Polyline (RGB:255:0:0)
46	WT_600MMAbandoned	Should represent crossed simple line	Polyline (RGB:255:0:0)
47	WT_900MMAbandoned	Should represent crossed simple line	Polyline(RGB:197:0:255)
48	WT_1200MMAbandoned	Should represent crossed simple line	Polyline(RGB:169:0:230)
49	WT_1400MMAbandoned	Should represent crossed simple line	Polyline(RGB:56:160:200)
50	OH_400kVPlanned	Should represent simple line	Polyline(RGB:0:92:230)
51	SecUG_400VPlanned	Should represent Dashed simple line	Polyline(RGB:255:0:197)

52	UG_6_6kVPlanned	Should represent Dashed simple line	Polyline(RGB:230:0:0)
53	UG_11kVPlanned	Should represent Dashed simple line	Polyline(RGB:76:230:0)
54	UG_33kVPlanned	Should represent Dashed simple line	Polyline(RGB:0:77:168)
55	UG_132kVPlanned	Should represent Dashed simple line	Polyline(RGB:255:170:0)
56	UG_400kVPlanned	Should represent Dashed simple line	Polyline(RGB:0:0:255)
57	Lateral32MMPlanned	Should represent Dashed simple line	Polyline(RGB:169:0:230)
58	WT_1400MMPlanned	Should represent Dashed simple line	Polyline(RGB:56:160:200)
59	WT_1200MMPlanned	Should represent Dashed simple line	Polyline(RGB:169:0:230)
60	WT_900MMPlanned	Should represent Dashed simple line	Polyline(RGB:197:0:255)
61	WT_600MMPlanned	Should represent Dashed simple line	Polyline (RGB:255:0:0)
62	WT_550MMPlanned	Should represent Dashed simple line	Polyline (RGB:255:0:0)
63	WD_450MMPlanned	Should represent Dashed simple line	Polyline (RGB:230:0:0)
64	WD_300MMPlanned	Should represent Dashed simple line	Polyline(RGB:255:0:197)
65	WD_225MMPlanned	Should represent Dashed simple line	Polyline (RGB:0:92:230
66	WD_150MMPlanned	Should represent Dashed simple line	Polyline (RGB:38:115:0)
67	WD_100MMPlanned	Should represent Dashed simple line	Polyline (RGB:115:0:0)
68	GAS_Pipeline	Should represent simple line	Polyline(RGB:0:0:255)
69	Conduit132kV Planned	Should represent Compound dashed line as specified in sample	Line and CSV (RGB:255:170:0)
70	Conduit11kV_33kV_Planned	Should represent Compound dashed line as specified in sample	Line and CSV (RGB:76:230:0)
71	ConduitLV Planned	Should represent Compound dashed line as specified in sample	Line and CSV(RGB:244:179:252)
72	GAS_PipelineAbandoned	Should represent simple line	Polyline(RGB:0:0:255)
73	GAS_PipelinePlanned	Should represent Dashed simple line	Polyline(RGB:0:0:255)
74	Transmission_NetworkCorridor	Should represent simple line	Polyline(RGB:204:102:0)
75	Distribution_NetworkCorridor	Should represent simple line	Polyline(RGB:205:102:102)

Other than GIS data, DEWA II&P expect customer to submit duct/Utility Crosssection in CSV file and This CSV file should follow as per instruction given in Ref.***3.0 Specification of coded values for various fields-CSV and 4.Specification of coded values for various fields-CSV(Crosssection)***

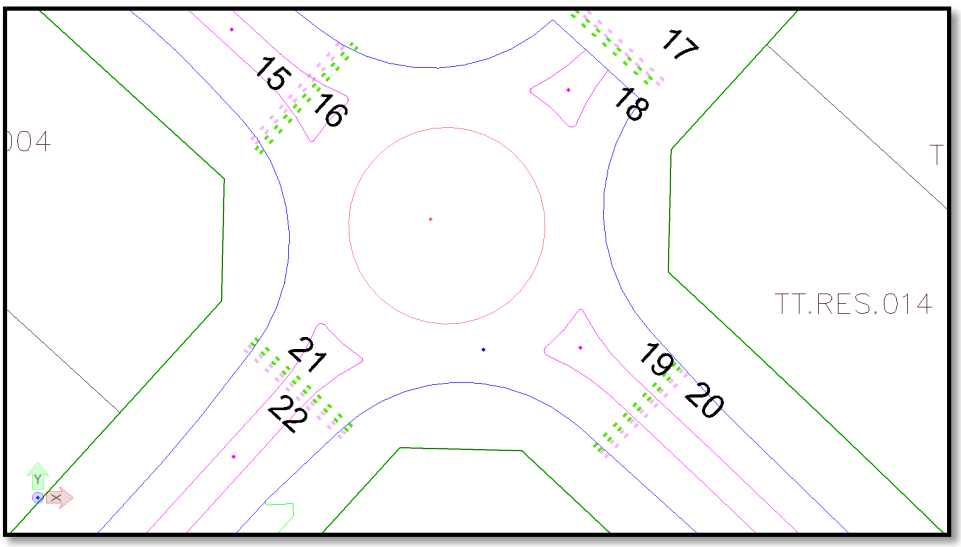
Road Width

The road width should be captured in Line string as specified in below picture and each segment should be end snapped with adjacent features. **The duct should be captured as a single line segment with duct number as a text.**



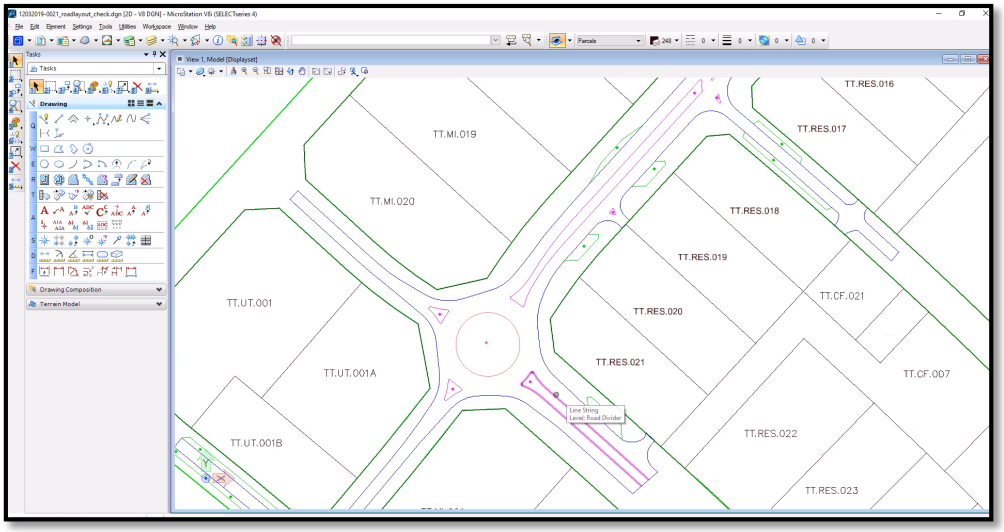
Duct/Conduit

The Conduit should be captured in single line segment but should be created using multiline symbology option in DGN or DWG along with duct number in Numeric format , but at same time customer should submit duct details in CSV format..



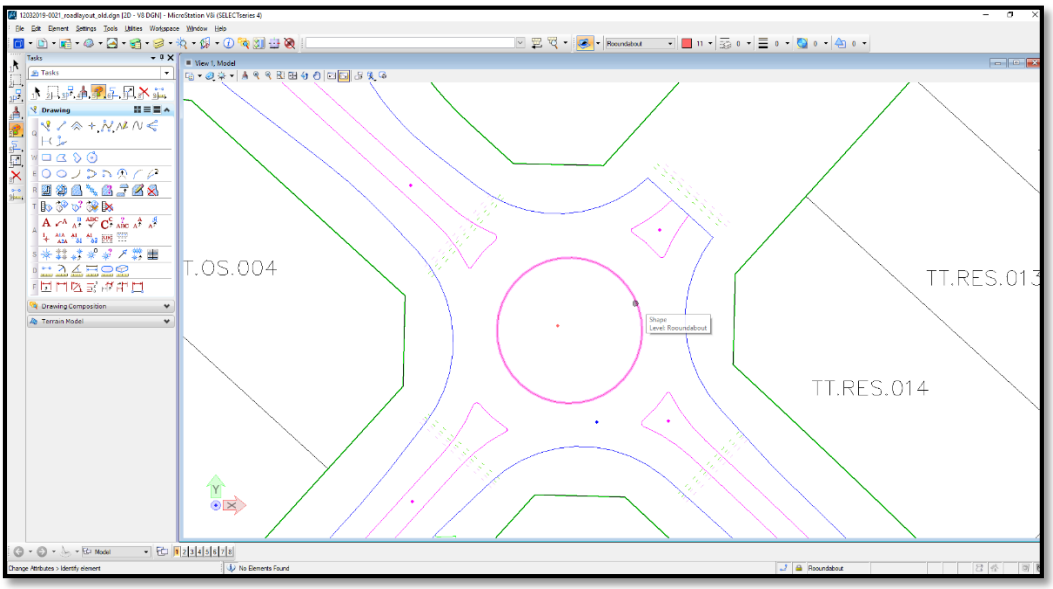
Road Divider

The road divider should be captured in Line string as specified in below picture and each segment should be end snapped with adjacent features.



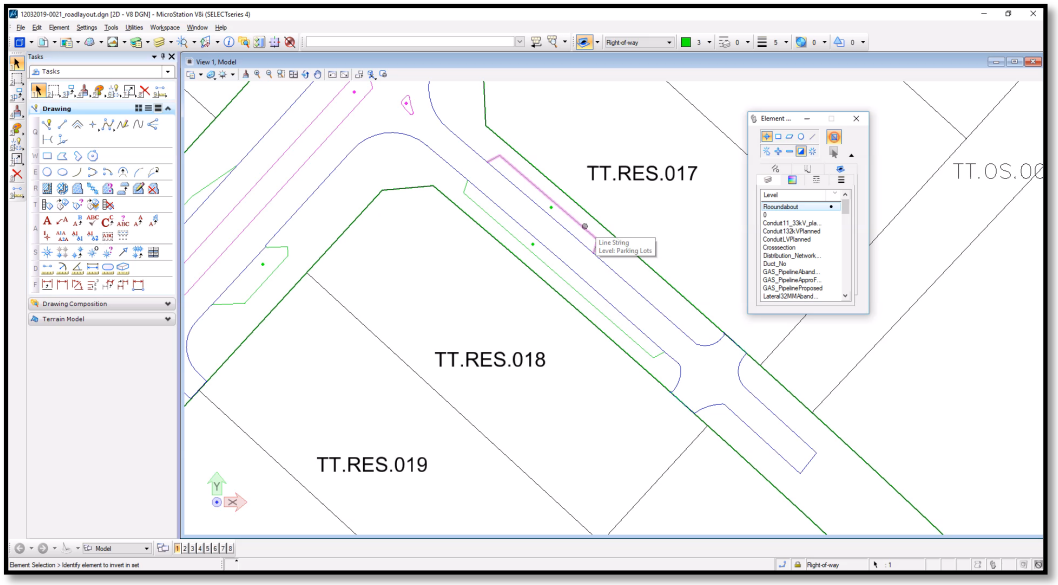
Roundabout

The Roundabout should be captured in Line string as specified in below picture.,



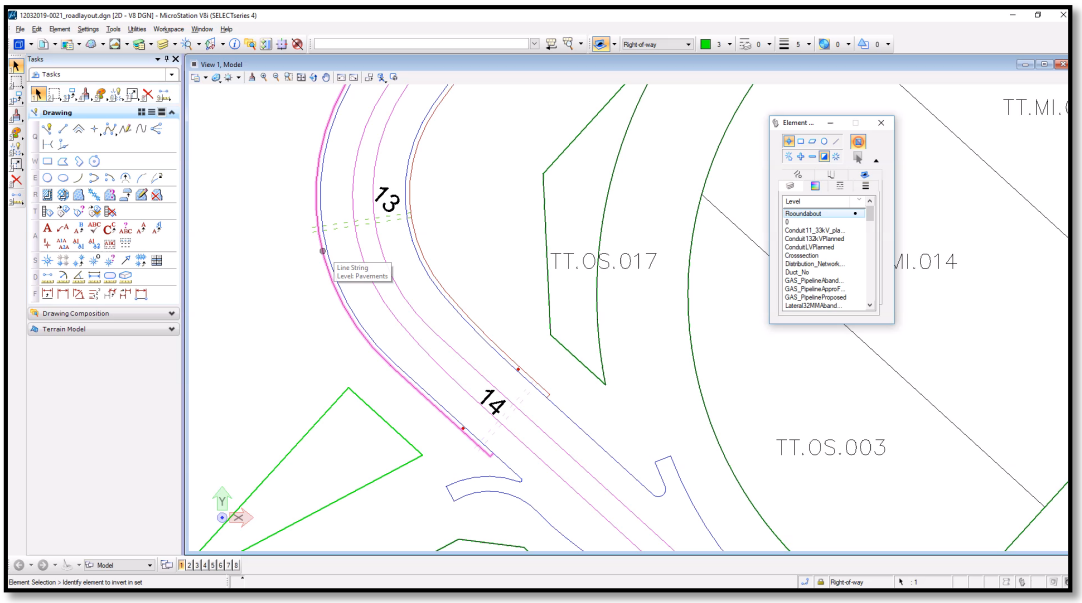
Parking

The Parking should be captured in Line string as specified in below picture and each segment should be end snapped with adjacent features.



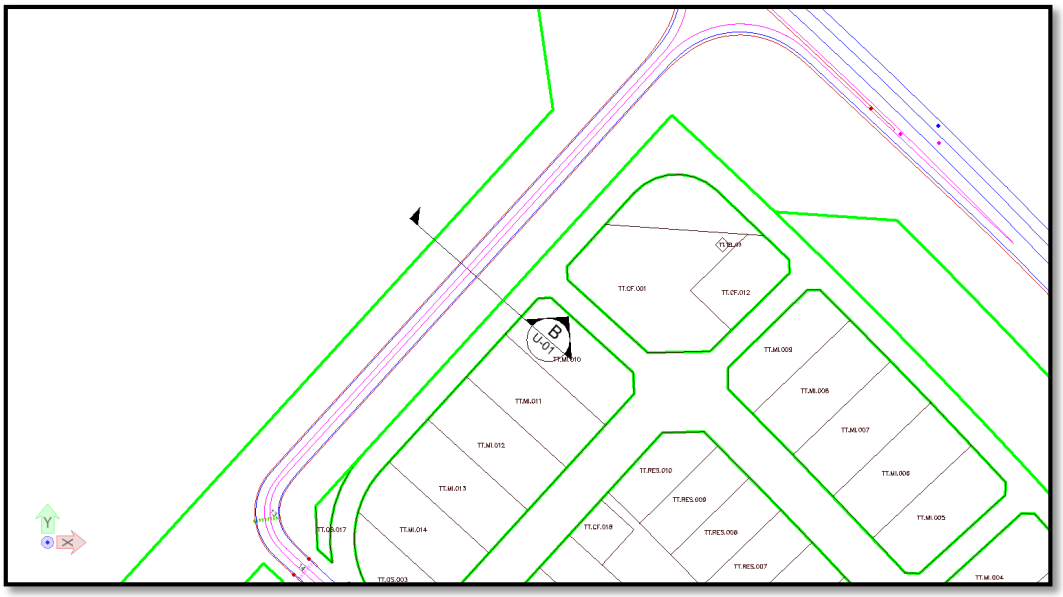
Pavement

The Pavement should be captured in Line string as specified in below picture and each segment should be end snapped with adjacent features.



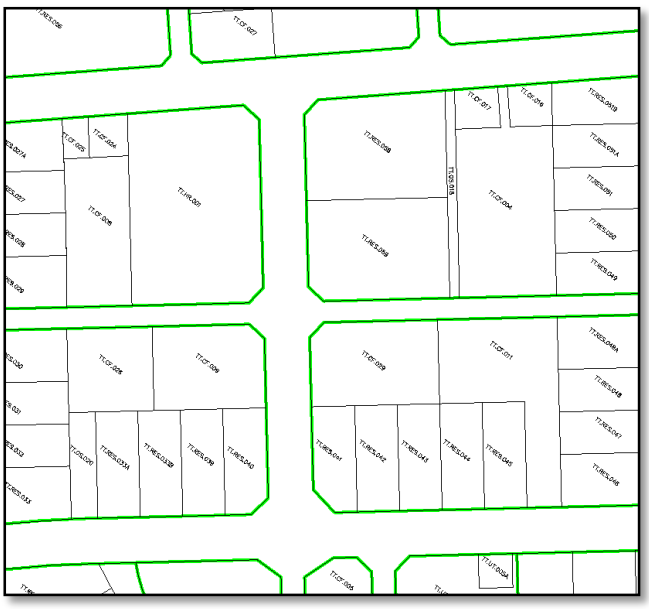
Crosssection

The crosssection should be captured single line segment with section number as a text.



Right of Way

The Right of Way should be captured in Line string as specified in below picture and each segment should be end snapped with adjacent features.



Coordinate System

Features in DEWA GDS compliant files must be represented in real world locations as referenced by Dubai Local Transverse Mercator projection (DLTM) parameters as given below.

Projection:

Dubai Local Transverse Mercator

Parameters:

Longitude of Origin 55:20:00:00 d:m:s

Latitude of Origin 0:00:00.000 d:m:s

False Easting 500,000.000 m

False Northing 0.000 m

Scale Factor along Longitude of Origin 1.0000

Geodetic Datum: WGS84

Ellipsoid WGS84 (Standard parameters)

Equatorial Radius: 6378137.000 m

Polar Radius: 6356752.314 m

Eccentricity: 0.0818191908426215

Flattening: 0.00335281066474746

Flattening Inverse: 298.257223563002

Units and Formats:

Geographic Units: d: m: s

Format: Long/lat. Precision: 4, Positive N,E

Projection Units: m

Format: Easting/Northing Precision: 3

Height Units: m Precision: 3

Geocentric Units: m Precision: 3

Distance Units: m Precision: 3

Angular Units: deg Precision: 6

CAD data submission guidelines

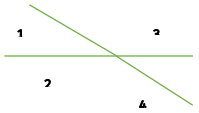
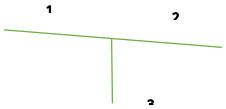
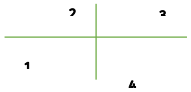
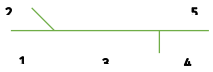
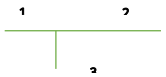
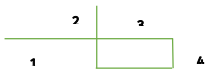
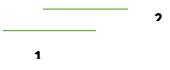
If the Data Submitter is unable to provide the required spatial information in accordance with the DEWA's GDS, the following guidelines should be followed when preparing CAD data for submission to the DEWA that will be used by the GIS Section:

- Layer/feature class names need to follow the DEWA's GDS naming format
- Each Feature Class and/or its sub-types need to be in a separate layer in the CAD file.
- Ellipse and Spline shall not be used at all.
- Overlapping, Self-intersecting and Zero Length are not allowed.
- Where two Polylines logically join, intersecting features within the same layer these shall be snapped at the point of intersection.
- Each text/point representing information about an area should fit well inside it.
- Digitization of lines (for example where these are roads) should be undertaken in their direction of travel where the road links are 'one-way' links. Two-way links represented as one link can be digitized in either direction.
- All new Conduits (Line features) must be clearly distinguishable from existing features by symbology and labels (Existing/New/).
- For each feature the following spatial data is required: StartPoint, EndPoint and TurningPoints if applicable). Features must have x,y co-ordinates as label text near the respective location on the drawing. These co-ordinates shall be on level 10.
- All drawings delivered to DEWA shall have an attached CSV file containing all features, their X,Y location (StartPoint, EndPoint and TurningPoints) and shall include attributes (ref: 2.Specification of coded values for various fields-CSV(Duct) and 3.Specification of coded values for various fields-CSV(Crosssection)) specified in a tabular form. Sample CSV template available in Appendix 1 Sample CSV/CAD file template.
- An additional reference number in duct/section_id in Crosssection (refno-Ref Appendix 1 Sample CSV/CAD file template) can be added (if required) to enable

relationships between the graphics in CAD and attributes in CSV.

Topology rules

It is important that some basic topological rules are enforced whilst creating and maintaining existing data. These rules should be followed in CAD format files to ensure ease of translating from CAD to GIS formats should DEWA need to undertake such translation exercise. Some of the examples are shown below:

			☒	✓
1	Must Not Overlap	Requires that lines not overlap with lines in the same feature class. This rule is used where line segments should not be duplicated.		
2	Must Not Intersect	Requires that line features from the same feature class not cross or overlap each other. Lines can share endpoints. This rule is used in cases where the intersection of lines should only occur at endpoints, such as street segments and intersections.		
3	Must not have Dangles	Requires that a line feature must touch lines from the same feature class at both endpoints. An endpoint that is not connected to another line is called a dangle. This rule is used when line features must form closed loops, such as when they are defining the boundaries of polygon features. It may also be used in cases where lines typically connect to other lines, as with networks, such as road links. In this case, exceptions can be used where the rule is occasionally violated, as with cul-de-sac or dead end street segments.		
5	Must not intersect or Touch Interior	Requires that a line in one feature class must only touch other lines of the same feature class at endpoints. Any line segment in which features overlap or any intersection not at an endpoint is an error. This rule is useful where lines must only be connected at endpoints, such as in the case of plot lines, which must split.		
6	Must not Overlap with	Requires that a line from one feature class not overlap with line features in another feature class. This rule is used when line features cannot share the same space. For example,roads must not exactly follow a railway line.	 Where the purple lines overlap is an error.	
7	Must not Self Overlap	Requires that line features not overlap themselves. They can cross or touch themselves, but must not have coincident segments. This rule is useful for features such as streets,where segments might touch in a loop, but where the same street should not follow the same course twice.	 The individual line feature overlaps itself, with the error indicated by the coral line.	
8	Must not self Intersect	Requires that line features not cross or overlap themselves. This rule is useful for lines, such as contour lines, that cannot cross themselves.		
9	Must be a Single Part	Requires that lines have only one part. This rule is useful where line features, such as highways, may not have multiple parts.	 Multipart lines are created from a single sketch.	

The following definitions clarify the subject of the DEWA's GDS:

Polyline: A polyline is a sequence of joined vertices. Each vertex has an X and Y. Attributes further describe the polyline. A polyline must be uniquely identified and duplicates are not permitted, unless the justification for a duplicate is provided by the Data Submitter.

Polygon: A polygon, like a polyline, is a sequence of vertices. However, in a polygon, the first and last vertices are always at the same position. Overlapping polygons are not permitted, unless the justification for any overlap is provided by the Data Submitter.

Dangle: Dangles are topological errors where an arc or a line does not end at the point where it should. These are created due to improper digitization. Dangles are of two types- overshoots and undershoot. Dangles can be avoided if proper Snapping tolerance is defined before starting digitization. Dangles are not permitted, unless justification for any dangles is provided by the Data Submitter.

Undershoots: When an arc or a line finishes before connecting to another arc at a required location it is called as undershoot. Undershoots can occur when a line feature (e.g. a road) does not exactly meet another feature to which it should be connected. Undershoots are not permitted, unless justification for any undershoot is provided by the Data Submitter.

Overshoots: When an arc or a line does not end at its termination point on another arc and goes beyond it is called as overshoot. Overshoots can occur when a line feature such as a road does not meet another road exactly at an intersection. Overshoots are not permitted, unless justification for any overshoot is provided by the Data Submitter.

Spurious Polygons: Spurious polygons or slivers are often created during overlay of two or more polygon layers. Slivers are small polygons which results due to overlay operations of polygons whose edges do not match. Slivers can occur when the edges of two polygon areas do not meet properly. Slivers are not permitted, unless justification for any sliver is provided by the Data Submitter.

Compliance: The Data Submitter must comply with the requirements for DEWA's GDS in the coordinate system; layer names must meet the requirements of the DEWA's GDS. These layers will be populated by those submitting the GDS file with the appropriate survey / engineering data and by providing supporting documentation to allow DEWA full discovery of

the information provided and any issues that DEWA should be aware if they use the data.

Naming Convention: Layers must be submitted in accordance with a naming convention that is consistent with the DEWA's own naming convention.

Specification of coded values for various fields-CSV(Duct)

Subtype

Code	State
1	Duct Bank
2	Trench
3	Truf
4	HDD
5	Unknown

Status indicator

Code	State
Proposed	Proposed
Cancelled	Cancelled
In service	In service
Approved for Construction	Approved for Construction
Construction As Laid	Constructed As laid
Temporary Out Of Operation	Temporary Out Of Operation
Abandoned	Abandoned

Operating Voltage

Code	Conduit Nominal Voltage
400	400 kV
132	132 kV
11	11 kV
33	33 kV
LV	LV

Encasement Type

Code	Encasement Type
BF	Back Fill
CCRT	Concrete
UNK	Unknown

Material

Code	Material Type
HDPE	HDPE
UPVC	UPVC
UNK	Unknown

Duct Size

Code	Duct Size
2	2"
4	4"
6	6"
12	12"
18	18"
24	24"
30	30"
36	36"
42	42"
48	48"

NumberofDucts

Code	NoofDucts	Code	NoofDucts	Code	NoofDucts	Code	NoofDucts
4	1	48	27	32	2x30	55	4x(2x5)
5	2	49	28	33	2x35	1	IV(1)
6	3	50	29	34	2x40	3	IV(3)
7	4	51	30	35	2x45	399	IV(39)
24	5	12	1x6	36	2x50	2	UNKNOWN
17	6	56	1x8	10	3x4	100	9
25	7	58	1x11	39	3x5	103	14
15	10	57	1x12	14	3x6	107	2x3
37	11	8	2x4	22	3x8	108	2x7
38	13	26	2x5	60	3x11		
16	16	13	2x6	23	3x12		
9	18	19	2x8	21	3x16		
41	19	29	2x10	40	4x4		
42	20	59	2x11	99	4x6		
43	21	20	2x12	61	4x11		
44	22	27	2x15	11	6x4		
45	23	30	2x20	52	1x(2x5)		
46	25	28	2x24	53	2x(2x5)		
47	26	31	2x25	54	3x(2x5)		

Specification of coded values for various fields-CSV(Crosssection)

Status

Domain Type:	CodedValue
Code	**Value**
AB	As-Built
C	Construction
FD	Final Design
PD	Preliminary Design

Undertaking Letter Indicator

Domain Type:	CodedValue
Code	**Value**
N	No
NA	Not Applicable
UNK	Unknown
Y	Yes

Appendix 1, Sample CSV/CAD file template


DubaiExpo2020_Crosssection.csv


DubaiExpo2020_Dist_duct.csv

DubaiExpo2020_roadlayout.dwg


DubaiExpo2020_roadlayout.dgn


DubaiExpo2020_Trans_duct.csv