

The cover features a large blue speech bubble shape on the right side, containing the title 'DESIGN PORTFOLIO' in white. To the left of the speech bubble is a solid grey vertical rectangle.

DESIGN PORTFOLIO

NOR ASLINAWATI ABDUL MAJID
CAD ENGINEER

CONTACT INFO:

+447387714289

aslina.majid@yahoo.com

An experienced CAD and network design engineer with a background in smart battery systems, fiber optics, and schematic design. Skilled in AutoCAD Electrical, Map 3D, Cadence, and GIS platforms, with a strong focus on accuracy, cross-functional collaboration, and technical documentation.



EDUCATION BACKGROUND:

- MSc in Microelectronic Engineering – Universiti Sains Malaysia, 2018
- Bachelor of Engineering (Hons) in Mechatronics – Universiti Selangor, 2016
- Diploma in Mechatronics Engineering – Universiti Selangor, 2007



PROFESSIONAL BACKGROUND:

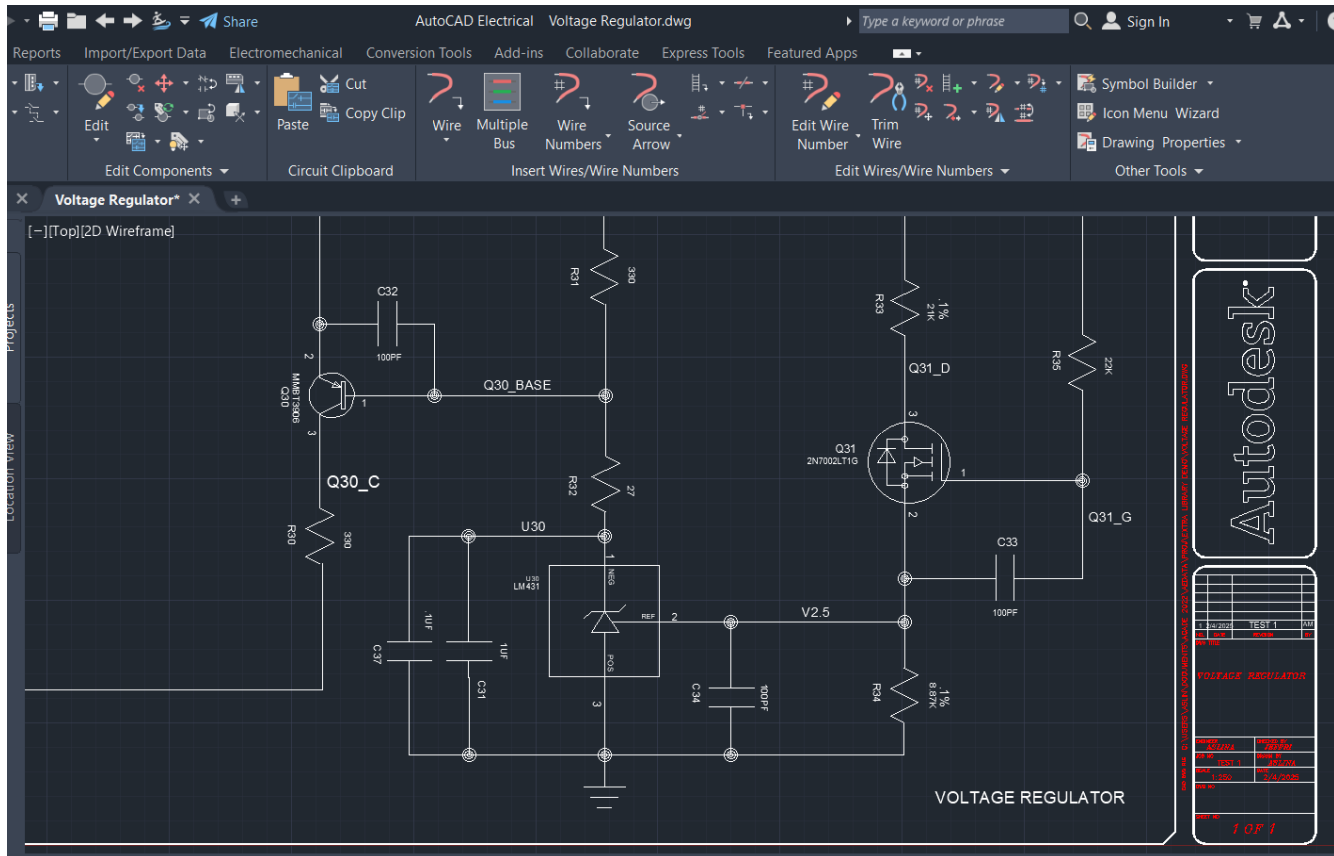
- Motorola Solutions Sdn. Bhd. (Malaysia) – Electrical Engineer II
- ECHO Broadband Sdn. Bhd. (Malaysia)
 - Senior GIS Network Design Engineer
 - GIS Network Design Engineer
 - Junior Network Drafter
 - Part-Time Administrative Assistant



SOFTWARE SKILLS:

- AutoCAD – Basic, Electrical, Map 3D
- Bentley Microstation
- Cadence Virtuoso

Voltage Regulator Schematic (Smart Battery)



Project Description:

Tool Used: AutoCAD Electrical

Type: Voltage Regulator Circuit (Partial Schematic)

Role: Electrical Engineer II, Motorola Solutions Sdn. Bhd. (Project Belize)

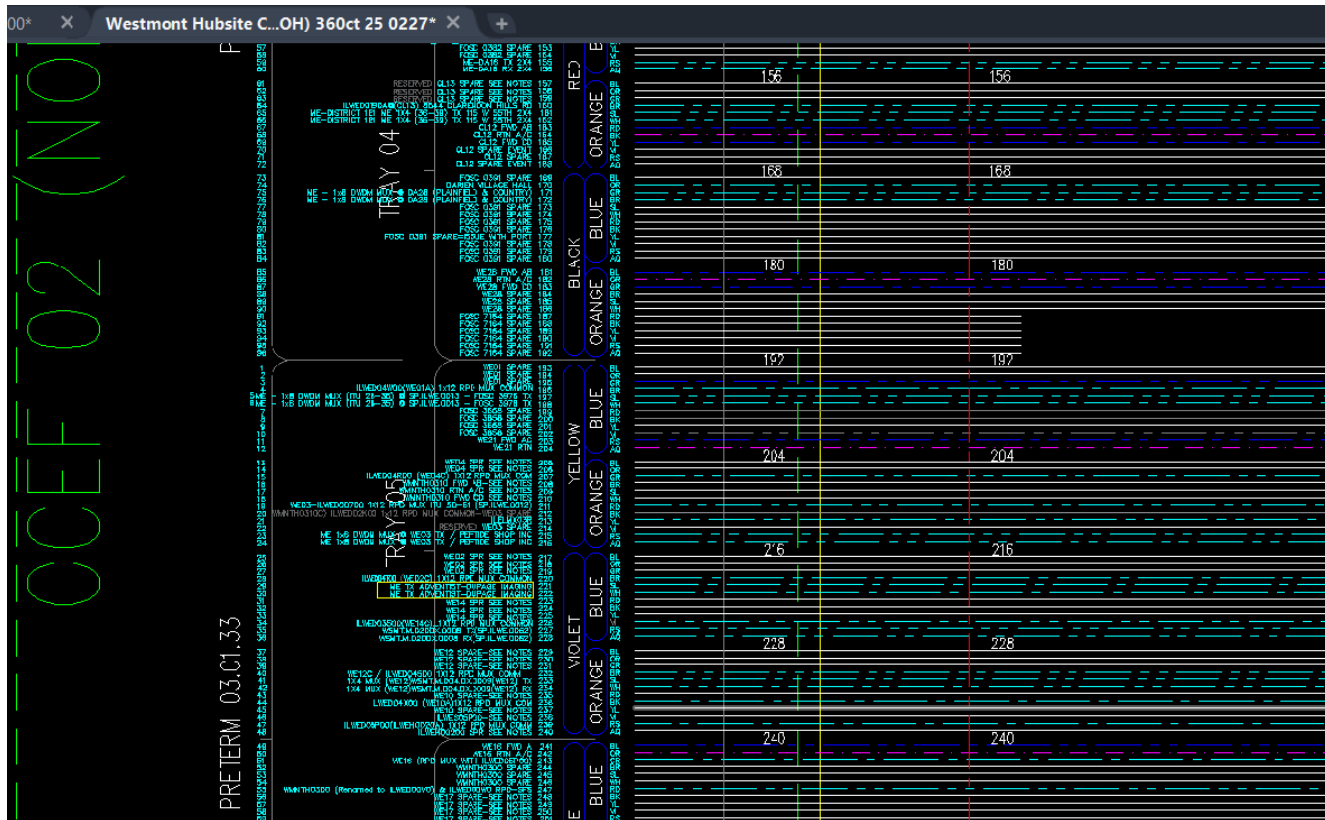
Components:

- Bipolar Junction Transistor (BJT)
- N-Channel MOSFET
- Resistors
- Capacitors

Description/Highlights:

- This schematic is a recreated portion of a smart battery circuit. Component values have been altered for confidentiality, as the original design is proprietary.
- Voltage regulation is essential in smart battery systems, as raw battery voltage fluctuates during charge/discharge cycles.
- Unregulated voltage may damage sensitive internal electronics such as microcontrollers, sensors, and fuel gauges.
- The voltage regulator ensures a consistent and stable output voltage, protecting internal components and ensuring reliable operation.

Fiber Cable Schematic Design



Project Description:

Tool Used: AutoCAD Basic

Type: FTTx Fiber Schematic

Role: Senior GIS Network Design Engineer, ECHO Broadband (Project Comcast)

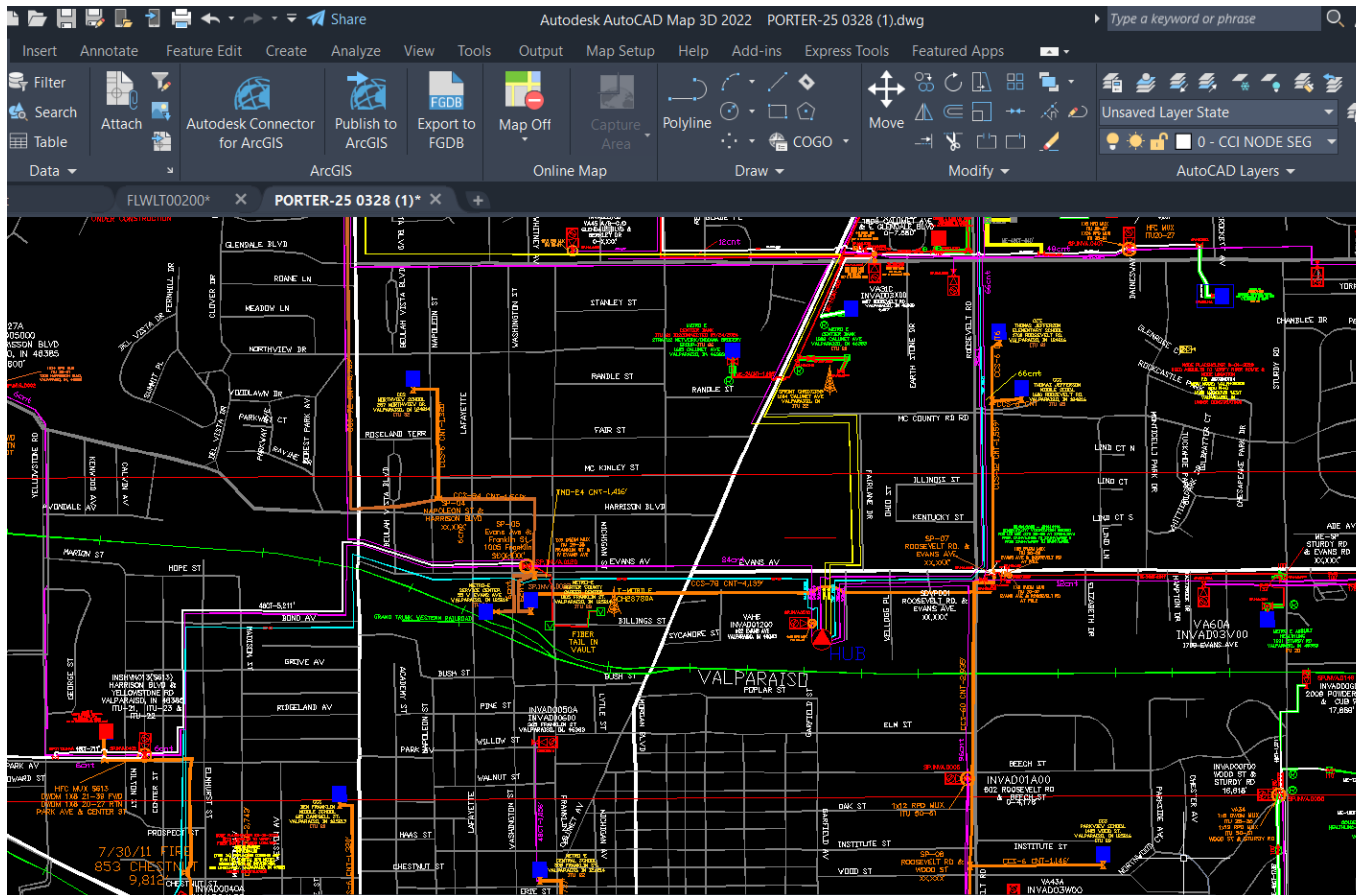
Components:

- Fiber cable path and address
- Cabinet tray number
- Cable number
- Fiber color (traced from hub to endpoint)

Description/Highlights:

- Updated FTTx fiber network schematics following design approval.
- Verified continuity of each fiber sheath from the hub to the correct customer endpoint.
- Identified dark fibers (unused), damaged ports, and reserved fiber sheaths to ensure efficient use of network resources.
- Ensured updated records were accurate for future planning and troubleshooting.

Fiber Network Update by Location



Project Description:

Tool Used: AutoCAD MAP 3D

Type: Location-Based Fiber Network Update

Role: GIS Network Design Engineer,
ECHO Broadband (Project Comcast)

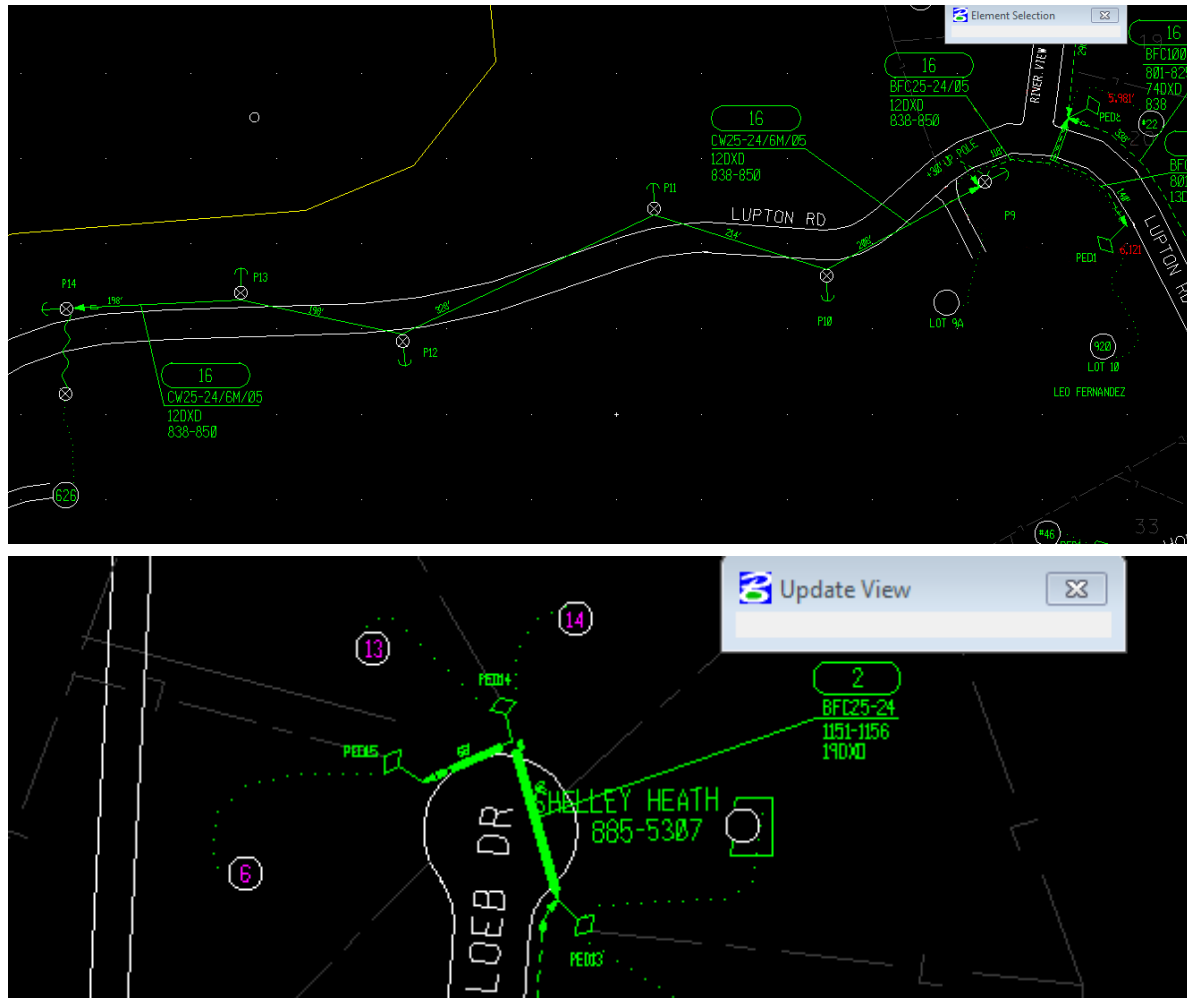
Components:

- Fiber network layout from hub to distribution area

Description/Highlights:

- Designed and updated fiber routes from the hub to the endpoint using precise geolocation data.
- Mapping included estimated distance, serving cable, splice points, and connection details.
- Zooming in allowed access to detailed data such as house numbers and lot identifiers.
- Improved the accuracy and usability of network maps for field engineers and future expansions.

Structure Mapping for GIS Migration



Project Description:

Tool Used: Bentley Microstation

Type: Structure Map for Network Migration

Role: GIS Network Design Engineer,
ECHO Broadband (Project
Comporium)

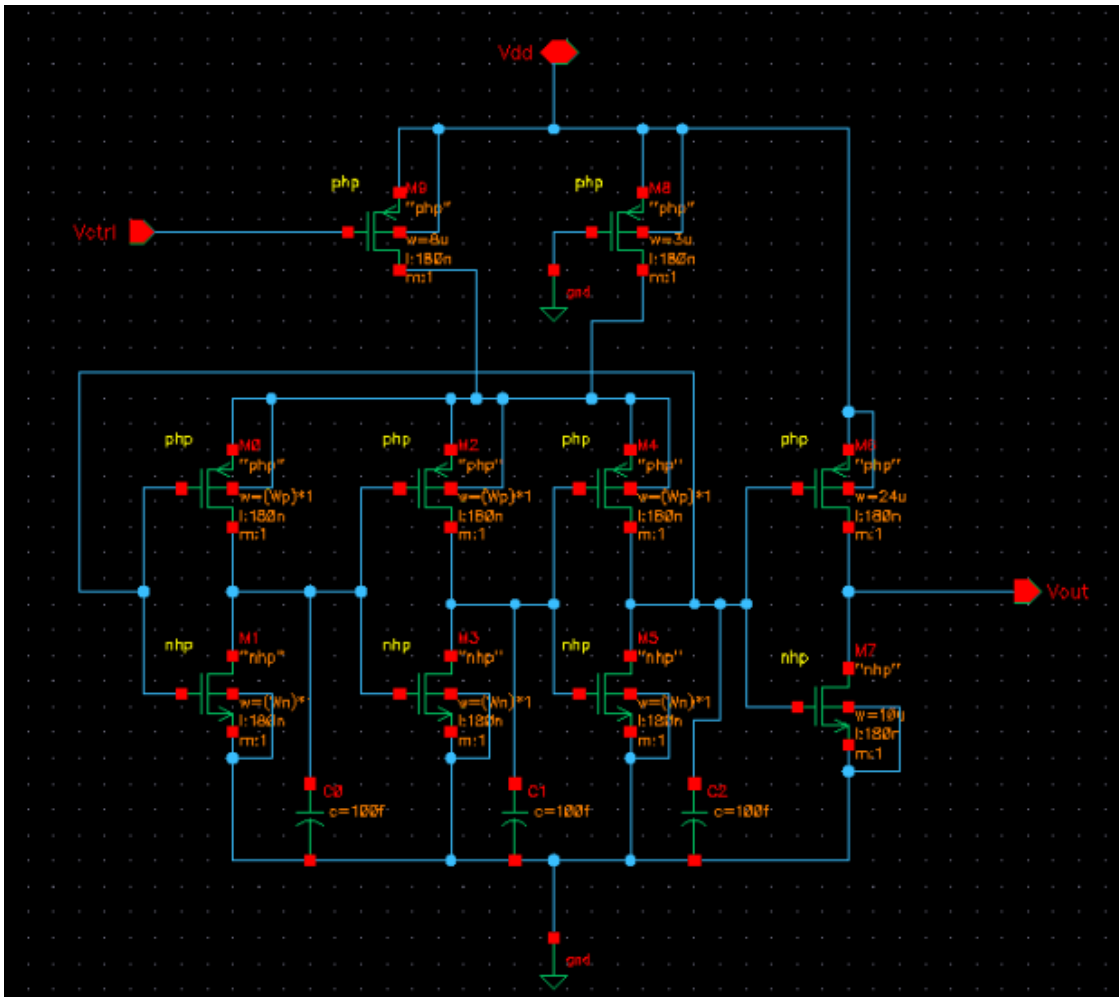
Components:

- On-site structures (poles, pedestals, routing paths)

Description/Highlights:

- Cross-checked and updated the location, parcel data, and address of each structure using Google Maps.
- Ensured positional accuracy prior to migrating the network into the GIS utility system.
- Verified alignment across multiple drawings to maintain continuity during the merge process.
- Critical for a seamless transition to GIS, where drawings are combined into a unified system.

Ring Voltage-Controlled Oscillator (VCO) Design



Project Description:

Tool Used: Cadence Virtuoso

Type: Analog Design (VCO)

Role: Student, Universiti Sains Malaysia
(Postgraduate Dissertation)

Components:

- 3-stage CMOS inverter chain
- PMOS and NMOS transistors
- Capacitors for tuning frequency
- Vctrl input for voltage control

Description/Highlights:

- Designed and connected CMOS inverter stages to generate oscillation.
- Tuned transistor W/L ratios to control frequency behavior.
- Implemented a voltage control input (Vctrl) to modulate the delay and achieve adjustable frequency output.
- Simulated output waveforms to verify frequency stability and functional accuracy.