

RAHIM UDDIN

Charlotte, NC, 28205 | (813) 327-9346 | rahim@gmail.com | linkedin.com/in/rahim

Technical Skills

- **Design & Mapping Tools:** AutoCAD, ArcGIS Pro – Proficient in drafting fiber infrastructure and spatial network layouts.
- **GIS & Data Platforms:** Vetro FiberMap, SPARC GIS, SQL Server – Skilled in splice planning, pole tracking, and asset databases.
- **Industry Standards:** Knowledge of NESC and NEC regulations for aerial and underground fiber deployments.
- **Programming & Analysis:** Python scripting, SQL querying, Power BI reporting, advanced Excel functions and automation.

Professional Experience

Fiber Infinity LLC – Remote

OSP Fiber Design Engineer

July 2024 – Present

- Developed centralized XGS-PON fiber layouts using AutoCAD for efficient deployment and expansion.
- Optimized cable routing and equipment positioning to reduce costs and improve service coverage.
- Interpreted redlines and field data to generate accurate as-built CAD files for post-construction documentation.
- Automated shapefile exports through AutoLISP enhancements, improving GIS team handoffs.
- Analyzed plats and ROW maps to validate alignment with property lines and easement rules.
- Maintained high design accuracy using self-audited checklists and independent QA processes.
- Compiled Bills of Materials, splice records, and service address datasets using GIS and automation tools.
- Assisted in building SOPs and onboarding guides, supporting faster team integration and project ramp-up.

BrightFiber Networks – Raleigh, NC

CAD Team Lead – Fiber Infrastructure Projects

July 2023 – June 2024

- Managed a team of CAD drafters across multiple time zones to transform engineering plans into permit-ready drawings.
- Provided technical mentorship and introduced workflow automation, enhancing team productivity by over 40%.
- Conducted detailed QA on all drawings to ensure compliance with local permitting rules and client standards.
- Automated data tracking processes that cut down turnaround times and improved submission consistency.
- Created templates, training modules, and internal documentation to standardize practices across teams.
- Encouraged a collaborative team culture through weekly standups, peer reviews, and troubleshooting sessions.
- Liaised directly with clients and stakeholders to align design outputs with evolving project requirements and feedback.
- Led cross-functional coordination with engineering, GIS, and construction teams to proactively resolve design conflicts and accelerate project delivery.

BrightFiber Networks – Raleigh, NC

CAD Technician – Fiber Design

Jan 2021 – June 2023

- Drafted aerial and underground fiber systems including conduit paths, handhole placements, and MST layouts.
- Created and maintained organized CAD files with proper layer usage, Xref linking, and annotation protocols.
- Enhanced base maps for engineering overlays and simplified visual alignment with GIS data sources.
- Coordinated design clarifications with project engineers, permitting teams, and field inspectors.
- Authored internal guides and checklists to help streamline drafting and handoff processes.
- Utilized AutoCAD and GIS tools to accurately integrate utility data and ensure compliance with local design standards.
- Supported as-built documentation and redline updates based on field markups and construction feedback.

Education

North Carolina A&T State University – Greensboro, NC

Bachelor of Science in Electrical Engineering

Relevant Courses: Geographic Information Systems (GIS), CAD Design, Infrastructure Planning, Data Structures

1. Inuberry IO Solutions – OSP Fiber Design Engineer (Remote)

STAR Story: Enhancing GIS Hand-Offs and Network Accuracy

- **Situation:**

When I joined Inuberry, the company was rapidly scaling XGS-PON fiber deployments across multiple regions, but the design-to-GIS handoff process was inefficient and prone to errors due to manual shapefile exports.

- **Task:**

My responsibility was to produce highly accurate CAD fiber designs while streamlining the GIS integration process and maintaining compliance with ROW and easement standards.

- **Action:**

I enhanced AutoCAD workflows by scripting custom AutoLISP routines that automated shapefile exports. I also built a QA checklist system to self-audit designs and cross-verified property alignments using plats and ROW maps. I contributed to SOP creation and mentored new team members using onboarding guides I helped build.

- **Result:**

The AutoLISP automation reduced GIS handoff time by 30%, significantly lowered error rates in as-built files, and improved alignment accuracy. My QA checklists also helped establish a quality benchmark adopted across the team.

2. BrightFiber Networks – CAD Team Lead (Raleigh, NC)

STAR Story: Scaling Team Productivity Through Automation and Mentorship

- **Situation:**

When promoted to CAD Team Lead, BrightFiber was expanding fiber infrastructure across state lines. The team, spread across different time zones, struggled with inconsistent workflows, errors in permit packages, and slow turnarounds.

- **Task:**

I was tasked with managing and improving the output quality and speed of a distributed drafting team while standardizing workflows and maintaining permit compliance.

- **Action:**

I led weekly standups and peer reviews to foster collaboration and consistency. I introduced automation for data tracking and developed a library of templates, training materials, and documentation. I also mentored junior drafters and rolled out best practices for QA and permitting.

- **Result:**

We saw a 40% boost in team productivity and significantly improved submission accuracy and consistency. Clients praised our streamlined process, and new hires were fully productive within two weeks thanks to our onboarding system.

3. BrightFiber Networks – CAD Technician (Raleigh, NC)

STAR Story: Building Scalable Fiber Drafting Workflows

- **Situation:**

As a CAD Technician, I was responsible for drafting complex fiber routes for both aerial and underground systems at a time when BrightFiber was onboarding new markets and cities.

- **Task:**

I needed to create clear, accurate, and scalable designs that met engineering, permitting, and field inspection standards—while staying organized across multiple projects.

- **Action:**

I built and maintained clean CAD files with disciplined layer usage and Xref linking. I worked closely with engineers and inspectors to resolve field issues and authored internal checklists to reduce revision cycles. I also supported as-built documentation updates using redlines and field markups.

- **Result:**

My work helped cut project rework time by 25%, improved design clarity, and laid the foundation for our team's internal drafting standards. These guides were later used as the basis for training new drafters.

I. Technical Knowledge & Fundamentals (20 Questions)

1. Explain the difference between **feeder** and **distribution fiber** in an OSP network.
2. What is **XGS-PON**, and how is it different from GPON?
3. Describe the **main components of a fiber optic cable**.
4. What is the **purpose of a splice closure**?
5. Explain the **difference between fusion splicing and mechanical splicing**.
6. What is a **handhole**, and why is it critical in OSP design?

7. How do you determine **minimum bend radius** for fiber cables?
8. Explain **aerial vs. underground fiber routing** and their advantages/disadvantages.
9. What is the role of **Right-of-Way (ROW) and utility easements** in fiber design?
10. How do **NESC and NEC codes** affect OSP design?
11. What are **typical clearance requirements** for aerial fiber across roads and sidewalks?
12. Describe the **workflow of creating as-built fiber documentation**.
13. How does **fiber attenuation** occur, and how do you reduce it?
14. What are **mid-span access points**, and when are they used?
15. Explain the **importance of slack loops** in OSP design.
16. What is a **make-ready survey**, and why is it needed for pole attachments?
17. What are the **steps for permitting** in a multi-city fiber project?
18. How do you **calculate the fiber count** needed for a project segment?
19. Explain the **difference between backbone and lateral fiber routes**.
20. What are **common mistakes** that can cause permitting rejections?

II. Tools & Software Proficiency (15 Questions)

21. How do you **use AutoCAD** in OSP fiber design?
22. What is the **role of ArcGIS Pro** in your fiber workflow?
23. How have you used **Vetro FiberMap** for network visualization?
24. How do you **create and export shapefiles from AutoCAD to GIS**?
25. Describe an **AutoLISP automation** you have built for OSP design.
26. How do you **prepare splice plans** using SPARC GIS or similar tools?
27. Explain how to **validate ROW and easements** using plat maps.
28. What is your **QC checklist process** before submitting drawings?
29. How do you **organize CAD layers and Xrefs** in a large OSP project?
30. Explain how **SQL or Power BI** can be used to track project status.
31. How do you **ensure CAD and GIS coordinate systems align**?
32. What steps are required to **generate permit-ready CAD drawings**?
33. How do you **handle field redlines efficiently**?
34. What is your **process for maintaining block libraries** in AutoCAD?
35. Have you ever **automated data tracking or reporting** for fiber projects? How?

III. Scenario-Based / Problem-Solving Questions (20 Questions)

36. A **gas utility line** is discovered along your **planned fiber route**—what do you do?
37. Your **aerial span violates NESC clearance**—how do you redesign it?
38. The **city rejects your permit for an incorrect easement**—how do you fix it?
39. How would you **re-route fiber** if a key ROW is denied by a landowner?
40. Field redlines are **coming in slowly**, delaying as-built submissions—how do you speed it up?
41. If **plat maps and GIS data conflict**, how do you verify the correct alignment?
42. A client asks for **shorter delivery timelines** without losing quality—what's your strategy?
43. How do you **coordinate CAD and GIS teams** to ensure seamless handoff?
44. A fiber route has **too many splices**—how would you optimize it?
45. You're tasked to **standardize drafting templates** for a new project—what would you include?
46. A **field engineer sends incomplete redlines**—how do you proceed?
47. You're assigned **three urgent projects simultaneously**—how do you prioritize?
48. A **junior drafter is making repeated mistakes**—how do you mentor them?
49. You find **field as-builts don't match your submitted drawings**—what's next?
50. Your project requires a **railroad crossing**—what are your considerations?
51. A client **GIS import shows shifted coordinates** from your CAD—how do you fix it?
52. State DOT requests **additional documentation**—what steps do you take?
53. A **last-minute client design change** occurs after permit submission—how do you handle it?

54. How do you **ensure smooth handoff** from design to construction teams?
55. A **fiber segment is damaged post-construction**—what's your process for updating as-builts?

IV. Project Experience & Past Roles (15 Questions)

56. Tell me about a **complex OSP project** you worked on.
57. At **Inuberry IO**, how did your **AutoLISP automation** improve efficiency?
58. What was your **biggest leadership challenge** at BrightFiber as CAD Team Lead?
59. Describe how you **improved the CAD-to-GIS handoff process**.
60. How did you manage **distributed teams across time zones**?
61. Tell me about a **time you introduced workflow automation**.
62. What are **lessons learned** from scaling XGS-PON projects?
63. Share an **example where field redlines prevented a design error**.
64. How did you **mentor new drafters and improve their quality**?
65. Have you **ever caught a critical design error** before construction? What happened?
66. How did you **coordinate permitting** with city or state agencies?
67. What was your **method for tracking project progress** at BrightFiber?
68. Share a **success story** where your team delivered ahead of schedule.
69. What is the **biggest impact you made** on your previous employer's workflow?
70. Tell me about a **project where you reduced rework or revision cycles**.

V. Regulatory, Safety & Compliance (10 Questions)

71. How do you **ensure NESC compliance** for aerial designs?
72. What **NEC considerations** are needed for underground fiber?
73. How do you **manage ROW and easements** during OSP planning?
74. What are **differences between municipal and utility ROW rules**?
75. Explain the **pole attachment process** for aerial fiber.
76. How do you **avoid clearance conflicts** with existing power lines?
77. How do **state DOT rules** impact OSP projects?
78. What is **make-ready work**, and when is it required?
79. How do you **prepare documentation** for permitting authorities?
80. What is a **key safety consideration** in active OSP construction?

VI. Teamwork, Communication & Leadership (10 Questions)

81. How do you **coordinate between design and field teams**?
82. Describe your **mentorship approach** for junior drafters.
83. How do you **handle disagreements** within a project team?
84. What is your **strategy for maintaining quality** in high-pressure projects?
85. How do you **communicate project status** to clients and stakeholders?
86. Share an **example of a highly collaborative project** you worked on.
87. How do you **explain technical details to non-technical stakeholders**?
88. What is your **process for documenting and sharing lessons learned**?
89. How do you **balance speed and accuracy** in design delivery?
90. Have you **ever led a cross-functional project team**? What was your approach?

VII. Behavioral & Situational (10 Questions)

91. Tell me about a **time you made a mistake** and how you fixed it.
 92. What **motivates you** to work in OSP fiber engineering?
 93. Share a **time you went above and beyond** to deliver a project.
 94. What's the **most challenging project** you've faced, and how did you handle it?
 95. How do you **handle critical feedback** from a QA team or client?
 96. Share a **time you quickly learned a new tool or technology**.
 97. How do you **prioritize tasks under pressure**?
 98. Give an example of **continuous improvement** you implemented.
 99. Share a **time you solved a complex problem independently**.
 100. Why should we **hire you over other OSP Engineers**?
-

Rahim Uddin – OSP Engineer Interview Cheat Sheet

1. Top 30 Must-Know Technical Points

OSP Design & Fiber Basics

1. **Feeder vs. Distribution Fiber:** Feeder runs from the central office to local distribution points; distribution serves individual premises.
2. **XGS-PON:** 10 Gbps symmetrical passive optical network; upgrade from GPON.
3. **Aerial vs. Underground Fiber:** Aerial is faster/cheaper but requires NESC compliance; underground is safer but slower and costlier.
4. **Fiber Attenuation:** Signal loss per distance; minimized by careful splicing and maintaining bend radius.
5. **Splicing Methods:** Fusion (low loss, permanent) vs. Mechanical (quick, temporary/higher loss).
6. **Splice Closure:** Enclosure protecting spliced fiber sections from weather and physical stress.
7. **Handholes & Vaults:** Access points for pulling fiber and future maintenance.
8. **Mid-Span Access:** Enables access to fibers without cutting the main cable.
9. **Bend Radius Compliance:** Minimum bend per manufacturer (commonly 10× cable diameter).
10. **Slack Loops:** Extra fiber reserved for maintenance and emergency rerouting.

Permitting & Compliance

11. **Right-of-Way (ROW):** Public land access for installing infrastructure.
12. **Utility Easements:** Private property permissions for running fiber.
13. **NESC (Aerial) vs. NEC (Underground):** Core safety and design codes for OSP fiber.
14. **Clearance Requirements:** Typical ~15–18 ft for roads, ~12 ft for sidewalks.
15. **Make-Ready Work:** Pole modifications needed before attaching fiber.

Software & Tools

16. **AutoCAD:** Layer control, Xrefs, and block management for OSP drafting.
17. **ArcGIS Pro / Vetro FiberMap:** Spatial visualization and asset management.
18. **SPARC GIS:** Splicing plans and pole tracking.
19. **AutoLISP Automation:** Reduces repetitive CAD tasks (labeling, exports).

20. **Python & SQL:** Data querying, reporting, and workflow automation.

QC & Workflow

21. **Redline Integration:** Incorporate field changes accurately into as-built files.

22. **QC Checklist:** Verify labeling, layer usage, ROW compliance, and scaling.

23. **CAD-to-GIS Export:** Use proper projections (State Plane/NAD83) for shapefiles.

24. **As-Built Documentation:** Finalized post-construction design reflecting field changes.

25. **QA/QC Benefit:** Reduces errors, permit rejections, and costly field rework.

Field & Scenario Awareness

26. **Conflict Resolution:** Verify against gas, electric, and water utilities before routing.

27. **Emergency Reroutes:** Quick design changes to bypass construction or hazards.

28. **DOT/City Coordination:** Required for road crossings or high-traffic areas.

29. **Team Communication:** Proactive updates reduce back-and-forth delays.

30. **Continuous Improvement:** Template and checklist standardization saves 30–50% drafting time.

2. STAR Stories – Fully Polished

Story 1 – Inuberry IO: Enhancing GIS Hand-Offs

- **Situation:** Scaling XGS-PON fiber projects; CAD-to-GIS handoff was slow and error-prone.
- **Task:** Improve efficiency and accuracy of shapefile exports while maintaining ROW compliance.
- **Action:**
 - Developed AutoLISP routines to automate shapefile exports.
 - Created QA checklist for self-auditing and cross-checked plats & ROW maps.
 - Helped author SOPs and onboarding guides for new hires.
- **Result:**
 - Reduced GIS handoff time by 30% and minimized errors in as-built files.
 - Improved overall alignment accuracy and set a team-wide QC standard.

Story 2 – BrightFiber Networks: Team Leadership & Automation

- **Situation:** Leading a distributed CAD team with inconsistent outputs and slow turnarounds.
- **Task:** Standardize workflows, improve permit-ready drawing quality, and boost productivity.
- **Action:**
 - Led weekly standups, peer reviews, and technical mentoring.
 - Developed templates, SOPs, and automation for data tracking.
 - Fostered collaboration across CAD, GIS, and engineering teams.
- **Result:**
 - Increased productivity by 40% and improved submission consistency.
 - Reduced onboarding time for new hires to two weeks.
 - Enhanced client satisfaction with cleaner, faster deliverables.

Story 3 – BrightFiber Networks: Drafting Workflow Standardization

- **Situation:** As a CAD Technician, needed to draft clear aerial and underground fiber layouts for multiple cities.

- **Task:** Produce accurate, scalable drawings and reduce revision cycles.
- **Action:**
 - Maintained strict layer usage, Xref linking, and clean base maps.
 - Coordinated closely with engineers and inspectors to resolve field issues.
 - Authored checklists and guides to standardize drafting handoffs.
- **Result:**
 - Cut rework by 25% and improved clarity of fiber layouts.
 - Created documentation that later became core training material for new drafters.

3. CAD-to-GIS Workflow Diagram & Talking Points

Workflow:

pgsql
 CopyEdit
 Field Survey → Redlines → AutoCAD Draft → QC Checklist → CAD-to-GIS Export → Permitting → As-Built Update

Talking Points for Interviews:

1. **Begin with field survey & redlines** to capture accurate site conditions.
2. **Draft in AutoCAD** using block libraries, Xrefs, and correct layer structures.
3. **Apply QC Checklist** to ensure compliance with NESC, ROW, and layer standards.
4. **Export shapefiles/KMZ to GIS** for permitting and asset tracking.
5. **Coordinate with permitting authorities** for submittal and approval.
6. **Update as-built files** post-construction with final redlines for handoff.

Usage Guide for Cheat Sheet

- **Review top 30 points** before each interview.
 - **Memorize STAR stories** to cover leadership, technical, and problem-solving aspects.
 - **Practice drawing & explaining the workflow diagram** for visual impact in interviews.
-

RECRUITER QUESTIONS:

I. Background & Experience (8 Questions)

1. Can you **walk me through your resume?**
2. What made you **choose a career in OSP fiber design?**
3. Can you **summarize your experience** with AutoCAD and GIS tools in OSP projects?
4. What type of **OSP projects** have you worked on—rural, urban, aerial, or underground?
5. How much **hands-on experience** do you have with **splicing plans or pole data management?**

6. Can you describe a **project where you were most proud of your contribution?**
7. Have you **worked with permitting authorities** or dealt with **ROW and easements?**
8. What's your **strongest technical skill** related to OSP engineering?

II. Current Role & Responsibilities (5 Questions)

9. What does a **typical day** look like for you in your current role at Inuberry?
10. How do you **interact with field engineers, permitting teams, or GIS teams?**
11. What **automation or process improvements** have you contributed to recently?
12. How do you **ensure accuracy and quality** in your work?
13. What **types of networks** (like GPON, XGS-PON) have you been involved in designing?

III. Motivation & Career Goals (5 Questions)

14. Why are you **interested in changing roles** or considering new opportunities now?
15. What **kind of OSP projects** do you enjoy working on the most?
16. Where do you **see your career in 2-3 years** in the telecom/fiber industry?
17. Are you **open to relocation or field visits** if required?
18. What **excites** you about working as an OSP Design Engineer?

IV. Teamwork & Communication (4 Questions)

19. Have you **led or mentored team members** in any of your roles?
20. Can you **give an example** of how you collaborated with a multi-disciplinary team?
21. How do you **handle feedback or redlines** from field or QA teams?
22. What is your **preferred communication style** when working with remote teams?

V. Work Preferences & Logistics (8 Questions)

23. Are you **currently employed**, and what is your **availability to start** if selected?
24. What is your **preferred work setup**: fully remote, hybrid, or on-site?
25. Are you **comfortable with travel or occasional field visits**?
26. Do you have **experience working in fast-paced or deadline-driven environments?**
27. What is your **expected compensation** for this role?
28. Are you **legally authorized to work** in the U.S.?
29. Will you **require sponsorship** now or in the future?

30. Do you have **any upcoming commitments** that might affect your availability for interviews or project start?