



Procurement Services
404 N El Paso
Russellville, AR 72801
479-968-0269

Request for Proposal RFP 25-015

East Fiber Loop Project

Sealed Responses must be received by April 21, 2025 2 p.m.

Issuing Officer-Jennifer Warren

jwarren2@atu.edu

Phone: 479-964-0583 ext. 3552

Anticipated Procurement Timetable

RFP Issued: March 31, 2025

Mandatory Site Visit: April 8 and 15, 2025 at 10 a.m. Meet at RCB 105 W O Street Room Suite 400 Russellville, AR 72801

Questions deadline: April 16, 2025 4 p.m.

Answers posted to website: April 17, 2025 4 p.m.

Opening of Proposals: April 21, 2025 2 p.m.

Selection Committee meeting: Week of April 21, 2025 (tentative)

Awardee Notified: Week of May 5, 2025 (tentative)

Project completion deadline: July 31, 2025-Firm

Background

Arkansas Tech University is a state university established in 1909 with programs at the technical certification, associate, baccalaureate and graduate levels. The University has campuses in Russellville, Arkansas, and Ozark, Arkansas. The institution also operates Arkansas Tech Career Center (ATCC), a career and technical training initiative headquartered in Russellville with satellite locations at Clarksville, Danville, Ozark and Paris.

Arkansas Tech is also a leader in the state for science, technology, engineering and mathematics education. Here, students can explore intersecting career paths made possible by more than 120 undergraduate degree programs and more than 25 graduate degree options—all focused-on student success.

ATU-Ozark Campus offers 29 of Tech's technical certificate and associate's degree programs with a focus on workforce education and partnership with over 300 industry partners in the region, all of which results in multiple career

pathways for the approximately 2,100 Arkansas Tech students served through Ozark.

ATCC serves high school students, provides concurrent credit to 19 school districts and educates approximately 1,000 students in nine programs of study.

Scope

This Request for Proposals (RFP) outlines basic requirements for services to be provided. Arkansas Tech University is the client and makes no guarantee as to the number and size of projects, which may be awarded under this proposal. See pages 23 - 65.

Award:

The University reserves the right to negotiate with the consultant selected for best and final offer.

Award will be made in the best interest of the University; however, the University reserves the right to not award any contract pursuant to this request for quotation. Cost will not be the sole criteria for determining the contract award but will comprise 30% of the weight in the deciding factor.

Proposals that are substantially incomplete or lack key information will be rejected.

The initial term of this contract is anticipated to be for a period of one (1) year with the option to renew on an annual basis. If the University requires additional services after that time, the contract may be extended for up to as long a time as necessary to complete the additional services not to exceed 7 years. The University reserves the right to cancel this contract at any time upon written notice given thirty (30) days in advance. If during the performance of the contract, the consultant violates any local, state or federal law, the University reserves the right to cancel this contract immediately. The University will give written documentation to the contractor as to the reason for cancellation. Authorized services performed for the University will be paid for through the cancellation date with the exception of illegal acts.

PERFORMANCE & PAYMENT BOND FOR CONTRACTS OVER \$50,000.00
(Arkansas Code Annotated 18-44-503, 18-44-506, 18-44-507 and Arkansas Code Annotated 22-9-401, 22-9-402, 22-9-403)

The successful bidder shall furnish a Performance and Payment bond within 10 days after receipt of the University's Notice of Intent to Award. Use the proper Arkansas Statutory Performance and Payment Bond Form, provided by

the University or by the Arkansas Building Authority. Failure to furnish the required bonds may cause forfeiture of bid guarantee to the Owner as liquidated damages.

The Contractor shall furnish a "Performance and Payment Bond" in the amount equal to 100% of the contract price as security for the faithful performance of this contract and for payment of all indebtedness for labor and materials furnished or performed in connection with this contract. The bond shall be written by a surety company that is qualified and is authorized to do business in the State of Arkansas. The bond must be executed by a resident local agent who shall be entitled to the full commission paid local agents, who is licensed by the Insurance Commissioner to represent the surety company executing said bond and who files with said bond his Power of Attorney as his authority. The mere countersigning of a bond will not be sufficient.

The bond shall be written in favor of Arkansas Tech University and executed. An original and two (2) copies of the bond must be furnished, with Power of Attorney attached to each. The contractor shall file (not record) the original with the Clerk in the Circuit Court of Pope County. The contractor is to pay all expenses incident to the filing of the bond. The remaining two copies should be certified by the Clerk to evidence the filing of the original and these two copies submitted to ATU Procurement Services.

SUBCONTRACTORS

All prime contractors, as a condition to perform construction work for and in the State of Arkansas, shall use no other subcontractors when the subcontractors' portion of the project is \$50,000 or more, except those qualified and licensed by the Contractors Licensing Board in Mechanical (HVAC-R), Plumbing, Electrical and Roofing/Sheet Metal.

For those bids where the listed work is \$50,000 or more, the prime contractor must make a definite decision as to which subcontractor he intends to use. The prime contractor shall place the names, licenses of each subcontractor and indicate on the space provided on the Bid Form that the amount of the listed work is \$50,000 or more.

The prime contractor may use his own forces to do the listed work; however, if the listed work is \$50,000 or more, the prime contractor must be qualified and licensed by the Arkansas Contractors Licensing Board to perform the listed work. Once the prime contractor determines his own forces will be used, he shall place his name, license number and indicate on the space provided on the Bid Form that the amount of listed work is \$50,000 or more.

In the event the amount of the listed work is below \$50,000, the Prime Contractor shall place the names of the person or firm performing the work and indicate on the space provided on the Form of Proposal that the listed work is under \$50,000. Failure to complete the bid form correctly shall cause the bid to be declared non-responsive and the bid will not receive consideration.

Any questions pertaining to this RFP are to be directed to Jennifer Warren, Director of Procurement, jwarren2@atu.edu 479-964-0589 ext. 3552.

Arkansas Tech University's Standard Terms & Conditions may be found at www.atu.edu/purchasing

Additional terms and conditions of this RFP may be found in Attachment A below.

TAXES

The bidder shall include in his bid ALL State Sales Tax, Social Security Taxes, State Unemployment Insurance and all other items of like nature. It is the intent that the bid shall represent the total cost to the University of all work included in the contract. The local tax rate is 9%.

Evaluation

Responses to this request are rated by points. The responses must include the following information for evaluation:

Evaluation Category	Point Value
Cost	30
Experience with similar projects	30
Ability to meet project deadlines	20
References	20
Total	100

Proposal

All responses must be **sealed, completed and submitted using the proposal packet included in this document**. ATU has developed a format for preparing proposals to simplify the university's task of evaluating them. Failure to adhere to this format or to omit any of the required information will result in your firm's proposal being disqualified.

The contract will be awarded to the vendor, firm, contractor, offeror, or proposer ("vendor") who best satisfies the University's needs at optimum cost and service performance. Cost will not be the sole criterion for determining the contract award. Vendors shall state the purchase price of each line item in the Proposal Packet. The University shall issue a firm, fixed-price contract for the services resulting from this RFP.

INTERGOVERNMENTAL/COOPERATIVE USE OF PROPOSAL AND CONTRACT: In accordance with Arkansas Code §19-11-249, this proposal and the resulting contract are available to any college or university in Arkansas that wishes to utilize the services of the selected proposer, and if the proposer agrees, they may agree as provided in this RFP.

Respondents must use the cost sheet included in this document and submit **information for evaluation** as follows

1. No more than **one** page providing a general overview of your organization, including the nature of your ownership (privately or publicly held), the number employees, and the year the organization was founded.
2. No more than **three** pages describing experience and performance describe the full scope of services and support offered by your organization.
3. No more than **three** pages describing performance of similar engagement. Explain your organization's experience working with institutions of higher education.
4. Complete the reference section of this document and include no more than **three** pages describing recommendations.
5. If the base price exceeds \$50,000, a bid security (bid bond) in the amount of 5% of the base price must accompany each proposal.

ALL BIDDERS SHALL CONFORM TO THE REQUIREMENTS OF THE ARKANSAS CODE ANNOTATED 17-25-101 ET SEQ., ARKANSAS STATE LICENSING LAW FOR CONTRACTORS. CONTRACTORS MUST BE LICENSED ON THE DAY OF THE RESPONSE SUBMITTAL. THERE SHALL BE ONLY ONE (1) BID SUBMITTED PER STATE CONTRACTOR'S LICENSE, AND EACH BID RECEIVED SHALL HAVE THE LICENSE FOR THAT BIDDER.

Any confidential, proprietary, copyrighted or financial material submitted by respondents must be marked as such and submitted under separate cover. All submittals by proposers will be available for review to the extent permissible, pursuant to the Arkansas freedom of information act. A.C.A. Section 25-19-105-et seq.

Proposal Packet

Submittal Checklist

- ☐ Signed Cost Response
- ☐ Signed Attachment A (Page 13)
- ☐ Bid bond if base price is in excess of \$50,000
- ☐ Included information for Evaluation See Proposal Section above for requirements.
 - Overview of organization
 - Experience and performance
 - Vendor's performance with similar engagements
 - Recommendations from third parties
- ☐ Completed References Section
- ☐ Samples of work included in response
- ☐ Include required documents below)
- ☐ Signed addenda, if applicable
- ☐ Shipped to arrive at Procurement Office by **April 21, 2025 2 p.m.**

The following four (4) documents will be required prior to award of contract and may be included in RFP response.

1. [Disclosure Required by Executive Order 98-04:](#)
2. [Combined Certifications for Contracting with the State of Arkansas](#)
3. [EEOC Policy Statement](#)
4. Certificate of Commercial Liability Insurance

Send:

One original hard copy

One electronic copy on flash drive.

Include one electronic copy on flash drive with all proprietary information redacted.

Mail sealed response to

RFP 25-015

Fiber Project-East Loop

Procurement Services

Arkansas Tech University

404 N El Paso Ave.

Russellville, AR 72801

References	
Reference 1	
Business Name	
Contact	
Email Address	
Telephone Number	
Number of years as customer	
Reference 2	
Business Name	
Contact	
Email Address	
Telephone Number	
Number of years as customer	
Reference 3	
Business Name	
Contact	
Email Address	
Telephone Number	
Number of years as customer	

Bidder acknowledges receipt of the following addenda:

Cost Proposal

Provide an estimated fee for printing the following items. Please include all mail service charges as needed, but there is no need to include postage.

Name of Business	
Representative Name	
Email Address	
Telephone Number	
Yes	I can accommodate the work schedule to complete this project by the deadlines contained in this RFP document. Project Deadline: July 31, 2025
Instructions: All respondents must offer base bid for required work and respond with pricing on a combination of options A or B must be selected and pricing be completed for each below.	
Base Bid for Required Project Work	
If option A is selected, complete all the following fields.	
Base Bid for Option A	
Base Bid for Option C-Option C requires Option A also be chosen.	
Base Bid for Option D with Option A	
If option B is selected, complete all the following fields.	
Base Bid for Option B	
Base Bid for Option D with Option B	
Signature of Authorized Representative	

Printed/Typed Name:	
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Attachment A

Additionally, any resultant contract/agreement will include the following:

1. Nothing in this Agreement shall be deemed to waive the sovereign immunity of the State of Arkansas, Arkansas Tech University, the Arkansas Tech University Board of Trustees, or Arkansas Tech University administrators, officers, faculty, staff, employees or agents.
2. This Agreement shall be governed by the laws of the State of Arkansas. The exclusive jurisdiction for any dispute by Company regarding this agreement shall, pursuant to A.C.A. §19-10-204, shall be the Arkansas State Claims Commission.
3. Company agrees that it is solely responsible for complying with all laws as well as obtaining all required permission, licenses, or other authority for all items, services, goods, products, or activities that it performs or provides. Violation by Company or its employees of local, state or federal law during the performance of the contract shall permit the University to cancel this contract immediately with no penalty. Further, Company states that it is in compliance with all applicable laws and further, that it has or will obtain all required and necessary rights, licenses, titles, and permits necessary for all items, services, goods, products, or activities to be performed or provided. Company further agrees to fully indemnify and hold harmless Arkansas Tech University from any and all copyright, copyright infringement, license, royalties, title or other claims that arise or are made as a result of Company's service, goods, product, or activity on the campus of, or provided to, Arkansas Tech University.
4. Company agrees that it will be solely responsible for any harm, damage or injury that it, its product, its equipment, its goods, its service, or its employees, agents or guests cause or permit to occur to any person or their real or personal property as the result of Company's actions or failure to act. Company further agrees to fully indemnify and hold harmless Arkansas Tech University from any and all losses, damages, or expenses, including reasonable attorney's fees, arising out of or resulting from claims or actions for bodily injury, death, sickness, property damage, financial loss, or other injury or damage caused by Company's product, goods, service or otherwise, as

well as all claims alleging any negligent act or omission of Company, its employees, subcontractors, or agents.

5. The parties shall comply with all federal, state and local laws as required in connection with the performance of their obligations under this Agreement, including but not limited to, Executive Order 11246, as amended, Section 503 of the Rehabilitation Act of 1973, as amended, and the Vietnam Era Veteran's Readjustment Act of 1974, as amended. The parties hereby incorporate the requirements of 41 C.F.R. §60-1.4(a) (7), 60-250.5 and 60-741.5, if applicable.
6. Upon the signing of this Agreement by all parties, terms of the Agreement shall become available to the public, pursuant to the provisions of A.C.A. §25-18-501.
7. Licensor shall obtain and maintain in force and effect at all times during the term of this contract, at its sole expense, a general commercial liability insurance policy which policy shall have minimum limits of one million dollars (\$1,000,000.00) per occurrence and two million dollars (\$2,000,000.00) in the aggregate.
8. Company will not assign or otherwise transfer its duties under this contract to another person or entity without Arkansas Tech University's express written permission. Further, this agreement shall be binding upon the Company's successors and assigns.
9. Company agrees that it will not allow any of its employees, subcontractors or agents to engage in behavior that constitutes sexual harassment.
10. The parties agree and understand that approval of this Agreement or any amendments to this Agreement are subject to review and/or approval by the Arkansas General Assembly and/or any committee or sub-committee of the Arkansas General Assembly in its or their sole discretion. The parties further agree that in the event such legislative review or approval is not granted or is otherwise withheld, this Agreement shall terminate automatically with no penalty to Arkansas Tech University.
11. Any information of Arkansas Tech University or relating to Arkansas Tech University's business, including student information, which Company obtains as a result of the services contemplated by this Agreement, which information is not generally available to the public

or subject to the Arkansas Freedom of Information Act, shall be considered Confidential Information. All requests for Confidential Information shall be directed to Arkansas Tech University's representative, who will determine in his/her sole discretion whether disclosure of the requested Confidential Information is necessary to enable Company to perform the service under this Agreement. Regardless of how it is obtained, Company shall not disclose to any third party or parties, or use, except expressly for the sole purpose of performing its obligations under this Agreement, any Confidential Information given to Company by Arkansas Tech University or learned or developed during the course of the services under this Agreement, except that that Company may disclose such Confidential Information in order for Company to perform its obligations under this Agreement. Company shall cause all of its representatives to comply with the provision of this paragraph and shall be responsible for any breach by such representatives.

12. When Company handles or possesses personal and confidential Arkansas Tech University student, employee, faculty, staff or other individual's data such as, but not limited to, home addresses, banking information, health information (including but not limited to medical records), social security numbers, credit card numbers, birth dates, or medical information, Company must have procedures in place to ensure that the confidential information is protected against unauthorized disclosure or theft. Company agrees to keep secure all information or data that it receives under this Agreement. Company further agrees that if it determines that the security of this information or data has been breached, it will notify Arkansas Tech University within 24 hours of when it had notice of the breach. In the event Company fails in its responsibility to keep secure all information or data that it receives under this agreement, Company agrees to be fully responsible for all damages to any person or entity that result from the breach in security.
13. Company agrees that any data provided to it by Arkansas Tech University under or pursuant to this Agreement: (a) will be used by Company only for the purpose of performing this contract; (b) will be treated as confidential information; and (c) will not be used, sold or shared with any third party inconsistent with this provision.
14. Upon termination of this Agreement Company shall, upon request, aid and assist Arkansas Tech University in the retrieval or return of any or

all of the University's data or records that are in the possession of Company.

15. During the performance of this Agreement, Company shall remain in full compliance with the General Data Protection Regulation.
16. In the event the Arkansas General Assembly fails to appropriate sufficient funds or make monies available for any fiscal year covered by the term of the underlying agreement, the underlying agreement shall be terminated on the last day of the last fiscal year for which sufficient funds were appropriated or monies made available for such purposes. This provision shall not be construed to abridge any other right of termination the University may have.
17. The underlying agreement may be terminated at any time upon thirty (30) days' written notice by either party. Any such termination of the agreement is without prejudice to any obligations or liabilities of either party already accrued prior to such termination.
18. If any local, state or federal government or government agency changes or amends any laws, rules, or regulations affecting the rights, requirements, or relationships contemplated herein, Arkansas Tech University reserves the right to amend this Agreement in order to bring it into compliance with such changes.
19. Pursuant to A.C.A. §21-1-503, Company certifies that it is not currently engaged in, and further, hereby agrees that for the duration of the contract, not to engage in, a boycott of Israel.
20. The parties agree that pursuant to A.C.A. §19-11-247, before a contract is ratified and affirmed under subdivision (c)(1)(A) of A.C.A. §19-11-247, it shall be presented to the Legislative Council or, if the General Assembly is in session, to the Joint Budget Committee, for review if the contract is required to be submitted for review under A.C.A. §19-11-1006.
21. Pursuant to Act 557 of 2015, and A.C.A. §19-11-267, the service criteria for this Agreement is as follows: to provide competent services in the area of advertising as well performing all items set forth in paragraph one ("The Services") of the Agreement.

Acceptable performance of this Agreement shall be measured as follows: The Company shall perform its services consistent with the professional skill, quality, timeliness and care of other entities that perform/provide the same or similar advertising and public relations services.

Neither the University's review, approval, or acceptance of, nor payment for, the services required under this contract shall be construed to operate as a waiver of any rights under this contract or of any cause of action arising out of the performance of this contract, and the Company shall be and remain liable to the University in accordance with applicable laws for all damages to the University caused by the Company's negligent performance of any of the services rendered under this Agreement.

In the event that the Company shall fail to maintain or keep in force any of the terms and conditions of this Agreement, the University may notify the Company in writing of such failure and demand that the same be remedied within 10 days. Should the Company fail to remedy the same within said period, the University shall then, in its sole discretion, have the right to immediately terminated this agreement without penalty.

22. Company hereby approves all strikethroughs and deletions made by the University to the face of the Agreement, and further agrees that the terms of this Addendum supersede and are controlling over any conflicting terms set forth in the Agreement.

Signature

Date

Printed Name and Title

ARKANSAS TECH UNIVERSITY STANDARD TERMS & CONDITIONS

Revised January 9, 2020

1. GENERAL: Any Special Terms and Conditions included in the Request for Quotation (RFQ) override these Standard Terms and Conditions. The Standard Terms & Conditions and any Special Terms & Conditions become a part of any resultant contract.

2. ACCEPTANCE & REJECTION: The University reserves the right to accept or reject all or any part of a bid or any and all bids, to waive minor technicalities and to award the bid in the best interests of the University. This RFQ does not in any way commit the University to contract for the commodities/ services listed herein.

3. BID SUBMISSION: Bids must be submitted to ATU Procurement and Risk Management Services on this RFQ with attachments, when appropriate, on or before the date and time specified for bid opening. If this RFQ form is not used, the bid may be rejected. *If returned by mail*, each bid should be placed in a separate envelope completely and properly identified on the outside of the envelope with the bid number and the date of opening. Bid must be typed or printed in ink. Late bids will not be considered.

4. FAX BIDS: The University shall not be responsible for mechanical malfunctions that prevent receipt of faxed response by bid opening time and date.

5. SIGNATURE: Failure to sign bid will disqualify it. Person signing bid should show title or authority to bind his firm in a contract. "Signature" means a manual or an electronic or digital method executed or adopted by a party with the intent to be bound by or to authenticate a record that is:

(a) unique to the person using it; (b) capable of verification;

(c) under the sole control of the person using it;

(d) linked to data in a manner that if the data are changed, the electronic signature is invalidated

6. AMENDMENTS: Bid cannot be altered or amended after bid opening except as permitted by regulation.

7. NO BID: It is no longer necessary to return a "No Bid" response to the University. Bidder may be removed from the List of Bidders for failure to submit a response to three (3) consecutive bid invitations on any one bid class and/or sub-class.

8. PRICES: Quote FOB destination, freight prepaid. Bid unit price on quantity and unit of measure specified. In case of errors in extension, unit prices shall govern. Prices are firm and not subject to escalation, unless otherwise specified in the RFQ. Unless otherwise specified, bid must be firm for acceptance for thirty (30) days from bid opening date.

9. DISCOUNTS: "Discount from list" bids are not acceptable unless requested in the RFQ. Cash discount will not be considered in determining the low bid, except in the case of tie bids. All cash discounts offered will be taken if earned.

10. TAXES & TRADE DISCOUNTS: Do not include State Sales Tax in your bid. Trade discounts should be deducted from the unit price and the net price shown on bid.

11. QUANTITIES: Quantities stated on "firm" contracts are actual requirements of the University. The quantities stated in "term" contracts are estimated only and

are not guaranteed (the University may order more or less than estimated quantity).

12. BRAND NAME REFERENCES: Unless specified "No Substitutes", any catalog, brand name or manufacturer's reference used in bid invitation is descriptive only and not restrictive, and is used to indicate type and quality desired. Bids on brands of like nature and quality will be considered. If bidding on other than referenced specifications, bid must show manufacturer, brand or trade name and other description, and should include manufacturer's illustrations and complete descriptions of product offered. *If bidder fails to submit such, the bid may be rejected.*

The University reserves the right to determine whether a substitute offered is equivalent to and meets the standards of the item specified, and the University may require the bidder to supply additional descriptive material. Bidder guarantees product offered will meet or exceed specifications identified in the bid invitation. If bidder takes no exception to specifications or reference data in this bid, he will be required to furnish product according to brand names, numbers, etc., as specified in the invitation.

13. GUARANTY: All items bid shall be newly manufactured, in first class condition, latest model and design, including where applicable containers suitable for shipment and storage, unless otherwise indicated in bid invitation. Bidder hereby guarantees that everything furnished hereunder will be free from defects in design, workmanship and material; and that if sold by drawing, sample or specification, it will conform thereto and will serve the function for which furnished hereunder. Bidder further guarantees that if the items furnished thereunder are to be installed by the bidder that such items will function properly when installed. Bidder also guarantees that all applicable laws have been complied with relating to construction, packaging, labeling and registration. Bidder's obligations under this paragraph shall survive for a period of one (1) year from date of delivery, unless otherwise specified herein.

14. LIMITATIONS ON LIABILITY: Contract language from Bidder/Vendor that limits in any way the

University's recovery in tort actions is not acceptable.

15. SAMPLES: Samples or demonstrators when requested must be furnished free of expense to the University. If samples are not destroyed during reasonable examination, they will be returned to the bidder, if requested, at bidder's expense. Each sample should be marked with the Bidder's name and address, bid number and item number. Tests may be performed on samples or demonstrators submitted with the bid or on samples taken from regular shipments. In the event products tested fail to meet or exceed all conditions and requirements of the original specifications, the cost of the sample used and the reasonable cost of the testing shall be borne by the bidder.

16. ALTERATION OF ORIGINAL RFQ DOCUMENT: The original written or electronic language of the RFQ shall not be changed or altered except by approved written addendum issued by ATU Procurement Services. This does not prohibit a vendor/contractor from taking exception(s) to these documents, but does clarify that he/she cannot change the original document's written or electronic language. If a vendor wishes to make exception(s) to any or the original language, they must be submitted in separate written or electronic language in a manner that clearly explains the exception(s). If a vendor's

submittal is discovered to contain alterations/changes to the original written or electronic documents, the response may be declared as "non-responsive" and not considered.

17. AWARD: Any contract resulting from this RFQ shall be awarded with reasonable promptness by written notice to the lowest responsible and responsive bidder. A written Purchase Order mailed or otherwise furnished to the successful bidder within the time of acceptance specified in the RFQ results in a binding contract without further action by either party. The effective date of the purchase order shall be the date it is mailed or otherwise furnished by the University to the address of the bidder

indicated in his bid. *The University reserves the right to award the item (s) listed on the RFQ "individually", by "groups", "all or none" or by any other method as deemed in the best interest of the University.* In the event all bids exceed available funds, as certified by the appropriate fiscal officer, the Agency Procurement Official is authorized, in situations where time or economic considerations preclude re-solicitation of work of a reduced scope, to negotiate an adjustment of the bid price, including changes in the bid requirements, with the lowest responsive responsible bidder in order to bring the bid within the amount of available funds.

Firm Contract: A written University Purchase Order mailed or otherwise furnished to the successful bidder within the time of acceptance specified in the RFQ results in a binding contract that requires the contract to furnish the commodities or services as stated on the purchase order that will reference the original RFQ documents and number. Vendor is to immediately initiate action to comply with the requirements of the PO that by reference will incorporate all the requirements contained in the original Request for Quotation.

Term Contract: A Contract Award will be issued to the successful bidder. It results in a binding obligation of the item(s) or service(s) for specific pricing and time frame without further action at that time by either party. The Contract Award does not authorize any shipment(s) or service(s) to be provided. Shipment(s) of commodities or the providing of service(s) related to a "term contract" is only authorized by the receipt of a University Purchase Order by the contractor that will list the actual requirement, pricing, delivery location and contract number.

18. TERM OF CONTRACT: The RFQ, Contract Award or Purchase Order will clearly state the period of time the contract will be in effect for each individual contract.

19. DELIVERY: On the face of the RFQ, the bidder should show approximate number of days for delivery after receipt of order. "Working days" shall be defined as Monday through Friday of each week, exclusive of all official State holidays.

20. BACKORDERS OR DELAY IN DELIVERY: Backorders or failure to deliver within the time required may be default of the contract. Contractor must give written notice to Procurement Services of the reason and the expected delivery date. If reason is not acceptable, contractor is in default. Procurement Services has the right to extend delivery if reasons appear valid. If date is not acceptable, the University may buy elsewhere and any additional cost will be borne by the Contractor.

21. DELIVERY REQUIREMENTS: No substitutions or cancellations are permitted without prior written approval by ATU Procurement Services. Delivery shall be made during ATU work hours only, 8:00 a.m. to 400 p.m. Monday through Friday, unless prior approval for other delivery has been obtained from the University. Packing memorandum shall be enclosed with each shipment.

22. DEFAULT: All commodities furnished will be subject to inspection and acceptance of the University after delivery. Backorders, default in promised delivery or failure to meet specifications authorizes Procurement Services to cancel this contract or any portion of same and reasonably purchase commodities elsewhere and charge full increase, if any, in cost and handling to defaulting contractor. *Consistent failure to meet delivery without a valid reason may cause removal from the Bidders' List or suspension of eligibility for award.*

23. VARIATION IN QUANTITY: The University assumes no liability for commodities produced, processed or shipped in excess of the amount specified on the ATU Purchase Order.

24. INVOICING: The contractor shall be paid upon completion of all of the following: (1) delivery and acceptance of the commodities or services; (2) submission of a properly itemized invoice that reflects the contract/purchase order

number(s), item(s), quantity and pricing;

(3) and the proper and legal processing of the invoice by the University. Invoices must be sent to the ATU Accounts Payable Office as shown on the purchase order. *Itemized sales tax shall be shown on the invoice.*

25. ATU PROPERTY: Any specifications, drawings, technical information, dies, cuts, negatives, positives, data or any other commodity furnished to the contractor hereunder or in contemplation thereof or developed by the contractor for use hereunder shall remain property of the University, be kept confidential to the extent allowed by Arkansas law, be used only as expressly authorize d, and returned at the contractor's expense to ATU Procurement Services, properly identifying what is being returned.

26. PATENTS OR COPYRIGHTS: The contractor agrees to indemnify and hold Tech harmless from all claims, damages, and costs, including attorney's fees, arising from infringement of patents or copyrights.

27. ASSIGNMENT: Any contract entered into pursuant to this RFQ is not assignable nor the duties thereunder delegable by either party without the written consent of both parties of the original contract.

28. CANCELLATION: Either party may cancel any contract or item award for cause by giving a thirty

(30) day notice of intent to cancel.

(a) *Cause for the University to cancel* will include, but is not limited to, cost exceeding current market prices for comparable purchases, request for increase in prices during the period of the contract or failure to perform to contract conditions. The contractor will be required to honor all purchase orders that were prepared and dated prior to the date of expiration or cancellation. Cancellation by the University does not relieve the contractor of any liability arising out of a default or nonperformance.

If a contract is cancelled due to a request for increases in pricing or failure to perform, that contractor will be removed from the bidders/vendors list for a period up to twenty-four (24) months.

(b) *Cause for the vendor to cancel* a contract will include but is not limited to the item(s) being discontinued and unavailable from the manufacturer or non-payment of vendor invoices by the University.

29. OTHER REMEDIES: In addition to the remedies outlined herein, the contractor and the University have the right to pursue any other remedy permitted by law or in equity.

30. LACK OF FUNDS: The University may cancel this contract to the extent funds are no longer legally available for expenditures under this contract. The University will return any delivered but unpaid goods in normal condition to the contractor. If the University is unable to return the commodities in normal condition and there are no funds legally available to pay for the goods, the contractor may file a claim with Arkansas Claims Commission for the actual expense. If the contractor has provided services and there are no longer funds legally available to pay for the services, the contractor may file a claim.

31. ETHICAL STANDARDS: It shall be a breach of ethical standards for a person to be retained, or to retain a person, to solicit or secure a University contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, except for retention of bona fide employees or bona fide established commercial selling agencies maintained by the contractor for the purpose of securing business.

32. DISCRIMINATION: In order to comply with the provisions of Act 954 of 1977, relating to unfair employment practices, the bidder agrees as follows:

(a) the bidder will not discriminate against any employee or applicant for employment because of race, sex, color, age, religion, pregnancy, veterans status, genetic information, sexual orientation, gender identity, disability or national origin;

(b) in all solicitations or advertisements for employees, the bidder will state that all qualified applicants will receive consideration without regard to race, color, sex, age, religion, pregnancy, veteran status, genetic information, sexual orientation, gender identity, disability or national origin;

(c) the bidder will furnish such relevant information and reports as requested by the Human

Resources Commission for the purpose of determining compliance with the statute;

(d) failure of the bidder to comply with the statute, the rules and regulations promulgated thereunder and this non-discrimination clause shall be deemed a breach of contract and it

may be canceled, terminated or suspended in whole or in part;

(e) the bidder will include the provisions of items a through d in every subcontract so that such provisions will be binding upon such subcontractor or vendor.

33. MINORITY VENDORS: The University encourages all small, minority and women-owned business enterprises to submit bids. Encouragement is also made to all contractors that, in the event they subcontract portions of the contract, consideration is given to these groups.

34. ANTITRUST ASSIGNMENT: As part of the consideration for entering into any contract pursuant to this RFQ, the bidder named on the front of this RFQ, acting herein by the authorized individual, its duly authorized agent, hereby assigns, sells and transfers to the University/State of Arkansas all rights, title and interest in and to all causes of action it may have under the antitrust laws of the United States or this State for price fixing, which causes of action have accrued prior to the date of this assignment and which relate solely to the particular goods or services purchased or produced by this State pursuant to this contract.

35. CONTRACT & GRANT DISCLOSURE AND CERTIFICATION: Any contract or amendment to any contract executed by the University **that exceeds \$25,000** shall require the contractor to disclose information as required under the terms of Executive Order 98-04 and the regulations pursuant thereto. Failure of any person or entity to disclose or any violation of any rule, regulation or policy promulgated by the Department of Finance & Administration pursuant to this order shall be considered a material breach of the terms of this contract. The material breach of the terms shall subject the party failing to disclose, or in violation, to all legal remedies available to the University under the provisions of existing law.

If required, the Contract & Grant Disclosure and Certification Form (F-1 and F-2) shall be used for the disclosure purpose. No contract or amendment to any existing contract will be approved until the contractor completes and returns the disclosure form.

36. ARKANSAS TECHNOLOGY ACCESS: When procuring a technology product or when soliciting the development of such a product, the State of Arkansas is required to comply with the provisions of Arkansas Code Annotated § 25-26-201 et seq., as amended by Act 308 of 2013, which expresses the policy of the State to provide individuals who are blind or visually impaired with access to information technology purchased in whole or in part with state funds. The Vendor expressly acknowledges and agrees that state funds may not be expended in connection with the purchase of information technology unless that system meets the statutory requirements found in 36 C.F.R. § 1194.21, as it existed on January 1, 2013 (software applications and operating systems) and 36 C.F.R. § 1194.22, as it existed on January 1, 2013 (web-based intranet and internet information and applications), in accordance with the State of Arkansas technology policy standards relating to accessibility by persons with visual impairments.

ACCORDINGLY, THE VENDOR EXPRESSLY REPRESENTS AND WARRANTS to the State of Arkansas through the procurement process by submission of a Voluntary Product Accessibility Template (VPAT) or similar documentation to demonstrate compliance with 36 C.F.R. § 1194.21, as it existed on January 1, 2013 (software applications and operating systems) and 36 C.F.R. § 1194.22, as it existed on January 1,

2013 (web-based intranet and internet information and applications) that the technology provided to the State for purchase is capable, either by virtue of features included within the technology, or because it is readily adaptable by use with other technology, of:

- Providing, to the extent required by Arkansas Code Annotated § 25-26-201 et seq., as amended by Act 308 of 2013, equivalent access for effective use by both visual and non-visual means;

- Presenting information, including prompts used for interactive communications, in formats intended for non-visual use;
- After being made accessible, integrating into networks for obtaining, retrieving, and disseminating information used by individuals who are not blind or visually impaired;
- Providing effective, interactive control and use of the technology, including without limitation the operating system, software applications, and format of the data presented is readily achievable by nonvisual means;
- Being compatible with information technology used by other individuals with whom the blind or visually impaired individuals interact;
- Integrating into networks used to share communications among employees, program participants, and the public; and
- Providing the capability of equivalent access by nonvisual means to telecommunications or other interconnected network services used by persons who are not blind or visually impaired.

If the information technology product or system being offered by the Vendor does not completely meet these standards, the Vendor must provide an explanation within the Voluntary Product Accessibility Template (VPAT) detailing the deviation from these standards.

State agencies cannot claim a product as a whole is not commercially available because no product in the marketplace meets all the standards. If products are commercially available that meet some but not all of the standards, the agency must procure the product that best meets the standards or provide written documentation supporting selection of a different product.

For purposes of this section, the phrase “equivalent access” means a substantially similar ability to communicate with, or make use of, the technology, either directly, by features incorporated within the technology, or by other reasonable means such as assistive devices or services which would constitute reasonable accommodations under the Americans with Disabilities Act or similar state and federal laws. Examples of methods by which equivalent access may be provided include, but are not limited to, keyboard alternatives to mouse commands or other means of navigating graphical displays, and customizable display appearance. As provided in Act 308 of 2013, if equivalent access is not reasonably available, then individuals who are blind or visually impaired shall be provided a reasonable accommodation as defined in 42 U.S.C. § 12111(9), as it existed on January 1, 2013.

As provided in Act 308 of 2013, if the information manipulated or presented by the product is inherently visual in nature, so that its meaning cannot be conveyed non-visually, these specifications do not prohibit the purchase or use of an information technology product that does not meet these standards.

37. SOVEREIGN IMMUNITY: Nothing in any agreement resulting from this RFQ shall be construed to waive the sovereign immunity of the State of Arkansas or any entity thereof, including Arkansas Tech University.

38. A.C.A. §21-1-503. Company and Artist certify that they are not currently engaged in, and further, hereby agree that for the duration of the contract, not to engage in a boycott of Israel.

39. A.C.A. § 19-11-249. Any State public procurement unit may participate in any contract resulting from this solicitation with a participating addendum

signed by the contractor and approved by the chief procurement officer of the procurement agency issuing this solicitation.

40. PAST PERFORMANCE. In accordance with provisions of State Procurement Law, specifically OSP Rule R5:19-11-230(b)(1), a Prospective Contractor's past performance with the State and/or University may be used to determine if the Prospective Contractor is "responsible". Proposals submitted by Prospective Contractors determined to be non-responsive.

Performance Based Standards:

Arkansas Code 19-11-267 requires the use of performance-based standards on any resultant contract by the University.

Milestone Payment Contracts	
Standards	Remedies
Milestone deadlines are met	Vendor must provide an acceptable remediation plan
Work products are professional & comprehensive	Payment may be withheld in part or in whole until milestones are met or acceptable work products are produced
	Replacement resources acceptable to Arkansas Tech University may be required
	Contract may be cancelled

Time & Materials Contracts	
Standards	Remedies
Services are provided in a timely and professional manner	Vendor must provide an acceptable remediation plan
Work products are professional, comprehensive and consistent with the contracted skill level	Payment may be withheld in part or in whole until acceptable work products are produced
	Replacement resources acceptable to Arkansas Tech University may be required
	Contract may be cancelled

East Fiber Loop Exploratory and Infrastructure Project – Scope of Work

Introduction

The following is a scope of work for the installation of initial infrastructure project for the proposed East fiber loop project at Arkansas Tech University's Russellville Campus. The purpose of this project is to install new conduit pathways, new splice boxes, and new ground vaults/pull boxes. The project has the following parts:

- Installation of new conduit
- Installation of new ground vaults and above-ground splice boxes
- Where new ground vaults are to be installed intersecting existing conduit, cut open the existing conduit to provide access while being careful not to damage existing active fiber.
- Cleanout of dirt/mud/debris while investigating the existing ground vaults
- Installation, labeling, termination, and certification of new singlemode fiber between designated locations. Certification documentation must be provided to ATU at project completion.
- Installation of Tracesafe wiring to be run in any conduit that does not already have Tracesafe. Termination of Tracesafe should be done in each ground vault/handhold.
- Creation of as-built documentation and maps of the new conduit routes, spliceboxes, and ground vaults/handholds. Documentation and maps must be provided to ATU at project completion.

There is also several optional portions of the project involving:

- Installation, labeling, termination, and certification of two 24-strand singlemode fiber bundles between the telecommunication shelters to two Multilink splice boxes (one is already installed and the other would be installed as part of the non-optional part of this project).
- Installation of the Northern most section of the East Fiber Loop including boring conduit, Tracesafe, and running, labeling, terminating, and certification of a 24-strand fiber.
- Installation of a connection from the mid-point of the East Fiber Loop to existing conduit including a short bore under Coliseum Drive, Tracesafe, and running, labeling, terminating, and certification of a 24-strand fiber.
- Installation, labeling, termination, and certification of two 24-strand singlemode fiber bundles between the telecommunication shelters to the Corley datacenter (one fiber bundle coming to the datacenter from each shelter).

Depending on the cost of the base project and the cost of this optional part, ATU will decide on whether to proceed with the optional portions or not.

Materials

All materials are to be provided by the contractor, unless otherwise noted. Contractor is responsible for all parts, tools, and labor needed to complete the project.

In addition to the model of parts specified necessary for the project, the contractor shall also provide:

- Parts, tools, labor, and materials to create concrete pedestals for fiber splice enclosures with two 4" conduit connecting to nearby ground vault
- Parts, tools, labor, and materials to install new 2 x 4" conduit path between two existing ground vaults/handholds
- Parts, tools, labor, and materials to install new ground vaults/handholds
- Tools and labor to run 24-strand fiber through conduit and into splice boxes
- Parts, tools, labor, and materials to add Tracesafe cable to any conduit part of this project that does not already have a Tracesafe cable present along the run
- Tools and labor to fusion splice, certify, and label single mode fiber
- Parts, labor, and materials to add pull tape to leave in conduit with new pulls for future use

The following are the materials needed for installation. If a vendor and part number is provided below, no substitutions will be accepted without approval by ATU unless otherwise noted:

- Multilink Part # FDH-BR-DD-GM-288 Fiber Splice box – Two Multiple splice boxes will be installed along the route near already existing or new ground vaults. The locations should be pre-approved and coordinated with Arkansas Tech University. The splicebox installations will each need the following:
 - Multilink Part # FDH-BRDD-GM-288 Fiber Splice box. See attached documents for cut sheet and examples.
 - A hollow concrete pedestal to mount the box on and bring the fiber into. See attached document for original concept drawing (may need to be slightly modified for better attachment of splice box).
 - Two 4-inch conduits running from the concrete pedestal to the nearest underground vault. Conduits need to be turned up in a sweep into hollow concrete pedestal. Mounting hardware to attach and secure the Multilink Splice box to the concrete pedestal
 - Multi-fiber grommets from Multilink. These grommets are designed to replace the fiber-entry grommets that come with the splice box but allow more than one bundle to enter the box through a single hole. Grommets should be selected so that the holes match the provided fiber that will be going through them (see fiber diameters below) but also have as many holes as possible so that multiple fiber bundles on this project, and any future expansion, can utilize the same entry point on the box through the grommet. See attached document.
- Multilink Part # CT-X-PS-CL-12-SCU-P CTX Patch and Splice Cassettes - Each splice cassette comes with a 12-strand Singlemode pigtail which can be fusion spliced to the fiber bundle run. Connectors should be Singlemode SC. Each cassette is for 12 connections which means it can terminate two 6-strand fiber bundles inside the same cassette if needed or a single 12-strand fiber bundle. These cassettes can be mounted in the rack shelves specified below as well as the Multilink Splice boxes specified above.

- Multilink Part # 045-665-00 1RU Fiber Shelf – Rack-mounted fiber shelf that can hold two CTX splice cassettes. Suitable to terminate 24-strand fibers. Also requires Multilink Part # 072-208-50 which should be the bulkhead for the 2 cassette 1RU shelf.
- All materials to provide orange 19-awg Trace-Safe RT1800W wires and locating connector terminations with any fiber run in this project running through a conduit that does not already have a Trace-Safe cable installed. Trace-Safe should be cut and terminated at each splice box and ground vault. See attached cutsheet.
- Materials to label new fiber runs. Labeling needs to be done in the box, both on the door label and as a tag on each fiber coming up from the pedestal, to indicate what cassettes go to which location and engraved waterproof tags need to be added to the fiber in each ground vault/handhold to indicate what runs they belong to.
- All labor and materials run, fusion terminate, test/certify, and label all required Single mode fiber runs. The fiber should be OCC Part # DX024DSLX9YRI2 fiber – 24-strand armored singlemode fiber to run between splice boxes and between the telecommunication shelters and the Corley datacenter. See attached cutsheet. (If this part is not available, substitutions would be accepted as long as the new fiber meets or exceeds the specs listed in this cutsheet).
- Conduit installed between existing and/or new ground vaults should be a single 4-inch
- New ground vaults should be at least 2-foot x 4-foot in size with split lids and open bottom
 - Proper drainage with a drainage layer should be installed at the bottom of each new ground vault

If there are any questions on part numbers or materials that the contractor is responsible for, please contact the ATU Office of Information Systems before purchase.

Project

The project consists of some work that is required and several optional parts. The optional parts will be chosen from based on costs and available budget. The contractor will need to initiate OneCalls to investigate utilities in the area in order to verify feasibility of proposed conduit paths and installation locations of new ground vaults and splice boxes. Optimal paths for bores, ground vault, and splice box placements should be recommended by the contractor and then approved by ATU. Please see the below maps to outline the project area using the following legend:

- Red Lines – Proposed new conduit bore paths
- Green Lines – Existing conduit paths
- Yellow Pins – Existing ground vaults
- Green Pins – Existing splice boxes
- Red Pins – Proposed ground vaults locations
- White Pins – Proposed splice box locations

Required Work

The following section will outline the required parts of the project.

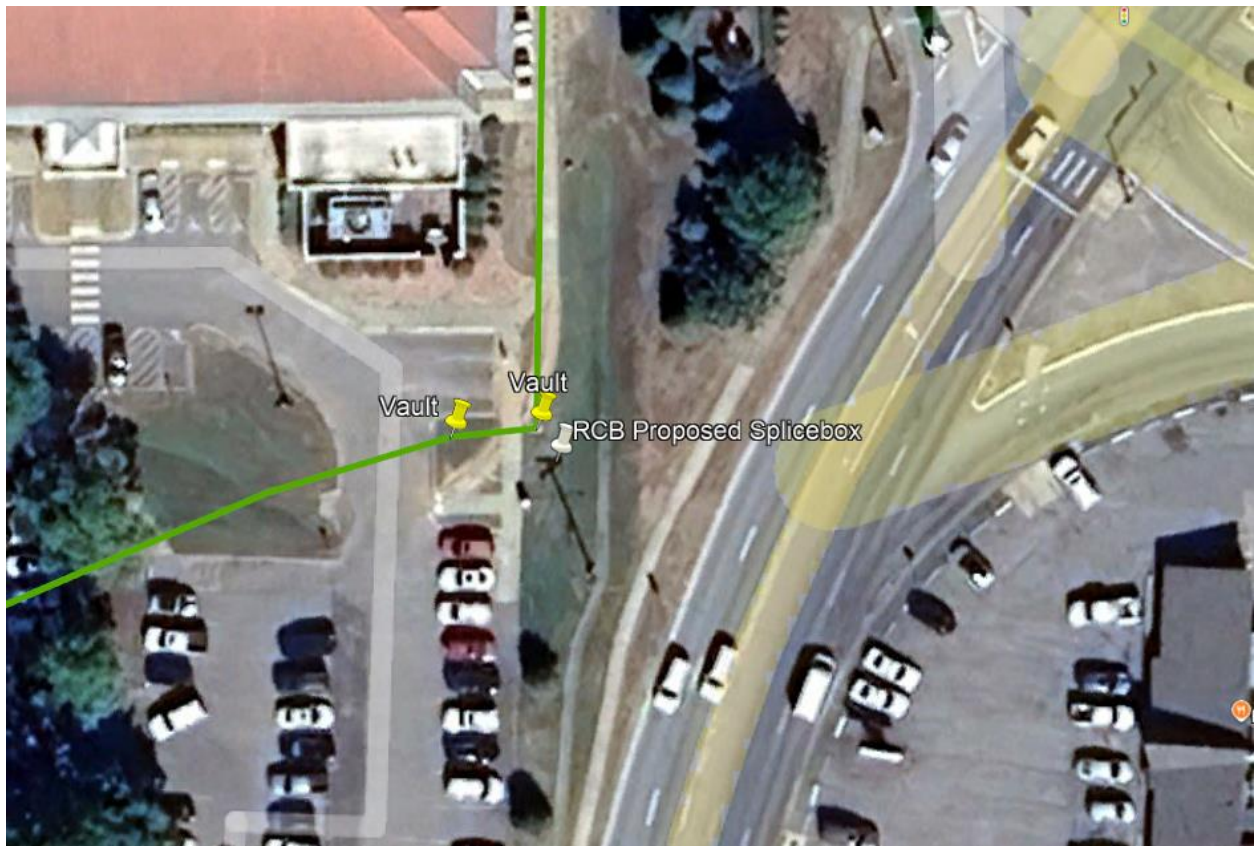


Figure 1: Proposed location for a new fiber splice box to the Southeast of the Brown (RCB) Hall building.

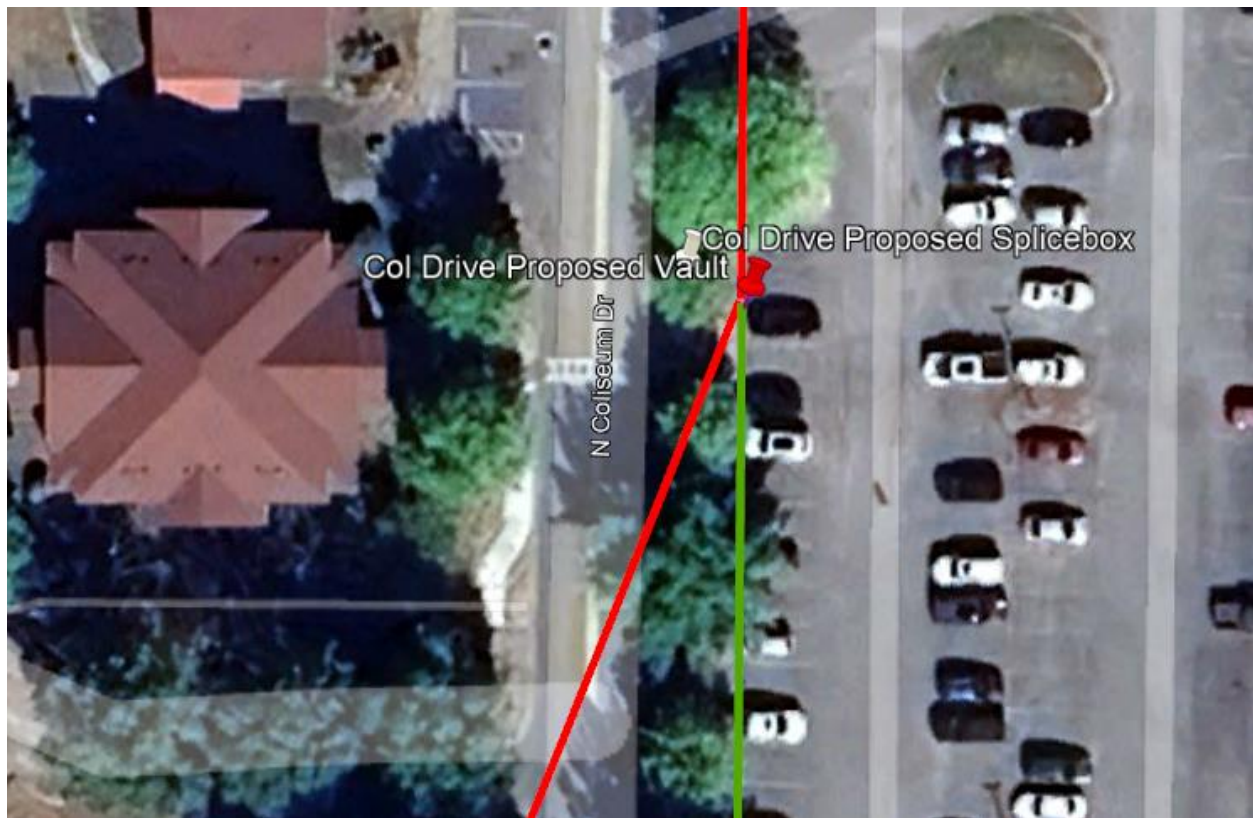


Figure 2: Proposed location of a new fiber splice box to the Southeast of the ATU Post Office building along Coliseum Drive.

Figures 1 and 2 above show proposed locations for new fiber splice boxes to be installed.

The one shown in Figure 1 will be installed nearby existing conduit and ground vaults and will require two 4" conduits to be installed between it and the closest ground vault.

The one shown in Figure 2 will be installed near the end of an existing empty conduit. There is not currently a ground vault at the end of this conduit so one will need to be installed and then two 4" conduits run from it to the splice box location.

In both instances, the contractor will get approval for the exact placement of the concrete pedestal and splice box.

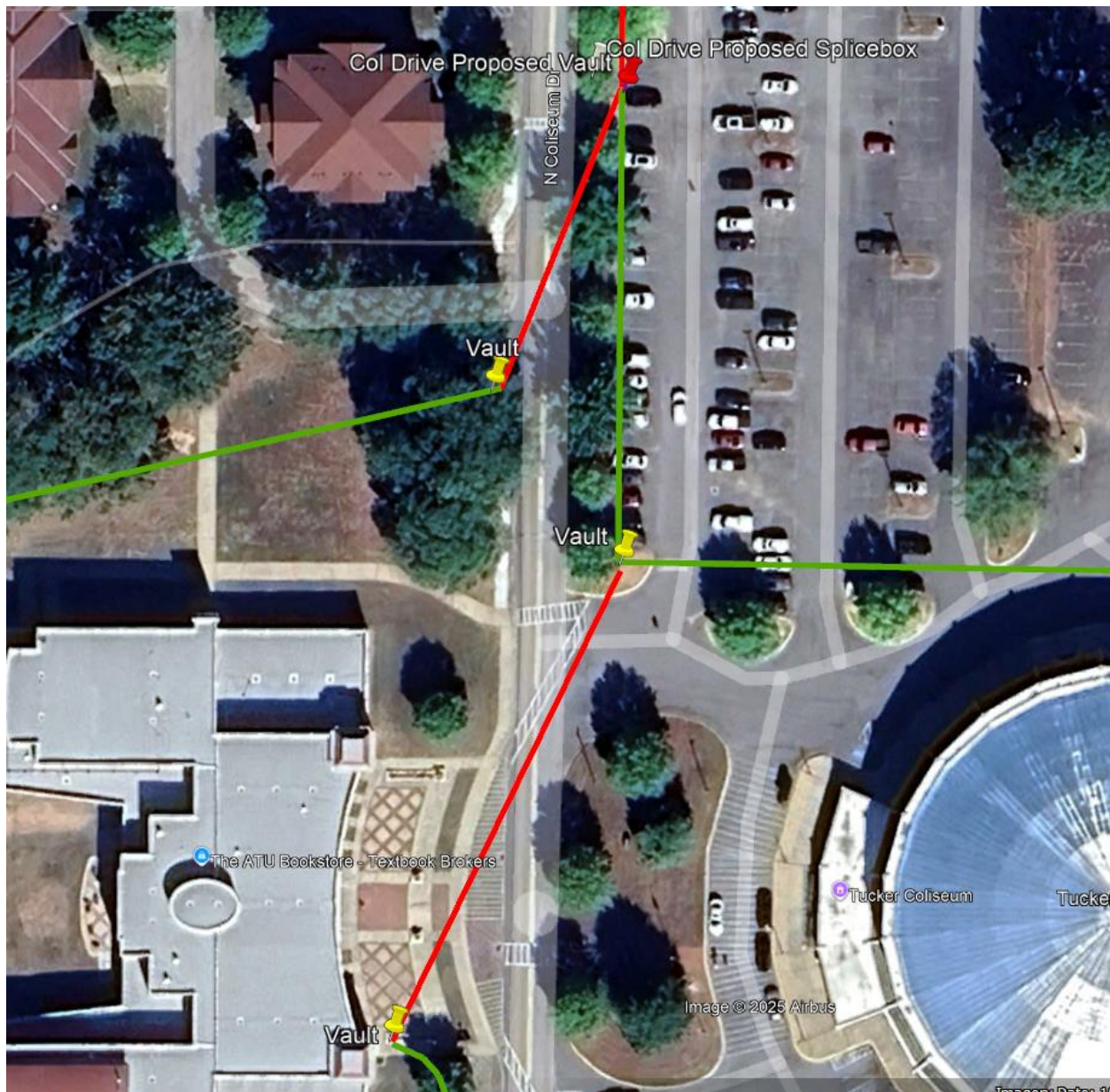


Figure 3: Two required boring paths, marked in red.

In Figure 3, two required conduit bores are shown in red. Each of these crosses Coliseum Drive and are intended to connect existing conduit on opposite sides of the road. The conduit bore to the North in the image will terminate between an existing ground vault on the West side of the road and a new ground vault (previously mentioned) on the East side of the road. The conduit bore to the South will be bored between two existing ground vaults. This image is meant to show the required conduit connectivity and actual bore paths will need to be recommended by the contractor.

The remainder of the required work will be Trase-Safe and fiber runs/terminations, all of which require the above new conduit, splice boxes, and ground vaults to be in place.



Figure 4: The rough path for the first required fiber run between the Crabaugh splice box (labeled as “CRA Splicebox” with a green pin) and the new Brown Hall splice box (labeled as “RCB Proposed Splicebox with a white pin).

The first section of the new fiber runs is shown in Figure 4. A 24-strand singlemode fiber bundle will be run from the splice box to the Northeast of the Crabaugh building to newly installed splice box to the Southeast of the Brown Hall building. The fiber will be terminated into two CTX cassettes (12-strands each) in each splice box. The fiber will be labeled on each end as well as in each ground vault it passes through, and labels will be added in the splice box for the CTX cassettes. Trace-safe will be run in any part of this conduit path that does not already have Trace-safe installed, and it will be cut and terminated with the appropriate locating connector at each ground vault it passes through.

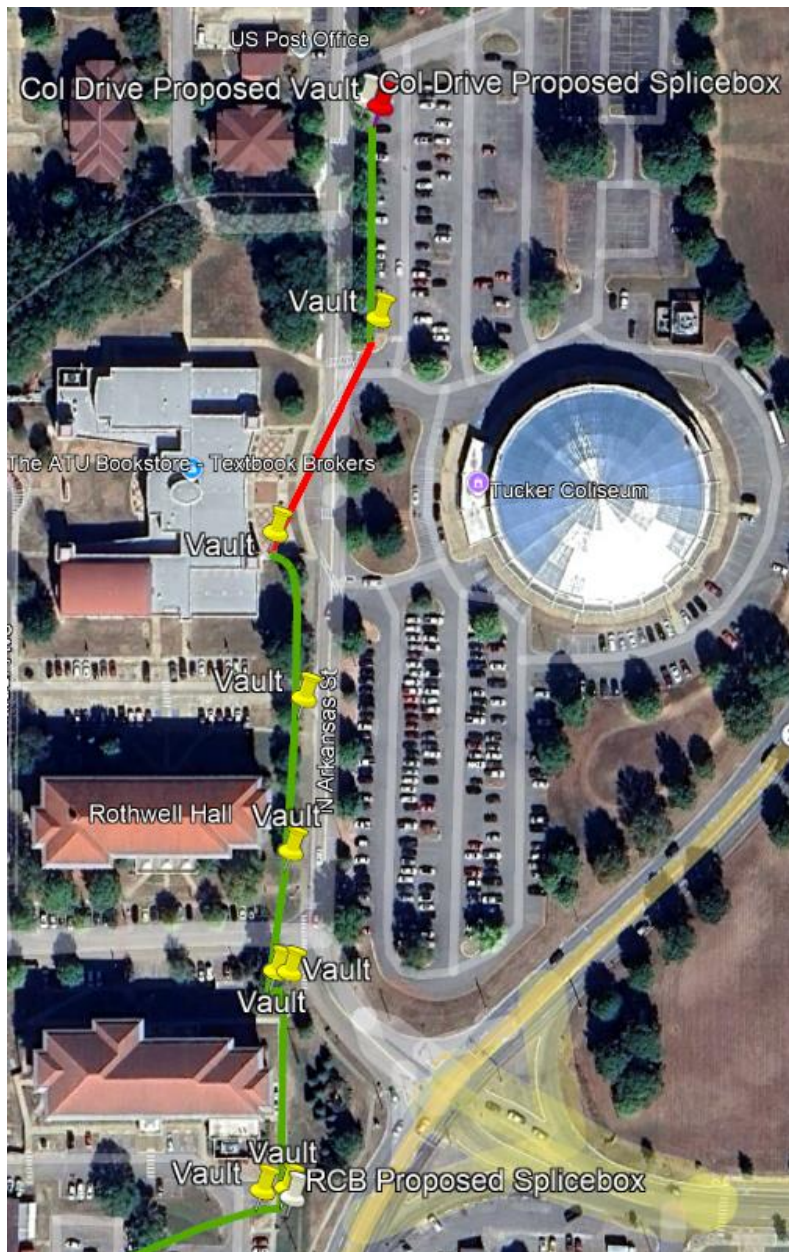


Figure 5: The second section of required fiber running North from the Brown Hall splice box (labeled as “RCB Proposed Splicebox”) to the Coliseum Drive splice box (labeled as “Col Drive Proposed Splicebox”).

The second section of the new fiber run is shown in Figure 5. A 24-strand singlemode fiber bundle will be run from the newly installed splice box to the Southeast of the Brown building to newly installed splice box to the Southeast of the ATU Post Office building along Coliseum Drive. The fiber will be terminated into two CTX cassettes (12-strands each) in each splice box. The fiber will be labeled on each end as well as in each ground vault it passes through, and labels will be added in the splice box for the CTX cassettes. Trace-safe will be run in any part of this conduit path that does not already have Trace-safe installed, and it will be cut and terminated with the appropriate locating connector at each ground vault it passes through.

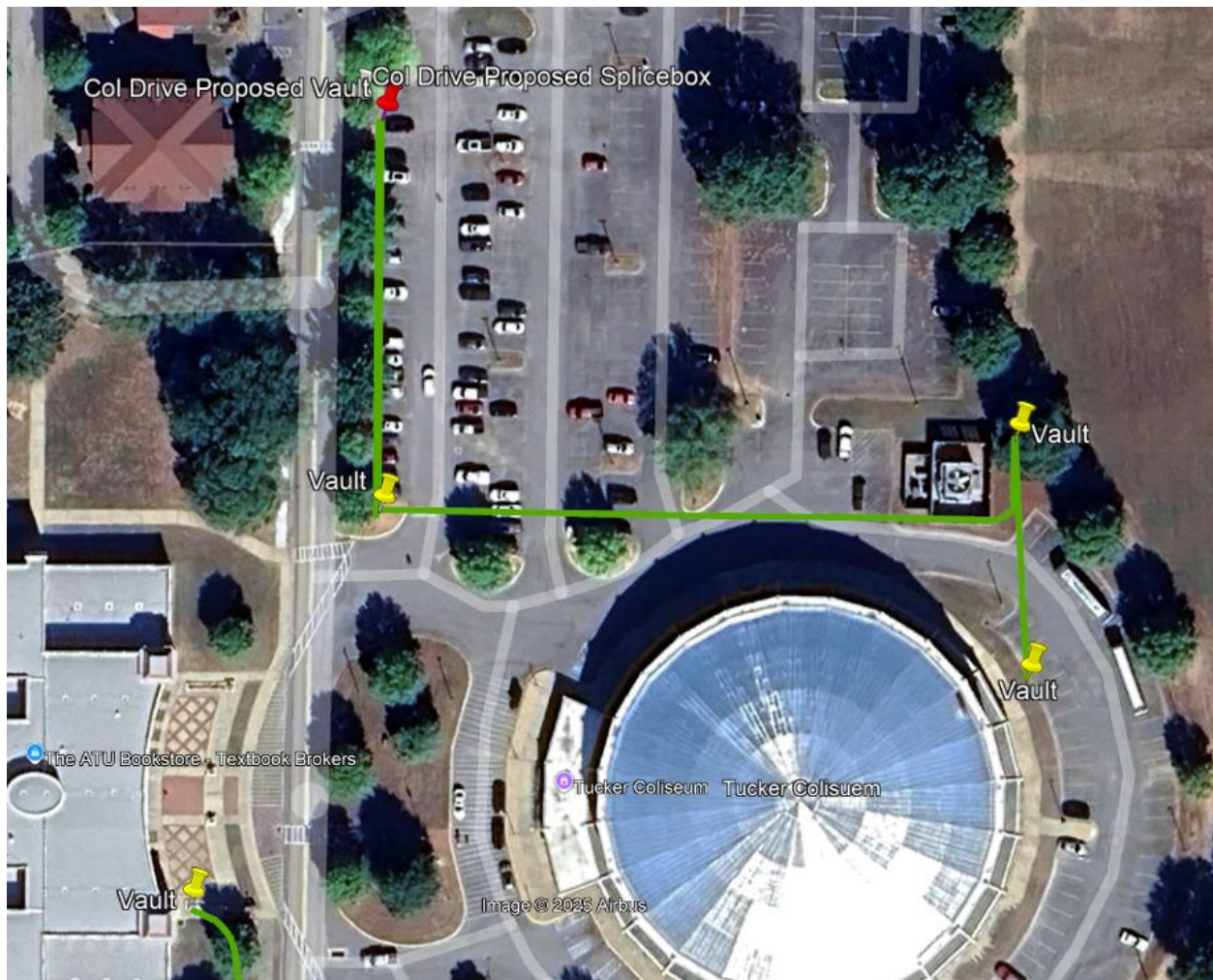


Figure 6: The conduit path for singlemode fiber to be run from the newly installed Coliseum Drive splice box (labeled as “Col Drive Proposed Splicebox”) to Tucker Coliseum.

Figure 6 shows the conduit pathway to reach the Tucker Coliseum building. A 12-strand singlemode fiber bundle will be run from the splice box to the Southeast of the ATU Post Office building on Coliseum Drive into Tucker Coliseum via the ground vault directly to the East of the building. Once inside, the fiber will need to be run through the ceiling to the main FOP closet just inside the West entrance of the building. The fiber will be terminated into one CTX cassette on each end of the run (one in the splice box and one in the Tucker Coliseum West closet). The fiber will be labeled on each end as well as in each ground vault it passes through, and a label will be added in the splice box for the CTX cassette. Trace-safe will be run in any part of this conduit path that does not already have Trace-safe installed, and it will be cut and terminated with the appropriate locating connector at each ground vault it passes through.

There is a 12-strand singlemode fiber already in existence running between the West and East closets in Tucker Coliseum that also needs to be terminated. This fiber has already been run and just needs to have the 12-strands terminated on each end of the run in CTX modules (one on each end).

The required work would require the following parts:

- 2 x Multilink Part # FDH-BRDD-GM-288 Fiber Splice box
- 12 x Multilink Part # CT-X-PS-CL-12-SCU-P CTX Patch and Splice Cassettes
- 2 x Multilink Part # 045-665-00 1RU Fiber Shelf
- 2 x Multilink Part # 072-208-50 Fiber Shelf Bulkhead
- 1 x ground vault with drainage layer
- Enough 4" conduit to complete the accepted paths and connections
- Concrete to pour pedestals for the splice boxes
- Enough 24-strand singlemode fiber to complete the runs
- Enough Trace-safe cable and terminators to complete the runs through sections of the route where Trace-safe does not already exist
- Enough engraved waterproof tags to label the fiber in each ground vault along the route

Optional Work

The following sections will be optional and will be chosen to be implemented or not based on cost and available budget.

Of these options, a choice will be made between Option A or B to be implemented as part of this project. The option not picked will be considered with the remaining options to be implemented now or as part of a future project based on cost and budget.

Option A

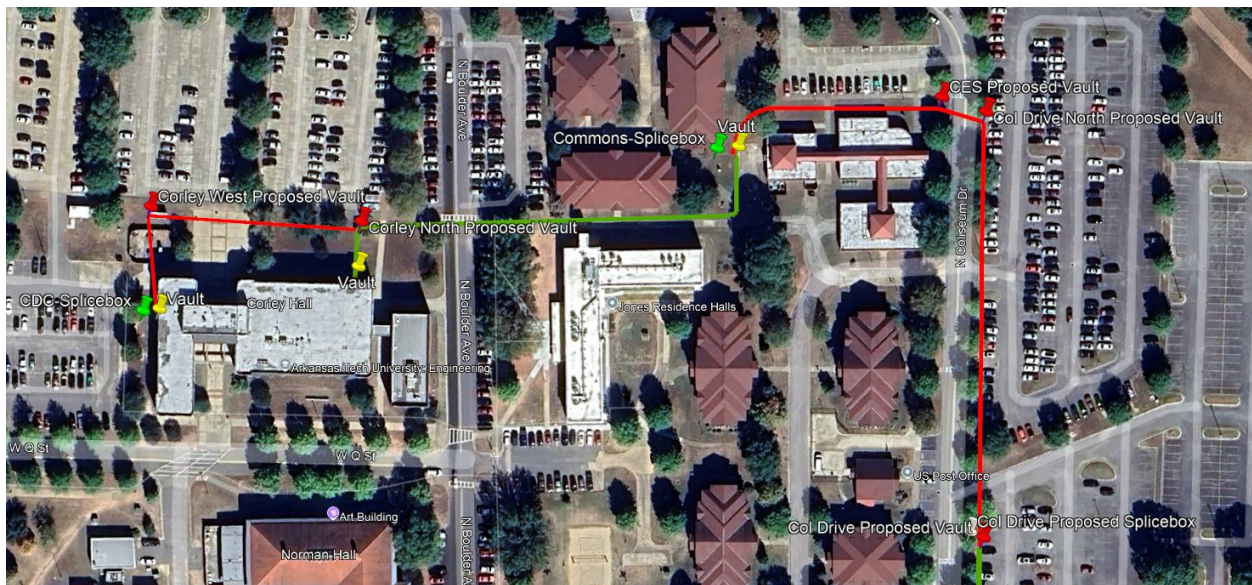


Figure 7: Option A which includes boring a 4" conduit from the newly installed ground vault and splice box (parts of the required work above) to the existing ground vault at University Commons. A new ground vault also would need to be installed over the existing conduit just to the North of the Corley building. A second bore would connect this new ground vault to another new one at the Corley generator and then the bore would turn South to connect to the existing ground vault West of Corley. This forms the path for new fiber.

In Figure 7, we can see the proposed conduit bore path for Option A. A bore for a new 4" conduit would be done from the ground box installed to the Southeast of the ATU Post Office (part of the required

work above), running North along Coliseum Drive, turning West to run North of the Center for Energy Studies building, before turning South briefly to connect to the existing ground vault at that location. Ground vaults would need to be installed along this path to allow for the street crossing.

On the North of the Corley building, a new ground vault would be installed over the existing conduit path. The existing conduit needs to be cut open while not damaging the cabling inside. Efforts should be made to properly seal the new ground vault around the existing conduit. This new ground vault serves as a way to connect this conduit path with the conduit path to the West side of Corley via a bore for a new 4" conduit along with another new ground vault at the point the bore turns South. This bore would then terminate at the existing ground vault to the West of the Corley building.

Once this new conduit and ground vaults are installed, a 24-strand singlemode fiber bundle will be run from the newly installed splice box to the Southeast of the ATU Post Office building to the existing splice box to at University Commons. The fiber will be terminated into two CTX cassettes (12-strands each) in each splice box. A second 24-strand singlemode fiber bundle will be run from the existing splice box at University Commons to the existing splice box just to the West of the Corley Building. The fiber will be terminated into two CTX cassettes (12-strands each) in each splice box.

In all cases, the fiber will be labeled on each end as well as in each ground vault it passes through and labels will be added in the splice box for the CTX cassettes. Trace-safe will be run in any part of this conduit path that does not already have Trace-safe installed and it will be cut and terminated with the appropriate locating connector at each ground vault it passes through.

Option A would require the following parts:

- 8 x Multilink Part # CT-X-PS-CL-12-SCU-P CTX Patch and Splice Cassettes
- 4 x ground vaults with drainage layer
- Enough 4" conduit to complete the accepted paths and connections
- Enough 24-strand singlemode fiber to complete the runs
- Enough Trace-safe cable and terminators to complete the runs through sections of the route where Trace-safe does not already exist
- Enough engraved waterproof tags to label the fiber in each ground vault along the route

Option B

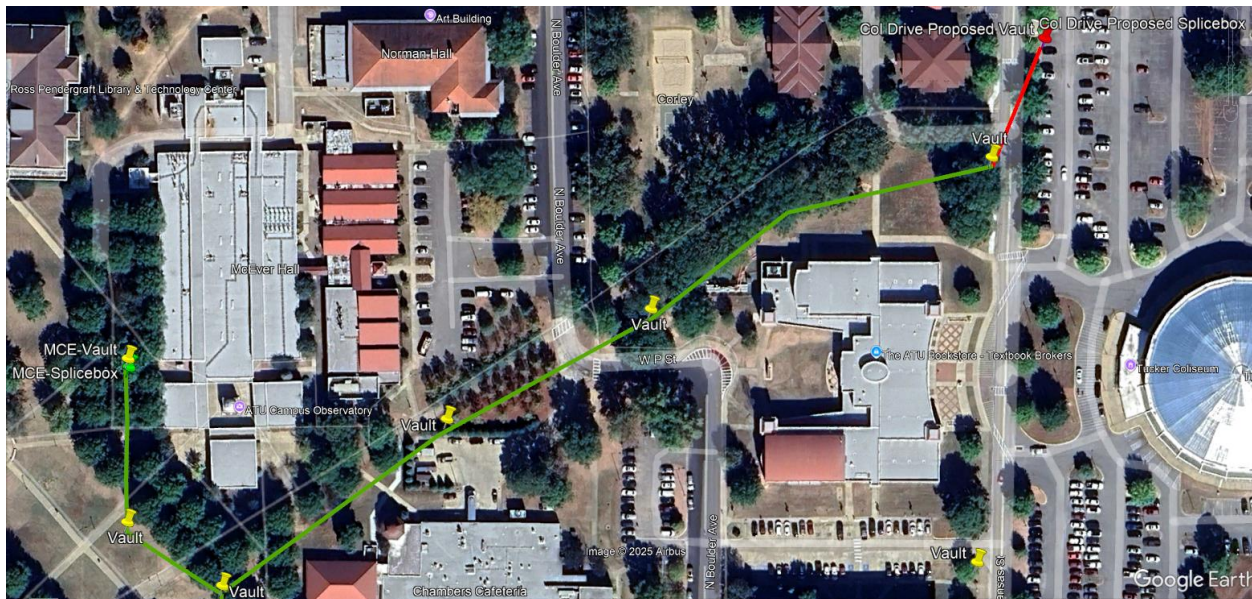


Figure 8: Option B involves a single bore to install a 4" conduit to connect the newly installed ground vault to the Southeast of the ATU Post Office building on Coliseum Drive (part of the required work above) to an existing ground vault directly to the Southwest and across the street. This forms a conduit path to connect the newly installed splice box (also part of the required work above) located there to an existing splice box to the West of the McEver building.

Figure 8 shows the pathway for Option B. A single 4" conduit would need to be bored between the new ground vault located to the Southeast of the ATU Post Office building to an existing ground vault directly to the Southwest on the other side of Coliseum Drive. Once this is done, a 24-strand singlemode fiber bundle will be run from the newly installed splice box to the Southeast of the ATU Post Office building to the existing splice box to the West of the McEver building. The fiber will be terminated into two CTX cassettes (12-strands each) in each splice box. The fiber will be labeled on each end as well as in each ground vault it passes through, and labels will be added in the splice box for the CTX cassettes. Trace-safe will be run in any part of this conduit path that does not already have Trace-safe installed, and it will be cut and terminated with the appropriate locating connector at each ground vault it passes through.

Option B would require the following parts:

- 4 x Multilink Part # CT-X-PS-CL-12-SCU-P CTX Patch and Splice Cassettes
- Enough 24-strand singlemode fiber to complete the runs
- Enough Trace-safe cable and terminators to complete the runs through sections of the route where Trace-safe does not already exist
- Enough engraved waterproof tags to label the fiber in each ground vault along the route

Option C

Option C is dependent on Option A being chosen and involves adding a 24-strand singlemode fiber from of the two existing telecommunication shelters on campus to one of the nearby Multilink splice boxes.

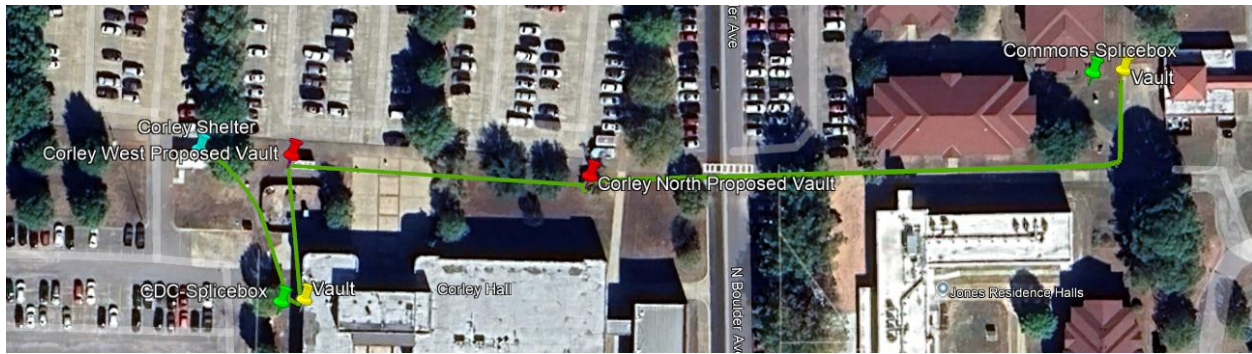


Figure 9: The path for the telecommunication shelter to the Northwest of the Corley building to reach the Commons Splice Box.



Figure 10: The path for the telecommunication shelter to the North of the Crabaugh building to reach the newly installed splice box at the Southeast of the Brown building.

Shown in Figure 9, the path from the Corley telecommunication shelter to the Commons splice box requires the conduit bored in Option A to exist. If Option A is not chosen, then this conduit path is not possible. If Option A is chosen and this option is also chosen, then a 24-strand singlemode fiber bundle will be run from the Corley telecommunication shelter to the existing splice box to the West of the Center for Energy Studies building. The fiber will be terminated into two CTX cassettes (12-strands each) in the shelter and in the splice box. The fiber will be labeled on each end as well as in each ground vault it passes through, and labels will be added in the splice box for the CTX cassettes. Trace-safe will be run in any part of this conduit path that does not already have Trace-safe installed, and it will be cut and terminated with the appropriate locating connector at each ground vault it passes through.

Figure 10 shows the Crabaugh conduit route to reach the newly installed splice box to the Southeast of the Brown building. A single 4" bore would need to be done from the shelter to the existing ground vault on the Northeast corner of the Crabaugh building. After this is done, a 24-strand singlemode fiber bundle will be run from the Crabaugh shelter to the existing splice box to the Southeast of the Brown building. The fiber will be terminated into two CTX cassettes (12-strands each) in the shelter and in the splice box. The fiber will be labeled on each end as well as in each ground vault it passes through, and labels will be added in the splice box for the CTX cassettes. Trace-safe will be run in any part of this conduit path that does not already have Trace-safe installed, and it will be cut and terminated with the appropriate locating connector at each ground vault it passes through.

Option C would require the following parts:

- 8 x Multilink Part # CT-X-PS-CL-12-SCU-P CTX Patch and Splice Cassettes
- 2 x Multilink Part # 045-665-00 1RU Fiber Shelf
- 2 x Multilink Part # 072-208-50 Fiber Shelf Bulkhead
- Enough 24-strand singlemode fiber to complete the runs
- Enough Trace-safe cable and terminators to complete the runs through sections of the route where Trace-safe does not already exist
- Enough engraved waterproof tags to label the fiber in each ground vault along the route

Option D

Option D involves adding fiber from each of the two telecommunication shelters on campus to the Corley datacenter. The route taken for the fiber will depend on if Option A is chosen or not.

If Option A Is Chosen

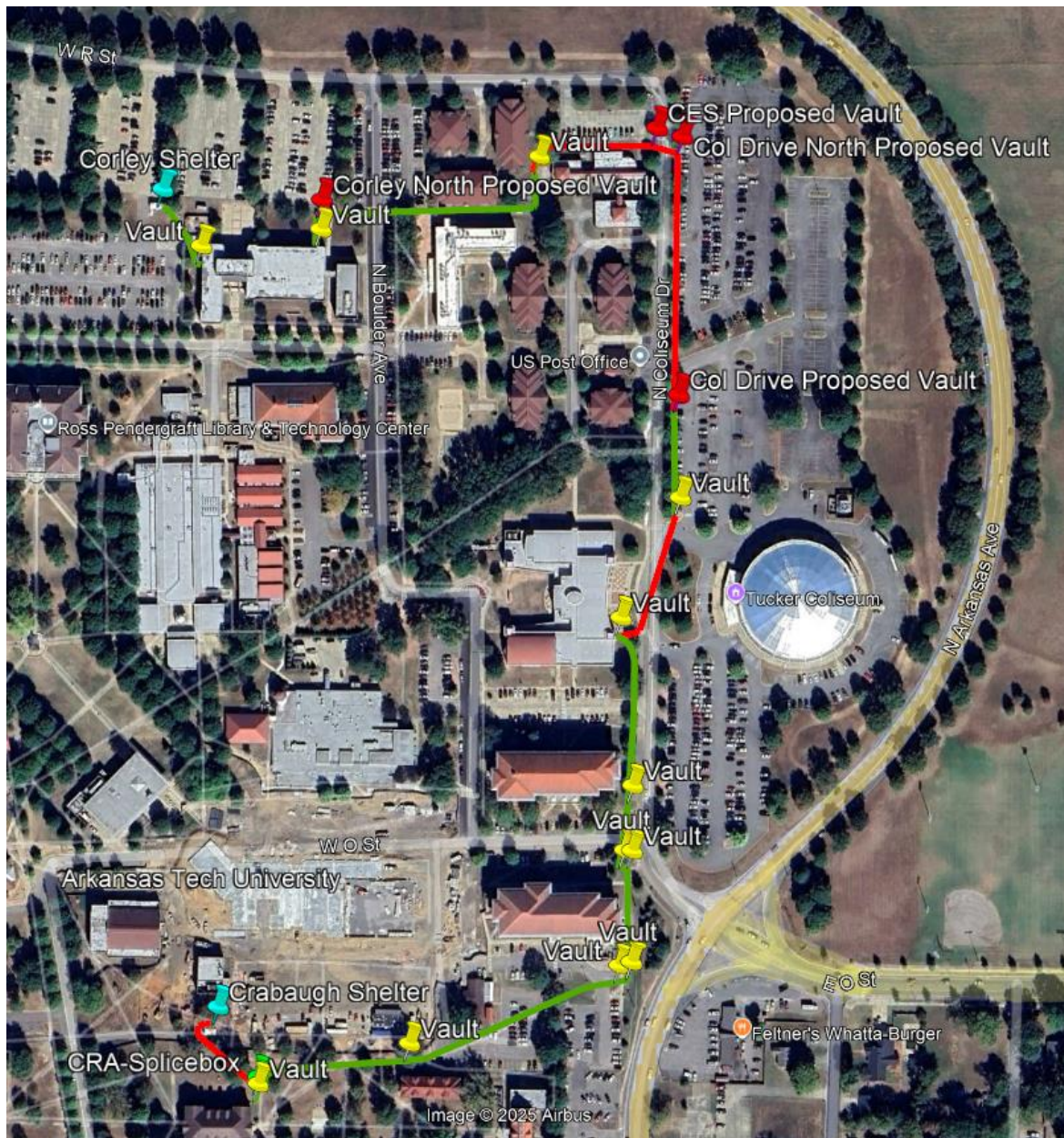


Figure 11: The two routes from the telecommunication shelters to get to the Corley datacenter.

If Option A is chosen, the newly completed conduit pathway on the East side of campus going up Coliseum drive would be used to get fiber from the Crabaugh telecommunication shelter to North entry to the Corley building. Once into the building, the fiber would be run up to the datacenter on the second floor. A 24-strand fiber would be run between these two locations and terminated into two CTX cassettes on both sides. The fiber will be labeled on each end as well as in each ground vault it passes through, and labels will be added in the splice box for the CTX cassettes. Trace-safe will be run in any part of this conduit path that does not already have Trace-safe installed, and it will be cut and terminated with the appropriate locating connector at each ground vault it passes through.

A 24-strand fiber would be run from the Corley telecommunication shelter to the ground vault directly to the West of the Corley building which also provides a conduit into the building. Once inside, this fiber would also proceed up to the datacenter on the second floor and be terminated into two CTX cassettes on both ends. The fiber will be labeled on each end as well as in each ground vault it passes through, and labels will be added in the splice box for the CTX cassettes. Trace-safe will be run in any part of this conduit path that does not already have Trace-safe installed, and it will be cut and terminated with the appropriate locating connector at each ground vault it passes through.

This version of Option D would require the following parts:

- 8 x Multilink Part # CT-X-PS-CL-12-SCU-P CTX Patch and Splice Cassettes
- 3 x Multilink Part # 045-665-00 1RU Fiber Shelf
- 3 x Multilink Part # 072-208-50 Fiber Shelf Bulkhead
- Enough 24-strand singlemode fiber to complete the runs
- Enough Trace-safe cable and terminators to complete the runs through sections of the route where Trace-safe does not already exist
- Enough engraved waterproof tags to label the fiber in each ground vault along the route

If Option B is Chosen



Figure 12: If Option B is chosen, only the fiber between the Corley telecommunication shelter and the Corley datacenter will be run. The Crabaugh telecommunication shelter will be connected in a future project.

Figure 12 shows only the connection for the Corley shelter to the Corley datacenter. This would be necessary if Option B is chosen over Option A. The Corley shelter connection to the Corley datacenter would connect to the ground vault on the West side of the Corley building before proceeding into the

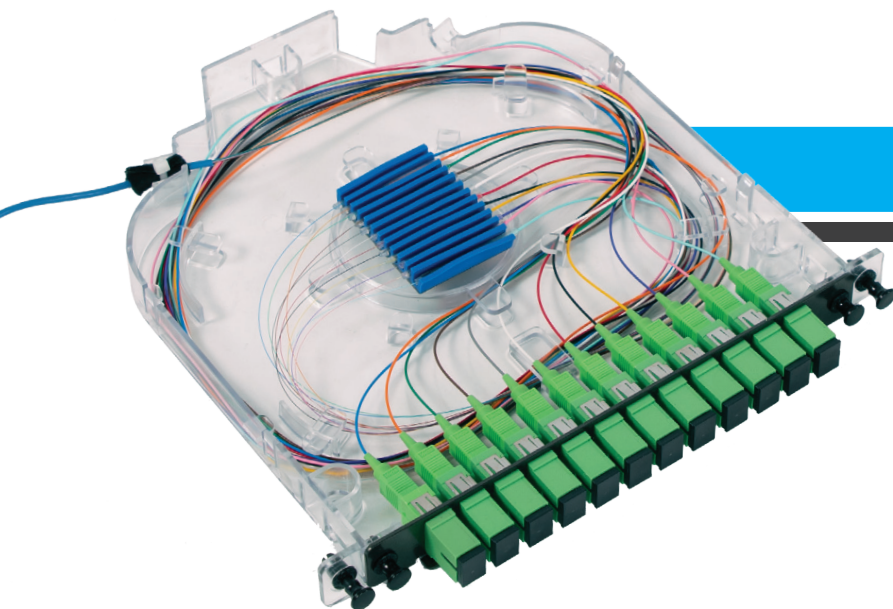
2nd floor to the datacenter (this is no different than if Option A is chosen). The difference is, no connection would be run between the Crabaugh Telecommunication Shelter and the Corley datacenter. The fiber amount would still be 24-strand singlemode for both runs to be terminated into CTX cassettes on both sides, labeled.

This version of Option D would require the following parts:

- 8 x Multilink Part # CT-X-PS-CL-12-SCU-P CTX Patch and Splice Cassettes
- 2 x Multilink Part # 045-665-00 1RU Fiber Shelf
- 2 x Multilink Part # 072-208-50 Fiber Shelf Bulkhead
- Enough 24-strand singlemode fiber to complete the runs
- Enough Trace-safe cable and terminators to complete the runs through sections of the route where Trace-safe does not already exist
- Enough engraved waterproof tags to label the fiber in each ground vault along the route

Special Note

As mentioned in an earlier part of the document, any instance where a new ground vault is going to be added to intersect an existing conduit with currently active fiber in it, special care needs to be taken not to damage the fiber while working and modifying the conduit.



CT-X Cassette

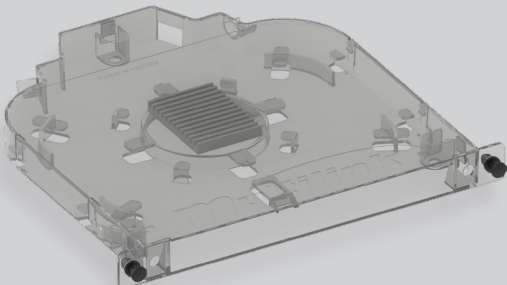
Patch & Splice

Product Description

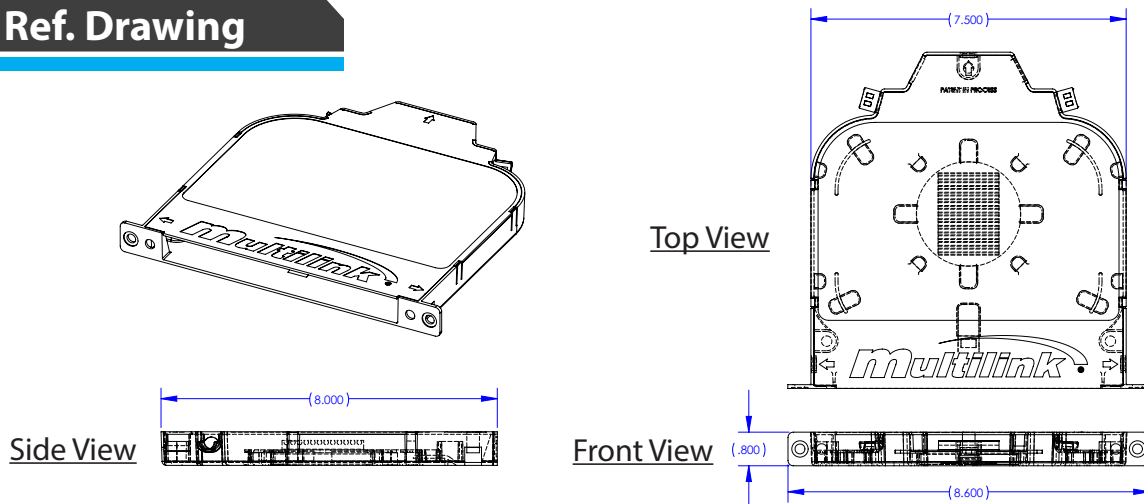
Multilink's CT-X Cassette is an industry-leading plug-and-play device that is easily field installed with scalable applications. Our CT-X is a versatile platform that accommodates patch/splice connections. All back connections to the base are bidirectional, allowing fiber to enter from either left or right build outs, or both. Perfect for upgrading or adding existing wall and rack mount configurations.

The polycarbonate plastic material of the CT-X allows for accessible fiber networking without the hassle of assembly times or worrying about shipping safety. The CT-X lineup includes a Patch Only cassette, a Patch & Splice unit, an MTP unit and a splitter unit. Multilink will help you choose the best cassette for your project.

CT-X Specifications

	Dimension:	8.60"W x 0.80"H x 8.00"D
	Material:	Polycarbonate Resin
	Color:	Clear
	Capacity:	12 SC Simplex 24 LC Duplex
	Adapter Type:	SC/APC SC/UPC LC/APC LC/UPC
	Standards:	All Telcordia and Six Sigma

CT-X Ref. Drawing



CT-X Configurator

CTX	PS	CL	12	SCA	P
1	2	3	4	5	6

1	Module Type
CTX	CT-X

2	Module Style
PS	Patch & Splice

3	Color
CL	Clear

4	Fiber Count
LC	12, 24
SC	6, 12

5	Adapter/Polish, Fiber
SCA	SC/APC SM 9μm
SCU	SC/UPC SM 9μm
LCA	*LC/APC SM 9μm
LCU	*LC/UPC SM 9μm
LC1	*LC/PC OM1 62.5μm
LC2	*LC/PC OM2 50μm
LC3	*LC/PC OM3 50μm
LC4	*LC/PC OM4 50μm
SC1	SC/PC OM1 62.5μm
SC2	SC/PC OM2 50μm
SC3	SC/PC OM3 50μm
SC4	SC/PC OM4 50μm

*24 Fiber Only

6	Pigtail
P	1M Included
N	Not Included
R	Ribbon



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580 Ternes Ln
Elyria, OH 44035
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Fax: (440) 366-6802



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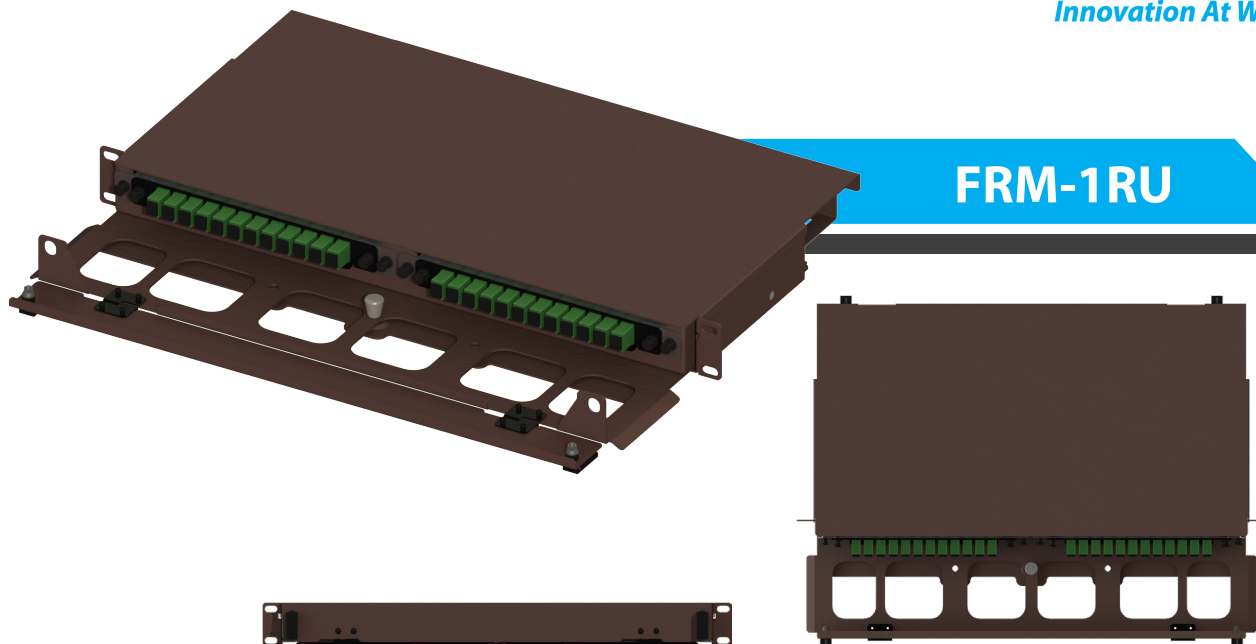
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Email: engsupport@gomultilink.com	Email: engsupport@gomultilink.com	Email: lasupport@gomultilink.com



Product Description

Multilink's Signature Series offers a complete line of fiber patch panel products (both wall and rack mount) for our CT-X cassette. Multilink's CT-X cassette offers a system wide modular solution for fiber connectivity. The CT-X cassette is fully integrated with each Signature Series product including the FRM-1RU. It can hold up to (2) CT-X cassettes or (3) FTM adapter panels.

Each Signature Series rack mount allows for a non-captive cable entrances allow pre-connectorized cable assemblies to be easily installed. Each Signature Series rack mount is built from either Aluminum or Steel with our unique bronze polyester powder coat finish to provide extreme durability. The FRM-1RU uses a spring plunger to secure the rack in place to prevent any sudden movements that could potentially cause damage by the tray falling out of place.

Features & Benefits





- Signature Series bronze powder coated finish.
- Removable door panel for additional room for access.
- Optional assembly to have a fixed door panel is available.
- Option to silk screen custom logo on front panel (*additional silk screening cost*).
- Swell latches allow for maximum compression for both door panel and rack top.
- Spring plunger allows for rack to securely lock when opening and a fixed closed position.
- Various bulkhead brackets allow for both FTM modules and CT-X cassettes to be used.

Specifications

Parameter	Specification
Dimensions:	19" W x 1.75" H x 14.19" D
Weight:	15 lbs
Material:	Aluminum & Steel
Finish:	Bronze Powder Coat
Capacity:	(2) CT-X Cassettes or (3) FTM Modules
Rack Cover:	Door Panel (Option to silk screen w/ custom logo)

Accessories

FRM-1RU Accessories

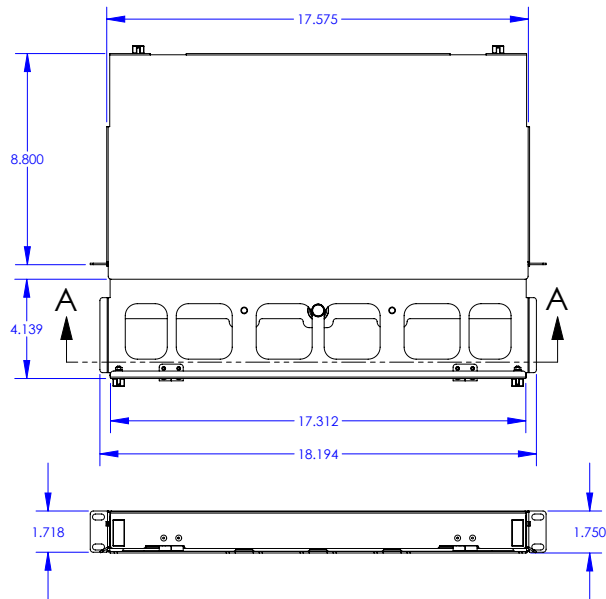
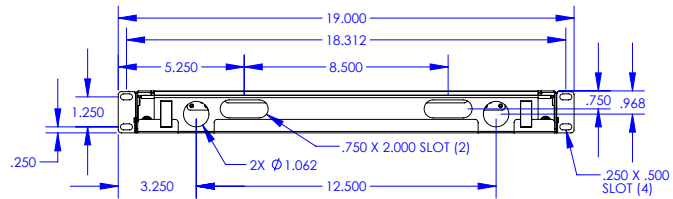
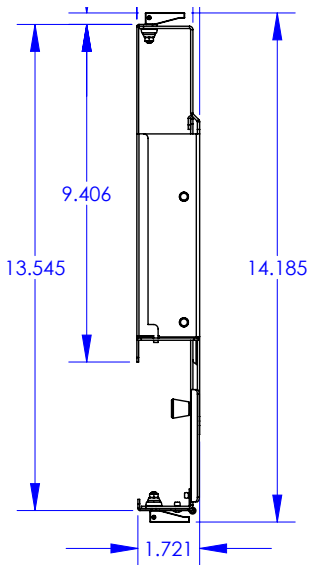
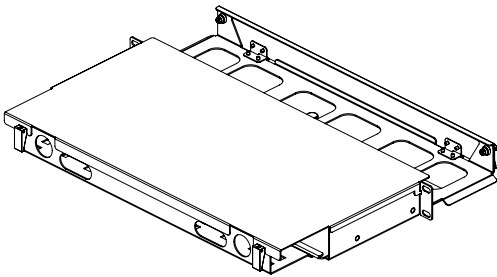
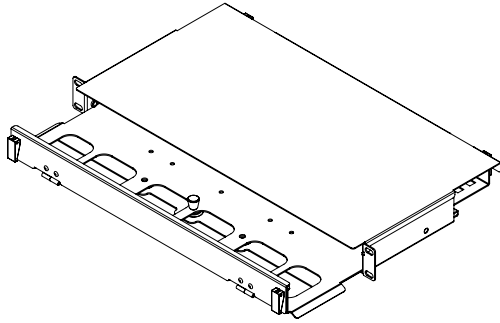
Products	Description	Stock ID
	Strain Relief Kit (1RU)	065-249-10
	FRM-1RU CT-X Bulkhead Bracket Kit	072-208-50
	FRM-1RU FTM Bulkhead Bracket Kit	072-208-20
	FTM Blank Plate	10-7666
	CT-X Blank Plate	065-822-11

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Dimensional Drawings

045-665-00



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Ordering Guide

FRM-1RU	-		-		-		-		-		-		-		-		-	
		1		2		3		4		5		6		7		8		

1	Module
FTM	FTM Module
CT-X	CT-X Cassette

2	# of Modules
01	1 Module
02	2 Modules
03	3 Modules*

**FTM Module Only*

3	Module Style
P	Patch
S	Splice
M	MPO

4	Adapter Type
SCA	SC/APC SM 900µm
SCU	SC/UPC SM 900µm
LCA	LC/APC SM 900µm
LCU	LC/UPC SM 900µm
SC1	SC/PC OM1 62.5µm
SC2	SC/PC OM2 50µm
SC3	SC/PC OM3 50µm
SC4	SC/PC OM4 50µm
LC1	LC/PC OM1 62.5µm
LC2	LC/PC OM2 50µm
LC3	LC/PC OM3 50µm
LC4	LC/PC OM4 50µm
ST1*	ST/UPC SM
ST2*	ST/PC MM

**FTM Module Only*

5	# of Conn. / Module
06	6 Fiber
12	12 Fiber
24*	24 Fiber

**LC Adapters Only*

6	Fiber Type
9	900µm
R	Ribbon
LT	Loose Tube
J	Jumper

8	Fiber Jacket
SW	Spiral Wrap*
OFR	OFNR
OPF	OFNP
OP	OSP

**Splice Style Only*

8	Pigtail Length
.5	.5 Meter*
1M	1 Meter
3M	3 Meters
XX	Custom (Specify Length)

**MPO Only*

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Splice Hub™ Series



Product Description

The Splice Hub™ is a fast deployment, fully configurable and field upgradeable fiber distribution hub. Each can be equipped for various fiber capacities including 144, 288, 432 and 576. Easy installation allows for 144+ fiber to be dispatched to a housing development or business location without interrupted service.

The Splice Hub™ is NEMA 4 rated and Telcordia compliant (please review specifications for all rated standards). Dual door design allows easy accessibility to both feeder and distribution partitions simultaneously or individual access to technicians. Each Splice Hub™ can be ground, pole or wall mounted appropriately.

Features & Benefits

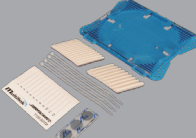
- Easily expandable and scalable by housing (12) CT-X cassettes
- Capable of housing 9 splitters
- Fiber capacity includes 144 SC connections OR 288 LC connections
- Ground, Pole, and Wall Mountable

Specifications


Parameter	Specification
Dimensions:	16" W x 23" H x 20" D
Weight:	30 lbs
Fiber Capacity:	144 SC & LC 288 LC
CT-X Capacity:	12
Splitter Capacity:	9
Splice Tray:	1120-SSTP
Material:	Corrosion Resistant Aluminum
Finish:	Powder Coat
Color:	Beige <small>*More options available upon request</small>
Hardware:	Stainless Steel
Security:	3-Point Latching Mechanism
Mounting:	Ground Mount, Pole Mount or Wall Mount
Cable Entrance:	Bottom Entry
Safety Standards:	Designed to NEMA 4 Terminations designed to GR-326 Designed to GR-3125

Accessories

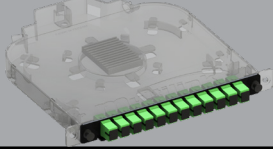
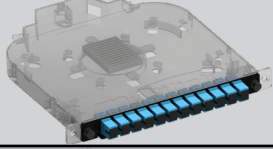
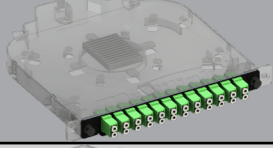
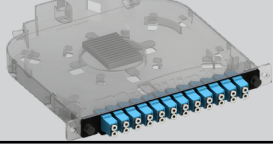
Splice Tray

Products	Description	Stock ID
	1120-SSTP	072-059-10

Splitter

Products	Description	Stock ID
	Cassette Splitter	Custom

CT-X Cassette

Products	Description	Stock ID
	CT-X SC/APC 12 Fiber Module	045-793-11
	CT-X SC/UPC 12 Fiber Module	045-793-15
	CT-X LC/APC 24 Fiber Module	045-793-25
	CT-X LC/UPC 24 Fiber Module	045-793-35

Ordering Guide

FDH	BE								_____ X _____
	1	2	3	4	5	6	7	8	9

10	11	12	13

2	Input Type
01	Padlockable Handle
02	216 Can Wrench

3	Fiber Count
72	72 Fibers
144	144 Fibers
288	288 Fibers
432	432 Fibers
576	576 Fibers

4	Mounting
01	Pad*
02	Pole**
03	Wall***

* Pad not available for 72 count
 ** Pole available for 72, 144, 288 only
 *** Wall available for 72 & 144 count only

5	Input Type
01	Patch
02	Splice

6	Feeder Fiber Count
12	12 Fiber
24	24 Fiber
48	48 Fiber

7	Custom Feeder Cable Length (ft.)
****	*Measured In Feet/Meter
0050F	*Example of 50 Feet *Increments of 50 Feet

8	Feeder Cable Type
01	Loose Tube Dielectric Outdoor Cable
02	* Ribbon Dielectric Cable
03	Loose Tube Single Jacket & Armored Cable
04	Indoor/Outdoor Cable
05	* Ribbon Armored

*Special Order Only

9	Output Cable Quantity	X	Output Cable Fiber Count Per Cable
1	1		72 72
2	2		144 144
3	3		288 288
4	4		432 432
5	5		864 864

10	Custom Distribution Cable Length (ft.)
****	*Measured In Feet
0100F	*Example of 100 Feet/Meter *Increments of 50 Feet

11	Distribution Cable Type
01	Loose Tube Dielectric Outdoor Cable
02	*Ribbon Dielectric Cable
03	Loose Tube Single Jacket & Armored Cable
04	Indoor/Outdoor Cable
05	*Ribbon Armored

*Special Order Only

12	Connector Type
SCU	SC/UPC
SCA	SC/APC
LCU	LC/UPC
LCA	LC/APC

13	Splitter Module Type
S1	1x8
S2	1x16
S3	1x32



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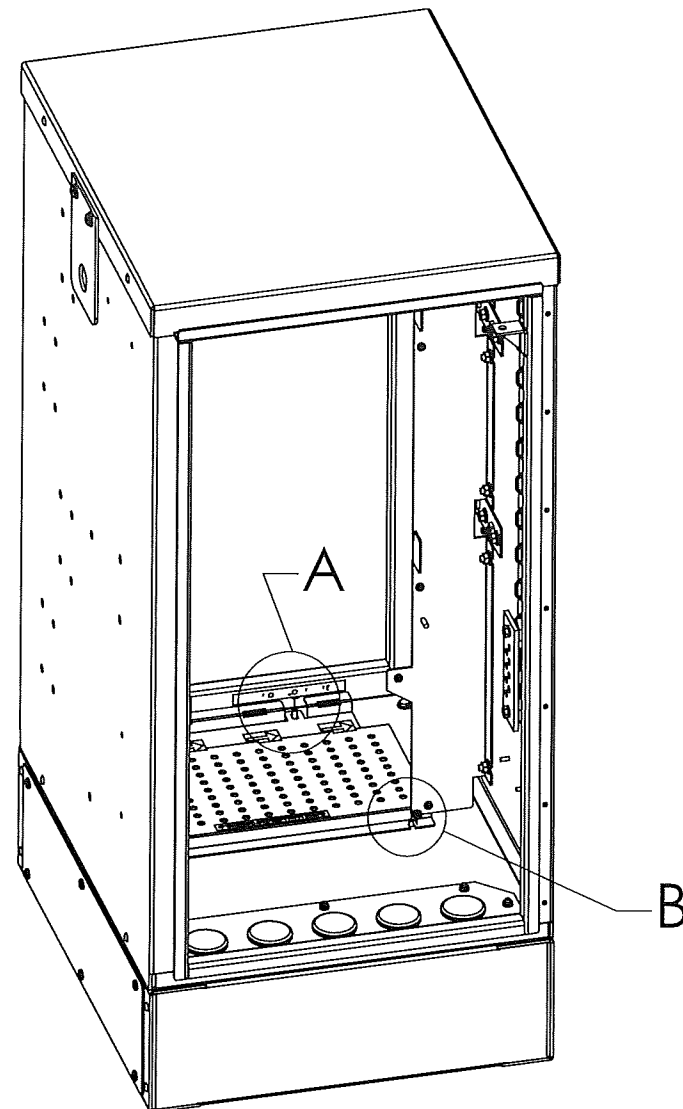
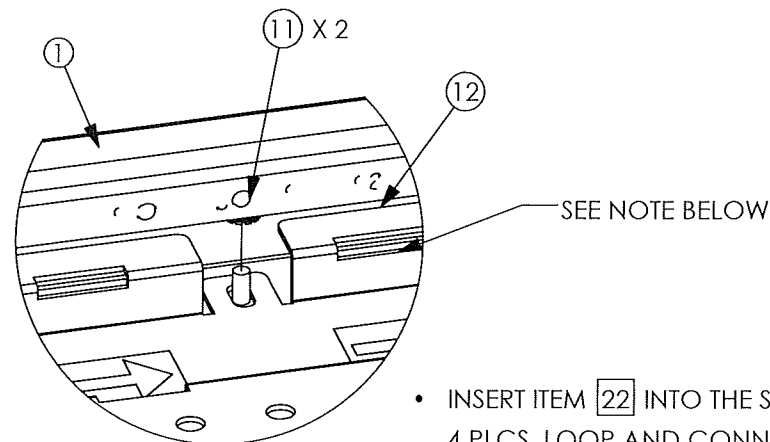
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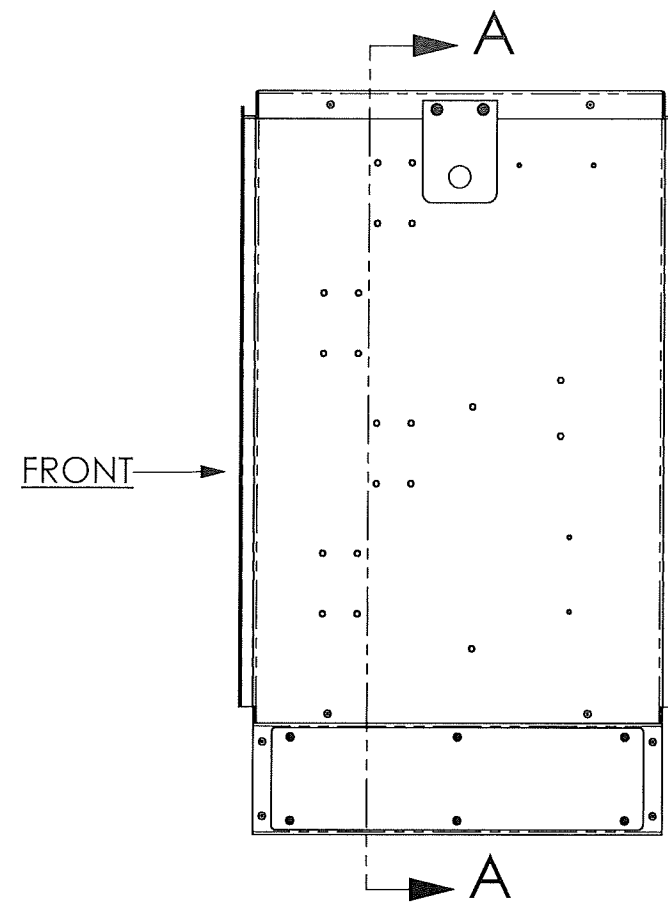
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01	N/A	INITIAL RELEASE	11/01/16	SJK	

(DOORS AND WINDSTOPS HIDDEN FOR CLARITY)

**STEP-1**DETAIL A
SCALE 1 : 2

- INSERT ITEM 22 INTO THE SLOTS OF ITEM 12 IN 4 PLCS. LOOP AND CONNECT THE VELCRO.
- SECURE ITEM 12 TO THE BOTTOM OF ITEM 1 USING ITEM 11, QTY 2 IN THE FRONT AND 2 IN THE BACK.

SEE NOTE BELOW

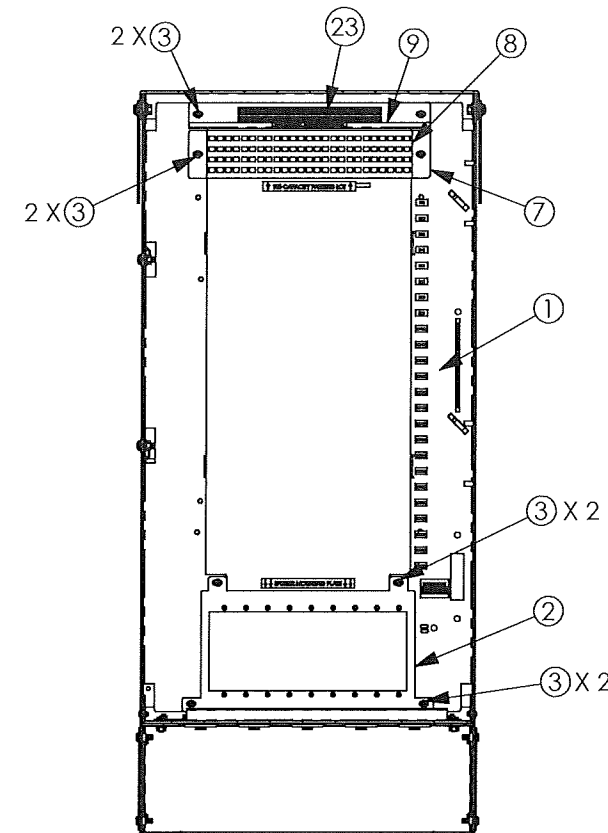


FRONT →

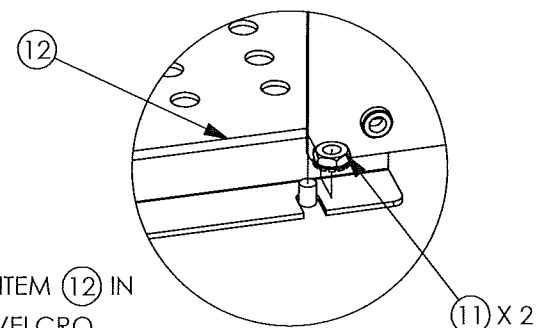
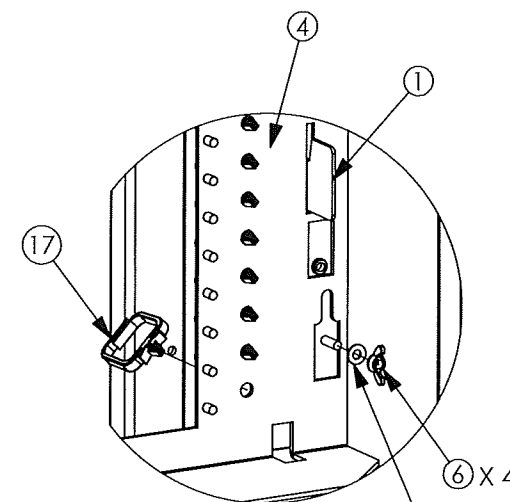
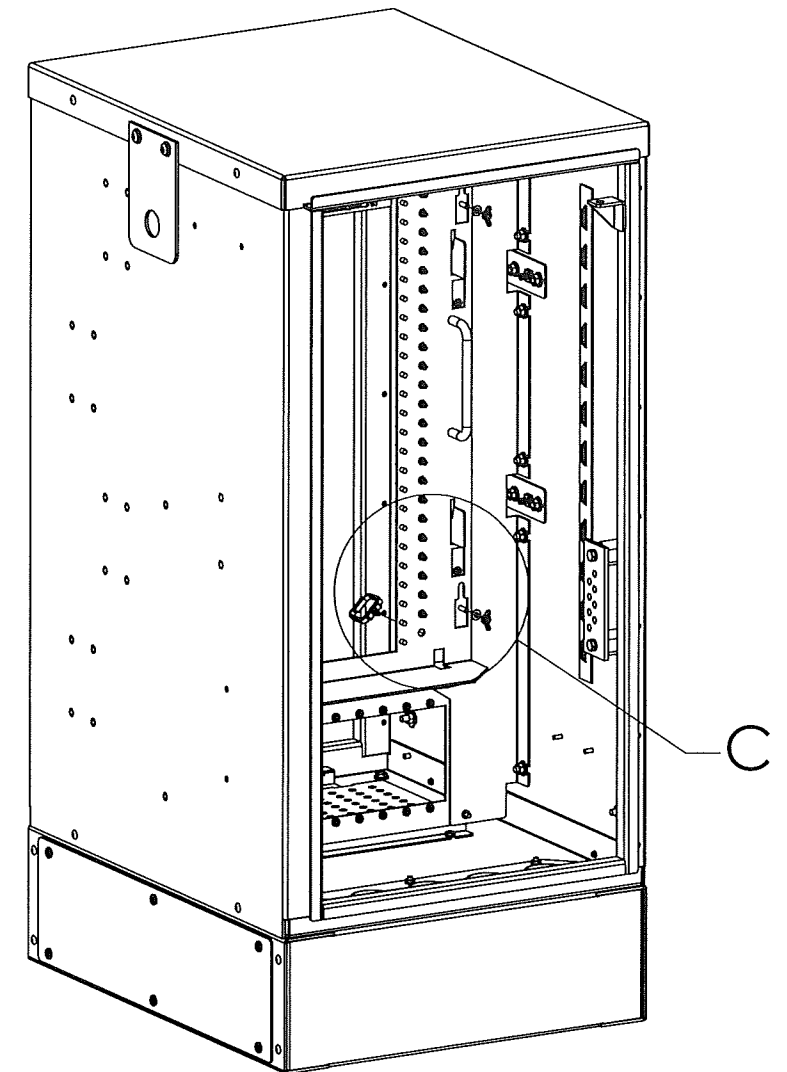
A

STEP-2

- SECURE ITEM 2 TO THE RAILS IN ITEM 1 FROM THE FRONT AT THE BOTTOM USING ITEM 3, QTY 4.
- INSERT ITEM 23 INTO ITEM 9 IN 24 PLCS. BE SURE ADAPTER CAPS ARE KEPT ON AT ALL TIMES.
- SECURE ITEM 9 TO THE RAILS IN ITEM 1 FROM THE FRONT AT THE TOP USING ITEM 3, QTY 2.
- AFFIX ITEM 8 TO ITEM 7 IN THE CENTER USING GLUE/EPOXY AND SECURE ITEM 7 TO ITEM 1 BELOW ITEM 9 USING ITEM 3, QTY 2.



SECTION A-A

DETAIL B
SCALE 1 : 2DETAIL C
SCALE 1 : 4**STEP-3**

- INSERT ITEM 17 INTO ITEM 4 IN THE ORIENTATION SHOWN IN 24 PLCS. INSURE EACH OF ITEM 17 IS PROPERLY SEATED.
- SECURE ITEM 4 FROM THE BACK SIDE OF ITEM 1 (LANCE PLATE SIDE) USING ITEMS 5 AND 6, QTY 4 EACH.

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS: DECIMALS: ANGLES:
±1/32 .XX=±.03 ±1°
.XXX=±.010
ALL FLATS TO BE ±.005

**NO SHARP EDGES OR
BURRS ALLOWED**

MATERIAL:
FINISH: SEE B.O.M.
N/A

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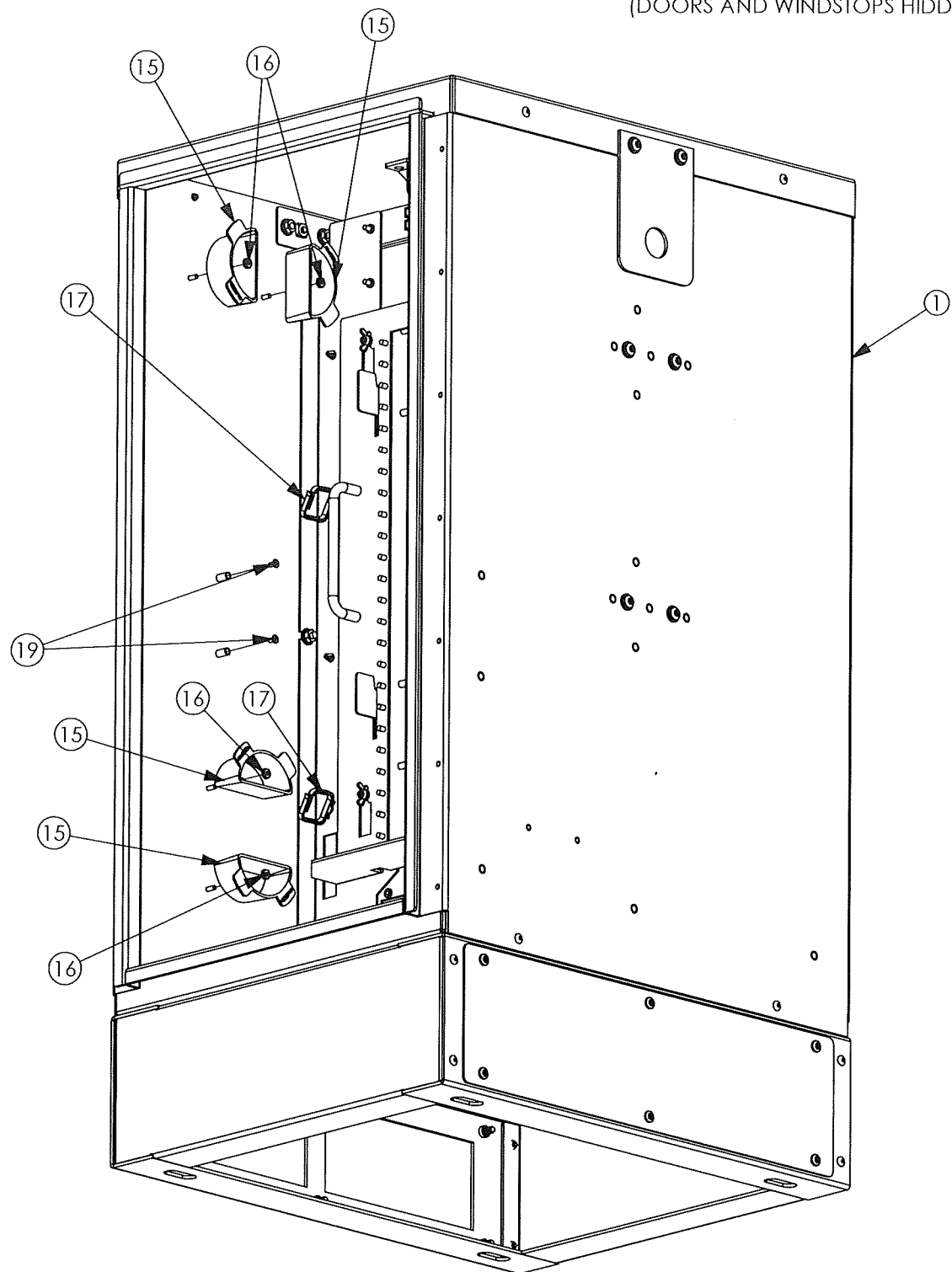
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QUALITY ENG: DATE:

MultilinkFDH-BE-DD-GM-288
W/ACCESSORIES

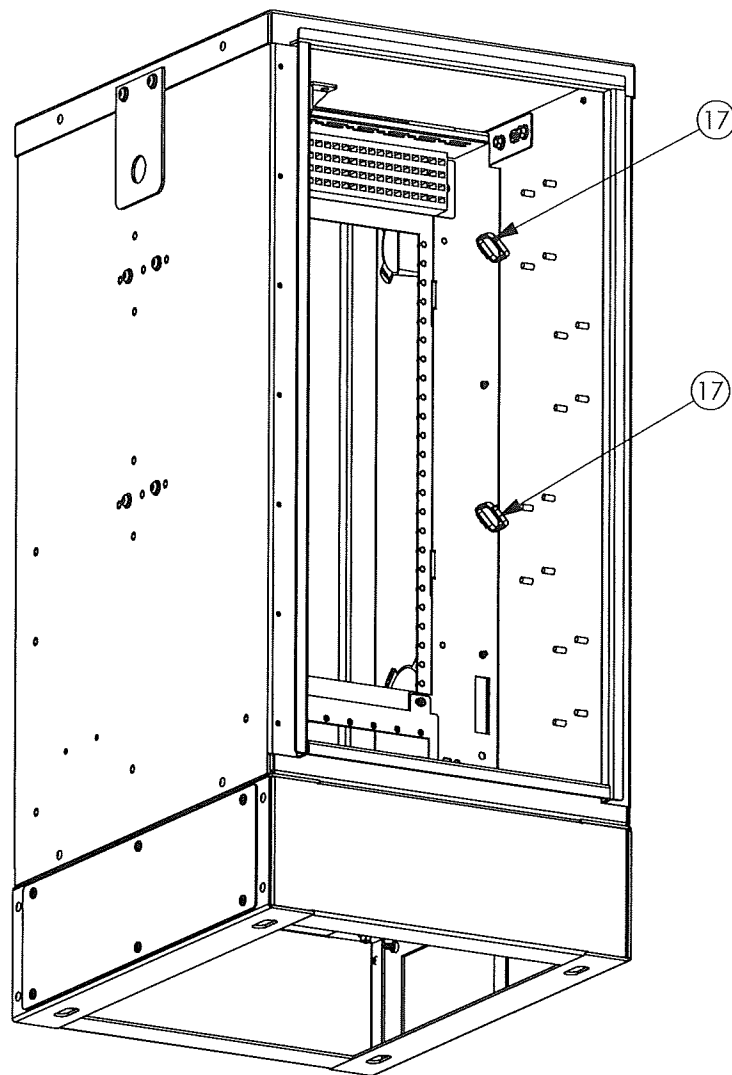
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REV.	ECN #	DESCRIPTION OF CHANGE	DATE	BY	MFG ENG
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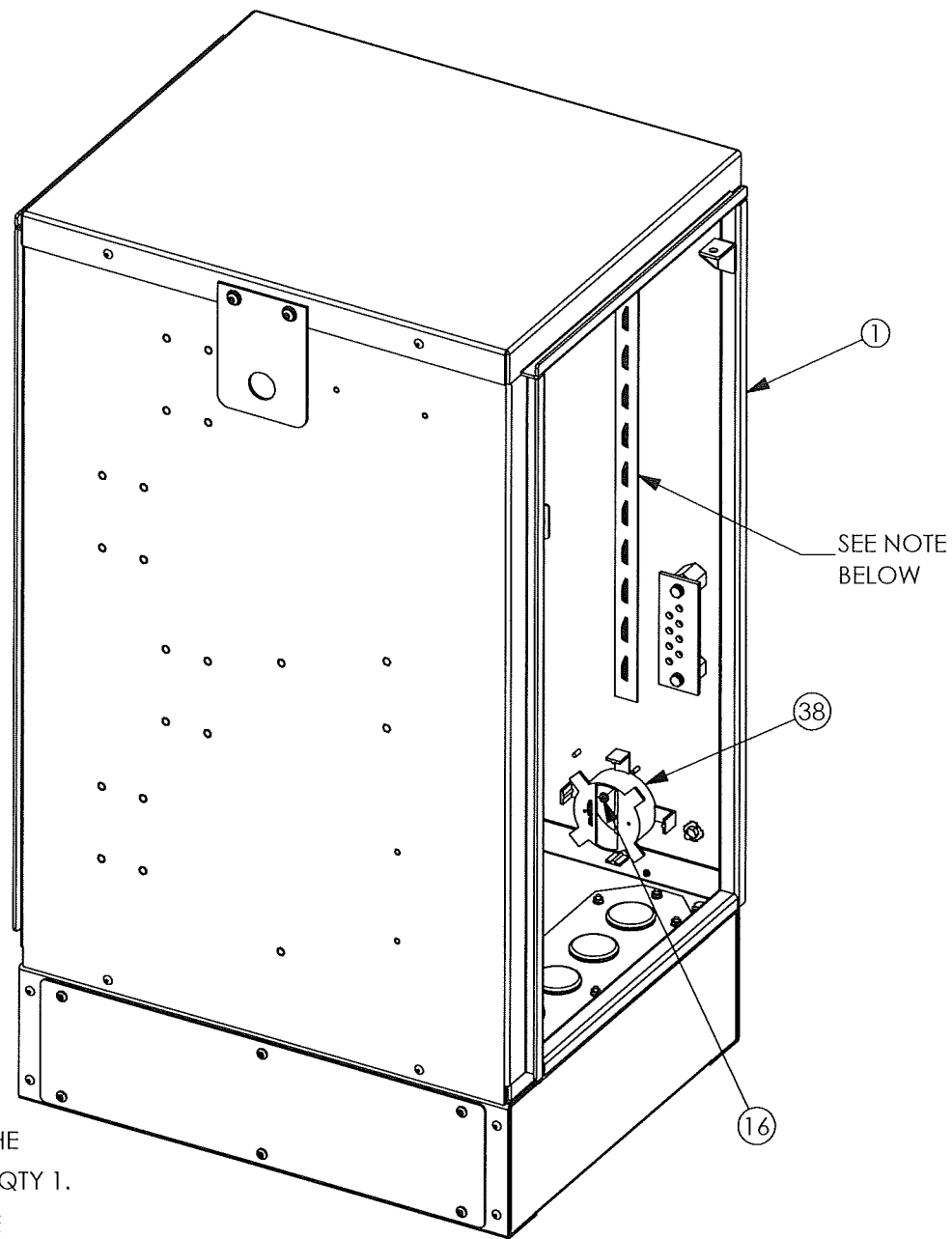
(DOORS AND WINDSTOPS HIDDEN FOR CLARITY)

**STEP-4**

- SECURE ITEM (15), QTY 2 FROM THE BACK OF ITEM (1) USING ITEM (16), QTY 1 PER EACH OF ITEM (15).
- SECURE 2 QTY OF ITEM (15) AT THE BOTTOM ON THE SAME SIDE USING ITEM (16).
- SECURE ITEM (19) IN 2 PLCS TO ITEM (1) INNER WALL AS SHOWN. SECURE ITEM (18) AT THE REAR INSIDE BOTTOM OF ITEM (1) USING PACKAGING TAPE.
- INSERT ITEM (17) INTO ITEM (1) RACK RAIL AS SHOWN IN 4 PLCS (2 LOCATED ON FRONT PANEL AND OTHER 2 LOCATED ON THE BACK PANEL)..



- SECURE ITEM (38), QTY 1 TO ITEM (1) FROM THE REAR RIGHT BOTTOM SIDE USING ITEMS (16), QTY 1.
- INSERT ITEM (21) INTO EACH OPENING OF THE LANCE PLATE OF ITEM (1) AS SHOWN.
- PLACE 12 QTY OF ITEM (21) ON THE REAR INSIDE BOTTOM OF THE CABINET ALONG WITH ITEM (18).

**STEP-5**

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS: DECIMALS: ANGLES:
 $\pm 1/32$.XX = $\pm .03$ $\pm 1^\circ$
.XXX = $\pm .010$

ALL FLATS TO BE $\pm .005$ **NO SHARP EDGES OR
BURRS ALLOWED**

MATERIAL: SEE B.O.M.
FINISH: N/A

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MFG ENG: DATE:

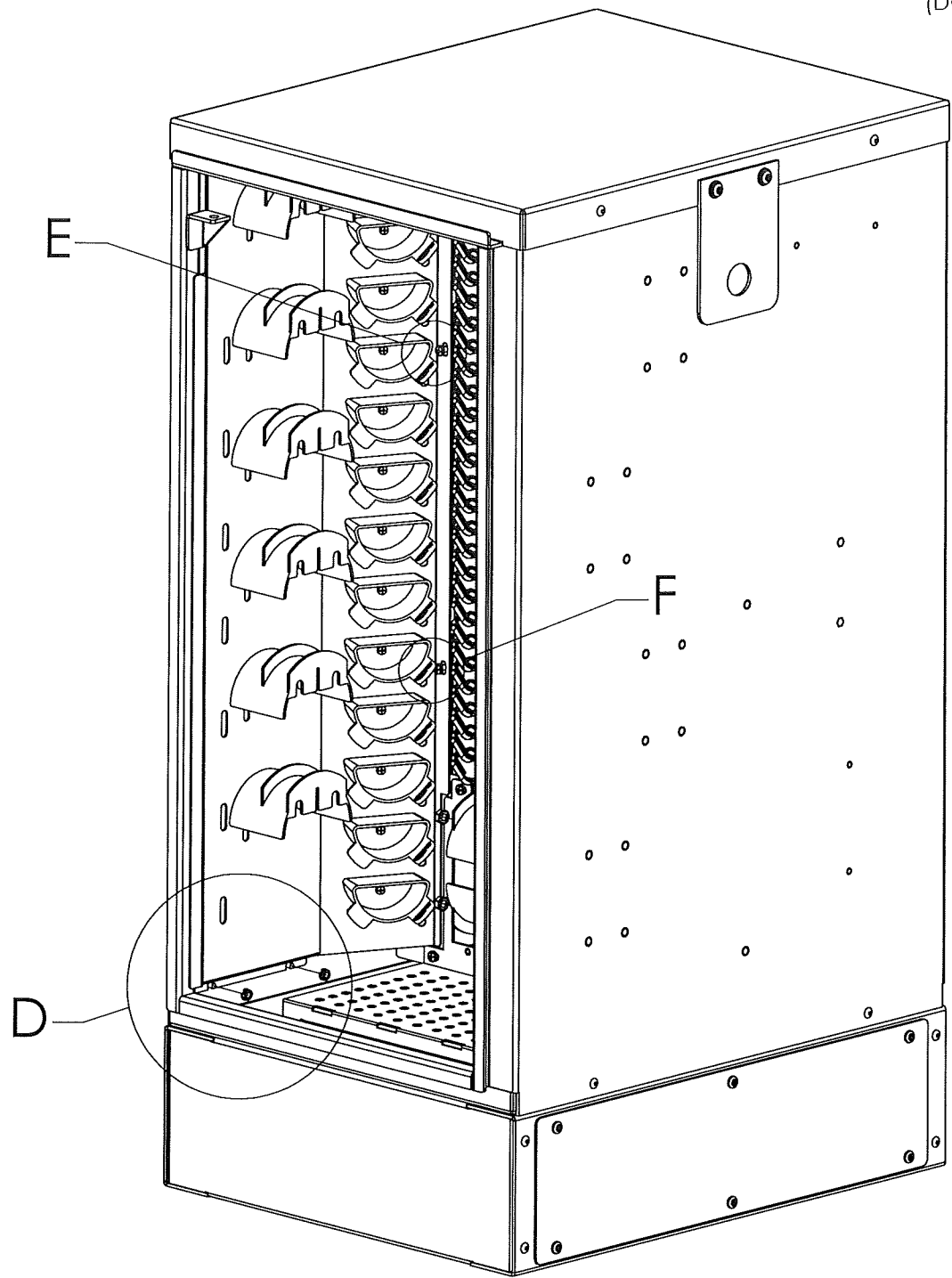
QUALITY ENG: DATE:

MultilinkFDH-BE-DD-GM-288
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SHEET: **B** DWG. NO. 030-301-20 REV. 01
SCALE: 1:6 CAD FILE: 030-301-20 SHEET: 3 OF 5

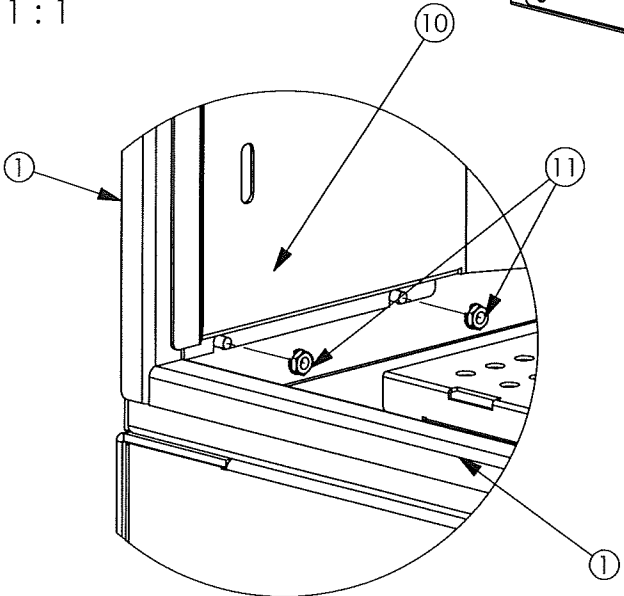
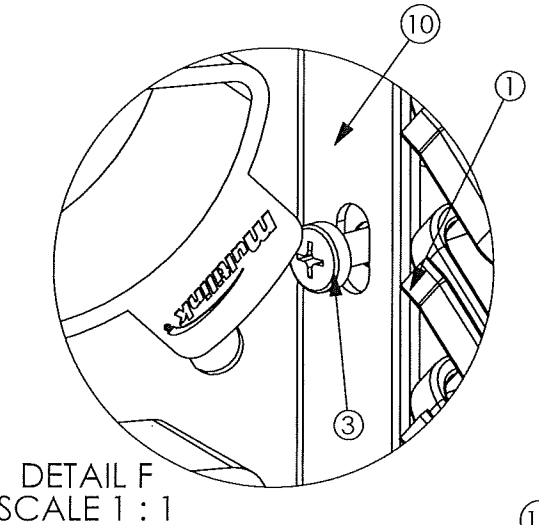
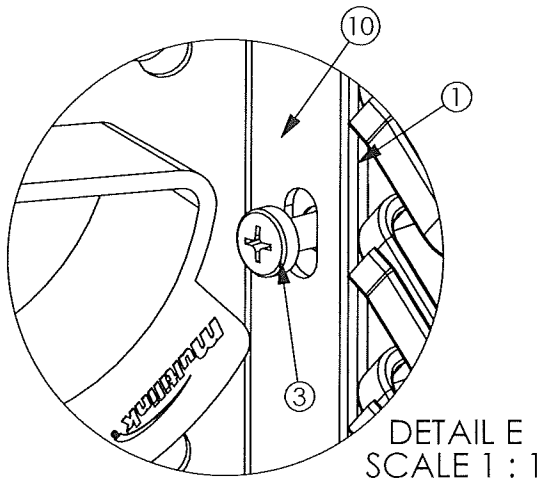
REV.	ECN #	DESCRIPTION OF CHANGE	DATE	BY	MFG ENG
01	N/A	INITIAL RELEASE	11/01/16	SJK	

(DOORS AND WINDSTOPS HIDDEN FOR CLARITY)

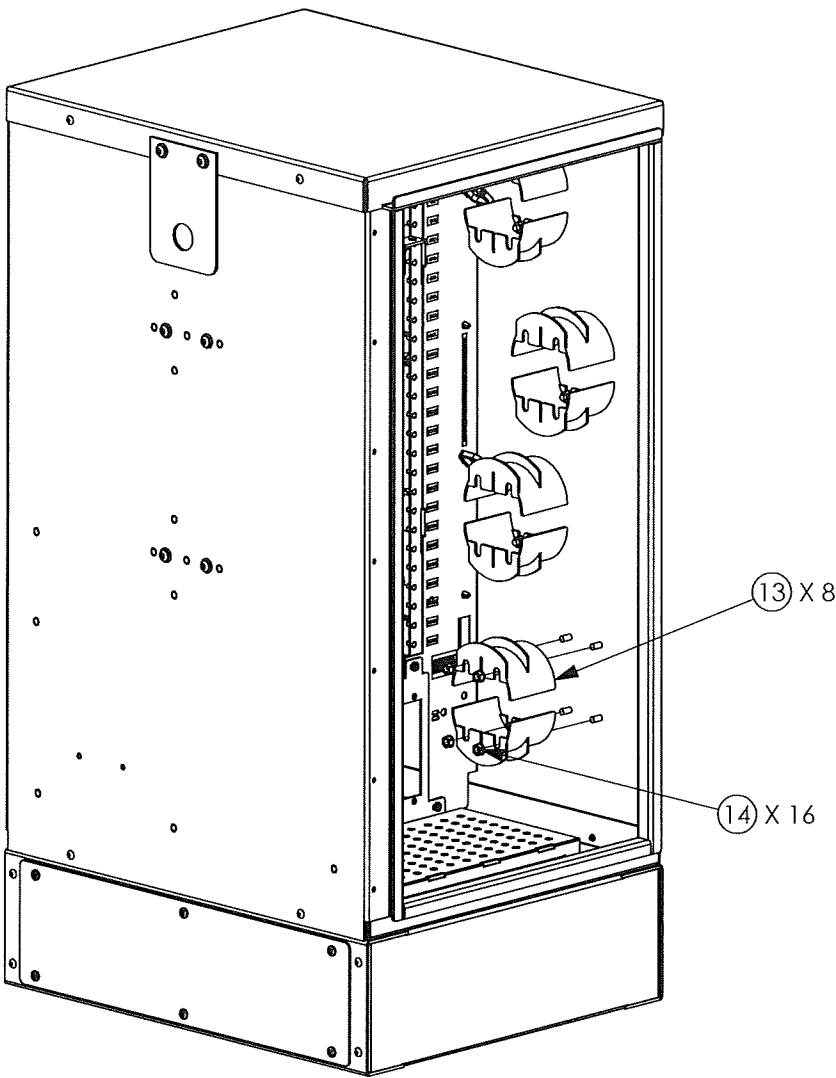


STEP-6

- INSERT ITEM 22 INTO THE BOTTOM SIX SLOTS OF ITEM 10 AND INSERT ITEM 21 INTO THE TOP SLOT OF ITEM 10.
- SECURE ITEM 10 TO ITEM 1 ON THE FRONT LEFT SIDE USING ITEM 11, QTY 4 (2 ON THE TOP AND 2 ON THE BOTTOM) AND ITEM 3, QTY 2 TO THE LEFT RAIL.



DETAIL D
SCALE 1 : 1

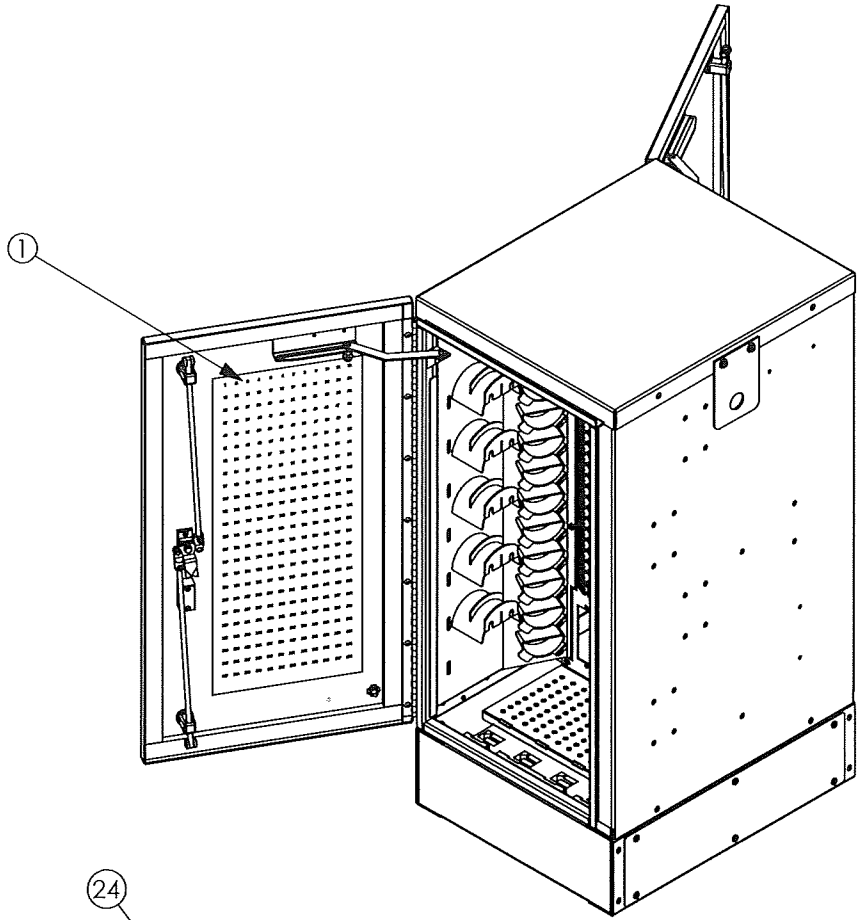


STEP-7

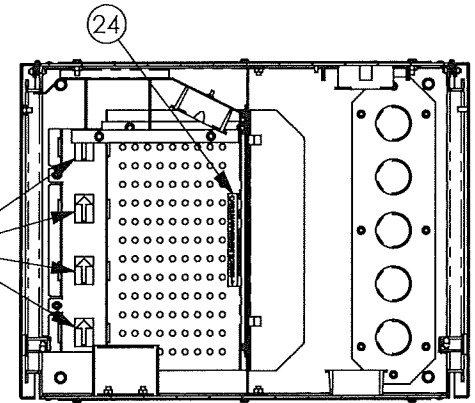
- SECURE ITEM 13 TO THE FRONT RIGHT SIDE OF ITEM 1 AT 8 PLACES AS SHOWN USING ITEM 14, QTY 2 PER EACH OF ITEM 13.

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS: .XX=±.03 ANGLES: ±1° DECIMALS: .XXX=±.010 ALL FLATS TO BE ±.005			THIS DOCUMENT AND THE INFORMATION CONTAINED THEREIN ARE CONFIDENTIAL & PROPRIETARY TO MULTILINK AND MAY NOT BE COPIED OR DISCLOSED TO OTHERS WITHOUT A WRITTEN CONSENT FROM MULTILINK. THE INFORMATION IS TO BE PROMPTLY RETURNED TO MULTILINK UPON REQUEST.		
NO SHARP EDGES OR BURRS ALLOWED			DRAWN BY: SJK	DATE: 11/01/16	<div>Multilink</div> <div>FDH-BE-DD-GM-288 W/ACCESSORIES</div>
MATERIAL: SEE B.O.M.			CHECKED:	DATE:	
FINISH: N/A			MFG ENG:	DATE:	
DO NOT SCALE DRAWING			QUALITY ENG:	DATE:	
SIZE B	DWG. NO. 030-301-20	REV. 01	SCALE: 1/6	CAD FILE: 030-301-20	SHEET: 4 OF 5

REV.	ECN #	DESCRIPTION OF CHANGE	DATE	BY	MFG ENG
01	N/A	INITIAL RELEASE	11/01/16	SJK	



- NOTES:
- ITEM 27 (NOT SHOWN) IS SHIPPED WITH THE CABINET.



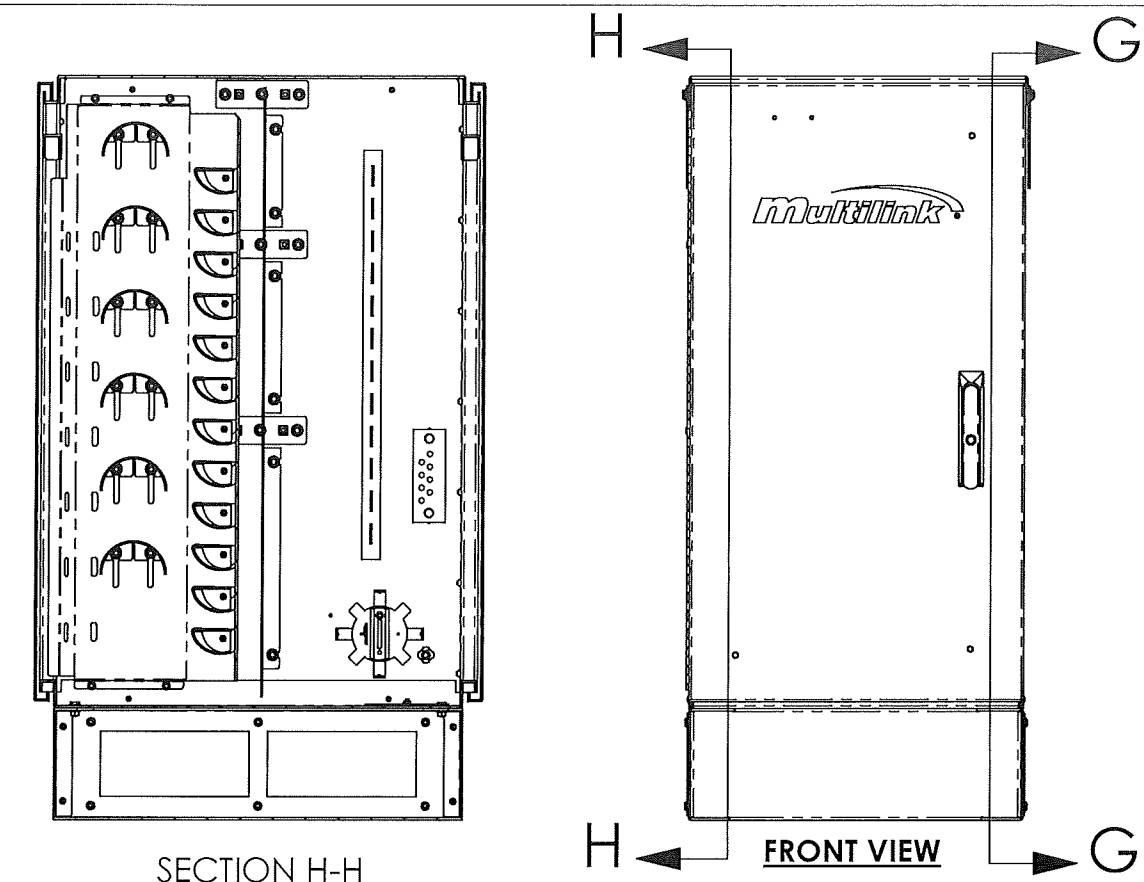
SECTION L-L

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS: DECIMALS: ANGLES: ±1/32 .XX=±.03 ±1° .XXX=±.010 ALL FLATS TO BE ±.005 NO SHARP EDGES OR BURRS ALLOWED		THIS DOCUMENT AND THE INFORMATION CONTAINED THEREIN ARE CONFIDENTIAL & PROPRIETARY TO MULTILINK AND MAY NOT BE COPIED OR DISCLOSED TO OTHERS WITHOUT A WRITTEN CONSENT FROM MULTILINK. THE INFORMATION IS TO BE PROMPTLY RETURNED TO MULTILINK UPON REQUEST.	
DRAWN BY: SJK		DATE: 11/01/16	
CHECKED:		DATE:	
MFG ENG:		DATE:	
QUALITY ENG:		DATE:	
DO NOT SCALE DRAWING			

Multilink

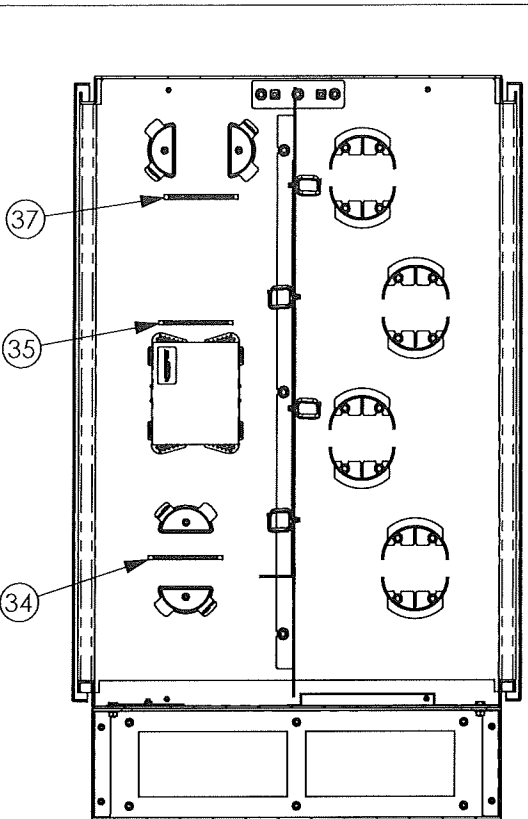
FDH-BE-DD-GM-288
W/ACCESSORIES

SIZE B	DWG. NO. 030-301-20	REV. 01
SCALE: 1:10 CAD FILE: 030-301-20 SHEET: 5 OF 5		

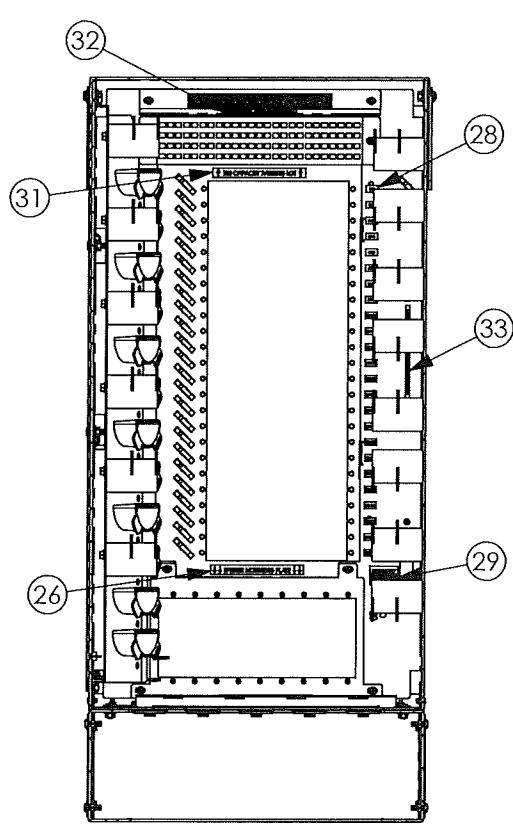


SECTION H-H

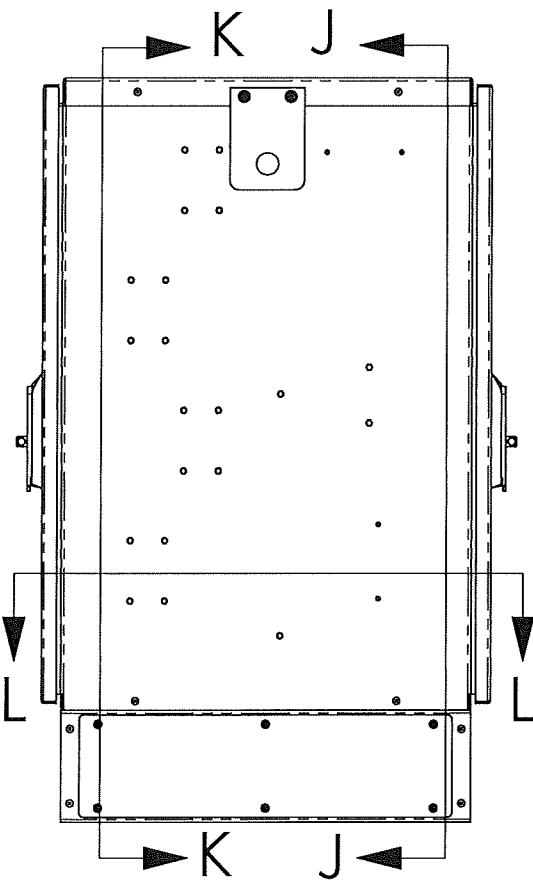
FRONT VIEW



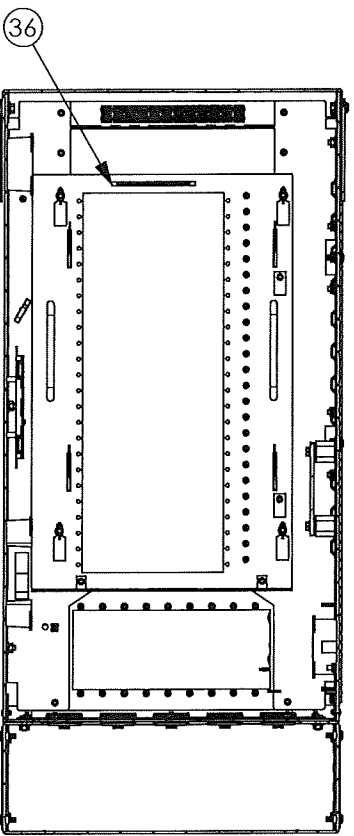
SECTION G-G



SECTION K-K



SIDE VIEW

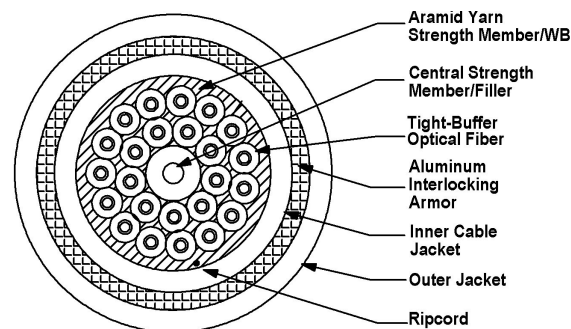


SECTION J-J

Part #: DX024DSLX9YRI2

24 CHANNEL

DX-Series Distribution – Aluminum Interlocking Armored (ILA) – Riser Rated Cables



Laser Ultra-Fox™ Fiber Performance

Fiber Code	SLX
Industry Standard Designation	Low Water Peak Single-Mode ITU-T G.652.D
Core/Cladding Diameter (μm)	9/125
Wavelength (nm)	1310/1550
Maximum Cabled Attenuation (dB/km)	0.5/0.5
Primary Coating Diameter (μm)	245
Secondary Buffer Diameter (μm)	900
Zero Dispersion Slope (ps/nm ² -km)	0.092
Proof Test Level (kpsi)	100

Installation and Operating Characteristics

Inner Cable		
	Installation	Operating
Max Tensile Load	3,000 N (670 lbs)	1,000 N (220 lbs)
Min Bend Radius	13.4 cm (5.3 in)	8.9 cm (3.5 in)
Outer Cable		
	Installation	Operating
Max Tensile Load	1,350 N (300 lbs)	400 N (90 lbs)
Min Bend Radius	33.4 cm (13.1 in)	25.1 cm (9.9 in)

Mechanical and Environmental

	Inner Cable	Entire Cable
Impact Resistance EIA/TIA-455-25A	1,500 Impacts	20 impacts
Crush Resistance TIA-455-41	1,800 N/cm	650 N/cm
Flex Resistance	2,000 cycles	25 cycles
Operating Temperature	-40°C to +85°C	-40°C to +85°C
Storage Temperature	-55°C to +85°C	-55°C to +85°C
Installation Temperature (actual temp. of cable)	-10°C to +60°C	0°C to +60°C
Flame Retardancy	UL listed type OFNR (UL 1666) for all fiber counts *FT4 (CSA C22.2 No. 232) for 2-24 fiber counts only	UL listed type OFNR (UL 1666) for all fiber counts *FT4 (CSA C22.2 No. 232) for 2-24 fiber counts only

Cable Characteristics

Inner Cable	
Jacket Color	Black
Jacket Material	Indoor / Outdoor PVC
Buffer Material	PVC for 2- to 24-fiber counts. For all other fiber counts contact OCC Sales.
Cable Weight	66 kg/km (44 lbs/1000')
Cable Diameter	8.9 mm (0.35 in)
Outer Cable	
Jacket Color	
Jacket Material	Indoor/Outdoor PVC
Cable Weight	239 kg/km (161 lbs/1000')
Cable Diameter	16.7 mm (0.66 in)

24 CHANNEL

DX-Series Distribution – Aluminum Interlocking Armored (ILA)
– Riser Rated Cables

Part #: DX024DSLX9YRI2



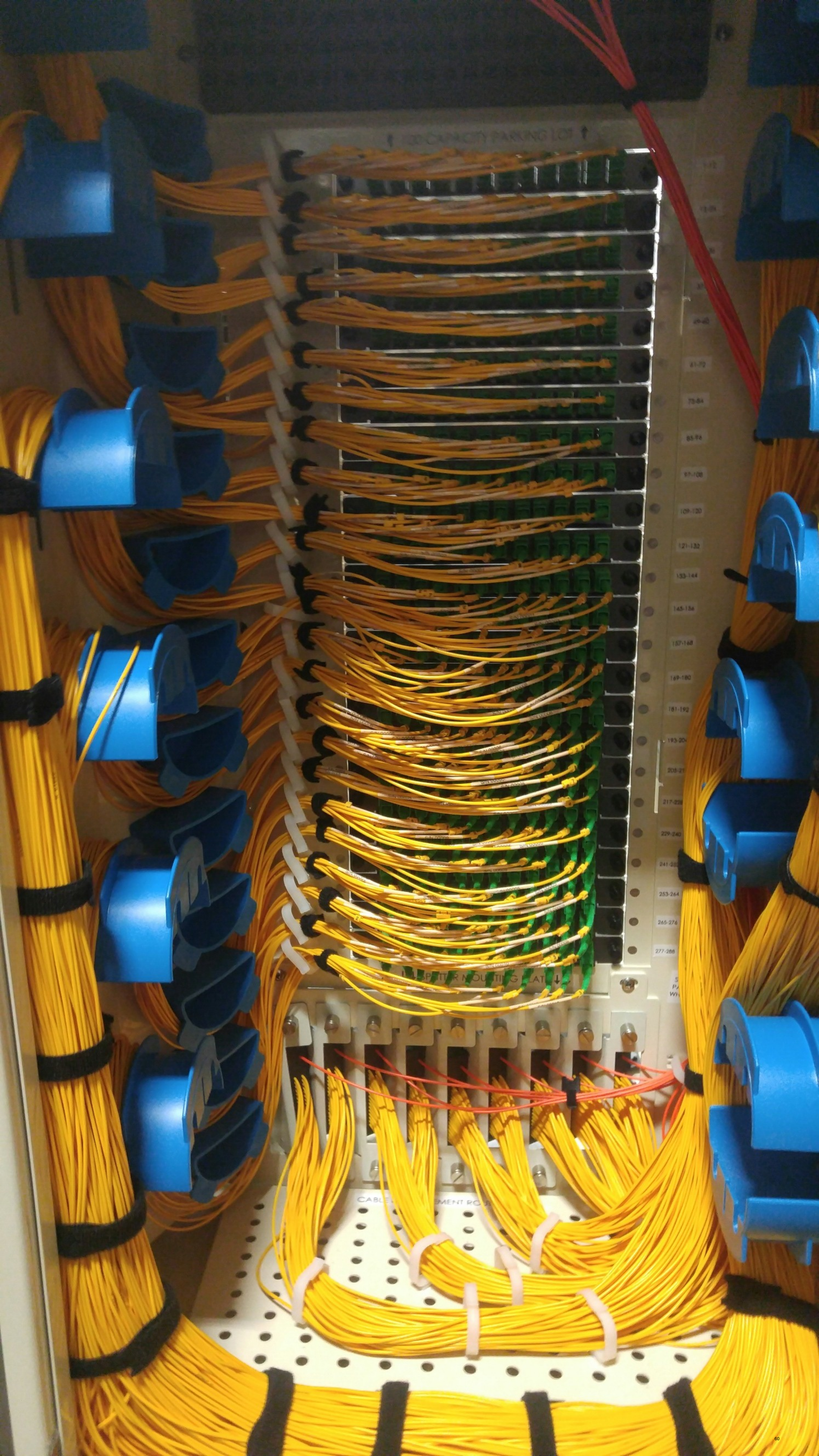
Standards

Optical Cable Corporation's Indoor/Outdoor tight-buffered fiber optic cables meet the functional requirements of the following standards:

- UL 1666
- UL 1651
- ICEA-S-83-596

Features

- Cable materials are Indoor/Outdoor – UL-listed OFCR and UV, water and fungus resistant
- UL Listed in accordance with NEC section 770.179(b) for use in vertical runs in building risers or from floor to floor
- Aluminum interlocking armor with PVC overjacket
- Interlocking armor can be easily removed leaving an intact inner cable
- Greater flexibility than standard corrugated steel armored (CST) cables
- Ideal for locations that require conduit for cable protection
- Wide operating temperature of -40°C to +85°C

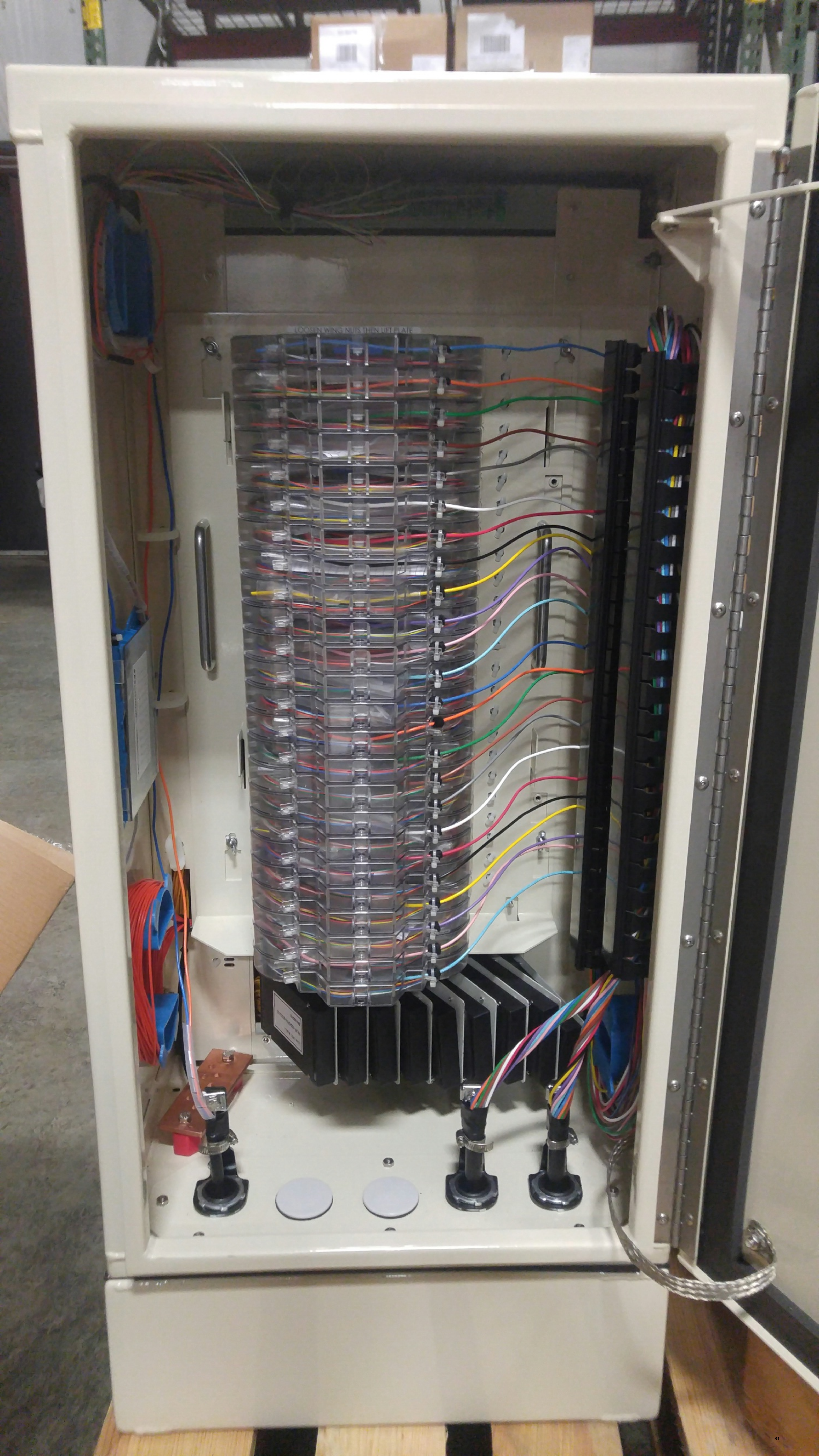


COUNCIL PARKING LOT ↑

- 1-12
- 13-24
- 25-36
- 37-48
- 49-60
- 61-72
- 73-84
- 85-96
- 97-108
- 109-120
- 121-132
- 133-144
- 145-156
- 157-168
- 169-180
- 181-192
- 193-204
- 205-216
- 217-228
- 229-240
- 241-252
- 253-264
- 265-276
- 277-288

COMPUTER ROUTING LOT ↓

CABLE MANAGEMENT PORT



Grommet Inserts For 1" NPT Fittings

										
Stock ID	10-5552	10-5127	10-5128	10-6550	10-5129	10-6552	10-6002	10-5130	10-5134	065-082-10
10 Pack ID	10-5553	10-5421	10-5422	10-6551	10-5419	10-6553	10-6003	10-5483	10-5420	N/A
# of Ports	1	1	1	8	6	4	4	4	4	1-SC
Cable Size	.3"-.4"	.41"-.5"	.51"-.79"	.150"	.265	.300	.350	.370	Flat Drop	SC Outdoor
Weight	.5 lbs.	.5 lbs.	.5 lbs.	.5 lbs.	.5 lbs.	.5 lbs.	.5 lbs.	.5 lbs.	.5 lbs.	.2 lbs.

RT 1800 Series

Description

Water blocking reinforced tracer wire used for direct burial locating purposes in the telecommunications, gas, sewer or water utilities. Double insulated tin-coated solid copper conductor enables location of plastic gas lines, sewer lines, water pipes and non-metallic dielectric fiber optic cables.

Features & Benefits

- ▲ Durably printed with sequential footage or meter markings
- ▲ Conductor additionally protected by product construction
- ▲ Market specific coloring for easy identification
- ▲ Water blocking yarns
- ▲ High density polyethylene jackets
- ▲ Low elongation for enhanced worker safety , no spring back
- ▲ Lightweight and flexible
- ▲ Easy to handle and install
- ▲ Conductor functions at a wide range of frequencies and is compatible with any standard locating equipment
- ▲ Fungus resistant
- ▲ 600 V rated per UL 1581
- ▲ Passes 3 meter water head test
- ▲ Universal connector system



Please refer to NEPTCO's TRACE-SAFE® Water Blocking Tracer Wire Splicing Instructions.

TRACE-SAFE® WATER BLOCKING TRACER WIRE PRODUCT ORDERING INFORMATION

Product	Color Code	Market	Strength		Nominal Diameter	
			lbs.	(kg)	Major	Minor
RT1800W	Orange	Telecommunications	1800	(818)	.250"	.200"
RT1801W	Yellow	Gas	1800	(818)	.250"	.200"
RT1802W	Blue	Water	1800	(818)	.250"	.200"
RT1803W	Green	Sewer	1800	(818)	.250"	.200"



TRACE-SAFE® Water Blocking Tracer Wire is intended to promote detection of underground cables and utilities. As with any conductor, it has the potential to transfer electrical energy. Do not pull, strap, bind or lift items with this product.

RT 1800 Series

Conductor Data

AWG	19 AWG tin coated solid copper conductor
Diameter	.0356" Nominal (.90 mm)
DC Resistance	8.5 OHMS per 1,000 feet (304 meters)
Tensile Strength	38,500 psi Nominal (27,342 kPa)

Conductor Insulation Data

Type	High Density Polyethylene
Inner jacket thickness	.006" (.154 mm) Nominal - Black Color
Dielectric Constant	2.29 @ 1 MHZ

Core Material

Type	Woven high tenacity polyester and water blocking polyester yarns
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Outer Jacket

Type	High Density Polyethylene
Overall Thickness	.030" (7.62 mm)

Overall Product Strength

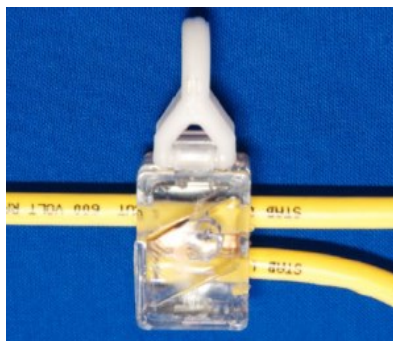
Tensile Strength	1,800 lbs. Nominal (818 kg)
Crush Strength	4,200 lbs. Nominal (1909 kg)

Connectors

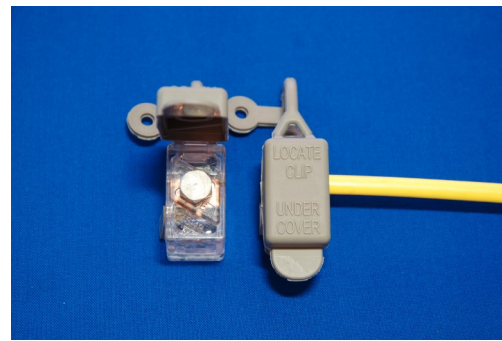
Consistent reliable connections



No stripping required

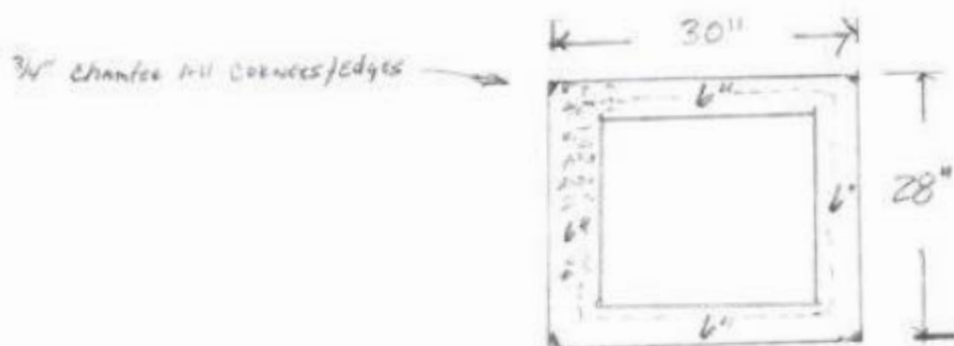


Easy to use ensuring high quality splices



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Hollow Concrete Pedestal Design



SPRINKLER WATER FURNISHED
CONTRACTOR INSTALLED

- * VACUUM/CLEAN BOTTOM
OF GROUND VAULT
ADD GRAVEL DRAIN FILL
3/4" CLEAN

